Brewery Creek Mine
2009 Revegetation Assessment

Site Assessment Report Prepared for

Alexco Resource Corp.

Laberge
ENVIRONMENTAL SERVICES

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Contents

LIST OF TABLES

1.0 Background

A revegetation program has been ongoing at the Brewery Creek Mine since 1997. Several seed mixes have been used. Earlier revegetation efforts were focused on the recontoured Canadian Zone waste rock dump and haul road, an area to the west of the Pacific Zone, and an area below the leach pad and reclaim ponds.

Two seed mixes were acquired by Viceroy Minerals Corporation in 2003.

The 'wet site' seed mix consisted of:

Common Name	Scientific Name	Percentage by Weight
Violet Wheatgrass	*Agropyron violaceum*	33%
Fowl Bluegrass	*Poa palustris*	33%
Alkaligrass	*Puccinellia distans*	13%
Tufted Hairgrass	*Deschampsia caespitosa*	13%
White Clover	*Trifolium repens*	8%

The 'leach pad' mix consisted of:

Common Name	Scientific Name	Percentage by Weight
Slender Wheatgrass	*Agropyron trachycaulus*	50%
Kentucky Bluegrass	*Poa pratensis*	20%
Red Fescue	*Festuca rubra*	20%
Alfalfa	*Medicago sativa*	10%

These two seed mixes were used to revegetate a number of areas of the mine site between 2003 and 2006 (see Sections 2.0 and 3.0).

A new seed mix was acquired by Alexco Resource Corp. in early 2006.

The 'Brewery Creek Blend' consisted of:

Common Name	Scientific Name	Percentage by Weight
Violet Wheatgrass	*Agropyron violaceum*	36%
Ticklegrass	*Agrostis scabra*	15%
Sheep Fescue	*Festuca ovina*	14%
Rocky Mountain Fescue	*Festuca saximontana*	14%
Glaucous Bluegrass	*Poa glauca*	11%
Alfalfa	*Medicago sativa*	10%

This seed mix has been used to revegetate a number of areas of the mine site since 2006.

As detailed in Section 7 of the Heap Leach Pad Cover and Facilities Monitoring Program, and Section 6 of the Blue Zone Monitoring and Assessment Program, annual terrestrial monitoring (from 2005 to 2009 inclusive) is to be conducted on the vegetation on the

Leach Pad and in the Blue Zone WRSA. Three 5m X 5m permanent monitoring plots were therefore established in 2005 at each of the following locations:

Blue Zone Waste Rock Storage Area
Leach Pad
Control (West of Pacific Zone)

The Blue Zone Waste Rock Storage Area and the Leach Pad were both seeded in the fall of 2003 with the 'leach pad' seed mix. The control plot was seeded in the fall of 2001 with the 'Brewery Creek' seed mix (see Section 2.2).

Additionally, in accordance with the two previously mentioned monitoring programs, metal uptake assessments are to be conducted during Year 1 (2005), Year 5 (2009) and Year 10 (2014). Concurrently, soil samples from each plot are to be collected for metal analysis.

A survey of the permanent monitoring plots and other revegetated areas was carried out in July 2005, July 2006, August 2007 and July 2008. Survey methods and results of these surveys are presented in reports by Laberge Environmental Services (2006, 2007, 2008 and 2009). The permanent monitoring plots and other revegetated areas were resurveyed on July 22nd and 23rd, 2009. The results of the 2009 survey, including the metal uptake assessments, are presented in this report.

2.0 2009 Survey of Permanent Monitoring Plots

2.1 Survey Methods

At each plot the following information was recorded:

- UTM coordinates
- Elevation, slope and aspect
- Vegetative cover using the following 5 grades:
  0-1%
  1-12.5%
  12.5-25%
  25-50%
  50-100%
- Seeded species composition
- Natural colonization by other plant species
- Root depth penetration of seeded species
- In-situ soil pH
- In-situ soil moisture (% relative saturation at bottom of test pit)
- Evidence of erosion

The wooden corner stakes of each plot were replaced with rebar coated with fluorescent paint. Pin flags were also installed in each corner. This was to ensure easy location of the plots in the future, as necessary, since 2009 is the last year for annual assessments.

Soils samples were collected from each plot using a stainless steel trowel. Samples were placed into ziplock bags, kept cool and shipped to Maxxam Analytics in Burnaby, BC.

Tissue samples from each seeded plant species were collected, from the stem up, using disposable gloves and placed into ziplock bags. Samples were kept cool and shipped to Maxxam Analytics in Burnaby, BC.

Site photographs were also taken.

2.2 2009 Survey Results

The following presents the data per permanent monitoring plot. Relevant photographs are provided in Appendix A.

Blue Zone Waste Rock Storage Area - Seeded in the Fall of 2003

Seed mix included:	Slender Wheatgrass	(*Agropyron trachycaulus*)	50%
	Kentucky Bluegrass	(*Poa pratensis*)	20%
	Red Fescue	(*Festuca rubra*)	20%
	Alfalfa	(*Medicago sativa*)	10%

Table 1 Blue Zone WRSA Plots

	Plot 1	Plot 2	Plot 3
UTM Coordinates	07W 0633674E 7105241N	07W 0633716E 7105262N	07W 0633755E 7105257N
Elevation (m)	815	815	807
Estimated Slope (^{o})	30	35	35
Aspect	South	South	South
In-situ Soil pH	6.5		6.3
In-situ Soil Moisture (% relative saturation)	15		19
Vegetative Cover (%)	50-100	25 - 50	50-100
Species Composition (seeded species in order of dominance)	Red Fescue Slender Wheatgrass	Slender Wheatgrass Red Fescue Alfalfa	Red Fescue Slender Wheatgrass Alfalfa (1 plant)
Root Depth Penetration (mm)	S. Wheatgrass 100 R. Fescue 110	S. Wheatgrass 90 R. Fescue 120 Alfalfa >300	S. Wheatgrass 110 R. Fescue 140 Alfalfa 200
Other Species	Ticklegrass	Moss	Arctic Lupine, Fireweed, moss, Ticklegrass
Evidence of Erosion		Minor erosion gully gradually stabilizing and filling in	1 gully filling in (grass growing in gully)
Additional Comments	Plot located over lysimeter Both seeded grass species in seed A great deal of leaf litter from previous years' growth	No Kentucky Bluegrass Both seeded grass species immature, Alfalfa in flower Litter from previous years' growth is inhibiting growth	All seeded grass species in seed, Alfalfa in flower 1 bluegrass plant outside of plot Lots of leaf litter Soil sample collected

	Plot 1	Plot 2	Plot 3
	Occasional alfalfa plants outside of plot No bluegrass Soil sample collected Fescue and Wheatgrass collected for tissue Photographs taken	Red fox observed Soil sample collected Fescue, Wheatgrass and alfalfa collected for tissue Photographs taken	Fescue and Wheatgrass collected for tissue Photographs taken

Leach Pad - Seeded in the Fall of 2003

Seed mix included:	Slender Wheatgrass	(*Agropyron trachycaulus*)	50%
	Kentucky Bluegrass	(*Poa pratensis*)	20%
	Red Fescue	(*Festuca rubra*)	20%
	Alfalfa	(*Medicago sativa*)	10%

Table 2 Leach Pad Plots

	Plot 1	Plot 2	Plot 3
UTM Coordinates	07W 0632807E 7104611N	07W 0632716E 7104655N	07W 0632856E 7104587N
Elevation (m)	859	849	853
Estimated Slope (^{o})	0	<10	20
Aspect	Neutral	North	Southeast
In-situ Soil pH	6.5	6.5	6.4
In-situ Soil Moisture (% relative saturation)	20	34	19
Vegetative Cover (%)	50-100	50-100	50-100
Species Composition (seeded species in order of dominance)	Red Fescue Slender Wheatgrass	Red Fescue Slender Wheatgrass Alfalfa (1 tiny plant)	Red Fescue Slender Wheatgrass Kentucky Bluegrass Alfalfa (1 small plant)
Root Depth Penetration (mm)	S. Wheatgrass 110 R. Fescue 90	S. Wheatgrass 110 R. Fescue 100 Alfalfa 100	S. Wheatgrass 125 R. Fescue 130 K. Bluegrass 80 Alfalfa 180
Other Species	Raspberry (in berry) Fireweed, moss, Foxtail Barley	Arctic Lupine, Foxtail Barley, Ticklegrass, Moss, unidentified forb	Annual Hawk's-beard, fleabane, Fireweed, moss Common Dandelion

	Plot 1	Plot 2	Plot 3
Evidence of Erosion	None	None	None
Additional Comments	Heavily dominated by fescue, only a few wheatgrass plants Lots of leaf litter creating areas of no growth Some Bluegrass plants outside of plot No alfalfa in plot and only 1 within visual range Birches and large willows growing nearby Fox droppings Soil sample collected Only fescue collected for tissue Photographs taken	All seeded grass species in seed, Alfalfa in flower No Kentucky Bluegrass More alfalfa in area than near Plot 1 Willows growing nearby Soil sample collected Fescue and Wheatgrass collected for tissue Photographs taken	All seeded grass species in seed Lots of litter from previous year's growth Not much alfalfa on this slope Soil sample collected Fescue, Bluegrass and Wheatgrass collected for tissue Photographs taken

Control (West of Pacific Zone) - Seeded in the Fall of 2001

Seed mix included:	Violet Wheatgrass	(*Agropyron violaceum*)	35%
	Slender Wheatgrass	(*Agropyron trachycaulus*)	13%
	Fowl Bluegrass	(*Poa palustris*)	16%
	Alpine Bluegrass	(*Poa alpina*)	13%
	Sheep Fescue	(*Festuca ovina*)	13%
	Rocky Mountain Fescue	(*Festuca saximontana*)	10%

Table 3 Control Plots

	Plot 1	Plot 2	Plot 3
UTM Coordinates	07W 0632890E 7105434N	07W 0632899E 7105457N	07W 0632920E 7105520N
Elevation (m)	837	838	835
Estimated Slope (^{o})	0	0	0
Aspect	Neutral	Neutral	Neutral
In-situ Soil pH	6.5	6.6	6.6

	Plot 1	**Plot 2**	**Plot 3**
In-situ Soil Moisture (% relative saturation)	30	22	30
Vegetative Cover (%)	50-100	50-100	50-100
Species Composition (seeded species in order of dominance)	Fowl Bluegrass Violet/Slender Wheatgrass Rocky Mountain/ Sheep Fescue	Fowl Bluegrass Rocky Mountain/ Sheep Fescue Violet/Slender Wheatgrass Alpine Bluegrass (1)	Rocky Mountain/ Sheep Fescue Fowl Bluegrass Alpine Bluegrass Violet/Slender Wheatgrass
Root Depth Penetration (mm)	V/S Wheatgrass 90 RM/S Fescue 105 F Bluegrass 105	V/S Wheatgrass 80 RM/S Fescue 120 F Bluegrass 100 Alpine Bluegrass 95	V/S Wheatgrass 80 RM/S Fescue 95 F Bluegrass 110 Alpine Bluegrass 95
Other Species	Fireweed, Tall Jacob's Ladder, Arctic Lupine Willow, yarrow, wood rush	Fireweed Arctic Lupine Tall Jacob's Ladder Common Horsetail Common Timothy Dandelion	Fireweed Willow Blue-joint grass Alder, Birch, Fleabane
Evidence of Erosion	None	None	None
Additional Comments	All seeded grass species in seed No sign of Alpine Bluegrass Very dense vegetative growth and lots of grass litter from previous years' growth More fireweed than previous years Large Goldenrod just outside of plot Soil sample collected. Bluegrass, Fescue and Wheatgrass collected. Photographs taken	All seeded grass species in seed Lots of grass litter from previous years' growth Soil sample collected. Bluegrass, Fescue and Wheatgrass collected for tissue. Photographs taken	All seeded grass species in seed Lots of leaf litter Soil sample collected. Fowl Bluegrass, Fescue and Wheatgrass collected for tissue Photographs taken

2.3 Metal Uptake Analysis

In accordance with the two previously mentioned monitoring programs, metal uptake assessments are to be conducted during Year 5. Soil samples were collected from each plot concurrently with the collection of the seeded plant species. The laboratory analytical data are presented in Appendix B.

Soil samples were collected in Year 1 (Laberge Environmental Services, 2006). There was good correlation between years at all control and leach pad sites, although there was some differences in the concentrations of arsenic, cadmium and zinc in the soil from L-2. There was some minor variation in the concentrations in the Blue Zone soils.

The averages of the concentrations of the soil samples per site (Appendix B) were similar for most metals in 2009. The notable exceptions were higher arsenic (significantly) and mercury concentrations in soil from the Blue Zone and slightly higher concentrations of cadmium, copper, tin, titanium and zinc in the Control soils.

The plant tissue analysis attempts to determine if there is a significant uptake of metals by the seeded plant species by examining the metal concentrations found in plant tissues and the associated soils. A comparison of metal levels was made between the two mine site plots and the control plot. The mine site plots, Blue Zone and the Leach Pad, were both seeded in the fall of 2003 with the "leach pad" mix, while the control plots was seeded in the fall of 2001 with an earlier acquired seed mix. Wheatgrass, Bluegrass and Fescue are the seeded grasses used in the comparison. Alfalfa, a legume, was not included in the mix used at the Control sites, but was in the "leach pad" mix (See Section 2.2).

Fewer seeded species were found in sufficient quantity from each plot for metal analysis in 2009. As mentioned in Section 2.2, there was a decline in the growth and presence of Bluegrass in the Leach Pad and Blue Zone plots. Alfalfa was only found in adequate quantities to allow sampling at BZ-2.

Of the three seeded grass types common to the sites, the highest concentrations of aluminum, iron, lead, manganese, molybdenum, and sodium were documented in fescue tissues. The highest concentrations of arsenic, chromium and nickel were highest in wheatgrass tissues. Alfalfa tissues had very high concentrations of barium, boron, calcium, magnesium and strontium compared to the grass species.

Only fescue plants were common to each plot. Fescue tissues from the Control plots had higher concentrations of several metals but notably cadmium, chromium, lead and zinc. Concentration of selenium was the greatest in fescue tissues from the Leach Pad plots, and arsenic concentrations were greater from the Blue Zone plots. Concentrations of arsenic in Fescue tissues from the leach Pad plots were also greater than in the control plot tissues.

It may appear that plants are taking arsenic up from the soils at the Blue Zone plots. However concentrations were significantly lower in the soils in the Leach Pad plots (and were similar to the concentrations in the Control plots), yet arsenic levels in the various

plant tissues here were considerably higher than at most of the Control sites, and not that much lower than at the Blue Zone plots. Therefore, an increase in arsenic levels in the associated soils has not necessarily translated to an increase in the arsenic levels in the plant tissues.

The data for metals of potential concern in soils and the plant tissues are summarized for each plot in Table 4.

Metal analysis was conducted on plant tissues in 2005 (Laberge Environmental Services, 2006). A visual comparison of the two data sets shows that aluminum concentrations were consistently much lower in almost all of the plant tissues in 2009. Due to the high abundance of aluminum commonly occurring in soils, it is not unusual to have relatively high aluminum levels in plant tissues. It is unknown why concentrations are so diminished in 2009.

Concentrations of several of the metals (typically arsenic, cadmium, copper, lead, selenium and/or zinc) were lower in 2009 in the sampled plant tissues. There were increases in chromium concentrations in the fescue and wheatgrass tissues from C-3, fescue tissues from L-1 and wheatgrass tissues at L-2.

2.4 Summary

- Soil moisture was significantly lower at all plots at the time of the 2009 survey. This was probably the result of the dry, warm weather that occurred during the 2009 summer.

- The grades of vegetative cover remained the same at each of the plots in 2009 except for a decrease (25 to 50%) at Plot 2 of the Blue Zone WRSA. The abundance of leaf litter from previous years' growth appears to be inhibiting new growth.

- The most notable change in species composition in 2009 was the absence of Kentucky Bluegrass at the Blue WRSA plots and Plots 1 and 2 on the Leach Pad. It appears that Kentucky Bluegrass (a non-native species) will not be a long-term survivor at the Brewery Creek Mine and is gradually dying off. There has also been a decline in the number of alfalfa plants colonizing the plots.

- The number of native plants colonizing the plots has not increased in 2009. This is probably the result of the very dense growth of the seeded species.

- The only evidence of erosion continues to be on the Blue Zone WRSA plots, and these small gullies appear to have stabilized. They are continuing to fill in and are revegetating.

- Concentrations of most of the metals were similar in the soils collected from each plot. The soils at the Blue WRSA plots had higher concentrations of arsenic and mercury. The soil at the Control plots had higher concentrations of cadmium, copper, tin, titanium and zinc.

- Only fescue plants were common to each plot in 2009. Concentrations of several metals, but notably cadmium, chromium, lead and zinc, were highest in the fescue tissues from the Control plots. Selenium concentrations were greatest in the fescue tissues from the Leach Pad plots, and arsenic concentrations were highest from the plant tissue growing on the Blue WSRA plots.

3.0 2009 Revegetation Survey

3.1 Survey Methods

A brief visual survey of other seeded areas of the mine site was carried out. These areas included recontoured and scarified pit infills, waste rock dumps, and haul roads, as well as the areas around the reclaimed leach pad. The survey included an estimate of the overall vegetative cover, a non-quantitative seeded species composition and a record of other plant species observed colonizing the area. Photos of selected sites over time are presented in Appendix A.

3.2 2009 Survey Results

Pacific Pit
Approximately 11.7 ha were broadcast-seeded in the fall of 2001 using the second 'Brewery Creek' seed mix. This mix included:

Violet Wheatgrass	(*Agropyron violaceum*)	35%
Slender Wheatgrass	(*Agropyron trachycaulus*)	13%
Fowl Bluegrass	(*Poa palustris*)	16%
Alpine Bluegrass	(*Poa alpina*)	13%
Sheep Fescue	(*Festuca ovina*)	13%
Rocky Mountain Fescue	(*Festuca saximontana*)	10%

This slope has a patchy, inconsistent (30 to 90%) vegetative cover.

The seeded cover is now a mix of Fowl Bluegrass and Wheatgrass, with lesser amounts of Alpine Bluegrass, Rocky Mountain Fescue and Sheep Fescue. White Clover continues to occur in patches, although it was not seeded on this slope.

Colonizing species observed in 2009 include Black Spruce (*Picea mariana*), Alaska Birch (*Betula neoalaskana*), Balsam Poplar (*Populus balsamifera*), Trembling Aspen (*Populus tremuloides*), Willow (*Salix* spp.), Alder (*Alnus crispa*), Raspberry (*Rubus idaeus*), Fireweed (*Epilobium angustifolium*), Fleabane (*Erigeron acris*), Arctic Lupine (*Lupinus arcticus*), Annual Hawk's-beard (*Crepis tectorum*), Foxtail Barley (*Hordeum jubatum*), Blue-joint Reed Grass (*Calamagrostis canadensis*) and Ticklegrass (*Agrostis scabra*).

The haul road above the pit has a sparse vegetative cover (about 20%) which includes Violet Wheatgrass, Sheep Fescue, and the unseeded Northern Rough Fescue (*Festuca altaica*).

Blue Inpit Backfill
Approximately 4.9 ha were drill-seeded in the fall of 2003 using the wet area seed mix.

The overall vegetative cover ranges from 60 to 80%, although a few areas have a thinner cover and a few spots were missed by the seeder.

The seeded cover is mostly Violet Wheatgrass and Tufted Hairgrass, with lesser amounts of Fowl Bluegrass. White Clover is sparse and patchy.

Colonizing species observed in 2009 include Raspberry (*Rubus idaeus*), Fireweed (*Epilobium angustifolium*), Fleabane (*Erigeron* sp.), Foxtail Barley (*Hordeum jubatum*) and Ticklegrass (*Agrostis scabra*).

The access road to the Blue Zone pit (seeded with the new Brewery Creek blend in the spring of 2007) is now dominated by a thick growth of Violet Wheatgrass and Ticklegrass with lesser amounts of Rocky Mountain Fescue, Glaucous Bluegrass and Alfalfa.

There is a small erosion channel beside the access road near the bottom of the hill.

Moosehead
Approximately 3.0 ha were seeded (drill-seeded and broadcast-seeded by ATV) in the fall of 2003 using the wet area seed mix.

The vegetative cover is variable, ranging from about 20% in the east by the pit to about 90% on top of the hill. A black fox was observed upon arrival at the site.

The seeded cover is mostly Tufted Hairgrass, with lesser amounts of Violet Wheatgrass and Fowl Bluegrass. White Clover occurs in dense patches.

Colonizing species observed in 2009 include Black Spruce (*Picea mariana*), White Spruce (*Picea glauca*), Alaska Birch (*Betula neoalaskana*), Balsam Poplar (*Populus balsamifera*), Trembling Aspen (*Populus tremuloides*), Willow (*Salix* spp.), Alder (*Alnus crispa*), Raspberry (*Rubus idaeus*), Prickly Rose (*Rosa acicularis*), Arctic Lupine (*Lupinus arcticus*) and Hawk's-beard (*Crepis nana*), Fireweed (*Epilobium angustifolium*) and Alaskan Knotweed (*Polygonum alaskanum*).

Moosehead Road and Main Haul Road West of Moosehead Zone
This area was reseeded in the spring of 2006 with the new Brewery Creek Blend.

The area has a variable vegetative cover averaging about 70%. The seeded cover is heavily dominated by Alfalfa with lesser amounts of Violet Wheatgrass and Ticklegrass.

Colonizing species include large patches of Foxtail Barley (*Hordeum jubatum*).

Canadian Waste Rock Storage Area
Approximately 9.2 ha were seeded in the fall of 1997 with a bulk mixer truck using the 'Brewery Creek' seed mix. This mix included:

Fowl Bluegrass	(*Poa palustris*)	17%
Kentucky Bluegrass	(*Poa pratensis*)	16%
Wild Rye	(*Elymus* ?)	16%
Sheep Fescue	(*Festuca ovina*)	16%
Red Fescue	(*Festuca rubra*)	12%
Common Timothy	(*Phleum pratense*)	10%
Alsike Clover	(*Trifolium hybridum*)	8%
Alfalfa	(*Medicago sativa*)	5%

This area has a variable cover, ranging from about 70% (there are still some barren areas) on the south slope to about 100% on the north slope.

The seeded cover now consists of Common Timothy and occasional Red Fescue and Fowl Bluegrass, with large patches of Alsike Clover and Alfalfa. The south slope has a few dense patches of Red Fescue.

Colonizing species observed in 2009 include White Spruce (*Picea glauca*), Black Spruce (*Picea mariana*), Trembling Aspen (*Populus tremuloides*) – some > 5m tall-, Willow (*Salix* spp.), Alaska Birch (*Betula neoalaskana*), Alder (*Alnus crispa*), Rose (*Rosa acicularis*), Annual Hawk's-beard (*Crepis tectorum*), Fireweed (*Epilobium angustifolium*), Arctic Lupine (*Lupinus arcticus*), Fleabane (*Erigeron acris*), Common Yarrow (*Achillea millefolium*), Smooth Brome (*Bromus inermis*), Blue-joint Reed Grass (*Calamagrostis canadensis*) and Common Horsetail (*Equisetum arvense*).

There is also evidence of winter moose browse in this area.

Canadian Stockpile
Approximately 1.0 ha was drill-seeded in the fall 2003 using the wet area seed mix.

The lower slopes of this area have a very good vegetative cover (close to 100%), and the higher drier slopes have only about a 20% cover.

The seeded cover is dominated by a dense growth of White Clover, which is choking out other species in some places. Violet Wheatgrass, Tufted Hairgrass and Fowl Bluegrass are also found. On the lower slopes there is also a great deal of litter from last year's growth, mostly Violet Wheatgrass.

Colonizing species observed in 2009 include Alder (*Alnus crispa*), Willow (*Salix* spp.), Alaska Birch (*Betula neoalaskana*), Balsam Poplar (*Populus balsamifera*), Annual Hawk's-beard (*Crepis tectorum*), Arctic Lupine (*Lupinus arcticus*), Fleabane (*Erigeron acris*), Common Yarrow (*Achillea millefolium*), Red Clover (*Trifolium pratense*) and Blue-joint Reed Grass (*Calamagrostis canadensis*).

Flanks of Main Haul Road West of Canadian Zone at Stream Crossing
This area was seeded in the fall of 2005 with the leach pad mix and in the spring of 2006 with the new Brewery Creek blend.

It has a good vegetative cover (up to 90%).

The seeded cover continues to be dominated by a heavy cover of Alfalfa and Wheatgrass with lesser amounts of Red Fescue and Kentucky Bluegrass.

Upper Fosters
Approximately 8.0 ha were drill-seeded in the fall of 2003 using the wet area seed mix.

The area has good cover on the lower flats (up to 90%), with a sparse growth (about 20%) on the upper slopes.

The seeded cover on the upper slopes is Fowl Bluegrass with small patches of White Clover and patches of Tufted Hairgrass at the base of the slope where the seed had washed into depressions. Violet Wheatgrass and Tufted Hairgrass are no longer in evidence on the upper slopes. Revegetation on the lower flat area is now mostly dense White Clover, with a little Tufted Hairgrass and Fowl Bluegrass.

Colonizing species observed in 2009 include Black Spruce (*Picea mariana*), Alaska Birch (*Betula neoalaskana*), Trembling Aspen (*Populus tremuloides*), Willow (*Salix* sp.), Raspberry (*Rubus idaeus*), Annual Hawk's-beard (*Crepis tectorum*), Fireweed (*Epilobium angustifolium*) and Common Timothy (*Phleum pratense*.).

Kokanee Inpit Backfill
Approximately 5.0 ha were broadcast-seeded by ATV in the fall of 2003 using the wet area seed mix.

The vegetative cover is highly variable, ranging from very sparse, 10% on the slopes, to nearly 100% on the lower flats.

The upper slopes have a sparse growth of Fowl Bluegrass, Violet Wheatgrass and Tufted Hairgrass with patches of White Clover. The lower flats are dominated by vast dense stands of White Clover along with Fowl Bluegrass and Tufted Hairgrass and with minor amounts of Violet Wheatgrass.

Although the upper slopes have sparser vegetative cover, there are many more colonizing shrubs, mostly Alaska Birch (*Betula neoalaskana*) and willows (*Salix* spp.). Other colonizing species observed in 2009 include Alder (*Alnus crispa*), Annual Hawk's-beard (*Crepis tectorum*), Arctic Lupine (*Lupinus arcticus*), Common Yarrow (*Achillea millefolium*), Wormwood (*Artemisia* sp.), Fleabane (*Erigeron* sp.) and Red Clover (*Trifolium pratense*).

North Golden Inpit Backfill
Approximately 11.2 ha of the lower slopes were broadcast-seeded by ATV in the fall 2003 using the wet area seed mix. The upper slopes were seeded in the fall of 2005 with the wet area seed mix and reseeded in the spring of 2006 and again in the spring of 2007 with the new Brewery Creek blend.

The vegetative cover on the lower slopes is about 90% and dominated by dense stands of Tufted Hairgrass along with Violet Wheatgrass, Fowl Bluegrass and patches of White Clover.

The more recently seeded upper slopes now have a good cover (about 80%). These areas have a vegetative cover dominated by Violet Wheatgrass, Tufted Hairgrass, White Clover and Alfalfa. Areas not reseeded have a sparse cover (about 40%) of Tufted Hairgrass and White Clover. Although these areas have a rather sparse cover they have more volunteer colonizers.

Colonizing species observed in this zone in 2009 include Balsam Poplar (*Populus balsamifera*), Felt-leaf Willow (*Salix alaxensis*), Alaska Birch (*Betula neoalaskana*), Alder (*Alnus incana*), Annual Hawk's-beard (*Crepis tectorum*), Red Clover (*Trifolium pratense*), Common Yarrow (*Achillea millefolium*), and Fireweed (*Epilobium angustifolium*).

Lucky

Approximately 4.3 ha, including the waste rock dump and the inpit backfill, were broadcast-seeded by ATV in the fall 2003 using the wet area seed mix. The waste rock dump, the pit bottom, the old Lucky haul road and the lower road to Bohemian were reseeded with the Brewery Creek blend in the spring of 2007.

The east slope of the inpit backfill has a dense vegetative cover, up to 100%. The seeded cover in this area is dominated by Tufted Hairgrass with some Violet Wheatgrass, Fowl Bluegrass and White Clover (in dense stands). The pit bottom has approximately 70% cover of Violet Wheatgrass, Fowl Bluegrass, Ticklegrass and Alfalfa.

The newly reseeded areas of the waste rock dump, the Lucky haul road and the lower road to Bohemian also now have a good cover (up to 90%). The seeded cover on these areas consists of Violet Wheatgrass, Tufted Hairgrass and White Clover from the earlier seeding (2003) and Ticklegrass, Glaucous Bluegrass, Sheep Fescue and Alfalfa from the recent seeding (2007).

Colonizing species observed in the Lucky zone area in 2009 include Black Spruce (*Picea mariana*), Alaska Birch (*Betula neoalaskana*), Alder (*Alnus crispa*), Balsam Poplar (*Populus balsamifera*), Willow (*Salix* sp.), Raspberry (*Rubus idaeus*), Fireweed (*Epilobium angustifolium*), Arctic Dock (*Rumex arcticus*), Common Yarrow (*Achillea millefolium*), Siberian Yarrow (*Achillea sibirica*), Blue-joint Reed Grass (*Calamagrostis canadensis*), Alaskan Knotweed (*Polygonum alaskanum*), Crepis (*Crepis nana*), Annual Hawk'sbeard (*Crepis tectorum*), Horsetail (*Equisetum* sp.) and Slough Grass (*Beckmannia syzigachne*).

Main Haul Road

Approximately 24.0 ha of the main haul road from the Blue Zone to the Lucky Zone were broadcast-seeded by ATV in the spring of 2005 using the leach pad seed mix.

This part of the main haul road now has a good vegetative cover ranging from 70-90%. The ground cover is dominated by Alfalfa which is very dense in some areas. Wheatgrass and Kentucky Bluegrass also occur here.

The steep sideslopes along some sections of the haul road remain quite barren. A few erosion channels were noted along the road, particularly towards the east end.

Colonizing species observed in 2009 include Willow (*Salix* spp.), Annual Hawk's-beard (*Crepis tectorum*) and Fireweed (*Epilobium angustifolium*).

Valve House Road
This area was seeded in the fall of 2005 and the spring of 2006 with the wet area seed mix.

This area now has a vegetative cover of about 90%.

The seeded cover largely consists mainly of Violet Wheatgrass and Tufted Hairgrass with some Fowl Bluegrass and White Clover.

Colonizing species observed in 2009 include Willow (*Salix* sp.), Common Yarrow (*Achillea millefolium*), Fleabane (*Erigeron acris*), Alfalfa (*Medicags sativa*), Fireweed (*Epilobium angustifolium*), Annual Hawk's-beard (*Crepis tectorum*), Alaskan Knotweed (*Polygonum aslaskanum*), Common Timothy (*Phleum pratense*) and Foxtail Barley (*Hordeum jubatum*).

Pipe Laydown Area
This area was seeded in the spring of 2006 with the new Brewery Creek blend.

The area now has a vegetative cover of about 80%.

The seeded vegetation is dominated by Violet Wheatgrass and Rocky Mountain Fescue, with some Ticklegrass and patches of Alfalfa

Colonizing species observed in 2009 include Willow (*Salix* spp.), Annual Hawk's-beard (*Crepis tectorum*), White Clover (*Trifolium repens*), White Sweet Clover (*Melilotus officinalis*), Shepherd's Purse (*Capsella bursa-pastoris*), and Foxtail Barley (*Hordeum jubatum*) and Common Timothy (*Phleum pratense*).

Laura Creek Road and Lysimeter Access
This area was seeded in the spring of 2006 with the new Brewery Creek blend.

Vegetation in this area is generally concentrated on the road edges (traffic has kept the middle of the road bare). The area on the road edges now has a vegetative cover of about 60%.

The seeded vegetation is primarily Sheep Fescue, Violet Wheatgrass, Ticklegrass and Alfalfa.

Colonizing species observed in 2009 include Alaska Birch (*Betula neoalaskana*), Trembling Aspen (*Populus tremuloides*), Willow (*Salix* spp.), Fireweed (*Epilobium angustifolium*), Alaskan Knotweed (*Polygonum alaskanum*), Common Yarrow (*Achillea millefolium*), Annual Hawk's-beard (*Crepis tectorum*), Fleabane (*Erigeron acris*), White Clover (*Trifolium repens*), Tufted Hairgrass (*Deschampsia caespitosa*) Blue-joint Reed Grass (*Calamagrostis canadensis*), Foxtail Barley (*Hordeum jubatum*) and Common Horsetail (*Equisetum arvense*).

Pond Bypass Road
This area was seeded in the spring of 2006 with the wet area seed mix.

Most of the area now has a vegetative cover of about 80%, although some of the road centre remains bare.

The seeded cover is now a fairly even mix of Violet Wheatgrass, Tufted Hairgrass, Fowl Bluegrass and dense patches of White Clover

Colonizing species observed in 2009 include Alaskan Birch (*Betula neonlaskana*), Trembling Aspen (*Populus tremuloides*), Willow (*Salix* spp.), Annual Hawk's-beard (*Crepis tectorum*), Red Clover (*Trifolium pratense*), Pineapple Weed (*Matricaria discoidea*), Blue-joint Reed Grass (*Calamagrostis canadensis*) and Common Timothy (*Phleum pratense*).

ADR Building Site
This area was seeded in the spring of 2006 with the wet area seed mix.

The area now has a vegetative cover of about 90%.

The seeded cover is a mix of Tufted Hairgrass with Fowl Bluegrass and White Clover. There is no longer evidence of Violet Wheatgrass.

Colonizing species observed in 2009 include Aspen (*Populus tremuloides*), Willow (*Salix* spp.), Common Yarrow (*Achillea millefolium*), Fireweed (*Epilobium angustifolium*), Chickweed (*Stellaria* sp.) and Foxtail Barley (*Hordeum jubatum*).

Treatment Pond Area
This area was seeded in the fall of 2005 with the wet area seed mix.

The area now has a vegetative cover of about 70%.

The seeded cover consists of Fowl Bluegrass, Tufted Hairgrass, Violet Wheatgrass and White Clover.

Colonizing species observed in 2009 include Alaska Birch (*Betula neoalaskana*), Trembling Aspen (*Populus tremuloides*), Willow (*Salix* sp.), Raspberry (*Rubus idaeus*), Annual Hawk's-beard (*Crepis tectorum*), Fireweed (*Epilobium angustifolium*), Common Yarrow (*Achillea millefolium*), Alaskan Knotweed (*Polygonum alaskanum*) and Common Timothy (*Phleum pratense*).

Shale Hill
This area was seeded in the spring of 2006 with the new Brewery Creek Blend.

The vegetative cover of this area now has now increased to about 90%, although there are still a few small bare patches.

The seeded vegetation includes Rocky Mountain Fescue, Violet Wheatgrass and Glaucous Bluegrass, with Alfalfa in thick patches and Ticklegrass in the more open areas.

Colonizing plant species observed in 2009 include Alaska Birch (*Betula neoalaskana*), Trembling Aspen (*Populus tremuloides*), Mountain Alder (*Alnus crispa*), Willow (*Salix* sp.), Annual Hawk's-beard (*Crepis tectorum*), Alsike Clover (*Trifolium hybridum*), Fireweed (*Epilobium angustifolium*), Alaskan Knotweed (*Polygonum alaskanum*) and Common Yarrow (*Achillea millefolium*),

Corner of ER and Main Haul Road
This area was seeded in the spring of 2006 and again in 2007 with the new Brewery Creek Blend.

The vegetative cover on this area is now about 90%, excluding a few bare patches.

The seeded cover includes Violet Wheatgrass and Glaucous Bluegrass with very little Alfalfa.

Colonizing species observed in 2009 include Balsam Poplar (*Populus balsamifera*), Alaskan Birch (*Betula neoalsaskanum*), Willow (*Salix* spp.), Arctic Lupine (*Lupinus arcticus*), White Clover (*Trifolium repens*) and Tufted Hairgrass (*Deschampsia caespitosa*).

Area in Front of Shop
This area was seeded in the spring of 2006 with the new Brewery Creek Blend.

The vegetative cover on this area is now about 90%, including Violet Wheatgrass, Rocky Mountain Fescue, Glaucous Bluegrass and thick patches of alfalfa.

Colonizing species observed in 2009 include Alaska Birch (*Betula neoalaskana*), Trembling Aspen (*Populus tremuloides*), White Clover (*Trifolium repens*), Annual Hawk's-beard (*Crepis tectorum*), Tufted Hairgrass (*Deschampsia caespitosa*) and Foxtail Barley (*Hordeum jubatum*).

Reclaimed Ponds
This area was seeded in the spring of 2009 with the Brewery Creek Blend.

The vegetative cover of this newly seeded area is approximately 10%.

The seeded vegetation is still too immature for identification.

Colonizing plant species observed near this area in 2009 include Alaskan Birch (*Betula neoalaskana*) Balsam Poplar (*Poplar balsamifera*), Alsike Clover (*Trifolium hybridum*), Fireweed (*Epilobium angustifolium*) and Common Yarrow (*Achillea millefolium*).

3.3 Revegetation Progress Assessment

An aggressive revegetation program has been ongoing at the Brewery Creek Mine since 2003, although some areas had been seeded as early as 1997. More than 130 ha have now been seeded with grasses and legumes. Most areas of the mine have now been reclaimed. Areas with the least vegetation continue to be the steep, but stable, back-walls of some of the former open pits and the steep side-slopes of the main haul road.

This assessment of the current status of revegetation at the Brewery Creek Mine takes into account the objectives set out in the 2004 Amendment to the Quartz Mining License. The General Standards set out in Schedule C, Section D, include:

1. Vegetation is self sustaining and comprises native seed mixes.

2. The vegetative cover is capable of self-regeneration without continued dependence on fertilizer or reseeding.

3. The establishment of a vegetative cover with sufficient density and species diversity to stabilize the surface against the effects of long term erosion.

4. The successive vegetation must be similar to naturally occurring habitats in the surrounding area.

Although most of the grasses seeded since 2003 are species naturally occurring in the Yukon, the seeds were acquired from suppliers in southern Canada, as Yukon-produced seeds were not available in the quantity required at the time of seeding. The non-native exceptions are Kentucky Bluegrass and Red Fescue. These sod-forming species were used in the Leach Pad Mix to help form a tighter cover. The Leach Pad Mix, although originally intended only for the leach pad cover, was also applied to a few other areas including the Blue Zone WRSA and the main haul road. Non-native legumes, white clover and alfalfa, were also used at Brewery Creek as the seeds of native species of legumes were not commercially available in large quantity at the time of seeding.

The vegetative cover on the reclaimed surfaces appears to be self-regenerating. The seeded species were mostly in flower or seed at the time of the 2009 survey. Self-

sustainability of these species, however, can only be confirmed through further monitoring. It should be noted that the long-term sustainability of the seeded species is not desirable, as these species should eventually give way to later successional species.

If observed closely, many native plant species can already be seen colonizing most areas of the reclaimed mine, as documented in Section 3.2. Table 5 shows the tree species observed on the reclaimed surfaces in 2009. Seventeen of the 23 areas that were assessed in 2009 now support the growth of at least one native species of willow. Alaska birch is also becoming a common invading tree species and was documented at 13 sites. It is anticipated that the vegetative succession to a climax forest similar to surrounding areas (the mature forest not disturbed by recent fires) will naturally occur, albeit slowly, if the area is left alone (*i.e.* if vehicle access is restricted).

Table 5 Native Tree Species Colonizing Reclaimed Sites at the Brewery Creek Mine in 2009

Revegetation Zone	White Spruce	Black Spruce	Alaska Birch	Balsam Poplar	Alder	Trembling Aspen	Willows
Pacific Pit		+*	+*	+*	+	+*	+ *
Moosehead	+ *	+ *	+ *	+*	+*	+	+ *
Can. Waste Rock	+*	+*	+*		+*	+ *	+ *
Can. Stockpile			+*	+*	+*		+*
Upper Foster		+	+ *			+ *	+ *
Kokanne Pit			+ *		+ *		+ *
North Golden			+	+ *	+		+ *
Lucky		+*	+*	+ *	+ *		+ *
Main Haul Road							+
Valve House Road							+
Pipe Laydown							+*
Laura Cr Rd and Lysimeter Access			+			+	+
Pond By Pass Rd			+*			+*	+*
ARD bldg						+	+*
Treatment Pond Area			+*			+*	+*
Shale Hill			+*		+	+	+*
Corner of ER and Haul Rd.			+*	+*			+*
Area in front of shop			+			+	

+ * indicates that it was also documented in 2008

Natural revegetation at this latitude, particularly on the relatively dry upland slopes such as those at Brewery Creek, is a slow process (several decades will pass before the area returns to a climax forest). Further seeding with grasses will do little to hasten this process, and may even hinder it. Further disturbance to the soil could delay the revegetation process, and the resulting formation of a too dense ground cover may inhibit the colonizing of the area by indigenous species. The addition of more fertilizer or the further seeding of nitrogen-fixing legumes may help to improve soil nutrients; however the naturally occurring native species colonizing the area are already adapted to these nutrient-poor soil conditions.

The current vegetative cover now found on the reclaimed mine surfaces is obviously quite variable (from sparse to very dense). This unevenness reflects the local variations in terrain (roughness, slope, aspect, drainage patterns etc.), climate and soil conditions. It is also indicative of the challenges faced in obtaining a uniform application rate of seed and fertilizer in such terrain.

The best indication of how the reseeded areas of the Brewery Creek Mine will revegetate in the near future may be to look at the Canadian Knoll and Waste Rock Storage Area, the site of the first revegetation efforts at the mine in 1997. Twelve years after seeding, the vegetative cover on these slopes consists of a few of the seeded grass and legume species, but more significantly, an array of colonizing tree seedlings, shrubs and forbs (see Section 3.2). Although this area is still at an early successional stage, it is a demonstration how natural revegetation will slowly occur if it is left alone. Other more recently seeded areas, such as the Moosehead Zone seeded in 2003, are also showing a high diversity of colonizing shrub species.

There may be areas of the reclaimed mine where soil erosion is occurring (these sites were not documented during this revegetation survey). Once such areas have been identified, they may have to be stabilized and reseeded. Further erosion control efforts should focus on significant erosion gullies and areas where the physical stability of slopes is obviously compromised and where further deterioration is anticipated. Minimizing the disturbance footprint during the reworking of these erosion sites will be essential. The many small short-term erosion gullies and rills that are common throughout newly reclaimed surfaces will most likely stabilize without further intervention.

4.0 Recommendations

- An inventory of sites with obvious erosional or slope stability problems should take place during the summer of 2010. When (if) such sites are identified, recontouring and reseeding should be carried in the late summer or early fall.

- All other seeded areas should be left alone to allow continued propagation of the seeded species as well as to permit the gradual invasion and colonization of native species.

- Vehicle access to the reclaimed surfaces of the former mine should remain restricted.

- Four further revegetation assessments should be carried out at the Brewery Creek Mine before the expiration of the License (2011, 2014 – to coincide with the metals in plant tissue assessment in Year 10, 2017 and 2020). These surveys should be similar to past surveys with an assessment of the permanent plots and a visual overview of all revegetated areas on the former mine site.

- Samples of naturally occurring shrubs (particularly common browse species such as willows and birch that are colonizing reclaimed areas) should be collected and analyzed for metal uptake. Both the leaves and twigs of these shrubs should be sampled from on-site areas (waste rock storage areas and pit backfills) and from at least one off-site comparison location.

5.0 REFERENCES

Laberge Environmental Services. 2009. Brewery Creek Mine 2008 Revegetation Assessment. Site Assessment Report Prepared for Alexco Resources Corp.

Laberge Environmental Services. 2008. Brewery Creek Mine 2007 Revegetation Assessment. Site Assessment Report Prepared for Alexco Resources Corp.

Laberge Environmental Services. 2007. Brewery Creek Mine 2006 Revegetation Assessment. Site Assessment Report Prepared for Alexco Resources Corp.

Laberge Environmental Services. 2006. Brewery Creek Mine 2005 Revegetation Assessment. Site Assessment Report Prepared for Alexco Resources Corp.

Viceroy Minerals Corporation. March 2005. Blue Zone Monitoring and Assessment Program. Prepared under the Brewery Creek Mine Decommissioning and Reclamation Plan.

Viceroy Minerals Corporation. March 2005. Heap Leach Pad Cover and Facilities Monitoring Program. Prepared under the Brewery Creek Mine Decommissioning and Reclamation Plan.

APPENDIX A

PHOTOGRAPHIC RECORD

Photo #1: The newly established plot at BZ-1 on the Blue Zone WRSA on August 16th, 2005.

Photo #2: BZ-1 four years later on July 23rd, 2009.

Photo #3: The newly established plot at LP-3 on the east facing slope of the leach pad, August 16th, 2005.

Photo #4: LP-3 four years later on July 23rd, 2009. The thick growth of grasses keeps the steep slope stable and prevents erosion.

Photo #5: Aerial view of Lucky and area, September 2nd, 2009.

Photo #6: Aerial view of Kokanee and Haul Road, September 2nd, 2009.

Photo #7: Aerial photo of Moosehead, September 2009. Note group of untouched spruce trees in centre.

Photo #8: Moosehead looking towards the untouched group of spruce trees, August 17, 2005.

Photo #9: Moosehead looking at the same group of spruce trees in July 23, 2009. Note the numerous deciduous trees colonizing the site.

Photo #10: North Golden on August 17th, 2005.

Photo #11: North Golden on July 17th, 2008.

Photo #12: North Golden on July 23rd, 2009.

Photo #13: Blue Zone WRSA beyond the lysimeter, August 16, 2005.

Photo #14: Good increased growth over the Blue Zone WRSA, July 23, 2009.

Photo #15: Corner of ER and the Haul Road on July 19, 2006.

Photo #16: Corner of ER and Haul Road, September 2009. There has been an incredible increase of growth.

Photo #17: Pipe lay down area, July 19, 2006.

Photo #18: Pipe lay down area on July 22, 2009.

Photo #19: The recently reclaimed and seeded upper pond area, July 22nd, 2009.

Photo #20: Grasses are sprouting in the newly seeded area, July 22nd, 2009.

APPENDIX B

LABORATORY ANALYTICAL REPORTS, 2009

Your Project #: BREWERY CREEK PROJECT
Your C.O.C. #: 08302452, 08302453, 08302454

Attention: Bonnie Burns
LABERGE ENVIRONMENTAL SERVICES
WHITEHORSE
405 Ogilvie Street
PO Box 21072
Whitehorse, YT
CANADA Y1A 6P7

Report Date: 2009/08/05

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A939159
Received: 2009/07/28, 13:00

Sample Matrix: Soil
Samples Received: 9

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Elements by ICPMS (total)	9	2009/07/30	2009/07/30	BRN SOP-00203 R5.0	Based on EPA 200.8
Moisture	9	N/A	2009/07/30	BRN SOP-00321 R5.0	Ont MOE -E 3139
pH (2:1 DI Water Extract) (1)	9	2009/07/31	2009/07/31	BRN SOP-00266 R6.0	Carter, SSMA 16.2

Sample Matrix: Tissue (Plant)
Samples Received: 22

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Elements by CRC ICPMS (total) - Plant	12	2009/07/31	2009/08/01	BRN SOP-00206 R7.0	Based on EPA 200.8
Elements by CRC ICPMS (total) - Plant	10	2009/07/31	2009/08/02	BRN SOP-00206 R7.0	Based on EPA 200.8

* Results relate only to the items tested.

(1) SCC/CAEAL

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

KIMBERLEY WEBBER, BBY Customer Service
Email: kim.webber@maxxamanalytics.com
Phone# (604) 444-4808 Ext:259

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Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

Total cover pages: 1

Maxxam Job #: A939159
Report Date: 2009/08/05

LABERGE ENVIRONMENTAL SERVICES
Client Project #: BREWERY CREEK PROJECT

Sampler Initials: BB

RESULTS OF CHEMICAL ANALYSES OF SOIL

Maxxam ID		P97595	P97596	P97597	P97598	P97599	P97600	P97601	P97602	P97603		
Sampling Date		2009/07/22 13:30	2009/07/22 14:30	2009/07/22 15:15	2009/07/23 10:00	2009/07/23 10:45	2009/07/23 11:40	2009/07/23 13:30	2009/07/23 14:00	2009/07/23 15:15		
	Units	**C-1**	**C-2**	**C-3**	**LP-1**	**LP-2**	**LP-3**	**BZ-1**	**BZ-2**	**BZ-3**	**RDL**	**QC Batch**
Physical Properties												
Moisture	%	8.1	8.2	8.3	8.1	9.4	8.9	5.3	4.1	3.6	0.3	3311262

RDL = Reportable Detection Limit

Maxxam Job #: A939159
Report Date: 2009/08/05

LABERGE ENVIRONMENTAL SERVICES
Client Project #: BREWERY CREEK PROJECT

Sampler Initials: BB

ELEMENTS BY ATOMIC SPECTROSCOPY (TISSUE (PLANT))

Maxxam ID		P97604	P97606	P97607	P97608	P97609	P97610	P97611	P97612		
Sampling Date		2009/07/22 13:30	2009/07/22 13:30	2009/07/22 13:30	2009/07/22 14:30	2009/07/22 14:30	2009/07/22 14:30	2009/07/22 15:15	2009/07/22 15:15		
	Units	**C-1 FESCUE**	**C-1 BLUEGRASS**	**C- 1 WHEATGRASS**	**C-2 FESCUE**	**C-2 BLUEGRASS**	**C-2 WHEATGRASS**	**C-3 FESCUE**	**C-3 BLUEGRASS**	**RDL**	**QC Batch**
Total Metals by ICPMS											
Total Aluminum (Al)	mg/kg	126	5	4	6	6	5	5	17	1	3317337
Total Antimony (Sb)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	3317337
Total Arsenic (As)	mg/kg	0.35	0.12	0.15	0.20	0.17	0.17	0.11	0.16	0.01	3317337
Total Barium (Ba)	mg/kg	25.3	40.6	45.7	30.7	51.2	42.9	22.4	46.7	0.1	3317337
Total Beryllium (Be)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	3317337
Total Bismuth (Bi)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	3317337
Total Boron (B)	mg/kg	<5	8	<5	<5	6	<5	<5	6	5	3317337
Total Cadmium (Cd)	mg/kg	0.44	0.11	0.07	0.50	0.18	0.08	0.37	0.23	0.01	3317337
Total Calcium (Ca)	mg/kg	1120	2210	1670	1490	1830	1260	936	1270	10	3317337
Total Chromium (Cr)	mg/kg	28.0	0.6	33.6	2.6	1.4	<0.5	13.2	<0.5	0.5	3317337
Total Cobalt (Co)	mg/kg	0.9	<0.1	1.1	0.1	<0.1	<0.1	0.4	<0.1	0.1	3317337
Total Copper (Cu)	mg/kg	7.6	5.3	4.0	5.0	4.7	2.3	4.7	4.1	0.5	3317337
Total Iron (Fe)	mg/kg	346	34	114	45	34	26	71	44	10	3317337
Total Lead (Pb)	mg/kg	2.01	0.13	0.05	0.09	0.11	0.07	0.08	0.18	0.01	3317337
Total Magnesium (Mg)	mg/kg	716	1040	829	902	934	766	744	697	10	3317337
Total Manganese (Mn)	mg/kg	75.5	85.8	42.0	152	110	74.3	157	103	0.1	3317337
Total Mercury (Hg)	mg/kg	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	3317337
Total Molybdenum (Mo)	mg/kg	3.5	1.3	2.4	1.5	1.8	0.8	8.6	3.8	0.1	3317337
Total Nickel (Ni)	mg/kg	19.8	2.6	25.5	4.5	2.5	0.5	14.2	4.3	0.1	3317337
Total Phosphorus (P)	mg/kg	1710	2070	2200	1980	2050	2090	1800	1700	10	3317337
Total Potassium (K)	mg/kg	9970	8530	12500	5890	8620	10300	5680	6510	10	3317337
Total Selenium (Se)	mg/kg	0.11	0.06	0.07	0.04	0.05	0.03	0.11	0.08	0.01	3317337
Total Silver (Ag)	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	3317337
Total Sodium (Na)	mg/kg	26	<10	<10	<10	<10	<10	<10	<10	10	3317337
Total Strontium (Sr)	mg/kg	5.6	10.1	8.3	8.0	10.8	7.6	5.2	7.9	0.1	3317337
Total Thallium (Tl)	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	3317337
Total Tin (Sn)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	3317337
Total Titanium (Ti)	mg/kg	3	<1	<1	<1	<1	<1	<1	<1	1	3317337
Total Uranium (U)	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	3317337
Total Vanadium (V)	mg/kg	<2	<2	<2	<2	<2	<2	<2	<2	2	3317337
Total Zinc (Zn)	mg/kg	41.5	60.0	38.4	41.3	44.5	27.8	18.5	31.5	0.1	3317337

RDL = Reportable Detection Limit

Maxxam Job #: A939159
Report Date: 2009/08/05

LABERGE ENVIRONMENTAL SERVICES
Client Project #: BREWERY CREEK PROJECT

Sampler Initials: BB

ELEMENTS BY ATOMIC SPECTROSCOPY (TISSUE (PLANT))

Maxxam ID		P97613	P97614	P97615	P97616	P97617	P97618	P97619	P97622		
Sampling Date		2009/07/22 15:15	2009/07/23 10:00	2009/07/23 10:45	2009/07/23 10:45	2009/07/23 11:40	2009/07/23 11:40	2009/07/23 11:40	2009/07/23 13:30		
	Units	**C-3 WHEATGRASS**	**LP-1 FESCUE**	**LP-2 FESCUE**	**LP-2 WHEATGRASS**	**LP-3 FESCUE**	**LP-3 BLUEGRASS**	**LP-3 WHEATGRASS**	**BZ-1 FESCUE**	**RDL**	**QC Batch**
Total Metals by ICPMS											
Total Aluminum (Al)	mg/kg	7	6	8	7	5	8	6	7	1	3317337
Total Antimony (Sb)	mg/kg	<0.1	<0.1	0.1	0.3	<0.1	0.3	<0.1	<0.1	0.1	3317337
Total Arsenic (As)	mg/kg	0.13	0.47	0.45	1.15	0.54	0.94	0.25	0.55	0.01	3317337
Total Barium (Ba)	mg/kg	26.9	25.2	40.2	47.3	19.9	31.6	35.6	42.8	0.1	3317337
Total Beryllium (Be)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	3317337
Total Bismuth (Bi)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	3317337
Total Boron (B)	mg/kg	<5	<5	<5	<5	<5	6	<5	<5	5	3317337
Total Cadmium (Cd)	mg/kg	0.11	0.22	0.24	0.29	0.14	0.47	0.09	0.09	0.01	3317337
Total Calcium (Ca)	mg/kg	929	1350	1370	2170	1270	2680	1350	1440	10	3317337
Total Chromium (Cr)	mg/kg	12.9	4.1	<0.5	3.9	<0.5	<0.5	1.3	<0.5	0.5	3317337
Total Cobalt (Co)	mg/kg	0.4	0.2	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	0.1	3317337
Total Copper (Cu)	mg/kg	2.3	3.4	2.8	2.0	2.1	3.2	1.8	2.5	0.5	3317337
Total Iron (Fe)	mg/kg	73	45	33	38	21	34	25	27	10	3317337
Total Lead (Pb)	mg/kg	0.09	0.10	0.12	0.16	0.08	0.06	0.08	0.06	0.01	3317337
Total Magnesium (Mg)	mg/kg	703	805	868	526	600	1270	467	654	10	3317337
Total Manganese (Mn)	mg/kg	60.4	249	351	193	357	170	119	182	0.1	3317337
Total Mercury (Hg)	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	3317337
Total Molybdenum (Mo)	mg/kg	2.6	1.2	1.1	0.3	0.8	0.2	0.2	1.0	0.1	3317337
Total Nickel (Ni)	mg/kg	8.8	5.5	3.7	3.5	1.6	1.8	1.4	2.0	0.1	3317337
Total Phosphorus (P)	mg/kg	1540	1660	1870	1090	1590	1120	1100	1100	10	3317337
Total Potassium (K)	mg/kg	8160	9720	11100	8160	12600	9760	7230	6050	10	3317337
Total Selenium (Se)	mg/kg	0.04	0.52	0.25	0.25	0.28	0.52	0.31	0.04	0.01	3317337
Total Silver (Ag)	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	3317337
Total Sodium (Na)	mg/kg	<10	<10	<10	<10	<10	<10	<10	<10	10	3317337
Total Strontium (Sr)	mg/kg	5.7	5.5	7.5	10.9	6.7	12.7	8.0	10.0	0.1	3317337
Total Thallium (Tl)	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	3317337
Total Tin (Sn)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	3317337
Total Titanium (Ti)	mg/kg	<1	<1	<1	<1	<1	<1	<1	<1	1	3317337
Total Uranium (U)	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	3317337
Total Vanadium (V)	mg/kg	<2	<2	<2	<2	<2	<2	<2	<2	2	3317337
Total Zinc (Zn)	mg/kg	21.9	20.2	24.0	25.4	15.8	18.9	14.3	14.9	0.1	3317337

RDL = Reportable Detection Limit

Maxxam Job #: A939159
Report Date: 2009/08/05

LABERGE ENVIRONMENTAL SERVICES
Client Project #: BREWERY CREEK PROJECT

Sampler Initials: BB

ELEMENTS BY ATOMIC SPECTROSCOPY (TISSUE (PLANT))

Maxxam ID		P97623	P97624		P97625	P97626	P97627	P97628		
Sampling Date		2009/07/23 13:30	2009/07/23 14:00		2009/07/23 14:00	2009/07/23 14:00	2009/07/23 15:15	2009/07/23 15:15		
	Units	**BZ-1 WHEATGRASS**	**BZ-2 FESCUE**	**QC Batch**	**BZ-2 WHEATGRASS**	**BZ-2 ALFALFA**	**BZ-3 FESCUE**	**BZ-3 WHEATGRASS**	**RDL**	**QC Batch**
Total Metals by ICPMS										
Total Aluminum (Al)	mg/kg	8	12	3317337	6	8	7	7	1	3317425
Total Antimony (Sb)	mg/kg	<0.1	<0.1	3317337	<0.1	<0.1	<0.1	<0.1	0.1	3317425
Total Arsenic (As)	mg/kg	1.01	0.94	3317337	0.97	0.78	0.35	0.41	0.01	3317425
Total Barium (Ba)	mg/kg	45.2	34.3	3317337	21.6	244	40.6	51.8	0.1	3317425
Total Beryllium (Be)	mg/kg	<0.1	<0.1	3317337	<0.1	<0.1	<0.1	<0.1	0.1	3317425
Total Bismuth (Bi)	mg/kg	<0.1	<0.1	3317337	<0.1	<0.1	<0.1	<0.1	0.1	3317425
Total Boron (B)	mg/kg	<5	6	3317337	<5	19	<5	<5	5	3317425
Total Cadmium (Cd)	mg/kg	0.10	0.22	3317337	0.26	0.89	0.07	0.11	0.01	3317425
Total Calcium (Ca)	mg/kg	2000	2640	3317337	1870	21100	1390	2310	10	3317425
Total Chromium (Cr)	mg/kg	1.6	<0.5	3317337	<0.5	<0.5	<0.5	1.2	0.5	3317425
Total Cobalt (Co)	mg/kg	<0.1	<0.1	3317337	<0.1	<0.1	<0.1	<0.1	0.1	3317425
Total Copper (Cu)	mg/kg	2.7	3.4	3317337	2.0	6.2	2.8	2.6	0.5	3317425
Total Iron (Fe)	mg/kg	35	42	3317337	21	50	24	30	10	3317425
Total Lead (Pb)	mg/kg	0.06	0.06	3317337	0.08	0.06	0.07	0.05	0.01	3317425
Total Magnesium (Mg)	mg/kg	454	938	3317337	522	2440	681	618	10	3317425
Total Manganese (Mn)	mg/kg	140	188	3317337	119	49.3	227	181	0.1	3317425
Total Mercury (Hg)	mg/kg	<0.01	<0.01	3317337	<0.01	<0.01	<0.01	<0.01	0.01	3317425
Total Molybdenum (Mo)	mg/kg	0.2	1.8	3317337	0.5	1.4	0.6	0.2	0.1	3317425
Total Nickel (Ni)	mg/kg	1.5	1.6	3317337	0.3	5.2	2.9	1.4	0.1	3317425
Total Phosphorus (P)	mg/kg	1020	1380	3317337	1250	1380	933	1140	10	3317425
Total Potassium (K)	mg/kg	8090	10200	3317337	6710	14200	10100	7080	10	3317425
Total Selenium (Se)	mg/kg	0.04	0.10	3317337	0.21	0.21	0.08	0.43	0.01	3317425
Total Silver (Ag)	mg/kg	<0.05	<0.05	3317337	<0.05	<0.05	<0.05	<0.05	0.05	3317425
Total Sodium (Na)	mg/kg	<10	<10	3317337	<10	21	<10	<10	10	3317425
Total Strontium (Sr)	mg/kg	13.5	11.5	3317337	8.6	104	8.8	14.5	0.1	3317425
Total Thallium (Tl)	mg/kg	<0.05	<0.05	3317337	<0.05	<0.05	<0.05	<0.05	0.05	3317425
Total Tin (Sn)	mg/kg	<0.1	<0.1	3317337	<0.1	<0.1	<0.1	<0.1	0.1	3317425
Total Titanium (Ti)	mg/kg	<1	<1	3317337	<1	<1	<1	<1	1	3317425
Total Uranium (U)	mg/kg	<0.05	<0.05	3317337	<0.05	<0.05	<0.05	<0.05	0.05	3317425
Total Vanadium (V)	mg/kg	<2	<2	3317337	<2	<2	<2	<2	2	3317425
Total Zinc (Zn)	mg/kg	22.2	18.3	3317337	22.8	39.0	10.7	20.6	0.1	3317425

RDL = Reportable Detection Limit

Maxxam Job #: A939159
Report Date: 2009/08/05

LABERGE ENVIRONMENTAL SERVICES
Client Project #: BREWERY CREEK PROJECT

Sampler Initials: BB

CSR/CCME METALS IN SOIL (SOIL)

Maxxam ID		P97595	P97596	P97597	P97598	P97599	P97600	P97601	P97602	P97603		
Sampling Date		2009/07/22 13:30	2009/07/22 14:30	2009/07/22 15:15	2009/07/23 10:00	2009/07/23 10:45	2009/07/23 11:40	2009/07/23 13:30	2009/07/23 14:00	2009/07/23 15:15		
	Units	**C-1**	**C-2**	**C-3**	**LP-1**	**LP-2**	**LP-3**	**BZ-1**	**BZ-2**	**BZ-3**	**RDL**	**QC Batch**
Misc. Inorganics												
Soluble (2:1) pH	pH Units	5.35	5.01	4.91	5.04	5.04	4.87	5.40	5.43	5.04	0.01	3316124
Total Metals by ICPMS												
Total Aluminum (Al)	mg/kg	13600	15100	13600	13500	13400	15000	8290	11700	9450	100	3314236
Total Antimony (Sb)	mg/kg	46.4	62.4	17.3	93.8	171	74.8	138	113	87.8	0.1	3314236
Total Arsenic (As)	mg/kg	110	111	62.4	59.0	107	44.6	551	309	150	0.2	3314236
Total Barium (Ba)	mg/kg	663	583	424	529	885	473	682	522	427	0.1	3314236
Total Beryllium (Be)	mg/kg	0.6	0.7	0.5	0.5	0.6	0.6	0.8	0.6	0.6	0.1	3314236
Total Bismuth (Bi)	mg/kg	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	3314236
Total Cadmium (Cd)	mg/kg	1.70	1.89	1.71	0.82	1.77	0.61	1.48	0.60	0.48	0.05	3314236
Total Calcium (Ca)	mg/kg	3180	3460	2430	2020	2190	2020	1430	1790	1330	100	3314236
Total Chromium (Cr)	mg/kg	24	24	26	25	33	25	20	22	20	1	3314236
Total Cobalt (Co)	mg/kg	9.2	8.2	7.9	8.1	10.7	9.7	9.0	8.8	7.2	0.3	3314236
Total Copper (Cu)	mg/kg	38.9	32.6	59.8	30.4	43.4	30.3	43.5	36.1	35.9	0.5	3314236
Total Iron (Fe)	mg/kg	26500	24600	23600	24100	28200	26200	24800	24000	20400	100	3314236
Total Lead (Pb)	mg/kg	18.3	18.0	15.3	14.6	18.6	16.0	17.5	15.8	13.9	0.1	3314236
Total Magnesium (Mg)	mg/kg	3200	3310	3730	3560	3120	3800	1650	2530	2600	100	3314236
Total Manganese (Mn)	mg/kg	432	409	286	297	410	355	337	325	272	0.2	3314236
Total Mercury (Hg)	mg/kg	0.85	0.67	1.17	0.32	0.94	0.22	2.48	1.07	0.94	0.05	3314236
Total Molybdenum (Mo)	mg/kg	3.0	2.6	2.6	2.0	4.2	1.8	5.5	3.0	2.4	0.1	3314236
Total Nickel (Ni)	mg/kg	31.6	26.1	26.3	24.4	40.3	25.5	32.2	24.6	21.7	0.8	3314236
Total Phosphorus (P)	mg/kg	973	993	839	576	952	523	648	563	440	10	3314236
Total Potassium (K)	mg/kg	691	784	472	705	709	735	1130	862	634	100	3314236
Total Selenium (Se)	mg/kg	1.1	1.1	1.1	0.8	1.9	0.8	2.3	1.3	0.9	0.5	3314236
Total Silver (Ag)	mg/kg	0.29	0.43	0.33	0.27	0.59	0.22	0.82	0.41	0.29	0.05	3314236
Total Sodium (Na)	mg/kg	<100	<100	<100	<100	<100	<100	<100	<100	<100	100	3314236
Total Strontium (Sr)	mg/kg	39.5	38.1	33.9	40.2	74.4	32.9	60.2	39.7	34.3	0.1	3314236
Total Thallium (Tl)	mg/kg	0.24	0.24	0.25	0.16	0.28	0.14	0.45	0.27	0.17	0.05	3314236
Total Tin (Sn)	mg/kg	3.2	2.8	10.7	0.8	1.1	3.4	0.6	1.9	5.3	0.1	3314236
Total Vanadium (V)	mg/kg	77	77	100	62	101	59	77	73	67	2	3314236
Total Zinc (Zn)	mg/kg	202	146	158	111	216	111	151	111	97	1	3314236
Total Titanium (Ti)	mg/kg	298	302	357	265	222	264	123	192	184	1	3314236
Total Zirconium (Zr)	mg/kg	0.6	0.6	0.7	0.5	0.5	0.8	0.6	<0.5	0.9	0.5	3314236

RDL = Reportable Detection Limit

Maxxam Job #: A939159
Report Date: 2009/08/05

LABERGE ENVIRONMENTAL SERVICES
Client Project #: BREWERY CREEK PROJECT

Sampler Initials: BB

Package 1	9.3°C

Each temperature is the average of up to three cooler temperatures taken at receipt

General Comments

Maxxam Job #: A939159
Report Date: 2009/08/05

LABERGE ENVIRONMENTAL SERVICES
Client Project #: BREWERY CREEK PROJECT

Sampler Initials: BB

QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits	% Recovery	QC Limits
3311262	Moisture	2009/07/30					<0.3	%	0	20		
3314236	Total Arsenic (As)	2009/07/31	92	75 - 125	100	75 - 125	<0.2	mg/kg	8.2	30	97	70 - 130
3314236	Total Beryllium (Be)	2009/07/31	96	75 - 125	93	75 - 125	<0.1	mg/kg	NC	30		
3314236	Total Cadmium (Cd)	2009/07/31	99	75 - 125	102	75 - 125	<0.05	mg/kg	NC	30	92	70 - 130
3314236	Total Chromium (Cr)	2009/07/31	94	75 - 125	104	75 - 125	<1	mg/kg	2.0	30	101	70 - 130
3314236	Total Cobalt (Co)	2009/07/31	97	75 - 125	105	75 - 125	<0.3	mg/kg	2.2	30	98	70 - 130
3314236	Total Copper (Cu)	2009/07/31	93	75 - 125	110	75 - 125	<0.5	mg/kg	2.8	30	97	70 - 130
3314236	Total Lead (Pb)	2009/07/31	92	75 - 125	97	75 - 125	<0.1	mg/kg	0.3	35	91	70 - 130
3314236	Total Mercury (Hg)	2009/07/31	96	75 - 125	112	75 - 125	<0.05	mg/kg	NC	35		
3314236	Total Nickel (Ni)	2009/07/31	95	75 - 125	105	75 - 125	<0.8	mg/kg	2.6	30	98	70 - 130
3314236	Total Selenium (Se)	2009/07/31	97	75 - 125	105	75 - 125	<0.5	mg/kg	NC	30		
3314236	Total Vanadium (V)	2009/07/31	NC	75 - 125	112	75 - 125	<2	mg/kg	1.9	30	113	70 - 130
3314236	Total Zinc (Zn)	2009/07/31	NC	75 - 125	115	75 - 125	<1	mg/kg	1.2	30	97	70 - 130
3314236	Total Aluminum (Al)	2009/07/31					<100	mg/kg	1.4	35	110	70 - 130
3314236	Total Antimony (Sb)	2009/07/31					<0.1	mg/kg	NC	30	107	70 - 130
3314236	Total Barium (Ba)	2009/07/31					<0.1	mg/kg	1.4	35	105	70 - 130
3314236	Total Calcium (Ca)	2009/07/31					<100	mg/kg	11.1	30	100	70 - 130
3314236	Total Iron (Fe)	2009/07/31					<100	mg/kg	1.7	30	100	70 - 130
3314236	Total Magnesium (Mg)	2009/07/31					<100	mg/kg	5.9	30	109	70 - 130
3314236	Total Manganese (Mn)	2009/07/31					<0.2	mg/kg	4.5	30	106	70 - 130
3314236	Total Molybdenum (Mo)	2009/07/31					<0.1	mg/kg	NC	35	90	70 - 130
3314236	Total Phosphorus (P)	2009/07/31					<10	mg/kg	1.6	30	105	70 - 130
3314236	Total Silver (Ag)	2009/07/31					<0.05	mg/kg	NC	35	89	70 - 130
3314236	Total Strontium (Sr)	2009/07/31					<0.1	mg/kg	4.0	35	98	70 - 130
3314236	Total Thallium (Tl)	2009/07/31					<0.05	mg/kg	NC	30	81	70 - 130
3314236	Total Titanium (Ti)	2009/07/31					<1	mg/kg	3.3	30	109	70 - 130
3314236	Total Bismuth (Bi)	2009/07/31					<0.1	mg/kg	NC	30		
3314236	Total Potassium (K)	2009/07/31					<100	mg/kg	0.7	35		
3314236	Total Sodium (Na)	2009/07/31					<100	mg/kg	NC	35		
3314236	Total Tin (Sn)	2009/07/31					<0.1	mg/kg	NC	35		
3314236	Total Zirconium (Zr)	2009/07/31					<0.5	mg/kg	NC	30		
3316124	Soluble (2:1) pH	2009/07/31			100	96 - 104			0.1	20		
3317337	Total Arsenic (As)	2009/08/02	103	75 - 125	103	75 - 125	<0.01	mg/kg	4.5	35		
3317337	Total Beryllium (Be)	2009/08/02	101	75 - 125	99	75 - 125	<0.1	mg/kg	NC	35		
3317337	Total Cadmium (Cd)	2009/08/02	104	75 - 125	101	75 - 125	0.01, RDL=0.01	mg/kg	9.3	35		
3317337	Total Chromium (Cr)	2009/08/02	99	75 - 125	104	75 - 125	0.6, RDL=0.5	mg/kg	NC	35		
3317337	Total Cobalt (Co)	2009/08/02	97	75 - 125	102	75 - 125	<0.1	mg/kg	NC	35		
3317337	Total Copper (Cu)	2009/08/02	97	75 - 125	103	75 - 125	<0.5	mg/kg	2.0	35		
3317337	Total Lead (Pb)	2009/08/02	99	75 - 125	101	75 - 125	<0.01	mg/kg	9.9	35		
3317337	Total Mercury (Hg)	2009/08/02	103	75 - 125	109	75 - 125	<0.01	mg/kg	NC	35		

Maxxam Job #: A939159
Report Date: 2009/08/05

LABERGE ENVIRONMENTAL SERVICES
Client Project #: BREWERY CREEK PROJECT

Sampler Initials: BB

QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits	% Recovery	QC Limits
3317337	Total Nickel (Ni)	2009/08/02	96	75 - 125	102	75 - 125	<0.1	mg/kg	3.6	35		
3317337	Total Selenium (Se)	2009/08/02	107	75 - 125	106	75 - 125	0.01, RDL=0.01	mg/kg	15.9	35		
3317337	Total Uranium (U)	2009/08/02	101	75 - 125	101	75 - 125	<0.05	mg/kg	NC	35		
3317337	Total Vanadium (V)	2009/08/02	99	75 - 125	102	75 - 125	<2	mg/kg	NC	35		
3317337	Total Zinc (Zn)	2009/08/02	99	75 - 125	105	75 - 125	<0.1	mg/kg	4.5	35		
3317337	Total Aluminum (Al)	2009/08/02					2, RDL=1	mg/kg	10.1	35		
3317337	Total Antimony (Sb)	2009/08/02					<0.1	mg/kg	NC	35		
3317337	Total Barium (Ba)	2009/08/02					<0.1	mg/kg	7.1	35		
3317337	Total Bismuth (Bi)	2009/08/02					<0.1	mg/kg	NC	35		
3317337	Total Boron (B)	2009/08/02					<5	mg/kg	NC	35		
3317337	Total Calcium (Ca)	2009/08/02					<10	mg/kg	6.6	35		
3317337	Total Iron (Fe)	2009/08/02					<10	mg/kg	NC	35		
3317337	Total Magnesium (Mg)	2009/08/02					<10	mg/kg	4.6	35		
3317337	Total Manganese (Mn)	2009/08/02					<0.1	mg/kg	5.4	35		
3317337	Total Molybdenum (Mo)	2009/08/02					<0.1	mg/kg	5.6	35		
3317337	Total Phosphorus (P)	2009/08/02					<10	mg/kg	3.6	35		
3317337	Total Potassium (K)	2009/08/02					<10	mg/kg	4.3	35		
3317337	Total Silver (Ag)	2009/08/02					<0.05	mg/kg	NC	35		
3317337	Total Sodium (Na)	2009/08/02					<10	mg/kg	NC	35		
3317337	Total Strontium (Sr)	2009/08/02					<0.1	mg/kg	6.4	35		
3317337	Total Thallium (Tl)	2009/08/02					<0.05	mg/kg	NC	35		
3317337	Total Tin (Sn)	2009/08/02					<0.1	mg/kg	NC	35		
3317337	Total Titanium (Ti)	2009/08/02					<1	mg/kg	NC	35		
3317425	Total Arsenic (As)	2009/08/01	116	75 - 125	100	75 - 125	<0.01	mg/kg	1.1	35		
3317425	Total Beryllium (Be)	2009/08/01	109	75 - 125	97	75 - 125	<0.1	mg/kg	NC	35		
3317425	Total Cadmium (Cd)	2009/08/01	106	75 - 125	97	75 - 125	<0.01	mg/kg	NC	35		
3317425	Total Chromium (Cr)	2009/08/01	97	75 - 125	100	75 - 125	0.6, RDL=0.5	mg/kg	2.6	35		
3317425	Total Cobalt (Co)	2009/08/01	103	75 - 125	99	75 - 125	<0.1	mg/kg	4.0	35		
3317425	Total Copper (Cu)	2009/08/01	104	75 - 125	101	75 - 125	<0.5	mg/kg	5.0	35		
3317425	Total Lead (Pb)	2009/08/01	105	75 - 125	97	75 - 125	<0.01	mg/kg	6.8	35		
3317425	Total Mercury (Hg)	2009/08/01	110	75 - 125	111	75 - 125	0.02, RDL=0.01	mg/kg	NC	35		
3317425	Total Nickel (Ni)	2009/08/01	100	75 - 125	97	75 - 125	<0.1	mg/kg	2.5	35		
3317425	Total Selenium (Se)	2009/08/01	110	75 - 125	100	75 - 125	0.01, RDL=0.01	mg/kg	NC	35		
3317425	Total Uranium (U)	2009/08/01	108	75 - 125	96	75 - 125	<0.05	mg/kg	NC	35		
3317425	Total Vanadium (V)	2009/08/01	104	75 - 125	99	75 - 125	<2	mg/kg	NC	35		
3317425	Total Zinc (Zn)	2009/08/01	111	75 - 125	102	75 - 125	<0.1	mg/kg	1.8	35		
3317425	Total Aluminum (Al)	2009/08/01					1, RDL=1	mg/kg	3.9	35		
3317425	Total Antimony (Sb)	2009/08/01					<0.1	mg/kg	NC	35		
3317425	Total Barium (Ba)	2009/08/01					<0.1	mg/kg	7.6	35		
3317425	Total Bismuth (Bi)	2009/08/01					<0.1	mg/kg	NC	35		

Maxxam Job #: A939159
Report Date: 2009/08/05

LABERGE ENVIRONMENTAL SERVICES
Client Project #: BREWERY CREEK PROJECT

Sampler Initials: BB

QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits	% Recovery	QC Limits
3317425	Total Boron (B)	2009/08/01					<5	mg/kg	NC	35		
3317425	Total Calcium (Ca)	2009/08/01					<10	mg/kg	4.4	35		
3317425	Total Iron (Fe)	2009/08/01					<10	mg/kg	6.6	35		
3317425	Total Magnesium (Mg)	2009/08/01					<10	mg/kg	1.8	35		
3317425	Total Manganese (Mn)	2009/08/01					<0.1	mg/kg	3.6	35		
3317425	Total Molybdenum (Mo)	2009/08/01					0.1, RDL=0.1	mg/kg	6.4	35		
3317425	Total Phosphorus (P)	2009/08/01					<10	mg/kg	1.9	35		
3317425	Total Potassium (K)	2009/08/01					<10	mg/kg	1.5	35		
3317425	Total Silver (Ag)	2009/08/01					<0.05	mg/kg	NC	35		
3317425	Total Sodium (Na)	2009/08/01					<10	mg/kg	NC	35		
3317425	Total Strontium (Sr)	2009/08/01					<0.1	mg/kg	4.9	35		
3317425	Total Thallium (Tl)	2009/08/01					<0.05	mg/kg	NC	35		
3317425	Total Tin (Sn)	2009/08/01					<0.1	mg/kg	NC	35		
3317425	Total Titanium (Ti)	2009/08/01					<1	mg/kg	NC	35		

N/A = Not Applicable
RDL = Reportable Detection Limit
RPD = Relative Percent Difference
Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.
QC Standard: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was not sufficiently significant to permit a reliable recovery calculation.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

08302452

8577 Commerce Court
Burnaby, BC V5A 4N5
www.maxxamanalytics.com

Phone: (604) 444-4808
Fax.: (604) 444-4511
Toll-Free: 1-800-440-4808

CHAIN-OF CUSTODY RECORD AND ANALYSIS REQUEST

LAB USE ONLY — MAXXAM JOB #

ANALYSIS REQUEST

LAB USE ONLY — COC #

COMPANY NAME:	Access Consulting Group
COMPANY ADDRESS:	#3 Calcite 151 Industrial Road Whitehorse, Yukon Y1A 2V3
CLIENT PROJECT NO.:	Brewery Creek Project
TEL.:	867-668-6463
E-MAIL:	durand@accessconsulting.ca
FAX:	
SAMPLER NAME (PRINT):	Bonnie Burns/Stu Withers
PROJECT MANAGER:	Bonnie Burns
LABORATORY CONTACT:	Kimberly Webber

	FIELD SAMPLE ID	MAXXAM LAB # (LAB USE ONLY)	MATRIX: GROUNDWATER	SURFACE WATER	DRINKING WATER	SOIL	TISSUE	SAMPLING: DATE DD/MM/YY	TIME	# CONTAINERS	% moisture content	pH	ICP metals
1	C-1					x		22/07/2009	13:30	1	x	x	x
2	C-2					x		22/07/2009	14:30	1	x	x	x
3	C-3					x		22/07/2009	15:15	1	x	x	x
4	LP-1					x		23/07/2009	10:00	1	x	x	x
5	LP-2					x		23/07/2009	10:45	1	x	x	x
6	LP-3					x		23/07/2009	11:40	1	x	x	x
7	BZ-1					x		23/07/2009	13:30	1	x	x	x
8	BZ-2					x		23/07/2009	14:00	1	x	x	x
9	BZ-3					x		23/07/2009	15:15	1	x	x	x
10	C-1 Fescue						x	22/07/2009	13:30	1			x
11	C-1 Bluegrass						x	22/07/2009	13:30	1			x
12	C-1 Wheatgrass						x	22/07/2009	13:30	1			x

TAT (Turnaround Time)
LESS THAN 5 DAY TAT MUST HAVE PRIOR APPROVAL
* Some exceptions apply - please contact laboratory

STANDARD 5 BUSINESS DAYS
RUSH 3 BUSINESS DAYS
RUSH 2 BUSINESS DAYS
URGENT 1 BUSINESS DAY
OTHER BUSINESS DAYS

CUSTODY RECORD

PO NUMBER OR QUOTE NUMBER:

SPECIAL DETECTION LIMITS / CONTAMINANT TYPE:

CCME
CSR
AB TIER 1
OTHER

LAB USE ONLY — ARRIVAL TEMPERATURE °C: 9.7, 12 | DUE DATE: | LOG IN CHECK:

ACCOUNTING CONTACT:

SPECIAL REPORTING OR BILLING INSTRUCTIONS:
Send copy of receipt of samples and the data report to bonnie

JARS USED:

RELINQUISHED BY SAMPLER: Bonnie Burns	DATE: DD/MM/YY 27/07/2009	TIME: 10:00	RECEIVED BY:
RELINQUISHED BY:	DATE: DD/MM/YY	TIME:	RECEIVED BY:
RELINQUISHED BY:	DATE: DD/MM/YY 28/07/09	TIME: 8:00	RECEIVED BY LABORATORY: AmD

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bonnieburns@northwestel.net
-thanks.

08302453

8577 Commerce Court
Burnaby, BC V5A 4N5
www.maxxamanalytics.com

Phone: (604) 444-4808
Fax.: (604) 444-4511
Toll-Free: 1-800-440-4808

CHAIN-OF CUSTODY RECORD AND ANALYSIS REQUEST

LAB USE ONLY
MAXXAM JOB #

ANALYSIS REQUEST

LAB USE ONLY
COC #

COMPANY NAME: Access Consulting Group	CLIENT PROJECT NO.: Brewery Creek Project
COMPANY ADDRESS: #3 Calcite 151 Industrial Road, Whitehorse, Yukon, Y1A 2V3	TEL.: 867-668-6463 E-MAIL: durand@accessconsulting.ca FAX:
SAMPLER NAME (PRINT): Bonnie Burns/Stu Withers	PROJECT MANAGER: Bonnie Burns
	LABORATORY CONTACT: Kimberly Webber

	FIELD SAMPLE ID	MAXXAM LAB # (LAB USE ONLY)	MATRIX: GROUNDWATER	SURFACE WATER	DRINKING WATER	SOIL	TISSUE	SAMPLING: DATE DD/MM/YY	TIME	# CONTAINERS	% moisture content	pH	ICP metals
1	C-2 Fescue						x	22/07/2009	14:30	1			x
2	C-2 Bluegrass						x	22/07/2009	14:30	1			x
3	C-2 Wheatgrass						x	22/07/2009	14:30	1			x
4	C-3 Fescue						x	22/07/2009	15:15	1			x
5	C-3 Bluegrass						x	22/07/2009	15:15	1			x
6	C-3 Wheatgrass						x	22/07/2009	15:15	1			x
7	LP-1 Fescue						x	23/07/2009	10:00	1			x
8	LP-2 Fescue						x	23/07/2009	10:45	1			x
9	LP-2 Wheatgrass						x	23/07/2009	10:45	1			x
10	LP-3 Fescue						x	23/07/2009	11:40	1			x
11	LP-3 Bluegrass						x	23/07/2009	11:40	1			x
12	LP-3 Wheatgrass						x	23/07/2009	11:40	1			x

TAT (Turnaround Time)
LESS THAN 5 DAY TAT MUST HAVE PRIOR APPROVAL
* Some exceptions apply - please contact laboratory

STANDARD	5 BUSINESS DAYS	
RUSH	3 BUSINESS DAYS	
RUSH	2 BUSINESS DAYS	
URGENT	1 BUSINESS DAY	

OTHER BUSINESS DAYS

CUSTODY RECORD

PO NUMBER OR QUOTE NUMBER:

SPECIAL DETECTION LIMITS / CONTAMINANT TYPE:

CCME
CSR
AB TIER 1
OTHER

JARS USED:

LAB USE ONLY
ARRIVAL TEMPERATURE °C: 9, 7, 12
DUE DATE:
LOG IN CHECK:

ACCOUNTING CONTACT:

SPECIAL REPORTING OR BILLING INSTRUCTIONS:
Send copy of receipt of samples and the data report to bonnie

RELINQUINSHED BY SAMPLER: Bonnie Burns	DATE: DD/MM/YY 27/07/2009	TIME: 10:00	RECEIVED BY:
RELINQUINSHED BY:	DATE: DD/MM/YY	TIME:	RECEIVED BY:
RELINQUINSHED BY:	DATE: DD/MM/YY 28/07/09	TIME: 13:00	RECEIVED BY LABORATORY: tmD

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08302454

8577 Commerce Court
Burnaby, BC V5A 4N5
www.maxxamanalytics.com

Phone: (604) 444-4808
Fax.: (604) 444-4511
Toll-Free: 1-800-440-4808

CHAIN-OF CUSTODY RECORD AND ANALYSIS REQUEST

LAB USE ONLY — MAXXAM JOB #

ANALYSIS REQUEST

LAB USE ONLY — COC #

COMPANY NAME:	Access Consulting Group
COMPANY ADDRESS:	#3 Calcite 151 Industrial Road Whitehorse, Yukon Y1A 2V3
CLIENT PROJECT NO.:	Brewery Creek Project
TEL.:	867-668-6463
E-MAIL:	durand@accessconsulting.ca
FAX:	
SAMPLER NAME (PRINT):	Bonnie Burns/Stu Withers
PROJECT MANAGER:	Bonnie Burns
LABORATORY CONTACT:	Kimberly Webber

	FIELD SAMPLE ID	MAXXAM LAB # (LAB USE ONLY)	MATRIX: GROUNDWATER	SURFACE WATER	DRINKING WATER	SOIL	TISSUE	SAMPLING: DATE DD/MM/YY	TIME	# CONTAINERS	% moisture content	pH	ICP metals
1	BZ-1 Fescue						x	23/07/2009	13:30	1			x
2	BZ-1 Wheatgrass						x	23/07/2009	13:30	1			x
3	BZ-2 Fescue						x	23/07/2009	14:00	1			x
4	BZ-2 Wheatgrass						x	23/07/2009	14:00	1			x
5	BZ-2 Alfalfa						x	23/07/2009	14:00	1			x
6	BZ-3 Fescue						x	23/07/2009	15:15	1			x
7	BZ-3 Wheatgrass						x	23/07/2009	15:15	1			x
8													
9													
10													
11													
12													

TAT (Turnaround Time)

LESS THAN 5 DAY TAT MUST HAVE PRIOR APPROVAL

* Some exceptions apply - please contact laboratory

STANDARD 5 BUSINESS DAYS
RUSH 3 BUSINESS DAYS
RUSH 2 BUSINESS DAYS
URGENT 1 BUSINESS DAY

OTHER BUSINESS DAYS

CUSTODY RECORD

PO NUMBER OR QUOTE NUMBER: 3429

SPECIAL DETECTION LIMITS / CONTAMINANT TYPE:

ACCOUNTING CONTACT:

SPECIAL REPORTING OR BILLING INSTRUCTIONS: **Send copy of receipt of samples and the data report to bonnie**

CCME
CSR
AB TIER 1
OTHER

JARS USED:

LAB USE ONLY — ARRIVAL TEMPERATURE °C: 9, 7, 12 | DUE DATE: | LOG IN CHECK:

RELINQUINSHED BY SAMPLER: Bonnie Burns	DATE: DD/MM/YY 27/07/2009	TIME: 10:00	RECEIVED BY:
RELINQUINSHED BY:	DATE: DD/MM/YY	TIME:	RECEIVED BY:
RELINQUINSHED BY:	DATE: DD/MM/YY 28/07/09	TIME: 13:10	RECEIVED BY LABORATORY:

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