

# **A HERITAGE RESOURCE ASSESSMENT FOR THE HISTORIC ARROWHEAD TOWNSITE AND CEMETERY, ARROWHEAD, BRITISH COLUMBIA**



**Christopher R. Burk**

**January 15<sup>th</sup>, 2009**

**HORIZON**  
HERITAGE CONSULTING



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Prepared for:

**The Arrowhead Conservation Society**  
P.O. Box 643, Revelstoke, B.C. V0E 2S0

Funded by:



Prepared by:

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## **SYNOPSIS**

In August of 2008 Horizon Heritage Consulting conducted a heritage resource assessment of the historic Arrowhead townsite and cemetery at Arrowhead, British Columbia. The purpose of this assessment was to determine the current state, heritage value, and possible future impacts to all remnants, structures, buildings, and artifacts present, and to use this information to compile a Heritage Resource Significance Evaluation of the scientific, public, ethnic, economic, and historic significance of the townsite and cemetery.

This assessment was conducted on behalf of the Arrowhead Conservation Society (P.O. Box 643, Revelstoke, B.C., V0E 2S0, contact Brian Gadbois, 250-837-6169). The project was funded by the Columbia Basin Trust, and was overseen on behalf of the ACS by Mr. Brian Gadbois. Fieldwork was conducted by Mr. Christopher Burk of Horizon Heritage Consulting from August 3<sup>rd</sup> to 8<sup>th</sup>, 2008, assisted by Ms. Amanda Palmer.

The assessment found that there are still considerable historical remnants at the Arrowhead townsite. The townsite remains have excellent potential for scientific and historic studies and have high significance values in these categories, and have medium-high potential to become an interpretive and educational site and generate revenue for local tour operators and historic interpreters. The overall heritage significance value of the townsite is high, which warrants future studies, conservation efforts, and the seeking of official Heritage Designation through the creation of a Commemorative Integrity Statement.

**The need to take immediate action to conserve the Arrowhead Cemetery cannot be stressed enough.** Erosion, bears, and falling trees are causing immediate and ongoing adverse impacts to the grave sites and markers, and we must respect our ancestors enough to take proper care of their final resting places. Graves near the road cut bank on the south side of the cemetery must be protected with retaining walls, a fence must be erected to keep bears out, erosion control measures must be undertaken, and all trees should be removed from within the cemetery as soon as possible to prevent further destruction of markers by falling trees and the certain imminent displacement of interred human remains by tree throws.

**ACKNOWLEDGEMENTS AND CREDITS**

Horizon Heritage Consulting would like to thank Mr. Brian Gadbois and the Arrowhead Conservation Society for retaining our firm to conduct this Heritage Resource Assessment. Mr. Gadbois was the Project Supervisor on behalf of the ACS, and provided correspondence, maps, access, and the initial site tour.

Thank you to the Columbia Basin Trust for supporting the Arrowhead Conservation Society and making this project possible.

Thank you to Ms. Cathy English of the Revelstoke Museum and Archives who provided valuable assistance and access to the archives.

Thank you to the Royal British Columbia Museum for permission to reproduce archival images appearing in this report.

Mr. Christopher Burk conducted the field work and produced this report. Mr. Burk was assisted in the field by Ms. Amanda Palmer, MA, who provided copious notes, a few photographs, and mountains of good cheer. Thank you Amanda!



## **TABLE OF CONTENTS**

Synopsis .....	i
Acknowledgements and Credits .....	ii
List of Tables .....	iv
List of Figures .....	v
<b>1.0 INTRODUCTION and BACKGROUND .....</b>	<b>1</b>
1.1 Introduction.....	1
1.2 Background.....	1
1.3 Natural Setting .....	4
<b>2.0 METHODOLOGY .....</b>	<b>7</b>
<b>3.0 RESOURCE ASSESSMENT SURVEY RESULTS .....</b>	<b>7</b>
A note on Measurements .....	7
A note on Temporal Markers .....	8
3.1 Townsite Blocks.....	8
3.1.1 Block 1 .....	9
3.1.2 Block 2.....	11
The Imperial Bank .....	11
John Bull's .....	14
The Lakeview Hotel.....	14
Barber Shop .....	14
3.1.3 Block 3 .....	16
The City Hotel.....	16
Dykes & Temples-Butcher Shop-Reid & Young Store-Unknown Store .....	18
The Union Hotel .....	18
The Newman Building.....	18
The Anglican Church.....	18
3.1.4 Block 4 .....	20
First Arrowhead School/Community Hall.....	20
Presbyterian Church.....	20
Bench below Presbyterian Church.....	21
3.1.5 Block 5 .....	21
3.1.6 Blocks 7 and 8.....	22
3.1.7 Block 9 .....	22
3.1.8 Block A .....	22
3.1.9 Block B .....	24
3.1.10 Block C .....	24
3.1.11 Block D .....	24
3.1.12 Block E.....	25
3.1.13 Block F.....	25
3.1.14 Block G .....	27
3.2 Townsite Roads.....	28

3.3	The Arrowhead School .....	30
3.3.1	The Cistern.....	38
3.4	The Arrowhead Cemetery.....	40
3.5	Culturally Modified Trees.....	54
<b>4.0</b>	<b>HERITAGE SIGNIFICANCE EVALUATIONS .....</b>	<b>55</b>
4.1	Scientific Significance .....	55
4.2	Historic Significance.....	56
4.3	Public Significance .....	56
4.4	Ethnic Significance .....	57
4.5	Economic Significance .....	57
4.6	Additional Factors.....	58
4.7	Overall Significance.....	58
<b>5.0</b>	<b>POTENTIAL IMPACTS AND RECOMMENDATIONS .....</b>	<b>59</b>
5.1	ATVs.....	59
5.2	Erosion .....	59
5.3	Vegetation.....	60
5.4	Bears .....	61
5.5	Looters/Vandals .....	62
<b>6.0</b>	<b>CONCLUDING REMARKS .....</b>	<b>63</b>
<b>7.0</b>	<b>REFERENCES.....</b>	<b>64</b>

### **LIST OF TABLES**

<b>Table 1.</b>	Non-native heritage plant species and some of their locations.....	5
<b>Table 2.</b>	Examples of temporally diagnostic artifacts at the Arrowhead townsite.....	8
<b>Table 3.</b>	Arrowhead Cemetery grave conditions.....	42
<b>Table 4.</b>	Culturally Modified Trees observed at the Arrowhead townsite & cemetery....	54
<b>Table 5.</b>	Significance value ratings.....	58

**LIST OF FIGURES**

	<b>Page</b>
<b>Figure 1.</b> Location of Arrowhead Townsite on Upper Arrow Lake, British Columbia.....	2
<b>Figure 2.</b> The layout of the town blocks.....	3
<b>Figure 3.</b> Town plan overlain on Google Earth image.....	3
<b>Figure 4.</b> Arrowhead in 1906 .....	6
<b>Figure 4a.</b> View of the lakeshore portion of the townsite in 2008 .....	6
<b>Figure 5.</b> Townsite blocks numbered as per the original town plan .....	8
<b>Figure 6.</b> Remains of the only visible building footprint in Block 1 .....	9
<b>Figure 7.</b> The remains of a stone retaining wall at the rear (north side) of the footprint.....	10
<b>Figure 8.</b> A metal stovepipe flange found near the building footprint in Block 1 .....	10
<b>Figure 9.</b> The remains of a stone retaining wall along the Block 2 alley.....	12
<b>Figure 10.</b> Blocks of local stone were stacked but not cemented to create the wall.....	12
<b>Figure 11.</b> View south from the rear of the Imperial Bank.....	13
<b>Figure 12.</b> View east of the rear of the bank.....	13
<b>Figure 13.</b> Buried concrete sidewalk and step down at the former Lakeview Hotel .....	15
<b>Figure 14.</b> The depression behind the site of the Lakeview Hotel.....	15
<b>Figure 15.</b> The edge of the concrete slab and retaining wall which were at the front of the City Hotel along Front Street, eroded by the elevated reservoir .....	17
<b>Figure 16.</b> Steps leading from the City Hotel east down onto 3 <sup>rd</sup> Street.....	17
<b>Figure 17.</b> A portion of the Block 3 midden east of the Anglican Church site.....	19
<b>Figure 18.</b> Artifacts found at the former location of the Presbyterian Church .....	20
<b>Figure 19.</b> A glass Alka-Seltzer tablet tube and a hinged enameled metal bed warmer.....	23
<b>Figure 20.</b> Various items found in the Block A midden .....	23

<b>Figure 21.</b>	The remains of a wire-wrapped wooden water pipe in Block F.....	26
<b>Figure 22.</b>	The name Rob (or Bob?) McQueen carved into a non-native maple tree .....	27
<b>Figure 23.</b>	8 <sup>th</sup> Street, view south from Cook Avenue .....	29
<b>Figure 24.</b>	Lonsdale Street, facing east from 7 <sup>th</sup> Street.....	29
<b>Figure 25.</b>	The Arrowhead School in 1906.....	32
<b>Figure 26.</b>	The site of the Arrowhead School in 2008 .....	32
<b>Figure 27.</b>	An entrance to the basement at the southwest corner of the school .....	33
<b>Figure 28.</b>	A doorway in the west wall of the original foundation .....	33
<b>Figure 29.</b>	A portion of the collapsed concrete slab at the rear of the building .....	34
<b>Figure 30.</b>	The remains of a metal 2-tap sink found inside the foundation .....	34
<b>Figure 31.</b>	Remnants of original and replacement plumbing at the rear of the building .....	35
<b>Figure 32.</b>	Electrical conduit and burnt timber inside the school foundation .....	35
<b>Figure 33.</b>	The remains of one of two metal bucket-top mop wringers.....	36
<b>Figure 34.</b>	Northwest corner of the school foundation showing later modifications.....	36
<b>Figure 35.</b>	Modifications to the southwest corner of the foundation .....	37
<b>Figure 36.</b>	The open top of the concrete cistern.....	39
<b>Figure 37.</b>	The inside of the cistern at ground level, facing west .....	39
<b>Figure 38.</b>	The subterranean chamber of the cistern.....	40
<b>Figure 39.</b>	Dave Williams' 1998 cemetery map .....	42
<b>Figure 40.</b>	Marker placed at the cemetery in 1967 .....	47
<b>Figure 41.</b>	A general view of a portion of the cemetery, view east .....	47
<b>Figure 42.</b>	A 'tree throw' in the cemetery .....	48
<b>Figure 43.</b>	Plot 'C' (Holbert 1907) – very close to road cut .....	48

<b>Figure 44.</b> Plot 224a (White), displaced by bear.....	49
<b>Figure 45.</b> Plot 248 (Nelson), stone broken and displaced .....	49
<b>Figure 46.</b> Plot 261 (Butler child), near eroding bank. ....	50
<b>Figure 47.</b> Plot 265 (Bowen), showing severe erosion. ....	50
<b>Figure 48.</b> Plots 270 (Heffern) and 271 (Gibbs), showing state of markers. ....	51
<b>Figure 49.</b> Plot 271a,b,c (Kirkpatrick) showing erosion.....	51
<b>Figure 50.</b> Plot 286 (Johnson), showing undermined tombstone.....	52
<b>Figure 51.</b> Fallen wooden cross at Plot 289S (Armstrong).....	52
<b>Figure 52.</b> Plot 298S (Vaughn). Marker is being undermined by erosion .....	53
<b>Figure 53.</b> Cobbles from plots 250a, b, and c, displaced by bears.....	53
<b>Figure 54.</b> Bark-stripped birch Culturally Modified Trees in Block F .....	54

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## **1.0 INTRODUCTION AND BACKGROUND**

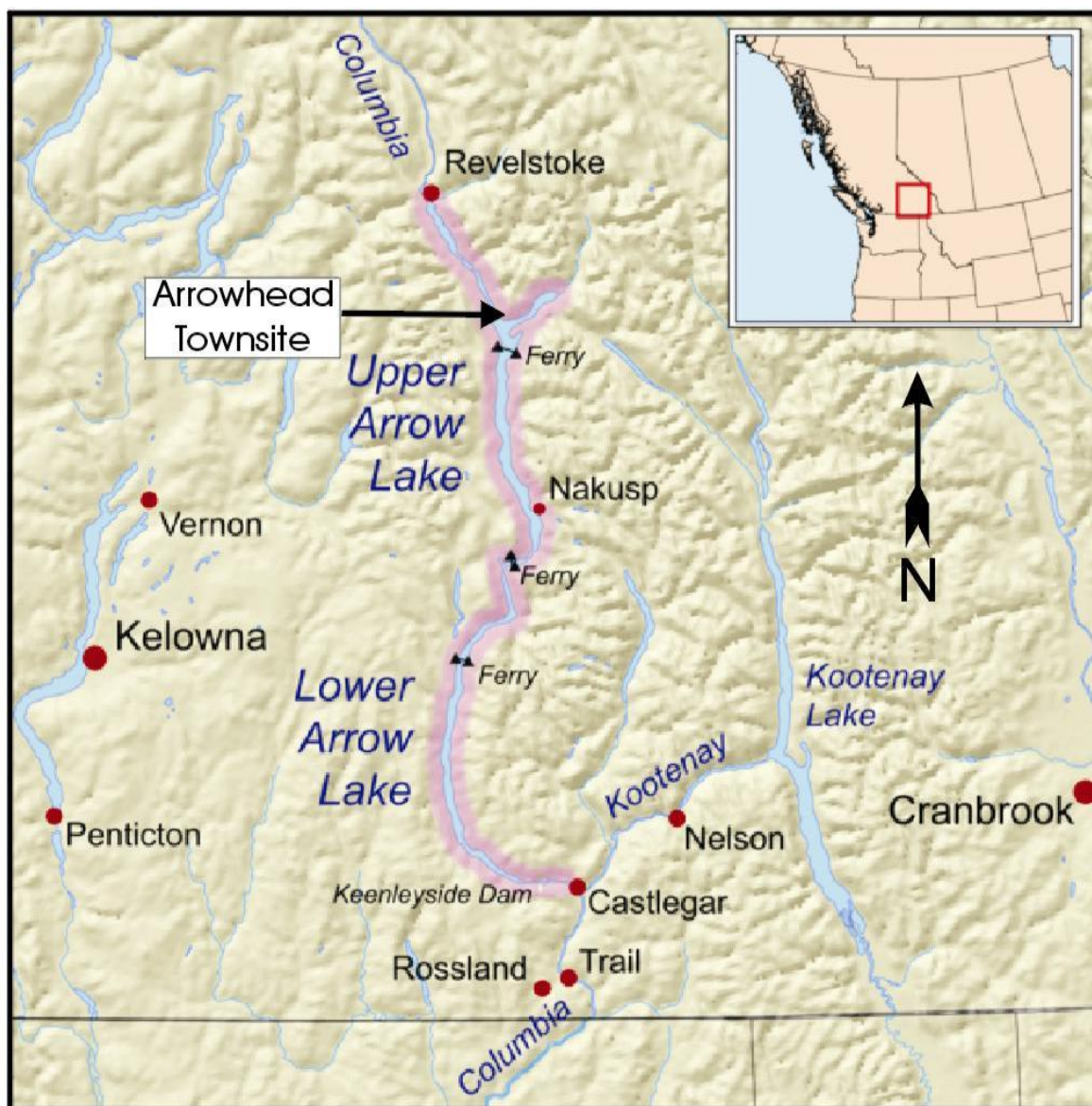
### **1.1 Introduction**

In August of 2008 Horizon Heritage Consulting conducted a heritage resource assessment of the historic Arrowhead townsite and cemetery at Arrowhead, British Columbia. The purpose of this assessment was to determine the current state, heritage value, and possible future impacts to all remnants, structures, buildings, and artifacts present, and to use this information to compile a Heritage Resource Significance Evaluation of the scientific, public, ethnic, economic, and historic significance of the townsite and cemetery.

### **1.2 Background**

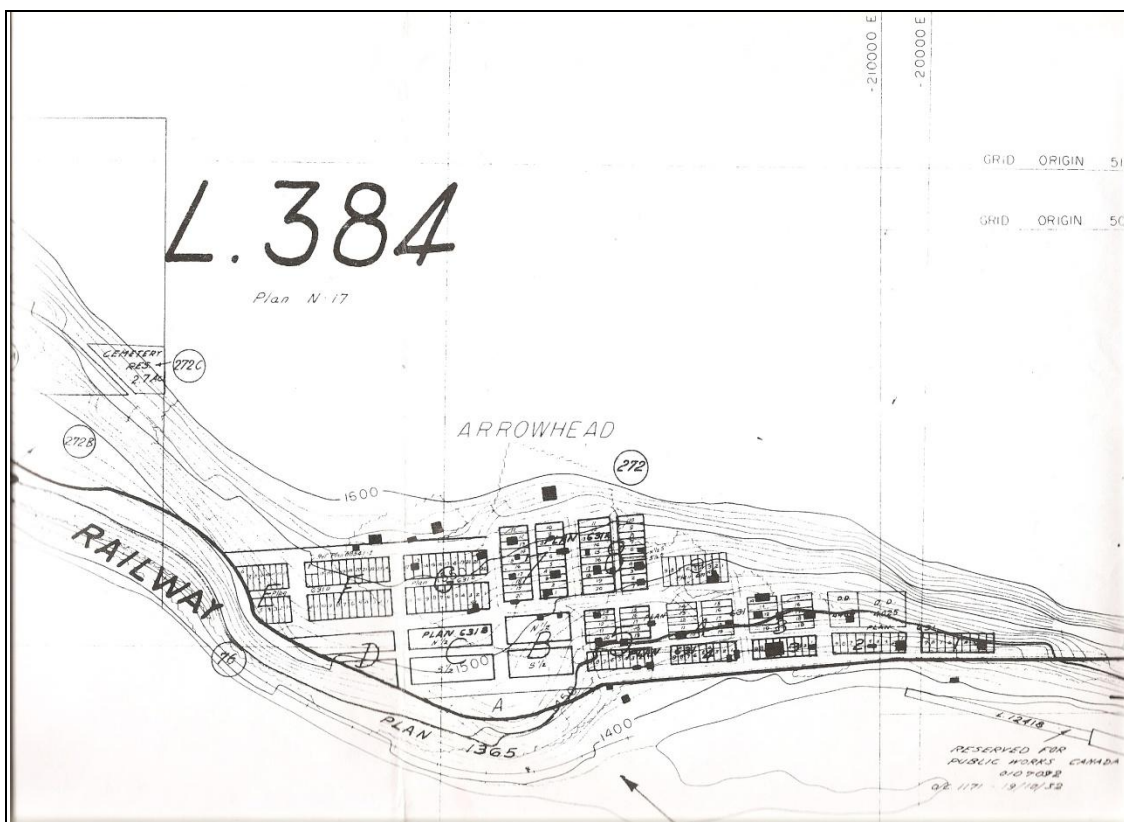
The town of Arrowhead was located on Upper Arrow Lake in southeastern British Columbia, just east of the Columbia River (see Figure 1). The town was established as a transportation hub in 1895 as a place where sternwheelers moving people and freight between communities on the Arrow Lakes could meet a spur line of the Canadian Pacific Railway, connecting the people of the central Kootenay region to Canada's growing transportation and shipping network.

With the connection to the CPR came accessibility to markets across Canada, and with Arrowhead's location in prime timber country, the town quickly grew with the construction of two lumber mills. By 1911 the town's population grew to 497, with the Arrow Lakes Lumber Company employing the majority of the residents. The town attracted people from across Canada and around the world with its beautiful natural setting and employment opportunities. A 1911 census lists people of English, Irish, Scottish, Manx, Welsh, Japanese, Chinese, Norwegian, Swedish, Austrian, German, East Indian, French, Slovak, Belgian, Dutch, and Danish origin living at Arrowhead.

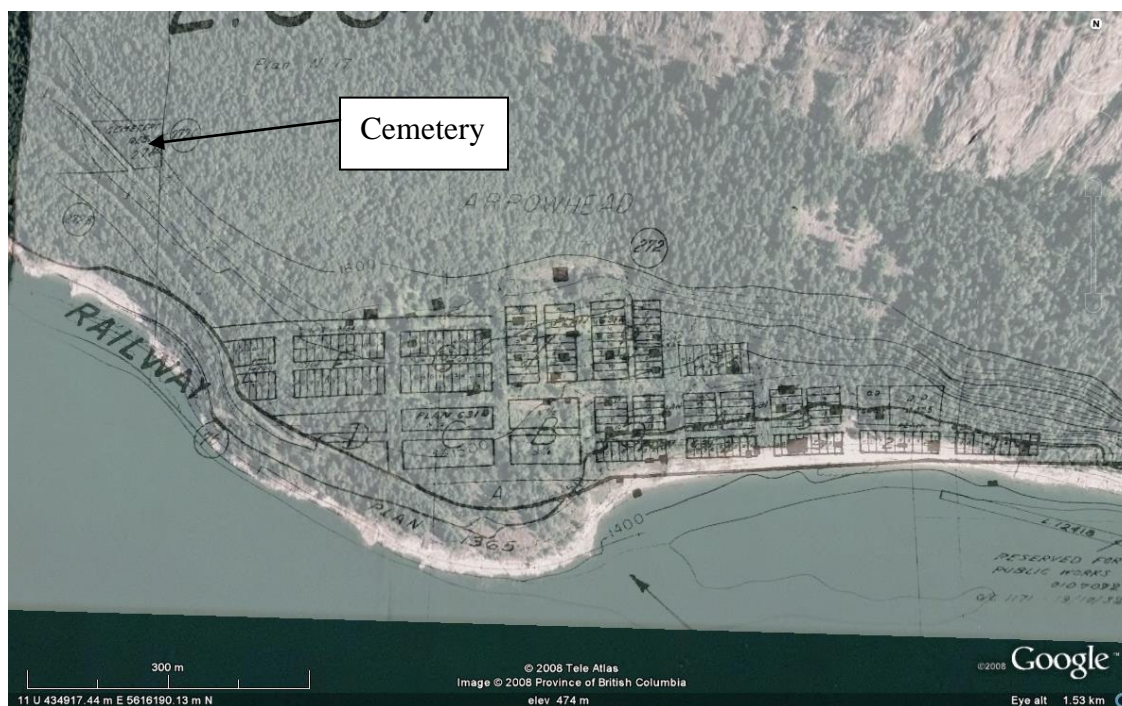


**Figure 1.** Location of Arrowhead Townsite on Upper Arrow Lake, British Columbia.





**Figure 2.** The layout of the town blocks. Black rectangles indicate the location of buildings which persisted into the 1960's prior to inundation.



**Figure 3.** Town plan overlain on Google Earth image. The location of the townsite, school, and roads are evident in vegetation patterns in the background image.

### **1.3 Natural Setting**

Arrowhead was located where the Columbia River meets Upper Arrow Lake in Southeastern British Columbia. The townsite is in the Columbia Mountains and Highlands Ecoregion within the Montane Cordillera Ecozone, at 440-485 metres above sea level. The ecoregion is characterized by a series of high mountain ranges and alternating trenches between the Rockies and the interior plateau of British Columbia.

Upper Arrow Lake is surrounded by moderate to steeply sloping hillsides which rise to an average of 2000 metres above sea level and as high as 2900 m asl. Interior Cedar-Hemlock (ICH) forest cover dominates the lower elevation slopes around Arrowhead up to about 1200 m ASL, and Engelmann Spruce-Subalpine Fir (ESSF) forest dominates higher elevations. ICH typically grades into ESSF throughout its range.

Climates in the region range from sub-alpine in the mountains to a more temperate continental climate in the valley bottoms. The climate is typified by cool, wet winters and warm dry summers. The Arrow Lakes are within the 'Interior Wet Belt' of British Columbia, with 84.2 cm of precipitation annually (Environment Canada 2008) of which 25-50% falls as snow (Meidinger and Pojar 1991). Mean annual precipitation in other parts of the ecoregion is as high as 120 cm. Average temperatures range from -3 in winter to +18 degrees C in summer, with the surrounding higher elevation areas having higher precipitation and cooler temperatures.

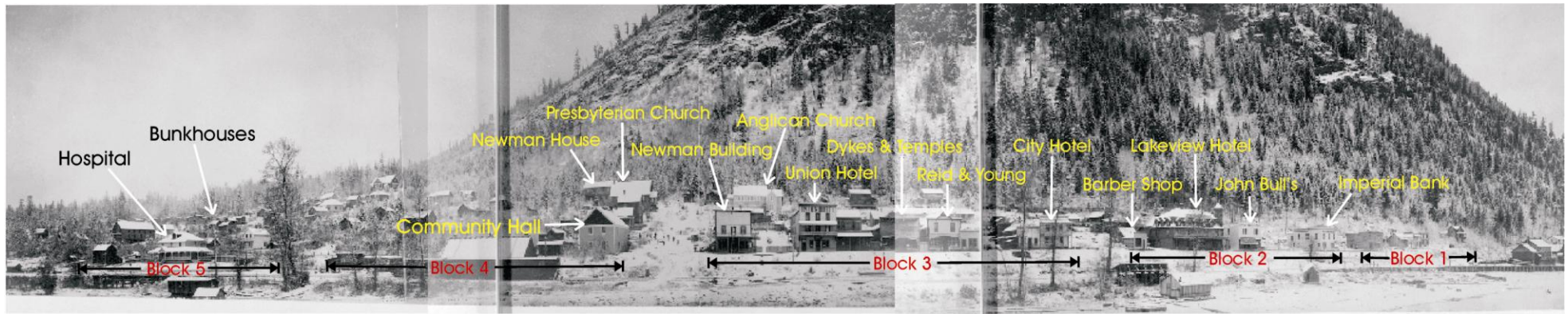
Typical ICH vegetation in the region includes cedar, hemlock, Douglas-fir, subalpine (balsam) fir, yew, maple, paper birch, cottonwood, white pine, lodgepole pine, alder, larch, kinnickinnick, falsebox, *Vaccinium* spp., wild ginger, devil's club, rattlesnake plantain, soopalallie, rose, arnica, bunchberry, lungwort, Oregon-grape, one-sided wintergreen, pink wintergreen, violet, spirea, aster, prince's-pine, queen's cup, twinflower, freckled pelt, red-stemmed feathermoss, electrified cat's tail, knight's plume, and several varieties of fern. Typical ESSF vegetation in the region includes Engelmann spruce, subalpine fir, rhododendron, highbush cranberry, blue and red huckleberry, blueberry, falsebox, devil's club, thimbleberry, cow's parsnip, Indian hellebore, five-leaved bramble, bunchberry, gooseberry, twinberry, twinflower, foamflower, violet, prince's-pine, queen's cup, spirea, lungwort, stiff clubmoss, electrified cat's tail, knight's plume, and feathermoss.

The townsite area is now populated by several of the naturally present species listed above, but is also home to several introduced domestic species planted by the townspeople and allowed to go wild after they left. These include several species of domestic fruit (apple, pear, plum, raspberry, etc.) and ornamental species such as exotic maples, domestic rose, and black locust, which have now made the former townsite conspicuous by their presence (see Figure 5). A study of these introduced species and their distribution was conducted in 2008 (Coleshill and Hartman 2008 – see Table 1).

**Table 1.** Non-native heritage plant species and some of their locations at the abandoned Arrowhead townsite. (from Coleshill and Hartman 2008)

COLLECTION NUMBER	BOTANICAL NAME	COMMON NAME	UTM EASTING	UTM NORTHING
AR01	<i>Acer saccharum</i>	Sugar Maple	434841	5616014
AR02	<i>Acer saccharinum</i>	Silver Cutleaf Maple	434969	5616060
AR03	<i>Rosa spp. #1</i>	Rose	434987	5616007
AR04	<i>Iris spp.</i>	Iris	434973	5615993
AR05	<i>Prunus americana</i>	Plum	434948	5616014
AR06	<i>Rosa spp. #2</i>	Rose	434944	5616008
AR07	<i>Symphytum officinale</i>	Comfrey	434945	5616007
AR08	<i>Rosa spp. #3</i>	Rose	434944	5616000
AR09	<i>Syringa spp. (vulgaris)</i>	Lilac	434943	5616007
AR10	<i>Hemerocallis fulva</i>	Daylily	434961	5615994
AR11	<i>Aesculus hippocastanum</i>	Horse Chestnut	434970	5616003
AR12	<i>Asparagus officinales</i>	Asparagus	434978	5615974
AR13	<i>Lathyrus latifolia</i>	Sweet pea	434979	5615971
AR14	<i>Achillea millefolium</i>	Yarrow	434951	5616003
AR16	<i>Robinia pseudoacacia</i>	Black Locust	435112	5615952
AR17	<i>Prunus avium</i>	Cherry	435113	5615954
AR18	<i>Rosa spp. # 4</i>	Rose	434851	5616023
AR19	<i>Rosa spp. # 5</i>	Rose	435038	5615829
AR20	<i>Populus deltoides</i>	Plains Cottonwood	434926	5616059
AR21	<i>Pyrus-Malus.(MalusMill.)</i>	Apple	434953	5616048





**Figure 4.** Arrowhead in 1906, with buildings and blocks described in the following text labeled. Composite image from B.C. Archives photographs F-02410, F-02411, and F-02412 (images used by permission, courtesy of Royal BC Museum, BC Archives).



**Figure 5.** View of the lakeshore portion of the townsite in 2008. The former townsite area is made conspicuous by the presence of deciduous trees along the lakeshore, most of which are introduced domesticated species. Natural forest cover in the area is represented by mainly coniferous forest as seen on the upper slope.

## **2.0 METHODOLOGY**

Prior to visiting the townsite, Horizon Heritage Consulting did a literature search to obtain historical background information on the town of Arrowhead. A great deal of information was obtained from the Revelstoke Museum and Archives, with the help of curator Cathy English. Historic maps, photos, and newspaper articles were compiled. Additional photos were obtained from the B.C. Archives, and additional town plan maps were provided by Brian Gadbois of the Arrowhead Conservation Society.

The town was systematically surveyed on a block-to-block basis on August 5<sup>th</sup> to August 9<sup>th</sup>, 2008 by two Horizon Heritage Consulting archaeologists. Records of the findings in each block were made in field notes and significant finds (structural remains, historic artifacts, etc.) were described in detail and photographed.

The remains of the Arrowhead School were also inspected, recorded, and photographed, with an emphasis on remaining artifacts, construction methods, evident past renovations and upgrades, and possible threats to the structural remnants.

The Arrowhead cemetery was examined systematically using a map drawn in 1998 by Dave Williams of Revelstoke (see Figure 39). Each grave on the map was relocated and described in terms of its present condition and possible future threats (See Table 3).

A short video was also produced, documenting significant remains, artifacts, and possible threats to the heritage resources present at the townsite, school, and cemetery.

## **3.0 RESOURCE ASSESSMENT SURVEY RESULTS**

The following sections describe the results of the Heritage Resource Assessment Survey. Town plan maps showed blocks labeled with numbers 1-9 and letters A-G (See Figure 2), and these designations were used to study historic remains in a systematic fashion. Sections 3.1.1 through 3.1.14 describe block-by-block findings in the townsite proper, with each section corresponding to a designated block. Section 3.2 briefly describes the townsite roads in their current condition. Section 3.3 describes the observed remains at the Arrowhead school. Section 3.4 describes the current state of the Arrowhead cemetery. Section 3.5 describes Culturally Modified Trees (CMTs) observed within the townsite and cemetery.

### **A Note on Measurements**

The majority of the measurements in this report appear in metres, and were arrived at either by tape measure, counting paces, or visual estimation. Measurements for some structural remains and artifacts are provided in imperial measurements (feet and inches) as these are the increments which would have been used historically and in some cases are still commonly used today (as with dimensional lumber, i.e. 'two-by-four').

## **A Note on Temporal Markers**

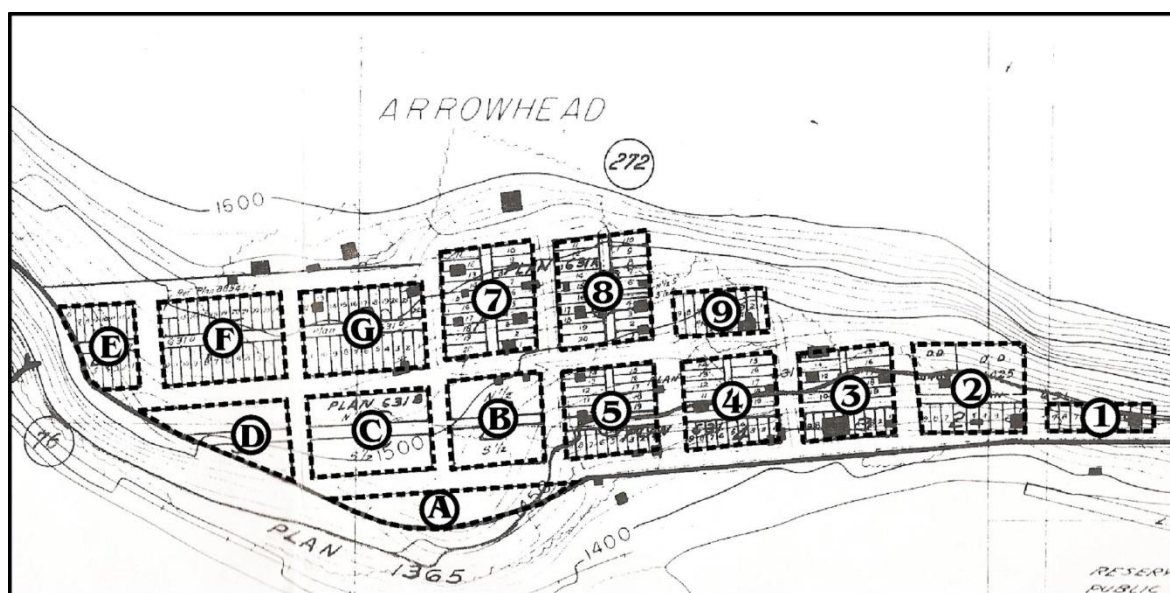
Several diagnostic historic temporal horizon marker artifacts were observed within the townsite. These include food jars and tins, glass bottles and enamelware goods. Several of these artifact types are mentioned in the body of this report, so the following table is provided to clarify the age of some diagnostic artifacts.

**Table 2.** Examples of temporally diagnostic artifacts at the Arrowhead townsite.

<b>Artifact Type</b>	<b>Age range</b>
Hole-in-cap can	1820 - WWI
Hole-in-top cans	1900 - WWII
Soldered cans	Pre-1904
Hand-lipped bottles	1856 - WWI
Turn-mold bottles	1870-WWI
Machine made bottles	Post-WWI
'Lightning' stopper bottle closure	1882-1920s
Enamelware	1876 – 1940s

The enormous numbers of such goods at the townsite provide an excellent opportunity for future historical archaeological studies, as each refuse scatter can be analysed to determine the age range of use for each midden, and individual specimens of tin cans can be measured to determine age and contents, allowing for numerous scientific analyses to be conducted (see Section 4.1 for examples of possible studies).

## **3.1 TOWNSITE BLOCKS**



**Figure 5a.** Townsite blocks numbered as per the original town plan. The following sections summarize findings in each block using these designations.



### **3.1.1 – Block 1**

Block 1 is the easternmost designated block in the townsite. The majority of the block slopes moderately to the north. The southern edge of the block, the former location of Front Street, has been eroded by the artificially raised water level of the reservoir. Historical photographs show that the block had been cleared of trees, and they have since regenerated with healthy second growth of native species including Douglas-fir, cedar, hemlock, paper birch, and alder.

Block 1 originally had only a single row of buildings along Front Street. These buildings included Wallis' Drug Store, a Chinese laundry, and a store opposite the CPR station (ALHS 1997:86), which was across Front Street and below the current high water line. At the time of inundation in the 1960's only one of the original buildings remained, in Lot 2 of Block 1, and at the time of our survey a portion of only this building footprint was still evident. No other structural remains were surficially evident in the block, and it is likely that the rising water level of the post-inundation reservoir has eroded the original ground surface away for much of the block.

Historic artifacts were observed in block 1 below the current high water line and in the remaining 5 by 7 metre building footprint. Mason jars, a wall flange for a wood stove pipe, camping fuel tins, and food tins were observed within the footprint, including hole-in-top lead soldered cans (see Table 2). Rotten dimensional lumber fragments were present in the mossy ground cover, and a portion of a cobblestone retaining wall exists along the back of the building footprint. Bottle glass and galvanized sheet metal fragments were eroding out of the bank below.



**Figure 6.** Remains of the only visible building footprint in Block 1. View east.





**Figure 7.** The remains of a stone retaining wall at the rear (north side) of the footprint.



**Figure 8.** A metal stovepipe flange found near the building footprint in Block 1.

### **3.1.2 – Block 2**

Block 2 originally had a barber shop on the western end of Front Street at the corner of 3<sup>rd</sup> Street, followed west to east by the Lakeview Hotel, John Bull's store, and the Imperial Bank. A portion of the block has been washed away with inundation, but significant historical architectural features remain. One of the most striking of which is a stone retaining wall approximately 60 metres long and up to 2 metres high (see Figure 9) which is in line with the back of the Imperial Bank building, and must have served to retain a bank of earth along the base of the slope in the alley behind Front Street. Angular blocks of local stone were stacked but not cemented to make the wall (Figure 10).

Near the western end of the wall there is a second stone retaining wall, approximately 5 metres to the south and running parallel to the first wall. This retaining wall is approximately 7 metres long and 1 metre high, and is very near the current high water line.

#### **The Imperial Bank**

The site of the Imperial Bank is made obvious by the remains of concrete foundations at what would likely have been the rear of the bank, while the original location of the front of the bank along Front Street has been destroyed by inundation. The foundation consists of a series of five concrete pillars oriented in an E-W line along the back of the building. The pillars are six feet tall, 12" square at the top, flare out to 16" at the base, and are connected along the ground by a concrete retaining wall 2' high and 12" wide. The two westernmost and the easternmost column are still standing, while the other two columns have collapsed just above the two-foot retaining wall. The remaining columns are threatened by slumping and creeping soils coming down the slope from behind the structural remains from the north, and by encroaching vegetation. A very large paper birch tree is growing over the retaining wall between the two western columns (see Figure 12) and could damage them when it dies and falls, and the eastern column is already leaning in as a result of pressure from uphill deposits.

In the centre of the remaining footprint of the bank is a large block of concrete, 1 metre square and 1.5 metres high, which was formed with shiplap and tapers towards the top (see Figure 11). The lower portion of the block appears to have regular aggregate, while the upper portion has large cobbles cemented in. The bank's vault may have originally sat on top of this block.

Also within the remaining footprint of the bank were a galvanized bucket, two galvanized washtubs, coffee tins, food tins, the wire coil from around a composite wooden water pipe, glass bottles, and clay bricks.





**Figure 9.** The remains of a stone retaining wall along the Block 2 alley.



**Figure 10.** Blocks of local stone were stacked but not cemented to create the wall. A piece of weathered dimensional lumber (3/4" x 3.5" x 4') is leaning against the wall in the centre of the photograph.





**Figure 11.** View south from the rear of the Imperial Bank, showing the large block of concrete (vault pedestal?), standing and broken columns, and various artifacts.



**Figure 12.** View east of the rear of the bank, showing standing and broken columns, the retaining wall, and a portion of the large birch tree growing on top of the wall.

### **John Bull's**

There is no surficial evidence of the remains of John Bull's store, as a portion of the front of Block 2 has been eroded by the raising of the reservoir level. A flat bench in front of the stone retaining wall is all that is visible at the location of the former store.

### **The Lakeview Hotel**

The site of the Lakeview Hotel is visible as a 20 x 20 metre clearing on a level bench west of the end of the stone retaining wall, near the west end of Block 2. Several artifacts are in evidence at the rear of the site of the Hotel, including pieces of a metal boiler, a metal bathtub, galvanized buckets, food tins (including hole-in-top cans), cork-top bottles, liquor bottles, large cooking oil tins, leather shoe soles, a barrel hoop, bed rails, paint cans, and a shovel blade. Most of these artifacts were located in a 10 x 20 metre refuse dump which would have been located behind the hotel.

Above the refuse dump approximately 3 metres up the slope is a large hole, approximately 1x1 metre and 1.5-2 metres deep (see Figure 14). The sides of the feature had slumped in so it was difficult to determine its exact depth. This was possibly the site of an outhouse behind the hotel which would have been easily accessible via a back deck on the second floor, over which much of the refuse could also have been dumped.

At the front (south side) of the clearing is a cut bank along the current high water mark, where the remnant of a concrete sidewalk 20 centimetres thick and 6 metres long is visible (see Figure 13). At the east end of the sidewalk there is a single concrete step down. This sidewalk was likely once at the front of the Lakeview Hotel, with a step down onto what was once Front Street. The sidewalk is now covered with 10-30 centimetres of fill. This fill is very dark in colour which suggests a high organic and/or charcoal content, and is probably made up of the remains of the hotel itself after it was destroyed and burned. Small pieces of rotten dimensional lumber and charcoal were observed eroding out of this dark layer.

### **Barber Shop**

The site of the barber shop is evident as a small, level grassy clearing near the former location of 3<sup>rd</sup> Avenue, west of the larger clearing of the Lakeview Hotel site. No artifacts were observed at the site.





**Figure 13.** Buried concrete sidewalk and step down in front of the former Lakeview Hotel.



**Figure 14.** The depression behind the site of the Lakeview Hotel, possibly the site of a former privy.

### **3.1.3 – Block 3**

Block 3 originally had the Newman Building at the west end (Front and 4<sup>th</sup> Streets), followed to the east by the Union Hotel, Dykes & Temples grocery and butcher shop, the Reid and Young General Store, another small unknown store, and finally the City Hotel on the corner of Front and 3<sup>rd</sup> Streets (ALHS 1997:85). Front Street has been eroded away by the elevated reservoir water level, but it appears that most the building footprint locations are intact. Individual building footprints are not readily apparent as depressions, the entire block is an open, grassy level bench feature, but it is possible to discern the location of each building based on the vegetation patterns (e.g. size of each cleared area) and location of artifact clusters, with the aid of historic photographs and maps. The Anglican Church was located at the NW corner of Block 3, where there is now an obvious building footprint.

#### **The City Hotel**

The site of the City Hotel is made obvious by the presence of a 7 metre (E-W) x 6 metre (N-S) concrete slab. The slab is poured on grade and is 8-10' thick. On the east side of the slab is a retaining wall bordering 3<sup>rd</sup> Street, and a set of 3 concrete steps lead down from the southeast corner of the slab onto 3<sup>rd</sup> Street (see Figure 16). A row of immature fir trees now grows along the east side, obscuring the retaining wall and steps. A two-foot tall retaining wall ran along the south side of the slab where the front of the building once was, but this retaining wall has split and sections of it have slid down the eroded slope where Front Street once was (see Figure 15.)

A varied assemblage of artifacts were observed on and near the concrete slab, which is comprised of several small metal items, which likely survived a fire which destroyed the rest of the building. This assemblage includes several hose fittings of various size and materials, brass shotgun shell bases (stamped 'London'), a hair clip, pocket watch and suspender parts, and part of a Schick brand razor. Also present were several small unidentifiable metallic objects, some fire-altered.

At the back (north side) of the City Hotel lot is a small cabin (approx. 2.5 x 3.5 m) which was constructed in the recent past (~10 years) which was the site of an illegal squat by a lone occupant who may have been a trapper in the area. The illegal occupation has since been ended but the cabin remains. The cabin is a combination of horizontal log and plywood construction, using materials likely gathered from the beach and scrounged from the townsite, including a locally made metal wood stove (marked Valley Comfort, Appledale BC) from the nearby Slocan Valley.

The squatter's cabin has no negative impact on the historic fabric of the townsite, although it is anachronistic to the remains of the town. Removal of this cabin would help to restore a deeper sense of history to the remains of the City Hotel and Block 3, and may want to be considered by the ACS. Removal of this cabin would also discourage future camping and/or squatting at the site.





**Figure 15.** The edge of the concrete slab and retaining wall which were at the front of the City Hotel along Front Street, eroded by the elevated reservoir.



**Figure 16.** Steps leading from the City Hotel east down onto 3<sup>rd</sup> Street.

### **Dykes & Temples – Butcher Shop - Reid & Young Store – Unknown Store**

These four establishments occupied the central portion of Block 3, along with the Union Hotel. The footprints of each individual building are not apparent, but the location of the entire string of stores is defined by a large level grassy clearing approximately 20 metres wide north-south. Native (fir) and non-native (black locust) trees grow within and along the edges of the clearing. These trees are all relatively young, having grown post inundation, making them all less than 40 years old. Older trees exist in the area behind the location of the small unknown store and in the area which was the gap between this store and the City Hotel.

A makeshift road cuts across the grassy terrace running E-W. This road is the result of ATV traffic at the townsite, and has caused some erosion in this location and in other locations around the townsite. For more on the impact of ATV's on the site, see section 5.1 below.

### **The Union Hotel**

The site of the Union Hotel is at the west end of the large grassy terrace. Several immature black locust trees now grow at the site of the Hotel. On the slope behind the hotel site is a 10 x 20 metre refuse dump. Within this dump were observed many red bricks, with an indent on one side and flat on the other, which should be diagnostic as to their place of manufacture but we were unable to determine the source. It is possible that the bricks came from downriver at the Dukhabour brick factory at Brilliant. Also observed in the refuse were several dozen food tins, mason jars, glass bottles, 'Sun-Rype' brand juice tins, 'Heinz' tomato juice tins, fragments of glass and ceramic tableware, a Palmolive cream jar, a film reel, a powdered baby formula tin ('SMA' brand), and parts of electric lamps.

### **The Newman Building**

The site of the Newman Building is visible at the west end of the block next to the site of the former 4<sup>th</sup> Street. The site is now a level grassy clearing with several black locust trees. The ATV trail bisects this clearing as it does the entire block, and has caused some significant erosion to the former building site and especially to the former 4<sup>th</sup> Street and other former streets within the townsite (see Section 5.1).

### **The Anglican Church**

The Anglican Church was located at the northwest corner of Block 3 (Lonsdale and 4<sup>th</sup> Streets). The footprint of the church is visible as a level rectangular bench 10 m wide (N-S) and 20 m long (E-W). A stone retaining wall runs along the north side of this feature, and additional stone retaining walls are visible through the undergrowth upslope to the north, running E-W parallel to the first wall, and may have been part of a terraced garden. A 3m x 2m x 1m deep depression was observed at the west end of the feature, and may have been a root cellar.



Within and to the east of the church site is a massive historic garbage dump, with thousands of food tins and various other refuse spread over a 30 m N-S by 50 m E-W area (Figure 17). Notable items include hole-in-cap cans, hole-in-top cans, mason jars, tobacco tins, glass jars, window glass, dimensional lumber, and even a railroad tie. Branded items include Red Rose Coffee tins, large (5 gallon) Mazola oil tins, Oxo tins, Prem meat tins, Johnson's Wax, Nabob Baking Powder tins, Fry's Cocoa tins, a Red Devil Soot Remover tin, and several different brands of tobacco tins. There were also fragments of ceramic dishes, including a teacup fragment marked Made In England. The range of artifacts, from the hole-in-cap cans (pre-WWI) to the 'Zing' orange cola can with a pull tab (post-1962 – IMACS 2001:471) shows that this dump was used throughout the lifespan of the town, and the remarkable preservation of some of the specimens such as those with famous national brand labels listed above makes this a very significant collection of historic artifacts for historians and historical archaeologists interested in studying the early post-contact period of this geographically isolated region.



**Figure 17.** A portion of the Block 3 midden east of the Anglican Church site.

### **3.1.4 – Block 4**

The majority of Block 4 was originally cleared of native vegetation but according to historic photos had few buildings. A 1906 photograph (Figure 4) shows the Community Hall on the southeast corner, the large Presbyterian Church on the northeast corner, and only 6 other small buildings which appear to be private residences on the periphery of the block, while the centre of the block is vegetated. Most of this block is now densely overgrown with scrub alder, thimbleberries, blackberries, domestic rose, and domestic fruit trees. The ground surface, the smaller building footprints, and any historic artifacts are completely obscured. Only the Community Centre and Church locations are still evident (see following 2 sections). Due to the large number of fruit trees left in the southern portion of the block, this area is now very popular with the resident bear population (see Section 5.4 for more on bears).

#### **First Arrowhead School/Community Hall**

Block 4 had Arrowhead's first school (later a community hall) on the southeast corner (Front & 4<sup>th</sup> Streets). The building footprint is clearly defined as a 15 by 15 metre rectangular depression cut back into the slope, with a 3 metre high cutbank on the north side. It is overgrown with domestic rose, snowberry, burdock, and alder, and lined with native (immature fir, cedar) and non-native (black locust and domesticated fruit) trees. No historic artifacts were observed in this area.

#### **Presbyterian Church**

The Presbyterian Church sat on the corner of Lonsdale and 4<sup>th</sup> Streets, at the NE corner of Block 4. The building footprint is visible as a 20 x 20 metre level clearing below the former Lonsdale Street. Several historic artifacts were observed here (see Figure 18), including old style colourless glass Coca-cola bottles (first produced 1916), stubby beer bottles (used almost exclusively in Canada 1962-1986), food tins, an enamelware ferrous metal pie plate, an axe head, turn-mold bottles (1890-1910), leather shoe soles, a decorative cast iron fragment (possibly from a stove), a Magic Baking Powder tin (1897-1915), and a metal steering wheel.



**Figure 18.** Artifacts found at the former location of the Presbyterian Church.

#### **Bench Below Presbyterian Church (South)**

Another building footprint is evident immediately south of the footprint of the Presbyterian Church, which in historic photographs appears to be a private residence. This footprint is defined by rounded berms up to 2 metres high which form a rectangle 20 metres E-W by 10 metres N-S. At the west end of this feature is a depression 1.5 metres square by 1 meter deep, perhaps a root cellar. Historic artifacts fill and surround this feature, including hole-in-top cans, tobacco tins, ceramic fragments, blown glass bottle fragments, a metal cooking pot lid, cast iron stove parts, and a galvanized bucket base. A second concentration of historic artifacts is located to the west of the rectangular berms, in what was once the backyard of the building. Food tins, cork-top bottles, a galvanized bucket, and parts of a metal lantern were observed, as well as more recent items such as oil cans and a plastic detergent bottle.

#### **3.1.5 – Block 5**

Block 5 originally had the hospital (at the corner of 5<sup>th</sup> Street) and the CPR section house on Front street at the south end of the block, and scattered large and small bunkhouses for ‘millmen’ in the uphill portion of the block (ALHS 1997:84). The block is now densely overgrown with scrub alder, thimbleberries, blackberries, domestic rose, and domestic fruit trees. The ground surface, building footprints, and any historic artifacts are completely obscured. Due to the large number of fruit trees left throughout the block, this area is now very popular with the resident bear population (see Section 5.4 for more on bears).

### **3.1.6 – Blocks 7 & 8**

Blocks 7 and 8 were in the uphill portion of the town and show what appear to be several private residences in historic photographs. Both blocks are now overgrown with mostly non-native species, including domestic fruit trees, domestic rose, domestic raspberry, imported maples, and black locust trees, joined by native species of cedar, alder, blackberry, and thimbleberry. There are some open grassy clearings where buildings persisted into the 1960's, but no obvious building footprints were observed. Openings near the centre of Block 7 were overgrown with domestic sweet pea.

The large amount of wild and domestic fruit in these two blocks has made them another favourite location for the resident bears, and numerous bear trails through the undergrowth criss-cross both blocks. See Section 5.4 for more on bears.

### **3.1.7 – Block 9**

Block 9 was at the top of the town at the base of the steeper slope to the north, and had only a single house at the south end on Lonsdale Street, near the east end of the block. The house was owned by George Newman, who was an early pioneer of the town and opened a general store in 1897, and later was involved in the logging industry and became the town's first Justice of the Peace (ALHS 1997:44,55,120).

#### **The Newman House**

The Newman house persisted into the 1960's and the building footprint and yard features are still readily evident. A 50 metre long by 1 metre high cemented stone retaining wall borders the south end of the property along Lonsdale Street. This wall had 4x4 inch wooden posts cemented into it, which supported a wire mesh fence. An open, level grassy clearing exists where the house once was, in which domestic columbine, domestic rose, thimbleberry and blackberry now grow among the native wild grasses. An ATV trail runs up over part of the stone wall into the house lot, causing considerable damage and erosion (for more on ATV's see Section 5.1).

### **3.1.8 – Block A**

Block A sits on a rocky rise near the lake at the south end of the townsite. The ground is either steeply sloped or rocky and uneven, and it does not appear that any structures were built in the block, and none appear in historic photographs. A steep gulley climbs northwest from the water at the foot of 6<sup>th</sup> Street across the east end of Block A to the southeast corner of Block B, where bunkhouses for mill workers were located. The gulley and the eastern portion of Block A above the gulley appear to have been used as a garbage dump site by the mill men. Observed in this area were thousands of food tins, hand-finished liquor bottles, barrel hoops, galvanized wash tubs, window glass, tobacco tins, a galvanized metal sink, a ceramic chamber pot, and numerous medicine bottles, including glass Alka-Selter tubes and glass and ceramic Mentholatum bottles. An oddly-shaped, hinged enameled metal vessel was observed (see Figure 19)



which may have been a bed warmer. Several metal bedframes were observed at the top of the gulley, along with many other domestic items such as metal pots and pans and various broken ceramic dishes. A brown glass beer bottle with moulded Japanese writing (Figure 20) was also found here (it had 'AKURA BEER' embossed on the opposite side).



**Figure 19.** A glass Alka-Seltzer tablet tube and a hinged enameled metal bed warmer (?).



**Figure 20.** Various items found in the Block A midden, including a Japanese beer bottle.



The Block A historic midden, like the one found near the site of the Anglican Church in Block 3 (see Section 3.1.3 above) could be of great interest to historians or historical archaeologists studying what life was like in a turn-of-the-20<sup>th</sup>-century town. The Block A midden would especially answer questions about the life and demographic of mill workers at the time, and inferences can already be made with the little information provided here. A study might be made comparing the two major middens of the town, comparing the mill worker's midden to that of the upper and middle class clergy and shop keeps who lived near the Block 9 midden.

### **3.1.9 - Block B**

Block B was historically the site of several large and small bunkhouses for mill workers (ALHS 1997:84, see Figure 4). The block was originally cleared of native vegetation, and has since become overgrown with native and introduced domestic species, obscuring the ground surface and any building footprints. In historic photos it appears that bunkhouses were constructed on posts off the ground, which allowed for level floors without having to level the ground surface, and also allowed extra clearance for deep snow. Such construction methods would not leave a typical rectangular building footprint, and it would be difficult to determine exact building locations.

In the southeast portion of Block B is a portion of the midden described in Section 3.1.8 above, covering a 40 x 40 metre area. Near this midden is a curious arrangement of a galvanized metal bucket tied to a wire which leads to a branch in a tree approximately 12 metres off the ground, perhaps a bear-proof food cache. A small assemblage of historic artifacts was also observed near the NW corner of the block, which includes cork-top and screw-top bottles, a galvanized bucket, and a ceramic chamber pot.

### **3.1.10 – Block C**

Block C appears on the ground and in photographs to never have been cleared of natural vegetation and developed. As such, a mature, open forest of native cedar and hemlock with little understory persists in this location. Near the south end of the block is a squared post 1.5 m tall which looks like a typical mine claim corner post, with a sideways capital 'R' and the number 5 carved into it. The post is supported by a cairn of cobbles. Some recent historic debris (plastic oil containers) are strewn through part of the block. No earlier artifacts or other cultural features were observed in the block.

### **3.1.11 – Block D**

Block D is covered by mixed-age natural typical Interior Cedar-Hemlock (ICH) vegetation, and appears to be largely in a natural state. Historic photos show natural vegetation and only a few small buildings (probably bunkhouses). Some small linear berm features were observed which may have been accumulations around elevated floors (especially if bunkhouses were constructed on posts as described in Section 3.1.9 above). Near the north-central portion of the block was observed a series of mounds, one metre high and 1-2 metres in diameter, possibly a refuse site, although no historic refuse was

observed on the surface. In the absence of a Heritage Conservation Act Section 14 Archaeological Inspection Permit the mounds were not disturbed to determine their true nature.

The southern access road to the town borders the south end of Block D, and south of this road below Block D is a small gulley in which there is another historic midden, covering approximately a 10 x 20 metre area. In this area were observed approximately 300 food tins (including hole-in-top cans), cast-iron stove parts, galvanized metal buckets, paint cans, tobacco tins, liquor and medicine bottles, a ceramic whiskey jug, metal pots and pans, glass baking dishes, and a steel sink. Branded items observed include Heinz ketchup bottles, a round porcelain shampoo jar with a blue metal lid, embossed 'Lustre Crème Shampoo with Lanolin', and a tin marked 'McColl's Golden Roast Peanut Butter'. The remains of an early electric washing machine were also observed here, with a metal label marked 'Brantford Washing Machines Ltd., Brantford, Canada'. cursory research suggests that this manufacturer no longer exists.

On the road above this midden was located a collection of some older bottles which had been retrieved from the site by private collectors but left behind. On both of the existing access roads to the town, such collections were observed, showing that the townsite is a regular haunt of amateur collectors and that historic artifacts remaining at the site are under threat (see Section 5.5 for more details on the impact of looting).

### **3.1.12 – Block E**

Block E is overgrown with a mixed age of native and non-native mostly deciduous trees. Numerous early and late historic middens were observed within the block, associated with the locations of former houses and the current access road.

In the northeast corner of Block E was a scattering of early historic debris, including the ubiquitous food tins (some hand-soldered, pre-WWI), glass jars, metal cooking pots, tobacco tins, and parts of a bed frame and coil-spring mattress. This debris covered a roughly 30 x 30 metre area. Near the road at the north end of Block 3 was observed later historic trash, including numerous oil cans, two-stroke oil cans, antifreeze cans, 'Libby's' pickle jars, screw-top bottles, and pull-tab 'Shasta' soda cans. Such more recent trash was observed along both existing parallel access roads which enter the townsite from the west, with a high percentage of items relating to automobile traffic, including the aforementioned motor oil, two-stroke oil, and antifreeze tins, as well as parts of vehicles. Various beverage containers are also common artifacts along the roadways. Most of these items are on the low (south) side of the road. There is evidence that these artifacts are being scavenged on a regular basis (see Section 5.5).

### **3.1.13 – Block F**

In the NW corner of Block F a 10 x 10 metre scattering of historic debris was observed, which included food tins, an enamelware cooking pot, tobacco tins, whiskey bottles, a small wooden crate reinforced with metal strapping and wire-drawn nails, a

barrel stove, and parts of a brass ‘torchiere’ type electric floor lamp with ceramic lamp bases. Further east below the access road (formerly Cook Avenue) at the north end of the block were observed additional historic artifacts, including a 39x12x14 cm riveted galvanized metal box, food and tobacco tins, galvanized metal wash tubs, and various soda and liquor bottles. A section of a wire-wrapped wooden water pipe was observed just below and parallel to the road. Such water pipes were observed in other parts of the townsite as well, and were likely part of a town water system installed in 1906. The wooden portion had mostly rotted away, but the wrapped-wire reinforcing was intact (see Figure 21) and had an outside diameter of 17 cm. Nearby was a threaded iron U-clamp with both square and hexagonal nuts threaded onto it, as well as a rubber gasket, which would have been used to join two sections of the wooden water pipe. This pipe would likely have led to a creek west of town where water was once collected in a large wooden cistern and later in a metal cistern, which can be observed on the low (south) side of the road on the way out of the townsite. A two-foot section of white 2 ½” ABS pipe was observed near the remains of the wooden pipe, likely part of the later water system.

In the northeast corner of Block F was observed a level 20 x 20 metre clearing, overgrown with thimbleberry, likely a former building location. Near the centre of this yard is a non-native maple tree, and non-native fruit trees (possible plum) line the clearing. The remains of an old road are evident east of this clearing, likely the former location of 8<sup>th</sup> Street (see Section 3.2 for a description of roads).



**Figure 21.** The remains of a wire-wrapped wooden water pipe in Block F.



### **3.1.14 – Block G**

At the northwest corner of Block G were observed the remains of what must have been a house and garden which were located south of Cook Avenue. Parallel to the road are the remains of a rock garden wall 4 metres long and 35 cm high. At the east end of this wall is a mature non-native maple tree. Carved into this tree is the name ‘Rob (Bob?) McQueen’, (See Figure 22) which was carved some time ago and the tree has partially healed itself. This was perhaps the site of the McQueen homestead, as several McQueen graves are present in the cemetery. Just south of the rock wall and tree is a rectangular berm 20 cm high defining a 6 x 6 metre square platform, likely a house footprint.



**Figure 22.** The name Rob (or Bob?) McQueen carved into a non-native maple tree. The carving is old enough that new bark has regenerated under the original carving.

Near the northwest corner of Block G is a level clearing where historic maps indicate that a building stood in the 1960's. East of this clearing are the remains of a telephone pole with ceramic insulators and wiring attached, and a part of a broken concrete slab. Non-native maples and domestic roses surround the clearing. Motor oil cans and a metal gasoline 'jerry' can lie to the west of the platform. More broken concrete and metal roofing scraps south of the platform give the appearance that the building was flattened by machinery from north to south (the Columbia Power Corporation destroyed all remaining buildings prior to inundation in the 1960's).

Maps show that another building persisted into the 1960's in the northeast corner of Block G. This house must have had a fantastic garden, as this corner of the block is now overgrown with domestic cherry, apple, black locust, and plum trees, as well as lilac,

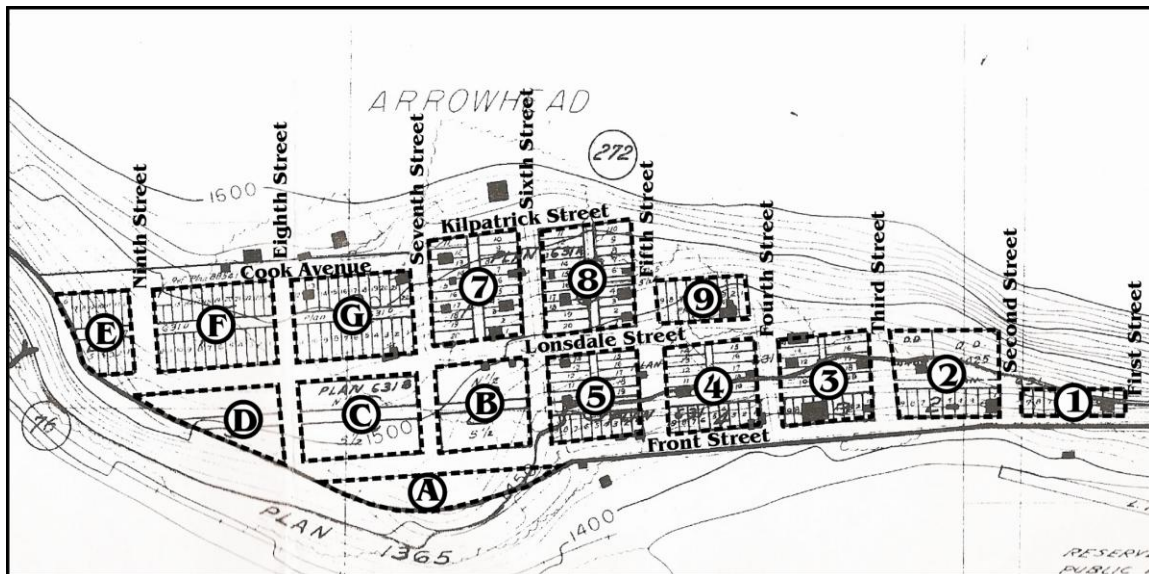
domestic rose, rhubarb, and mint. Native thimbleberry, alder, and water birch also now grow here.

In the southwest corner of Block G is another historic debris scatter, which includes a galvanized metal bucket, hole-in-top food tins, a metal 'Thermos' brand insulated beverage bottle, and glass bottles spread over a 10 x 10 metre area.

### **Section 3.2 – Townsite Roads**

The current access road to the townsite passes through the cemetery and leads to the west end of Cook Avenue. Some of the roads within the townsite are still clear of vegetation and 'drivable', although vehicle access past the vicinity of Cook Avenue and 8<sup>th</sup> streets would be difficult due to encroaching vegetation and poor road surface conditions. Clearly visible, 'drivable' roads include Cook Avenue, Kilpatrick Street, Lonsdale Street, 4<sup>th</sup> Street, and the upper (north) portions of 6<sup>th</sup> and 7<sup>th</sup> Streets. These roads are now exclusively used by ATV traffic, which are having a definite negative impact on the roads and other parts of the townsite (see Section 5.1).

Remaining roads within the townsite are made visible by linear 'openings' which are overgrown with thimbleberry (see Figure 23), a native species which is often the first plant to become established in areas which have seen a high degree of recent soil disturbance, such as landslides, old roadbeds, and old building footprints as observed in the townsite block surveys. Some roads are more overgrown than others, and in addition to the thimbleberry these roads are obscured by other native species which similarly prefer recently disturbed soils. These species include alder, water birch, and strawberry.







**Figure 23.** 8<sup>th</sup> Street, view south from Cook Avenue. The former street is evident in the linear arrangement of thimbleberry, bordered by birch and alder, all native species which tend to grow on disturbed ground (i.e. old roadbeds).



**Figure 24.** Lonsdale Street, facing east from 7<sup>th</sup> Street. Introduced and natural vegetation encroaches from the north and south, and an ATV trail runs up the middle.

### **3.3 - The Arrowhead School**

The 'new' Arrowhead School was built north of Block 7, just west of the top of 6<sup>th</sup> Street, in what was originally laid out as Block 15 but never developed. The school was constructed between July and November of 1905. The former school, on the corner of Front and 4<sup>th</sup> Streets, became the Community Hall. The new school had classes up until 1959-60, and was used post-inundation by a church camp group who ran Camp Arrowhead in the 1970's. The school was finally torched by the B.C. Forest Service for fear of liability issues.

According to the description in *Silent Shores and Sunken Ships*:

"The dimensions showed a perimeter of 37x56 ft. comprising two rooms 35x26 ft. and a cloak room 12x24 ft. A full concrete basement supported the structure which was beautifully painted outside and plastered inside with light colours to reflect the first class electrical fixtures." (ALHS 1997:86-87)

The concrete basement, inside plaster, and electrical fixtures are all still in evidence. The concrete was formed with 8" wide shiplap run horizontally. The wall at the back of the school (north) which has to retain the uphill bank is 8" thick while the remaining walls are only 6" thick. The foundation had been lightly plastered and painted on the inside, but the plaster has cracked and flaked off along with the outer layer of the concrete exposing the underlying aggregate. The concrete appears to have been mixed by hand as the aggregate varies throughout the walls and varies in colour from grey to red, and there is 'honeycomb' in evidence where subsequent batches of concrete did not completely bond to those poured earlier. Wooden framing around openings in the foundation (for doors and windows) was incorporated into the form so that it was set into the concrete when it cured.

There is evidence that the original design of the basement changed at some point, as some openings in the initial foundation (a window on the west side and a doorway on the east side) were subsequently filled with newer concrete, and a doorway was added entering the basement from the west, under where the original external stairs to the second floor had been (see Figures 28 and 35). Additions were made to the rear of the building at some point as well, where a newer concrete wall was added to extend the building to the north another ten feet at the northwest corner and to the east for 20 feet. This wall is of obviously newer concrete than the original foundation, is in much better shape and was poured with more consistent concrete, is 12" thick, and has ¾" diameter anchor bolts set every six feet. Anchor bolts were not used in the original foundation. This was possibly for the addition of indoor washrooms at the rear of the school, as a 4" thick concrete slab begins at this wall and extends to the original foundation wall, which has collapsed underneath it, and the slab has fallen into the foundation. Four 4" floor drains were set into the slab, presumably for flush toilets, which were initially plumbed with cast-iron pipe and later upgraded to ABS plastic. Old threaded metal water line and newer black PVC water line scraps are in evidence near the back wall of the original foundation (see Figure 31).



A second newer section of concrete foundation has also been added to the outside at the back of the building, approximately 5' N-S by 10' E-W and 8" thick. This section also has anchor bolts, and is strewn and surrounded with weathered dimensional lumber, some of which was painted red at one time. This addition appears to have been a new foyer from which a set of wide, low stairs descended behind the building to the north. This foyer was likely added when the modifications were made to the southwest corner of the building, at which time the original external front staircase to the second floor may have been removed. When the doorway to the east was filled in, fill was added outside of the building, possibly to bury the water line which was coming in from the outside cistern. It is possible that the external stairway at the southeast corner was also removed at this time. Class photos up until 1959 were taken on the southeast stairway, and afterwards were taken on the back stairway, so the modifications must have taken place around 1960.

A portion of the original foundation near the bottom of the west wall has collapsed, as has the rear wall under the concrete slab which was the later addition. These sections were likely undermined by groundwater coming from the slope to the north. Numerous immature fir trees grow within and without the foundation, and will likely cause additional negative impacts to the structural remains.

Large sections of the plaster which once covered the inside walls of the main floor remain scattered near the foundation walls, inside and out. The plaster was light grey,  $\frac{3}{4}$ " thick, painted white on the inside surface, and held together by 1" hexagonal chicken wire. Electrical fixtures at the site include metal housings and diffusers for long tube-type fluorescent lighting, and various metal conduits and junction boxes. The remains of a charred two-tap sink lie inside the foundation, but towards the front of the school. The sink may have been in the classroom or might have been moved by relic collectors after the fire. There is a scattering of red bricks near the centre of the foundation, which were likely from the original chimney.

Portable artifacts observed within the foundation include the remains of two metal mop buckets, a coil spring mattress, and two cots. An old boiler and a newer hot water tank were also inside the building. Another hot water tank is situated near the outside cistern, and a large electric heater lies just outside the foundation to the east.



**Figure 25.** The Arrowhead School in 1906 (Image F-02394 courtesy of Royal BC Museum, BC Archives).



**Figure 26.** The site of the Arrowhead School in 2008. The foundation is obscured by encroaching native vegetation (immature fir trees).





**Figure 27.** An entrance to the basement at the southwest corner of the school, under where the external stairway to the second floor had been. Variations in the colour and texture of the concrete suggest that this doorway and the low wall to the right were later renovations.



**Figure 28.** A doorway in the west wall of the original foundation was subsequently filled in. A water pipe leads through the former opening to a concrete cistern located east of the school.



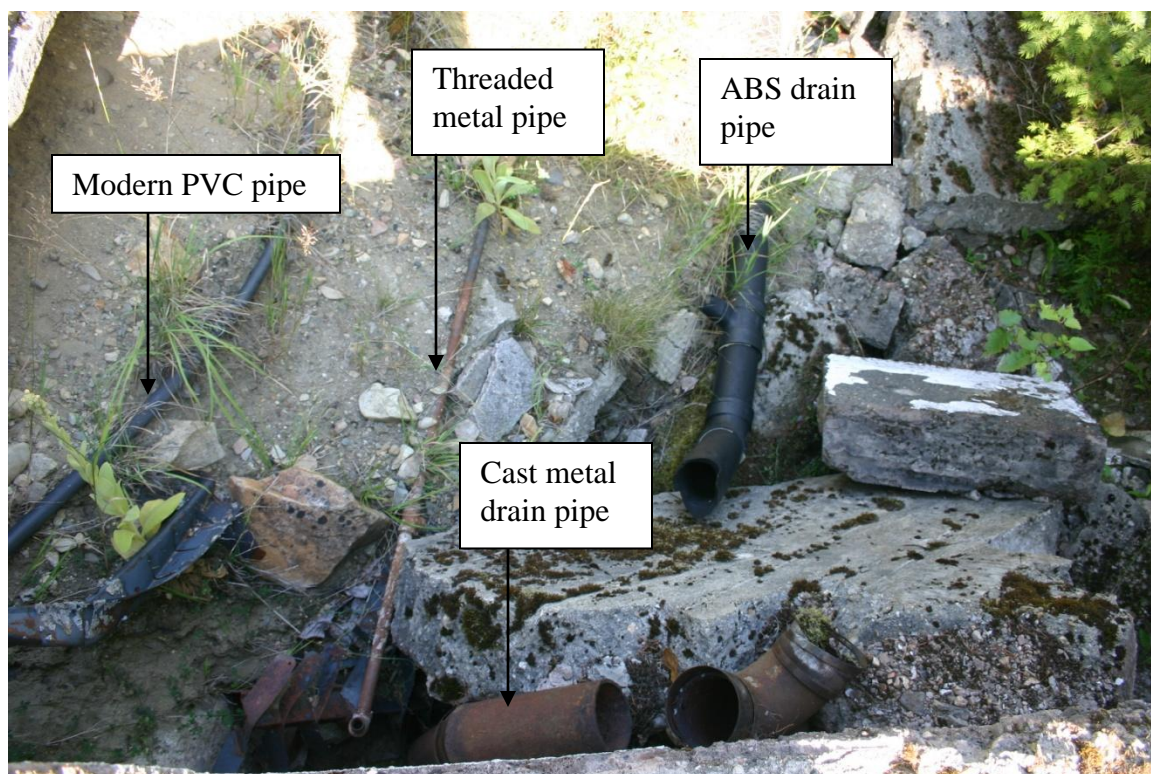


**Figure 29.** A portion of the collapsed concrete slab at the rear of the building. At least three additional floor drains were plumbed into the 4" slab.



**Figure 30.** The remains of a metal 2-tap sink found inside the foundation near the SE corner. This is near where a water pipe enters the foundation through a filled-in doorway which leads to a cistern west of the building.





**Figure 31.** Remnants of original and replacement plumbing at the rear of the building.

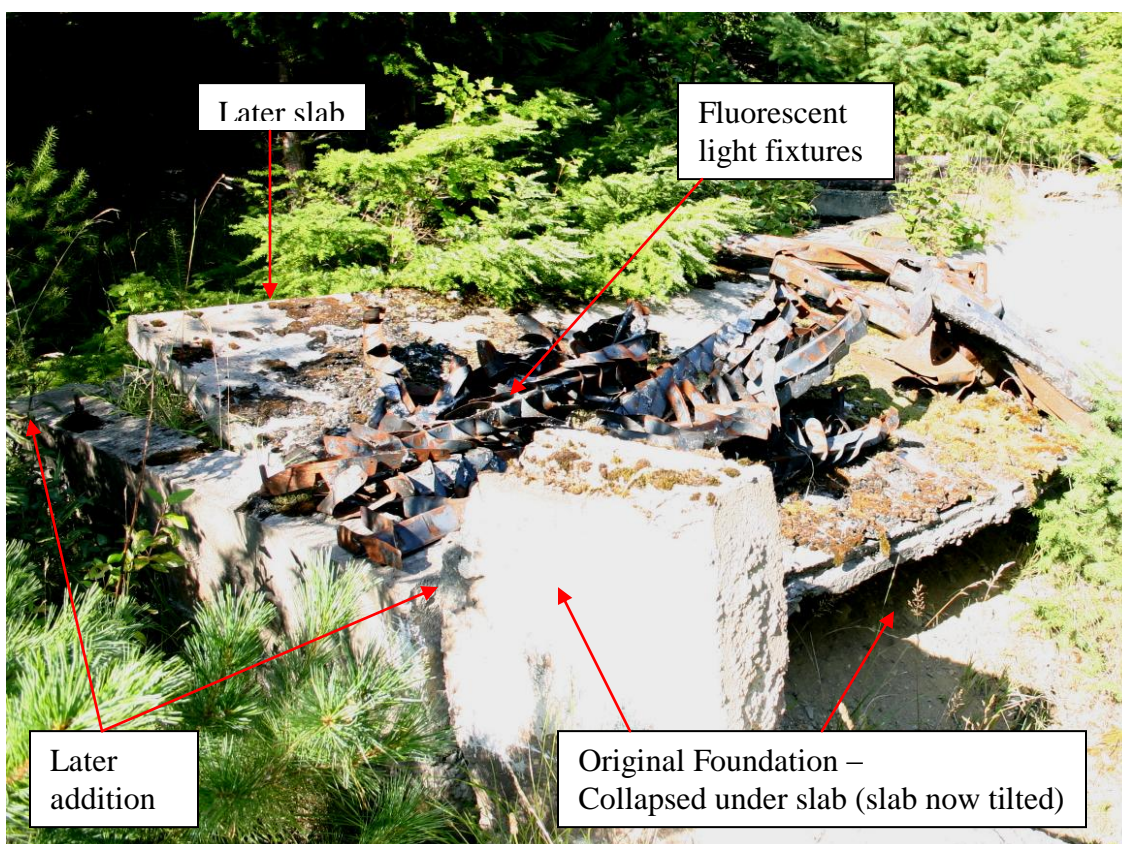


**Figure 32.** Electrical conduit and burnt timber inside the school foundation.



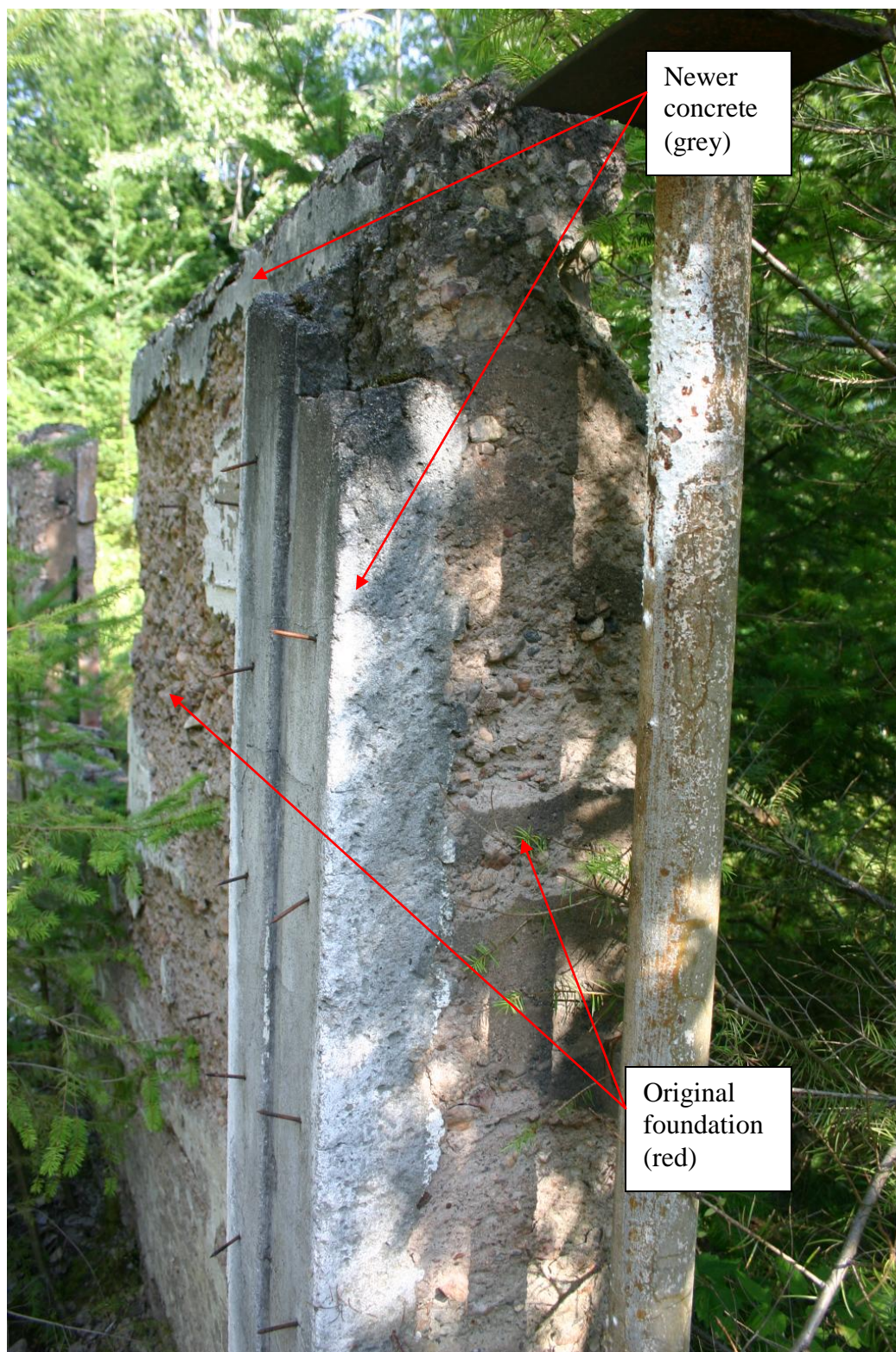


**Figure 33.** The remains of one of two metal bucket-top mop wringers inside the school.



**Figure 34.** Northwest corner of the school foundation showing later modifications.





**Figure 35.** Modifications to the southwest corner of the foundation, where it appears a later doorway was added.

### **3.31 - The Cistern**

To the east of the school is an 8 x 12 foot concrete cistern approximately 7 ½ feet high. The cistern has 6" thick walls and was formed via the shiplap construction method. The top of the cistern is open, with a 6" thick suspended slab approximately 4 feet down from the top. A threaded metal pipe comes down from the bottom of this slab at the western end and out through the wall of the cistern, at which point it connects to a 'T' fitting, on the end of which there must have been a tap which is now missing. A pipe comes off the centre of the 'T' and into the ground. The buried pipe comes into the east wall of the school foundation through the filled-in doorway (see Figure 28).

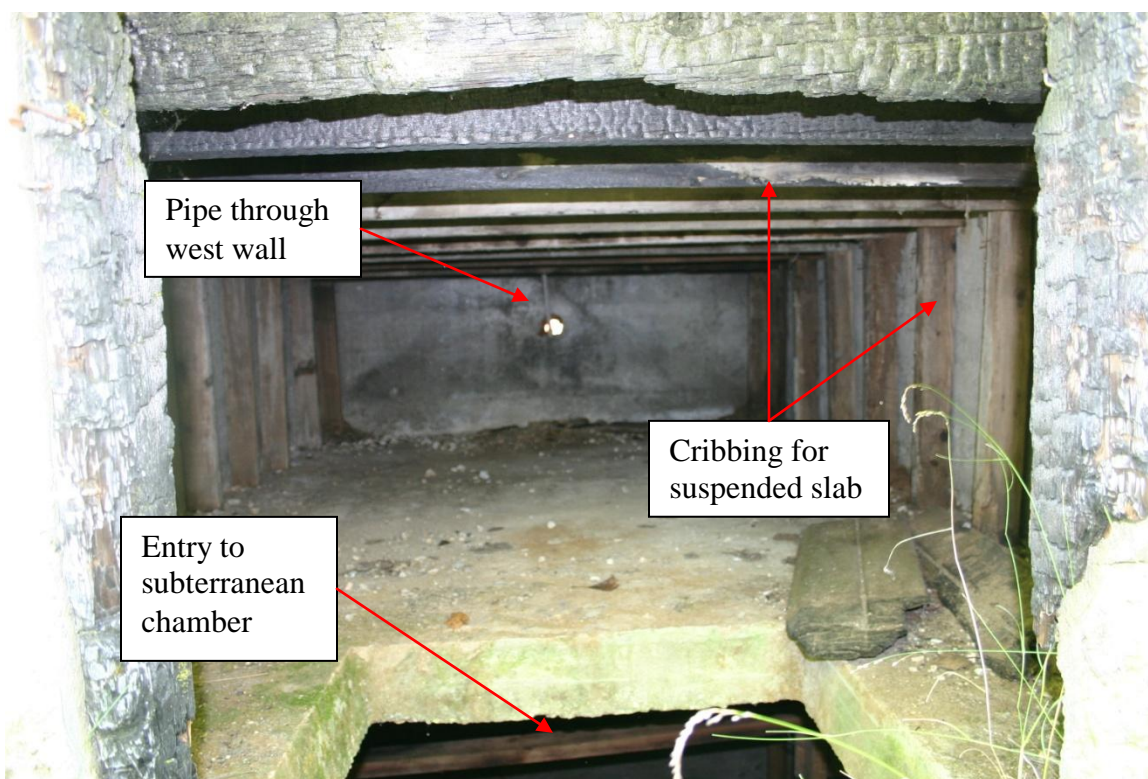
At the eastern end of the cistern is a 2-foot square opening under the suspended slab. Through this opening a slab on grade is visible, which extends beyond the aboveground portion of the cistern approximately 2' around the outside, and is suspended over a subterranean chamber. The slab has a two-foot square opening in it which leads to the concrete lined subterranean chamber, which is 8' deep. The subterranean chamber also has a concrete floor, through which another two-foot opening was visible at the far end. A rock tossed into this opening struck water. This must have been a well to fill the cistern when there was not enough precipitation. It was difficult to discern definitely, but it appeared that the second subterranean chamber might also be lined with concrete. It is possible that the cistern had a wooden lid which is now gone, and that well water was used exclusively to fill it.

The cribbing for the suspended slab under the upper reservoir is still in place, and can easily be observed through the opening at the east end. Eight-inch shiplap was used, suspended by 2x6" joists which are in turn supported by 2x4" studs on 16" centres which are standing on the lower slab (see Figure 37). Within the subterranean chamber are several scraps of weathered dimensional lumber, and two sets of makeshift plywood shelves (Figure 38).





**Figure 36.** The open top of the concrete cistern.



**Figure 37.** The inside of the cistern at ground level, facing west.





**Figure 38.** The subterranean chamber of the cistern.

### **3.4 – The Arrowhead Cemetery**

The Arrowhead cemetery was established in 1908, with 311 plots surveyed and mapped. Forty-six of the original plots now have interments, and an additional 13 graves have been identified outside of the originally surveyed area (Williams 1998). The cemetery has been the subject of at least two recent studies, one in 1998 conducted by Dave Williams of Revelstoke, and one in 2000 by members of the Vernon & District Family History Society (Lodge and Jones 2000). Both agencies compiled lists of grave markers recording names, dates, and inscriptions, and added comments to their tables which describe something of the person interred (most often cause of death). In addition, Mr. Williams did an excellent job of matching names to the original 1908 survey map (see Figure 39).

The cemetery today is in dire need of protection and restoration work. It is being continually impacted by several factors, including downslope erosion, falling trees, and foraging bears, and several graves are missing markers. Erosion is undermining several grave markers and concrete retaining walls around plots. Falling trees are causing chips in the top of some standing gravestones, and other stones have been broken off of their foundations, likely also by falling trees (but possibly also by vandals and/or bears). Falling trees are also causing ‘tree throws’, where the weight of the tree pulls up a large root mass and the surrounding substrate, displacing a large amount of soil (see Figure 42). The current age and state of the present stand of birch and fir growing on soil which

has been loosened by the digging of graves poses the possibility of several tree throws occurring here in the near future, which has great potential to actually displace interments.

Bears have perhaps been having the greatest impact on the cemetery. Abandoned fruit trees in the townsite have attracted a large population of resident bears (see Section 5.4) which regularly forage in the cemetery. Several graves which were marked by cobble cairns are now difficult to discern as the cobbles have been widely scattered by bears foraging for insects under the stones (see Figure 53). Bears have also dug into at least one grave, and into the base of a tree growing out of another grave, displacing some of the soil. Perhaps the most dramatic example of the impact that bears are having on the cemetery is the displacement of an entire grave marker (White, Plot 224a) which was dug up and moved approximately 5 metres downslope from its original location by a bear to access a termite nest which was under the marker (see Figure 44). For more on these disturbance factors and recommendations see Section 5.

As full names, dates, and inscriptions are described in other sources as stated above, it would have been redundant to list them here; instead, the focus was on assessing the present condition of each gravesite or marker. These observations are presented in the following table. Gravesites marked with an asterisk (\*) on the list were outside of the original 1908 surveyed graveyard, and were assigned numbers by D. Williams during his 1998 survey. These graves were assigned the number of the nearest surveyed plot followed by a lower case letter (e.g. 224a is nearest surveyed plot 224). These graves are all located to the north of the original survey. Three additional unsurveyed plots were given upper case designations A, B, and C (see Figure 39).

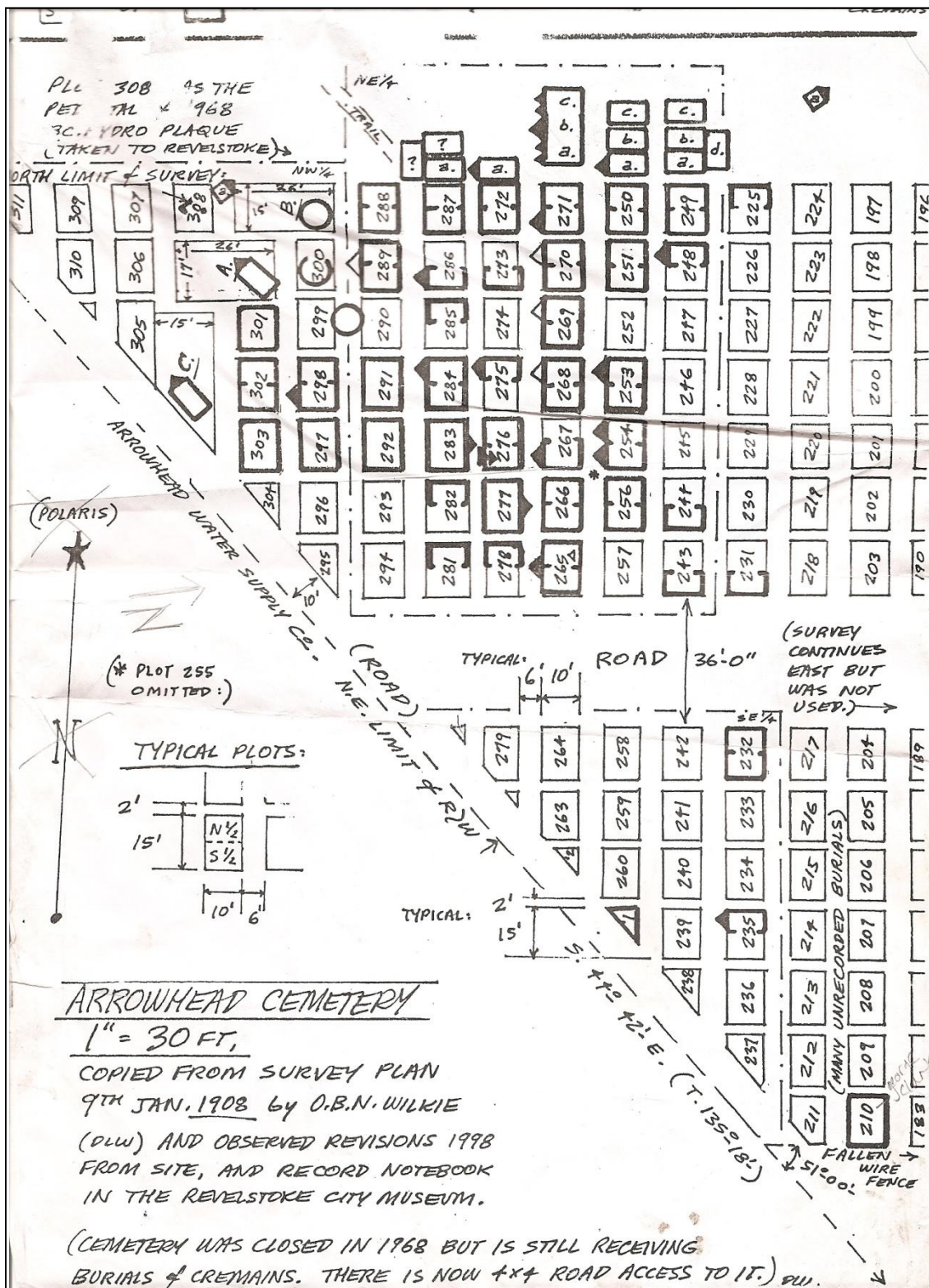


Figure 39. Dave Williams' 1998 cemetery map.



**Table 3. Arrowhead Cemetery Grave Conditions**

PLOT NO.	NAME	DATE	CONDITION	FIGURE NO.
210	Clark	1924	Not relocated	
224a*	White	1995	Stone unearthed and moved down slope by bear (termite nest under original stone location)	44
225N	Cussenco		Scattered cobbles	
231S	Little		Scattered cobbles	
232N	Shuhmacher	1934	No marker, level platform with slight depression	
232S	Shuhmacher	1952	No marker, level platform with slight depression	
235N	Harkins	1911	Mossy, some erosion around marker	
243S	Unknown	1949	Visible only as a slight rise with scattered cobbles	
244S	Carlson	1949	No marker, barely visible as a slight depression	
248N	Nelson	1942	Headstone tilted due to erosion, top of stone broken, several logs fallen across plot, leveled plot being undermined by erosion	45
249N	Takashama	1925	No marker, only a depression with cobbles	
249S	Hulyd	1925	No marker, slight depression	
249a*	Trotter	Unknown	Visible only as slight depression, no marker	
249b*	Trotter	1942	Visible only as slight depression, no marker	
249c*	Kirk	1951	Visible only as slight depression, no marker	
249d*	Trotter	1952	Visible only as slight depression, no marker	
250N	Edwards	1911	No marker, raised platform with scattered cobbles, platform being eroded	
250S	Mantello (Ross)	1911	No marker, raised platform with scattered cobbles, platform being eroded	
250a*	McQueen	1941	Stone in good condition, but down slope erosion undermining leveled plot	
250b*	Boyd	1941	No marker, raised area with large displaced cobbles and bear diggings	53
250c*	Athol	Unknown	No marker, raised area with large displaced cobbles and bear diggings	53
251N	Soderman	1911	Visible as cobbles around a depression, cobbles eroding into depression and disturbed by bears	
251S	Leyotte	1912	Visible as cobbles around a depression, cobbles eroding into depression and disturbed by bears	

*Heritage Resource Assessment of the Arrowhead Townsite and Cemetery*

253N	Froloff	1926	Headstone says 'Mother', mossed over, concrete retaining wall undermined by erosion, large stones within plot have been dislodged by bears	
253S	Shinkorenko	1926	Raised mound with cobbles, no marker	
254N	Dedoe	1962	Eroded around marker, marker lopsided	
254S	Dedosenko	1951	Eroded around marker, marker lopsided	
256N	Gunterman	1945	Shallow depression, no marker, cobbles downhill may have marked graves initially but have been displaced by bears	
256S	Gunterman	1937	See note under 256N above	
261	Butler	1912	Child's grave, now visible only as a small depression with a few cobbles, in imminent danger of eroding into road (within 1 metre).	46
265N	Bowen	1951	Concrete retaining wall exposed by erosion inside and outside of plot, headstone is tilted and coming off of foundation	47
265S	Bowen	1936	See note for 265N above	47
266N	Burbridge	1949	No markers, broken marble stone on ground, affected by erosion and bears	
266S	Burbridge	1926	See 266N remarks above	
267S	Whitfield	1923	Stone tilted by erosion	
268N	Macfarlane	1923	Marked only with boulder	
268S	Peterson	1924	Mossy cobbles, barely visible, some cobbles down slope dislodged by erosion and bears	
269N	Mackey	1942	Broken stone on ground, raised hump	
269S	Mackey 1926; Ewing 1942	1926 1942	Visible only as a scattering of mossy cobbles	
270N	Heffern	1923	Raised mound, rotting wooden post propped up with cobbles	48
270S	Chapman	1923	No marker, gravesite barely visible, boulder displaced by bear	
271N	Mcleod	1911	Raised hump with cobbles, no marker	
271S	Gibbs	1911	Slight depression, headstone was broken from base and has been propped up with a cobble, base is eroding out, stone is weathered and chipped	48

*Heritage Resource Assessment of the Arrowhead Townsite and Cemetery*

271a*	Kirkpatrick	1926	Large standing stone marks family plot, individual graves marked with flat stones (being undermined and overgrown). Concrete border around family plot (271a,b,c,d) being eroded on inside by flowing water, concrete is cracking and splitting	49
271b*	Kirkpatrick	1928	See 271a above	49
271c*	Kirkpatrick	1940	See 271a above	49
271d	Roberts	1990	In Kirkpatrick family plot, see 271a above	49
272N	Toner	1910	Scattering of cobbles, several recently displaced by bears	
272S	Gobelet	1911	Scattering of cobbles, several recently displaced by bears	
272a*	Waddington	1920 1928	Log fallen across depression, large stone covered in lichen and moss	
273S	Gust	1906	Barely visible as a few mossy cobbles	
275N	Gullivan	1915	Tree growing from under stone, stone skewed	
276N	Kirk	Unknown		41
276S	Kirk	1919	Slope is eroding around stone, concrete base exposed, stone migrating down slope	41
277	Reid	1917	Stone is broken and being eroded	
278N	Purdy	Unknown	Shallow depression, no marker, displaced cobbles	
281N	Michels	1934	Erosion, no marker	
282N	Lindsley	1932	Erosion, no marker	
283	Kirk	1916,-21, -31, -38	Kirk family plot, single stone marker for plot, erosion around base of stone, disturbed cobbles downslope, displaced by bears	
284N	Petterson	1910	Erosion	
284S	Furiak	Unknown	No marker, grave not visible	
285N	McMurray	Unknown	No marker, a rectangular arrangement of cobbles being dislodged by bears	
286S	Johnston	1909	Concrete wall around plot being undermined by cedar tree, headstone undermined by erosion, cobbles displaced	50
287N	Liemo	Unknown	No marker, raised hump with a few cobbles, tree growing out of hump has termites, tree and ground have been dug into by bear	
287S	Henderson	1910	Raised bump, displaced cobbles, no marker	



*Heritage Resource Assessment of the Arrowhead Townsite and Cemetery*

287a*	McQueen	Unknown	Scattered displaced cobbles, no marker	
288N	Markstrom	Unknown	Depression, no marker	
288S	Stewart	Unknown	Scattered mossy cobbles	
289N	Unknown		Mound of earth and cobbles, a bear has recently dug into the mound	
289S	Armstrong	Unknown	Large fallen wooden cross	51
291	Unknown	Unknown	Identified by D. Williams as occupied, not visible	
292	Unknown	Unknown	Identified by D. Williams as occupied, not visible	
297	Unknown	Unknown	Identified by D. Williams as occupied, not visible	
298S	Vaughan	1907	Marker intact, subject to moss cover and erosion	52
300	Unknown		Identified by D. Williams as occupied, not visible	
301	Smith	1911	Barely visible, overgrown, cobbles, no marker	
302N	Carlson	Unknown	Barely visible, overgrown, cobbles, no marker	
302S	Carlson			
303	Unknown		Identified by D. Williams as occupied, not visible	
308a	Douglas	1989	Small upright marker	
A	Irvin	1906	Overgrown with moss and weeds	
B	Unknown		Identified by D. Williams as occupied, not visible	
C	Holbert	1907	Close to road cut, threatened by erosion	43

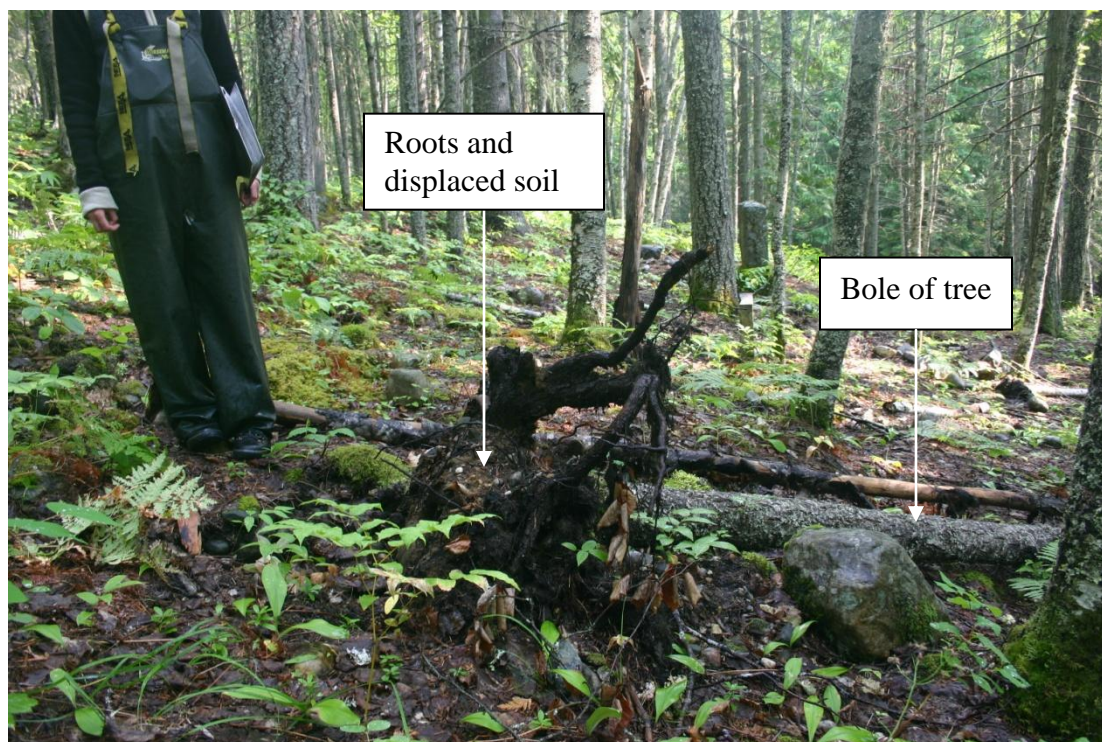


**Figure 40.** Marker placed at the cemetery in 1967. Slightly askew due to erosion.



**Figure 41.** A general view of a portion of the cemetery, view east. Plot 276 (Kirk) in foreground. Note upright stones askew due to erosion, exposure of concrete around flat marker, displaced cobbles, leaning fir and birch trees, and bark-stripped birch CMTs (see Section 3.5).





**Figure 42.** A 'tree throw' in the cemetery. This is a relatively small tree which has not displaced a large amount of soil, but larger trees at the cemetery have the potential to displace large amounts of soil and interred human remains.



**Figure 43.** Plot 'C' (Holbert 1907) – very close to road cut, threatened by bank erosion. Note CMTs at right.



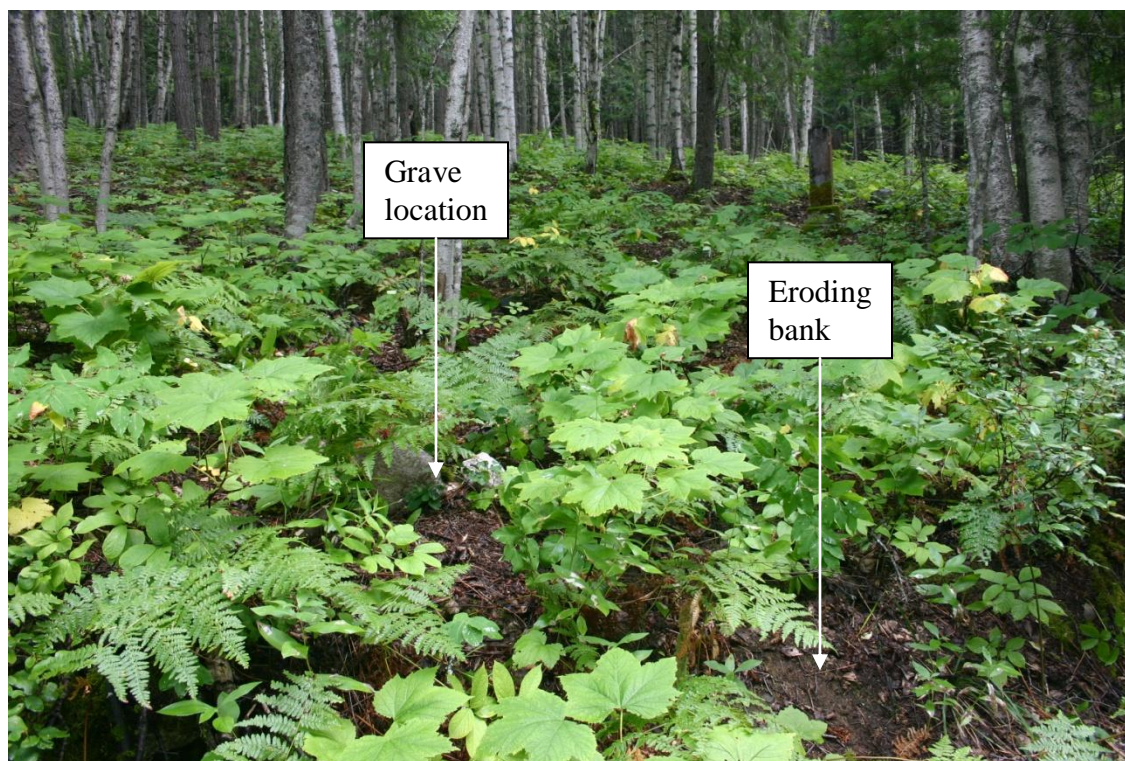


**Figure 44.** Plot 224a (White). This marker was dug up and displaced 5 metres by a bear digging into a buried termite nest under the stone. The hole from which it was displaced is visible near the top of the photo.



**Figure 45.** Plot 248 (Nelson). The stone is being displaced by soil creep and erosion. The top of the stone has been broken, likely by the fallen log in the foreground which has now nearly rotted away. A more recent fallen log lies in the background.



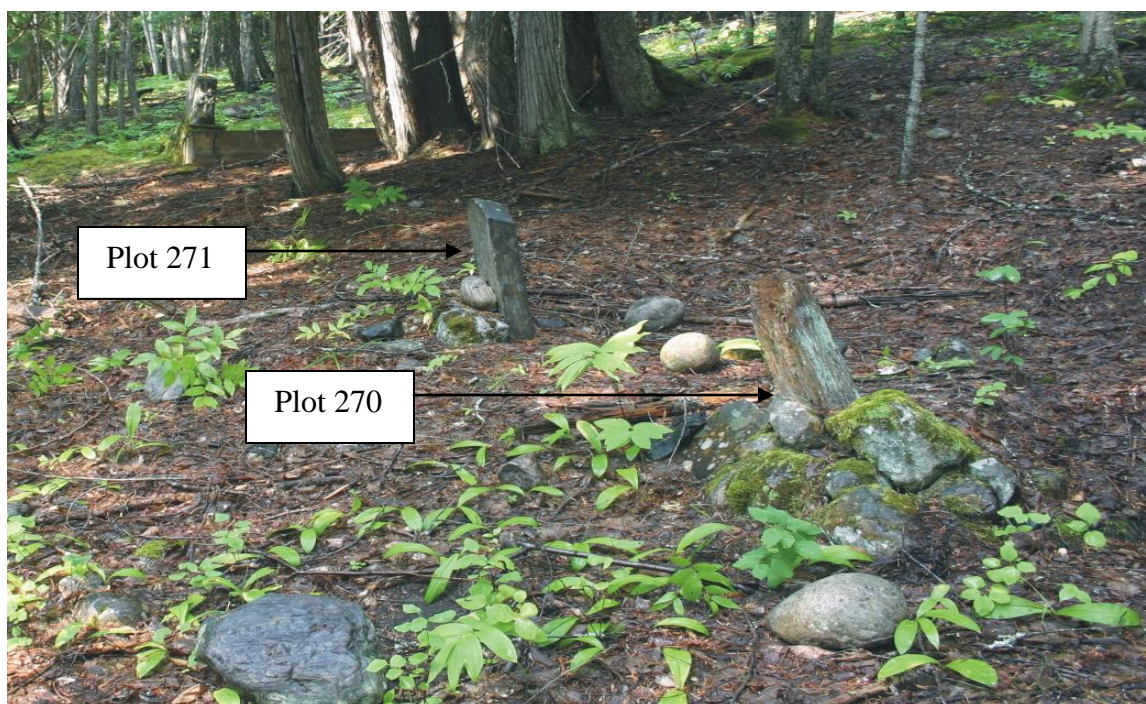


**Figure 46.** Plot 261 (Butler child). The grave is only visible as a slight depression with a few cobbles, and is in imminent danger of eroding out of the road cut bank.



**Figure 47.** Plot 265 (Bowen). Note severe erosion which has displaced a large amount of soil from inside the retaining wall, and the crack under the stone which is separating from the concrete foundation.





**Figure 48.** Plots 270 (Heffern) and 271 (Gibbs). Gibbs' stone has broken from its pedestal and is propped up by a cobble. Heffern's wooden marker is badly rotted.



**Figure 49.** Plot 271a,b,c (Kirkpatrick) showing displacement of soil by erosion inside the retaining wall. The visible crack goes right to the ground and is widening.





**Figure 50.** Plot 286 (Johnson), showing undermined tombstone and cedar tree growing over cracked and leaning concrete retaining wall.



**Figure 51.** Fallen wooden cross at Plot 289S (Armstrong).





**Figure 52.** Plot 298S (Vaughn). Marker is being undermined by erosion and could soon topple.



**Figure 53.** Cobbles in the vicinity of Plots 250a, b, and c (McQueen, Boyd, and Athol). The original arrangements have been severely displaced by foraging bears, and several have been overturned very recently, as seen with the cobble in the foreground.



### 3.5. Culturally Modified Trees

Culturally Modified Trees (CMTs) are trees which have been modified by a person for a traditional use, such as collecting bark for food, clothing, basketry, etc. and they are regularly recorded by archaeologists in British Columbia as First Nations Traditional Use sites. Birch bark has been harvested in a traditional manner in several locations within the Arrowhead townsite and also in the cemetery. A horizontal incision is made around the bole of the tree in two places and then a longitudinal incision is made between them, allowing a rectangular segment of the outer bark to be removed. Unlike other species, girdling the tree in this manner does not kill birch trees. The woody inner bark which is red when first peeled turns black, and eventually fragments and flakes off as the tree generates new bark. Thirty-one such bark-stripped birch Culturally Modified Trees of varying size and age were observed, photographed, and recorded at seven different locations during the assessment of the townsite and cemetery.

**Table 4.** Culturally Modified Trees observed at the Arrowhead townsite and cemetery.

<b>Townsite Location</b>	<b>UTM</b>	<b>Number of CMTs</b>
Block F north end	434662/5616180	5
N of Access Road (Cook Avenue)	434523/5616210	14
Block G southwest	434714/5616169	3
W of school on road	434836/5616276	1
200 m E of cemetery, S of road	434430/5616363	2
Lonsdale and 4 <sup>th</sup>	435130/5616151	1
Cemetery	434570/5616220	5



**Figure 54.** Bark-stripped birch Culturally Modified Trees in Block F.

## **4.0 – HERITAGE SIGNIFICANCE EVALUATIONS**

The Province of British Columbia employs five heritage significance evaluation categories for historic sites. These categories are 1) Scientific Significance; 2) Historic Significance; 3) Public Significance; 4) Ethnic Significance; and 5) Economic Significance. Each category is assigned a value based on a five-part ranking scheme - Low, Low-Medium, Medium, Medium-High, or High. The rankings for the Arrowhead Townsite for each category follow, along with a brief explanation of the criteria used to assign a ranking for each category.

### **4.1 – Scientific Significance**

Ranking for Scientific Significance is based on the potential for a site to ‘substantively enhance understanding of historic patterns of settlement and land use in a particular locality, regional or larger area’ (Province of British Columbia 1998) and provide information which, if properly recovered, will enhance our understanding of British Columbia’s heritage resources. Particularly important is the potential of a site to yield information that will help to solve current historical research problems, provide new or unique information, and contribute information to other related academic disciplines.

The Arrowhead townsite has substantial potential to enhance understanding of settlement and land use in the central Kootenay region, and could contribute greatly to historical archaeological studies of the Kootenays, the province, and the country. Information gathered at the site could answer research questions about the distribution of goods across Canada via historic transportation networks (rail and sternwheeler), town planning, architecture, and social structures at the time as reflected in the town layout. The abundance of historic middens (refuse scatters) at the townsite presents the opportunity for a number of historical archaeological studies such as examining divisions of class and ethnicity within the town as suggested by the distribution of goods. The potential to answer so many research questions and the abundance of artifacts and features at the site would make it an ideal place to conduct a portion of a historical archaeological field school.

Studies such as those suggested above relate not only to historical archaeology but to anthropology, sociology, geography, and psychology. Building remains at the site could enhance knowledge of local historic architecture, and a study of heritage plants which were introduced by settlers at the site has already been conducted (Coleshill and Hartman 2008) adding botany to the list of related disciplines. With the studies that have already occurred and with the possibility of so many future examinations of the townsite remains to make significant scientific contributions, and with its definite potential to enhance the understanding of settlement and land use patterns in the region, the **Scientific Significance** of the Arrowhead Townsite is **High**.



## **4.2 - Historic Significance**

Historic significance is based on whether the site is associated with 1) the early exploration, settlement, land use, or other aspect of British Columbia's cultural development; 2) the life or activities of a particular historic figure, group, organization, or institution that has made a significant contribution to, or impact on, the community, province or nation; 3) a particular historic event whether cultural, economic, military, religious, social or political that has made a significant contribution to, or impact on, the community, province or nation; and/or 4) a traditional recurring event in the history of the community, province, or nation, such as an annual celebration (Province of BC 1998).

Factors which influence the Historic Significance evaluation of the Arrowhead townsite include 1) Association with the CPR, as a town that was born as a direct result of the completion of the railway in 1885; 2) Association with the early historic settlement of the Kootenays; 3) Association with the early days of the British Columbia lumber industry; 4) Association with the historic sternwheeler transportation network of the British Columbia interior; 5) association with historic activities of organizations such as the CPR, Imperial Bank, Anglican and United Churches, and the B.C. Forest Service; 6) being the home and final resting place of several Canadian WWI and WWII veterans.

These factors combined satisfy three out of the four assessment criteria as listed above, and as such the **Historic Significance** of the Arrowhead Townsite is **High**.

## **4.3 - Public Significance**

Public significance is assessed on the potential that a site has to enhance public awareness, interest, understanding, or appreciation of British Columbia's past. Of particular importance in this category is the interpretive, educational, and recreational potential of a heritage resource.

The Arrowhead townsite has excellent potential to be an educational interpretive site. The many visible features allow for easy interpretation and the site could be self-guiding with interpretive signage or is an excellent candidate for guided tours employing persons as heritage interpreters. The site currently receives regular visits by tourists enjoying the many established outdoor recreation sites nearby (Provincial and B.C. Forest Service camp sites) and from around the Arrow Lakes.

Although the site does have great potential for the public significance to be high, accessibility is an issue. Ease of access is one of the criteria considered when assessing Public Significance, and although this site is very easily accessed from the water the road access is limited. This is actually in the site's favour as it provides better protection for the site by limiting the numbers of visitors and keeping most vehicles out. There is an excellent opportunity to combine a heritage tour of the site with a boat tour of Upper Arrow Lake (which could incorporate other nearby heritage sites and hot springs) but

accessibility for most of the general public (people without their own boats or ATVs) is limited. This limited access downgrades the Public Significance slightly. The **Public Significance** of the site is therefore **medium-high**.

#### **4.4 - Ethnic Significance**

Ethnic Significance is based on the traditional, social, or religious importance, significance, or value of a site as perceived by an ethnically distinct community or group. This category is normally reserved for First Nations peoples, but could apply to any distinct community.

A 1911 census lists persons of English, Irish, Scottish, Manx, Welsh, Japanese, Chinese, Norwegian, Swedish, Austrian, German, East Indian, French, Slovak, Belgian, Dutch, and Danish origin living at Arrowhead, and the names in the cemetery reflect some of these ethnicities. The Arrowhead townsite area was once important to First Nations people, as at least two pre-contact burial sites (now provincially registered as archaeological sites EeQl-2 and EeQl-4) were found during construction of the original railway along the lakeshore. These gravesites were destroyed, and the remains were moved, but subsequent efforts by archaeologists to relocate the remains in 1977 and again in 2003 were unsuccessful. An additional archaeological site (EeQl-3) was recorded as a pre-contact 'camp site' and was located near the subsequent site of the Forestry Office in Block 3, and was destroyed in the construction of the Forestry buildings.

It is a significant reflection on early Canadian pioneer communities that so many ethnicities co-existed at Arrowhead, and a reflection on the 'melting pot' nature of Canada in general, but rating the current significance of the site for any one of these ethnicities is beyond the scope of this study. The site will have significance to any group who have members currently interred there, especially the First Nations people, but it is not the place of those outside of an ethnicity to rate the 'ethnic significance'. Therefore the **Ethnic Significance** within the scope of this study is **not applicable**.

#### **4.5 - Economic Significance**

Economic significance is based on the potential for a site to contribute or generate monetary benefits or employment through its development and use as a public recreational or educational facility. Visitors' willingness-to-pay and potential travel costs are factors considered in this category.

The Arrowhead townsite has great potential to generate revenue for tour operators who might conduct boat tours of the Arrow Lakes or specific trips to the Arrowhead townsite. Historic and Aboriginal Tourism are fast-growing components of the tourism industry, and tend to attract people who are better educated, stay longer and spend more money in the areas they visit (ATABC 2008).



Although there is great potential for the site to be a recreational and educational facility and as such generate income for tour operators, educators and interpreters, accessibility is again an issue as the most feasible access is from the water which will increase site visit costs. Considering these factors, the **economic significance** of the site is **medium**.

#### **4.6 – Additional Factors**

Additional factors considered in a historical assessment include the integrity and condition of a site, whether it is a commonly acknowledged landmark, whether the site contributes to a sense of continuity or identity either alone or in conjunction with similar sites in the vicinity, and whether the site is representative of a particular architectural style or pattern.

Although the integrity of the site has been compromised by various factors (see Section 5 below) there are still considerable intact remains and features at the site which have great potential for recreational and educational interpretation. The site is definitely an acknowledged local landmark, and does have continuity with other ‘ghost towns’ around the Arrow Lakes reservoir. It is also representative of a turn-of-the-century ‘company town’, as reflected in the town’s layout (separation of the mill workers’ housing from the upper class shop keeps and managers etc.). As described in section 4.1 above, the site is ideal for scientific studies of such class divisions as reflected in the town layout and contents of refuse scatters in various parts of the town.

#### **4.7 – Overall Significance**

The overall significance rating is based on an average of all other significance value ratings. The ratings in each of the aforementioned categories are presented in the following table:

**Table 5.** Significance value ratings.

<b>Category</b>	<b>Significance Rating</b>
Scientific	High
Historic	High
Public	Medium-High
Ethnic	N/A
Economic	Medium

Scientific and Historic significance values are given more weight than other factors when arriving at an overall significance rating (categories in the above table are listed in order of importance). Taking this and the additional factors outlined in Section 4.6 into account, the **overall significance** of the Arrowhead townsite is **high**.

## **5.0 - POTENTIAL IMPACTS AND RECOMMENDATIONS**

The townsite and cemetery are vulnerable to many current and ongoing adverse impacts caused by numerous factors which include ATV traffic, downslope erosion, bears, looters, and encroaching vegetation. Each of these factors and their impacts are discussed in the following subsections, along with recommendations for mitigating each factor.

### **5.1 - ATVs**

The Arrowhead townsite has recently become a popular destination for users of personal recreational off-road all-terrain vehicles (known colloquially as ‘ATVs’, ‘quads’, or ‘four-wheelers’). These vehicles allow users to access almost any terrain as the name suggests, and although many riders are responsible and stay on marked roads and trails there is a percentage of users who are not respectful of the terrain over which they travel and can cause considerable damage simply by engaging the throttle hard enough to spin the tires. Even when not driven in such a manner these vehicles have the propensity to cause severe damage to the vegetation and surfaces they drive over. There are already tracks and ruts in several places in the townsite that have been caused by these machines. These impacts are considerable in their own right and are also exacerbating erosion.

The only road access to the town is through two private properties, which has served to limit access to potentially destructive vehicular traffic. The current landowners agree to allow access to authorized visitors to the site, but there is potential for future conflicts if these private lands change hands. A formal agreement between the present property owners and the ACS would be beneficial, perhaps even adding covenants to the properties to ensure future access to the townsite by legitimate users as listed under Recommendations below.

**Recommendations** - no motorized vehicles of any kind should be allowed within the Arrowhead townsite, with the exception of persons visiting the graves of relatives in the Arrowhead cemetery or conducting research, conservation, educational or interpretive activities. No ATVs or motorcycles should be allowed.

The ACS should attempt to construct formal agreements with the private landowners of the two properties which must be crossed to access the townsite via the road, and seek covenants on the properties to ensure access in perpetuity to legitimate visitors even if these properties change hands.

### **5.2 - Erosion**

The townsite is in the interior wet belt of British Columbia and as such receives a significant amount of precipitation. As the majority of the townsite is on slope, runoff has the potential to cause significant impact to remains at the site via downslope erosion.



This is particularly evident on north-south oriented roads (which run downslope) where runoff is being naturally channeled and is greatly exacerbated by ruts created by ATVs. Runoff is also channeled around concrete retaining walls and pedestals in the cemetery and is undermining several of these features, causing the walls to crack and grave markers to topple.

**Recommendations** - Erosion control measures should be taken in places where it has already caused significant impacts. This could be as simple and inexpensive as adding water bars to the the north-south roads, or perforated draitile could also be used to direct runoff into the small excavated ditches which were originally dug for such purpose and run alongside each of these roads (they seem to generally be on the west side of each road). Special measures need to be taken in the cemetery, where it my be prudent (although with some expense involved) to install a draitile system running downslope at intervals between plots to direct rainwater to the ditch along the access road at the south end of the cemetery. Two of the gravesites (Plot 261 and Plot C, see Figures 43 and 46) are very near the eroding cut bank along the access road and interred remains could soon be exposed. Efforts should be made to shore up the bank near these two plots at least, if not the entire bank, with the construction of one or more small retaining walls.

### **5.3 - Vegetation**

Most of the features at the site have been obscured by encroaching natural and feral introduced species. The impact of the vegetation varies throughout the townsite, but is especially evident within two of the most significant features at the site, the school foundation and the cemetery. Recent historic photographs (ALHS 1997:360) show no trees growing around the school foundation, but it is now becoming completely obscured by immature fir trees which are growing along and inside the walls in the disturbed ground. The roots of these trees have already caused the collapse of a section of wall within the foundation, and as they grow will push more of the weakened concrete walls over. When these trees reach maturity and start to topple they will cause significant damage. Trees are also growing on top of the foundation remains of the Imperial bank and on retaining walls within the cemetery, where their roots will cause significant damage and again the toppling of mature trees can cause severe damage.

Within the cemetery tree roots are displacing markers, and falling trees have chipped several markers and knocked some of them off of their foundations. The birch and fir trees within the cemetery are reaching maturity and are starting to die off, and they will fall at an increasing rate over the next few years. There is the potential for catastrophic destruction to the grave markers and retaining walls as these trees come down. In addition, falling trees have a tendency to create 'tree throws', where the roots and surrounding substrate are pulled from the ground by the weight of the falling trunk (see Figure 42). The size of the current mature trees within the cemetery will create large tree throws which have immense potential to displace large amounts of the surrounding soil to a great depth and expose interred human remains.

**Recommendations** – Trees threatening extant remains within the townsite (particularly those around the bank and school foundations) should be removed in a controlled manner to mitigate further impacts. **All trees (including CMTs) within the cemetery should be removed as soon as possible**, as adverse impacts caused by falling trees have already taken place, and small tree throws have already occurred (see Figure 42). The trees within the cemetery are reaching a level of maturity where they will all soon start coming down, and the instability of the ground (caused by digging of the graves) will contribute to the creation of large tree throws, and will almost certainly displace and unearth human remains. Tree throws and falling trunks will also likely displace and/or break many standing grave markers.

#### **5.4 - Bears**

The non-native vegetation which has flourished since it was introduced and has subsequently gone feral at the site has made the townsite an ideal habitat for a resident bear population. In the five days at the site conducting this study, at least five different bears were observed in eight separate encounters, which include a large cinnamon bear, a large black bear, a stout yearling black bear, a lanky yearling black bear, and a small black bear cub. These bears are habituated to the site, and may be habituated to humans as well, as three of these bears showed absolutely no fear of humans.

The large cinnamon bear was encountered at close range (~20 metres) by two persons accompanied by a large barking dog and stood its ground, and was not even fazed by a bear banger. One of the smaller black bears was noticed sleeping in a tree after the crew had been nearby (~30 metres) taking notes and photographs for approximately 15 minutes, and still did not move when loud noises were made in an attempt to startle it and make it leave the area. The next day the large black bear was spotted coming towards the crew, and it kept coming even when spoken to loudly, at which point the crew was forced to quickly leave the area.

Such a habituated population is extremely dangerous, and any of the above described encounters could have resulted in serious injury or death. It would be advisable to keep people out of the area during the seasons when the fruit trees are ripening at the site. A biologist should be hired to study the bear population and assess its size and seasonality at the site, and provide recommendations as to when it is safe for humans to be in the area.

Foraging bears have had a significant impact to the cemetery. Cobbles marking gravesites have been displaced and scattered by bears looking for grubs and insects under them, and are scattered further by subsequent bear visits (see Figure 53). Trees at the site have been knocked over and dug into at their bases, displacing soil covering graves. Some interments have been dug into directly by bears seeking subterranean insect nests, and one grave marker was pulled right out and dragged five metres down the slope by bears accessing a termite nest which was under the stone (see Figure 44).



**Recommendations** – First and foremost, **bears must be kept out of the cemetery.** Remains of a former fence around the cemetery are evident in places, and a new fence should be erected in its place as soon as possible to deter bears, and signage should be posted informing people visiting gravesites of the necessity to keep gates closed. As mentioned above, a bear biologist should be contracted to do a study of the number and habits of the resident bear population, to determine when they are most often present to avoid any bear/human encounters which might end in tragedy.

## **5.5 – Looters/Vandals**

Fortunately, there is little evidence of direct vandalism at the site (besides the impact of irresponsible ATV riders). There is evidence of looting, as several of the historic midden sites have been ‘mined’ for historic artifacts. This is particularly evident along the extant roads west of the townsite, where bottle collectors have brought specimens up from over the bank and left the less desirable ones behind on the roadsides and in trees. This looting will have an affect on any future scientific or historic studies at the site, as there is much information that can be gleaned from ‘in situ’ artifacts, which is lost when these artifacts are disturbed or removed.

**Recommendations** – The only cure for looting and vandalism is education. Were the site given heritage designation artifacts would be protected by law, but people would still have to be informed of this designation via interpretive signage and/or site wardens, and they would need to be convinced of the value of leaving such historic sites intact for the enjoyment of future generations and for the collection of scientific data.

## **6.0 CONCLUDING REMARKS**

The extant remains at the Arrowhead townsite and cemetery are a lasting testament to the people who ventured into the wilderness and pioneered a nation newly bound by the freshly laid tracks of the CPR. The town was a hub for the two major transportation networks of the Kootenay region (rail and paddlewheeler), for the burgeoning lumber industry of British Columbia, and served as an example of the cross-cultural 'melting pot' that was and is Canada.

The townsite remains have excellent potential for scientific and historic studies and have high significance values in these categories, and have medium-high potential to become an interpretive and educational site and generate revenue for local tour operators and historic interpreters. The overall heritage significance value of the townsite is high, which warrants future studies, conservation efforts, and the seeking of official Heritage Designation through the creation of a Commemorative Integrity Statement.

**The need to take immediate action to conserve the cemetery cannot be stressed enough.** Erosion, bears, and falling trees are causing immediate and ongoing adverse impacts to the grave sites and markers, and we must respect our ancestors enough to take proper care of their final resting places. Graves near the road cut bank on the south side of the cemetery must be protected with retaining walls, a fence must be erected to keep bears out, erosion control measures must be undertaken, and all trees should be removed from within the cemetery as soon as possible to prevent further destruction of markers by falling trees and the certain imminent displacement of interred human remains by tree throws.



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