6.0 PROPOSED MONITORING

The proposed monitoring and surveillance programs have been designed to ensure that all regulatory permitting requirements are met by the Yellowjacket JV. Information in this section is exclusively from *2009 Yellowjacket Water Quality and Waste Sampling Program Memorandum, Lorax Environmental Inc., March 10, 2009* - Appendix I.

The 2009 proposed environmental monitoring and surveillance programs will include:

- Surface Water Quality - Sampling and Analysis;
- ML/ARD – Mineralized, waste rock, and tailings -Sampling and Analysis;
- Field leach bin - Construction and sampling; and
- Benthic Invertebrate studies

Additional hydrology and hydrogeology assessment(s) are planned for in 2009 by the Yellowjacket JV as part of the water balance program. Following the water balance work, there may be a requirement to initiate a monitoring program for the data collection. In Sections 4.3 and 4.6 of this application there is some detailed information on both hydrology and hydrogeology.

6.1 Surface Water Quality Monitoring

The Yellowjacket Gold Project currently has in place all infrastructural components required for development of this deposit, including stockpiles, tailings (sedimentation) pond, settling pond, process plant and an a small open pit. Future developments will not involve a significant increase in the mine footprint area or have extensive volume of waste materials which are eventually planned to be stored sub-aerially at site. Previous geochemical characterization of Yellowjacket Zone lithologies indicates that waste materials are non-acid generating (NAG), but neutral-drainage metal leaching may be an issue so additionally characterization and monitoring will be required for the site. Due to the2006-2007 ML/ARD results, mine site drainage is not expected to be significantly impacted as a result of the proposed development plans for the site. Further, the current discharges from site are largely indicative of what will be encountered from future development. Therefore, quantifying the current level of impact from the bulk sample pit, small stockpiles and tailings/sediment ponds will provide robust information in support of the effects assessment required for this Effluent Discharge Permit Application.

Therefore, it is proposed that the 2009 surface water quality monitoring program involve collection of surface water samples from the following locations:

- Pine Creek (4 stations: PC-1, PC-2, PC-6 - located approximately 200 m downstream of mine site, and PC-5);
- Existing Bulk Sample Pit effluent discharge (BS Pit); and
- Tailings facility effluent discharge (TSF)

Collection of water from these three (3) source locations will help to characterize site source water, as well as determine the degree of impact (or lack thereof) associated with current drainages from the Yellowjacket Gold Project.

The proposed sampling points and a comparison between operations and post-closure are indicated in Table 6.1 and these monitoring sampling locations are shown on Figure 6-1.

Table 6.1
Water Quality Sampling Sites

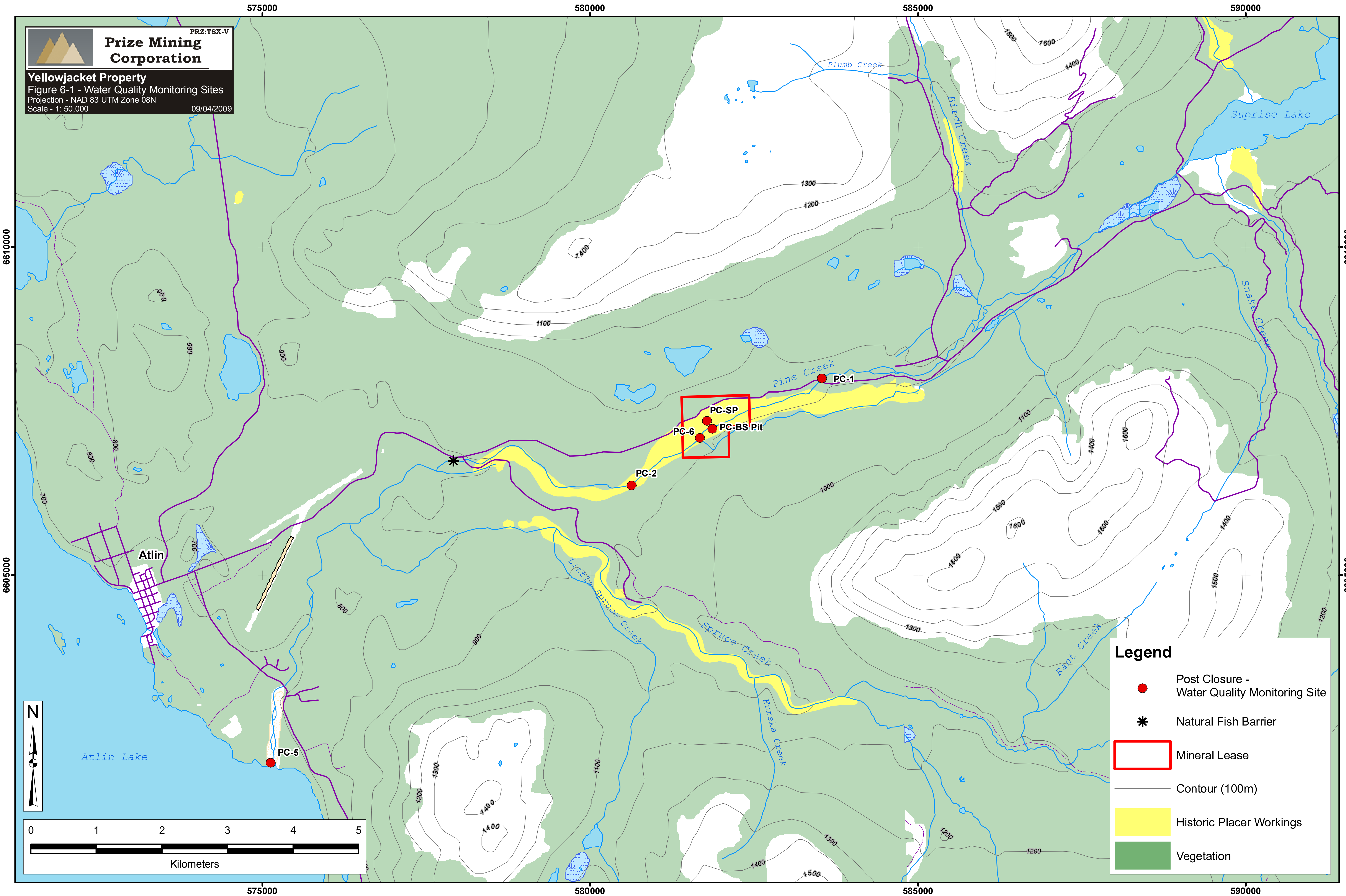
Location			Number of Sample Sites	
	Northing	Easting	Operation	Post-Closure
PC-1 – Control located U/S of YJZ activities	6608000	583537	1	1
PC-2 Located D/S of YJZ and U/S of Hydro intake	6606370	580635	1	
PC-5 Located on Pine Creek immediately U/S of Atlin Lake	6602141	575127	1	
PC-6 – Located 200 m D/S of YJZ activities	6607095	581671	1	1
PC-BS - Water sample from pit operations	6607234	581865	1	1
PC-SP – Water from tailings settling pond	6607352	581780	1	1

Sampling at each of these sites will be conducted monthly, except during freshet when samples will be collected weekly as noted in Table 6.2. This will ensure that all possible flow conditions are captured to most effectively evaluate the impact of the Yellowjacket site on the receiving environment. Yellowjacket JV personnel or TRTFN contractors that are trained in collection of water quality samples will conduct all monthly water quality sampling.

Table 6.2
Proposed 2009 Yellowjacket Gold Project Surface Water Quality Program Sampling Schedule

Month	PC-1	PC-6	PC-2	PC-5	BS pit	TSF/Sediment
Mar 2009	X	X	X	X	X	X
Apr 2009	X	X	X	X		X
May 2009	X[1]	X[1]	X[1]	X[1]		X
June 2009	X	X	X	X	X	X
July 2009	X	X	X	X		X
Aug 2009	X	X	X	X		X
Sept 2009	X	X	X	X	X	X
Oct 2009	X	X	X	X		X
Nov 2009	X	X	X	X		X
Dec 2009	X	X	X	X	X	X
Jan 2010	X	X	X	X		X
Feb 2010	X	X	X	X		X

X[1] - Sampling frequency is weekly during freshet



PRZ:TSX-V
Prize Mining Corporation
Yellowjacket Property
Figure 6-1 - Water Quality Monitoring Sites
Projection - NAD 83 UTM Zone 08N
Scale - 1: 50,000
09/04/2009
575000
580000
585000
590000
6610000
6605000
Atlin
Atlin Lake
Pine Creek
Plumb Creek
Birch Creek
Suprise Lake
Snake Creek
Little Spruce Creek
Spruce Creek
Eureka Creek
Rant Creek
PC-1
PC-SP
PC-BS Pit
PC-6
PC-2
PC-5
N
0
1
2
3
4
5
Kilometers
Legend
Post Closure - Water Quality Monitoring Site
Natural Fish Barrier
Mineral Lease
Contour (100m)
Historic Placer Workings
Vegetation

6.1.1 Water Collection, Parameters and Detection Limits

Water quality sampling will be consistent with government and peer-reviewed methods. Samples for metals, nutrients and physical parameters will be collected in clean plastic containers facing upstream while wearing powderless vinyl gloves. Prior to collection, all bottles, except for the cyanide, are to be rinsed three times with water from the sample site and disposed of downstream of the sampler to ensure that no contamination of the sample occurred (**Note:** The rinsing of water bottles will be checked with analytical lab to determine necessity of this procedure). Cyanide bottles were not rinsed due to the fact that they were charged with NaOH preservative pellets prior to shipment from the laboratory. During sample collection, bottles will be oriented to collect water from below the water surface, thereby minimizing the potential for the collection of surface films. As well, care will be taken to minimize sediment re-suspension during sample collection.

After collection, sample bottles will be kept cool and in the dark for transport to the laboratory (in a cooler). Both dissolved metals and nutrient samples will be filtered within a few hours of collection, indoors on a clean lab surface. Cyanide and total metals samples will be left unfiltered and preserved with NaOH and concentrated HNO3, respectively. Physical/anion samples will be left unfiltered and unpreserved, but these bottles will be filled to capacity to minimize headspace and degassing.

6.1.2 Quality Assurance/Quality Control

The quality assurance/quality control (QA/QC) program to be used during water quality monitoring of Pine Creek will involve the analysis of field blanks and duplicates, filter blanks, laboratory replicates, and certified reference materials. All blank samples will be composed of distilled de-ionized water, of known composition, supplied by the analytical laboratory (Maxxam - Vancouver). Field blanks will be exposed to the same conditions and treatment as the water samples collected, and will be intended to monitor any contamination that may occur in the field. Field replicates will be obtained by collecting two samples at the same time from a single station for the purpose of monitoring natural variability. Filter blanks will be run through filters used in the preparation of dissolved metals samples and will be collected to detect any contamination potentially introduced during the filtration process. Laboratory replicates, comprising sample splits, will be analyzed to determine precision of the analytical techniques used. Method blanks will be analyzed in order to detect any contamination that may have been introduced due to the analytical equipment. Finally, certified reference materials will be analyzed in order to determine the accuracy of the analytical techniques and equipment used.

The criterion used to determine the quality of duplicate QA/QC data is the relative percent difference (RPD), calculated as: *RPD = [2*{A – B/A + B}]*100*

With A and B as duplicate samples. RPD values are generally considered valid if they are less than 25%. However, RPD values of up to 100% are considered acceptable at concentrations less than five times the detection limit. As part of the monitoring water sampling program, Lorax has been requested to assess the QA/QC duplicate requirements for the project.

The parameter list and detections limits that are to be included in the YJZ Environmental Effects Monitoring Program are provided in Table 6.3.

Table 6.3
Proposed surface water sample parameters and detection limits, Yellowjacket Project Environmental Effects Monitoring Program

Parameter	Symbol	Detection Limit	Units
Physical Parameters			
Conductivity		1	µS/cm
Hardness		0.5	mg/L
pH	pH	0.1	pH
Total Suspended Solids	TSS	1	mg/L
Turbidity	NTU	0.1	NTU
Major Anions and nutrients			
Alkalinity-Total	CaCO3	0.5	mg/L
Chloride	Cl	0.5	mg/L
Sulphate	SO4	0.5	mg/L
Fluoride	F	0.01	mg/L
Ammonia Nitrogen	N	0.005	mg/L
Nitrate Nitrogen	N	0.005	mg/L
Nitrite Nitrogen	N	0.002	mg/L
Dissolved ortho-Phosphate	P	0.002	mg/L
Total Dissolved Phosphate	P	0.002	mg/L
Dissolved and Total Metals			
Aluminum	Al	0.2	µg/L
Antimony	Sb	0.02	µg/L
Arsenic	As	0.02	µg/L
Barium	Ba	0.02	µg/L
Beryllium	Be	0.01	µg/L
Bismuth	Bi	0.005	µg/L
Boron	B	50	µg/L
Cadmium	Cd	0.005	µg/L
Calcium	Ca	0.05	µg/L
Chromium	Cr	0.1	µg/L
Cobalt	Co	0.005	µg/L
Copper	Cu	0.05	µg/L
Iron	Fe	1	µg/L
Lead	Pb	0.005	µg/L
Lithium	Li	0.5	µg/L
Magnesium	Mg	0.05	µg/L
Manganese	Mn	0.05	µg/L
Mercury	Hg	0.01	µg/L
Molybdenum	Mo	0.05	µg/L
Nickel	Ni	0.02	µg/L
Phosphorus	P	2	µg/L
Potassium	K	0.05	µg/L
Selenium	Se	0.04	µg/L
Silicon	Si	100	µg/L
Silver	Ag	0.005	µg/L
Sodium	Na	0.05	µg/L
Strontium	Sr	0.05	µg/L
Thallium	Tl	0.002	µg/L
Tin	Sn	0.01	µg/L
Titanium	Ti	0.5	µg/L
Uranium	U	0.002	µg/L
Vanadium	V	0.2	µg/L
Zinc	Zn	0.1	µg/L

6.2 Waste Material Monitoring

The Yellowjacket JV has initiated supplemental static and kinetic test work and these will be conducted in some detail over the initial year of operations. Previous geochemical characterization of Yellowjacket Zone lithologies indicates that waste materials are NAG, but neutral-drainage metal leaching may still be an issue. For a more detailed review of the proposed program the reviewer is directed to the technical memo entitled *2009 Yellowjacket Water Quality and Waste Sampling Program, Lorax Environmental, March 10, 2009* - Appendix I.

During the 2007 bulk sampling program, approximately 10,000 tonnes of material was extracted, of which only 4,200 tonnes has been processed to date. Therefore, mineralized, waste and tailings materials are currently available for collection and analysis. Review of this existing material is advantageous, because it provides site specific information on the actual materials that will be generated during future operations. The waste material sampling program will comprise:

- 15 samples representative of existing materials produced during the 2007 bulk sample program, including both ore and waste rock (~5 kg each);
- 30 samples from exploration drill holes representative of material to be extracted during future development at the Yellowjacket Project (2 – 4 kg each); and
- 3 samples of tailings generated from the processing plant (2 – 4 kg each).

Existing mineralized and waste rock samples will be sieved at the lab, with the < 2 mm fraction being analyzed separately from the remainder of the sample. This will provide important information on the ARD and metal leaching characteristics of the most reactive fraction of materials that were produced as part of the bulk sampling program. These data, together with the drill hole samples from future development areas and field leach bin drainage chemistry (discussed below), will permit robust predictions of the potential impact of future waste materials generated at the Yellowjacket Gold Project.

All of the above samples will be submitted for static characterization, including acid-base accounting (ABA; paste pH, total sulphur, sulphate sulphur, sulphide sulphur, total carbon, total inorganic carbon, siderite corrected Sobek neutralization potential (NP) and multi-element geochemistry (aqua-regia leach). As well, a suite of samples will be submitted for mineralogical investigation in order to more clearly determine the source and abundance of NP mineralization in Yellowjacket Zone materials.

6.2.1 Mitigation

As noted above, additional test work is currently being conducted to refine criteria for identifying potentially problematic material for selective handling. These criteria will list parameters, and/or site specific indicators of geochemical characteristics that identify the relative potential for metal leaching and/or acid generation.

Material, which in the future may be identified as having some potential for acid generation or more potential for metal leaching than previously seen, can be managed by storing underwater in the flooded mined-out portion of the pit areas. The mine plan indicates that all mined waste material will be returned to the flooded pit(s) within two years of extraction.

Data collected to date show that NPRs indicate the waste materials are NAG. Although some metal values measured in certain lithologies have higher background levels than crustal averages, they do reflect backgrounds in this system. Routine monitoring will ensure that any metal leaching or acid generating potential values higher than current levels or recommended guidelines will be identified and the subject material removed to underwater storage.

6.2.2 Field Leach Bin Program

With the mining activities being undertaken in an area that is highly porous and has permeable placer gravels, the collection of drainage from these materials is not possible. Therefore, field-based kinetic tests will be conducted in order to collect and monitor the quality of contact water draining from the stockpiles at the Yellowjacket site. The proposed field-based kinetic tests will utilize plastic bins, constructed of barrels approximately 0.6 m in diameter by 0.8 m high, to mimic natural weathering reactions as shown in Figure 6-2. Field leach bin experiments are advantageous because they more closely resemble the actual conditions present with natural waste piles, including site-specific climatic conditions, scale, grain size, and water-rock ratios. These field leach bins will provide long-term monitoring of water quality from geologic materials.

Figure 6-2 - Example of field kinetic bins

Based on review of the Yellowjacket Property Bulk Sample Waste Characterization Program (Lorax 2006), approximately four to eight field weathering bins will be constructed at site and will include the main waste lithologies determined from review of mine plans and geologic information along strike of the Yellowjacket Fault Zone. As well, depending on the finalized mine plan, experiments using mineralized and/or tailings materials may be constructed in order to obtain drainage chemistry data from these materials.

The results from each phase of the three components will be compiled into a separate report. However, due to the long term nature of the field-based kinetic testing, an annual report will be produced that summarizes all previous data together with recommendations for the following years monitoring.

6.3 Benthic Invertebrate Monitoring

A formal assessment and monitoring program for benthic invertebrates has not yet been developed for the project, but this program is planned for late summer 2009.

It is understood that water comprises an important link to other valued components such as benthic biota, fish and wildlife. Project related inputs that have the potential to affect water quality and sediment composition are associated with such features as land disturbance (e.g., suspended sediments), waste rock/tailings storage (metal leaching and acid rock drainage) and mining/processing. Therefore, potential toxicity monitoring of benthic invertebrate is being designed in 2009 to detect (or not detect) influences associated with the potential project effects.