

PRELIMINARY  
SITE CHARACTERIZATION  
EDIBLE RIPARIAN  
TECHNICAL MEMORANDUM

MOLYCORP MINE RI/FS

REVISION 0

*Prepared for*  
Molycorp, Inc.  
Questa, New Mexico

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**URS**

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## SECTION TWELVE

## Edible Riparian

This section documents and summarizes analytical results for edible riparian vegetation samples collected as part of the RI/FS at the Molycorp mine and tailings facility in Questa, New Mexico.

Sampling of edible riparian plants is described in the FSP (URS 2002c) and in SOP 13.1, Plant Sample Collection for the RI/FS (Revision 2.0, May 22, 2003). Decontamination was done in accordance with SOP 6.0, Decontamination of Sampling Equipment, and sample management followed SOP 9.0, Sample Management. Edible plants were initially identified from data collected during fall 2002 RI/FS sampling of riparian vegetation along the Red River and Cabresto Creek. Based on discussions with EPA, two species were selected for sampling based on their being sufficiently common and widely distributed that they could be sampled in the mine site riparian, tailing riparian, and reference riparian areas; and being good quality and common edibles likely to be used regularly. The species selected were wintercress (*Barbarea vulgaris*), an edible leafy green, and chokecherry (*Prunus virginiana*), an edible berry used locally in jams and similar products.

The sample season was determined based on field reconnaissance. Leafy greens were harvested in June when they were in good condition and in flower or starting to flower. Berries were collected in August when they were mostly ripe. Soil samples were collected at the sample sites following collection of vegetation samples (11 sites), or had been previously collected in fall 2002 at sample sites originally established for co-located random soils, wildlife, and vegetation sampling (nine sites).

Date	Sampling Conducted
October 9-16, 2002	9 riparian soil samples at sites later used for sampling of edible riparian plants
June 6, 2003	9 wintercress vegetation samples
June 30, 2003	2 wintercress vegetation samples
August 5-6, 2003	7 chokecherry whole berry and 7 chokecherry samples for juice extraction
August 8-9, 13, 2003	10 riparian soil samples
August 26-27, 2003	2 chokecherry whole berry and 2 chokecherry samples for juice extraction; 1 riparian soil sample

Samples of each edible riparian species were planned to be collected at three mine site riparian sites, three tailing riparian sites, and three reference areas (total of nine samples per species). The FSP included sampling of each of the riparian reference areas separately. However, they were combined based on field conditions, because insufficient plant material of the target species was available in the individual reference areas. The reference area samples were collected in both areas for both species, one sample from Lower Cabresto Creek Riparian Reference and two from the Mine Site Riparian Reference area. Two additional tailing riparian sites were sampled for wintercress at the request of EPA. Sample sites were selected based on field reconnaissance to locate areas with good availability of the target species. Previously established RI/FS sample sites were used if possible, and new sample sites (numbered RIP-1 through RIP-11) were

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established when there were no suitable previous sample sites. Previously collected survey coordinates and soils data were used for existing sample sites, and new sites were surveyed and 0 to 24 inch soil samples were collected. An overview of edible riparian studies is provided below. Figure 12-1 is a map of sample locations.

Species	Area	Sample Number	Site Numbers	Number of Samples	
				Whole Tissue	Juice
Wintercress	<b>Reference</b> (Above mine riparian (RRBV-1 and -2), Lower Cabresto Creek)	RRBV-1 RRBV-2 RRBV-3	RIP-2 RRS-3 RRS-30	3	NA
	<b>Soil Area 9</b> Red River Riparian Along Mine Site	RMBV-1 RMBV-2 RMBV-3	RS-4 RIP-1 RS-10	3	NA
	<b>Soil Area 16</b> Red River Riparian Along Tailings Facility	RTBV-1 RTBV-2 RTBV-3 RTBV-4 RTBV-5	RS-11 RS-12 RS-13 RIP-3 RIP-4	5	NA
Chokecherry	<b>Reference</b> (Lower Cabresto Creek, Upper Cabresto Creek, Above Mine Riparian)	RRCC-1 RRCC-2 RRCC-3	RRS-17 RIP-11 RRS-7	3	3
	<b>Soil Area 9</b> Red River Riparian Along Mine Site	RMCC-1 RMCC-2 MRCC-3	RIP-8 RIP-9 RIP-10	3	3
	<b>Soil Area 16</b> Red River Riparian Along Tailings Facility	RTBV-1 RTBV-2 RTBV-3	RIP-5 RIP-6 RIP-7	3	3

Only the plant parts normally eaten by people were collected. Samples consisted of basal and lower stem leaves and petioles for wintercress, and berries for chokecherry. A composite sample of the target species edible material was collected at each site by hand or with stainless steel hand tools. Normal sample sizes were 50 to 60 grams. For chokecherries, a double sample was collected and split to provide two samples for separate analysis of whole berries and of juice. Juice was extracted in the lab before analysis. Plant material was collected from at least five individual plants at each site. Leaves were washed using deionized water, and then blotted dry with paper towels. Berries were left unwashed.

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### **12.1 WINTERCRESS REFERENCE IN MINE SITE RIPARIAN AND REFERENCE FOR LOWER CABRESTO CREEK RIPARIAN**

#### **12.1.1 Sample Collection**

Three samples were collected, two from the Red River above the mine site and one from lower Cabresto Creek. The samples from the Red River were collected at Fawn Lake (new sample site RIP-1) and near the town of Red River (sample site RS-3). The Cabresto Creek sample was collected from sample site RRS-30.

#### **12.1.2 Vegetation**

Plant samples were analyzed for 25 metals and percent solids. Ten metals were detected – barium, boron, cadmium, calcium, copper, iron, magnesium, manganese, potassium, and zinc. Dry weight results are presented in Table 12-1. Fourteen metals were non-detect in all three samples – aluminum, antimony, arsenic, beryllium, chromium, cobalt, lead, mercury, nickel, selenium, silver, sodium, thallium, and vanadium. Molybdenum was detected in less than 50 percent of samples.

For wet weight (Table 12-2), the same 10 metals were detected in more than half of samples - barium, boron, cadmium, calcium, copper, iron, magnesium, manganese, potassium and zinc. The 14 metals were non-detect in all three samples and molybdenum was detected in less than 50 percent of samples.

### **12.2 WINTERCRESS IN SOIL AREA 9 – RED RIVER RIPARIAN ALONG MINE SITE**

#### **12.2.1 Sample Collection**

Three sample sites were collected along the Red River along and below the mine site, including sample site RS-4 (near beaver dam), new site RIP-1 in the Columbine Park area, and sample site RS-10 south of Questa.

#### **12.2.2 Vegetation**

Plant samples were analyzed for 25 metals and percent solids. Dry weight results are presented in Table 12-3. Eleven metals were detected in all samples: barium, boron, cadmium, calcium, copper, iron, magnesium, manganese, molybdenum, potassium, and zinc. Twelve metals were non-detect in all three samples: antimony, arsenic, beryllium, chromium, cobalt, lead, mercury, selenium, silver, sodium, thallium, and vanadium. Two metals were detected in less than 50 percent of samples: aluminum and nickel.

For wet weight, (Table 12-4) the same 11 metals were detected in all samples: barium, boron, cadmium, calcium, copper, iron, magnesium, manganese, molybdenum, potassium, and zinc. The same 12 metals were non-detect in all three samples, and aluminum and nickel were detected in less than 50 percent of samples.

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### **12.3 WINTERCRESS SOIL AREA 16 – RED RIVER RIPARIAN ALONG TAILINGS FACILITY**

#### **12.3.1 Sample Collection**

Five samples were collected. The three original samples were collected on June 6 at sample sites RS-11, RS-12, and RS-13. At the direction of EPA, two additional samples were collected on June 30 from new sites south of the Tailings Facility, sample site RIP-3 near Spring 9, and sample site RIP-4 by the 002 Outfall.

#### **12.3.2 Vegetation**

Plant samples were analyzed for 25 metals and percent solids. Dry weight results are presented in Table 12-5. Eleven metals were detected in more than half of samples: barium, boron, cadmium, calcium, chromium, copper, iron, magnesium, manganese, potassium, and zinc. Nine metals were non-detect in all three samples: antimony, arsenic, cobalt, lead, nickel, selenium, silver, thallium, and vanadium. Five metals were detected in less than 50 percent of samples, aluminum, beryllium, mercury, molybdenum, and sodium.

For wet weight (Table 12-6), the same 11 metals were detected in more than half of the samples: barium, boron, cadmium, calcium, chromium, copper, iron, magnesium, manganese, potassium, and zinc. The same nine metals were non-detect in all three samples and the same five metals were detected in less than 50 percent of samples.

### **12.4 CHOKECHERRY IN MINE SITE RIPARIAN REFERENCE AND LOWER CABRESTO CREEK AND REFERENCE RIPARIAN**

#### **12.4.1 Sample Collection**

Samples were collected at one site along lower Cabresto Creek (sample site RRS-17), one site along upper Cabresto Creek (new site RIP-11), and one site along the Red River above the mine (sample site RRS-7).

#### **12.4.2 Vegetation – Whole Berry**

Plant samples were analyzed for 25 metals and percent solids. Dry weight results are presented in Table 12-7. Nine metals were detected in more than half the samples: barium, boron, cadmium, calcium, copper, lead, magnesium, manganese, nickel, and potassium. Fourteen metals were non-detect in all three samples: aluminum, antimony, arsenic, beryllium, cadmium, cobalt, mercury, molybdenum, selenium, silver, sodium, thallium, vanadium, and zinc. Two metals were detected in less than 50 percent of samples.

For wet weight (Table 12-8), the same nine metals were detected in more than half of samples: boron, calcium, copper, lead, magnesium, manganese, nickel, and potassium. The same 14

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metals were non-detect in all three samples and the same two metals were detected in less than 50 percent of samples.

### **12.4.3 Vegetation – Juice**

Plant samples were analyzed for 25 metals and percent solids. Results are presented in wet weight (Table 12-9). Seven metals were detected in more than half the samples – boron, calcium, copper, magnesium, manganese, and potassium. Sixteen metals were non-detect in all three samples: aluminum, antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, iron, mercury, molybdenum, selenium, silver, sodium, thallium, and vanadium. Two metals were detected in less than 50 percent of samples: lead and nickel.

## **12.5 CHOKECHERRY IN SOIL AREA 9 – RED RIVER RIPARIAN ALONG MINE SITE**

### **12.5.1 Sample Collection**

Samples were collected from two sites in Columbine Park (new sample sites RIP-8 and 9), and one site near the Questa Ranger Station (new site RIP-10).

### **12.5.2 Vegetation – Whole Berry**

Plant samples were analyzed for 25 metals and percent solids. Dry weight results are presented in Table 12-10. Seven metals were detected in all samples: boron, calcium, chromium, copper, magnesium, manganese, and potassium. Thirteen metals were non-detect in all three samples: antimony, arsenic, beryllium, cadmium, cobalt, iron, mercury, selenium, silver, sodium, thallium, vanadium, and zinc. Five metals were detected in less than 50 percent of samples: aluminum, barium, lead, molybdenum, and nickel.

For wet weight (Table 12-11), the same seven metals were detected in all samples: boron, calcium, chromium, copper, magnesium, manganese, and potassium. The same 13 metals were non-detect in all three samples and the same five metals were detected in less than 50 percent of samples.

### **12.5.3 Vegetation – Juice**

Plant samples were analyzed for 25 metals and percent solids. Results are presented in wet weight (Table 12-12). Six metals were detected in all samples: boron, calcium, copper, magnesium, manganese, and potassium. Seventeen metals were non-detect in all three samples: aluminum, antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, iron, mercury, molybdenum, selenium, silver, sodium, thallium, vanadium, and zinc. Two metals were detected in less than 50 percent of samples: lead and nickel.

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### **12.6 CHOKECHERRY IN SOIL AREA 16 – RED RIVER RIPARIAN ALONG TAILINGS FACILITY**

#### **12.6.1 Sample Collection**

Samples were collected from three sites in the Red River Canyon between the Questa Valley and the Red River State Fish Hatchery. They were all collected at new sample sites identified as RIP-5, RIP-6, and RIP-7.

#### **12.6.2 Vegetation – Whole Berry**

Plant samples were analyzed for 25 metals and percent solids. Dry weight results are presented in Table 12-13. Eight metals were detected in all samples: boron, calcium, chromium, copper, magnesium, manganese, and potassium. Fourteen metals were non-detect in all three samples: antimony, arsenic, beryllium, cadmium, cobalt, iron, mercury, molybdenum, nickel, selenium, silver, thallium, vanadium, and zinc. Three metals were detected in less than 50 percent of samples: aluminum, barium, and sodium.

For wet weight (Table 12-14), the same eight metals were detected in all samples: boron, calcium, chromium, copper, lead, magnesium, manganese, and potassium. The same 14 metals were non-detect in all three samples, and the same three metals were detected in less than 50 percent of samples.

#### **12.6.3 Vegetation – Juice**

Plant samples were analyzed for 25 metals and percent solids. Results are presented in wet weight (Table 12-15). Eight metals were detected in more than half the samples: aluminum, boron, calcium, copper, lead, magnesium, manganese and potassium. Fifteen metals were non-detect in all three samples – antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, mercury, molybdenum, nickel, selenium, silver, sodium, thallium, and vanadium. Two metals were detected in less than 50 percent of samples: iron and zinc.

### **12.7 SUMMARY**

#### **12.7.1 Wintercress Leaves**

For dry weight, eight metals were detected in all samples, including barium, boron, calcium, copper, magnesium, manganese, potassium, and zinc. Molybdenum was detected in more than half the samples from the mine site riparian area, and chromium from the tailings facility riparian area. The other 13 metals were non-detect or were detected in less than half of samples in all three areas: aluminum, antimony, arsenic, beryllium, cobalt, lead, mercury, nickel, selenium, silver, sodium, thallium, and vanadium. Mean dry weight concentrations of selected metals in each area are presented in Figures 12-2 through 12-12.

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The pattern was the same for wet weight. The same eight metals were detected in all samples, and the same 13 metals were non-detect or were detected in less than half of samples in all three areas. Mean wet weight concentrations of selected metals in each area are presented in Figures 12-13 through Figure 12-23.

### **12.7.2 Chokecherry Whole Berry**

For dry weight, six metals were detected in all samples, including boron, calcium, copper, magnesium, manganese, and potassium. Chromium was detected in more than half of samples from the mine site and tailings riparian areas, lead in more than half the samples from the reference and mine site riparian areas, and barium and nickel in more than half of samples from the riparian reference areas. The other 15 metals were non-detect or were detected in less than half of samples in all three areas – aluminum, antimony, arsenic, beryllium, cadmium, cobalt, iron, mercury, molybdenum, selenium, silver, sodium, thallium, vanadium, and zinc. Mean dry weight concentrations of selected metals in each area are presented in Figures 2-2 through 2-12.

The pattern was the same for wet weight. The same six metals were detected in all samples. The same twelve metals were non-detect or were detected in less than half of samples in all three areas. Mean wet-weight concentrations of selected metals in each area are presented in Figures 12-13 through Figure 12-23.

### **12.7.3 Chokecherry Juice**

Six metals were detected in all samples, including boron, calcium, copper, magnesium, manganese, and potassium. Zinc was detected in more than half of samples from the reference riparian area, and aluminum and lead from the tailings facility riparian. The other 16 metals were non-detect or were detected in less than half of samples in all three areas: antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, iron, mercury, molybdenum, nickel, selenium, silver, sodium, thallium, and vanadium. Mean wet-weight concentrations in each area are presented in Figures 12-13 through 12-23.



**SECTION 12**  
**EDIBLE RIPARIAN**  
**TABLES**

**Table 12-1**  
**Edible Riparian Wintercress - Dry Weight**  
**RI/FS Mine Site Riparian Reference and Lower Cabresto Creek Riparian Reference**  
**Summary of Results**

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
<b>Metals</b>											
Aluminum	T	mg/Kg-Dry	3	0	No SLC	86.8	126	ND	ND		
Antimony	T	mg/Kg-Dry	3	0	No SLC	2.9	3.4	ND	ND		
Arsenic	T	mg/Kg-Dry	3	0	No SLC	1.2	1.3	ND	ND		
Barium	T	mg/Kg-Dry	3	100	No SLC			26.1	68.7	44.2	37.8
Beryllium	T	mg/Kg-Dry	3	0	No SLC	0.13	0.14	ND	ND		
Boron	T	mg/Kg-Dry	3	100	No SLC			29.9	48	37.2	33.6
Cadmium	T	mg/Kg-Dry	3	66.7	No SLC	0.21	0.21	ND	0.54	0.35	0.41
Calcium	T	mg/Kg-Dry	3	100	No SLC			26000	44100	33700	31000
Chromium	T	mg/Kg-Dry	3	0	No SLC	0.82	1.3	ND	ND		
Cobalt	T	mg/Kg-Dry	3	0	No SLC	1.2	1.3	ND	ND		
Copper	T	mg/Kg-Dry	3	100	No SLC			3.8	6.3	5	4.9
Iron	T	mg/Kg-Dry	3	100	No SLC			151	229	186	179
Lead	T	mg/Kg-Dry	3	0	No SLC	1.2	1.3	ND	ND		
Magnesium	T	mg/Kg-Dry	3	100	No SLC			2870	3060	2930	2870
Manganese	T	mg/Kg-Dry	3	100	No SLC			18.7	128	61.6	38.2
Mercury	T	mg/Kg-Dry	3	0	No SLC	0.12	0.13	ND	ND		
Molybdenum	T	mg/Kg-Dry	3	33.3	No SLC	3.1	4.4	ND	2.6		
Nickel	T	mg/Kg-Dry	3	0	No SLC	1.3	1.4	ND	ND		
Potassium	T	mg/Kg-Dry	3	100	No SLC			25500	37900	31300	30600
Selenium	T	mg/Kg-Dry	3	0	No SLC	4.7	5.4	ND	ND		
Silver	T	mg/Kg-Dry	3	0	No SLC	0.59	0.63	ND	ND		
Sodium	T	mg/Kg-Dry	3	0	No SLC	152	571	ND	ND		
Thallium	T	mg/Kg-Dry	3	0	No SLC	0.59	0.67	ND	ND		
Vanadium	T	mg/Kg-Dry	3	0	No SLC	1.4	1.6	ND	ND		
Zinc	T	mg/Kg-Dry	3	100	No SLC			69.4	125	95.1	91

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.  
Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.  
Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction  
D = Filtered Fraction (0.45 micron filter)  
A = Filtered Fraction (0.1 micron filter)  
ND = Non Detected Value

**Table 12-2**  
**Edible Riparian Wintercress - Wet Weight**  
**RI/FS Mine Site Riparian Reference and Lower Cabresto Creek Riparian Reference**  
**Summary of Results**

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
<b>Inorganics</b>											
Solids, Percent	T	%	3	100	No SLC			12.7	14.4	13.5	13.4
<b>Metals</b>											
Aluminum	T	mg/Kg	3	0	No SLC	12.2	16	ND	ND		
Antimony	T	mg/Kg	3	0	No SLC	0.39	0.49	ND	ND		
Arsenic	T	mg/Kg	3	0	No SLC	0.16	0.19	ND	ND		
Barium	T	mg/Kg	3	100	No SLC			3.5	9.9	6.1	4.8
Beryllium	T	mg/Kg	3	0	No SLC	0.017	0.02	ND	ND		
Boron	T	mg/Kg	3	100	No SLC			4.3	6.1	5	4.5
Cadmium	T	mg/Kg	3	66.7	No SLC	0.03	0.03	ND	0.073	0.047	0.052
Calcium	T	mg/Kg	3	100	No SLC			3740	5600	4500	4160
Chromium	T	mg/Kg	3	0	No SLC	0.11	0.17	ND	ND		
Cobalt	T	mg/Kg	3	0	No SLC	0.15	0.18	ND	ND		
Copper	T	mg/Kg	3	100	No SLC			0.48	0.85	0.68	0.7
Iron	T	mg/Kg	3	100	No SLC			21.8	29.1	25	24
Lead	T	mg/Kg	3	0	No SLC	0.15	0.18	ND	ND		
Magnesium	T	mg/Kg	3	100	No SLC			365	440	397	385
Manganese	T	mg/Kg	3	100	No SLC			2.5	16.2	8.1	5.5
Mercury	T	mg/Kg	3	0	No SLC	0.016	0.017	ND	ND		
Molybdenum	T	mg/Kg	3	33.3	No SLC	0.42	0.63	ND	0.33		
Nickel	T	mg/Kg	3	0	No SLC	0.17	0.2	ND	ND		
Potassium	T	mg/Kg	3	100	No SLC			3420	5460	4260	3890
Selenium	T	mg/Kg	3	0	No SLC	0.63	0.78	ND	ND		
Silver	T	mg/Kg	3	0	No SLC	0.075	0.09	ND	ND		
Sodium	T	mg/Kg	3	0	No SLC	21.9	76.5	ND	ND		
Thallium	T	mg/Kg	3	0	No SLC	0.079	0.097	ND	ND		
Vanadium	T	mg/Kg	3	0	No SLC	0.18	0.22	ND	ND		
Zinc	T	mg/Kg	3	100	No SLC			10	15.9	12.7	12.2

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.  
Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.  
Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction  
D = Filtered Fraction (0.45 micron filter)  
A = Filtered Fraction (0.1 micron filter)  
ND = Non Detected Value

**Table 12-3**

**Edible Riparian Wintercress - Dry Weight  
RI/FS Soil Area 9 - Red River Riparian Along Mine Site  
Summary of Results**

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
<b>Metals</b>											
Aluminum	T	mg/Kg-Dry	3	33.3	No SLC	91.7	156	ND	577		
Antimony	T	mg/Kg-Dry	3	0	No SLC	3.1	4.9	ND	ND		
Arsenic	T	mg/Kg-Dry	3	0	No SLC	1.3	2	ND	ND		
Barium	T	mg/Kg-Dry	3	100	No SLC			11.6	40.7	25.1	22.9
Beryllium	T	mg/Kg-Dry	3	0	No SLC	0.14	0.19	ND	ND		
Boron	T	mg/Kg-Dry	3	100	No SLC			45.8	52.3	48.7	48.1
Cadmium	T	mg/Kg-Dry	3	100	No SLC			0.89	2.6	1.6	1.3
Calcium	T	mg/Kg-Dry	3	100	No SLC			24800	52800	39900	42100
Chromium	T	mg/Kg-Dry	3	0	No SLC	1	1.7	ND	ND		
Cobalt	T	mg/Kg-Dry	3	0	No SLC	1.3	1.7	ND	ND		
Copper	T	mg/Kg-Dry	3	100	No SLC			7.6	11.6	9.9	10.4
Iron	T	mg/Kg-Dry	3	100	No SLC			133	993	435	178
Lead	T	mg/Kg-Dry	3	0	No SLC	1	5.1	ND	ND		
Magnesium	T	mg/Kg-Dry	3	100	No SLC			3810	5140	4450	4390
Manganese	T	mg/Kg-Dry	3	100	No SLC			32.6	118	78.2	84
Mercury	T	mg/Kg-Dry	3	0	No SLC	0.11	0.19	ND	ND		
Molybdenum	T	mg/Kg-Dry	3	100	No SLC			4	5	4.5	4.4
Nickel	T	mg/Kg-Dry	3	33.3	No SLC	1.4	1.4	ND	9		
Potassium	T	mg/Kg-Dry	3	100	No SLC			29000	56600	38600	30100
Selenium	T	mg/Kg-Dry	3	0	No SLC	5	7.8	ND	ND		
Silver	T	mg/Kg-Dry	3	0	No SLC	0.63	0.85	ND	ND		
Sodium	T	mg/Kg-Dry	3	0	No SLC	152	207	ND	ND		
Thallium	T	mg/Kg-Dry	3	0	No SLC	0.62	0.97	ND	ND		
Vanadium	T	mg/Kg-Dry	3	0	No SLC	1.5	2.1	ND	ND		
Zinc	T	mg/Kg-Dry	3	100	No SLC			159	377	288	329

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.  
 Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.  
 Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction  
 D = Filtered Fraction (0.45 micron filter)  
 A = Filtered Fraction (0.1 micron filter)  
 ND = Non Detected Value

**Table 12-4**  
**Edible Riparian Wintercress - Wet Weight**  
**RI/FS Soil Area 9 - Red River Riparian Along Mine Site**  
**Summary of Results**

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
<b>Inorganics</b>											
Solids, Percent	T	%	3	100	No SLC			8.6	14.4	12.2	13.5
<b>Metals</b>											
Aluminum	T	mg/Kg	3	33.3	No SLC	13.2	13.4	ND	77.9		
Antimony	T	mg/Kg	3	0	No SLC	0.42	0.45	ND	ND		
Arsenic	T	mg/Kg	3	0	No SLC	0.17	0.18	ND	ND		
Barium	T	mg/Kg	3	100	No SLC			1	5.5	3.3	3.3
Beryllium	T	mg/Kg	3	0	No SLC	0.016	0.02	ND	ND		
Boron	T	mg/Kg	3	100	No SLC			4.5	6.6	5.9	6.5
Cadmium	T	mg/Kg	3	100	No SLC			0.11	0.37	0.2	0.12
Calcium	T	mg/Kg	3	100	No SLC			2130	7610	5140	5690
Chromium	T	mg/Kg	3	0	No SLC	0.1	0.23	ND	ND		
Cobalt	T	mg/Kg	3	0	No SLC	0.15	0.18	ND	ND		
Copper	T	mg/Kg	3	100	No SLC			1	1.4	1.2	1.1
Iron	T	mg/Kg	3	100	No SLC			15.3	134	56.1	19.1
Lead	T	mg/Kg	3	0	No SLC	0.15	0.69	ND	ND		
Magnesium	T	mg/Kg	3	100	No SLC			442	632	530	515
Manganese	T	mg/Kg	3	100	No SLC			2.8	15.9	10.3	12.1
Mercury	T	mg/Kg	3	0	No SLC	0.016	0.016	ND	ND		
Molybdenum	T	mg/Kg	3	100	No SLC			0.43	0.63	0.53	0.54
Nickel	T	mg/Kg	3	33.3	No SLC	0.19	0.2	ND	0.77		
Potassium	T	mg/Kg	3	100	No SLC			4070	4870	4370	4180
Selenium	T	mg/Kg	3	0	No SLC	0.67	0.72	ND	ND		
Silver	T	mg/Kg	3	0	No SLC	0.073	0.09	ND	ND		
Sodium	T	mg/Kg	3	0	No SLC	17.8	21.9	ND	ND		
Thallium	T	mg/Kg	3	0	No SLC	0.083	0.09	ND	ND		
Vanadium	T	mg/Kg	3	0	No SLC	0.18	0.22	ND	ND		
Zinc	T	mg/Kg	3	100	No SLC			21.5	47.4	33.8	32.4

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction

D = Filtered Fraction (0.45 micron filter)

A = Filtered Fraction (0.1 micron filter)

ND = Non Detected Value

**Table 12-5**  
**Edible Riparian Wintercress - Dry Weight**  
**RI/FS Soil Area 16 - Red River Riparian Along Tailings Facility**  
**Summary of Results**

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
<b>Metals</b>											
Aluminum	T	mg/Kg-Dry	5	40	No SLC	103	149	ND	113		
Antimony	T	mg/Kg-Dry	5	0	No SLC	0.81	3.5	ND	ND		
Arsenic	T	mg/Kg-Dry	5	0	No SLC	0.32	1.4	ND	ND		
Barium	T	mg/Kg-Dry	5	100	No SLC			13.5	29	21.2	22
Beryllium	T	mg/Kg-Dry	5	20	No SLC	0.11	0.15	ND	0.17		
Boron	T	mg/Kg-Dry	5	100	No SLC			38.1	67.6	49.1	44.2
Cadmium	T	mg/Kg-Dry	5	80	No SLC	0.52	0.52	ND	0.6	0.46	0.51
Calcium	T	mg/Kg-Dry	5	100	No SLC			27600	59500	38200	34100
Chromium	T	mg/Kg-Dry	5	80	No SLC	1.1	1.1	ND	1.6	0.95	1.1
Cobalt	T	mg/Kg-Dry	5	0	No SLC	0.96	1.7	ND	ND		
Copper	T	mg/Kg-Dry	5	100	No SLC			4.6	10.9	6.8	5.4
Iron	T	mg/Kg-Dry	5	60	No SLC	100	184	ND	291	154	151
Lead	T	mg/Kg-Dry	5	0	No SLC	1	2.1	ND	ND		
Magnesium	T	mg/Kg-Dry	5	100	No SLC			3110	4620	3690	3490
Manganese	T	mg/Kg-Dry	5	100	No SLC			24.2	105	44.3	30.6
Mercury	T	mg/Kg-Dry	5	40	No SLC	0.09	0.12	ND	0.25		
Molybdenum	T	mg/Kg-Dry	5	20	No SLC	2.3	7.6	ND	6.4		
Nickel	T	mg/Kg-Dry	5	0	No SLC	1.1	1.8	ND	ND		
Potassium	T	mg/Kg-Dry	5	100	No SLC			26300	38300	33200	36600
Selenium	T	mg/Kg-Dry	5	0	No SLC	1.3	5.5	ND	ND		
Silver	T	mg/Kg-Dry	5	0	No SLC	0.48	1.9	ND	ND		
Sodium	T	mg/Kg-Dry	5	40	No SLC	307	415	ND	856		
Thallium	T	mg/Kg-Dry	5	0	No SLC	0.16	0.69	ND	ND		
Vanadium	T	mg/Kg-Dry	5	0	No SLC	1.2	1.7	ND	ND		
Zinc	T	mg/Kg-Dry	5	100	No SLC			46.8	105	83.2	92

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.  
Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.  
Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction  
D = Filtered Fraction (0.45 micron filter)  
A = Filtered Fraction (0.1 micron filter)  
ND = Non Detected Value

**Table 12-6**  
**Edible Riparian Wintercress - Wet Weight**  
**RI/FS Soil Area 16 - Red River Riparian Along Tailings Facility**  
**Summary of Results**

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
<b>Inorganics</b>											
Solids, Percent	T	%	5	100	No SLC			11.1	17.8	13.8	13.8
<b>Metals</b>											
Aluminum	T	mg/Kg	5	40	No SLC	16.3	20.6	ND	12.5		
Antimony	T	mg/Kg	5	0	No SLC	0.09	0.47	ND	ND		
Arsenic	T	mg/Kg	5	0	No SLC	0.036	0.19	ND	ND		
Barium	T	mg/Kg	5	100	No SLC			1.5	4	3	3.3
Beryllium	T	mg/Kg	5	20	No SLC	0.018	0.019	ND	0.019		
Boron	T	mg/Kg	5	100	No SLC			5.6	7.5	6.6	6.4
Cadmium	T	mg/Kg	5	80	No SLC	0.058	0.058	ND	0.076	0.064	0.071
Calcium	T	mg/Kg	5	100	No SLC			4060	6610	5100	4710
Chromium	T	mg/Kg	5	80	No SLC	0.15	0.15	ND	0.19	0.13	0.18
Cobalt	T	mg/Kg	5	0	No SLC	0.16	0.19	ND	ND		
Copper	T	mg/Kg	5	100	No SLC			0.6	1.5	0.92	0.81
Iron	T	mg/Kg	5	60	No SLC	11.8	20.4	ND	40.1	22.1	26.8
Lead	T	mg/Kg	5	0	No SLC	0.12	0.31	ND	ND		
Magnesium	T	mg/Kg	5	100	No SLC			442	554	500	508
Manganese	T	mg/Kg	5	100	No SLC			3.4	14.5	6	4.2
Mercury	T	mg/Kg	5	40	No SLC	0.015	0.016	ND	0.028		
Molybdenum	T	mg/Kg	5	20	No SLC	0.32	0.84	ND	0.75		
Nickel	T	mg/Kg	5	0	No SLC	0.18	0.2	ND	ND		
Potassium	T	mg/Kg	5	100	No SLC			3110	5420	4560	4680
Selenium	T	mg/Kg	5	0	No SLC	0.14	0.75	ND	ND		
Silver	T	mg/Kg	5	0	No SLC	0.081	0.21	ND	ND		
Sodium	T	mg/Kg	5	40	No SLC	54.5	57.3	ND	101		
Thallium	T	mg/Kg	5	0	No SLC	0.018	0.094	ND	ND		
Vanadium	T	mg/Kg	5	0	No SLC	0.18	0.21	ND	ND		
Zinc	T	mg/Kg	5	100	No SLC			5.2	15.5	11.6	12.3

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.  
Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.  
Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction  
D = Filtered Fraction (0.45 micron filter)  
A = Filtered Fraction (0.1 micron filter)  
ND = Non Detected Value

**Table 12-7**

**Edible Riparian Chokecherry - Whole Berry - Dry Weight Basis**  
**RI/FS Mine Site Riparian Reference and Lower Cabresto Creek Riparian Reference**  
**Summary of Results**

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
<b>Metals</b>											
Aluminum	T	mg/Kg-Dry	3	0	No SLC	8.8	13.4	ND	ND		
Antimony	T	mg/Kg-Dry	3	0	No SLC	2.2	2.3	ND	ND		
Arsenic	T	mg/Kg-Dry	3	0	No SLC	0.88	0.93	ND	ND		
Barium	T	mg/Kg-Dry	3	66.7	No SLC	5.4	5.4	ND	7	4.9	5
Beryllium	T	mg/Kg-Dry	3	0	No SLC	0.098	0.21	ND	ND		
Boron	T	mg/Kg-Dry	3	100	No SLC			25.9	29.9	28.2	28.8
Cadmium	T	mg/Kg-Dry	3	0	No SLC	0.15	0.26	ND	ND		
Calcium	T	mg/Kg-Dry	3	100	No SLC			1810	1960	1870	1850
Chromium	T	mg/Kg-Dry	3	33.3	No SLC	2.9	10.2	ND	1		
Cobalt	T	mg/Kg-Dry	3	0	No SLC	0.88	1.5	ND	ND		
Copper	T	mg/Kg-Dry	3	100	No SLC			6.4	8.8	8	8.8
Iron	T	mg/Kg-Dry	3	33.3	No SLC	23.5	33.2	ND	290		
Lead	T	mg/Kg-Dry	3	66.7	No SLC	0.73	0.73	ND	1.2	0.89	1.1
Magnesium	T	mg/Kg-Dry	3	100	No SLC			1180	1390	1280	1280
Manganese	T	mg/Kg-Dry	3	100	No SLC			11.9	21.5	15.4	12.8
Mercury	T	mg/Kg-Dry	3	0	No SLC	0.078	0.086	ND	ND		
Molybdenum	T	mg/Kg-Dry	3	0	No SLC	0.78	1.6	ND	ND		
Nickel	T	mg/Kg-Dry	3	66.7	No SLC	0.98	0.98	ND	22.4	8.6	2.8
Potassium	T	mg/Kg-Dry	3	100	No SLC			18900	28400	22800	21200
Selenium	T	mg/Kg-Dry	3	0	No SLC	1.3	1.4	ND	ND		
Silver	T	mg/Kg-Dry	3	0	No SLC	0.47	0.86	ND	ND		
Sodium	T	mg/Kg-Dry	3	0	No SLC	163	1280	ND	ND		
Thallium	T	mg/Kg-Dry	3	0	No SLC	0.44	0.46	ND	ND		
Vanadium	T	mg/Kg-Dry	3	0	No SLC	1.1	1.5	ND	ND		
Zinc	T	mg/Kg-Dry	3	0	No SLC	4	6.7	ND	ND		

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.  
Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.  
Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction  
D = Filtered Fraction (0.45 micron filter)  
A = Filtered Fraction (0.1 micron filter)  
ND = Non Detected Value



**Table 12-8**

**Edible Riparian Chokecherry - Whole Berry - Wet Weight Basis**  
**RI/FS Mine Site Riparian Reference and Lower Cabresto Creek Riparian Reference**  
**Summary of Results**

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
<b>Inorganics</b>											
Solids, Percent	T	%	3	100	No SLC			18.7	20.5	19.5	19.3
<b>Metals</b>											
Aluminum	T	mg/Kg	3	0	No SLC	1.7	2.5	ND	ND		
Antimony	T	mg/Kg	3	0	No SLC	0.43	0.45	ND	ND		
Arsenic	T	mg/Kg	3	0	No SLC	0.17	0.18	ND	ND		
Barium	T	mg/Kg	3	66.7	No SLC	1.1	1.1	ND	1.3	0.94	0.96
Beryllium	T	mg/Kg	3	0	No SLC	0.019	0.039	ND	ND		
Boron	T	mg/Kg	3	100	No SLC			5	5.9	5.5	5.6
Cadmium	T	mg/Kg	3	0	No SLC	0.028	0.049	ND	ND		
Calcium	T	mg/Kg	3	100	No SLC			346	402	366	350
Chromium	T	mg/Kg	3	33.3	No SLC	0.54	2.1	ND	0.2		
Cobalt	T	mg/Kg	3	0	No SLC	0.17	0.28	ND	ND		
Copper	T	mg/Kg	3	100	No SLC			1.2	1.8	1.6	1.7
Iron	T	mg/Kg	3	33.3	No SLC	4.4	6.4	ND	59.5		
Lead	T	mg/Kg	3	66.7	No SLC	0.14	0.14	ND	0.23	0.18	0.23
Magnesium	T	mg/Kg	3	100	No SLC			228	285	251	239
Manganese	T	mg/Kg	3	100	No SLC			2.3	4.4	3	2.4
Mercury	T	mg/Kg	3	0	No SLC	0.015	0.016	ND	ND		
Molybdenum	T	mg/Kg	3	0	No SLC	0.15	0.33	ND	ND		
Nickel	T	mg/Kg	3	66.7	No SLC	0.19	0.19	ND	4.6	1.7	0.53
Potassium	T	mg/Kg	3	100	No SLC			3540	5480	4460	4350
Selenium	T	mg/Kg	3	0	No SLC	0.26	0.27	ND	ND		
Silver	T	mg/Kg	3	0	No SLC	0.09	0.16	ND	ND		
Sodium	T	mg/Kg	3	0	No SLC	31.4	245	ND	ND		
Thallium	T	mg/Kg	3	0	No SLC	0.086	0.091	ND	ND		
Vanadium	T	mg/Kg	3	0	No SLC	0.21	0.28	ND	ND		
Zinc	T	mg/Kg	3	0	No SLC	0.83	1.3	ND	ND		

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.  
Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.  
Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction  
D = Filtered Fraction (0.45 micron filter)  
A = Filtered Fraction (0.1 micron filter)  
ND = Non Detected Value

**Table 12-9**

**Edible Riparian Chokecherry - Juice - Wet Weight Basis**  
**RI/FS Mine Site Riparian Reference and Lower Cabresto Creek Riparian Reference**  
**Summary of Results**

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
<b>Metals</b>											
Aluminum	T	mg/Kg	3	0	No SLC	1.8	2.2	ND	ND		
Antimony	T	mg/Kg	3	0	No SLC	0.4	0.49	ND	ND		
Arsenic	T	mg/Kg	3	0	No SLC	0.16	0.2	ND	ND		
Barium	T	mg/Kg	3	0	No SLC	0.72	1.1	ND	ND		
Beryllium	T	mg/Kg	3	0	No SLC	0.02	0.039	ND	ND		
Boron	T	mg/Kg	3	100	No SLC			2.3	3.5	3.1	3.4
Cadmium	T	mg/Kg	3	0	No SLC	0.029	0.049	ND	ND		
Calcium	T	mg/Kg	3	100	No SLC			143	282	210	204
Chromium	T	mg/Kg	3	0	No SLC	0.18	0.31	ND	ND		
Cobalt	T	mg/Kg	3	0	No SLC	0.18	0.28	ND	ND		
Copper	T	mg/Kg	3	100	No SLC			0.35	0.71	0.5	0.45
Iron	T	mg/Kg	3	0	No SLC	2.4	3.6	ND	ND		
Lead	T	mg/Kg	3	33.3	No SLC	0.14	0.19	ND	0.26		
Magnesium	T	mg/Kg	3	100	No SLC			137	227	185	191
Manganese	T	mg/Kg	3	100	No SLC			1.2	2.4	1.8	1.9
Mercury	T	mg/Kg	3	0	No SLC	0.015	0.017	ND	ND		
Molybdenum	T	mg/Kg	3	0	No SLC	0.095	0.19	ND	ND		
Nickel	T	mg/Kg	3	33.3	No SLC	0.2	0.24	ND	0.42		
Potassium	T	mg/Kg	3	100	No SLC			3070	4170	3610	3590
Selenium	T	mg/Kg	3	0	No SLC	0.24	0.29	ND	ND		
Silver	T	mg/Kg	3	0	No SLC	0.088	0.16	ND	ND		
Sodium	T	mg/Kg	3	0	No SLC	62.7	268	ND	ND		
Thallium	T	mg/Kg	3	0	No SLC	0.081	0.098	ND	ND		
Vanadium	T	mg/Kg	3	0	No SLC	0.22	0.28	ND	ND		
Zinc	T	mg/Kg	3	66.7	No SLC	0.9	0.9	ND	6.9	2.9	1.3

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.  
Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.  
Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction  
D = Filtered Fraction (0.45 micron filter)  
A = Filtered Fraction (0.1 micron filter)  
ND = Non Detected Value

**Table 12-10**

**Edible Riparian Chokecherry - Whole Berry - Dry Weight Basis**

**RI/FS Soil Area 9 - Red River Riparian Along Mine Site**

**Summary of Results**

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
<b>Metals</b>											
Aluminum	T	mg/Kg-Dry	3	33.3	No SLC	6.5	7.6	ND	11.6		
Antimony	T	mg/Kg-Dry	3	0	No SLC	1.9	2	ND	ND		
Arsenic	T	mg/Kg-Dry	3	0	No SLC	0.77	0.81	ND	ND		
Barium	T	mg/Kg-Dry	3	33.3	No SLC	3.1	3.1	ND	4.2		
Beryllium	T	mg/Kg-Dry	3	0	No SLC	0.077	0.086	ND	ND		
Boron	T	mg/Kg-Dry	3	100	No SLC			15.7	32.7	24	23.6
Cadmium	T	mg/Kg-Dry	3	0	No SLC	0.11	0.13	ND	ND		
Calcium	T	mg/Kg-Dry	3	100	No SLC			1020	1630	1340	1380
Chromium	T	mg/Kg-Dry	3	100	No SLC			0.97	1.3	1.1	1.1
Cobalt	T	mg/Kg-Dry	3	0	No SLC	0.65	0.77	ND	ND		
Copper	T	mg/Kg-Dry	3	100	No SLC			5.1	12.7	8.7	8.2
Iron	T	mg/Kg-Dry	3	0	No SLC	16.5	32.7	ND	ND		
Lead	T	mg/Kg-Dry	3	33.3	No SLC	0.64	0.86	ND	0.81		
Magnesium	T	mg/Kg-Dry	3	100	No SLC			657	1080	912	1000
Manganese	T	mg/Kg-Dry	3	100	No SLC			6.8	18.5	14.2	17.3
Mercury	T	mg/Kg-Dry	3	0	No SLC	0.058	0.068	ND	ND		
Molybdenum	T	mg/Kg-Dry	3	33.3	No SLC	0.68	0.94	ND	0.88		
Nickel	T	mg/Kg-Dry	3	33.3	No SLC	0.85	0.86	ND	2.7		
Potassium	T	mg/Kg-Dry	3	100	No SLC			17700	24000	21300	22300
Selenium	T	mg/Kg-Dry	3	0	No SLC	1.2	1.2	ND	ND		
Silver	T	mg/Kg-Dry	3	0	No SLC	0.32	0.39	ND	ND		
Sodium	T	mg/Kg-Dry	3	0	No SLC	133	306	ND	ND		
Thallium	T	mg/Kg-Dry	3	0	No SLC	0.38	0.39	ND	ND		
Vanadium	T	mg/Kg-Dry	3	0	No SLC	0.77	0.94	ND	ND		
Zinc	T	mg/Kg-Dry	3	0	No SLC	6.4	10	ND	ND		

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.  
 Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.  
 Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction  
 D = Filtered Fraction (0.45 micron filter)  
 A = Filtered Fraction (0.1 micron filter)  
 ND = Non Detected Value

**Table 12-11**  
**Edible Riparian Chokecherry - Whole Berry - Wet Weight Basis**  
**RI/FS Soil Area 9 - Red River Riparian Along Mine Site**  
**Summary of Results**

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
<b>Inorganics</b>											
Solids, Percent	T	%	3	100	No SLC			23.3	26	24.3	23.6
<b>Metals</b>											
Aluminum	T	mg/Kg	3	33.3	No SLC	1.7	1.8	ND	2.7		
Antimony	T	mg/Kg	3	0	No SLC	0.45	0.5	ND	ND		
Arsenic	T	mg/Kg	3	0	No SLC	0.18	0.2	ND	ND		
Barium	T	mg/Kg	3	33.3	No SLC	0.73	0.73	ND	1.1		
Beryllium	T	mg/Kg	3	0	No SLC	0.02	0.02	ND	ND		
Boron	T	mg/Kg	3	100	No SLC			3.7	8.5	5.9	5.5
Cadmium	T	mg/Kg	3	0	No SLC	0.028	0.03	ND	ND		
Calcium	T	mg/Kg	3	100	No SLC			240	380	326	358
Chromium	T	mg/Kg	3	100	No SLC			0.23	0.34	0.27	0.25
Cobalt	T	mg/Kg	3	0	No SLC	0.17	0.18	ND	ND		
Copper	T	mg/Kg	3	100	No SLC			1.2	3.3	2.1	1.9
Iron	T	mg/Kg	3	0	No SLC	3.9	8.5	ND	ND		
Lead	T	mg/Kg	3	33.3	No SLC	0.15	0.2	ND	0.21		
Magnesium	T	mg/Kg	3	100	No SLC			155	261	222	251
Manganese	T	mg/Kg	3	100	No SLC			1.6	4.5	3.5	4.3
Mercury	T	mg/Kg	3	0	No SLC	0.015	0.016	ND	ND		
Molybdenum	T	mg/Kg	3	33.3	No SLC	0.16	0.22	ND	0.23		
Nickel	T	mg/Kg	3	33.3	No SLC	0.2	0.2	ND	0.7		
Potassium	T	mg/Kg	3	100	No SLC			4170	6250	5210	5200
Selenium	T	mg/Kg	3	0	No SLC	0.27	0.3	ND	ND		
Silver	T	mg/Kg	3	0	No SLC	0.083	0.09	ND	ND		
Sodium	T	mg/Kg	3	0	No SLC	34.6	72.2	ND	ND		
Thallium	T	mg/Kg	3	0	No SLC	0.091	0.1	ND	ND		
Vanadium	T	mg/Kg	3	0	No SLC	0.2	0.22	ND	ND		
Zinc	T	mg/Kg	3	0	No SLC	1.5	2.6	ND	ND		

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.  
Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.  
Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction  
D = Filtered Fraction (0.45 micron filter)  
A = Filtered Fraction (0.1 micron filter)  
ND = Non Detected Value

**Table 12-12**

**Edible Riparian Chokecherry - Juice - Wet Weight Basis**

**RI/FS Soil Area 9 - Red River Riparian Along Mine Site**

**Summary of Results**

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
<b>Metals</b>											
Aluminum	T	mg/Kg	3	0	No SLC	1.8	1.8	ND	ND		
Antimony	T	mg/Kg	3	0	No SLC	0.45	0.49	ND	ND		
Arsenic	T	mg/Kg	3	0	No SLC	0.18	0.19	ND	ND		
Barium	T	mg/Kg	3	0	No SLC	0.71	0.73	ND	ND		
Beryllium	T	mg/Kg	3	0	No SLC	0.019	0.02	ND	ND		
Boron	T	mg/Kg	3	100	No SLC			2.1	6.6	3.7	2.4
Cadmium	T	mg/Kg	3	0	No SLC	0.029	0.03	ND	ND		
Calcium	T	mg/Kg	3	100	No SLC			73.2	245	150	133
Chromium	T	mg/Kg	3	0	No SLC	0.18	0.19	ND	ND		
Cobalt	T	mg/Kg	3	0	No SLC	0.17	0.18	ND	ND		
Copper	T	mg/Kg	3	100	No SLC			0.37	0.95	0.59	0.46
Iron	T	mg/Kg	3	0	No SLC	1.7	4.8	ND	ND		
Lead	T	mg/Kg	3	33.3	No SLC	0.15	0.17	ND	0.18		
Magnesium	T	mg/Kg	3	100	No SLC			87.6	229	145	118
Manganese	T	mg/Kg	3	100	No SLC			1	3.4	2	1.6
Mercury	T	mg/Kg	3	0	No SLC	0.015	0.016	ND	ND		
Molybdenum	T	mg/Kg	3	0	No SLC	0.16	0.16	ND	ND		
Nickel	T	mg/Kg	3	33.3	No SLC	0.2	0.2	ND	0.62		
Potassium	T	mg/Kg	3	100	No SLC			2850	5700	3900	3140
Selenium	T	mg/Kg	3	0	No SLC	0.27	0.29	ND	ND		
Silver	T	mg/Kg	3	0	No SLC	0.087	0.09	ND	ND		
Sodium	T	mg/Kg	3	0	No SLC	24.6	59.4	ND	ND		
Thallium	T	mg/Kg	3	0	No SLC	0.089	0.097	ND	ND		
Vanadium	T	mg/Kg	3	0	No SLC	0.21	0.22	ND	ND		
Zinc	T	mg/Kg	3	0	No SLC	0.73	2.7	ND	ND		

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.  
 Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.  
 Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction  
 D = Filtered Fraction (0.45 micron filter)  
 A = Filtered Fraction (0.1 micron filter)  
 ND = Non Detected Value

Table 12-13

**Edible Riparian Chokecherry - Whole Berry - Dry Weight Basis  
RI/FS Soil Area 16 - Red River Riparian Along Tailings Facility  
Summary of Results**

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
<b>Metals</b>											
Aluminum	T	mg/Kg-Dry	3	33.3	No SLC	6.3	6.8	ND	8.6		
Antimony	T	mg/Kg-Dry	3	0	No SLC	1.9	2	ND	ND		
Arsenic	T	mg/Kg-Dry	3	0	No SLC	0.75	0.81	ND	ND		
Barium	T	mg/Kg-Dry	3	33.3	No SLC	2.7	3.1	ND	3.5		
Beryllium	T	mg/Kg-Dry	3	0	No SLC	0.072	0.081	ND	ND		
Boron	T	mg/Kg-Dry	3	100	No SLC			13.7	41.6	27.8	28
Cadmium	T	mg/Kg-Dry	3	0	No SLC	0.1	0.13	ND	ND		
Calcium	T	mg/Kg-Dry	3	100	No SLC			984	1270	1130	1140
Chromium	T	mg/Kg-Dry	3	100	No SLC			0.92	1.8	1.3	1.2
Cobalt	T	mg/Kg-Dry	3	0	No SLC	0.63	0.77	ND	ND		
Copper	T	mg/Kg-Dry	3	100	No SLC			5.2	11.3	7.9	7.2
Iron	T	mg/Kg-Dry	3	0	No SLC	26.9	44.3	ND	ND		
Lead	T	mg/Kg-Dry	3	100	No SLC			0.72	1.2	0.89	0.75
Magnesium	T	mg/Kg-Dry	3	100	No SLC			574	950	756	743
Manganese	T	mg/Kg-Dry	3	100	No SLC			10	14.2	12.5	13.3
Mercury	T	mg/Kg-Dry	3	0	No SLC	0.06	0.072	ND	ND		
Molybdenum	T	mg/Kg-Dry	3	0	No SLC	0.56	0.68	ND	ND		
Nickel	T	mg/Kg-Dry	3	0	No SLC	0.71	0.86	ND	ND		
Potassium	T	mg/Kg-Dry	3	100	No SLC			14500	17500	16400	17100
Selenium	T	mg/Kg-Dry	3	0	No SLC	1.1	1.2	ND	ND		
Silver	T	mg/Kg-Dry	3	0	No SLC	0.31	0.38	ND	ND		
Sodium	T	mg/Kg-Dry	3	33.3	No SLC	85.8	139	ND	123		
Thallium	T	mg/Kg-Dry	3	0	No SLC	0.37	0.41	ND	ND		
Vanadium	T	mg/Kg-Dry	3	0	No SLC	0.75	0.9	ND	ND		
Zinc	T	mg/Kg-Dry	3	0	No SLC	6	24.9	ND	ND		

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.  
Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.  
Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction  
D = Filtered Fraction (0.45 micron filter)  
A = Filtered Fraction (0.1 micron filter)  
ND = Non Detected Value

**Table 12-14**

**Edible Riparian Chokecherry - Whole Berry - Wet Weight Basis  
RI/FS Soil Area 16 - Red River Riparian Along Tailings Facility  
Summary of Results**

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
<b>Inorganics</b>											
Solids, Percent	T	%	3	100	No SLC			22.1	26.8	24.6	24.9
<b>Metals</b>											
Aluminum	T	mg/Kg	3	33.3	No SLC	1.7	1.7	ND	1.9		
Antimony	T	mg/Kg	3	0	No SLC	0.45	0.5	ND	ND		
Arsenic	T	mg/Kg	3	0	No SLC	0.18	0.2	ND	ND		
Barium	T	mg/Kg	3	33.3	No SLC	0.68	0.68	ND	0.93		
Beryllium	T	mg/Kg	3	0	No SLC	0.018	0.02	ND	ND		
Boron	T	mg/Kg	3	100	No SLC			3.4	9.2	6.7	7.5
Cadmium	T	mg/Kg	3	0	No SLC	0.028	0.028	ND	ND		
Calcium	T	mg/Kg	3	100	No SLC			245	341	280	253
Chromium	T	mg/Kg	3	100	No SLC			0.23	0.4	0.32	0.33
Cobalt	T	mg/Kg	3	0	No SLC	0.17	0.17	ND	ND		
Copper	T	mg/Kg	3	100	No SLC			1.4	2.5	1.9	1.8
Iron	T	mg/Kg	3	0	No SLC	6.8	9.8	ND	ND		
Lead	T	mg/Kg	3	100	No SLC			0.18	0.27	0.22	0.2
Magnesium	T	mg/Kg	3	100	No SLC			143	210	184	199
Manganese	T	mg/Kg	3	100	No SLC			2.2	3.8	3.1	3.3
Mercury	T	mg/Kg	3	0	No SLC	0.016	0.016	ND	ND		
Molybdenum	T	mg/Kg	3	0	No SLC	0.15	0.15	ND	ND		
Nickel	T	mg/Kg	3	0	No SLC	0.19	0.19	ND	ND		
Potassium	T	mg/Kg	3	100	No SLC			3620	4580	4020	3860
Selenium	T	mg/Kg	3	0	No SLC	0.27	0.3	ND	ND		
Silver	T	mg/Kg	3	0	No SLC	0.083	0.083	ND	ND		
Sodium	T	mg/Kg	3	33.3	No SLC	23	30.8	ND	30.6		
Thallium	T	mg/Kg	3	0	No SLC	0.09	0.1	ND	ND		
Vanadium	T	mg/Kg	3	0	No SLC	0.2	0.2	ND	ND		
Zinc	T	mg/Kg	3	0	No SLC	1.6	5.5	ND	ND		

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.  
 Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.  
 Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction  
 D = Filtered Fraction (0.45 micron filter)  
 A = Filtered Fraction (0.1 micron filter)  
 ND = Non Detected Value

**Table 12-15**

**Edible Riparian Chokecherry - Juice - Wet Weight Basis  
RI/FS Soil Area 16 - Red River Riparian Along Tailings Facility  
Summary of Results**

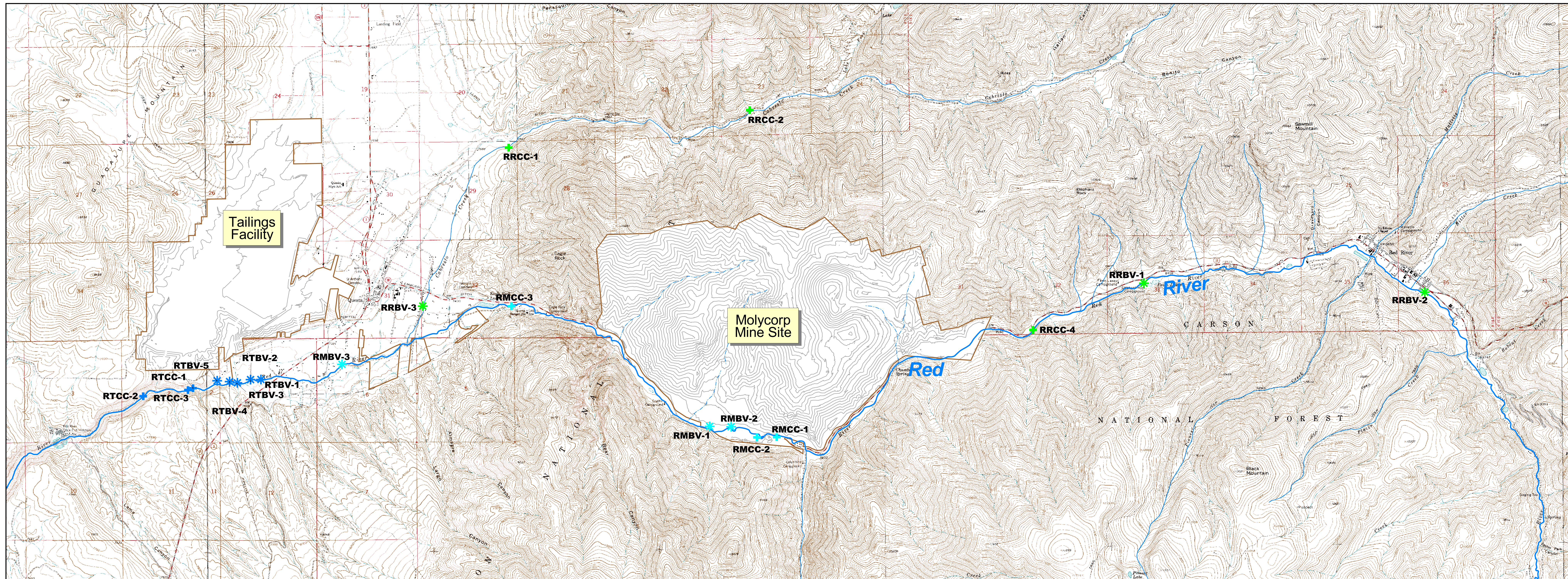
Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
<b>Metals</b>											
Aluminum	T	mg/Kg	3	66.7	No SLC	1.7	1.7	ND	2.7	2	2.6
Antimony	T	mg/Kg	3	0	No SLC	0.48	0.5	ND	ND		
Arsenic	T	mg/Kg	3	0	No SLC	0.19	0.2	ND	ND		
Barium	T	mg/Kg	3	0	No SLC	0.69	0.73	ND	ND		
Beryllium	T	mg/Kg	3	0	No SLC	0.019	0.02	ND	ND		
Boron	T	mg/Kg	3	100	No SLC			2.2	4.2	3.4	3.9
Cadmium	T	mg/Kg	3	0	No SLC	0.028	0.03	ND	ND		
Calcium	T	mg/Kg	3	100	No SLC			99.8	150	128	135
Chromium	T	mg/Kg	3	0	No SLC	0.19	0.2	ND	ND		
Cobalt	T	mg/Kg	3	0	No SLC	0.17	0.18	ND	ND		
Copper	T	mg/Kg	3	100	No SLC			0.45	0.51	0.48	0.47
Iron	T	mg/Kg	3	33.3	No SLC	2.7	4.5	ND	2		
Lead	T	mg/Kg	3	100	No SLC			0.18	0.23	0.2	0.2
Magnesium	T	mg/Kg	3	100	No SLC			126	152	138	135
Manganese	T	mg/Kg	3	100	No SLC			1.4	2.5	1.9	1.9
Mercury	T	mg/Kg	3	0	No SLC	0.015	0.016	ND	ND		
Molybdenum	T	mg/Kg	3	0	No SLC	0.15	0.16	ND	ND		
Nickel	T	mg/Kg	3	0	No SLC	0.19	1	ND	ND		
Potassium	T	mg/Kg	3	100	No SLC			2620	3780	3290	3480
Selenium	T	mg/Kg	3	0	No SLC	0.29	0.3	ND	ND		
Silver	T	mg/Kg	3	0	No SLC	0.085	0.09	ND	ND		
Sodium	T	mg/Kg	3	0	No SLC	36.4	101	ND	ND		
Thallium	T	mg/Kg	3	0	No SLC	0.096	0.1	ND	ND		
Vanadium	T	mg/Kg	3	0	No SLC	0.21	0.22	ND	ND		
Zinc	T	mg/Kg	3	33.3	No SLC	0.91	1.1	ND	9.8		

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.  
Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.  
Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction  
D = Filtered Fraction (0.45 micron filter)  
A = Filtered Fraction (0.1 micron filter)  
ND = Non Detected Value



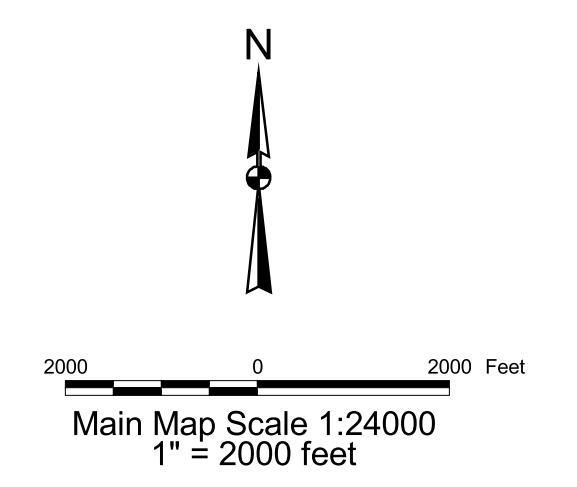
**SECTION 12**  
**EDIBLE RIPARIAN**  
**FIGURES**



- Wintercross
- \* Soil Area 9 - Red River Riparian along Mine Site
  - \* Reference Riparian
  - \* Soil Area 16 - Red River Riparian along Tailings Facility
- Chokecherry
- + Soil Area 9 - Red River Riparian along Mine Site
  - + Reference Riparian
  - + Soil Area 16 - Red River Riparian along Tailings Facility
- ~ Gulch
  - ~ River
  - ~ Creek
  - ~ Property Boundary

NOTES

1. Base topography taken from USGS 7.5-minute quadrangles for Questa, New Mexico (1963) and Red River, New Mexico (1963).
2. Mine Site topography provided by Molycorp-Questa Mine (quest\_sp.dwg, 2001).



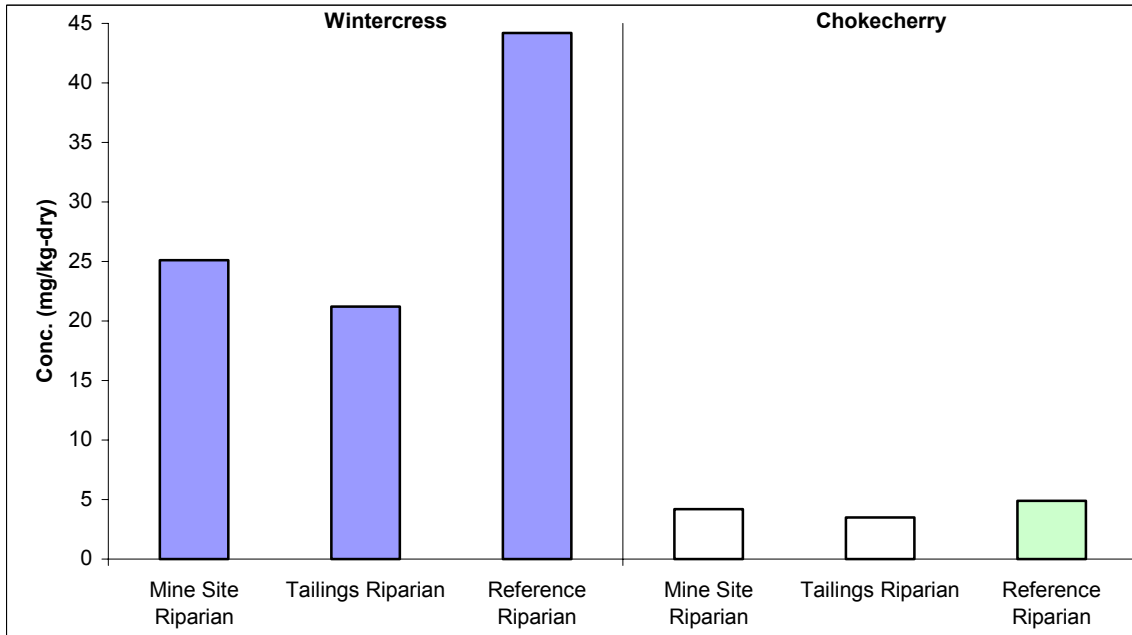
**URS**  
 URS Center  
 8181 East Tufts Avenue  
 Denver, CO 80237-2637  
 (303) 694-2770

APPLICATION  
ArcView GIS  
 FILE NAME  
wqg\_techmemo.apr  
 DRAWN BY  
Denver/GIS  
 DATE  
3/1/2005

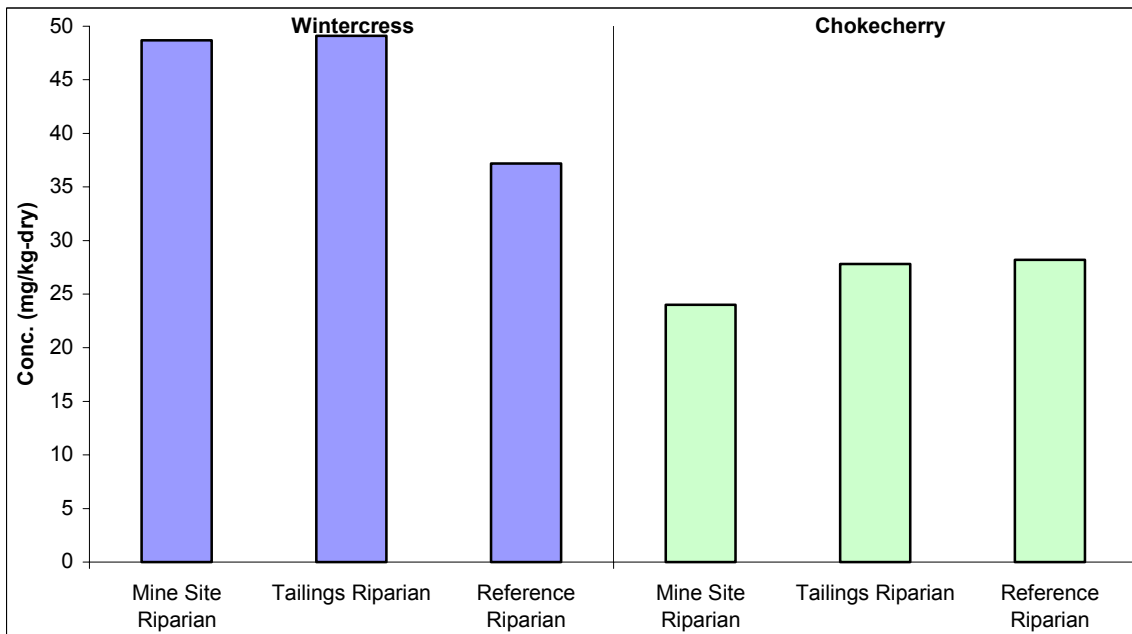
MOLYCORP - QUESTA MINE RI/FS  
**LOCATIONS OF EDIBLE RIPARIAN  
 VEGETATION SAMPLE SITES**

PROJECT  
22236244  
**FIGURE 12-1**  
*Preliminary Site  
 Characterization Report*

**Figure 12-2**  
**Barium Mean Concentrations in Edible Riparian Plants - Dry Weight**

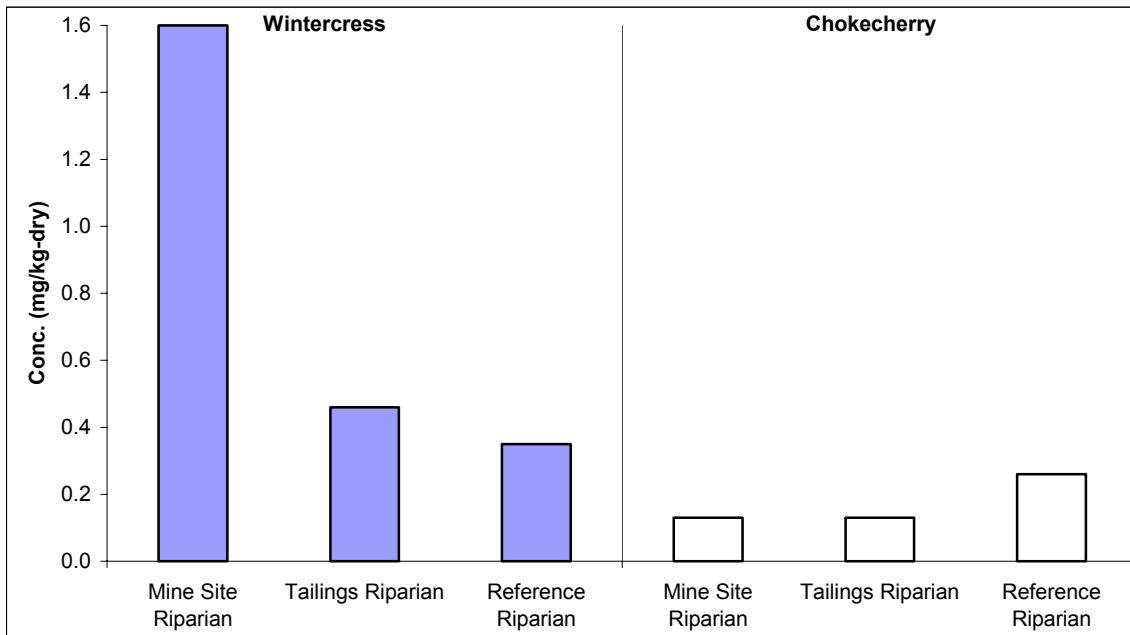


**Figure 12-3**  
**Boron Mean Concentrations in Edible Riparian Plants - Dry Weight**

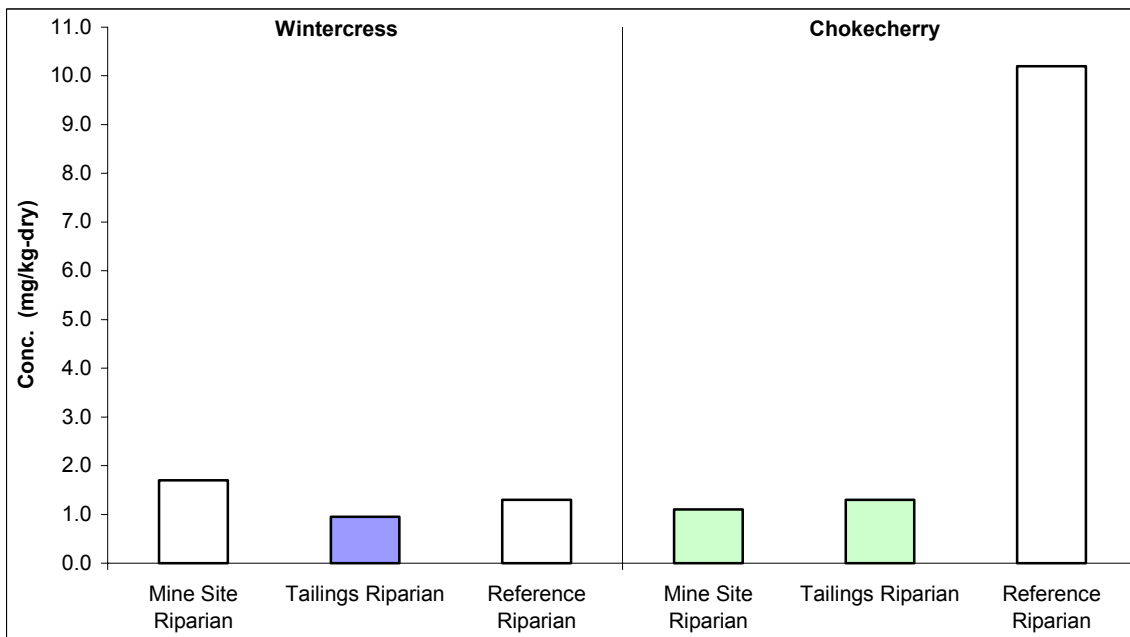


Note: A white bar indicates that 50% or more of the values were not detected, and a mean was not calculated. In these cases, the maximum detected value or the maximum reporting limit, whichever was greater, was plotted.

**Figure 12-4**  
**Cadmium Mean Concentrations in Edible Riparian Plants - Dry Weight**

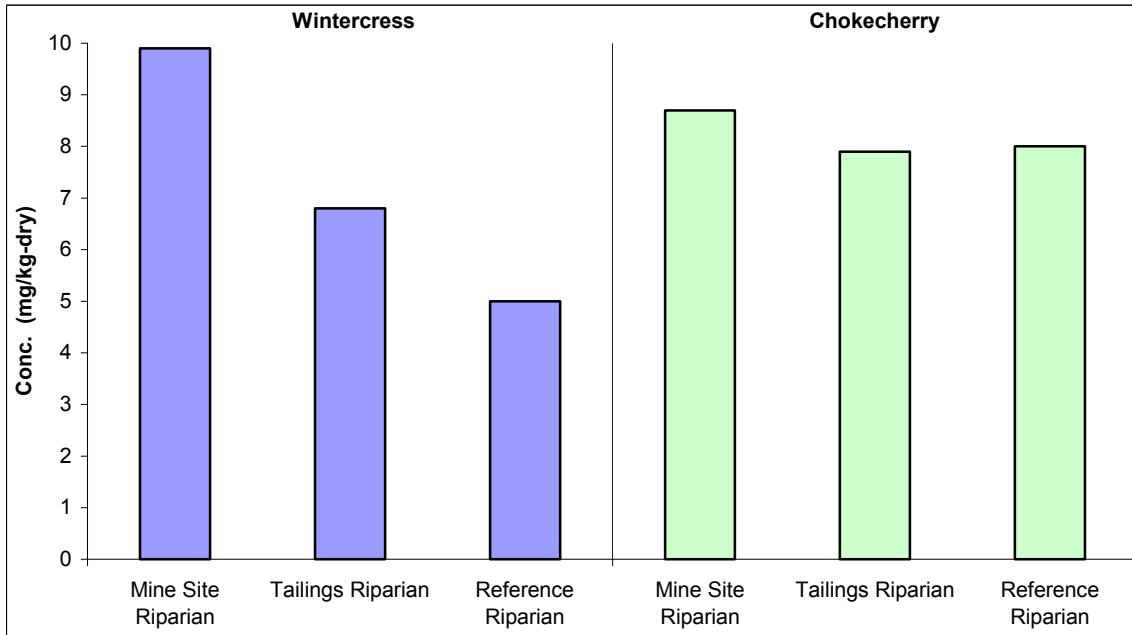


**Figure 12-5**  
**Chromium Mean Concentrations in Edible Riparian Plants - Dry Weight**

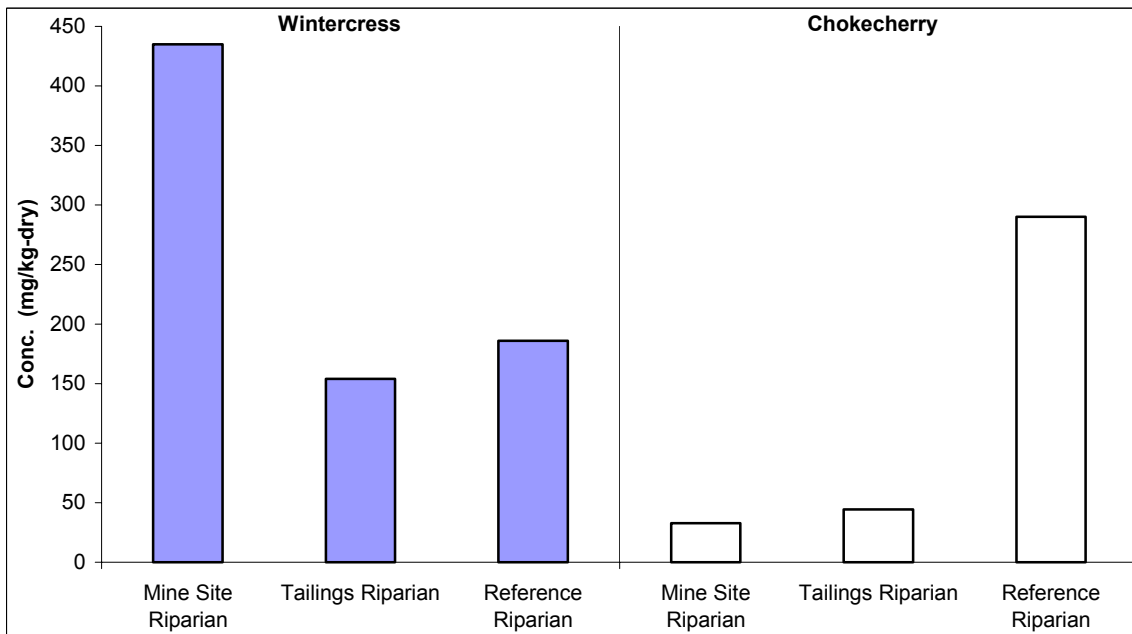


Note: A white bar indicates that 50% or more of the values were not detected, and a mean was not calculated. In these cases, the maximum detected value or the maximum reporting limit, whichever was greater, was plotted.

**Figure 12-6**  
**Copper Mean Concentrations in Edible Riparian Plants - Dry Weight**

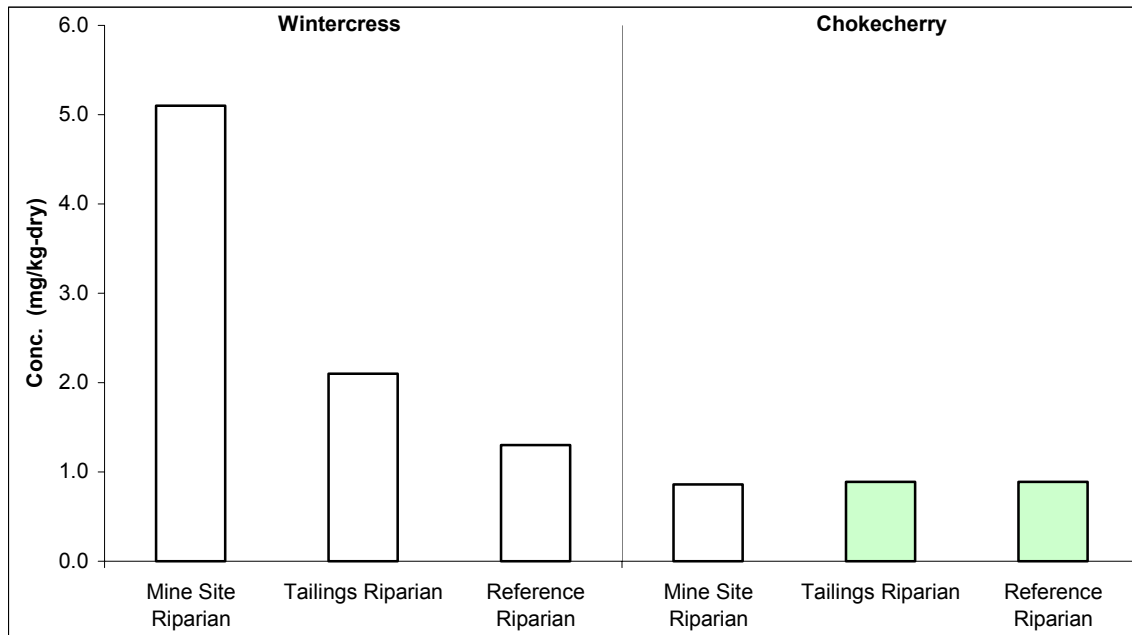


**Figure 12-7**  
**Iron Mean Concentrations in Edible Riparian Plants - Dry Weight**

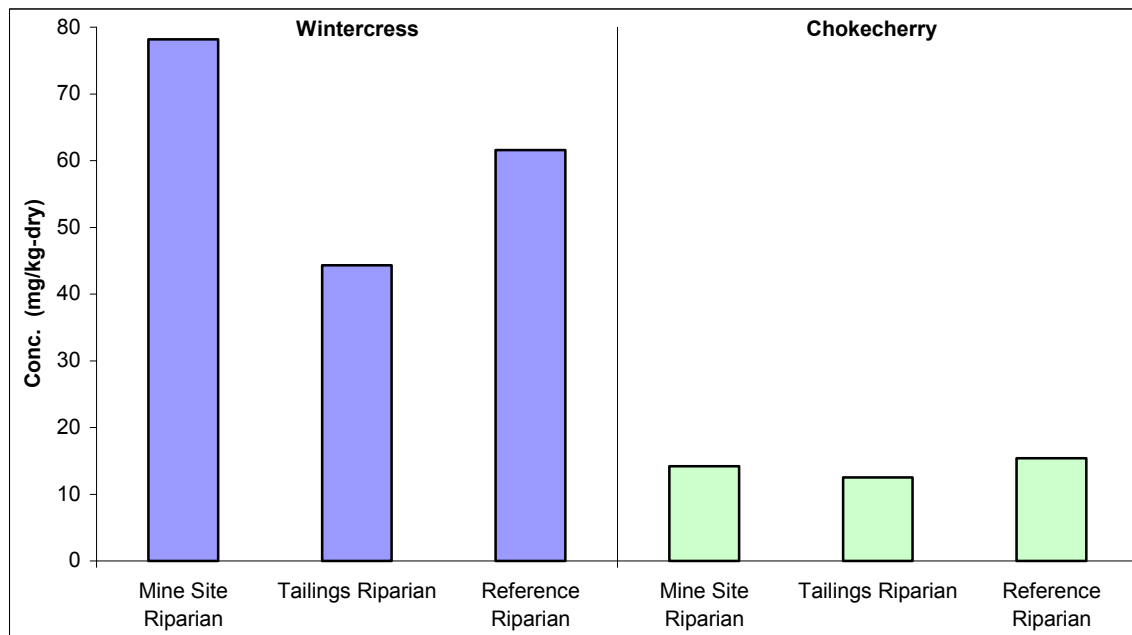


Note: A white bar indicates that 50% or more of the values were not detected, and a mean was not calculated. In these cases, the maximum detected value or the maximum reporting limit, whichever was greater, was plotted.

**Figure 12-8  
Lead Mean Concentrations in Edible Riparian Plants - Dry Weight**

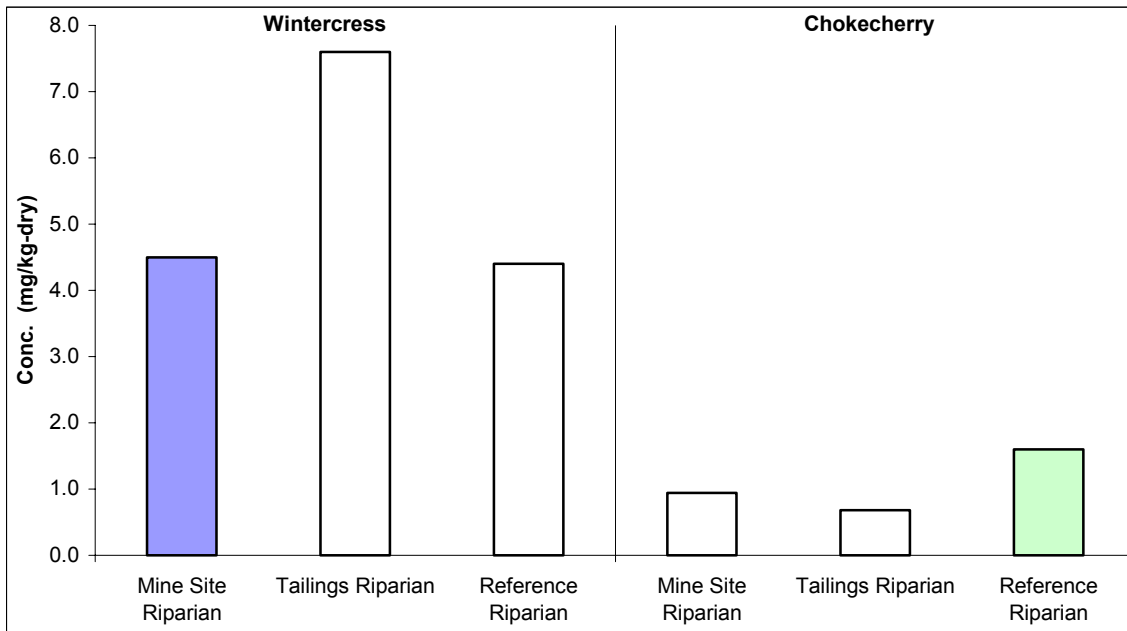


**Figure 12-9  
Manganese Mean Concentrations in Edible Riparian Plants - Dry Weight**

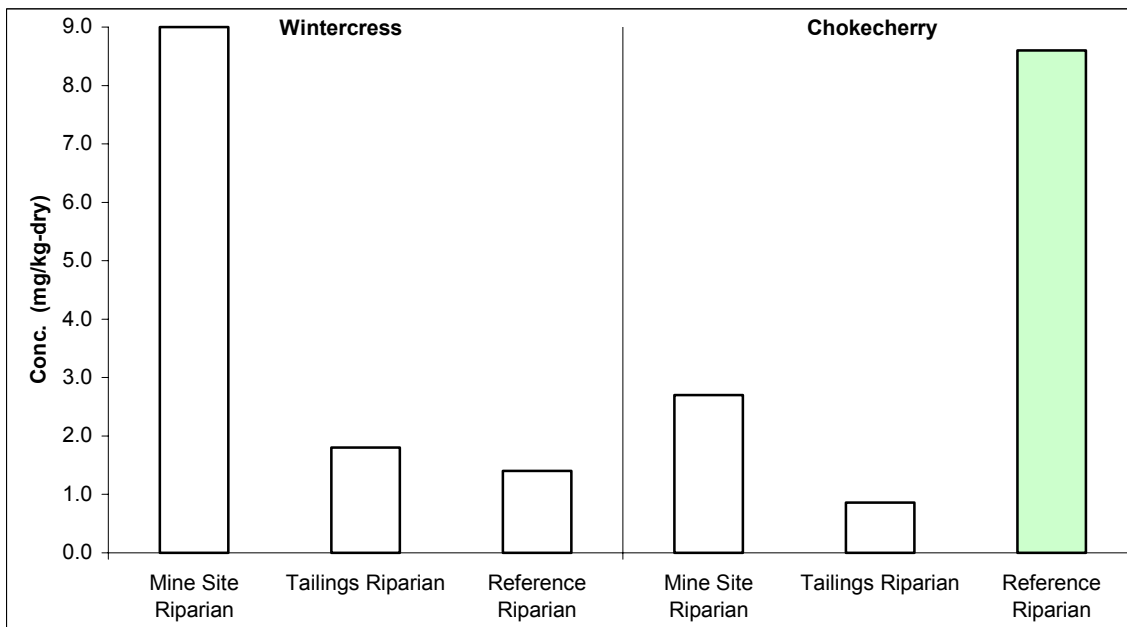


Note: A white bar indicates that 50% or more of the values were not detected, and a mean was not calculated. In these cases, the maximum detected value or the maximum reporting limit, whichever was greater, was plotted.

**Figure 12-10**  
**Molybdenum Mean Concentrations in Edible Riparian Plants - Dry Weight**

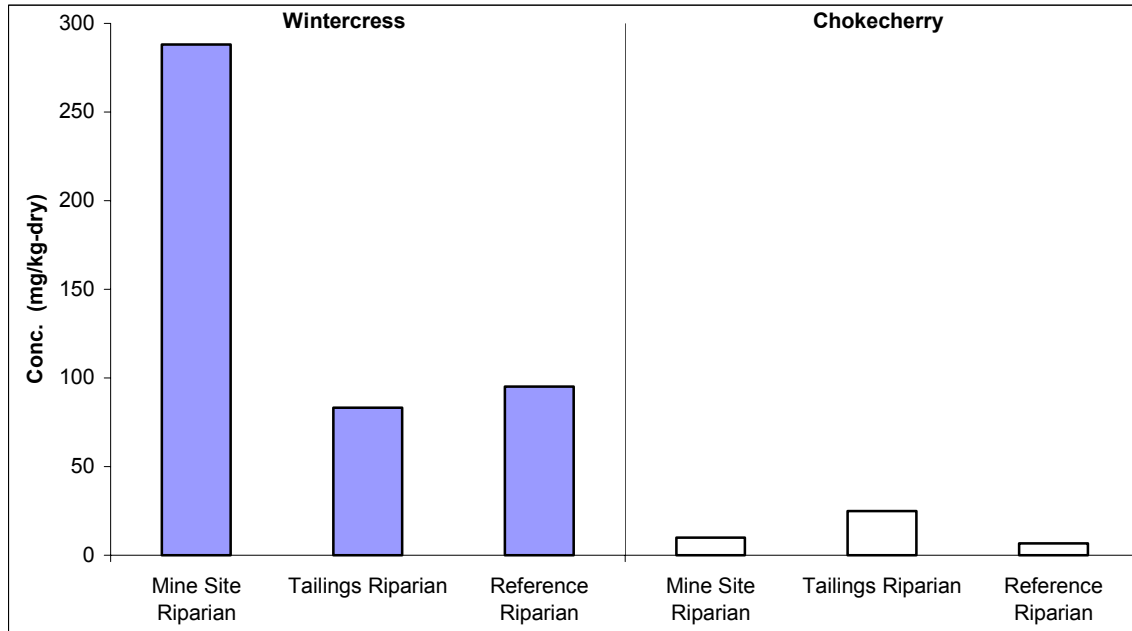


**Figure 12-11**  
**Nickel Mean Concentrations in Edible Riparian Plants - Dry Weight**



Note: A white bar indicates that 50% or more of the values were not detected, and a mean was not calculated. In these cases, the maximum detected value or the maximum reporting limit, whichever was greater, was plotted.

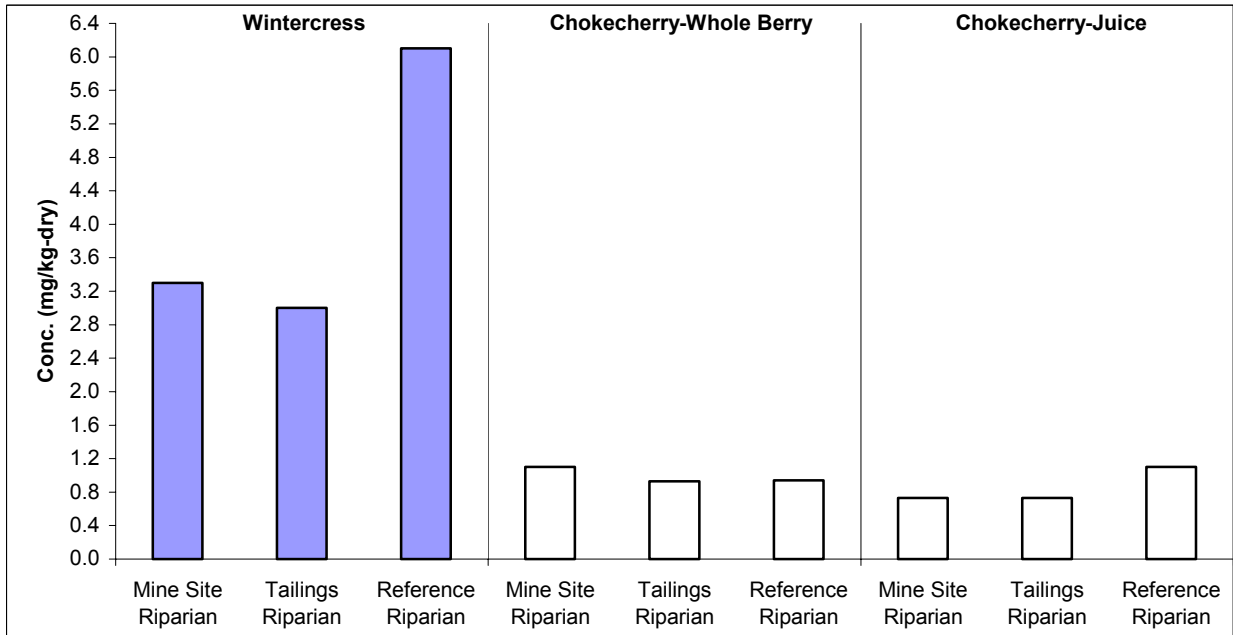
**Figure 12-12**  
**Zinc Mean Concentrations in Edible Riparian Plants - Dry Weight**



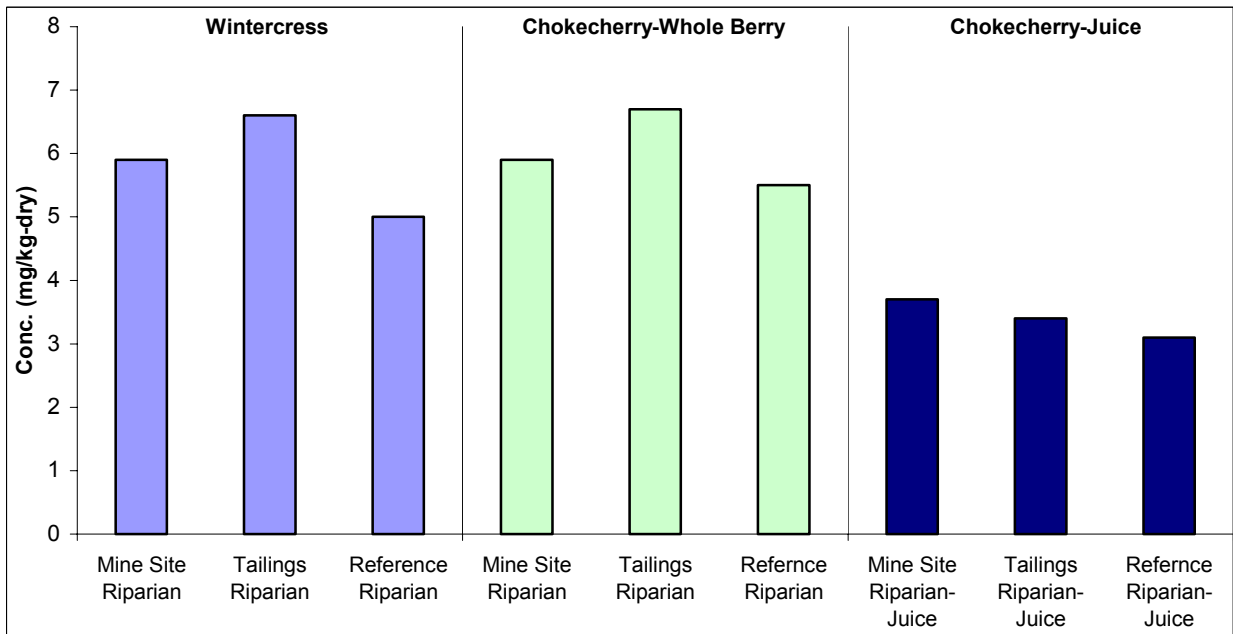
Note: A white bar indicates that 50% or more of the values were not detected, and a mean was not calculated. In these cases, the maximum detected value or the maximum reporting limit, whichever was greater, was plotted.



**Figure 12-13**  
**Barium Mean Concentrations in Edible Riparian Plants - Wet Weight**

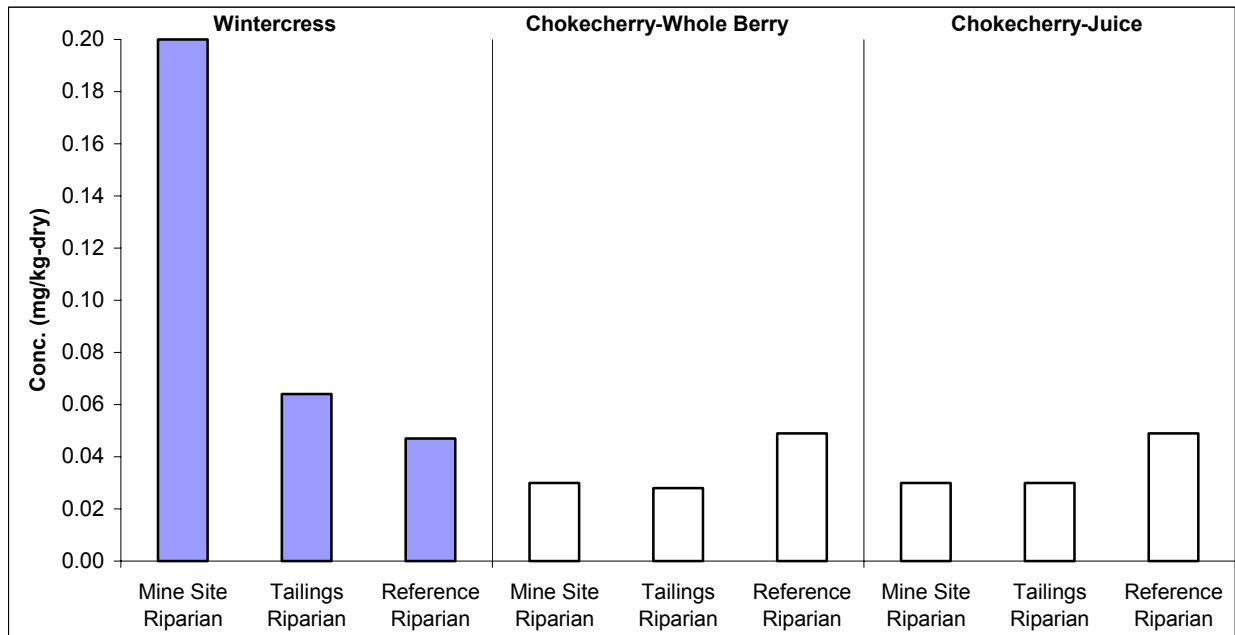


**Figure 12-14**  
**Boron Mean Concentrations in Edible Riparian Plants - Wet Weight**

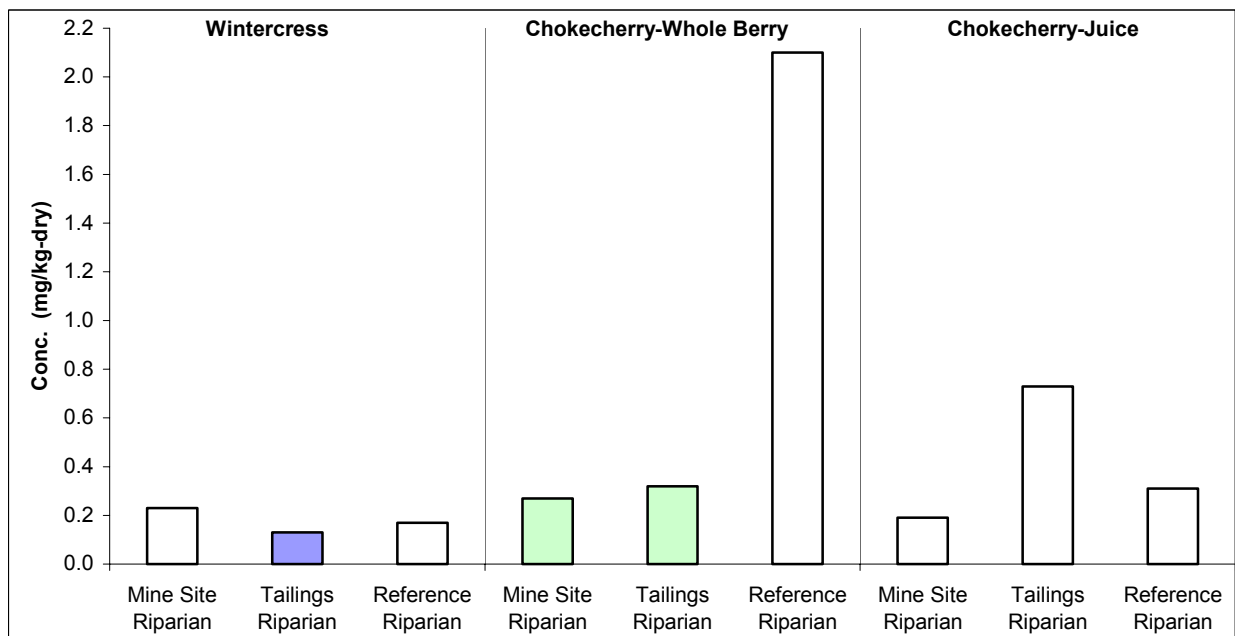


Note: A white bar indicates that 50% or more of the values were not detected, and a mean was not calculated. In these cases, the maximum detected value or the maximum reporting limit, whichever was greater, was plotted.

**Figure 12-15  
Cadmium Mean Concentrations in Edible Riparian Plants - Wet Weight**

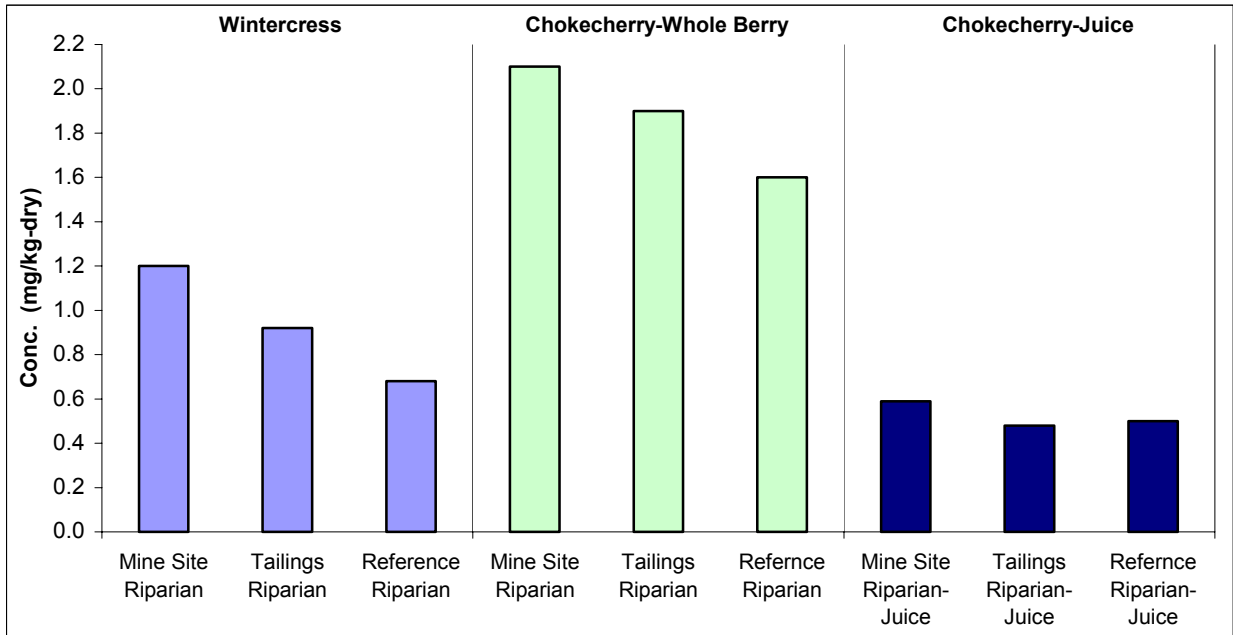


**Figure 12-16  
Chromium Mean Concentrations in Edible Riparian Plants - Wet Weight**

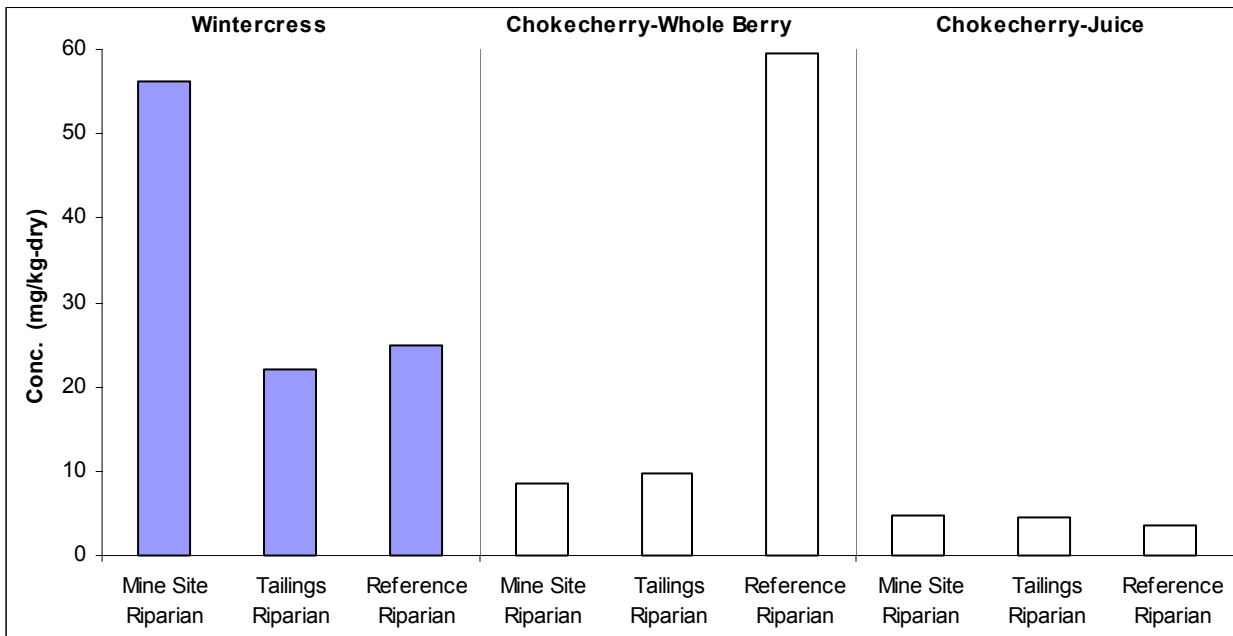


Note: A white bar indicates that 50% or more of the values were not detected, and a mean was not calculated. In these cases, the maximum detected value or the maximum reporting limit, whichever was greater, was plotted.

**Figure 12-17**  
**Copper Mean Concentrations in Edible Riparian Plants - Wet Weight**

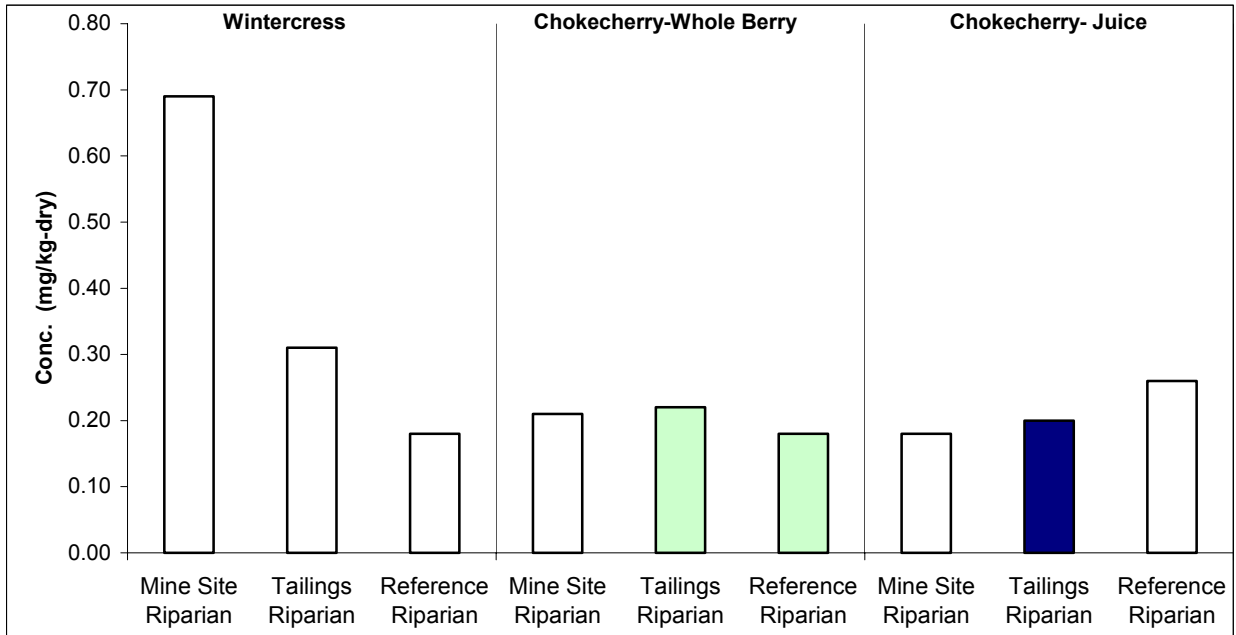


**Figure 12-18**  
**Iron Mean Concentrations in Edible Riparian Plants - Wet Weight**

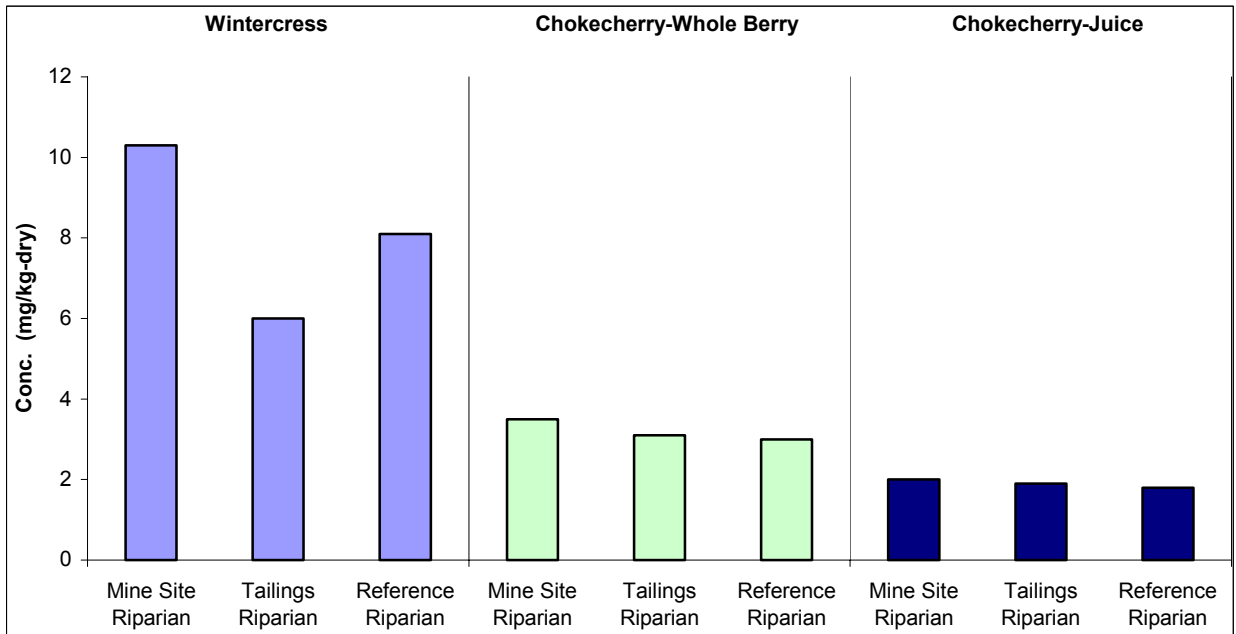


Note: A white bar indicates that 50% or more of the values were not detected, and a mean was not calculated. In these cases, the maximum detected value or the maximum reporting limit, whichever was greater, was plotted.

**Figure 12-19  
Lead Mean Concentrations in Edible Riparian Plants - Wet Weight**

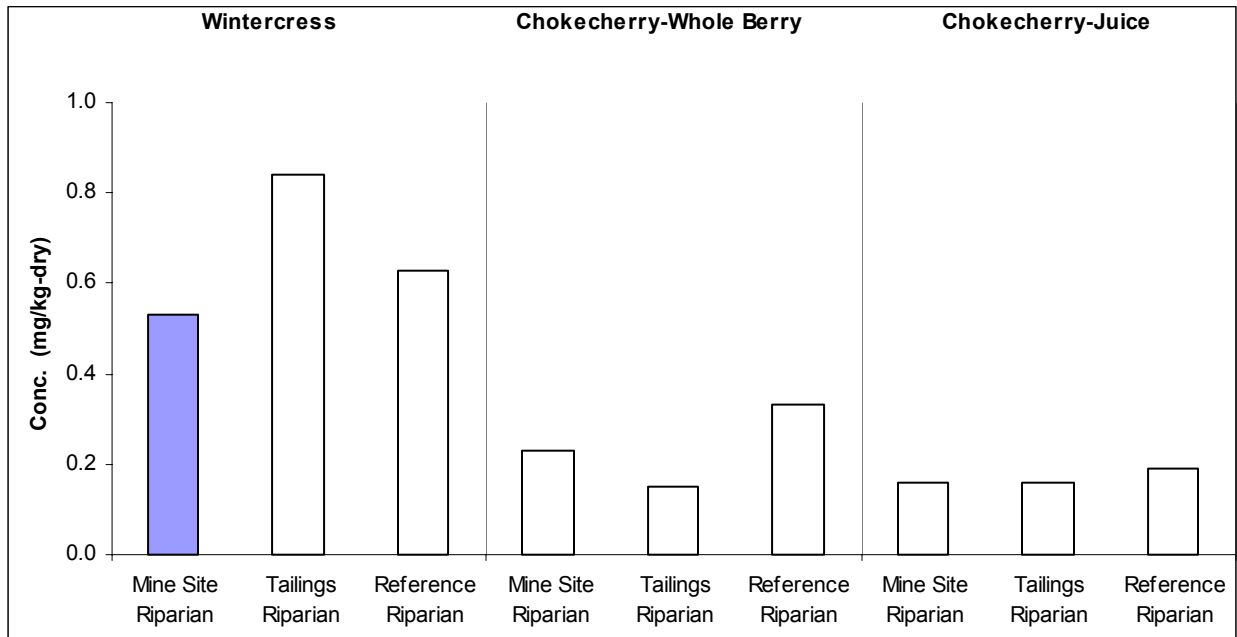


**Figure 12-20  
Manganese Mean Concentrations in Edible Riparian Plants - Wet Weight**

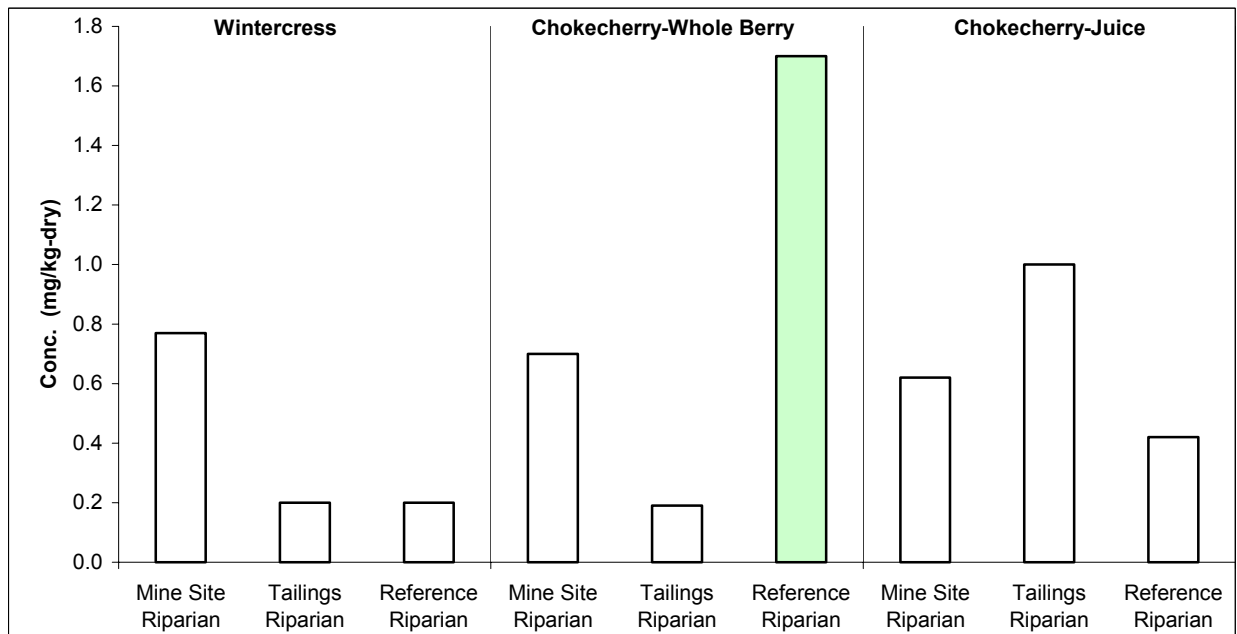


Note: A white bar indicates that 50% or more of the values were not detected, and a mean was not calculated. In these cases, the maximum detected value or the maximum reporting limit, whichever was greater, was plotted.

**Figure 12-21**  
**Molybdenum Mean Concentrations in Edible Riparian Plants - Wet Weight**

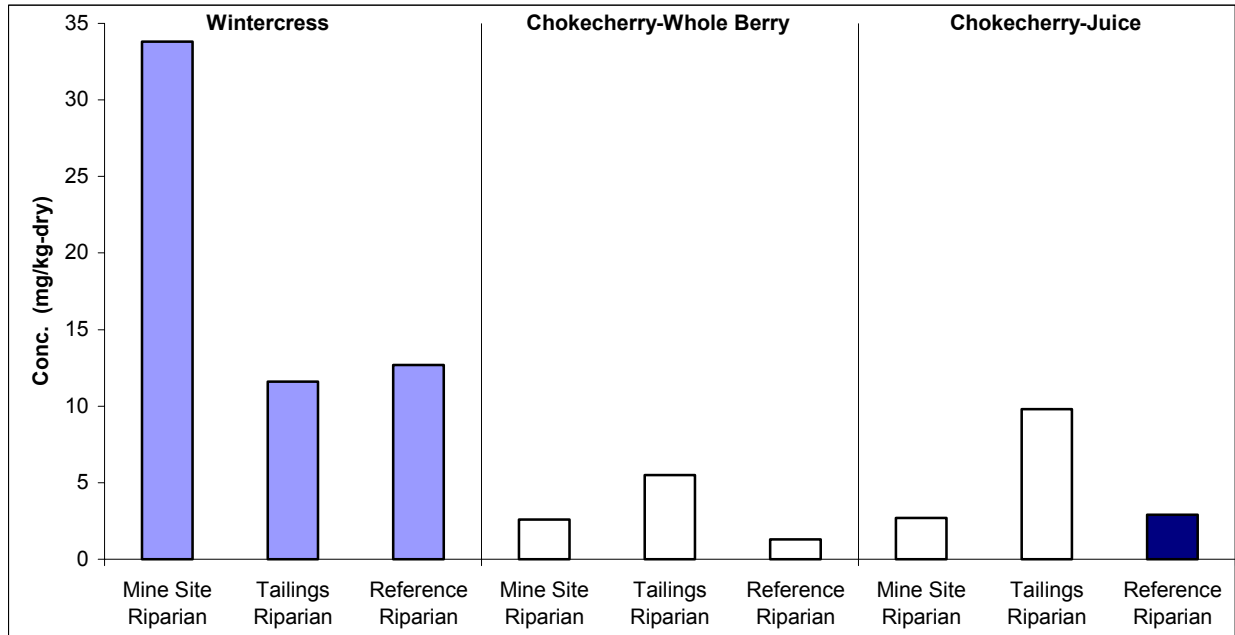


**Figure 12-22**  
**Nickel Mean Concentrations in Edible Riparian Plants - Wet Weight**



Note: A white bar indicates that 50% or more of the values were not detected, and a mean was not calculated. In these cases, the maximum detected value or the maximum reporting limit, whichever was greater, was plotted.

**Figure 12-23  
Zinc Mean Concentrations in Edible Riparian Plants - Wet Weight**



Note: A white bar indicates that 50% or more of the values were not detected, and a mean was not calculated. In these cases, the maximum detected value or the maximum reporting limit, whichever was greater, was plotted.

**APPENDIX A-12**  
**EDIBLE RIPARIAN**  
**VALIDATED ANALYTICAL RESULTS**

**Appendix A-12**  
**Edible Riparian**  
**Validated Analytical Results**

Parameter	Units	Site ID Sample Date Sample ID Exposure Area Fraction	RIP-1	RIP-10	RIP-10	RIP-11	RIP-11	RIP-2
			6/6/2003 RMBV-2-T01N-PLT Wintercress Mine Site Riparian	8/6/2003 RMCC-3-T01N-PLTJ Chokecherry Mine Site Riparian	8/6/2003 RMCC-3-T01N-PLTB Chokecherry Mine Site Riparian	8/26/2003 RRCC-2-T01N-PLTJ Chokecherry Reference Riparian	8/26/2003 RRCC-2-T01N-PLTB Chokecherry Reference Riparian	6/6/2003 RRBV-1-T01N-PLT Wintercress Reference Riparian
<b>Laboratory Parameters</b>								
Solids, Percent	%	T	8.6	-	23.3	-	20.5	13.4
<b>Metals</b>								
Aluminum	mg/Kg	T	<13.4 J	<1.8	2.7	<2.2	<2.5	<12.2 J
Aluminum	mg/Kg-Dry	T	<156. J	-	11.6	-	<12.2	<91. J
Antimony	mg/Kg	T	<0.42	<0.49	<0.45	<0.49	<0.45	<0.39
Antimony	mg/Kg-Dry	T	<4.9	-	<1.9	-	<2.2	<2.9
Arsenic	mg/Kg	T	<0.17	<0.19	<0.18	<0.2	<0.18	<0.16
Arsenic	mg/Kg-Dry	T	<2.	-	<0.77	-	<0.88	<1.2
Barium	mg/Kg	T	1.	<0.72	<0.73	<1.1	<1.1	3.5
Barium	mg/Kg-Dry	T	11.6	-	<3.1	-	<5.4	26.1
Beryllium	mg/Kg	T	<0.016 J	<0.02 J	<0.02 J	<0.039	<0.037	<0.019 J
Beryllium	mg/Kg-Dry	T	<0.19 J	-	<0.086 J	-	<0.18	<0.14 J
Boron	mg/Kg	T	4.5	2.1	5.5	3.4	5.9	4.5
Boron	mg/Kg-Dry	T	52.3	-	23.6	-	28.8	33.6
Cadmium	mg/Kg	T	0.11	<0.029	<0.03	<0.049	<0.046	0.073
Cadmium	mg/Kg-Dry	T	1.3	-	<0.13	-	<0.22	0.54
Calcium	mg/Kg	T	2130.	133.	380.	282.	402.	4160.
Calcium	mg/Kg-Dry	T	24800.	-	1630.	-	1960.	31000.
Chromium	mg/Kg	T	<0.1	<0.19	0.25	<0.31	<2.1	<0.11
Chromium	mg/Kg-Dry	T	<1.2	-	1.1	-	<10.2	<0.82
Cobalt	mg/Kg	T	<0.15	<0.18	<0.18	<0.28	<0.27	<0.17
Cobalt	mg/Kg-Dry	T	<1.7	-	<0.77	-	<1.3	<1.3
Copper	mg/Kg	T	1.	0.37	1.9	0.71	1.8	0.85
Copper	mg/Kg-Dry	T	11.6	-	8.2	-	8.8	6.3
Iron	mg/Kg	T	15.3 J	<1.7	<6.7	<2.7	59.5	24.
Iron	mg/Kg-Dry	T	178. J	-	<28.8	-	290.	179.
Lead	mg/Kg	T	<0.26	<0.15	<0.2	<0.14	0.23	<0.18
Lead	mg/Kg-Dry	T	<3.	-	<0.86	-	1.1	<1.3
Magnesium	mg/Kg	T	442.	118.	251.	227.	285.	385.
Magnesium	mg/Kg-Dry	T	5140.	-	1080.	-	1390.	2870.
Manganese	mg/Kg	T	2.8	1.6	4.3	2.4	4.4	2.5
Manganese	mg/Kg-Dry	T	32.6	-	18.5	-	21.5	18.7
Mercury	mg/Kg	T	<0.016	<0.016	<0.015	<0.017	<0.016	<0.017

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

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**Appendix A-12**  
**Edible Riparian**  
**Validated Analytical Results**

Parameter	Site ID		RIP-1	RIP-10	RIP-10	RIP-11	RIP-11	RIP-2
	Sample Date		6/6/2003	8/6/2003	8/6/2003	8/26/2003	8/26/2003	6/6/2003
	Sample ID		RMBV-2-T01N-PLT	RMCC-3-T01N-PLTJ	RMCC-3-T01N-PLTB	RRCC-2-T01N-PLTJ	RRCC-2-T01N-PLTB	RRBV-1-T01N-PLT
	Exposure Area		Wintercress Mine Site Riparian	Chokecherry Mine Site Riparian	Chokecherry Mine Site Riparian	Chokecherry Reference Riparian	Chokecherry Reference Riparian	Wintercress Reference Riparian
Units	Fraction							
Mercury	mg/Kg-Dry	T	<0.19 :	-	<0.064 :	-	<0.078 :	<0.13 :
Molybdenum	mg/Kg	T	0.43 :	<0.16 :	<0.22 :	<0.19 :	<0.33 :	<0.42 :
Molybdenum	mg/Kg-Dry	T	5. :	-	<0.94 :	-	<1.6 :	<3.1 :
Nickel	mg/Kg	T	0.77 J	<0.2 J	<0.2 J	<0.24 :	4.6 :	<0.19 J
Nickel	mg/Kg-Dry	T	9. J	-	<0.86 J	-	22.4 :	<1.4 J
Potassium	mg/Kg	T	4870. J	2850. :	5200. J	3590. :	4350. J	3420. J
Potassium	mg/Kg-Dry	T	56600. J	-	22300. J	-	21200. J	25500. J
Selenium	mg/Kg	T	<0.67 :	<0.29 :	<0.27 :	<0.29 :	<0.27 :	<0.63 :
Selenium	mg/Kg-Dry	T	<7.8 :	-	<1.2 :	-	<1.3 :	<4.7 :
Silver	mg/Kg	T	<0.073 J	<0.088 J	<0.09 J	<0.16 :	<0.15 :	<0.084 J
Silver	mg/Kg-Dry	T	<0.85 J	-	<0.39 J	-	<0.73 :	<0.63 J
Sodium	mg/Kg	T	<17.8 :	<24.6 :	<57.6 :	<268. :	<245. :	<76.5 :
Sodium	mg/Kg-Dry	T	<207. :	-	<247. :	-	<1200. :	<571. :
Thallium	mg/Kg	T	<0.083 :	<0.097 :	<0.091 :	<0.098 :	<0.091 :	<0.079 :
Thallium	mg/Kg-Dry	T	<0.97 :	-	<0.39 :	-	<0.44 :	<0.59 :
Vanadium	mg/Kg	T	<0.18 :	<0.22 :	<0.22 :	<0.28 :	<0.27 :	<0.21 :
Vanadium	mg/Kg-Dry	T	<2.1 :	-	<0.94 :	-	<1.3 :	<1.6 :
Zinc	mg/Kg	T	32.4 :	<0.73 :	<1.5 :	6.9 :	<0.83 :	12.2 :
Zinc	mg/Kg-Dry	T	377. :	-	<6.4 :	-	<4. :	91. :

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

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**Appendix A-12**  
**Edible Riparian**  
**Validated Analytical Results**

Parameter	Units	Site ID Sample Date Sample ID Exposure Area Fraction	RIP-3	RIP-4	RIP-5	RIP-5	RIP-6	RIP-6
			6/30/2003 RTBV-4-T01N-PLT Wintercress Tailings Riparian	6/30/2003 RTBV-5-T01N-PLT Wintercress Tailings Riparian	8/5/2003 RTCC-1-T01N-PLTJ Chokecherry Tailings Riparian	8/5/2003 RTCC-1-T01N-PLTB Chokecherry Tailings Riparian	8/5/2003 RTCC-2-T01N-PLTJ Chokecherry Tailings Riparian	8/5/2003 RTCC-2-T01N-PLTB Chokecherry Tailings Riparian
<b>Laboratory Parameters</b>								
Solids, Percent	%	T	11.8	11.1	-	26.8	-	22.1
<b>Metals</b>								
Aluminum	mg/Kg	T	3.1	12.5	<1.7	<1.7	2.6	1.9
Aluminum	mg/Kg-Dry	T	26.3	113.	-	<6.3	-	8.6
Antimony	mg/Kg	T	<0.41	<0.09	<0.49	<0.5	<0.5	<0.45
Antimony	mg/Kg-Dry	T	<3.5	<0.81	-	<1.9	-	<2.
Arsenic	mg/Kg	T	<0.16	<0.036	<0.2	<0.2	<0.2	<0.18
Arsenic	mg/Kg-Dry	T	<1.4	<0.32	-	<0.75	-	<0.81
Barium	mg/Kg	T	2.6	1.5	<0.7	0.93	<0.69	<0.68
Barium	mg/Kg-Dry	T	22.	13.5	-	3.5	-	<3.1
Beryllium	mg/Kg	T	<0.018	0.019	<0.019	<0.02	<0.019	<0.018
Beryllium	mg/Kg-Dry	T	<0.15	0.17	-	<0.075	-	<0.081
Boron	mg/Kg	T	6.4	7.5	4.2	7.5	3.9	9.2
Boron	mg/Kg-Dry	T	54.2	67.6	-	28.	-	41.6
Cadmium	mg/Kg	T	0.071	<0.058	<0.029	<0.028	<0.028	<0.028
Cadmium	mg/Kg-Dry	T	0.6	<0.52	-	<0.1	-	<0.13
Calcium	mg/Kg	T	4560.	6610.	135.	341.	99.8	253.
Calcium	mg/Kg-Dry	T	38600.	59500.	-	1270.	-	1140.
Chromium	mg/Kg	T	0.19	0.036	<0.2	0.33	<0.2	0.4
Chromium	mg/Kg-Dry	T	1.6	0.32	-	1.2	-	1.8
Cobalt	mg/Kg	T	<0.18	<0.19	<0.17	<0.17	<0.17	<0.17
Cobalt	mg/Kg-Dry	T	<1.5	<1.7	-	<0.63	-	<0.77
Copper	mg/Kg	T	0.88	0.6	0.45	1.4	0.47	2.5
Copper	mg/Kg-Dry	T	7.5	5.4	-	5.2	-	11.3
Iron	mg/Kg	T	<11.8	<20.4	<2.7	<7.2	2.	<9.8
Iron	mg/Kg-Dry	T	<100.	<184.	-	<26.9	-	<44.3
Lead	mg/Kg	T	<0.12	<0.12	0.2	0.2	0.18	0.27
Lead	mg/Kg-Dry	T	<1.	<1.1	-	0.75	-	1.2
Magnesium	mg/Kg	T	442.	513.	126.	199.	135.	210.
Magnesium	mg/Kg-Dry	T	3750.	4620.	-	743.	-	950.
Manganese	mg/Kg	T	4.2	3.4	1.9	3.8	1.4	2.2
Manganese	mg/Kg-Dry	T	35.6	30.6	-	14.2	-	10.
Mercury	mg/Kg	T	0.019	0.028	<0.015	<0.016	<0.016	<0.016

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

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**Appendix A-12**  
**Edible Riparian**  
**Validated Analytical Results**

Parameter	Site ID		RIP-3	RIP-4	RIP-5	RIP-5	RIP-6	RIP-6
	Sample Date		6/30/2003	6/30/2003	8/5/2003	8/5/2003	8/5/2003	8/5/2003
	Sample ID		RTBV-4-T01N-PLT	RTBV-5-T01N-PLT	RTCC-1-T01N-PLTJ	RTCC-1-T01N-PLTB	RTCC-2-T01N-PLTJ	RTCC-2-T01N-PLTB
	Exposure Area		Wintercress Tailings Riparian	Wintercress Tailings Riparian	Chokecherry Tailings Riparian	Chokecherry Tailings Riparian	Chokecherry Tailings Riparian	Chokecherry Tailings Riparian
Units	Fraction							
Mercury	mg/Kg-Dry	T	0.16 :	0.25 :	-	<0.06 :	-	<0.072 :
Molybdenum	mg/Kg	T	0.75 :	<0.84 J	<0.15 :	<0.15 :	<0.15 :	<0.15 :
Molybdenum	mg/Kg-Dry	T	6.4 :	<7.6 J	-	<0.56 :	-	<0.68 :
Nickel	mg/Kg	T	<0.19 :	<0.2 :	<0.19 J	<0.19 J	<0.19 J	<0.19 J
Nickel	mg/Kg-Dry	T	<1.6 :	<1.8 :	-	<0.71 J	-	<0.86 J
Potassium	mg/Kg	T	4320. J	3110. J	3480. :	4580. J	2620. :	3860. J
Potassium	mg/Kg-Dry	T	36600. J	28000. J	-	17100. J	-	17500. J
Selenium	mg/Kg	T	<0.65 :	<0.14 :	<0.3 :	<0.3 :	<0.3 :	<0.27 :
Selenium	mg/Kg-Dry	T	<5.5 :	<1.3 :	-	<1.1 :	-	<1.2 :
Silver	mg/Kg	T	<0.2 :	<0.21 :	<0.086 J	<0.083 J	<0.085 J	<0.083 J
Silver	mg/Kg-Dry	T	<1.7 :	<1.9 :	-	<0.31 J	-	<0.38 J
Sodium	mg/Kg	T	101. :	55.3 :	<101. :	<23. :	<36.4 :	<30.8 :
Sodium	mg/Kg-Dry	T	856. :	498. :	-	<85.8 :	-	<139. :
Thallium	mg/Kg	T	<0.081 :	<0.018 :	<0.099 :	<0.1 :	<0.1 :	<0.09 :
Thallium	mg/Kg-Dry	T	<0.69 :	<0.16 :	-	<0.37 :	-	<0.41 :
Vanadium	mg/Kg	T	<0.18 :	<0.19 :	<0.21 :	<0.2 :	<0.21 :	<0.2 :
Vanadium	mg/Kg-Dry	T	<1.5 :	<1.7 :	-	<0.75 :	-	<0.9 :
Zinc	mg/Kg	T	12.2 :	5.2 :	<0.91 :	<1.6 :	<1.1 :	<5.5 :
Zinc	mg/Kg-Dry	T	103. :	46.8 :	-	<6. :	-	<24.9 :

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

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**Appendix A-12**  
**Edible Riparian**  
**Validated Analytical Results**

Parameter	Units	Site ID Sample Date Sample ID Exposure Area Fraction	RIP-7	RIP-7	RIP-8	RIP-8	RIP-9	RIP-9
			8/5/2003 RTCC-3-T01N-PLTJ Chokecherry Tailings Riparian	8/5/2003 RTCC-3-T01N-PLTB Chokecherry Tailings Riparian	8/5/2003 RMCC-1-T01N-PLTJ Chokecherry Mine Site Riparian	8/5/2003 RMCC-1-T01N-PLTB Chokecherry Mine Site Riparian	8/6/2003 RMCC-2-T01N-PLTJ Chokecherry Mine Site Riparian	8/6/2003 RMCC-2-T01N-PLTB Chokecherry Mine Site Riparian
<b>Laboratory Parameters</b>								
Solids, Percent	%	T	-	24.9	-	26.	-	23.6
<b>Metals</b>								
Aluminum	mg/Kg	T	2.7	<1.7	<1.8	<1.7	<1.8	<1.8
Aluminum	mg/Kg-Dry	T	-	<6.8	-	<6.5	-	<7.6
Antimony	mg/Kg	T	<0.48	<0.49	<0.45	<0.5	<0.45	<0.47
Antimony	mg/Kg-Dry	T	-	<2.	-	<1.9	-	<2.
Arsenic	mg/Kg	T	<0.19	<0.2	<0.18	<0.2	<0.18	<0.19
Arsenic	mg/Kg-Dry	T	-	<0.8	-	<0.77	-	<0.81
Barium	mg/Kg	T	<0.73	<0.68	<0.71	1.1	<0.73	<0.73
Barium	mg/Kg-Dry	T	-	<2.7	-	4.2	-	<3.1
Beryllium	mg/Kg	T	<0.02 J	<0.018 J	<0.019 J	<0.02 J	<0.02 J	<0.02 J
Beryllium	mg/Kg-Dry	T	-	<0.072 J	-	<0.077 J	-	<0.085 J
Boron	mg/Kg	T	2.2	3.4	6.6	8.5	2.4	3.7
Boron	mg/Kg-Dry	T	-	13.7	-	32.7	-	15.7
Cadmium	mg/Kg	T	<0.03	<0.028	<0.029	<0.028	<0.03	<0.03
Cadmium	mg/Kg-Dry	T	-	<0.11	-	<0.11	-	<0.13
Calcium	mg/Kg	T	150.	245.	245.	358.	73.2	240.
Calcium	mg/Kg-Dry	T	-	984.	-	1380.	-	1020.
Chromium	mg/Kg	T	<0.19	0.23	<0.18	0.34	<0.18	0.23
Chromium	mg/Kg-Dry	T	-	0.92	-	1.3	-	0.97
Cobalt	mg/Kg	T	<0.18	<0.17	<0.17	<0.17	<0.18	<0.18
Cobalt	mg/Kg-Dry	T	-	<0.68	-	<0.65	-	<0.76
Copper	mg/Kg	T	0.51	1.8	0.95	3.3	0.46	1.2
Copper	mg/Kg-Dry	T	-	7.2	-	12.7	-	5.1
Iron	mg/Kg	T	<4.5	<6.8	<4.8	<8.5	<1.9	<3.9
Iron	mg/Kg-Dry	T	-	<27.3	-	<32.7	-	<16.5
Lead	mg/Kg	T	0.23	0.18	0.18	0.21	<0.17	<0.15
Lead	mg/Kg-Dry	T	-	0.72	-	0.81	-	<0.64
Magnesium	mg/Kg	T	152.	143.	229.	261.	87.6	155.
Magnesium	mg/Kg-Dry	T	-	574.	-	1000.	-	657.
Manganese	mg/Kg	T	2.5	3.3	3.4	4.5	1.	1.6
Manganese	mg/Kg-Dry	T	-	13.3	-	17.3	-	6.8
Mercury	mg/Kg	T	<0.016	<0.016	<0.015	<0.015	<0.015	<0.016

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

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**Appendix A-12**  
**Edible Riparian**  
**Validated Analytical Results**

Parameter	Units	Site ID Sample Date Sample ID Exposure Area Fraction	RIP-7	RIP-7	RIP-8	RIP-8	RIP-9	RIP-9
			8/5/2003	8/5/2003	8/5/2003	8/5/2003	8/6/2003	8/6/2003
			RTCC-3-T01N-PLTJ Chokecherry Tailings Riparian	RTCC-3-T01N-PLTB Chokecherry Tailings Riparian	RMCC-1-T01N-PLTJ Chokecherry Mine Site Riparian	RMCC-1-T01N-PLTB Chokecherry Mine Site Riparian	RMCC-2-T01N-PLTJ Chokecherry Mine Site Riparian	RMCC-2-T01N-PLTB Chokecherry Mine Site Riparian
Mercury	mg/Kg-Dry	T	-	<0.064	-	<0.058	-	<0.068
Molybdenum	mg/Kg	T	<0.16	<0.15	<0.16	0.23	<0.16	<0.16
Molybdenum	mg/Kg-Dry	T	-	<0.6	-	0.88	-	<0.68
Nickel	mg/Kg	T	<1. J	<0.19 J	0.62 J	0.7 J	<0.2 J	<0.2 J
Nickel	mg/Kg-Dry	T	-	<0.76 J	-	2.7 J	-	<0.85 J
Potassium	mg/Kg	T	3780.	3620. J	5700.	6250. J	3140.	4170. J
Potassium	mg/Kg-Dry	T	-	14500. J	-	24000. J	-	17700. J
Selenium	mg/Kg	T	<0.29	<0.29	<0.27	<0.3	<0.27	<0.28
Selenium	mg/Kg-Dry	T	-	<1.2	-	<1.2	-	<1.2
Silver	mg/Kg	T	<0.09 J	<0.083 J	<0.087 J	<0.083 J	<0.09 J	<0.09 J
Silver	mg/Kg-Dry	T	-	<0.33 J	-	<0.32 J	-	<0.38 J
Sodium	mg/Kg	T	<70.4	30.6 J	<28.4	<34.6	<59.4	<72.2
Sodium	mg/Kg-Dry	T	-	123. J	-	<133.	-	<306.
Thallium	mg/Kg	T	<0.096	<0.098	<0.089	<0.1	<0.089	<0.093
Thallium	mg/Kg-Dry	T	-	<0.39	-	<0.38	-	<0.39
Vanadium	mg/Kg	T	<0.22	<0.2	<0.21	<0.2	<0.22	<0.22
Vanadium	mg/Kg-Dry	T	-	<0.8	-	<0.77	-	<0.93
Zinc	mg/Kg	T	9.8	<1.7	<2.7	<2.6	<1.2	<1.5
Zinc	mg/Kg-Dry	T	-	<6.8	-	<10.	-	<6.4

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T = Total Fraction

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**Appendix A-12**  
**Edible Riparian**  
**Validated Analytical Results**

Parameter	Site ID		RRS-17	RRS-17	RRS-3	RRS-30	RRS-7	RRS-7
	Sample Date		8/6/2003	8/6/2003	6/6/2003	6/6/2003	8/27/2003	8/27/2003
	Sample ID		RRCC-1-T01N-PLTJ	RRCC-1-T01N-PLTB	RRBV-2-T01N-PLT	RRBV-3-T01N-PLT	RRCC-4-T01N-PLTJ	RRCC-4-T01N-PLTB
Units	Fraction	Exposure Area	Chokecherry	Chokecherry	Wintercress	Wintercress	Chokecherry	Chokecherry
		Reference Riparian	Reference Riparian	Reference Riparian	Reference Riparian	Reference Riparian	Reference Riparian	
<b>Laboratory Parameters</b>								
Solids, Percent	%	T	-	19.3	14.4	12.7	-	18.7
<b>Metals</b>								
Aluminum	mg/Kg	T	<1.8	<1.7	<12.5	<16.	<1.9	<2.5
Aluminum	mg/Kg-Dry	T	-	<8.8	<86.8	<126.	-	<13.4
Antimony	mg/Kg	T	<0.46	<0.44	<0.49	<0.41	<0.4	<0.43
Antimony	mg/Kg-Dry	T	-	<2.3	<3.4	<3.2	-	<2.3
Arsenic	mg/Kg	T	<0.18	<0.18	<0.19	<0.16	<0.16	<0.17
Arsenic	mg/Kg-Dry	T	-	<0.93	<1.3	<1.3	-	<0.91
Barium	mg/Kg	T	<0.72	0.96	9.9	4.8	<0.99	1.3
Barium	mg/Kg-Dry	T	-	5.	68.7	37.8	-	7.
Beryllium	mg/Kg	T	<0.02	<0.019	<0.02	<0.017	<0.037	<0.039
Beryllium	mg/Kg-Dry	T	-	<0.098	<0.14	<0.13	-	<0.21
Boron	mg/Kg	T	2.3	5.	4.3	6.1	3.5	5.6
Boron	mg/Kg-Dry	T	-	25.9	29.9	48.	-	29.9
Cadmium	mg/Kg	T	<0.029	<0.028	<0.03	0.052	<0.043	<0.049
Cadmium	mg/Kg-Dry	T	-	<0.15	<0.21	0.41	-	<0.26
Calcium	mg/Kg	T	143.	350.	3740.	5600.	204.	346.
Calcium	mg/Kg-Dry	T	-	1810.	26000.	44100.	-	1850.
Chromium	mg/Kg	T	<0.18	0.2	<0.15	<0.17	<0.24	<0.54
Chromium	mg/Kg-Dry	T	-	1.	<1.	<1.3	-	<2.9
Cobalt	mg/Kg	T	<0.18	<0.17	<0.18	<0.15	<0.25	<0.28
Cobalt	mg/Kg-Dry	T	-	<0.88	<1.3	<1.2	-	<1.5
Copper	mg/Kg	T	0.45	1.7	0.7	0.48	0.35	1.2
Copper	mg/Kg-Dry	T	-	8.8	4.9	3.8	-	6.4
Iron	mg/Kg	T	<3.6	<6.4	21.8	29.1	<2.4	<4.4
Iron	mg/Kg-Dry	T	-	<33.2	151.	229.	-	<23.5
Lead	mg/Kg	T	<0.19	<0.14	<0.18	<0.15	0.26	0.23
Lead	mg/Kg-Dry	T	-	<0.73	<1.3	<1.2	-	1.2
Magnesium	mg/Kg	T	137.	228.	440.	365.	191.	239.
Magnesium	mg/Kg-Dry	T	-	1180.	3060.	2870.	-	1280.
Manganese	mg/Kg	T	1.2	2.3	5.5	16.2	1.9	2.4
Manganese	mg/Kg-Dry	T	-	11.9	38.2	128.	-	12.8
Mercury	mg/Kg	T	<0.016	<0.015	<0.017	<0.016	<0.015	<0.016

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**Appendix A-12**  
**Edible Riparian**  
**Validated Analytical Results**

Parameter	Units	Site ID Sample Date Sample ID Exposure Area Fraction	RRS-17	RRS-17	RRS-3	RRS-30	RRS-7	RRS-7
			8/6/2003	8/6/2003	6/6/2003	6/6/2003	8/27/2003	8/27/2003
			RRCC-1-T01N-PLTJ Chokecherry Reference Riparian	RRCC-1-T01N-PLTB Chokecherry Reference Riparian	RRBV-2-T01N-PLT Wintercress Reference Riparian	RRBV-3-T01N-PLT Wintercress Reference Riparian	RRCC-4-T01N-PLTJ Chokecherry Reference Riparian	RRCC-4-T01N-PLTB Chokecherry Reference Riparian
Mercury	mg/Kg-Dry	T	-	<0.078	<0.12	<0.13	-	<0.086
Molybdenum	mg/Kg	T	<0.16	<0.15	<0.63	0.33	<0.095	<0.18
Molybdenum	mg/Kg-Dry	T	-	<0.78	<4.4	2.6	-	<0.96
Nickel	mg/Kg	T	<0.2	<0.19	<0.2	<0.17	0.42	0.53
Nickel	mg/Kg-Dry	T	-	<0.98	<1.4	<1.3	-	2.8
Potassium	mg/Kg	T	4170.	5480.	5460.	3890.	3070.	3540.
Potassium	mg/Kg-Dry	T	-	28400.	37900.	30600.	-	18900.
Selenium	mg/Kg	T	<0.28	<0.27	<0.78	<0.66	<0.24	<0.26
Selenium	mg/Kg-Dry	T	-	<1.4	<5.4	<5.2	-	<1.4
Silver	mg/Kg	T	<0.088	<0.09	<0.09	<0.075	<0.14	<0.16
Silver	mg/Kg-Dry	T	-	<0.47	<0.63	<0.59	-	<0.86
Sodium	mg/Kg	T	<62.7	<31.4	<21.9	<43.6	<227.	<239.
Sodium	mg/Kg-Dry	T	-	<163.	<152.	<343.	-	<1280.
Thallium	mg/Kg	T	<0.092	<0.088	<0.097	<0.082	<0.081	<0.086
Thallium	mg/Kg-Dry	T	-	<0.46	<0.67	<0.65	-	<0.46
Vanadium	mg/Kg	T	<0.22	<0.21	<0.22	<0.18	<0.25	<0.28
Vanadium	mg/Kg-Dry	T	-	<1.1	<1.5	<1.4	-	<1.5
Zinc	mg/Kg	T	<0.9	<1.3	10.	15.9	1.3	<0.94
Zinc	mg/Kg-Dry	T	-	<6.7	69.4	125.	-	<5.

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**Appendix A-12**  
**Edible Riparian**  
**Validated Analytical Results**

Parameter	Site ID		RS-10	RS-11	RS-12	RS-13	RS-4	----
	Sample Date		6/6/2003	6/6/2003	6/6/2003	6/6/2003	6/6/2003	
	Sample ID		RMBV-3-T01N-PLT	RTBV-1-T01N-PLT	RTBV-2-T01N-PLT	RTBV-3-T01N-PLT	RMBV-1-T01N-PLT	
Units	Exposure Area		Wintercress Mine Site Riparian	Wintercress Tailings Riparian	Wintercress Tailings Riparian	Wintercress Tailings Riparian	Wintercress Mine Site Riparian	
	Fraction							
<b>Laboratory Parameters</b>								
Solids, Percent	%	T	13.5	14.7	17.8	13.8	14.4	-
<b>Metals</b>								
Aluminum	mg/Kg	T	77.9 J	<16.3 J	<18.4 J	<20.6 J	<13.2 J	-
Aluminum	mg/Kg-Dry	T	577. J	<111. J	<103. J	<149. J	<91.7 J	-
Antimony	mg/Kg	T	<0.42	<0.46	<0.43	<0.47	<0.45	-
Antimony	mg/Kg-Dry	T	<3.1	<3.1	<2.4	<3.4	<3.1	-
Arsenic	mg/Kg	T	<0.17	<0.19	<0.17	<0.19	<0.18	-
Arsenic	mg/Kg-Dry	T	<1.3	<1.3	<0.96	<1.4	<1.3	-
Barium	mg/Kg	T	5.5	3.3	3.4	4.	3.3	-
Barium	mg/Kg-Dry	T	40.7	22.4	19.1	29.	22.9	-
Beryllium	mg/Kg	T	<0.019 J	<0.018 J	<0.019 J	<0.018 J	<0.02 J	-
Beryllium	mg/Kg-Dry	T	<0.14 J	<0.12 J	<0.11 J	<0.13 J	<0.14 J	-
Boron	mg/Kg	T	6.5	5.6	7.4	6.1	6.6	-
Boron	mg/Kg-Dry	T	48.1	38.1	41.6	44.2	45.8	-
Cadmium	mg/Kg	T	0.12	0.075	0.068	0.076	0.37	-
Cadmium	mg/Kg-Dry	T	0.89	0.51	0.38	0.55	2.6	-
Calcium	mg/Kg	T	5690.	4060.	5540.	4710.	7610.	-
Calcium	mg/Kg-Dry	T	42100.	27600.	31100.	34100.	52800.	-
Chromium	mg/Kg	T	<0.23	0.18	0.19	<0.15	<0.15	-
Chromium	mg/Kg-Dry	T	<1.7	1.2	1.1	<1.1	<1.	-
Cobalt	mg/Kg	T	<0.17	<0.16	<0.17	<0.16	<0.18	-
Cobalt	mg/Kg-Dry	T	<1.3	<1.1	<0.96	<1.2	<1.3	-
Copper	mg/Kg	T	1.4	0.8	0.81	1.5	1.1	-
Copper	mg/Kg-Dry	T	10.4	5.4	4.6	10.9	7.6	-
Iron	mg/Kg	T	134. J	27.4 J	26.8 J	40.1 J	19.1 J	-
Iron	mg/Kg-Dry	T	993. J	186. J	151. J	291. J	133. J	-
Lead	mg/Kg	T	<0.69	<0.31	<0.21	<0.22	<0.15	-
Lead	mg/Kg-Dry	T	<5.1	<2.1	<1.2	<1.6	<1.	-
Magnesium	mg/Kg	T	515.	508.	554.	481.	632.	-
Magnesium	mg/Kg-Dry	T	3810.	3460.	3110.	3490.	4390.	-
Manganese	mg/Kg	T	15.9	3.8	4.3	14.5	12.1	-
Manganese	mg/Kg-Dry	T	118.	25.9	24.2	105.	84.	-
Mercury	mg/Kg	T	<0.016	<0.015	<0.016	<0.016	<0.016	-

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**Appendix A-12**  
**Edible Riparian**  
**Validated Analytical Results**

Parameter	Site ID		RS-10	RS-11	RS-12	RS-13	RS-4	----
	Sample Date		6/6/2003	6/6/2003	6/6/2003	6/6/2003	6/6/2003	
	Sample ID		RMBV-3-T01N-PLT	RTBV-1-T01N-PLT	RTBV-2-T01N-PLT	RTBV-3-T01N-PLT	RMBV-1-T01N-PLT	
	Exposure Area		Wintercross Mine Site Riparian	Wintercross Tailings Riparian	Wintercross Tailings Riparian	Wintercross Tailings Riparian	Wintercross Mine Site Riparian	
Units	Fraction							
Mercury	mg/Kg-Dry	T	<0.12 :	<0.1 :	<0.09 :	<0.12 :	<0.11 :	-
Molybdenum	mg/Kg	T	0.54 :	<0.59 J	<0.55 J	<0.32 J	0.63 :	-
Molybdenum	mg/Kg-Dry	T	4. :	<4. J	<3.1 J	<2.3 J	4.4 :	-
Nickel	mg/Kg	T	<0.19 J	<0.18 J	<0.19 J	<0.18 J	<0.2 J	-
Nickel	mg/Kg-Dry	T	<1.4 J	<1.2 J	<1.1 J	<1.3 J	<1.4 J	-
Potassium	mg/Kg	T	4070. J	5420. J	4680. J	5290. J	4180. J	-
Potassium	mg/Kg-Dry	T	30100. J	36900. J	26300. J	38300. J	29000. J	-
Selenium	mg/Kg	T	<0.67 :	<0.74 :	<0.68 :	<0.75 :	<0.72 :	-
Selenium	mg/Kg-Dry	T	<5. :	<5. :	<3.8 :	<5.4 :	<5. :	-
Silver	mg/Kg	T	<0.086 J	<0.081 J	<0.086 J	<0.082 J	<0.09 J	-
Silver	mg/Kg-Dry	T	<0.64 J	<0.55 J	<0.48 J	<0.59 J	<0.63 J	-
Sodium	mg/Kg	T	<21. :	<54.5 :	<54.6 :	<57.3 :	<21.9 :	-
Sodium	mg/Kg-Dry	T	<156. :	<371. :	<307. :	<415. :	<152. :	-
Thallium	mg/Kg	T	<0.084 :	<0.093 :	<0.086 :	<0.094 :	<0.09 :	-
Thallium	mg/Kg-Dry	T	<0.62 :	<0.63 :	<0.48 :	<0.68 :	<0.63 :	-
Vanadium	mg/Kg	T	<0.21 :	<0.2 :	<0.21 :	<0.2 :	<0.22 :	-
Vanadium	mg/Kg-Dry	T	<1.6 :	<1.4 :	<1.2 :	<1.4 :	<1.5 :	-
Zinc	mg/Kg	T	21.5 :	15.5 :	12.3 :	12.7 :	47.4 :	-
Zinc	mg/Kg-Dry	T	159. :	105. :	69.1 :	92. :	329. :	-

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