

CMC Metals
SILVER HART PROPERTY

YESAA Executive Committee Submission

APPENDIX L
ADDITIONAL INFORMATION REQUEST FOR YESAB
WATSON LAKE DISTRICT OFFICE I (December 2007)

November 2009



YESAB Online Registry
www.yesab.ca/registry

Re: Notice of Supplementary Information Required
YESAB Project Number: 2007-0206
Project Title: Silver Hart Mine Development and Production

Nov 07, 2007

Dear Inglis

Thank you for your submission of this project proposal to the Watson Lake Designated Office of the Yukon Environmental and Socio-economic Assessment Board (YESAB).

In order for your project proposal to be deemed complete and for the assessment to begin, it has been determined that additional information is required to supplement your project proposal. A list of this required information has been attached to this notice. Once your proposal has been deemed complete, the evaluation will begin as soon as possible.

All supplementary information related to your project proposal can be submitted via the YESAB On-line Registry or by contacting the Project Assessment Officer assigned to this project.

The Project Assessment Officer for this proposed project is Aliesha Narain and she can be contacted via email at aliesha.narain@yesab.ca, by phone at 867-536-4040, by fax at 867-536-4049 or by mail at the YESAB Watson Lake Designated Office, P.O. Box 294, Watson Lake Y0A 1C0.

In order to avoid having this project proposal being deemed withdrawn, you are required to submit the requested supplementary information, or advise the Project Assessment Officer in writing when you will be submitting the information, before the end of May 5, 2008.

For more information about this assessment under the Yukon Environmental and Socio-economic Assessment Act, please [click here](#) or see the YESAB On-line Registry at www.yesab.ca/registry.

Thank you.

Please see attachment.

Additional Information Request

The project description submitted for the proposed project provides a good overview of the project. We, however, require further information or clarification on some areas. The clarifications being sought will help to facilitate the public's review of the information pertaining to your project proposal. You can respond directly to these questions, or if the requested information already exists in other documents/applications you can submit those documents and reference the pages where the requested information can be found.

1. The information contained within the Project Proposal and Description gives conflicting distances of the project from the Town of Watson Lake and Teslin. Please clarify the approximate distance to Teslin from the project site and the approximate distance to Watson Lake.
2. The coordinates provided in the project proposal for the proposed project are:
NW 60.3669N, 130.7134W
NE 60.3407N, 130.6576W
SE 60.3390N, 130.7844W
SW 60.3126N, 136.7467W
When plotted on a map, the SW coordinate does not appear to be accurate. Please confirm if this coordinate is correct, and if not, please provide the correct coordinate.
3. Please provide a list of the heavy equipment that will be used throughout the course of the project.
4. In the Project Description, page 20 – it is noted that “stope development will be by typical drill and blast techniques and with pneumatic jack hammers.” The Summary of the Assessment of Potential Environmental Effects Resulting from the Proposed CMC Silver Project (page 66) and the mitigations for wildlife effects (page 68) do not specifically address any potential effects or disturbances from the use of pneumatic hammers or blasting on wildlife. Please provide further information on how these activities will affect wildlife and what measure you will take to offset any adverse effects.
5. In the Project Description, page 23 – you note that “it is anticipated that a minor amount of blasting of rock will be required”. Please qualify what constitutes “a minor amount of blasting”.
6. What is the anticipated blasting frequency?
7. Will any blasting be done within 100 m of a nearby watercourse?
8. The project proposal indicates that there will be excess moisture/water retention in the TM zone. What measures do you intend to take to prevent the excessive loss or release of ammonia into the environment as a result of incomplete combustion of the ANFO slurry.
9. In the Project Description, page 10 – reference is made to Figure 3 which is an estimated timeline for the permitting and development of the project. Figure 3, however, is titled as “Site Overview” and does not give any indication of timelines.
10. Please provide further information on camp waste management, particularly as it relates to the following:
 - a. Will camp facilities or sewage/waste water be located or disposed of within 30 m of water bodies, or any sources of potable water?
 - b. How do you plan to make water safe for drinking and domestic use?

11. What are the holding capacities of the thickener and silver leach tanks? Please describe how you will manage any accidental spills or overflows that may occur (for example will you have a containment berm or other structure in place, and if so, to what standard will it be built?).
12. Please describe the storage of milling reagents and conditioners. How will you manage any accidental spills that may occur?
13. We understand that a water well will be drilled for camp water use and that you intend to truck potable water from the nearest source to the site. Please indicate whether a secondary source of water has been identified, in the event that the well does not provide the amount of water required for the project. If water is to be extracted from a watercourse, please indicate the source and the average stream flow capacity of the watercourse(s).
14. In the Project Description, it is noted that the potential volume capacity of the tailings pond is 39,500 m³ and that the tailings spillway will be sized to pass the peak flow from 100 year return storm period. Please quantify the estimated additional volume of water a 100 year flood event will contribute to the pond.
15. Please confirm whether that there will be an electricity/diesel generating system in place for the camp and mill facilities, and provide details on the size of the system - if applicable.
16. Section 7.2 of the Project Description is titled "Summary of Potential Environmental and Socioeconomic Effects and Proposed Mitigation", however, the information contained within only speaks to mitigation measures for environmental components. Apart from what is contained in Table 12: Summary of the Assessment of Potential Environmental Effects Resulting from the Proposed CMC Silver Project, are there any other mitigation measures proposed for socio-economic valued components as identified in the table?
17. Please provide further details on the practices that will be observed to contain domestic garbage, particularly during bear season which occurs from April – October, and when there is a high likelihood for bear habituation and subsequent human-wildlife conflicts.
18. In the Project Description, it is noted that minor road upgrading will be required but this is applied for as part of the Class III Exploration Permit. Does this also include the road network shown on Figure 5? If not, please provide further information on the new roads that will be constructed on-claims, particularly with regards to:
 - a. Total length and width of the roads?
 - b. Will the roads be permanent or temporary?
 - c. How will watercourses be crossed?
 - d. You noted that overburden from the pit will be used for, among others, road base material. Will you also require additional material that may be sourced from, for example, burrow pits? If yes, please indicate the location (s) of the pits, total amount of material that will be removed, and the measures you will take to reclaim the area (s).
19. In the Project Description, page 73, as part of the post closure efforts, it is noted that CMC will "work towards a walk-away closure scenario for most or all mine components." Please indicate whether this refers to progressive reclamation or other.
20. It seems unclear from the information provided in the project proposal as to whether or not there has been previous mining at the Silver Hart Property. Please confirm.

21. Can you please provide copies of the Phase I and Phase II Environmental Site Assessments that are referenced in section 7.4 of the Project Description?
22. In the Project Description, page 12, there is a list of plans and reports that you have indicated will be submitted in support of the application as required. The reference to the sections in the Project Description where some information on these plans can be found seems to be inaccurate, for example, there is no section 4.2.4, but section 4.2.1 deals with Waste Rock Management; section 5.1.2 does not at all give any information relevant to an ARD Management Plan; and finally the information contained within the sections referred to on page 12 does not seem to constitute plans as such. Please clarify.
23. You have noted the uncertainty in ARD potential and that ore zone material has been submitted for kinetic ARD testing. Furthermore, the Project Description notes that an ML/ARD plan will be created and implemented as required. We understand that in some cases, there may be some inconclusiveness around pre-mining ARD/ML prediction as compared to predictions based on testwork undertaken during the operational and post-mining phases of the development. However, we feel that an ARD/ML program should assess the consequences of events that could occur over the life of the project and beyond, and where there is uncertainty regarding future drainage chemistry, contingency planning - including monitoring and management of effects - is often critical in dealing with this uncertainty. Based on the information provided as part of your project proposal, we feel that we do not have enough details to understand the characterization of geological materials, the ARD/ML predictions, and the contingency measures you intend to implement should there be an issue. In this regard, we are seeking the following specific information:
 - a. Please provide a full description of the property geology as well as geochemical investigations as they relate to the following:
 - i. A plan map showing outcrop/subcrop geology including geological cross-sections representing each of the units in relation to the undertaking;
 - ii. Plan and cross-sectional representations (maps) indicating sample locations for the geochemical testwork program;
 - iii. An enumeration of each of the rock units [including acid generation potential (see item 23 (b) below), neutralization potential, and trace element content] expected to be encountered by the project, amounts of each rock unit, and final resting place for these materials. Include outlier data, not just averages;
 - iv. Similar to item (iii) above, please describe the waste rock-quality as per standard geological/geotechnical investigations (core sample description).
 - v. As the geochemical testing was limited to ore material from the TM zone only, we see this as a limitation given that the S zone is also suggested for development, and no further information is provided on whether the ore zones/assemblages are consistent. In addition, there is the need to conduct testing of all materials (waste rock) to be encountered by the project, including those materials suggested for use in the construction of roads and impoundments.
 - vi. The discussion on ABA results as well as the ABA testwork lab certificate provides some insight into the "uncertainty" surrounding the capacity for the tailings waste to promote ARD. Given the incomplete description/understanding of the geologic unit tested, further testing of this unit is required to enable us to understand the mineralogy that is expected to take part in acid generation and neutralization.
 - vii. What physical changes will occur as a result of excavation and weathering, and how will they alter other weathering reactions, drainage conditions and the amount of mineral exposure?

- viii. What are the critical weathering reactions? For example, is dissolution a concern? Will primary metal release occur almost entirely from sulphide oxidation?
 - ix. What are the expected present and future metal loadings from each mine component/geologic unit?
 - x. How long will it take for ARD and other important hydrological or weathering events to occur?
 - xi. Section 4.1.2 of the Project Description notes "It was observed that the overburden tends to not to be well draining, and the lower TM depression in the overburden maintains water throughout the summer months." Please provide further information on the groundwater conditions at the TM pit. What is the grain-size analysis data for this material?
 - xii. In the Project Description, you have noted that water flowing from the existing adit has shown zinc, arsenic and cadmium levels in exceedance of the CCME guidelines. Is there any water that is presently impounded in the underground workings? If so, what is the water quality like? Is there any historical information to draw upon in understanding the potential geochemical evolution of the water generated from the underground workings?
 - xiii. What is the grade and geometry for presently-developed underground workings?
 - xiv. How much waste will be disposed of above ground versus backfilled and what is the ARD/ML nature for this waste?
 - xv. It is our understanding that depending on the ARD/ML release mechanisms, rates and other factors, a one metre lift of crushed limestone may have negligible or only short-term mitigation capacity. This suggested strategy seems preliminary. Please indicate whether further geochemical and treatability studies will be conducted and how the findings will be used.
 - xvi. The open pit intercepting the underground workings seem to suggest a flow-through scenario upon closure, with combined flow exiting present underground access points. We are unclear as to how water will be controlled from the combined open-pit/underground access at the end of mine life.
- b. At a minimum, the following procedures are recommended for determining ARD potential:

Static Testing

- 1. Trace Element Content:
 - Total Concentration
 - Soluble Concentration
- 2. Acid Base Accounting:
 - Total Sulphur, Sulphate-Sulphur, and Sulphide-Sulphur
 - Bulk Neutralization Potential
 - Carbonate Neutralization Potential
 - pH
- 3. Mineralogy and Other Geological Properties:
 - Mineralogical Examination
- 4. Particle Size Separation and Determination (for unconsolidated and crushed materials)

Kinetic Testing

- 1. Reaction Rates and Drainage Chemistry:
 - Pre-Test and Post-Test Characterization

- Humidity Cell
- On-Site Test Pads
- Site Drainage Monitoring

- c. Please provide an analysis of all possible outcomes or interpretations of monitoring and material characterization, and the consequences of events that could occur over the life of the project and beyond. Stemming from the analysis, details on contingency plans and monitoring/studies aimed at reducing uncertainty, as well as options for drainage treatment, should also be provided.

24. The following questions are specific to monitoring and management of potential environmental effects:

- a. Please describe your plans for monitoring potential project effects associated with water and/or air quality, soils, and any other environmental components during the duration of the project (construction, operation, decommissioning). This information should include details on the frequency of monitoring activities and the parameters that will be analysed- in the case of water, air and soil - and any adaptive management strategies that will be taken to monitor the occurrence of effects and the success of mitigation measures.
- b. Please provide further details on the treatment options you will use particularly with regards to the metals (zinc, lead, arsenic and cadmium) you have noted as exceeding certain standards (CCME and MMER).
- c. Have you identified possible factors or situations that could undermine the stability of the tailings pond (for example vibrations from blasting, natural events, etc.)? Please describe the emergency response measures you will implement should there be a failure of the tailings dam or pond?

25. Please provide details on the preliminary reclamation liability costs and the level of financial security estimated for mine closure.

December 21, 2007

Yukon Environmental and Socioeconomic Assessment Board
Watson Lake Designated Office
P.O. Box 294 Watson Lake, Yukon Y0A 1C0

Attention Ms. Aliesha Narain, Project Assessment Officer

Regarding: Silver Hart Mine Development YESAB Project Number 2007-0206

Dear Ms Narain,

Thank you for making the time to meet with our environmental consultants for this project and discussing your additional information requests to begin the environmental assessment of our Silver Hart Mine. We have prepared the following responses to your questions in blue type below your questions.

Additional Information Request

The project description submitted for the proposed project provides a good overview of the project. We, however, require further information or clarification on some areas. The clarifications being sought will help to facilitate the public's review of the information pertaining to your project proposal. You can respond directly to these questions, or if the requested information already exists in other documents/applications you can submit those documents and reference the pages where the requested information can be found.

- 1. The information contained within the Project Proposal and Description gives conflicting distances of the project from the Town of Watson Lake and Teslin. Please clarify the approximate distance to Teslin from the project site and the approximate distance to Watson Lake.*

By road: Teslin: 150km, Watson Lake: 180km

Geographical distance: Teslin: approximately 120km, Watson Lake: approximately 80km

- 2. The coordinates provided in the project proposal for the proposed project are:
NW 60.3669N, 130.7134W
NE 60.3407N, 130.6576W
SE 60.3390N, 130.7844W
SW 60.3126N, 136.7467W
When plotted on a map, the SW coordinate does not appear to be accurate. Please confirm if this coordinate is correct, and if not, please provide the correct coordinate.*

SW 60.3126N, 130.7467W

- 3. Please provide a list of the heavy equipment that will be used throughout the course of the project.*

During the construction phase, the heavy equipment that will or may be used includes an excavator, articulated dump trucks (2), dozer, grader, soil compactor, backhoe loader and a mobile crane.

On going operational heavy equipment will include a grader, ITC loader/forklift, mobile crushing plant, 3 ton flatbed truck, a bobcat, and 2-diesel electric gensets. Larger materials and supplies will be transported to the site via a contract truck hauler and concentrate transportation from the site will be by contractor haulage with one 25-tonne capacity tractor trailer. Mining will also be contracted and will require at least an excavator, articulated dump trucks (2), and a dozer. Underground contractor heavy equipment would include 2-LHD's, roof bolter, and a double boom jumbo drill for development drifts.

4. *In the Project Description, page 20 – it is noted that “stope development will be by typical drill and blast techniques and with pneumatic jack hammers.” The Summary of the Assessment of Potential Environmental Effects Resulting from the Proposed CMC Silver Project (page 66) and the mitigations for wildlife effects (page 68) do not specifically address any potential effects or disturbances from the use of pneumatic hammers or blasting on wildlife. Please provide further information on how these activities will affect wildlife and what measure you will take to offset any adverse effects.*

Standard mitigative measures for noise reduction will be observed at all times. These will include steps such as industry standard muffling equipment, well maintained and operating equipment, noise reducing blast locations. The property is partially overlapped by a Mountain Goat Wildlife Key Area that extends to the east from the property. The higher elevation areas across the river valley to the south are also identified as Mountain Goat Wildlife Key Area and a Thinhorn Sheep Wildlife Key Area (see figure 12 of the Silver Hart Project Description). No mountain goats or thinhorn sheep have been observed on the property or across the Oake Creek valley during the 2 years of seasonal (summer and fall) drilling. As the mountain goat and thinhorn mating season is during the winter no disturbance from the mining will occur. Blasting will be avoided whenever possible during the birthing season of May and June. With these mitigative measures the negative impacts to wildlife will be minimized.

5. *In the Project Description, page 23 – you note that “it is anticipated that a minor amount of blasting of rock will be required”. Please qualify what constitutes “a minor amount of blasting”.*

Blasting would be dictated by the degree of difficulty that the dozer and excavator would experience in ripping/ hammer breaking the waste rock. Minor amount of blasting would entail blasting to fracture the waste rock on average once a month during the summer mining season or about 5 times a year. Rock fracturing to the .45m run-of-mine rock size would be less than 20 percent of the total waste rock proposed to be excavated.

6. *What is the anticipated blasting frequency?*

Blasting frequency would be on average once a month for the summer mining season or up to 5 times a year during the surface mining phase.

7. *Will any blasting be done within 100 m of a nearby watercourse?*

No blasting will occur within 100m of a watercourse.

8. *The project proposal indicates that there will be excess moisture/water retention in the TM zone. What measures do you intend to take to prevent the excessive loss or release of ammonia into the environment as a result of incomplete combustion of the ANFO slurry.*

The volume of ANFO is very minor in perspective of the potential incomplete combustion. If it is assumed that five percent of the blast holes are incomplete, based on a common incomplete combustion rate for blasting, the amount of ANFO that would potentially be available for release would be equivalent to the fertilizer application rates to fertilize 1.6

hectares of a golf course on an annual basis, a low level of ammonia release. Water accumulation within the pit will be used as a source of water for the mill and eventually end up in the tailings pond. Therefore if the incomplete combustion of the ANFO slurry is identified as a systemic occurrence, the release of the ammonia would be retained in the tailings pond. Also, with the water quality monitoring program, an early detection of ammonia and nitrates would dictate the change of ANFO to a non-ammonia based explosive. As the blasting will not occur within 400m of a watercourse and all potentially contaminated water will be retained in the tailings pond, the potential for ammonia contamination of the surface water system is considered to be very low, and any release from the tailings pond will be monitored and treated as required.

9. *In the Project Description, page 10 – reference is made to Figure 3 which is an estimated timeline for the permitting and development of the project. Figure 3, however, is titled as “Site Overview” and does not give any indication of timelines.*

Please see the timeline figure in Appendix I of the Revised Project Description.

10. *Please provide further information on camp waste management, particularly as it relates to the following:*

- a. *Will camp facilities or sewage/waste water be located or disposed of within 30 m of water bodies, or any sources of potable water?*
- b. *How do you plan to make water safe for drinking and domestic use?*

A separate cistern at the camp facilities will hold potable water that will be trucked to the site from the Town of Watson Lake. Also, 19.8 liter water cooler stands will be placed within the mill facilities, office, lab, First Aid station, and camp facilities.

Domestic water will be groundwater from the proposed make-up water well. This well will be tested for potability prior to use.

11. *What are the holding capacities of the thickener and silver leach tanks? Please describe how you will manage any accidental spills or overflows that may occur (for example will you have a containment berm or other structure in place, and if so, to what standard will it be built?).*

The holding capacity will be based on available used tanks when the mill process facilities are being prefabricated. The tanks will be in the range of 15,000 litres (3.35 m diameter by 1.68 m height). Both the thickener and leach tanks will be located inside the mill facilities building. The building will have a concrete perimeter wall and slab floor with a collection sump for any spillage from the mill process, thickener tank or the leach tank. Any floor clean-up solids or liquids are pumped into the ball mill for reprocessing. Larger spills from the thickener or leach tank will require the source of the spill to be repaired and the material pumped back into the tank. The containment capacity of the concrete building walls and floor would be over 60,000 litres.

12. *Please describe the storage of milling reagents and conditioners. How will you manage any accidental spills that may occur?*

An adjoining building to the mill facilities with an explosive proof ventilation system will store the reagents and conditioners as per the standards described in the MSDS requirements. Spill clean-ups will follow the recommended procedures in the MSDS procedures. For most small solid spills the material can be swept up and disposed of in a contaminated waste barrel. For small liquid spills, an inert absorbent can contain the liquid and be swept up and disposed of in 205L drums. Larger spills will require the material to be shoveled into an appropriate container. Large liquid spills will require the containment of the spill by building a berm (if outside) and use of inert absorbent material and pads to absorb the

liquid. Within a building the liquid can be vacuumed into a container and inert absorbent material to clean-up the residual waste. All contaminated waste material barrels will be disposed of at a permitted waste disposal facility capable upon receipt of the necessary transportation permits. All personnel handling and working within the mill process facilities will be trained in the clean-up procedures, proper protective equipment to be used, documentation of spills, and will understand the MSDS requirements.

13. *We understand that a water well will be drilled for camp water use and that you intend to truck potable water from the nearest source to the site. Please indicate whether a secondary source of water has been identified, in the event that the well does not provide the amount of water required for the project. If water is to be extracted from a watercourse, please indicate the source and the average stream flow capacity of the watercourse(s).*

No secondary source of water has been identified. Should the water well not produce the necessary yields required another source of water will be assessed and the applicable permits and licences will be applied for.

14. *In the Project Description, it is noted that the potential volume capacity of the tailings pond is 39,500 m³ and that the tailings spillway will be sized to pass the peak flow from 100 year return storm period. Please quantify the estimated additional volume of water a 100 year flood event will contribute to the pond.*

The tailings pond has a run-on drainage ditch to divert the majority of the flood flow during a 1:100 year flood event. Based on the past work by third party consultants, it was estimated that a 1:200 year flood event would be 45mm/hr. corresponding to a 10 minute duration. This would contribute an additional 400.5m³ to the tailings pond. Tailings pond operational protocols will use decant water from the pond for the mill and maintain a minimum 10 percent capacity volume. Therefore the 400.5m³ flood occurrence contribution shouldn't require emergency spillage considering there would be a potential 3,950m³ volume available.

15. *Please confirm whether that there will be an electricity/diesel generating system in place for the camp and mill facilities, and provide details on the size of the system - if applicable.*

Electrification of the project site is with two diesel fueled gensets located next to the fuel containment site. The two gensets were selected on the basis that during the summer mining phase both gensets would be utilized for the crushing plant and milling facilities. To minimize fuel consumption, only one genset is required during the winter milling phase. Genset size is one 260 kW unit and one 180 kW unit. This will depend on the availability of used gensets at the designated size and may vary slightly.

16. *Section 7.2 of the Project Description is titled "Summary of Potential Environmental and Socioeconomic Effects and Proposed Mitigation", however, the information contained within only speaks to mitigation measures for environmental components. Apart from what is contained in Table 12: Summary of the Assessment of Potential Environmental Effects Resulting from the Proposed CMC Silver Project, are there any other mitigation measures proposed for socioeconomic valued components as identified in the table?*

The socioeconomic valued components are not expected to be significantly impacted, thus the mitigation measures suggested in Table 12 are expected to be sufficient to minimize the impacts of the project to these.

17. *Please provide further details on the practices that will be observed to contain domestic garbage, particularly during bear season which occurs from April – October, and when there is a high likelihood for bear habituation and subsequent human-wildlife conflicts.*

All garbage will be stored in lockable containers to prevent odour from attracting bears until shipped off-site for disposal. This will be done on a weekly basis at a minimum. Employees will comply with Government of Yukon policy with respect to bear management and bear education programs.

18. In the Project Description, it is noted that minor road upgrading will be required but this is applied for as part of the Class III Exploration Permit. Does this also include the road network shown on Figure 5? If not, please provide further information on the new roads that will be constructed on claims, particularly with regards to:

- a. Total length and width of the roads?
- b. Will the roads be permanent or temporary?
- c. How will watercourses be crossed?
- d. You noted that overburden from the pit will be used for, among others, road base material. Will you also require additional material that may be sourced from, for example, borrow pits? If yes, please indicate the location (s) of the pits, total amount of material that will be removed, and the measures you will take to reclaim the area (s).

The only road development is the TM pit road to the mill facility area that would require the development of less than 100 m in length. The road base would be 10 m wide with a running surface of 6 m. The road is a temporary road and will be removed at the end of the active life of the project. There are no watercourse crossings associated with the TM pit road and the construction materials will not require a borrow pit.

There will also be a trail from the mill facilities area to the tailings pond to provide access to the area for construction of the berm. This trail will eventually be the right-of-way for the tailings line and the return dewatering line. This trail will have a temporary 4 m wide road base that will be reclaimed at the end of the project. Total length of the trail is approximately 110 m.

19. In the Project Description, page 73, as part of the post closure efforts, it is noted that CMC will “work towards a walk-away closure scenario for most or all mine components.” Please indicate whether this refers to progressive reclamation or other.

Progressive reclamation of the impacted areas of the site will be undertaken whenever possible. As the temporal and spatial impacts of this project are small the opportunities for progressive reclamation are considered to be very low aside from small measures such as reseeding berms and slopes when appropriate and recontouring and reseeding areas disturbed during construction.

20. It seems unclear from the information provided in the project proposal as to whether or not there has been previous mining at the Silver Hart Property. Please confirm.

There has been no mining at the Silver Hart property but an extensive underground exploration and bulk sampling program was undertaken in 1985-86.

21. Can you please provide copies of the Phase I and Phase II Environmental Site Assessments that are referenced in section 7.4 of the Project Description?

Please see the attached digital version of the Phase II Environmental Site Assessment. The Phase I Environmental Site Assessment was not located but the Phase I was summarized in the Phase II report.

22. In the Project Description, page 12, there is a list of plans and reports that you have indicated will be submitted in support of the application as required. The reference to the sections in the Project Description where some information on these plans can be found seems to be inaccurate, for example, there is no section 4.2.4, but section 4.2.1 deals with

Waste Rock Management; section 5.1.2 does not at all give any information relevant to an ARD Management Plan; and finally the information contained within the sections referred to on page 12 does not seem to constitute plans as such. Please clarify.

The plans have not been completed as yet but will be submitted to fulfill the requirements of the permits or licences that are being applied for should they be deemed to be required. The page references in the Project Description are intended to direct the reader to the relevant section of the report that discuss these topics but not the plans themselves.

23. You have noted the uncertainty in ARD potential and that ore zone material has been submitted for kinetic ARD testing. Furthermore, the Project Description notes that an ML/ARD plan will be created and implemented as required. We understand that in some cases, there may be some inconclusiveness around pre-mining ARD/ML prediction as compared to predictions based on testwork undertaken during the operational and post-mining phases of the development. However, we feel that an ARD/ML program should assess the consequences of events that could occur over the life of the project and beyond, and where there is uncertainty regarding future drainage chemistry, contingency planning - including monitoring and management of effects – is often critical in dealing with this uncertainty. Based on the information provided as part of your project proposal, we feel that we do not have enough details to understand the characterization of geological materials, the ARD/ML predictions, and the contingency measures you intend to implement should there be an issue. In this regard, we are seeking the following specific information:

- a. Please provide a full description of the property geology as well as geochemical investigations as they relate to the following:
 - i. A plan map showing outcrop/subcrop geology including geological cross-sections representing each of the units in relation to the undertaking;

In the vicinity of the TM surface pit, there is a mantle of till that covers the rock interface. There were no natural outcrops/subcrops in the TM and S zone area. Surface geological mapping was conducted in the TM trench, but not for the outlying area. Attached are the surface geological maps and the underground geological maps prepared by Silver Hart Mines for the TM zone. The 2007 drill holes are plotted on the maps as reference drill holes Granodiorite/Altered Granodiorite, and Andesite Dyke.

- ii. Plan and cross-sectional representations (maps) indicating sample locations for the geochemical testwork program;

Please see the attached geological mapping.

Comment [MSOffice1]: ob
please add your sample points to
the map

- iii. An enumeration of each of the rock units [including acid generation potential (see item 23 (b) below), neutralization potential, and trace element content] expected to be encountered by the project, amounts of each rock unit, and final resting place for these materials. Include outlier data, not just averages;

Rock Units	Volume BCM	Geochemical Characteristics	Use Waste Dump BCM	Use Construction Material BCM
Granodiorite	145,483	See attached spreadsheet	138,834	6,649
Andesite Dyke	6,564	Not Available	6,564	0
Totals-	152,047		145,398	6,649

- iv. Similar to item (iii) above, please describe the waste rock-quality as per standard geological/geotechnical investigations (core sample description).

Please see Geological logs associated with the drill hole sample assays in iii above.

- v. *As the geochemical testing was limited to ore material from the TM zone only, we see this as a limitation given that the S zone is also suggested for development, and no further information is provided on whether the ore zones/assemblages are consistent. In addition, there is the need to conduct testing of all materials (waste rock) to be encountered by the project, including those materials suggested for use in the construction of roads and impoundments.*

There was drilling conducted in 2005, 2006, and 2007 in the TM and S zone areas to define the vein continuation, confirm historical data, and to define the host rock assemblages. Both the TM and S zone that are designated for mining are hosted in same granodiorites. Both the TM and S mineralized vein depositional stages would have occurred at the same time and therefore be considered equivalent in geological and geochemical make-up. Any waste rock proposed to be used as a construction material would not contain sulphide minerals outside of the typical threshold levels seen in the Cassiar Batholith granodiorites.

- vi. *The discussion on ABA results as well as the ABA testwork lab certificate provides some insight into the “uncertainty” surrounding the capacity for the tailings waste to promoted ARD. Given the incomplete description/understanding of the geologic unit tested, further testing of this unit is required to enable us to understand the mineralogy that is expected to take part in acid generation and neutralization.*

Kinetic testing of the ore zone is currently being undertaken. Static testing was undertaken for two samples of the hanging wall, one of the footwall, and an additional sample from the ore zone. The modified ABA data indicates that the sample TM-OZ-01 is the only sample with significant sulphide content and is potentially acid generating. As most of the sulphides in the ore sample will be extracted through the mill process, this rock type is not expected to result in any acid generation as tailings. The remaining four samples TM-FW-01, TM-HW-01, TM-HW-02 and TM Zone LCT are considered to be uncertain based on the low Net NP. However, this is due to the relatively low values for both AP and NP; hence with high NP/AP ratios these samples are unlikely to generate acidity.

- vii. *What physical changes will occur as a result of excavation and weathering, and how will they alter other weathering reactions, drainage conditions and the amount of mineral exposure?*

Few physical changes are expected as a result of weathering beyond what would normally occur with exposed rock. The rock will be more fragmented during the excavation process and thus some fines will wash out into the surface soils under and immediately downgradient from the waste rock storage area. Over time the rock will smooth down on from weathering and some rock may crack as a result of the freeze-thaw process.

- viii. *What are the critical weathering reactions? For example, is dissolution a concern? Will primary metal release occur almost entirely from sulphide oxidation?*

Based on our knowledge of current steady state groundwater, we have found that the groundwater has some elevated levels of zinc, which would infer that there has been dissolution of sulphide minerals within the host rock.

- ix. *What are the expected present and future metal loadings from each mine component/geologic unit?*

The metal loadings are not calculable based on the geological unit but water quality testing, in combination with flow measurements, has shown current metal loading values for the receiving waters. There is not expected to be any appreciable difference in the metal loading of the receiving waters as a result of this project, due to its small size and the management plans to minimize potential contamination of the receiving waters from the operation of this mine. Metals loading limits are expected to be a requirement of the mine production licence and thus will be monitored through the life of the project.

x. How long will it take for ARD and other important hydrological or weathering events to occur?

Predicting ARD (should it occur) or other hydrological or weathering events is not possible at this time.

xi. Section 4.1.2 of the Project Description notes "It was observed that the overburden tends to not to be well draining, and the lower TM depression in the overburden maintains water throughout the summer months." Please provide further information on the groundwater conditions at the TM pit. What is the grain-size analysis data for this material?

There is no existing groundwater information for the TM pit or any surface water data from the water retained in the depressions. The TM zone is near surface bedrock and therefore significantly reducing the potential concern of water retention within overlying surficial materials. The TM zone is within the bedrock and therefore no grain-size analysis has been undertaken.

xii. In the Project Description, you have noted that water flowing from the existing adit has shown zinc, arsenic and cadmium levels in exceedance of the CCME guidelines. Is there any water that is presently impounded in the underground workings? If so, what is the water quality like? Is there any historical information to draw upon in understanding the potential geochemical evolution of the water generated from the underground workings?

We do not expect a significant impoundment of water in the underground workings, as the adit was constructed as a free-draining incline. The only information available to describe the geochemical processes occurring in the underground workings is a knowledge of the geological composition of the ore body and the condition of the water flowing from the adit. From this information it appears that the groundwater is in contact with the ore and as a result some dissolution of the metals is occurring, hence the elevation of arsenic, cadmium, and zinc levels. The pH value of approximately 7.5, well within the normal range for surface waters, indicates that there is no significant acid generation occurring.

xiii. What is the grade and geometry for presently-developed underground workings?

The presently-developed underground workings measure 3.6 to 4.9 meters wide by 3.0 meters high. Slusher drifts and raises were approximately 1.5 meters wide by 2.1 meters high. The adit has a positive grade of approximately 2 percent. Currently the adit opening is permanently closed but has a rock drain to allow the drainage of the workings.

xiv. How much waste will be disposed of above ground versus backfilled and what is the ARD/ML nature for this waste?

The amount of above ground waste disposal will be dictated by the ratio of ore to waste at the time of extraction and the swell factor of the underground fractured waste. Due to the variability of these factors, as additional waste needs to be disposed, the first priority will to

place the material underground. If it is not practical at the time the waste rock is being removed to the waste dump area or for reclaiming slopes of the TM pit. Refer to the geochemical core assays spreadsheet in iii above for typical assays to be encountered.

Static testing indicates that the ARD nature of the rock will be uncertain due to the very low levels of neutralization potential, even though the NP/AP ratio is considered to be outside of the PAG levels for 3 of the 3 samples. All of this rock will be disposed of in the waste rock pile.

xv. It is our understanding that depending on the ARD/ML release mechanisms, rates and other factors, a one metre lift of crushed limestone may have negligible or only short-term mitigation capacity. This suggested strategy seems preliminary. Please indicate whether further geochemical and treatability studies will be conducted and how the findings will be used.

A treatability study of the water was undertaken in the fall of 2007 to determine what treatment would be required of the water to reduce the levels of some of the metals of concern. As the hydrogeology of the site may be altered by the mine development closure options will be finalized once a better understanding of predicted post-closure conditions is available. It is expected that the removal of the ore body from the hillside will remove the potential for contamination of the water and any flow from the adit will contain greatly reduced levels of metals.

xvi. The open pit intercepting the underground workings seem to suggest a flow through scenario upon closure, with combined flow exiting present underground access points. We are unclear as to how water will be controlled from the combined open-pit/underground access at the end of mine life.

See previous response (23.a.xvi.).

b. At a minimum, the following procedures are recommended for determining ARD potential:

Static Testing

1. Trace Element Content:

- Total Concentration
- Soluble Concentration

2. Acid Base Accounting:

- Total Sulphur, Sulphate-Sulphur, and Sulphide-Sulphur
- Bulk Neutralization Potential
- Carbonate Neutralization Potential
- pH

3. Mineralogy and Other Geological Properties:

- Mineralogical Examination

4. Particle Size Separation and Determination (for unconsolidated and crushed materials)

Kinetic Testing

1. Reaction Rates and Drainage Chemistry:

- Pre-Test and Post-Test Characterization
- Humidity Cell
- On-Site Test Pads
- Site Drainage Monitoring

Static testing was done for a number of samples and humidity cell testing is being undertaken on the ore sample based on the kinetic testing results.

c. Please provide an analysis of all possible outcomes or interpretations of monitoring and material characterization, and the consequences of events that could occur over

the life of the project and beyond. Stemming from the analysis, details on contingency plans and monitoring/studies aimed at reducing uncertainty, as well as options for drainage treatment, should also be provided.

A performance based adaptive management strategy will be adopted to manage such potential future events. The proposed Environmental Monitoring Program (attached) will be used to observe any changes that require management changes to deal with these issues.

24. The following questions are specific to monitoring and management of potential environmental effects:

a. Please describe your plans for monitoring potential project effects associated with water and/or air quality, soils, and any other environmental components during the duration of the project (construction, operation, decommissioning). This information should include details on the frequency of monitoring activities and the parameters that will be analysed in the case of water, air and soil - and any adaptive management strategies that will be taken to monitor the occurrence of effects and the success of mitigation measures.

Please see the attached proposed Environmental Monitoring Program.

b. Please provide further details on the treatment options you will use particularly with regards to the metals (zinc, lead, arsenic and cadmium) you have noted as exceeding certain standards (CCME and MMER).

Treatment options are currently being considered but will not be finalized until a more complete understanding of the requirements of treatment is determined. The existing water of concern (the flow from the adit) will be used in the milling process and is expected to be a fairly different composition upon completion of mining and the removal of the ore, thus any decisions on treatment options will be made when a release of water from the mine site that will exceed the relevant standards is expected.

c. Have you identified possible factors or situations that could undermine the stability of the tailings pond (for example vibrations from blasting, natural events, etc.)? Please describe the emergency response measures you will implement should there be a failure of the tailings dam or pond?

During the design stage of the tailings dam, several design features were incorporated to mitigate the potential undermining and stability of the dam. These include:

<u>Design Feature</u>	<u>Mitigation Criteria</u>
Rock core and toe drains	Eliminates hydrostatic pressures that can lead to catastrophic failure
Rock Slope Face	Minimizes erosion of dam slope faces
Freeboard/ Emergency Spill Channel	Eliminates overtopping of the dam during flash downpours.

As part of the environmental Policies and Procedures to be developed for on going data collection, monitoring, and mitigation, a Dam Safety Inspection Procedures with an Emergency Preparedness Procedure based on the principles of the Canadian Dam Safety Association, "Dam Safety Guidelines 2007" will be used.

25. Please provide details on the preliminary reclamation liability costs and the level of financial security estimated for mine closure.

It is our understanding that the accounting of reclamation costs is a regulatory tool and a determination of these costs will be made through the appropriate government agencies.

We trust the above response is adequate to answer your questions; however please do not hesitate to contact me or our agent in Yukon, Paul Inglis of Access Consulting Group, if you have any further questions.

Sincerely,

Don Wedman, P.Eng.,
President, CMC Metals Inc.

Attachments:

- Geological cross sections
- Amended project description information
- Environmental Monitoring Program

CC Paul Inglis, Access Consulting Group

PWGSC

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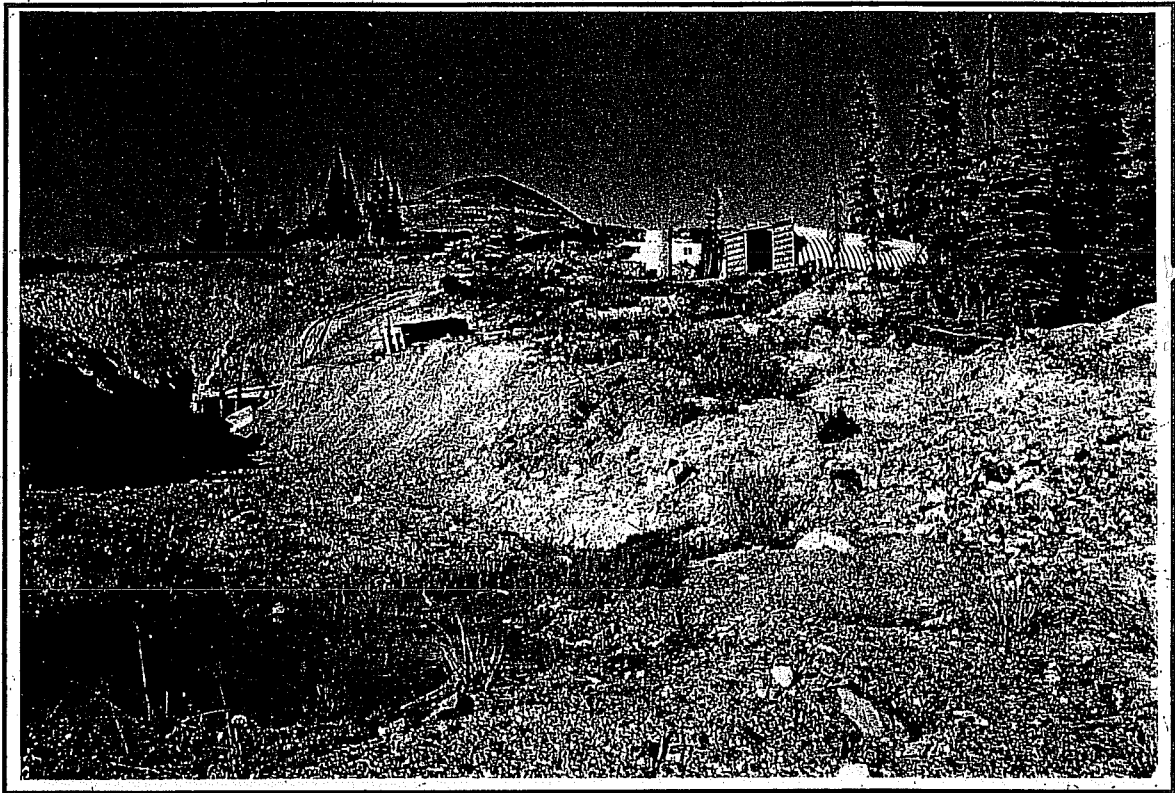
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Quality in Environmental Services

PHASE II ENVIRONMENTAL ASSESSMENT OF THE SILVER HART ABANDONED MINE SITE



prepared for:

Action on Waste Program
Indian and Northern Affairs Canada

prepared by:

Environmental Services
Public Works and Government Services Canada

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February 1997

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**PHASE II
ENVIRONMENTAL ASSESSMENT
of the
SILVER HART MINE SITE**

Prepared for:

**Action on Waste Program
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**Environmental Services
Public Works and Government Services Canada**

March 1997

EXECUTIVE SUMMARY

A phase II environmental assessment was conducted at the Silver Hart abandoned mine site (60°19'20" N, 130°40'30" W) in July, 1996 by Environmental Services, Public Works and Government Services Canada for the Action on Waste Program, Indian and Northern Affairs Canada. Based on the findings of the Phase I investigation performed in 1993 by DIAND Technical Services, a phase II assessment was conducted to a) identify potential environmental and human health risks associated with the present condition of the mine site, and b) provide recommendations and preliminary cost estimates for remediation of those risks.

A field investigation of the abandoned mine site was conducted to evaluate environmental and human safety concerns with respect to: mine openings and workings; buildings and infrastructure; waste disposal areas; waste rock disposal areas; surface water (including adit and waste rock seepage, and receiving waters); and hazardous and non-hazardous materials on the site.

The results of the investigation concluded that although the single mine opening is stable, it is not adequately secured from public and wildlife access. An assessment of the acid rock drainage potential for the site shows that the risk to the environment due to the presence of waste rock and adit is currently a moderate concern. Environmental concerns also exist concerning mine seepage, numerous 205 litre barrels of diesel oil, aviation fuel and waste oil scattered about the site and oil stained soil in the maintenance area.

Aesthetic concerns arise from the presence of 6 above ground fuel storage tanks (ranging in size from 2270 litres to 22700 litres) in the maintenance area, empty metal barrels, collapsing tent frames in the upper exploration camp as well as assorted metal and plastic waste scattered about the site.

Using applicable federal and territorial criteria as well as northern mine reclamation guidelines, recommendations are to secure the single adit opening using surrounding rock and soil, decommission above ground fuel storage tanks on site by cutting up and burying using available fill on site, flare off diesel and aviation fuels on site, remove waste oil barrels and miscellaneous oily materials off site for incineration, scarify and fertilize heavily oil stained soils on site, disassemble metal quonset hut and dispose of off site, remove prefabricated trailers and haul off site for salvage and demolish and burn wooden structures and combustible waste on site.

Further test work is required on the moderately acid generating waste rock disposal areas. It is recommended that every five years a monitoring program be undertaken to obtain water quality data for mine seepage and receiving waters for the spring freshet, middle summer and late fall conditions. Should further development occur on the site, regulatory agencies should ensure that an acid drainage prevention plan is developed which includes detailed measures for handling and disposal of mineralized waste rock.

SUMMARY OF CONCLUSIONS & RECOMMENDATIONS

ASSESSMENT COMPONENT	RISK	RECOMMENDATION
1. Building, Infrastructure, Equipment		
17 x 18 metal quonset hut	Aesthetic Concern	Disassemble dispose off-site
6 pre-fabricated trailers, 4 @ lower site and 2 @ upper site	Aesthetic Concern	Haul out for site salvage
Tent frames	Aesthetic Concern	Demolish & burn on site
Road access	Aesthetic Concern	Upgrade access to site.
2. Non-Hazardous Waste Material		
1 x 2270 litres, 3 x 4540 litres and 1 x 22,700 litres ASTs	Environmental Concern	Clean and cut tanks, bury on site
Oily rags & oily waste materials	Aesthetic Concern	Burn on site
Misc. metal and plastic wastes	Aesthetic Concern	Bury on site
3. Hazardous Materials		
Stained soil inside quonset hut	Environmental Concern	Spread, scarify, mix and fertilize on site
17 drums diesel & 2 drums of Jet B aviation fuel	Environmental Concern	Use 2 barrels to burn on site. Incinerate 5 barrels off site.
4. Water Quality		
Mine Seepage	Minor Env. Risk	Monitor 1/4'ly every 5 years
Site Drainage	Minor Env. Risk	None
Receiving Waters	Minor Env. Risk	Monitor 1/4'ly every 5 years
5. Waste Rock Disposal Areas		
Waste rock moderately acid generating - 7,040 m ³	Environmental Concern	Monitor every 5 years
6. Mine Openings		
Adit open and accessible	Health and Safety Concern	Seal with available waste rock
7. Tailings		
None	None	None

TABLE OF CONTENTS

EXECUTIVE SUMMARY

1.	INTRODUCTION AND BACKGROUND	1
1.1	Location	1
1.2	Overview of Site Development	1
1.3	Site Access	3
2.	PURPOSE AND SCOPE OF WORK	3
3.	SITE ASSESSMENT METHODOLOGY	4
3.1	Assumptions	4
3.2	Assessment criteria	4
3.2.1	Criteria and Guidelines	4
3.2.2	Application of Criteria	6
3.3	Methods	7
3.3.1	Background Information	7
3.3.2	Site Assessment Components	8
3.3.3	Sampling Methods and Quality Assurance	8
4.	ENVIRONMENTAL SETTING	10
4.1	Mineralization	10
4.2	Surface Hydrology	10
4.3	Climate	10
4.4	Vegetation	11
4.5	Fish and Wildlife Resources	11
4.6	Site Topography and Soils	11
4.7	Permafrost	12
5.	SITE DESCRIPTION AND FINDINGS	12
5.1	Buildings, Infrastructure, Equipment	12
5.2	Non-hazardous Waste Materials	12
5.3	Hazardous Materials	12
5.4	Surface Water Quality	14
5.5	Waste Rock Disposal Areas	15
5.6	Mine Openings	18
5.7	Tailings	18

TABLE OF CONTENTS (Cont'd)

6.	CONCLUSIONS	19
6.1	Health and Safety	19
6.2	Environmental Risks	19
6.3	Aesthetic Concerns	20
7.	RECOMMENDATIONS	21
8.	COST ESTIMATES TO IMPLEMENT RECOMMENDATIONS	22

REFERENCES

Figures

Figure 1 Location of Silver Hart Mine

Tables

Table 1	Buildings, Infrastructure & Equipment
Table 2	Non-Hazardous Waste Material
Table 3	Surface Water Samples - Significant Laboratory Results
Table 4	Silver Hart 1995 Site Assessment Sample Results
Table 5	Summary Acid/Base Accounting Test Results
Table 6	Mine Openings

Drawings

Drawing 1 Silver Hart Mine Site Development and Geological Information

APPENDIX A Determination of Acid Rock Drainage Potential

APPENDIX B Site Photographs

APPENDIX C Analytical Results

1.0 INTRODUCTION AND BACKGROUND

In 1993, assessments of 49 abandoned Yukon mine exploration and development sites were completed under the Arctic Environmental Strategy - Action on Waste program by DIAND Technical Services. These assessments were intended to provide a general overview of historical activities, describe site infrastructure, workings and wastes, describe existing environmental or safety concerns on each site, and provide general recommendations for remediation or mitigation work, as appropriate.

For the Silver Hart abandoned mine site, the 1993 report recommended further investigation into possible environmental impacts resulting from the previous mining activities. According to that report, the potential areas of concern included damage to vegetation as a result of exploration activity, the uncertainty of the risk of groundwater contamination from adit seepage, unsecured adit entrance, proliferation of fuel tanks and drums on site, and the removal of remaining buildings from the site. No rock, tailings, soil or water samples were collected in this assessment.

In light of these preliminary findings, Indian and Northern Affairs Canada has determined that further investigation is warranted. Environmental Services, Public Works and Government Services Canada was retained to conduct an environmental assessment of the Silver Hart abandoned mine site to a) identify specific environmental and human safety risks; b) provide clean-up recommendations; and c) provide a Class "D" cost estimate for remediation or mitigation of those risks.

1.1 LOCATION:

The Silver Hart mine site is located at 60°19'20"N, 130°40'30"W and approximately 43 km north northeast of Rancheria, YT and 2.5 km north northeast of Edgar Lake. The access road to the site is steep and rough from Edgar Lake to the main site and crosses an unnamed stream (which feeds Edgar lake) 2.5 km from the adit entrance. The mine site consists of one adit at the main mine level of 1440 m with a raise and shaft at upper trenching level of 1480 m.

1.2 OVERVIEW OF SITE DEVELOPMENT:

Exploration on the Silver Hart property has focused on a variety of occurrences including a tungsten rich skarn and a system of parallel or en echelon silver-rich sulphide veins. The Silver Hart mine site was the focus of a significant exploration effort between 1986-87 (DIAND 105B-07-2; MinFile 105B-021). Work on the Hart site began in 1947 Based on Department of Indian Affairs and Northern Development (DIAND) and Yukon Territorial Government (YTG) assessment file and MinFile data.

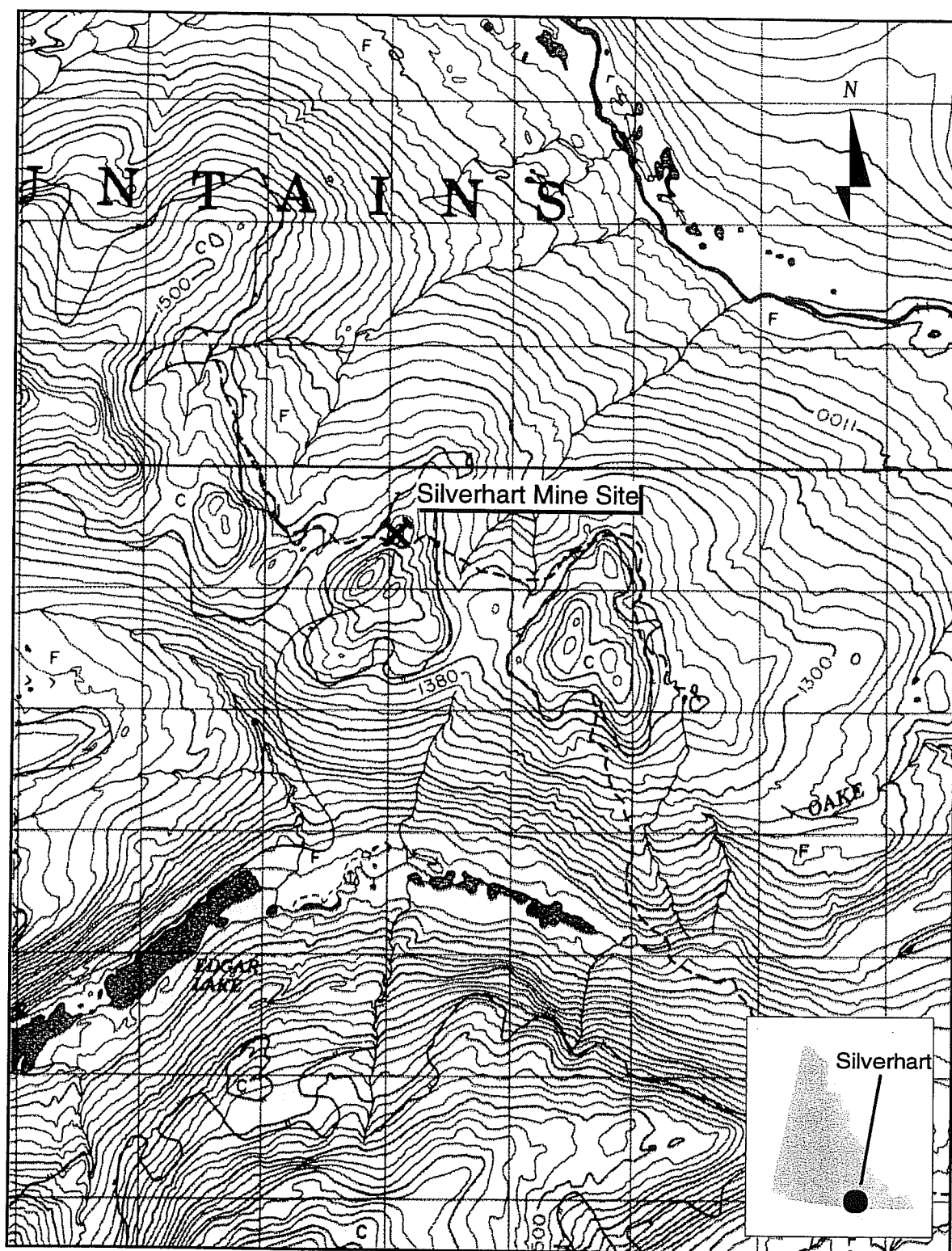
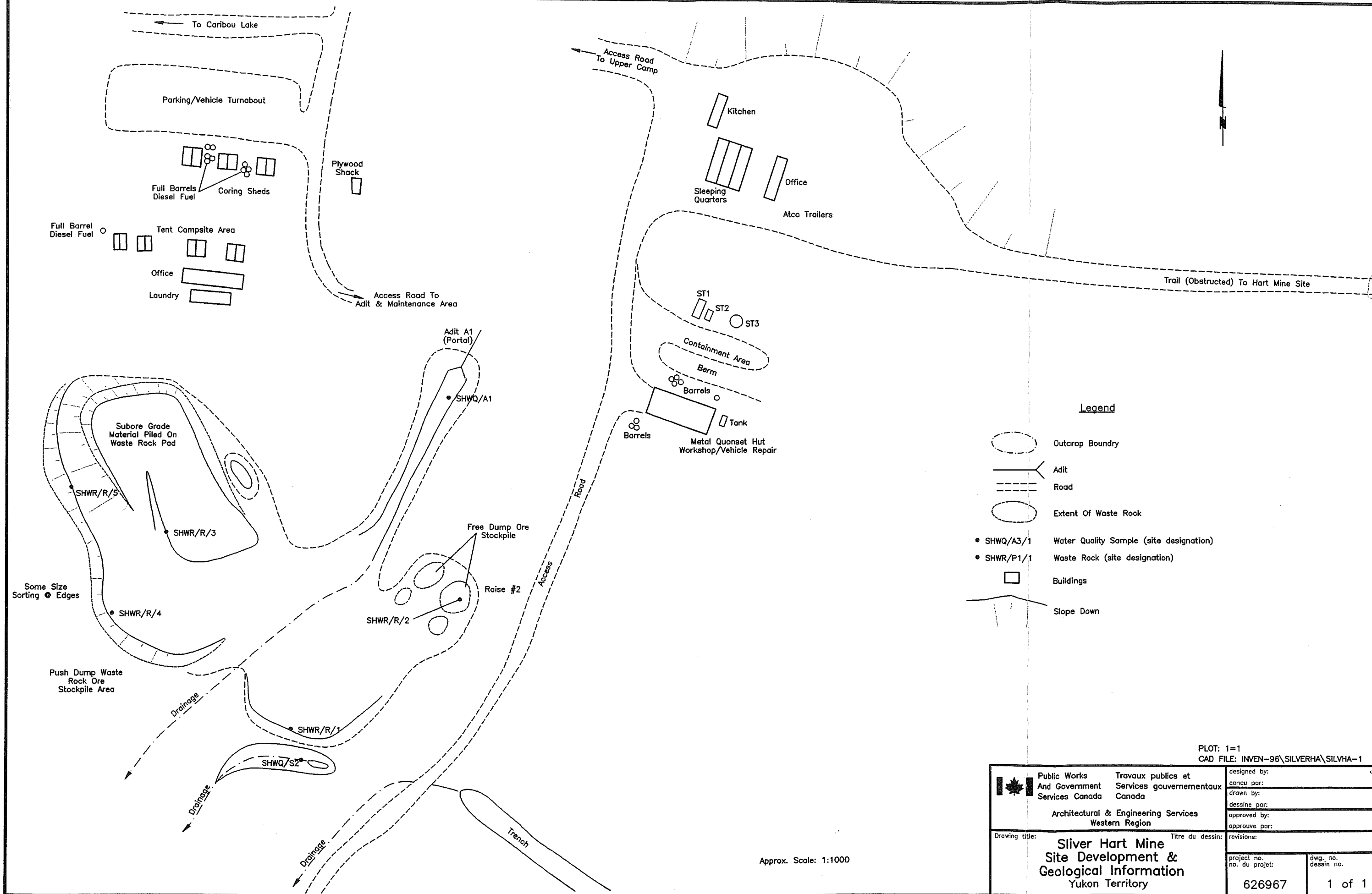


Figure 1: SILVERHART SITE

N.T.S. 105 B/7 Map Name: Sab Lake Map Scale: 1:50,000

Latitude: 60° 19' 20" N Longitude: 130° 40' 30" W



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Work to date includes:

- original discovery of galena in leached gossans (1947)
- grid soil sampling and detailed mapping (1971)
- trenching (1980)
- geochemical sampling, mapping and drilling of two holes totalling 197 metres (1982)
- bulldozer trenching (1983);
- bulldozer trenching, drilling 50 holes totalling 3,658 metres, 673 metres of underground development, including a 3 by 3 metre adit and 2 raises, construction of a 40 kilometre road from the Alaska Highway and construction of a trailer camp (1985-86);
- preliminary mine engineering and feasibility studies completed (1987) and; four drill holes totalling 609.6 metres (1987).

1.3 SITE ACCESS:

Access to the site is available via a service road which branches north from mile 720 of the Alaska Highway, 16 km west of Rancheria, Y.T. This service road in turn follows the east bank of the Rancheria River north to Northwind Lake, jogs eastward past Roy Lake and Edgar Lake, then jogs north to the mine site. Estimated distance from the Alaska Highway to the campsite is approximately 42 km over rough road. A number of creeks cross the access road prior to reaching Northwind Lake. No culverts have been provided to channel runoff so that deep ruts have been left in the road.

2.0 PURPOSE AND SCOPE OF WORK

The following assessment activities were completed:

- ☐ Inspection of mine openings and workings, buildings and infrastructure, and waste disposal areas;
- ☐ Photo documentation and mapping of relevant site features;
- ☐ Sampling of waste rock disposal areas, stained soils, surface water (including adit and waste rock seepage, and receiving waters) and barrel contents;
- ☐ Identification and inventory of hazardous and non-hazardous materials on the site;
- ☐ Identification of potential or actual environmental pathways and receptors for site contaminants; and
- ☐ Assessment of human safety hazards and potential for accidental or deliberate access to hazardous areas.

Upon completion of these activities, preliminary cost estimates were generated to meet the following remediation/mitigation requirements:

- ☐ Physical stabilization of waste rock disposal areas;

- ☐ Chemical stabilization of the waste rock disposal areas as appropriate to local and background conditions, taking into account impact, on-site resources, and accessibility;
- ☐ Sealing of all mine openings;
- ☐ Consolidation and landfill of all non-hazardous, non-combustible solid wastes;
- ☐ Remediation or removal and disposal of contaminated soils as required to meet the more stringent of: Yukon Government's Contaminated Sites Regulations (1996) Schedule 1; and Canadian Council of Ministers of the Environment's Interim Canadian Environmental Quality Criteria for Contaminated Sites (1991) Commercial/Industrial criteria for soils;
- ☐ Removal and disposal of hazardous solid wastes;
- ☐ Draining, cleaning and disposal of drums or other containers containing petroleum products or other liquid hazardous wastes;
- ☐ Onsite flaring or removal and off-site disposal of petroleum products and other liquid hazardous wastes; and
- ☐ Demolition of buildings and infrastructure to foundation level and burning of combustible non-hazardous materials in approved location

3.0 SITE ASSESSMENT METHODOLOGY

3.1 Assumptions:

At each mine site, the assessment was limited to the area specifically developed or occupied for mine exploration or mining purposes and immediately adjacent areas within applicable claim boundaries as well as off-site environmental resources believed to be affected by mine exploration or development activities. Water samples were taken off-site to determine potential impact to surface water bodies due to mining activities. Access roadways to mine sites were not included in the assessments.

3.2 ASSESSMENT CRITERIA

3.2.1 Criteria and Guidelines

Metal Mining Liquid Effluent Regulations and Guidelines (Environmental Protection Service, Environment Canada, 1977)

The intent of the requirements defined in this document is to limit the discharge of deleterious substances from base-metal, uranium and iron ore mines. These requirements are uniformly applied national standards and intended to provide protection for fish and other aquatic life.

Interim Canadian Environmental Quality Criteria for Contaminated Sites (Canadian Council of Ministers of the Environment, 1992)

The Canadian Council of Ministers of the Environment (CCME) Interim Canadian Environmental Quality Criteria for Contaminated Sites are numerical limits for contaminants in soil and water intended to protect, maintain or improve environmental quality and human health at contaminated sites in general. CCME criteria include two types of benchmarks for soil and water quality - assessment criteria and remediation criteria. Assessment criteria are approximate background concentrations or approximate analytical detection limits for contaminants in soil and water, and remediation criteria are used as clean-up benchmarks based upon intended land use. Remediation criteria do not address site-specific conditions. They are considered generally protective of human and environmental health for specified uses of soil and water at contaminated sites. The remediation criteria for soil are classified by three land uses:

- 1) Agricultural,
- 2) Residential/Parkland, and
- 3) Commercial/Industrial.

Remediation criteria for water are classified by four uses of water likely of concern at contaminated sites:

- 1) Freshwater aquatic life,
- 2) Irrigation,
- 3) Livestock watering, and
- 4) Drinking water.

Contaminated Sites Regulations (draft) (Yukon Government, 1996)

According to these draft regulations a site is contaminated if it used for agricultural, commercial, industrial, parkland, or residential land use and contains a substance in concentration greater than or equal to:

- (i) the generic numerical soil standard of Schedule 1, or
 - (ii) the matrix (pathway specific) numerical soil standards of Schedule 2
- and, surface or groundwater used for aquatic life, irrigation, livestock, or drinking water which exceeds a concentration greater than or equal to:

- (i) the generic numerical water standard of Schedule 3, or
- (ii) the local background concentration of that substance in the soil, surface water, or groundwater.

Below 3 metres of the surface, commercial land use criteria is applicable.

Mine Reclamation in Northwest Territories and Yukon (INAC, 1992)

This report defines factors which are to be considered in reclamation of abandoned mine sites operating in northern climates. Factors include:

- ☐ open pit and underground mines;
- ☐ special mines such as uranium, sand and gravel, and coal;
- ☐ waste rock and tailings disposal;
- ☐ acid generation and leaching; and
- ☐ estimating cleanup costs.

3.2.2 Application of Criteria and Guidelines

The following assessment criteria were used for the Silver Hart abandoned mine site:

A. Soils:

CCME:	Remediation Criteria for Soil - Commercial/Industrial standard
YUKON RENEWABLE RESOURCES	Draft Contaminated Sites Regulations - used for hydrocarbon screening parameters

B. Water:

Envir. Canada:	Metal Mining Liquid Effluent Regulations and Guidelines - are compared to seepage from mine openings, and river/stream water quality
Background:	Downstream water quality results of rivers and streams are compared to the results of upstream (background) water quality.
CCME:	Remediation Criteria for Water - Freshwater Aquatic Life guideline for river and stream water quality

[Note: In this screening assessment of water quality, analytical results are primarily compared to background values which may more accurately characterize the local environment.]

C. Mine Clean-Up and Reclamation:

INAC:	Mine Reclamation in Northwest Territories and Yukon

3.3 METHODS

3.3.1 Background Information

Available background information was consolidated from the Yukon Chamber of Mines mine records, Whitehorse Public Library, Yukon Archives holdings, and records and reports from the Yukon Renewable Resources Library, Yukon Water Board, DIAND Lands Branch, DIAND Water Resources, and DIAND Library. INAC (1994) provided an overview assessment of the Silver Hart mine site to that date. Other published information sources were examined for site or regional information as applicable. On the basis of available information, knowledge gaps regarding existing or potential safety and environmental risks at the site were identified and a site assessment plan was developed.

3.3.2 Site Assessment Components

A site assessment was conducted to identify existing or potential safety and environmental risks on the site. The assessment included the following components:

Waste Rock disposal areas were inspected and sampled by a professional geologist to assess acid rock drainage potential by:

- ☐ Identifying waste rock mineralization with potential to release acidic and/or metal-contaminated drainage
- ☐ Mapping and logging waste rock, tailings, pit walls and rock faces
- ☐ Collecting and field testing representative samples of mine wastes

Mine Openings were inspected and documented to identify closure requirements.

Non-Hazardous Site Debris was inventoried.

Contaminated Soil Areas were measured and sampled to determine the degree and type of contamination and estimate soil volumes for remediation.

Hazardous Materials were inventoried and sampled for identification of contaminant constituents, as necessary.

Buildings and other Structures were inspected for hazardous material and assessed for stability.

Borrow Sources were identified and assessed for accessibility and approximate quantity and type of granular material.

Scale site plans were prepared to identify the dimensions and locations site structures, mine workings and adits, waste rock disposal areas, on-site sampling locations (as applicable), and any other pertinent information.

3.3.3 Sampling Methods and Quality Assurance

Test Pit Sampling

Test pits were excavated to a depth of about 0.3 m to 1.0 m. Horizons in the test pit walls were logged, noting colour/weathering, rock composition, primary and secondary mineralization, particle size distribution, paste pH and paste conductivity, and moisture content. The test pit and was photographed and its location was marked on the field map. Approximately 2 kg of rock was collected at each sample site. For test pits showing a homogeneous wall face, a plastic sheet was placed at the bottom of the test pit and the pit wall was cut vertically down with a cleaned shovel. All rock larger than 75 mm in size was discarded. The sample was coned and quartered, discarding opposite quarters, until a 2 kg sample was obtained. For test pit walls showing clearly-distinguishable horizons (distinguishable by the sulphide and carbonate contents), the horizons were sampled individually.

Water Sampling

Samples were collected from surface streams upstream and downstream of mine related flows, and from representative seeps emanating from waste rock, tailings, pit walls, and/or adits. 250 ml water samples were collected by hand, facing upstream, ensuring that the sample is not contaminated by disturbed sediment, debris and other floating materials. Sample bottles were rinsed three times with water from the sample stream prior to collecting the sample. Two (2) ml of HNO_3 were immediately added to water samples destined for metals analyses. For analyses of non-metallic parameters, water samples were brim-filled to minimise head space, placed in a cooler, and maintained at 4° C until delivery to the laboratory.

Soil Sampling

Soil lithology was recorded from observations of the side walls of the test pit, and soil samples for both field and laboratory testing were collected. Observations were recorded for each soil sample site, including soil particle size, consistency, colour, moisture, discolouration, stratification, odour, and any other observations of significance. Samples were collected at depth intervals selected on the basis of stratigraphic observations and anticipated or apparent contamination. The lab samples were collected using disposable latex gloves and decontaminated stainless steel sampling utensils. All samples intended for organic analyses were stored in laboratory-cleaned 250 ml glass jars; samples intended for metals analyses were placed in new "Whirl-Pak" bags. All samples were placed in a cooler for shipment to the laboratory.

Barrel, Pail, and Above-Ground Storage Tank Sampling

Barrels and pails suspected as containing hydrocarbons were sampled with 1.2 m clean hollow glass rods ("drum thieves"), capable of extracting up to 25 ml of product. The rods were inserted into the drum or pail, and the uppermost open tip was sealed to maintain the sample within the rod as it was extracted from the drum or pail. The sampled hydrocarbon was then drained into a 40-ml laboratory-cleaned vial. The extractions were repeated until at least 20-30 ml of product was obtained. The vial was then sealed and placed in a container for shipment to the laboratory. Each used drum thief rod was subsequently destroyed to prevent accidental re-use.

Four above-ground storage tanks (AST) were identified in the maintenance area north of the adit entrance. One vertical AST (22700 litres) was sampled with a stainless steel Bacon bomb sampler. A plunger at the tip of the sampler depressed when contact with the tank bottom was made, allowing any petroleum product to enter the body of the sampler. When the sampler was raised, the plunger closed to seal the sampler and allow removal of the sample from the AST. The sampled petroleum product was then drained into a 40-ml laboratory-cleaned vial which was then sealed and placed in a container for shipment to the laboratory. A water/petroleum mixture (85%/15%) was found when the bomb was extracted. The bomb sampler was cleaned with laboratory-grade detergent between sampling events. All remaining ASTs were inspected and found to be empty.

Quality Assurance

Quality Assurance (QA) is a set of procedures for ensuring that the results of chemical analyses are, and can be shown to be, accurately representative of field conditions. A complete QA program includes both a field component and a laboratory component. In addition to the standard sample collection methods outlined above, the field QA measures that were implemented for this assessment study include:

- ☐ chain of custody procedures and forms;
- ☐ a sample labelling and sample location identification scheme;
- ☐ laboratory preparation of all sampling containers;
- ☐ laboratory defined sample preservation and shipping procedures; and
- ☐ regular maintenance (including re-calibration) and cleaning of field equipment.

Laboratory QA measures included replicate analyses of selected soil and water samples. Replicate analytical results were submitted with each analytical report.

4.0 ENVIRONMENTAL SETTING

4.1 MINERALIZATION

The Silver Hart property is located along the eastern contact of Cretaceous granodiorites of the Cassiar Batholith and Cambrian to Late Proterozoic marble and quartz - biotite - sericite - chlorite schists of the Atan Group. The metasedimentary rocks have a general northerly trend and east dip (Poole et al, 1960; Norecol, 1987). Mineralization in the Silver Hart area includes a variety of occurrence types, including:

- shear hosted quartz-carbonate-sulphide veins of galena, tetrahedrite and sphalerite;
- cheelite - molybdenum - galena - sphalerite skarn developed along intrusive - metasedimentary contact, and;
- halcopyrite enriched pyritic zones within the sericite schists.

The veins are the primary ore of the Silver Hart mine with assays ranging from 0.3 g/t Au, 507.4 g/t Ag, 29.6% Pb and 4.9 % Zn across 0.6 metres to 0.6 g/t Au, 4,145.1 g/t Ag, 18.3% Pb and 0.7 % Zn across 0.6 metres. Reserves outlined in 1987 were 97,000 tonnes grading 1025 g/t Ag. Over 60 vein or float occurrences of galena grading up to 8,571 g/t Ag.

4.2 SURFACE HYDROLOGY

Creeks flow both north to the Meister River and south to Edgar Lake from the Silver Hart property area. The mine area is drained by a creek approximately a kilometre to the south of and 200 metres lower in elevation than the adit. Surface water run-off from groundwater was observed in the area of the adit and flows to the main creek to the south. A small lake above the adit has been completely removed by trenching.

The Rancheria River is reported to support a sport fishery for Arctic Grayling, Dolly Varden Char (Foothills Pipelines Ltd., 1976). Both the Rancheria and Meister River systems possess important overwintering habitats for many fish species that move into smaller tributaries in the spring following breakup. Two unnamed creeks located northwest of Oake Creek drain to the northeast and into Meister River about 3 and 4 km downstream from Caribou Lake.

4.3 CLIMATE

The Silver Hart mine site lies in the Pelly Mountain Ecoregion which comprises an area of 31,712 km² and is situated within the southeastern portion of the Yukon. The site is subject to a predominating cold continental climate which provides colder winter and warmer summer temperatures than other areas of the Yukon which are under a more significant marine influence. Generally speaking, the climate of this portion of the Yukon consists of long cold winters and short warm summers.

Mean annual temperatures are below freezing and vary from a low of -25°C to a high of 15°C with annual precipitation varying from 375 mm to 500 mm, increasing with elevation and during the summer months of July, August and September. This ecoregion receives mean annual precipitation from 375 mm to 625 mm with higher levels at higher elevations in the north and south. Temperature isotherms of -4°C to -6°C are common for this area. (Ecoregions of Yukon Territory, Oswald, E.T. & Senyk, J.P., p. 14 & p. 32)

4.4 VEGETATION

The Pelly Mountain Ecoregion is included in the Eastern Yukon (B26c) forest subregion. While treeless tundra is common at higher elevations, white and black spruce predominate at lower elevations, white spruce and lodgepole pine on warmer sites with alpine fir and shrub birch-willow in subalpine areas. Tree level hovers about 1350 m - 1500 m with moderately high precipitation and moderate temperatures.

While much of the region at higher elevations is treeless and lies in tundra, lower elevation plateaus are in the B26c forest region with open growing black & white spruce occurring at the lower slope areas as well as in valleys. Lodgepole pine is common in burned over areas, alpine fir in the subalpine and feathermoss laces with sphagnum in plateaux understory. Ericaceous shrubs & willows occur over much of the area however forbs are scarce. Shrub birch and willow are common in the subalpine and form extensive patches in protected areas above treeline. Alpine tundra areas are dominated by lichens, ericaceous shrubs and willows whereas sedge tussocks dominate alpine wetlands. (Soil, Site & Land Classification, Rowe, J.S. 1972).

4.5 FISH AND WILDLIFE RESOURCES

Fish species reported to be found in the Liard River system generally include: Arctic Grayling, Burbot, Dolly Varden Char, Emerald Shiner, Finescale Dace, Flathead Chub, Goldeye, Inconnu, Lake Chub, Lake Trout, Lake Whitefish, Longnose Dace, Longnose Sucker, Mountain Whitefish, Ninespinie Stickleback, Northern Pike, Rainbow Trout, Round Whitefish, Slimy Sculpin, Spottail Shiner, Trout Perch, White Sucker, and Yellow Walleye. The species of most importance to domestic and sports fisheries includes Arctic Grayling, Dolly Varden Char, Lake Trout and Northern Pike. (Foothills Pipelines Ltd. 1976).

4.6 SITE TOPOGRAPHY AND SOILS

The Silver Hart area is situated above the tree line at an elevation of 1400 metres on a south facing peak along an southeast trending mountain ridge. Topography slopes moderately steep off to the south, but more gently to the north and northeast. Above 1500 metres elevation, about 70 % of the area is under a cover of colluvium, with outcrop exposed over 20% of the area. Below 1500 m, the area is partially covered by ablation till, reworked glacial deposits, outcrop and colluvium (Klassen, 1983). Test pits established for the Silver Hart mine site feasibility work indicated most of the till deposits have been reworked as colluvium (McLeod, 1987).

Surficial deposits in the valley bottoms are largely alluvial. Kame deposits have formed side channel valleys behind moraine dams.

4.7 PERMAFROST

The Silver Hart site is situated within the scattered subzone of discontinuous permafrost zone that stretches in a band across the southwestern portion of the land mass of the Yukon. In this area, permafrost tends to be localized with the active layer varying in thickness and depth. Quite often, the relative distribution of permafrost varies according to terrain and elevation with variations in local terrain conditions responsible for the occurrence in discontinuous zones as well as the thickness in these zones. (Ecoregions of Yukon Territory, Oswald, E.T. & Senyk, J.P., 19).

5.0 SITE DESCRIPTION AND FINDINGS

5.1 BUILDINGS, INFRASTRUCTURE, EQUIPMENT

The Silver Hart mine site consists of a lower level exploration area and single adit and an upper encampment area (**See Photo 1**). A number of service buildings are located north of the adit entrance along the service road. A large corrugated metal quonset hut has functioned as a machine shop and a horizontal above ground fuel storage tank lies behind (**See Photo 2**). Immediately north of the quonset hut / maintenance shed, three above ground storage tanks are located on a slight berm above the quonset hut (**See Photos 3 & 4**). Four prefabricated trailers were located above the maintenance shed area with 3 used for sleeping and one as a kitchen (**See Photos 5 & 6**). Further north and up the access road, a wood frame and plastic covered tent encampment was situated adjacent to two more prefabricated trailers which made up an office and laundry facility (**See Photo 9**). Buildings, infrastructure and equipment identified on site are detailed in **Table 1** below.

5.2 NON-HAZARDOUS WASTE MATERIALS

Non-hazardous waste materials observed in and around the site are listed in **Table 2** below.

5.3 HAZARDOUS MATERIALS

The major portion of hazardous materials remaining consists of full 205 litre barrels of diesel fuel = 2 in trailer camp + 8 in upper exploration tent camp area; full 205 litre barrels of Jet "B" aviation fuel = 2 in upper exploration tent camp area (**see Photos 9, 10, & 11**); full 205 litre barrels of diesel fuel/water mixture (in the case of deteriorated barrels) and or waste diesel fuel = 6 outside in maintenance area + 16 within quonset hut (**see Photo 12**). An area of ground in the quonset hut appeared to have been subjected to waste diesel oil staining to a depth of approximately 150 mm. Approximate area of staining = < 20 m³ (**see Photo 12**).

Table 1: Buildings, Infrastructure & Equipment

Structure	Construction Features	Interior Contents
Metal Quonset Hut	- fabricated in place galvanized metal quonset hut; 17.6 m X 18.3 m	- auto workshop incl. waste oil barrels, empty oil containers
Prefabricated "ATCO" trailers	- 3 @ 3.1 m wide X 15.9 m long & 1 @ 3.1 m X 12.2 m wood frame & metal clad north of maintenance area	-3 used as sleeping quarters & 1 used as kitchen facility
Prefabricated "ATCO" trailers	- 1 @ 3.1 X 9.2 m & 1 @ 4.2 m X 8.5 m located at upper encampment	- laundry facilities and office
Wood frame wood clad structure	- 3.1 m X 4.3 m addition to lower sleeping quarter complex	- no access
Wood tent frame & canvas structures	- 4 @ 3.6 m X 4.7 m wood frame and canvas clad structures located in upper encampment area.	- no interior contents, structures are dilapidated; used as sleeping quarters
Wood tent frame & canvas structures	- 3 @ 3.6 m X 4.7 m wood frame and canvas clad structures located in upper encampment area	- used as core storage sheds

Table 2 Non-Hazardous Waste Materials

Waste Material	Number/ Volume	Location	Comments
2270 litre fuel tank	1	Maintenance Area	Horizontal; empty, valve secured, no staining, fair condition
4540 litre fuel tank	1	Maintenance Area	Horizontal; empty, valve secured, no staining, fair condition
22700 litre fuel tank	1	Maintenance Area	Vertical; approx. 0.3 m depth of diesel/H ₂ O mix; valve secured at bottom
4540 litre fuel tank	2	Trailer Camp area	Horizontal; empty, valve secured, no staining, fair condition
205 litre barrel	1	Exploration Camp Area	Empty, non-burnable and rusted
205 litre barrel	3	Maintenance Area	Empty, non-burnable and rusted
Timbers, core boxes, wood waste	< 85 m ³	Core sheds in Exploration Camp Area	Non-preserved, burnable

5.4 SURFACE WATER QUALITY

Field analysis of seepage from the adit area (discussed in **Section 5.6**) and the main creek draining south were completed. Samples were collected, but were lost in shipping. **Table 3** identifies the significant findings of the sampling program conducted to determine the potential impact of the site on surface water bodies

Samples were collected only from site drainage courses and field measurements of pH and conductivity were taken. Complete analytical results are provided in **Appendix C**.

Table 3 Surface Water Samples - Significant Laboratory Results

Sample ID	Sample Location	pH	Conductivity ($\square$ mhos/cm)	Metallic Parameters
SHWQ-C1-2	Edgar Lake Tributary	7.1	30	
SHWQ-A1-1	Adit Drainage	7.2	340	Cadmium, Zinc
SHWQ-S1-2	Settling Pond Overflow	6.6	310	Iron & Zinc (Norecol '87)

- Notes:
- 1) Ph and conductivity readings in square brackets are field measurements; non-bracketed readings are lab measurements
 - 2) Low field conductivity readings for all samples may have been due to a calibration error on the conductivity meter.
 - 3) n/a indicates that none of the readings from analytical samples submitted to the lab exhibited levels beyond parameters identified

The analysis for **SHWQ-C1-2** was conducted at the bridge crossing on the road where Norecol established a monitoring station (Site M2) and installed a staff gauge. The field results above are indicative of the general health of the stream. A staff gauge reading of 0.44 metres was observed, although no flow readings or stream profile data were taken at this time. The same site was used by the Water Resources Division of DIAND (Site 8).

Water quality result data from these previous studies was not available but is referred to in the Norecol report (1987). Annual precipitation in the area is expected to be moderately low based on results from a monitoring station at Swift River approximately 70 km to the south. The Swift River station reported a mean annual precipitation of 580 mm, 235 mm of which was recorded as rain and 330 cm of snowfall (Norecol, 1987).

The underground workings at Silver Hart produce a small flow of mine water that seeps through the rubble blocking the portal and then over the surface of the waste rock. The flow was not traced beyond the waste rock pad area but does not directly access the creek 0.7 km to the southeast. A small settling pond exists directly blow the waste rock piles. A larger settling pond is reported just down slope from the adit but was not investigated.

Samples were collected from the drainage coming from the adit (SHWQ-A1-1) and from the overflow out the settling pond below the waste rock piles (SHWQ-S1-2). Water flow rates were observed to be low, totalling less than 5 litres per second. The portal is partially blocked by backfill, damming a considerable volume of water over 0.5 metres deep and back more than 50 metres. The adit sample was analysed, but the settling pond overflow sample was lost in shipping. Analysis was done to the standards of the 1995 Canadian Council of Ministers of the Environment (CCME) fresh water guidelines for aquatic life, however the sample was stored for approximately a month at room temperatures.

At 200 times the CCME fresh water aquatic life guidelines (0.03 mg/L Zn), the elevated zinc in the water sample (SHWQ-A1-1) is significant, even at moderate pH and high hardness. The effect on aquatic life is expected to be more chronic than acute in hard water conditions. Zinc can be expected to be removed from solution through coprecipitation with iron and manganese, and adsorption of up to 100% with clays at pH >7.0. This high result may be in part the result of its lengthy and poor storage conditions.

Cadmium levels are elevated above CCME guideline levels of 0.0018 mg/L. Cadmium is easily coprecipitated by hydrous iron, aluminum and manganese oxides and carbonate, all of which are readily available in solution and in the surrounding soils and bedrock. Concentrations of cadmium in the tissues of aquatic organisms decreases with increases in water hardness. The results for arsenic and lead are also slightly elevated, but at a hardness of >180 mg/L, they are both below the CCME water quality guidelines. Results of the field analysis of the waste rock seepage (SHWQ-S1-2) from the settling pond indicate that conductance in both the adit and overflow water samples are high. This is likely in part the result of the high zinc and sulphate content.

5.5 WASTE ROCK DISPOSAL AREAS:

Waste rock from the underground mining has been push dumped to form a level pad of approximately 0.7 hectares on the slope immediately south of the portal. Ore and subgrade ore stockpiles have been free dumped and push dumped respectively on the waste rock pad. The waste rock is composed of five main rock types including biotite schist, marble, granodiorite, skarn and quartz sulphide ore in varying quantities. The samples collected were representative of each compositionally distinct portion of the waste dumps and are described below :

SHWR-R1 - development waste rock;

- 70% biotite schist, 15% hornfels, 10% quartz vein (+/-sulphides), 5% marble;
- 30% coarse, 30% medium and 40% fine textured;
- 95% green yellow and 5% bright orange brown.

SHWR-R2 - high-grade ore stockpile;

- 70% quartz-sphalerite-galena-tetrahedrite vein, 20% marble, 10% biotite schist;
- 30% coarse, 30% medium and 60% fine textured;
- 90% green yellow and 10% bright orange brown.

SHWR-R3 - sub-grade ore stockpile;

- 60% biotite schist, 20% marble, 20% quartz sulphide vein;
- 50% coarse, 20% medium and 30% fine textured;
- 95% green yellow and 5% bright orange brown.

SHWR-R4 - development waste rock;

- 60% granodiorite, 30% marble, 5% biotite schist, 5% quartz vein (+/-sulphides);
- 40% coarse, 20% medium and 40% fine textured;
- 99% yellow green and 5% bright orange brown.

SHWR-R5 - development waste rock;

- 80% granodiorite, 10% marble, 5% biotite schist, 5% quartz vein (+/-sulphides);
- 60% coarse, 20% medium and 20% fine textured;
- 95% light brown and 5% bright yellow orange.

A volume of 1,840 m³ of waste rock from the development of the adit was used to build a pad to stockpile the ore sample material. The 5,200 m³ of development rock is composed of biotite schist, granodiorite, marble and skarn with 3% fine to medium grained, disseminated pyrite, chalcopyrite, sphalerite. The sulphide content of the sub-grade and high grade ores is comprised of 10% to 40% disseminated and massive to semi-massive sphalerite-galena-tetrahedrite vein material with trace pyrite. Samples from rock dumps were elevated in zinc, lead, silver, arsenic cadmium, copper, antimony & iron, as listed below.

Sample **SHWR-R1** had the highest levels of iron, likely more from biotite than pyrite, but was low in all other elements. All the other samples assayed over 1% zinc and were high in lead and silver, suggesting the presence of numerous minor veins.

Sample **SHWR-R2** from the ore stockpile was high in all the above elements. The paste pH of the Silver Hart samples are relatively neutral. Conductivities are high in samples **SHWR-R1** and **SHWR-R2**, likely the result of the high SO₄ content and the high metals content of the ore respectively. Results of the static analysis and acid-base accounting (ABA) for the Silver Hart property are summarized in **Table 5** below.

Table 4: Silver Hart 1995 Site Assessment Sample Results:

Sample No.	Zn (ppm)	Pb (ppm)	Ag (ppm)	As (ppm)	Cd (ppm)	Cu (ppm)	Sb (ppm)	Fe (%)
SHWR-R1	534	83	2.8	1	0.1	124	6	9.18
SHWR-R2	>10000	>10000	>200	994	>100	2728	1461	3.30
SHWR-R3	>10000	2316	148.8	1550	>100	500	140	2.94
SHWR-R4	>10000	1160	101.2	836	94.7	363	65	1.94
SHWR-R5	>10000	1425	67.8	1	2.1	159	46	2.25

Table 5: Summary Acid/Base Accounting Test Results

Sample No.	Field Paste pH	Lab Paste pH	Sulphur (Total) %	Sulphur (SO ₄) %	Acid Potential (AP*)	Neutral. Potential (NP*)	Net NP*	NP/AP
SHWR-R1	8.1	7.75	2.22	1.60	19.4	42.3	-22.9	2.2
SHWR-R2	6.5	6.57	7.23	0.15	221.3	9.5	-211.8	<0.1
SHWR-R3	6.5	6.76	2.81	0.09	85.0	6.6	-78.4	<0.1
SHWR-R4	7.1	7.75	1.83	0.09	54.4	15.4	-39.0	0.3
SHWR-R5	7.2	7.91	0.70	0.00	21.9	12.3	-9.6	0.6

*AP and NP reported in tonnes CaCO₃ equivalent per 1000 tonnes of material.

The NP/AP ratios from samples SHWR-R2 through SHWR-R5 are all below 1.0 and all Net NP's are negative suggesting that the waste rock at the Silver Hart site is likely to generate acidity (See Photo 14). Sample SHWR-R1 has a higher NP/AP ratio resulting from over 70% of the sulphur being oxidized likely due to the schistose nature of the rock. It is also likely that all the waste rock will some generate acid drainage. Total sulphur content is generally moderate, however it is predominantly in zinc and lead sulphides which are less prone to acid generation.

The sulphide mineralization occurs in both disseminated and as coarse massive to semi-massive veins. The disseminated sulphides are likely to be in intimate contact with neutralizing minerals and the coarse texture of the sulphide vein material would make physical weathering or oxidation difficult. This would reduce the potential for acid generation. Marble in bedrock and derived soils and substrate are also expected to provide additional buffering capacity. Based on the risk of acid generation from the waste and ore stockpiles, the potential total amount of H_2SO_4 that could be produced from the rock dumps at the Silver Hart site is approximately 570 tonnes, assuming 100% of the unoxidated sulphur was available and is converted, a pore space of 30% in the stockpiles, a H_2SO_4 to sulphur ratio of 3.06:1 and the specific gravities outlined above.

Conclusions based on the acid base accounting results from the Norecol study state a low risk of acid generation. However, the NP/AP results range from very low to moderately high, suggesting some risks as indicated by the results of this study.

5.6 Mine Openings

The Silver Hart property was explored by a single adit and two raises, commencing from the portal along azimuth 040° at an elevation of approximately 1,450 m. The portal area has been excavated back 60 metres into the slope of the hill to collar in sound bedrock. The portal of the 2 m by 3 m adit has been constructed with steel beams at 1 m centres for about the first 50 m along the drift. (See Photo 1)

Table 6: Mine Openings

Adit	Location	Drift Length	Condition
A1	1450 m elev.	137 metres	Excavated 60 m into slope of hill; 2 m X 3 m with steel beams @ 1 m centres for first 50 m along drift; good condition

Loose overburden and rock has fallen in front of the portal resulting in partial blockage and damming up over 0.5 m of water in the drift. Approximately 60% of the area above the adit to the north has been trenched by bulldozer with large volumes of stripped overburden ramped out into stockpiles. The total area of disturbance is over 100 hectares, including a grid of trenches to 6 m deep and numerous roads.

5.7 Tailings

There has been no milling or ore processing on the Silver Hart site and there are no mill tailings present on the site as a result.

6.0 CONCLUSIONS

6.1 HEALTH AND SAFETY:

Risks relating to mine safety at the Silver Hart mine site are moderately low since the portal appears to be very soundly constructed. However, the portal should be permanently closed as it is likely that humans or wildlife could easily gain access. A minor amount of risk exists from the presence of the existing tanks on site as the curious visitor may be inclined to climb the vertical above ground storage tank and suffer an injury from a fall. The tent frame structures could collapse due to the wear and tear of the elements in the next few years and also pose a concern.

6.2 ENVIRONMENTAL RISKS:

The overall environmental risks of the Silver Hart site relating to the mining and exploration activity are considered medium low with limited potential for acid generation. Some effort to properly culvert the water emanating from the adit should be made before any attempt to block the adit with fill. The present rock dumps are likely to generate acid drainage based on the ABA analysis, although paste pH readings are neutral. The assessment of the potential risks to the receiving environment resulting from acid generation caused by the mine and waste rock piles are considered medium low based on the following data:

- the limited volume of material in the mine dumps;
- the maximum total potential sulphuric acid is low, estimated at 570 tonnes;
- the neutral paste pH of the bulk of the material;
- the near absence of iron sulphides;
- the coarse texture of the sulphides present;
- the presence of marble within the host stratigraphy, and;
- climatic conditions are dry with a moderately low annual precipitation, approximately half of which is stored in the winter snow pack.

The potential for release of metals into the environment is considered a low risk. Release of zinc and cadmium in solution at levels above the CCME guidelines has been suggested. The receiving environment is conducive to their precipitation out of solution before reaching the creek over 600 metres away. Re-contouring of the stripped areas and general site reclamation are considered the most important environmental concerns at the Silver Hart site. The results of this environmental assessment of the potential for acid generation and metals contamination caused by the mining and exploration work done on the site are limited by the following parameters.

1. The static analytical procedures used for the ABA can only be considered indicative of the potential for acid generation and requires kinetic testing to

- establish a more accurate prediction model;
2. Assumptions built into the calculation of the total potential H_2SO_4 , including the percentage of pour space and specific gravity of the rock, and;
 3. Total metals analysis of the water samples was possibly compromised by the poor and lengthy storage of the sample.

The results of this environmental assessment of the geologically related aspects of the Silver Hart site can be considered indicative of the present state of the site and its potential to adversely affect the immediate surrounding environment.

Monitoring of the creek water upstream from Edgar Lake is recommended in 5 years to test for metals contamination. More intense sampling and definitive analytical procedures would be required to accurately test those parameters identified in this study as a potential risk. A moderate risk could be said to exist as a result of the large number of barrels of diesel fuel at the exploration area as well as waste oil in the maintenance area which could puncture and leak to the surrounding environment.

The environmental risks of development of the Silver Hart site were examined by Norecol in 1986-87. Results of the water quality work were not available at the time of writing this report.

6.3 AESTHETIC CONCERNS

The primary aesthetic concern at the Silver Hart site is the proliferation of 205 litre metal barrels full of diesel fuel, Jet "B" aviation fuel or waste oil scattered about the maintenance shed area as well as the exploration camp area of the site. A secondary aesthetic concern consists of the presence of a total of 6 aboveground fuel storage tanks located primarily in the maintenance area.

Other aesthetic concerns at this site include the significant amount of building infrastructure remaining on site consisting of prefabricated trailers, metal quonset hut, wooden tent frames, and a large amount of core boxes left exposed to the weather in the upper exploration camp area stained soils in the maintenance area.

7.0 RECOMMENDATIONS

Recommendation 1.

Since waste rock is moderately acid generating, waste rock disposal areas should be monitored every 5 years to determine the acid generating potential over the long term.

Recommendation 2.

It is recommended that every five years a monitoring program be undertaken to obtain water quality data for spring freshet, middle summer and late fall conditions for mine seepage as well as receiving waters. The method detection limits used should meet the CCME criteria for fresh water aquatic life

Recommendation 3.

Clean above ground fuel storage tanks, cut up and bury on site using waste rock on site. Incinerate barrels of diesel fuel and jet fuel on site. Use 2 barrels of waste oil for burning combustibles on site and incinerate remaining barrels of waste oil off site. Burn oily rags and waste materials off site. Scarify soil heavily stained with oil inside quonset hut, mix and fertilize on site.

Recommendation 4.

The single adit should be covered from human and animal access for health and safety reasons with surrounding rock and soil using readily available equipment. Should the mine need to be reopened, access to workings is achievable with heavy equipment.

Recommendation 5.

Disassemble metal quonset hut, cut up and bury on site. Haul out prefabricated trailers off site for salvage. Bury miscellaneous plastic and metal waste on site. Burial can occur by covering waste material with surrounding rock and soil on a clearing adjacent to a rock slope. Retain wood core boxes from tent frame structures and burn tent frame structures on site.

8.0 COST ESTIMATES TO IMPLEMENT RECOMMENDATIONS

Recommended remediation and management actions are compliant with applicable federal or territorial regulations and criteria, are reliant upon available technology, and are intended to be appropriate for local conditions and sensitivities. An estimated breakdown of expected remediation/mitigation costs to an accuracy of 25% is provided under separate cover to this report. The cost estimate includes contractor and project management costs and contingencies. The estimated cost to implement the recommendations is provided under separate cover.

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APPENDIX A

**DETERMINATION OF
ACID ROCK DRAINAGE POTENTIAL**

**SILVER HART
ACID ROCK DRAINAGE
ASSESSMENT REPORT**

TABLE OF CONTENTS

1.0	INTRODUCTION	J-1
2.0	GEOLOGY AND MINERALIZATION	J-2
3.0	WASTE ROCK DISPOSAL AREAS	J-2
3.1	Description	J-2
3.2	Samples	J-3
3.3	Analytical Results	J-4
4.0	EXISTING AND POTENTIAL ACID ROCK DRAINAGE CONDITIONS ..	J-5
5.0	REMEDIATION OPTIONS	J-5
6.0	CONCLUSIONS AND RECOMMENDATIONS	J-7
6.1	Conclusions	J-7
6.2	Recommendations	J-8
7.0	REFERENCES	J-8

LIST OF TABLES

TABLE 1	Silver Hart Waste Rock Sample Descriptions	J-10
TABLE 2	Silver Hart Waste Rock Sample ABA and ICP Results	J-11
TABLE 3	Silver Hart Water Quality Results	J-12

SITE MAP

SILVER HART ACID ROCK DRAINAGE ASSESSMENT REPORT

1.0 INTRODUCTION

This report has been prepared in conjunction with a *Phase II Environmental Assessment of the Silver Hart Abandoned Mine Site*, prepared by Environmental Services, Public Works and Government Services Canada (PWGSC). As part of the Phase II assessment prepared by PWGSC, Steffen Robertson and Kirsten (SRK) was requested to assess the potential for acid rock drainage at the site, which is the subject of this report. The reader is directed to the PWGSC report for a comprehensive environmental assessment of the Silver Hart site.

The following report reviews the existing, and the potential for, acid rock drainage (ARD) conditions at the Silver Hart site and provides recommendations for remediation. This site specific report is part of the *Acid Rock Drainage Review Report, Yukon Abandoned Mine Site Assessments*, prepared by Steffen, Robertson and Kirsten (SRK), which includes similar assessments for a number of other sites. The reader is directed to that report for detail regarding the scope of work, site assessment methodology, ARD remediation options and the evaluation of potential remediation options.

The Silver Hart site is located in the southern Yukon, approximately 43 kilometres northeast of Rancheria and 2 kilometres northwest of Edgar Lake.

Mining related disturbances observed during the site assessment consist of an adit, one of two raises, one of two settling ponds, stockpiled ore, a waste rock pile, and trenches. The mine rock was excavated from the underground workings between 1985 and 1986.

The site is located above the tree line, near the height of land, at an elevation of 1400 metres on a south facing peak along a southeast trending mountain ridge. The mine workings drain into a tributary of Edgar Lake. A water quality sample/ hydrology site used by the Water Resources Division of DIAND (Site 8) and during preliminary engineering studies is located 700 metres below the adit at a bridge crossing of this tributary (Norecol, 1987).

2.0 GEOLOGY AND MINERALIZATION

Mineralization at the Silver Hart property is located along the eastern contact of a granodiorite intrusion with marble, quartz-biotite-sericite-chlorite schists, and metasediments (hornfels). The area hosts a variety of mineral occurrence types, including:

- Shear hosted quartz-carbonate-sulphide veins of galena (PbS), tetrahedrite ((Cu,Fe)₁₂Sb₄S₁₃) and sphalerite ((Zn,Fe)S);
- Scheelite (CaWO₄) - molybdenite (MoS₂) - galena - sphalerite skarn developed along the intrusive-metasedimentary contact; and,
- Chalcopyrite (CuFeS₂) enriched pyritic (FeS_s) zones within the sericite schists.

3.0 WASTE ROCK DISPOSAL AREAS

3.1 Description

The volume of waste rock produced from the underground development work is estimated to be 17,000 tonnes. The assumptions made to derive this estimate are:

- a specific gravity of 2.65;
- 675 metres of lateral underground development; and
- 3 by 3 metre mine openings.

In order to collar the adit entrance (portal) in solid bedrock, overburden and weathered bedrock was excavated back 60 metres into the slope of the hill.

The waste rock, overburden and weathered bedrock has been pushed dumped to construct a 0.7 ha pad on the slope to the south of the adit. Ore stockpiles have been free dumped on the pad and subgrade ore has been pushed dumped on the pad.

The waste rock is composed of five main rock types in varying quantities: biotite schist; marble; granodiorite; skarn; and quartz-sulphide ore.

Trenching has occurred to the north of the adit. Approximately 60% of the area above the adit has been trenched by a bulldozer, resulting in large volumes of overburden being pushed into stockpiles. The total area of disturbance is over 100 ha, including a grid of trenches up to 6 metres deep.

3.2 Samples

Five samples were collected to represent each of the main rock types observed at the mine site. The sample locations are shown on the site map, Drawing 2. Samples SHWR-R1, SHWR-R4 and SHWR-R5 were collected from the waste rock in the pad. R1 was predominately biotite schist material. R4 was predominately a blend of granodiorite and marble and R5 was predominately granodiorite. Sample SHWR-R2 was collected from a stockpile of ore near Raise #2 and sample SHWR-R3 was collected from subgrade ore material.

A sample, SHWQ-A1-1 was collected of the water discharging from the adit at < 5 L/sec (visual estimate). Water is ponding to a depth of 0.5 metres behind a rock dam created by a failure of the overburden and rock in front of the adit. The flow was not traced beyond the waste rock pad area.

Water was observed to be seeping through the waste rock pad and collecting in a small settling pond. The pH, conductivity, and temperature of the water was tested in the field at the location marked SHWQ/S2 on the site map. A larger settling pond was reported just downslope of the mine workings.

Field tests were also recorded for the tributary of Edgar Lake that receives drainage from the mine workings. A staff gauge marked the established sample site along the access road to the mine.

3.3 Analytical Results

Results of geochemical analyses of the rock samples are provided in Table 2 and the analytical results for the water sample is provided in Table 3.

Paste Parameters

The laboratory paste pH values for the five rock samples ranged from 6.5 to 7.9, indicating that the material is not currently generating acid.

Acid Base Accounting

Results of acid base accounting (ABA) tests on samples from the stockpiled ore and the waste rock indicate that this material is potentially acid generating. Their Neutralizing Potential to Acid Potential ratios (NP:AP) are less than 2.2. Total sulphur contents range from 0.70% to 7.23%. 73% of the total sulphur present in sample R1 is in the form of sulphate, whereas less than 5% of the total sulphur present in samples R2, R3, and R4 is in the form of sulphate.

Metals Concentrations

All rock samples contained elevated concentrations of copper, manganese and zinc. The samples from the stockpiled ore and granodiorite rich waste rock contained elevated concentrations of lead and silver. The sample of high grade ore was also elevated in antimony, arsenic, cadmium, and tungsten. The sample of low grade ore and the waste rock sample with 60% granodiorite and 30% marble also contained elevated concentrations of arsenic, and cadmium.

Water Quality

The water sample collected from the adit discharge, SHWQ-A1-1, had a pH of 7.2 (field measurement). The conductivity was 340 $\mu\text{S}/\text{cm}$ (field measurement), indicating the

presence of sulphate and/or metals in the water. Sample SHWQ-A1-1 was shipped to the laboratory 23 days after it was collected; during the interim it was stored at ambient temperature. Conductivity, hardness, pH, acidity, alkalinity, and sulphate laboratory results are therefore not considered in this assessment. The total metals sample was preserved with HNO_3 and the results are used as an indication of potential metals of concern. Laboratory analysis indicated elevated concentrations of arsenic, cadmium, lead, manganese, silver and zinc.

The pH of the water seeping through the waste rock pad and collecting in the small settling pond was 6.6. The conductivity of the water was $310 \mu\text{S}/\text{cm}$, indicating the presence of sulphate and/or dissolved metals.

The pH of the water 700 metres downstream of the adit, at the bridge crossing, was 7.1. The conductivity of the water was $30 \mu\text{S}/\text{cm}$.

4.0 EXISTING AND POTENTIAL ACID ROCK DRAINAGE CONDITIONS

Neutral or near neutral paste pH values of the mine rock indicates that this material is not currently generating acid. However ABA tests indicate that the mine rock has the potential to generate acid.

The quality of the adit discharge indicates some sulphide oxidation is occurring in the adit. At present, the acid associated with this oxidation is being effectively neutralized. The pH of the water in the settling pond and 700 metres downstream of the adit are neutral. The impact of elevated metal concentrations from the adit discharge on the receiving environment was not assessed.

5.0 REMEDIATION OPTIONS

Typical reclamation and control options for acid generating mine waste and mine openings include:

- source control which includes limiting further oxidation, for instance, by placing the waste under water thus preventing oxygen entry;

- migration control which limits the mobility of oxidation products, for example, by reducing infiltration to the waste by placing a low permeability cover; and,
- release control by collecting and treating contaminated flows prior to discharge.

The acid base accounting results suggest that the waste rock at Silver Hart are potentially acid generating.

Collection and treatment of the runoff from Silver Hart site is not considered a viable option because of the remote location of the site and the high cost of operating a treatment facility. Relocation of the mined material is not considered, since there is no secure placement location readily available, such as underground workings or an open pit.

Placement of a soil cover to control the migration of ARD is considered a viable option. This option is compared to the "do nothing" option in the following table.

The waste rock and ore stockpiles at the Silver Hart site likely represent a health and safety risk to the public due to instability of the material around the adit. Workers would also be exposed to a health and safety risk during the placement of the cover.

Even though covering the mine rock would decrease the amount of infiltration through the pile it is not without risk to the environment since a second site would be disturbed in order to obtain the cover material, and during the contouring of the piles a short term release of soluble metal constituents would likely occur. However, the risk to the environment is considered high because the current quality of the downstream water is not known.

Covering the ore stockpiles could obstruct exploration on the site, should the feasibility of the project be reevaluated.

Monitoring costs would likely be incurred with either option and maintenance of the cover would be necessary.

Covering the waste rock and ore stockpiles would improve the aesthetic appearance of the site and is therefore ranked higher.

Matrix for Evaluating Applicable/Potential Remediation

Option versus Evaluation Criteria	Silver Hart			
	Collect and Treat	Relocate	Cover	Do Nothing
Public Health and Safety 5 = provides full protection of public 1 = provides no protection of public	not applicable	not applicable	5	4
Worker Health and Safety 5 = relative low risk to workers 1 = high risk to workers	not applicable	not applicable	3	5
Ecosystem Preservation and Protection 5 = relative low risk to environment 1 = relative high risk to environment	not applicable	not applicable	4	1
Impact on Mineral Resource 5 = allows for continued exploration 1 = impedes continued exploration	not applicable	not applicable	4	5
Direct Costs (mobilization & materials) 5 = relative low cost 1 = relative high cost	not applicable	not applicable	3	5
Monitoring and Maintenance Costs 5 = relative low cost 1 = relative high cost	not applicable	not applicable	2	3
Acceptability 5 = positive response anticipated 1 = negative response anticipated	not applicable	not applicable	4	2
Total Score	0	0	25	25

6.0 CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions

The waste rock and ore stockpiled on site has the potential to become acid generating. However, the evaluation of the potential remediation options does not clearly indicate which option is preferable for the long term. There is currently insufficient information to determine whether leaving the piles as is will be environmentally acceptable.

6.2 Recommendations

No further laboratory test work is recommended on the waste rock and ore stockpiles. However, further water quality and hydrology data is required to assess the potential impacts. This study is required to develop an effective remediation plan for the waste rock and ore stockpiles.

It is recommended that for 1997 a sampling program be undertaken to obtain water quality and hydrology data during spring freshet, middle summer and late fall conditions. Water samples should be collected at SHWQ-A1-1, SHWQ-S2, and at the bridge below the adit. Additional seeps observed at the base of the waste rock pad should also be sampled and analyzed. The method detection limits used should correspond to the CCME freshwater aquatic life criteria. It is also recommended that water quality and hydrology data collected during past environmental studies on the property be gathered and compiled. The results can then be used to determine appropriate remediation measures and future monitoring requirements.

7.0 REFERENCES

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TABLE 1 Silver Hart Waste Rock Sample Descriptions

Sample ID	Sample Description
SHWR-R1	Waste rock sample consisted of 70% biotite schist, 15% hornfels, 10% quartz vein, and 5% marble. 30% of the material was coarse, 30% medium and 40% fine textured. 95% was a green yellow colour, the remaining 5% a bright orange brown. The field paste pH was 8.1.
SHWR-R2	High grade ore stockpile sample of 70% quartz-sphalerite-galena-tetrahedrite vein material, 20% marble and 10% biotite schist. 25% of the material was coarse, 25% medium and 50% fine textured. 90% was a green yellow colour, the remaining 10% a bright orange brown. The field paste pH was 6.5.
SHWR-R3	Subgrade ore stockpile sample of 60% biotite schist, 20% marble and 20% quartz sulphide material. 50% of the material was coarse, 20% medium and 30% fine textured. 95% was a green yellow colour, the remaining 5% a bright orange brown. The field paste pH was 6.5.
SHWR-R4	Waste rock sample of 60% granodiorite, 30% marble, 5% biotite schist and 5% quartz vein. 40% of the material was coarse, 20% medium and 40% fine textured. 99% was a green yellow colour, the remaining 1% a bright orange brown. The field paste pH was 7.1.
SHWR-R5	Waste rock sample of 80% granodiorite, 10% marble, 5% biotite schist and 5% quartz vein. 60% of the material was coarse, 20% medium and 20% fine textured. 95% was a green yellow colour, the remaining 5% a bright orange brown. The field paste pH was 7.2.

TABLE 2 Silver Hart Waste Rock ABA and ICP Results

Parameter	Units	Sample Number SHWR				
		R1	R2	R3	R4	R5
Field Paste pH		8.1	6.5	6.5	7.1	7.2
Lab Paste pH		7.75	6.57	6.76	7.76	7.91
Total Sulfur	%	2.22	7.23	2.81	1.83	0.70
Sulfate	%	1.60	0.15	0.09	0.09	na
AP		19.38	221.25	85.00	54.38	21.88
NP		42.25	9.50	6.56	15.38	12.25
NET NP		22.88	-211.75	-78.44	-39.00	-9.63
NP/AP		2.18	<0.1	<0.1	0.28	0.56
Aluminum	%	1.96	0.28	0.25	0.39	0.21
Antimony	ppm	6	1461	140	65	46
Arsenic	ppm	<1	994	1559	836	<1
Barium	ppm	52	22	12	19	13
Beryllium	ppm	<0.1	<0.1	<0.1	<0.1	<0.1
Bismuth	ppm	38	59	8	6	<1
Cadmium	ppm	<0.1	>100	>100	94.7	2.1
Calcium	%	2.23	0.48	0.18	0.65	0.44
Chromium	ppm	86	79	159	146	138
Cobalt	ppm	35	9	7	6	3
Copper	ppm	724	2728	500	363	159
Gallium	ppm	<1	<1	<1	<1	<1
Iron	%	9.18	3.30	2.94	1.94	2.25
Lead	ppm	83	>10000	2316	1160	1425
Lithium	ppm	35	<1	2	6	<1
Magnesium	%	0.76	0.09	0.07	0.17	0.09
Manganese	ppm	1295	8510	7796	3246	6754
Molybdenum	ppm	56	84	22	17	20
Nickel	ppm	46	43	37	22	30
Potassium	%	0.32	0.11	0.16	0.14	0.14
Phosphate	ppm	370	660	620	600	510
Silver	ppm	2.8	>200	148.8	101.2	67.8
Sodium	%	0.04	<0.01	<0.01	<0.01	<0.01
Strontium	ppm	65	35	22	38	23
Thorium	ppm	<1	<1	<1	<1	<1
Tin	ppm	6	11	7	4	3
Titanium	%	0.04	<0.01	<0.01	<0.01	<0.01
Tungsten	ppm	6	250	111	69	33
Uranium	ppm	<1	<1	<1	<1	<1
Vanadium	ppm	25.1	5.6	1.8	4.0	1.6
Zinc	ppm	534	>10000	>10000	>10000	>10000

AP = Acid Potential in tonnes CaCO₃ equivalent per 100 tonnes of material

NP = Neutralization Potential in tonnes CaCO₃ equivalent per 1000 tonnes of material

Net NP = Net Neutralization Potential = tonnes CaCO₃ equivalent per 1000 tonnes of material

na = no assay / analysis

< = lower detection limit

> = upper detection limit

Steffen Robertson and Kirsten
February, 1997

TABLE 3 Silver Hart Water Quality Results

Parameter		Units	SHWQ
			A1-1
Field Conductivity		umhos/cm	*
Field pH			7.2
Conductivity		umhos/cm	507
Hardness	CaCO3	mg/L	*
Moisture	%	%	-
pH			7.65
Acidity (to pH 8.3)	CaCO3	mg/L	*
Alkalinity-Total	CaCO3	mg/L	*
Chloride	Cl	mg/L	-
Sulphate	SO4	mg/L	*
Aluminum	T-Al	mg/L	0.031
Antimony	T-Sb	mg/L	-
Arsenic	T-As	mg/L	0.036
Barium	T-Ba	mg/L	0.01
Beryllium	T-Be	mg/L	<0.005
Boron	T-B	mg/L	<0.1
Cadmium	T-Cd	mg/L	0.0134
Calcium	T-Ca	mg/L	77.3
Chromium	T-Cr	mg/L	<0.001
Cobalt	T-Co	mg/L	<0.02
Copper	T-Cu	mg/L	<0.001
Iron	T-Fe	mg/L	<0.03
Lead	T-Pb	mg/L	0.002
Lithium	T-Li	mg/L	<0.02
Magnesium	T-Mg	mg/L	15.6
Manganese	T-Mn	mg/L	0.163
Mercury	T-Hg	mg/L	<0.00005
Molybdenum	T-Mo	mg/L	<0.03
Nickel	T-Ni	mg/L	<0.02
Selenium	T-Se	mg/L	<0.0005
Silver	T-Ag	mg/L	0.0001
Sodium	T-Na	mg/L	2
Tin	T-Sn	mg/L	-
Vanadium	T-V	mg/L	<0.03
Zinc	T-Zn	mg/L	6.73

< = lower detection limit

Sample held for approximately 30 days at room ten

Steffen Robertson and Kirsten
February, 1997

APPENDIX B

SITE PHOTOGRAPHS



Photo 1. View upslope (looking north) of site with adit (left) maintenance area (right) and trailer camp (background).

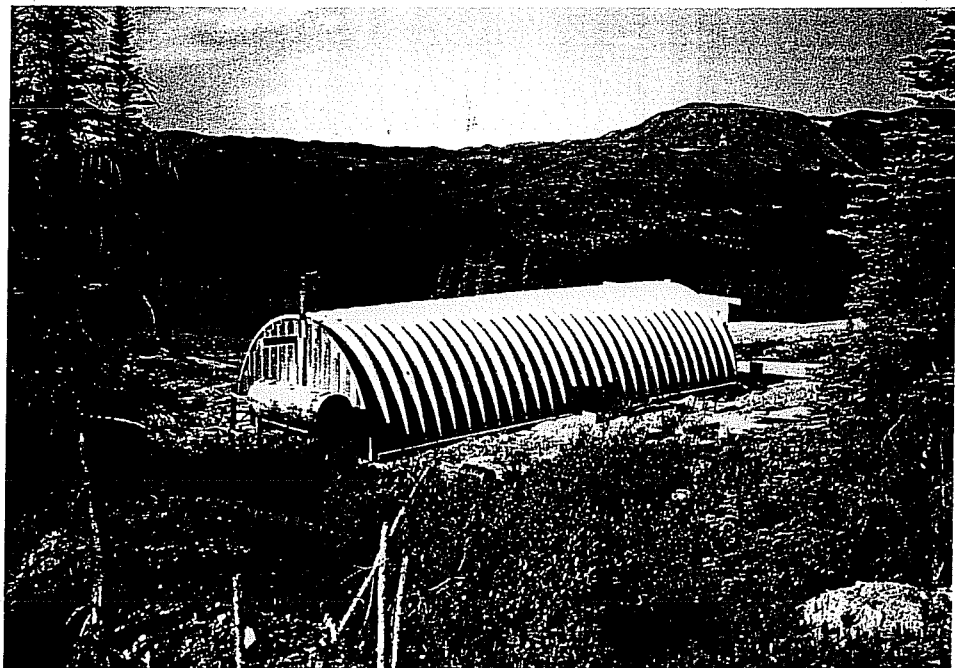


Photo 2. Prefabricated metal maintenance shed with AST and adit area (background).

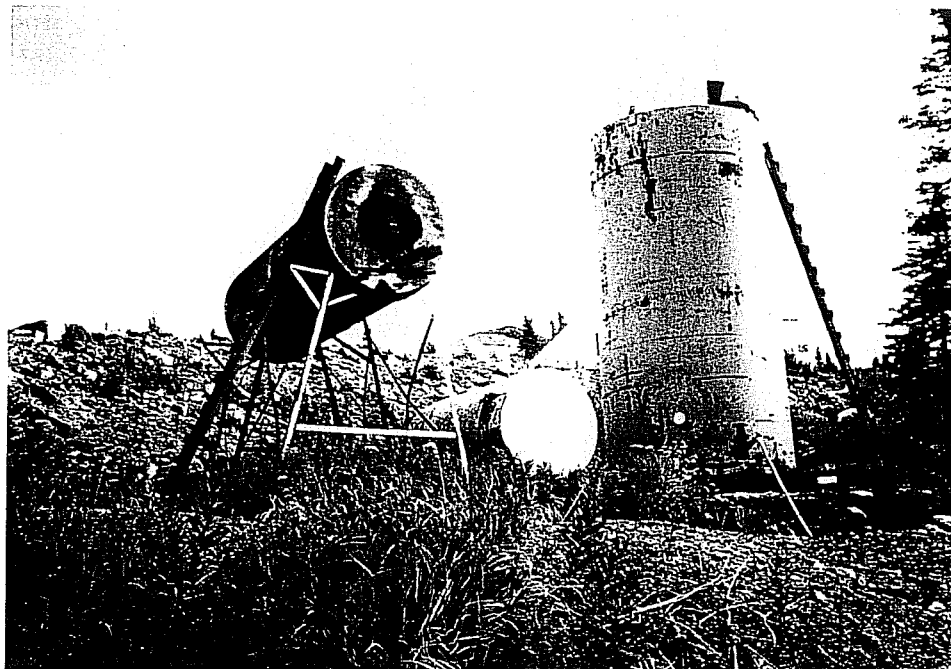


Photo 3. View of 2 horizontal ASTs and 1 vertical AST in maintenance area below trailer camp.

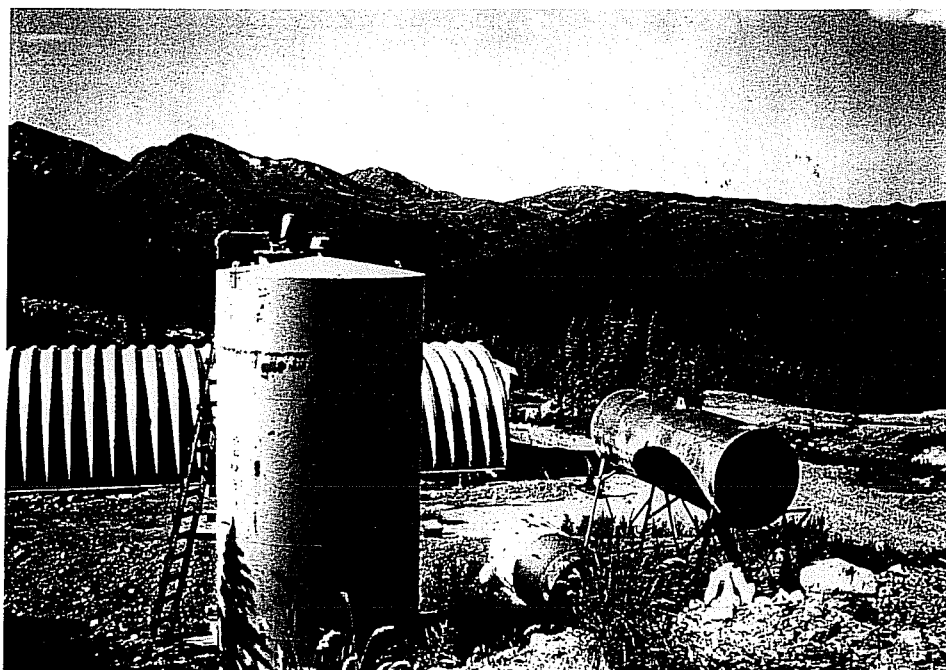


Photo 4. View of maintenance area ASTs with main adit and waste rock area below.

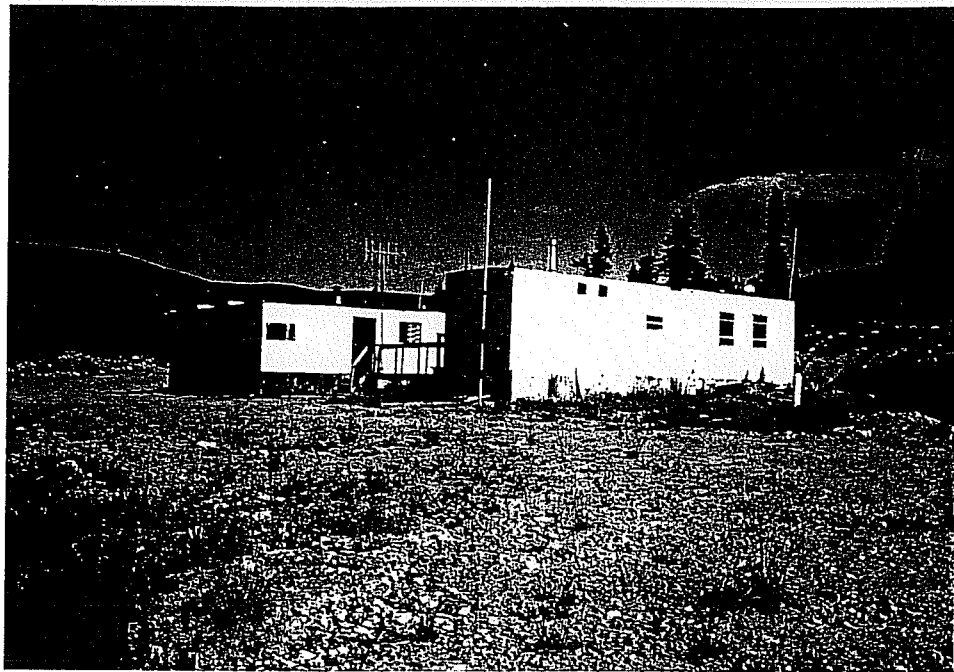


Photo 5. Prefabricated "Atco" trailers for sleeping & dining north of maintenance area.

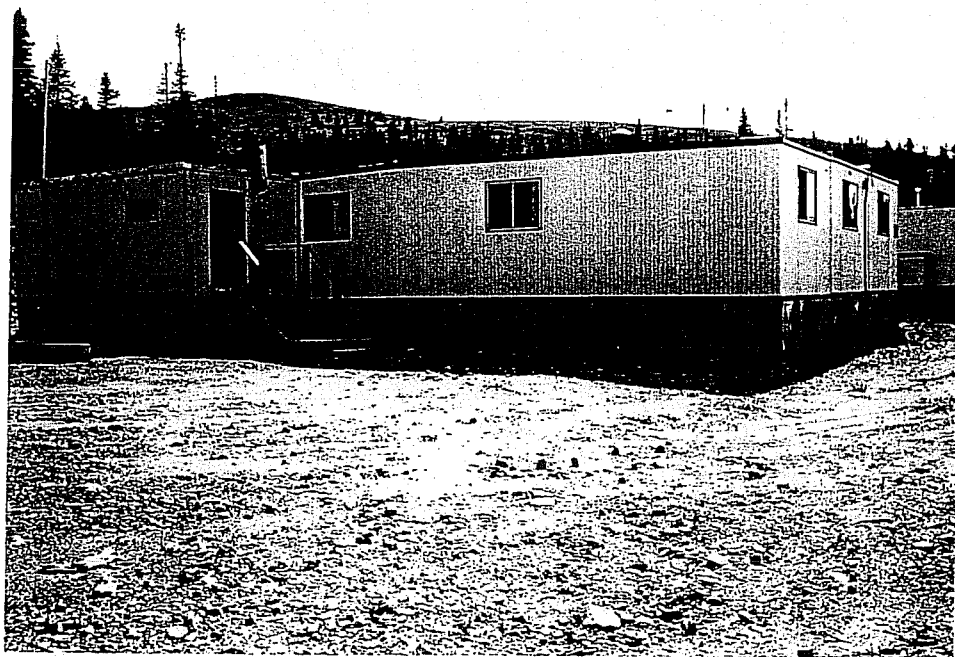


Photo 6. Detail of sleeping quarters in trailer camp area.



Photo 7. Twin ASTs in trailer camp area.

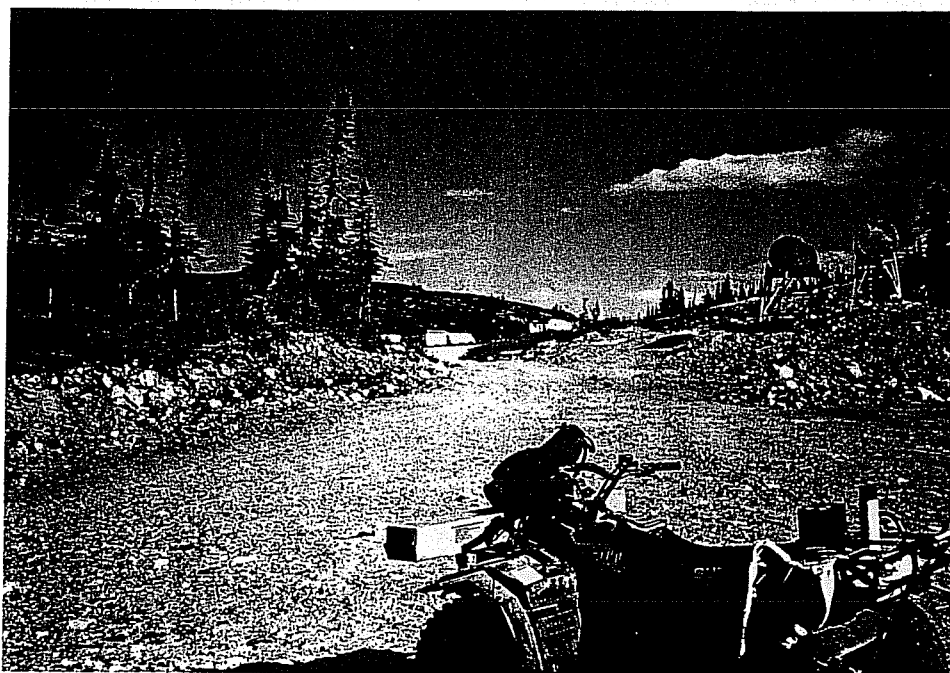


Photo 8. Service road to upper tent camp area with twin ASTs in trailer camp area (right) and tent camp area (background).



Photo 9. Sleeping tent frames with wood waste at right and metal barrels strewn about site.



Photo 10. Further detail of area surrounding tent frame sleeping quarters.



Photo 11. Wooden core storage racks behind tent frame sleeping quarters.



Photo 12. View of interior of maintenance shed. Note obvious signs of soil staining and waste oil containers (right rear).



Photo 13. Barrels of Jet B fuel found near upper level tent frame area.



Photo 14. Detail of test pit area SH-WR-R4 at south western edge of push dump waste rock ore stock pile area west of main adit.

APPENDIX C

ANALYTICAL RESULTS

CHEMICAL ANALYSIS REPORT

Date: INTERIM
ASL File No. G3599
Report On: 762-186 Water Analysis
Report To: **Public Works & Gov't Services**
Environmental Services
204-1166 Alberni Street
Vancouver, BC
V6E 3W5
Attention: **Mr. Tim Sackmann**, Manager, Contaminated Sites
Received: July 31, 1996

ASL ANALYTICAL SERVICE LABORATORIES LTD.
per:

Heather A. Ross, B.Sc.
Project Chemist

RESULTS OF ANALYSIS - Water¹

File No. G4270

		SH-WQ-A1 -1	DU-WQ- STR-302	FO-WQ- STR-001	FO-WQ- STR-301	FO-WQ- STR-302
		96 07 29 10:00	96 08 17 09:30	96 08 13 11:00	96 08 13 11:30	96 08 13 11:30
Physical Tests						
Conductivity (umhos/cm)		507	60.2	618	615	1020
Hardness	CaCO ₃	257	25.8	339	336	589
pH		7.65	7.26	8.08	8.11	7.73
Dissolved Anions						
Acidity	CaCO ₃	16.1	3.8	5.0	3.6	13.4
Alkalinity - Total	CaCO ₃	150	11.7	136	135	234
Sulphate SO ₄		123	15.5	192	168	409
Total Metals						
Aluminum T-Al		~~0.031~~	0.010	0.017	0.008	~~0.035~~
Arsenic T-As		0.0360	0.0012	0.0024	0.0024	0.0014
Barium T-Ba		0.01	0.07	0.04	0.04	0.04
Beryllium T-Be		<0.005	<0.005	<0.005	<0.005	<0.005
Boron T-B		<0.1	<0.1	<0.1	<0.1	<0.1
Cadmium T-Cd		~~0.0124~~	~~<0.0002~~	~~0.0019~~	~~0.0018~~	0.0009
Calcium T-Ca		77.3	7.53	103	102	145
Chromium T-Cr		<0.001	<0.001	<0.001	<0.001	<0.001
Cobalt T-Co		<0.02	<0.02	<0.02	<0.02	<0.02
Copper T-Cu		<0.001	<0.001	<0.001	<0.001	~~0.002~~
Iron T-Fe		<0.03	<0.03	0.11	0.10	0.15
Lead T-Pb		0.002	<0.001	0.001	0.001	0.004
Lithium T-Li		<0.02	<0.02	<0.02	<0.02	<0.02
Magnesium T-Mg		15.6	1.70	19.5	19.3	54.9
Manganese T-Mn		0.163	<0.005	0.106	0.099	0.006
Mercury T-Hg		<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Molybdenum T-Mo		<0.03	<0.03	<0.03	<0.03	<0.03
Nickel T-Ni		<0.02	<0.02	<0.02	<0.02	<0.02
Selenium T-Se		<0.00005	0.0007	0.0009	0.0010	0.0007
Silver T-Ag		0.0001	<0.0001	0.0002	0.0002	0.0002
Sodium T-Na		2	<2	<2	<2	2
Vanadium T-V		<0.03	<0.03	<0.03	<0.03	<0.03
Zinc T-Zn		~~0.005~~	0.005	0.237	0.228	0.052

Remarks regarding the analyses appear at the beginning of this report.
 < = Less than the detection limit indicated.
¹Results are expressed as milligrams per litre except where noted.

Outlines of the methodologies utilized for the analysis of the samples submitted are as follows:

Error opening method file.

Extractable Organic Halide (EOX) in Oil

This analysis is carried out using a procedure that is consistent with the requirements of the appropriate regulatory agencies and adapted from U.S. EPA Method 9020 (Publ. # SW-846, 3rd ed., Washington, DC 20460). The procedure involves extracting a subsample with ethyl acetate and analysing the extract with a TOX analyser.

Moisture

This analysis is carried out gravimetrically by drying the sample to constant weight at 103 C.

Conventional Parameters in Sediment/Soil

These analyses are carried out on a leachable basis. The procedure involves mixing with reagent grade water and leaching for several hours. The leachate is centrifuged and analysed in accordance with "Standard Methods for the Examination of Water and Wastewater" 17th ed. published by the American Public Health Association, 1989.

Metals in Sediment/Soil

This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 Method 3050 or Method 3051, published by the United States Environmental Protection Agency (EPA). The procedures involve a digestion using a 1:1 ratio of nitric acid and hydrochloric acid, along with hotplate or microwave heating. Instrumental analysis is by atomic absorption spectrophotometry (EPA Method 7000) and/or inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010).

Method Limitation: The stated acid digestion will provide excellent results for total recoverable metals; however, it is only partially effective on mineralized or non-environmentally available metals.

Polycyclic Aromatic Hydrocarbons in Sediment/Soil

This analysis is carried out using a procedure adapted by ASL from U.S. EPA Methods 3500, 3630, and 8270 (Publ. #SW-846 3rd ed., Washington, DC 20460). The procedure involves a microwave assisted extraction with

dichloromethane followed by a clean-up using silica gel column chromatography. This clean-up procedure has been found to effectively remove aliphatic and heterocyclic hydrocarbons which could potentially interfere with the analysis. The final extract is analysed by capillary column gas chromatography with mass spectrometric detection.

Conventional Parameters in Water

These analyses are carried out in accordance with procedures described in "Methods for Chemical Analysis of Water and Wastes" (USEPA), "Manual for the Chemical Analysis of Water, Wastewaters, Sediments and Biological Tissues" (BCMOE), and/or "Standard Methods for the Examination of Water and Wastewater" (APHA). Further details are available on request.

Metals in Water

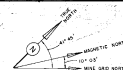
This analysis is carried out in accordance with procedures described in "Standard Methods for the Examination of Water and Wastewater" 19th Edition 1995 published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion or filtration (EPA Method 3005), followed by instrumental analysis by atomic absorption spectrophotometry (EPA Method 7000), inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010), and/or inductively coupled plasma - mass spectrometry (EPA Method 6020).

Mercury in Water

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" 19th Edition 1995 published by the American Public Health Association. A cold-oxidation procedure involving bromine monochloride is used, followed by instrumental analysis by cold-vapour atomic absorption spectrophotometry (CVAAS).

End of Report

ORGAN: 01 - 27	REF: 01	ORGANOS: 01
DATE: 1988-10-17		SG-H-54



LEGEND

DRILL HOLE DATA

81-18 (DANDY DRILL HOLE #1)
81-18 (DANDY DRILL HOLE #2)
81-18 (DANDY DRILL HOLE #3)
81-18 (DANDY DRILL HOLE #4)
81-18 (DANDY DRILL HOLE #5)
81-18 (DANDY DRILL HOLE #6)
81-18 (DANDY DRILL HOLE #7)
81-18 (DANDY DRILL HOLE #8)
81-18 (DANDY DRILL HOLE #9)
81-18 (DANDY DRILL HOLE #10)

DRILL HOLE SYMBOLS

81-18 (DANDY DRILL HOLE #1)
81-18 (DANDY DRILL HOLE #2)
81-18 (DANDY DRILL HOLE #3)
81-18 (DANDY DRILL HOLE #4)
81-18 (DANDY DRILL HOLE #5)
81-18 (DANDY DRILL HOLE #6)
81-18 (DANDY DRILL HOLE #7)
81-18 (DANDY DRILL HOLE #8)
81-18 (DANDY DRILL HOLE #9)
81-18 (DANDY DRILL HOLE #10)

- DRILL HOLE SYMBOLS**
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 - 81-18 (DANDY DRILL HOLE #2)
 - 81-18 (DANDY DRILL HOLE #3)
 - 81-18 (DANDY DRILL HOLE #4)
 - 81-18 (DANDY DRILL HOLE #5)
 - 81-18 (DANDY DRILL HOLE #6)
 - 81-18 (DANDY DRILL HOLE #7)
 - 81-18 (DANDY DRILL HOLE #8)
 - 81-18 (DANDY DRILL HOLE #9)
 - 81-18 (DANDY DRILL HOLE #10)
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 - 81-18 (DANDY DRILL HOLE #2)
 - 81-18 (DANDY DRILL HOLE #3)
 - 81-18 (DANDY DRILL HOLE #4)
 - 81-18 (DANDY DRILL HOLE #5)
 - 81-18 (DANDY DRILL HOLE #6)
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 - 81-18 (DANDY DRILL HOLE #8)
 - 81-18 (DANDY DRILL HOLE #9)
 - 81-18 (DANDY DRILL HOLE #10)

COMPILATION OF PROPERTY DATA AS OF 20 APRIL, 1985 BY W.S. READ & P. ELLIS
FOR SILVER HART MINES LTD. (A DIVISION OF THE HART MINES GROUP, LTD.)
REVISOR: W.S. READ & P. ELLIS
DATE: APRIL 17, 1985

SILVER HART MINES LTD.
HART SILVER PROPERTY, YUKON.
GEOLOGY
UNDERGROUND PLAN
(4800 FT. LEVEL)

N008'889'9

404,100E

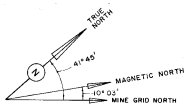
N006'889'9

404,200E

N000'889'9

4043 00E

N002'889'9



LEGEND

DRILL HOLE DATA

PB5-9 (PERCUSSION DRILL HOLE N°9)
PB5-8 (DIAMOND DRILL HOLE N°8)
+43° (INCLINATION)
160.0 (LENGTH FT.)

CHIP SAMPLE SEQUENCE

AG	PS	ZN	CU	AG	PS	ZN	CU	AG	PS	ZN	CU
SAMPLE WIDTH (FT.)											
SAMPLE N°											

MINING

WIDTH (FT.)	AG	PS	ZN	CU	AG	PS	ZN	CU
AVERAGE								
SAMPLE N°								

DRILL HOLE WITHIN 5 ft. OF SECTION

DRILL HOLE BEHIND SECTION, DISTANCE NOTED

DRILL HOLE IN FRONT OF SECTION, DISTANCE NOTED

DRILL HOLE COLLAR

OVERBURDEN

VEIN

PROPYLITIC ALTERATION OF GRANODIORITE

ARGILLIC ALTERATION OF GRANODIORITE

SERPENTINIZATION

SAUSSURIZED ?

ANDESITE DYKE

QUARTZ - SERICITE SCHIST. 7A SERPENTIZED

QUARTZ - BIOTITE - CHLORITE SCHIST

GARNET - DIOPSIDE SKARN

RECRYSTALLIZED LIMESTONE / MARBLE

INTENSE MANGANESE - LIMONITE HEMATITE

QUARTZ CALCITE VEIN

GRANODIORITE - LOW ALTERATION 13A DIORITE

QUARTZITES

DOLOMITE

GEOLOGICAL SYMBOLS

BEDDING STRIKE & DIP

FAULT STRIKE & DIP OBSERVED, INFERRED

FAULT - THRUST - TEETH ON UPPER PLATE - ARROW PLUNGE OF STRATATIONS

FAULT - NORMAL DOWN THROW MEASURED

FAULT RELATIVE HORIZONTAL MOVEMENT

SHEAR ZONE

BRECCIA

JOINTING WITH DIP (MAJOR, MINOR) NOT DIFFERENTIATED ON PRESENT MAP

SCHISTOSITY

GEOLOGICAL CONTACT - OBSERVED, INFERRED

MINERALIZATION

VEIN ZONE, DIP - MASSIVE, DISSEMINATED, STRANDED

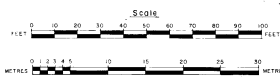
MORE ZINC THAN LEAD

MORE LEAD THAN ZINC

QUARTZ VEIN

SKARN ZONE

CLAY ZONE



SILVER HART MINES LTD.
HART SILVER PROPERTY, YUKON.
60° 10' N. - 130° 45' W.

GEOLOGY SURFACE PLAN

DRAWN BY: J.T. REVISED: DATE: FEB. 1987. AUTHORIZED:

DRAWING NO. SG-H-4.4

CMC Metals Ltd.

Silver Hart Property

ENVIRONMENTAL MONITORING PROGRAM

CONSTRUCTION, PRODUCTION, AND DECOMMISSIONING

SILVER HART PROPERTY

YUKON TERRITORY

December 2007

Prepared by:



www.accessconsulting.ca

TABLE OF CONTENTS

1.0	Introduction.....	1
1.1	Health and Safety.....	2
1.2	Physical Inspections.....	2
1.3	Water Quality Surveillance Network.....	2
2.0	Water Quality Monitoring.....	3
2.1.1	Receiving Water Stations	4
3.0	Physical Inspection.....	8
3.1	Benthic Invertebrate Monitoring Program.....	7
3.2	Sediment Monitoring Program.....	7

LIST OF TABLES

Table 1	Water Quality Sample Station Locations.....	4
Table 2	Overall Monitoring Program Summary.....	6
Table 3	Physical Inspection Sites Monitoring Schedule.....	9

LIST OF FIGURES

Figure 1	Water Quality Sample Station Locations	5

LIST OF APPENDICES

Appendix A	– Inspection Checklist

ENVIRONMENTAL MONITORING PROGRAM

1.0 INTRODUCTION

This environmental monitoring program has been prepared for the Silver Hart Property (CMC Metals Ltd.) mine development and water licence application. This program is intended to be a stand alone document and will evolve based on the mine development, results of monitoring, water treatment system improvements and closure related studies.

This document describes the environmental monitoring programs that will be carried out to ensure that project development components are operated and maintained in a manner that ensures environmental and socio-economic protection. These programs are designed to monitor:

- site security and public health and safety;
- existing treatment facilities and their operational performance;
- site facilities and operations as a preventative measure for accidents and malfunctions;
- potential effects to the receiving environment through scheduled water quality and biological sampling and inspection tours of the local receiving water streams; and
- mitigation success.

Data will also be utilized for closure plan development and implementation as necessary. If monitoring indicates that treatment systems are not performing or stability issues with mine workings arise, then maintenance measures or contingency plans can be implemented following an adaptive management approach.

A baseline monitoring program is already in place for the Silver Hart Property. This program utilizes up to 16 environmental monitoring stations to undertake water and sediment quality monitoring. Some of these will be used for aquatic effects monitoring for benthic invertebrate populations and continued water quality and sediment monitoring as outlined in following sections. Table 2 outlines the overall receiving waters monitoring program.

The active mine site will be physically inspected on a regular basis during the operational life of the mine and the closure phase to ensure public health and safety and

environmental protection. Site personnel record will observations on an inspection check list form (Appendix A), which will be reviewed by management personnel for action as necessary.

1.1 HEALTH AND SAFETY

Considerable emphasis is placed on ensuring worker health and safety. The company has procedures in place for worker health and safety and follows all occupational requirements. Health and safety training, meetings, and briefings are to be undertaken for all employees on a routine basis. Scheduled environmental tours of the workplace will occur to look for environmental and safety hazards and potential accidents, and to assess waste management activities. This information will then be used for feedback in safety briefings and implementation of corrective action.

1.2 RECEIVING WATER SURVEILLANCE NETWORK

A water quality surveillance network is in place to monitor the surface receiving waters for quality and environmental effects purposes. These stations will be sampled for water, sediment, and benthic invertebrates. All of these monitoring stations have been sampled in the past.

Table 1 lists the current site location numbering system that will be monitored as part of the water quality surveillance network. Table 1 provides the site locations for the surface receiving waters surveillance network. The present sampling frequency and analytical schedule is outlined previously in Table 2, Overall Monitoring Program Summary.

1.3 PHYSICAL INSPECTIONS

The tailings dams, spillways, and diversion ditches are to be routinely inspected by site personnel for physical stability of these structures. The primary issues are settlement of the dams and erosion of flow channels. Table 1 outlines the physical inspection monitoring program for the tailings impoundments, waste rock storage area, diversion ditches, mill site, camp facilities, and fuel storage area. An inspection by a qualified geotechnical engineer of the tailings dams, settling ponds and diversion ditches will be undertaken for physical stability, if problems are identified. An annual engineering inspection of these areas will also be undertaken to ensure stability. A physical

inspection program for the production and waste disposal sites is presented in the Table 3.

2.0 WATER QUALITY MONITORING

In September 2006 Access Consulting Group (ACG) initiated a baseline receiving water monitoring program for the Silver Hart Property. Water quality monitoring stations were chosen based on previous water quality sampling to ensure continuity and on the applicability of sample locations to the proposed project and potential future projects. The goal of this sampling was to create a baseline of data to facilitate the understanding of any future impacts to the aquatic environment of the development of the Silver Hart Property. Results of the 2006-2007 program are documented within the "*Silver Hart Property Project Proposal and YESAA Submission, 2007*" prepared by ACG for CMC Metals Ltd.

ACG performed the following activities during 2006/2007:

- Collecting four rounds of water quality samples from various receiving water sites during open water conditions;
- Conducting spot flow measurements at all water quality sites when safe to do so;
- Installing, monitoring and inspecting hydrological sensors/data loggers at CMC-M2 (McCrary Creek at the access road), to collect stage discharge and flow records and allow for more confident study area hydrologic modeling;
- Collecting three rounds of stream sediment samples;

2.1.1 Receiving Water Stations

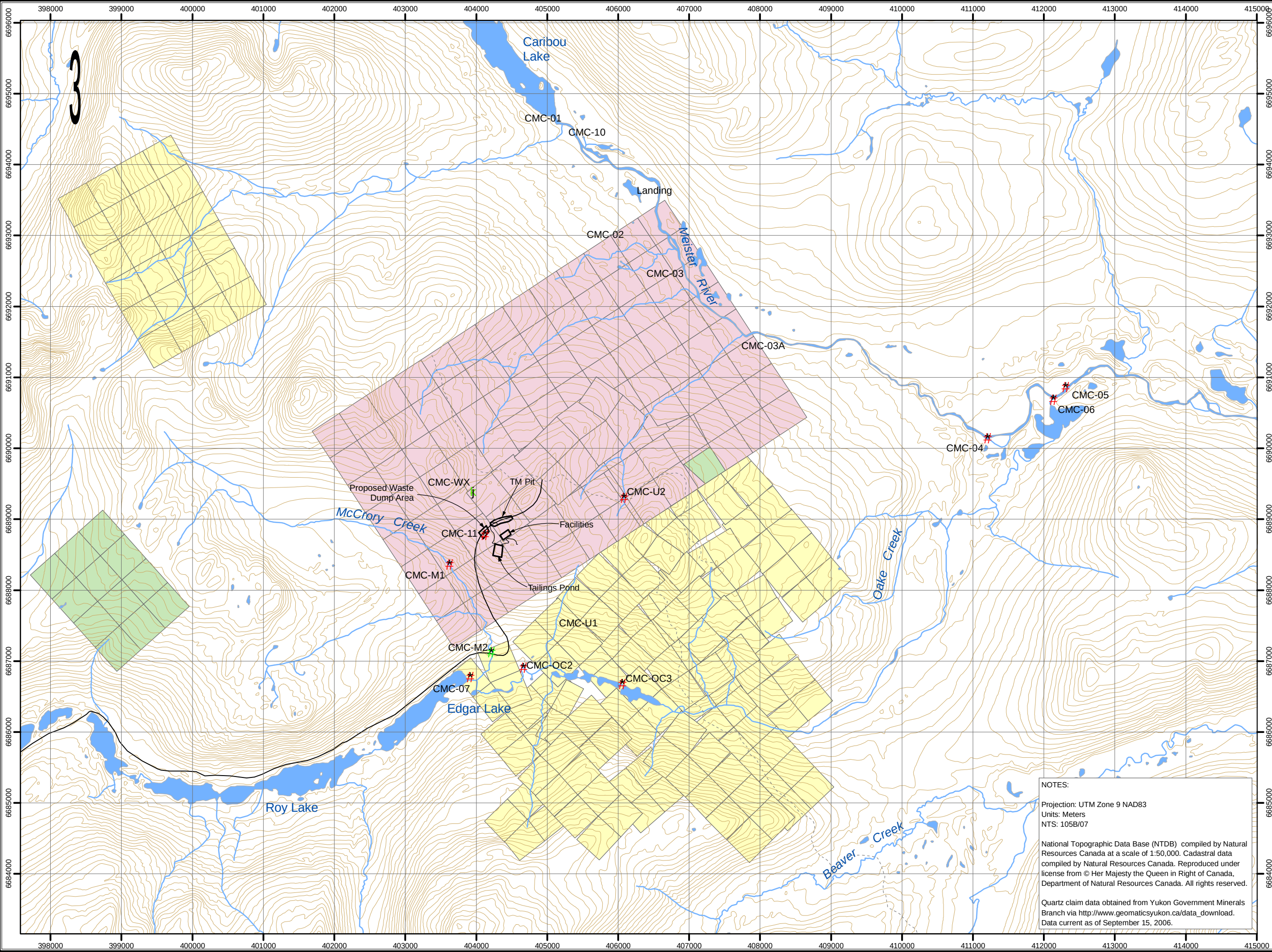
Receiving water stations include the following listed sites, which are shown on Figure 1 and listed in Table 1. The regular monitoring program for receiving water stations using an external laboratory facility for analytical testwork is outlined in Table 2.

- CMC-04 – Meister River upstream of the confluence with Oake Creek: to be a final control site for all influences of the project via the Oake Creek system;
- CMC-05 – Meister River downstream of the confluence with Oake Creek: to monitor downstream effects from the project via the Oake Creek system;

- CMC-06 – Oake Creek upstream of the confluence with the Meister River: to monitor downstream effects from the project prior to the confluence with the Meister River;
- CMC-07 – Oake Creek downstream of Edgar lake upstream of confluence with McCrory Creek: to provide a monitor overall downstream effects;
- CMC-11 – Adit flow: for characterization of water flowing from existing underground workings;
- CMC-M1 - McCrory Creek upstream from unnamed tributary to the south: to provide a project control site for the potential influences of the mine site;
- CMC-M2 – McCrory Creek at the access road crossing; upstream from Edgar Lake confluence; downstream from unnamed tributary;
- CMC-OC2 – Oake Creek downstream of McCrory Creek: to monitor effects from McCrory Creek;
- CMC-OC3 – Oake Creek downstream of unnamed tributary: to determine any downstream effects from tributary creek to the Oake Creek system;
- CMC-U1 – Unnamed tributary to Oake Creek: to determine any effects of the project on the unnamed creek to the east of the project;
- CMC-T1 – Tailings pond: to be sampled to monitor the condition of the water from the tailings pond.

Table 1 Water Quality Sample Station Locations

EMS*	SITE DESCRIPTION	Northing	Easting
CMC-04	Meister River upstream from Oake Creek confluence	6690129	411208
CMC-05	Meister River just downstream of Oake Creek confluence	6690849	412312
CMC-06	Oake Creek just upstream of Meister River confluence	6690673	412137
CMC-07	Mouth of Oake Creek at Edgar Lake	6686763	403918
CMC-11	Adit just south of camp	6688769	404126
CMC-M1	McCrory Creek upstream from unnamed tributary to the south	6688350	403628
CMC-M2	McCrory Creek upstream from Edgar Lake confluence;	6687110	404215
CMC-OC2	Oake Creek, downstream from McCrory Creek and Edgar Lake	6686894	404668
CMC-OC3	Oake Creek, downstream from unnamed creek confluence	6686666	406063
CMC-U1	Tributary to Oake Creek	6688432	405458



CMC METALS LTD.
PROPERTY



- Legend**
- Weather Station
 - Water Quality Station
 - Water Quality and Hydrology Station
 - Trail
 - Limited-Use Road
 - Contour
 - Water Course
 - Environmental Assessment Project Spatial Boundary
 - Infrastructure

- Quartz Claims**
Claim Owner, Status
- Expired
 - Archer, Cathro & Associates, Active
 - CMC Metals Ltd., Active

NOTES:

Projection: UTM Zone 9 NAD83
Units: Meters
NTS: 105B/07

National Topographic Data Base (NTDB) compiled by Natural Resources Canada at a scale of 1:50,000. Cadastral data compiled by Natural Resources Canada. Reproduced under license from © Her Majesty the Queen in Right of Canada, Department of Natural Resources Canada. All rights reserved.

Quartz claim data obtained from Yukon Government Minerals Branch via http://www.geomaticsyukon.ca/data_download. Data current as of September 15, 2006.

Figure 1

Site Overview

Scale: 1:50,000



Drawn by: HD Checked by: PI

Date: December 2007

Table 2 Receiving Water Stations - Monitoring Schedule																
<u>Receiving Water Stations:</u>		<i>in situ</i>					External - Lab									
		Inspect	Flow	pH	Temp.	Cond.	Total ICP ¹ Metals	Dissolved ICP ¹ Metals	Hardness	pH	Cond.	TSS	NUTR	LT50	Sediment Program	Benthos Program
Site No.	Description															
CMC-04	Meister River upstream from Oake Creek confluence	TA	TA	TA	TA	TA	TA	TA	TA	TA	TA	TA	TA		BA	BA
CMC-05	Meister River just downstream of Oake Creek confluence	TA	TA	TA	TA	TA	TA	TA	TA	TA	TA	TA	TA		BA	BA
CMC-06	Oake Creek just upstream of Meister River confluence	TA	TA	TA	TA	TA	TA	TA	TA	TA	TA	TA	TA		BA	BA
CMC-07	Mouth of Oake Creek at Edgar Lake	M	M	M	M	M	M	M	M	M	M	M	M		BA	BA
CMC-11	Adit just south of camp	M	M	M	M	M	M	M	M	M	M	M	M			
CMC-M1	McCrory Creek upstream from unnamed tributary to the south	M	M	M	M	M	M	M	M	M	M	M	M		BA	BA
CMC-M2	McCrory Creek upstream from Edgar Lake confluence; downstream from unnamed tributary	M	M	M	M	M	M	M	M	M	M	M	M		BA	BA
CMC-OC2	Oake Creek, downstream from McCrory Creek and Edgar Lake confluence	M	M	M	M	M	M	M	M	M	M	M	M			
CMC-OC3	Oake Creek, downstream from unnamed creek confluence	M	M	M	M	M	M	M	M	M	M	M	M			
CMC-U1	Tributary to Oake Creek	M	M	M	M	M	M	M	M	M	M	M	M			
CMC-T1	Tailings pond	W/M ¹	W ²	W	W	W	W	W	W	W	W	W	W	W/M ¹		
Codes:		D = Daily W = Weekly M = Monthly TA = Twice annually A = Annually BA = Every second year Sampling frequency is dependant on site conditions (some locations may not contain water in winter months)														
		¹ ICP Metals include: Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium Silicon, Silver, Sodium, Strontium, Sulfur, Thallium, Tin, Titanium, Uranium, Vanadium, Zinc and Zirconium ² only applicable when the tailings pond is discharging ³Weekly from the pond decant if the pond is discharging, monthly from the pond if it is not														

3.0 BENTHIC INVERTEBRATE MONITORING PROGRAM

The benthic invertebrate program is proposed to monitor local streams. No existing data has been collected and as such a program for the summer of 2008 is being proposed. This program will be undertaken every two years at stations located in the Oake Creek and McCrory Creek systems. The preliminary proposed sites are CMC-04, CMC-05, CMC-06, CMC-07, CMC-M1, and CMC-M2. The choice of these sites is based on their applicability of the site and the suitability of the site for benthic sampling. Site conditions may show that these sites are not suitable and result in changes to the benthic sampling program. Table 3 shows the benthic sampling sites and their schedules.

Three replicate samples will be collected at each station during the summer using serber samplers. Samples will be preserved in a 10% formalin solution and identified to the lowest possible taxa and counted. Water quality and sediment data will be collected at the same time.

Data will be analyzed using a variety of indices and compared with existing information and reported in an annual report.

4.0 SEDIMENT MONITORING PROGRAM

A sediment monitoring program is proposed to monitor impacts from the project on local stream sediment. The program will be conducted in conjunction with the benthic invertebrate monitoring program but will be sampled every year during summer low flow. Sample stations will be the same as the water quality sampling stations as show in Table 3.

Samples will be conducted in replicates from within the active stream channel using a teflon or stainless steel scoop. Samples will be dried and screened, using sieve sizes at ASTM mesh numbers, 10, 20, 40, 60, 100, 140, and 270 (ASTM -E11-61) and the fractions recorded. A sub-sample of the material passing through the 100 mesh sieve will be analyzed for ICP metals.

The results will be reported in an annual report and include an evaluation against existing stream sediment data.

5.0 PHYSICAL INSPECTION

The following stations (listed in Table 3) are intended to monitor physical aspects of the project.

- Fuel storage/refueling area
 - Inspect for spills, leaks, and hydrocarbon staining along all the fuel lines and within the refueling area
- Generators
 - Inspect for spill and leaks around the generator and fuel storage areas
- Crushed ore and run-of-mill storage areas
 - Inspect for any ore spills outside of the lined and bermed storage area,
 - Inspect berms for stability
- Drainage and diversion ditches and berms
 - Inspect stability and integrity of all diversion ditches and berms
 - Ensure all ditches are free-flowing and note any sedimentation within the ditches for immediate removal
- Tailings pond
 - Inspect for stability, leakage
 - Monitor water levels, sedimentation levels
- Settling Ponds
 - Inspect for stability, stress fractures, leakage
 - Monitor water levels, sedimentation levels
- Downgradient for tailings ponds and settling ponds
 - Monitor for groundwater flow surfacing
- Waste rock storage area
 - Monitor for stability
- Existing adit and water line to mill
 - Monitor for leakage
- Solid Waste Storage Area
 - Ensure waste containers are closed

Table 3 Physical Inspection Sites and Monitoring Schedule								
Site No.	Description	Physical Inspection						
		Inspection	Water Levels	Sediment Levels	Spills, Leaks,	Stability	Stress Cracks	Surface Flow
CMC-FS	Fuel storage/refueling area	W			W			
CMC-Gen	Generators	W			W			
CMC-Ore	Ore storage areas	W			W			
CMC-Ditch	Drainage and diversion ditches and berms	W ¹	W ¹	W	W	W	W	
CMC-TP	Tailings pond	D ¹	D ¹	W	W	W	W	
CMC-SP1	Mill pad settling pond	D ¹	D ¹	W	W	W	W	
CMC-SP2	Tailings pond settling pond	D ¹	D ¹	W	W	W	W	
CMC-SP3	Waste rock area settling pond	D ¹	D ¹	W	W	W	W	
CMC-WR	Waste rock storage area	W				W	W	
CMC-Adit	Existing adit and water line	W			W			W
CMC-DG	Downgradient from settling ponds and tailings pond	W						M
CMC-SW	Solid waste storage area	D						
Codes: D = Daily W = Weekly M = Monthly ¹ These sites will also be inspected during and after any major storm event								

CMC Metals Ltd. Silver Hart Property.

ENVIRONMENTAL MONITORING PROGRAM

MINE CONSTRUCTION, PRODUCTION, AND DECOMMISSIONING

APPENDIX A

INSPECTION CHECKLISTS

CMC-FS			Fuel Storage Area and Fuel Lines
1) Are there any visible fuel leaks?	Y	N	Action taken:
2) Is there any visible hydrocarbon staining?	Y	N	Describe:
CMC-Gen			Generators
1) Are there any visible fuel leaks?	Y	N	Action taken:
2) Is there any visible hydrocarbon staining?	Y	N	Describe:
CMC-Ore			Ore storage Piles
1) Are there any visible spills?	Y	N	Describe:
2) Are there any stress cracks in the berms?	Y	N	Describe:
3) Are there any signs of erosion?	Y	N	Describe:
CMC-Ditches			Diversion Ditches and Berms
1) Are there any signs of sedimentation or objects affecting flow in the ditches?	Y	N	Describe:
2) Are there any stress cracks in the berms?	Y	N	Describe:
3) Are there any signs of erosion of the berms?	Y	N	Describe:
CMC-TP			Tailings Pond
1) Is there any water flow over the decant?	Y	N	Describe:
2) Is there a noticeable change in flow (since last inspection)?	Y	N	Describe:
3) Do you observe an ice plug?	Y	N	Describe:
4) Is there any leakage from the adit or water line to the mill?	Y	N	Describe:
5) Water level (reading from stadia rod)			Describe:
6) Sediment level (depth to sediment from fixed point)			Describe:
CMC-SP1			Mill Pad Settling Pond
1) Is there any seepage along downstream side of structure?	Y	N	Describe:
2) Checked culverts/decants (free of blockages, damage, etc)?	Y	N	Describe:
3) Is there evidence of up-welling downstream?	Y	N	Describe:
4) Are there any new slumps, cracks, etc.?	Y	N	Describe:
5) Water level (reading from stadia rod)			Describe:
6) Sediment level (depth to sediment from fixed point)			Describe:

CMC-SP2		Tailings Pond Settling Pond	
1) Is there any seepage along downstream side of structure?	Y	N	Describe:
2) Checked culverts/decants (free of blockages, damage, etc)?	Y	N	Describe:
3) Is there evidence of up-welling downstream?	Y	N	Describe:
4) Are there any new slumps, cracks, etc.?	Y	N	Describe:
5) Water level (reading from stadia rod)			Describe:
6) Sediment level (depth to sediment from fixed point)			Describe:
CMC-SP3		Facilities Area Settling Pond	
1) Is there any seepage along downstream side of structure?	Y	N	Describe:
2) Checked culverts/decants (free of blockages, damage, etc)?	Y	N	Describe:
3) Is there evidence of up-welling downstream?	Y	N	Describe:
4) Are there any new slumps, cracks, etc.?	Y	N	Describe:
5) Water level (reading from stadia rod)			Describe:
6) Sediment level (depth to sediment from fixed point)			Describe:
CMC-WR		Waste Rock Storage Area	
1) Is there any evidence of instability or erosion?	Y	N	Describe:
2) Are there any new slumps, cracks, etc.?	Y	N	Describe:
CMC-Adit		Existing Adit and Water Line	
1) Is there any evidence of leakage?	Y	N	Describe:
CMC-SW		Solid Waste Storage Area	
1) Is there any loose or visible garbage ?	Y	N	Describe:
2) Are the storage containers sealed?	Y	N	Describe:
3) Are there strong odours of garbage?	Y	N	Describe:
Name of Inspector:		Date and Time of Inspection:	

Note: Please Provide Comments/Concerns/Observed Changes, if Necessary:

Last updated - December 2007



S Zone Hangingwall Rock																									
ELEMENT	Mo	Cu	Pb	Zn	Ag**	Ni	Co	Mn	Fe	As	Sr	Cd	Sb	Bi	Ca	P	Cr	Mg	Al	Na	K	W	Hg	Au**	Sample
SAMPLES	%	%	%	%	gm/mt	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	gm/mt	kg
DH05-01 S																									
25501	0.002	0.003	<.01	0.06	<2	0.001	<.001	0.07	0.68	<.01	0.001	<.001	0.001	<.01	0.09	0.021	0.001	0.03	0.53	0.01	0.26	<.001	0.001	<.01	2.8
25502	0.016	0.008	0.13	0.62	7	0.001	0.001	1.44	6.08	0.01	0.008	0.002	0.002	<.01	0.11	0.023	<.001	0.02	0.5	0.01	0.39	<.001	0.001	0.01	0.54
25503	0.001	0.002	<.01	0.07	<2	<.001	<.001	0.06	0.89	<.01	0.001	<.001	<.001	<.01	0.11	0.028	0.001	0.07	0.62	<.01	0.28	<.001	<.001	<.01	2.81
25504	0.005	0.003	0.02	0.22	<2	0.001	<.001	1.25	5.16	<.01	0.007	0.001	0.001	<.01	0.14	0.042	<.001	0.02	0.55	0.04	0.45	<.001	<.001	<.01	0.58
25505	0.001	0.001	<.01	0.07	<2	<.001	<.001	0.09	1.3	<.01	0.003	<.001	0.001	<.01	0.74	0.071	0.001	0.05	0.64	0.01	0.32	<.001	0.001	0.01	6.53
25506	0.001	0.002	<.01	0.09	<2	<.001	<.001	0.08	1.58	<.01	0.002	<.001	<.001	<.01	0.21	0.064	0.001	0.13	1	0.03	0.33	<.001	<.001	0.01	5.07
25507	<.001	0.001	<.01	0.1	<2	<.001	<.001	0.06	1.46	<.01	0.002	<.001	0.001	<.01	0.32	0.063	<.001	0.12	0.86	0.06	0.3	<.001	<.001	0.01	5.34
25508	0.002	0.001	<.01	0.09	<2	<.001	<.001	0.08	1.82	<.01	0.003	<.001	<.001	<.01	0.64	0.064	0.001	0.08	0.84	<.01	0.35	<.001	<.001	<.01	5.97
25509	<.001	0.002	<.01	0.19	<2	<.001	<.001	0.04	1.62	<.01	0.001	<.001	<.001	<.01	0.21	0.057	0.001	0.14	0.91	0.07	0.36	<.001	<.001	<.01	5.9
25510	<.001	0.004	<.01	0.25	<2	0.001	0.001	0.04	1.5	<.01	0.001	0.001	<.001	<.01	0.15	0.046	0.001	0.12	0.94	0.06	0.31	0.001	<.001	<.01	6.1
25511	0.005	0.001	<.01	0.2	<2	<.001	<.001	0.03	1.34	<.01	0.001	<.001	0.001	<.01	0.13	0.033	<.001	0.08	0.85	0.03	0.29	<.001	<.001	<.01	5.25
25512	0.001	0.004	0.01	0.08	8	0.001	<.001	0.02	1.31	<.01	0.001	<.001	<.001	<.01	0.07	0.03	0.001	0.02	0.5	0.01	0.38	<.001	<.001	0.01	2.4
25513	0.002	0.002	0.11	0.31	6	0.001	<.001	0.58	2.06	<.01	0.002	0.001	0.002	<.01	0.06	0.036	0.001	0.01	0.49	<.01	0.45	<.001	<.001	<.01	4.29
25514	<.001	0.008	0.26	0.62	39	0.001	<.001	1.25	3.9	<.01	0.001	0.002	0.003	<.01	0.11	0.037	<.001	0.06	0.39	<.01	0.4	<.001	<.001	0.01	2.98
25515	0.001	0.008	0.05	1.24	15	0.001	<.001	1.69	5.91	<.01	0.002	0.003	<.001	<.01	0.11	0.046	<.001	0.08	0.48	0.04	0.47	<.001	<.001	0.02	3.15
25516	<.001	<.001	0.14	0.16	<2	<.001	<.001	0.43	1.94	<.01	0.003	<.001	<.001	<.01	0.67	0.056	0.001	0.15	0.7	0.09	0.43	<.001	<.001	<.01	3.57
25519	0.002	0.003	0.28	0.22	20	0.001	<.001	1.42	3.77	<.01	0.001	0.001	0.001	<.01	0.22	0.052	<.001	0.13	0.47	<.01	0.47	<.001	<.001	<.01	2.72
25520	<.001	<.001	<.01	0.06	<2	<.001	<.001	0.05	1.52	<.01	0.002	<.001	<.001	<.01	0.68	0.058	0.001	0.28	0.86	0.04	0.34	<.001	<.001	<.01	6.06
25521	<.001	0.001	0.01	0.05	<2	0.001	<.001	0.1	1.51	<.01	0.002	<.001	0.001	<.01	0.56	0.062	<.001	0.12	0.67	0.04	0.33	<.001	<.001	0.01	5.16
25522	<.001	0.001	0.02	0.15	<2	<.001	<.001	0.06	3.17	0.01	0.001	0.001	0.001	<.01	0.29	0.058	<.001	0.1	0.71	0.04	0.36	<.001	<.001	<.01	5.74
25525	<.001	<.001	<.01	<.01	<2	0.001	0.001	0.06	1.53	<.01	0.006	<.001	<.001	<.01	1.1	0.062	<.001	0.27	0.76	0.03	0.35	<.001	<.001	<.01	5.7
25526	<.001	<.001	<.01	0.01	<2	<.001	<.001	0.05	1.56	<.01	0.006	<.001	0.001	<.01	1.16	0.06	0.001	0.27	0.79	0.06	0.3	<.001	<.001	<.01	3.01
25527	0.001	<.001	<.01	0.21	<2	<.001	0.001	0.09	1.53	<.01	0.003	0.001	<.001	<.01	0.87	0.073	0.001	0.16	0.8	0.02	0.35	<.001	<.001	<.01	7.38
25528	0.001	0.001	0.05	0.36	<2	<.001	<.001	0.21	1.68	<.01	0.002	0.001	0.001	<.01	0.47	0.073	0.001	0.1	0.78	<.01	0.38	<.001	<.001	<.01	6.15
25529	<.001	0.001	0.12	0.46	<2	0.001	<.001	0.89	2.85	<.01	0.001	0.002	0.002	<.01	0.3	0.058	<.001	0.11	0.54	0.06	0.47	<.001	<.001	<.01	5.93
25530	<.001	0.001	<.01	0.33	<2	0.001	<.001	0.06	1.87	<.01	0.003	0.001	0.001	<.01	0.48	0.072	0.001	0.19	0.92	0.03	0.32	<.001	<.001	0.01	5.83
25531	<.001	<.001	<.01	0.13	<2	0.001	<.001	0.07	1.5	<.01	0.01	<.001	0.001	<.01	1.18	0.068	<.001	0.17	0.56	0.07	0.44	<.001	<.001	<.01	6.52
25532	<.001	<.001	<.01	0.02	<2	<.001	<.001	0.05	1.54	<.01	0.011	<.001	<.001	<.01	1.51	0.066	0.001	0.25	0.57	0.01	0.33	<.001	<.001	<.01	5.67
25533	<.001	<.001	<.01	<.01	<2	<.001	<.001	0.04	1.57	<.01	0.007	<.001	<.001	<.01	1.12	0.061	0.001	0.33	0.61	0.04	0.29	<.001	<.001	0.01	4.85
25534	<.001	0.001	0.01	0.04	<2	<.001	<.001	0.17	1.95	<.01	0.008	<.001	<.001	<.01	1.3	0.06	0.001	0.3	0.67	0.02	0.34	<.001	<.001	0.01	6.7
25535	0.001	0.006	0.08	1.41	10	<.001	<.001	0.71	2.89	0.02	0.001	0.005	0.001	<.01	0.25	0.052	<.001	0.09	0.5	0.01	0.47	<.001	<.001	0.01	2.72
DH05-02 S																									
25537	0.001	0.002	<.01	0.14	<2	<.001	<.001	0.06	1.61	<.01	0.002	<.001	0.001	<.01	0.49	0.068	<.001	0.12	0.71	<.01	0.33	<.001	<.001	0.01	2.7
25541	<.001	0.003	0.01	0.42	23	<.001	<.001	0.09	0.96	<.01	0.002	0.001	0.004	<.01	0.38	0.07	0.001	0.07	0.67	0.01	0.2	<.001	<.001	<.01	2.62
25542	<.001	0.001	0.01	0.1	4	<.001	<.001	0.07	1.45	<.01	0.003	0.001	0.002	<.01	0.73	0.069	0.001	0.15	0.56	<.01	0.29	<.001	<.001	<.01	4.58
25543	<.001	0.004	<.01	0.16	22	<.001	<.001	0.07	1.63	<.01	0.003	0.001	0.002	<.01	0.67	0.068	0.001	0.17	0.69	0.01	0.26	<.001	<.001	<.01	5.62
25544	<.001	0.001	<.01	0.04	<2	<.001	<.001	0.05	2.05	<.01	0.005	<.001	<.001	<.01	1.01	0.07	0.001	0.38	1.12	0.02	0.3	0.001	<.001	<.01	5.22
25545	<.001	0.001	<.01	0.04	<2	<.001	<.001	0.04	2.34	<.01	0.004	<.001	<.001	<.01	0.75	0.067	0.001	0.48	1.33	0.03	0.42	<.001	<.001	<.01	5.61
25546	<.001	0.001	0.01	0.04	3	<.001	<.001	0.09	1.83	<.01	0.006	<.001	<.001	<.01	1.15	0.068	0.001	0.31	0.86	0.01	0.3	<.001	<.001	<.01	5.88
25547	<.001	<.001	<.01	0.03	<2	<.001	<.001	0.05	1.79	<.01	0.007	<.001	<.001	<.01	1.4	0.065	0.001	0.37	0.89	0.03	0.34	<.001	<.001	<.01	4.13
25549	<.001	<.001	<.01	0.01	<2	<.001	<.001	0.04	1.74	<.01	0.01	<.001	<.001	<.01	1.46	0.067	0.001	0.36	0.78	0.03	0.32	<.001	<.001	<.01	6.03
25550	<.001	0.001	0.01	0.02	<2	<.001	<.001	0.07	1.94	<.01	0.007	<.001	0.001	<.01	1.48	0.071	0.001	0.3	0.86	0.01	0.37	<.001	<.001	<.01	4.72
25552	<.001	0.002	0.04	0.1	3	<.001	<.001	0.4	1.9	<.01	0.003	<.001	<.001	<.01	0.84	0.072	<.001	0.19	0.51	<.01	0.4	<.001	<.001	<.01	5.59
DH05-03 S																									
25560	<.001	<.001	0.02	0.09	2	<.001	<.001	0.08	1.64	<.01	0.004	<.001	0.001	<.01	0.83	0.07	0.001	0.27	0.81	0.02	0.33	<.001	<.001	<.01	4.6
25561	<.001	0.001	0.01	0.19	<2	<.001	<.001	0.11	2.23	<.01	0.002	0.001	<.001	<.01	0.28	0.07	0.001	0.33	1.19	0.02	0.38	<.001	<.001	<.01	3.58
25562	0.001	0.001	0.06	0.07	7	<.001	<.001	0.18	1.7	<.01	0.003	<.001	<.001	<.01	0.76	0.065	<.001	0.15	0.55	<.01	0.47	<.001	<.001	<.01	3.62
25563	0.001	<.001	<.01	0.01	<2	<.001	<.001	0.08	1.27	<.01	0.004	<.001	<.001	<.01	1.08	0.079	<.001	0.18	0.53	<.01	0.42	<.001	<.001	<.01	4.07
25564	0.007																								

TM Zone Hangingwall Rock																									
ELEMENT SAMPLES	Mo %	Cu %	Pb %	Zn %	Ag** gm/mt	Ni %	Co %	Mn %	Fe %	As %	Sr %	Cd %	Sb %	Bi %	Ca %	P %	Cr %	Mg %	Al %	Na %	K %	W %	Hg %	Au** gm/mt	Sample kg
DH05-10TM																									
25901	<.001	0.001	<.01	0.07	<2	0.001	<.001	0.03	0.9	<.01	0.001	<.001	<.001	<.01	0.2	0.051	0.001	0.14	0.52	0.03	0.22	<.001	<.001	<.01	6.39
25902	<.001	0.001	<.01	0.05	<2	<.001	<.001	0.02	0.92	<.01	0.001	<.001	<.001	<.01	0.17	0.051	<.001	0.09	0.54	0.04	0.24	<.001	<.001	<.01	5.03
25903	<.001	0.001	<.01	0.03	<2	<.001	<.001	0.03	0.81	<.01	0.001	<.001	<.001	<.01	0.18	0.046	<.001	0.11	0.55	0.03	0.19	<.001	<.001	<.01	4.55
25904	<.001	0.001	<.01	0.06	<2	<.001	<.001	0.03	0.93	<.01	0.001	<.001	<.001	<.01	0.16	0.049	<.001	0.07	0.53	0.03	0.24	<.001	<.001	<.01	4.19
25905	<.001	0.006	0.02	0.15	14	<.001	<.001	0.16	1.24	0.01	0.001	<.001	0.002	<.01	0.15	0.052	0.001	0.07	0.62	0.01	0.27	<.001	<.001	<.01	2.83
25906	<.001	0.006	0.07	0.24	25	<.001	<.001	0.72	2.6	0.01	0.002	0.001	0.002	<.01	0.09	0.058	<.001	0.03	0.34	<.01	0.31	<.001	<.001	<.01	2.11
DH05-11TM																									
25929	<.001	0.001	<.01	0.02	<2	<.001	<.001	0.02	0.96	<.01	0.001	<.001	0.002	<.01	0.12	0.037	<.001	0.1	0.56	0.04	0.21	0.001	<.001	<.01	2.37
25930	<.001	0.004	<.01	0.05	<2	<.001	<.001	0.06	0.9	<.01	0.001	<.001	<.001	<.01	0.15	0.047	<.001	0.06	0.58	0.02	0.24	0.001	<.001	<.01	1.52
25931	0.001	0.005	0.08	0.2	22	<.001	<.001	0.86	2.84	0.01	0.003	0.001	0.001	<.01	0.1	0.045	<.001	0.02	0.39	<.01	0.38	<.001	<.001	<.01	3.85
25932	<.001	0.002	0.02	0.18	6	<.001	<.001	0.14	0.92	<.01	0.001	<.001	<.001	<.01	0.09	0.027	0.001	0.03	0.39	0.01	0.31	<.001	0.001	<.01	4.55
25933	<.001	0.001	<.01	0.21	2	<.001	<.001	0.06	1.12	<.01	0.001	<.001	<.001	<.01	0.12	0.031	<.001	0.09	0.69	0.02	0.25	<.001	<.001	<.01	4.29
25934	<.001	<.001	0.02	0.15	<2	<.001	<.001	0.51	1.73	<.01	0.002	<.001	0.001	<.01	0.44	0.053	<.001	0.06	0.41	0.01	0.36	<.001	<.001	<.01	10.27
25935	0.001	0.009	0.01	0.37	22	<.001	<.001	0.38	1.85	<.01	0.001	0.001	0.003	<.01	0.16	0.048	<.001	0.04	0.4	0.01	0.37	<.001	<.001	0.01	5.48
25936	<.001	0.002	0.01	0.1	<2	<.001	<.001	0.11	0.92	<.01	0.003	<.001	0.001	<.01	0.61	0.055	<.001	0.04	0.37	0.01	0.36	<.001	<.001	<.01	8.85
25937	0.001	0.002	0.02	0.15	6	<.001	<.001	0.32	1.19	<.01	0.003	<.001	0.001	<.01	0.39	0.053	<.001	0.07	0.38	<.01	0.36	<.001	<.001	<.01	7.22
25938	<.001	0.003	0.01	0.12	7	<.001	<.001	0.08	0.85	<.01	0.003	<.001	0.001	<.01	0.58	0.051	<.001	0.06	0.37	<.01	0.36	<.001	<.001	<.01	5.96
25939	<.001	0.002	0.01	0.2	<2	<.001	<.001	0.07	0.86	0.01	0.001	<.001	0.001	<.01	0.13	0.047	0.001	0.02	0.39	<.01	0.36	<.001	<.001	<.01	5.85
25940	<.001	0.001	0.04	0.44	<2	<.001	<.001	0.35	1.12	<.01	0.002	0.001	0.001	<.01	0.35	0.055	0.001	0.07	0.37	<.01	0.37	<.001	<.001	<.01	5.35
25943	0.001	0.007	0.04	0.13	16	<.001	<.001	0.51	1.97	0.01	0.001	0.001	0.003	<.01	0.14	0.057	<.001	0.06	0.4	<.01	0.4	<.001	<.001	<.01	3.19
25946	<.001	0.001	0.01	0.06	<2	<.001	<.001	0.15	0.92	<.01	0.001	<.001	0.001	<.01	0.13	0.036	<.001	0.06	0.3	<.01	0.31	<.001	<.001	0.01	3.07
25947	0.001	0.002	0.02	0.39	<2	0.001	<.001	0.17	0.86	<.01	0.002	<.001	0.001	<.01	0.23	0.053	0.001	0.07	0.38	<.01	0.38	0.001	<.001	<.01	7.22
25948	0.001	<.001	0.01	0.39	<2	<.001	<.001	0.14	0.88	<.01	0.003	<.001	<.001	<.01	0.44	0.056	0.001	0.08	0.38	<.01	0.37	0.001	<.001	<.01	7.62
25949	0.001	0.001	0.07	0.39	<2	<.001	<.001	0.62	1.67	<.01	0.001	0.001	0.001	<.01	0.25	0.059	<.001	0.08	0.39	<.01	0.36	<.001	<.001	<.01	2.65
25950	0.001	0.001	0.03	0.23	<2	<.001	<.001	0.77	2.35	<.01	0.001	0.001	<.001	<.01	0.17	0.057	<.001	0.08	0.41	<.01	0.38	<.001	<.001	<.01	1.85
DH05-12TM																									
25815	0.001	0.007	0.22	0.35	42	<.001	<.001	0.57	2.34	0.02	<.001	0.002	0.003	<.01	0.13	0.05	<.001	0.04	0.29	<.01	0.28	<.001	<.001	0.16	6.44
25816	<.001	0.007	0.06	1.1	33	<.001	<.001	0.52	2.17	0.02	<.001	0.003	0.002	<.01	0.09	0.031	<.001	0.05	0.32	<.01	0.3	<.001	<.001	0.02	3.59
25818	<.001	0.003	0.04	0.76	4	<.001	<.001	0.06	0.8	<.01	<.001	0.002	0.001	<.01	0.02	0.012	<.001	0.01	0.21	<.01	0.23	<.001	<.001	0.01	1.73
DH05-14TM																									
25861	<.001	0.005	0.01	0.05	<2	<.001	<.001	0.04	0.74	<.01	0.001	<.001	<.001	<.01	0.2	0.057	0.001	0.06	0.48	<.01	0.24	<.001	<.001	<.01	5.82
25862	<.001	0.007	0.01	0.05	4	<.001	<.001	0.03	0.81	<.01	0.001	<.001	0.001	<.01	0.2	0.045	<.001	0.08	0.48	0.01	0.22	0.001	<.001	<.01	4.81
25864	<.001	0.003	<.01	0.03	2	<.001	<.001	0.03	0.87	<.01	0.003	<.001	0.001	<.01	0.54	0.038	0.001	0.11	0.46	0.02	0.23	<.001	<.001	<.01	6.17
25865	<.001	0.005	<.01	0.03	3	<.001	<.001	0.03	0.94	<.01	0.004	<.001	<.001	<.01	0.63	0.026	<.001	0.11	0.39	0.02	0.24	<.001	<.001	<.01	4.53
25866	0.001	0.013	0.02	0.14	18	<.001	<.001	0.24	1.42	<.01	0.001	0.001	0.001	<.01	0.07	0.025	0.001	0.03	0.32	<.01	0.36	<.001	<.001	<.01	5.14
25867	0.001	0.009	0.04	0.1	52	<.001	<.001	0.09	1.16	<.01	0.001	<.001	0.001	<.01	0.05	0.033	0.001	0.01	0.31	0.01	0.3	<.001	<.001	<.01	5.22
25869	0.001	0.014	0.06	0.11	36	<.001	<.001	0.2	1.85	<.01	0.001	<.001	0.005	<.01	0.07	0.046	<.001	0.03	0.35	<.01	0.37	<.001	<.001	<.01	2.63
25870	<.001	0.004	0.02	0.79	5	<.001	<.001	0.1	0.92	<.01	0.001	0.001	0.002	<.01	0.12	0.044	0.001	0.03	0.4	0.01	0.34	<.001	<.001	<.01	6.45
25871	<.001	0.002	0.04	0.26	8	<.001	<.001	0.49	1.44	<.01	0.001	0.001	0.001	<.01	0.14	0.053	<.001	0.04	0.36	<.01	0.39	<.001	<.001	<.01	8.22
25872	<.001	0.002	0.05	0.09	13	<.001	<.001	0.15	1.13	<.01	0.001	<.001	0.002	<.01	0.07	0.03	0.001	0.02	0.3	<.01	0.31	<.001	<.001	0.01	1.85
25873	<.001	0.001	0.02	0.19	3	<.001	<.001	0.37	1.72	<.01	0.001	0.001	<.001	<.01	0.12	0.048	<.001	0.05	0.37	<.01	0.41	<.001	<.001	<.01	2.05
25874	0.001	0.001	0.04	0.22	4	<.001	<.001	0.27	1.69	0.01	0.001	0.001	0.002	<.01	0.1	0.041	<.001	0.03	0.32	<.01	0.33	<.001	<.001	0.01	1.01
DH07-01TM																									
305901	0.002	0.003	0.03	0.14	7	<.001	<.001	0.46	2.27	0.03	0.001	<.001	0.003	<.01	0.13	0.046	<.001	0.04	0.49	<.01	0.43	<.001	<.001		

CMC Metals
SILVER HART PROPERTY

YESAA Executive Committee Submission

APPENDIX M
ADDITIONAL INFORMATION REQUEST FOR YESAB
WATSON LAKE DISTRICT OFFICE II (June 2008)

November 2009



YESAB Online Registry
www.yesab.ca/registry

Re: Notice that Supplementary Information Submitted is Inadequate
YESAB Project Number: 2007-0206
Project Title: Silver Hart Mine Development and Production

Dec 28, 2007

Dear Inglis

Thank you for your submission of supplementary information for this project pursuant to the Notice of Supplementary Information Required sent to you on November 7, 2007. The Watson Lake Designated Office of the Yukon Environmental and Socio-economic Assessment Board (YESAB) has determined that the information submitted is not sufficient for the evaluation to begin. Please find, attached to this notice, a list of required information that must be submitted in order for the assessment to continue.

All supplementary information related to your project proposal can be submitted via the YESAB On-line Registry or by contacting the Project Assessment Officer. The Project Assessment Officer for this proposed project is Aliesha Narain who can be contacted via email at aliesha.narain@yesab.ca, by phone at 867-536-4040, by fax at 867-536-4049 or in person during most regular business hours at the Watson Lake Designated Office P.O. Box 294, Watson Lake.

In order to avoid having this project proposal deemed withdrawn, you are required to submit the requested supplementary information, or advise the Project Assessment Officer in writing when you will be submitting the information, before the end of June 25, 2008.

For more information about this assessment under the Yukon Environmental and Socio-economic Assessment Act, please see the YESAB On-line Registry at www.yesab.ca/registry.

Thank you.

Please update your supplementary information submission to address the questions and deficiencies identified below:

1. Question 10. No response given regarding whether camp facilities or infrastructure will be located within 30 m of waterbodies. Please provide this information.
2. Question 22. Response states that the plans mentioned in the proposal have not been completed (e.g. ARD Management Plan). Plans that are relevant to the assessment, must form part of the project proposal and need to be provided for consideration in the assessment. Without a waste rock management plan, the assumption of this assessment will be that all waste rock will be placed on the ground, and is a potential ARD concern.
3. Question 23(a)(i). Surface geological maps and underground geological maps not attached; not clear if referenced maps will be adequate to depict site geology (i.e., showing juxtaposition and distribution of all lithologies with associated structural features) of TM and S zones and vicinity. Provided vertical cross-sections are very difficult to read, decipher and interpret eliminate info/data that is not essential at a more workable scale, and provide a conceptual geologic interpretation that clearly depicts all rock-type units, corehole locations, sampled intervals, etc. These maps must be submitted in addition to maps for the S zone. All maps submitted must be clear, and contain suitable legends. If there is no outcrop, then conclusions will need to be extrapolated based on the data.
4. Question 23(a)(ii). Maps were not provided. Please update.
5. Question 23(a)(iii). An enumeration of each rock unit was requested, and the submitted table is incomplete. The table provided only includes 2 rock units. This table needs to include the overburden/till mentioned in response to 23.a.i, other rock-types not on legend for vertical cross sections, ore depicted on cross sections, and carbonate/sedimentary lithologies noted on page 45 of project description. Also, the table eludes to an attached spreadsheet which is absent so cant evaluate ARD-related testing requests. Also, has the granodiorite been subdivided based on alterations? how were volumes calculated (are there maps and cross sections that delineate the zone(s) of excavation)? Why no geochemistry for the andesite? Please update the table accordingly. It is critical that detailed information be provided.
6. Question 23(a)(iv). Core logs were provided for only three cores, with two different kinds of logs, neither of which have a legend please standardize and update accordingly. Standard waste rock-quality characterization would require whole rock analyses and ABA tests have these characterizations been conducted systematically (e.g., representatively with sufficient sample numbers) and what will be potential waste rock? Describe sample and testing strategy (i.e., objectives, scope (limitations of sampling), methods, results, interpretations or limitations, conclusions, any recommendations for further testing).
7. Question 23(a)(v). The explanation for not sampling, for example, S zones is not valid the proposal must demonstrate that mineralization and resultant geochemistry of various rock-types in spatially different areas/zones is similar enough to be managed as one unit. Please update information accordingly. What is meant by typical threshold levels?
8. Please provide a detailed description of the sampling strategy undertaken/developed for this project, including layout

(i.e. sample locations and their rationale), rock type, analyses (including detailed description of static and kinetic tests planned/undertaken and rationale). For more information see bullet 16 (below).

9. Question 23(a)(vi). Regarding ARD testing/prediction, the response indicates that kinetic testing is currently being undertaken. Without these results, reaction rates cannot be determined and therefore any of the conclusions/presumptions made by the proponent regarding the likelihood of generating acid are adequately backed-up. See bullet 6 (above). We cannot determine with provided response where referenced samples (TM-OZ-01, TM-FW-01, TM-HW-01, TM-HW-02 and TM Zone LCT) were collected (or why)? or how the one modified ABA sample result for TM-OZ-01 can support the statement that the rock type is not expected to result in any acid generation potential? Where are the results for the other four samples? What is the basis for the statement, most of the sulphides in the ore sample will be extracted through the mill process? What will be the chemistry of the extracted effluent? What about the waste rock? Please provide the necessary information accordingly.

10. Question 23(a)(vii x). The intent of these questions was for the proponent to provide a preliminary prediction of mine effluent from each facility (e.g., waste rock pile, ore pile, tailings, ponds, etc.) prior to and after any required treatment (e.g., assuming Best Available Technologies). This response will require the proponent to, at a minimum: 1) conceptually describe all facilities that could affect the flow and water chemistry of surface water and groundwater once leaving the site (i.e., a water management plan), 2) provide hydrologic and hydrogeologic conceptual models, 3) provide baseline water chemistry data for surface and groundwater, and 4) provide the data, results and rationale for predicting water quality (e.g., a supporting ARD report of waste rock and tailings). The responses provided are very generic and suggest that the 4 steps noted above have not been sufficiently performed to proceed to the next level of assessment. Please update the answers to these questions accordingly.

11. Question 23(a)(xi). In the absence of groundwater characterization, please provide a hydrogeological model of the site (e.g., explaining hydrostratigraphic units, where groundwater occurs, potential perching conditions and/or barriers to groundwater movement) in the context of the future open pit and any facilities that might affect these conditions including the geological units that the water will have to pass through prior to discharge.

12. Question 23(a)(xii). The answer provided is not clear on why, when and where underground adit water was sampled? Why was this sample used to conclude that no significant acid generation is occurring? Given the pH of the water, how are elevated concentrations of Zn, As and Cd produced?

13. Question 23(a)(xiv). How will the ratio of ore to waste be determined (for example, where are the maps and cross sections to support these calculations)? Referenced geochemical results for three samples were not included please update accordingly.

14. Question 23(a)(xv). The response states: As the hydrogeology of the site may be altered by the mine development closure options will be finalized once a better understanding of predicted post-closure conditions is available. The assessment of this project will consider all phases of projects, and in this case that also includes closure/decommissioning to the extent practicable. It is important that the proponent demonstrate and provide the current thinking in this regard, with respect to the data/information on hand. What was scope of treatability study? Please provide a report summarizing objective, scope, methods, results, etc. Please explain the statement: the removal of the ore body will remove the potential for contamination

15. Question 23(a)(xvi). Please provide conceptual hydrogeologic model (as above).

16. Question 23(b). Proponent states that static testing was done for a number of samples and some kinetic testing is being undertaken. The response provided is inadequate. The proponent should provide data, information in acceptable standard of today, which would be a stand alone technical report provided by/or reviewed by a qualified professional (e.g., a P. Geo. with expertise in geochemistry) The report would, for example, 1) describe the sampling strategy for all

rock-types (by-products) that will form part of the waste rock pile, tailings, etc (with appropriate maps and cross sections); 2) describe reasoning for conducting various lab analyses, 3) provide summary of all static and kinetic results, and 4) provide interpretations, limitations, conclusions and recommendations.

17. Question 24(b). Please provide further details on the treatment options you will use, particularly with regards to zinc, lead, arsenic, and cadmium, in order to meet CCME and/or MMER standards.

18. Question 24(c). Please provide emergency measures/procedures with respect to the tailings dam.



Silver Hart Property

Additional Info for Yukon Environmental and Socio-Economic Assessment Board

Dated: June 18, 2008

Prepared by:



TABLE OF CONTENTS

List of Tables

Table 1 Preliminary Quarter By Quarter Process Water Balance	6
Table 2 Summary Of Prevention, Detection And Response Measures To Potential Emergency Conditions Of The CMC Tailings Facility.....	11

List of Appendices

Appendix I Figures (as per the following list):

<i>Figure A</i>	<i>Surface Geology</i>
<i>Figure B</i>	<i>TM Zone Cross Section A'-A</i>
<i>Figure C</i>	<i>TM Zone Cross Section B'-B</i>
<i>Figure D</i>	<i>TM Zone Cross Section C'-C</i>
<i>Figure E</i>	<i>TM Zone Cross Section D'-D</i>
<i>Figure F</i>	<i>S Zone Cross Section E'-E</i>
<i>Figure G</i>	<i>S Zone Cross Section F'-F</i>
<i>Figure H</i>	<i>Site Layout with Water Management System</i>
<i>Figure I</i>	<i>Operations Water Balance Schematic</i>
<i>Figure J</i>	<i>General View of Site</i>
<i>Figure K</i>	<i>Waste Rock Pile</i>

Appendix II Waste Rock Management Plan

Appendix III SGS Lakefield Research Limited Report 11440-002

Appendix IV CMC Metals Property Water Quality Database 2006-2007

1. Question 10. No response given regarding whether camp facilities or infrastructure will be located within 30 m of waterbodies. Please provide this information.

Response: No camp facilities or infrastructure will be located within 30 m of waterbodies.

2. Question 22. Response states that the plans mentioned in the proposal have not been completed (e.g. ARD Management Plan). Plans that are relevant to the assessment, must form part of the project proposal and need to be provided for consideration in the assessment. Without a waste rock management plan, the assumption of this assessment will be that all waste rock will be placed on the ground, and is a potential ARD concern.

Response: A waste rock management plan is included as Appendix II. This plan is supported by studies conducted during 2007 and early 2008, results of which are provided in Annex 1 to the Plan, and in Appendix III (SGS Report 11440-002).

3. Question 23(a)(i). Surface geological maps and underground geological maps not attached; not clear if referenced maps will be adequate to depict site geology (i.e., showing juxtaposition and distribution of all lithologies with associated structural features) of TM and S zones and vicinity. Provided vertical cross-sections are very difficult to read, decipher and interpret eliminate info/data that is not essential at a more workable scale, and provide a conceptual geologic interpretation that clearly depicts all rock-type units, corehole locations, sampled intervals, etc. These maps must be submitted in addition to maps for the S zone. All maps submitted must be clear, and contain suitable legends. If there is no outcrop, then conclusions will need to be extrapolated based on the data.

Response:

Geology:

Section 2.2 of the Application gives an overview of regional and property geology, mineralogy, and alteration. Figure A included in Appendix I gives an overview of the surface geology in the zone of the proposed TM pit, and the S zone. Sections compiled based on available surface and drillhole information for the proposed TM pit are given in Figures B through E. S zone sections are given in Figures F and G.

The proposed pit and underground developments lie within a granodioritic zone of the Cretaceous Cassiar Batholith, within a few hundred metres of local contact with metasediments of the Lower Cambrian Atan Group (locally occurring as schists with lesser quartzite, dolomite and minor skarn). Potentially economic mineralization is a vein-hosted Ag-Zn-Pb±Cu system, and is comprised of narrow steeply dipping structures with sulphide minerals consisting of sphalerite, galena, chalcopyrite, sulphosalt minerals, and pyrite. Potential waste rock will be almost entirely comprised of granodiorite, and in the TM zone also a minor quantity of dyke material of andesitic composition. Both units show variable alteration and a high degree of fracturing, considered to be related to local faulting and mineralizing events. The contact with the metasediment unit is located to the immediate southwest of the TM pit, and thus this unit is not expected to be intercepted during development of the pit.

In general, wall rock alteration is reported to be epithermal in style, with varying degrees of silicification and 'claying' or argillic alteration proximal to the veins, sericite as the next outer shell, and weak to intense propylitic alteration as the outer-most alteration halo. Oxidation is variable. Based on drill logs, pyrite and at times pyrrhotite have been noted in non-mineralized sections of drill core, in disseminated form from trace amounts up to 1%, and locally increasing to 2% to 3% as discontinuous pyrite-filled fractures and pyrite selvages on quartz veinlets.

Faulting is complex, with the dominant structure in the TM and S zones being a NE-SW trending fault dipping at approximately 45 degrees to the NW. Most of the mineralized veins occur within this fault structure. Based on observations of drill core, rock tends to be highly fractured throughout the hanging wall, vein, and footwall zones.

4. Question 23(a)(ii). Maps were not provided. Please update.

Response: Please see response to Question 3.

5. Question 23(a)(iii). An enumeration of each rock unit was requested, and the submitted table is incomplete. The table provided only includes 2 rock units. This table needs to include the overburden/till mentioned in response to 23.a.i, other rock-types not on legend for vertical cross sections, ore depicted on cross sections, and carbonate/sedimentary lithologies noted on page 45 of project description. Also, the table eludes to an attached spreadsheet which is absent so cant evaluate ARD-related testing requests. Also, has the granodiorite been subdivided based on alterations? how were volumes calculated (are there maps and cross sections that delineate the zone(s) of excavation)? Why no geochemistry for the andesite? Please update the table accordingly. It is critical that detailed information be provided.

Response: Section 4.3 of the Waste Rock Management Plan presents estimated quantities of waste rock and overburden units to be extracted from the TM and S zones. In addition, as stated in section 4.1.5 of the Application, 36,150 t of ore is expected to be extracted from the TM pit and a further 27,063 t of ore from the TM and S zone underground development.

Upon review of the geological information and the proposed mine plan, it is considered unlikely that mining activities will intercept the metasediment units (locally present as various types of schist) mentioned in section 5.1.1 of the Application. As stated in the response to Question 3 and shown in Figure A of Appendix I, the contact with the metasediment unit is located to the immediate southwest of the TM pit, and thus this unit is not expected to be intercepted during development of the pit.

The overburden material is described in section 4.1.2 of the Application as silty clay with cobbles, and the occasional glacial boulder. Further to this, a sample taken approximately 200 m to the southwest of the proposed TM pit is described in section 2.2 of the geotechnical report by Kloth Leonoff provided in Appendix G of the Application. The report interprets the deposits to be glacial till reworked by slope action to form colluvium, specifically: "...silty colluvium composed of silty sand with angular rock fragments". CMC does not anticipate geochemical issues with this material; nonetheless, confirmatory static testing could be conducted during the 2008 season if required.

Annex 1 of the Waste Rock Management Plan presents a detailed review of the geochemistry of the TM and S zone waste rock and ore materials, including graphical and numerical statistical presentations, and the raw data from the study. In answer to one of the above questions, for the purposes of the study, the granodiorite was not subdivided based on alteration, however, in addition to geological units, all samples were assigned qualifiers in accordance with spatial location (for example hangingwall, footwall, ore, or 'interore') and rock management categories (Waste Granodiorite, Waste Andesite, Low-Grade Ore, or High-Grade Ore).

The andesite unit represents less than 5 percent of the waste rock to be extracted. Static testwork including ICP-MS, whole rock, and acid-base accounting, was performed on one sample. Relative to the granodiorite samples tested, results indicated similar sulphur and sulphide content, higher neutralization potential, and elevated zinc potential. The ratio of NP:AP was 5.6, indicating no potential for production of net acidity.

6. Question 23(a)(iv). Core logs were provided for only three cores, with two different kinds of logs, neither of which have a legend please standardize and update accordingly. Standard waste rock-quality characterization would require whole rock analyses and ABA tests have these characterizations been conducted systematically (e.g., representatively with sufficient sample numbers) and what will be potential waste rock? Describe sample and testing strategy (i.e., objectives, scope (limitations of sampling), methods, results, interpretations or limitations, conclusions, any recommendations for further testing).

Details of the geoenvironmental testing programs including analyses, methodology, interpretations, conclusions and recommendations are given in Annex 1 of the Waste Rock Management Plan. For illustrative purposes, also included in this annex are photographs of drill core of selected TM and S zone drill holes, with the associated static test analyses. With this updated compilation of data, no additional drillhole logs are being included with this submission. Nonetheless, these logs, and an interpretive legend are available and can certainly be provided by CMC to any reviewer on request.

7. Question 23(a)(v). The explanation for not sampling, for example, S zones is not valid the proposal must demonstrate that mineralization and resultant geochemistry of various rock-types in spatially different areas/zones is similar enough to be managed as one unit. Please update information accordingly. What is meant by typical threshold levels?

Response: Further characterization of waste rock and ore from the TM and S zones was conducted in early 2008, and is presented and discussed in Annex 1 of the Waste Rock Management Plan.

Threshold geochemical values for rock for general construction use are specified in section 4.6.1.1 of the Waste Rock Management Plan.

8. Please provide a detailed description of the sampling strategy undertaken/developed for this project, including layout (i.e. sample locations and their rationale), rock type, analyses (including detailed description of static and kinetic tests planned/undertaken and rationale). For more information see bullet 16 (below).

Response: Please refer to Annex 1 of the Waste Rock Management Plan. Details of study approach and methodology are presented in sections 1.4 and 2.0 of this document. Annex 1 incorporates results of initial studies conducted by SGS Lakefield Research Limited; in addition the full SGS report 11440-002 is provided in Appendix 3.

9. Question 23(a)(vi). Regarding ARD testing/prediction, the response indicates that kinetic testing is currently being undertaken. Without these results, reaction rates cannot be determined and therefore any of the conclusions/presumptions made by the proponent regarding the likelihood of generating acid are adequately backed-up. See bullet 6 (above). We cannot determine with provided response where referenced samples (TM-OZ-01, TM-FW-01, TM-HW-01, TM-HW-02 and TM Zone LCT) were collected (or why)? or how the one modified ABA sample result for TM-OZ-01 can support the statement that the rock type is not expected to result in any acid generation potential? Where are the results for the other four samples? What is the basis for the statement, most of the sulphides in the ore sample will be extracted through the mill process? What will be the chemistry of the extracted effluent? What about the waste rock? Please provide the necessary information accordingly.

Response: For a clear presentation of the testwork conducted, please refer to Table 3-1 of the Waste Rock Management Plan. This table summarizes work carried out on both the above-referenced initial phase (2007-2008 by SGS Lakefield Limited, reports 11440-001 and 11440-002), and the second phase static testing conducted in early 2008.

Annex 1 of the Waste Rock Management Plan discusses the results of waste rock and ore testing and presents conclusions with respect to acid generation and metal-leaching potential of these materials.

For additional information on chemistry of the tailings process water, the reader is referred to the report #11440-001 of SGS Lakefield Research Limited presented in Appendix B of the Application. As previously presented in section 5.1.1 of the Application, lead concentrations reported above Metal Mining Effluent Regulations (MMER) guideline values in both the liquid tailings effluents and leachates generated from Synthetic Precipitation Leaching Procedure (SPLP) testing of the tailings solids. All other parameters were well under the MMER. It should be noted that the tailings facility and downstream evaporation pond are intended to be operated in closed circuit, with no effluent discharge. The impoundment area is very small (0.89 ha), and diversion ditching above will divert surface flow out of the system.

10. Question 23(a)(vii x). The intent of these questions was for the proponent to provide a preliminary prediction of mine effluent from each facility (e.g., waste rock pile, ore pile, tailings, ponds, etc.) prior to and after any required treatment (e.g., assuming Best Available Technologies). This response will require the proponent to, at a minimum: 1) conceptually describe all facilities that could affect the flow and water chemistry of surface water and groundwater once leaving the site (i.e., a water management plan), 2) provide hydrologic and hydrogeologic conceptual models, 3) provide baseline water chemistry data for surface and groundwater, and 4) provide the data, results and rationale for predicting water quality (e.g., a supporting ARD report of waste rock and tailings). The responses provided are very generic and suggest that the 4 steps noted above have not been sufficiently performed to proceed to the next level of assessment. Please update the answers to these questions accordingly.

Response: There are few areas of the minesite that are expected to produce effluent due to run off control methods that will capture and retain or recycle the water. Diversion ditches on the uphill slopes and collection ditches on the down gradient slopes of all of the facilities will reduce the amounts of precipitation runoff from facilities to the total area contained within the diversion and collection ditches. The collection ditches will direct all runoff from the facilities into settling ponds which will allow for precipitation of suspended solids and the resulting water will then be recycled for processing in the mill. Diversion and collection ditches are shown in the attached Figure H. These runoff control measures will be used throughout the active and reclamation phases of the life of the mine and will then be decommissioned as a part of reclamation. Structures and alteration of the ground will have a clear impact on the surface flow in the immediate area of the mine but this surface flow is only in the form of precipitation runoff and the above runoff control measures will mitigate any potential impacts to down gradient surface waters (McCrory Creek, Oake Creek, and the Meister River).

A schematic of the site operations water management system is given in Figure I. This diagram is based on values given in Table 8 of the Application and depicts the balances during the static state of ongoing processing and tailings water recycling. In order to assess system storage capacity in the event of process upsets and above-average precipitation events, a preliminary quarterly water balance for the operations phase has been derived and is shown in Table 1. The table demonstrates adequate storage capacity to accommodate average operating and climatic conditions throughout the 3-year operating life. Excess inventories requiring treatment and release may result late in the operating life in the event of extreme climatic events and/or suspension of tailings recycling, or if mine water inputs are significantly above that required for process operations.

Water Quality sampling was undertaken twice in 2006 and twice in 2007. The results of water quality sampling of the surface waters in the area of the mine have been provided in Appendix E of "Silver Hart Property 2007 Mine Production Application and Project Description". A summary table of the water quality results is given in Appendix IV (CMC Metals Property Water Quality Database 2006-2007). There was no sampling of groundwater on site but station CMC-11 is the adit flow, sampled approximately 30m downstream from where the flow emerges from the adit.

The Waste Rock Management Plan and results of the related testing programs analysis are given in Appendices II and III.

Table 1 Preliminary Quarter by Quarter Process Water Balance

a. Total Capacity up to freeboard (m ³)	39500 *Reference Section 4.3.4, CMC Application
b. Total Tailings Area (m ²)	8900 *Reference Section 4.3.4, CMC Application
c. Other Contributing areas (m ²)	28500 * waste rock pile 1.28 ha; mill and stockpile facilities 1.00 ha; +25% for miscellaneous areas
d. Average Annual Precipitation (mm)	500 * as per Klohn Crippen estimates, Appendix G of CMC Application (Section 6.3.1)
e. Average Annual Evaporation (mm)	200 * as per Klohn Crippen estimates, Appendix G of CMC Application (Section 6.3.1)
f. % of precip reporting as runoff from other contributing areas	25% * maximum reporting to tailings pond – remainder of water uptake in soil/vegetation, stored in interim ponds
g. Quarterly Net Precipitation over Tailings Area (m ³ /quarter)	668 * Precipitation minus Evaporation on the Total Tailings Area $[(d-e)/1000 \times b]/4$
h. Quarterly Runoff from Contributing Areas (m ³ /quarter)	534 * Precipitation minus Evaporation on the Other Contributing Area times factor f. $[(d-e)/1000 \times c]/4 \times f$
i. Ore Processing Rate (tpd)	80 *Reference Figure 8, CMC Application
j. Adit Water Input (m ³ /day)	43 *approximately 0.5 l/s
k. Pit water contribution (m ³ /day)	43 *conservative assumption -- potential additional water contribution as a result of pit and additional underground workings
l. Estimated average process water demand (m ³ /day)	44.8 *Reference Section 4.4.1, CMC Application
m. TM pit recoverable ore (t)	36150 *Reference Section 4.1.5, CMC Application
n. Underground recov ore (t)	27063 *Reference Section 4.1.5, CMC Application
o. Total recoverable ore (t)	63213 *Reference Section 4.1.5, CMC Application
p. Total tailings produced (t)	58030 *Reference Section 4.3.4, CMC Application
q. Total tailings produced (m ³)	24589 *Reference Section 4.3.4, CMC Application
r. Calculated tailings density (t/m ³)	2.36 *calculated as tonnes tailings produced / m ³ tailings produced
s. Minimum pond working volume (m ³)	450 * assumes 2 m depth, 15x15 m area

EXTREME EVENTS:	Value	Total (m ³)	
1. Adit and pit flow from 5-day plant down time (m ³)	86 m ³ /day	430	*43 m ³ /day from adit flow, up to 43 m ³ /day flow from pit, for five days
2. Tailings dewater flow from 5-day plant shutdown	60 m ³ /day	300	*during processing, dewatering from tailings estimated at 77.2 m ³ /day -- conservatively assume value averages 60 m ³ /day (12% flow reduction per day) over the five day plant shutdown period
3. Wet quarter /freshet assumption (mm/quarter)	180 mm	2885	*melt of heavy snowpack year or wet quarter (see Note 1): volume is equal to 100% of precip over tailings area plus % of precip over contributing areas (factor c. x f.)
4. 24-hour extreme precipitation event	50 mm	801	*see Note 2. Volume is equal to 100% of precip over tailings area plus % of precip over contributing areas (c. x f.)

	Operational Capacity									Available Capacity Following Extreme Event(s)				
	Ore Processed (t)	Ore Processed to Date (t)	Tailings Deposited (t)	Tailings Deposited to Date (t)	Tailings Deposited to date (m ³)	Net Precipitation (m ³)	Gross Available Capacity (m ³)	Minimum Pond working Volume (m ³)	Net Available Capacity (m ³)	1. 5-day plant shutdown (m ³)	2. Tailings Dewater over 5 days (m ³)	3. Wet quarter /freshet assumption (m ³)	4. 24-hour precip event (m ³)	Simultaneous Events 1 + 2 + 3 + 4 (m ³)
Initial	0	0	0	0	0	0	39500	450	39050	38620	38750	36166	38249	34634
end of Q1	5268	5268	4836	4836	2049	1202	36249	450	35799	35369	35499	32915	34998	31383
end of Q2	5268	10536	4836	9672	4098	1202	32998	450	32548	32118	32248	29664	31747	28132
end of Q3	5268	15803	4836	14508	6147	1202	29747	450	29297	28867	28997	26413	28496	24881
end of Q4	5268	21071	4836	19343	8196	1202	26496	450	26046	25616	25746	23162	25245	21630
end of Q5	5268	26339	4836	24179	10245	1202	23245	450	22795	22365	22495	19911	21994	18379
end of Q6	5268	31607	4836	29015	12294	1202	19994	450	19544	19114	19244	16660	18743	15129
end of Q7	5268	36874	4836	33851	14344	1202	16743	450	16293	15863	15993	13409	15492	11878
end of Q8	5268	42142	4836	38687	16393	1202	13492	450	13042	12612	12742	10158	12241	8627
end of Q9	5268	47410	4836	43523	18442	1202	10241	450	9791	9361	9491	6907	8990	5376
end of Q10	5268	52678	4836	48358	20491	1202	6990	450	6540	6110	6240	3656	5739	2125
end of Q11	5268	57945	4836	53194	22540	1202	3739	450	3289	2859	2989	405	2488	(1126)
end of Q12	5268	63213	4836	58030	24589	1202	489	450	39	(391)	(261)	(2846)	(763)	(4377)

* Note 1: A value of 305 mm is considered as an extreme freshet or wet quarter, minus the average quarterly precipitation of 125 mm (500 mm/4) to arrive at 180 mm of additional contribution. The extreme freshet or wet quarter was taken from historic (33 years, 1976-2008) monitoring at Pine Lake Airstrip snow pillow station 10AA-SC03, approximately 30 km to southwest of project at elevation 995 masl. Value of 305 mm corresponds to the 95th percentile value of the maximum yearly snow water equivalent measurement.

* Note 2: The 50 mm 24-hour event roughly equates to a >1:100 year event for Teslin, and a 1:20 year event for Watson Lake airports. (Reference: Environment Canada IDF Values, 1990. <http://arcdm20.tor.ec.gc.ca/pub/dst/IDF/>)

11. Question 23(a)(xi). In the absence of groundwater characterization, please provide a hydrogeological model of the site (e.g., explaining hydrostratigraphic units, where groundwater occurs, potential perching conditions and/or barriers to groundwater movement) in the context of the future open pit and any facilities that might affect these conditions including the geological units that the water will have to pass through prior to discharge.

Response:

Hydrogeological Units.

Overburden: Based on drilling and trenching, overburden cover in the order of 4 metres or less is expected over the proposed TM pit area. Figure J provides a general view of the proposed TM pit, waste rock and mill site. As stated in the response to Question 5, the overburden material is described in section 4.1.2 of the Application as silty clay with cobbles, and the occasional glacial boulder. Further to this, a sample taken approximately 200 m to the southwest of the proposed TM pit is described in a previous geotechnical report provided in Appendix G (section 2.2) of the Application. The report interprets the deposits to be glacial till reworked by slope action to form colluvium, specifically: "...silty colluvium composed of silty sand with angular rock fragments". The overburden does contain sufficient fines to cause localized surface ponding in depressions, as referenced in Section 4.1.2 of the Application, and as seen in the overburden in the proposed waste rock pile area (Figure K).

Rock: Rock in both the TM and S zones tends to be highly fractured, as demonstrated by the photographs in Annex 1 of the Waste Rock Management Plan, and detailed geotechnical logging conducted on TM and S zone holes in 2005, which indicated a Rock Quality Designation (RQD) average of 17% for the TM zone and 25% for the S Zone. As noted in section 2.2.3 of the Application, some clay alteration is seen proximal to the vein in the hangingwall, and thin clay fracture fillings are commonly noted in the drill logs. Due to these characteristics, potential hydraulic conductivity of this rock is approximated to be in the semi-pervious range and fracture controlled. The major rock type is variably altered granodiorite. Andesite dyke makes up less than 5 percent of the rock in TM pit. Based on drill log information, this discontinuous unit tends to be pervasively clay altered and occurs parallel to and adjacent to the steeply dipping vein zones in thicknesses of 1.5 m or less.

Existing Phreatic Surface. An old water well is located in the south west end of the proposed TM pit area, (see Figure B), was completed in the mid-1980's and supplied all the water for the 20 man camp that was on site at the time. Although neither phreatic data nor drilling reports are available, based on drawings the well head elevation is 4690.5' (1429 masl) and is 185' (56 m) deep. The bottom of the well is therefore calculated to be at 1373 masl. Considering that in general that drilling of a well would be continued a considerable distance beyond the first intersection of good water return (eg. 5 to 10 m deeper than the water intersection), it is estimated that the phreatic surface at the time of completion of the well was in the order of 1380 masl to 1390 masl. This is 10 m or more below the 1400 masl bottom elevation of the proposed TM pit.

Old underground workings exist at the lower extent of the proposed TM pit at just above the 1400 masl elevation (the '4600 Level'; see cross-sections, Figures B through E). No observations of problems with large-volume water intersections during underground development are noted in the historic reports, hence it is concluded that consistent with the water well information that the phreatic surface lies below these workings. Nonetheless, as indicated in section 4.4.1 of the Application and answers question 23 xiii) previously submitted, the workings grade downwards towards a portal that daylights approximately 100 m to the southwest of the proposed TM pit area, where drainage in the order of 0.5-1.0 l/s flows continuously. This flow may originate from fault controlled seeps. Due to the various contributing factors it is difficult to predict the flow volume change as a result of pit and additional underground development. For planning purposes, it is expected that some additional flow may occur.

Synthesis. The phreatic surface is interpreted to occur under unconfined conditions at a depth in the order of 10 m below the lower extents of the proposed TM pit. Some fault-controlled seeps may occur at lower elevations within the pit. The water from the fault-controlled seeps that could be encountered during development of the TM pit are anticipated to be similar in quality to that obtained from the adit (CMC-11). Thus, this water is expected to be overall neutral. Zn concentrations are expected to be above the 0.5 mg/l MMER criteria. If it is necessary to remove this water from the TM pit during operations, the water will be utilized in ore processing, and any excess inventories treated as required prior to release. As indicated in the response to Question 10, a situation of excess water inventory is unlikely to occur (if at all) until the latter part of year 3.

12. Question 23(a)(xii). The answer provided is not clear on why, when and where underground adit water was sampled? Why was this sample used to conclude that no significant acid generation is occurring? Given the pH of the water, how are elevated concentrations of Zn, As and Cd produced?

Response: The adit water was sampled at station CMC-11, located approximately 30m down gradient from the adit. What has been referred to as the adit water could be called the "adit discharge water" for clarity as it is actually the surface water that daylights at the adit entrance. It was sampled to obtain baseline information of the water that is flowing through the underground workings – workings which traverse an estimated 673 m and primarily follow the Zn-Pb-Ag vein structures. Station CMC-11 was sampled on September 7 2006, September 21 2006, December 8 2006, July 12 2007, and August 21 2007. The pH level of these samples was between 7.5 and 8.0 and total alkalinity at 150 mg CaCO₃/l, indicating a well-buffered and neutral to slightly alkaline water. Sulphate concentrations were in the order of 130 mg/l which is considered low and in the range of typical ground water – in contrast to concentrations of several hundred to the low thousands of milligrams per litre typically seen in water emanating from a zone of sulphide oxidation. Nonetheless, due to the presence of slightly elevated to moderately elevated metal levels in the CMC-11 water, it is likely that some oxidation and localized generation of net acidity on a mineralogical scale is occurring or has occurred in the past. While this condition is sufficient to cause dissolution of certain metals, particularly zinc (occurring in the CMC-11 water at concentrations in excess of the 0.5 mg/l MMER criteria), the overall alkalinity of the water is not significantly affected. It is noted that elevated levels of some of metals in water can occur over the long term without generation of net acidity, as has been shown at the Keno Hill Mines, where elevated levels of zinc have been noted in waters with a pH above 7.0.

13. Question 23(a)(xiv). How will the ratio of ore to waste be determined (for example, where are the maps and cross sections to support these calculations)? Referenced geochemical results for three samples were not included please update accordingly.

Response: See attached Waste Rock Management Plan, in particular, section 4.3. Estimations are that 5634 t (2167 BCM) of waste rock will be generated from underground development; this material is planned for storage within the old underground workings. Relative to this and as shown in Table 4-1 of the Waste Rock Management Plan, an estimated 152,047 BCM of waste rock will be extracted from the TM pit, with 145,398 BCM being placed in the TM waste rock pile and 6,649 BCM being utilized for general construction purposes.

A surface geological map and cross sections are shown Figures A through G. Geochemical results for the three waste rock samples referenced in the above question are given in Appendix III (SGS report 11440-002). The SGS test results, along with results of the second phase test program, are discussed in Annex 1 of the Waste Rock Management Plan.

14. Question 23(a)(xv). The response states: As the hydrogeology of the site may be altered by the mine development closure options will be finalized once a better understanding of predicted post-

closure conditions is available. The assessment of this project will consider all phases of projects, and in this case that also includes closure/decommissioning to the extent practicable. It is important that the proponent demonstrate and provide the current thinking in this regard, with respect to the data/information on hand. What was scope of treatability study? Please provide a report summarizing objective, scope, methods, results, etc. Please explain the statement: the removal of the ore body will remove the potential for contamination

Response: It is believed that the ore-grade material within the underground workings is the main contributor to the elevated zinc levels currently occurring in the adit flow. The deposit is very localized and concentrated, and with the proposed mining of the ore body exposures along the underground and open pit workings, much of this material of higher sulphide and metal content will be removed. As previously discussed in the response to Question 12, the elevated zinc levels in the adit outflow water occur without a corresponding low pH often seen with metals contamination from mining-affected sites. Thus with the removal of this ore there is expected to be a degree of reduced level of metal loading to the adit water. As the acid rock drainage testing results indicate a weak potential for net acid generation there is considered to be minimal potential for a change in the existing alkalinity of the site drainage, and one should also see some reduction in zinc concentrations in the site drainage.

The understanding that water chemistry effects can occur even without a strong drop in the water pH was the reason that CMC Metals undertook a treatability study of the adit water for use in identifying potential treatment methods for water that may be discharged from the site. It was thought that the adit water was a likely representative of potential effluent from the mine site. The treatability study was an analysis of the adit water to determine the treatment requirements to remove metals that were showing in the water in elevated levels to bring the water within applicable guidelines. The treatability study was simply a sample of water from the adit discharge analyzed at the SGS Lakefield Research Limited laboratory to determine the concentrations required for a lime treatment system that would bring the waters within the MMER. The results of this study in given in Appendix III (SGS report 11440-002).

15. Question 23(a)(xvi). Please provide conceptual hydrogeologic model (as above).

Response: Please refer to the response to Questions 10 and 11.

16. Question 23(b). Proponent states that static testing was done for a number of samples and some kinetic testing is being undertaken. The response provided is inadequate. The proponent should provide data, information in acceptable standard of today, which would be a stand alone technical report provided by/or reviewed by a qualified professional (e.g., a P.Geo. with expertise in geochemistry) The report would, for example, 1) describe the sampling strategy for all rock-types (by-products) that will form part of the waste rock pile, tailings, etc (with appropriate maps and cross sections); 2) describe reasoning for conducting various lab analyses, 3) provide summary of all static and kinetic results, and 4) provide interpretations, limitations, conclusions and recommendations.

Response: Please refer to i) Annex 1 of the Waste Rock Management Plan, and ii) Appendix III (SGS report 11440-002).

17. Question 24(b). Please provide further details on the treatment options you will use, particularly with regards to zinc, lead, arsenic, and cadmium, in order to meet CCME and/or MMER standards.

Response: There are a number of options for treating contaminated water from mine sites should there be a need. Two methods, lime injection pH reduction and a biological reduction field, were determined to be the most applicable to this project based on probable flow rates and known or expected contaminant levels. Both were researched in greater detail for this project.

A study of the treatability of the adit water was undertaken by SGS and the results are included in Appendix III (SGS report 11440-002). This study was to determine the effectiveness of a pH adjustment treatment system to precipitate the metals from the adit flow as required. A second test was run on manufactured effluent from an ore sampled that had been ground to represent tailings. The results indicated that only a minor addition of lime was enough to raise the pH and precipitate the metals out of solution of either sample. This is a common treatment system in use at many mine sites throughout the world and can be seen as a part of the Water Use Licence requirements for the Keno Hill Mine as an example. More detailed design plans will be created prior to construction should it be determined that a treatment system is required.

The second system is a site specific biological treatment system that involves the use a reduction field. A reduction field is a leach field where the infiltrated water is amended with a carbon source at a rate sufficient to support biological reduction reactions, especially sulfate reduction. This is a system that has been put in place at the Mike Horse Mine in Montana and the Leviathan Mine in California. A reduction field bioreactor is currently being proposed for use at Keno Hill Mine for treatment of the contaminated adit discharges. Specific details of the system will be provided as a part of the design process should this system be determined to be the most applicable for the Silver Hart property. Alexco Resource Corp. holds a number of US patents on this technology and is currently working on a number of mine water treatment projects for the United States Environmental Protection Agency and their expertise may be requested should this technology be chosen.

The intention of the project is to create a no discharge system during operation that will not require any treatment. As a contingency the above discussed options have been researched to determine ways to reduce the metals levels in any water released. Should a treated release be required it is expected that the release will need to conform to the MMER guidelines.

Discussions with the appropriate regulatory agencies will determine which treatment system, if required, is most applicable to this site.

18. Question 24(c). Please provide emergency measures/procedures with respect to the tailings dam.

Response: As stated in the response given previously to this question, an Emergency Response and Preparedness Plan will be developed prior to operation of the tailings impoundment, to implement and be utilized by site staff and to be communicated to other stakeholders. This plan will be based on the principles of the Canadian Dam Safety Association, "Dam Safety Guidelines 2007", and will be integrated with an Operations, Maintenance and Surveillance (OMS) manual for the tailings impoundment.

As shown in Figure 10 and Table 7 of the Application, the tailings impoundment is a small facility. It will cover less than 1 ha of area, with dam crest height of 7 m. CMC recognizes that preventative measures incorporated into the siting, design, construction, and ongoing maintenance of a tailings facility are crucial to the successful operation of this facility. Another essential factor is the monitoring and surveillance programs which will serve to provide early detection of conditions that if not managed, could affect the operational safety, structural integrity, and environmental performance of the facility. Finally, as previously mentioned an emergency response plan will be developed in advance and communicated to all stakeholders, and tested and kept current.

Table 2 outlines key measures incorporated into design, construction and maintenance to prevent development of the two primary upset conditions for the facility: 1) slope or foundation failure of the dam, and 2) excess water. Monitoring and surveillance measures are included to permit early detection of contributing conditions, and emergency actions are described.

Table 2 Summary of Prevention, Detection and Response Measures to Potential Emergency Conditions of the CMC Tailings Facility

Potential Emergency Condition	Possible Cause(s)	Prevention		Early Detection Monitoring and Surveillance	Response
		Mitigation through Design and Construction	Mitigation through Operational Maintenance		
Slope or Foundation Failure	- inadequate foundation - seismic event - excessive erosion of dam face(s) - saturation of dam - seepage or piping	- design will meet seismic criteria applicable to zone - adequate foundation preparation - incorporation of rock core and basal drainage layer to prevent dam saturation - adequate construction oversight and quality control - overall low crest height (7m) - perimeter ditches to direct run-on away from impoundment and dam - geosynthetic lining of tailings impoundment to minimize exfiltration and seepage from the tailings material	- maintain riprap faces in adequate condition - remove any accumulation of soil and vegetation from toe drains, to ensure they remain open and free draining - maintain perimeter ditches	<u>Daily Inspection Items:</u> - visual check of dam crest for obvious changes, cracks, movement <u>Monthly Inspection Items:</u> - dam faces free of signs of erosion - toe drains open and unblocked by soil or vegetation - no evidence of slumping, bulging, sinkholes, cracks in crest or faces - seepages within normal ranges (location, quantity, and quality) <u>Bi-Annually:</u> - survey of crest monuments <u>Annually:</u> - independent review by Qualified Geotechnical Engineer	Consult Qualified Geotechnical Engineer for analysis of causes, and action plan specific to situation. Possible mitigation may include: - reduce water inventory in pond (direct water to Evaporation / Settlement Pond) - place additional buttressing at downstream toe using coarse rock

Potential Emergency Condition	Possible Cause(s)	Prevention		Early Detection Monitoring and Surveillance	Response
		Mitigation through Design and Construction	Mitigation through Operational Maintenance		
Excess Water or Overtopping (more water than minimum freeboard requirements)	- extreme storm event - extreme snowpack accumulation and sudden freshet conditions - extended shutdown of process plant (no water return to plant) - blocked emergency spillway	- impoundment sited away from existing watercourses - diversion channels to minimize run-on into impoundment - emergency spillway to maintain water level at or below freeboard - excess impoundment capacity to accommodate climatic and/or process contingency conditions	- maintain perimeter ditches - maintain emergency spillway at design outlet elevation - routine servicing of decant pump and decant culvert - standby decant pumping capability immediately available on site	<u>Daily Inspection Items:</u> - visual check and recording of staff gauge value to ensure maintenance of required freeboard - ensure tailings being spigotted away from pond and decant area <u>Monthly Review Items:</u> - review water levels for previous month to ensure no trends of concern - review climate trends for preceding and ensuing months to ensure adequate freeboard in pond - check to ensure emergency spillway is maintained at design elevation and free of potential blockages - check to ensure perimeter ditches intact and free of potential blockages, with no short-circuiting of run-on into impoundment	Potential Actions (as appropriate for specific situation): - minimize fresh water makeup - check emergency spillway to ensure no blockage - repair any short-circuits of run-on into impoundment - compact/pile excess snow in impoundment to attenuate freshet - increase evaporation losses via sprinklers and/or recirculation of water over tailings surface - reduce water inventory in pond (direct water to Evaporation / Settlement Pond) - increase monitoring for dam structural integrity
					12

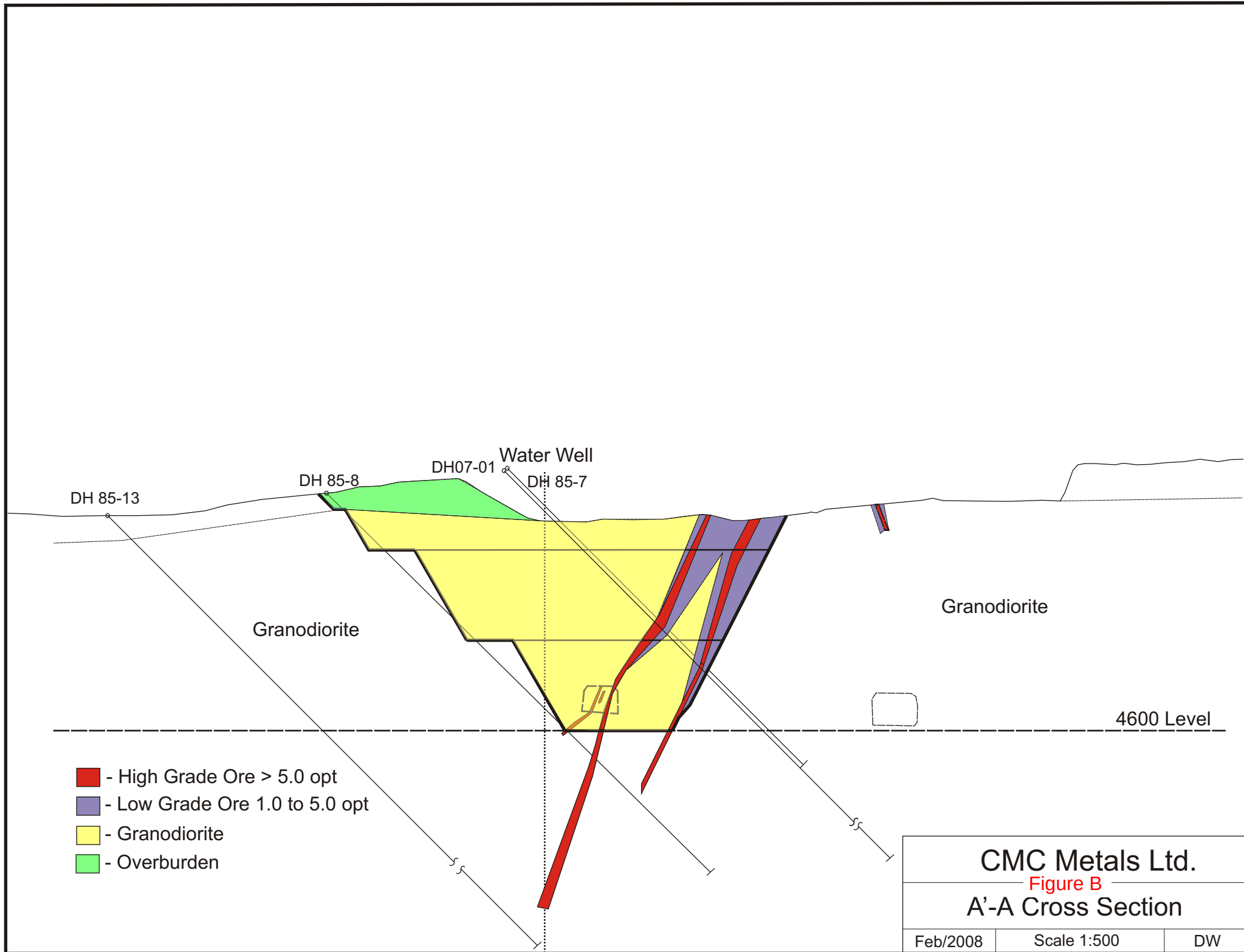


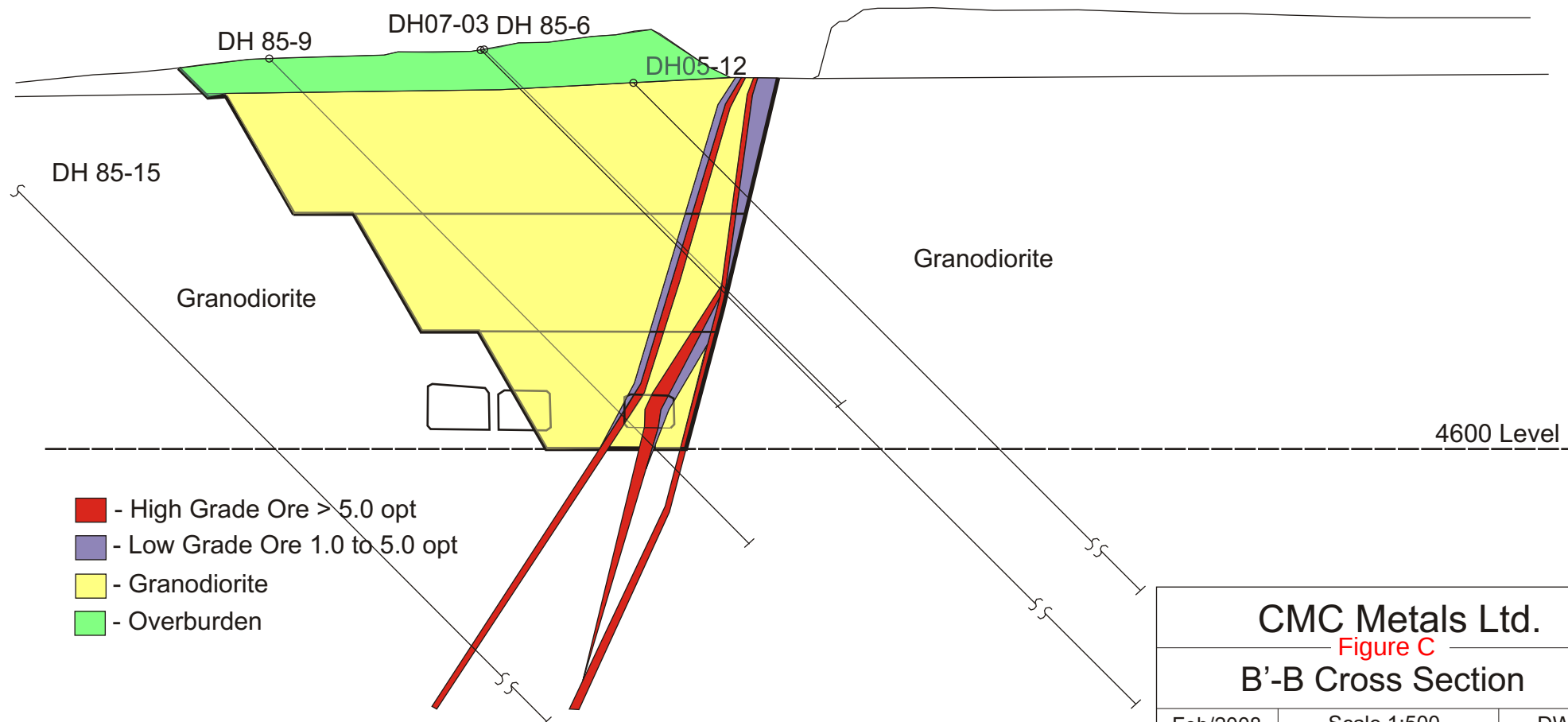
Silver Hart Property

Additional Info for Yukon Environmental and Socio-Economic Assessment Board

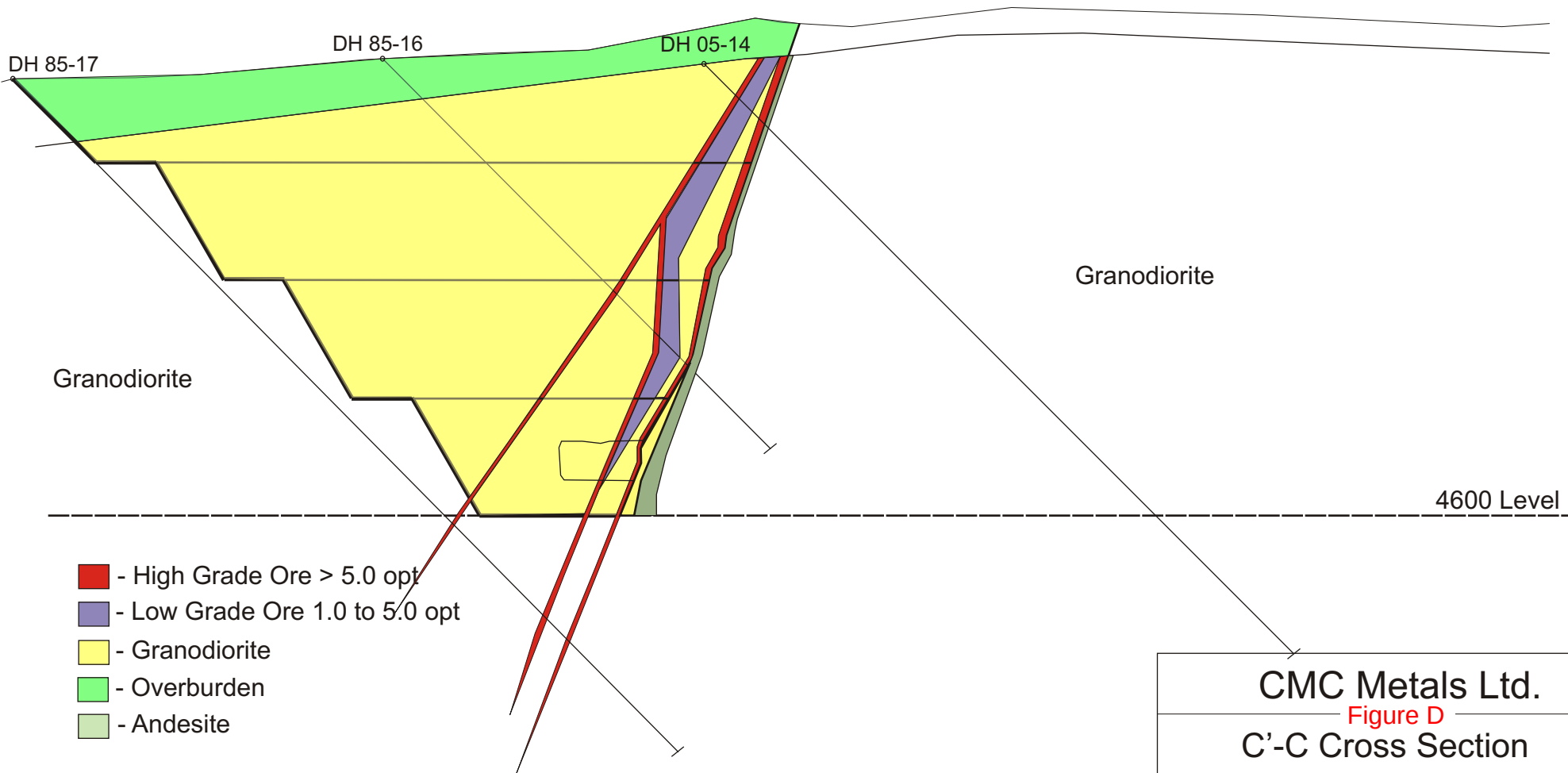
Appendix I

Figures





CMC Metals Ltd.
 Figure C
 B'-B Cross Section



CMC Metals Ltd.
Figure D
C'-C Cross Section



CMC Metals Ltd.

Figure E

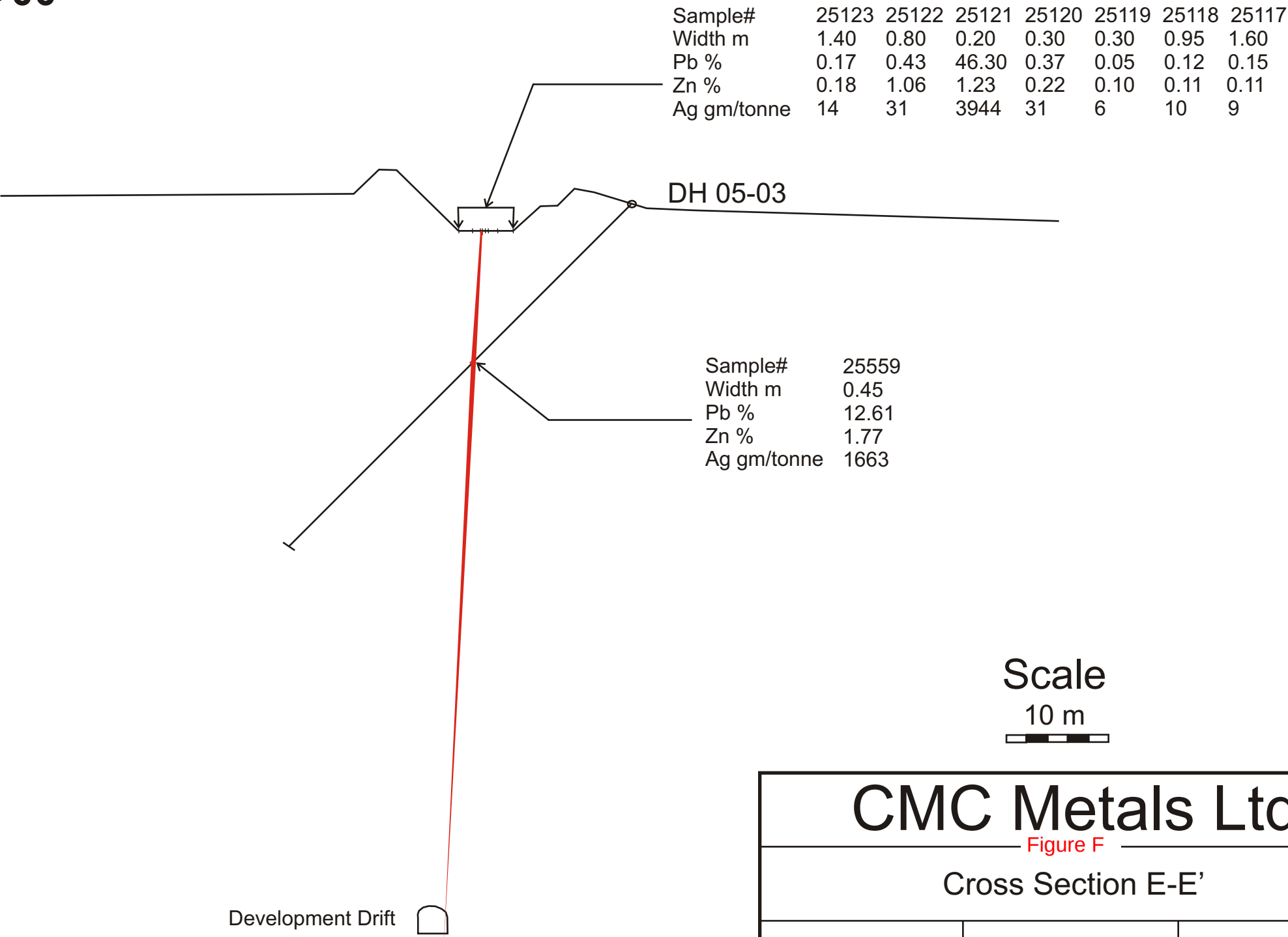
D'-D Cross Section

Mar/2008

Scale 1:500

DW

S Zone
Trench Station S 0+00



CMC Metals Ltd.

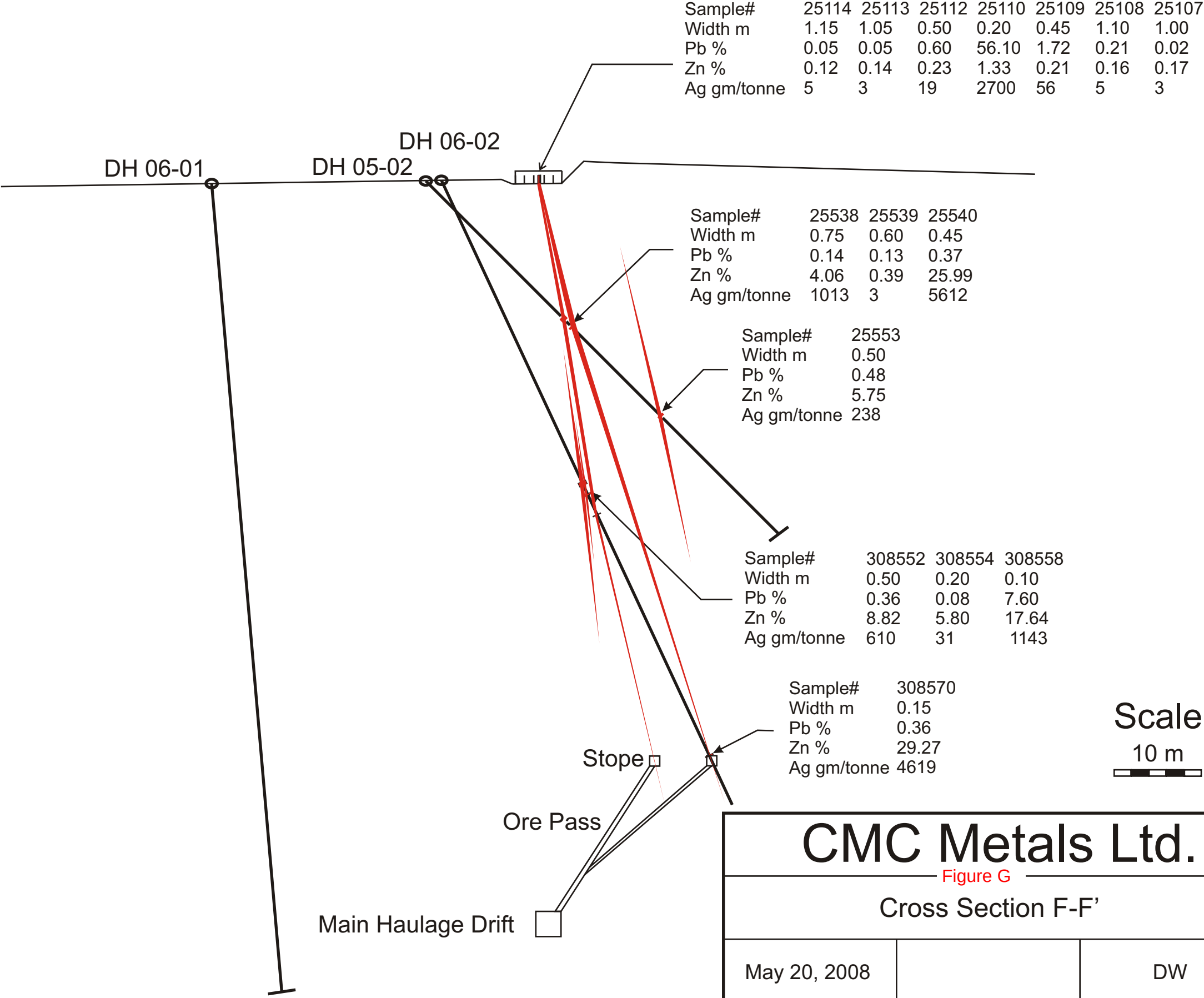
Figure F

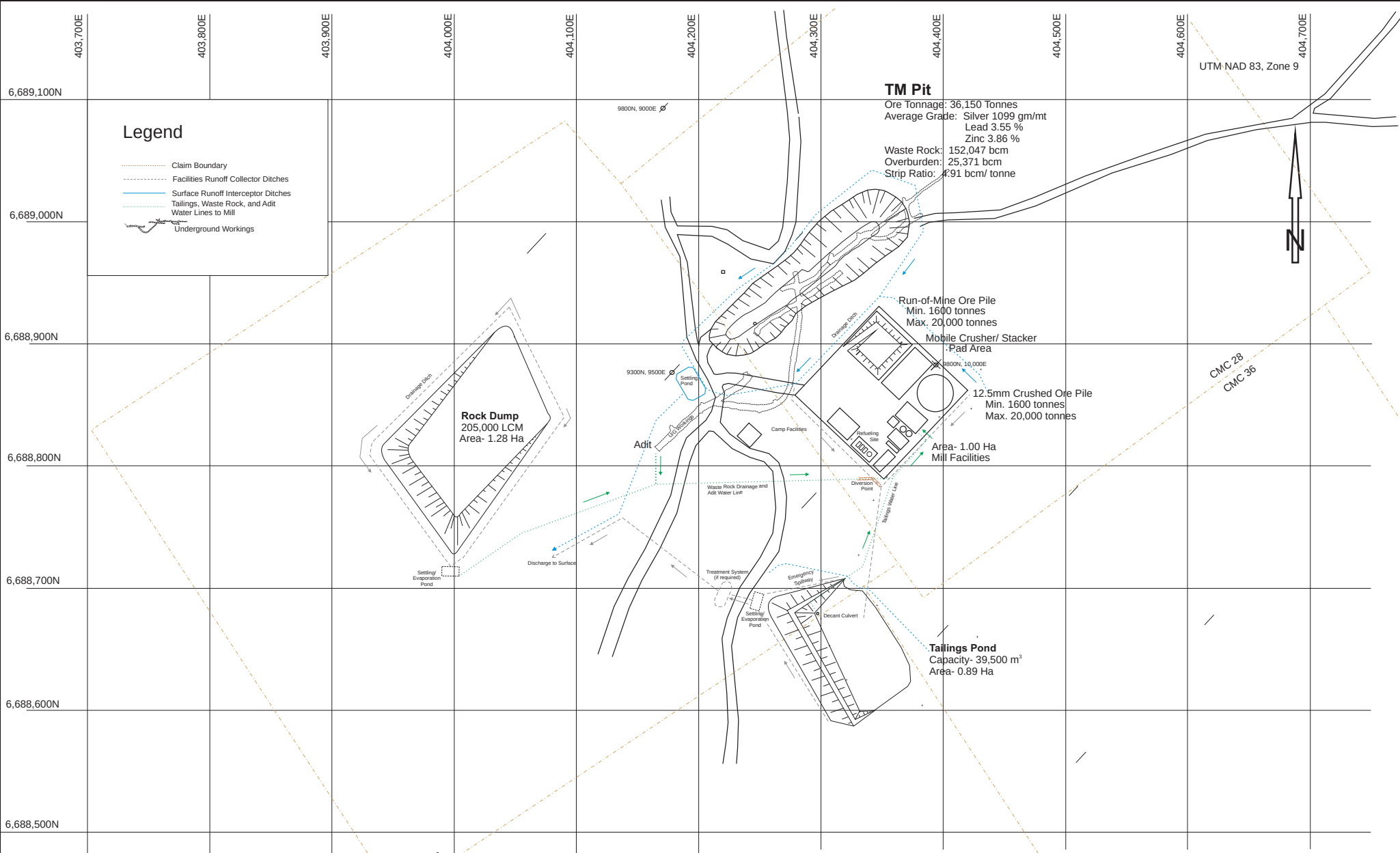
Cross Section E-E'

May 15,2008

DW

S Zone
Trench Station S 0+50





UTM-NAD 83, Zone 9



CMC Metals Ltd.		
Figure H		
Site Layout Plan with Water Managment Systems		
June 2008		DW

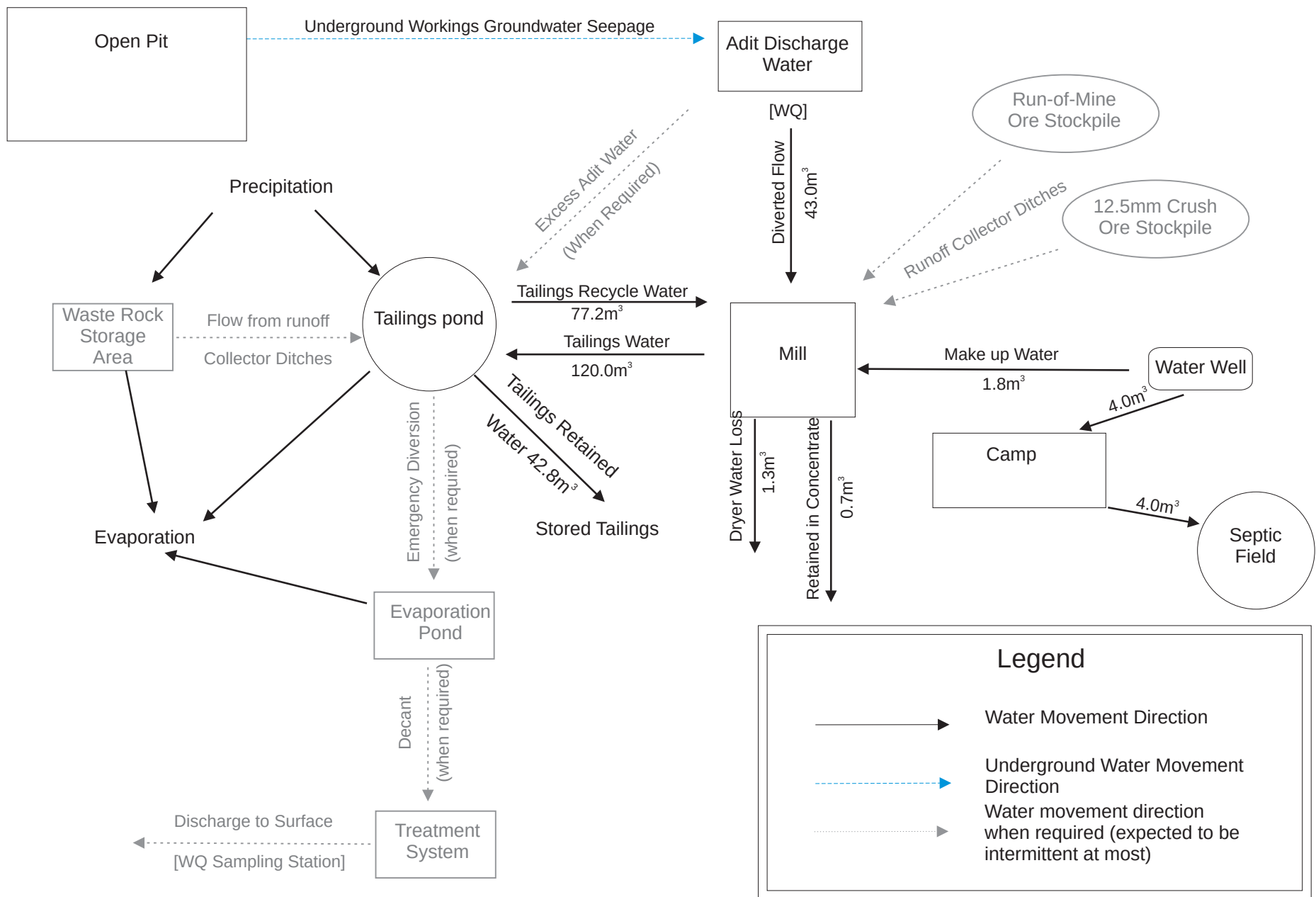


Figure I
Operations Water Balance Schematic

CMC Metals Ltd.
Silver Hart Property

Normal Daily Water Volumes (m^3/day)

June 2008



Figure J

General View of the Site



Figure K

Current Waste Rock Pile



Silver Hart Property

**Additional Info for Yukon Environmental and
Socio-Economic Assessment Board**

Appendix II

Waste Rock Management Plan



WASTE ROCK MANAGEMENT PLAN
FOR
**WATER LICENCE APPLICATION &
MINING LAND USE APPROVAL AMENDMENT REQUEST**

TM AND S ZONE DEVELOPMENT
SILVER HART PROPERTY
YUKON

June 2008

Prepared by:



www.accessconsulting.ca

TABLE OF CONTENTS

1.0	INTRODUCTION.....	1-1
1.1	PURPOSE OF PLAN.....	1-1
1.2	SCOPE OF PLAN.....	1-1
2.0	BACKGROUND INFORMATION.....	2-1
2.1	PROJECT OVERVIEW	2-1
2.1.1	Historical Overview	2-2
2.1.2	Proposed Rock and Overburden Excavation Activities	2-2
2.2	ENVIRONMENTAL SETTING.....	2-3
2.3	GEOLOGY AND MAJOR ROCK TYPES FOR THE TM AND S ZONES	2-3
3.0	ROCK CHARACTERIZATION.....	3-1
3.1	SUMMARY OF ROCK CHARACTERIZATION.....	3-1
3.1.1	Study Overview	3-1
3.1.2	Study Results and Material Management Recommendations	3-2
3.1.2.1	Study Results	3-2
3.1.2.2	Material Management Recommendations.....	3-4
4.0	EXCAVATION PLAN.....	4-1
4.1	PROPOSED WORK.....	4-1
4.2	WASTE ROCK MANAGEMENT CATEGORIES	4-1
4.3	ESTIMATED ROCK QUANTITIES	4-2
4.4	MANAGEMENT DURING OPERATIONS	4-2
4.5	TM WASTE ROCK PILE.....	4-2
4.5.1	Preparation	4-2
4.5.2	Waste Rock Placement	4-3
4.5.3	Closure	4-3
4.6	ROCK FOR GENERAL CONSTRUCTION PURPOSES	4-4
4.6.1	Selection Criteria.....	4-4
4.6.1.1	Waste Rock.....	4-4
4.6.1.2	Overburden	4-4
4.6.2	Process to Extract and Identify Rock for General Construction	4-5
5.0	MONITORING AND REPORTING.....	5-1
5.1	MONITORING	5-1
5.1.1	Excavated Areas.....	5-1

5.1.1.1	Mapping	5-1
5.1.1.2	Ongoing Surveillance	5-1
5.1.2	Rock Storage Areas	5-2
5.1.2.1	Geochemical Characterization	5-2
5.1.2.2	Ongoing Surveillance	5-2
5.2	REPORTING.....	5-2
6.0	REFERENCES.....	6-1

LIST OF TABLES

Table 3-1	Geoenvironmental Characterization Testwork, TM and S Zones	3-3
Table 4 -1	TM and S Zone – Extracted Rock and Overburden.....	4-2

LIST OF ANNEXES

Annex 1	Silver Hart Property: Review of Geoenvironmental Analyses, TM and S Zones	

1.0 INTRODUCTION

1.1 PURPOSE OF PLAN

This document outlines practices for management of waste rock to be excavated during the proposed 3-year TM and S Zone open pit and underground development operation, to be undertaken by CMC Metals Ltd. (CMC) at the Silver Hart Property in south-central Yukon. Further details of the project are given in the document entitled “Silver Hart Property 2007 Mine Production Application and Project Description” (the ‘CMC Application’).

This plan is intended to ensure that appropriate management procedures are followed during excavation activities in order to minimize impacts of stored rock to land and water resources. Monitoring following excavation activities is intended to assess the effectiveness of the management measures, and to ensure that appropriate information is obtained by CMC to assist in closure planning.

1.2 SCOPE OF PLAN

Aspects Included in this Plan are:

- Definition of waste rock management categories and estimation of quantities to be excavated during the project;
- Rock management during operations;
- Applicable screening criteria for rock;
- Monitoring activities after rock excavation; and
- Reporting of waste rock management activities.

Aspects not Included in this Plan are:

- Geotechnical design of waste rock storage areas; and
- Management of stockpiled ore: While Annex 1 of this plan includes discussion of the ore’s geoenvironmental characteristics and presents recommendations, management of this material is not within the scope of the waste rock management plan.

2.0 BACKGROUND INFORMATION

2.1 PROJECT OVERVIEW

CMC proposes a small scale operation of 80 tonnes per day ore processing over 3 years from the TM and S zones at its Silver Hart property located in south-central Yukon. The mine plan calls for a seasonal open pit and underground operation, and year-round processing using conventional comminution and flotation to produce an Ag-Zn-Pb-Cu concentrate product. The TM and S zones are located within 200 metres of each other on a moderate to gently sloping hillside at approximately 1430 masl, in an alpine environment and approximately at treeline level. The proposed TM pit will have dimensions of 192 by 57 m with a maximum depth of 50 m. Once the TM pit is complete in year 2, underground mining of deeper zones of TM and of the S zones will commence, to continue until the end of year 3.

Located in the Rancheria area of south-central Yukon, access to the Silver Hart property is via a 41 km unsurfaced access road that travels north from its junction with the Alaska Highway about 161 km west of Watson Lake.

CMC Metals Ltd. (CMC) is a public mining company trading on the TSX Venture Stock Exchange, and is focused on the development of advance staged mineral properties. CMC searches for high grade precious and base metal properties that are sufficient in size to meet their economic criteria plus demonstrate the ability to minimize environmental foot print. For a property to be considered for development, the property must be sustainable financially, environmentally, and socially. Currently CMC has four properties that are being evaluated for development - three are located in the Yukon Territory.

As mentioned in section 1.1, CMC has prepared the “Silver Hart Property Mine Production Application and Project Description” (the ‘CMC Application’). This waste rock management plan is intended to support the CMC Application and be used as a guiding document during excavation activities in the TM and S zones.

2.1.1 Historical Overview

Documents indicate that the area was first staked as early as 1947 (Bastille Claims owned by Great Northern ECL) but there are no records of any work being undertaken until the area was re-staked in 1971. Exploration work consisting of mapping, test pits, geophysics and a minor amount of drilling was carried out by various parties from 1971 to 1983, when two additional silver-lead-zinc zones (the F and T) were discovered.

An extensive surface exploration program in 1985 consisted of additional mapping, grid geophysical and geochemical surveys, bulldozer trenching, and the completion of 50 diamond drill holes. During the winter of 1985-86, underground exploration was conducted in the T zone, just above an elevation of 4,600 feet (1402 masl). Trackless mining methods were used with openings on haulages of approximately 12-16 ft (3.6-4.9 m) wide by 10 ft (3 m) high. Slusher drifts and raises were approximately 5 ft (1.5 m) wide by 7 ft (2.1 m) high. Approximately 2,208 ft (673 m) of openings were driven.

Exploration continued through 1986 and 1987 throughout the property, and following a feasibility study in 1988, a \$10 million agreement was signed to put the property into production. However, a drop in silver prices lead to the project's eventual cancellation (Read and McCrea, 2005).

Surface works programs including trenching, overburden removal, road construction, along with reclamation were completed from 1992 to 1993, and again in 2000.

In 2005 CMC bought the property and conducted a due diligence exploration program to confirm the past geological data. Recently in 2006 and 2007, CMC continued to gather additional information by way of diamond drilling, trenching and geochemical surveys. Reclamation of past site operators camp facilities, closure of the adit opening and upgrading of the access road on the claims has also occurred during this time.

2.1.2 Proposed Rock and Overburden Excavation Activities

As indicated in the CMC Application, an estimated total of 152,047 bank cubic metres (BCM) or 395,322 t of waste rock is planned to be extracted from the proposed TM pit. Of this, an estimated at 145,398 (BCM) or 378,035 t of TM zone waste rock is planned for placement in a pile situated approximately 200 metres to the west of the

proposed pit in a previously disturbed area, where there is a small pile of rock excavated from underground exploration workings completed in the mid 1980's. Additionally, approximately 6,649 BCM (17,287 t) of waste rock is required for construction of the tailings impoundment. A site plan is provided in Figure 5 of the CMC Application.

The proposed TM pit area is partially covered with silty colluvium material, and during year 1 an estimated 44,100 bank cubic metres (BCM) of this material will be removed and primarily used for tailings and process facility construction and road base fill.

2.2 ENVIRONMENTAL SETTING

A detailed description of the environmental conditions in the area of the Silver Hart property is presented in section 5.0 of the CMC Application; certain overview aspects are presented in the following paragraphs.

The Silver Hart Property is located in south central Yukon between the Meister River and the Oake Lake/Oake Creek watersheds. The property is located near the headwaters of the Rancheria River but outside of this watershed. The proposed project area lies within the Pelly Mountains Ecoregion at approximately 1430 masl, and is locally dominated by alpine fir forests.

The climate in the Pelly Mountains Ecoregion is cold and semiarid with a mean annual temperature of -3.0°C. The summer mean temperature is 10.5°C and the winter mean for the ecoregion is -17.5°C. Using the Hydrological Atlas of Canada, a 500 mm average precipitation value was conservatively assumed by Klohn Leonoff (1987). However, as shown in Table 9 of the CMC Application, based on site measurements and long term monitoring at Teslin and Watson Lake Environment Canada stations, typical annual site precipitation may well be lower, in the order of 200 to 300 mm.

2.3 GEOLOGY AND MAJOR ROCK TYPES FOR THE TM AND S ZONES

The geology of the Silver Hart property and of the TM and S zones is described in section 2.2 of the CMC Application. The proposed pit and underground developments lie within a granodioritic zone of the Cretaceous Cassiar Batholith, within a few hundred metres of local contact with metasediments of the Lower Cambrian Atan Group (locally

occurring as schists with lesser quartzite, dolomite and minor skarn). Potentially economic mineralization is a vein-hosted Ag-Zn-Pb±Cu system, consists of narrow steeply dipping structures with sulphide minerals consisting of sphalerite, galena, chalcopyrite, sulphosalt minerals, and pyrite. Potential waste rock will be predominantly comprised of granodiorite, and in the TM zone also a minor quantity of dyke material of andesitic composition. Both units show variable alteration and a high degree of fracturing, considered to be related to local faulting and mineralizing events. The contact with the metasediment unit is located to the immediate southwest of the TM pit, and thus this unit is not expected to be intercepted during development of the pit.

In general, wall rock alteration is reported to be epithermal in style, with varying degrees of silicification and 'claying' or argillic alteration proximal to the veins, sericite as the next outer shell, and weak to intense propylitic alteration as the outer-most alteration halo. Oxidation is variable. Based on drill logs, pyrite and at times pyrrhotite have been noted in non-mineralized sections of drill core, in disseminated form from trace amounts up to 1%, and locally increasing to 2 to 3% as discontinuous pyrite-filled fractures and pyrite selvages on quartz veinlets.

Rock tends to be highly fractured throughout the hangingwall, vein, and footwall zones. The increasing intensity of alteration towards the mineralized zone is particularly notable in the TM zone holes. Photographs of drill core of selected TM and S zone holes are included in the supporting document provided in Annex 1.

3.0 ROCK CHARACTERIZATION

3.1 SUMMARY OF ROCK CHARACTERIZATION

Studies conducted on both surface-exposed rock and drill core provide a foundation for correlating and understanding the weathering behaviour or 'geoenvironmental' tendencies of rock in the TM and S zones.

The geoenvironmental evaluation was completed by Altura Environmental Consulting (2008), and is given in Annex 1. An overview of the studies and the key results are summarized in the following sections.

3.1.1 Study Overview

The geoenvironmental evaluation to support the TM and S zone Preliminary Waste Rock Management Plan (WRMP) consisted of data analysis and integration of two specific study components: 1) previous testwork conducted by SGS Lakefield Research Limited, and 2) second phase testwork conducted on samples assayed from 2005 through 2007 and archived at Acme Labs in Vancouver, B.C. Table 3-1 provides an overview of the tests and number of samples in both programs.

Previous Work: Previous analyses were conducted by SGS Lakefield Research Limited and included acid-base accounting, net acid-generating (NAG) testing, and leachate extraction testing on 3 waste rock and 1 ore sample from TM zone surface exposures. Tailings obtained during locked cycle metallurgical testing ('LCT') were also evaluated by SGS, and results presented in Appendix B of the CMC Application. A tailings sample was later subjected to a 20 week humidity cell test.

Second Phase Testing: In order to better assess trends and variability of the rock proposed for excavation from the TM and S zones, 67 samples were selected from exploration diamond drill hole sample pulps archived at Acme Labs in Vancouver, B.C. All selected samples were analysed for 37 elements via ICP-MS, and a subset submitted for major element (whole rock) and acid base accounting testing. Along with this, available drill log and core photo data was used to assist in the interpretation of results. It is important to note that the majority of these samples represent the more altered rock occurring within 4 metres of the economic mineralization and based on geological

information are considered to be of higher sulphide content than distal waste rock zones of the proposed TM pit.

3.1.2 Study Results and Material Management Recommendations

3.1.2.1 Study Results

Overall, the waste rock tested shows enrichment by the metals of economic interest, dominantly zinc, lead, and silver. Enrichment appears to be most pronounced in zinc, with the majority of waste rock samples reporting over 1000 ppm. Zinc also showed marked solubility in leachate extraction tests conducted on three surface samples each containing over 2000 ppm zinc. Arsenic, though generally low, shows some sporadic values elevated in the several hundred ppm range. Lead in waste rock tends to be only slightly anomalous at 100 to 350 ppm, and along with arsenic demonstrated low solubility in the leachate extraction tests.

Sulphur tends to be low in the waste rock samples tested, with by far the majority of samples less than 0.50 percent and sporadic values in the 1 to 2 percent range. In the surface waste rock samples analysed, the majority of sulphur is present in the oxidized form of sulphate, while in subsurface samples (drill core), virtually all sulphur is present as sulphide.

Paste pH values of waste rock in the 27 drill core and 3 surface samples tested are all in the neutral to slightly alkaline range, indicating no readily soluble acidic products.

Calcium is low, typically less than 0.50 percent in most samples. Neutralizing potential tends to also be low in the waste rock sample set, with 75 percent of TM and S zone samples having NP's of less than 15 and 13 kg CaCO₃/t respectively.

Samples with either an NP of more than 20 kg CaCO₃/t or sulphur less than or equal to 0.15 percent demonstrate an NP:AP ratio of greater than 3.0. Below the 20 kg CaCO₃/t NP level, NP:AP is strongly dependent on sulphur content. A portion of the samples tested (the majority occurring within 4 metres of the mineralized zones), have NP:AP ratios less than 1.0, indicating possible acid generation.

Table 3-1 Geoenvironmental Characterization Testwork, TM and S Zones

(Note: values indicate the number of samples)

	Multi-Element via ICP-MS	Major Element (Whole Rock)	Modified ABA	Other Tests
Initial Phase (SGS), Total # Samples	5	-	5	
TM Zone				
Hangingwall Waste Rock	2	-	2	- Leachate Extraction (Shake Flask, SPLP), n=2 - Net Acid Generation (NAG), n=2
Ore	1	-	1	- Leachate Extraction (Shake Flask, SPLP), n=1 - Net Acid Generation (NAG), n=1
Footwall Waste Rock	1	-	1	- Leachate Extraction (Shake Flask, SPLP), n=1 - Net Acid Generation (NAG), n=1
Tailings from Locked Cycle Testing	1	-	1	- Leachate Extraction (Shake Flask, SPLP), n=1 - Humidity Cell, n=1 - Effluent Water Quality, n=1
Second Phase, 2008, Total # Samples	67	22	31	
TM Zone				
Hangingwall Waste Rock	22 (21 granodiorite, 1 andesite)	7	10	
Ore	8	3	3	
InterOre Waste Rock	6	3	3	
Footwall Waste Rock	14	3	5	
S Zone				
Hangingwall Waste Rock	6 (including 3 Upper hangingwall)	3 (including 1 Upper hangingwall)	4 (including 2 Upper hangingwall)	
Ore	1	-	1	
InterOre Waste Rock	2	1	2	
Footwall Waste Rock	8	2	3	

The characterization work indicates that the following rock geochemical factors should be considered in management of waste rock from the TM and S zones:

- Zinc content: waste rock samples tested for soluble products were in the 2000 to 2800 ppm zinc range. These samples produced moderately elevated concentrations of dissolved zinc; and
- Sulphur content: in the absence of above-average neutralization availability, results show that samples with more than 0.15 percent sulphur may have NP:AP values in the uncertain to potentially acid generating category.

While results also indicate that calcium content may assist in estimation of neutralization availability, more information would be required to adequately these thresholds.

When sample results are plotted on cross sections (see Figures 7 through 10 in Annex 1), they clearly illustrate the tendency for rock closer to the vein system to have higher zinc and sulphur and lower neutralization to acid potential (NP:AP) ratios. Conversely, samples with lower zinc and sulphur and higher NP:AP tend to occur distal to the ore zones.

3.1.2.2 Material Management Recommendations

As indicated in section 2.1.2, virtually all waste rock and overburden material extracted from the proposed TM and S zones will be handled in one of the following two ways:

- i) used for general construction purposes, or
- ii) placed in the TM waste rock pile.

Based on the test work conducted, recommended management measures for these materials are as follows:

General Construction Purposes

Approximately 5 percent of rock extracted from TM pit will be required for construction purposes. Results show that suitable rock (non-acid generating and non-metal leaching) is available within the proposed pit area. Zones proximal to vein structures are in general not appropriate for this purpose, but sampling indicates the presence of suitable rock further from vein structures in the upper hangingwall zones of the TM pit.

Based on the acid base accounting analyses, a criteria of sulphur content less than or equal to 0.15%S has been selected to ensure a conservatively high NP:AP and thus minimize the potential for generation of net acidity. An upper limit of 1000 ppm (0.1%) has been selected for zinc content to minimize potential for metal leaching effects. It is noted that confirmatory leachate extraction tests may demonstrate the acceptability of higher zinc contents in rock (eg. in the 1500 ppm range).

Given its silty colluvium characteristics, the overburden material is not expected to have issues with respect to acid generation or metal leaching.

TM Waste Rock Pile

Most waste rock extracted from the proposed mine operation will be placed in the TM waste rock pile. The majority of rock will originate from zones distal from the vein structures, and are expected to present low potential for acid generation and metal leaching. Waste rock from zones proximal to vein structures tends to contain an elevated zinc signature and overall low but variable sulphide mineral content. If placed under conditions where significant infiltration is allowed to occur, this 'near-vein' waste rock material may produce drainage with zinc concentrations in excess of Metal Mining Effluent Regulations, possibly accompanied by weak acidity.

Recommended control measures during operation, particularly in the 'near-vein' waste rock material, include minimizing infiltration such that no net drainage occurs, and if necessary, collecting drainage. The principal closure measures objective should be to minimize infiltration.

4.0 EXCAVATION PLAN

4.1 PROPOSED WORK

Section 4.0 of the CMC Application describes the proposed work program in detail. Rock and overburden excavation will occur over a three-year time period involving the following two activities:

- **Overburden Stripping:** During the first two years, unconsolidated material will be removed to allow waste rock and ore removal from the TM pit. As described in section 4.1.2 of the CMC Application, as the overburden is stripped to expose the rock interface, it will be used as road base material, tailings dam construction and mill site grade elevation material.
- **Waste Rock Removal, TM Pit:** Waste rock and ore will be excavated from the pit in 5 m lifts, and these activities are described in detail in sections 4.1.3 to 4.2.1 of the CMC Application. It is anticipated that dozer ripping with a minor amount of blasting to fracture the waste rock will be sufficient to facilitate removal. Ore-grade material will be extracted first from the given 5 m lift and followed by waste rock removal to complete the lift in accordance with the pit design. Every second 5 m lift will coincide with development of a highwall bench. The operation will utilize articulated haul trucks (estimated at 30 t capacity) to transport excavated rock. Ore will be hauled to the mill site area approximately 150 m east of the TM pit for stockpiling and later processing. The majority of waste rock will be placed in the TM waste pile, and a minor portion utilized for construction purposes as described in below in section 4.2 of this document.

4.2 WASTE ROCK MANAGEMENT CATEGORIES

Waste rock and overburden material are classified into two main management categories in accordance with their end destination:

1. **General Construction Purposes**
 - a. Rock (eg. suitable for for tailings impoundment structural fill);
 - b. Overburden (eg. for tailings impoundment, mill platform, road base fill, and other miscellaneous civil works)
2. **TM Waste Rock Pile:** consisting of variably altered granodiorite with minor amounts of andesite dyke material.

4.3 ESTIMATED ROCK QUANTITIES

Table 4-1 tabulates expected quantities of rock to be removed from workings during the proposed TM and S zone development.

Table 4 -1 TM and S Zone – Extracted Rock and Overburden

	Rock Units	Volume Extracted (BCM¹)	Volume to Waste Rock Pile (BCM)	Volume for Construction Material (BCM)
Rock	Granodiorite	145,483	138,834	6,649 ²
	Andesite Dyke	6,564	6,564	0
	<i>Total Rock</i>	<i>152,047</i>	<i>145,398</i>	<i>6,649</i>
Overburden	Overburden	44,100	0	44,100 ³

¹ For waste rock, 1 BCM = 2.6 t

² Tailings dam construction: coarse rock centre core and downstream and upstream faces, as described in section 4.3.4 of the CMC Application.

³ As per Table 1 of the CMC Application, estimated allocations are 800 BCM to Road Base Fill, 6600 BCM to Mill Site Grade Fill, 30700 BCM to Tailings Dam Fill, 5800 BCM to Tailings Pond Liner Fill, 200 BCM to Fuel Container Berm

It is also noted that an estimated 5634 t (2167 BCM) of waste rock will be generated from underground development; this material is planned to be stored within the old underground workings.

4.4 MANAGEMENT DURING OPERATIONS

4.5 TM WASTE ROCK PILE

The TM waste rock pile is located approximately 200 m to the west of the proposed TM pit in a previously disturbed area, where there is a small pile of rock excavated from underground exploration workings completed in the mid 1980's. Section 4.2.1 of the CMC Application describes the waste rock pile design concept and design criteria.

4.5.1 Preparation

The waste rock site is located in an area with shallow unconsolidated overburden cover in the order of a few metres thickness. Prior to placement of waste rock, the intent of

CMC is to doze this overburden material to either side of the final waste rock pile footprint, and upon closure, to utilize this material for decommissioning of the pile.

As stated in section 4.2.1 of the CMC Application, CMC intends to construct a run-on, run-off drainage ditch to perimeter the waste rock site to collect drainage. A pond will be constructed in the southeast corner of the TM waste rock pile to allow any developed siltation to settle out.

4.5.2 Waste Rock Placement

Articulated haul trucks (estimated 30 t capacity) will be used to transport waste rock from the TM pit. Figure 6 of the CMC Application illustrates the profile of the TM waste rock pile. Rock will be end-dumped starting from the uphill area nearest the TM pit. Keeping the top running surface of the pile essentially horizontal, the pile will gradually advance down hill, and in its final stages toe out against the existing pile of waste rock, reaching a maximum height of 25 m above original ground.

4.5.3 Closure

Decommissioning of the TM waste rock pile will be consistent with the closure objectives and Best Management Practices described in section 7.2.5 of the CMC Application. Those relevant to the decommissioning of the TM waste rock pile include:

- An overall objective to re-contour major cuts and side slopes, prevent long-term erosion/slumping and promote successful revegetation of disturbed areas;
- Re-contouring/re-sloping of disturbed areas to a 2.5:1 slope should be achievable in most locations, with contouring aimed at matching natural topography;
- Long slopes (>15 m high) will be benched and slopes will be roughened mechanically across contour to discourage rill-and-gully type erosion and to provide growing sites for revegetation;
- Where possible, topsoil from disturbed areas will be stockpiled for use in preparing reclaimed areas for re-establishment of vegetation;
- Where native vegetation is not expected to re-establish naturally, an appropriate native seed mixture and fertilizing regime will be selected and applied;
- Periodic monitoring of the run-off and erosion control measures will be conducted, and if failing in sensitive areas, sediment control measures (silt

- fences, check dams, straw dikes) may be employed and monitored to prevent sediment transport into streams;
- Sediment control measures will be instituted in areas of high run-off/sediment transport potential to avoid downstream sedimentation (this may include sump/silt trap construction or use of slash windrows and natural vegetation buffers); and
 - Systematic approach to decommissioning (progressive reclamation)

Following re-contouring of slopes, the overburden material stripped from the waste rock pile footprint (described above in section 4.5.1) will be available to be pulled back over the side slopes and top of the pile, in order to minimize infiltration and encourage natural revegetation.

4.6 ROCK FOR GENERAL CONSTRUCTION PURPOSES

Approximately 5 percent of rock (6649 BCM or 17,287 t) extracted from TM pit will be required for general construction purposes, principally for construction of the coarse rock centre core and outer faces of the tailings dam.

4.6.1 Selection Criteria

4.6.1.1 Waste Rock

As described in section 3.1.2.2, in order to ensure non-acid generating and non-metal-leaching properties, rock destined for general construction purposes will meet both of the following criteria:

1. sulphur content, as defined by ICP-MS or other appropriate method to be less than or equal to 0.15%; and
2. zinc content, as defined by ICP-MS or other appropriate method to be less than or equal to 1000 ppm.

4.6.1.2 Overburden

Given its silty colluvium characteristics, the overburden material is not expected to have issues with respect to acid generation or metal leaching. No geochemical selection criteria are considered necessary.

4.6.2 Process to Extract and Identify Rock for General Construction

Zones of weakly altered to fresh granodiorite in areas distal from zones of mineralization are expected to contain rock that meet the geochemical criteria specified above in section 4.6.1.1. Because there is currently no tested process for field screening of general construction waste rock, confirmatory geochemical testing must be conducted prior to using this rock. This testing may be conducted in one of two ways: i) prior to excavation using representative drill samples from the sector proposed for excavation, or ii) from interim stockpiles once the waste rock excavated. This second option will require temporary stockpiling of the rock pending receipt of the confirmatory test results. The planned procedure for this second option is outlined in the following paragraphs.

The site geologist will first identify sectors of the TM pit potentially suitable for general construction rock. Favourable factors include a low degree of hydrothermal alteration, very little to no visible sulphide minerals, and a long distance to mineralized zones. During excavation of the sector, any rock encountered appearing unsuitable for general construction purposes will be sent to the TM waste rock pile.

Potential rock for general construction purposes will be temporarily stockpiled in a designated area. Whenever possible, truckloads of rock will be tightly dumped in a single lift so that individual loads may be later segregated if necessary. Screening sampling of at least one sample per 200 t rock will be conducted, and will be randomly distributed over the stockpile area. Sample locations will be marked in the field and noted in the sampling documentation.

The site geologist will review the analysis results, and if there are any samples not meeting the geochemical criteria specified in section 4.6.1, the geologist will check these samples sites. Any observations of the distinct alteration, mineralogical, or lithological tendencies of these above-criteria samples will be noted in order to assist in future screening efforts.

Using the test results and noted visual observations, the site geologist will demark any sectors of the stockpile deemed unsuitable for general construction use. These sectors will be sent to the TM waste rock pile. The remaining rock may be used for construction purposes.

5.0 MONITORING AND REPORTING

5.1 MONITORING

Monitoring in both the excavated areas and the rock storage areas forms an integral and vital adaptive management component of any waste rock management program. Monitoring determines the effectiveness of the management measures, provides valuable feedback for optimization of the management process, and assists in development of waste rock management strategies of future developments.

Moreover, the monitoring program planned for the TM and S zones is intended to fulfill the following specific objectives:

- characterize the rock encountered during excavation (through open pit and underground mapping);
- confirm the geochemical character of the TM waste rock pile (through multi-element and acid-base accounting analysis); and
- establish ongoing surveillance for weathering of rock (through inspections and drainage monitoring).

5.1.1 Excavated Areas

5.1.1.1 Mapping

Geological mapping will be conducted on all pit walls, adits and crosscuts to document lithological units, major structural features, and sulphidic zones.

5.1.1.2 Ongoing Surveillance

Open pit and underground excavations will be monitored and inspected monthly from May through October for:

- evidence of sulphide oxidation (rust staining, sulphur odour, snowmelt patches)
- occurrence of drainage or seeps in walls. If drainage is noted, flow volume will be estimated and basic field parameters of pH and conductivity recorded. More detailed monitoring will be initiated as required and based on specific results if field monitoring results indicate: i) pH significantly declining between measurements or dropping below 7.0, and/or ii) conductivity showing a significant increasing trend or conductivity above 2000 $\mu\text{S}/\text{cm}$.

5.1.2 Rock Storage Areas

5.1.2.1 Geochemical Characterization

The TM waste rock pile will be geochemically characterized to derive an overall composition of the material stored.

Both multi-element ICP analyses (including sulphur and zinc) and acid base accounting analyses will be conducted, typically through surface sampling, test pits and/or drilling of the stored material. Sampling density will be in the order of one ICP sample per 4000 tonnes, and one confirmatory acid base accounting test per 20,000 tonnes placed in the TM waste rock pile.

5.1.2.2 Ongoing Surveillance

Waste rock storage areas will be monitored and inspected monthly from May through October for:

- stability (such as settling and excessive erosion)
- evidence of sulphide oxidation (such as snow melt areas, presence of oxidation products)
- occurrence of drainage or seeps from rock storage areas. If drainage is noted, flow volume will be estimated and basic field parameters of pH and conductivity recorded. More detailed monitoring will be initiated as required and based on specific results if field monitoring results indicate: i) pH significantly declining between measurements or dropping below 7.0, and/or ii) conductivity showing a significant increasing trend or conductivity above 2000 $\mu\text{S}/\text{cm}$.

5.2 REPORTING

Documentation of waste rock management activities including operational field screening and ongoing monitoring will be compiled and included in the annual mining land use report.

6.0 REFERENCES

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ANNEX 1

SILVER HART PROPERTY SILVER HART PROPERTY: REVIEW OF GEOENVIRONMENTAL ANALYSES, TM AND S ZONES

To: Don Wedman, CMC Metals Ltd.
Paul Inglis, Rob McIntyre, Dave Petkovich, Access Consulting Group

From: Diane Lister

Date: May 28, 2008

RE: **Silver Hart Property: Review of Geoenvironmental Analyses, TM and S Zones**

1.0 Introduction

This report summarizes results of geoenvironmental rock characterization focussed on the TM and S zones at the CMC Metals Ltd. Silver Hart Property in south-central Yukon.

1.1 Project Overview

CMC Metals Ltd. (CMC) proposes a small scale operation of 80 tonnes per day ore processing over 3 years from the TM and S zones. The mine plan calls for a seasonal open pit and underground operation, and year-round processing using conventional comminution and flotation to produce an Ag-Zn-Pb-Cu concentrate product. The TM and S zones are located within 200 metres of each other on a moderate to gently sloping hillside at approximately 1430 masl, in an alpine environment and approximately at treeline level. The proposed TM pit will have dimensions of 192 by 57 m with a maximum depth of 50 m. Once the TM pit is complete in year 2, underground mining of deeper zones of TM and of the S zones will commence, to continue until the end of year 3.

As indicated in the “Silver Hart Property 2007 Mine Production Application and Project Description” (the ‘CMC Application’), an estimated total of 152,047 bank cubic metres (BCM) or 395,322 t of waste rock is planned to be extracted from the proposed TM pit. Of this, an estimated at 145,398 (BCM) or 378,035 t of TM zone waste rock is planned for placement in a pile situated approximately 200 metres to the west of the proposed pit in a previously disturbed area, where there is a small pile of rock excavated from underground exploration workings completed in the mid 1980’s. Additionally, approximately 6,649 BCM (17,287 t) of waste rock is required for construction of the tailings impoundment. Lastly, it is expected that 5634 t (2167 BCM) of waste rock will be generated from underground development; this material is planned to be stored within the old underground workings.

The proposed TM pit area is partially covered with silty colluvium material, and during year 1 an estimated 44,100 bank cubic metres (BCM) of this material will be removed and primarily used for tailings and process facility construction and road base fill, with the concept that upon closure some of this material may be reclaimed to provide unconsolidated material to assist in the recontouring of the site and allow for natural propagation of shrubs on the exposed rock benches, waste dump and tailings pond capping. In addition, the the waste rock pile itself is located in an area with shallow unconsolidated overburden cover in the order of a few metres thickness. Prior to placement of waste rock, the intent of CMC is to doze this overburden material to either side of the final waste rock pile footprint, and upon closure, to utilize this material for decommissioning of the pile.

1.2 Geology and Major Rock Types

Geology of the Silver Hart property and of the TM and S zones is described in section 2.2 of the CMC Application. The proposed pit and underground developments lie within a granodioritic zone of the Cretaceous Cassiar Batholith, within a few hundred metres of local contact with metasediments of the Lower Cambrian Atan Group (locally occurring as schists with lesser quartzite, dolomite and minor skarn). Potentially economic mineralization is a vein-hosted Ag-Zn-Pb±Cu system, consists of narrow steeply dipping structures with sulphide minerals consisting of sphalerite, galena, chalcopyrite, sulphosalt minerals, and pyrite. Potential waste rock will be predominantly comprised of granodiorite, and in the TM zone also a minor quantity of dyke material of andesitic composition. Both units show variable alteration and a high degree of fracturing, considered to be related to local faulting and mineralizing events. The contact with the metasediment unit is located to the immediate southwest of the TM pit, and thus this unit is not expected to be intercepted during development of the pit.

In general, wall rock alteration is reported to be epithermal in style, with varying degrees of silicification and 'claying' or argillic alteration proximal to the veins, sericite as the next outer shell, and weak to intense propylitic alteration as the outer-most alteration halo. Oxidation is variable. Based on drill logs, pyrite and at times pyrrhotite have been noted in non-mineralized sections of drill core, in disseminated form from trace amounts up to 1%, and locally increasing to 2 to 3% as discontinuous pyrite-filled fractures and pyrite selvages on quartz veinlets.

Photographs of core from three selected TM and S zone drill holes are given in Appendix V, along with the respective results of trace element and acid base accounting testing conducted as part of this study. As can be seen, rock tends to be highly fractured throughout the hangingwall, vein, and footwall zones. The increasing intensity of alteration towards the mineralized zone is particularly notable in the two TM holes (05-14 and 07-03).

1.3 Purpose of Evaluation

The purpose of this evaluation is to, based on available information:

- i) establish general characteristics of the TM and S zone rock with respect to potential for generation of net acidity and/or metal leaching ("AML"), characteristics that will provide a basis for the development of a waste rock management plan for the proposed 3-year exploitation of the TM and S zones; and to
- ii) define any further information needs for ongoing refinement of the waste rock management plan.

Of consideration in both this evaluation and in the preliminary waste rock management plan are the following three end destinations for virtually all of the excavated material from the proposed mine operation:

1. General Construction Purposes
 - a. Rock (eg. suitable for for tailings impoundment structural fill);
 - b. Overburden (eg. for tailings impoundment, mill platform, road base fill, and other miscellaneous civil works)
2. TM Waste Rock Pile
3. Ore Stockpile (interim storage, for ore-grade material only)

1.4 Study Approach

This review is based on results of: 1) previous testwork conducted by SGS Lakefield Research Limited, and 2) second phase testwork conducted on samples assayed from 2005 through 2007 and archived at Acme Analytical Laboratories Ltd. in Vancouver, B.C. Table 1 provides an overview of the tests and number of

samples in both programs. Section 5.2 of this report presents recommendations for 2008 confirmatory sampling, once seasonal access to the site is re-established.

Previous Work: Previous analyses were conducted by SGS Lakefield Research Limited and included acid-base accounting, net acid-generating (NAG) testing, and leachate extraction testing on 3 waste rock and 1 ore sample reported by CMC to be from TM zone surface exposures. Tailings obtained during locked cycle metallurgical testing ('LCT') were also evaluated by SGS, and results presented in Appendix B of the CMC Application. The tailings were later subjected to a 20 week humidity cell test.

Second Phase Testing: In order to better assess trends and variability of the rock proposed for excavation from the TM and S zones, 67 samples were selected from exploration diamond drill hole sample pulps archived at Acme Analytical Laboratories Ltd. in Vancouver, B.C. All selected samples were analysed for 37 elements via ICP-MS, and a subset submitted for major element (whole rock) and acid base accounting testing. Along with this, available drill log and core photo data was used to assist in the interpretation of results. It is important to note that the majority of these samples represent the more altered rock occurring within 4 metres of the economic mineralization, and based on geological information is considered to be of higher sulphide content than the distal rock zones also to be mined in the proposed TM pit. As stated in section 5.2, additional confirmatory sampling of these distal waste rock zones is recommended once seasonal access is re-established in mid-2008.

2.0 Methodology

CMC provided their 2005 to 2007 combined assay-rock type database (n=190 potential waste rock and ore-grade samples from TM zone and 72 potential waste rock and ore-grade samples from S zone), for which archived sample pulps were available for additional analysis. The assay analysis suite included 24 elements, primarily analysed to assay-grade levels (eg. % not ppm for all but Au and Ag). Parameters included key heavy metals such as Zn, Pb, Ag, Au, and As, and accessory elements such as Mn, Fe, Ca, K, and Al. Appendix I lists the assay results and summary statistics for the 119 waste rock-grade samples from the two zones. Due to seasonal constraints, during the time of the study (January to April 2008), no access to the site was possible for obtaining additional samples. Altura Environmental Consulting has been informed by CMC that additional drill core of deeper TM zone holes (completed in 1985) is also stored at site. Other potential sources of additional waste rock data at site include a small waste rock pile from 1986 underground exploration development, and surface exploration exposures.

CMC also provided: geological cross sections, geological plan view maps, drill core photos for the majority of drill holes, site photographs, geotechnical logging data for 2005 holes, and geological drill logs for a selection of 2005 and 2007 drill holes.

Results of work by SGS Lakefield Research Limited were provided by both CMC and directly by SGS.

2.1 Second Phase Testing

2.1.1 Sample Selection

Samples for the second phase of testing were selected from diamond drill core samples considering spatial distribution along over both the TM and S zones, ensuring representation of hangingwall, footwall, inter-ore, and ore material, ensuring representation of the major rock types.

The assay-rock type database provided by CMC included a geological rock type for each sample (Granodiorite, Andesite, or Vein). Prior to sample selection, all samples in the TM and S zone assay databases were additionally assigned a Rock Management and Mine Zone category, as described in Tables 2 and 3. The Rock Management category is intended to classify rock in accordance with how it is to be managed and stored once excavated, with qualifiers of geological unit given to waste rock, and qualifiers of potentially low and high grade given to ore material. The Mine Zone category provides spatial reference to a given sample as to whether it is from above, below, or within the vein zone. These additional classifications not only serve to ensure representative sample selection, but allow for more discriminatory data analysis of results.

Table 1. Geoenvironmental Characterization Testwork, TM and S Zones (Note: values indicate the number of samples)

	Multi- Element via ICP-MS	Major Element (Whole Rock)	Modified ABA	Other Tests
Initial Phase (SGS), Total # Samples	5	-	5	
TM Zone				
Hangingwall Waste Rock	2	-	2	- Leachate Extraction (Shake Flask, SPLP), n=2 - Net Acid Generation (NAG), n=2
Ore	1	-	1	- Leachate Extraction (Shake Flask, SPLP), n=1 - Net Acid Generation (NAG), n=1
Footwall Waste Rock	1	-	1	- Leachate Extraction (Shake Flask, SPLP), n=1 - Net Acid Generation (NAG), n=1
Tailings from Locked Cycle Testing	1	-	1	- Leachate Extraction (Shake Flask, SPLP), n=1 - Humidity Cell, n=1 - Effluent Water Quality, n=1
Second Phase, 2008, Total # Samples	67	22	31	
TM Zone	50	16	21	
Hangingwall Waste Rock	22 (21 granodiorite, 1 andesite)	7	10	
Ore	8	3	3	
InterOre Waste Rock	6	3	3	
Footwall Waste Rock	14	3	5	
S Zone	17	6	10	
Hangingwall Waste Rock	6 (including 3 Upper hangingwall)	3 (including 1 Upper hangingwall)	4 (including 2 Upper hangingwall)	
Ore	1	-	1	
InterOre Waste Rock	2	1	2	
Footwall Waste Rock	8	2	3	

As noted in section 1.4, most of the samples available for this second phase of testing represent the more altered rock occurring within 4 metres of the economic mineralization.

Table 2. Rock Management Categories Assigned to TM and S Zone Assay Database Samples

Rock Management Category	Description
Waste Granodiorite	Granodiorite, non-economic mineralization
Waste Andesite	Andesite, non-economic mineralization
Ore LG	Mineralization – Potential Low Grade Ore (nominally assigned 1.0 to 5.0 Oz/T Ag [approx. 31 to 156 g/t])
Ore HG	Mineralization – Potential High Grade Ore (nominally >5.0 Oz/T Ag [>156 g/t])

Table 2. Mine Zone Categories Assigned to TM and S Zone Assay Database Samples

Mine Zone Category	Description
HW	Hangingwall. Predominantly granodiorite, variably altered. Potential Waste Rock.
UHW	Upper Hangingwall, S Zone. Category of granodiorite assigned only to S zone hangingwall samples more than 6 m away from mineralization, that in most cases would not be disturbed during underground mining.
Ore	Economic Mineralization – proposed for processing.
InterOre	Granodiorite (and minor andesite) occurring in variable thicknesses between veins. It is noted that some of this material is in the order of 1 to 2% Zn, thus depending on vein geometry, project economics, and metal prices, the operation may in some cases elect to excavate and process this material along with the adjacent higher-grade rock.
FW	Footwall, immediately below the vein zone.
ExPit	Rock well outside of proposed TM pit limits (Assigned only for TM zone samples. Note that since they lie outside of proposed pit limits, these samples were eliminated from both selection for further testing and for any statistical analysis).

Other observations with respect to sample selection include:

- Only one sample of andesite (estimated to represent less than 5 percent of the TM zone waste rock) was available in the assay database.
- Typically the first available sample in any of the drill hole was included in the selection for further analyses (first samples were in most cases 5 metres or more down the hole). The last sample selected in a given drill hole was generally within a 2.5 m distance beyond the lowest mineralized vein within the zone proposed for mining.

- While still attempting to be representative over the various mine zone sectors, samples selected for acid base accounting were slightly biased in order to get more detailed information on the rock likely to fall in the 'uncertain' category for potential acid generation. This was carried out by ensuring good representation of samples with elevated zinc assay results (eg. 0.2% or higher), which in the absence of more definitive information, were hypothesized to have a higher likelihood of elevated sulphide minerals.
- Samples for major element analyses were selected from the acid base accounting sample subset. Objectives were to: i) include at least three samples for the hangingwall, footwall, and 'inter ore' sector of both the TM and S zones, and ii) select samples that sufficiently demonstrated the range of manganese, calcium, and iron in these zones.

2.1.2 Analytical Methods

As mentioned above, second phase testwork included analyses for: i) trace multi-elements via ICP-MS, ii) major element (whole rock) analyses, and iii) acid-base accounting via modified method. Work was performed by Acme Analytical Labs and CEM Inc. in Vancouver, B.C. Further details of analysis methods are given in Appendix VI-A.

2.1.3 Data Analysis

Analysis data for the 67 samples selected was provided in digital format by the laboratory. Data were merged with the assay and rock type database and for statistical analysis purposes, results beyond minimum or maximum limits of detection were assigned a value equal to the respective detection limit. Analysis was carried out using ExcelTM and XLStatTM software. Primary tools for data analysis included: i) descriptive statistics, ii) box and whiskers plots to graphically demonstrate data tendencies and allow visual comparison by a given category, and iii) correlation coefficient and scatterplots to determine key inter-relationships between parameters.

3.0 *TM and S Zone Rock Characterization*

This section discusses characteristics of the TM and S zone rock derived from major and trace element analyses, acid base accounting, and other related testing. While the discussion mainly focuses on results from second phase testing, where applicable results of the earlier testing conducted by SGS Lakefield Research Limited are incorporated into the discussion.

3.1 *Trace Elemental Characterization*

Trace element characteristics of the 67 selected TM and S zone waste rock and ore-grade samples shown in Table 1 were determined through analysis via 37-element ICP-MS (including sulphur) with aqua regia digestion.

3.1.1 *Results*

Key statistical measures of the geochemistry for the TM and S zones were evaluated using results of the second phase testing, are tabulated in detail in Appendix II, in accordance with: 1) geological unit, and 2) mine zone.

Analysis of the results delineated certain elements of interest in the TM and S zone waste rock, and highlights are presented in the following text. Appendix III shows box plots of these 12 selected elements in waste rock and ore units. A correlation matrix, generated for TM zone samples (larger number of samples than the S zone), is given in Appendix IV.

Silver (Ag)

As expected, there is distinct silver enrichment in the 'Vein' geological unit proposed to be mined as ore, with the granodiorite waste rock host also showing anomalous levels with a median value just under 10,000 ppb. Despite its proximity to the ore zone, the single andesite sample contained very low levels of silver, and therefore may be a post-mineralization feature. In the TM zone, silver has a Pearson linear correlation coefficient of greater than 0.800 with Cu, S, and Sb.

The S zone granodiorite samples tested tends to have notably less silver than TM zone (median of 3090 ppb versus 9346 ppb for TM zone).

Aluminum (Al)

Sample groups tend to show relatively low aluminum levels (medians less than 0.50%), with the singular exception being the andesite sample at 4.45% Al.

Arsenic (As)

Anomalous arsenic values are present in the ore material (up to 3779 ppm in TM zone). With a median of 36 ppm, the TM zone granodiorite has overall low arsenic, but with outliers in the 900 ppm range. The S zone granodiorite is lower still with a 5 ppm median.

In the TM zone, arsenic has a Pearson linear correlation coefficient of greater than 0.800 with Cd and Cu.

Calcium (Ca)

Calcium content is relatively low across most units, tending to be less than 0.50% (with the exception of the andesite sample at 1.69%). The footwall zone shows slightly elevated calcium relative to hangingwall sectors. The S zone is also slightly calcium-enriched with respect to the TM zone (median of 0.53% versus 0.25%).

Cadmium (Cd)

Cadmium tends to occur in the less than 10 ppm range for the majority of waste rock samples. The few TM zone samples in the 25 to 50 ppm range also contained elevated concentrations of Zn (6400 to >10000 ppm). The S zone waste rock samples have similar cadmium concentrations to the TM zone, but with all samples below 10 ppm. The 'InterOre' waste rock zone appears slightly enriched in cadmium relative to hangingwall and footwall zones.

In the TM zone, cadmium has a Pearson linear correlation coefficient of greater than 0.800 with Cu, Hg, Pb, S and Sb; in particular in the granodiorite, cadmium and sulphur show a moderately good correlation ($r^2=0.850$)

Copper (Cu)

Copper tends to occur in the less than 100 ppm range for most waste rock samples, with the footwall zone showing the lowest range (3 to 48 ppm).

In the TM zone, copper has a Pearson linear correlation coefficient of greater than 0.800 with Ag, Hg, Pb, S and Sb.

Iron (Fe)

Most samples show low iron content (well below 5%), with vein units slightly elevated with respect to granodiorite, likely due to the presence of various iron-silver-zinc-lead sulphide minerals.

The single andesite sample showed the maximum iron content in the dataset with a value of 5.9%.

In the 44 granodiorite samples analysed from the TM zone, iron correlates very closely with manganese ($r^2=0.943$).

Mercury (Hg)

In the hangingwall and footwall waste rock, mercury concentrations tend to be low at less than 10 ppb. 'InterOre' waste rock samples range slightly higher up to 28 ppb. Ore is slightly enriched in mercury with a median of 49 ppb, and a maximum of 545 ppb.

In the 50-sample TM zone database, mercury has a Pearson linear correlation coefficient of greater than 0.800 with Cd, Pb, S and Sb.

Manganese (Mn)

It is noted in geological information for the Silver Hart property that the occurrence of a manganese 'wad' or aureole has been used as a prospecting tool for locating the vein zones (Read and McCrea, 2005). This is also seen in the analysed sample set; relative to an average crustal abundance of about 1000 ppm¹, manganese in the TM and S zone samples tend to be slightly to be highly elevated proximal to the mineralized zones. The manganese aureole appears to be of larger magnitude in the TM zone (5 metre range), while manganese values in the S zone tend to drop off within a metre of two of mineralized sections.

As noted previously, in the 44 granodiorite samples analysed from the TM zone, manganese correlates very closely with iron ($r^2=0.943$).

Lead (Pb)

Lead demonstrates a marked elevation in ore-grade material (median of 481 ppm in the TM zone), and in the samples tested, lead also tends to still be slightly anomalous in waste rock, with many samples reporting concentrations in the 100 to 350 ppm range.

In the TM zone, lead has a Pearson correlation coefficient of greater than 0.800 with Cd, Cu, Hg, and S.

Sulphur (S)

In the TM zone, the granodiorite, in particular the hangingwall zone, records both the highest (0.96%) and the lowest (0.02%) waste rock sulphur concentrations. Median value is overall low at 0.17%. Values for the sixteen S-zone granodiorite samples tend to be lower still with a median of 0.09%, but with a wider range (0.02 to 1.88%). The single TM zone andesite sample returned 0.10% S.

¹ Jefferson Lab website, <http://education.jlab.org/itselemental/index.html>

As seen in the box plots in Appendix III, of the mine zone waste rock categories, the 'InterOre' waste rock showed the most elevated sulphur with a median of 0.29% in the TM zone and 0.18% in the S zone.

Ore-grade material shows a very broad range of sulphur, and overall elevated with respect to waste rock (median of 1.48% in the TM zone, while the single ore sample from the S zone returned 9.57%)

In the TM zone, sulphur has a Pearson linear correlation coefficient of greater than 0.800 with Cd, Hg, Pb, and Sb.

Antimony (Sb)

Antimony tends to be low in the waste rock samples tested (less than 10 ppm), while in the ore values range up to 2000 ppm.

In the TM zone, antimony has a Pearson linear correlation coefficient of greater than 0.800 with Cd, Hg, and S.

Zinc (Zn)

Zinc shows anomalous levels across all sample categories, with the majority of samples reporting over 1000 ppm. Higher concentrations in waste rock tend to occur when closer to mineralized structures. Similar to sulphur, of the mine zone waste rock categories, the 'InterOre' samples show the tendency for elevated zinc (median of 5972 ppm in the TM zone and 3841 ppm in the S zone). The hangingwall zone demonstrates lower overall zinc with a median in the TM zone of 1642 ppm and 1958 ppm in the S zone).

Also of note is that the single andesite sample returned a very anomalous zinc concentration of 9796 ppm. This is somewhat inconsistent with the concentrations of other heavy metals and sulphur for this sample, and possibly indicates a tendency for re-mobilization of zinc after the major mineralizing event.

3.1.2 Discussion of Results

As would be expected with rock immediately adjacent to an epithermal vein system, the TM and S zone waste rock show some enrichment by the metals of economic interest, dominantly zinc, lead, and silver. Enrichment appears to be most pronounced in zinc, with the majority of waste rock samples reporting over 1000 ppm. Arsenic, though generally low, shows some sporadic values elevated in the several hundred ppm range. Copper, mercury, and antimony occur at low levels. A manganese aureole centred over the vein zones and in the order of at least 2000 ppm is seen in the waste rock, particularly in the TM zone.

Sulphur tends to be low in the waste rock samples tested, with by far the majority of samples less than 0.50%. Calcium is also low, typically less than 0.50% in most samples.

Ore zones are distinctly elevated with respect to sulphur and most heavy metals.

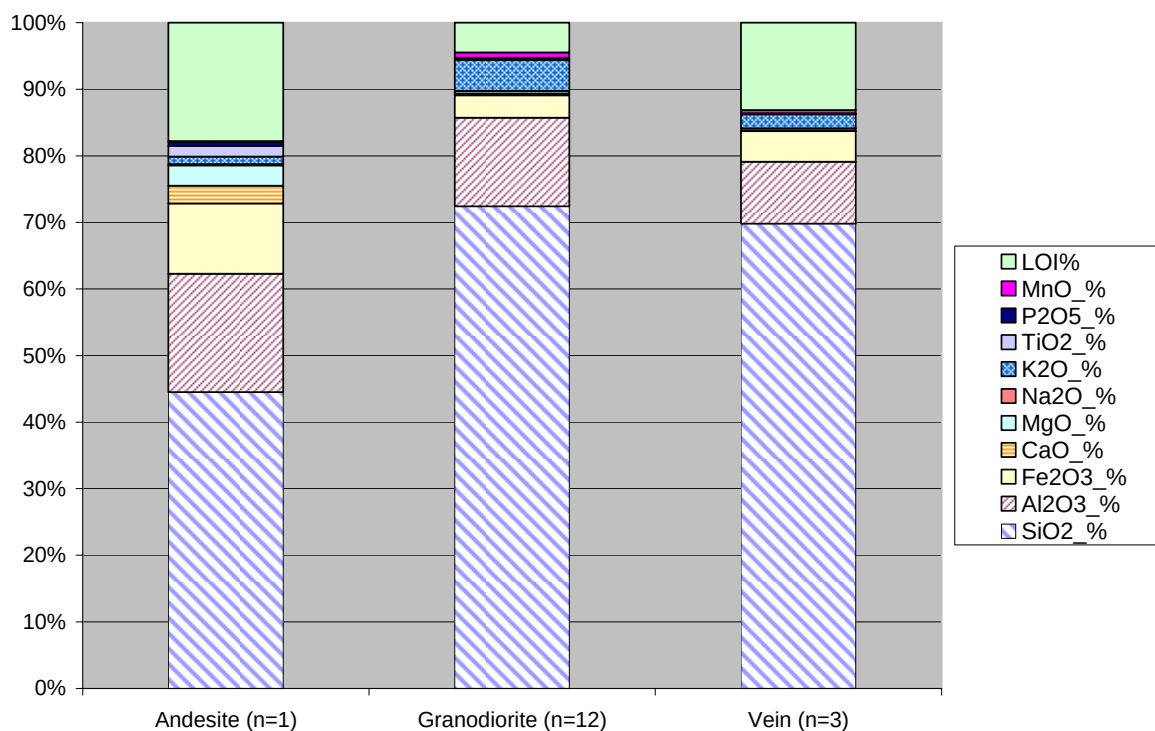
3.2 Major Element Composition

As indicated in Table 1, a total of 22 major element analyses were conducted on TM and S zone samples. Results, including key statistical measures, are tabulated in detail in Appendix II. TM zone sample statistics are further broken down in accordance with: 1) geological unit, and 2) mine zone categories of hangingwall, ore, inter-ore, and footwall. Note that due to the smaller sample size (n=6), only overall statistics were calculated for the S zone. Appendix III shows box plots of the major element parameters in waste rock and ore units.

As shown in Figure 1, all samples were predominantly comprised of silica (SiO₂), followed by aluminum and iron oxides. Of the eight major constituents in the figure, potassium oxides comprise about 5 percent of the granodiorite, but occur in much lower concentrations in the vein and andesite units. The andesite sample shows a small amount of calcium oxide (2.6%), while very minimal amounts of this constituent are typically present in the vein and granodiorite units. Small amounts of manganese oxide are noted in the granodiorite and vein, but only trace amounts (0.12%) occurs in the andesite sample.

Loss on ignition (LOI) accounted for a median of 4.4% in granodiorite, 17.4% in andesite, and 9.3% in ore-grade material.

Figure 1. Median Composition of Geological Units, TM Zone (normalized to 100 percent)



3.3 Acid Base Accounting

A total of 31 TM and S zone waste rock and mineralized samples were analysed for modified acid base accounting (ABA) parameters. ABA analyses are typically used for a screening tool intended to provide a quantitative determination of the balance between acid-producing (sulphide) and acid consuming minerals of a rock or soil sample. Analyses conducted by SGS Lakefield and for the second phase study used the same methodology, as presented in Appendix VI.

Overall results of the acid base accounting analyses are discussed in this section, and where applicable, compared with industry-accepted threshold criteria. In order to assist with development of a waste rock management plan, an equally important aspect discussed are the correlating and/or controlling relationships between the acid base accounting characteristics and the geological, spatial, and geochemical characteristics of the material to be mined.

3.3.1 Results

Table 4 summarizes overall characteristics of the waste rock samples (hangingwall, footwall, and interore combined) from the TM and S zones. Complete acid base accounting results and statistics are tabulated in Appendix II. Graphical representations of the database with respect to lithology, zone, mineralized and non-mineralized samples are given in Appendix III.

Figures V-1 through V-3 (Appendix V) also show drill core photos of three selected TM and S zone drillholes with associated ICP and ABA results.

Paste pH

The 18 TM zone waste rock samples tested range in paste pH from 7.05 to 8.93 with a median of 7.71, while the S zone 10-sample set range slightly lower from 6.46 to 8.41, with a median of 7.46, indicating that for both sets, readily soluble products in both zones show a tendency for the neutral to slightly alkaline range.

As can be seen in the box plots in Appendix III-I to III-K, vein or ore-grade samples tend to have lower paste pH than their waste rock counterparts, with a minimum paste pH of 6.65 from the TM zone and 5.80 from the S zone.

Fizz Rating

The ‘fizz rating’, a ranking from ‘None’ to ‘Strong’ of effervescence to 25% HCl, is assessed by the laboratory in order to determine the strength of acid to utilize for the neutralization potential titration. Fizz rating of the TM and S zone samples range from ‘None’ to ‘Slight’, with most samples recording ‘Slight’ effervescence, indicative of low amounts of reactive carbonate minerals such as calcite (CaCO_3).

Sulphur Species

Total sulphur content (via Leco method) of waste rock samples ranges from 0.02% to 1.04% in the TM zone and 0.04% to 1.84% in the S zone, with median values of 0.23% and 0.14% respectively. As expected, the ore-grade samples tend to be significantly higher, ranging from 0.08 to 16.30%.

With a singular exception of a sample of S zone ore-grade material with 0.57%, sulphate from the second phase testing (conducted on drill core) tends to be near or below the 0.01% detection limit for most waste rock and ore-grade samples. In contrast, the ore and three waste rock samples taken from surface during the earlier evaluation by SGS Lakefield showed at least 50 percent of the sulphur present as sulphate.

The ore zone sample with elevated sulphate of 0.57% also returned the lowest paste pH result in the dataset of 5.80, likely indicating that sulphide oxidation was contributing to the weakly acidic result.

Of interest for future analyses is the excellent correlation between total sulphur via Leco and sulphur via ICP-MS, particularly at sulphur levels below 2% (eg. suitable for typical waste rock), see Figures 2a and 2b. This indicates that sulphur values obtained as part of a multi-element Aqua Regia/ICP-MS scan may be considered a reasonable estimate of total sulphur in a waste rock sample. Above 2 percent, it can be seen that there is a tendency for the ICP method to under-estimate total sulphur.

In order to assess ratios of sulphide to neutralizing potential, in acid base accounting analyses the sulphide value (calculated as the difference between total sulphur and sulphate) is multiplied by a factor of 31.25 for stoichiometric conversion to units of kg CaCO_3 /t. This value is typically termed “acid potential”, or AP, and results for the TM and S zone testing are given in Table 4 and in Appendix II. Use of the AP value allows direct comparison to the sample’s neutralizing potential, which is expressed in these same units. These values are used for calculation of the ratio of neutralizing potential to acid production potential, and net neutralizing potential discussed later in this section.

Table 4. Summary Statistics of Acid Base Accounting Parameters for Waste Rock from TM and S Zones

TM Zone											
Statistic	Paste pH	Fizz Rating	CO ₂ (%)	NP via Carbonate (kgCaCO ₃ /t)	Total S (%)	Sulphate (%)	Sulphide, Calculated (%)	Acid Potential (kgCaCO ₃ /t)	Neutraliz- ation Potential (kgCaCO ₃ /t)	Net Neutraliz- ation Potential (kgCaCO ₃ /t)	Neutral- ization Potential : Acid Potential
No. of observations	18	18	18	18	18	18	18	18	18	18	18
No. of missing values	0	0	0	0	0	0	0	0	0	0	0
Minimum	7.05	"None"	0.03	0.7	<0.02	<0.01	<0.02	<0.6	2.9	-25.3	0.2
Maximum	8.93	"Slight"	4.53	103.0	1.04	0.01	1.03	32.2	44.8	39.8	9.0
Median	7.71	"Slight"	1.49	33.9	0.23	0.01	0.23	7.2	7.0	1.8	1.5
Mean	7.85	-	1.90	43.2	0.28	0.01	0.28	8.9	12.2	3.4	2.7
Standard deviation	0.52	-	1.37	31.1	0.25	0.00	0.25	7.9	10.7	14.2	2.5
Geometric mean	7.83	-	1.18	26.7	0.19	0.01	0.19	5.9	9.3	-	1.6
Geometric standard deviation	1.07	-	3.65	3.6	2.75	1.00	2.75	2.8	2.1	-	3.2

S Zone											
Statistic	Paste pH	Fizz Rating	CO ₂ (%)	NP via Carbonate (kgCaCO ₃ /t)	Total S (%)	Sulphate (%)	Sulphide, Calculated (%)	Acid Production Potential (kgCaCO ₃ /t)	Neutraliz- ation Potential (kgCaCO ₃ /t)	Net Neutraliz- ation Potential (kgCaCO ₃ /t)	Neutral- ization Potential : Acid Production Potential
No. of observations	9	9	9	9	9	9	9	9	9	9	9
No. of missing values	0	0	0	0	0	0	0	0	0	0	0
Minimum	6.46	"None"	0.04	0.9	0.04	<0.01	0.04	1.3	2.3	-51.3	0.1
Maximum	8.41	"Slight"	4.15	94.3	1.84	0.03	1.81	56.6	41.4	38.6	14.7
Median	7.46	"Slight"	2.55	58.0	0.14	0.01	0.14	4.4	9.9	5.1	1.8
Mean	7.56	-	2.04	46.5	0.32	0.01	0.31	9.8	12.4	2.7	3.4
Standard deviation	0.55	-	1.64	37.2	0.54	0.01	0.53	16.6	11.2	22.0	4.1
Geometric mean	7.54	-	0.90	20.4	0.16	0.01	0.15	4.8	8.8		1.8
Geometric standard deviation	1.08	-	5.81	5.8	2.82	1.62	2.87	2.9	2.4		3.8

Figure 2a. Sulphur via ICP-MS and Sulphur via Leco, for all TM and S zone samples (n=31)

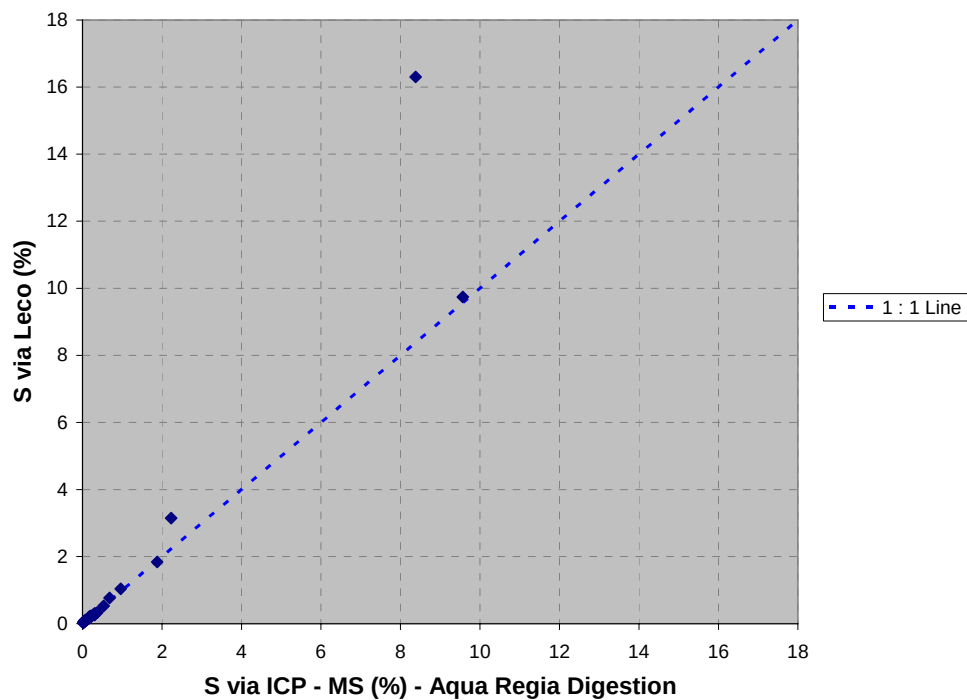
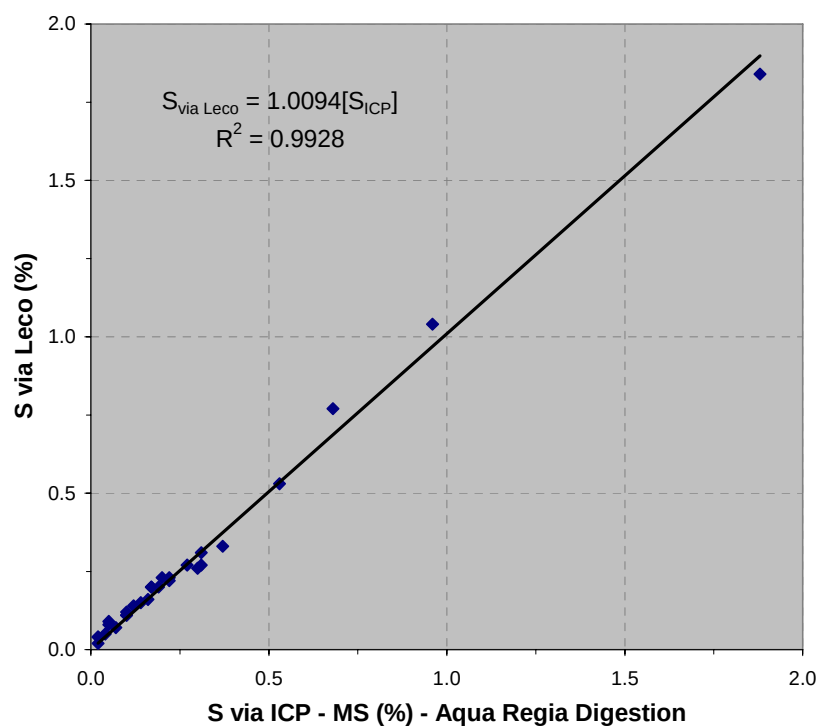


Figure 2b. Correlation of Sulphur via ICP-MS and Sulphur via Leco, for all TM and S zone samples $\leq 2\%S$ (n=28), and linear regression relationship



Neutralizing Potential

The TM and S zone waste rock datasets demonstrate overall low to very low neutralization potential (NP) values, with 75 percent of TM and S zone samples having NP's of less than 15 and 13 kg CaCO₃/t respectively.

Footwall samples in both TM and S zones show a tendency for higher NP values – the maximum NP values for both zones are in the mid-40 kg CaCO₃/t range, and are footwall samples. Hangingwall and 'InterOre' samples show a lower NP tendency, as shown in Figure 3.

Of interest is the correlation of calcium with neutralizing potential in granodiorite (Figures 4a and 4b). While this relationship is typically attributed to the presence of the mineral calcite (CaCO₃), in this case one does not see a similar correlation between NP and CO₂. The lack of correlation with CO₂ is possibly due to the presence of other weakly to non-neutralizing carbonate minerals such as MnCO₃ and FeCO₃, in addition to some calcite, and is discussed in more detail in the following paragraphs.

Carbonate and Carbonate Neutralizing Potential

Carbonate occurs in concentrations up to 4 percent, with a tendency for the 1 to 2 percent range for waste rock samples.

Carbonate neutralizing potential, also referred in the appendices as 'C -NP', is calculated by multiplying the percent CO₂ by 1000/44 and reported in units of kg CaCO₃/t. The drill core samples tested in the second phase program show the tendency for C-NP to be higher than the NP derived from measuring the actual acid consumption of a given sample. Typically, this discrepancy implies the presence in the sample of carbonate minerals with little or no neutralizing capacity, such as siderite (FeCO₃), or rhodochrosite (MnCO₃). As seen in Figure IV-1 (in Appendix IV), manganese shows direct correlation with carbonate content, so it is concluded that manganese-containing carbonates as well as some calcium carbonate are likely present in TM and S zone rock. This is supported by mineralogical information in section 2.2.3 of the CMC Application which notes the presence of manganese carbonates as accessory minerals. Iron did not demonstrate a similar correlation with carbonate, although manganese and iron often form end members to a solid-solution siderite-rhodochrosite mineral series.

Contrary to the drill core samples, the three waste rock samples taken from surface and tested by SGS Lakefield returned carbonate and C-NP's lower than the respective NP value and lower than those of the drill core samples. There may be a variety of reasons for this difference, but degradation of carbonate minerals as a result of surface weathering is considered to be a likely factor.

Net Neutralization Potential

Net neutralization potential, or NNP, is the arithmetic difference between a sample's NP and AP. When acid base accounting was first used in the industry, a sample's NNP was originally considered as the primary screening parameter for prediction of acid generation potential, with ≥20 kg CaCO₃/t being considered non-acid generating, ≤20 kg CaCO₃/t considered potentially acid-generating, and values intermediate to this falling in a 'gray' area requiring other types of confirmatory testwork. Today, the NP:AP ratio is more commonly used, and is discussed in detail in the next section.

As seen in the box plots in Appendix III-J and III-K and listed in Table 4, most of the TM and S zone waste rock samples fall within the -20 to +20 kg CaCO₃/t NNP range. Higher NNP values tend to occur within footwall samples, and at the other end of the scale, three of the four ore samples show NNP's well below the -20 CaCO₃/t threshold, indicating potential acid generation.

Figure 3. Statistical Box Plots for Neutralizing Potential, by Mine Zone

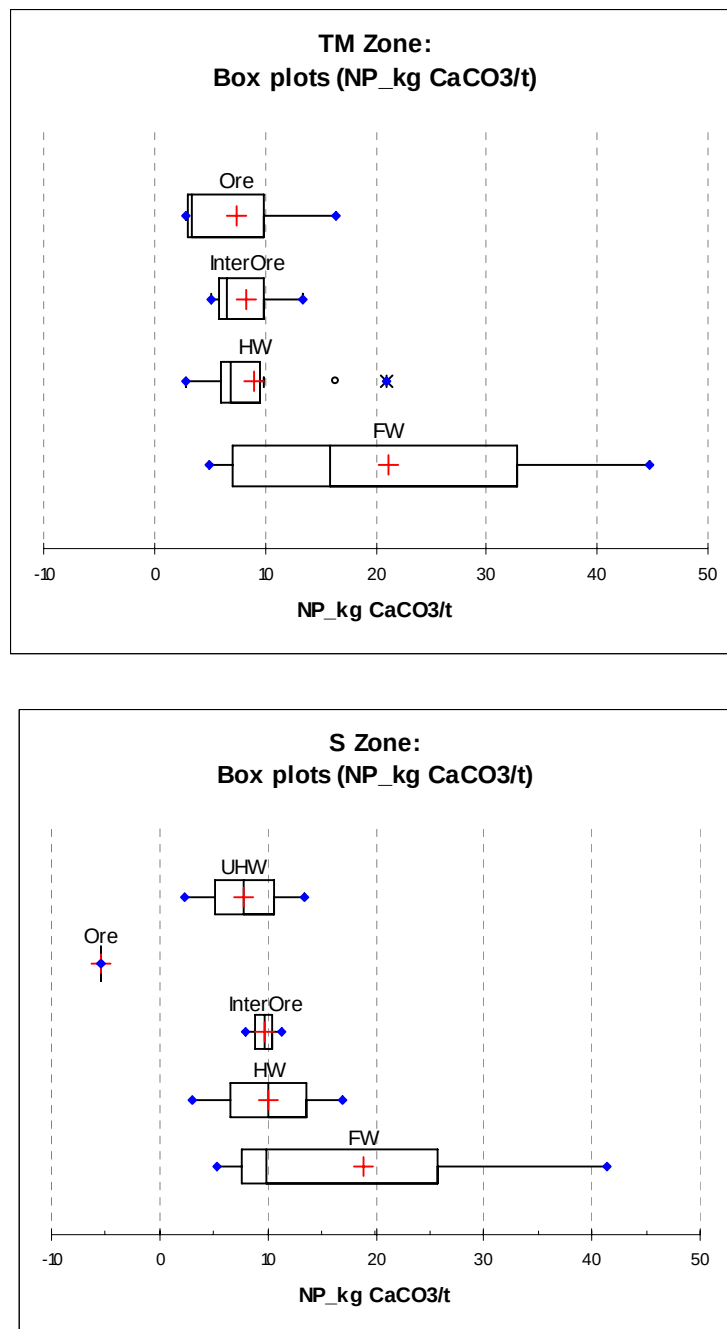


Figure 4a. Relationship of NP versus Calcium in TM and S zone Granodiorite

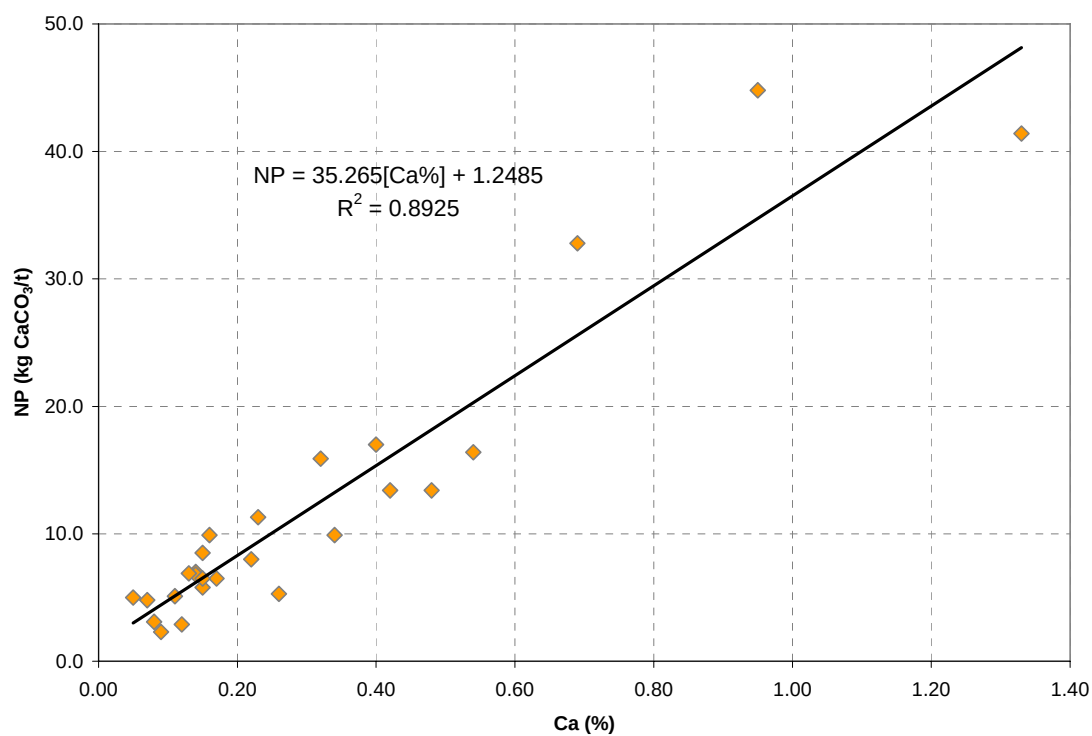
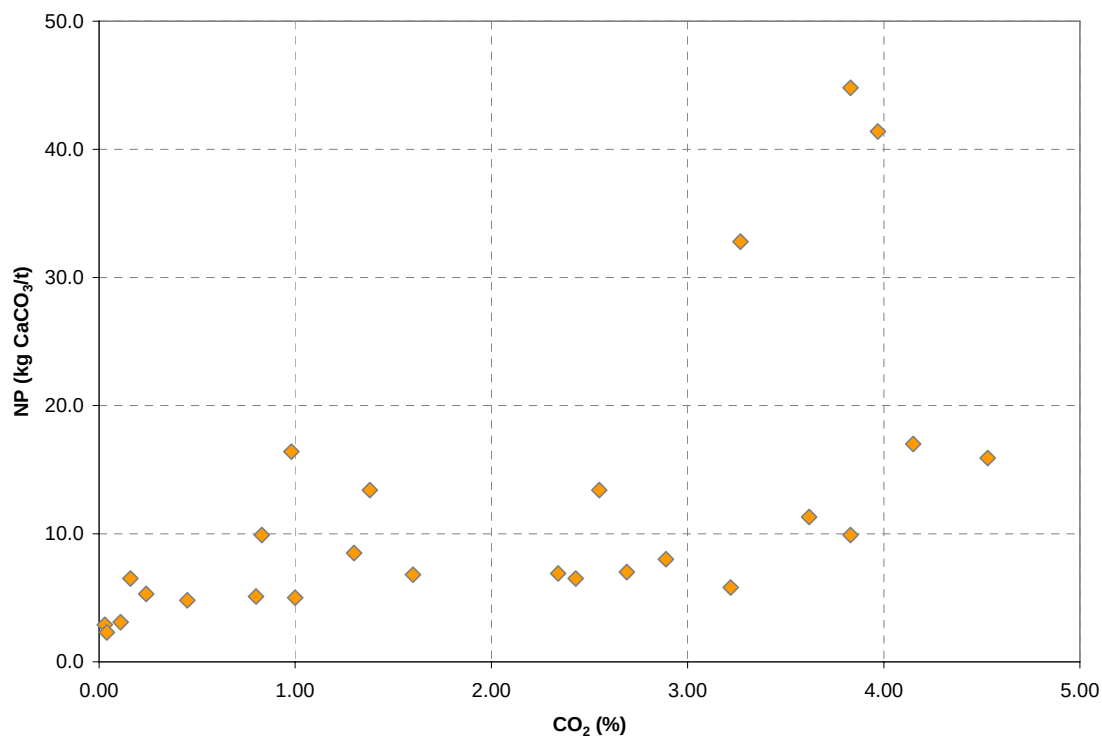


Figure 4b. Relationship of NP versus Carbonate in TM and S zone Granodiorite



NP : AP

Neutralizing to acid potential ratio, or NP:AP is calculated by dividing the sample's neutralizing potential by its acid potential. Thus, an NP:AP value of 1.0 implies that the acid generation and acid neutralizing potential are in stoichiometric equilibrium.

Industry practice is to apply a safety factor to the NP:AP ratio, with factors of 2:1, 3:1 or even 4:1 used for various applications and jurisdictions (Price et. al, 1997, Price, 2005). Most commonly, an NP:AP threshold of ≥ 3.0 is used for initial screening to designate those samples unlikely to produce net acidity and with no need for further testwork or study. For samples with ratios between 1.0 and 3.0, the result is considered “uncertain” and additional information (such as data from field and lab weathering studies) is indicated in order to confirm any site-specific controls on net acid generation. Samples with $\text{NP:AP} \leq 1.0$ are considered potentially acid-generating.

In considering the NP:AP ratio, one should also note that rock with very low sulphide concentrations (eg. $\leq 0.10\% \text{S}^{2-}$) logically has ‘AP’ values of less than 5 kg CaCO_3/t and thus under ambient conditions would be expected to have limited potential to produce either: i) a significant concentration of acidity, or ii) acidity for a long duration. However, if due to mineralogical composition the same sample returns a low neutralizing potential value, the resulting NP:AP ratio is often well below the 3.0 threshold and in the ‘uncertain’ acid generating potential. Thus for low-sulphide / low-NP deposits as may be the case for the TM and S zones, overall sulphur content should also be taken into account.

In the TM and S zone dataset, NP:AP ratios tend to be low for waste rock samples with a median value of 1.5 for the TM zone and 1.8 for the S zone. Thus is a largely a result of overall low NP where occurring with slightly anomalous to moderate sulphur concentrations (note that in the case of the TM and S zone drillhole sample dataset, sulphide and sulphur are essentially equal). As shown in Figure 5, NP:AP values vary widely within each Mine Zone category, with the highest values tending to occur in the footwall sectors of both the TM and S deposits.

Three of the four ore-grade samples returned NP:AP ratios close to 0.0 with elevated sulphur and sulphide contents, and are thus categorized as potentially acid-generating. One ore-grade sample from the TM zone yielded a high NP:AP of 6.6.

The characteristics of the waste rock samples are discussed in terms of their general NP:AP grouping, as follows, with TM zone results illustrated in Figures 6a and 6b:

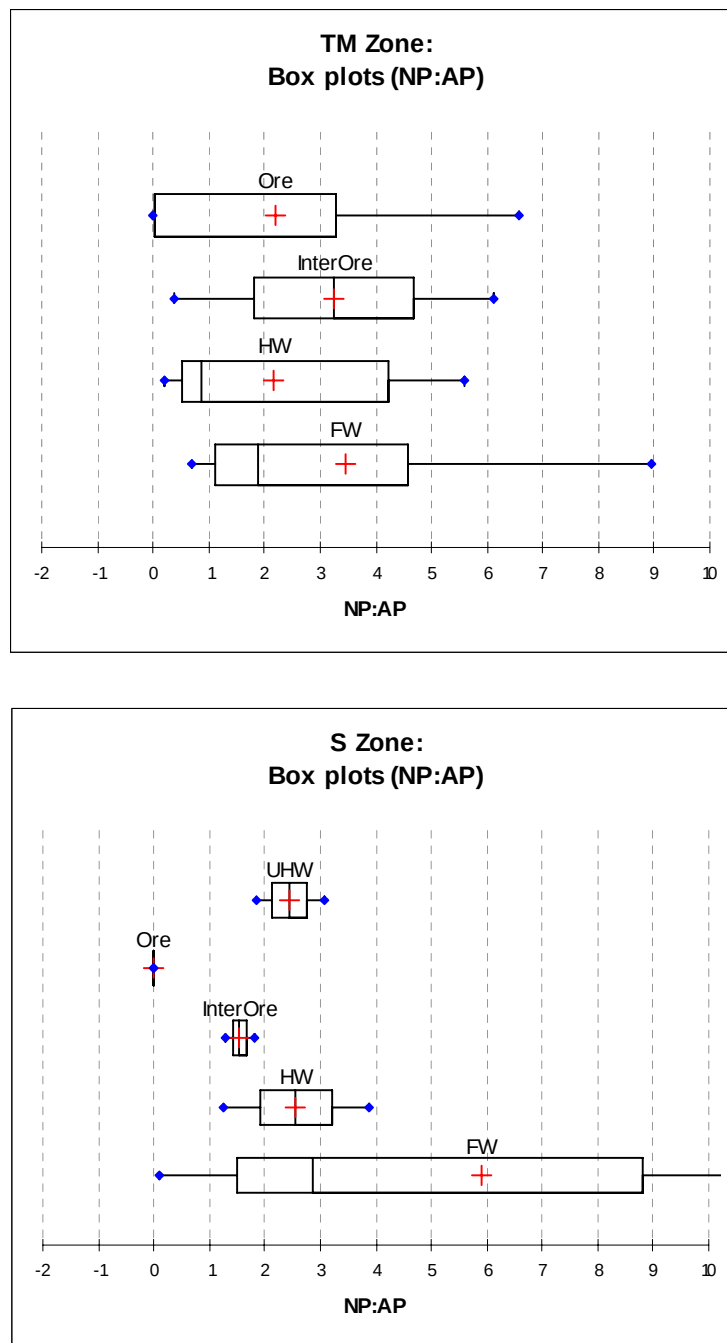
NP : AP ≥ 3.0 (Non-Acid Generating): This group has a sulphur range from $<0.02\%$ to 0.23% for the TM zone, and from 0.09% to 0.15% in the S zone. Neutralizing potential for this sample group varies from 3 to 45 kg CaCO_3/t . Also, included in this group is one of the three ore-grade samples from the TM zone.

NP : AP 1.1 – 2.9 (Uncertain Acid Generation Potential): This group shows a tight sulphur grouping from 0.20% to 0.27% in the TM zone, and a wider range of 0.04% to 0.20% in the S zone. Neutralizing potential varies from 2 to 16 kg CaCO_3/t .

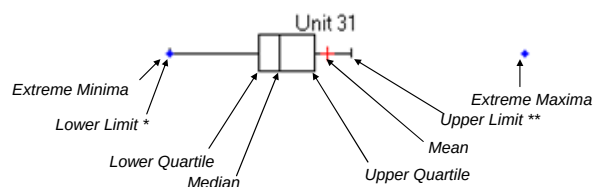
NP : AP ≤ 1.0 (Potentially Acid Generating): Sulphur content varies from 0.23% to 16.30% in the TM zone, and 1.84% to 19.74% in the S zone. Neutralizing potential ranged from -5.4 to 9.9 kg CaCO_3/t . Also, included in this group are two of the three ore-grade samples from the TM zone and the one ore-grade sample from the S zone.

It can be seen in Figures 6a and 6b that overall, sulphur content appears to have a strong influence on whether a given sample has a high, moderate or low NP:AP ratio. Conversely, while all TM zone waste rock samples with NP above 20 kg CaCO_3/t have a high NP:AP, below this value, the resulting NP:AP is predominantly dependent on the sample's sulphur concentration. In addition, as seen in Figure 6b the 20 kg CaCO_3/t threshold roughly corresponds to the calcium threshold of 0.55% . It is noted, though, this observation is based on a small sample size, and that additional data would be required to adequately refine a calcium threshold.

Figure 5. Statistical Box Plots for NP : AP, by Mine Zone



LEGEND FOR BOX PLOTS:



*Lower limit: $Linf = X(i)$ such that $\{X(i) - [Q1 - 1.5 (Q3 - Q1)]\}$ is minimum and $X(i) = Q1 - 1.5 (Q3 - Q1)$.

**Upper limit: $Lsup = X(i)$ such that $\{X(i) - [Q3 + 1.5 (Q3 - Q1)]\}$ is minimum and $X(i) = Q3 + 1.5 (Q3 - Q1)$.

Figure 6a. Relationship between NP : AP and Sulphur Content, TM Zone Waste Rock (n=18)

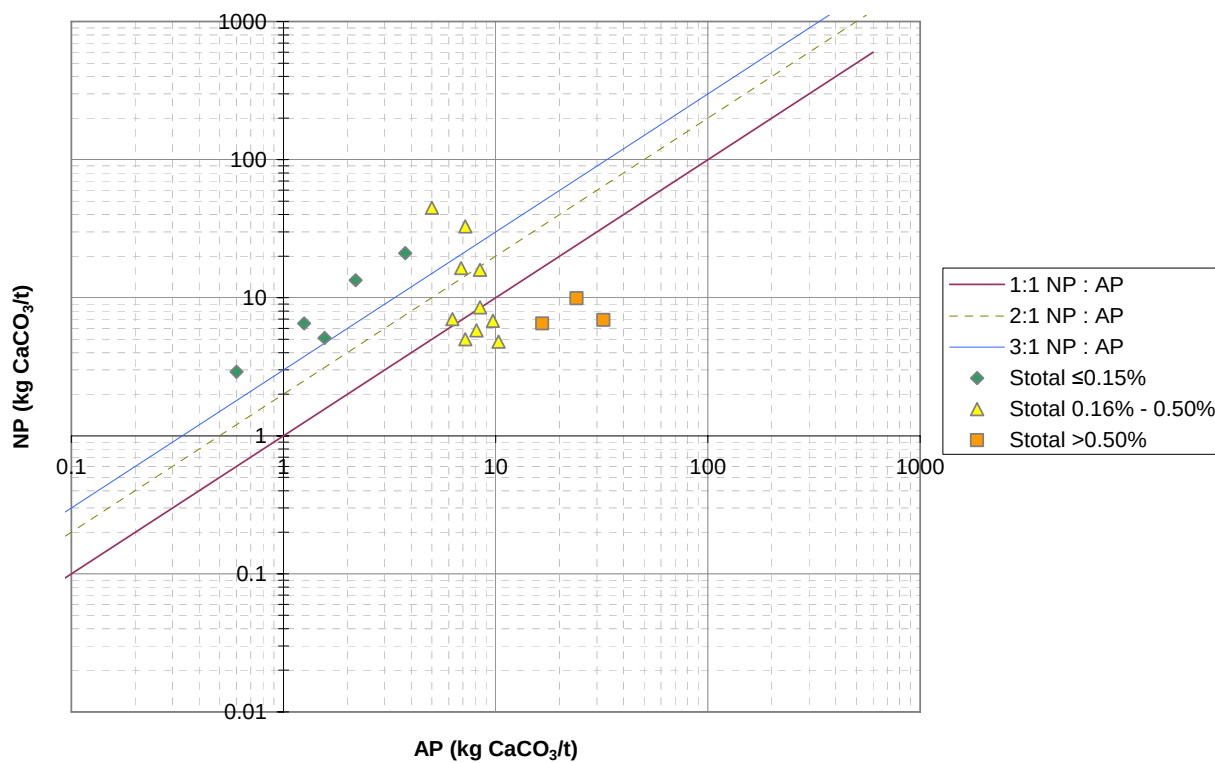
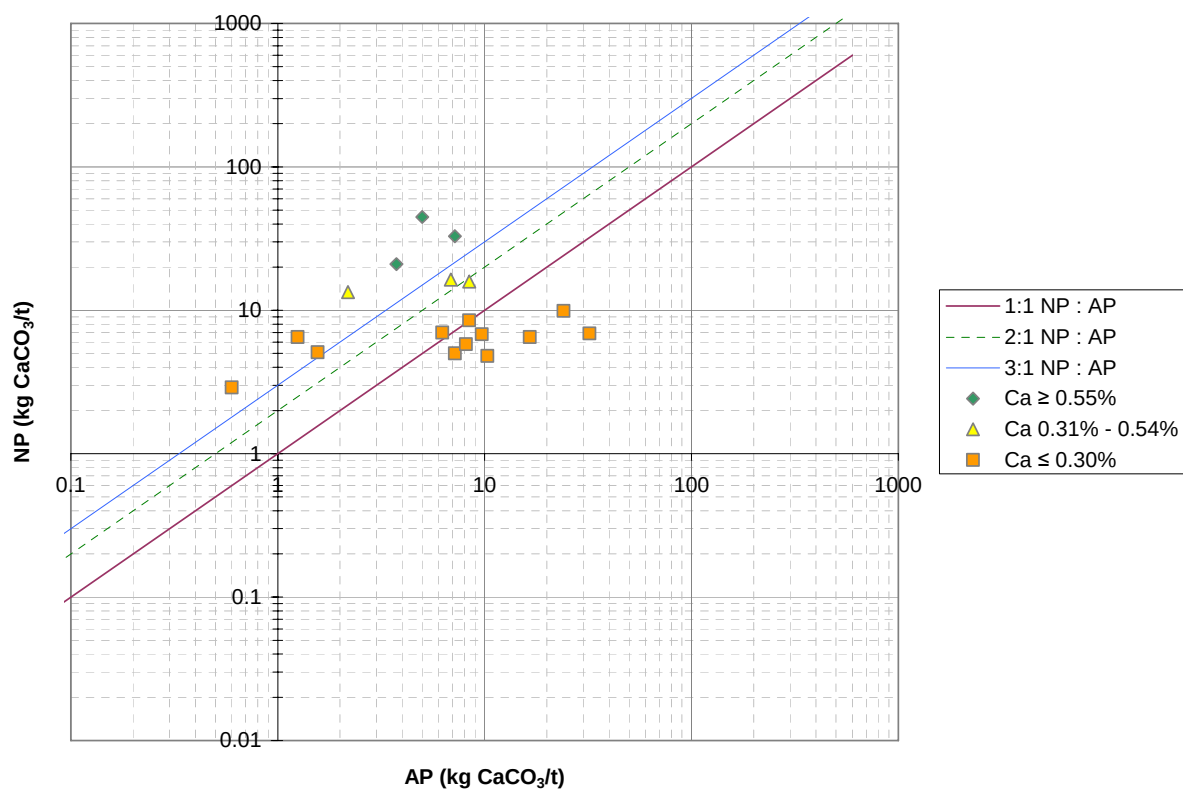


Figure 6b. Relationship between NP : AP and Calcium Content, TM Zone Waste Rock (n=18)



3.3.2 Summary of Acid Base Accounting Results

Paste pH values of waste rock in the 27 drill core and 3 surface samples tested are all in the neutral to slightly alkaline range, indicating no readily soluble acidic products. In the 1 surface and 4 drill core ore samples, paste pH ranges from the slightly acidic to neutral range.

Sulphur tends to be at very low to low concentrations in waste rock with sporadic values in the 1 to 2 percent range. In ore, sulphur values are elevated.

Sulphate results for drill core samples are very low for virtually all of the samples, indicating negligible oxidation and thus negligible difference between total sulphur and calculated sulphide values. In contrast, the one ore and three waste rock samples taken from surface analysed during previous studies indicated the majority of sulphur to be present as sulphate.

Neutralizing potential tends to be low in the waste rock sample set. Samples with either an NP of more than 20 kg CaCO₃/t or sulphur less than or equal to 0.15% demonstrate an NP:AP ratio of greater than 3.0. Below the 20 kg CaCO₃/t NP level, NP:AP is strongly dependent on sulphur content. A portion of the samples tested (the majority occurring within 4 metres of the mineralized zones), have NP:AP ratios less than 1.0, indicating possible acid generation.

3.4 Other Related Test Work

3.4.1 Net Acid Generation Tests

SGS Lakefield Research Limited conducted net acid generation (NAG) tests on the three waste rock and one ore sample taken from surface exposures in 2007. This test involves 24 hour oxidation of the sample using peroxide, and measurement of resultant solution pH ('final NAG pH'). The solution is then back-titrated to pH 4.5 and then to pH 7.0. Two NAG values (one at pH 4.5 and the other at pH 7.0) are calculated in units of kg H₂SO₄/t using the amount of base required to reach each pH endpoint. A final NAG pH of greater than or equal to 4.5 classifies the sample as non-acid forming (Lottermoser, 2007), and the NAG values give indication of the magnitude of neutralization required to buffer the samples to the given pH.

As mentioned in section 3.3.1, these samples contained a significant amount of sulphate-sulphur, and the remaining reactive sulphide content of the waste rock samples was relatively low, ranging from 0.01% to 0.09%. When tested, these samples had final NAG pH values between 6.92 and 7.61, indicating they were non-acid forming. The lowest pH value corresponded to the sample with 0.09% sulphide, and a minimum amount of base (0.2 kg H₂SO₄/t equivalent) was required to titrate this sample up to pH 7.0. Thus an overall neutral-pH tendency for all three waste rock samples is indicated.

The ore sample contained 4.75% total sulphur and 3.27% sulphate, thus was calculated to contain 1.48% sulphide. Final NAG pH was 5.30, while more acidic than the waste rock samples, was well above the pH 4.5 acid-forming threshold. A NAG value to pH 7.0 of 3.5 kg H₂SO₄/t indicates that the resultant solution was moderately well buffered at its weakly acidic final pH.

3.4.2 Leachate Extraction Tests

SGS Lakefield conducted shake flask extraction and the synthetic precipitation leaching procedure (or SPLP, EPA method 1312) on the three waste rock and one ore taken from surface exposures in 2007. Extractions were conducted at a ratio of 1 part solid to 3 parts liquid for durations of 18 hours for the SPLP test, and 24 hours for the leachate extraction test. While the shake flask test uses deionized water, the SPLP test procedure utilizes deionized water with the addition a 60:40 weight percent mix of sulphuric and nitric acid to adjust the leachant pH to 4.2.

Leachate extraction tests give indication of the readily soluble products in a given rock sample, and in waste rock applications, are particularly appropriate for determining tendency for metal leaching. Samples such as these, exposed to site weathering conditions at surface, are often especially suited for this test.

The waste rock samples tested contained zinc concentrations between 2000 and 2800 ppm, in the range of the median values for drill core sample dataset discussed in section 3.1. Lead values ranged from 710 to 1100 ppm, and were therefore elevated with respect to the drill core sample dataset. The ore contained levels of metals in keeping with those found in the TM and S zones, with the exception of zinc which at 1200 ppm was lower than is typical.

Waste Rock

pH / Alkalinity / Acidity: Under the weakly acidic conditions of the SPLP test, the final leachate pH of the three waste rock samples ranged from 6.53 to 6.87, indicating buffering capacity of the sample to neutral levels. Alkalinity was low and ranged from 7 to 10 mg CaCO_3/l , with no measurable acidity. Results were similar in the shake flask tests using deionized water.

Metals: The resulting leachates for both types of extraction tests were low in concentrations of dissolved iron, arsenic, mercury, silver, and copper. Despite having elevated lead concentrations in the rock samples, lead was also in low concentrations in the leachate, with the shake flask test solution showing values slightly elevated with respect to that of the SPLP solution (0.008 to 0.058 mg/l versus <0.0007 to 0.0011 mg/l). Dissolved aluminum was higher in the SPLP test relative to the leachate extraction test (0.12 to 0.99 mg/l versus <0.01 to 0.21 mg/l). Zinc showed moderately elevated concentrations in both types of extraction tests and for all samples (0.247 to 1.52 mg/l), and thus is regarded to be a potential soluble element to be considered in waste rock management.

Ore Zone

pH / Alkalinity / Acidity: Final leachate pH of the ore sample under both tests was just under 6.0, indicating weakly acidic conditions. Alkalinity was low at 3 mg CaCO_3/l , with an acidity value of 10 mg CaCO_3/l .

Metals: Similar to waste rock, the resulting leachates for both types of extraction tests were very low in concentrations of dissolved iron, arsenic, mercury, silver, and copper. Aluminum concentration was also very low. Both lead and zinc showed elevated concentrations in both types of tests (up to 21.5 and 2.33 mg/l respectively), and thus both elements are regarded as potential soluble constituents to be considered in storage and handling of ore and ore by-products.

4.0 Conclusions

4.1 Geochemical Factors

The characterization work discussed previously indicates that the following rock geochemical factors should be considered in management of waste rock from the TM and S zones:

- Zinc content: waste rock samples tested in the 2000 ppm zinc range produced moderately elevated concentrations of dissolved zinc; and
- Sulphur content: in the absence of above-average neutralization availability, results show that samples with more than 0.15% sulphur may have NP:AP values in the uncertain to potentially acid generating category.

While results also indicate that calcium content may assist in estimation of neutralization availability, more information would be required to adequately these thresholds.

4.2 Spatial Distribution

To illustrate the spatial distribution and visual character of the samples, Appendix V provides photographs of core from three selected TM and S zone drill holes, along with their respective results of trace element and acid base accounting testing. In addition, Figures 7 through 10 show simplified geological cross sections through the TM zone, with sample results plotted. Analysis results are colour-coded with respect to their respective geochemical factors of zinc, sulphur and NP:AP values.

The general tendency of increased zinc and sulphur content and decreased NP:AP proximal to the ore zones can be seen in both the Figures 7 through 10 and in Appendix V. Samples with lower zinc and sulphur and higher NP:AP tend to occur distal to the ore zones. While it is also apparent that some confirmatory sampling is warranted for the upper hangingwall sectors of the TM pit once seasonal access is re-established, the results to date do indicate that this material will have favourable characteristics with respect to potential acid generation and metal-leaching.

Figure 7. TM Zone Simplified Geological Cross Section A'-A, 9565N, with Static Test Results for Zn, S, and NP:AP

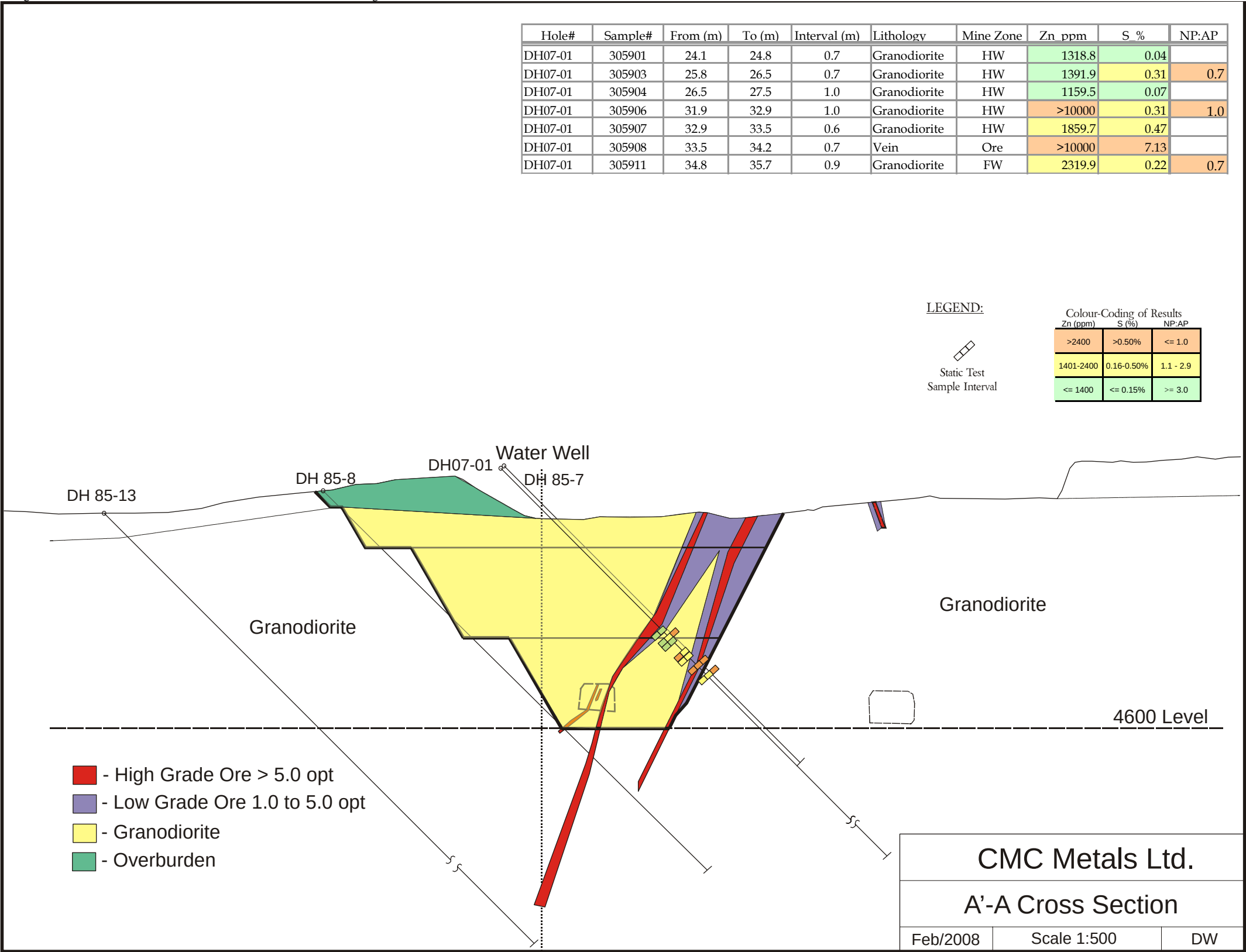


Figure 8. TM Zone Simplified Geological Cross Section B'-B, 9700N, with Static Test Results for Zn, S, and NP:AP

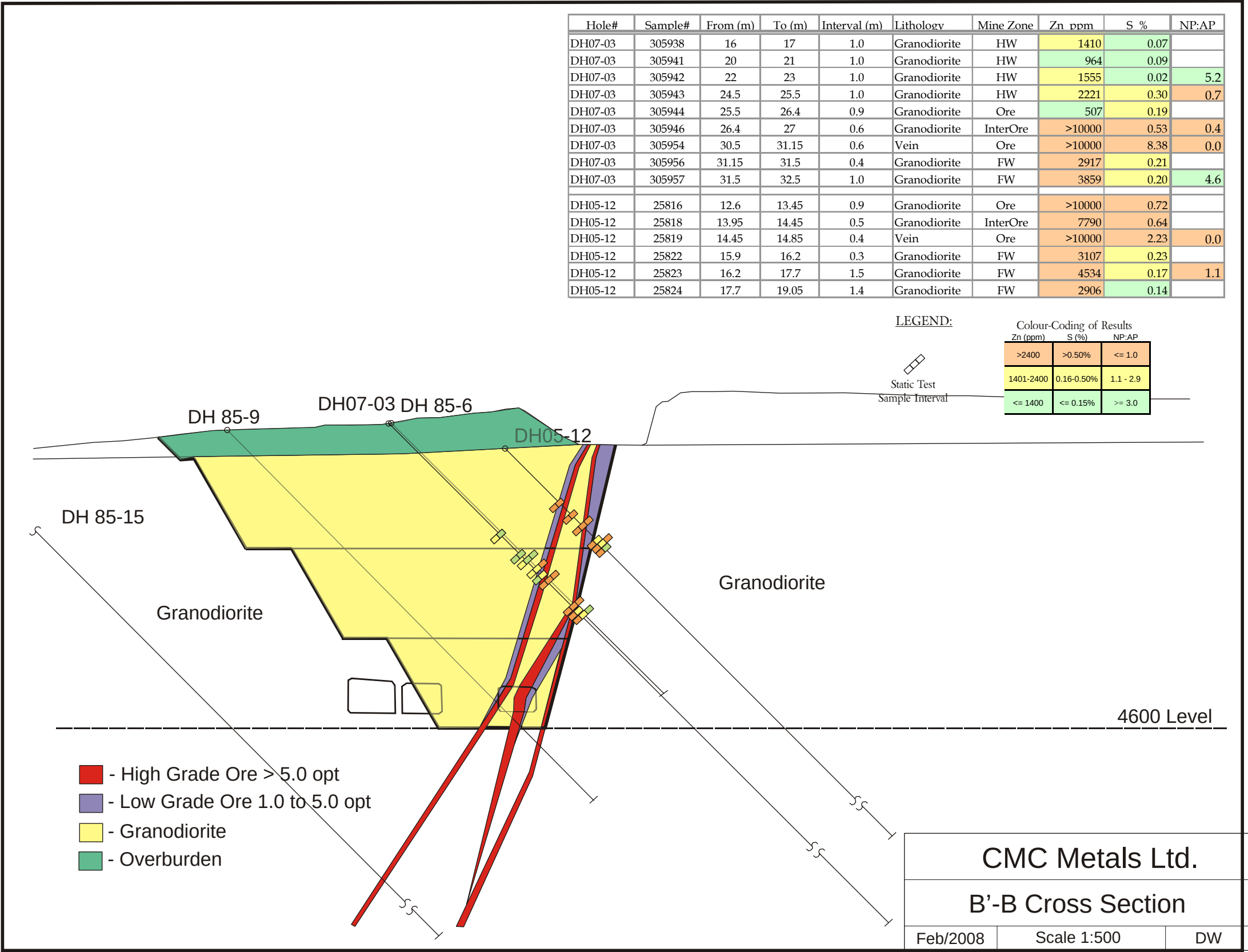


Figure 9. TM Zone Simplified Geological Cross Section C'C-, 9820N, with Static Test Results for Zn, S, and NP:AP

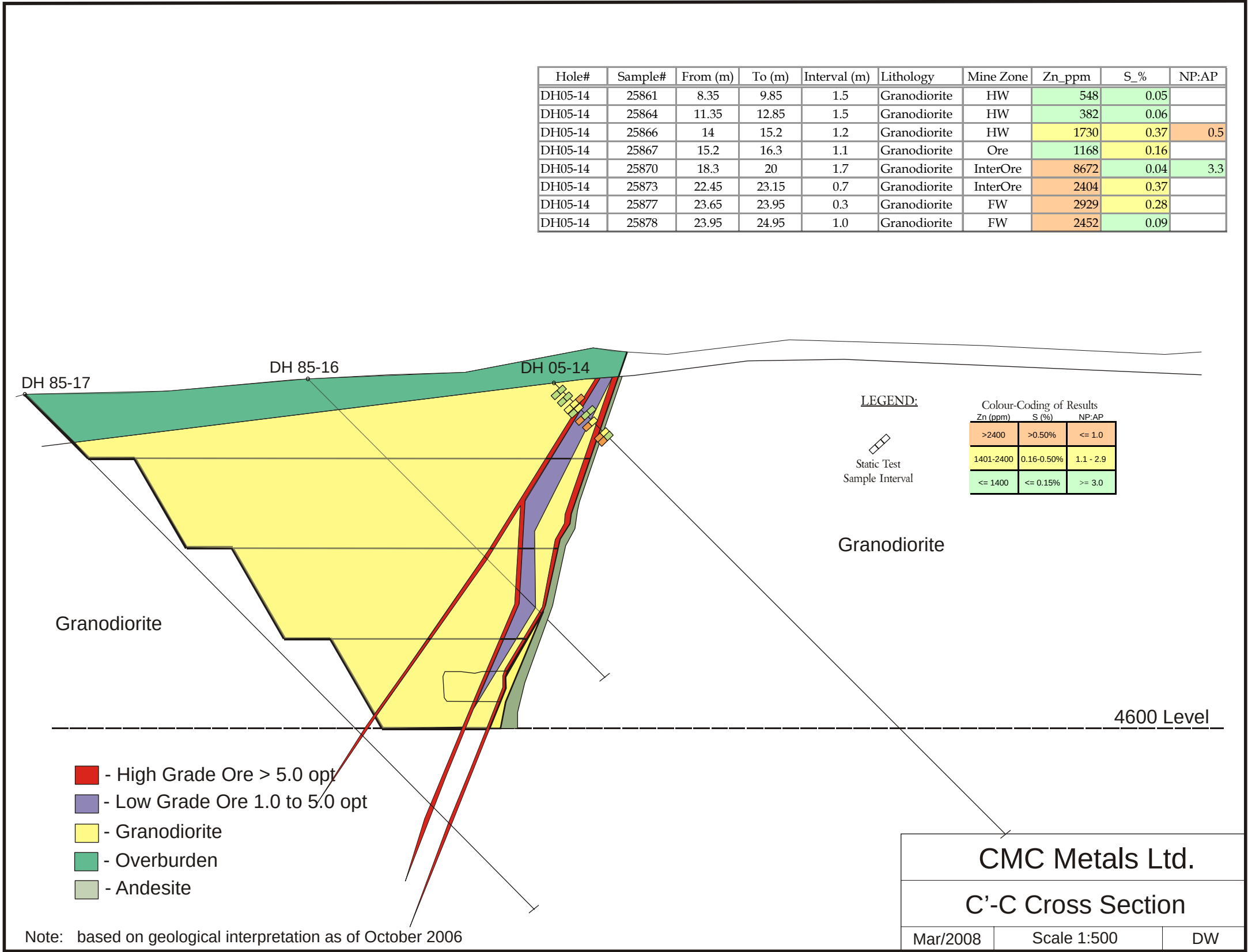
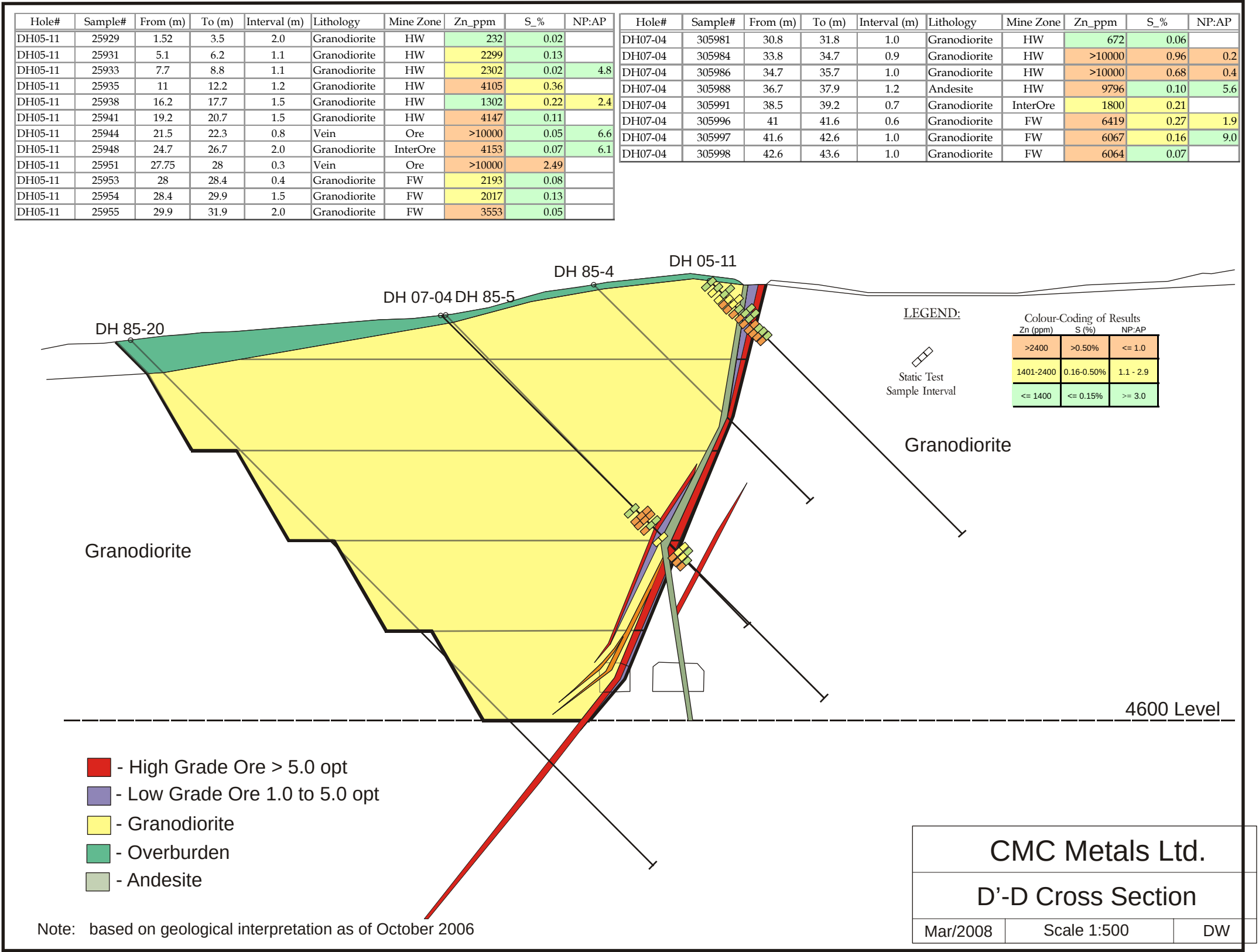


Figure 10. TM Zone Simplified Geological Cross Section D'-D, 9940N, with Static Test Results for Zn, S, and NP:AP



5.0 Recommendations

5.1 Material Management Measures

As indicated in section 1.3, virtually all material removed from the proposed pit and underground operation will be handled in one of the following ways:

- i) used for general construction purposes,
- ii) placed in the TM waste rock pile, or
- iii) transported to ore stockpile area (interim ore storage until processing).

Based on the analyses conducted to date, the following are the geoenvironmental characteristics and recommended management measures for each category of material.

5.1.1 General Construction Purposes

Approximately 5 percent of rock extracted from TM pit will be required for construction purposes. Results indicate that suitable rock (non-acid generating and non-metal leaching) is available within the proposed pit area. Zones proximal to vein structures are in general not appropriate for this purpose, but sampling to date indicates that rock further from vein structures in the upper hangingwall zones of the TM pit is suitable. As indicated in section 5.2, confirmatory testing in 2008 is recommended to ascertain the geochemical variability within this sector, in particular sulphur and zinc, which as discussed in the previous section, have been identified as potential geochemical factors to be considered in waste rock management.

Given its silty colluvium characteristics, the overburden material is not expected to have issues with respect to acid generation or metal leaching. Nonetheless, confirmatory testing (predominantly multi-element ICP) could be carried out.

5.1.2 TM Waste Rock Pile

Most waste rock extracted from the proposed mine operation will be placed in the TM waste rock pile. The majority of rock will originate from zones distal from the vein structures, and are expected to present low potential for acid generation and metal leaching. A small amount of additional testing of this sector in 2008 would be of benefit to confirm its geochemical characteristics. Waste rock from zones proximal to vein structures tends to contain an elevated zinc signature and overall low but variable sulphide mineral content. If placed under conditions where significant infiltration is allowed to occur, this 'near-vein' waste rock material may produce drainage with zinc concentrations in excess of Metal Mining Effluent Regulations, possibly accompanied by weak acidity. Based on these properties, recommended control measures during operation, particularly in the 'near-vein' waste rock material, include minimizing infiltration such that no net drainage occurs, and/or collecting drainage. The main closure measures objective should be to minimize infiltration, again, particularly in the 'near-vein' waste rock material. Waste rock pile closure measures are discussed within the CMC Application, and are also addressed within the scope of the main Waste Rock Management Plan.

5.1.3 Ore Stockpile

Ore-grade material is indicated to be both potentially acid-generating and metal leaching. The ore stockpile area is an interim storage facility and therefore a low permeability base and a drainage collection system is indicated in order to prevent migration of soluble products. No further testing is recommended.

5.2 Additional Information

The studies discussed in the preceding sections are considered of sufficient scope to support a waste rock management plan for the TM and S Zone project that is described in the CMC Application. Nonetheless, waste rock management, like many other environmental management systems, is an ongoing and iterative

process of adaptive management in which data is continually gathered to allow for feedback to and optimization of the management process.

The following recommendations to be considered for additional information prior to commencement of mining operations are intended to enhance characterization of the proposed waste rock and augment understanding of existing weathering processes at the site.

5.2.1 Geochemical Sampling

As previously noted in the above section, confirmatory testing of the upper hangingwall area of the proposed TM pit is recommended once seasonal access to the project is re-established. This testing will serve to improve characterization of the large majority of rock to be placed in the TM waste rock pile, and in particular, of the rock intended for use for general construction purposes. It is understood that drill core from non-mineralized sections of 1985 drill holes is still available on site, and if in suitable condition, would be ideal for this additional sampling. Sample intervals should be chosen such that they are either within the proposed TM pit or very close to final pit walls. Upper sections of the 2005 to 2007 TM zone drillholes would also be suitable sampling candidates. ICP-MS is recommended as the primary analysis method (20 to 30 analyses), with modified acid base accounting conducted as a confirmatory test on no more than 10 percent of samples, and only on those samples with more than 0.05%S.

The andesite unit is poorly represented in the existing dataset. At least five additional ICP-MS analyses are recommended, and of these, at least two should be analysed for modified acid base accounting parameters (if any samples show a sulphur content of more than 0.05%).

No additional geochemical sampling is recommended for the S zone at this time.

5.2.2 Leachate Extraction Tests

Leachate extraction tests on surface samples in the 2000 ppm zinc range indicated moderate concentrations of soluble zinc. In order to ensure low zinc solubility characteristics, it is recommended that some additional tests be carried out on lower zinc-content material (1500 ppm or less), particularly on material intended for general construction use. These analyses should be carried out on rock from the upper hangingwall area of the TM pit. Three samples, including at least one from drill core and one from surface, should provide sufficient information on zinc solubilization.

Care should be taken to select samples with minimal potential for dust contamination by zinc, for example avoiding drill core with obvious surface dust. Surface exposures in trenches or other workings, with the outer 'crust' cleaned immediately prior to sampling, may be good sample sources for this test, as is drill core stored under clean conditions. A simple shake flask method at 3:1 deionized water to solid ratio, with pH, alkalinity, acidity and ICP-MS analysis of leachate is recommended. ICP-MS analyses must also be performed on the rock 'head' sample prior to testing.

5.2.3 Field Measurements

On a site such as the Silver Hart property with existing surface exploration workings and older drill core there is considerable on-site information available on waste rock weathering characteristics under local conditions. Simple field paste pH and conductivity measurements serve to confirm the net alkalinity or acidity of a sample and give an estimate of readily soluble salts. This data would assist in determining the longer term weathering to the TM and S zone waste rock, refine the current understanding of the various rock units, and help to refine waste rock management measures during operation and closure.

5.2.4 Database Information

The assignment of alteration information for each sample in the static test database may help to delineate any mineral assemblage controls with respect to acid generation and metal leaching potential.

In closing, I appreciate the opportunity to participate in this assessment. Should you have any questions please do not hesitate to contact me.

Prepared By:

ALTURA ENVIRONMENTAL CONSULTING

A handwritten signature in black ink, appearing to read 'Diane Lister', with a stylized, sweeping flourish at the end.

Diane Lister, P.Eng.

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Attachments:

Appendix I	Waste Rock Assay Data and Assay Statistics
Appendix II	Statistics, ICP, ABA, and Major Element Data
Appendix III	Box Plots, ICP, ABA, and Major Element Data
Appendix IV	Other Data Correlations and Relationships
Appendix V	Drill Core Photographs, TM and S Zones
Appendix VI	Analysis Methods and Reports

APPENDIX I

Waste Rock Assay Data and Assay Statistics

- a. TM Zone Assay Summary
- b. S Zone Assay Summary
- c. TM Zone Waste Rock
- d. S Zone Waste Rock
- e. TM Zone Granodiorite
- f. TM Zone Andesite
- g. TM Zone HW
- h. TM Zone InterOre
- i. TM Zone FW
- j. S Zone Waste HW and UHW
- k. S Zone InterOre
- l. S Zone FW

Appendix I
Waste Rock Assay Information
A. TM Zone Assay Summary

All Samples

	Mo %	Cu %	Pb %	Zn %	Ag g/mt	Ni %	Co %	Mn %	Fe %	As %	Sr %	Cd %	Sb %	Bi %	Ca %	P %	Cr %	Mg %	Al %	Na %	K %	W %	Hg %	Au g/mt
N	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	42
Min	0.001	0.001	0.01	0.02	2.00	0.00	0.00	0.01	0.74	0.01	0.00	0.00	0.00	0.01	0.02	0.01	0.00	0.01	0.21	0.01	0.15	0.00	0.00	0.01
Max	0.003	0.013	0.15	2.78	31.00	0.01	0.00	1.20	6.28	0.09	0.01	0.01	0.01	0.01	2.49	0.28	0.01	1.52	5.84	0.04	0.44	0.00	0.00	3.31
Mean	0.001	0.003	0.03	0.46	6.23	0.00	0.00	0.37	1.66	0.01	0.00	0.00	0.00	0.01	0.36	0.05	0.00	0.13	0.53	0.01	0.33	0.00	0.00	0.09
Geometric Mean	0.001	0.002	0.022	0.271	4.203	0.001	0.001	0.237	1.469	0.011	0.001	0.001	0.001	0.010	0.218	0.046	0.001	0.070	0.408	0.011	0.320	0.001	0.001	0.012
Median	0.001	0.002	0.02	0.23	3.50	0.00	0.00	0.32	1.32	0.01	0.00	0.00	0.00	0.01	0.16	0.05	0.00	0.06	0.38	0.01	0.33	0.00	0.00	0.01
Std Dev	0.000	0.003	0.03	0.54	6.67	0.00	0.00	0.29	0.94	0.01	0.00	0.00	0.00	0.00	0.43	0.04	0.00	0.22	0.76	0.01	0.06	0.00	0.00	0.51
Geometric Std Dev	1.302	2.156	2.12	2.85	2.28	1.33	1.18	2.96	1.60	1.40	1.88	1.56	1.56	1.00	2.69	1.65	1.41	2.67	1.68	1.35	1.24	1.20	1.00	2.49
1st Quartile	0.001	0.001	0.01	0.15	2.00	0.00	0.00	0.11	0.98	0.01	0.00	0.00	0.00	0.01	0.12	0.04	0.00	0.04	0.32	0.01	0.30	0.00	0.00	0.01
3rd Quartile	0.001	0.003	0.04	0.54	6.75	0.00	0.00	0.56	2.10	0.01	0.00	0.00	0.00	0.01	0.47	0.05	0.00	0.11	0.41	0.01	0.38	0.00	0.00	0.01
5% percentile	0.001	0.001	0.01	0.05	2.00	0.00	0.00	0.03	0.85	0.01	0.00	0.00	0.00	0.01	0.05	0.02	0.00	0.02	0.25	0.01	0.22	0.00	0.00	0.01
95% percentile	0.002	0.009	0.08	1.50	22.00	0.00	0.00	0.86	3.35	0.02	0.01	0.00	0.00	0.01	1.05	0.06	0.00	0.59	0.74	0.02	0.40	0.00	0.00	0.02
98% percentile	0.003	0.012	0.094	2.218	25.760	0.004	0.002	1.030	4.074	0.035	0.008	0.004	0.004	0.010	1.686	0.258	0.005	0.761	3.023	0.035	0.419	0.002	0.001	0.620
99% percentile	0.003	0.013	0.12	2.53	29.46	0.00	0.00	1.18	5.06	0.05	0.01	0.01	0.00	0.01	1.97	0.27	0.01	0.97	4.22	0.04	0.43	0.00	0.00	1.97
99.9%percentile	0.003	0.013	0.15	2.75	30.85	0.00	0.00	1.20	6.16	0.09	0.01	0.01	0.01	0.01	2.44	0.28	0.01	1.47	5.68	0.04	0.44	0.00	0.00	3.18

Geol Unit = Grandodiorite

	Mo %	Cu %	Pb %	Zn %	Ag g/mt	Ni %	Co %	Mn %	Fe %	As %	Sr %	Cd %	Sb %	Bi %	Ca %	P %	Cr %	Mg %	Al %	Na %	K %	W %	Hg %	Au g/mt
N	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	42
Min	0.001	0.001	0.01	0.02	2.00	0.00	0.00	0.01	0.74	0.01	0.00	0.00	0.00	0.01	0.02	0.01	0.00	0.01	0.21	0.01	0.15	0.00	0.00	0.01
Max	0.003	0.013	0.15	2.78	31.00	0.01	0.00	1.20	4.69	0.09	0.01	0.01	0.01	0.01	2.49	0.28	0.01	0.81	3.73	0.04	0.44	0.00	0.00	3.31
Mean	0.001	0.003	0.03	0.45	6.29	0.00	0.00	0.37	1.60	0.01	0.00	0.00	0.00	0.01	0.34	0.05	0.00	0.11	0.46	0.01	0.33	0.00	0.00	0.09
Geometric Mean	0.001	0.002	0.022	0.266	4.243	0.001	0.001	0.240	1.441	0.011	0.001	0.001	0.001	0.010	0.213	0.045	0.001	0.067	0.394	0.011	0.322	0.001	0.001	0.012
Median	0.001	0.002	0.02	0.23	4.00	0.00	0.00	0.32	1.31	0.01	0.00	0.00	0.00	0.01	0.16	0.05	0.00	0.06	0.38	0.01	0.33	0.00	0.00	0.01
Std Dev	0.000	0.003	0.03	0.54	6.70	0.00	0.00	0.29	0.79	0.01	0.00	0.00	0.00	0.00	0.39	0.04	0.00	0.15	0.46	0.01	0.06	0.00	0.00	0.51
Geometric Std Dev	1.304	2.156	2.12	2.84	2.28	1.27	1.16	2.96	1.55	1.41	1.82	1.56	1.56	1.00	2.63	1.59	1.31	2.52	1.52	1.36	1.23	1.20	1.00	2.49
1st Quartile	0.001	0.001	0.01	0.15	2.00	0.00	0.00	0.12	0.97	0.01	0.00	0.00	0.00	0.01	0.12	0.04	0.00	0.04	0.32	0.01	0.30	0.00	0.00	0.01
3rd Quartile	0.001	0.003	0.04	0.52	7.00	0.00	0.00	0.56	2.03	0.01	0.00	0.00	0.00	0.01	0.44	0.05	0.00	0.10	0.41	0.01	0.38	0.00	0.00	0.01
5% percentile	0.001	0.001	0.01	0.05	2.00	0.00	0.00	0.03	0.85	0.01	0.00	0.00	0.00	0.01	0.05	0.02	0.00	0.02	0.25	0.01	0.22	0.00	0.00	0.01
95% percentile	0.002	0.009	0.08	1.50	22.00	0.00	0.00	0.86	3.13	0.02	0.01	0.00	0.00	0.01	0.97	0.06	0.00	0.44	0.60	0.02	0.40	0.00	0.00	0.02
98% percentile	0.003	0.012	0.094	2.226	25.880	0.002	0.001	1.035	3.451	0.035	0.006	0.004	0.004	0.010	1.403	0.158	0.003	0.699	1.697	0.035	0.420	0.002	0.001	0.620
99% percentile	0.003	0.013	0.12	2.53	29.48	0.00	0.00	1.18	3.82	0.05	0.01	0.01	0.00	0.01	1.80	0.27	0.01	0.74	2.73	0.04	0.43	0.00	0.00	1.97
99.9%percentile	0.003	0.013	0.15	2.75	30.85	0.00	0.00	1.20	4.60	0.09	0.01	0.01	0.01	0.01	2.42	0.28	0.01	0.80	3.63	0.04	0.44	0.00	0.00	3.18

Geol Unit = Andesite

	Mo %	Cu %	Pb %	Zn %	Ag g/mt	Ni %	Co %	Mn %	Fe %	As %	Sr %	Cd %	Sb %	Bi %	Ca %	P %	Cr %	Mg %	Al %	Na %	K %	W %	Hg %	Au g/mt
N	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0
Min	0.001	0.001	0.01	0.99	2.00	0.00	0.00	0.09	6.28	0.01	0.01	0.00	0.00	0.01	1.81	0.25	0.01	1.52	5.84	0.01	0.18	0.00	0.00	0.00
Max	0.001	0.001	0.01	0.99	2.00	0.00	0.00	0.09	6.28	0.01	0.01	0.00	0.00	0.01	1.81	0.25	0.01	1.52	5.84	0.01	0.18	0.00	0.00	0.00
Mean	0.001	0.001	0.01	0.99	2.00	0.00	0.00	0.09	6.28	0.01	0.01	0.00	0.00	0.01	1.81	0.25	0.01	1.52	5.84	0.01	0.18	0.00	0.00	0.00
Geometric Mean	0.001	0.001	0.010	0.990	2.000	0.004	0.002	0.090	6.280	0.010	0.009	0.001	0.001	0.010	1.810	0.252	0.007	1.520	5.840	0.010	0.180	0.001	0.001	0.001
Median	0.001	0.001	0.01	0.99	2.00	0.00	0.00	0.09	6.28	0.01	0.01	0.00	0.00	0.01	1.81	0.25	0.01	1.52	5.84	0.01	0.18	0.00	0.00	0.00
Std Dev	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Geometric Std Dev	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
1st Quartile	0.001	0.001	0.01	0.99	2.00	0.00	0.00	0.09	6.28	0.01	0.01	0.00	0.00	0.01	1.81	0.25	0.01	1.52	5.84	0.01	0.18	0.00	0.00	0.00
3rd Quartile	0.001	0.001	0.01	0.99	2.00	0.00	0.00	0.09	6.28	0.01	0.01	0.00	0.00	0.01	1.81	0.25	0.01	1.52	5.84	0.01	0.18	0.00	0.00	0.00
5% percentile	0.001	0.001	0.01	0.99	2.00	0.00	0.00	0.09	6.28	0.01	0.01	0.00	0.00	0.01	1.81	0.25	0.01	1.52	5.84	0.01	0.18	0.00	0.00	0.00
95% percentile	0.001	0.001	0.01	0.99	2.00	0.00	0.00	0.09	6.28	0.01	0.01	0.00	0.00	0.01	1.81	0.25	0.01	1.52	5.84	0.01	0.18	0.00	0.00	0.00
98% percentile	0.001	0.001	0.010	0.990	2.000	0.004	0.002	0.090	6.280	0.010	0.009	0.001	0.001	0.010	1.810	0.252	0.007	1.520	5.840	0.010	0.180	0.001	0.001	0.001
99% percentile	0.001	0.001	0.01	0.99	2.00	0.00	0.00	0.09	6.28	0.01	0.01	0.00	0.00	0.01	1.81	0.25	0.01	1.52	5.84	0.01	0.18	0.00	0.00	0.00
99.9%percentile	0.001	0.001	0.01	0.99	2.00	0.00	0.00	0.09	6.28	0.01	0.01	0.00	0.00	0.01	1.81	0.25	0.01	1.52	5.84	0.01	0.18	0.00	0.00	0.00

Appendix I
Waste Rock Assay Information
A. TM Zone Assay Summary

Mine Zone = Hangingwall (HW)

	Mo %	Cu %	Pb %	Zn %	Ag g/mt	Ni %	Co %	Mn %	Fe %	As %	Sr %	Cd %	Sb %	Bi %	Ca %	P %	Cr %	Mg %	Al %	Na %	K %	W %	Hg %	Au g/mt
N	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	18
Min	0.001	0.001	0.01	0.02	2.00	0.00	0.00	0.02	0.74	0.01	0.00	0.00	0.00	0.01	0.07	0.03	0.00	0.02	0.31	0.01	0.18	0.00	0.00	0.01
Max	0.003	0.013	0.08	2.02	31.00	0.00	0.00	1.20	6.28	0.09	0.01	0.00	0.00	0.01	1.81	0.25	0.01	1.52	5.84	0.04	0.43	0.00	0.00	0.01
Mean	0.001	0.003	0.02	0.31	6.42	0.00	0.00	0.32	1.59	0.01	0.00	0.00	0.00	0.01	0.36	0.05	0.00	0.12	0.57	0.01	0.32	0.00	0.00	0.01
Geometric Mean	0.001	0.002	0.018	0.166	4.193	0.001	0.001	0.191	1.390	0.011	0.002	0.001	0.001	0.010	0.256	0.047	0.001	0.072	0.438	0.012	0.318	0.001	0.001	0.010
Median	0.001	0.002	0.02	0.15	3.00	0.00	0.00	0.22	1.23	0.01	0.00	0.00	0.00	0.01	0.18	0.05	0.00	0.06	0.39	0.01	0.35	0.00	0.00	0.01
Std Dev	0.001	0.003	0.02	0.43	7.18	0.00	0.00	0.30	1.05	0.01	0.00	0.00	0.00	0.00	0.35	0.04	0.00	0.25	0.91	0.01	0.06	0.00	0.00	0.00
Geometric Std Dev	1.436	2.223	1.98	2.90	2.36	1.26	1.12	3.14	1.62	1.50	1.95	1.34	1.57	1.00	2.23	1.46	1.38	2.26	1.61	1.45	1.24	1.20	1.00	1.00
1st Quartile	0.001	0.001	0.01	0.10	2.00	0.00	0.00	0.08	0.94	0.01	0.00	0.00	0.00	0.01	0.14	0.04	0.00	0.05	0.37	0.01	0.29	0.00	0.00	0.01
3rd Quartile	0.001	0.005	0.03	0.22	6.25	0.00	0.00	0.47	1.88	0.01	0.00	0.00	0.00	0.01	0.52	0.05	0.00	0.09	0.46	0.01	0.37	0.00	0.00	0.01
5% percentile	0.001	0.001	0.01	0.03	2.00	0.00	0.00	0.03	0.85	0.01	0.00	0.00	0.00	0.01	0.10	0.03	0.00	0.02	0.32	0.01	0.22	0.00	0.00	0.01
95% percentile	0.003	0.009	0.07	1.17	22.00	0.00	0.00	0.87	3.14	0.02	0.01	0.00	0.00	0.01	0.93	0.06	0.00	0.24	0.61	0.03	0.39	0.00	0.00	0.01
98% percentile	0.003	0.010	0.080	1.579	24.700	0.002	0.001	0.997	4.229	0.048	0.007	0.003	0.004	0.010	1.215	0.118	0.003	0.736	2.235	0.040	0.409	0.002	0.001	0.010
99% percentile	0.003	0.012	0.08	1.80	27.85	0.00	0.00	1.10	5.25	0.07	0.01	0.00	0.00	0.01	1.51	0.18	0.00	1.13	4.04	0.04	0.42	0.00	0.00	0.01
99.9%percentile	0.003	0.013	0.08	2.00	30.69	0.00	0.00	1.19	6.18	0.09	0.01	0.00	0.00	0.01	1.78	0.25	0.01	1.48	5.66	0.04	0.43	0.00	0.00	0.01

Mine Zone = InterOre

	Mo %	Cu %	Pb %	Zn %	Ag g/mt	Ni %	Co %	Mn %	Fe %	As %	Sr %	Cd %	Sb %	Bi %	Ca %	P %	Cr %	Mg %	Al %	Na %	K %	W %	Hg %	Au g/mt
N	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	12
Min	0.001	0.001	0.01	0.06	2.00	0.00	0.00	0.06	0.80	0.01	0.00	0.00	0.00	0.01	0.02	0.01	0.00	0.01	0.21	0.01	0.21	0.00	0.00	0.01
Max	0.001	0.013	0.15	2.78	23.00	0.00	0.00	0.78	2.55	0.02	0.00	0.01	0.00	0.01	1.24	0.06	0.00	0.72	0.46	0.01	0.41	0.00	0.00	0.03
Mean	0.001	0.003	0.04	0.75	5.85	0.00	0.00	0.39	1.60	0.01	0.00	0.00	0.00	0.01	0.19	0.04	0.00	0.08	0.32	0.01	0.33	0.00	0.00	0.01
Geometric Mean	0.001	0.002	0.027	0.463	4.073	0.001	0.001	0.308	1.487	0.011	0.001	0.002	0.001	0.010	0.122	0.039	0.001	0.047	0.318	0.010	0.323	0.001	0.001	0.011
Median	0.001	0.002	0.02	0.39	4.00	0.00	0.00	0.34	1.56	0.01	0.00	0.00	0.00	0.01	0.13	0.04	0.00	0.05	0.31	0.01	0.33	0.00	0.00	0.01
Std Dev	0.000	0.004	0.03	0.76	6.19	0.00	0.00	0.25	0.61	0.00	0.00	0.00	0.00	0.00	0.26	0.01	0.00	0.15	0.07	0.00	0.05	0.00	0.00	0.01
Geometric Std Dev	1.000	2.288	2.21	2.87	2.22	1.00	1.00	2.15	1.49	1.24	1.33	1.97	1.33	1.00	2.49	1.54	1.00	2.45	1.24	1.00	1.19	1.24	1.00	1.37
1st Quartile	0.001	0.001	0.02	0.22	2.00	0.00	0.00	0.17	1.08	0.01	0.00	0.00	0.00	0.01	0.08	0.04	0.00	0.03	0.29	0.01	0.31	0.00	0.00	0.01
3rd Quartile	0.001	0.003	0.04	1.05	5.75	0.00	0.00	0.62	2.20	0.01	0.00	0.00	0.00	0.01	0.16	0.05	0.00	0.07	0.38	0.01	0.36	0.00	0.00	0.01
5% percentile	0.001	0.001	0.01	0.09	2.00	0.00	0.00	0.10	0.86	0.01	0.00	0.00	0.00	0.01	0.02	0.01	0.00	0.01	0.21	0.01	0.23	0.00	0.00	0.01
95% percentile	0.001	0.012	0.08	2.47	21.10	0.00	0.00	0.77	2.49	0.02	0.00	0.00	0.00	0.01	0.48	0.06	0.00	0.11	0.41	0.01	0.39	0.00	0.00	0.02
98% percentile	0.001	0.013	0.123	2.655	22.240	0.001	0.001	0.776	2.527	0.020	0.003	0.007	0.002	0.010	0.936	0.058	0.001	0.477	0.441	0.010	0.402	0.002	0.001	0.026
99% percentile	0.001	0.013	0.14	2.72	22.62	0.00	0.00	0.78	2.54	0.02	0.00	0.01	0.00	0.01	1.09	0.06	0.00	0.60	0.45	0.01	0.41	0.00	0.00	0.03
99.9%percentile	0.001	0.013	0.15	2.77	22.96	0.00	0.00	0.78	2.55	0.02	0.00	0.01	0.00	0.01	1.22	0.06	0.00	0.71	0.46	0.01	0.41	0.00	0.00	0.03

Mine Zone = Footwall (FW)

	Mo %	Cu %	Pb %	Zn %	Ag g/mt	Ni %	Co %	Mn %	Fe %	As %	Sr %	Cd %	Sb %	Bi %	Ca %	P %	Cr %	Mg %	Al %	Na %	K %	W %	Hg %	Au g/mt
N	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	12
Min	0.001	0.001	0.01	0.17	2.00	0.00	0.00	0.01	0.77	0.01	0.00	0.00	0.00	0.01	0.04	0.01	0.00	0.01	0.22	0.01	0.15	0.00	0.00	0.01
Max	0.002	0.006	0.11	1.49	29.00	0.01	0.00	1.17	4.69	0.04	0.01	0.00	0.01	0.01	2.49	0.28	0.01	0.81	3.73	0.03	0.44	0.00	0.00	3.31
Mean	0.001	0.002	0.03	0.45	6.27	0.00	0.00	0.42	1.81	0.01	0.00	0.00	0.00	0.01	0.51	0.07	0.00	0.18	0.64	0.01	0.33	0.00	0.00	0.29
Geometric Mean	0.001	0.002	0.026	0.368	4.340	0.001	0.001	0.266	1.589	0.011	0.002	0.001	0.001	0.010	0.287	0.052	0.001	0.098	0.454	0.011	0.320	0.001	0.001	0.017
Median	0.001	0.002	0.03	0.33	4.00	0.00	0.00	0.42	1.51	0.01	0.00	0.00	0.00	0.01	0.35	0.05	0.00	0.11	0.38	0.01	0.33	0.00	0.00	0.01
Std Dev	0.000	0.002	0.03	0.34	6.50	0.00	0.00	0.31	1.03	0.01	0.00	0.00	0.00	0.00	0.58	0.07	0.00	0.22	0.83	0.01	0.07	0.00	0.00	0.95
Geometric Std Dev	1.159	1.862	2.20	1.83	2.29	1.56	1.31	3.32	1.66	1.38	2.07	1.23	1.70	1.00	3.17	1.98	1.65	3.30	2.00	1.35	1.30	1.16	1.00	5.31
1st Quartile	0.001	0.001	0.01	0.23	2.00	0.00	0.00	0.14	1.01	0.01	0.00	0.00	0.00	0.01	0.14	0.05	0.00	0.05	0.31	0.01	0.29	0.00	0.00	0.01
3rd Quartile	0.001	0.003	0.05	0.52	7.50	0.00	0.00	0.62	2.14	0.01	0.00	0.00	0.00	0.01	0.68	0.06	0.00	0.17	0.48	0.01	0.38	0.00	0.00	0.01
5% percentile	0.001	0.001	0.01	0.19	2.00	0.00	0.00	0.04	0.92	0.01	0.00	0.00	0.00	0.01	0.04	0.02	0.00	0.01	0.24	0.01	0.22	0.00	0.00	0.01
95% percentile	0.001	0.005	0.07	1.19	14.90	0.00	0.00	0.87	3.54	0.02	0.01	0.00	0.00	0.01	1.55	0.25	0.00	0.67	2.35	0.02	0.41	0.00	0.00	1.50
98% percentile	0.002	0.006	0.093	1.372	23.120	0.005	0.003	1.048	4.211	0.032	0.008	0.002	0.005	0.010	2.108	0.271	0.006	0.755	3.180	0.026	0.427	0.002	0.001	2.586
99% percentile	0.002	0.006	0.10	1.43	26.06	0.00	0.00	1.11	4.45	0.04	0.01	0.00	0.01	0.01	2.30	0.27	0.01	0.78	3.45	0.03	0.43	0.00	0.00	2.95
99.9%percentile	0.002	0.006	0.11	1.48	28.71	0.00	0.00	1.16	4.67	0.04	0.01	0.00	0.01	0.01	2.47	0.28	0.01	0.81	3.70	0.03	0.44	0.00	0.00	3.27

Appendix I
Waste Rock Assay Information
B. S Zone Assay Summary

All Samples

	Mo %	Cu %	Pb %	Zn %	Ag g/mt	Ni %	Co %	Mn %	Fe %	As %	Sr %	Cd %	Sb %	Bi %	Ca %	P %	Cr %	Mg %	Al %	Na %	K %	W %	Hg %	Au g/mt
N	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41
Min	0.001	0.001	0.01	0.01	2.00	0.00	0.00	0.02	0.68	0.01	0.00	0.00	0.00	0.01	0.06	0.02	0.00	0.01	0.40	0.01	0.20	0.00	0.00	0.01
Max	0.016	0.008	0.28	1.24	23.00	0.00	0.00	1.69	6.08	0.01	0.01	0.00	0.00	0.01	1.51	0.07	0.00	0.48	1.33	0.09	0.54	0.00	0.00	0.02
Mean	0.002	0.002	0.05	0.22	5.05	0.00	0.00	0.40	2.35	0.01	0.00	0.00	0.00	0.01	0.51	0.06	0.00	0.16	0.69	0.02	0.37	0.00	0.00	0.01
Geometric Mean	0.001	0.002	0.023	0.129	3.437	0.001	0.001	0.163	2.074	0.010	0.002	0.001	0.001	0.010	0.368	0.055	0.001	0.120	0.661	0.019	0.363	0.001	0.001	0.010
Median	0.001	0.001	0.01	0.16	2.00	0.00	0.00	0.08	1.94	0.01	0.00	0.00	0.00	0.01	0.38	0.06	0.00	0.13	0.64	0.01	0.36	0.00	0.00	0.01
Std Dev	0.002	0.002	0.06	0.26	5.65	0.00	0.00	0.51	1.29	0.00	0.00	0.00	0.00	0.00	0.39	0.01	0.00	0.11	0.21	0.02	0.08	0.00	0.00	0.00
Geometric Std Dev	1.765	1.901	3.04	3.13	2.21	1.00	1.00	4.00	1.64	1.00	2.11	1.36	1.34	1.00	2.42	1.38	1.00	2.39	1.33	2.08	1.23	1.11	1.00	1.11
1st Quartile	0.001	0.001	0.01	0.07	2.00	0.00	0.00	0.06	1.52	0.01	0.00	0.00	0.00	0.01	0.21	0.05	0.00	0.08	0.53	0.01	0.32	0.00	0.00	0.01
3rd Quartile	0.001	0.002	0.08	0.22	6.00	0.00	0.00	0.61	2.61	0.01	0.00	0.00	0.00	0.01	0.74	0.07	0.00	0.24	0.81	0.04	0.43	0.00	0.00	0.01
5% percentile	0.001	0.001	0.01	0.01	2.00	0.00	0.00	0.04	0.96	0.01	0.00	0.00	0.00	0.01	0.09	0.03	0.00	0.02	0.47	0.01	0.26	0.00	0.00	0.01
95% percentile	0.005	0.005	0.14	0.84	20.00	0.00	0.00	1.43	5.16	0.01	0.01	0.00	0.00	0.01	1.31	0.07	0.00	0.33	1.12	0.06	0.48	0.00	0.00	0.01
98% percentile	0.007	0.008	0.176	1.024	22.200	0.001	0.001	1.490	5.944	0.010	0.009	0.003	0.002	0.010	1.374	0.071	0.001	0.400	1.218	0.074	0.524	0.001	0.001	0.012
99% percentile	0.012	0.008	0.23	1.13	22.60	0.00	0.00	1.59	6.01	0.01	0.01	0.00	0.00	0.01	1.44	0.07	0.00	0.44	1.27	0.08	0.53	0.00	0.00	0.02
99.9%percentile	0.01556	0.008	0.2748	1.2292	22.96	0.001	0.001	1.68	6.0732	0.01	0.01088	0.00396	0.00392	0.01	1.5032	0.071	0.001	0.476	1.3244	0.0892	0.5392	0.00196	0.001	0.0196

Appendix I
Waste Rock Assay Information
B. S Zone Assay Summary

Mine Zone = Hangingwall and Upper Hangingwall (HW and UHW)

	Mo %	Cu %	Pb %	Zn %	Ag g/mt	Ni %	Co %	Mn %	Fe %	As %	Sr %	Cd %	Sb %	Bi %	Ca %	P %	Cr %	Mg %	Al %	Na %	K %	W %	Hg %	Au g/mt
N	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
Min	0.001	0.001	0.01	0.06	2.00	0.00	0.00	0.02	0.68	0.01	0.00	0.00	0.00	0.01	0.06	0.02	0.00	0.01	0.40	0.01	0.26	0.00	0.00	0.01
Max	0.016	0.008	0.14	1.24	15.00	0.00	0.00	1.69	6.08	0.01	0.01	0.00	0.00	0.01	0.74	0.07	0.00	0.16	1.00	0.09	0.54	0.00	0.00	0.02
Mean	0.002	0.003	0.04	0.27	4.10	0.00	0.00	0.46	2.43	0.01	0.00	0.00	0.00	0.01	0.29	0.05	0.00	0.09	0.66	0.03	0.37	0.00	0.00	0.01
Geometric Mean	0.001	0.002	0.024	0.182	3.185	0.001	0.001	0.182	2.020	0.010	0.002	0.001	0.001	0.010	0.217	0.047	0.001	0.069	0.638	0.019	0.366	0.001	0.001	0.010
Median	0.001	0.002	0.01	0.19	2.00	0.00	0.00	0.09	1.72	0.01	0.00	0.00	0.00	0.01	0.21	0.05	0.00	0.10	0.63	0.01	0.37	0.00	0.00	0.01
Std Dev	0.003	0.002	0.05	0.31	3.46	0.00	0.00	0.56	1.64	0.00	0.00	0.00	0.00	0.00	0.22	0.02	0.00	0.05	0.18	0.02	0.07	0.00	0.00	0.00
Geometric Std Dev	2.144	2.052	2.93	2.33	1.97	1.00	1.00	4.48	1.83	1.00	1.92	1.50	1.24	1.00	2.20	1.47	1.00	2.33	1.31	2.30	1.22	1.00	1.00	1.17
1st Quartile	0.001	0.001	0.01	0.09	2.00	0.00	0.00	0.06	1.43	0.01	0.00	0.00	0.00	0.01	0.11	0.04	0.00	0.05	0.50	0.01	0.32	0.00	0.00	0.01
3rd Quartile	0.002	0.003	0.07	0.23	6.25	0.00	0.00	0.74	2.85	0.01	0.00	0.00	0.00	0.01	0.44	0.06	0.00	0.12	0.84	0.04	0.44	0.00	0.00	0.01
5% percentile	0.001	0.001	0.01	0.07	2.00	0.00	0.00	0.03	0.88	0.01	0.00	0.00	0.00	0.01	0.07	0.02	0.00	0.02	0.47	0.01	0.28	0.00	0.00	0.01
95% percentile	0.006	0.008	0.13	0.98	8.35	0.00	0.00	1.45	5.92	0.01	0.01	0.00	0.00	0.01	0.67	0.07	0.00	0.16	0.94	0.07	0.47	0.00	0.00	0.01
98% percentile	0.012	0.008	0.136	1.137	12.340	0.001	0.001	1.595	6.015	0.010	0.008	0.004	0.002	0.010	0.713	0.070	0.001	0.160	0.977	0.082	0.513	0.001	0.001	0.016
99% percentile	0.014	0.008	0.14	1.19	13.67	0.00	0.00	1.64	6.05	0.01	0.01	0.00	0.00	0.01	0.73	0.07	0.00	0.16	0.99	0.09	0.53	0.00	0.00	0.02
99.9%percentile	0.01579	0.008	0.13981	1.23487	14.867	0.001	0.001	1.68525	6.07677	0.01	0.00798	0.00398	0.002	0.01	0.73867	0.07094	0.001	0.16	0.99886	0.08962	0.53867	0.001	0.001	0.01981

Mine Zone = InterOre

	Mo %	Cu %	Pb %	Zn %	Ag g/mt	Ni %	Co %	Mn %	Fe %	As %	Sr %	Cd %	Sb %	Bi %	Ca %	P %	Cr %	Mg %	Al %	Na %	K %	W %	Hg %	Au g/mt
N	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Min	0.001	0.001	0.01	0.02	2.00	0.00	0.00	0.05	1.96	0.01	0.00	0.00	0.00	0.01	0.23	0.06	0.00	0.11	0.50	0.01	0.33	0.00	0.00	0.01
Max	0.001	0.001	0.13	0.39	6.00	0.00	0.00	1.17	3.38	0.01	0.01	0.00	0.00	0.01	1.34	0.07	0.00	0.33	0.76	0.04	0.52	0.00	0.00	0.01
Mean	0.001	0.001	0.07	0.23	3.40	0.00	0.00	0.63	2.62	0.01	0.00	0.00	0.00	0.01	0.77	0.07	0.00	0.20	0.58	0.02	0.44	0.00	0.00	0.01
Geometric Mean	0.001	0.001	0.049	0.153	3.104	0.001	0.001	0.430	2.577	0.010	0.003	0.001	0.001	0.010	0.606	0.068	0.001	0.181	0.575	0.013	0.437	0.001	0.001	0.010
Median	0.001	0.001	0.09	0.28	3.00	0.00	0.00	0.61	2.45	0.01	0.00	0.00	0.00	0.01	0.89	0.07	0.00	0.16	0.53	0.01	0.44	0.00	0.00	0.01
Std Dev	0.000	0.000	0.06	0.17	1.67	0.00	0.00	0.41	0.56	0.00	0.00	0.00	0.00	0.00	0.51	0.00	0.00	0.09	0.11	0.01	0.07	0.00	0.00	0.00
Geometric Std Dev	1.000	1.000	3.21	3.54	1.60	1.00	1.00	3.47	1.24	1.00	2.74	1.00	1.00	1.00	2.32	1.05	1.00	1.55	1.19	1.86	1.19	1.00	1.00	1.00
1st Quartile	0.001	0.001	0.02	0.10	2.00	0.00	0.00	0.51	2.34	0.01	0.00	0.00	0.00	0.01	0.26	0.07	0.00	0.14	0.52	0.01	0.44	0.00	0.00	0.01
3rd Quartile	0.001	0.001	0.12	0.38	4.00	0.00	0.00	0.81	2.99	0.01	0.01	0.00	0.00	0.01	1.15	0.07	0.00	0.24	0.60	0.01	0.48	0.00	0.00	0.01
5% percentile	0.001	0.001	0.01	0.04	2.00	0.00	0.00	0.14	2.04	0.01	0.00	0.00	0.00	0.01	0.24	0.06	0.00	0.12	0.50	0.01	0.35	0.00	0.00	0.01
95% percentile	0.001	0.001	0.13	0.39	5.60	0.00	0.00	1.10	3.30	0.01	0.01	0.00	0.00	0.01	1.30	0.07	0.00	0.31	0.73	0.03	0.51	0.00	0.00	0.01
98% percentile	0.001	0.001	0.129	0.389	5.840	0.001	0.001	1.141	3.349	0.010	0.008	0.001	0.001	0.010	1.325	0.071	0.001	0.323	0.747	0.038	0.517	0.001	0.001	0.010
99% percentile	0.001	0.001	0.13	0.39	5.92	0.00	0.00	1.16	3.36	0.01	0.01	0.00	0.00	0.01	1.33	0.07	0.00	0.33	0.75	0.04	0.52	0.00	0.00	0.01
99.9%percentile	0.001	0.001	0.12996	0.38996	5.992	0.001	0.001	1.16856	3.37844	0.01	0.008	0.001	0.001	0.01	1.33924	0.071	0.001	0.32964	0.75936	0.03988	0.51984	0.001	0.001	0.01

Mine Zone = Footwall (FW)

	Mo %	Cu %	Pb %	Zn %	Ag g/mt	Ni %	Co %	Mn %	Fe %	As %	Sr %	Cd %	Sb %	Bi %	Ca %	P %	Cr %	Mg %	Al %	Na %	K %	W %	Hg %	Au g/mt
N	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
Min	0.001	0.001	0.01	0.01	2.00	0.00	0.00	0.04	0.96	0.01	0.00	0.00	0.00	0.01	0.22	0.05	0.00	0.07	0.45	0.01	0.20	0.00	0.00	0.01
Max	0.002	0.004	0.28	0.84	23.00	0.00	0.00	1.43	4.53	0.01	0.01	0.00	0.00	0.01	1.51	0.07	0.00	0.48	1.33	0.05	0.47	0.00	0.00	0.01
Mean	0.001	0.001	0.04	0.16	6.75	0.00	0.00	0.26	2.16	0.01	0.00	0.00	0.00	0.01	0.72	0.06	0.00	0.24	0.76	0.02	0.35	0.00	0.00	0.01
Geometric Mean	0.001	0.001	0.018	0.080	3.903	0.001	0.001	0.105	2.003	0.010	0.003	0.001	0.001	0.010	0.609	0.065	0.001	0.207	0.722	0.020	0.339	0.001	0.001	0.010
Median	0.001	0.001	0.01	0.10	2.00	0.00	0.00	0.07	1.93	0.01	0.00	0.00	0.00	0.01	0.71	0.07	0.00	0.26	0.70	0.02	0.34	0.00	0.00	0.01
Std Dev	0.000	0.001	0.07	0.21	8.00	0.00	0.00	0.46	0.94	0.00	0.00	0.00	0.00	0.00	0.39	0.01	0.00	0.12	0.26	0.01	0.07	0.00	0.00	0.00
Geometric Std Dev	1.189	1.625	3.03	3.72	2.72	1.00	1.00	3.17	1.48	1.00	2.06	1.19	1.49	1.00	1.85	1.09	1.00	1.72	1.37	1.88	1.24	1.19	1.00	1.00
1st Quartile	0.001	0.001	0.01	0.04	2.00	0.00	0.00	0.05	1.53	0.01	0.00	0.00	0.00	0.01	0.36	0.06	0.00	0.14	0.58	0.01	0.31	0.00	0.00	0.01
3rd Quartile	0.001	0.001	0.02	0.18	7.25	0.00	0.00	0.10	2.35	0.01	0.01	0.00	0.00	0.01	0.92	0.07	0.00	0.32	0.82	0.04	0.39	0.00	0.00	0.01
5% percentile	0.001	0.001	0.01	0.01	2.00	0.00	0.00	0.04	1.33	0.01	0.00	0.00	0.00	0.01	0.23	0.06	0.00	0.09	0.47	0.01	0.25	0.00	0.00	0.01
95% percentile	0.001	0.003	0.18	0.53	22.25	0.00	0.00	1.42	3.96	0.01	0.01	0.00	0.00	0.01	1.36	0.07	0.00	0.41	1.23	0.04	0.44	0.00	0.00	0.01
98% percentile	0.002	0.004	0.241	0.714	22.700	0.001	0.001	1.427	4.302	0.010	0.010	0.002	0.003	0.010	1.450	0.070	0.001	0.450	1.288	0.047	0.458	0.002	0.001	0.010
99% percentile	0.002	0.004	0.26	0.78	22.85	0.00	0.00	1.43	4.42	0.01	0.01	0.00	0.00	0.01	1.48	0.07	0.00	0.47	1.31	0.05	0.46	0.00	0.00	0.01
99.9%percentile	0.00199	0.00399	0.27805	0.8337	22.985	0.001	0.001	1.42985	4.5186	0.01	0.01093	0.00199	0.00397	0.01	1.507	0.07	0.001	0.4785	1.3279	0.04985	0.4694	0.00199	0.001	0.01

Appendix I
Waste Rock Assay Information
C. TM Zone Waste Rock

Note -- Ore and Expit samples deleted --

Note: red typeface in results table indicates values above or below method detection limit

N	78	78	78	78	78	78	78	78	78	78	78
Min	0.001	0.001	0.01	0.02	2.00	0.00	0.00	0.01	0.74	0.01	
Max	0.003	0.013	0.15	2.78	31.00	0.01	0.00	1.20	6.28	0.09	
Mean	0.001	0.003	0.03	0.46	6.23	0.00	0.00	0.37	1.66	0.01	
Geometric Mean	0.001	0.002	0.022	0.271	4.203	0.001	0.001	0.237	1.469	0.011	
Median	0.001	0.002	0.02	0.23	3.50	0.00	0.00	0.32	1.32	0.01	
Std Dev	0.000	0.003	0.03	0.54	6.67	0.00	0.00	0.29	0.94	0.01	
Geometric Std Dev	1.302	2.156	2.12	2.85	2.28	1.33	1.18	2.96	1.60	1.40	
1st Quartile	0.001	0.001	0.01	0.15	2.00	0.00	0.00	0.11	0.98	0.01	
3rd Quartile	0.001	0.003	0.04	0.54	6.75	0.00	0.00	0.56	2.10	0.01	
5% percentile	0.001	0.001	0.01	0.05	2.00	0.00	0.00	0.03	0.85	0.01	
95% percentile	0.002	0.009	0.08	1.50	22.00	0.00	0.00	0.86	3.35	0.02	
98% percentile	0.003	0.012	0.094	2.218	25.760	0.004	0.002	1.030	4.074	0.035	
99% percentile	0.003	0.013	0.12	2.53	29.46	0.00	0.00	1.18	5.06	0.05	
99.9%percentile	0.003	0.013	0.15	2.75	30.85	0.00	0.00	1.20	6.16	0.09	

Zone	Drillhole	Sample#	From	To	Interval	Easting	Northing	Azimuth	Dip	Lithology	Rock Mgmt U	Pit Zone	Mo. %	Cu. %	Pb. %	Zn. %	Ag. g/mt	Ni. %	Co. %	Mn. %	Fe. %	As. %
TM	DH05-11	25929	1.52	3.5	1.98	404358	6688990	150	-45	Granodiorite	Waste Granoc	HW	0.001	0.001	0.01	0.02	2	0.001	0.001	0.02	0.96	0.01
TM	DH05-11	25930	3.5	5.1	1.6	404358	6688990	150	-45	Granodiorite	Waste Granoc	HW	0.001	0.004	0.01	0.05	2	0.001	0.001	0.06	0.9	0.01
TM	DH05-11	25931	5.1	6.2	1.1	404358	6688990	150	-45	Granodiorite	Waste Granoc	HW	0.001	0.005	0.08	0.2	22	0.001	0.001	0.86	2.84	0.01
TM	DH05-11	25932	6.2	7.7	1.5	404358	6688990	150	-45	Granodiorite	Waste Granoc	HW	0.001	0.002	0.02	0.18	6	0.001	0.001	0.14	0.92	0.01
TM	DH05-11	25933	7.7	8.8	1.1	404358	6688990	150	-45	Granodiorite	Waste Granoc	HW	0.001	0.001	0.01	0.21	2	0.001	0.001	0.06	1.12	0.01
TM	DH05-11	25934	8.8	11	2.2	404358	6688990	150	-45	Granodiorite	Waste Granoc	HW	0.001	0.001	0.02	0.15	2	0.001	0.001	0.51	1.73	0.01
TM	DH05-11	25935	11	12.2	1.2	404358	6688990	150	-45	Granodiorite	Waste Granoc	HW	0.001	0.009	0.01	0.37	22	0.001	0.001	0.38	1.85	0.01
TM	DH05-11	25936	12.2	14.2	2	404358	6688990	150	-45	Granodiorite	Waste Granoc	HW	0.001	0.002	0.01	0.1	2	0.001	0.001	0.11	0.92	0.01
TM	DH05-11	25937	14.2	16.2	2	404358	6688990	150	-45	Granodiorite	Waste Granoc	HW	0.001	0.002	0.02	0.15	6	0.001	0.001	0.32	1.19	0.01
TM	DH05-11	25938	16.2	17.7	1.5	404358	6688990	150	-45	Granodiorite	Waste Granoc	HW	0.001	0.003	0.01	0.12	7	0.001	0.001	0.08	0.85	0.01
TM	DH05-11	25939	17.7	19.2	1.5	404358	6688990	150	-45	Granodiorite	Waste Granoc	HW	0.001	0.002	0.01	0.2	2	0.001	0.001	0.07	0.86	0.01
TM	DH05-11	25941	19.2	20.7	1.5	404358	6688990	150	-45	Granodiorite	Waste Granoc	HW	0.001	0.001	0.04	0.38	2	0.001	0.001	0.36	1.25	0.01
TM	DH05-11	25943	20.7	21.5	0.8	404358	6688990	150	-45	Granodiorite	Waste Granoc	HW	0.001	0.007	0.04	0.13	16	0.001	0.001	0.51	1.97	0.01
TM	DH05-11	25946	22.3	23.05	0.75	404358	6688990	150	-45	Granodiorite	Waste Granoc	InterOre	0.001	0.001	0.01	0.06	2	0.001	0.001	0.15	0.92	0.01
TM	DH05-11	25947	23.05	24.7	1.65	404358	6688990	150	-45	Granodiorite	Waste Granoc	InterOre	0.001	0.002	0.02	0.39	2	0.001	0.001	0.17	0.86	0.01
TM	DH05-11	25948	24.7	26.7	2	404358	6688990	150	-45	Granodiorite	Waste Granoc	InterOre	0.001	0.001	0.01	0.39	2	0.001	0.001	0.14	0.88	0.01
TM	DH05-11	25949	26.7	27.3	0.6	404358	6688990	150	-45	Granodiorite	Waste Granoc	InterOre	0.001	0.001	0.07	0.39	2	0.001	0.001	0.62	1.67	0.01
TM	DH05-11	25950	27.3	27.75	0.45	404358	6688990	150	-45	Granodiorite	Waste Granoc	InterOre	0.001	0.001	0.03	0.23	2	0.001	0.001	0.77	2.35	0.01
TM	DH05-11	25953	28	28.4	0.4	404358	6688990	150	-45	Granodiorite	Waste Granoc	FW	0.001	0.001	0.02	0.2	4	0.001	0.001	0.88	2.7	0.01
TM	DH05-11	25954	28.4	29.9	1.5	404358	6688990	150	-45	Granodiorite	Waste Granoc	FW	0.001	0.001	0.07	0.19	2	0.001	0.001	0.44	1.37	0.01
TM	DH05-11	25955	29.9	31.9	2	404358	6688990	150	-45	Granodiorite	Waste Granoc	FW	0.001	0.001	0.01	0.33	2	0.001	0.001	0.06	0.92	0.01
TM	DH05-11	25956	31.9	33.9	2	404358	6688990	150	-45	Granodiorite	Waste Granoc	FW	0.001	0.005	0.01	0.17	2	0.001	0.001	0.04	1.02	0.01
TM	DH05-12	25817	13.45	13.95	0.5	404296	6688947	150	-45	Granodiorite	Waste Granoc	InterOre	0.001	0.012	0.15	2.78	21	0.001	0.001	0.18	1.16	0.01
TM	DH05-12	25818	13.95	14.45	0.5	404296	6688947	150	-45	Granodiorite	Waste Granoc	InterOre	0.001	0.003	0.04	0.76	4	0.001	0.001	0.06	0.8	0.01
TM	DH05-12	25822	15.9	16.2	0.3	404296	6688947	150	-45	Granodiorite	Waste Granoc	FW	0.001	0.005	0.02	0.31	29	0.001	0.001	0.01	0.77	0.04
TM	DH05-12	25823	16.2	17.7	1.5	404296	6688947	150	-45	Granodiorite	Waste Granoc	FW	0.001	0.001	0.06	0.42	4	0.001	0.001	0.77	2.15	0.01
TM	DH05-12	25824	17.7	19.05	1.35	404296	6688947	150	-45	Granodiorite	Waste Granoc	FW	0.001	0.002	0.01	0.24	6	0.001	0.001	0.22	1.29	0.01
TM	DH05-12	25825	19.05	19.6	0.55	404296	6688947	150	-45	Granodiorite	Waste Granoc	FW	0.001	0.002	0.01	1.21	2	0.005	0.003	0.56	4.69	0.01
TM	DH05-14	25861	8.35	9.85	1.5	404320	6688971	150	-45	Granodiorite	Waste Granoc	HW	0.001	0.005	0.01	0.05	2	0.001	0.001	0.04	0.74	0.01
TM	DH05-14	25863	9.85	11.35	1.5	404320	6688971	150	-45	Granodiorite	Waste Granoc	HW	0.001	0.007	0.01	0.06	3	0.001	0.001	0.03	0.85	0.01
TM	DH05-14	25864	11.35	12.85	1.5	404320	6688971	150	-45	Granodiorite	Waste Granoc	HW	0.001	0.003	0.01	0.03	2	0.001	0.001	0.03	0.87	0.01
TM	DH05-14	25865	12.85	14	1.15	404320	6688971	150	-45	Granodiorite	Waste Granoc	HW	0.001	0.005	0.01	0.03	3	0.001	0.001	0.03	0.94	0.01
TM	DH05-14	25866	14	15.2	1.2	404320	6688971	150	-45	Granodiorite	Waste Granoc	HW	0.001	0.013	0.02	0.14	18	0.001	0.001	0.24	1.42	0.01
TM	DH05-14	25870	18.3	20	1.7	404320	6688971	150	-45	Granodiorite	Waste Granoc	InterOre	0.001	0.004	0.02	0.79	5	0.001	0.001	0.1	0.92	0.01
TM	DH05-14	25871	20	22	2	404320	6688971	150	-45	Granodiorite	Waste Granoc	InterOre	0.001	0.002	0.04	0.26	8	0.001	0.001	0.49	1.44	0.01
TM	DH05-14	25872	22	22.45	0.45	404320	6688971	150	-45	Granodiorite	Waste Granoc	InterOre	0.001	0.002	0.05	0.09	13	0.001	0.001	0.15	1.13	0.01
TM	DH05-14	25873	22.45	23.15	0.7	404320	6688971	150	-45	Granodiorite	Waste Granoc	InterOre	0.001	0.001	0.02	0.19	3	0.001	0.001	0.37	1.72	0.01
TM	DH05-14	25874	23.15	23.35	0.2	404320	6688971	150	-45	Granodiorite	Waste Granoc	InterOre	0.001	0.001	0.04	0.22	4	0.001	0.001	0.27	1.69	0.01
TM	DH05-14	25876	23.5	23.65	0.15	404320	6688971	150	-45	Granodiorite	Waste Granoc	FW	0.001	0.006	0.05	1.49	15	0.004	0.002	0.4	2.79	0.01
TM	DH05-14	25877	23.65	23.95	0.3	404320	6688971	150	-45	Granodiorite	Waste Granoc	FW	0.001	0.003	0.02	0.24	12	0.001	0.001	0.21	1.01	0.01
TM	DH05-14	25878	23.95	24.95	1	404320	6688971	150	-45	Granodiorite	Waste Granoc	FW	0.001	0.001	0.03	0.21	2	0.001	0.001	0.46	1.76	0.01
TM	DH05-14	25879	24.95	26.8	1.85	404320	6688971	150	-45	Granodiorite	Waste Granoc	FW	0.001	0.002	0.05	0.32	11	0.001	0.001	0.07	0.97	0.01
TM	DH07-01	305901	24.1	24.8	0.7	404249	6688931	135	-45	Granodiorite	Waste Granoc	HW	0.002	0.003	0.03	0.14	7	0.001	0.001	0.46	2.27	0.03
TM	DH07-01	305902	24.8	25.8	1	404249	6688931	135	-45	Granodiorite	Waste Granoc	HW	0.003	0.001	0.03	0.14	2	0.001	0.001	0.47	1.64	0.01
TM	DH07-01	305903	25.8	26.5	0.7	404249	6688931	135	-45	Granodiorite	Waste Granoc	HW	0.003	0.001	0.05	0.15	4	0.001	0.001	0.45	1.54	0.01
TM	DH07-01	305904	26.5	27.5	1	404249	6688931	135	-45	Granodiorite	Waste Granoc	HW	0.001	0.002	0.04	0.12	5	0.001	0.001	0.33	1.31	0.01
TM	DH07-01	305906	31.9	32.9	1	404249	6688931	135	-45	Granodiorite	Waste Granoc	HW	0.003	0.009	0.02	1.09	10	0.001	0.001	0.18	0.83	0.01
TM	DH07-01	305907	32.9	33.5	0.6	404249	6688931	135	-45	Granodiorite	Waste Granoc	HW	0.003	0.009	0.08	0.21	31	0.001	0.001	0.79	2.43	0.01
TM	DH07-01	305909	34.2	34.8	0.6	404249	6688931	135	-45	Granodiorite	Waste Granoc	FW	0.001	0.002	0.04	0.19	8	0.001	0.001	0.08	0.93	0.01
TM	DH07-01	305911	34.8	35.7	0.9	404249	6688931	135	-45	Granodiorite	Waste Granoc	FW	0.001	0.003	0.03	0.27	6	0.001	0.001	0.3	1.16	0.01
TM	DH07-01	305912	35.7	36.6	0.9	404249	6688931	135	-45	Granodiorite	Waste Granoc	FW	0.001	0.001	0.04	0.52	2	0.001	0.001	0.32	1	0.01
TM	DH07-03	305938	16	17	1	404282	6688954	135	-45	Granodiorite	Waste Granoc	HW	0.001	0.007	0.01	0.15	3	0.001	0.001	0.13	1.22	0.01
TM	DH07-03	305939	18	19	1	404282	6688954	135	-45	Granodiorite	Waste Granoc	HW	0.001	0.002	0.02	0.15	5	0.001	0.001	0.35	1.32	0.01
TM	DH07-03	305941	20	21	1	404282	6688954	135	-45	Granodiorite	Waste Granoc	HW	0.001	0.002	0.02	0.1	2	0.001	0.001	0.11	1.11	0.01

Appendix I
Waste Rock Assay Information
C. TM Zone Waste Rock

[illegible]

Zone	Drillhole	Sample#	From	To	Sr %	Cd %	Sb %	Bi %	Ca %	P %	Cr %	Mg %	Al %	Na %	K %	W %	Hg %	Au g/mt
TM	DH05-11	25929	1.52	3.5	0.001	0.001	0.002	0.01	0.12	0.037	0.001	0.1	0.56	0.04	0.21	0.001	0.001	0.01
TM	DH05-11	25930	3.5	5.1	0.001	0.001	0.001	0.01	0.15	0.047	0.001	0.06	0.58	0.02	0.24	0.001	0.001	0.01
TM	DH05-11	25931	5.1	6.2	0.003	0.001	0.001	0.01	0.1	0.045	0.001	0.02	0.39	0.01	0.38	0.001	0.001	0.01
TM	DH05-11	25932	6.2	7.7	0.001	0.001	0.001	0.01	0.09	0.027	0.001	0.03	0.39	0.01	0.31	0.001	0.001	0.01
TM	DH05-11	25933	7.7	8.8	0.001	0.001	0.001	0.01	0.12	0.031	0.001	0.09	0.69	0.02	0.25	0.001	0.001	0.01
TM	DH05-11	25934	8.8	11	0.002	0.001	0.001	0.01	0.44	0.053	0.001	0.06	0.41	0.01	0.36	0.001	0.001	0.01
TM	DH05-11	25935	11	12.2	0.001	0.001	0.003	0.01	0.16	0.048	0.001	0.04	0.4	0.01	0.37	0.001	0.001	0.01
TM	DH05-11	25936	12.2	14.2	0.003	0.001	0.001	0.01	0.61	0.055	0.001	0.04	0.37	0.01	0.36	0.001	0.001	0.01
TM	DH05-11	25937	14.2	16.2	0.003	0.001	0.001	0.01	0.39	0.053	0.001	0.07	0.38	0.01	0.36	0.001	0.001	0.01
TM	DH05-11	25938	16.2	17.7	0.003	0.001	0.001	0.01	0.58	0.051	0.001	0.06	0.37	0.01	0.36	0.001	0.001	0.01
TM	DH05-11	25939	17.7	19.2	0.001	0.001	0.001	0.01	0.13	0.047	0.001	0.02	0.39	0.01	0.36	0.001	0.001	0.01
TM	DH05-11	25941	19.2	20.7	0.002	0.001	0.001	0.01	0.33	0.055	0.001	0.06	0.37	0.01	0.36	0.001	0.001	0.01
TM	DH05-11	25943	20.7	21.5	0.001	0.001	0.003	0.01	0.14	0.057	0.001	0.06	0.4	0.01	0.4	0.001	0.001	0.01
TM	DH05-11	25946	22.3	23.05	0.001	0.001	0.001	0.01	0.13	0.036	0.001	0.06	0.3	0.01	0.31	0.001	0.001	0.01
TM	DH05-11	25947	23.05	24.7	0.002	0.001	0.001	0.01	0.23	0.053	0.001	0.07	0.38	0.01	0.38	0.001	0.001	0.01
TM	DH05-11	25948	24.7	26.7	0.003	0.001	0.001	0.01	0.44	0.056	0.001	0.08	0.38	0.01	0.37	0.001	0.001	0.01
TM	DH05-11	25949	26.7	27.3	0.001	0.001	0.001	0.01	0.25	0.059	0.001	0.08	0.39	0.01	0.36	0.001	0.001	0.01
TM	DH05-11	25950	27.3	27.75	0.001	0.001	0.001	0.01	0.17	0.057	0.001	0.08	0.41	0.01	0.38	0.001	0.001	0.01
TM	DH05-11	25953	28	28.4	0.001	0.001	0.001	0.01	0.26	0.06	0.001	0.15	0.41	0.01	0.38	0.001	0.001	0.01
TM	DH05-11	25954	28.4	29.9	0.002	0.001	0.001	0.01	0.35	0.061	0.001	0.11	0.4	0.01	0.4	0.001	0.001	0.01
TM	DH05-11	25955	29.9	31.9	0.003	0.001	0.001	0.01	0.56	0.052	0.001	0.1	0.52	0.02	0.33	0.001	0.001	0.01
TM	DH05-11	25956	31.9	33.9	0.004	0.001	0.001	0.01	0.53	0.049	0.001	0.13	0.51	0.03	0.3	0.001	0.001	0.01
TM	DH05-12	25817	13.45	13.95	0.001	0.009	0.002	0.01	0.02	0.014	0.001	0.01	0.21	0.01	0.21	0.001	0.001	0.03
TM	DH05-12	25818	13.95	14.45	0.001	0.002	0.001	0.01	0.02	0.012	0.001	0.01	0.21	0.01	0.23	0.001	0.001	0.01
TM	DH05-12	25822	15.9	16.2	0.001	0.001	0.003	0.01	0.04	0.04	0.001	0.01	0.31	0.01	0.44	0.001	0.001	0.02
TM	DH05-12	25823	16.2	17.7	0.001	0.001	0.003	0.01	0.15	0.057	0.001	0.06	0.37	0.01	0.4	0.001	0.001	0.01
TM	DH05-12	25824	17.7	19.05	0.003	0.001	0.001	0.01	0.72	0.046	0.001	0.13	0.5	0.02	0.32	0.001	0.001	0.01
TM	DH05-12	25825	19.05	19.6	0.009	0.001	0.001	0.01	2.49	0.276	0.005	0.81	2.42	0.01	0.15	0.001	0.001	3.31
TM	DH05-14	25861	8.35	9.85	0.001	0.001	0.001	0.01	0.2	0.057	0.001	0.06	0.48	0.01	0.24	0.001	0.001	0.01
TM	DH05-14	25863	9.85	11.35	0.001	0.001	0.001	0.01	0.75	0.043	0.001	0.4	0.46	0.01	0.22	0.001	0.001	0.01
TM	DH05-14	25864	11.35	12.85	0.003	0.001	0.001	0.01	0.54	0.038	0.001	0.11	0.46	0.02	0.23	0.001	0.001	0.01
TM	DH05-14	25865	12.85	14	0.004	0.001	0.001	0.01	0.63	0.026	0.001	0.11	0.39	0.02	0.24	0.001	0.001	0.01
TM	DH05-14	25866	14	15.2	0.001	0.001	0.001	0.01	0.07	0.025	0.001	0.03	0.32	0.01	0.36	0.001	0.001	0.01
TM	DH05-14	25870	18.3	20	0.001	0.001	0.002	0.01	0.12	0.044	0.001	0.03	0.4	0.01	0.34	0.001	0.001	0.01
TM	DH05-14	25871	20	22	0.001	0.001	0.001	0.01	0.14	0.053	0.001	0.04	0.36	0.01	0.39	0.001	0.001	0.01
TM	DH05-14	25872	22	22.45	0.001	0.001	0.002	0.01	0.07	0.03	0.001	0.02	0.3	0.01	0.31	0.001	0.001	0.01
TM	DH05-14	25873	22.45	23.15	0.001	0.001	0.001	0.01	0.12	0.048	0.001	0.05	0.37	0.01	0.41	0.001	0.001	0.01
TM	DH05-14	25874	23.15	23.35	0.001	0.001	0.002	0.01	0.1	0.041	0.001	0.03	0.32	0.01	0.33	0.001	0.001	0.01
TM	DH05-14	25876	23.5	23.65	0.007	0.002	0.003	0.01	1.58	0.264	0.006	0.68	3.73	0.01	0.22	0.001	0.001	0.01
TM	DH05-14	25877	23.65	23.95	0.001	0.001	0.002	0.01	0.1	0.041	0.001	0.03	0.33	0.01	0.38	0.001	0.001	0.01
TM	DH05-14	25878	23.95	24.95	0.002	0.001	0.001	0.01	0.35	0.059	0.001	0.09	0.41	0.01	0.41	0.001	0.001	0.01
TM	DH05-14	25879	24.95	26.8	0.005	0.001	0.002	0.01	0.81	0.051	0.001	0.12	0.42	0.01	0.37	0.001	0.001	0.01
TM	DH07-01	305901	24.1	24.8	0.001	0.001	0.003	0.01	0.13	0.046	0.001	0.04	0.49	0.01	0.43	0.001	0.001	
TM	DH07-01	305902	24.8	25.8	0.001	0.001	0.001	0.01	0.18	0.052	0.001	0.07	0.37	0.01	0.39	0.001	0.001	
TM	DH07-01	305903	25.8	26.5	0.001	0.001	0.001	0.01	0.14	0.047	0.001	0.06	0.36	0.01	0.38	0.001	0.001	
TM	DH07-01	305904	26.5	27.5	0.001	0.001	0.004	0.01	0.13	0.049	0.001	0.04	0.36	0.01	0.38	0.001	0.001	
TM	DH07-01	305906	31.9	32.9	0.001	0.001	0.001	0.01	0.16	0.046	0.001	0.05	0.34	0.01	0.33	0.003	0.001	
TM	DH07-01	305907	32.9	33.5	0.001	0.001	0.004	0.01	0.18	0.047	0.001	0.09	0.42	0.01	0.38	0.001	0.001	
TM	DH07-01	305909	34.2	34.8	0.001	0.001	0.002	0.01	0.04	0.017	0.001	0.01	0.24	0.01	0.23	0.001	0.001	
TM	DH07-01	305911	34.8	35.7	0.001	0.001	0.001	0.01	0.05	0.011	0.001	0.04	0.22	0.01	0.23	0.001	0.001	
TM	DH07-01	305912	35.7	36.6	0.001	0.001	0.001	0.01	0.1	0.026	0.001	0.05	0.38	0.01	0.4	0.002	0.001	
TM	DH07-03	305938	16	17	0.001	0.001	0.001	0.01	0.23	0.053	0.001	0.07	0.51	0.01	0.3	0.001	0.001	
TM	DH07-03	305939	18	19	0.005	0.001	0.001	0.01	0.96	0.051	0.001	0.09	0.34	0.01	0.33	0.001	0.001	
TM	DH07-03	305941	20	21	0.003	0.001	0.001	0.01	0.51	0.06	0.001	0.06	0.34	0.01	0.34	0.001	0.001	

Appendix I
Waste Rock Assay Information
C. TM Zone Waste Rock

Zone	Drillhole	Sample#	From	To	Interval	Easting	Northing	Azimuth	Dip	Lithology	Rock Mgmt U	Pit Zone	Mo %	Cu %	Pb %	Zn %	Ag g/mt	Ni %	Co %	Mn %	Fe %	As %
TM	DH07-03	305942	22	23	1	404282	6688954	135	-45	Granodiorite	Waste Granoc	HW	0.001	0.003	0.03	0.17	3	0.001	0.001	0.2	1.09	0.01
TM	DH07-03	305943	24.5	25.5	1	404282	6688954	135	-45	Granodiorite	Waste Granoc	HW	0.001	0.003	0.02	0.24	17	0.001	0.001	0.91	3.07	0.01
TM	DH07-03	305946	26.4	27	0.6	404282	6688954	135	-45	Granodiorite	Waste Granoc	InterOre	0.001	0.007	0.06	1.15	23	0.001	0.001	0.63	2.31	0.01
TM	DH07-03	305947	27	27.8	0.8	404282	6688954	135	-45	Granodiorite	Waste Granoc	InterOre	0.001	0.001	0.01	0.2	2	0.001	0.001	0.76	2.55	0.01
TM	DH07-03	305949	28.4	29	0.6	404282	6688954	135	-45	Granodiorite	Waste Granoc	InterOre	0.001	0.002	0.08	1.54	4	0.001	0.001	0.78	2.4	0.02
TM	DH07-03	305951	29	29.6	0.6	404282	6688954	135	-45	Granodiorite	Waste Granoc	InterOre	0.001	0.003	0.02	1.22	4	0.001	0.001	0.56	2.16	0.01
TM	DH07-03	305953	30	30.5	0.5	404282	6688954	135	-45	Granodiorite	Waste Granoc	InterOre	0.001	0.002	0.02	0.73	2	0.001	0.001	0.69	2.49	0.01
TM	DH07-03	305956	31.15	31.5	0.35	404282	6688954	135	-45	Granodiorite	Waste Granoc	FW	0.001	0.003	0.11	0.35	13	0.001	0.001	0.77	3.36	0.02
TM	DH07-03	305957	31.5	32.5	1	404282	6688954	135	-45	Granodiorite	Waste Granoc	FW	0.001	0.002	0.01	0.44	5	0.001	0.001	0.57	1.82	0.01
TM	DH07-03	305958	32.5	33.5	1	404282	6688954	135	-45	Granodiorite	Waste Granoc	FW	0.001	0.001	0.01	0.5	3	0.001	0.001	0.45	1.64	0.01
TM	DH07-03	305959	33.5	34.5	1	404282	6688954	135	-45	Granodiorite	Waste Granoc	FW	0.002	0.001	0.05	0.23	2	0.001	0.001	0.69	2.12	0.01
TM	DH07-04	305981	30.8	31.8	1	404331	6688995	135	-45	Granodiorite	Waste Granoc	HW	0.001	0.001	0.01	0.07	2	0.001	0.001	0.16	0.99	0.01
TM	DH07-04	305982	31.8	32.8	1	404331	6688995	135	-45	Granodiorite	Waste Granoc	HW	0.001	0.001	0.01	0.06	2	0.001	0.001	0.05	1.14	0.01
TM	DH07-04	305983	32.8	33.8	1	404331	6688995	135	-45	Granodiorite	Waste Granoc	HW	0.001	0.001	0.04	0.55	2	0.001	0.001	0.47	1.24	0.01
TM	DH07-04	305984	33.8	34.7	0.9	404331	6688995	135	-45	Granodiorite	Waste Granoc	HW	0.001	0.002	0.06	2.02	5	0.001	0.001	0.75	2.24	0.09
TM	DH07-04	305986	34.7	35.7	1	404331	6688995	135	-45	Granodiorite	Waste Granoc	HW	0.001	0.002	0.01	1.39	5	0.001	0.001	1.2	3.35	0.01
TM	DH07-04	305987	35.7	36.7	1	404331	6688995	135	-45	Granodiorite	Waste Granoc	HW	0.001	0.001	0.01	0.69	3	0.001	0.001	0.64	2.03	0.01
TM	DH07-04	305988	36.7	37.9	1.2	404331	6688995	135	-45	Andesite	Waste Andesi	HW	0.001	0.001	0.01	0.99	2	0.004	0.002	0.09	6.28	0.01
TM	DH07-04	305991	38.5	39.2	0.7	404331	6688995	135	-45	Granodiorite	Waste Granoc	InterOre	0.001	0.001	0.02	0.2	2	0.001	0.001	0.37	1.97	0.01
TM	DH07-04	305992	39.2	39.8	0.6	404331	6688995	135	-45	Granodiorite	Waste Granoc	InterOre	0.001	0.013	0.01	2.45	8	0.001	0.001	0.31	1.25	0.01
TM	DH07-04	305993	39.8	40.4	0.6	404331	6688995	135	-45	Granodiorite	Waste Granoc	InterOre	0.001	0.003	0.01	1.01	4	0.001	0.001	0.27	1.35	0.02
TM	DH07-04	305996	41	41.6	0.6	404331	6688995	135	-45	Granodiorite	Waste Granoc	FW	0.001	0.001	0.02	0.73	4	0.001	0.001	1.17	3.55	0.01
TM	DH07-04	305997	41.6	42.6	1	404331	6688995	135	-45	Granodiorite	Waste Granoc	FW	0.001	0.001	0.07	0.67	2	0.001	0.001	0.64	1.66	0.01
TM	DH07-04	305998	42.6	43.6	1	404331	6688995	135	-45	Granodiorite	Waste Granoc	FW	0.001	0.001	0.01	0.63	2	0.001	0.001	0.12	1.18	0.01

Appendix I
Waste Rock Assay Information
C. TM Zone Waste Rock

Zone	Drillhole	Sample#	From	To	Sr %	Cd %	Sb %	Bi %	Ca %	P %	Cr %	Mg %	Al %	Na %	K %	W %	Hg %	Au g/mt
TM	DH07-03	305942	22	23	0.001	0.001	0.001	0.01	0.17	0.059	0.001	0.02	0.32	0.01	0.32	0.001	0.001	
TM	DH07-03	305943	24.5	25.5	0.001	0.001	0.002	0.01	0.16	0.056	0.001	0.08	0.31	0.01	0.31	0.001	0.001	
TM	DH07-03	305946	26.4	27	0.001	0.003	0.001	0.01	0.15	0.044	0.001	0.08	0.27	0.01	0.3	0.001	0.001	
TM	DH07-03	305947	27	27.8	0.001	0.001	0.001	0.01	1.24	0.051	0.001	0.72	0.3	0.01	0.33	0.001	0.001	
TM	DH07-03	305949	28.4	29	0.001	0.004	0.001	0.01	0.15	0.052	0.001	0.06	0.33	0.01	0.35	0.002	0.001	
TM	DH07-03	305951	29	29.6	0.001	0.004	0.001	0.01	0.1	0.04	0.001	0.03	0.3	0.01	0.31	0.002	0.001	
TM	DH07-03	305953	30	30.5	0.001	0.002	0.001	0.01	0.08	0.034	0.001	0.04	0.26	0.01	0.32	0.001	0.001	
TM	DH07-03	305956	31.15	31.5	0.001	0.001	0.006	0.01	0.16	0.053	0.001	0.09	0.28	0.01	0.33	0.001	0.001	
TM	DH07-03	305957	31.5	32.5	0.001	0.001	0.002	0.01	0.74	0.054	0.001	0.41	0.3	0.01	0.33	0.001	0.001	
TM	DH07-03	305958	32.5	33.5	0.001	0.001	0.001	0.01	0.14	0.059	0.001	0.03	0.32	0.01	0.38	0.001	0.001	
TM	DH07-03	305959	33.5	34.5	0.001	0.001	0.001	0.01	0.16	0.058	0.001	0.05	0.36	0.01	0.37	0.001	0.001	
TM	DH07-04	305981	30.8	31.8	0.006	0.001	0.001	0.01	0.92	0.034	0.001	0.14	0.37	0.01	0.3	0.001	0.001	
TM	DH07-04	305982	31.8	32.8	0.005	0.001	0.001	0.01	0.83	0.026	0.001	0.19	0.57	0.04	0.27	0.001	0.001	
TM	DH07-04	305983	32.8	33.8	0.001	0.001	0.002	0.01	0.32	0.041	0.001	0.09	0.41	0.01	0.33	0.001	0.001	
TM	DH07-04	305984	33.8	34.7	0.001	0.004	0.001	0.01	0.15	0.044	0.001	0.06	0.41	0.01	0.37	0.001	0.001	
TM	DH07-04	305986	34.7	35.7	0.001	0.003	0.002	0.01	0.15	0.048	0.001	0.12	0.38	0.01	0.35	0.001	0.001	
TM	DH07-04	305987	35.7	36.7	0.001	0.001	0.001	0.01	0.32	0.05	0.001	0.15	0.39	0.01	0.38	0.001	0.001	
TM	DH07-04	305988	36.7	37.9	0.009	0.001	0.001	0.01	1.81	0.252	0.007	1.52	5.84	0.01	0.18	0.001	0.001	
TM	DH07-04	305991	38.5	39.2	0.001	0.001	0.001	0.01	0.13	0.053	0.001	0.06	0.46	0.01	0.36	0.001	0.001	
TM	DH07-04	305992	39.2	39.8	0.001	0.004	0.001	0.01	0.08	0.037	0.001	0.04	0.29	0.01	0.31	0.001	0.001	
TM	DH07-04	305993	39.8	40.4	0.001	0.002	0.001	0.01	0.07	0.029	0.001	0.03	0.25	0.01	0.25	0.001	0.001	
TM	DH07-04	305996	41	41.6	0.001	0.002	0.001	0.01	0.35	0.048	0.001	0.18	0.3	0.01	0.27	0.001	0.001	
TM	DH07-04	305997	41.6	42.6	0.001	0.001	0.001	0.01	1.02	0.056	0.001	0.57	0.38	0.01	0.32	0.001	0.001	
TM	DH07-04	305998	42.6	43.6	0.002	0.001	0.001	0.01	0.48	0.048	0.001	0.21	1.03	0.01	0.29	0.001	0.001	

Appendix I
Waste Rock Assay Information
D. S Zone Waste Rock

Note -- Ore and Expit samples deleted --

Note: **red** typeface in results table indicates values above or below method detection limit

N	41	41	41	41	41	41	41	41	41	41	41
Min	0.001	0.001	0.01	0.01	2.00	0.00	0.00	0.02	0.68	0.01	0.00
Max	0.016	0.008	0.28	1.24	23.00	0.00	0.00	1.69	6.08	0.01	0.01
Mean	0.002	0.002	0.05	0.22	5.05	0.00	0.00	0.40	2.35	0.01	0.00
Geometric Mean	0.001	0.002	0.023	0.129	3.437	0.001	0.001	0.163	2.074	0.010	0.002
Median	0.001	0.001	0.01	0.16	2.00	0.00	0.00	0.08	1.94	0.01	0.00
Std Dev	0.002	0.002	0.06	0.26	5.65	0.00	0.00	0.51	1.29	0.00	0.00
Geometric Std Dev	1.765	1.901	3.04	3.13	2.21	1.00	1.00	4.00	1.64	1.00	2.11
1st Quartile	0.001	0.001	0.01	0.07	2.00	0.00	0.00	0.06	1.52	0.01	0.00
3rd Quartile	0.001	0.002	0.08	0.22	6.00	0.00	0.00	0.61	2.61	0.01	0.00
5% percentile	0.001	0.001	0.01	0.01	2.00	0.00	0.00	0.04	0.96	0.01	0.00
95% percentile	0.005	0.005	0.14	0.84	20.00	0.00	0.00	1.43	5.16	0.01	0.01
98% percentile	0.007	0.008	0.176	1.024	22.200	0.001	0.001	1.490	5.944	0.010	0.009
99% percentile	0.012	0.008	0.23	1.13	22.60	0.00	0.00	1.59	6.01	0.01	0.01
99.9%percentile	0.016	0.008	0.27	1.23	22.96	0.00	0.00	1.68	6.07	0.01	0.01

Zone	Drillhole	Sample#	From	To	Interval	Easting	Northing	Azimuth	Dip	Lithology	Mine Zone	Mo %	Cu %	Pb %	Zn %	Ag g/mt	Ni %	Co %	Mn %	Fe %	As %	Sr %
S	DH05-01	25501	10.75	11.5	0.75	404638	6689008	146	-45	Granodiorite	UHW	0.002	0.003	0.01	0.06	2	0.001	0.001	0.07	0.68	0.01	0.001
S	DH05-01	25502	11.5	11.65	0.15	404638	6689008	146	-45	Granodiorite	UHW	0.016	0.008	0.13	0.62	7	0.001	0.001	1.44	6.08	0.01	0.008
S	DH05-01	25503	11.65	12.33	0.68	404638	6689008	146	-45	Granodiorite	UHW	0.001	0.002	0.01	0.07	2	0.001	0.001	0.06	0.89	0.01	0.001
S	DH05-01	25504	12.33	12.43	0.1	404638	6689008	146	-45	Granodiorite	UHW	0.005	0.003	0.02	0.22	2	0.001	0.001	1.25	5.16	0.01	0.007
S	DH05-01	25505	12.43	14	1.57	404638	6689008	146	-45	Granodiorite	UHW	0.001	0.001	0.01	0.07	2	0.001	0.001	0.09	1.3	0.01	0.003
S	DH05-01	25506	14	15.5	1.5	404638	6689008	146	-45	Granodiorite	UHW	0.001	0.002	0.01	0.09	2	0.001	0.001	0.08	1.58	0.01	0.002
S	DH05-01	25507	15.5	17	1.5	404638	6689008	146	-45	Granodiorite	UHW	0.001	0.001	0.01	0.1	2	0.001	0.001	0.06	1.46	0.01	0.002
S	DH05-01	25508	17	18.5	1.5	404638	6689008	146	-45	Granodiorite	UHW	0.002	0.001	0.01	0.09	2	0.001	0.001	0.08	1.82	0.01	0.003
S	DH05-01	25509	18.5	20	1.5	404638	6689008	146	-45	Granodiorite	UHW	0.001	0.002	0.01	0.19	2	0.001	0.001	0.04	1.62	0.01	0.001
S	DH05-01	25510	20	21.5	1.5	404638	6689008	146	-45	Granodiorite	UHW	0.001	0.004	0.01	0.25	2	0.001	0.001	0.04	1.5	0.01	0.001
S	DH05-01	25511	21.5	23	1.5	404638	6689008	146	-45	Granodiorite	UHW	0.005	0.001	0.01	0.2	2	0.001	0.001	0.03	1.34	0.01	0.001
S	DH05-01	25512	23	23.64	0.64	404638	6689008	146	-45	Granodiorite	UHW	0.001	0.004	0.01	0.08	8	0.001	0.001	0.02	1.31	0.01	0.001
S	DH05-01	25513	23.64	26.6	2.96	404638	6689008	146	-45	Granodiorite	HW	0.002	0.002	0.11	0.31	6	0.001	0.001	0.58	2.06	0.01	0.002
S	DH05-01	25515	27.43	28.19	0.76	404638	6689008	146	-45	Granodiorite	HW	0.001	0.008	0.05	1.24	15	0.001	0.001	1.69	5.91	0.01	0.002
S	DH05-01	25516	28.19	30.13	1.94	404638	6689008	146	-45	Granodiorite	HW	0.001	0.001	0.14	0.16	2	0.001	0.001	0.43	1.94	0.01	0.003
S	DH05-01	25519	30.21	30.86	0.65	404638	6689008	146	-45	Granodiorite	FW	0.002	0.003	0.28	0.22	20	0.001	0.001	1.42	3.77	0.01	0.001
S	DH05-01	25520	31.86	33.1	1.24	404638	6689008	146	-45	Granodiorite	FW	0.001	0.001	0.01	0.06	2	0.001	0.001	0.05	1.52	0.01	0.002
S	DH05-01	25521	33.1	34.6	1.5	404638	6689008	146	-45	Granodiorite	FW	0.001	0.001	0.01	0.05	2	0.001	0.001	0.1	1.51	0.01	0.002
S	DH05-01	25522	34.6	36.1	1.5	404638	6689008	146	-45	Granodiorite	FW	0.001	0.001	0.02	0.15	2	0.001	0.001	0.06	3.17	0.01	0.001
S	DH05-01	25525	36.1	37.6	1.5	404638	6689008	146	-45	Granodiorite	FW	0.001	0.001	0.01	0.01	2	0.001	0.001	0.06	1.53	0.01	0.006
S	DH05-02	25537	17.59	18.34	0.75	404590	6688990	170	-45	Granodiorite	HW	0.001	0.002	0.01	0.14	2	0.001	0.001	0.06	1.61	0.01	0.002
S	DH05-02	25539	22.87	23.47	0.6	404590	6688990	170	-45	Granodiorite	InterOre	0.001	0.001	0.13	0.39	3	0.001	0.001	0.81	2.99	0.01	0.001
S	DH05-02	25541	23.92	24.7	0.78	404590	6688990	170	-45	Granodiorite	FW	0.001	0.003	0.01	0.42	23	0.001	0.001	0.09	0.96	0.01	0.002
S	DH05-02	25542	24.7	26.2	1.5	404590	6688990	170	-45	Granodiorite	FW	0.001	0.001	0.01	0.1	4	0.001	0.001	0.07	1.45	0.01	0.003
S	DH05-02	25543	26.2	27.7	1.5	404590	6688990	170	-45	Granodiorite	FW	0.001	0.004	0.01	0.16	22	0.001	0.001	0.07	1.63	0.01	0.003
S	DH05-02	25544	27.7	29.2	1.5	404590	6688990	170	-45	Granodiorite	FW	0.001	0.001	0.01	0.04	2	0.001	0.001	0.05	2.05	0.01	0.005
S	DH05-02	25545	29.2	30.7	1.5	404590	6688990	170	-45	Granodiorite	FW	0.001	0.001	0.01	0.04	2	0.001	0.001	0.04	2.34	0.01	0.004
S	DH05-03	25556	14.34	15.14	0.8	404551	6688945	350	-45	Granodiorite	UHW	0.001	0.001	0.08	0.19	7	0.001	0.001	0.61	2.61	0.01	0.002
S	DH05-03	25557	15.14	16.08	0.94	404551	6688945	350	-45	Granodiorite	HW	0.001	0.005	0.11	0.97	8	0.001	0.001	1.13	4.14	0.01	0.001
S	DH05-03	25558	20.8	22.3	1.5	404551	6688945	350	-45	Granodiorite	HW	0.001	0.001	0.03	0.19	2	0.001	0.001	0.3	1.96	0.01	0.001
S	DH05-03	25560	22.75	24.25	1.5	404551	6688945	350	-45	Granodiorite	FW	0.001	0.001	0.02	0.09	2	0.001	0.001	0.08	1.64	0.01	0.004
S	DH05-03	25561	27.9	28.9	1	404551	6688945	350	-45	Granodiorite	FW	0.001	0.001	0.01	0.19	2	0.001	0.001	0.11	2.23	0.01	0.002
S	DH06-02	308551	39.00	39.80	0.80	404606	6689007	140	-65	Granodiorite	HW	0.001	0.001	0.06	0.21	5	0.001	0.001	1.19	3.58	0.01	0.001
S	DH06-02	308553	40.30	41.40	1.10	404606	6689007	140	-65	Granodiorite	InterOre	0.001	0.001	0.09	0.38	6	0.001	0.001	1.17	3.38	0.01	0.001
S	DH06-02	308555	41.60	42.80	1.20	404606	6689007	140	-65	Granodiorite	InterOre	0.001	0.001	0.02	0.1	2	0.001	0.001	0.51	2.34	0.01	0.008
S	DH06-02	308556	70.50	71.50	1.00	404606	6689007	140	-65	Granodiorite	InterOre	0.001	0.001	0.01	0.02	2	0.001	0.001	0.05	1.96	0.01	0.007
S	DH06-02	308557	71.50	71.80	0.30	404606	6689007	140	-65	Granodiorite	InterOre	0.001	0.001	0.12	0.28	4	0.001	0.001	0.61	2.45	0.01	0.003
S	DH06-02	308559	71.90	72.20	0.30	404606	6689007	140	-65	Granodiorite	FW	0.001	0.001	0.15	0.84	14	0.001	0.001	1.43	4.53	0.01	0.001
S	DH06-02	308560	72.20	73.20	1.00	404606	6689007	140	-65	Granodiorite	FW	0.001	0.001	0.09	0.18	5	0.001	0.001	0.4	2.38	0.01	0.006
S	DH06-02	308561	73.20	74.20	1.00	404606	6689007	140	-65	Granodiorite	FW	0.001	0.001	0.01	0.01	2	0.001	0.001	0.04	1.94	0.01	0.006
S	DH06-02	308562	74.20	75.10	0.90	404606	6689007	140	-65	Granodiorite	FW	0.001	0.001	0.01	0.01	2	0.001	0.001	0.05	1.92	0.01	0.011

Appendix I
Waste Rock Assay Information
D. S Zone Waste Rock

Note -- Ore and Expit samples deleted --

N	41	41	41	41	41	41	41	41	41	41	41	41	41
Min	0.00	0.00	0.01	0.06	0.02	0.00	0.01	0.40	0.01	0.20	0.00	0.00	0.01
Max	0.00	0.00	0.01	1.51	0.07	0.00	0.48	1.33	0.09	0.54	0.00	0.00	0.02
Mean	0.00	0.00	0.01	0.51	0.06	0.00	0.16	0.69	0.02	0.37	0.00	0.00	0.01
Geometric Mean	0.001	0.001	0.010	0.368	0.055	0.001	0.120	0.661	0.019	0.363	0.001	0.001	0.010
Median	0.00	0.00	0.01	0.38	0.06	0.00	0.13	0.64	0.01	0.36	0.00	0.00	0.01
Std Dev	0.00	0.00	0.00	0.39	0.01	0.00	0.11	0.21	0.02	0.08	0.00	0.00	0.00
Geometric Std Dev	1.36	1.34	1.00	2.42	1.38	1.00	2.39	1.33	2.08	1.23	1.11	1.00	1.11
1st Quartile	0.00	0.00	0.01	0.21	0.05	0.00	0.08	0.53	0.01	0.32	0.00	0.00	0.01
3rd Quartile	0.00	0.00	0.01	0.74	0.07	0.00	0.24	0.81	0.04	0.43	0.00	0.00	0.01
5% percentile	0.00	0.00	0.01	0.09	0.03	0.00	0.02	0.47	0.01	0.26	0.00	0.00	0.01
95% percentile	0.00	0.00	0.01	1.31	0.07	0.00	0.33	1.12	0.06	0.48	0.00	0.00	0.01
98% percentile	0.003	0.002	0.010	1.374	0.071	0.001	0.400	1.218	0.074	0.524	0.001	0.001	0.012
99% percentile	0.00	0.00	0.01	1.44	0.07	0.00	0.44	1.27	0.08	0.53	0.00	0.00	0.02
99.9%percentile	0.00	0.00	0.01	1.50	0.07	0.00	0.48	1.32	0.09	0.54	0.00	0.00	0.02

Zone	Drillhole	Sample#	From	To	Cd %	Sb %	Bi %	Ca %	P %	Cr %	Mg %	Al %	Na %	K %	W %	Hg %	Au g/mt
S	DH05-01	25501	10.75	11.5	0.001	0.001	0.01	0.09	0.021	0.001	0.03	0.53	0.01	0.26	0.001	0.001	0.01
S	DH05-01	25502	11.5	11.65	0.002	0.002	0.01	0.11	0.023	0.001	0.02	0.5	0.01	0.39	0.001	0.001	0.01
S	DH05-01	25503	11.65	12.33	0.001	0.001	0.01	0.11	0.028	0.001	0.07	0.62	0.01	0.28	0.001	0.001	0.01
S	DH05-01	25504	12.33	12.43	0.001	0.001	0.01	0.14	0.042	0.001	0.02	0.55	0.04	0.45	0.001	0.001	0.01
S	DH05-01	25505	12.43	14	0.001	0.001	0.01	0.74	0.071	0.001	0.05	0.64	0.01	0.32	0.001	0.001	0.01
S	DH05-01	25506	14	15.5	0.001	0.001	0.01	0.21	0.064	0.001	0.13	1	0.03	0.33	0.001	0.001	0.01
S	DH05-01	25507	15.5	17	0.001	0.001	0.01	0.32	0.063	0.001	0.12	0.86	0.06	0.3	0.001	0.001	0.01
S	DH05-01	25508	17	18.5	0.001	0.001	0.01	0.64	0.064	0.001	0.08	0.84	0.01	0.35	0.001	0.001	0.01
S	DH05-01	25509	18.5	20	0.001	0.001	0.01	0.21	0.057	0.001	0.14	0.91	0.07	0.36	0.001	0.001	0.01
S	DH05-01	25510	20	21.5	0.001	0.001	0.01	0.15	0.046	0.001	0.12	0.94	0.06	0.31	0.001	0.001	0.01
S	DH05-01	25511	21.5	23	0.001	0.001	0.01	0.13	0.033	0.001	0.08	0.85	0.03	0.29	0.001	0.001	0.01
S	DH05-01	25512	23	23.64	0.001	0.001	0.01	0.07	0.03	0.001	0.02	0.5	0.01	0.38	0.001	0.001	0.01
S	DH05-01	25513	23.64	26.6	0.001	0.002	0.01	0.06	0.036	0.001	0.01	0.49	0.01	0.45	0.001	0.001	0.01
S	DH05-01	25515	27.43	28.19	0.003	0.001	0.01	0.11	0.046	0.001	0.08	0.48	0.04	0.47	0.001	0.001	0.02
S	DH05-01	25516	28.19	30.13	0.001	0.001	0.01	0.67	0.056	0.001	0.15	0.7	0.09	0.43	0.001	0.001	0.01
S	DH05-01	25519	30.21	30.86	0.001	0.001	0.01	0.22	0.052	0.001	0.13	0.47	0.01	0.47	0.001	0.001	0.01
S	DH05-01	25520	31.86	33.1	0.001	0.001	0.01	0.68	0.058	0.001	0.28	0.86	0.04	0.34	0.001	0.001	0.01
S	DH05-01	25521	33.1	34.6	0.001	0.001	0.01	0.56	0.062	0.001	0.12	0.67	0.04	0.33	0.001	0.001	0.01
S	DH05-01	25522	34.6	36.1	0.001	0.001	0.01	0.29	0.058	0.001	0.1	0.71	0.04	0.36	0.001	0.001	0.01
S	DH05-01	25525	36.1	37.6	0.001	0.001	0.01	1.1	0.062	0.001	0.27	0.76	0.03	0.35	0.001	0.001	0.01
S	DH05-02	25537	17.59	18.34	0.001	0.001	0.01	0.49	0.068	0.001	0.12	0.71	0.01	0.33	0.001	0.001	0.01
S	DH05-02	25539	22.87	23.47	0.001	0.001	0.01	0.26	0.066	0.001	0.11	0.5	0.01	0.44	0.001	0.001	0.01
S	DH05-02	25541	23.92	24.7	0.001	0.004	0.01	0.38	0.07	0.001	0.07	0.67	0.01	0.2	0.001	0.001	0.01
S	DH05-02	25542	24.7	26.2	0.001	0.002	0.01	0.73	0.069	0.001	0.15	0.56	0.01	0.29	0.001	0.001	0.01
S	DH05-02	25543	26.2	27.7	0.001	0.002	0.01	0.67	0.068	0.001	0.17	0.69	0.01	0.26	0.001	0.001	0.01
S	DH05-02	25544	27.7	29.2	0.001	0.001	0.01	1.01	0.07	0.001	0.38	1.12	0.02	0.3	0.001	0.001	0.01
S	DH05-02	25545	29.2	30.7	0.001	0.001	0.01	0.75	0.067	0.001	0.48	1.33	0.03	0.42	0.001	0.001	0.01
S	DH05-03	25556	14.34	15.14	0.001	0.001	0.01	0.52	0.065	0.001	0.12	0.47	0.01	0.45	0.001	0.001	0.01
S	DH05-03	25557	15.14	16.08	0.004	0.001	0.01	0.24	0.047	0.001	0.11	0.4	0.01	0.39	0.001	0.001	0.01
S	DH05-03	25558	20.8	22.3	0.001	0.001	0.01	0.34	0.068	0.001	0.16	0.63	0.01	0.37	0.001	0.001	0.01
S	DH05-03	25560	22.75	24.25	0.001	0.001	0.01	0.83	0.07	0.001	0.27	0.81	0.02	0.33	0.001	0.001	0.01
S	DH05-03	25561	27.9	28.9	0.001	0.001	0.01	0.28	0.07	0.001	0.33	1.19	0.02	0.38	0.001	0.001	0.01
S	DH06-02	308551	39.00	39.80	0.001	0.001	0.01	0.42	0.065	0.001	0.16	0.59	0.01	0.54	0.001	0.001	0.01
S	DH06-02	308553	40.30	41.40	0.001	0.001	0.01	0.23	0.063	0.001	0.14	0.53	0.01	0.48	0.001	0.001	0.01
S	DH06-02	308555	41.60	42.80	0.001	0.001	0.01	1.34	0.068	0.001	0.24	0.52	0.01	0.44	0.001	0.001	0.01
S	DH06-02	308556	70.50	71.50	0.001	0.001	0.01	1.15	0.071	0.001	0.33	0.76	0.04	0.33	0.001	0.001	0.01
S	DH06-02	308557	71.50	71.80	0.001	0.001	0.01	0.89	0.07	0.001	0.16	0.6	0.01	0.52	0.001	0.001	0.01
S	DH06-02	308559	71.90	72.20	0.002	0.001	0.01	0.23	0.062	0.001	0.14	0.45	0.01	0.43	0.002	0.001	0.01
S	DH06-02	308560	72.20	73.20	0.001	0.001	0.01	1.31	0.067	0.001	0.24	0.54	0.01	0.42	0.001	0.001	0.01
S	DH06-02	308561	73.20	74.20	0.001	0.001	0.01	0.89	0.067	0.001	0.32	0.72	0.05	0.34	0.001	0.001	0.01
S	DH06-02	308562	74.20	75.10	0.001	0.001	0.01	1.51	0.067	0.001	0.32	0.58	0.04	0.31	0.001	0.001	0.01

Appendix I
Waste Rock Assay Information
E. TM Zone Granodiorite

Note -- Ore and Expit samples deleted --

Note: red typeface in results table indicates values above or below method detection limit

	77	77	77	77	77	77	77	77	77	77
N	0.001	0.001	0.01	0.02	2.00	0.00	0.00	0.01	0.74	0.01
Min	0.003	0.013	0.15	2.78	31.00	0.01	0.00	1.20	4.69	0.09
Max	0.001	0.003	0.03	0.45	6.29	0.00	0.00	0.37	1.60	0.01
Mean	0.001	0.002	0.022	0.266	4.243	0.001	0.001	0.240	1.441	0.011
Geometric Mean	0.001	0.002	0.02	0.23	4.00	0.00	0.00	0.32	1.31	0.01
Median	0.000	0.003	0.03	0.54	6.70	0.00	0.00	0.29	0.79	0.01
Std Dev	1.304	2.156	2.12	2.84	2.28	1.27	1.16	2.96	1.55	1.41
Geometric Std Dev	0.001	0.001	0.01	0.15	2.00	0.00	0.00	0.12	0.97	0.01
1st Quartile	0.001	0.003	0.04	0.52	7.00	0.00	0.00	0.56	2.03	0.01
3rd Quartile	0.001	0.001	0.01	0.05	2.00	0.00	0.00	0.03	0.85	0.01
5% percentile	0.002	0.009	0.08	1.50	22.00	0.00	0.00	0.86	3.13	0.02
95% percentile	0.003	0.012	0.094	2.226	25.880	0.002	0.001	1.035	3.451	0.035
98% percentile	0.003	0.013	0.12	2.53	29.48	0.00	0.00	1.18	3.82	0.05
99% percentile	0.003	0.013	0.15	2.75	30.85	0.00	0.00	1.20	4.60	0.09
99.9%percentile										

Zone	Drillhole	Sample#	From	To	Interval	Easting	Northing	Azimuth	Dip	Lithology	Rock Mgmt Ur	Pit Zone	Mo %	Cu %	Pb %	Zn %	Ag g/mt	Ni %	Co %	Mn %	Fe %	As %
TM	DH05-11	25929	1.52	3.5	1.98	404358	6688990	150	-45	Granodiorite	Waste Granoc	HW	0.001	0.001	0.01	0.02	2	0.001	0.001	0.02	0.96	0.01
TM	DH05-11	25930	3.5	5.1	1.6	404358	6688990	150	-45	Granodiorite	Waste Granoc	HW	0.001	0.004	0.01	0.05	2	0.001	0.001	0.06	0.9	0.01
TM	DH05-11	25931	5.1	6.2	1.1	404358	6688990	150	-45	Granodiorite	Waste Granoc	HW	0.001	0.005	0.08	0.2	22	0.001	0.001	0.86	2.84	0.01
TM	DH05-11	25932	6.2	7.7	1.5	404358	6688990	150	-45	Granodiorite	Waste Granoc	HW	0.001	0.002	0.02	0.18	6	0.001	0.001	0.14	0.92	0.01
TM	DH05-11	25933	7.7	8.8	1.1	404358	6688990	150	-45	Granodiorite	Waste Granoc	HW	0.001	0.001	0.01	0.21	2	0.001	0.001	0.06	1.12	0.01
TM	DH05-11	25934	8.8	11	2.2	404358	6688990	150	-45	Granodiorite	Waste Granoc	HW	0.001	0.001	0.02	0.15	2	0.001	0.001	0.51	1.73	0.01
TM	DH05-11	25935	11	12.2	1.2	404358	6688990	150	-45	Granodiorite	Waste Granoc	HW	0.001	0.009	0.01	0.37	22	0.001	0.001	0.38	1.85	0.01
TM	DH05-11	25936	12.2	14.2	2	404358	6688990	150	-45	Granodiorite	Waste Granoc	HW	0.001	0.002	0.01	0.1	2	0.001	0.001	0.11	0.92	0.01
TM	DH05-11	25937	14.2	16.2	2	404358	6688990	150	-45	Granodiorite	Waste Granoc	HW	0.001	0.002	0.02	0.15	6	0.001	0.001	0.32	1.19	0.01
TM	DH05-11	25938	16.2	17.7	1.5	404358	6688990	150	-45	Granodiorite	Waste Granoc	HW	0.001	0.003	0.01	0.12	7	0.001	0.001	0.08	0.85	0.01
TM	DH05-11	25939	17.7	19.2	1.5	404358	6688990	150	-45	Granodiorite	Waste Granoc	HW	0.001	0.002	0.01	0.2	2	0.001	0.001	0.07	0.86	0.01
TM	DH05-11	25941	19.2	20.7	1.5	404358	6688990	150	-45	Granodiorite	Waste Granoc	HW	0.001	0.001	0.04	0.38	2	0.001	0.001	0.36	1.25	0.01
TM	DH05-11	25943	20.7	21.5	0.8	404358	6688990	150	-45	Granodiorite	Waste Granoc	HW	0.001	0.007	0.04	0.13	16	0.001	0.001	0.51	1.97	0.01
TM	DH05-11	25946	22.3	23.05	0.75	404358	6688990	150	-45	Granodiorite	Waste Granoc	InterOre	0.001	0.001	0.01	0.06	2	0.001	0.001	0.15	0.92	0.01
TM	DH05-11	25947	23.05	24.7	1.65	404358	6688990	150	-45	Granodiorite	Waste Granoc	InterOre	0.001	0.002	0.02	0.39	2	0.001	0.001	0.17	0.86	0.01
TM	DH05-11	25948	24.7	26.7	2	404358	6688990	150	-45	Granodiorite	Waste Granoc	InterOre	0.001	0.001	0.01	0.39	2	0.001	0.001	0.14	0.88	0.01
TM	DH05-11	25949	26.7	27.3	0.6	404358	6688990	150	-45	Granodiorite	Waste Granoc	InterOre	0.001	0.001	0.07	0.39	2	0.001	0.001	0.62	1.67	0.01
TM	DH05-11	25950	27.3	27.75	0.45	404358	6688990	150	-45	Granodiorite	Waste Granoc	InterOre	0.001	0.001	0.03	0.23	2	0.001	0.001	0.77	2.35	0.01
TM	DH05-11	25953	28	28.4	0.4	404358	6688990	150	-45	Granodiorite	Waste Granoc	FW	0.001	0.001	0.02	0.2	4	0.001	0.001	0.88	2.7	0.01
TM	DH05-11	25954	28.4	29.9	1.5	404358	6688990	150	-45	Granodiorite	Waste Granoc	FW	0.001	0.001	0.07	0.19	2	0.001	0.001	0.44	1.37	0.01
TM	DH05-11	25955	29.9	31.9	2	404358	6688990	150	-45	Granodiorite	Waste Granoc	FW	0.001	0.001	0.01	0.33	2	0.001	0.001	0.06	0.92	0.01
TM	DH05-11	25956	31.9	33.9	2	404358	6688990	150	-45	Granodiorite	Waste Granoc	FW	0.001	0.005	0.01	0.17	2	0.001	0.001	0.04	1.02	0.01
TM	DH05-12	25817	13.45	13.95	0.5	404296	6688947	150	-45	Granodiorite	Waste Granoc	InterOre	0.001	0.012	0.15	2.78	21	0.001	0.001	0.18	1.16	0.01
TM	DH05-12	25818	13.95	14.45	0.5	404296	6688947	150	-45	Granodiorite	Waste Granoc	InterOre	0.001	0.003	0.04	0.76	4	0.001	0.001	0.06	0.8	0.01
TM	DH05-12	25822	15.9	16.2	0.3	404296	6688947	150	-45	Granodiorite	Waste Granoc	FW	0.001	0.005	0.02	0.31	29	0.001	0.001	0.01	0.77	0.04
TM	DH05-12	25823	16.2	17.7	1.5	404296	6688947	150	-45	Granodiorite	Waste Granoc	FW	0.001	0.001	0.06	0.42	4	0.001	0.001	0.77	2.15	0.01
TM	DH05-12	25824	17.7	19.05	1.35	404296	6688947	150	-45	Granodiorite	Waste Granoc	FW	0.001	0.002	0.01	0.24	6	0.001	0.001	0.22	1.29	0.01
TM	DH05-12	25825	19.05	19.6	0.55	404296	6688947	150	-45	Granodiorite	Waste Granoc	FW	0.001	0.002	0.01	1.21	2	0.005	0.003	0.56	4.69	0.01
TM	DH05-14	25861	8.35	9.85	1.5	404320	6688971	150	-45	Granodiorite	Waste Granoc	HW	0.001	0.005	0.01	0.05	2	0.001	0.001	0.04	0.74	0.01
TM	DH05-14	25863	9.85	11.35	1.5	404320	6688971	150	-45	Granodiorite	Waste Granoc	HW	0.001	0.007	0.01	0.06	3	0.001	0.001	0.03	0.85	0.01
TM	DH05-14	25864	11.35	12.85	1.5	404320	6688971	150	-45	Granodiorite	Waste Granoc	HW	0.001	0.003	0.01	0.03	2	0.001	0.001	0.03	0.87	0.01
TM	DH05-14	25865	12.85	14	1.15	404320	6688971	150	-45	Granodiorite	Waste Granoc	HW	0.001	0.005	0.01	0.03	3	0.001	0.001	0.03	0.94	0.01
TM	DH05-14	25866	14	15.2	1.2	404320	6688971	150	-45	Granodiorite	Waste Granoc	HW	0.001	0.013	0.02	0.14	18	0.001	0.001	0.24	1.42	0.01
TM	DH05-14	25870	18.3	20	1.7	404320	6688971	150	-45	Granodiorite	Waste Granoc	InterOre	0.001	0.004	0.02	0.79	5	0.001	0.001	0.1	0.92	0.01
TM	DH05-14	25871	20	22	2	404320	6688971	150	-45	Granodiorite	Waste Granoc	InterOre	0.001	0.002	0.04	0.26	8	0.001	0.001	0.49	1.44	0.01
TM	DH05-14	25872	22	22.45	0.45	404320	6688971	150	-45	Granodiorite	Waste Granoc	InterOre	0.001	0.002	0.05	0.09	13	0.001	0.001	0.15	1.13	0.01
TM	DH05-14	25873	22.45	23.15	0.7	404320	6688971	150	-45	Granodiorite	Waste Granoc	InterOre	0.001	0.001	0.02	0.19	3	0.001	0.001	0.37	1.72	0.01
TM	DH05-14	25874	23.15	23.35	0.2	404320	6688971	150	-45	Granodiorite	Waste Granoc	InterOre	0.001	0.001	0.04	0.22	4	0.001	0.001	0.27	1.69	0.01
TM	DH05-14	25876	23.5	23.65	0.15	404320	6688971	150	-45	Granodiorite	Waste Granoc	FW	0.001	0.006	0.05	1.49	15	0.004	0.002	0.4	2.79	0.01
TM	DH05-14	25877	23.65	23.95	0.3	404320	6688971	150	-45	Granodiorite	Waste Granoc	FW	0.001	0.003	0.02	0.24	12	0.001	0.001	0.21	1.01	0.01
TM	DH05-14	25878	23.95	24.95	1	404320	6688971	150	-45	Granodiorite	Waste Granoc	FW	0.001	0.001	0.03	0.21	2	0.001	0.001	0.46	1.76	0.01
TM	DH05-14	25879	24.95	26.8	1.85	404320	6688971	150	-45	Granodiorite	Waste Granoc	FW	0.001	0.002	0.05	0.32	11	0.001	0.001	0.07	0.97	0.01
TM	DH07-01	305901	24.1	24.8	0.7	404249	6688931	135	-45	Granodiorite	Waste Granoc	HW	0.002	0.003	0.03	0.14	7	0.001	0.001	0.46	2.27	0.03
TM	DH07-01	305902	24.8	25.8	1	404249	6688931	135	-45	Granodiorite	Waste Granoc	HW	0.003	0.001	0.03	0.14	2	0.001	0.001	0.47	1.64	0.01
TM	DH07-01	305903	25.8	26.5	0.7	404249	6688931	135	-45	Granodiorite	Waste Granoc	HW	0.003	0.001	0.05	0.15	4	0.001	0.001	0.45	1.54	0.01
TM	DH07-01	305904	26.5	27.5	1	404249	6688931	135	-45	Granodiorite	Waste Granoc	HW	0.001	0.002	0.04	0.12	5	0.001	0.001	0.33	1.31	0.01
TM	DH07-01	305906	31.9	32.9	1	404249	6688931	135	-45	Granodiorite	Waste Granoc	HW	0.003	0.009	0.02	1.09	10	0.001	0.001	0.18	0.83	0.01
TM	DH07-01	305907	32.9	33.5	0.6	404249	6688931	135	-45	Granodiorite	Waste Granoc	HW	0.003	0.009	0.08	0.21	31	0.001	0.001	0.79	2.43	0.01
TM	DH07-01	305909	34.2	34.8	0.6	404249	6688931	135	-45	Granodiorite	Waste Granoc	FW	0.001	0.002	0.04	0.19	8	0.001	0.001	0.08	0.93	0.01
TM	DH07-01	305911	34.8	35.7	0.9	404249	6688931	135	-45	Granodiorite	Waste Granoc	FW	0.001	0.003	0.03	0.27	6	0.001	0.001	0.3	1.16	0.01
TM	DH07-01	305912	35.7	36.6	0.9	404249	6688931	135	-45	Granodiorite	Waste Granoc	FW	0.001	0.001	0.04	0.52	2	0.001	0.001	0.32	1	0.01
TM	DH07-03	305938	16	17	1	404282	6688954	135	-45	Granodiorite	Waste Granoc	FW	0.001	0.007	0.01	0.15	3	0.001	0.001	0.13	1.22	0.01

Note -- Ore and Expit samples deleted --

	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	42
Min	0.00	0.00	0.00	0.01	0.02	0.01	0.00	0.01	0.21	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.01
Max	0.01	0.01	0.01	0.01	2.49	0.28	0.01	0.81	3.73	0.04	0.44	0.00	0.00	0.00	0.00	0.00	3.31
Mean	0.00	0.00	0.00	0.01	0.34	0.05	0.00	0.11	0.46	0.01	0.33	0.00	0.00	0.00	0.00	0.00	0.09
Geometric Mean	0.001	0.001	0.001	0.010	0.213	0.045	0.001	0.067	0.394	0.011	0.322	0.001	0.001	0.001	0.001	0.001	0.012
Median	0.00	0.00	0.00	0.01	0.16	0.05	0.00	0.06	0.38	0.01	0.33	0.00	0.00	0.00	0.00	0.00	0.01
Std Dev	0.00	0.00	0.00	0.00	0.39	0.04	0.00	0.15	0.46	0.01	0.06	0.00	0.00	0.00	0.00	0.00	0.51
Geometric Std Dev	1.82	1.56	1.56	1.00	2.63	1.59	1.31	2.52	1.52	1.36	1.23	1.20	1.00	1.00	1.00	1.00	2.49
1st Quartile	0.00	0.00	0.00	0.01	0.12	0.04	0.00	0.04	0.32	0.01	0.30	0.00	0.00	0.00	0.00	0.00	0.01
3rd Quartile	0.00	0.00	0.00	0.01	0.44	0.05	0.00	0.10	0.41	0.01	0.38	0.00	0.00	0.00	0.00	0.00	0.01
5% percentile	0.00	0.00	0.00	0.01	0.05	0.02	0.00	0.02	0.25	0.01	0.22	0.00	0.00	0.00	0.00	0.00	0.01
95% percentile	0.01	0.00	0.00	0.01	0.97	0.06	0.00	0.44	0.60	0.02	0.40	0.00	0.00	0.00	0.00	0.00	0.02
98% percentile	0.006	0.004	0.004	0.010	1.403	0.158	0.003	0.699	1.697	0.035	0.420	0.002	0.001	0.001	0.001	0.001	0.620
99% percentile	0.01	0.01	0.00	0.01	1.80	0.27	0.01	0.74	2.73	0.04	0.43	0.00	0.00	0.00	0.00	0.00	1.97
99.9%percentile	0.01	0.01	0.01	0.01	2.42	0.28	0.01	0.80	3.63	0.04	0.44	0.00	0.00	0.00	0.00	0.00	3.18

Zone	Drillhole	Sample#	From	To	Sr %	Cd %	Sb %	Bi %	Ca %	P %	Cr %	Mg %	Al %	Na %	K %	W %	Hg %	Au g/mt
TM	DH05-11	25929	1.52	3.5	0.001	0.001	0.002	0.01	0.12	0.037	0.001	0.1	0.56	0.04	0.21	0.001	0.001	0.01
TM	DH05-11	25930	3.5	5.1	0.001	0.001	0.001	0.01	0.15	0.047	0.001	0.06	0.58	0.02	0.24	0.001	0.001	0.01
TM	DH05-11	25931	5.1	6.2	0.003	0.001	0.001	0.01	0.1	0.045	0.001	0.02	0.39	0.01	0.38	0.001	0.001	0.01
TM	DH05-11	25932	6.2	7.7	0.001	0.001	0.001	0.01	0.09	0.027	0.001	0.03	0.39	0.01	0.31	0.001	0.001	0.01
TM	DH05-11	25933	7.7	8.8	0.001	0.001	0.001	0.01	0.12	0.031	0.001	0.09	0.69	0.02	0.25	0.001	0.001	0.01
TM	DH05-11	25934	8.8	11	0.002	0.001	0.001	0.01	0.44	0.053	0.001	0.06	0.41	0.01	0.36	0.001	0.001	0.01
TM	DH05-11	25935	11	12.2	0.001	0.001	0.003	0.01	0.16	0.048	0.001	0.04	0.4	0.01	0.37	0.001	0.001	0.01
TM	DH05-11	25936	12.2	14.2	0.003	0.001	0.001	0.01	0.61	0.055	0.001	0.04	0.37	0.01	0.36	0.001	0.001	0.01
TM	DH05-11	25937	14.2	16.2	0.003	0.001	0.001	0.01	0.39	0.053	0.001	0.07	0.38	0.01	0.36	0.001	0.001	0.01
TM	DH05-11	25938	16.2	17.7	0.003	0.001	0.001	0.01	0.58	0.051	0.001	0.06	0.37	0.01	0.36	0.001	0.001	0.01
TM	DH05-11	25939	17.7	19.2	0.001	0.001	0.001	0.01	0.13	0.047	0.001	0.02	0.39	0.01	0.36	0.001	0.001	0.01
TM	DH05-11	25941	19.2	20.7	0.002	0.001	0.001	0.01	0.33	0.055	0.001	0.06	0.37	0.01	0.36	0.001	0.001	0.01
TM	DH05-11	25943	20.7	21.5	0.001	0.001	0.003	0.01	0.14	0.057	0.001	0.06	0.4	0.01	0.4	0.001	0.001	0.01
TM	DH05-11	25946	22.3	23.05	0.001	0.001	0.001	0.01	0.13	0.036	0.001	0.06	0.3	0.01	0.31	0.001	0.001	0.01
TM	DH05-11	25947	23.05	24.7	0.002	0.001	0.001	0.01	0.23	0.053	0.001	0.07	0.38	0.01	0.38	0.001	0.001	0.01
TM	DH05-11	25948	24.7	26.7	0.003	0.001	0.001	0.01	0.44	0.056	0.001	0.08	0.38	0.01	0.37	0.001	0.001	0.01
TM	DH05-11	25949	26.7	27.3	0.001	0.001	0.001	0.01	0.25	0.059	0.001	0.08	0.39	0.01	0.36	0.001	0.001	0.01
TM	DH05-11	25950	27.3	27.75	0.001	0.001	0.001	0.01	0.17	0.057	0.001	0.08	0.41	0.01	0.38	0.001	0.001	0.01
TM	DH05-11	25953	28	28.4	0.001	0.001	0.001	0.01	0.26	0.06	0.001	0.15	0.41	0.01	0.38	0.001	0.001	0.01
TM	DH05-11	25954	28.4	29.9	0.002	0.001	0.001	0.01	0.35	0.061	0.001	0.11	0.4	0.01	0.4	0.001	0.001	0.01
TM	DH05-11	25955	29.9	31.9	0.003	0.001	0.001	0.01	0.56	0.052	0.001	0.1	0.52	0.02	0.33	0.001	0.001	0.01
TM	DH05-11	25956	31.9	33.9	0.004	0.001	0.001	0.01	0.53	0.049	0.001	0.13	0.51	0.03	0.3	0.001	0.001	0.01
TM	DH05-12	25817	13.45	13.95	0.001	0.009	0.002	0.01	0.02	0.014	0.001	0.01	0.21	0.01	0.21	0.001	0.001	0.03
TM	DH05-12	25818	13.95	14.45	0.001	0.002	0.001	0.01	0.02	0.012	0.001	0.01	0.21	0.01	0.23	0.001	0.001	0.01
TM	DH05-12	25822	15.9	16.2	0.001	0.001	0.003	0.01	0.04	0.04	0.001	0.01	0.31	0.01	0.44	0.001	0.001	0.02
TM	DH05-12	25823	16.2	17.7	0.001	0.001	0.003	0.01	0.15	0.057	0.001	0.06	0.37	0.01	0.4	0.001	0.001	0.01
TM	DH05-12	25824	17.7	19.05	0.003	0.001	0.001	0.01	0.72	0.046	0.001	0.13	0.5	0.02	0.32	0.001	0.001	0.01
TM	DH05-12	25825	19.05	19.6	0.009	0.001	0.001	0.01	2.49	0.276	0.005	0.81	2.42	0.01	0.15	0.001	0.001	3.31
TM	DH05-14	25861	8.35	9.85	0.001	0.001	0.001	0.01	0.2	0.057	0.001	0.06	0.48	0.01	0.24	0.001	0.001	0.01
TM	DH05-14	25863	9.85	11.35	0.001	0.001	0.001	0.01	0.75	0.043	0.001	0.4	0.46	0.01	0.22	0.001	0.001	0.01
TM	DH05-14	25864	11.35	12.85	0.003	0.001	0.001	0.01	0.54	0.038	0.001	0.11	0.46	0.02	0.23	0.001	0.001	0.01
TM	DH05-14	25865	12.85	14	0.004	0.001	0.001	0.01	0.63	0.026	0.001	0.11	0.39	0.02	0.24	0.001	0.001	0.01
TM	DH05-14	25866	14	15.2	0.001	0.001	0.001	0.01	0.07	0.025	0.001	0.03	0.32	0.01	0.36	0.001	0.001	0.01
TM	DH05-14	25870	18.3	20	0.001	0.001	0.002	0.01	0.12	0.044	0.001	0.03	0.4	0.01	0.34	0.001	0.001	0.01
TM	DH05-14	25871	20	22	0.001	0.001	0.001	0.01	0.14	0.053	0.001	0.04	0.36	0.01	0.39	0.001	0.001	0.01
TM	DH05-14	25872	22	22.45	0.001	0.001	0.002	0.01	0.07	0.03	0.001	0.02	0.3	0.01	0.31	0.001	0.001	0.01
TM	DH05-14	25873	22.45	23.15	0.001	0.001	0.001	0.01	0.12	0.048	0.001	0.05	0.37	0.01	0.41	0.001	0.001	0.01
TM	DH05-14	25874	23.15	23.35	0.001	0.001	0.002	0.01	0.1	0.041	0.001	0.03	0.32	0.01	0.33	0.001	0.001	0.01
TM	DH05-14	25876	23.5	23.65	0.007	0.002	0.003	0.01	1.58	0.264	0.006	0.68	3.73	0.01	0.22	0.001	0.001	0.01
TM	DH05-14	25877	23.65	23.95	0.001	0.001	0.002	0.01	0.1	0.041	0.001	0.03	0.33	0.01	0.38	0.001	0.001	0.01
TM	DH05-14	25878	23.95	24.95	0.002	0.001	0.001	0.01	0.35	0.059	0.001	0.09	0.41	0.01	0.41	0.001	0.001	0.01
TM	DH05-14	25879	24.95	26.8	0.005	0.001	0.002	0.01	0.81	0.051	0.001	0.12	0.42	0.01	0.37	0.001	0.001	0.01
TM	DH07-01	305901	24.1	24.8	0.001	0.001	0.003	0.01	0.13	0.046	0.001	0.04	0.49	0.01	0.43	0.001	0.001	0.01
TM	DH07-01	305902	24.8	25.8	0.001	0.001	0.001	0.01	0.18	0.052	0.001	0.07	0.37	0.01	0.39	0.001	0.001	0.01
TM	DH07-01	305903	25.8	26.5	0.001	0.001	0.001	0.01	0.14	0.047	0.001	0.06	0.36	0.01	0.38	0.001	0.001	0.01
TM	DH07-01	305904	26.5	27.5	0.001	0.001	0.004	0.01	0.13	0.049	0.001	0.04	0.36	0.01	0.38	0.001	0.001	0.01
TM	DH07-01	305906	31.9	32.9	0.001	0.001	0.001	0.01	0.16	0.046	0.001	0.05	0.34	0.01	0.33	0.003	0.001	0.01
TM	DH07-01	305907	32.9	33.5	0.001	0.001	0.004	0.01	0.18	0.047	0.001	0.09	0.42	0.01	0.38	0.001	0.001	0.01
TM	DH07-01	305909	34.2	34.8	0.001	0.001	0.002	0.01	0.04	0.017	0.001	0.01	0.24	0.01	0.23	0.001	0.001	0.01
TM	DH07-01	305911	34.8	35.7	0.001	0.001	0.001	0.01	0.05	0.011	0.001	0.04	0.22	0.01	0.23	0.001	0.001	0.01
TM	DH07-01	305912	35.7	36.6	0.001	0.001	0.001	0.01	0.1	0.026	0.001	0.05	0.38	0.01	0.4	0.002	0.001	0.01
TM	DH07-03	305938	16	17	0.001	0.001	0.001	0.01	0.23	0.053	0.001	0.07	0.51	0.01	0.3	0.001	0.001	0.01

Appendix I
Waste Rock Assay Information
E. TM Zone Granodiorite

Zone	Drillhole	Sample#	From	To	Interval	Easting	Northing	Azimuth	Dip	Lithology	Rock Mgmt Ur	Pit Zone	Mo %	Cu %	Pb %	Zn %	Ag g/mt	Ni %	Co %	Mn %	Fe %	As %
TM	DH07-03	305939	18	19	1	404282	6688954	135	-45	Granodiorite	Waste Granod	HW	0.001	0.002	0.02	0.15	5	0.001	0.001	0.35	1.32	0.01
TM	DH07-03	305941	20	21	1	404282	6688954	135	-45	Granodiorite	Waste Granod	HW	0.001	0.002	0.02	0.1	2	0.001	0.001	0.11	1.11	0.01
TM	DH07-03	305942	22	23	1	404282	6688954	135	-45	Granodiorite	Waste Granod	HW	0.001	0.003	0.03	0.17	3	0.001	0.001	0.2	1.09	0.01
TM	DH07-03	305943	24.5	25.5	1	404282	6688954	135	-45	Granodiorite	Waste Granod	HW	0.001	0.003	0.02	0.24	17	0.001	0.001	0.91	3.07	0.01
TM	DH07-03	305946	26.4	27	0.6	404282	6688954	135	-45	Granodiorite	Waste Granod	InterOre	0.001	0.007	0.06	1.15	23	0.001	0.001	0.63	2.31	0.01
TM	DH07-03	305947	27	27.8	0.8	404282	6688954	135	-45	Granodiorite	Waste Granod	InterOre	0.001	0.001	0.01	0.2	2	0.001	0.001	0.76	2.55	0.01
TM	DH07-03	305949	28.4	29	0.6	404282	6688954	135	-45	Granodiorite	Waste Granod	InterOre	0.001	0.002	0.08	1.54	4	0.001	0.001	0.78	2.4	0.02
TM	DH07-03	305951	29	29.6	0.6	404282	6688954	135	-45	Granodiorite	Waste Granod	InterOre	0.001	0.003	0.02	1.22	4	0.001	0.001	0.56	2.16	0.01
TM	DH07-03	305953	30	30.5	0.5	404282	6688954	135	-45	Granodiorite	Waste Granod	InterOre	0.001	0.002	0.02	0.73	2	0.001	0.001	0.69	2.49	0.01
TM	DH07-03	305956	31.15	31.5	0.35	404282	6688954	135	-45	Granodiorite	Waste Granod	FW	0.001	0.003	0.11	0.35	13	0.001	0.001	0.77	3.36	0.02
TM	DH07-03	305957	31.5	32.5	1	404282	6688954	135	-45	Granodiorite	Waste Granod	FW	0.001	0.002	0.01	0.44	5	0.001	0.001	0.57	1.82	0.01
TM	DH07-03	305958	32.5	33.5	1	404282	6688954	135	-45	Granodiorite	Waste Granod	FW	0.001	0.001	0.01	0.5	3	0.001	0.001	0.45	1.64	0.01
TM	DH07-03	305959	33.5	34.5	1	404282	6688954	135	-45	Granodiorite	Waste Granod	FW	0.002	0.001	0.05	0.23	2	0.001	0.001	0.69	2.12	0.01
TM	DH07-04	305981	30.8	31.8	1	404331	6688995	135	-45	Granodiorite	Waste Granod	HW	0.001	0.001	0.01	0.07	2	0.001	0.001	0.16	0.99	0.01
TM	DH07-04	305982	31.8	32.8	1	404331	6688995	135	-45	Granodiorite	Waste Granod	HW	0.001	0.001	0.01	0.06	2	0.001	0.001	0.05	1.14	0.01
TM	DH07-04	305983	32.8	33.8	1	404331	6688995	135	-45	Granodiorite	Waste Granod	HW	0.001	0.001	0.04	0.55	2	0.001	0.001	0.47	1.24	0.01
TM	DH07-04	305984	33.8	34.7	0.9	404331	6688995	135	-45	Granodiorite	Waste Granod	HW	0.001	0.002	0.06	2.02	5	0.001	0.001	0.75	2.24	0.09
TM	DH07-04	305986	34.7	35.7	1	404331	6688995	135	-45	Granodiorite	Waste Granod	HW	0.001	0.002	0.01	1.39	5	0.001	0.001	1.2	3.35	0.01
TM	DH07-04	305987	35.7	36.7	1	404331	6688995	135	-45	Granodiorite	Waste Granod	HW	0.001	0.001	0.01	0.69	3	0.001	0.001	0.64	2.03	0.01
TM	DH07-04	305991	38.5	39.2	0.7	404331	6688995	135	-45	Granodiorite	Waste Granod	InterOre	0.001	0.001	0.02	0.2	2	0.001	0.001	0.37	1.97	0.01
TM	DH07-04	305992	39.2	39.8	0.6	404331	6688995	135	-45	Granodiorite	Waste Granod	InterOre	0.001	0.013	0.01	2.45	8	0.001	0.001	0.31	1.25	0.01
TM	DH07-04	305993	39.8	40.4	0.6	404331	6688995	135	-45	Granodiorite	Waste Granod	InterOre	0.001	0.003	0.01	1.01	4	0.001	0.001	0.27	1.35	0.02
TM	DH07-04	305996	41	41.6	0.6	404331	6688995	135	-45	Granodiorite	Waste Granod	FW	0.001	0.001	0.02	0.73	4	0.001	0.001	1.17	3.55	0.01
TM	DH07-04	305997	41.6	42.6	1	404331	6688995	135	-45	Granodiorite	Waste Granod	FW	0.001	0.001	0.07	0.67	2	0.001	0.001	0.64	1.66	0.01
TM	DH07-04	305998	42.6	43.6	1	404331	6688995	135	-45	Granodiorite	Waste Granod	FW	0.001	0.001	0.01	0.63	2	0.001	0.001	0.12	1.18	0.01

Appendix I
Waste Rock Assay Information
E. TM Zone Granodiorite

Zone	Drillhole	Sample#	From	To	Sr %	Cd %	Sb %	Bi %	Ca %	P %	Cr %	Mg %	Al %	Na %	K %	W %	Hg %	Au g/mt
TM	DH07-03	305939	18	19	0.005	0.001	0.001	0.01	0.96	0.051	0.001	0.09	0.34	0.01	0.33	0.001	0.001	
TM	DH07-03	305941	20	21	0.003	0.001	0.001	0.01	0.51	0.06	0.001	0.06	0.34	0.01	0.34	0.001	0.001	
TM	DH07-03	305942	22	23	0.001	0.001	0.001	0.01	0.17	0.059	0.001	0.02	0.32	0.01	0.32	0.001	0.001	
TM	DH07-03	305943	24.5	25.5	0.001	0.001	0.002	0.01	0.16	0.056	0.001	0.08	0.31	0.01	0.31	0.001	0.001	
TM	DH07-03	305946	26.4	27	0.001	0.003	0.001	0.01	0.15	0.044	0.001	0.08	0.27	0.01	0.3	0.001	0.001	
TM	DH07-03	305947	27	27.8	0.001	0.001	0.001	0.01	1.24	0.051	0.001	0.72	0.3	0.01	0.33	0.001	0.001	
TM	DH07-03	305949	28.4	29	0.001	0.004	0.001	0.01	0.15	0.052	0.001	0.06	0.33	0.01	0.35	0.002	0.001	
TM	DH07-03	305951	29	29.6	0.001	0.004	0.001	0.01	0.1	0.04	0.001	0.03	0.3	0.01	0.31	0.002	0.001	
TM	DH07-03	305953	30	30.5	0.001	0.002	0.001	0.01	0.08	0.034	0.001	0.04	0.26	0.01	0.32	0.001	0.001	
TM	DH07-03	305956	31.15	31.5	0.001	0.001	0.006	0.01	0.16	0.053	0.001	0.09	0.28	0.01	0.33	0.001	0.001	
TM	DH07-03	305957	31.5	32.5	0.001	0.001	0.002	0.01	0.74	0.054	0.001	0.41	0.3	0.01	0.33	0.001	0.001	
TM	DH07-03	305958	32.5	33.5	0.001	0.001	0.001	0.01	0.14	0.059	0.001	0.03	0.32	0.01	0.38	0.001	0.001	
TM	DH07-03	305959	33.5	34.5	0.001	0.001	0.001	0.01	0.16	0.058	0.001	0.05	0.36	0.01	0.37	0.001	0.001	
TM	DH07-04	305981	30.8	31.8	0.006	0.001	0.001	0.01	0.92	0.034	0.001	0.14	0.37	0.01	0.3	0.001	0.001	
TM	DH07-04	305982	31.8	32.8	0.005	0.001	0.001	0.01	0.83	0.026	0.001	0.19	0.57	0.04	0.27	0.001	0.001	
TM	DH07-04	305983	32.8	33.8	0.001	0.001	0.002	0.01	0.32	0.041	0.001	0.09	0.41	0.01	0.33	0.001	0.001	
TM	DH07-04	305984	33.8	34.7	0.001	0.004	0.001	0.01	0.15	0.044	0.001	0.06	0.41	0.01	0.37	0.001	0.001	
TM	DH07-04	305986	34.7	35.7	0.001	0.003	0.002	0.01	0.15	0.048	0.001	0.12	0.38	0.01	0.35	0.001	0.001	
TM	DH07-04	305987	35.7	36.7	0.001	0.001	0.001	0.01	0.32	0.05	0.001	0.15	0.39	0.01	0.38	0.001	0.001	
TM	DH07-04	305991	38.5	39.2	0.001	0.001	0.001	0.01	0.13	0.053	0.001	0.06	0.46	0.01	0.36	0.001	0.001	
TM	DH07-04	305992	39.2	39.8	0.001	0.004	0.001	0.01	0.08	0.037	0.001	0.04	0.29	0.01	0.31	0.001	0.001	
TM	DH07-04	305993	39.8	40.4	0.001	0.002	0.001	0.01	0.07	0.029	0.001	0.03	0.25	0.01	0.25	0.001	0.001	
TM	DH07-04	305996	41	41.6	0.001	0.002	0.001	0.01	0.35	0.048	0.001	0.18	0.3	0.01	0.27	0.001	0.001	
TM	DH07-04	305997	41.6	42.6	0.001	0.001	0.001	0.01	1.02	0.056	0.001	0.57	0.38	0.01	0.32	0.001	0.001	
TM	DH07-04	305998	42.6	43.6	0.002	0.001	0.001	0.01	0.48	0.048	0.001	0.21	1.03	0.01	0.29	0.001	0.001	

Appendix I
Waste Rock Assay Information
F. TM Zone Andesite

Note -- Ore and Expit samples deleted --

Note: red typeface in results table indicates values above or below method detection limit

N	1	1	1	1	1	1	1	1	1	1
Min	0.001	0.001	0.01	0.99	2.00	0.00	0.00	0.09	6.28	0.01
Max	0.001	0.001	0.01	0.99	2.00	0.00	0.00	0.09	6.28	0.01
Mean	0.001	0.001	0.01	0.99	2.00	0.00	0.00	0.09	6.28	0.01
Geometric Mean	0.001	0.001	0.010	0.990	2.000	0.004	0.002	0.090	6.280	0.010
Median	0.001	0.001	0.01	0.99	2.00	0.00	0.00	0.09	6.28	0.01
Std Dev	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Geometric Std Dev	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
1st Quartile	0.001	0.001	0.01	0.99	2.00	0.00	0.00	0.09	6.28	0.01
3rd Quartile	0.001	0.001	0.01	0.99	2.00	0.00	0.00	0.09	6.28	0.01
5% percentile	0.001	0.001	0.01	0.99	2.00	0.00	0.00	0.09	6.28	0.01
95% percentile	0.001	0.001	0.01	0.99	2.00	0.00	0.00	0.09	6.28	0.01
98% percentile	0.001	0.001	0.010	0.990	2.000	0.004	0.002	0.090	6.280	0.010
99% percentile	0.001	0.001	0.01	0.99	2.00	0.00	0.00	0.09	6.28	0.01
99.9%percentile	0.001	0.001	0.01	0.99	2.00	0.00	0.00	0.09	6.28	0.01

Zone	Drillhole	Sample#	From	To	Interval	Easting	Northing	Azimuth	Dip	Lithology	Rock Mgmt U	Pit Zone	Mo %	Cu %	Pb %	Zn %	Ag g/mt	Ni %	Co %	Mn %	Fe %	As %
TM	DH07-04	305988	36.7	37.9	1.2	404331	6688995	135	-45	Andesite	Waste Andesi	HW	0.001	0.001	0.01	0.99	2	0.004	0.002	0.09	6.28	0.01

Appendix I
Waste Rock Assay Information
F. TM Zone Andesite

Note -- Ore and Expit samples deleted --

N	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0
Min	0.01	0.00	0.00	0.01	1.81	0.25	0.01	1.52	5.84	0.01	0.18	0.00	0.00	0.00	0.00
Max	0.01	0.00	0.00	0.01	1.81	0.25	0.01	1.52	5.84	0.01	0.18	0.00	0.00	0.00	0.00
Mean	0.01	0.00	0.00	0.01	1.81	0.25	0.01	1.52	5.84	0.01	0.18	0.00	0.00	#DIV/0!	
Geometric Mean	0.009	0.001	0.001	0.010	1.810	0.252	0.007	1.520	5.840	0.010	0.180	0.001	0.001	#DIV/0!	
Median	0.01	0.00	0.00	0.01	1.81	0.25	0.01	1.52	5.84	0.01	0.18	0.00	0.00	#NUM!	
Std Dev	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
Geometric Std Dev	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
1st Quartile	0.01	0.00	0.00	0.01	1.81	0.25	0.01	1.52	5.84	0.01	0.18	0.00	0.00	0.00	
3rd Quartile	0.01	0.00	0.00	0.01	1.81	0.25	0.01	1.52	5.84	0.01	0.18	0.00	0.00	0.00	
5% percentile	0.01	0.00	0.00	0.01	1.81	0.25	0.01	1.52	5.84	0.01	0.18	0.00	0.00	#NUM!	
95% percentile	0.01	0.00	0.00	0.01	1.81	0.25	0.01	1.52	5.84	0.01	0.18	0.00	0.00	#NUM!	
98% percentile	0.009	0.001	0.001	0.010	1.810	0.252	0.007	1.520	5.840	0.010	0.180	0.001	0.001	#NUM!	
99% percentile	0.01	0.00	0.00	0.01	1.81	0.25	0.01	1.52	5.84	0.01	0.18	0.00	0.00	#NUM!	
99.9%percentile	0.01	0.00	0.00	0.01	1.81	0.25	0.01	1.52	5.84	0.01	0.18	0.00	0.00	#NUM!	

Zone	Drillhole	Sample#	From	To	Sr %	Cd %	Sb %	Bi %	Ca %	P %	Cr %	Mg %	Al %	Na %	K %	W %	Hg %	Au g/mt
TM	DH07-04	305988	36.7	37.9	0.009	0.001	0.001	0.01	1.81	0.252	0.007	1.52	5.84	0.01	0.18	0.001	0.001	

Appendix I
Waste Rock Assay Information
G. TM Zone HW

Note: red typeface in results table indicates values above or below method detection limit

Zone	Drillhole	Sample#	From	To	Interval	Easting	Northing	Azimuth	Dip	Lithology	Rock Mgmt	U	Pit Zone	Mo %	Cu %	Pb %	Zn %	Ag g/mt	Ni %	Co %	Mn %	Fe %	As %
TM	DH05-11	25929	1.52	3.5	1.98	404358	6688990	150	-45	Granodiorite	Waste Granoc	HW		0.001	0.001	0.01	0.02	2	0.001	0.001	0.02	0.96	0.01
TM	DH05-11	25930	3.5	5.1	1.6	404358	6688990	150	-45	Granodiorite	Waste Granoc	HW		0.001	0.004	0.01	0.05	2	0.001	0.001	0.06	0.9	0.01
TM	DH05-11	25931	5.1	6.2	1.1	404358	6688990	150	-45	Granodiorite	Waste Granoc	HW		0.001	0.005	0.08	0.2	22	0.001	0.001	0.86	2.84	0.01
TM	DH05-11	25932	6.2	7.7	1.5	404358	6688990	150	-45	Granodiorite	Waste Granoc	HW		0.001	0.002	0.02	0.18	6	0.001	0.001	0.14	0.92	0.01
TM	DH05-11	25933	7.7	8.8	1.1	404358	6688990	150	-45	Granodiorite	Waste Granoc	HW		0.001	0.001	0.01	0.21	2	0.001	0.001	0.06	1.12	0.01
TM	DH05-11	25934	8.8	11	2.2	404358	6688990	150	-45	Granodiorite	Waste Granoc	HW		0.001	0.001	0.02	0.15	2	0.001	0.001	0.51	1.73	0.01
TM	DH05-11	25935	11	12.2	1.2	404358	6688990	150	-45	Granodiorite	Waste Granoc	HW		0.001	0.009	0.01	0.37	22	0.001	0.001	0.38	1.85	0.01
TM	DH05-11	25936	12.2	14.2	2	404358	6688990	150	-45	Granodiorite	Waste Granoc	HW		0.001	0.002	0.01	0.1	2	0.001	0.001	0.11	0.92	0.01
TM	DH05-11	25937	14.2	16.2	2	404358	6688990	150	-45	Granodiorite	Waste Granoc	HW		0.001	0.002	0.02	0.15	6	0.001	0.001	0.32	1.19	0.01
TM	DH05-11	25938	16.2	17.7	1.5	404358	6688990	150	-45	Granodiorite	Waste Granoc	HW		0.001	0.003	0.01	0.12	7	0.001	0.001	0.08	0.85	0.01
TM	DH05-11	25939	17.7	19.2	1.5	404358	6688990	150	-45	Granodiorite	Waste Granoc	HW		0.001	0.002	0.01	0.2	2	0.001	0.001	0.07	0.86	0.01
TM	DH05-11	25941	19.2	20.7	1.5	404358	6688990	150	-45	Granodiorite	Waste Granoc	HW		0.001	0.001	0.04	0.38	2	0.001	0.001	0.36	1.25	0.01
TM	DH05-11	25943	20.7	21.5	0.8	404358	6688990	150	-45	Granodiorite	Waste Granoc	HW		0.001	0.007	0.04	0.13	16	0.001	0.001	0.51	1.97	0.01
TM	DH05-14	25861	8.35	9.85	1.5	404320	6688971	150	-45	Granodiorite	Waste Granoc	HW		0.001	0.005	0.01	0.05	2	0.001	0.001	0.04	0.74	0.01
TM	DH05-14	25863	9.85	11.35	1.5	404320	6688971	150	-45	Granodiorite	Waste Granoc	HW		0.001	0.007	0.01	0.06	3	0.001	0.001	0.03	0.85	0.01
TM	DH05-14	25864	11.35	12.85	1.5	404320	6688971	150	-45	Granodiorite	Waste Granoc	HW		0.001	0.003	0.01	0.03	2	0.001	0.001	0.03	0.87	0.01
TM	DH05-14	25865	12.85	14	1.15	404320	6688971	150	-45	Granodiorite	Waste Granoc	HW		0.001	0.005	0.01	0.03	3	0.001	0.001	0.03	0.94	0.01
TM	DH05-14	25866	14	15.2	1.2	404320	6688971	150	-45	Granodiorite	Waste Granoc	HW		0.001	0.013	0.02	0.14	18	0.001	0.001	0.24	1.42	0.01
TM	DH07-01	305901	24.1	24.8	0.7	404249	6688931	135	-45	Granodiorite	Waste Granoc	HW		0.002	0.003	0.03	0.14	7	0.001	0.001	0.46	2.27	0.03
TM	DH07-01	305902	24.8	25.8	1	404249	6688931	135	-45	Granodiorite	Waste Granoc	HW		0.003	0.001	0.03	0.14	2	0.001	0.001	0.47	1.64	0.01
TM	DH07-01	305903	25.8	26.5	0.7	404249	6688931	135	-45	Granodiorite	Waste Granoc	HW		0.003	0.001	0.05	0.15	4	0.001	0.001	0.45	1.54	0.01
TM	DH07-01	305904	26.5	27.5	1	404249	6688931	135	-45	Granodiorite	Waste Granoc	HW		0.001	0.002	0.04	0.12	5	0.001	0.001	0.33	1.31	0.01
TM	DH07-01	305906	31.9	32.9	1	404249	6688931	135	-45	Granodiorite	Waste Granoc	HW		0.003	0.009	0.02	1.09	10	0.001	0.001	0.18	0.83	0.01
TM	DH07-01	305907	32.9	33.5	0.6	404249	6688931	135	-45	Granodiorite	Waste Granoc	HW		0.003	0.009	0.08	0.21	31	0.001	0.001	0.79	2.43	0.01
TM	DH07-03	305938	16	17	1	404282	6688954	135	-45	Granodiorite	Waste Granoc	HW		0.001	0.007	0.01	0.15	3	0.001	0.001	0.13	1.22	0.01
TM	DH07-03	305939	18	19	1	404282	6688954	135	-45	Granodiorite	Waste Granoc	HW		0.001	0.002	0.02	0.15	5	0.001	0.001	0.35	1.32	0.01
TM	DH07-03	305941	20	21	1	404282	6688954	135	-45	Granodiorite	Waste Granoc	HW		0.001	0.002	0.02	0.1	2	0.001	0.001	0.11	1.11	0.01
TM	DH07-03	305942	22	23	1	404282	6688954	135	-45	Granodiorite	Waste Granoc	HW		0.001	0.003	0.03	0.17	3	0.001	0.001	0.2	1.09	0.01
TM	DH07-03	305943	24.5	25.5	1	404282	6688954	135	-45	Granodiorite	Waste Granoc	HW		0.001	0.003	0.02	0.24	17	0.001	0.001	0.91	3.07	0.01
TM	DH07-04	305981	30.8	31.8	1	404331	6688995	135	-45	Granodiorite	Waste Granoc	HW		0.001	0.001	0.01	0.07	2	0.001	0.001	0.16	0.99	0.01
TM	DH07-04	305982	31.8	32.8	1	404331	6688995	135	-45	Granodiorite	Waste Granoc	HW		0.001	0.001	0.01	0.06	2	0.001	0.001	0.05	1.14	0.01
TM	DH07-04	305983	32.8	33.8	1	404331	6688995	135	-45	Granodiorite	Waste Granoc	HW		0.001	0.001	0.04	0.55	2	0.001	0.001	0.47	1.24	0.01
TM	DH07-04	305984	33.8	34.7	0.9	404331	6688995	135	-45	Granodiorite	Waste Granoc	HW		0.001	0.002	0.06	2.02	5	0.001	0.001	0.75	2.24	0.09
TM	DH07-04	305986	34.7	35.7	1	404331	6688995	135	-45	Granodiorite	Waste Granoc	HW		0.001	0.002	0.01	1.39	5	0.001	0.001	1.2	3.35	0.01
TM	DH07-04	305987	35.7	36.7	1	404331	6688995	135	-45	Granodiorite	Waste Granoc	HW		0.001	0.001	0.01	0.69	3	0.001	0.001	0.64	2.03	0.01
TM	DH07-04	305988	36.7	37.9	1.2	404331	6688995	135	-45	Andesite	Waste Andesi	HW		0.001	0.001	0.01	0.99	2	0.004	0.002	0.09	6.28	0.01

Note -- Ore and Expit samples deleted --

N	36	36	36	36	36	36	36	36	36	36	36	36	36	36	18
Min	0.00	0.00	0.00	0.01	0.07	0.03	0.00	0.02	0.31	0.01	0.18	0.00	0.00	0.01	
Max	0.01	0.00	0.00	0.01	1.81	0.25	0.01	1.52	5.84	0.04	0.43	0.00	0.00	0.01	
Mean	0.00	0.00	0.00	0.01	0.36	0.05	0.00	0.12	0.57	0.01	0.32	0.00	0.00	0.01	
Geometric Mean	0.002	0.001	0.001	0.010	0.256	0.047	0.001	0.072	0.438	0.012	0.318	0.001	0.001	0.010	
Median	0.00	0.00	0.00	0.01	0.18	0.05	0.00	0.06	0.39	0.01	0.35	0.00	0.00	0.01	
Std Dev	0.00	0.00	0.00	0.00	0.35	0.04	0.00	0.25	0.91	0.01	0.06	0.00	0.00	0.00	
Geometric Std Dev	1.95	1.34	1.57	1.00	2.23	1.46	1.38	2.26	1.61	1.45	1.24	1.20	1.00	1.00	
1st Quartile	0.00	0.00	0.00	0.01	0.14	0.04	0.00	0.05	0.37	0.01	0.29	0.00	0.00	0.01	
3rd Quartile	0.00	0.00	0.00	0.01	0.52	0.05	0.00	0.09	0.46	0.01	0.37	0.00	0.00	0.01	
5% percentile	0.00	0.00	0.00	0.01	0.10	0.03	0.00	0.02	0.32	0.01	0.22	0.00	0.00	0.01	
95% percentile	0.01	0.00	0.00	0.01	0.93	0.06	0.00	0.24	0.61	0.03	0.39	0.00	0.00	0.01	
98% percentile	0.007	0.003	0.004	0.010	1.215	0.118	0.003	0.736	2.235	0.040	0.409	0.002	0.001	0.010	
99% percentile	0.01	0.00	0.00	0.01	1.51	0.18	0.00	1.13	4.04	0.04	0.42	0.00	0.00	0.01	
99.9%percentile	0.01	0.00	0.00	0.01	1.78	0.25	0.01	1.48	5.66	0.04	0.43	0.00	0.00	0.01	

Zone	Drillhole	Sample#	From	To	Sr %	Cd %	Sb %	Bi %	Ca %	P %	Cr %	Mg %	Al %	Na %	K %	W %	Hg %	Au g/mt
TM	DH05-11	25929	1.52	3.5	0.001	0.001	0.002	0.01	0.12	0.037	0.001	0.1	0.56	0.04	0.21	0.001	0.001	0.01
TM	DH05-11	25930	3.5	5.1	0.001	0.001	0.001	0.01	0.15	0.047	0.001	0.06	0.58	0.02	0.24	0.001	0.001	0.01
TM	DH05-11	25931	5.1	6.2	0.003	0.001	0.001	0.01	0.1	0.045	0.001	0.02	0.39	0.01	0.38	0.001	0.001	0.01
TM	DH05-11	25932	6.2	7.7	0.001	0.001	0.001	0.01	0.09	0.027	0.001	0.03	0.39	0.01	0.31	0.001	0.001	0.01
TM	DH05-11	25933	7.7	8.8	0.001	0.001	0.001	0.01	0.12	0.031	0.001	0.09	0.69	0.02	0.25	0.001	0.001	0.01
TM	DH05-11	25934	8.8	11	0.002	0.001	0.001	0.01	0.44	0.053	0.001	0.06	0.41	0.01	0.36	0.001	0.001	0.01
TM	DH05-11	25935	11	12.2	0.001	0.001	0.003	0.01	0.16	0.048	0.001	0.04	0.4	0.01	0.37	0.001	0.001	0.01
TM	DH05-11	25936	12.2	14.2	0.003	0.001	0.001	0.01	0.61	0.055	0.001	0.04	0.37	0.01	0.36	0.001	0.001	0.01
TM	DH05-11	25937	14.2	16.2	0.003	0.001	0.001	0.01	0.39	0.053	0.001	0.07	0.38	0.01	0.36	0.001	0.001	0.01
TM	DH05-11	25938	16.2	17.7	0.003	0.001	0.001	0.01	0.58	0.051	0.001	0.06	0.37	0.01	0.36	0.001	0.001	0.01
TM	DH05-11	25939	17.7	19.2	0.001	0.001	0.001	0.01	0.13	0.047	0.001	0.02	0.39	0.01	0.36	0.001	0.001	0.01
TM	DH05-11	25941	19.2	20.7	0.002	0.001	0.001	0.01	0.33	0.055	0.001	0.06	0.37	0.01	0.36	0.001	0.001	0.01
TM	DH05-11	25943	20.7	21.5	0.001	0.001	0.003	0.01	0.14	0.057	0.001	0.06	0.4	0.01	0.4	0.001	0.001	0.01
TM	DH05-14	25861	8.35	9.85	0.001	0.001	0.001	0.01	0.2	0.057	0.001	0.06	0.48	0.01	0.24	0.001	0.001	0.01
TM	DH05-14	25863	9.85	11.35	0.001	0.001	0.001	0.01	0.75	0.043	0.001	0.4	0.46	0.01	0.22	0.001	0.001	0.01
TM	DH05-14	25864	11.35	12.85	0.003	0.001	0.001	0.01	0.54	0.038	0.001	0.11	0.46	0.02	0.23	0.001	0.001	0.01
TM	DH05-14	25865	12.85	14	0.004	0.001	0.001	0.01	0.63	0.026	0.001	0.11	0.39	0.02	0.24	0.001	0.001	0.01
TM	DH05-14	25866	14	15.2	0.001	0.001	0.001	0.01	0.07	0.025	0.001	0.03	0.32	0.01	0.36	0.001	0.001	0.01
TM	DH07-01	305901	24.1	24.8	0.001	0.001	0.003	0.01	0.13	0.046	0.001	0.04	0.49	0.01	0.43	0.001	0.001	
TM	DH07-01	305902	24.8	25.8	0.001	0.001	0.001	0.01	0.18	0.052	0.001	0.07	0.37	0.01	0.39	0.001	0.001	
TM	DH07-01	305903	25.8	26.5	0.001	0.001	0.001	0.01	0.14	0.047	0.001	0.06	0.36	0.01	0.38	0.001	0.001	
TM	DH07-01	305904	26.5	27.5	0.001	0.001	0.004	0.01	0.13	0.049	0.001	0.04	0.36	0.01	0.38	0.001	0.001	
TM	DH07-01	305906	31.9	32.9	0.001	0.001	0.001	0.01	0.16	0.046	0.001	0.05	0.34	0.01	0.33	0.003	0.001	
TM	DH07-01	305907	32.9	33.5	0.001	0.001	0.004	0.01	0.18	0.047	0.001	0.09	0.42	0.01	0.38	0.001	0.001	
TM	DH07-03	305938	16	17	0.001	0.001	0.001	0.01	0.23	0.053	0.001	0.07	0.51	0.01	0.3	0.001	0.001	
TM	DH07-03	305939	18	19	0.005	0.001	0.001	0.01	0.96	0.051	0.001	0.09	0.34	0.01	0.33	0.001	0.001	
TM	DH07-03	305941	20	21	0.003	0.001	0.001	0.01	0.51	0.06	0.001	0.06	0.34	0.01	0.34	0.001	0.001	
TM	DH07-03	305942	22	23	0.001	0.001	0.001	0.01	0.17	0.059	0.001	0.02	0.32	0.01	0.32	0.001	0.001	
TM	DH07-03	305943	24.5	25.5	0.001	0.001	0.002	0.01	0.16	0.056	0.001	0.08	0.31	0.01	0.31	0.001	0.001	
TM	DH07-04	305981	30.8	31.8	0.006	0.001	0.001	0.01	0.92	0.034	0.001	0.14	0.37	0.01	0.3	0.001	0.001	
TM	DH07-04	305982	31.8	32.8	0.005	0.001	0.001	0.01	0.83	0.026	0.001	0.19	0.57	0.04	0.27	0.001	0.001	
TM	DH07-04	305983	32.8	33.8	0.001	0.001	0.002	0.01	0.32	0.041	0.001	0.09	0.41	0.01	0.33	0.001	0.001	
TM	DH07-04	305984	33.8	34.7	0.001	0.004	0.001	0.01	0.15	0.044	0.001	0.06	0.41	0.01	0.37	0.001	0.001	
TM	DH07-04	305986	34.7	35.7	0.001	0.003	0.002	0.01	0.15	0.048	0.001	0.12	0.38	0.01	0.35	0.001	0.001	
TM	DH07-04	305987	35.7	36.7	0.001	0.001	0.001	0.01	0.32	0.05	0.001	0.15	0.39	0.01	0.38	0.001	0.001	
TM	DH07-04	305988	36.7	37.9	0.009	0.001	0.001	0.01	1.81	0.252	0.007	1.52	5.84	0.01	0.18	0.001	0.001	

Appendix I
Waste Rock Assay Information
H. TM Zone InterOre

Note -- Ore and Expit samples deleted --

Note: red typeface in results table indicates values above or below method detection limit

												20	20	20	20	20	20	20	20	20	20	20
Min												0.001	0.001	0.01	0.06	2.00	0.00	0.00	0.06	0.80	0.01	
Max												0.001	0.013	0.15	2.78	23.00	0.00	0.00	0.78	2.55	0.02	
Mean												0.001	0.003	0.04	0.75	5.85	0.00	0.00	0.39	1.60	0.01	
Geometric Mean												0.001	0.002	0.027	0.463	4.073	0.001	0.001	0.308	1.487	0.011	
Median												0.001	0.002	0.02	0.39	4.00	0.00	0.00	0.34	1.56	0.01	
Std Dev												0.000	0.004	0.03	0.76	6.19	0.00	0.00	0.25	0.61	0.00	
Geometric Std Dev												1.000	2.288	2.21	2.87	2.22	1.00	1.00	2.15	1.49	1.24	
1st Quartile												0.001	0.001	0.02	0.22	2.00	0.00	0.00	0.17	1.08	0.01	
3rd Quartile												0.001	0.003	0.04	1.05	5.75	0.00	0.00	0.62	2.20	0.01	
5% percentile												0.001	0.001	0.01	0.09	2.00	0.00	0.00	0.10	0.86	0.01	
95% percentile												0.001	0.012	0.08	2.47	21.10	0.00	0.00	0.77	2.49	0.02	
98% percentile												0.001	0.013	0.123	2.655	22.240	0.001	0.001	0.776	2.527	0.020	
99% percentile												0.001	0.013	0.14	2.72	22.62	0.00	0.00	0.78	2.54	0.02	
99.9%percentile												0.001	0.013	0.15	2.77	22.96	0.00	0.00	0.78	2.55	0.02	

Zone	Drillhole	Sample#	From	To	Interval	Easting	Northing	Azimuth	Dip	Lithology	Rock Mgmt U	Pit Zone	Mo %	Cu %	Pb %	Zn %	Ag g/mt	Ni %	Co %	Mn %	Fe %	As %
TM	DH05-11	25946	22.3	23.05	0.75	404358	6688990	150	-45	Granodiorite	Waste Granoc	InterOre	0.001	0.001	0.01	0.06	2	0.001	0.001	0.15	0.92	0.01
TM	DH05-11	25947	23.05	24.7	1.65	404358	6688990	150	-45	Granodiorite	Waste Granoc	InterOre	0.001	0.002	0.02	0.39	2	0.001	0.001	0.17	0.86	0.01
TM	DH05-11	25948	24.7	26.7	2	404358	6688990	150	-45	Granodiorite	Waste Granoc	InterOre	0.001	0.001	0.01	0.39	2	0.001	0.001	0.14	0.88	0.01
TM	DH05-11	25949	26.7	27.3	0.6	404358	6688990	150	-45	Granodiorite	Waste Granoc	InterOre	0.001	0.001	0.07	0.39	2	0.001	0.001	0.62	1.67	0.01
TM	DH05-11	25950	27.3	27.75	0.45	404358	6688990	150	-45	Granodiorite	Waste Granoc	InterOre	0.001	0.001	0.03	0.23	2	0.001	0.001	0.77	2.35	0.01
TM	DH05-12	25817	13.45	13.95	0.5	404296	6688947	150	-45	Granodiorite	Waste Granoc	InterOre	0.001	0.012	0.15	2.78	21	0.001	0.001	0.18	1.16	0.01
TM	DH05-12	25818	13.95	14.45	0.5	404296	6688947	150	-45	Granodiorite	Waste Granoc	InterOre	0.001	0.003	0.04	0.76	4	0.001	0.001	0.06	0.8	0.01
TM	DH05-14	25870	18.3	20	1.7	404320	6688971	150	-45	Granodiorite	Waste Granoc	InterOre	0.001	0.004	0.02	0.79	5	0.001	0.001	0.1	0.92	0.01
TM	DH05-14	25871	20	22	2	404320	6688971	150	-45	Granodiorite	Waste Granoc	InterOre	0.001	0.002	0.04	0.26	8	0.001	0.001	0.49	1.44	0.01
TM	DH05-14	25872	22	22.45	0.45	404320	6688971	150	-45	Granodiorite	Waste Granoc	InterOre	0.001	0.002	0.05	0.09	13	0.001	0.001	0.15	1.13	0.01
TM	DH05-14	25873	22.45	23.15	0.7	404320	6688971	150	-45	Granodiorite	Waste Granoc	InterOre	0.001	0.001	0.02	0.19	3	0.001	0.001	0.37	1.72	0.01
TM	DH05-14	25874	23.15	23.35	0.2	404320	6688971	150	-45	Granodiorite	Waste Granoc	InterOre	0.001	0.001	0.04	0.22	4	0.001	0.001	0.27	1.69	0.01
TM	DH07-03	305946	26.4	27	0.6	404282	6688954	135	-45	Granodiorite	Waste Granoc	InterOre	0.001	0.007	0.06	1.15	23	0.001	0.001	0.63	2.31	0.01
TM	DH07-03	305947	27	27.8	0.8	404282	6688954	135	-45	Granodiorite	Waste Granoc	InterOre	0.001	0.001	0.01	0.2	2	0.001	0.001	0.76	2.55	0.01
TM	DH07-03	305949	28.4	29	0.6	404282	6688954	135	-45	Granodiorite	Waste Granoc	InterOre	0.001	0.002	0.08	1.54	4	0.001	0.001	0.78	2.4	0.02
TM	DH07-03	305951	29	29.6	0.6	404282	6688954	135	-45	Granodiorite	Waste Granoc	InterOre	0.001	0.003	0.02	1.22	4	0.001	0.001	0.56	2.16	0.01
TM	DH07-03	305953	30	30.5	0.5	404282	6688954	135	-45	Granodiorite	Waste Granoc	InterOre	0.001	0.002	0.02	0.73	2	0.001	0.001	0.69	2.49	0.01
TM	DH07-04	305991	38.5	39.2	0.7	404331	6688995	135	-45	Granodiorite	Waste Granoc	InterOre	0.001	0.001	0.02	0.2	2	0.001	0.001	0.37	1.97	0.01
TM	DH07-04	305992	39.2	39.8	0.6	404331	6688995	135	-45	Granodiorite	Waste Granoc	InterOre	0.001	0.013	0.01	2.45	8	0.001	0.001	0.31	1.25	0.01
TM	DH07-04	305993	39.8	40.4	0.6	404331	6688995	135	-45	Granodiorite	Waste Granoc	InterOre	0.001	0.003	0.01	1.01	4	0.001	0.001	0.27	1.35	0.02

Appendix I
Waste Rock Assay Information
H. TM Zone InterOre

Note -- Ore and Exipit samples deleted --

N	20	20	20	20	20	20	20	20	20	20	20	20	20	20	12
Min	0.00	0.00	0.00	0.01	0.02	0.01	0.00	0.01	0.21	0.01	0.21	0.00	0.00	0.00	0.01
Max	0.00	0.01	0.00	0.01	1.24	0.06	0.00	0.72	0.46	0.01	0.41	0.00	0.00	0.00	0.03
Mean	0.00	0.00	0.00	0.01	0.19	0.04	0.00	0.08	0.32	0.01	0.33	0.00	0.00	0.00	0.01
Geometric Mean	0.001	0.002	0.001	0.010	0.122	0.039	0.001	0.047	0.318	0.010	0.323	0.001	0.001	0.001	0.011
Median	0.00	0.00	0.00	0.01	0.13	0.04	0.00	0.05	0.31	0.01	0.33	0.00	0.00	0.00	0.01
Std Dev	0.00	0.00	0.00	0.00	0.26	0.01	0.00	0.15	0.07	0.00	0.05	0.00	0.00	0.00	0.01
Geometric Std Dev	1.33	1.97	1.33	1.00	2.49	1.54	1.00	2.45	1.24	1.00	1.19	1.24	1.00	1.00	1.37
1st Quartile	0.00	0.00	0.00	0.01	0.08	0.04	0.00	0.03	0.29	0.01	0.31	0.00	0.00	0.00	0.01
3rd Quartile	0.00	0.00	0.00	0.01	0.16	0.05	0.00	0.07	0.38	0.01	0.36	0.00	0.00	0.00	0.01
5% percentile	0.00	0.00	0.00	0.01	0.02	0.01	0.00	0.01	0.21	0.01	0.23	0.00	0.00	0.00	0.01
95% percentile	0.00	0.00	0.00	0.01	0.48	0.06	0.00	0.11	0.41	0.01	0.39	0.00	0.00	0.00	0.02
98% percentile	0.003	0.007	0.002	0.010	0.936	0.058	0.001	0.477	0.441	0.010	0.402	0.002	0.001	0.001	0.026
99% percentile	0.00	0.01	0.00	0.01	1.09	0.06	0.00	0.60	0.45	0.01	0.41	0.00	0.00	0.00	0.03
99.9%percentile	0.00	0.01	0.00	0.01	1.22	0.06	0.00	0.71	0.46	0.01	0.41	0.00	0.00	0.00	0.03

Zone	Drillhole	Sample#	From	To	Sr %	Cd %	Sb %	Bi %	Ca %	P %	Cr %	Mg %	Al %	Na %	K %	W %	Hg %	Au g/mt
TM	DH05-11	25946	22.3	23.05	0.001	0.001	0.001	0.01	0.13	0.036	0.001	0.06	0.3	0.01	0.31	0.001	0.001	0.01
TM	DH05-11	25947	23.05	24.7	0.002	0.001	0.001	0.01	0.23	0.053	0.001	0.07	0.38	0.01	0.38	0.001	0.001	0.01
TM	DH05-11	25948	24.7	26.7	0.003	0.001	0.001	0.01	0.44	0.056	0.001	0.08	0.38	0.01	0.37	0.001	0.001	0.01
TM	DH05-11	25949	26.7	27.3	0.001	0.001	0.001	0.01	0.25	0.059	0.001	0.08	0.39	0.01	0.36	0.001	0.001	0.01
TM	DH05-11	25950	27.3	27.75	0.001	0.001	0.001	0.01	0.17	0.057	0.001	0.08	0.41	0.01	0.38	0.001	0.001	0.01
TM	DH05-12	25817	13.45	13.95	0.001	0.009	0.002	0.01	0.02	0.014	0.001	0.01	0.21	0.01	0.21	0.001	0.001	0.03
TM	DH05-12	25818	13.95	14.45	0.001	0.002	0.001	0.01	0.02	0.012	0.001	0.01	0.21	0.01	0.23	0.001	0.001	0.01
TM	DH05-14	25870	18.3	20	0.001	0.001	0.002	0.01	0.12	0.044	0.001	0.03	0.4	0.01	0.34	0.001	0.001	0.01
TM	DH05-14	25871	20	22	0.001	0.001	0.001	0.01	0.14	0.053	0.001	0.04	0.36	0.01	0.39	0.001	0.001	0.01
TM	DH05-14	25872	22	22.45	0.001	0.001	0.002	0.01	0.07	0.03	0.001	0.02	0.3	0.01	0.31	0.001	0.001	0.01
TM	DH05-14	25873	22.45	23.15	0.001	0.001	0.001	0.01	0.12	0.048	0.001	0.05	0.37	0.01	0.41	0.001	0.001	0.01
TM	DH05-14	25874	23.15	23.35	0.001	0.001	0.002	0.01	0.1	0.041	0.001	0.03	0.32	0.01	0.33	0.001	0.001	0.01
TM	DH07-03	305946	26.4	27	0.001	0.003	0.001	0.01	0.15	0.044	0.001	0.08	0.27	0.01	0.3	0.001	0.001	
TM	DH07-03	305947	27	27.8	0.001	0.001	0.001	0.01	1.24	0.051	0.001	0.72	0.3	0.01	0.33	0.001	0.001	
TM	DH07-03	305949	28.4	29	0.001	0.004	0.001	0.01	0.15	0.052	0.001	0.06	0.33	0.01	0.35	0.002	0.001	
TM	DH07-03	305951	29	29.6	0.001	0.004	0.001	0.01	0.1	0.04	0.001	0.03	0.3	0.01	0.31	0.002	0.001	
TM	DH07-03	305953	30	30.5	0.001	0.002	0.001	0.01	0.08	0.034	0.001	0.04	0.26	0.01	0.32	0.001	0.001	
TM	DH07-04	305991	38.5	39.2	0.001	0.001	0.001	0.01	0.13	0.053	0.001	0.06	0.46	0.01	0.36	0.001	0.001	
TM	DH07-04	305992	39.2	39.8	0.001	0.004	0.001	0.01	0.08	0.037	0.001	0.04	0.29	0.01	0.31	0.001	0.001	
TM	DH07-04	305993	39.8	40.4	0.001	0.002	0.001	0.01	0.07	0.029	0.001	0.03	0.25	0.01	0.25	0.001	0.001	

Appendix I
Waste Rock Assay Information
I. TM Zone FW

Note -- Ore and Expit samples deleted --

Note: red typeface in results table indicates values above or below method detection limit

N	22	22	22	22	22	22	22	22	22	22
Min	0.001	0.001	0.01	0.17	2.00	0.00	0.00	0.01	0.77	0.01
Max	0.002	0.006	0.11	1.49	29.00	0.01	0.00	1.17	4.69	0.04
Mean	0.001	0.002	0.03	0.45	6.27	0.00	0.00	0.42	1.81	0.01
Geometric Mean	0.001	0.002	0.026	0.368	4.340	0.001	0.001	0.266	1.589	0.011
Median	0.001	0.002	0.03	0.33	4.00	0.00	0.00	0.42	1.51	0.01
Std Dev	0.0002	0.002	0.03	0.34	6.50	0.00	0.00	0.31	1.03	0.01
Geometric Std Dev	1.159	1.862	2.20	1.83	2.29	1.56	1.31	3.32	1.66	1.38
1st Quartile	0.001	0.001	0.01	0.23	2.00	0.00	0.00	0.14	1.01	0.01
3rd Quartile	0.001	0.003	0.05	0.52	7.50	0.00	0.00	0.62	2.14	0.01
5% percentile	0.001	0.001	0.01	0.19	2.00	0.00	0.00	0.04	0.92	0.01
95% percentile	0.001	0.005	0.07	1.19	14.90	0.00	0.00	0.87	3.54	0.02
98% percentile	0.002	0.006	0.093	1.372	23.120	0.005	0.003	1.048	4.211	0.032
99% percentile	0.002	0.006	0.10	1.43	26.06	0.00	0.00	1.11	4.45	0.04
99.9%percentile	0.002	0.006	0.11	1.48	28.71	0.00	0.00	1.16	4.67	0.04

Zone	Drillhole	Sample#	From	To	Interval	Easting	Northing	Azimuth	Dip	Lithology	Rock Mgmt Ur	Pit Zone	Mo %	Cu %	Pb %	Zn %	Ag g/mt	Ni %	Co %	Mn %	Fe %	As %
TM	DH05-11	25953	28	28.4	0.4	404358	6688990	150	-45	Granodiorite	Waste Granoc	FW	0.001	0.001	0.02	0.2	4	0.001	0.001	0.88	2.7	0.01
TM	DH05-11	25954	28.4	29.9	1.5	404358	6688990	150	-45	Granodiorite	Waste Granoc	FW	0.001	0.001	0.07	0.19	2	0.001	0.001	0.44	1.37	0.01
TM	DH05-11	25955	29.9	31.9	2	404358	6688990	150	-45	Granodiorite	Waste Granoc	FW	0.001	0.001	0.01	0.33	2	0.001	0.001	0.06	0.92	0.01
TM	DH05-11	25956	31.9	33.9	2	404358	6688990	150	-45	Granodiorite	Waste Granoc	FW	0.001	0.005	0.01	0.17	2	0.001	0.001	0.04	1.02	0.01
TM	DH05-12	25822	15.9	16.2	0.3	404296	6688947	150	-45	Granodiorite	Waste Granoc	FW	0.001	0.005	0.02	0.31	29	0.001	0.001	0.01	0.77	0.04
TM	DH05-12	25823	16.2	17.7	1.5	404296	6688947	150	-45	Granodiorite	Waste Granoc	FW	0.001	0.001	0.06	0.42	4	0.001	0.001	0.77	2.15	0.01
TM	DH05-12	25824	17.7	19.05	1.35	404296	6688947	150	-45	Granodiorite	Waste Granoc	FW	0.001	0.002	0.01	0.24	6	0.001	0.001	0.22	1.29	0.01
TM	DH05-12	25825	19.05	19.6	0.55	404296	6688947	150	-45	Granodiorite	Waste Granoc	FW	0.001	0.002	0.01	1.21	2	0.005	0.003	0.56	4.69	0.01
TM	DH05-14	25876	23.5	23.65	0.15	404320	6688971	150	-45	Granodiorite	Waste Granoc	FW	0.001	0.006	0.05	1.49	15	0.004	0.002	0.4	2.79	0.01
TM	DH05-14	25877	23.65	23.95	0.3	404320	6688971	150	-45	Granodiorite	Waste Granoc	FW	0.001	0.003	0.02	0.24	12	0.001	0.001	0.21	1.01	0.01
TM	DH05-14	25878	23.95	24.95	1	404320	6688971	150	-45	Granodiorite	Waste Granoc	FW	0.001	0.001	0.03	0.21	2	0.001	0.001	0.46	1.76	0.01
TM	DH05-14	25879	24.95	26.8	1.85	404320	6688971	150	-45	Granodiorite	Waste Granoc	FW	0.001	0.002	0.05	0.32	11	0.001	0.001	0.07	0.97	0.01
TM	DH07-01	305909	34.2	34.8	0.6	404249	6688931	135	-45	Granodiorite	Waste Granoc	FW	0.001	0.002	0.04	0.19	8	0.001	0.001	0.08	0.93	0.01
TM	DH07-01	305911	34.8	35.7	0.9	404249	6688931	135	-45	Granodiorite	Waste Granoc	FW	0.001	0.003	0.03	0.27	6	0.001	0.001	0.3	1.16	0.01
TM	DH07-01	305912	35.7	36.6	0.9	404249	6688931	135	-45	Granodiorite	Waste Granoc	FW	0.001	0.001	0.04	0.52	2	0.001	0.001	0.32	1	0.01
TM	DH07-03	305956	31.15	31.5	0.35	404282	6688954	135	-45	Granodiorite	Waste Granoc	FW	0.001	0.003	0.11	0.35	13	0.001	0.001	0.77	3.36	0.02
TM	DH07-03	305957	31.5	32.5	1	404282	6688954	135	-45	Granodiorite	Waste Granoc	FW	0.001	0.002	0.01	0.44	5	0.001	0.001	0.57	1.82	0.01
TM	DH07-03	305958	32.5	33.5	1	404282	6688954	135	-45	Granodiorite	Waste Granoc	FW	0.001	0.001	0.01	0.5	3	0.001	0.001	0.45	1.64	0.01
TM	DH07-03	305959	33.5	34.5	1	404282	6688954	135	-45	Granodiorite	Waste Granoc	FW	0.002	0.001	0.05	0.23	2	0.001	0.001	0.69	2.12	0.01
TM	DH07-04	305996	41	41.6	0.6	404331	6688995	135	-45	Granodiorite	Waste Granoc	FW	0.001	0.001	0.02	0.73	4	0.001	0.001	1.17	3.55	0.01
TM	DH07-04	305997	41.6	42.6	1	404331	6688995	135	-45	Granodiorite	Waste Granoc	FW	0.001	0.001	0.07	0.67	2	0.001	0.001	0.64	1.66	0.01
TM	DH07-04	305998	42.6	43.6	1	404331	6688995	135	-45	Granodiorite	Waste Granoc	FW	0.001	0.001	0.01	0.63	2	0.001	0.001	0.12	1.18	0.01

Appendix I
Waste Rock Assay Information
I. TM Zone FW

Note -- Ore and Expit samples deleted --

N	22	22	22	22	22	22	22	22	22	22	22	22	22	22	12
Min	0.00	0.00	0.00	0.01	0.04	0.01	0.00	0.01	0.22	0.01	0.15	0.00	0.00	0.00	0.01
Max	0.01	0.00	0.01	0.01	2.49	0.28	0.01	0.81	3.73	0.03	0.44	0.00	0.00	0.00	3.31
Mean	0.00	0.00	0.00	0.01	0.51	0.07	0.00	0.18	0.64	0.01	0.33	0.00	0.00	0.00	0.29
Geometric Mean	0.002	0.001	0.001	0.010	0.287	0.052	0.001	0.098	0.454	0.011	0.320	0.001	0.001	0.001	0.017
Median	0.00	0.00	0.00	0.01	0.35	0.05	0.00	0.11	0.38	0.01	0.33	0.00	0.00	0.00	0.01
Std Dev	0.00	0.00	0.00	0.00	0.58	0.07	0.00	0.22	0.83	0.01	0.07	0.00	0.00	0.00	0.95
Geometric Std Dev	2.07	1.23	1.70	1.00	3.17	1.98	1.65	3.30	2.00	1.35	1.30	1.16	1.00	1.00	5.31
1st Quartile	0.00	0.00	0.00	0.01	0.14	0.05	0.00	0.05	0.31	0.01	0.29	0.00	0.00	0.00	0.01
3rd Quartile	0.00	0.00	0.00	0.01	0.68	0.06	0.00	0.17	0.48	0.01	0.38	0.00	0.00	0.00	0.01
5% percentile	0.00	0.00	0.00	0.01	0.04	0.02	0.00	0.01	0.24	0.01	0.22	0.00	0.00	0.00	0.01
95% percentile	0.01	0.00	0.00	0.01	1.55	0.25	0.00	0.67	2.35	0.02	0.41	0.00	0.00	0.00	1.50
98% percentile	0.008	0.002	0.005	0.010	2.108	0.271	0.006	0.755	3.180	0.026	0.427	0.002	0.001	0.001	2.586
99% percentile	0.01	0.00	0.01	0.01	2.30	0.27	0.01	0.78	3.45	0.03	0.43	0.00	0.00	0.00	2.95
99.9%percentile	0.01	0.00	0.01	0.01	2.47	0.28	0.01	0.81	3.70	0.03	0.44	0.00	0.00	0.00	3.27

Zone	Drillhole	Sample#	From	To	Sr %	Cd %	Sb %	Bi %	Ca %	P %	Cr %	Mg %	Al %	Na %	K %	W %	Hg %	Au g/mt
TM	DH05-11	25953	28	28.4	0.001	0.001	0.001	0.01	0.26	0.06	0.001	0.15	0.41	0.01	0.38	0.001	0.001	0.01
TM	DH05-11	25954	28.4	29.9	0.002	0.001	0.001	0.01	0.35	0.061	0.001	0.11	0.4	0.01	0.4	0.001	0.001	0.01
TM	DH05-11	25955	29.9	31.9	0.003	0.001	0.001	0.01	0.56	0.052	0.001	0.1	0.52	0.02	0.33	0.001	0.001	0.01
TM	DH05-11	25956	31.9	33.9	0.004	0.001	0.001	0.01	0.53	0.049	0.001	0.13	0.51	0.03	0.3	0.001	0.001	0.01
TM	DH05-12	25822	15.9	16.2	0.001	0.001	0.003	0.01	0.04	0.04	0.001	0.01	0.31	0.01	0.44	0.001	0.001	0.02
TM	DH05-12	25823	16.2	17.7	0.001	0.001	0.003	0.01	0.15	0.057	0.001	0.06	0.37	0.01	0.4	0.001	0.001	0.01
TM	DH05-12	25824	17.7	19.05	0.003	0.001	0.001	0.01	0.72	0.046	0.001	0.13	0.5	0.02	0.32	0.001	0.001	0.01
TM	DH05-12	25825	19.05	19.6	0.009	0.001	0.001	0.01	2.49	0.276	0.005	0.81	2.42	0.01	0.15	0.001	0.001	3.31
TM	DH05-14	25876	23.5	23.65	0.007	0.002	0.003	0.01	1.58	0.264	0.006	0.68	3.73	0.01	0.22	0.001	0.001	0.01
TM	DH05-14	25877	23.65	23.95	0.001	0.001	0.002	0.01	0.1	0.041	0.001	0.03	0.33	0.01	0.38	0.001	0.001	0.01
TM	DH05-14	25878	23.95	24.95	0.002	0.001	0.001	0.01	0.35	0.059	0.001	0.09	0.41	0.01	0.41	0.001	0.001	0.01
TM	DH05-14	25879	24.95	26.8	0.005	0.001	0.002	0.01	0.81	0.051	0.001	0.12	0.42	0.01	0.37	0.001	0.001	0.01
TM	DH07-01	305909	34.2	34.8	0.001	0.001	0.002	0.01	0.04	0.017	0.001	0.01	0.24	0.01	0.23	0.001	0.001	
TM	DH07-01	305911	34.8	35.7	0.001	0.001	0.001	0.01	0.05	0.011	0.001	0.04	0.22	0.01	0.23	0.001	0.001	
TM	DH07-01	305912	35.7	36.6	0.001	0.001	0.001	0.01	0.1	0.026	0.001	0.05	0.38	0.01	0.4	0.002	0.001	
TM	DH07-03	305956	31.15	31.5	0.001	0.001	0.006	0.01	0.16	0.053	0.001	0.09	0.28	0.01	0.33	0.001	0.001	
TM	DH07-03	305957	31.5	32.5	0.001	0.001	0.002	0.01	0.74	0.054	0.001	0.41	0.3	0.01	0.33	0.001	0.001	
TM	DH07-03	305958	32.5	33.5	0.001	0.001	0.001	0.01	0.14	0.059	0.001	0.03	0.32	0.01	0.38	0.001	0.001	
TM	DH07-03	305959	33.5	34.5	0.001	0.001	0.001	0.01	0.16	0.058	0.001	0.05	0.36	0.01	0.37	0.001	0.001	
TM	DH07-04	305996	41	41.6	0.001	0.002	0.001	0.01	0.35	0.048	0.001	0.18	0.3	0.01	0.27	0.001	0.001	
TM	DH07-04	305997	41.6	42.6	0.001	0.001	0.001	0.01	1.02	0.056	0.001	0.57	0.38	0.01	0.32	0.001	0.001	
TM	DH07-04	305998	42.6	43.6	0.002	0.001	0.001	0.01	0.48	0.048	0.001	0.21	1.03	0.01	0.29	0.001	0.001	

Appendix I
Waste Rock Assay Information
J. S Zone Waste HW and UHW

Note -- Ore and Expit samples deleted --

Note: red typeface in results table indicates values above or below method detection limit

	20	20	20	20	20	20	20	20	20	20	20
N	0.001	0.001	0.01	0.06	2.00	0.00	0.00	0.02	0.68	0.01	0.00
Min	0.016	0.008	0.14	1.24	15.00	0.00	0.00	1.69	6.08	0.01	0.01
Max	0.002	0.003	0.04	0.27	4.10	0.00	0.00	0.46	2.43	0.01	0.00
Mean	0.001	0.002	0.024	0.182	3.185	0.001	0.001	0.182	2.020	0.010	0.002
Geometric Mean	0.001	0.002	0.01	0.19	2.00	0.00	0.00	0.09	1.72	0.01	0.00
Median	0.003	0.002	0.05	0.31	3.46	0.00	0.00	0.56	1.64	0.00	0.00
Std Dev	2.144	2.052	2.93	2.33	1.97	1.00	1.00	4.48	1.83	1.00	1.92
Geometric Std Dev	0.001	0.001	0.01	0.09	2.00	0.00	0.00	0.06	1.43	0.01	0.00
1st Quartile	0.002	0.003	0.07	0.23	6.25	0.00	0.00	0.74	2.85	0.01	0.00
3rd Quartile	0.001	0.001	0.01	0.07	2.00	0.00	0.00	0.03	0.88	0.01	0.00
5% percentile	0.006	0.008	0.13	0.98	8.35	0.00	0.00	1.45	5.92	0.01	0.01
95% percentile	0.012	0.008	0.136	1.137	12.340	0.001	0.001	1.595	6.015	0.010	0.008
98% percentile	0.014	0.008	0.14	1.19	13.67	0.00	0.00	1.64	6.05	0.01	0.01
99% percentile	0.016	0.008	0.14	1.23	14.87	0.00	0.00	1.69	6.08	0.01	0.01
99.9%percentile											

Zone	Drillhole	Sample#	From	To	Interval	Easting	Northing	Azimuth	Dip	Lithology	Mine Zone	Mo %	Cu %	Pb %	Zn %	Ag g/mt	Ni %	Co %	Mn %	Fe %	As %	Sr %
S	DH05-01	25501	10.75	11.5	0.75	404638	6689008	146	-45	Granodiorite	UHW	0.002	0.003	0.01	0.06	2	0.001	0.001	0.07	0.68	0.01	0.001
S	DH05-01	25502	11.5	11.65	0.15	404638	6689008	146	-45	Granodiorite	UHW	0.016	0.008	0.13	0.62	7	0.001	0.001	1.44	6.08	0.01	0.008
S	DH05-01	25503	11.65	12.33	0.68	404638	6689008	146	-45	Granodiorite	UHW	0.001	0.002	0.01	0.07	2	0.001	0.001	0.06	0.89	0.01	0.001
S	DH05-01	25504	12.33	12.43	0.1	404638	6689008	146	-45	Granodiorite	UHW	0.005	0.003	0.02	0.22	2	0.001	0.001	1.25	5.16	0.01	0.007
S	DH05-01	25505	12.43	14	1.57	404638	6689008	146	-45	Granodiorite	UHW	0.001	0.001	0.01	0.07	2	0.001	0.001	0.09	1.3	0.01	0.003
S	DH05-01	25506	14	15.5	1.5	404638	6689008	146	-45	Granodiorite	UHW	0.001	0.002	0.01	0.09	2	0.001	0.001	0.08	1.58	0.01	0.002
S	DH05-01	25507	15.5	17	1.5	404638	6689008	146	-45	Granodiorite	UHW	0.001	0.001	0.01	0.1	2	0.001	0.001	0.06	1.46	0.01	0.002
S	DH05-01	25508	17	18.5	1.5	404638	6689008	146	-45	Granodiorite	UHW	0.002	0.001	0.01	0.09	2	0.001	0.001	0.08	1.82	0.01	0.003
S	DH05-01	25509	18.5	20	1.5	404638	6689008	146	-45	Granodiorite	UHW	0.001	0.002	0.01	0.19	2	0.001	0.001	0.04	1.62	0.01	0.001
S	DH05-01	25510	20	21.5	1.5	404638	6689008	146	-45	Granodiorite	UHW	0.001	0.004	0.01	0.25	2	0.001	0.001	0.04	1.5	0.01	0.001
S	DH05-01	25511	21.5	23	1.5	404638	6689008	146	-45	Granodiorite	UHW	0.005	0.001	0.01	0.2	2	0.001	0.001	0.03	1.34	0.01	0.001
S	DH05-01	25512	23	23.64	0.64	404638	6689008	146	-45	Granodiorite	UHW	0.001	0.004	0.01	0.08	8	0.001	0.001	0.02	1.31	0.01	0.001
S	DH05-01	25513	23.64	26.6	2.96	404638	6689008	146	-45	Granodiorite	HW	0.002	0.002	0.11	0.31	6	0.001	0.001	0.58	2.06	0.01	0.002
S	DH05-01	25515	27.43	28.19	0.76	404638	6689008	146	-45	Granodiorite	HW	0.001	0.008	0.05	1.24	15	0.001	0.001	1.69	5.91	0.01	0.002
S	DH05-01	25516	28.19	30.13	1.94	404638	6689008	146	-45	Granodiorite	HW	0.001	0.001	0.14	0.16	2	0.001	0.001	0.43	1.94	0.01	0.003
S	DH05-02	25537	17.59	18.34	0.75	404590	6688990	170	-45	Granodiorite	HW	0.001	0.002	0.01	0.14	2	0.001	0.001	0.06	1.61	0.01	0.002
S	DH05-03	25556	14.34	15.14	0.8	404551	6688945	350	-45	Granodiorite	UHW	0.001	0.001	0.08	0.19	7	0.001	0.001	0.61	2.61	0.01	0.002
S	DH05-03	25557	15.14	16.08	0.94	404551	6688945	350	-45	Granodiorite	HW	0.001	0.005	0.11	0.97	8	0.001	0.001	1.13	4.14	0.01	0.001
S	DH05-03	25558	20.8	22.3	1.5	404551	6688945	350	-45	Granodiorite	HW	0.001	0.001	0.03	0.19	2	0.001	0.001	0.3	1.96	0.01	0.001
S	DH06-02	308551	39.00	39.80	0.80	404606	6689007	140	-65	Granodiorite	HW	0.001	0.001	0.06	0.21	5	0.001	0.001	1.19	3.58	0.01	0.001

Appendix I
Waste Rock Assay Information
J. S Zone Waste HW and UHW

Note -- Ore and Expit samples deleted --

N	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
Min	0.00	0.00	0.01	0.06	0.02	0.00	0.01	0.40	0.01	0.26	0.00	0.00	0.01				
Max	0.00	0.00	0.01	0.74	0.07	0.00	0.16	1.00	0.09	0.54	0.00	0.00	0.02				
Mean	0.00	0.00	0.01	0.29	0.05	0.00	0.09	0.66	0.03	0.37	0.00	0.00	0.01				
Geometric Mean	0.001	0.001	0.010	0.217	0.047	0.001	0.069	0.638	0.019	0.366	0.001	0.001	0.010				
Median	0.00	0.00	0.01	0.21	0.05	0.00	0.10	0.63	0.01	0.37	0.00	0.00	0.01				
Std Dev	0.00	0.00	0.00	0.22	0.02	0.00	0.05	0.18	0.02	0.07	0.00	0.00	0.00				
Geometric Std Dev	1.50	1.24	1.00	2.20	1.47	1.00	2.33	1.31	2.30	1.22	1.00	1.00	1.17				
1st Quartile	0.00	0.00	0.01	0.11	0.04	0.00	0.05	0.50	0.01	0.32	0.00	0.00	0.01				
3rd Quartile	0.00	0.00	0.01	0.44	0.06	0.00	0.12	0.84	0.04	0.44	0.00	0.00	0.01				
5% percentile	0.00	0.00	0.01	0.07	0.02	0.00	0.02	0.47	0.01	0.28	0.00	0.00	0.01				
95% percentile	0.00	0.00	0.01	0.67	0.07	0.00	0.16	0.94	0.07	0.47	0.00	0.00	0.01				
98% percentile	0.004	0.002	0.010	0.713	0.070	0.001	0.160	0.977	0.082	0.513	0.001	0.001	0.016				
99% percentile	0.00	0.00	0.01	0.73	0.07	0.00	0.16	0.99	0.09	0.53	0.00	0.00	0.02				
99.9%percentile	0.00	0.00	0.01	0.74	0.07	0.00	0.16	1.00	0.09	0.54	0.00	0.00	0.02				

Zone	Drillhole	Sample#	From	To	Cd %	Sb %	Bi %	Ca %	P %	Cr %	Mg %	Al %	Na %	K %	W %	Hg %	Au g/mt
S	DH05-01	25501	10.75	11.5	0.001	0.001	0.01	0.09	0.021	0.001	0.03	0.53	0.01	0.26	0.001	0.001	0.01
S	DH05-01	25502	11.5	11.65	0.002	0.002	0.01	0.11	0.023	0.001	0.02	0.5	0.01	0.39	0.001	0.001	0.01
S	DH05-01	25503	11.65	12.33	0.001	0.001	0.01	0.11	0.028	0.001	0.07	0.62	0.01	0.28	0.001	0.001	0.01
S	DH05-01	25504	12.33	12.43	0.001	0.001	0.01	0.14	0.042	0.001	0.02	0.55	0.04	0.45	0.001	0.001	0.01
S	DH05-01	25505	12.43	14	0.001	0.001	0.01	0.74	0.071	0.001	0.05	0.64	0.01	0.32	0.001	0.001	0.01
S	DH05-01	25506	14	15.5	0.001	0.001	0.01	0.21	0.064	0.001	0.13	1	0.03	0.33	0.001	0.001	0.01
S	DH05-01	25507	15.5	17	0.001	0.001	0.01	0.32	0.063	0.001	0.12	0.86	0.06	0.3	0.001	0.001	0.01
S	DH05-01	25508	17	18.5	0.001	0.001	0.01	0.64	0.064	0.001	0.08	0.84	0.01	0.35	0.001	0.001	0.01
S	DH05-01	25509	18.5	20	0.001	0.001	0.01	0.21	0.057	0.001	0.14	0.91	0.07	0.36	0.001	0.001	0.01
S	DH05-01	25510	20	21.5	0.001	0.001	0.01	0.15	0.046	0.001	0.12	0.94	0.06	0.31	0.001	0.001	0.01
S	DH05-01	25511	21.5	23	0.001	0.001	0.01	0.13	0.033	0.001	0.08	0.85	0.03	0.29	0.001	0.001	0.01
S	DH05-01	25512	23	23.64	0.001	0.001	0.01	0.07	0.03	0.001	0.02	0.5	0.01	0.38	0.001	0.001	0.01
S	DH05-01	25513	23.64	26.6	0.001	0.002	0.01	0.06	0.036	0.001	0.01	0.49	0.01	0.45	0.001	0.001	0.01
S	DH05-01	25515	27.43	28.19	0.003	0.001	0.01	0.11	0.046	0.001	0.08	0.48	0.04	0.47	0.001	0.001	0.02
S	DH05-01	25516	28.19	30.13	0.001	0.001	0.01	0.67	0.056	0.001	0.15	0.7	0.09	0.43	0.001	0.001	0.01
S	DH05-02	25537	17.59	18.34	0.001	0.001	0.01	0.49	0.068	0.001	0.12	0.71	0.01	0.33	0.001	0.001	0.01
S	DH05-03	25556	14.34	15.14	0.001	0.001	0.01	0.52	0.065	0.001	0.12	0.47	0.01	0.45	0.001	0.001	0.01
S	DH05-03	25557	15.14	16.08	0.004	0.001	0.01	0.24	0.047	0.001	0.11	0.4	0.01	0.39	0.001	0.001	0.01
S	DH05-03	25558	20.8	22.3	0.001	0.001	0.01	0.34	0.068	0.001	0.16	0.63	0.01	0.37	0.001	0.001	0.01
S	DH06-02	308551	39.00	39.80	0.001	0.001	0.01	0.42	0.065	0.001	0.16	0.59	0.01	0.54	0.001	0.001	0.01

Appendix I
Waste Rock Assay Information
K. S Zone InterOre

Note -- Ore and Expit samples deleted --

Note: red typeface in results table indicates values above or below method detection limit

	5	5	5	5	5	5	5	5	5	5	5
N	0.001	0.001	0.01	0.02	2.00	0.00	0.00	0.05	1.96	0.01	0.00
Min	0.001	0.001	0.13	0.39	6.00	0.00	0.00	1.17	3.38	0.01	0.01
Max	0.001	0.001	0.07	0.23	3.40	0.00	0.00	0.63	2.62	0.01	0.00
Mean	0.001	0.001	0.049	0.153	3.104	0.001	0.001	0.430	2.577	0.010	0.003
Geometric Mean	0.001	0.001	0.09	0.28	3.00	0.00	0.00	0.61	2.45	0.01	0.00
Median	0.000	0.000	0.06	0.17	1.67	0.00	0.00	0.41	0.56	0.00	0.00
Std Dev	1.000	1.000	3.21	3.54	1.60	1.00	1.00	3.47	1.24	1.00	2.74
Geometric Std Dev	0.001	0.001	0.02	0.10	2.00	0.00	0.00	0.51	2.34	0.01	0.00
1st Quartile	0.001	0.001	0.12	0.38	4.00	0.00	0.00	0.81	2.99	0.01	0.01
3rd Quartile	0.001	0.001	0.01	0.04	2.00	0.00	0.00	0.14	2.04	0.01	0.00
5% percentile	0.001	0.001	0.13	0.39	5.60	0.00	0.00	1.10	3.30	0.01	0.01
95% percentile	0.001	0.001	0.129	0.389	5.840	0.001	0.001	1.141	3.349	0.010	0.008
98% percentile	0.001	0.001	0.13	0.39	5.92	0.00	0.00	1.16	3.36	0.01	0.01
99% percentile	0.001	0.001	0.13	0.39	5.99	0.00	0.00	1.17	3.38	0.01	0.01
99.9%percentile	0.001	0.001	0.13	0.39	5.99	0.00	0.00	1.17	3.38	0.01	0.01

Zone	Drillhole	Sample#	From	To	Interval	Easting	Northing	Azimuth	Dip	Lithology	Mine Zone	Mo %	Cu %	Pb %	Zn %	Ag g/mt	Ni %	Co %	Mn %	Fe %	As %	Sr %
S	DH05-02	25539	22.87	23.47	0.6	404590	6688990	170	-45	Granodiorite	InterOre	0.001	0.001	0.13	0.39	3	0.001	0.001	0.81	2.99	0.01	0.001
S	DH06-02	308553	40.30	41.40	1.10	404606	6689007	140	-65	Granodiorite	InterOre	0.001	0.001	0.09	0.38	6	0.001	0.001	1.17	3.38	0.01	0.001
S	DH06-02	308555	41.60	42.80	1.20	404606	6689007	140	-65	Granodiorite	InterOre	0.001	0.001	0.02	0.1	2	0.001	0.001	0.51	2.34	0.01	0.008
S	DH06-02	308556	70.50	71.50	1.00	404606	6689007	140	-65	Granodiorite	InterOre	0.001	0.001	0.01	0.02	2	0.001	0.001	0.05	1.96	0.01	0.007
S	DH06-02	308557	71.50	71.80	0.30	404606	6689007	140	-65	Granodiorite	InterOre	0.001	0.001	0.12	0.28	4	0.001	0.001	0.61	2.45	0.01	0.003

Appendix I
Waste Rock Assay Information
K. S Zone InterOre

Note -- Ore and Expit samples deleted --

N	5	5	5	5	5	5	5	5	5	5	5	5	5
Min	0.00	0.00	0.01	0.23	0.06	0.00	0.11	0.50	0.01	0.33	0.00	0.00	0.01
Max	0.00	0.00	0.01	1.34	0.07	0.00	0.33	0.76	0.04	0.52	0.00	0.00	0.01
Mean	0.00	0.00	0.01	0.77	0.07	0.00	0.20	0.58	0.02	0.44	0.00	0.00	0.01
Geometric Mean	0.001	0.001	0.010	0.606	0.068	0.001	0.181	0.575	0.013	0.437	0.001	0.001	0.010
Median	0.00	0.00	0.01	0.89	0.07	0.00	0.16	0.53	0.01	0.44	0.00	0.00	0.01
Std Dev	0.00	0.00	0.00	0.51	0.00	0.00	0.09	0.11	0.01	0.07	0.00	0.00	0.00
Geometric Std Dev	1.00	1.00	1.00	2.32	1.05	1.00	1.55	1.19	1.86	1.19	1.00	1.00	1.00
1st Quartile	0.00	0.00	0.01	0.26	0.07	0.00	0.14	0.52	0.01	0.44	0.00	0.00	0.01
3rd Quartile	0.00	0.00	0.01	1.15	0.07	0.00	0.24	0.60	0.01	0.48	0.00	0.00	0.01
5% percentile	0.00	0.00	0.01	0.24	0.06	0.00	0.12	0.50	0.01	0.35	0.00	0.00	0.01
95% percentile	0.00	0.00	0.01	1.30	0.07	0.00	0.31	0.73	0.03	0.51	0.00	0.00	0.01
98% percentile	0.001	0.001	0.010	1.325	0.071	0.001	0.323	0.747	0.038	0.517	0.001	0.001	0.010
99% percentile	0.00	0.00	0.01	1.33	0.07	0.00	0.33	0.75	0.04	0.52	0.00	0.00	0.01
99.9%percentile	0.00	0.00	0.01	1.34	0.07	0.00	0.33	0.76	0.04	0.52	0.00	0.00	0.01

Zone	Drillhole	Sample#	From	To	Cd %	Sb %	Bi %	Ca %	P %	Cr %	Mg %	Al %	Na %	K %	W %	Hg %	Au g/mt
S	DH05-02	25539	22.87	23.47	0.001	0.001	0.01	0.26	0.066	0.001	0.11	0.5	0.01	0.44	0.001	0.001	0.01
S	DH06-02	308553	40.30	41.40	0.001	0.001	0.01	0.23	0.063	0.001	0.14	0.53	0.01	0.48	0.001	0.001	0.01
S	DH06-02	308555	41.60	42.80	0.001	0.001	0.01	1.34	0.068	0.001	0.24	0.52	0.01	0.44	0.001	0.001	0.01
S	DH06-02	308556	70.50	71.50	0.001	0.001	0.01	1.15	0.071	0.001	0.33	0.76	0.04	0.33	0.001	0.001	0.01
S	DH06-02	308557	71.50	71.80	0.001	0.001	0.01	0.89	0.07	0.001	0.16	0.6	0.01	0.52	0.001	0.001	0.01

Appendix I
Waste Rock Assay Information
L. S Zone FW

Note: red typeface in results table indicates values above or below method detection limit

Zone	Drillhole	Easting	Northing	Azimuth	Dip	Sample#	From	To	Interval	Lithology	Mine Zone	Mo %	Cu %	Pb %	Zn %	Ag g/mt	Ni %	Co %	Mn %	Fe %	As %	Sr %
S	DH05-01	404638	6689008	146	-45	25519	30.21	30.86	0.65	Granodiorite	FW	0.002	0.003	0.28	0.22	20	0.001	0.001	1.42	3.77	0.01	0.001
S	DH05-01	404638	6689008	146	-45	25520	31.86	33.1	1.24	Granodiorite	FW	0.001	0.001	0.01	0.06	2	0.001	0.001	0.05	1.52	0.01	0.002
S	DH05-01	404638	6689008	146	-45	25521	33.1	34.6	1.5	Granodiorite	FW	0.001	0.001	0.01	0.05	2	0.001	0.001	0.1	1.51	0.01	0.002
S	DH05-01	404638	6689008	146	-45	25522	34.6	36.1	1.5	Granodiorite	FW	0.001	0.001	0.02	0.15	2	0.001	0.001	0.06	3.17	0.01	0.001
S	DH05-01	404638	6689008	146	-45	25525	36.1	37.6	1.5	Granodiorite	FW	0.001	0.001	0.01	0.01	2	0.001	0.001	0.06	1.53	0.01	0.006
S	DH05-02	404590	6688990	170	-45	25541	23.92	24.7	0.78	Granodiorite	FW	0.001	0.003	0.01	0.42	23	0.001	0.001	0.09	0.96	0.01	0.002
S	DH05-02	404590	6688990	170	-45	25542	24.7	26.2	1.5	Granodiorite	FW	0.001	0.001	0.01	0.1	4	0.001	0.001	0.07	1.45	0.01	0.003
S	DH05-02	404590	6688990	170	-45	25543	26.2	27.7	1.5	Granodiorite	FW	0.001	0.004	0.01	0.16	22	0.001	0.001	0.07	1.63	0.01	0.003
S	DH05-02	404590	6688990	170	-45	25544	27.7	29.2	1.5	Granodiorite	FW	0.001	0.001	0.01	0.04	2	0.001	0.001	0.05	2.05	0.01	0.005
S	DH05-02	404590	6688990	170	-45	25545	29.2	30.7	1.5	Granodiorite	FW	0.001	0.001	0.01	0.04	2	0.001	0.001	0.04	2.34	0.01	0.004
S	DH05-03	404551	6688945	350	-45	25560	22.75	24.25	1.5	Granodiorite	FW	0.001	0.001	0.02	0.09	2	0.001	0.001	0.08	1.64	0.01	0.004
S	DH05-03	404551	6688945	350	-45	25561	27.9	28.9	1	Granodiorite	FW	0.001	0.001	0.01	0.19	2	0.001	0.001	0.11	2.23	0.01	0.002
S	DH06-02	404606	6689007	140	-65	308559	71.90	72.20	0.30	Granodiorite	FW	0.001	0.001	0.15	0.84	14	0.001	0.001	1.43	4.53	0.01	0.001
S	DH06-02	404606	6689007	140	-65	308560	72.20	73.20	1.00	Granodiorite	FW	0.001	0.001	0.09	0.18	5	0.001	0.001	0.4	2.38	0.01	0.006
S	DH06-02	404606	6689007	140	-65	308561	73.20	74.20	1.00	Granodiorite	FW	0.001	0.001	0.01	0.01	2	0.001	0.001	0.04	1.94	0.01	0.006
S	DH06-02	404606	6689007	140	-65	308562	74.20	75.10	0.90	Granodiorite	FW	0.001	0.001	0.01	0.01	2	0.001	0.001	0.05	1.92	0.01	0.011

Appendix I
Waste Rock Assay Information
L. S Zone FW

Note -- Ore and Expit samples deleted --

N	16	16	16	16	16	16	16	16	16	16	16	16	16
Min	0.00	0.00	0.01	0.22	0.05	0.00	0.07	0.45	0.01	0.20	0.00	0.00	0.01
Max	0.00	0.00	0.01	1.51	0.07	0.00	0.48	1.33	0.05	0.47	0.00	0.00	0.01
Mean	0.00	0.00	0.01	0.72	0.06	0.00	0.24	0.76	0.02	0.35	0.00	0.00	0.01
Geometric Mean	0.001	0.001	0.010	0.609	0.065	0.001	0.207	0.722	0.020	0.339	0.001	0.001	0.010
Median	0.00	0.00	0.01	0.71	0.07	0.00	0.26	0.70	0.02	0.34	0.00	0.00	0.01
Std Dev	0.00	0.00	0.00	0.39	0.01	0.00	0.12	0.26	0.01	0.07	0.00	0.00	0.00
Geometric Std Dev	1.19	1.49	1.00	1.85	1.09	1.00	1.72	1.37	1.88	1.24	1.19	1.00	1.00
1st Quartile	0.00	0.00	0.01	0.36	0.06	0.00	0.14	0.58	0.01	0.31	0.00	0.00	0.01
3rd Quartile	0.00	0.00	0.01	0.92	0.07	0.00	0.32	0.82	0.04	0.39	0.00	0.00	0.01
5% percentile	0.00	0.00	0.01	0.23	0.06	0.00	0.09	0.47	0.01	0.25	0.00	0.00	0.01
95% percentile	0.00	0.00	0.01	1.36	0.07	0.00	0.41	1.23	0.04	0.44	0.00	0.00	0.01
98% percentile	0.002	0.003	0.010	1.450	0.070	0.001	0.450	1.288	0.047	0.458	0.002	0.001	0.010
99% percentile	0.00	0.00	0.01	1.48	0.07	0.00	0.47	1.31	0.05	0.46	0.00	0.00	0.01
99.9%percentile	0.00	0.00	0.01	1.51	0.07	0.00	0.48	1.33	0.05	0.47	0.00	0.00	0.01

Zone\Drillhole	Easting	Northing	Azimuth	Cd %	Sb %	Bi %	Ca %	P %	Cr %	Mg %	Al %	Na %	K %	W %	Hg %	Au g/mt
S DH05-01	404638	6689008	146	0.001	0.001	0.01	0.22	0.052	0.001	0.13	0.47	0.01	0.47	0.001	0.001	0.01
S DH05-01	404638	6689008	146	0.001	0.001	0.01	0.68	0.058	0.001	0.28	0.86	0.04	0.34	0.001	0.001	0.01
S DH05-01	404638	6689008	146	0.001	0.001	0.01	0.56	0.062	0.001	0.12	0.67	0.04	0.33	0.001	0.001	0.01
S DH05-01	404638	6689008	146	0.001	0.001	0.01	0.29	0.058	0.001	0.1	0.71	0.04	0.36	0.001	0.001	0.01
S DH05-01	404638	6689008	146	0.001	0.001	0.01	1.1	0.062	0.001	0.27	0.76	0.03	0.35	0.001	0.001	0.01
S DH05-02	404590	6688990	170	0.001	0.004	0.01	0.38	0.07	0.001	0.07	0.67	0.01	0.2	0.001	0.001	0.01
S DH05-02	404590	6688990	170	0.001	0.002	0.01	0.73	0.069	0.001	0.15	0.56	0.01	0.29	0.001	0.001	0.01
S DH05-02	404590	6688990	170	0.001	0.002	0.01	0.67	0.068	0.001	0.17	0.69	0.01	0.26	0.001	0.001	0.01
S DH05-02	404590	6688990	170	0.001	0.001	0.01	1.01	0.07	0.001	0.38	1.12	0.02	0.3	0.001	0.001	0.01
S DH05-02	404590	6688990	170	0.001	0.001	0.01	0.75	0.067	0.001	0.48	1.33	0.03	0.42	0.001	0.001	0.01
S DH05-03	404551	6688945	350	0.001	0.001	0.01	0.83	0.07	0.001	0.27	0.81	0.02	0.33	0.001	0.001	0.01
S DH05-03	404551	6688945	350	0.001	0.001	0.01	0.28	0.07	0.001	0.33	1.19	0.02	0.38	0.001	0.001	0.01
S DH06-02	404606	6689007	140	0.002	0.001	0.01	0.23	0.062	0.001	0.14	0.45	0.01	0.43	0.002	0.001	0.01
S DH06-02	404606	6689007	140	0.001	0.001	0.01	1.31	0.067	0.001	0.24	0.54	0.01	0.42	0.001	0.001	0.01
S DH06-02	404606	6689007	140	0.001	0.001	0.01	0.89	0.067	0.001	0.32	0.72	0.05	0.34	0.001	0.001	0.01
S DH06-02	404606	6689007	140	0.001	0.001	0.01	1.51	0.067	0.001	0.32	0.58	0.04	0.31	0.001	0.001	0.01

APPENDIX II

Statistics, ICP, ABA, and Major Element Data

- a. TM Zone ICP Summary Statistics
- b. TM Zone ICP All Data
- c. TM Zone Major Element All Data
- d. TM Zone ABA All Data
- e. S Zone ICP All Data
- f. S Zone Major Element All Data
- g. S Zone ABA All Data

***Note:** for statistical analysis purposes, all results above or below laboratory detection limits have been assigned a value equal to the respective limit of detection. Original laboratory results showing the out-of-detection limit values are given in Appendix VI.

Appendix II
Static Test Results and Statistical Summary
A. TM Zone ICP Summary Stats

All Samples

	Ag_ppb	Al_%	As_ppm	Au_ppb	B_ppm	Ba_ppm	Bi_ppm	Ca_%	Cd_ppm	Co_ppm	Cr_ppm	Cu_ppm	Fe_%	Ga_ppm	Hg_ppb	K_%	La_ppm	Mg_%	Mn_ppm	Mo_ppm	Na_%	Ni_ppm
N	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Min	147	0.08	1.8	0.2	20	6.1	0.03	0.01	0.30	0.7	2.0	3.25	0.67	0.4	5	0.06	0.5	0.01	85	0.42	0.001	0.6
Max	100000	4.45	3779.1	374.8	20	267.5	34.74	1.69	805.28	25.9	65.3	4232.16	5.86	10.3	545	0.25	49.2	1.30	10000	27.68	0.026	38.6
Mean	15619	0.40	173.1	18.1	20	21.7	1.23	0.28	47.27	2.4	5.8	243.54	1.83	1.3	31	0.19	13.8	0.12	3810	4.02	0.005	2.2
Geometric Mean	4803	0.26	38.09	1.6	20	14.0	0.20	0.17	7.25	1.7	4.1	31.88	1.57	1.0	10	0.19	11.6	0.07	2446	2.02	0.003	1.2
Median	4168	0.24	39.8	1.3	20	12.4	0.15	0.15	5.68	1.6	3.7	28.04	1.44	0.9	8	0.21	12.7	0.07	2965	1.83	0.003	1.0
Std Dev	25834	0.71	553.1	64.2	0	42.9	5.20	0.33	159.09	3.7	9.9	841.34	1.09	1.7	93	0.04	7.6	0.21	3002	6.02	0.005	5.8
Geometric Std Dev	5	1.97	4.8	6.7	1	2.0	3.81	2.96	4.98	1.9	1.8	4.73	1.72	1.9	3	1.32	2.0	2.72	3	3.05	2.120	2.1
1st Quartile	1273	0.20	14.6	0.3	20	10.4	0.09	0.11	2.78	1.2	3.1	12.04	1.03	0.7	5	0.18	10.4	0.04	1164	0.79	0.002	0.8
3rd Quartile	15736	0.30	75.5	4.3	20	16.0	0.31	0.33	11.53	2.2	4.8	67.48	2.27	1.1	12	0.22	16.9	0.10	5979	4.08	0.004	1.3
5% percentile	355	0.11	4.6	0.2	20	6.7	0.04	0.02	0.94	0.8	2.5	4.11	0.76	0.5	5	0.13	3.1	0.01	340	0.47	0.001	0.7
95% percentile	85556	0.67	690.5	78.2	20	26.5	1.74	0.91	158.21	5.6	6.7	1468.46	3.73	3.1	106	0.25	21.0	0.45	9559	18.83	0.015	4.2
98% percentile	100000	3.05	971.0	252.1	20	182.0	14.03	1.19	801.54	10.2	38.9	3656.09	4.27	7.2	384	0.25	33.2	0.77	10000	24.54	0.020	18.5
99% percentile	100000	3.75	2375.1	313.5	20	224.8	24.39	1.44	803.41	18.1	52.1	3944.12	5.07	8.7	465	0.25	41.2	1.04	10000	26.11	0.023	28.6
99.9%percentile	100000	4.38	3638.7	368.7	20	263.2	33.70	1.67	805.09	25.1	64.0	4203.36	5.78	10.1	537	0.25	48.4	1.27	10000	27.52	0.026	37.6

Geol Unit = Grandodiorite

	Ag_ppb	Al_%	As_ppm	Au_ppb	B_ppm	Ba_ppm	Bi_ppm	Ca_%	Cd_ppm	Co_ppm	Cr_ppm	Cu_ppm	Fe_%	Ga_ppm	Hg_ppb	K_%	La_ppm	Mg_%	Mn_ppm	Mo_ppm	Na_%	Ni_ppm
N	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44
Min	147	0.11	1.8	0.2	20	6.2	0.03	0.02	0.30	0.7	2.5	3.25	0.67	0.4	5	0.13	3.2	0.01	85	0.42	0.001	0.6
Max	51503	0.74	913.7	22.4	20	27.2	1.89	0.95	59.91	3.4	6.8	133.61	3.34	2.2	28	0.25	21.0	0.51	10000	27.68	0.026	2.2
Mean	9346	0.27	75.6	3.0	20	13.8	0.28	0.25	9.25	1.6	4.0	34.65	1.60	0.9	9	0.20	13.6	0.09	3766	4.21	0.005	1.1
Geometric Mean	4058	0.25	30.15	1.2	20	13.0	0.16	0.18	5.01	1.5	3.8	22.24	1.43	0.9	8	0.20	12.9	0.06	2369	2.05	0.003	1.0
Median	4156	0.24	36.2	1.2	20	12.6	0.14	0.15	4.52	1.6	3.7	25.75	1.31	0.8	8	0.21	13.5	0.07	3189	1.99	0.003	1.0
Std Dev	12242	0.11	152.0	4.7	0	5.0	0.38	0.22	12.15	0.6	1.1	31.92	0.78	0.3	5	0.03	4.1	0.09	2981	6.35	0.005	0.4
Geometric Std Dev	4	1.41	3.8	4.0	1	1.4	2.64	2.35	3.08	1.5	1.3	2.74	1.60	1.4	2	1.18	1.4	2.28	3	3.15	2.088	1.4
1st Quartile	1137	0.21	13.8	0.3	20	10.7	0.08	0.12	2.42	1.1	3.2	11.10	0.96	0.7	5	0.19	11.2	0.04	1123	0.79	0.002	0.8
3rd Quartile	11909	0.29	57.8	3.0	20	15.8	0.30	0.33	9.94	2.1	4.7	46.92	2.13	1.0	11	0.22	16.9	0.10	5682	3.91	0.004	1.2
5% percentile	400	0.17	4.5	0.2	20	7.8	0.04	0.04	0.92	0.8	2.6	4.06	0.74	0.5	5	0.14	8.0	0.01	307	0.46	0.001	0.7
95% percentile	30776	0.46	264.2	12.4	20	25.3	1.04	0.69	35.12	2.5	6.3	97.13	3.17	1.5	21	0.25	20.8	0.18	8995	19.17	0.015	1.8
98% percentile	47304	0.60	489.7	20.0	20	25.9	1.60	0.87	43.11	2.9	6.5	106.23	3.29	1.7	25	0.25	21.0	0.39	10000	24.93	0.021	2.0
99% percentile	49403	0.67	701.7	21.2	20	26.6	1.74	0.91	51.51	3.1	6.7	119.92	3.31	1.9	26	0.25	21.0	0.45	10000	26.30	0.023	2.1
99.9%percentile	51293	0.73	892.5	22.3	20	27.1	1.88	0.95	59.07	3.4	6.8	132.24	3.34	2.2	28	0.25	21.0	0.50	10000	27.54	0.026	2.2

Geol Unit = Andesite

	Ag_ppb	Al_%	As_ppm	Au_ppb	B_ppm	Ba_ppm	Bi_ppm	Ca_%	Cd_ppm	Co_ppm	Cr_ppm	Cu_ppm	Fe_%	Ga_ppm	Hg_ppb	K_%	La_ppm	Mg_%	Mn_ppm	Mo_ppm	Na_%	Ni_ppm
N	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Min	185	4.45	6.5	0.2	20	267.5	0.14	1.69	3.37	25.9	65.3	21.72	5.86	10.3	5	0.19	49.2	1.30	928	0.71	0.012	38.6
Max	185	4.45	6.5	0.2	20	267.5	0.14	1.69	3.37	25.9	65.3	21.72	5.86	10.3	5	0.19	49.2	1.30	928	0.71	0.012	38.6
Mean	185	4.45	6.5	0.2	20	267.5	0.14	1.69	3.37	25.9	65.3	21.72	5.86	10.3	5	0.19	49.2	1.30	928	0.71	0.012	38.6
Geometric Mean	185	4.45	6.50	0.2	20	267.5	0.14	1.69	3.37	25.9	65.3	21.72	5.86	10.3	5	0.19	49.2	1.30	928	0.71	0.012	38.6
Median	185	4.45	6.5	0.2	20	267.5	0.14	1.69	3.37	25.9	65.3	21.72	5.86	10.3	5	0.19	49.2	1.30	928	0.71	0.012	38.6
Std Dev	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Geometric Std Dev	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
1st Quartile	185	4.45	6.5	0.2	20	267.5	0.14	1.69	3.37	25.9	65.3	21.72	5.86	10.3	5	0.19	49.2	1.30	928	0.71	0.012	38.6
3rd Quartile	185	4.45	6.5	0.2	20	267.5	0.14	1.69	3.37	25.9	65.3	21.72	5.86	10.3	5	0.19	49.2	1.30	928	0.71	0.012	38.6
5% percentile	185	4.45	6.5	0.2	20	267.5	0.14	1.69	3.37	25.9	65.3	21.72	5.86	10.3	5	0.19	49.2	1.30	928	0.71	0.012	38.6
95% percentile	185	4.45	6.5	0.2	20	267.5	0.14	1.69	3.37	25.9	65.3	21.72	5.86	10.3	5	0.19	49.2	1.30	928	0.71	0.012	38.6
98% percentile	185	4.45	6.5	0.2	20	267.5	0.14	1.69	3.37	25.9	65.3	21.72	5.86	10.3	5	0.19	49.2	1.30	928	0.71	0.012	38.6
99% percentile	185	4.45	6.5	0.2	20	267.5	0.14	1.69	3.37	25.9	65.3	21.72	5.86	10.3	5	0.19	49.2	1.30	928	0.71	0.012	38.6
99.9%percentile	185	4.45	6.5	0.2	20	267.5	0.14	1.69	3.37	25.9	65.3	21.72	5.86	10.3	5	0.19	49.2	1.30	928	0.71	0.012	38.6

Appendix II
Static Test Results and Statistical Summary
A. TM Zone ICP Summary Stats

All Samples

	P_ %	Pb_ppm	S_ %	Sb_ppm	Sc_ppm	Se_ppm	Sr_ppm	Te_ppm	Th_ppm	Ti_ %	Tl_ppm	U_ppm	V_ppm	W_ppm	Zn_ppm
N	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Min	0.004	9.59	0.02	0.19	0.1	0.1	1.5	0.02	0.9	0.001	0.08	2.7	2	0.1	232
Max	0.250	10000	8.38	2000.00	10.3	11.0	96.8	0.06	12.2	0.043	0.44	23.7	80	62.8	10000
Mean	0.049	677.25	0.61	102.94	0.9	0.6	15.9	0.02	7.6	0.002	0.17	7.0	5	1.8	4344
Geometric Mean	0.040	227.16	0.19	4.82	0.6	0.2	10.9	0.02	7.1	0.001	0.16	6.4	2	0.3	2936
Median	0.048	201.05	0.18	4.43	0.6	0.1	9.3	0.02	8.2	0.001	0.16	6.6	2	0.3	2911
Std Dev	0.037	1936.87	1.55	398.09	1.6	2.1	17.2	0.01	2.3	0.006	0.05	3.3	12	8.9	3509
Geometric Std Dev	1.963	3.47	3.79	6.69	1.9	2.9	2.4	1.27	1.6	1.996	1.29	1.5	2	2.9	3
1st Quartile	0.036	116.71	0.07	1.41	0.5	0.1	7.2	0.02	6.8	0.001	0.15	5.0	2	0.2	1599
3rd Quartile	0.053	504.53	0.35	8.21	0.7	0.2	19.4	0.02	9.0	0.001	0.18	7.9	2	0.4	7447
5% percentile	0.011	39.19	0.03	0.57	0.3	0.1	2.6	0.02	2.5	0.001	0.11	3.4	2	0.1	525
95% percentile	0.060	851.72	2.37	598.27	0.9	0.9	45.7	0.03	11.0	0.004	0.23	10.9	4	1.1	10000
98% percentile	0.177	10000	7.16	1786.01	6.7	10.9	63.9	0.05	11.8	0.013	0.25	12.1	44	10.5	10000
99% percentile	0.214	10000	7.77	1893.00	8.5	11.0	80.3	0.06	12.0	0.028	0.35	17.9	62	36.6	10000
99.9%percentile	0.246	10000	8.32	1989.30	10.1	11.0	95.2	0.06	12.2	0.041	0.43	23.1	78	60.2	10000

Geol Unit = Grandodiorite

	P_ %	Pb_ppm	S_ %	Sb_ppm	Sc_ppm	Se_ppm	Sr_ppm	Te_ppm	Th_ppm	Ti_ %	Tl_ppm	U_ppm	V_ppm	W_ppm	Zn_ppm
N	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44
Min	0.010	9.59	0.02	0.19	0.2	0.1	3.1	0.02	2.2	0.001	0.10	3.0	2	0.1	232
Max	0.060	869	0.96	38.69	0.9	0.9	55.6	0.06	12.2	0.004	0.25	11.9	4	1.2	10000
Mean	0.045	285.31	0.23	6.05	0.6	0.2	14.2	0.02	7.9	0.001	0.16	6.9	2	0.3	3578
Geometric Mean	0.042	195.55	0.15	3.19	0.6	0.2	11.4	0.02	7.7	0.001	0.16	6.6	2	0.3	2486
Median	0.048	184.51	0.17	4.36	0.6	0.1	9.7	0.02	8.3	0.001	0.16	6.7	2	0.3	2362
Std Dev	0.011	234.78	0.21	7.49	0.1	0.2	10.7	0.01	1.8	0.001	0.03	2.1	1	0.2	3003
Geometric Std Dev	1.434	2.61	2.68	3.39	1.3	1.9	1.9	1.27	1.3	1.422	1.19	1.4	1	1.8	3
1st Quartile	0.040	112.61	0.07	1.13	0.5	0.1	7.5	0.02	7.1	0.001	0.16	5.1	2	0.2	1405
3rd Quartile	0.052	430.38	0.30	6.95	0.7	0.2	16.7	0.02	8.9	0.001	0.18	8.0	2	0.4	4248
5% percentile	0.023	44.18	0.02	0.48	0.4	0.1	4.7	0.02	5.6	0.001	0.11	3.9	2	0.1	513
95% percentile	0.057	759.59	0.67	21.55	0.8	0.6	32.1	0.03	10.6	0.003	0.20	10.7	4	0.6	10000
98% percentile	0.059	814	0.75	25.27	0.8	0.6	36.6	0.05	11.9	0.003	0.22	11.2	4	0.9	10000
99% percentile	0.060	841	0.86	31.98	0.9	0.8	46.1	0.06	12.0	0.004	0.23	11.6	4	1.1	10000
99.9%percentile	0.060	866	0.95	38.02	0.9	0.9	54.6	0.06	12.2	0.004	0.25	11.9	4	1.2	10000

Geol Unit = Andesite

	P_ %	Pb_ppm	S_ %	Sb_ppm	Sc_ppm	Se_ppm	Sr_ppm	Te_ppm	Th_ppm	Ti_ %	Tl_ppm	U_ppm	V_ppm	W_ppm	Zn_ppm
N	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Min	0.250	26.44	0.10	2.63	10.3	0.8	96.8	0.02	11.3	0.043	0.13	23.7	80	0.3	9796
Max	0.250	26	0.10	2.63	10.3	0.8	96.8	0.02	11.3	0.043	0.13	23.7	80	0.3	9796
Mean	0.250	26.44	0.10	2.63	10.3	0.8	96.8	0.02	11.3	0.043	0.13	23.7	80	0.3	9796
Geometric Mean	0.250	26.44	0.10	2.63	10.3	0.8	96.8	0.02	11.3	0.043	0.13	23.7	80	0.3	9796
Median	0.250	26.44	0.10	2.63	10.3	0.8	96.8	0.02	11.3	0.043	0.13	23.7	80	0.3	9796
Std Dev	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Geometric Std Dev	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
1st Quartile	0.250	26.44	0.10	2.63	10.3	0.8	96.8	0.02	11.3	0.043	0.13	23.7	80	0.3	9796
3rd Quartile	0.250	26.44	0.10	2.63	10.3	0.8	96.8	0.02	11.3	0.043	0.13	23.7	80	0.3	9796
5% percentile	0.250	26.44	0.10	2.63	10.3	0.8	96.8	0.02	11.3	0.043	0.13	23.7	80	0.3	9796
95% percentile	0.250	26.44	0.10	2.63	10.3	0.8	96.8	0.02	11.3	0.043	0.13	23.7	80	0.3	9796
98% percentile	0.250	26	0.10	2.63	10.3	0.8	96.8	0.02	11.3	0.043	0.13	23.7	80	0.3	9796
99% percentile	0.250	26	0.10	2.63	10.3	0.8	96.8	0.02	11.3	0.043	0.13	23.7	80	0.3	9796
99.9%percentile	0.250	26	0.10	2.63	10.3	0.8	96.8	0.02	11.3	0.043	0.13	23.7	80	0.3	9796

Appendix II
Static Test Results and Statistical Summary
A. TM Zone ICP Summary Stats

Mine Zone = Ore

	Ag_ppb	Al_%	As_ppm	Au_ppb	B_ppm	Ba_ppm	Bi_ppm	Ca_%	Cd_ppm	Co_ppm	Cr_ppm	Cu_ppm	Fe_%	Ga_ppm	Hg_ppb	K_%	La_ppm	Mg_%	Mn_ppm	Mo_ppm	Na_%	Ni_ppm
N	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
Min	1622	0.08	40.1	0.4	20	6.1	0.10	0.01	1.95	1.4	2.0	49.87	1.06	0.6	5	0.06	0.5	0.01	869	0.79	0.001	0.6
Max	100000	3.02	3779.1	374.8	20	180.3	34.74	1.18	805.28	9.9	38.4	4232.16	4.24	7.1	545	0.19	32.9	0.76	10000	5.99	0.008	18.1
Mean	62251	0.51	702.4	99.6	20	30.4	6.21	0.20	249.03	3.5	7.7	1357.89	2.62	2.3	147	0.14	9.3	0.13	4637	2.89	0.003	3.7
Geometric Mean	41028	0.21	218.65	21.6	20	12.6	0.65	0.06	58.14	2.6	4.3	337.55	2.35	1.6	45	0.13	5.3	0.04	3624	2.22	0.002	1.6
Median	59703	0.19	157.4	25.0	20	9.1	0.22	0.06	94.43	1.8	3.7	138.19	2.50	1.5	49	0.16	6.6	0.04	3990	2.23	0.003	0.9
Std Dev	36566	1.01	1273.1	140.2	0	60.6	12.45	0.40	347.78	3.3	12.4	1805.58	1.20	2.2	204	0.05	10.4	0.26	3127	2.05	0.002	6.1
Geometric Std Dev	4	3.17	4.9	10.2	1	3.0	9.12	4.43	9.37	2.1	2.5	7.03	1.69	2.5	6	1.58	3.6	3.96	2	2.26	2.009	3.3
1st Quartile	42555	0.11	70.3	5.0	20	7.1	0.20	0.02	23.89	1.6	3.0	74.48	1.84	0.8	11	0.12	2.9	0.03	2340	1.34	0.002	0.9
3rd Quartile	100000	0.21	634.2	146.4	20	12.3	3.67	0.11	320.44	3.7	4.0	2796.94	3.66	3.1	191	0.18	11.1	0.07	6671	4.73	0.003	2.4
5% percentile	11680	0.08	41.7	1.8	20	6.1	0.13	0.01	2.72	1.5	2.0	56.87	1.10	0.6	6	0.06	1.1	0.01	1253	0.79	0.001	0.7
95% percentile	100000	2.04	2727.7	331.0	20	121.6	27.34	0.81	803.94	9.0	26.4	4026.42	4.10	5.7	488	0.19	25.6	0.52	9082	5.62	0.007	13.8
98% percentile	100000	2.63	3358.5	357.3	20	156.8	31.78	1.03	804.75	9.6	33.6	4149.86	4.18	6.6	522	0.19	30.0	0.66	9633	5.84	0.007	16.4
99% percentile	100000	2.82	3568.8	366.0	20	168.6	33.26	1.11	805.01	9.7	36.0	4191.01	4.21	6.8	534	0.19	31.4	0.71	9816	5.92	0.008	17.2
99.9%percentile	100000	3.00	3758.1	373.9	20	179.1	34.59	1.17	805.25	9.9	38.2	4228.05	4.24	7.1	544	0.19	32.8	0.76	9982	5.98	0.008	18.0

Mine Zone = Hangingwall (HW)

	Ag_ppb	Al_%	As_ppm	Au_ppb	B_ppm	Ba_ppm	Bi_ppm	Ca_%	Cd_ppm	Co_ppm	Cr_ppm	Cu_ppm	Fe_%	Ga_ppm	Hg_ppb	K_%	La_ppm	Mg_%	Mn_ppm	Mo_ppm	Na_%	Ni_ppm
N	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22
Min	147	0.18	1.8	0.2	20	9.9	0.03	0.07	0.30	0.9	2.8	4.20	0.67	0.6	5	0.14	9.1	0.02	179	0.46	0.002	0.7
Max	30850	4.45	913.7	22.4	20	267.5	1.55	1.69	59.91	25.9	65.3	133.61	5.86	10.3	21	0.25	49.2	1.30	10000	27.68	0.026	38.6
Mean	7323	0.47	85.6	2.1	20	27.4	0.34	0.30	7.96	3.0	6.7	41.88	1.74	1.3	7	0.20	16.0	0.12	3371	6.63	0.006	2.7
Geometric Mean	3318	0.30	29.71	0.7	20	17.4	0.22	0.21	3.56	2.1	4.3	29.54	1.47	1.0	7	0.20	14.9	0.07	2020	3.15	0.004	1.2
Median	4156	0.26	36.2	0.8	20	14.4	0.21	0.16	3.32	2.1	3.5	28.04	1.25	0.8	5	0.21	14.4	0.07	2139	3.13	0.003	1.0
Std Dev	8403	0.89	193.7	4.7	0	53.9	0.37	0.37	13.76	5.1	13.1	35.72	1.20	2.0	4	0.03	8.1	0.27	3087	8.27	0.006	8.0
Geometric Std Dev	5	1.94	4.0	3.7	1	2.0	2.57	2.18	3.44	1.9	1.9	2.43	1.75	1.8	2	1.18	1.4	2.34	3	3.64	2.140	2.2
1st Quartile	1403	0.23	14.6	0.2	20	12.3	0.13	0.13	1.99	1.5	3.1	16.75	0.96	0.7	5	0.19	11.9	0.04	965	1.47	0.003	0.9
3rd Quartile	8346	0.31	58.7	1.8	20	18.2	0.36	0.28	7.83	2.5	4.7	56.89	2.18	1.0	8	0.23	17.2	0.09	4284	6.75	0.005	1.2
5% percentile	194	0.19	4.9	0.2	20	10.0	0.06	0.10	0.67	1.1	2.8	7.73	0.79	0.6	5	0.14	10.1	0.02	296	0.49	0.002	0.7
95% percentile	21650	0.57	264.1	4.5	20	27.1	1.07	0.84	34.25	3.4	6.4	101.58	3.27	1.6	15	0.25	21.0	0.14	8841	24.22	0.020	1.4
98% percentile	26989	2.82	644.6	14.9	20	166.6	1.36	1.34	49.66	16.5	40.6	120.24	4.78	6.6	18	0.25	37.4	0.81	9516	26.34	0.023	23.0
99% percentile	28919	3.64	779.2	18.7	20	217.0	1.45	1.52	54.78	21.2	52.9	126.92	5.32	8.5	20	0.25	43.3	1.06	9758	27.01	0.025	30.8
99.9%percentile	30657	4.37	900.2	22.0	20	262.5	1.54	1.67	59.40	25.4	64.1	132.94	5.81	10.1	21	0.25	48.6	1.28	9976	27.61	0.026	37.8

Mine Zone = InterOre

	Ag_ppb	Al_%	As_ppm	Au_ppb	B_ppm	Ba_ppm	Bi_ppm	Ca_%	Cd_ppm	Co_ppm	Cr_ppm	Cu_ppm	Fe_%	Ga_ppm	Hg_ppb	K_%	La_ppm	Mg_%	Mn_ppm	Mo_ppm	Na_%	Ni_ppm
N	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Min	830	0.11	7.8	0.2	20	6.2	0.05	0.02	3.22	0.8	2.5	4.03	0.73	0.4	6	0.13	3.2	0.01	533	0.48	0.001	0.7
Max	25232	0.30	88.3	8.8	20	15.7	1.89	0.42	40.38	2.1	5.6	71.26	2.22	1.0	28	0.24	16.9	0.09	6127	5.15	0.006	2.0
Mean	6290	0.23	36.1	3.2	20	11.7	0.44	0.16	13.64	1.2	3.9	26.84	1.38	0.7	15	0.20	11.1	0.05	2740	2.04	0.003	1.2
Geometric Mean	3123	0.22	27.23	1.8	20	11.2	0.19	0.11	8.64	1.2	3.8	17.00	1.25	0.7	13	0.20	9.8	0.04	2011	1.46	0.002	1.1
Median	3214	0.25	30.8	1.8	20	11.4	0.14	0.13	6.60	1.1	3.9	21.38	1.27	0.8	11	0.21	11.2	0.06	2425	1.57	0.002	1.1
Std Dev	9382	0.07	29.0	3.4	0	3.3	0.72	0.14	14.77	0.5	1.2	25.64	0.64	0.2	9	0.04	4.8	0.03	2124	1.76	0.002	0.6
Geometric Std Dev	3	1.45	2.4	3.9	1	1.4	3.50	2.67	2.78	1.4	1.4	3.02	1.62	1.4	2	1.25	1.8	2.26	3	2.49	1.805	1.6
1st Quartile	1442	0.21	17.3	1.1	20	11.0	0.11	0.11	4.00	1.0	3.0	8.26	0.85	0.6	9	0.19	9.6	0.04	1164	0.75	0.002	0.7
3rd Quartile	4103	0.28	42.4	4.9	20	13.7	0.25	0.15	18.09	1.3	4.7	34.67	1.88	0.9	21	0.23	13.8	0.08	3747	2.62	0.003	1.6
5% percentile	892	0.14	9.8	0.4	20	7.4	0.06	0.04	3.30	0.9	2.6	5.05	0.76	0.5	7	0.14	4.7	0.02	669	0.52	0.001	0.7
95% percentile	19968	0.30	77.1	8.1	20	15.4	1.49	0.35	35.67	1.9	5.4	62.17	2.15	1.0	27	0.24	16.4	0.09	5559	4.57	0.005	1.9
98% percentile	23126	0.30	83.8	8.5	20	15.6	1.73	0.39	38.50	2.0	5.5	67.62	2.19	1.0	28	0.24	16.7	0.09	5900	4.92	0.006	2.0
99% percentile	24179	0.30	86.1	8.7	20	15.6	1.81	0.41	39.44	2.1	5.6	69.44	2.21	1.0	28	0.24	16.8	0.09	6013	5.03	0.006	2.0
99.9%percentile	25127	0.30	88.1	8.8	20	15.7	1.88	0.42	40.29	2.1	5.6	71.08	2.22	1.0	28	0.24	16.9	0.09	6116	5.14	0.006	2.0

Mine Zone = Ore

	P_ %	Pb_ppm	S_ %	Sb_ppm	Sc_ppm	Se_ppm	Sr_ppm	Te_ppm	Th_ppm	Ti_ %	Tl_ppm	U_ppm	V_ppm	W_ppm	Zn_ppm
N	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
Min	0.004	77.57	0.05	2.64	0.1	0.1	1.5	0.02	0.9	0.001	0.08	2.7	2	0.2	507
Max	0.176	10000	8.38	2000.00	6.6	11.0	63.2	0.03	9.2	0.012	0.44	9.9	43	62.8	10000
Mean	0.041	2790.38	2.67	614.82	1.3	2.8	12.2	0.03	5.3	0.002	0.19	5.1	7	9.2	7709
Geometric Mean	0.022	713.33	0.88	71.67	0.6	0.4	5.4	0.02	4.2	0.001	0.17	4.8	3	0.8	5267
Median	0.029	481.54	1.48	29.79	0.6	0.1	4.9	0.03	6.0	0.001	0.16	4.9	2	0.3	10000
Std Dev	0.056	4455.99	3.29	867.48	2.2	5.0	20.9	0.01	3.1	0.004	0.11	2.2	14	21.9	4245
Geometric Std Dev	3.392	5.98	6.60	14.41	3.2	8.4	3.4	1.24	2.3	2.407	1.65	1.5	3	8.8	3
1st Quartile	0.011	262.63	0.18	9.94	0.5	0.1	2.1	0.02	2.7	0.001	0.14	3.9	2	0.2	7792
3rd Quartile	0.034	3122.91	3.65	1237.49	0.7	2.9	7.9	0.03	7.5	0.001	0.20	5.5	2	2.7	10000
5% percentile	0.004	103.79	0.09	4.53	0.2	0.1	1.6	0.02	1.3	0.001	0.09	2.9	2	0.2	738
95% percentile	0.130	10000.00	7.94	1923.57	4.5	11.0	45.8	0.03	8.9	0.008	0.37	8.5	29	44.1	10000
98% percentile	0.158	10000	8.21	1969.43	5.8	11.0	56.2	0.03	9.1	0.010	0.41	9.3	37	55.3	10000
99% percentile	0.167	10000	8.29	1984.71	6.2	11.0	59.7	0.03	9.1	0.011	0.43	9.6	40	59.1	10000
99.9%percentile	0.175	10000	8.37	1998.47	6.6	11.0	62.9	0.03	9.2	0.012	0.44	9.9	43	62.4	10000

Mine Zone = Hangingwall (HW)

	P_ %	Pb_ppm	S_ %	Sb_ppm	Sc_ppm	Se_ppm	Sr_ppm	Te_ppm	Th_ppm	Ti_ %	Tl_ppm	U_ppm	V_ppm	W_ppm	Zn_ppm
N	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22
Min	0.022	9.59	0.02	0.19	0.4	0.1	6.5	0.02	6.8	0.001	0.10	3.8	2	0.1	232
Max	0.250	805	0.96	23.08	10.3	0.9	96.8	0.05	12.2	0.043	0.21	23.7	80	0.9	10000
Mean	0.055	252.20	0.22	5.62	1.1	0.3	20.0	0.02	8.7	0.003	0.16	7.3	6	0.4	3154
Geometric Mean	0.048	151.93	0.12	3.21	0.7	0.2	14.4	0.02	8.5	0.001	0.16	6.6	3	0.3	1890
Median	0.049	148.62	0.11	3.84	0.7	0.1	11.6	0.02	8.5	0.001	0.17	6.6	2	0.3	1643
Std Dev	0.044	236.94	0.24	6.01	2.1	0.2	21.1	0.01	1.5	0.009	0.03	4.2	17	0.2	3423
Geometric Std Dev	1.542	3.16	3.17	3.36	1.9	2.2	2.1	1.26	1.2	2.395	1.20	1.5	2	1.7	3
1st Quartile	0.044	81.63	0.06	1.78	0.6	0.1	7.8	0.02	7.6	0.001	0.14	5.0	2	0.3	1195
3rd Quartile	0.053	363.78	0.31	6.50	0.8	0.3	23.9	0.02	9.2	0.001	0.18	7.7	2	0.5	3654
5% percentile	0.032	26.97	0.02	0.32	0.5	0.1	7.1	0.02	6.9	0.001	0.12	4.2	2	0.1	391
95% percentile	0.056	761.48	0.67	19.79	0.8	0.8	54.5	0.03	11.8	0.004	0.19	11.8	4	0.6	10000
98% percentile	0.169	791	0.84	21.87	6.3	0.9	79.5	0.04	12.0	0.027	0.20	18.7	48	0.8	10000
99% percentile	0.209	798	0.90	22.48	8.3	0.9	88.1	0.05	12.1	0.035	0.21	21.2	64	0.8	10000
99.9%percentile	0.246	804	0.95	23.02	10.1	0.9	95.9	0.05	12.2	0.042	0.21	23.5	78	0.9	10000

Mine Zone = InterOre

	P_ %	Pb_ppm	S_ %	Sb_ppm	Sc_ppm	Se_ppm	Sr_ppm	Te_ppm	Th_ppm	Ti_ %	Tl_ppm	U_ppm	V_ppm	W_ppm	Zn_ppm
N	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Min	0.010	104.69	0.04	0.80	0.2	0.1	3.1	0.02	2.2	0.001	0.11	3.0	2	0.1	1800
Max	0.057	575	0.64	8.06	0.7	0.4	29.6	0.06	9.3	0.001	0.18	9.4	2	0.5	10000
Mean	0.041	254.33	0.31	3.67	0.6	0.2	11.0	0.03	6.8	0.001	0.15	6.7	2	0.3	5803
Geometric Mean	0.036	206.93	0.20	2.50	0.5	0.1	8.6	0.02	6.2	0.001	0.15	6.4	2	0.2	4794
Median	0.043	160.29	0.29	3.33	0.6	0.1	8.2	0.02	7.6	0.001	0.16	7.1	2	0.3	5972
Std Dev	0.016	189.40	0.25	3.03	0.2	0.1	9.4	0.02	2.6	0.000	0.03	2.1	0	0.1	3467
Geometric Std Dev	1.900	1.97	3.09	2.80	1.6	1.8	2.1	1.57	1.7	1.000	1.23	1.5	1	1.7	2
1st Quartile	0.041	133.46	0.11	1.01	0.5	0.1	6.9	0.02	6.1	0.001	0.13	6.4	2	0.2	2841
3rd Quartile	0.050	341.25	0.49	5.54	0.7	0.1	9.9	0.02	8.3	0.001	0.18	7.5	2	0.3	8451
5% percentile	0.018	110.63	0.05	0.81	0.3	0.1	4.0	0.02	3.1	0.001	0.11	3.8	2	0.1	1951
95% percentile	0.056	530.40	0.61	7.47	0.7	0.3	24.8	0.05	9.1	0.001	0.18	9.0	2	0.5	9668
98% percentile	0.057	557	0.63	7.82	0.7	0.4	27.7	0.06	9.2	0.001	0.18	9.2	2	0.5	9867
99% percentile	0.057	566	0.63	7.94	0.7	0.4	28.6	0.06	9.3	0.001	0.18	9.3	2	0.5	9934
99.9%percentile	0.057	574	0.64	8.05	0.7	0.4	29.5	0.06	9.3	0.001	0.18	9.4	2	0.5	9993

Appendix II
Static Test Results and Statistical Summary
A. TM Zone ICP Summary Stats

Mine Zone = Footwall (FW)

	Ag_ppb	Al_%	As_ppm	Au_ppb	B_ppm	Ba_ppm	Bi_ppm	Ca_%	Cd_ppm	Co_ppm	Cr_ppm	Cu_ppm	Fe_%	Ga_ppm	Hg_ppb	K_%	La_ppm	Mg_%	Mn_ppm	Mo_ppm	Na_%	Ni_ppm
<i>N</i>	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14
<i>Min</i>	345	0.13	4.2	0.2	20	7.8	0.04	0.04	1.99	0.7	2.5	3.25	0.71	0.5	5	0.14	5.3	0.01	85	0.42	0.001	0.6
<i>Max</i>	26823	0.74	420.7	19.6	20	21.7	0.43	0.95	24.35	2.5	6.8	48.16	3.34	2.2	13	0.25	21.0	0.51	10000	3.82	0.015	2.2
<i>Mean</i>	6006	0.29	66.8	3.1	20	12.2	0.12	0.35	8.16	1.3	4.3	16.53	1.71	1.0	8	0.21	14.1	0.14	4485	1.40	0.004	1.1
<i>Geometric Mean</i>	3031	0.26	23.93	1.3	20	11.6	0.09	0.25	6.26	1.2	4.1	12.22	1.53	0.9	8	0.20	13.3	0.10	2868	1.10	0.003	1.0
<i>Median</i>	3826	0.24	29.3	1.5	20	11.5	0.08	0.33	6.72	1.3	4.1	13.54	1.49	1.0	9	0.21	14.6	0.11	4620	0.94	0.002	1.1
<i>Std Dev</i>	7310	0.15	114.8	5.0	0	4.0	0.11	0.27	6.28	0.5	1.3	12.91	0.86	0.4	3	0.03	4.6	0.14	3133	1.03	0.004	0.5
<i>Geometric Std Dev</i>	4	1.53	4.4	4.1	1	1.4	2.05	2.67	2.16	1.5	1.4	2.32	1.61	1.5	1	1.16	1.5	2.70	4	2.06	2.096	1.5
<i>1st Quartile</i>	1062	0.21	5.6	0.4	20	9.5	0.06	0.14	3.39	0.9	3.4	6.12	1.13	0.7	5	0.20	11.2	0.08	2259	0.64	0.002	0.8
<i>3rd Quartile</i>	6196	0.31	57.1	2.8	20	13.1	0.12	0.51	10.70	1.6	5.0	22.04	2.02	1.1	10	0.22	18.0	0.15	6496	2.27	0.003	1.3
<i>5% percentile</i>	496	0.16	4.3	0.2	20	7.8	0.04	0.05	2.04	0.7	2.6	3.56	0.83	0.5	5	0.16	7.6	0.02	437	0.43	0.002	0.7
<i>95% percentile</i>	18992	0.54	282.7	10.6	20	20.0	0.36	0.78	18.95	2.2	6.6	36.66	3.24	1.6	12	0.25	20.1	0.42	9364	2.91	0.013	1.9
<i>98% percentile</i>	23691	0.66	365.5	16.0	20	21.0	0.40	0.88	22.19	2.4	6.7	43.56	3.30	2.0	13	0.25	20.6	0.47	9745	3.46	0.014	2.1
<i>99% percentile</i>	25257	0.70	393.1	17.8	20	21.4	0.42	0.92	23.27	2.4	6.8	45.86	3.32	2.1	13	0.25	20.8	0.49	9873	3.64	0.015	2.1
<i>99.9%percentile</i>	26666	0.74	417.9	19.4	20	21.7	0.43	0.95	24.24	2.5	6.8	47.93	3.34	2.2	13	0.25	21.0	0.51	9987	3.80	0.015	2.2

Mine Zone = Footwall (FW)

	P_%	Pb_ppm	S_%	Sb_ppm	Sc_ppm	Se_ppm	Sr_ppm	Te_ppm	Th_ppm	Ti_%	Tl_ppm	U_ppm	V_ppm	W_ppm	Zn_ppm
<i>N</i>	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14
<i>Min</i>	0.013	57.02	0.05	0.44	0.4	0.1	3.3	0.02	4.0	0.001	0.11	3.7	2	0.1	2017
<i>Max</i>	0.060	869	0.28	38.69	0.9	0.4	30.1	0.02	10.7	0.002	0.25	11.1	4	1.2	6419
<i>Mean</i>	0.047	318.94	0.16	5.93	0.6	0.2	13.9	0.02	7.7	0.001	0.17	7.5	2	0.4	3667
<i>Geometric Mean</i>	0.045	231.31	0.15	2.59	0.6	0.2	11.4	0.02	7.4	0.001	0.17	7.2	2	0.3	3408
<i>Median</i>	0.051	201.05	0.17	2.78	0.6	0.2	10.6	0.02	7.8	0.001	0.17	7.2	2	0.4	3018
<i>Std Dev</i>	0.012	263.87	0.07	10.02	0.2	0.1	9.0	0.00	1.9	0.000	0.03	2.3	1	0.3	1521
<i>Geometric Std Dev</i>	1.466	2.33	1.71	3.58	1.3	1.7	1.9	1.00	1.3	1.343	1.19	1.4	1	2.0	1
<i>1st Quartile</i>	0.043	137.22	0.10	0.83	0.4	0.1	7.6	0.02	6.3	0.001	0.16	6.3	2	0.2	2566
<i>3rd Quartile</i>	0.053	475.43	0.22	5.22	0.7	0.2	20.6	0.02	9.3	0.001	0.17	8.7	2	0.4	4365
<i>5% percentile</i>	0.029	66.46	0.06	0.62	0.4	0.1	4.7	0.02	5.0	0.001	0.14	4.4	2	0.1	2131
<i>95% percentile</i>	0.059	754.74	0.27	22.10	0.8	0.4	28.9	0.02	10.2	0.002	0.22	10.8	3	0.8	6190
<i>98% percentile</i>	0.060	823	0.28	32.05	0.9	0.4	29.6	0.02	10.5	0.002	0.24	11.0	4	1.0	6327
<i>99% percentile</i>	0.060	846	0.28	35.37	0.9	0.4	29.9	0.02	10.6	0.002	0.24	11.0	4	1.1	6373
<i>99.9%percentile</i>	0.060	867	0.28	38.36	0.9	0.4	30.1	0.02	10.7	0.002	0.25	11.1	4	1.2	6414

Appendix II
Static Test Results and Statistical Summary
B. TM Zone ICP All Data

N	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Min	147	0.08	1.8	0.2	20	6.1	0.03	0.01	0.30	0.7	2.0	3.25	0.67	0.4	5	0.06
Max	100000	4.45	3779.1	374.8	20	267.5	34.74	1.69	805.28	25.9	65.3	4232.16	5.86	10.3	545	0.25
Mean	15619	0.40	173.1	18.1	20	21.7	1.23	0.28	47.27	2.4	5.8	243.54	1.83	1.3	31	0.19
Geometric Mean	4803	0.26	38.09	1.6	20	14.0	0.20	0.17	7.25	1.7	4.1	31.88	1.57	1.0	10	0.19
Median	4168	0.24	39.8	1.3	20	12.4	0.15	0.15	5.68	1.6	3.7	28.04	1.44	0.9	8	0.21
Std Dev	25834	0.71	553.1	64.2	0	42.9	5.20	0.33	159.09	3.7	9.9	841.34	1.09	1.7	93	0.04
Geometric Std Dev	5	1.97	4.8	6.7	1	2.0	3.81	2.96	4.98	1.9	1.8	4.73	1.72	1.9	3	1.32
1st Quartile	1273	0.20	14.6	0.3	20	10.4	0.09	0.11	2.78	1.2	3.1	12.04	1.03	0.7	5	0.18
3rd Quartile	15736	0.30	75.5	4.3	20	16.0	0.31	0.33	11.53	2.2	4.8	67.48	2.27	1.1	12	0.22
5% percentile	355	0.11	4.6	0.2	20	6.7	0.04	0.02	0.94	0.8	2.5	4.11	0.76	0.5	5	0.13
95% percentile	85556	0.67	690.5	78.2	20	26.5	1.74	0.91	158.21	5.6	6.7	1468.46	3.73	3.1	106	0.25
98% percentile	100000	3.05	971.0	252.1	20	182.0	14.03	1.19	801.54	10.2	38.9	3656.09	4.27	7.2	384	0.25
99% percentile	100000	3.75	2375.1	313.5	20	224.8	24.39	1.44	803.41	18.1	52.1	3944.12	5.07	8.7	465	0.25
99.9%percentile	100000	4.38	3638.7	368.7	20	263.2	33.70	1.67	805.09	25.1	64.0	4203.36	5.78	10.1	537	0.25

	Drillhole	Sample#	Cert#	From	To	Interval	Geol Unit	Rock Mgmt Unit	Mine Zone	Ag_ppb	Al_%	As_ppm	Au_ppb	B_ppm	Ba_ppm	Bi_ppm	Ca_%	Cd_ppm	Co_ppm	Cr_ppm	Cu_ppm	Fe_%	Ga_ppm	Hg_ppb	K_%
TM	DH05-11	25929	A506765	1.52	3.5	1.98	Granodiorite	Waste Granodic	HW	147	0.46	1.8	0.2	20	15.1	0.06	0.11	0.3	1.1	4.8	12.56	0.92	1.6	5	0.14
TM	DH05-11	25931	A506765	5.1	6.2	1.1	Granodiorite	Waste Granodic	HW	21656	0.24	56.4	0.6	20	11.9	0.31	0.1	8.45	2.1	3	60.35	2.8	1.2	8	0.22
TM	DH05-11	25933	A506765	7.7	8.8	1.1	Granodiorite	Waste Granodic	HW	2826	0.58	48.3	0.3	20	18.3	0.03	0.12	1.61	2	5.6	7.53	1.13	1.5	5	0.18
TM	DH05-11	25935	A506765	11	12.2	1.2	Granodiorite	Waste Granodic	HW	21544	0.29	33.8	4.6	20	13.7	0.4	0.15	9.59	2.1	5.8	101.77	1.96	1	8	0.25
TM	DH05-11	25938	A506765	16.2	17.7	1.5	Granodiorite	Waste Granodic	HW	6392	0.25	46.6	0.9	20	17.7	0.12	0.54	2	1.7	4.8	35.65	0.85	0.6	5	0.21
TM	DH05-11	25941	A506765	19.2	20.7	1.5	Granodiorite	Waste Granodic	HW	2495	0.26	59.5	0.4	20	12.1	0.11	0.3	9.74	1.8	6.4	15.26	1.22	0.8	15	0.23
TM	DH05-11	25944	A506765	21.5	22.3	0.8	Vein	Ore LG	Ore	1622	3.02	78.8	0.4	20	180.3	0.18	1.18	30.47	9.9	38.4	49.87	4.24	7.1	12	0.15
TM	DH05-11	25948	A506765	24.7	26.7	2	Granodiorite	Waste Granodic	InterOre	1076	0.28	7.8	0.2	20	14.4	0.05	0.42	3.53	2.1	5.6	4.03	0.89	0.7	8	0.24
TM	DH05-11	25951	A506765	27.75	28	0.25	Vein	Ore HG	Ore	100000	0.22	587.2	112	20	12.2	0.1	0.1	155.91	1.7	3.9	2514.47	3.84	2	128	0.19
TM	DH05-11	25953	A506765	28	28.4	0.4	Granodiorite	Waste Granodic	FW	3526	0.3	56.7	1.4	20	11	0.04	0.21	3.32	1.1	3.7	11.87	2.86	1.3	9	0.25
TM	DH05-11	25954	A506765	28.4	29.9	1.5	Granodiorite	Waste Granodic	FW	744	0.31	4.4	0.2	20	12.6	0.06	0.33	3.58	1.3	5.1	3.25	1.38	1.1	9	0.25
TM	DH05-11	25955	A506765	29.9	31.9	2	Granodiorite	Waste Granodic	FW	578	0.43	7.8	0.2	20	19.1	0.04	0.53	2.06	2	5.4	5.74	0.9	1.1	5	0.21
TM	DH05-12	25816	A506765	12.6	13.45	0.85	Granodiorite	Ore LG	Ore	30359	0.18	214	13	20	7.8	0.21	0.08	32.95	1.8	3.5	69.86	2.06	0.8	19	0.17
TM	DH05-12	25818	A506765	13.95	14.45	0.5	Granodiorite	Waste Granodic	InterOre	3890	0.11	39.5	5.8	20	6.2	0.29	0.02	21.53	1	3.7	34	0.73	0.4	24	0.13
TM	DH05-12	25819	A506765	14.45	14.85	0.4	Vein	Ore LG	Ore	67902	0.12	100.7	36.9	20	6.1	0.36	0.02	160.1	1.6	4.2	190	1.18	0.6	79	0.14
TM	DH05-12	25822	A506765	15.9	16.2	0.3	Granodiorite	Waste Granodic	FW	26823	0.17	420.7	19.6	20	11.9	0.43	0.04	7.37	0.9	2.6	48.16	0.71	0.5	5	0.22
TM	DH05-12	25823	A506765	16.2	17.7	1.5	Granodiorite	Waste Granodic	FW	4125	0.21	31.2	5.8	20	7.8	0.09	0.14	11.81	1	3.5	15.21	2.12	1.1	11	0.22
TM	DH05-12	25824	A506765	17.7	19.05	1.35	Granodiorite	Waste Granodic	FW	5400	0.35	4.2	2.6	20	14.4	0.12	0.67	1.99	1.3	3.7	22	1.21	1.1	13	0.19
TM	DH05-14	25861	A506765	8.35	9.85	1.5	Granodiorite	Waste Granodic	HW	909	0.32	8.9	1.2	20	17.8	0.31	0.16	0.97	2.4	4.4	46.5	0.67	0.8	5	0.14
TM	DH05-14	25864	A506765	11.35	12.85	1.5	Granodiorite	Waste Granodic	HW	692	0.35	6.4	0.9	20	16.2	0.1	0.47	0.66	1.4	3.2	27.55	0.81	1	5	0.15
TM	DH05-14	25866	A506765	14	15.2	1.2	Granodiorite	Waste Granodic	HW	15114	0.2	38.6	2.7	20	16.1	0.38	0.07	5.94	2.4	3.2	133.61	1.34	0.6	13	0.19
TM	DH05-14	25867	A506765	15.2	16.3	1.1	Granodiorite	Ore LG	Ore	46620	0.2	44.6	5.2	20	12.5	0.22	0.04	4.14	1.6	3.9	86.37	1.06	0.6	7	0.18
TM	DH05-14	25870	A506765	18.3	20	1.7	Granodiorite	Waste Granodic	InterOre	4174	0.28	15.7	0.9	20	11.4	0.1	0.11	7.77	1.2	4.9	34.89	0.84	0.6	11	0.18
TM	DH05-14	25873	A506765	22.45	23.15	0.7	Granodiorite	Waste Granodic	InterOre	2538	0.22	22	1.6	20	10.8	0.14	0.12	5.42	1.3	2.5	8.09	1.65	0.8	11	0.21
TM	DH05-14	25877	A506765	23.65	23.95	0.3	Granodiorite	Waste Granodic	FW	10953	0.19	57.2	3.7	20	10.7	0.12	0.09	6.07	1.6	3.4	29.52	0.97	0.7	8	0.2
TM	DH05-14	25878	A506765	23.95	24.95	1	Granodiorite	Waste Granodic	FW	1157	0.26	4.9	1	20	13.2	0.07	0.33	3	1.7	6.5	5.08	1.61	0.9	12	0.21
TM	DH07-01	305901	/AN0700038	24.1	24.8	0.7	Granodiorite	Waste Granodic	HW	7303	0.22	273	0.2	20	27.2	0.21	0.12	1.98	1.6	3.2	24.84	2.16	0.7	5	0.22
TM	DH07-01	305903	/AN0700038	25.8	26.5	0.7	Granodiorite	Waste Granodic	HW	4161	0.19	15	1.1	20	11.1	1.09	0.14	3.46	2.5	3.1	11.48	1.5	0.6	6	0.2
TM	DH07-01	305904	/AN0700038	26.5	27.5	1	Granodiorite	Waste Granodic	HW	4585	0.18	95.4	0.2	20	10.5	0.59	0.13	3.27	0.9	3.5	17.31	1.28	0.7	5	0.19
TM	DH07-01	305906	/AN0700038	31.9	32.9	1	Granodiorite	Waste Granodic	HW	8693	0.2	16.1	1.1	20	13.4	0.24	0.15	3.61	2.8	2.8	98	0.79	0.6	5	0.19
TM	DH07-01	305907	/AN0700038	32.9	33.5	0.6	Granodiorite	Waste Granodic	HW	30850	0.23	51.1	2.2	20	13.3	0.2	0.16	10.53	2.5	2.9	92.19	2.31	0.8	5	0.21
TM	DH07-01	305908	/AN0700038	33.5	34.2	0.7	Vein	Ore HG	Ore	100000	0.08	3779.1	374.8	20	7.4	34.74	0.02	805.28	7.4	2	4232.16	3.6	3	381	0.07
TM	DH07-01	305911	/AN0700038	34.8	35.7	0.9	Granodiorite	Waste Granodic	FW	6328	0.13	27.3	1.6	20	7.8	0.32	0.05	10.69	0.7	6.8	22.05	1.11	0.5	5	0.14
TM	DH07-03	305938	/AN0700038	16	17	1	Granodiorite	Waste Granodic	HW	2463	0.4	19.9	0.2	20	25.6	0.23	0.23	2.7	2.2	3.5	72.17	1.2	1.3	5	0.22
TM	DH07-03	305941	/AN0700038	20	21	1	Granodiorite	Waste Granodic	HW	1049	0.26	14.5	2	20	23.8	0.16	0.51	2.02	1.1	3.8	16.56	1.02	0.8	5	0.25
TM	DH07-03	305942	/AN0700038	22	23	1	Granodiorite	Waste Granodic	HW	4091	0.25	65.7	0.2	20	25.7	1.55	0.17	2.54	1.2	4.3	31.82	1.04	0.8	8	0.23
TM	DH07-03	305943	/AN0700038	24.5	25.5	1	Granodiorite	Waste Granodic	HW	15943	0.26	15.7	0.4	20	12.8	0.77	0.15	5.98	1.7	3.3	35.18	3.05	0.9	5	0.23
TM	DH07-03	305944	/AN0700038	25.5	26.4	0.9	Granodiorite	Ore LG	Ore	51503	0.21	40.1	4.5	20	10.4	0.22	0.12	1.95	1.4	3.3	76.02	2.7	0.9	5	0.19
TM	DH07-03	305946	/AN0700038	26.4	27	0.6	Granodiorite	Waste Granodic	InterOre	25232	0.21	88.3	8.8	20	11.4	1.89	0.15	40.38	0.8	2.7	71.26	2.22	0.9	28	0.21
TM	DH07-03	305954	/AN0700038	30.5	31.15	0.65	Vein	Ore HG	Ore	100000	0.08	775	249.6	20	6.2	13.61	0.01	801.46	2.5	2.1	3644.33	2.29	3.2	545	0.06
TM	DH07-03	305956	/AN0700038	31.15	31.5	0.35	Granodiorite	Waste Granodic	FW	14775	0.22	208.4	2.2	20	10.2	0.13	0.15	16.04	0.8	2.5	30.47	3.19	0.8	6	0.21
TM	DH07-03	305957	/AN0700038	31.5	32.5	1	Granodiorite	Waste Granodic	FW	5801	0.24	62.3	2.9	20	9.3	0.07	0.69	10.7	0.7	4.4	17.15	1.71	0.7	10	0.21
TM	DH07-04	305981	/AN0700038	30.8	31.8	1	Granodiorite	Waste Granodic	HW	368	0.24	4.8	0.2	20	13.7	0.07	0.86	0.91	1.4	3.6	4.2	0.94	0.6	5	0.19
TM	DH07-04	305984	/AN0700038	33.8	34.7	0.9	Granodiorite	Waste Granodic	HW	5492	0.26	913.7	22.4	20	9.9	0.2	0.13	59.91	3.4	2.8	28.52	2.19	0.9	21	0.24
TM	DH07-04	305986	/AN0700038	34.7	35.7	1	Granodiorite	Waste Granodic	HW	4151	0.24	92.3	3.3	20	10	0.14	0.16	35.5	2.5	3	26.65	3.28	1	11	0.23
TM	DH07-04	305988	/AN0700038	36.7	37.9	1.2	Andesite	Waste Andesite	HW	185	4.45	6.5	0.2	20	267.5	0.14	1.69	3.37	25.9	65.3	21.72	5.86	10.3	5	0.19
TM	DH07-04	305991	/AN0700038	38.5	39.2	0.7	Granodiorite	Waste Granodic	InterOre	830	0.3	43.4	2	20	15.7	0.14	0.13	3.22	1	4.1	8.75	1.95	1	6	0.23
TM	DH07-04	305996	/AN0700038	41	41.6	0.6	Granodiorite	Waste Granodic	FW	2500	0.21	33.4	1.1	20	8.7	0.08	0.32	24.35	1.4	2.9	9.96	3.34	1.2	9	0.17
TM	DH07-04	305997	/AN0700038	41.6	42.6	1	Granodiorite	Waste Granodic	FW	1030	0.24	11.8	0.2	20	12.1	0.04	0.95	8.37	1.5	4.6	3.72	1.6	0.9	9	0.21
TM	DH07-04	305998	/AN0700038	42.6	43.6	1	Granodiorite	Waste Granodic	FW	345	0.74	4.8	0.2	20	21.7	0.07	0.45	4.9	2.5	4.5	7.25	1.18	2.2	5	0.2

Appendix II
Static Test Results and Statistical Summary
B. TM Zone ICP All Data

N	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Min	0.5	0.01	85	0.42	0.001	0.6	0.004	9.59	0.02	0.19	0.1	0.1	1.5	0.02	0.9	0.001		
Max	49.2	1.30	10000	27.68	0.026	38.6	0.250	10000	8.38	2000.00	10.3	11.0	96.8	0.06	12.2	0.043		
Mean	13.8	0.12	3810	4.02	0.005	2.2	0.049	677.25	0.61	102.94	0.9	0.6	15.9	0.02	7.6	0.002		
Geometric Mean	11.6	0.07	2446	2.02	0.003	1.2	0.040	227.16	0.19	4.82	0.6	0.2	10.9	0.02	7.1	0.001		
Median	12.7	0.07	2965	1.83	0.003	1.0	0.048	201.05	0.18	4.43	0.6	0.1	9.3	0.02	8.2	0.001		
Std Dev	7.6	0.21	3002	6.02	0.005	5.8	0.037	1936.87	1.55	398.09	1.6	2.1	17.2	0.01	2.3	0.006		
Geometric Std Dev	2.0	2.72	3	3.05	2.120	2.1	1.963	3.47	3.79	6.69	1.9	2.9	2.4	1.27	1.6	1.996		
1st Quartile	10.4	0.04	1164	0.79	0.002	0.8	0.036	116.71	0.07	1.41	0.5	0.1	7.2	0.02	6.8	0.001		
3rd Quartile	16.9	0.10	5979	4.08	0.004	1.3	0.053	504.53	0.35	8.21	0.7	0.2	19.4	0.02	9.0	0.001		
5% percentile	3.1	0.01	340	0.47	0.001	0.7	0.011	39.19	0.03	0.57	0.3	0.1	2.6	0.02	2.5	0.001		
95% percentile	21.0	0.45	9559	18.83	0.015	4.2	0.060	851.72	2.37	598.27	0.9	0.9	45.7	0.03	11.0	0.004		
98% percentile	33.2	0.77	10000	24.54	0.020	18.5	0.177	10000	7.15	1786.01	6.7	10.9	63.9	0.05	11.8	0.013		
99% percentile	41.2	1.04	10000	26.11	0.023	28.6	0.214	10000	7.77	1893.00	8.5	11.0	80.3	0.06	12.0	0.028		
99.9%percentile	48.4	1.27	10000	27.52	0.026	37.6	0.246	10000	8.32	1989.30	10.1	11.0	95.2	0.06	12.2	0.041		

Zone	Drillhole	Sample#	Cert#	From	To	Interval	Geol Unit	Rock Mgmt Unit	Mine Zone	La_ppm	Mg_%	Mn_ppm	Mo_ppm	Na_%	Ni_ppm	P_%	Pb_ppm	S_%	Sb_ppm	Sc_ppm	Se_ppm	Sr_ppm	Te_ppm	Th_ppm	Ti_%
TM	DH05-11	25929	A506765	1.52	3.5	1.98	Granodiorite	Waste Granodic	HW	17.5	0.1	179	0.49	0.026	1.3	0.036	9.59	0.02	0.19	0.7	0.1	8	0.02	9.2	0.004
TM	DH05-11	25931	A506765	5.1	6.2	1.1	Granodiorite	Waste Granodic	HW	12.6	0.02	8848	6.76	0.002	0.8	0.045	771.31	0.13	5.16	0.6	0.3	24.9	0.02	7.5	0.001
TM	DH05-11	25933	A506765	7.7	8.8	1.1	Granodiorite	Waste Granodic	HW	21	0.1	636	1.48	0.02	1.4	0.033	36.96	0.02	1.14	0.8	0.1	9.4	0.02	12.2	0.003
TM	DH05-11	25935	A506765	11	12.2	1.2	Granodiorite	Waste Granodic	HW	12.3	0.04	4042	6.7	0.004	1.1	0.049	109.08	0.36	8.53	0.6	0.1	12	0.03	9	0.001
TM	DH05-11	25938	A506765	16.2	17.7	1.5	Granodiorite	Waste Granodic	HW	11.5	0.07	849	1.67	0.003	0.7	0.051	129.84	0.22	4.43	0.5	0.1	33.5	0.02	7.2	0.001
TM	DH05-11	25941	A506765	19.2	20.7	1.5	Granodiorite	Waste Granodic	HW	14.3	0.07	3757	2.22	0.003	1	0.054	385.54	0.11	2.4	0.7	0.1	20.8	0.02	8.5	0.001
TM	DH05-11	25944	A506765	21.5	22.3	0.8	Vein	Ore LG	Ore	32.9	0.76	2465	0.79	0.008	18.1	0.176	152.47	0.05	2.64	6.6	0.1	63.2	0.02	9.2	0.012
TM	DH05-11	25948	A506765	24.7	26.7	2	Granodiorite	Waste Granodic	InterOre	16.9	0.09	1425	5.15	0.002	1.7	0.057	104.69	0.07	0.82	0.6	0.1	29.6	0.02	9.3	0.001
TM	DH05-11	25951	A506765	27.75	28	0.25	Vein	Ore HG	Ore	5.4	0.08	10000	1.55	0.003	0.8	0.029	299.35	2.49	1781.64	0.5	0.1	5.2	0.02	4.8	0.001
TM	DH05-11	25953	A506765	28	28.4	0.4	Granodiorite	Waste Granodic	FW	19.1	0.13	9021	0.87	0.003	1	0.06	183.59	0.08	2.56	0.9	0.1	9.9	0.02	10	0.001
TM	DH05-11	25954	A506765	28.4	29.9	1.5	Granodiorite	Waste Granodic	FW	18.4	0.11	4495	0.55	0.003	1.1	0.059	693.19	0.13	0.44	0.7	0.2	15.3	0.02	9.7	0.001
TM	DH05-11	25955	A506765	29.9	31.9	2	Granodiorite	Waste Granodic	FW	21	0.11	627	0.79	0.015	1.6	0.05	57.02	0.05	0.94	0.7	0.1	28.3	0.02	10.7	0.002
TM	DH05-12	25816	A506765	12.6	13.45	0.85	Granodiorite	Ore LG	Ore	10.8	0.05	5005	0.79	0.001	0.9	0.028	543.97	0.72	10.57	0.7	0.1	4.5	0.03	8.2	0.001
TM	DH05-12	25818	A506765	13.95	14.45	0.5	Granodiorite	Waste Granodic	InterOre	3.2	0.01	533	2.83	0.001	2	0.01	397.66	0.64	5.07	0.2	0.1	3.1	0.06	2.2	0.001
TM	DH05-12	25819	A506765	14.45	14.85	0.4	Vein	Ore LG	Ore	3.1	0.03	1966	1.52	0.002	5.8	0.013	830.54	2.23	37.79	0.3	0.1	2.2	0.03	2.9	0.001
TM	DH05-12	25822	A506765	15.9	16.2	0.3	Granodiorite	Waste Granodic	FW	8.9	0.01	85	3.82	0.001	0.8	0.037	216.68	0.23	13.17	0.4	0.1	11.5	0.02	7.3	0.001
TM	DH05-12	25823	A506765	16.2	17.7	1.5	Granodiorite	Waste Granodic	FW	14.5	0.07	7867	0.67	0.002	1.2	0.051	528.17	0.17	5.22	0.6	0.1	5.5	0.02	8.3	0.001
TM	DH05-12	25824	A506765	17.7	19.05	1.35	Granodiorite	Waste Granodic	FW	14.6	0.12	2261	2.42	0.012	1.3	0.042	113.79	0.14	3	0.6	0.2	30.1	0.02	8.3	0.002
TM	DH05-14	25861	A506765	8.35	9.85	1.5	Granodiorite	Waste Granodic	HW	15.5	0.05	402	2.63	0.002	1.4	0.048	66.35	0.05	1.11	0.8	0.2	11.1	0.02	8.5	0.001
TM	DH05-14	25864	A506765	11.35	12.85	1.5	Granodiorite	Waste Granodic	HW	17.2	0.1	290	0.94	0.015	1	0.034	41.91	0.06	1.04	0.7	0.2	32.5	0.02	9.3	0.003
TM	DH05-14	25866	A506765	14	15.2	1.2	Granodiorite	Waste Granodic	HW	10.1	0.03	2345	4.17	0.003	0.9	0.022	228.57	0.37	6.01	0.7	0.1	9.1	0.02	8.5	0.001
TM	DH05-14	25867	A506765	15.2	16.3	1.1	Granodiorite	Ore LG	Ore	7.8	0.01	869	4.66	0.004	0.9	0.03	419.1	0.16	8.05	0.6	0.2	13.4	0.03	7.3	0.001
TM	DH05-14	25870	A506765	18.3	20	1.7	Granodiorite	Waste Granodic	InterOre	14.7	0.03	1077	1.15	0.006	0.7	0.042	128.43	0.04	5.7	0.6	0.1	7.5	0.02	8	0.001
TM	DH05-14	25873	A506765	22.45	23.15	0.7	Granodiorite	Waste Granodic	InterOre	9.1	0.05	3855	0.62	0.002	0.8	0.043	148.55	0.37	1.59	0.5	0.1	8.8	0.02	5.7	0.001
TM	DH05-14	25877	A506765	23.65	23.95	0.3	Granodiorite	Waste Granodic	FW	10.2	0.03	2258	0.43	0.002	1.1	0.038	244.21	0.28	4.29	0.4	0.1	7.6	0.02	6.1	0.001
TM	DH05-14	25878	A506765	23.95	24.95	1	Granodiorite	Waste Granodic	FW	16.9	0.09	4745	0.63	0.002	1.8	0.053	317.21	0.09	0.72	0.7	0.1	22.3	0.02	9.6	0.001
TM	DH07-01	305901	/AN0700038	24.1	24.8	0.7	Granodiorite	Waste Granodic	HW	14.5	0.04	4255	18.21	0.004	1	0.044	298.51	0.04	20.2	0.5	0.1	15.2	0.02	8.3	0.001
TM	DH07-01	305903	/AN0700038	25.8	26.5	0.7	Granodiorite	Waste Granodic	HW	11.7	0.06	4293	24.48	0.002	0.9	0.047	517.96	0.31	3.25	0.6	0.1	7.3	0.03	8.9	0.001
TM	DH07-01	305904	/AN0700038	26.5	27.5	1	Granodiorite	Waste Granodic	HW	14.5	0.04	2954	12.18	0.002	1.3	0.05	464.22	0.07	23.08	0.4	0.1	8.1	0.02	7.8	0.001
TM	DH07-01	305906	/AN0700038	31.9	32.9	1	Granodiorite	Waste Granodic	HW	14.1	0.03	1728	27.68	0.003	1.1	0.048	230.23	0.31	4.42	0.5	0.6	7.5	0.02	6.9	0.001
TM	DH07-01	305907	/AN0700038	32.9	33.5	0.6	Granodiorite	Waste Granodic	HW	11.7	0.09	7067	19.34	0.005	1.1	0.046	804.98	0.47	12.08	0.5	0.1	6.5	0.02	6.9	0.001
TM	DH07-01	305908	/AN0700038	33.5	34.2	0.7	Vein	Ore HG	Ore	2.1	0.03	6436	5.99	0.002	1.3	0.005	10000	7.13	1056.1	0.5	10.9	1.9	0.03	2.1	0.001
TM	DH07-01	305911	/AN0700038	34.8	35.7	0.9	Granodiorite	Waste Granodic	FW	5.3	0.04	2818	1.01	0.002	0.7	0.013	172.45	0.22	5.86	0.4	0.1	3.3	0.02	4	0.001
TM	DH07-03	305938	/AN0700038	16	17	1	Granodiorite	Waste Granodic	HW	19.2	0.07	1240	3.62	0.008	1.2	0.055	156.57	0.07	6.24	0.7	0.2	14.4	0.02	11.8	0.002
TM	DH07-03	305941	/AN0700038	20	21	1	Granodiorite	Waste Granodic	HW	17	0.06	1075	3.75	0.004	0.8	0.056	132.48	0.09	1.75	0.7	0.1	28.9	0.02	8.3	0.001
TM	DH07-03	305942	/AN0700038	22	23	1	Granodiorite	Waste Granodic	HW	21	0.02	1933	4.97	0.003	0.9	0.053	255.76	0.02	6.58	0.7	0.3	14.9	0.05	9.5	0.001
TM	DH07-03	305943	/AN0700038	24.5	25.5	1	Granodiorite	Waste Granodic	HW	12.8	0.08	8699	1.52	0.003	0.9	0.054	140.66	0.3	8.26	0.8	0.2	7.7	0.03	8.2	0.001
TM	DH07-03	305944	/AN0700038	25.5	26.4	0.9	Granodiorite	Ore LG	Ore	11.9	0.06	7376	2.9	0.003	0.9	0.045	77.57	0.19	21.79	0.7	0.1	6	0.02	7.1	0.001
TM	DH07-03	305946	/AN0700038	26.4	27	0.6	Granodiorite	Waste Granodic	InterOre	11.2	0.08	6127	1.98	0.003	0.7	0.041	574.65	0.53	8.06	0.7	0.4	6.7	0.02	8.4	0.001
TM	DH07-03	305954	/AN0700038	30.5	31.15	0.65	Vein	Ore HG	Ore	0.5	0.01	2975	4.92	0.001	0.6	0.004	10000	8.38	2000	0.1	11	1.5	0.02	0.9	0.001
TM	DH07-03	305956	/AN0700038	31.15	31.5	0.35	Granodiorite	Waste Granodic	FW	11.1	0.09	6816	2	0.002	0.7	0.051	869.04	0.21	38.69	0.4	0.2	6.9	0.02	6.2	0.001
TM	DH07-03	305957	/AN0700038	31.5	32.5	1	Granodiorite	Waste Granodic	FW	11.4	0.37	5121	0.42	0.002	0.6	0.053	71.55	0.2	5.21	0.4	0.2	8.8	0.02	6.6	0.001
TM	DH07-04	305981	/AN0700038	30.8	31.8	1	Granodiorite	Waste Granodic	HW	15.8	0.14	1502	0.5	0.003	0.7	0.032	86.7	0.06	0.28	0.8	0.1	55.6	0.02	8.7	0.001
TM	DH07-04	305984	/AN0700038	33.8	34.7	0.9	Granodiorite	Waste Granodic	HW	9.1	0.06	7146	1.46	0.003	1	0.049	574.7	0.96	2.96	0.6	0.9	7.1	0.02	6.8	0.001
TM	DH07-04	305986	/AN0700038	34.7	35.7	1	Granodiorite	Waste Granodic	HW	10.1	0.09	10000	0.46	0.003	1	0.05	79.94	0.68	1.87	0.8	0.6	7.6	0.02	7.3	0.001
TM	DH07-04	305988	/AN0700038	36.7	37.9	1.2	Andesite	Waste Andesite	HW	49.2	1.3	928	0.71	0.012	38.6	0.25	26.44	0.1	2.63	10.3	0.8	96.8	0.02	11.3	0.043
TM	DH07-04	305991	/AN0700038	38.5	39.2	0.7	Granodiorite	Waste Granodic	InterOre	11.2	0.06	3424	0.48	0.002	1.3	0.052	172.02	0.21	0.8	0.7	0.1	10.2	0.02	7.1	0.001
TM	DH07-04	305996	/AN0700038	41	41.6	0.6	Granodiorite	Waste Granodic	FW	11.7	0.15	10000	1.2	0.003	0.8	0.049	185.42	0.27	1.35	0.6	0.3	7.7	0.02	5.6	0.001
TM	DH07-04	305997	/AN0700038	41.6	42.6	1	Granodiorite	Waste Granodic	FW	15.1	0.51	5534	2.36	0.002	0.8	0.054	687.41	0.16	0.79	0.6	0.4	11.3	0.02	6.4	0.001
TM	DH07-04	305998	/AN0700038	42.6	43.6	1	Granodiorite	Waste Granodic	FW	19.6	0.19	1138	2.42	0.005	2.2	0.046	125.48	0.07	0.73	0.8	0.4	25.7	0.02	8.3	0.002

Appendix II
Static Test Results and Statistical Summary
B. TM Zone ICP All Data

N	50	50	50	50	50
Min	0.08	2.7	2	0.1	232
Max	0.44	23.7	80	62.8	10000
Mean	0.17	7.0	5	1.8	4344
Geometric Mean	0.16	6.4	2	0.3	2936
Median	0.16	6.6	2	0.3	2911
Std Dev	0.05	3.3	12	8.9	3509
Geometric Std Dev	1.29	1.5	2	2.9	3
1st Quartile	0.15	5.0	2	0.2	1599
3rd Quartile	0.18	7.9	2	0.4	7447
5% percentile	0.11	3.4	2	0.1	525
95% percentile	0.23	10.9	4	1.1	10000
98% percentile	0.25	12.1	44	10.5	10000
99% percentile	0.35	17.9	62	36.6	10000
99.9%percentile	0.43	23.1	78	60.2	10000

Zone	Drillhole	Sample#	Cert#	From	To	Interval	Geol Unit	Rock Mgmt Unit	Mine Zone	Tl_ppm	U_ppm	V_ppm	W_ppm	Zn_ppm
TM	DH05-11	25929	A506765	1.52	3.5	1.98	Granodiorite	Waste Granodic	HW	0.1	7.9	4	0.1	232
TM	DH05-11	25931	A506765	5.1	6.2	1.1	Granodiorite	Waste Granodic	HW	0.16	6.6	2	0.6	2299
TM	DH05-11	25933	A506765	7.7	8.8	1.1	Granodiorite	Waste Granodic	HW	0.12	5	4	0.1	2302
TM	DH05-11	25935	A506765	11	12.2	1.2	Granodiorite	Waste Granodic	HW	0.18	6.6	2	0.3	4105
TM	DH05-11	25938	A506765	16.2	17.7	1.5	Granodiorite	Waste Granodic	HW	0.16	7.7	2	0.2	1302
TM	DH05-11	25941	A506765	19.2	20.7	1.5	Granodiorite	Waste Granodic	HW	0.18	5.1	2	0.3	4147
TM	DH05-11	25944	A506765	21.5	22.3	0.8	Vein	Ore LG	Ore	0.08	4.6	43	0.2	10000
TM	DH05-11	25948	A506765	24.7	26.7	2	Granodiorite	Waste Granodic	InterOre	0.18	7.1	2	0.2	4153
TM	DH05-11	25951	A506765	27.75	28	0.25	Vein	Ore HG	Ore	0.18	5.2	2	0.2	10000
TM	DH05-11	25953	A506765	28	28.4	0.4	Granodiorite	Waste Granodic	FW	0.19	7.3	2	0.6	2193
TM	DH05-11	25954	A506765	28.4	29.9	1.5	Granodiorite	Waste Granodic	FW	0.2	8.3	2	0.3	2017
TM	DH05-11	25955	A506765	29.9	31.9	2	Granodiorite	Waste Granodic	FW	0.16	10.7	2	0.1	3553
TM	DH05-12	25816	A506765	12.6	13.45	0.85	Granodiorite	Ore LG	Ore	0.16	5.4	2	0.3	10000
TM	DH05-12	25818	A506765	13.95	14.45	0.5	Granodiorite	Waste Granodic	InterOre	0.11	3	2	0.1	7790
TM	DH05-12	25819	A506765	14.45	14.85	0.4	Vein	Ore LG	Ore	0.12	4.1	2	0.2	10000
TM	DH05-12	25822	A506765	15.9	16.2	0.3	Granodiorite	Waste Granodic	FW	0.16	3.7	2	0.4	3107
TM	DH05-12	25823	A506765	16.2	17.7	1.5	Granodiorite	Waste Granodic	FW	0.25	6.5	2	1.2	4534
TM	DH05-12	25824	A506765	17.7	19.05	1.35	Granodiorite	Waste Granodic	FW	0.16	5.5	3	0.1	2906
TM	DH05-14	25861	A506765	8.35	9.85	1.5	Granodiorite	Waste Granodic	HW	0.13	4.8	2	0.5	548
TM	DH05-14	25864	A506765	11.35	12.85	1.5	Granodiorite	Waste Granodic	HW	0.13	5.1	3	0.2	382
TM	DH05-14	25866	A506765	14	15.2	1.2	Granodiorite	Waste Granodic	HW	0.15	8.5	2	0.2	1730
TM	DH05-14	25867	A506765	15.2	16.3	1.1	Granodiorite	Ore LG	Ore	0.15	9.9	2	0.3	1168
TM	DH05-14	25870	A506765	18.3	20	1.7	Granodiorite	Waste Granodic	InterOre	0.12	9.4	2	0.2	8672
TM	DH05-14	25873	A506765	22.45	23.15	0.7	Granodiorite	Waste Granodic	InterOre	0.15	6.2	2	0.5	2404
TM	DH05-14	25877	A506765	23.65	23.95	0.3	Granodiorite	Waste Granodic	FW	0.16	7.1	2	0.3	2929
TM	DH05-14	25878	A506765	23.95	24.95	1	Granodiorite	Waste Granodic	FW	0.16	10.6	2	0.4	2452
TM	DH07-01	305901	/AN0700038	24.1	24.8	0.7	Granodiorite	Waste Granodic	HW	0.18	6.6	2	0.4	1319
TM	DH07-01	305903	/AN0700038	25.8	26.5	0.7	Granodiorite	Waste Granodic	HW	0.18	7	2	0.5	1392
TM	DH07-01	305904	/AN0700038	26.5	27.5	1	Granodiorite	Waste Granodic	HW	0.16	4.6	2	0.9	1160
TM	DH07-01	305906	/AN0700038	31.9	32.9	1	Granodiorite	Waste Granodic	HW	0.16	3.8	2	0.3	10000
TM	DH07-01	305907	/AN0700038	32.9	33.5	0.6	Granodiorite	Waste Granodic	HW	0.19	4.9	2	0.5	1860
TM	DH07-01	305908	/AN0700038	33.5	34.2	0.7	Vein	Ore HG	Ore	0.24	3.2	2	62.8	10000
TM	DH07-01	305911	/AN0700038	34.8	35.7	0.9	Granodiorite	Waste Granodic	FW	0.11	4.7	2	0.4	2320
TM	DH07-03	305938	/AN0700038	16	17	1	Granodiorite	Waste Granodic	HW	0.17	7.3	2	0.3	1410
TM	DH07-03	305941	/AN0700038	20	21	1	Granodiorite	Waste Granodic	HW	0.18	5	2	0.3	964
TM	DH07-03	305942	/AN0700038	22	23	1	Granodiorite	Waste Granodic	HW	0.21	4.2	2	0.3	1555
TM	DH07-03	305943	/AN0700038	24.5	25.5	1	Granodiorite	Waste Granodic	HW	0.19	10.3	2	0.5	2221
TM	DH07-03	305944	/AN0700038	25.5	26.4	0.9	Granodiorite	Ore LG	Ore	0.16	5.8	2	0.4	507
TM	DH07-03	305946	/AN0700038	26.4	27	0.6	Granodiorite	Waste Granodic	InterOre	0.16	7.6	2	0.3	10000
TM	DH07-03	305954	/AN0700038	30.5	31.15	0.65	Vein	Ore HG	Ore	0.44	2.7	2	9.4	10000
TM	DH07-03	305956	/AN0700038	31.15	31.5	0.35	Granodiorite	Waste Granodic	FW	0.16	8.7	2	0.3	2917
TM	DH07-03	305957	/AN0700038	31.5	32.5	1	Granodiorite	Waste Granodic	FW	0.17	8.5	2	0.4	3859
TM	DH07-04	305981	/AN0700038	30.8	31.8	1	Granodiorite	Waste Granodic	HW	0.14	11.9	2	0.3	672
TM	DH07-04	305984	/AN0700038	33.8	34.7	0.9	Granodiorite	Waste Granodic	HW	0.19	6.8	2	0.3	10000
TM	DH07-04	305986	/AN0700038	34.7	35.7	1	Granodiorite	Waste Granodic	HW	0.18	7.5	2	0.3	10000
TM	DH07-04	305988	/AN0700038	36.7	37.9	1.2	Andesite	Waste Andesite	HW	0.13	23.7	80	0.3	9796
TM	DH07-04	305991	/AN0700038	38.5	39.2	0.7	Granodiorite	Waste Granodic	InterOre	0.18	7	2	0.3	1800
TM	DH07-04	305996	/AN0700038	41	41.6	0.6	Granodiorite	Waste Granodic	FW	0.17	6.4	2	0.4	6419
TM	DH07-04	305997	/AN0700038	41.6	42.6	1	Granodiorite	Waste Granodic	FW	0.17	6.3	2	0.2	6067
TM	DH07-04	305998	/AN0700038	42.6	43.6	1	Granodiorite	Waste Granodic	FW	0.17	11.1	4	0.1	6064

Appendix II
Static Test Results and Statistical Summary
C. TM Zone Mjr Elmt All Data

										16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16

Appendix II
Static Test Results and Statistical Summary
C. TM Zone Mjr Elmt All Data

N	16	16	16	16
Min	5	1	2.1	48.54
Max	23	19	17.4	99.86
Mean	16	5	5.9	95.07
Geometric Mean	15	4	4.8	93.93
Median	16	4	4.6	98.41
Std Dev	5	5	4.5	12.52
Geometric Std Dev	1	2	1.8	1.19
1st Quartile	15	4	3.3	97.46
3rd Quartile	19	4	5.5	99.17
5% percentile	8	2	2.4	82.16
95% percentile	22	16	15.8	99.79
98% percentile	23	18	16.8	99.83
99% percentile	23	18	17.1	99.85
99.9%percentile	23	19	17.4	99.86

Zone	Drillhole	Sample#	Cert#	From	To	Interval	Lithology	Rock Mgmt Unit	Mine Zone	Nb_ppm Sc_ppm		LOI_%	SUM_%
										_ME	ME		
TM	DH05-11	25933	A506765	7.7	8.8	1.1	Granodiorite	Waste Granod	HW	20	4	2.1	99.77
TM	DH05-11	25938	A506765	16.2	17.7	1.5	Granodiorite	Waste Granod	HW	19	4	2.5	99.86
TM	DH05-11	25944	A506765	21.5	22.3	0.8	Vein	Ore LG	Ore	15	15	15.3	96.23
TM	DH05-11	25948	A506765	24.7	26.7	2	Granodiorite	Waste Granod	InterOre	16	4	2.9	99.53
TM	DH05-12	25819	A506765	14.45	14.85	0.4	Vein	Ore LG	Ore	9	2	3.7	93.36
TM	DH05-12	25823	A506765	16.2	17.7	1.5	Granodiorite	Waste Granod	FW	15	4	4.4	99.39
TM	DH05-14	25870	A506765	18.3	20	1.7	Granodiorite	Waste Granod	InterOre	22	4	2.5	98.91
TM	DH07-01	305903	/AN0700038	25.8	26.5	0.7	Granodiorite	Waste Granod	HW	16	4	3.4	99.09
TM	DH07-03	305943	/AN0700038	24.5	25.5	1	Granodiorite	Waste Granod	HW	15	4	4.8	99.1
TM	DH07-03	305946	/AN0700038	26.4	27	0.6	Granodiorite	Waste Granod	InterOre	13	4	4.4	97.94
TM	DH07-03	305954	/AN0700038	30.5	31.15	0.65	Vein	Ore HG	Ore	5	1	9.3	48.54
TM	DH07-04	305984	/AN0700038	33.8	34.7	0.9	Granodiorite	Waste Granod	HW	13	3	4.8	96.86
TM	DH07-04	305986	/AN0700038	34.7	35.7	1	Granodiorite	Waste Granod	HW	21	4	5.5	97.66
TM	DH07-04	305988	/AN0700038	36.7	37.9	1.2	Andesite	Waste Andesite	HW	23	19	17.4	98.06
TM	DH07-04	305996	/AN0700038	41	41.6	0.6	Granodiorite	Waste Granod	FW	17	3	5.5	98.44
TM	DH07-04	305997	/AN0700038	41.6	42.6	1	Granodiorite	Waste Granod	FW	16	4	5.4	98.38

Appendix II
Static Test Results and Statistical Summary
D. TM Zone ABA All Data

N	21	21	21	21	21	21	21	21	21	21
Min	6.65	0.03	0.7	0.02	0.01	0.02	0.6	2.8	-506.0	0.0
Max	8.93	4.53	103.0	16.30	0.02	16.28	508.8	44.8	39.8	9.0
Mean	7.71	1.81	41.1	1.17	0.01	1.17	36.6	11.5	-25.0	2.6
Geometric Mean	7.68	1.17	26.7	0.26	0.01	0.26	8.0	8.6		1.1
Median	7.68	1.38	31.4	0.23	0.01	0.23	7.2	6.9	0.8	1.1
Std Dev	0.61	1.33	30.3	3.53	0.00	3.53	110.2	10.6	113.1	2.7
Geometric Std Dev	1.08	3.33	3.3	4.40	1.23	4.40	4.4	2.1		6.3
1st Quartile	7.46	0.80	18.2	0.12	0.01	0.12	3.8	5.1	-5.5	0.5
3rd Quartile	7.90	2.69	61.1	0.33	0.01	0.33	10.3	15.9	9.5	4.8
5% percentile	6.65	0.16	3.6	0.04	0.01	0.04	1.3	2.9	-94.5	0.0
95% percentile	8.75	3.83	87.0	3.15	0.02	3.13	97.8	32.8	25.6	6.6
98% percentile	8.86	4.25	96.6	11.04	0.02	11.02	344.4	40.0	34.1	8.0
99% percentile	8.89	4.39	99.8	13.67	0.02	13.65	426.6	42.4	37.0	8.5
99.9%percentile	8.93	4.52	102.6	16.04	0	16.02	500.5	44.6	39.5	8.9

Zone	Drillhole	Sample#	Cert#	From	To	Interval	Lithology	Rock Mgmt Unit	Mine Zone	Paste pH	CO2 (%)	CO ₂ -NP (kg CaCO ₃ /t)	Stotal (%)	SO4 (%)	S2- (%)	AP (kg CaCO ₃ /t)	NP (kg CaCO ₃ /t)	NNP (kg CaCO ₃ /t)	NP:AP	Fizz Test
TM	DH05-11	25933	A506765	7.7	8.8	1.1	Granodiorite	Waste Granod	HW	7.74	0.03	0.7	0.02	0.01	0.02	0.6	2.9	2.9	4.8	None
TM	DH05-11	25938	A506765	16.2	17.7	1.5	Granodiorite	Waste Granod	HW	8.64	0.98	22.3	0.22	0.01	0.22	6.9	16.4	9.5	2.4	Slight
TM	DH05-11	25944	A506765	21.5	22.3	0.8	Vein	Ore LG	Ore	7.34	1.93	43.9	0.08	0.01	0.08	2.5	16.4	13.9	6.6	Slight
TM	DH05-11	25948	A506765	24.7	26.7	2	Granodiorite	Waste Granod	InterOre	8.42	1.38	31.4	0.07	0.01	0.07	2.2	13.4	11.2	6.1	Slight
TM	DH05-12	25819	A506765	14.45	14.85	0.4	Vein	Ore LG	Ore	6.65	0.72	16.4	3.15	0.02	3.13	97.8	3.3	-94.5	0.0	None
TM	DH05-12	25823	A506765	16.2	17.7	1.5	Granodiorite	Waste Granod	FW	7.06	2.69	61.1	0.2	0.01	0.2	6.3	7.0	0.8	1.1	Slight
TM	DH05-14	25866	A506765	14	15.2	1.2	Granodiorite	Waste Granod	HW	7.46	0.45	10.2	0.33	0.01	0.33	10.3	4.8	-5.5	0.5	None
TM	DH05-14	25870	A506765	18.3	20	1.7	Granodiorite	Waste Granod	InterOre	7.56	0.8	18.2	0.05	0.01	0.05	1.6	5.1	3.5	3.3	Slight
TM	DH07-01	305903	/AN0700038	25.8	26.5	0.7	Granodiorite	Waste Granod	HW	7.58	1.6	36.4	0.31	0.01	0.31	9.7	6.8	-2.9	0.7	Slight
TM	DH07-01	305906	/AN0700038	31.9	32.9	1	Granodiorite	Waste Granod	HW	8.02	1.3	29.5	0.27	0.01	0.27	8.4	8.5	0.1	1.0	Slight
TM	DH07-01	305911	/AN0700038	34.8	35.7	0.9	Granodiorite	Waste Granod	FW	7.05	1	22.7	0.23	0.01	0.23	7.2	5.0	-2.2	0.7	Slight
TM	DH07-03	305942	/AN0700038	22	23	1	Granodiorite	Waste Granod	HW	7.90	0.16	3.6	0.04	0.01	0.04	1.3	6.5	5.3	5.2	None
TM	DH07-03	305943	/AN0700038	24.5	25.5	1	Granodiorite	Waste Granod	HW	7.68	3.22	73.2	0.26	0.01	0.26	8.1	5.8	-2.3	0.7	Slight
TM	DH07-03	305946	/AN0700038	26.4	27	0.6	Granodiorite	Waste Granod	InterOre	7.62	2.43	55.2	0.53	0.01	0.53	16.6	6.5	-10.1	0.4	Slight
TM	DH07-03	305954	/AN0700038	30.5	31.15	0.65	Vein	Ore HG	Ore	6.65	1.1	25.0	16.3	0.02	16.28	508.8	2.8	-506.0	0.0	Slight
TM	DH07-03	305957	/AN0700038	31.5	32.5	1	Granodiorite	Waste Granod	FW	8.93	3.27	74.3	0.23	0.01	0.23	7.2	32.8	25.6	4.6	Slight
TM	DH07-04	305984	/AN0700038	33.8	34.7	0.9	Granodiorite	Waste Granod	HW	7.52	2.34	53.2	1.04	0.01	1.03	32.2	6.9	-25.3	0.2	Slight
TM	DH07-04	305986	/AN0700038	34.7	35.7	1	Granodiorite	Waste Granod	HW	7.68	3.83	87.0	0.77	0.01	0.77	24.1	9.9	-14.2	0.4	Slight
TM	DH07-04	305988	/AN0700038	36.7	37.9	1.2	Andesite	Waste Andesite	HW	7.88	0.36	8.2	0.12	0.01	0.12	3.8	21.0	17.3	5.6	None
TM	DH07-04	305996	/AN0700038	41	41.6	0.6	Granodiorite	Waste Granod	FW	7.73	4.53	103.0	0.27	0.01	0.27	8.4	15.9	7.5	1.9	Slight
TM	DH07-04	305997	/AN0700038	41.6	42.6	1	Granodiorite	Waste Granod	FW	8.75	3.83	87.0	0.16	0.01	0.16	5.0	44.8	39.8	9.0	Slight

Appendix II
Static Test Results and Statistical Summary
E. S Zone ICP All Data

N	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17
Min	222	0.08	0.5	0.2	20	9.9	0.03	0.02	0.17	0.7	0.6	3	0.57	0.4	5	
Max	100000	0.71	185.8	608.9	20	70.2	11.03	1.33	19.60	3.8	8.2	5190	3.38	3.2	83	
Mean	8791	0.44	19.1	36.8	20	30.3	0.74	0.50	6.05	2.7	4.6	317	2.02	1.6	13	
Geometric Mean	2134	0.39	5.02	1.1	20	26.5	0.11	0.33	3.86	2.5	4.1	15	1.83	1.5	9	
Median	1752	0.39	5.0	0.9	20	27.6	0.10	0.40	4.73	2.7	4.2	11	1.82	1.5	8	
Std Dev	23879	0.17	46.7	147.4	0	16.2	2.65	0.39	5.18	0.8	1.9	1256	0.83	0.7	18	
Geometric Std Dev	4	1.68	4.0	6.2	1	1.7	3.73	2.95	3.18	1.5	1.8	5	1.62	1.6	2	
1st Quartile	932	0.33	2.6	0.5	20	17.8	0.06	0.23	1.83	2.3	3.7	7	1.35	1.2	5	
3rd Quartile	4017	0.56	6.7	1.7	20	35.1	0.12	0.70	8.54	3.2	5.0	13	2.72	1.8	12	
5% percentile	423	0.21	1.1	0.2	20	10.1	0.03	0.07	0.86	1.7	2.4	4	0.83	0.7	5	
95% percentile	34442	0.65	100.9	124.4	20	61.9	2.43	1.31	14.55	3.7	8.1	1062	3.14	3.0	29	
98% percentile	73777	0.69	151.8	415.1	20	66.9	7.59	1.32	17.58	3.8	8.2	3539	3.28	3.1	61	
99% percentile	86888	0.70	168.8	512.0	20	68.5	9.31	1.33	18.59	3.8	8.2	4364	3.33	3.2	72	
99.9%percentile	98689	0.71	184.1	599.2	20	70.0	10.86	1.33	19.50	3.8	8.2	5107	3.38	3.2	82	

Zone	Drillhole	Sample#	Cert#	From	To	Interval	Lithology	Rock Mgmt Uni	Mine Zone	Ag_ppb	Al_%	As_ppm	Au_ppb	B_ppm	Ba_ppm	Bi_ppm	Ca_%	Cd_ppm	Co_ppm	Cr_ppm	Cu_ppm	Fe_%	Ga_ppm	Hg_ppb
S	DH05-01	25501	A506163R	10.75	11.5	0.75	Granodiorite	/asteGranodiorit	UHW	932	0.31	6.7	0.5	20	17	0.18	0.09	1.03	1.9	4.2	28.7	0.57	0.8	5
S	DH05-01	25507	A506163R	15.5	17	1.5	Granodiorite	/asteGranodiorit	UHW	487	0.64	3	0.9	20	29.9	0.28	0.28	1.83	2.6	4.8	12.98	1.35	2.2	5
S	DH05-01	25513	A506163R	23.64	26.6	2.96	Granodiorite	/asteGranodiorit	HW	6280	0.24	6.1	1.7	20	17.8	0.1	0.08	13.29	2.4	4	27.6	1.81	0.9	5
S	DH05-01	25517	A506163R	30.13	30.21	0.08	Vein	OreHG	Ore	100000	0.08	185.8	608.9	20	9.9	11.03	0.02	19.6	0.7	0.6	5189.89	2.99	0.4	83
S	DH05-01	25520	A506163R	31.86	33.1	1.24	Granodiorite	/asteGranodiorit	FW	1432	0.63	1.2	1.1	20	35.1	0.11	0.6	1.18	2.3	8.1	8.02	1.28	2.4	9
S	DH05-01	25522	A506163R	34.6	36.1	1.5	Granodiorite	/asteGranodiorit	FW	1602	0.56	79.7	1.9	20	33.4	0.06	0.26	4.73	2.7	7.1	12.37	2.97	1.8	5
S	DH05-02	25537	A506163R	17.59	18.34	0.75	Granodiorite	/asteGranodiorit	HW	473	0.56	6.9	3.3	20	28.2	0.08	0.45	4.75	3.3	3.5	7.36	1.52	1.5	5
S	DH05-02	25539	A506163R	22.87	23.47	0.60	Granodiorite	/asteGranodiorit	InterOre	3085	0.3	5	2.2	20	10.2	0.03	0.22	10	1.9	2.8	3.99	2.72	1.2	15
S	DH05-02	25541	A506376R	23.92	24.7	0.78	Granodiorite	/asteGranodiorit	FW	18052	0.55	5.3	0.5	20	27.3	0.08	0.34	12.09	2.9	3	30.6	0.89	1.6	15
S	DH05-02	25542	A506376R	24.7	26.2	1.5	Granodiorite	/asteGranodiorit	FW	2354	0.44	3.3	0.2	20	43.4	0.17	0.7	4.53	2	4.2	11.32	1.34	1.4	6
S	DH05-03	25556	A506376R	14.34	15.14	0.8	Granodiorite	/asteGranodiorit	UHW	5106	0.36	5.1	0.9	20	39.5	0.06	0.48	6.37	2.5	5	12.63	2.58	1.3	8
S	DH05-03	25560	A506376R	22.75	24.25	1.5	Granodiorite	/asteGranodiorit	FW	1752	0.71	0.5	0.2	20	59.8	0.03	0.8	3.64	3	4.9	5.06	1.6	2.9	5
S	DH06-02	308551	A607391R	39.00	39.80	0.80	Granodiorite	/asteGranodiorit	HW	1180	0.36	2	1.2	20	25.3	0.05	0.4	4.38	3.2	5	6.75	3.38	1.6	6
S	DH06-02	308553	A607391R	40.3	41.4	1.10	Granodiorite	/asteGranodiorit	InterOre	1944	0.33	6.9	0.7	20	16.7	0.1	0.23	8.54	3.4	3.7	9.72	3.08	1.7	12
S	DH06-02	308555	A607391R	41.60	42.80	1.20	Granodiorite	/asteGranodiorit	FW	534	0.34	3.2	0.3	20	23.2	0.07	1.33	1.82	3.2	4	3.49	2.17	1.1	11
S	DH06-02	308560	A607391R	72.20	73.20	1.00	Granodiorite	/asteGranodiorit	FW	4017	0.39	2.6	0.7	20	27.6	0.11	1.31	4.83	3.8	4.3	10.8	2.23	1.5	13
S	DH06-02	308561	A607391R	73.20	74.20	1.00	Granodiorite	/asteGranodiorit	FW	222	0.6	2.1	0.3	20	70.2	0.12	0.86	0.17	3.7	8.2	6.85	1.82	3.2	8

Appendix II
 Static Test Results and Statistical Summary
 E. S Zone ICP All Data

N	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17
Min	0.08	0.7	0.01	373	0.56	0.001	0.2	0.005	21	0.02	0.18	0.4	0.1	1.2	0.02	
Max	0.32	46.1	0.34	10000	21.73	0.036	1.8	0.070	10000	9.57	2000.00	2.6	0.4	70.8	0.04	
Mean	0.21	31.0	0.15	3224	4.93	0.007	1.1	0.053	956	0.75	120.30	1.7	0.2	22.6	0.02	
Geometric Mean	0.20	25.1	0.10	1673	2.90	0.005	1.0	0.046	231	0.12	2.17	1.6	0.2	15.6	0.02	
Median	0.20	32.8	0.13	884	2.31	0.004	1.1	0.060	169	0.10	1.32	1.8	0.1	15.0	0.02	
Std Dev	0.06	12.0	0.10	3420	5.96	0.008	0.4	0.019	2366	2.31	484.40	0.6	0.1	19.4	0.01	
Geometric Std Dev	1.43	2.7	2.87	3	2.82	2.366	1.7	1.980	5	4.57	8.18	1.6	1.6	2.7	1.28	
1st Quartile	0.18	25.4	0.10	580	1.78	0.003	0.9	0.051	66	0.05	0.67	1.7	0.1	11.0	0.02	
3rd Quartile	0.25	38.1	0.24	4787	3.80	0.007	1.2	0.065	822	0.14	3.84	2.0	0.2	25.9	0.02	
5% percentile	0.10	9.9	0.01	379	0.58	0.002	0.4	0.014	26	0.02	0.32	0.6	0.1	4.5	0.02	
95% percentile	0.30	45.0	0.30	10000	16.56	0.018	1.8	0.068	3004	3.42	412.77	2.5	0.3	58.0	0.04	
98% percentile	0.31	45.7	0.32	10000	19.66	0.029	1.8	0.069	7202	7.11	1365.11	2.6	0.4	65.7	0.04	
99% percentile	0.32	45.9	0.33	10000	20.70	0.032	1.8	0.070	8601	8.34	1682.55	2.6	0.4	68.2	0.04	
99.9%percentile	0.32	46.1	0.34	10000	21.63	0.036	1.8	0.070	9860	9.45	1968.26	2.6	0.4	70.5	0.04	

Zone	Drillhole	Sample#	Cert#	From	To	Interval	Lithology	Rock Mgmt Uni	Mine Zone	K_ %	La_ppm	Mg_ %	Mn_ppm	Mo_ppm	Na_ %	Ni_ppm	P_ %	Pb_ppm	S_ %	Sb_ppm	Sc_ppm	Se_ppm	Sr_ppm	Te_ppm
S	DH05-01	25501	A506163R	10.75	11.5	0.75	Granodiorite	/asteGranodiorit	UHW	0.11	12.2	0.03	594	21.73	0.004	1.6	0.016	53.07	0.02	0.67	0.6	0.1	7.2	0.02
S	DH05-01	25507	A506163R	15.5	17	1.5	Granodiorite	/asteGranodiorit	UHW	0.17	38.1	0.13	513	5.22	0.007	1.2	0.057	27.29	0.02	0.49	1.8	0.1	13.8	0.02
S	DH05-01	25513	A506163R	23.64	26.6	2.96	Granodiorite	/asteGranodiorit	HW	0.2	21.6	0.01	4755	15.27	0.002	0.8	0.029	1052.2	0.1	2.91	1.1	0.1	19.6	0.02
S	DH05-01	25517	A506163R	30.13	30.21	0.08	Vein	OreHG	Ore	0.08	0.7	0.01	2471	0.59	0.001	0.2	0.005	10000	9.57	2000	0.4	0.3	1.2	0.04
S	DH05-01	25520	A506163R	31.86	33.1	1.24	Granodiorite	/asteGranodiorit	FW	0.18	30.5	0.29	373	2.26	0.01	0.9	0.047	94	0.08	0.75	1.7	0.1	18.4	0.03
S	DH05-01	25522	A506163R	34.6	36.1	1.5	Granodiorite	/asteGranodiorit	FW	0.19	20.6	0.1	566	3.73	0.005	1.8	0.051	168.71	1.88	4.29	1.5	0.1	11	0.02
S	DH05-02	25537	A506163R	17.59	18.34	0.75	Granodiorite	/asteGranodiorit	HW	0.18	31.7	0.11	580	2.29	0.003	1.1	0.063	37.29	0.08	1.32	1.8	0.1	18.3	0.02
S	DH05-02	25539	A506163R	22.87	23.47	0.60	Granodiorite	/asteGranodiorit	InterOre	0.21	25.4	0.1	7421	2.31	0.002	0.5	0.056	1254.69	0.17	2.18	1.8	0.2	5.3	0.02
S	DH05-02	25541	A506376R	23.92	24.7	0.78	Granodiorite	/asteGranodiorit	FW	0.13	35.7	0.07	884	1.59	0.005	1.2	0.065	90.19	0.1	15.96	2.6	0.1	14.7	0.02
S	DH05-02	25542	A506376R	24.7	26.2	1.5	Granodiorite	/asteGranodiorit	FW	0.19	34.1	0.14	659	1.78	0.004	1	0.07	65.73	0.07	7.99	2	0.2	25.9	0.02
S	DH05-03	25556	A506376R	14.34	15.14	0.8	Granodiorite	/asteGranodiorit	UHW	0.27	32.2	0.11	6312	3.74	0.002	0.9	0.061	758.03	0.14	0.7	1.9	0.4	14.4	0.02
S	DH05-03	25560	A506376R	22.75	24.25	1.5	Granodiorite	/asteGranodiorit	FW	0.23	40.8	0.25	774	0.87	0.013	0.9	0.066	160.45	0.05	3.84	2.4	0.2	34.1	0.02
S	DH06-02	308551	A607391R	39.00	39.80	0.80	Granodiorite	/asteGranodiorit	HW	0.32	32.8	0.16	10000	2.72	0.003	1.2	0.06	558.43	0.12	0.36	2	0.1	15	0.02
S	DH06-02	308553	A607391R	40.3	41.4	1.10	Granodiorite	/asteGranodiorit	InterOre	0.29	36.5	0.15	10000	2.23	0.003	1.2	0.06	843.78	0.19	1.73	1.9	0.2	7.2	0.02
S	DH06-02	308555	A607391R	41.60	42.80	1.20	Granodiorite	/asteGranodiorit	FW	0.25	43.6	0.24	4787	0.56	0.005	1.2	0.063	236.56	0.05	0.18	2	0.1	70.8	0.02
S	DH06-02	308560	A607391R	72.20	73.20	1.00	Granodiorite	/asteGranodiorit	FW	0.25	46.1	0.24	3740	3.8	0.011	0.8	0.068	822.16	0.13	1.12	1.7	0.3	51.7	0.03
S	DH06-02	308561	A607391R	73.20	74.20	1.00	Granodiorite	/asteGranodiorit	FW	0.26	44.7	0.34	381	13.11	0.036	1.8	0.065	20.99	0.04	0.67	2.5	0.2	54.8	0.04

Appendix II
 Static Test Results and Statistical Summary
 E. S Zone ICP All Data

N	17	17	17	17	17	17	17
Min	2.1	0.001	0.09	2.6	2	0.1	70
Max	21.4	0.031	0.60	8.5	17	0.5	4340
Mean	15.0	0.004	0.24	5.7	7	0.2	1749
Geometric Mean	13.7	0.002	0.22	5.5	5	0.2	1271
Median	14.4	0.001	0.23	5.6	6	0.2	1407
Std Dev	4.5	0.007	0.12	1.5	5	0.1	1259
Geometric Std Dev	1.7	2.896	1.57	1.3	2	1.7	3
1st Quartile	13.6	0.001	0.18	4.7	3	0.1	925
3rd Quartile	16.7	0.002	0.26	6.3	9	0.3	2086
5% percentile	9.2	0.001	0.11	3.8	2	0.1	422
95% percentile	21.2	0.014	0.43	8.3	16	0.5	4179
98% percentile	21.3	0.024	0.53	8.4	17	0.5	4275
99% percentile	21.4	0.028	0.57	8.5	17	0.5	4308
99.9%percentile	21.4	0.031	0.60	8.5	17	0.5	4337

Zone	Drillhole	Sample#	Cert#	From	To	Interval	Lithology	Rock Mgmt Uni	Mine Zone	Th_ppm	Ti_%	Ti_ppm	U_ppm	V_ppm	W_ppm	Zn_ppm
S	DH05-01	25501	A506163R	10.75	11.5	0.75	Granodiorite	/asteGranodiorit	UHW	11.7	0.001	0.09	5.3	2	0.2	510.6
S	DH05-01	25507	A506163R	15.5	17	1.5	Granodiorite	/asteGranodiorit	UHW	16.7	0.005	0.14	7.6	10	0.3	920.2
S	DH05-01	25513	A506163R	23.64	26.6	2.96	Granodiorite	/asteGranodiorit	HW	13.8	0.001	0.2	8.3	2	0.2	2717.5
S	DH05-01	25517	A506163R	30.13	30.21	0.08	Vein	OreHG	Ore	2.1	0.001	0.6	2.6	2	0.1	1049.8
S	DH05-01	25520	A506163R	31.86	33.1	1.24	Granodiorite	/asteGranodiorit	FW	16.3	0.008	0.12	6.2	10	0.1	567.6
S	DH05-01	25522	A506163R	34.6	36.1	1.5	Granodiorite	/asteGranodiorit	FW	14.2	0.002	0.29	6.5	6	0.2	1406.8
S	DH05-02	25537	A506163R	17.59	18.34	0.75	Granodiorite	/asteGranodiorit	HW	14.4	0.001	0.24	4.9	5	0.3	1646.6
S	DH05-02	25539	A506163R	22.87	23.47	0.60	Granodiorite	/asteGranodiorit	InterOre	11	0.001	0.23	4.1	5	0.2	4138.4
S	DH05-02	25541	A506376R	23.92	24.7	0.78	Granodiorite	/asteGranodiorit	FW	13.6	0.001	0.19	6.3	9	0.3	4340
S	DH05-02	25542	A506376R	24.7	26.2	1.5	Granodiorite	/asteGranodiorit	FW	16.6	0.002	0.14	5.3	6	0.5	1178.3
S	DH05-03	25556	A506376R	14.34	15.14	0.8	Granodiorite	/asteGranodiorit	UHW	12.4	0.001	0.39	8.5	7	0.3	2085.6
S	DH05-03	25560	A506376R	22.75	24.25	1.5	Granodiorite	/asteGranodiorit	FW	16.5	0.01	0.18	6.2	16	0.1	1012.3
S	DH06-02	308551	A607391R	39.00	39.80	0.80	Granodiorite	/asteGranodiorit	HW	14.3	0.001	0.26	5.6	4	0.2	1958.4
S	DH06-02	308553	A607391R	40.3	41.4	1.10	Granodiorite	/asteGranodiorit	InterOre	17.6	0.001	0.25	4.7	3	0.5	3544.4
S	DH06-02	308555	A607391R	41.60	42.80	1.20	Granodiorite	/asteGranodiorit	FW	20.4	0.001	0.23	4.6	2	0.1	924.7
S	DH06-02	308560	A607391R	72.20	73.20	1.00	Granodiorite	/asteGranodiorit	FW	21.4	0.001	0.31	6	6	0.1	1668.9
S	DH06-02	308561	A607391R	73.20	74.20	1.00	Granodiorite	/asteGranodiorit	FW	21.2	0.031	0.24	4.5	17	0.2	69.9

Appendix II
Static Test Results and Statistical Summary
F. S Zone Mjr Elmt All Data

N	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Min	67.09	13.16	1.22	0.23	0.13	0.03	3.91	0.16	0.08	0.08	0.001	237	5	13	70	15	18	3	2.7	99.37
Max	75.75	13.58	5.82	0.68	2.01	0.44	5.63	0.35	0.16	1.59	0.001	880	8	134	154	26	30	5	5.6	99.90
Mean	70.95	13.37	3.99	0.40	0.64	0.17	4.47	0.29	0.13	0.71	0.001	495	6	57	129	19	23	5	4.5	99.69
Geometric Mean	70.88	13.37	3.59	0.37	0.42	0.10	4.43	0.28	0.12	0.43	0.001	429	6	43	124	19	22	4	4.3	99.68
Median	70.08	13.38	4.33	0.38	0.44	0.11	4.30	0.33	0.15	0.70	0.001	392	5	40	146	17	22	5	5.0	99.71
Std Dev	3.43	0.19	1.60	0.17	0.70	0.17	0.63	0.08	0.03	0.58	0.000	290	1	45	35	4	4	1	1.3	0.19
Geometric Std Dev	1.05	1.01	1.76	1.54	2.66	3.25	1.14	1.37	1.35	3.64	1.000	2	1	2	1	1	1	1	1.4	1.00
1st Quartile	68.60	13.20	3.48	0.26	0.23	0.04	4.04	0.26	0.10	0.24	0.001	262	5	29	113	17	20	4	3.5	99.61
3rd Quartile	73.46	13.53	4.85	0.49	0.60	0.28	4.61	0.35	0.15	1.01	0.001	737	7	76	152	20	23	5	5.6	99.82
5% percentile	67.43	13.16	1.75	0.23	0.14	0.03	3.93	0.18	0.08	0.08	0.001	238	5	17	78	16	19	3	2.8	99.42
95% percentile	75.37	13.57	5.59	0.64	1.67	0.41	5.39	0.35	0.16	1.47	0.001	868	8	122	154	25	28	5	5.6	99.89
98% percentile	75.60	13.58	5.73	0.66	1.87	0.43	5.54	0.35	0.16	1.54	0.001	875	8	129	154	26	29	5	5.6	99.90
99% percentile	75.67	13.58	5.77	0.67	1.94	0.43	5.58	0.35	0.16	1.57	0.001	878	8	132	154	26	30	5	5.6	99.90
99.9%percentile	75.74	13.58	5.82	0.68	2	0.44	5.63	0.35	0.16	1.59	0.001	880	8	134	154	26	30	5	5.6	99.90

Zone	Drillhole	Sample#	Cert#	From	To	Interval	Lithology	Rock Mgmt	Uni	Mine Zone	SiO2_	Al2O3_	Fe2O3	MgO_	Na2O_		TiO2_	P2O5_	MnO_	Cr2O3_	Ba_pp	Ni_ppm	Sr_ppm	Zr_ppm	Y_ppm	Nb_pp	Sc_pp	LOI_%	SUM_	
											%	%	%	%	CaO_%	%	K2O_%	%	%	%	m_ME	_ME	_ME	m_ME	_ME	m_ME	_ME			
S	DH05-01	25501	A506163F	10.75	11.5	0.75	Granodiorite	/asteGranodioriti		UHW	75.75	13.55	1.22	0.23	0.18	0.18	5.63	0.16	0.08	0.09	0.001	454	7	50	70	21	30	3	2.7	99.85
S	DH05-01	25513	A506163F	23.64	26.6	2.96	Granodiorite	/asteGranodioriti		HW	74.24	13.16	3.35	0.23	0.13	0.04	4.22	0.24	0.09	0.72	0.001	237	5	30	103	26	18	4	3.1	99.57
S	DH05-01	25522	A506163F	34.6	36.1	1.5	Granodiorite	/asteGranodioriti		FW	71.13	13.28	4.88	0.4	0.51	0.44	3.91	0.31	0.14	0.08	0.001	831	8	84	142	15	20	5	4.5	99.71
S	DH05-02	25539	A506163F	22.87	23.47	0.60	Granodiorite	/asteGranodioriti		InterOre	69.03	13.58	4.77	0.36	0.36	0.03	3.98	0.34	0.16	1.1	0.001	240	5	13	153	17	21	5	5.6	99.37
S	DH06-02	308551	A607391F	39.00	39.80	0.80	Granodiorite	/asteGranodioriti		HW	67.09	13.47	5.82	0.52	0.63	0.04	4.38	0.35	0.15	1.59	0.001	329	5	28	154	17	23	5	5.6	99.71
S	DH06-02	308555	A607391F	41.60	42.80	1.20	Granodiorite	/asteGranodioriti		FW	68.45	13.17	3.88	0.68	2.01	0.31	4.68	0.35	0.15	0.68	0.001	880	5	134	150	17	23	5	5.4	99.9

Appendix II
Static Test Results and Statistical Summary
G. S Zone ABA All Data

N	10	10	10	10	10	10	10	10	10	10
Min	5.80	0.04	0.9	0.04	0.01	0.04	1.3	-5.4	-292.0	0.0
Max	8.41	4.15	94.3	9.74	0.57	9.17	286.6	41.4	38.6	14.7
Mean	7.38	1.92	43.6	1.26	0.07	1.20	37.4	10.6	-26.8	3.1
Geometric Mean	7.34	0.89	20.2	0.24	0.02	0.23	7.2	0.0	0.0	0.1
Median	7.44	1.69	38.4	0.15	0.01	0.14	4.4	9.0	3.4	1.8
Std Dev	0.78	1.68	38.2	3.03	0.18	2.85	89.1	12.5	95.7	4.3
Geometric Std Dev	1.12	5.26	5.3	5.09	3.62	5.11	5.1	1.0	1.0	3.2
1st Quartile	7.23	0.38	8.6	0.11	0.01	0.10	3.0	3.7	0.7	1.3
3rd Quartile	7.92	3.44	78.1	0.20	0.03	0.20	6.3	12.9	8.4	3.0
5% percentile	6.10	0.07	1.6	0.06	0.01	0.06	1.8	-1.9	-183.6	0.0
95% percentile	8.29	4.07	92.5	6.18	0.33	5.86	183.1	30.4	26.9	9.8
98% percentile	8.36	4.12	93.6	8.32	0.47	7.85	245.2	37.0	33.9	12.8
99% percentile	8.39	4.13	94.0	9.03	0.52	8.51	265.9	39.2	36.3	13.7
99.9%percentile	8.41	4.15	94.3	9.67	1	9.10	284.5	41.2	38.4	14.6

Zone	Drillhole	Sample#	Cert#	From	To	Interval	Lithology	Rock Mgmt Uni	Mine Zone	Paste pH	CO ₂ -NP				AP		NP		NP:AP	Fizz Test
											CO2 (%)	(kg CaCO3/t)	Stotal (%)	SO4 (%)	S2- (%)	(kg CaCO3/t)	(kg CaCO3/t)	(kg CaCO3/t)		
S	DH05-01	25501	A506163R	10.75	11.5	0.75	Granodiorite	/asteGranodioril	UHW	7.51	0.04	0.9	0.04	0.01	0.04	1.3	2.3	1.1	1.8	None
S	DH05-01	25513	A506163R	23.64	26.6	2.96	Granodiorite	/asteGranodioril	HW	6.46	0.11	2.5	0.11	0.03	0.08	2.5	3.1	0.6	1.2	None
S	DH05-01	25517	A506163R	30.13	30.21	0.08	Vein	OreHG	Ore	5.80	0.8	18.2	9.74	0.57	9.17	286.6	-5.4	-292.0	0.0	Slight
S	DH05-01	25522	A506163R	34.6	36.1	1.5	Granodiorite	/asteGranodioril	FW	7.38	0.24	5.5	1.84	0.03	1.81	56.6	5.3	-51.3	0.1	None
S	DH05-02	25539	A506163R	22.87	23.47	0.60	Granodiorite	/asteGranodioril	InterOre	7.18	2.89	65.7	0.2	0.01	0.2	6.3	8.0	1.8	1.3	Slight
S	DH05-02	25541	A506376R	23.92	24.7	0.78	Granodiorite	/asteGranodioril	FW	7.46	0.83	18.9	0.11	0.01	0.11	3.4	9.9	6.5	2.9	Slight
S	DH05-03	25556	A506376R	14.34	15.14	0.8	Granodiorite	/asteGranodioril	HW	8.06	2.55	58.0	0.15	0.01	0.14	4.4	13.4	9.0	3.1	Slight
S	DH06-02	308551	A607391R	39.00	39.80	0.80	Granodiorite	/asteGranodioril	HW	8.14	4.15	94.3	0.14	0.01	0.14	4.4	17.0	12.6	3.9	Slight
S	DH06-02	308553	A607391R	40.3	41.4	1.10	Granodiorite	/asteGranodioril	InterOre	7.42	3.62	82.3	0.2	0.01	0.2	6.3	11.3	5.1	1.8	Slight
S	DH06-02	308555	A607391R	41.60	42.80	1.20	Granodiorite	/asteGranodioril	FW	8.41	3.97	90.2	0.09	0.01	0.09	2.8	41.4	38.6	14.7	Slight

APPENDIX III

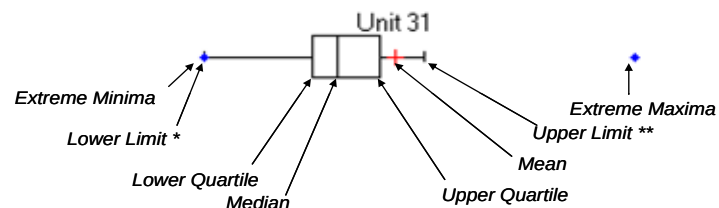
Box Plots, ICP, ABA, and Major Element Data

- a. ICP: TM Zone by Geological Unit
- b. ICP: TM Zone by Waste Rock Management Unit
- c. ICP: TM Zone by Mine Zone
- d. ICP: S Zone by WRM Unit
- e. ICP: S Zone by Mine Zone
- f. ICP: TM vs S Zones
- g. TM- Major Element by Geological Unit
- h. TM- Major Element by Mine Zone
- i. TM- ABA by Geological Unit
- j. TM- ABA by Mine Zone

Appendix III
Box Plots
A. TM Zone by Geol Unit

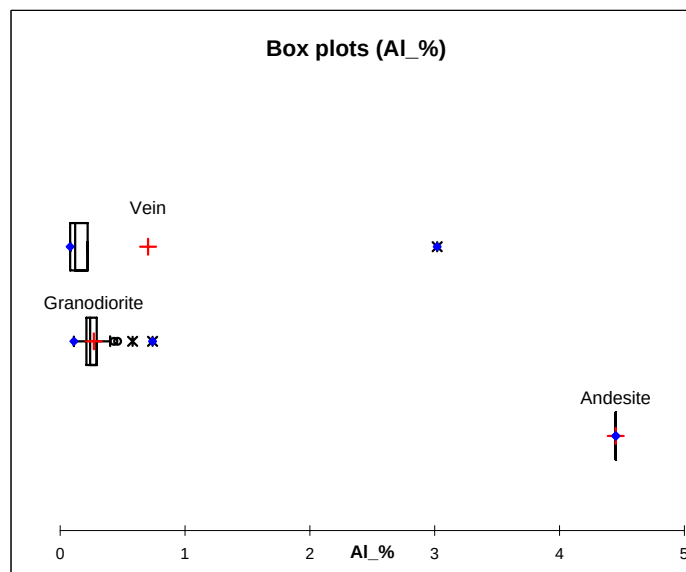
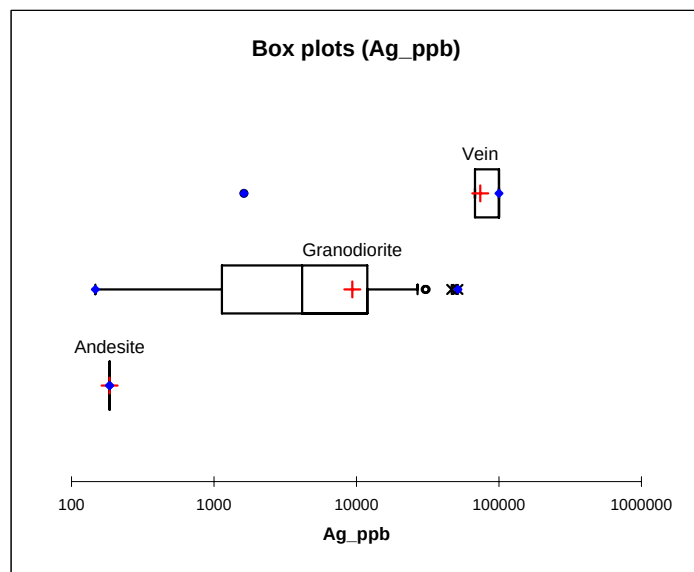
Geological Unit	# of Samples
Vein	5
Granodiorite	44
Andesite	1
Total	50

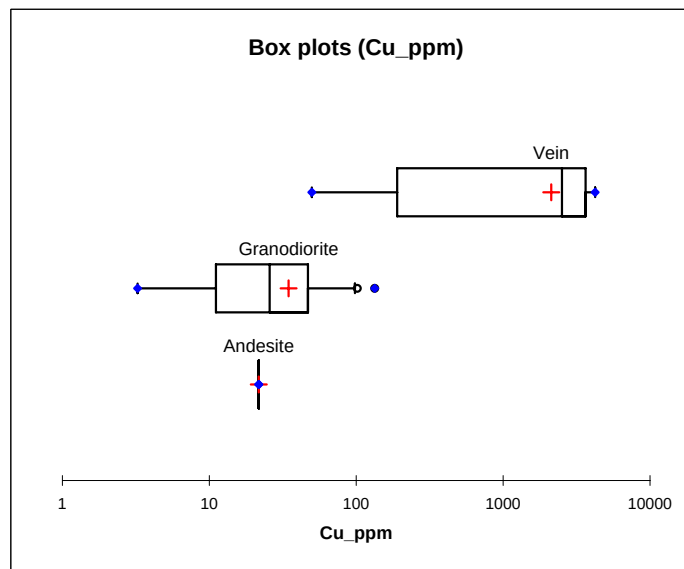
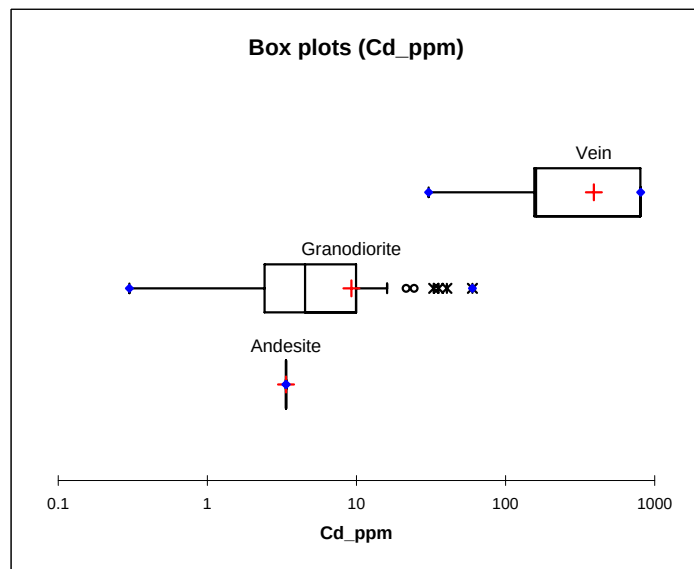
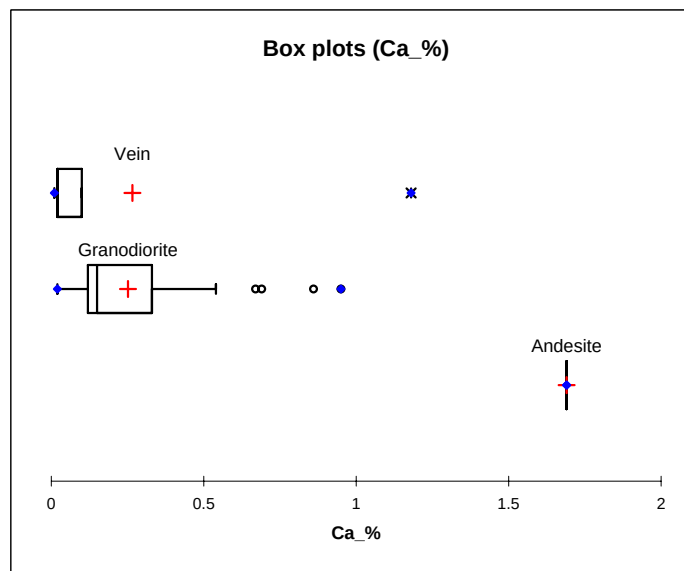
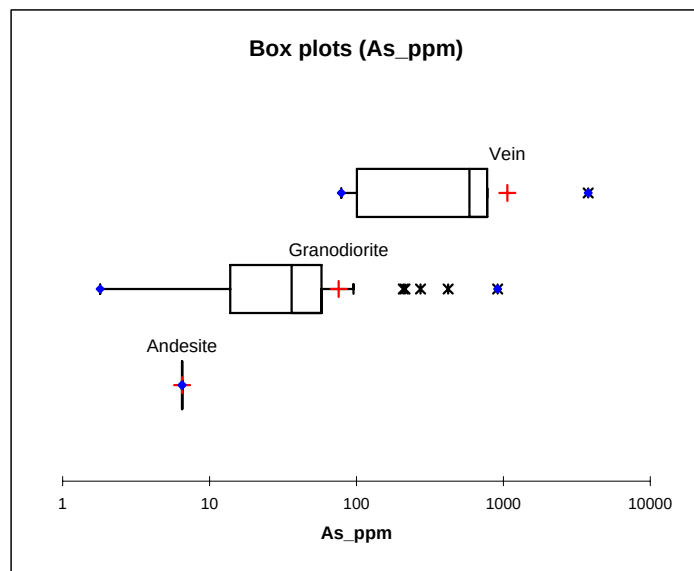
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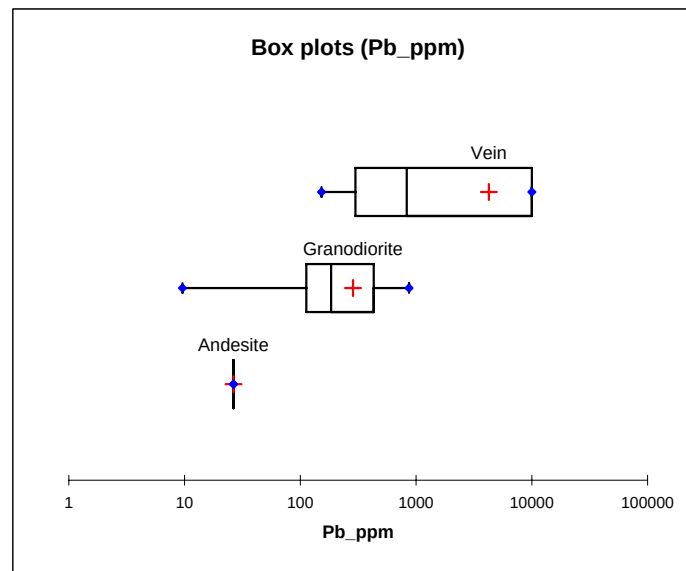
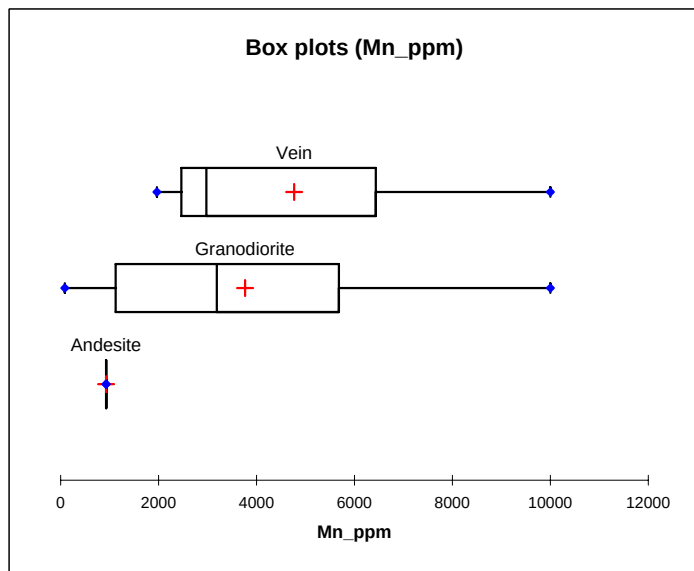
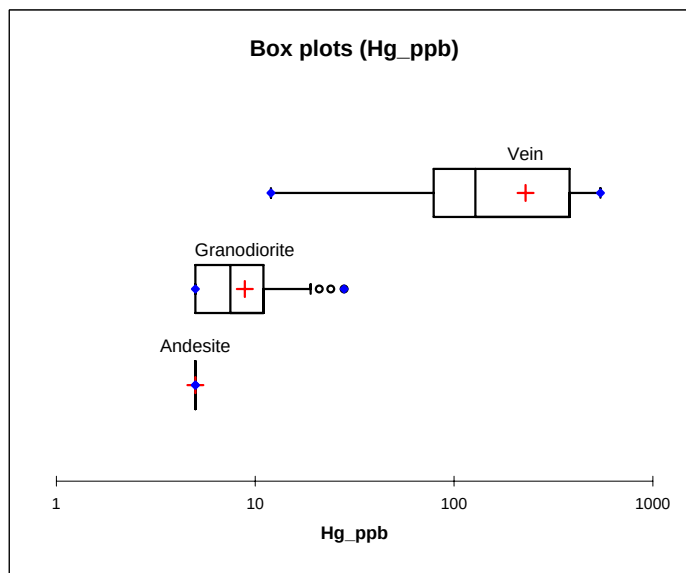
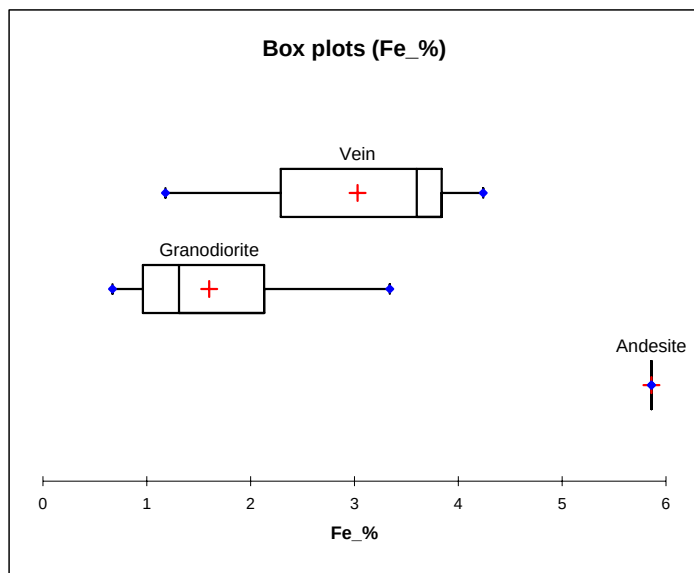


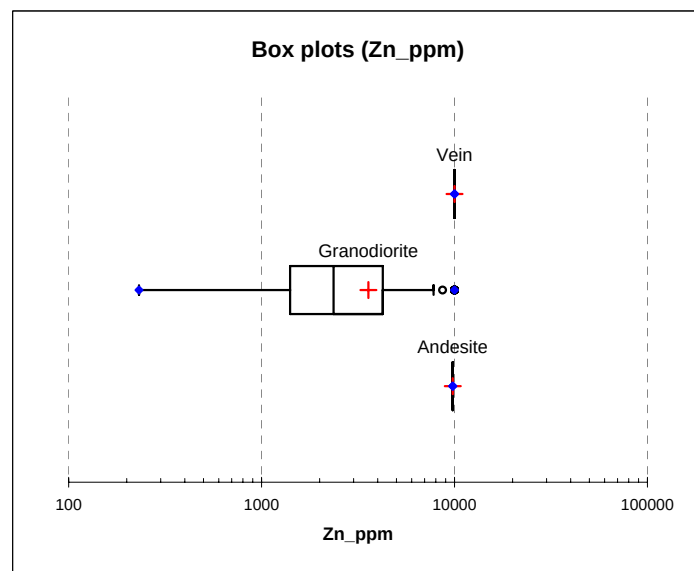
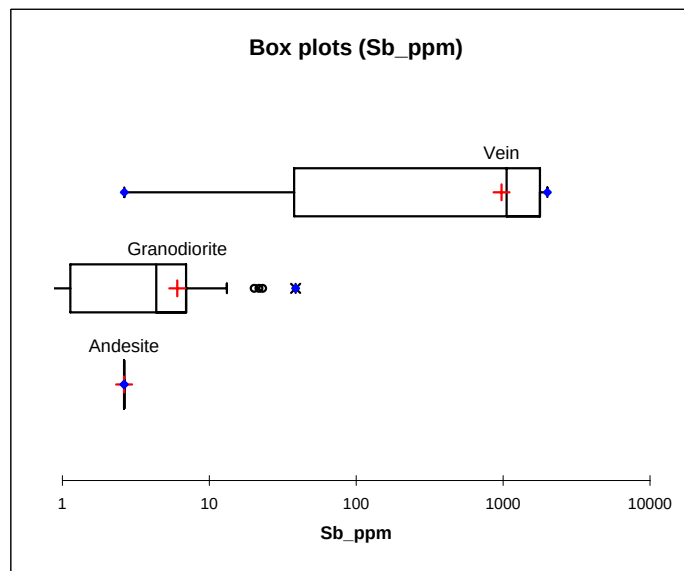
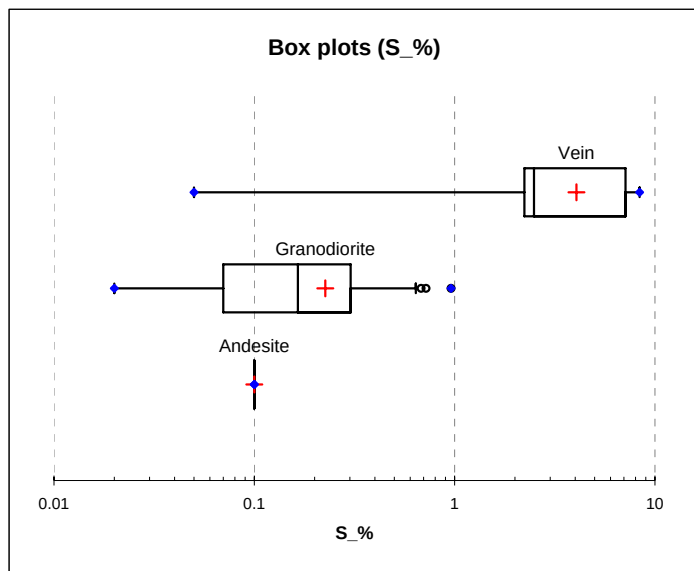
*Lower limit: $Linf = X(i)$ such that $\{X(i) - [Q1 - 1.5 (Q3 - Q1)]\}$ is minimum and $X(i) = Q1 - 1.5 (Q3 - Q1)$.

**Upper limit: $Lsup = X(i)$ such that $\{X(i) - [Q3 + 1.5 (Q3 - Q1)]\}$ is minimum and $X(i) = Q3 + 1.5 (Q3 - Q1)$.





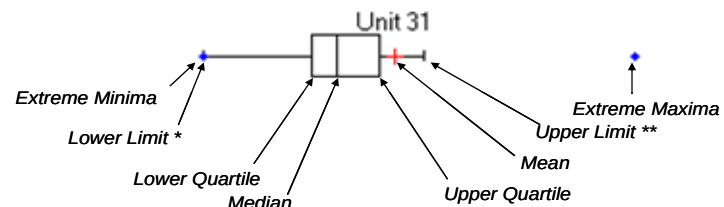




Appendix III
Box Plots
B. TM Zone by WRM Unit

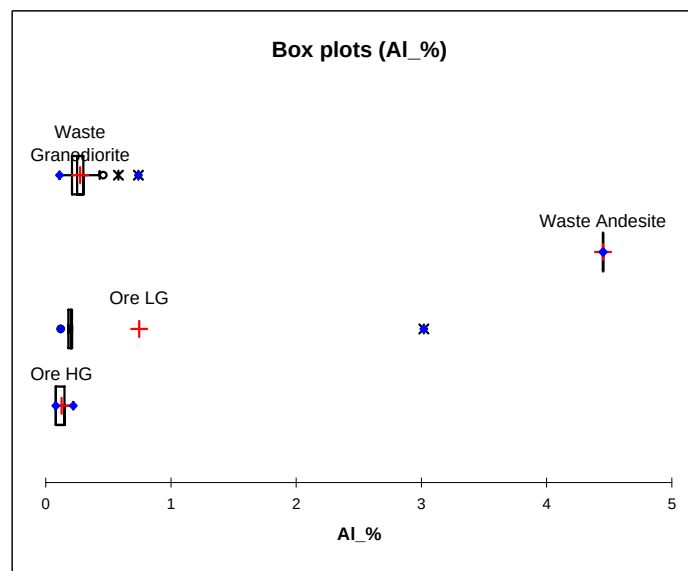
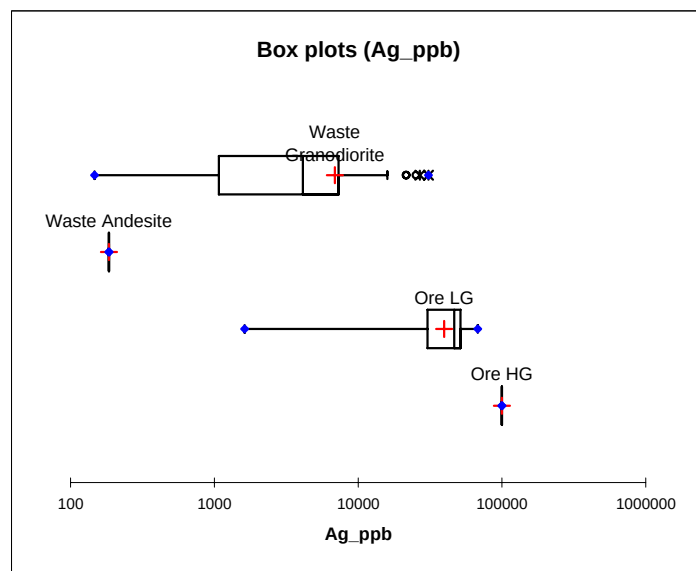
Rock Mgmt Unit	# of Samples
Waste Granodiorite	41
Waste Andesite	1
Ore Low Grade	5
Ore High Grade	3
Total	50

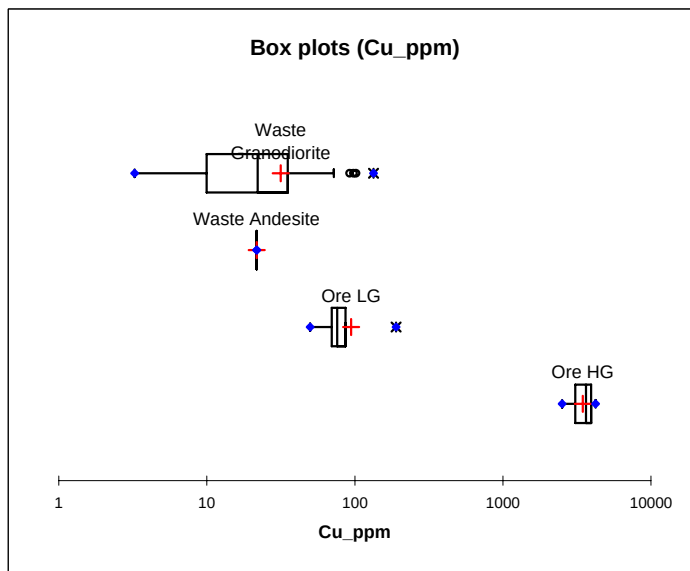
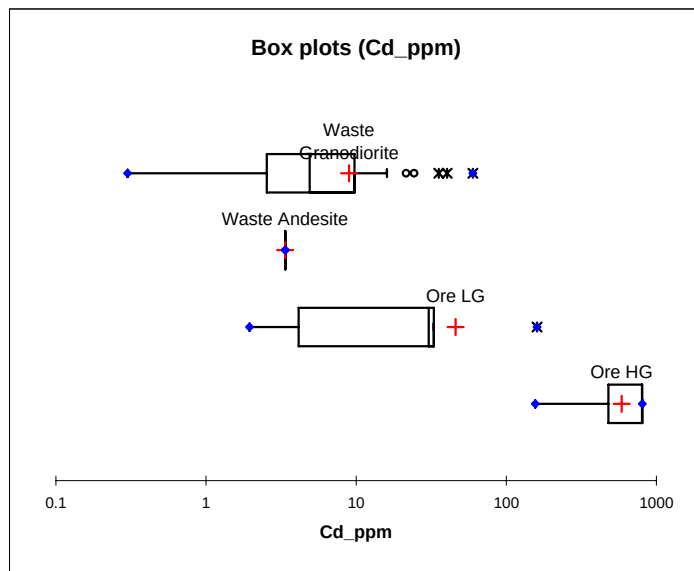
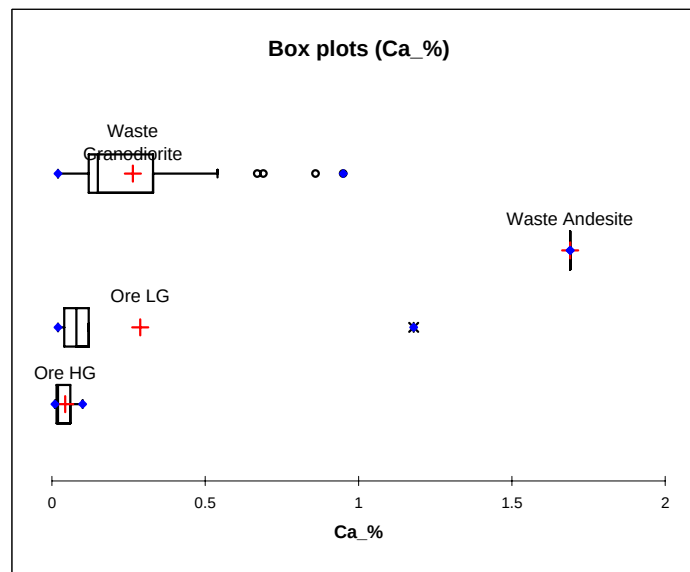
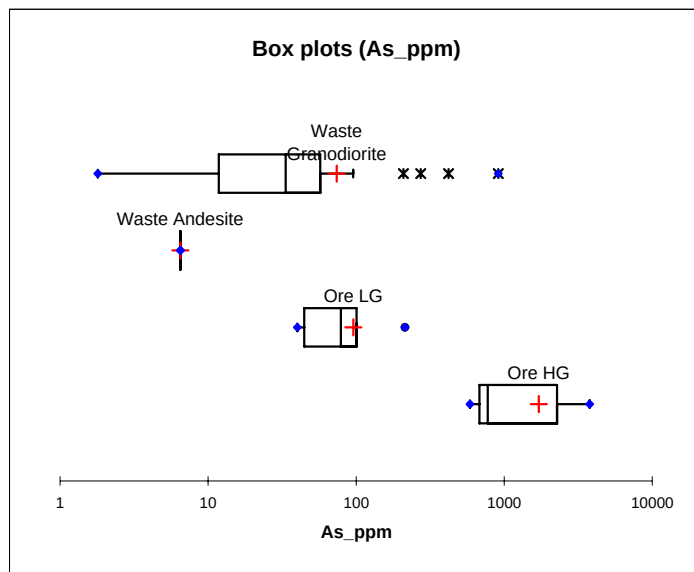
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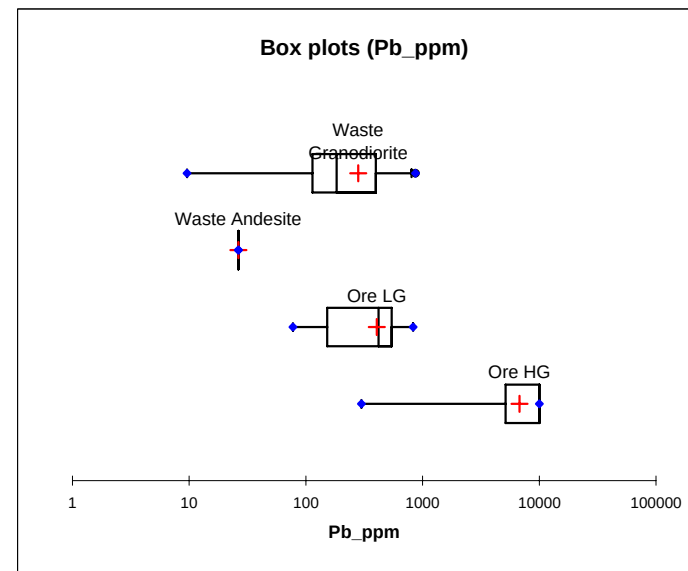
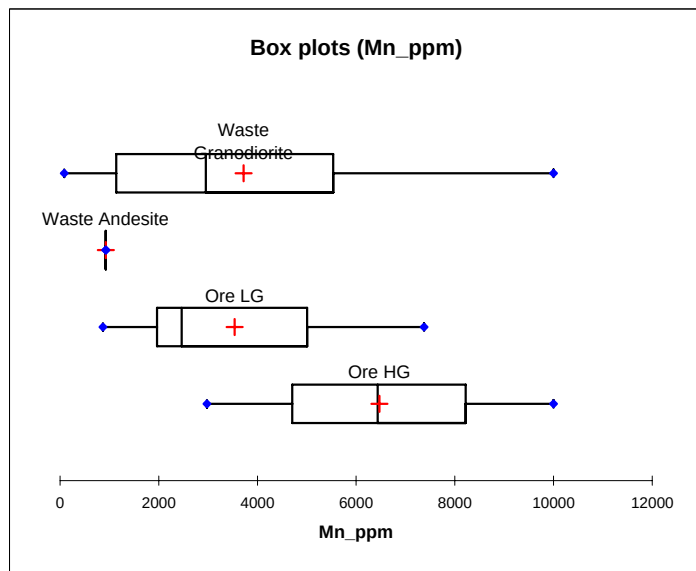
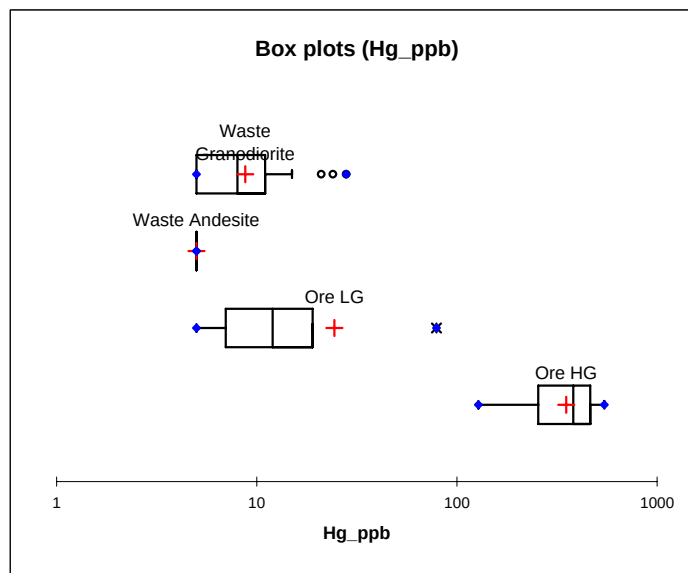
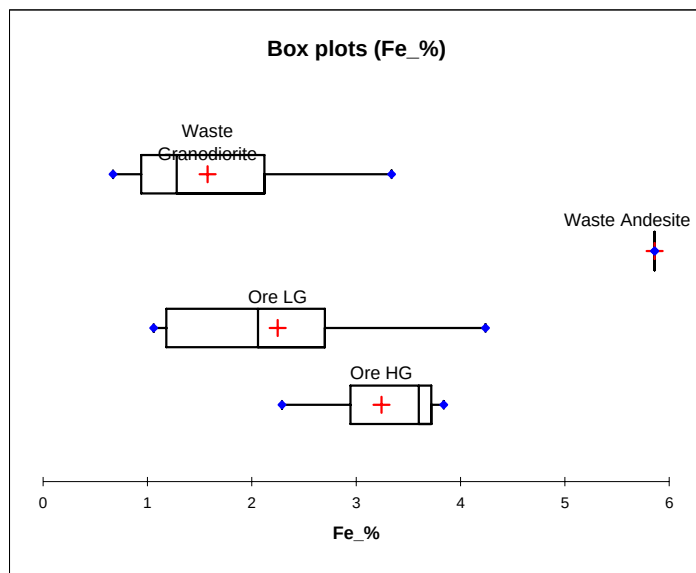


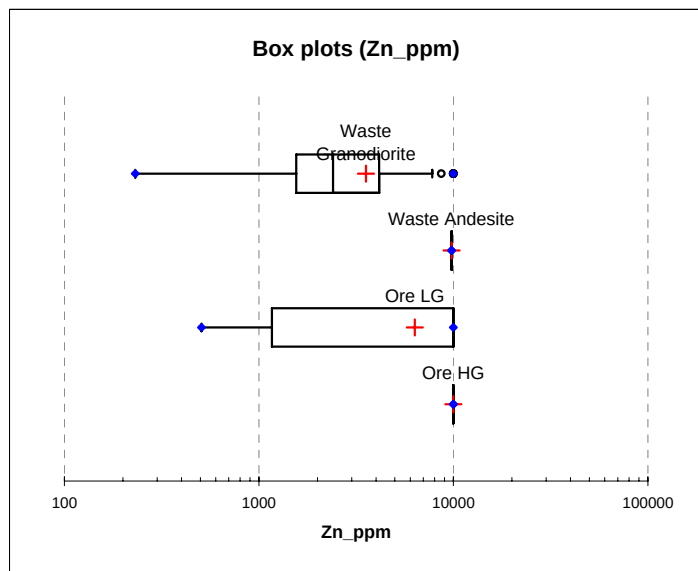
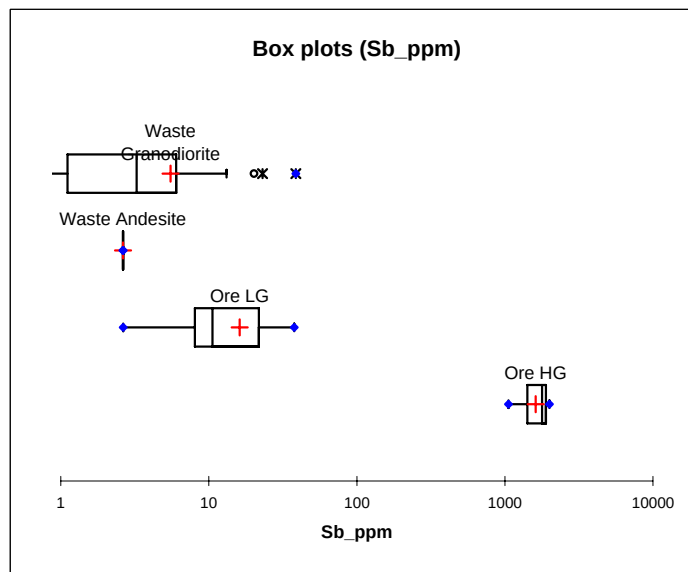
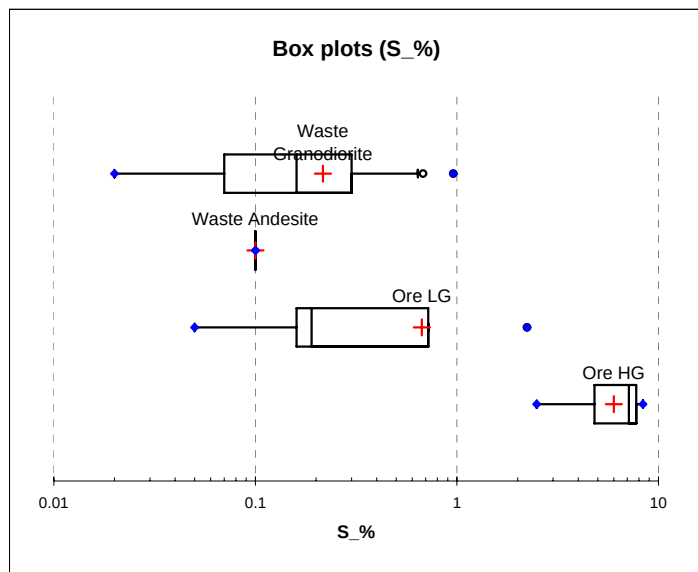
*Lower limit: $Linf = X(i)$ such that $\{X(i) - [Q1 - 1.5 (Q3 - Q1)]\}$ is minimum and $X(i) = Q1 - 1.5 (Q3 - Q1)$.

**Upper limit: $Lsup = X(i)$ such that $\{X(i) - [Q3 + 1.5 (Q3 - Q1)]\}$ is minimum and $X(i) = Q3 + 1.5 (Q3 - Q1)$





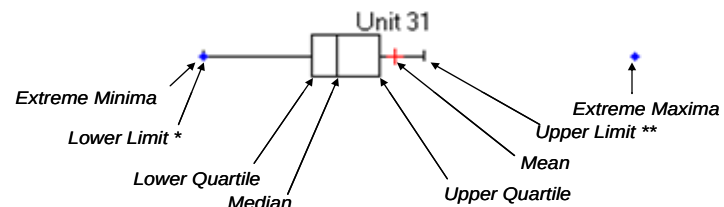




Appendix III
Box Plots
C. TM Zone by Mine Zone

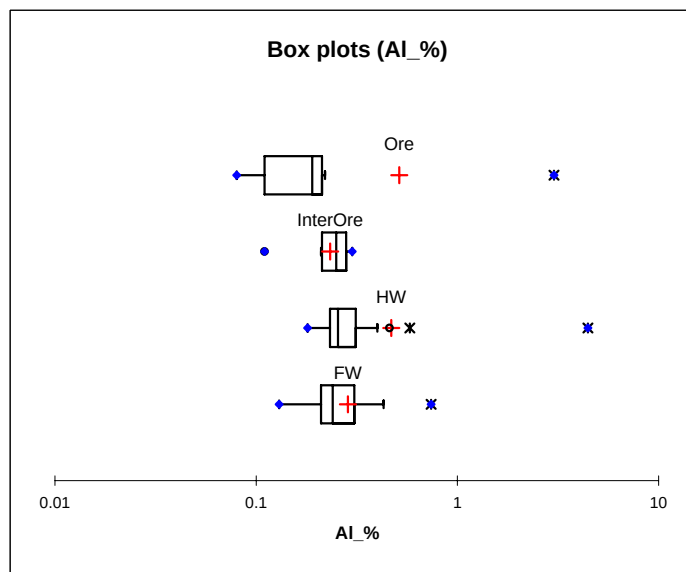
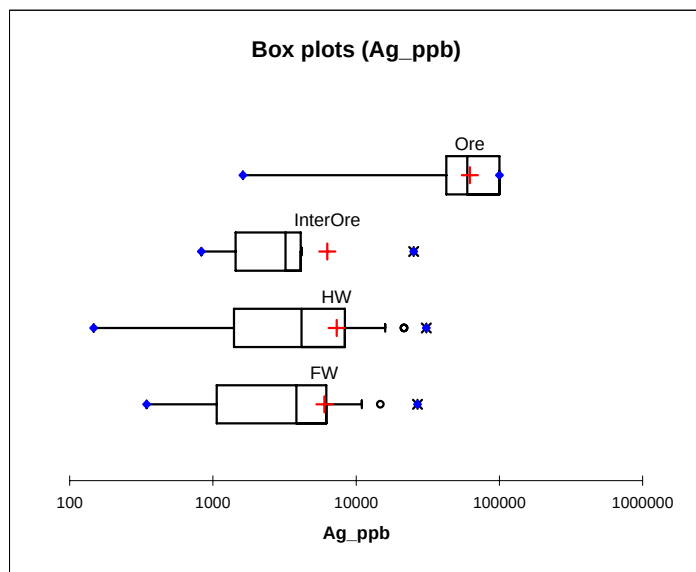
Mine Zone	# of Samples
Ore	8
InterOre	6
Hangingwall (HW)	22
Footwall (FW)	14
Total	50

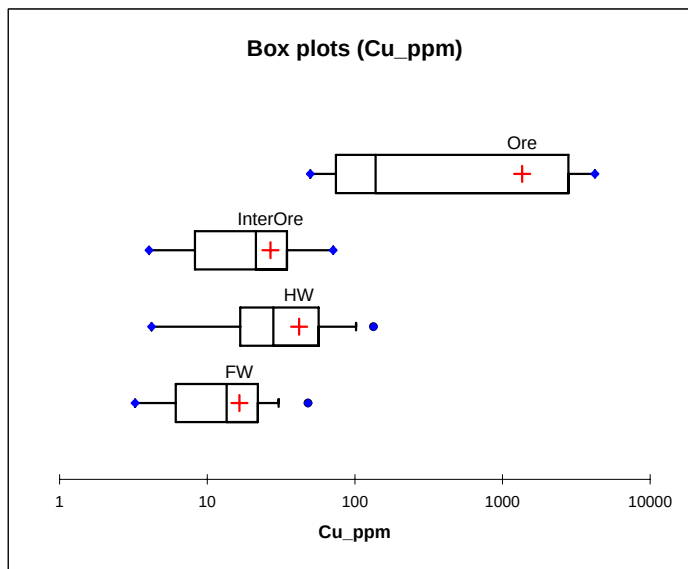
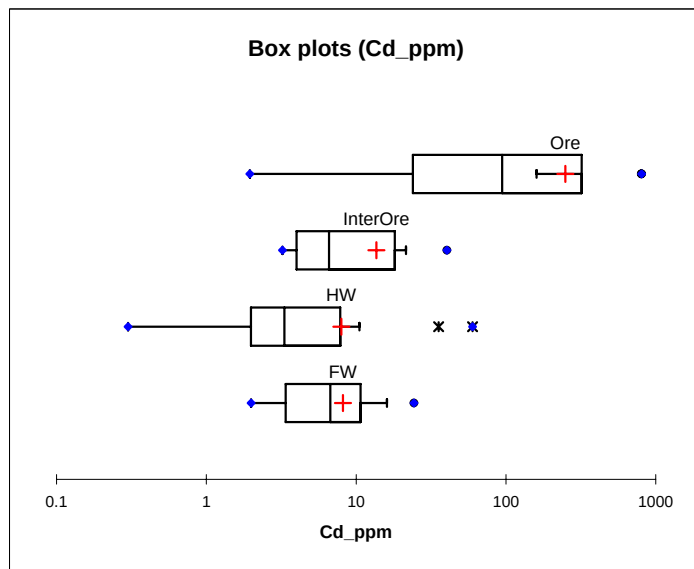
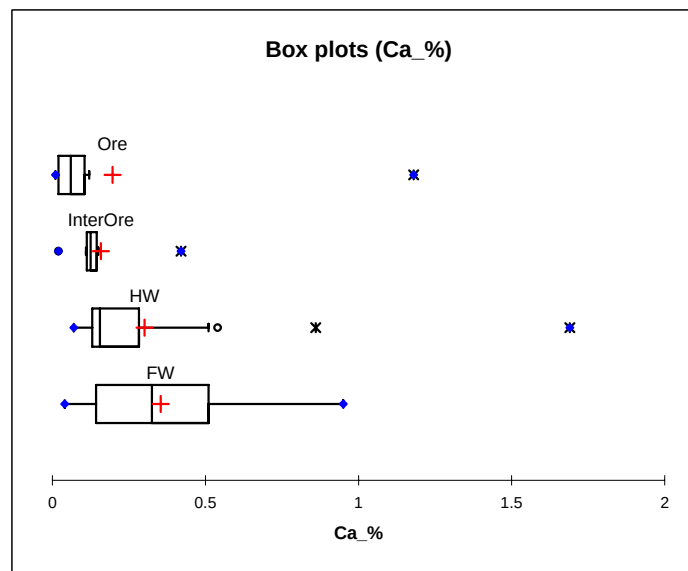
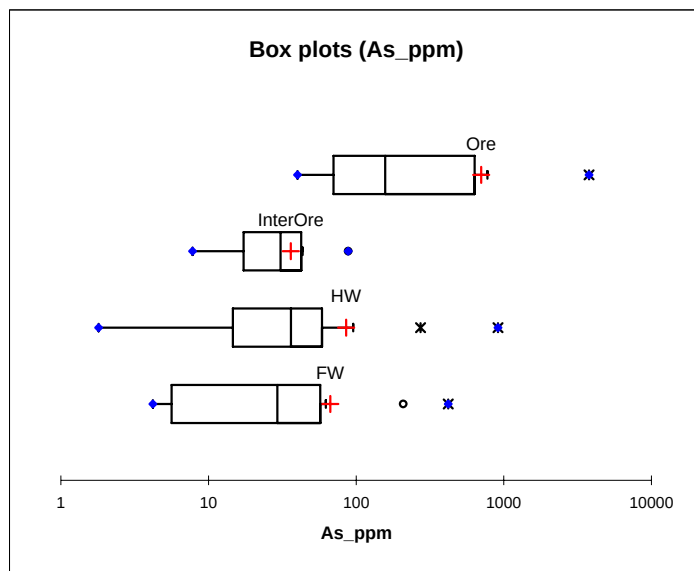
Box Plot Legend:

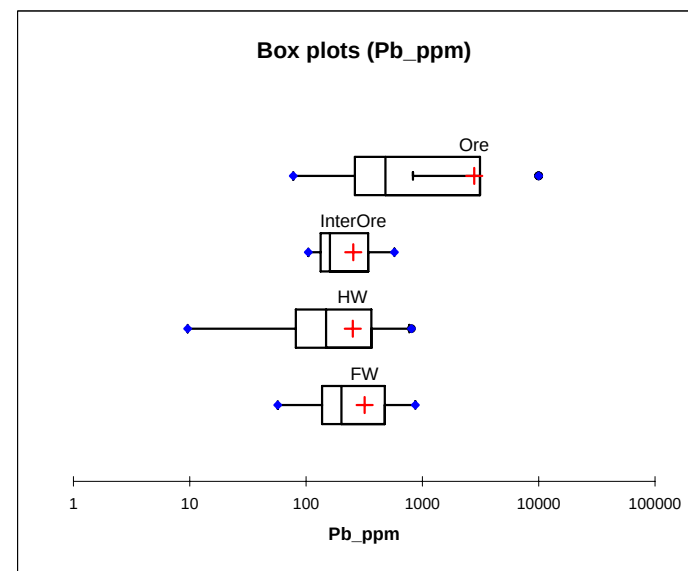
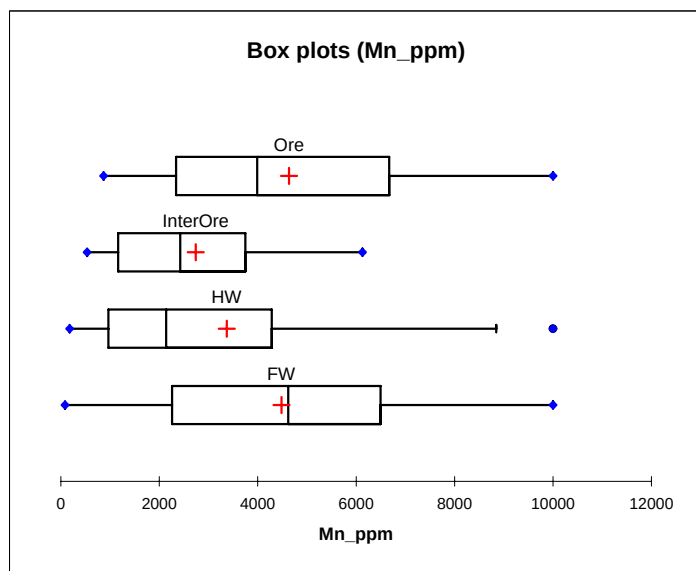
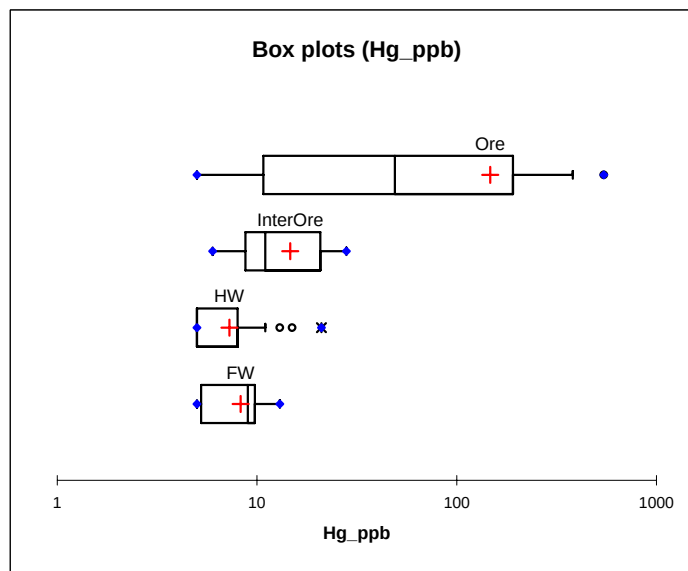
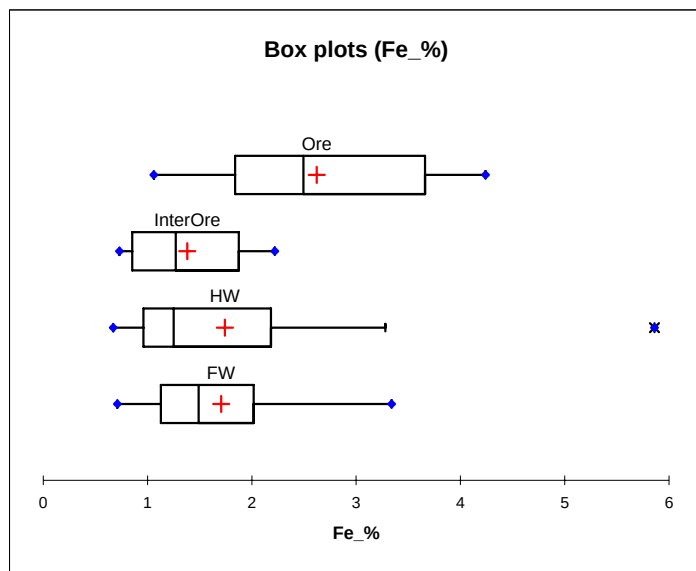


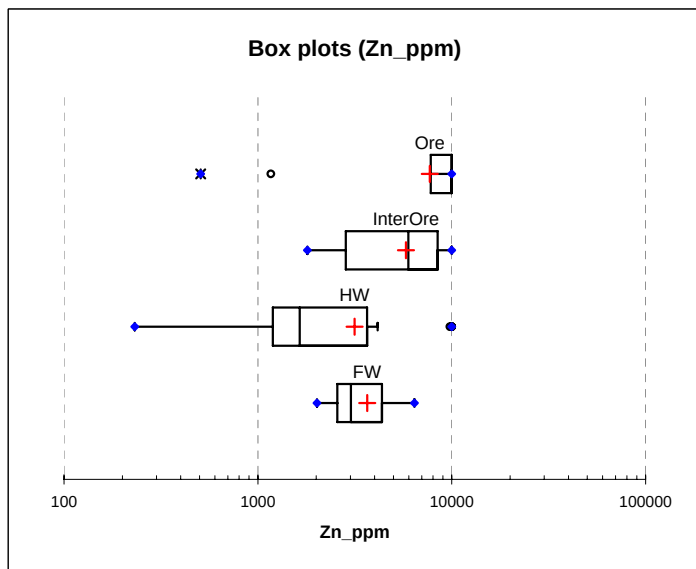
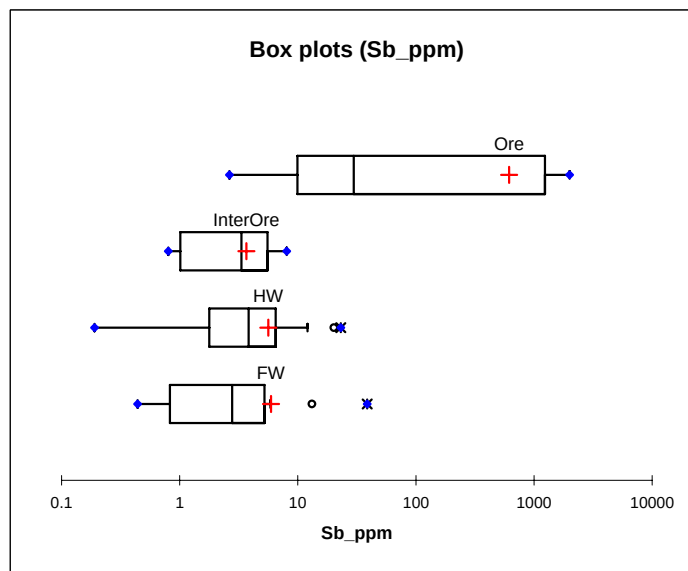
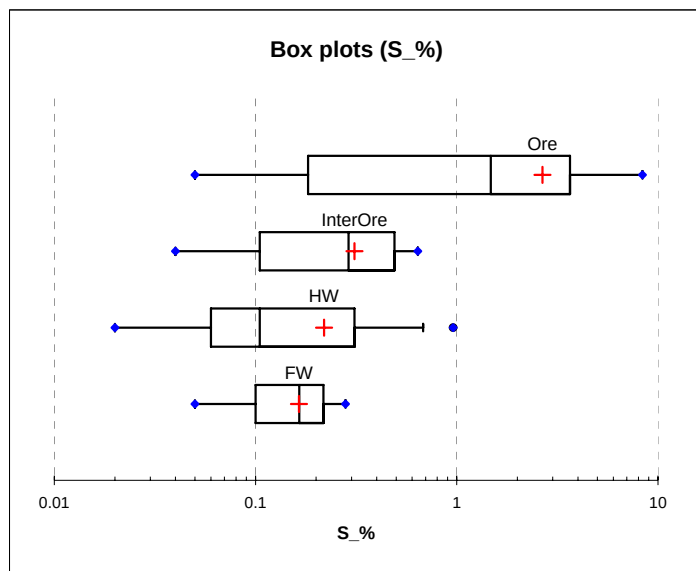
*Lower limit: $Linf = X(i)$ such that $\{X(i) - [Q1 - 1.5 (Q3 - Q1)]\}$ is minimum and $X(i) = Q1 - 1.5 (Q3 - Q1)$.

**Upper limit: $Lsup = X(i)$ such that $\{X(i) - [Q3 + 1.5 (Q3 - Q1)]\}$ is minimum and $X(i) = Q3 + 1.5 (Q3 - Q1)$.





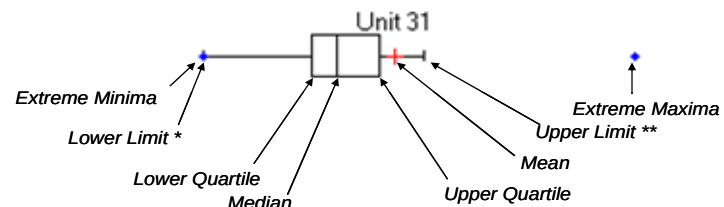




Appendix III
Box Plots
D. S Zone by WRM Unit

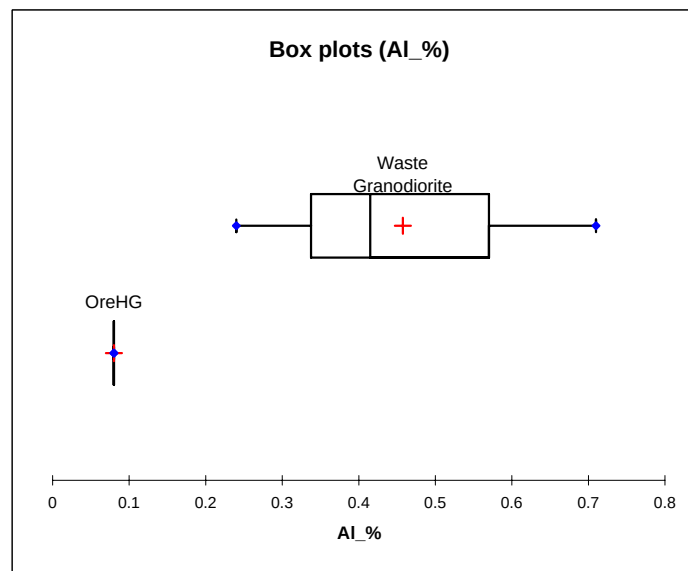
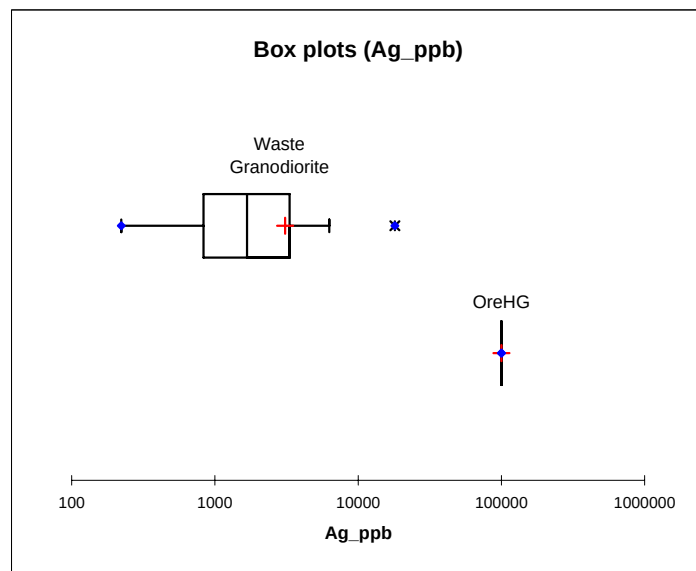
Rock Mgmt Unit	# of Samples
Waste Granodiorite	16
Waste Andesite	0
Ore Low Grade	0
Ore High Grade	1
Total	17

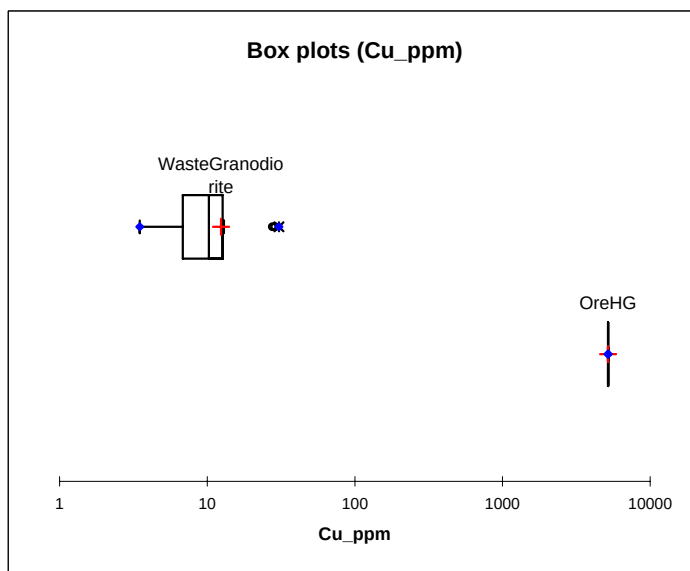
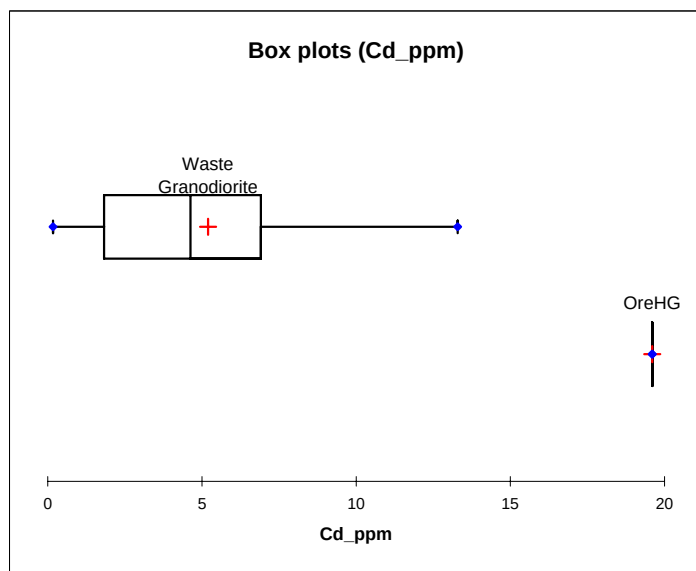
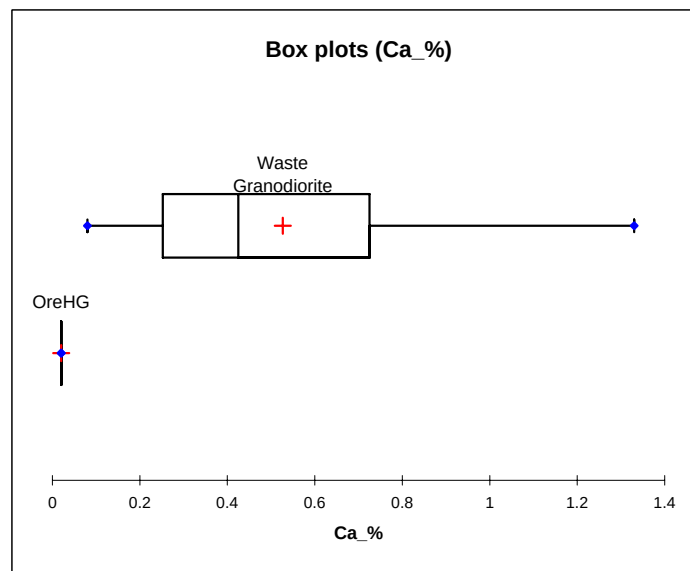
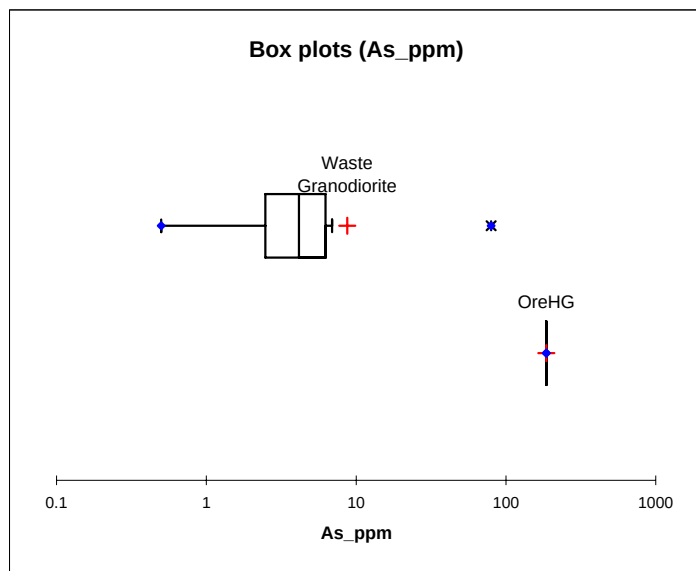
Box Plot Legend:

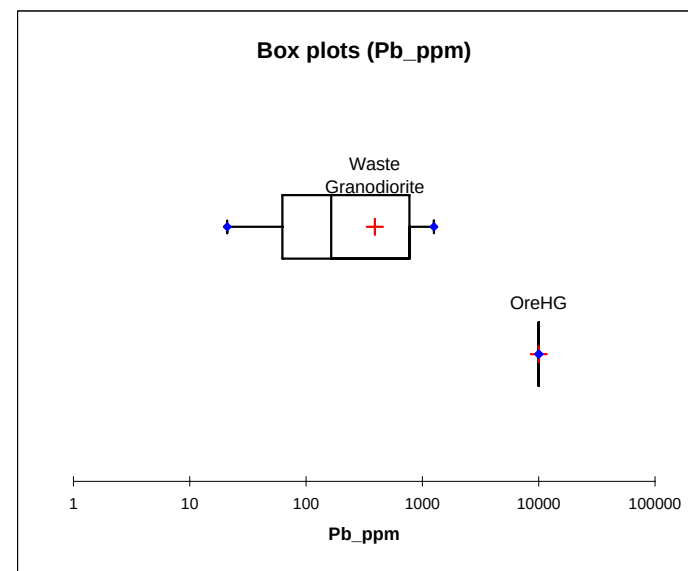
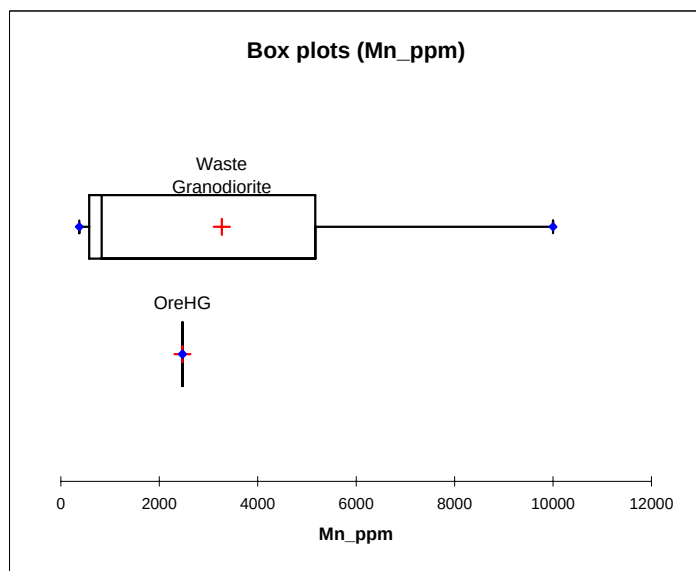
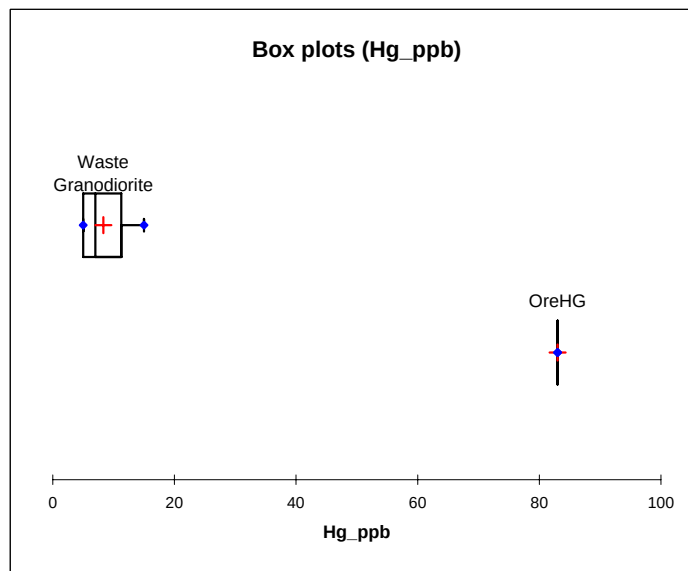
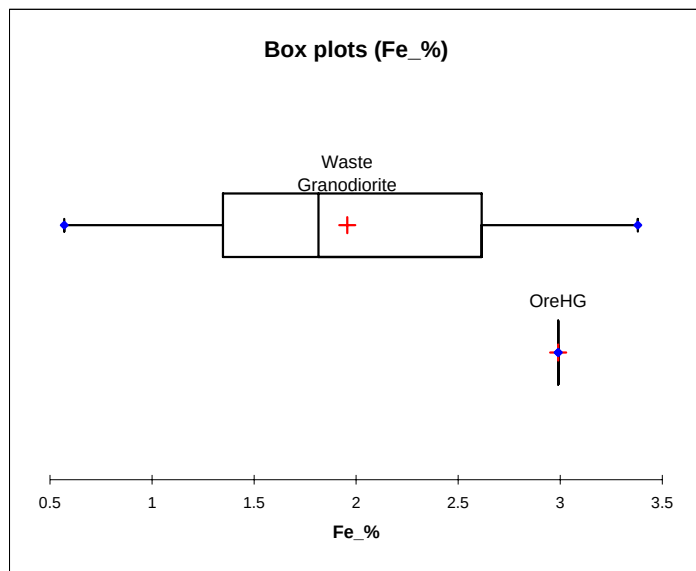


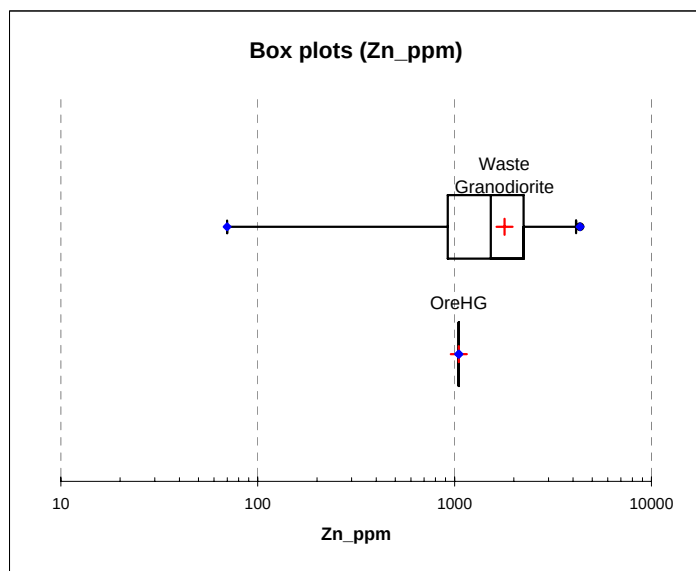
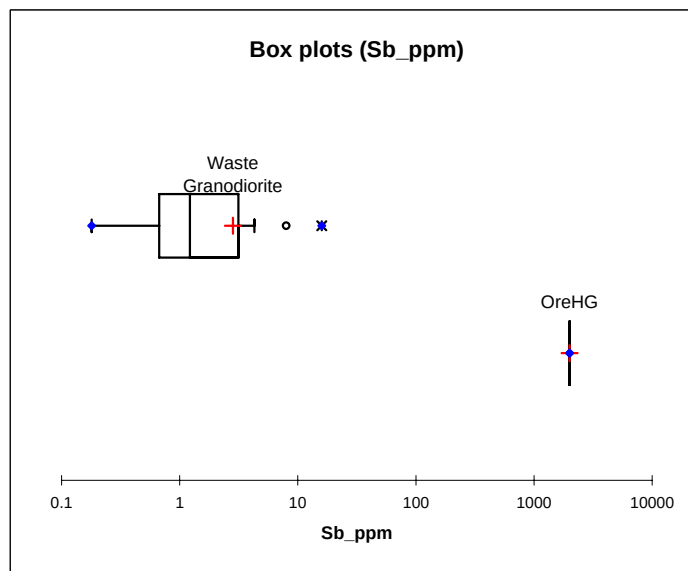
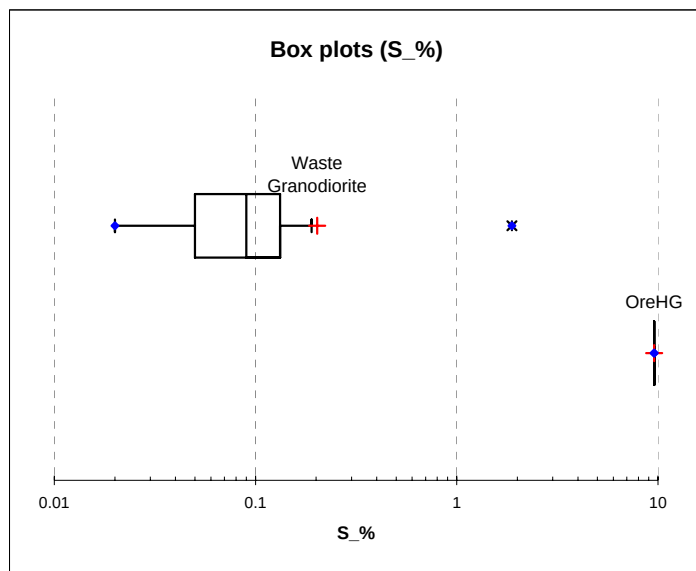
***Lower limit:** $Linf = X(i)$ such that $\{X(i) - [Q1 - 1.5 (Q3 - Q1)]\}$ is minimum and $X(i) = Q1 - 1.5 (Q3 - Q1)$.

****Upper limit:** $Lsup = X(i)$ such that $\{X(i) - [Q3 + 1.5 (Q3 - Q1)]\}$ is minimum and $X(i) = Q3 + 1.5 (Q3 - Q1)$.



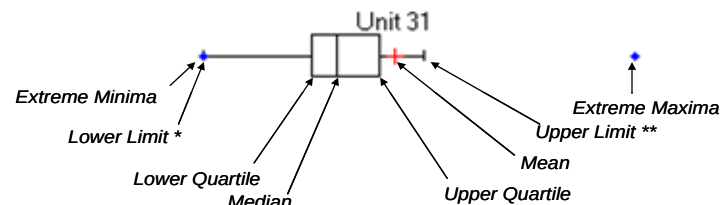






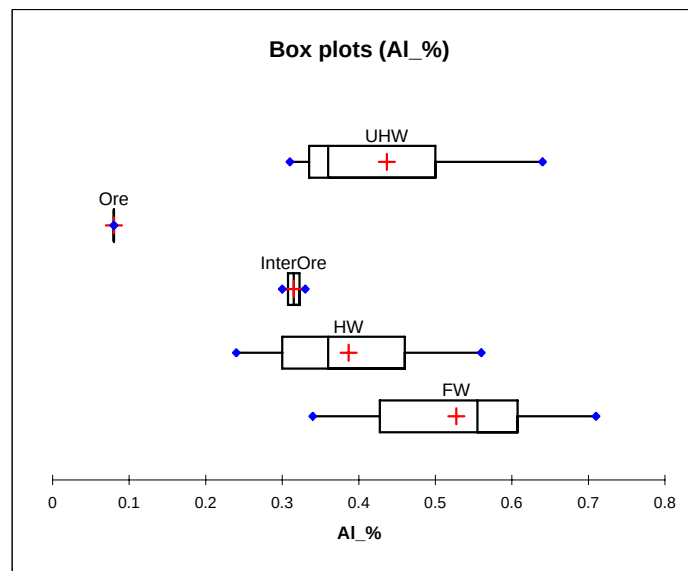
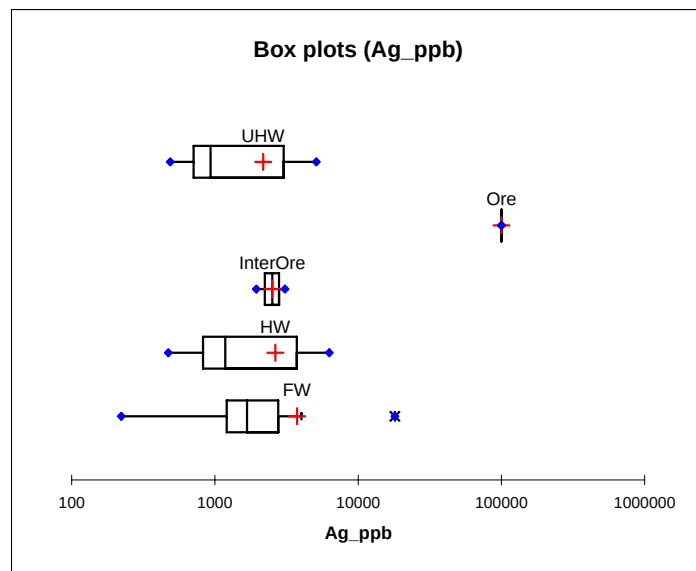
Appendix III
Box Plots
E. S Zone by Mine Zone

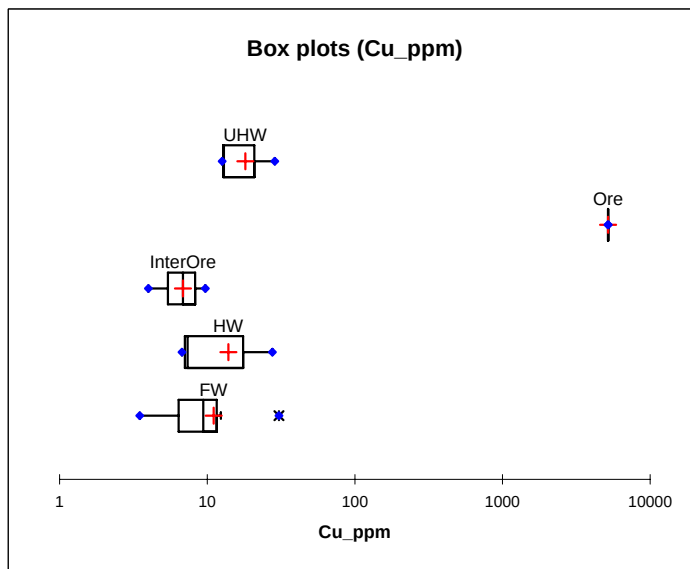
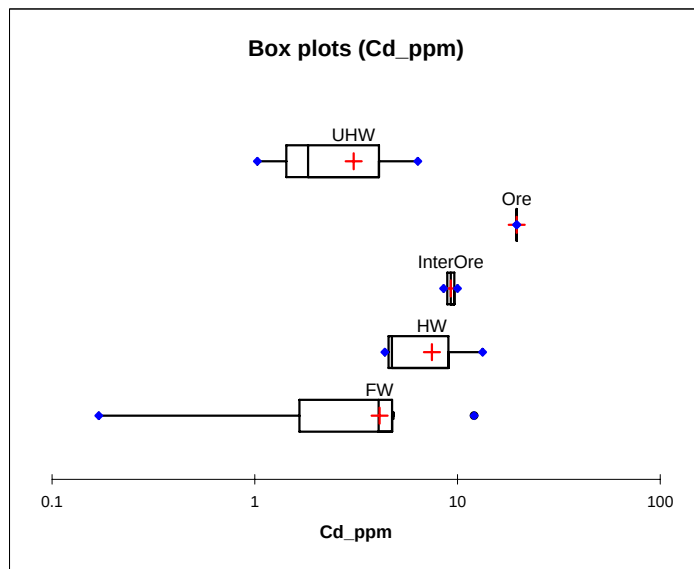
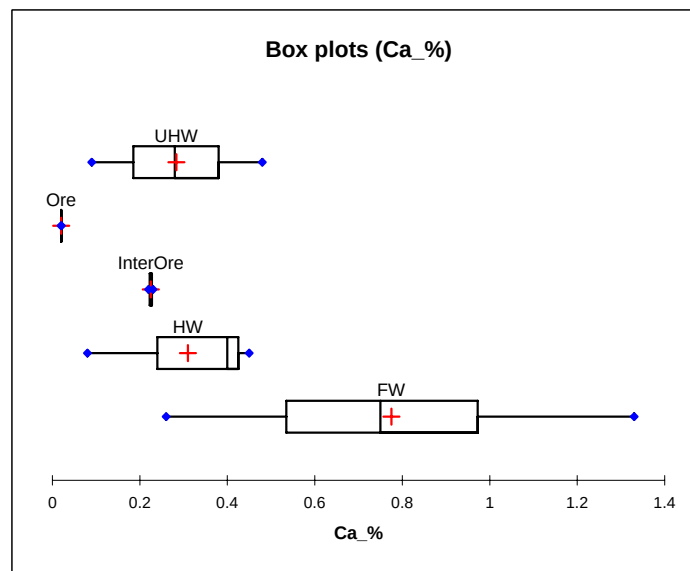
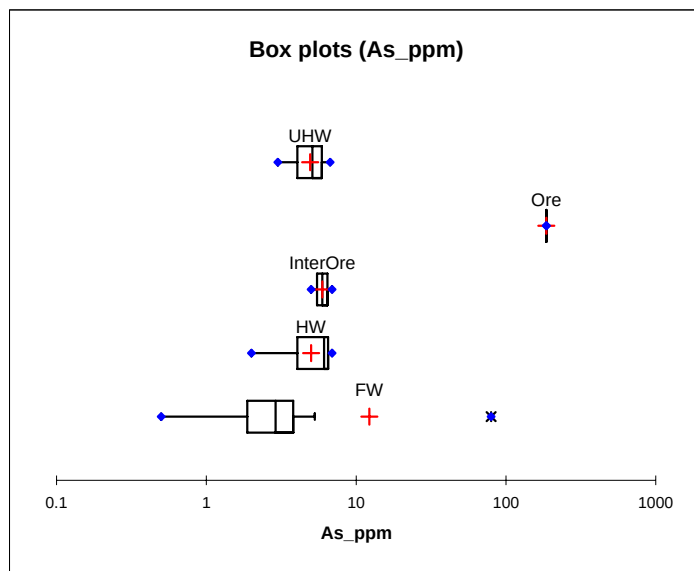
Mine Zone	# of Samples
Ore	1
InterOre	2
Hangingwall (HW)	3
Upper Hangingwall (UHW)	3
Footwall (FW)	8
Total	17

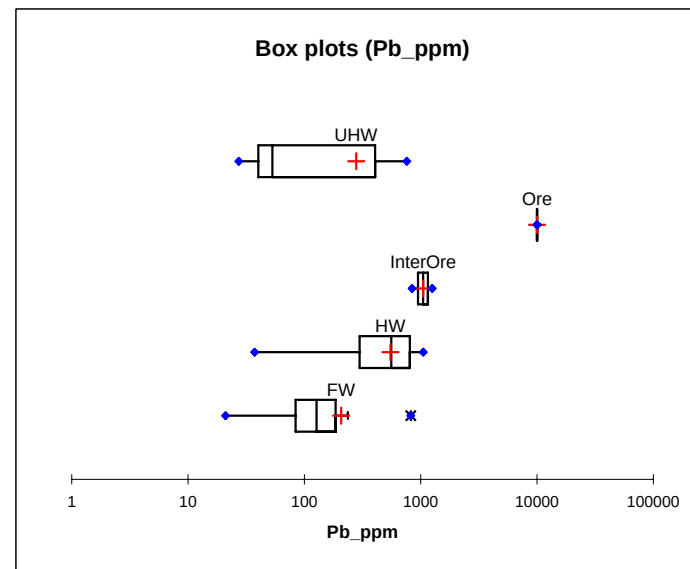
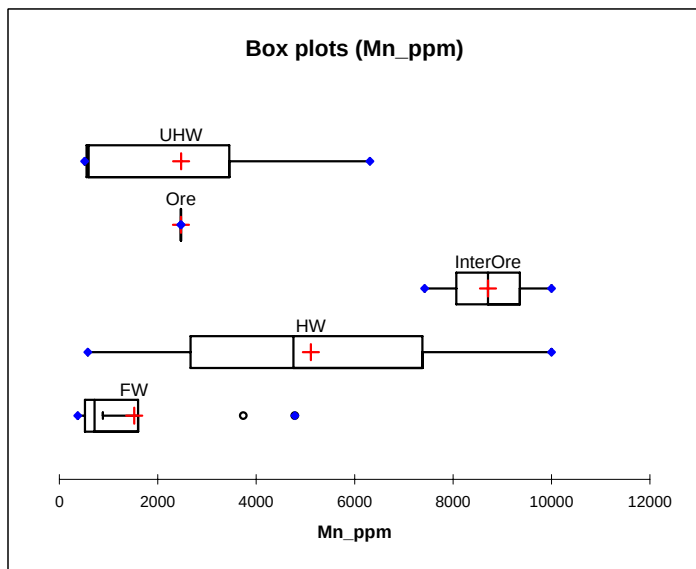
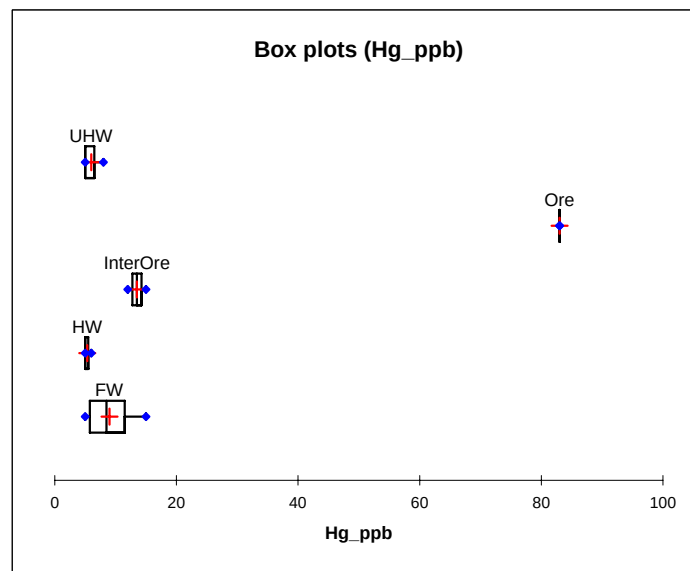
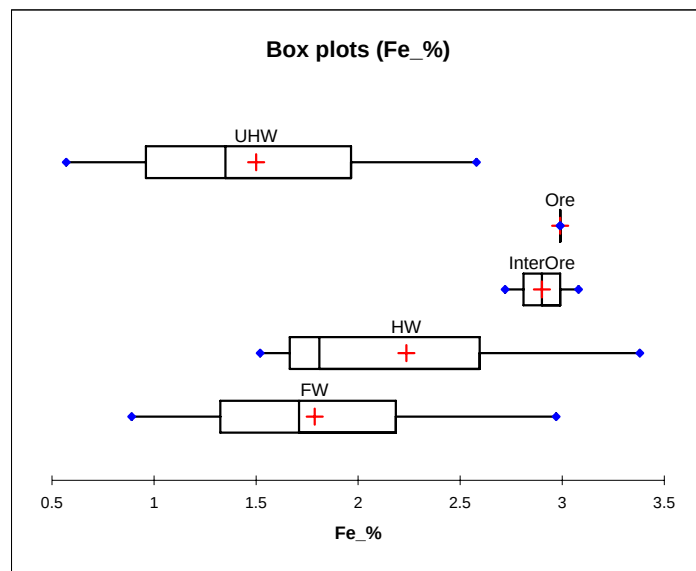
Box Plot Legend:

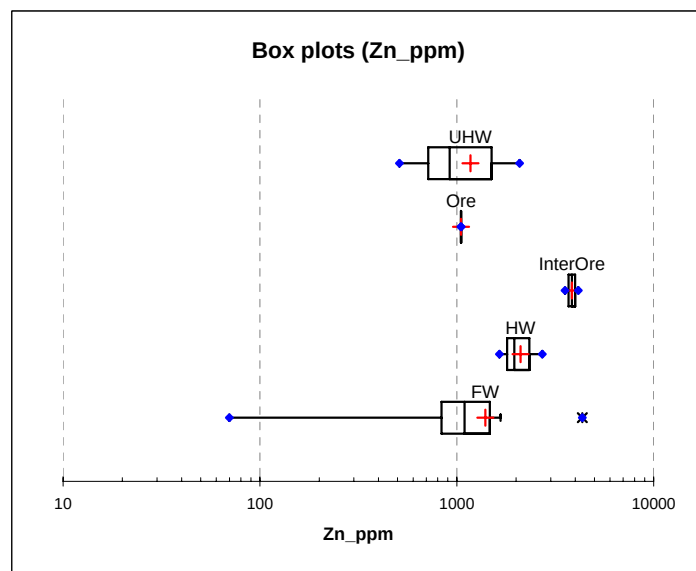
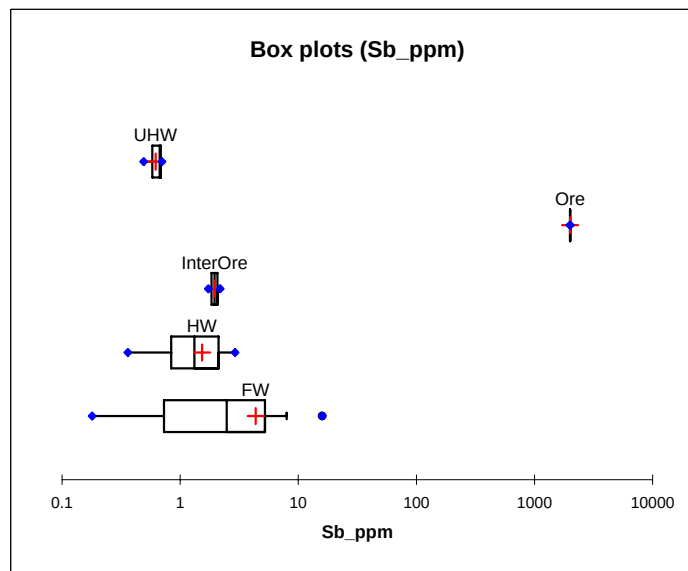
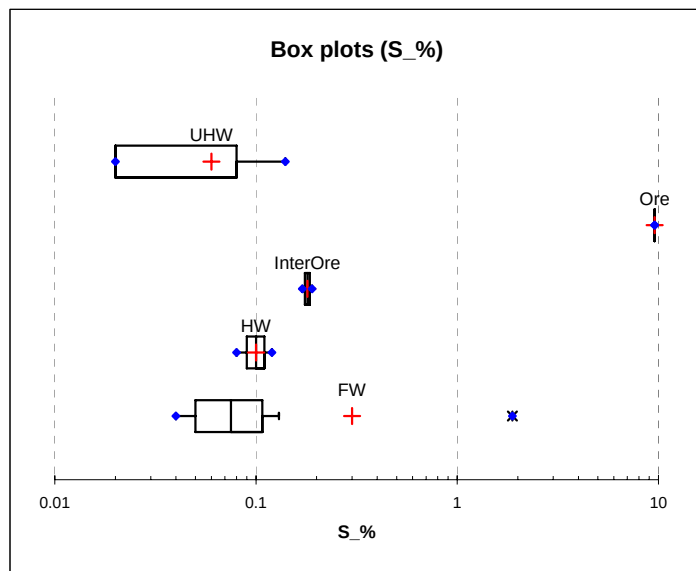
***Lower limit:** $Linf = X(i)$ such that $\{X(i) - [Q1 - 1.5 (Q3 - Q1)]\}$ is minimum and $X(i) = Q1 - 1.5 (Q3 - Q1)$.

****Upper limit:** $Lsup = X(i)$ such that $\{X(i) - [Q3 + 1.5 (Q3 - Q1)]\}$ is minimum and $X(i) = Q3 + 1.5 (Q3 - Q1)$.





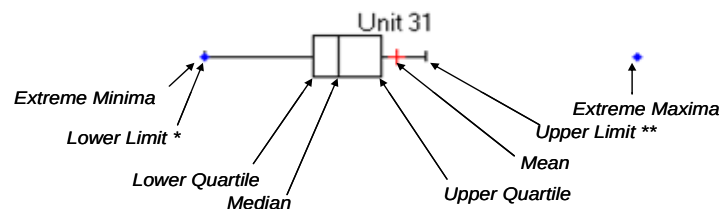




Appendix III
Box Plots
F. ICP TM vs S Zones

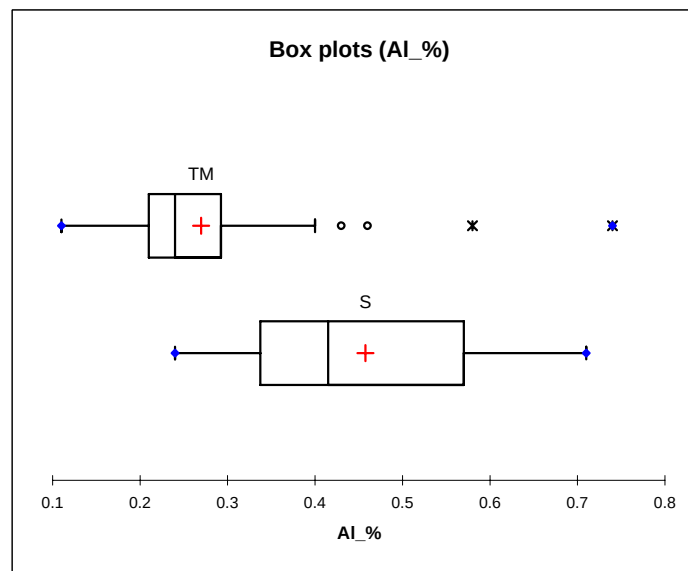
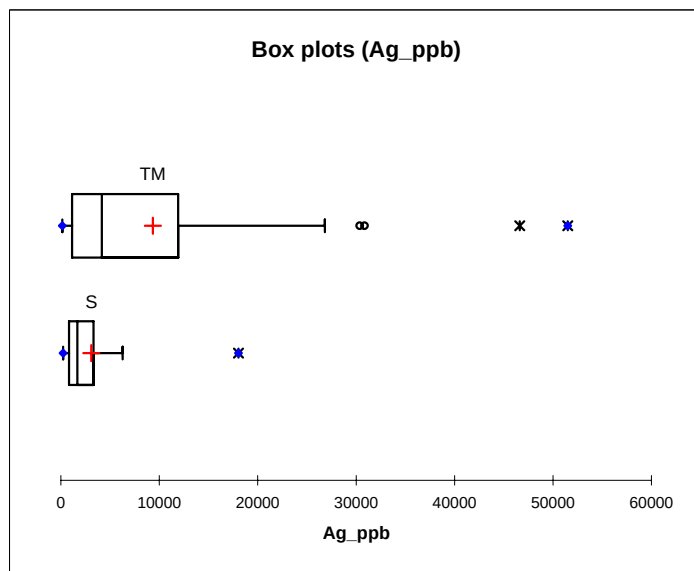
Zone	# of Samples
Granodiorite, TM Zone	44
Granodiorite, S Zone	16
Total	60

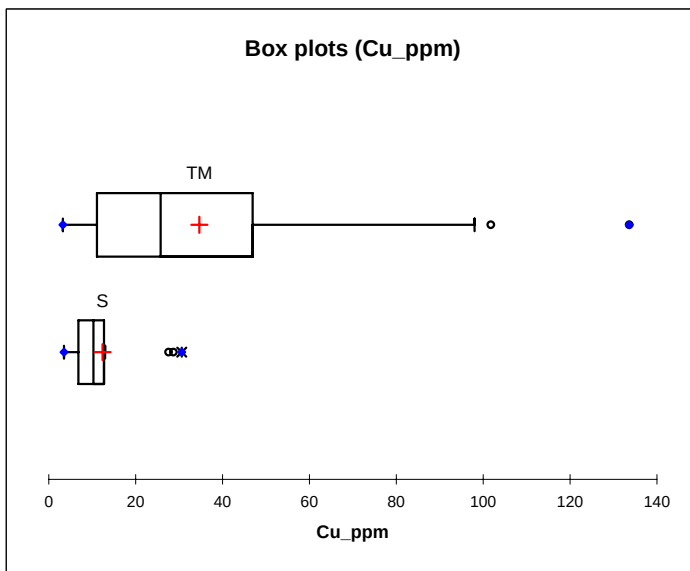
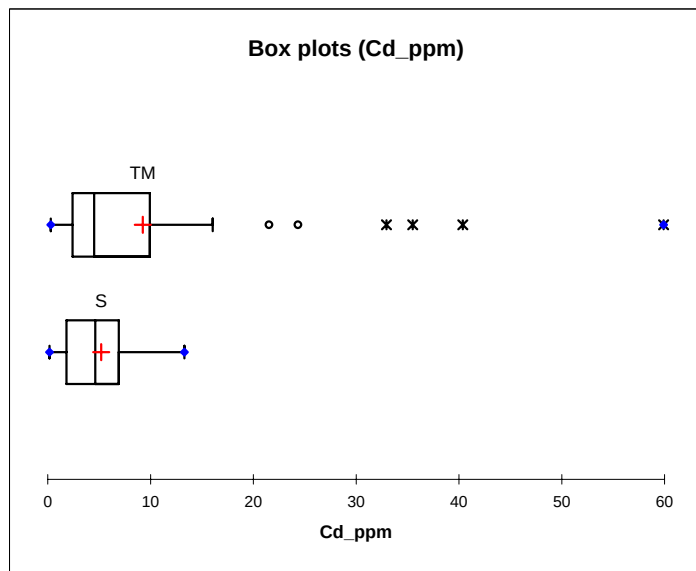
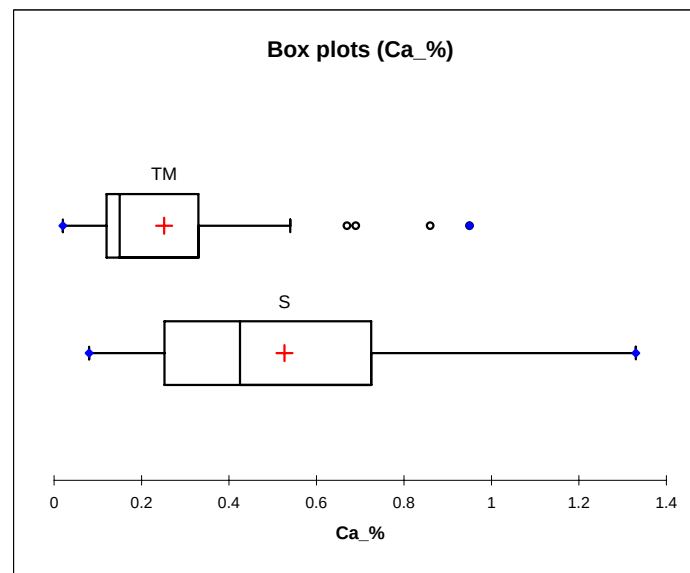
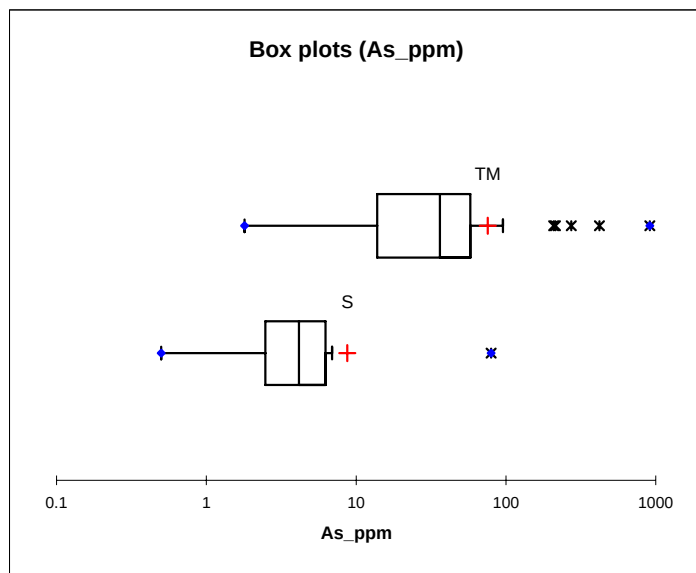
Box Plot Legend:

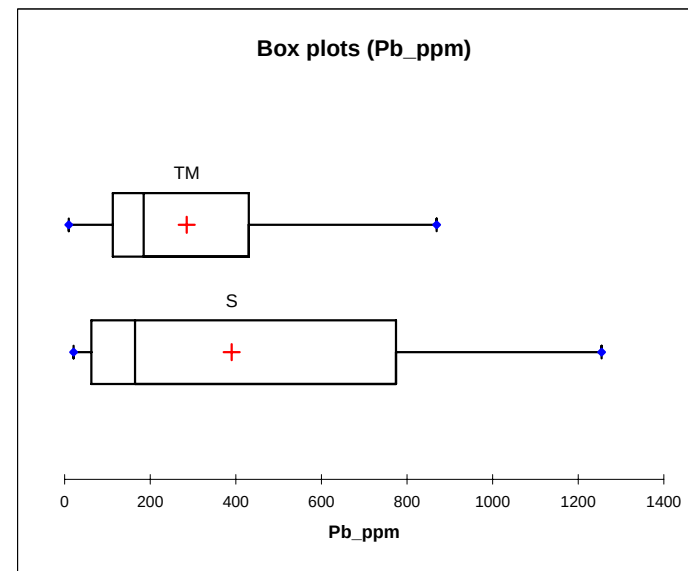
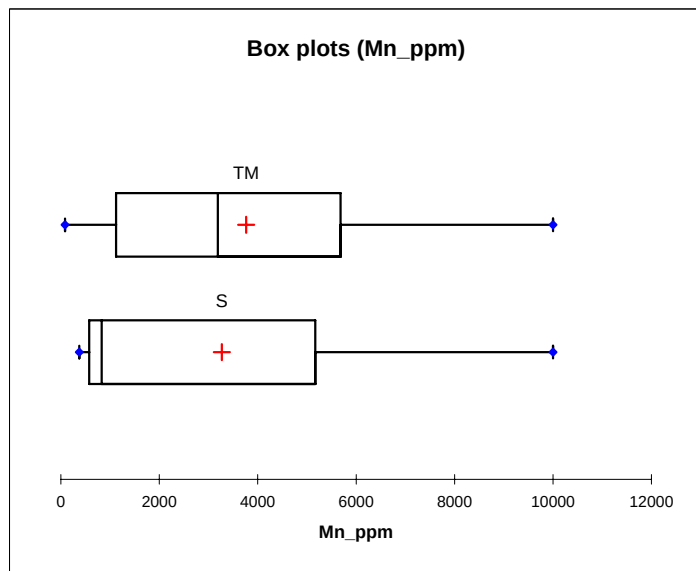
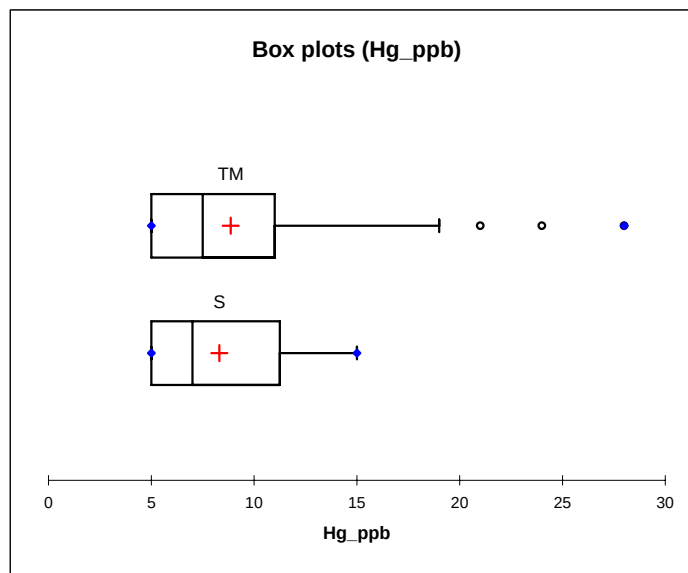
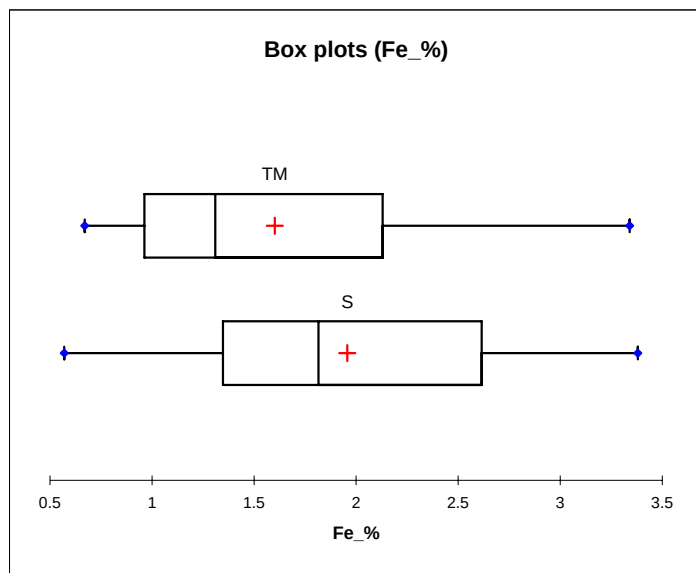


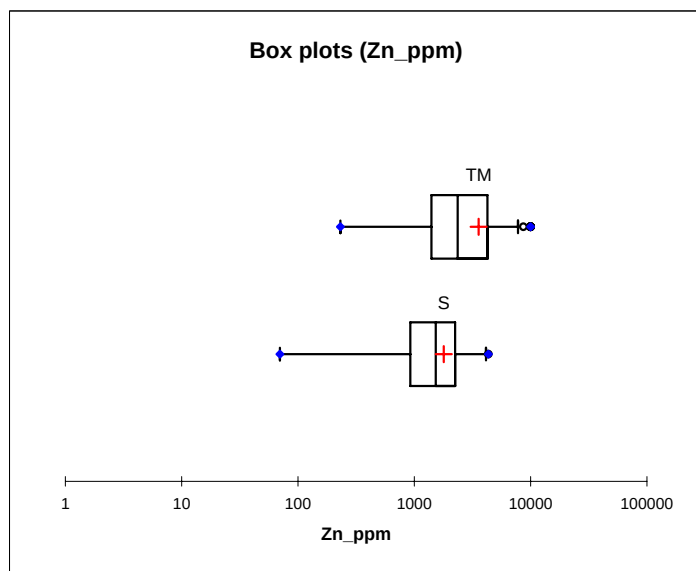
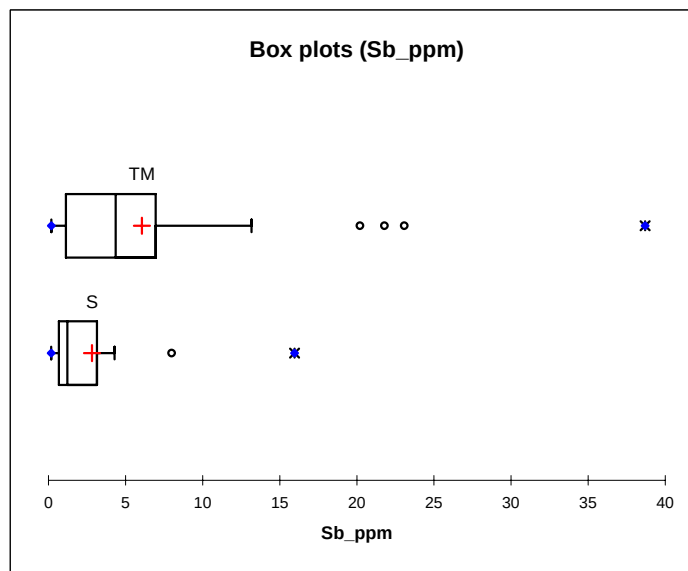
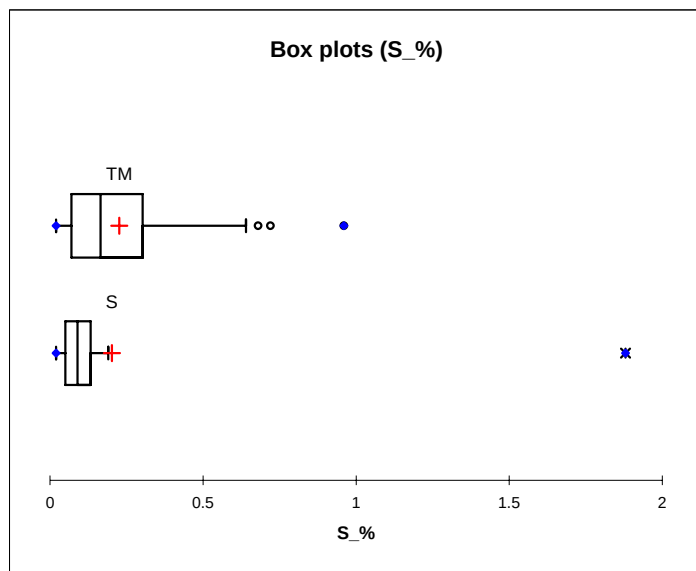
*Lower limit: $Linf = X(i)$ such that $\{X(i) - [Q1 - 1.5 (Q3 - Q1)]\}$ is minimum and $X(i) = Q1 - 1.5 (Q3 - Q1)$.

**Upper limit: $Lsup = X(i)$ such that $\{X(i) - [Q3 + 1.5 (Q3 - Q1)]\}$ is minimum and $X(i) = Q3 + 1.5 (Q3 - Q1)$.



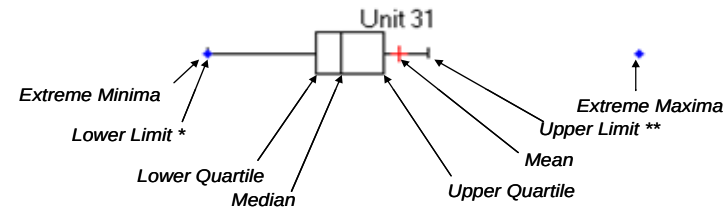






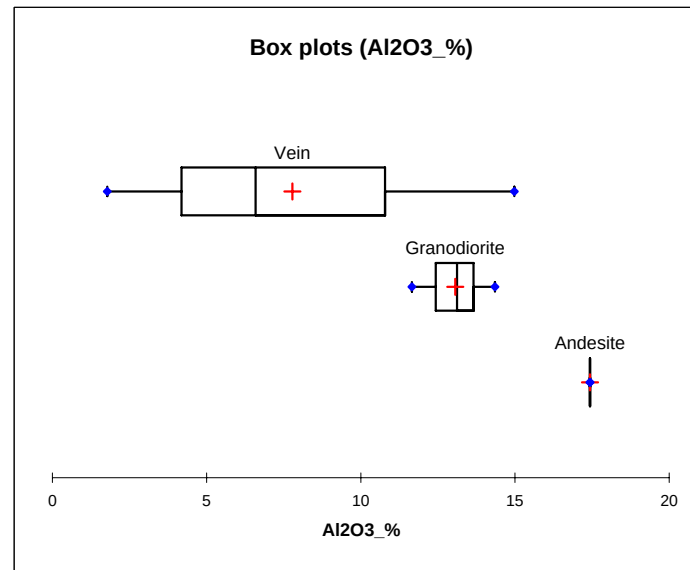
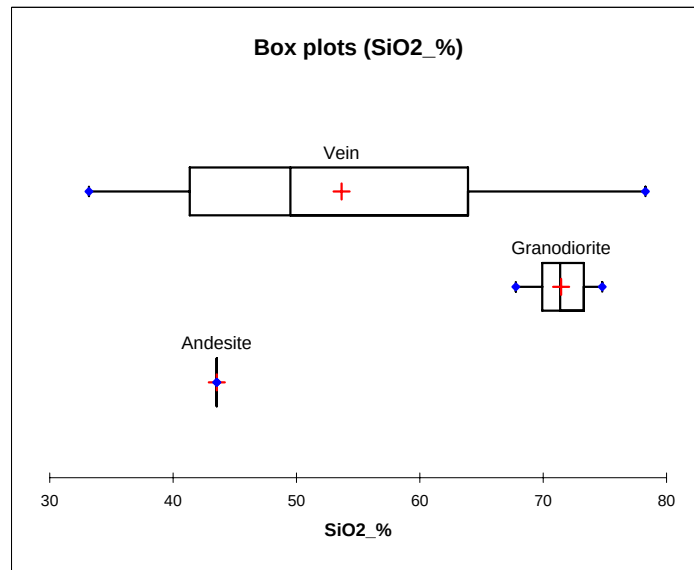
Appendix III
Box Plots
Section G. TM- Major Elmt by Geol Unit

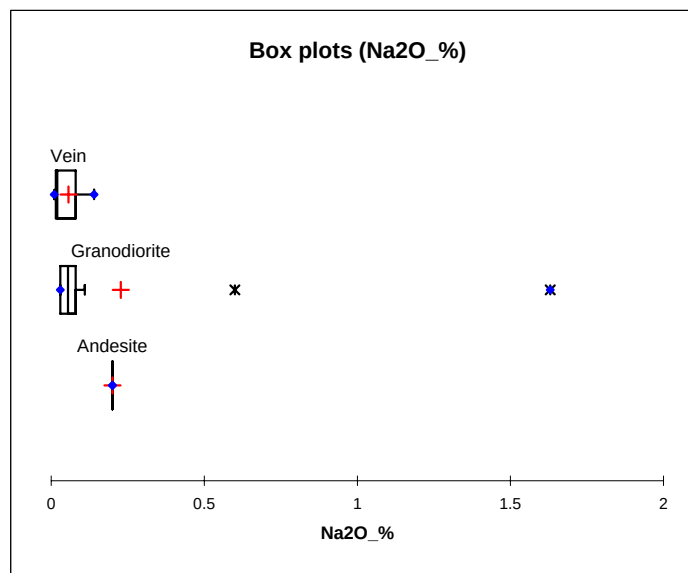
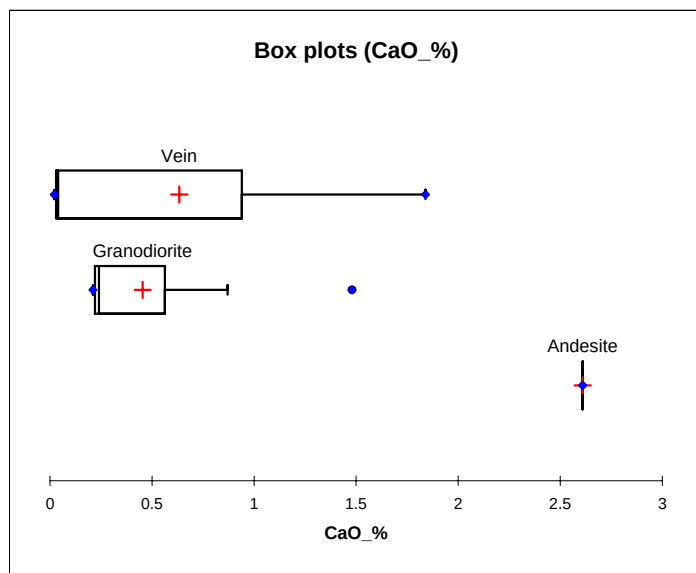
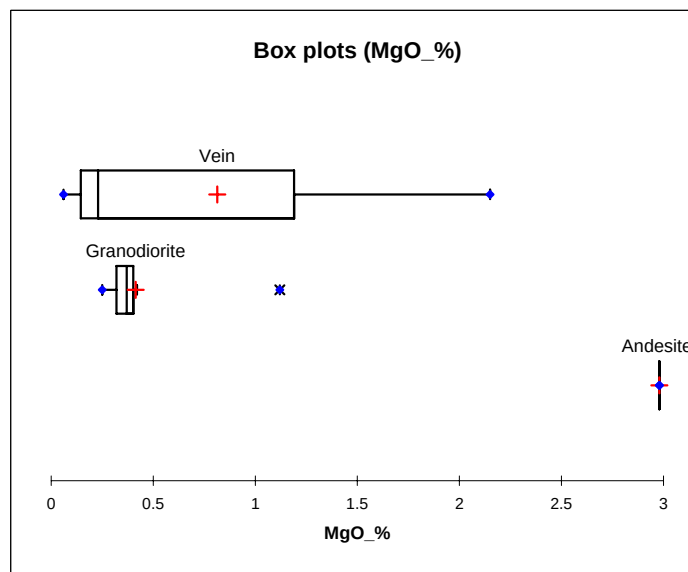
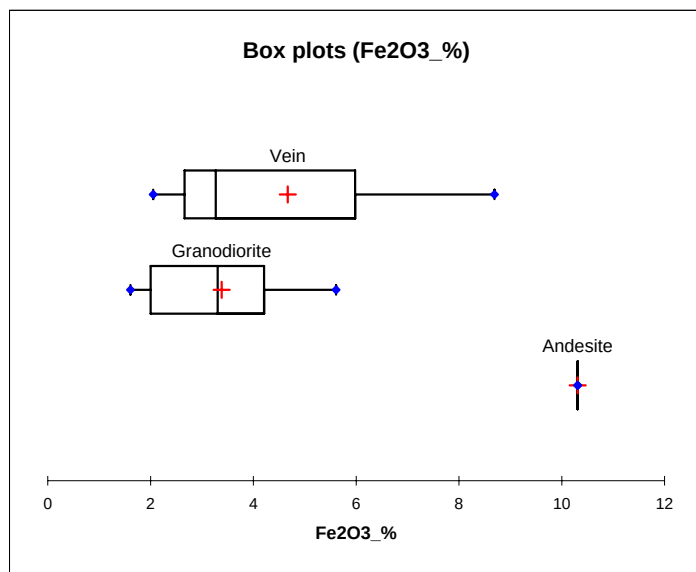
Geological Unit	# of Samples
Vein	3
Granodiorite	11
Andesite	1
Total	15

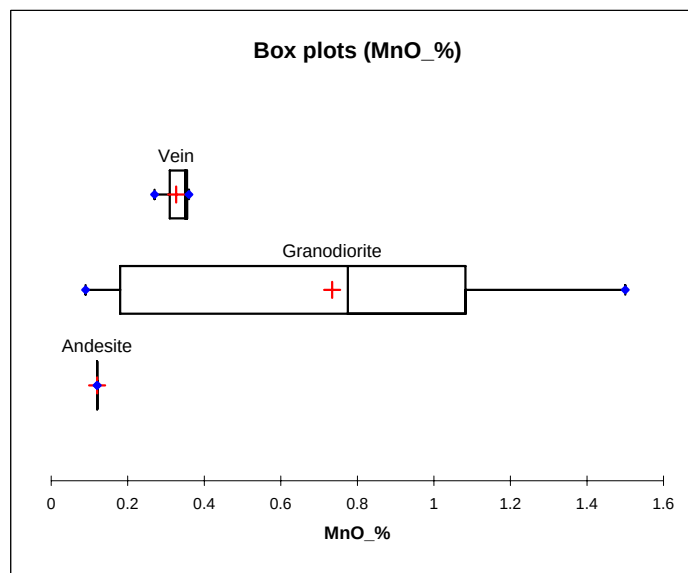
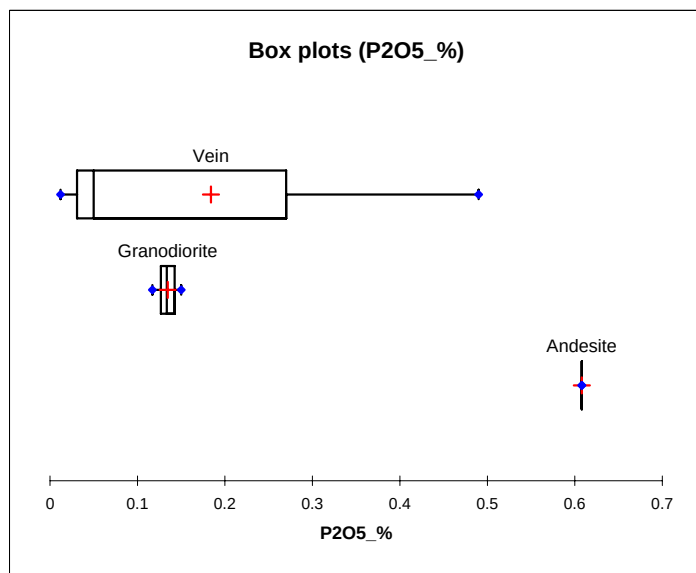
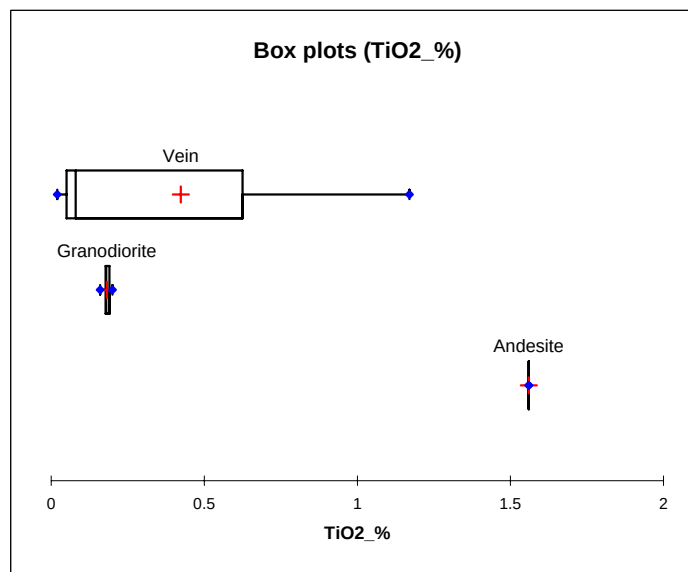
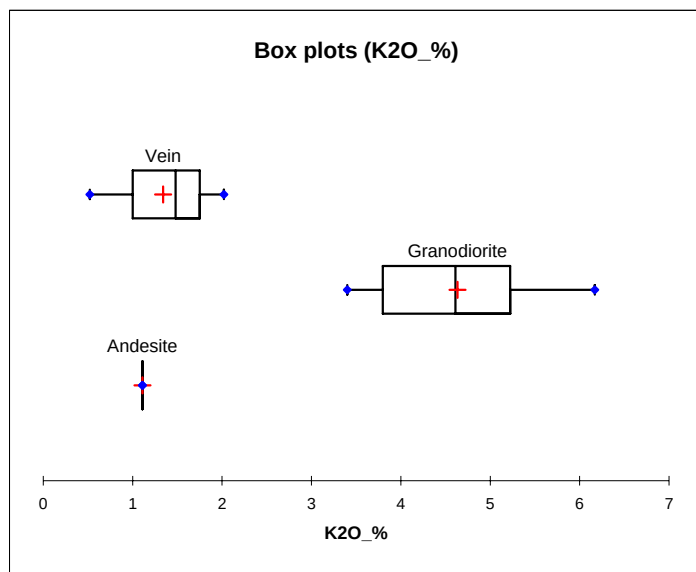
Box Plot Legend:

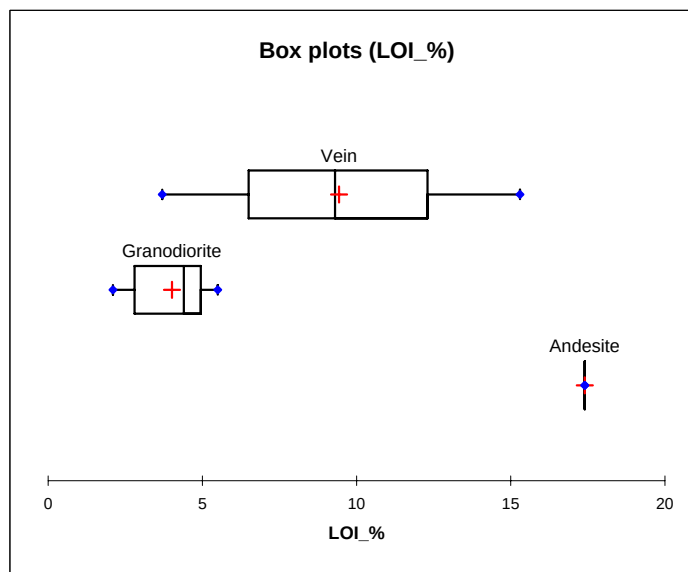
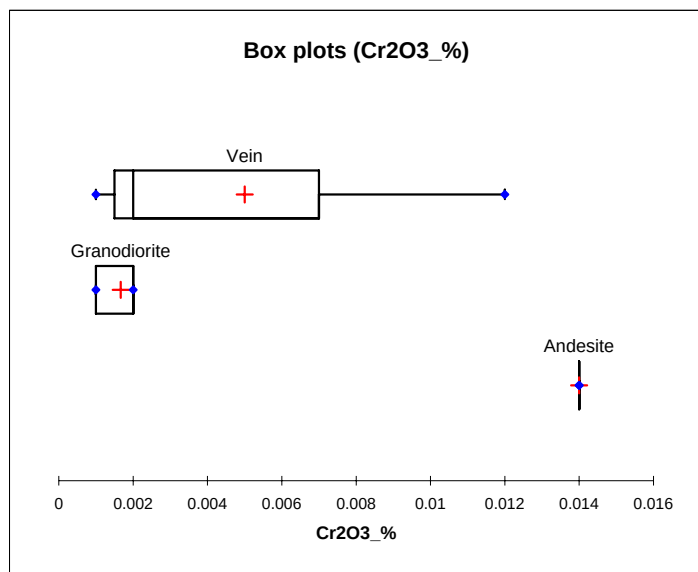
*Lower limit: $Linf = X(i)$ such that $\{X(i) - [Q1 - 1.5 (Q3 - Q1)]\}$ is minimum and $X(i) = Q1 - 1.5 (Q3 - Q1)$.

**Upper limit: $Lsup = X(i)$ such that $\{X(i) - [Q3 + 1.5 (Q3 - Q1)]\}$ is minimum and $X(i) = Q3 + 1.5 (Q3 - Q1)$.





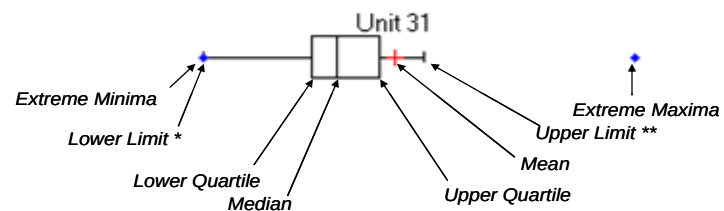




TM Zone

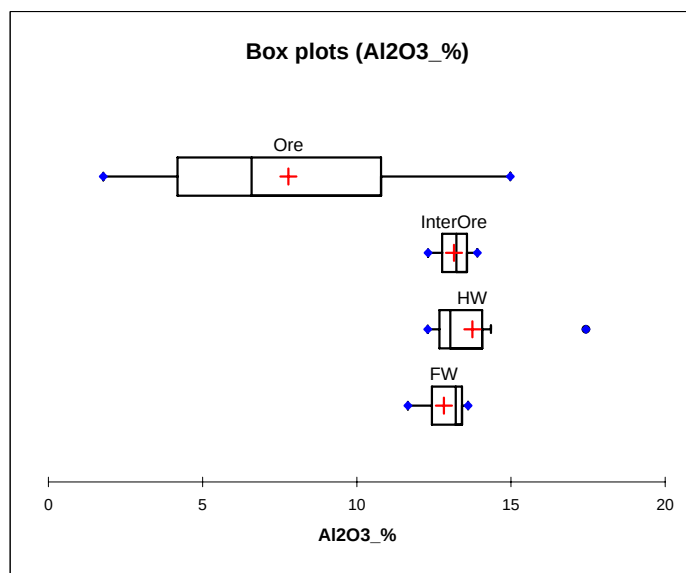
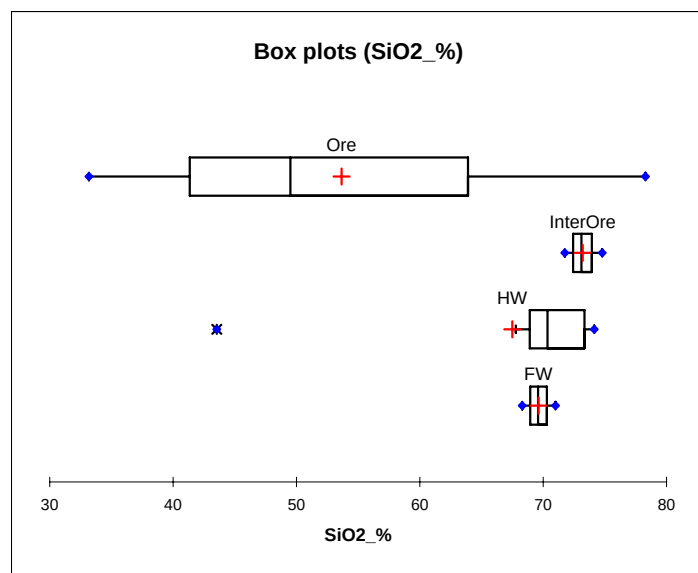
Mine Zone	# of Samples
Ore	3
InterOre	3
Hangingwall (HW)	7
Footwall (FW)	3
Total	16

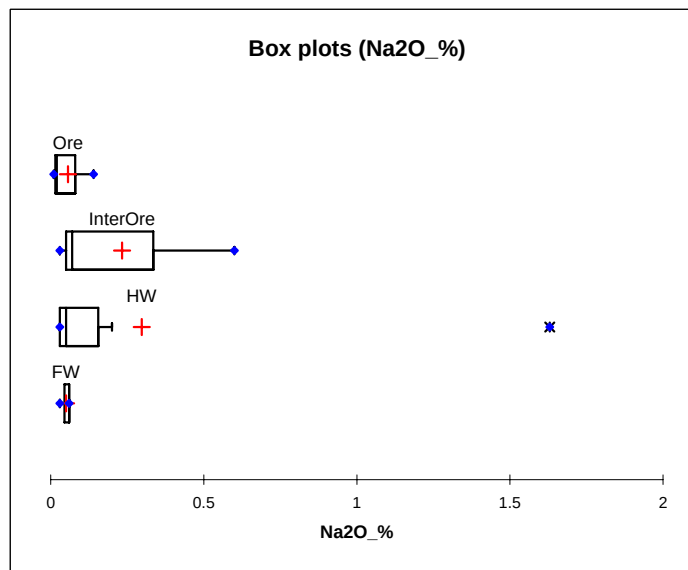
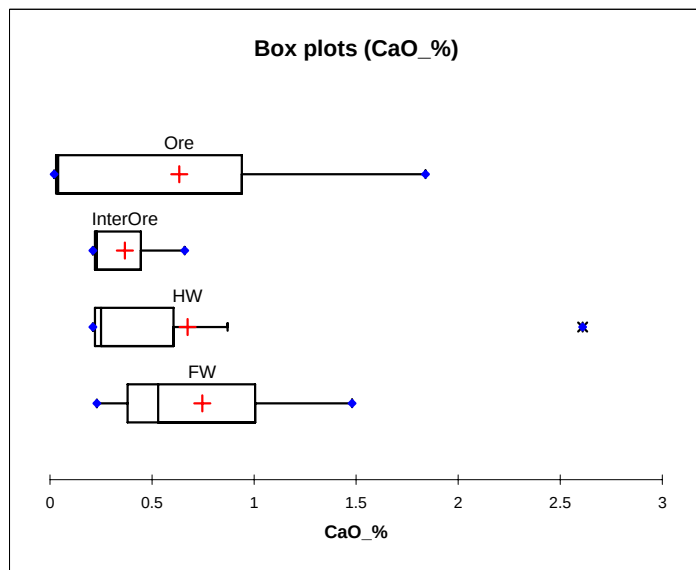
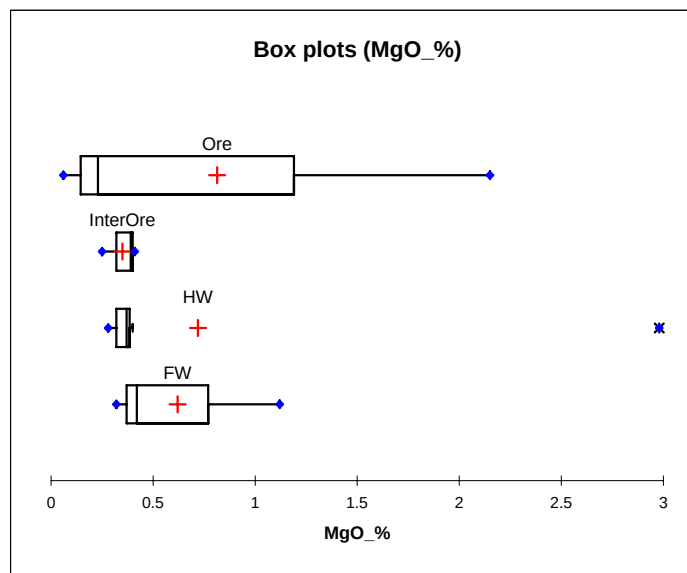
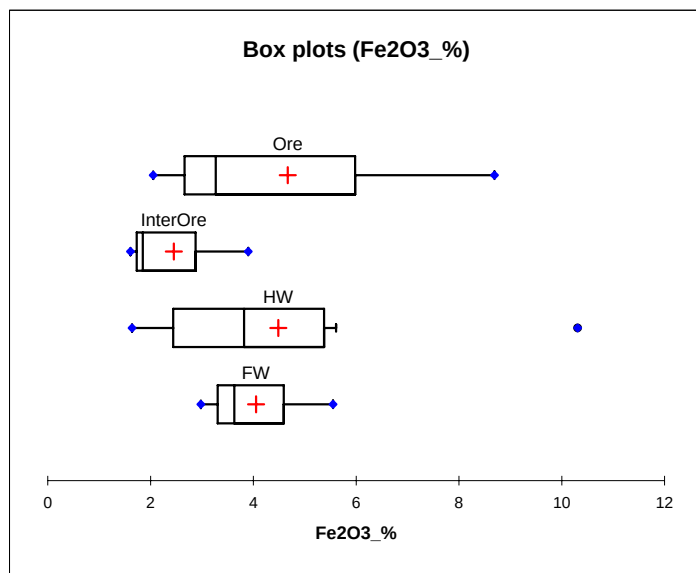
Box Plot Legend:

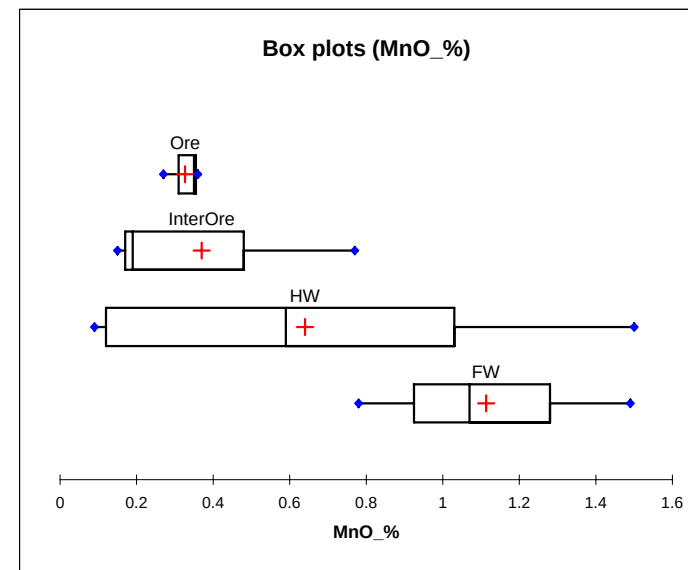
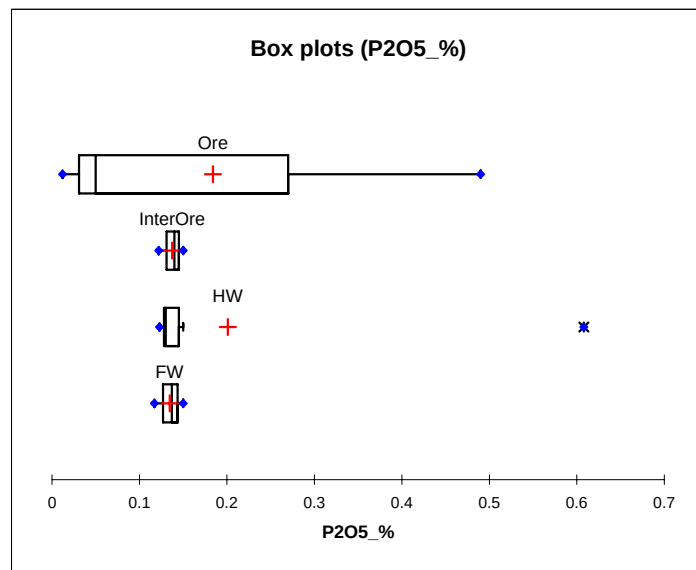
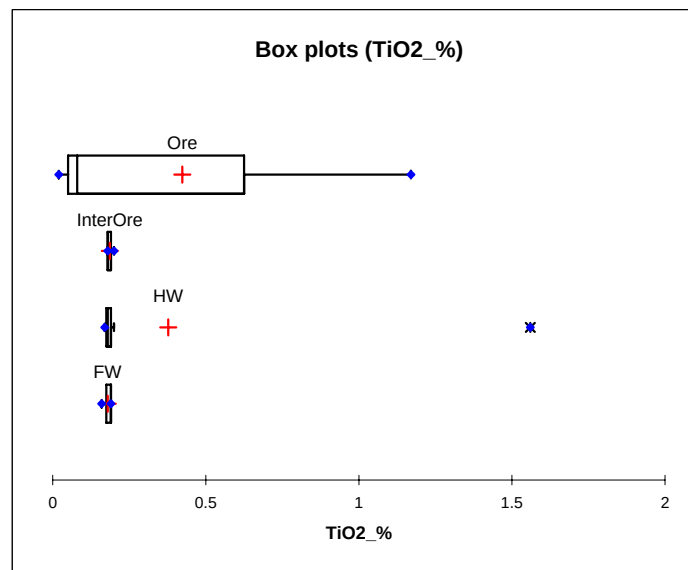
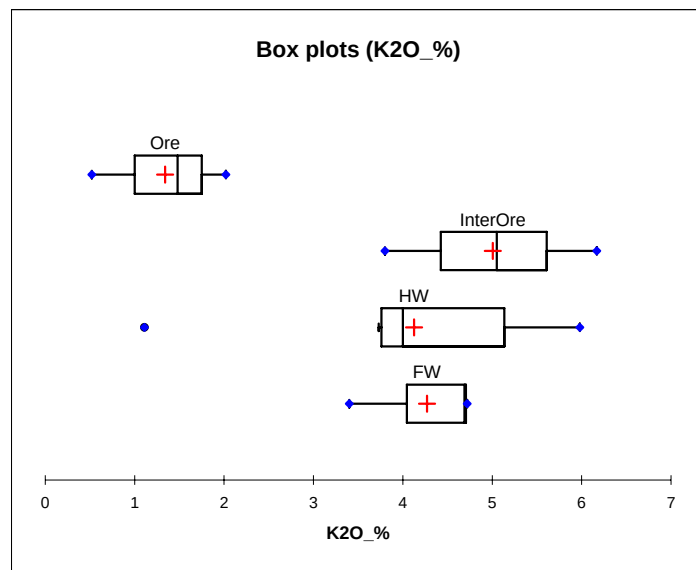


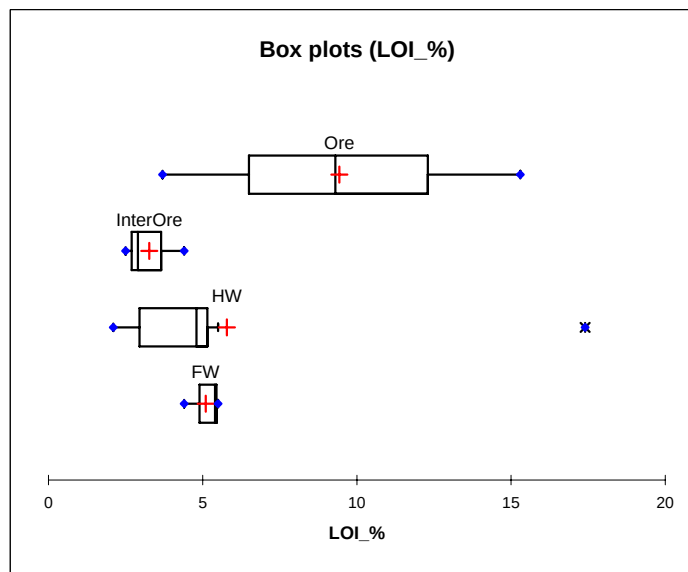
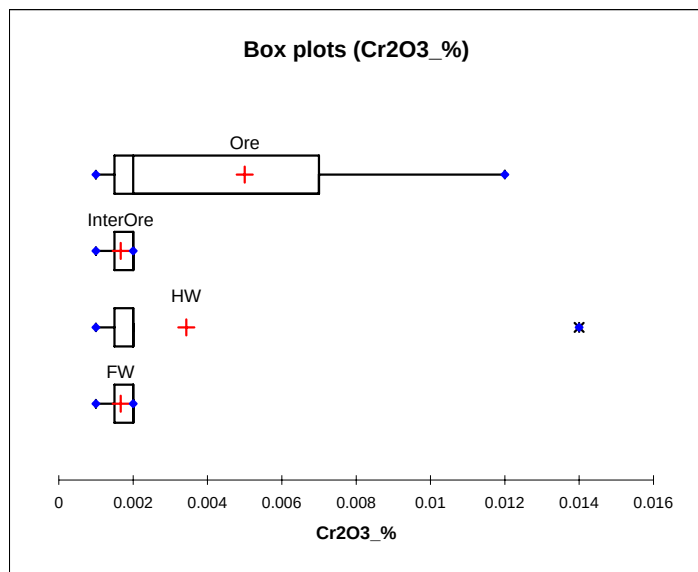
*Lower limit: $Linf = X(i)$ such that $\{X(i) - [Q1 - 1.5 (Q3 - Q1)]\}$ is minimum and $X(i) = Q1 - 1.5 (Q3 - Q1)$.

**Upper limit: $Lsup = X(i)$ such that $\{X(i) - [Q3 + 1.5 (Q3 - Q1)]\}$ is minimum and $X(i) = Q3 + 1.5 (Q3 - Q1)$.





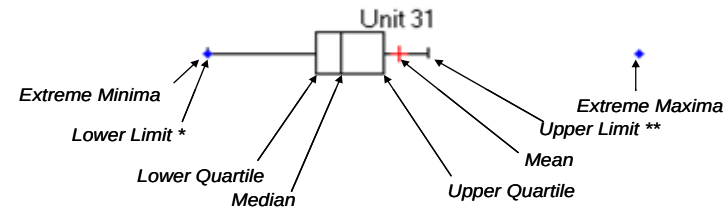




TM Zone

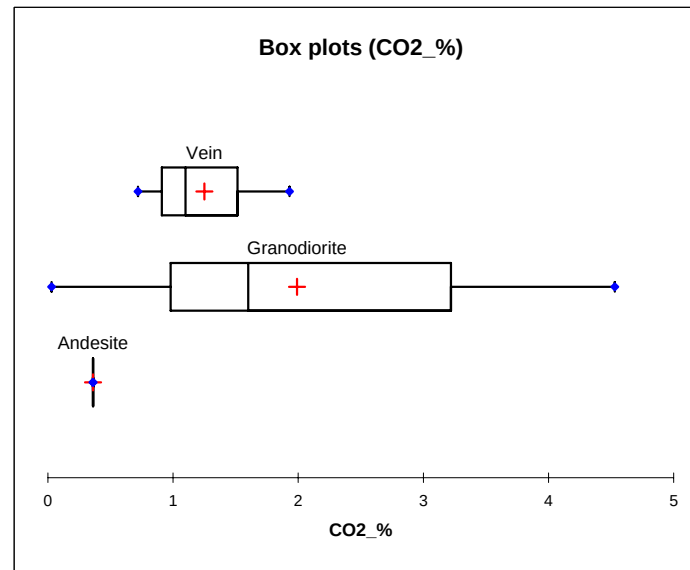
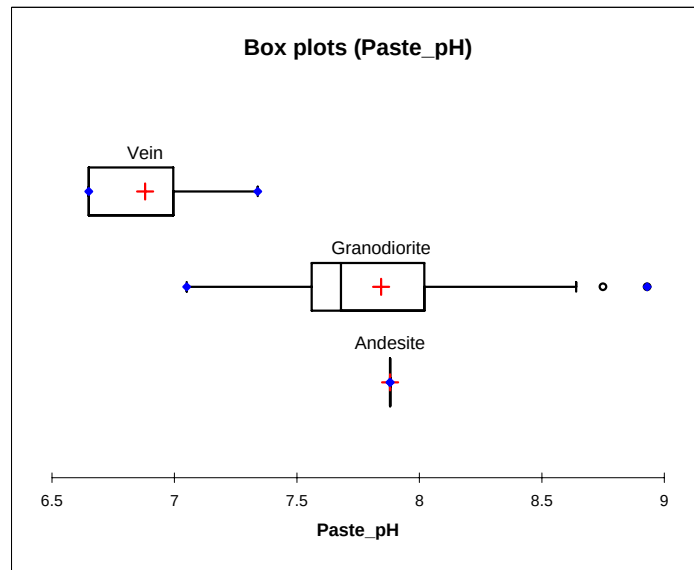
Geological Unit	# of Samples
Vein	3
Granodiorite	17
Andesite	1
Total	21

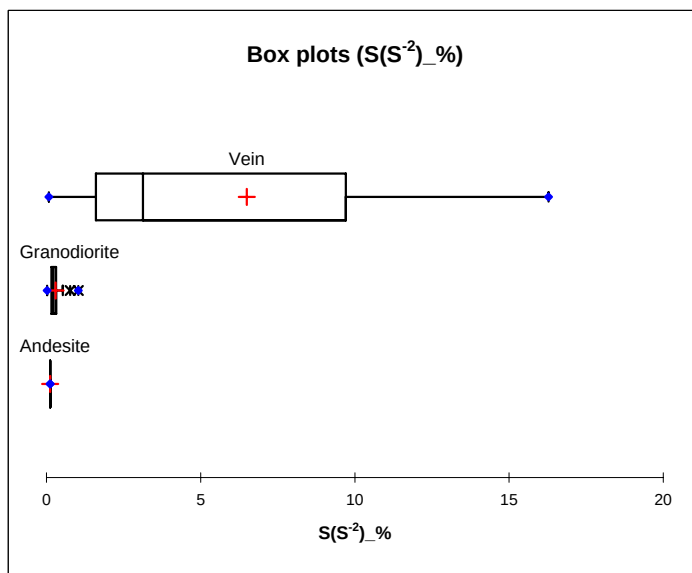
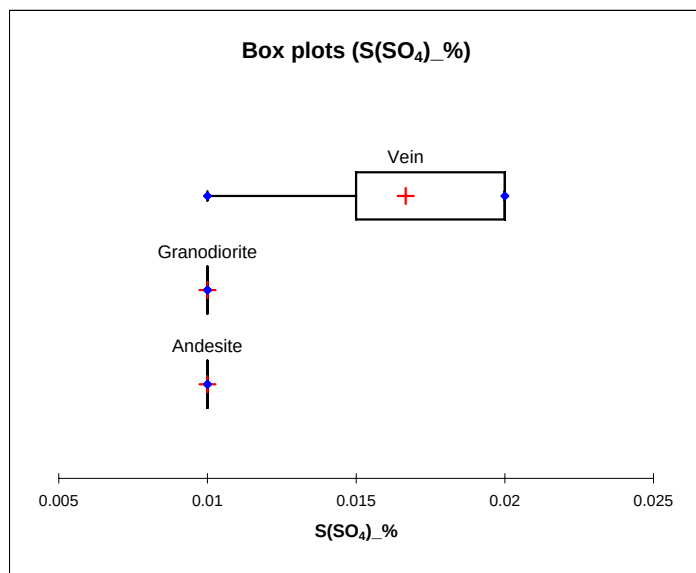
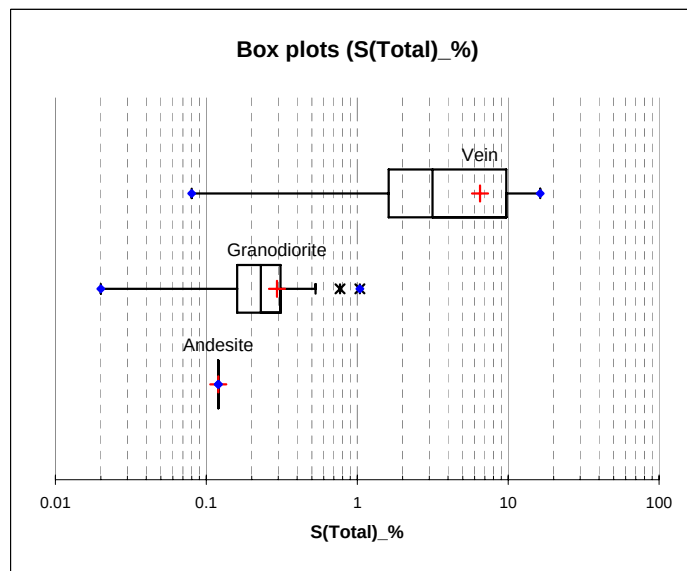
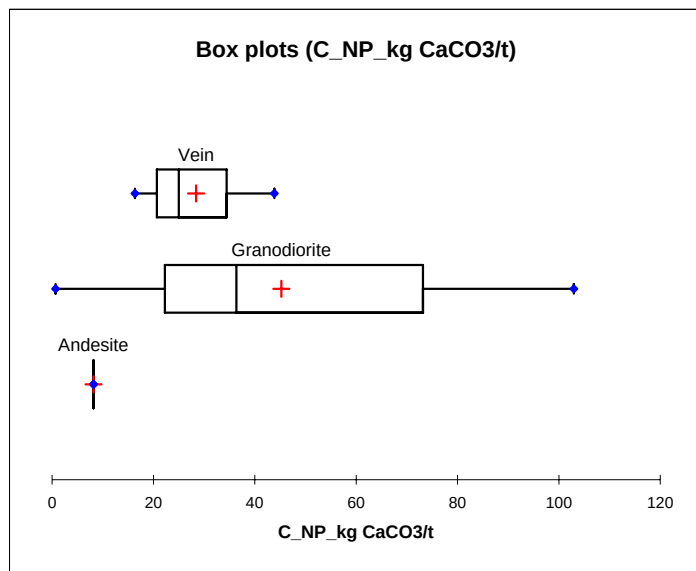
Box Plot Legend:

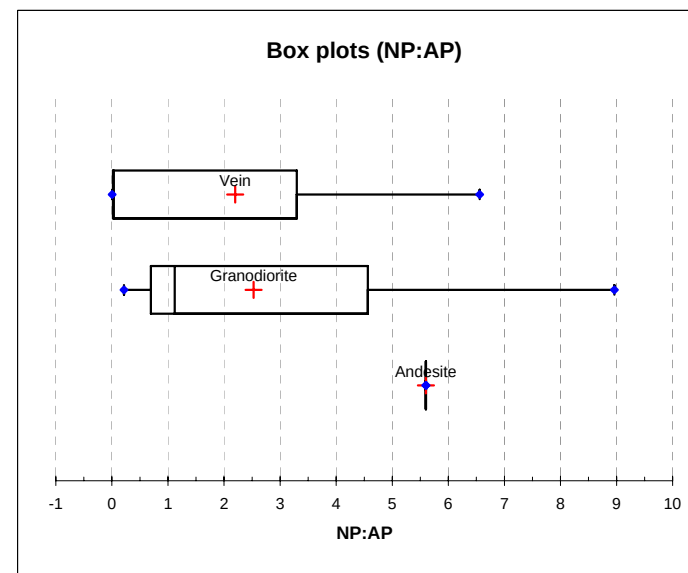
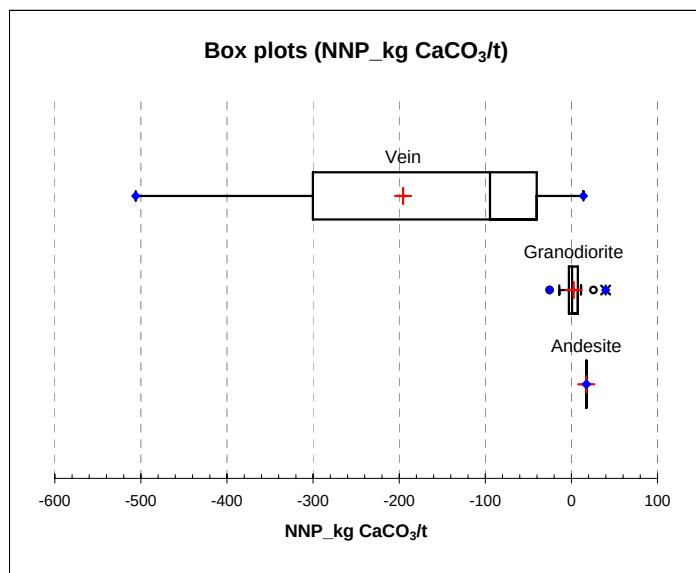
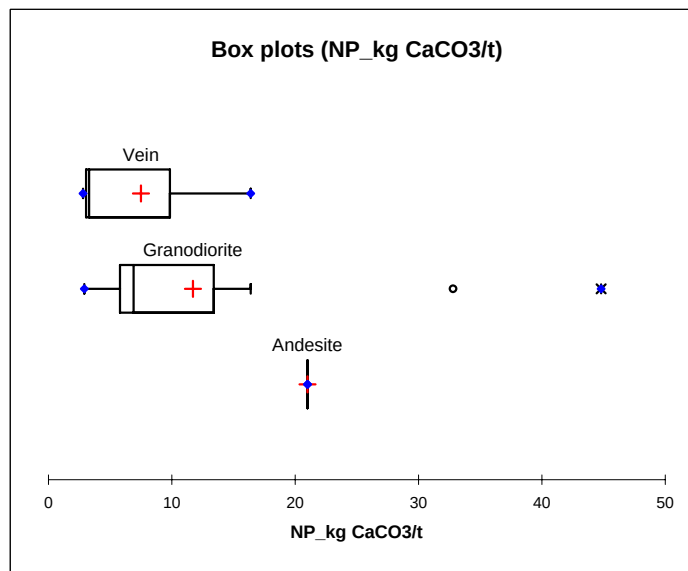
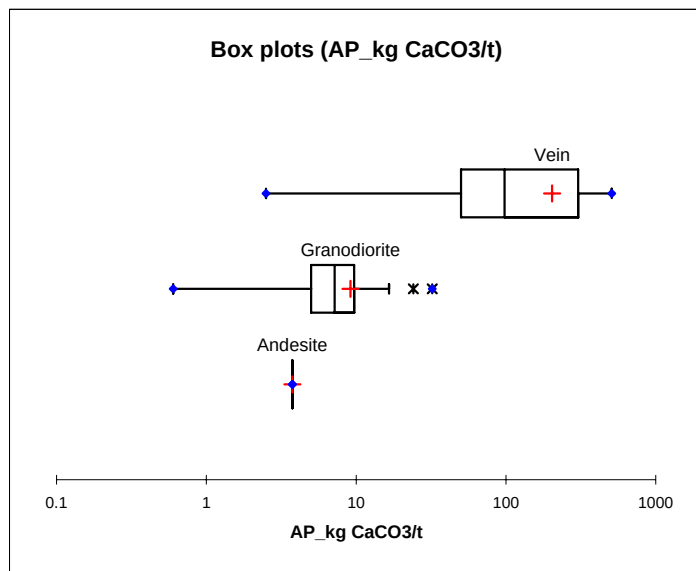


*Lower limit: $Linf = X(i)$ such that $\{X(i) - [Q1 - 1.5 (Q3 - Q1)]\}$ is minimum and $X(i) = Q1 - 1.5 (Q3 - Q1)$.

**Upper limit: $Lsup = X(i)$ such that $\{X(i) - [Q3 + 1.5 (Q3 - Q1)]\}$ is minimum and $X(i) = Q3 + 1.5 (Q3 - Q1)$.



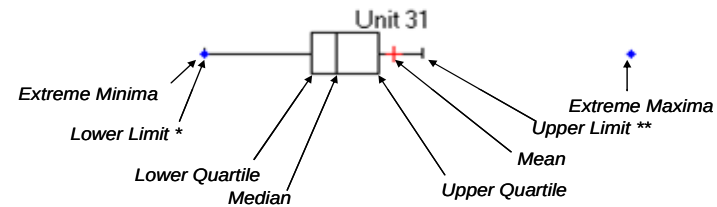




TM Zone

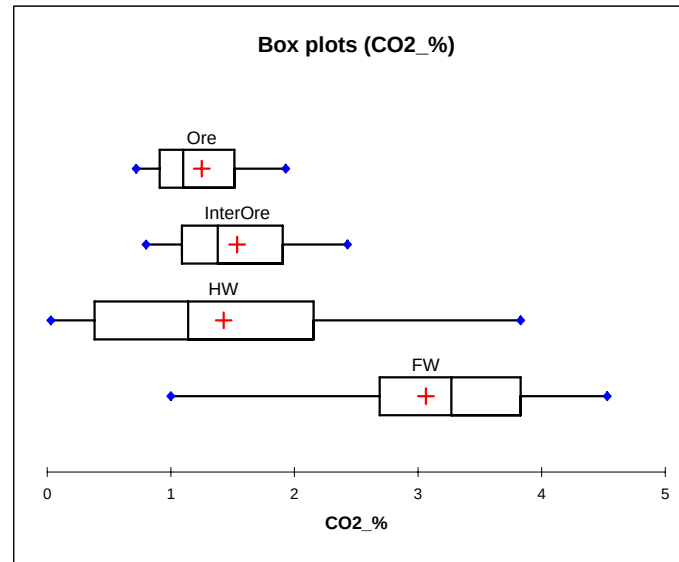
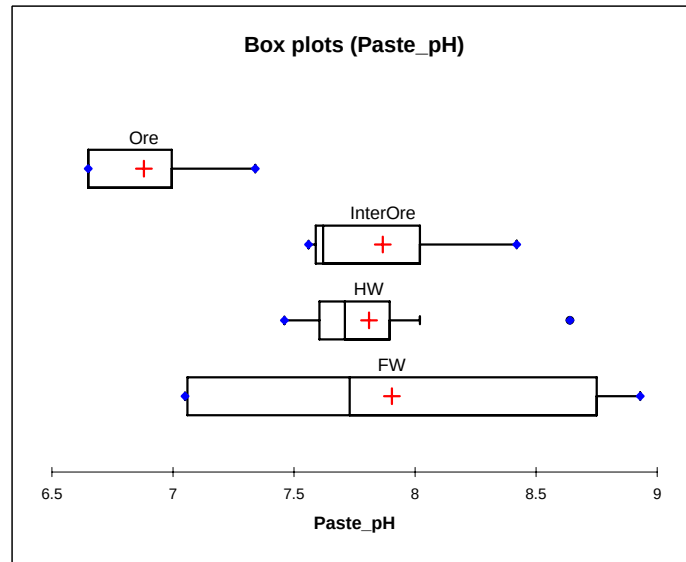
Mine Zone	# of Samples
Ore	3
InterOre	3
Hangingwall (HW)	10
Footwall (FW)	5
Total	21

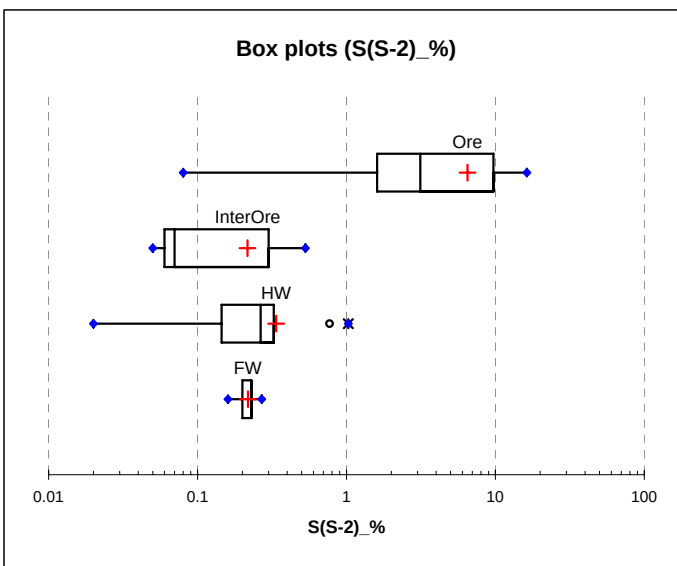
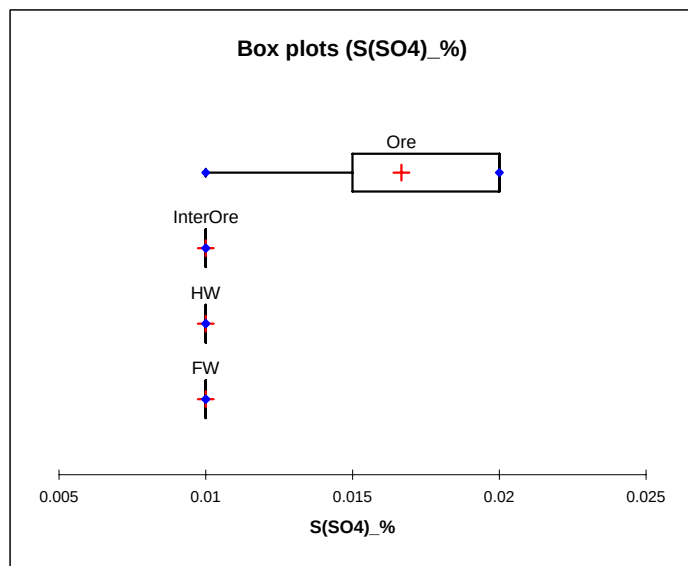
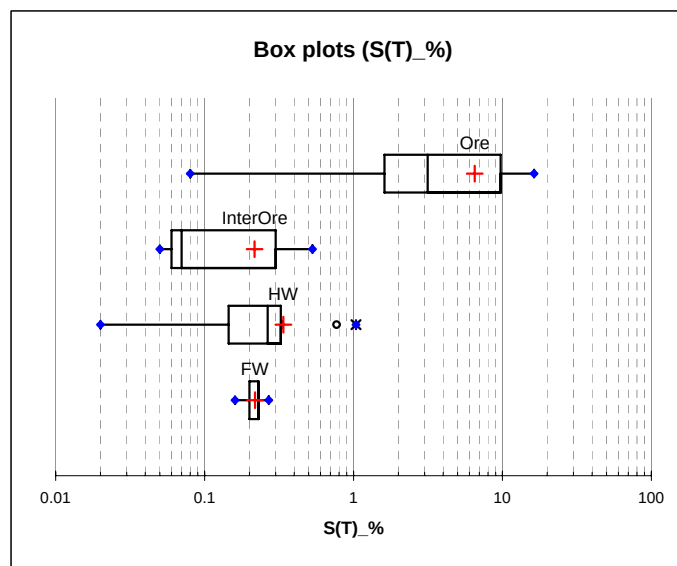
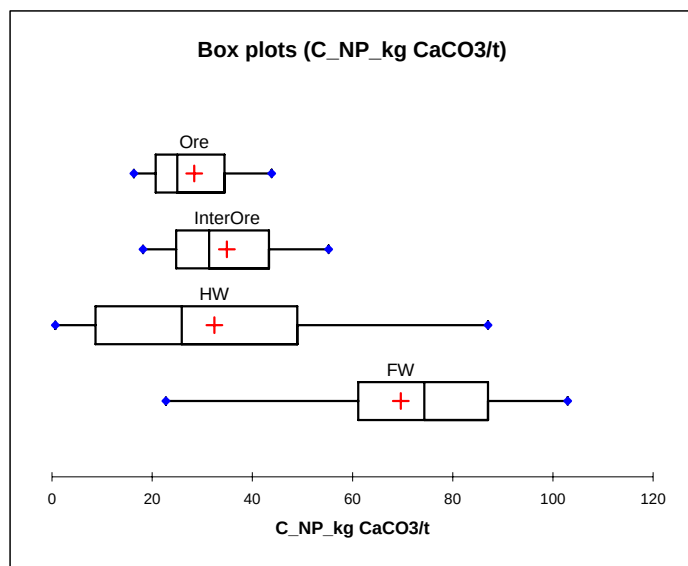
Box Plot Legend:

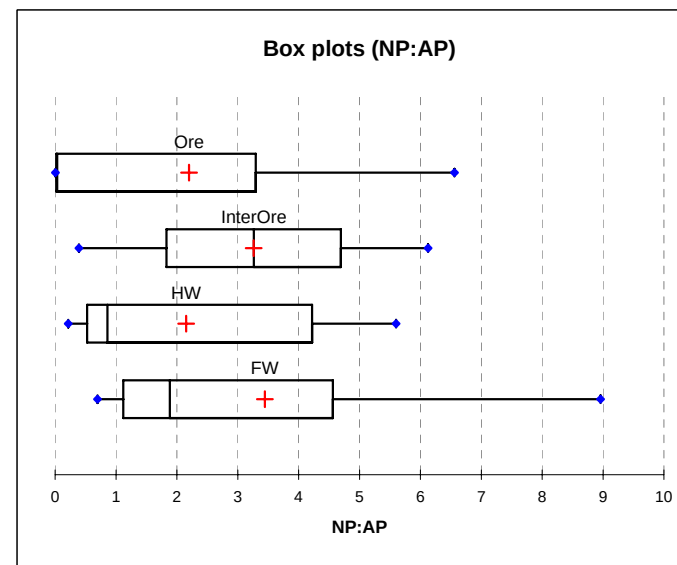
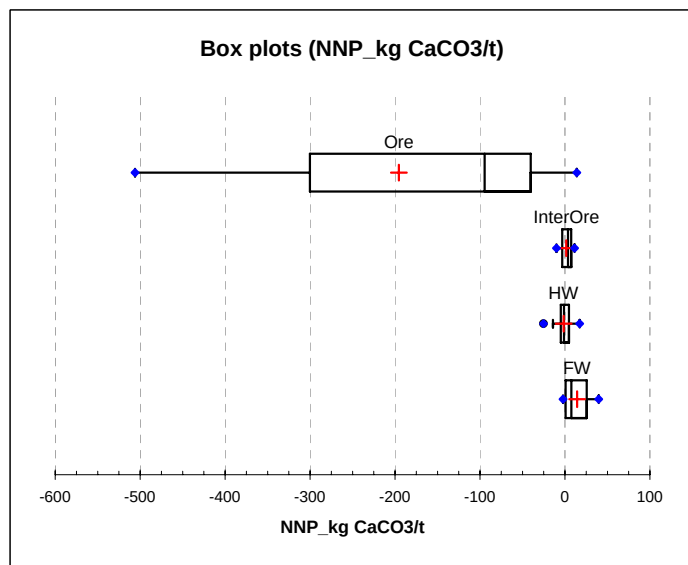
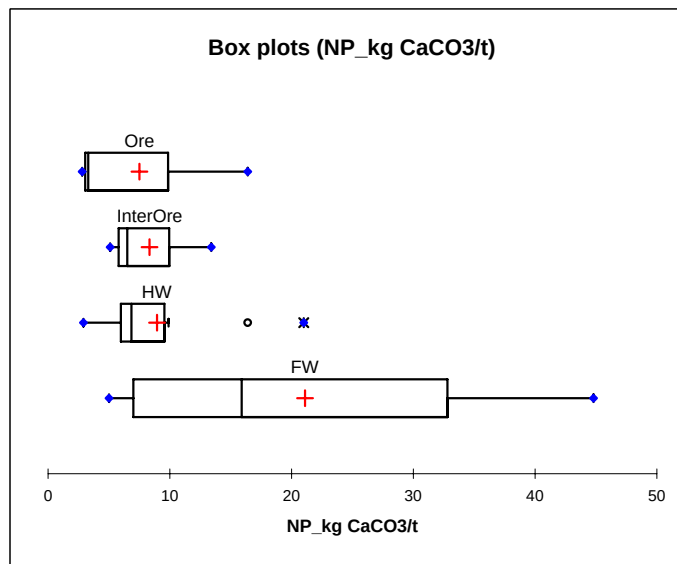
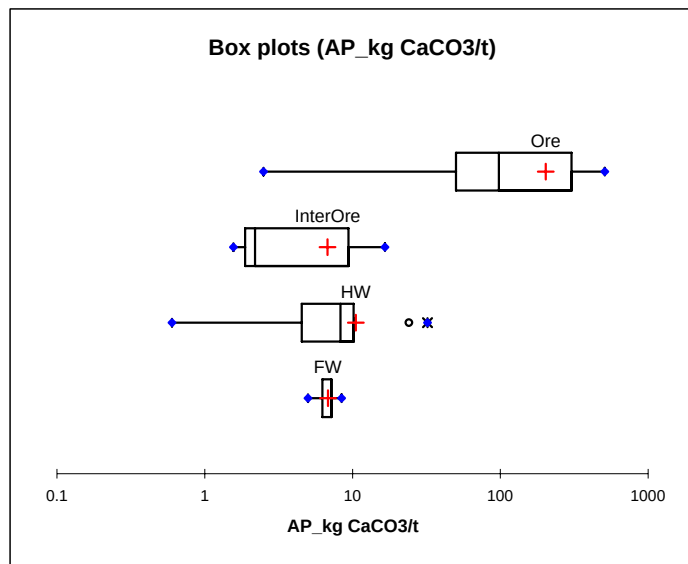


*Lower limit: $Linf = X(i)$ such that $\{X(i) - [Q1 - 1.5 (Q3 - Q1)]\}$ is minimum and $X(i) = Q1 - 1.5 (Q3 - Q1)$.

**Upper limit: $Lsup = X(i)$ such that $\{X(i) - [Q3 + 1.5 (Q3 - Q1)]\}$ is minimum and $X(i) = Q3 + 1.5 (Q3 - Q1)$.



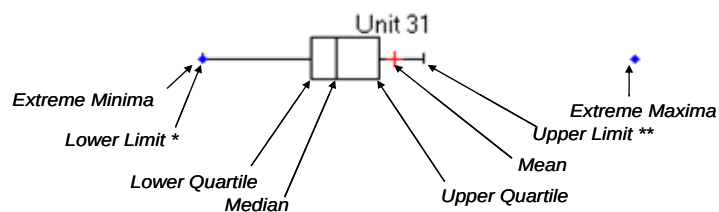




S Zone

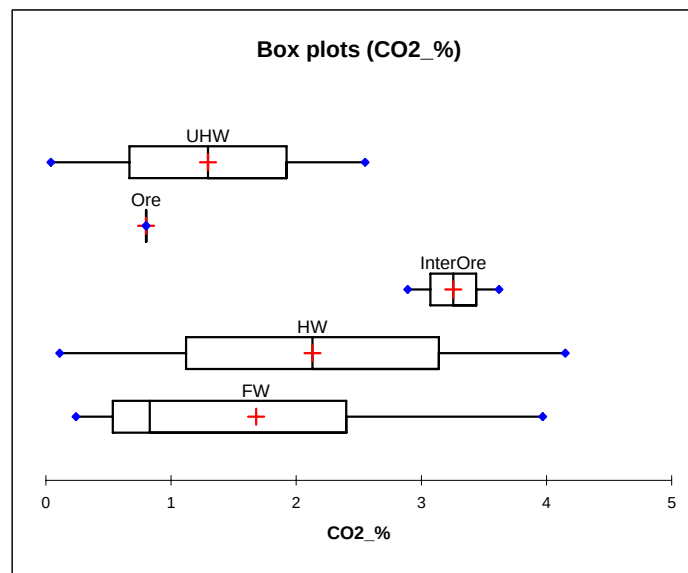
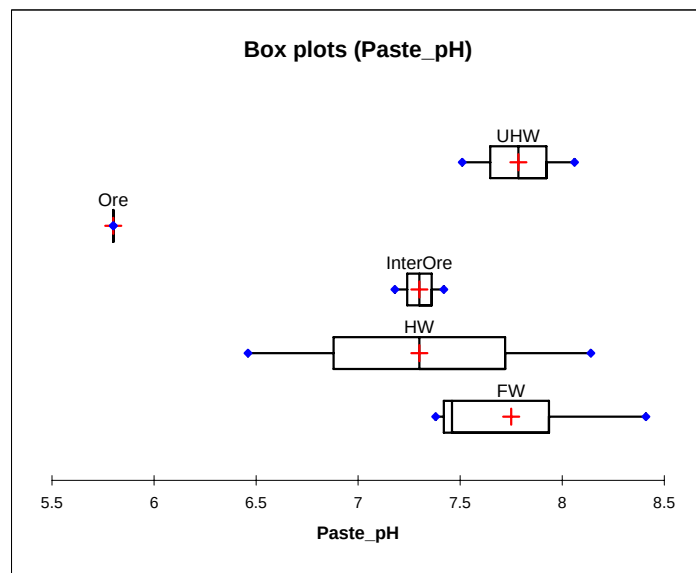
Mine Zone	# of Samples
Ore	1
InterOre	2
Hangingwall (HW)	3
Upper Hangingwall (UHW)	3
Footwall (FW)	8
Total	17

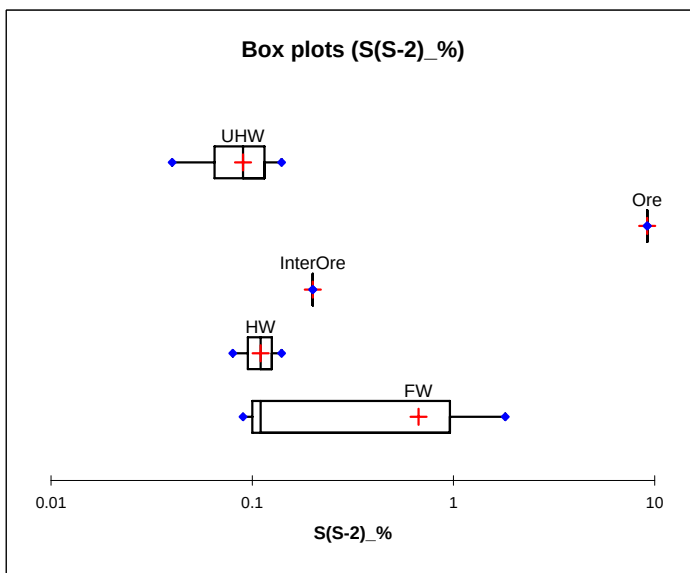
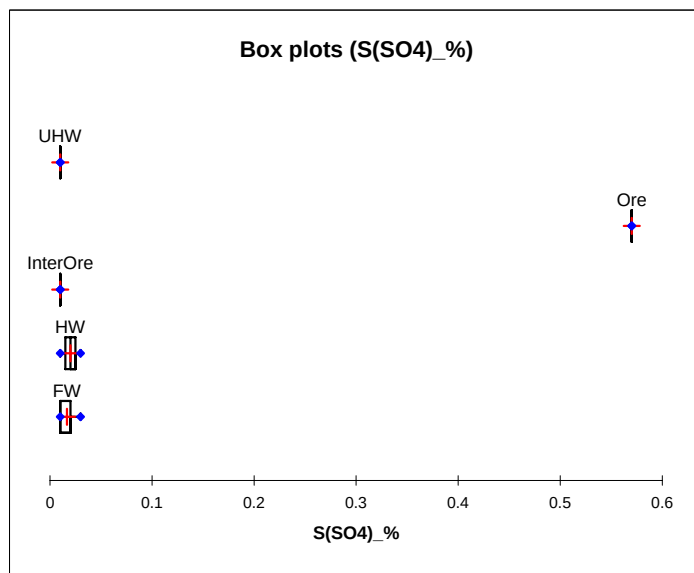
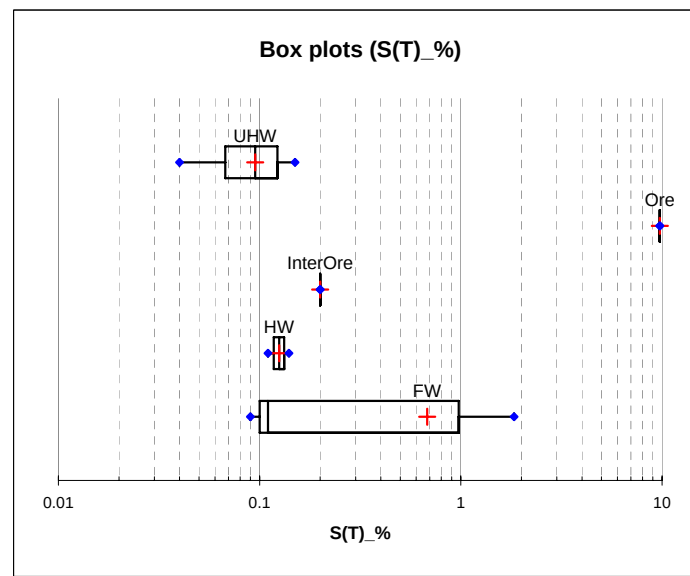
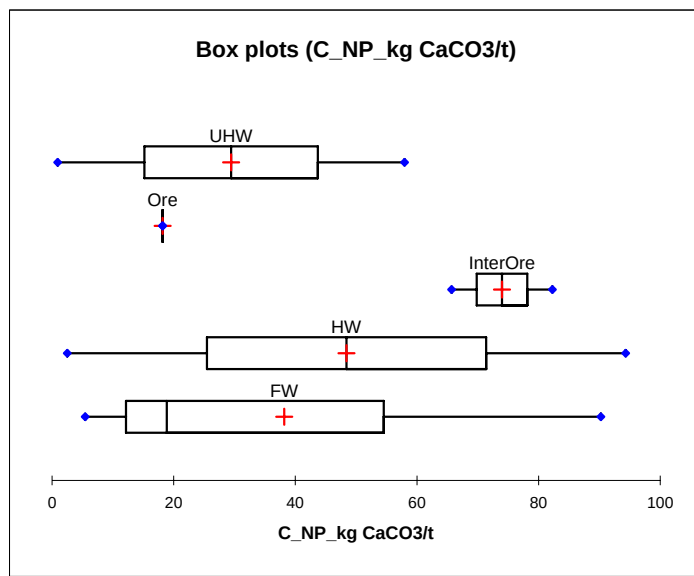
Box Plot Legend:

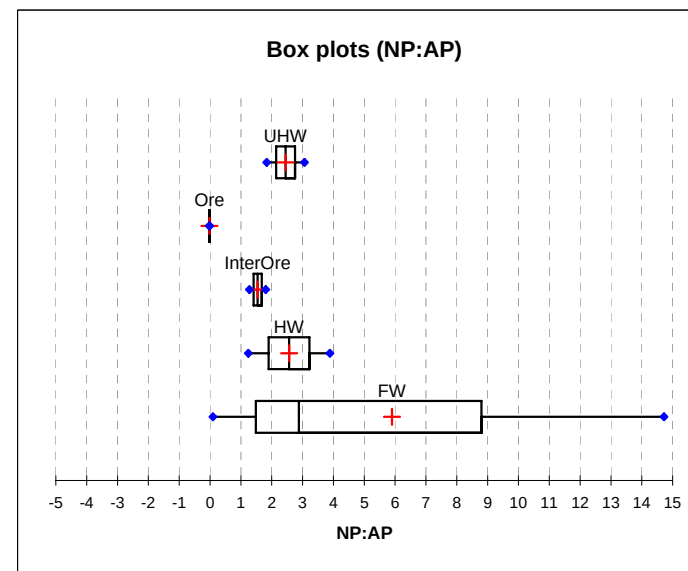
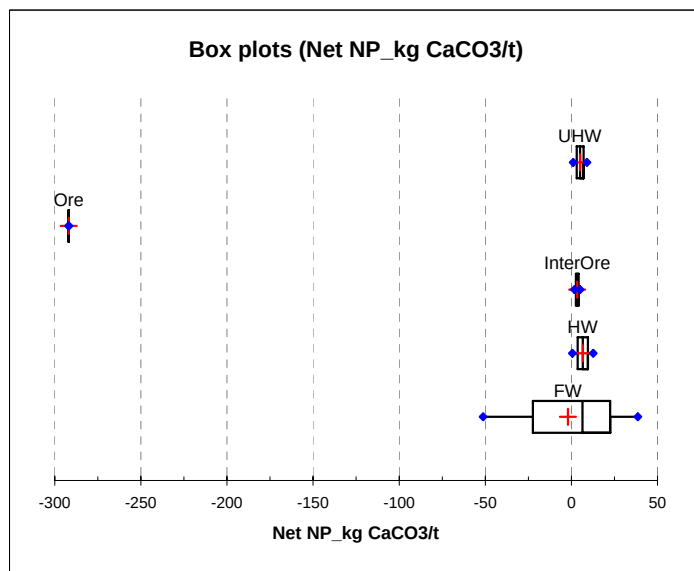
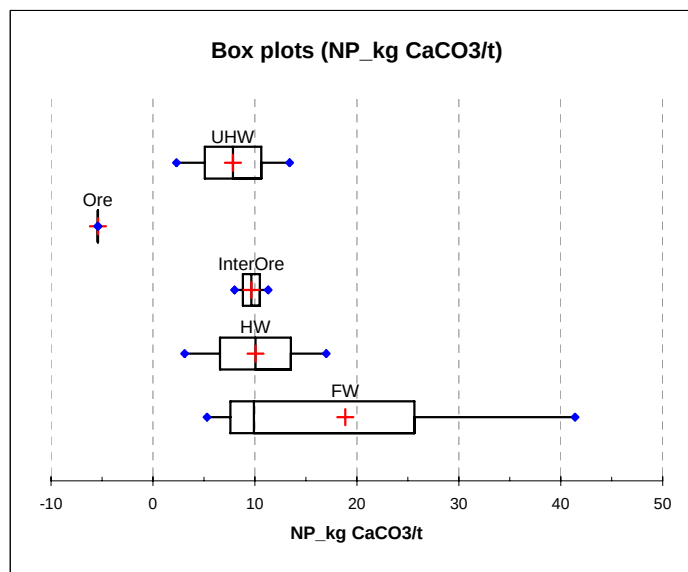
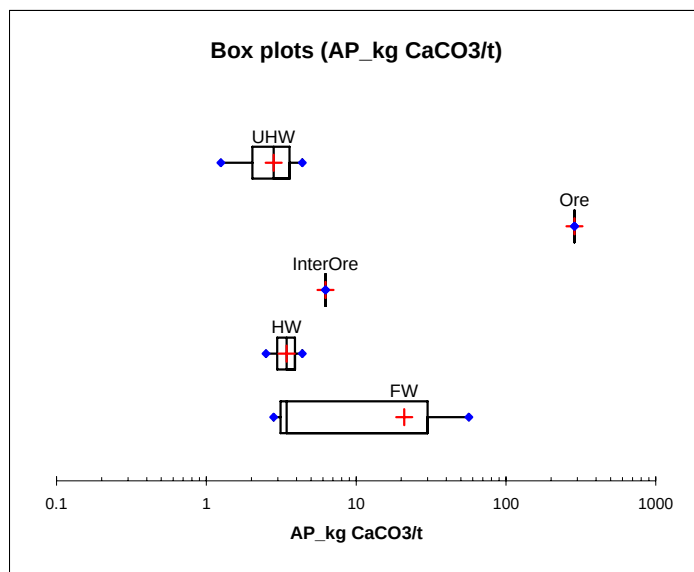


*Lower limit: $Linf = X(i)$ such that $\{X(i) - [Q1 - 1.5 (Q3 - Q1)]\}$ is minimum and $X(i) = Q1 - 1.5 (Q3 - Q1)$.

**Upper limit: $Lsup = X(i)$ such that $\{X(i) - [Q3 + 1.5 (Q3 - Q1)]\}$ is minimum and $X(i) = Q3 + 1.5 (Q3 - Q1)$.







APPENDIX IV

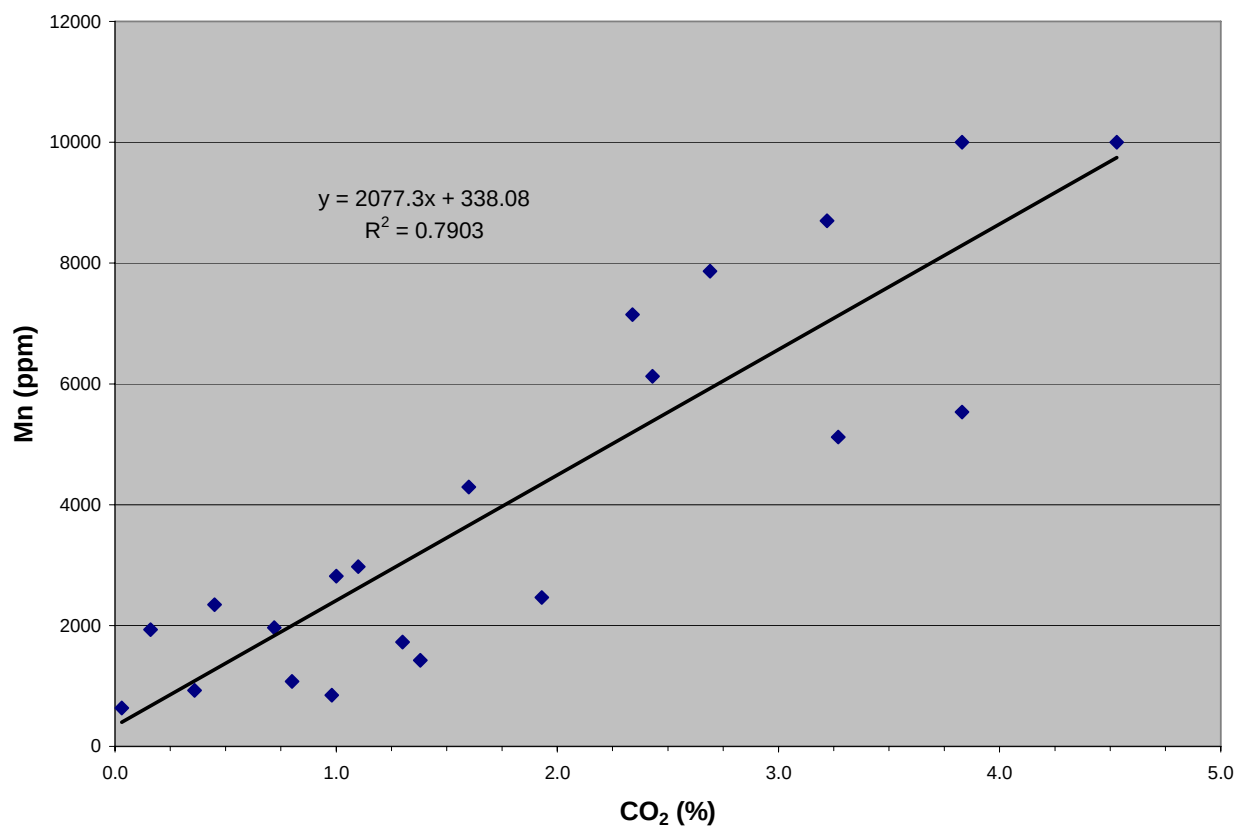
Other Data Correlations and Relationships

- a. Figure IV-1: Correlation of Mn via ICP-MS with Carbonate, TM Zone
- b. Correlation Coefficients – TM Zone Granodiorite
- c. Correlation Coefficients – TM Zone, All Samples

APPENDIX IV – OTHER DATA CORRELATIONS AND RELATIONSHIPS

A. Figures

Figure IV-1. Correlation of Mn via ICP-MS with Carbonate as CO₂, TM Zone



XLSTAT 2007.8.03 - Similarity/Dissimilarity matrices (correlation...) - on 5/21/2008 at 11:29:48 AM

Data: Workbook = Slvr Hart Rock GeoEnviro Char Data ICP Top 12.xls / Sheet = TM Zone ICP Granodiorite / Range = 'TM Zone ICP

Granodiorite'!\$AB\$1:\$AN\$45 / 44 rows and 13 columns

Similarity: Pearson correlation coefficient

Summary statistics

Summary statistics:

Variable	Observation	with missing	without missing	Minimum	Maximum	Mean	std. deviation
Ag_ppb	44	0	44	147.000	51503.000	9346.159	12241.700
Al_%	44	0	44	0.110	0.740	0.270	0.112
As_ppm	44	0	44	1.800	913.700	75.636	151.955
Ca_%	44	0	44	0.020	0.950	0.252	0.223
Cd_ppm	44	0	44	0.300	59.910	9.246	12.155
Cu_ppm	44	0	44	3.250	133.610	34.645	31.924
Fe_%	44	0	44	0.670	3.340	1.601	0.784
Hg_ppb	44	0	44	5.000	28.000	8.864	5.386
Mn_ppm	44	0	44	85.000	10000.000	3766.295	2980.827
Pb_ppm	44	0	44	9.590	869.040	285.312	234.777
S_%	44	0	44	0.020	0.960	0.226	0.211
Sb_ppm	44	0	44	0.190	38.690	6.055	7.487
Zn_ppm	44	0	44	231.600	10000.000	3577.852	3003.236

Proximity matrix (Pearson correlation coefficient):

	Ag_ppb	Al_%	As_ppm	Ca_%	Cd_ppm	Cu_ppm	Fe_%	Hg_ppb	Mn_ppm	Pb_ppm	S_%	Sb_ppm	Zn_ppm
Ag_ppb	1	-0.332	0.142	-0.389	0.147	0.686	0.290	0.076	0.223	0.271	0.282	0.502	0.007
Al_%	-0.332	1	-0.168	0.247	-0.259	-0.268	-0.191	-0.286	-0.297	-0.364	-0.399	-0.328	-0.115
As_ppm	0.142	-0.168	1	-0.240	0.659	0.050	0.188	0.319	0.184	0.283	0.549	0.254	0.335
Ca_%	-0.389	0.247	-0.240	1	-0.217	-0.418	-0.188	-0.142	-0.117	-0.161	-0.315	-0.336	-0.090
Cd_ppm	0.147	-0.259	0.659	-0.217	1	0.117	0.441	0.733	0.479	0.368	0.850	0.061	0.760
Cu_ppm	0.686	-0.268	0.050	-0.418	0.117	1	0.065	0.119	0.009	0.141	0.332	0.298	0.112
Fe_%	0.290	-0.191	0.188	-0.188	0.441	0.065	1	0.137	0.943	0.346	0.356	0.357	0.199
Hg_ppb	0.076	-0.286	0.319	-0.142	0.733	0.119	0.137	1	0.222	0.320	0.652	-0.106	0.660
Mn_ppm	0.223	-0.297	0.184	-0.117	0.479	0.009	0.943	0.222	1	0.429	0.393	0.211	0.268
Pb_ppm	0.271	-0.364	0.283	-0.161	0.368	0.141	0.346	0.320	0.429	1	0.328	0.392	0.197
S_%	0.282	-0.399	0.549	-0.315	0.850	0.332	0.356	0.652	0.393	0.328	1	0.050	0.651
Sb_ppm	0.502	-0.328	0.254	-0.336	0.061	0.298	0.357	-0.106	0.211	0.392	0.050	1	-0.101
Zn_ppm	0.007	-0.115	0.335	-0.090	0.760	0.112	0.199	0.660	0.268	0.197	0.651	-0.101	1

 $r^2 > 0.800$

Other Data Correlations and Relationships

C. TM Zone - All Samples

XLSTAT 2007.8.03 - Similarity/Dissimilarity matrices (correlation...) - on 6/13/2008 at 10:45:16 AM

Data: Workbook = Slvr Hart Rock GeoEnviro Char Data ICP Top 12.xls / Sheet = TM Zone ICP / Range = 'TM Zone ICP'!\$AB\$1:\$AN\$51 / 50 rows and 13 columns

Similarity: Pearson correlation coefficient

Proximity matrix (Pearson correlation coefficient) ▼

Variable	Observation	with missing	without missing	Minimum	Maximum	Mean	Std. deviation
Ag_ppb	50	0	50	147.000	100000.000	15618.800	25834.393
Al_%	50	0	50	0.080	4.450	0.397	0.712
As_ppm	50	0	50	1.800	3779.100	173.106	553.094
Ca_%	50	0	50	0.010	1.690	0.282	0.326
Cd_ppm	50	0	50	0.300	805.280	47.268	159.085
Cu_ppm	50	0	50	3.250	4232.160	243.539	841.343
Fe_%	50	0	50	0.670	5.860	1.829	1.093
Hg_ppb	50	0	50	5.000	545.000	30.800	92.830
Mn_ppm	50	0	50	85.000	10000.000	3809.740	3001.964
Pb_ppm	50	0	50	9.590	10000.000	677.250	1936.870
S_%	50	0	50	0.020	8.380	0.607	1.552
Sb_ppm	50	0	50	0.190	2000.000	102.944	398.087
Zn_ppm	50	0	50	231.600	10000.000	4344.428	3508.990

Proximity matrix (Pearson correlation coefficient):

	Ag_ppb	Al_%	As_ppm	Ca_%	Cd_ppm	Cu_ppm	Fe_%	Hg_ppb	Mn_ppm	Pb_ppm	S_%	Sb_ppm	Zn_ppm
Ag_ppb	1	-0.185	0.612	-0.353	0.770	0.833	0.297	0.771	0.264	0.697	0.816	0.814	0.402
Al_%	-0.185	1	-0.098	0.770	-0.100	-0.102	0.585	-0.106	-0.195	-0.120	-0.131	-0.095	0.273
As_ppm	0.612	-0.098	1	-0.193	0.800	0.804	0.290	0.684	0.197	0.787	0.746	0.531	0.359
Ca_%	-0.353	0.770	-0.193	1	-0.198	-0.201	0.340	-0.197	-0.201	-0.199	-0.239	-0.185	0.101
Cd_ppm	0.770	-0.100	0.800	-0.198	1	0.944	0.256	0.980	0.119	0.981	0.988	0.805	0.437
Cu_ppm	0.833	-0.102	0.804	-0.201	0.944	1	0.311	0.934	0.187	0.901	0.945	0.914	0.412
Fe_%	0.297	0.585	0.290	0.340	0.256	0.311	1	0.225	0.611	0.219	0.251	0.300	0.445
Hg_ppb	0.771	-0.106	0.684	-0.197	0.980	0.934	0.225	1	0.095	0.959	0.987	0.865	0.417
Mn_ppm	0.264	-0.195	0.197	-0.201	0.119	0.187	0.611	0.095	1	0.106	0.144	0.209	0.225
Pb_ppm	0.697	-0.120	0.787	-0.199	0.981	0.901	0.219	0.959	0.106	1	0.955	0.734	0.351
S_%	0.816	-0.131	0.746	-0.239	0.988	0.945	0.251	0.987	0.144	0.955	1	0.851	0.470
Sb_ppm	0.814	-0.095	0.531	-0.185	0.805	0.914	0.300	0.865	0.209	0.734	0.851	1	0.399
Zn_ppm	0.402	0.273	0.359	0.101	0.437	0.412	0.445	0.417	0.225	0.351	0.470	0.399	1

 $r^2 > 0.800$

APPENDIX V

Drill Core Photographs, TM and S Zones

- a. Hole 05-14, TM Zone Section C'-C, 9820N
- b. Hole 07-03, TM Zone Section B'-B, 9700 N
- c. Hole 06-02, S Zone

Static Test Results
Hole 05-14 (TM Zone Section C'-C, 9820 N)



Sample#	From (m)	To (m)	Lithology	Mine Zone	Al (%)	As (ppm)	Ca (%)	Cd (ppm)	Cu (ppm)	Fe (%)	Mn (ppm)	Pb (ppm)	S (%)	Zn (ppm)	Paste pH	CO2 (%)	C-NP*	Stotal (%)	SO4 (%)	S2- (%)	AP*	NP*	NNP*	NP:AP	Fizz Test
25861	8.35	9.85	Granodiorite	HW	0.32	8.9	0.16	0.97	47	0.67	402	66	0.05	548											
25864	11.35	12.85	Granodiorite	HW	0.35	6.4	0.47	0.66	28	0.81	290	42	0.06	382											
25866	14.00	15.20	Granodiorite	HW	0.20	38.6	0.07	5.94	134	1.34	2345	229	0.37	1730	7.46	0.45	10.2	0.33	0.01	0.33	10.3	4.8	-5.5	0.5	None
25867	15.20	16.30	Granodiorite	Ore	0.20	44.6	0.04	4.14	86	1.06	869	419	0.16	1168											
25870	18.30	20.00	Granodiorite	InterOre	0.28	15.7	0.11	7.77	35	0.84	1077	128	0.04	8672	7.56	0.80	18.2	0.05	0.01	0.05	1.6	5.1	3.5	3.3	Slight
25873	22.45	23.15	Granodiorite	InterOre	0.22	22.0	0.12	5.42	8	1.65	3855	149	0.37	2404											
25877	23.65	23.95	Granodiorite	FW	0.19	57.2	0.09	6.07	30	0.97	2258	244	0.28	2929											
25878	23.95	24.95	Granodiorite	FW	0.26	4.9	0.33	3.00	5	1.61	4745	317	0.09	2452											

* units in kg/CaCO₃/t

Notes: sample intervals as indicated on photos are approximate and based on meterage blocks

Static Test Results
Hole 07-03 (TM Zone Section B'-B, 9700 N)

#305938
(first available
sample in
hole)

#305941

#305942

#305943

#305944

#305946

#305954

#305956

#305957



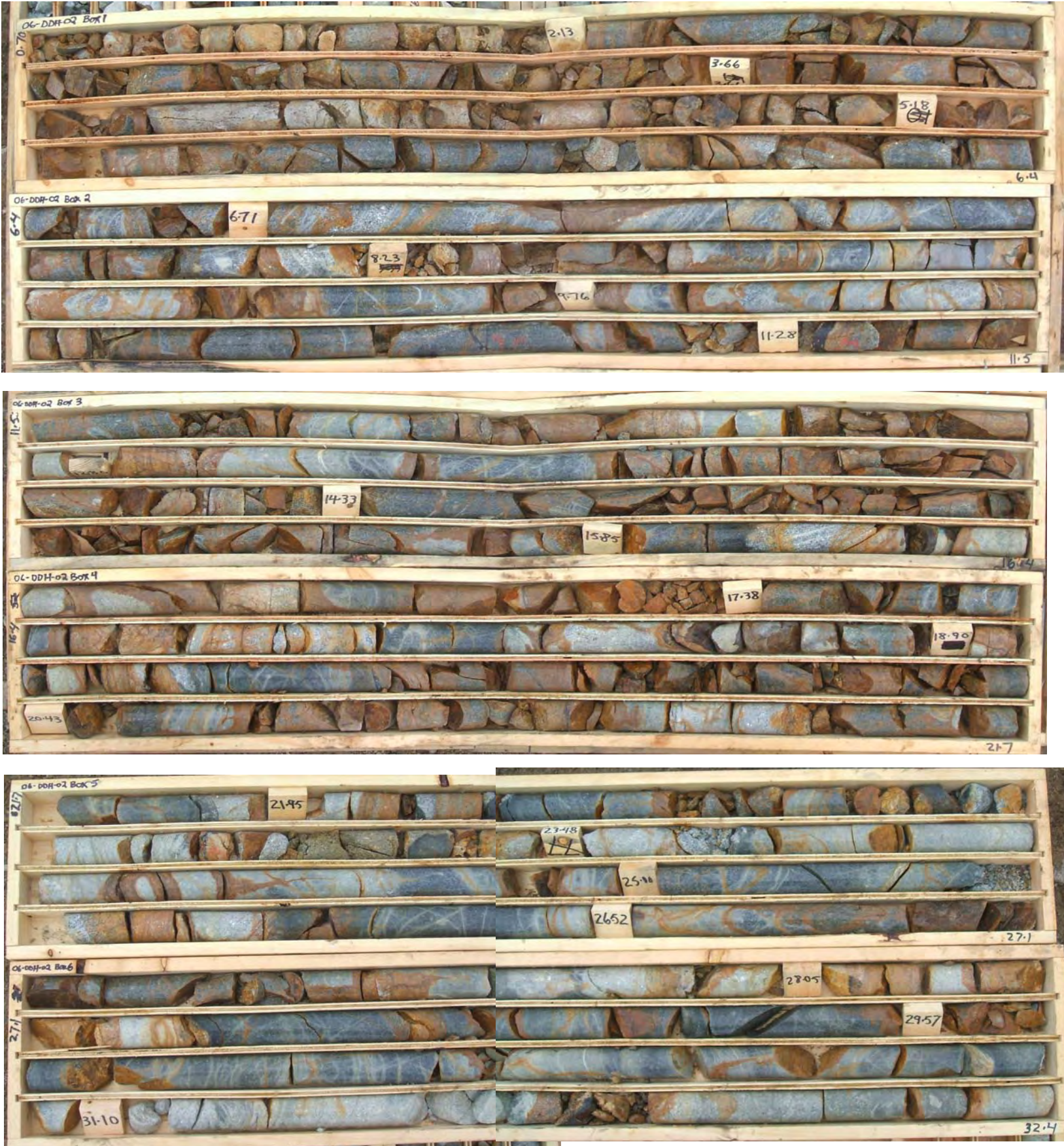
Sample#	From (m)	To (m)	Lithology	Mine Zone	As (ppm)	Ca (%)	Cd (ppm)	Cu (ppm)	Fe (%)	Mn (ppm)	Pb (ppm)	S (%)	Zn (ppm)	Paste pH	CO2 (%)	C-NP*	Stotal (%)	SO4 (%)	S2- (%)	AP*	NP*	NNP*	NP:AP	Fizz Test
305938	16.00	17.00	Granodiorite	HW	19.9	0.23	2.7	72	1.20	1240	157	0.07	1410											
305941	20.00	21.00	Granodiorite	HW	14.5	0.51	2.0	17	1.02	1075	132	0.09	964											
305942	22.00	23.00	Granodiorite	HW	65.7	0.17	2.5	32	1.04	1933	256	0.02	1555	7.90	0.16	3.6	0.04	<0.01	0.04	1.3	6.5	5.25	5.2	None
305943	24.50	25.50	Granodiorite	HW	15.7	0.15	6.0	35	3.05	8699	141	0.30	2221	7.68	3.22	73.2	0.26	<0.01	0.26	8.1	5.8	-2.325	0.7	Slight
305944	25.50	26.40	Granodiorite	Ore	40.1	0.12	2.0	76	2.70	7376	78	0.19	507											
305946	26.40	27.00	Granodiorite	InterOre	88.3	0.15	40.4	71	2.22	6127	575	0.53	>10000	7.62	2.43	55.2	0.53	<0.01	0.53	16.6	6.5	-10.1	0.4	Slight
305954	30.50	31.15	Vein	Ore	775.0	0.01	801.5	3644	2.29	2975	>10000	8.38	>10000	6.65	1.1	25.0	16.3	0.02	16.28	508.8	2.8	-506	0.01	Slight
305956	31.15	31.50	Granodiorite	FW	208.4	0.15	16.0	30	3.19	6816	869	0.21	2917											
305957	31.50	32.50	Granodiorite	FW	62.3	0.69	10.7	17	1.71	5121	72	0.20	3859	8.93	3.27	74.318	0.23	<0.01	0.23	7.2	32.8	25.613	4.6	Slight

* units in kg CaCO₃/t

Notes: sample intervals as indicated on photos are approximate and based on meterage blocks

Static Test Results
Hole 06-02 (S Zone)

Upper Hanging Wall Non-Mineralized Zone: not sampled in hole 06-02 during 2006 exploration drilling



Static Test Results

Hole 06-02 (S Zone), cont...

Upper Vein Zone

#308551
(first available sample in hole)

#308553

#308555

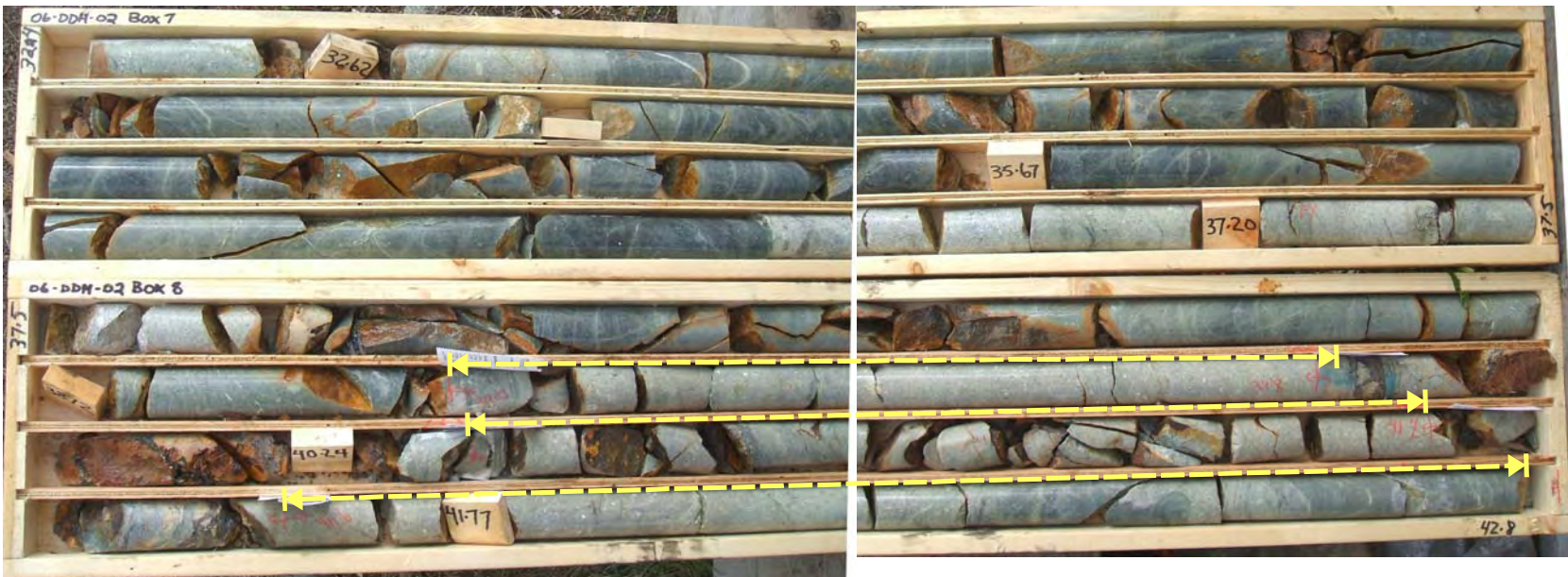


Photo for Box 13 (644 - 698 m) Missing

Lower Vein Zone

#308560

#308561



Sample#	From (m)	To (m)	Lithology	Mine Zone	As (ppm)	Ca (%)	Cd (ppm)	Cu (ppm)	Fe (%)	Mn (ppm)	Pb (ppm)	S (%)	Zn (ppm)	Paste pH	CO2 (%)	C-NP*	Stotal (%)	SO4 (%)	S2- (%)	AP*	NP*	NNP*	NP:AP	Fizz Test
308551	39.00	39.80	Granodiorite	HW	2.0	0.40	4.4	7	3.38	>10000	558	0.12	1958	8.14	4.15	94.3	0.14	<0.01	0.14	4.4	17	12.6	3.9	Slight
308553	40.30	41.40	Granodiorite	InterOre	6.9	0.23	8.5	10	3.08	>10000	844	0.19	3544	7.42	3.62	82.3	0.20	<0.01	0.20	6.3	11.3	5.1	1.8	Slight
308555	41.60	42.80	Granodiorite	FW	3.2	1.33	1.8	3	2.17	4787	237	0.05	925	8.41	3.97	90.2	0.09	<0.01	0.09	2.8	41.4	38.6	14.7	Slight
308560	72.20	73.20	Granodiorite	FW	2.6	1.31	4.8	11	2.23	3740	822	0.13	1669											
308561	73.20	74.20	Granodiorite	FW	2.1	0.86	0.2	7	1.82	381	21	0.04	70											

* units in kg CaCO₃/t

Notes: sample intervals as indicated on photos are approximate and based on meterage blocks

APPENDIX VI

Analysis Methods and Reports

- a. Methodology – Sample Source, Trace Element, Major Element, Acid Base Accounting
- b. Reports – Trace Element and Major Element
- c. Reports – Acid Base Accounting

Second Phase Test Work -- Analysis Methodology

5.3 *Sample Source*

Selected pulps for second-phase testing were retrieved from those archived at Acme Analytical Laboratories Ltd. at their storage facility in Vancouver, British Columbia. These samples were from diamond drill core samples that had been previously assayed during the 2005 to 2007 TM and S zone exploration surface drilling programs.

5.4 *Trace Element Analyses*

Samples were analysed by Acme Analytical Laboratories (Vancouver) Ltd. at their facility in Vancouver, British Columbia.

Acme's 'Group 1F Ultratrace' basic package was selected as it provided a broad range of elements (37 in total), and in particular interest, included sulphur analysis to a sufficiently low minimum detection level of 0.02%.

In this method, a 0.5 g sample is leached with 3 ml 2-2-2 HCl-HNO₃-H₂O at 95°C for 1 hour, then diluted to 10 ml and analysed via ICP /ES and MS.

Results were provided to CMC in digital format.

5.5 *Major Element (Whole Rock Analyses)*

Samples were analysed by Acme Analytical Laboratories (Vancouver) Ltd. at their facility in Vancouver, British Columbia.

Acme's 'Group 4A Whole Rock by ICP' package was selected. In this method, a 0.200 g sample is mixed with lithium metaborate/tetraborate flux (LiBO₂/Li₂B₄O₇) and fused in a graphite crucible. The molten result is digested with a dilute nitric acid solution, and analysis carried out via ICP-ES. Loss-On-Ignition is determined by weight differential following ignition at 1000°C.

Results were provided to CMC in digital format.

5.6 *Acid Base Accounting*

Acid base accounting analyses were conducted by Canadian Environmental & Metallurgical Inc. (CEMI) in Vancouver, British Columbia. Methodology for these analyses are given in the attachment by CEMI entitled "Procedures for CMC Metals, May 12, 2008".



Canadian Environmental & Metallurgical Inc.

Procedures for CMC Metals

May 12, 2008

1.0 Sample Receiving

Sample pulps were received from Acme Analytical Labs on April 15, 2008 and logged in.

2.0 Sample Preparation

No sample preparation was required.

3.0 Analysis

3.1 Paste pH

Paste pH was conducted according to the procedure by Sobek A., et. al. 1978 “Field and Laboratory Methods Applicable to Overburdens and Minesoils” (Report EPA-600/2-78-054).

3.2 Acid Base Accounting

Acid base accounting was conducted by the Modified ABA procedure described in “Acid Rock Drainage Prediction Manual”, March, 1991. In this procedure the pH is maintained between 1.5 and 2.0 using either 0.1N or 0.5N based on a fizz test. After 24h on a gyratory shaker the sample is back titrated to 8.3.

3.3 Total Sulphur

Total sulphur was determined by Acme Analytical Laboratories by Leco furnace.

3.4 Inorganic carbon

Inorganic carbon was determined by Acme using a direct analysis method. In this procedure a known weight of sample is placed in a closed vessel with hydrochloric acid and heated to approximately 90oC to evolve carbon dioxide from the sample. The gas

is then purged into a Leco analyzer where the concentration of CO₂ is determined by an infrared detector. The percent CO₂ is converted to equivalent kg CaCO₃/tonne by multiplying by 1000/44.

3.5 Sulphate-Sulphur

Sulphate-sulphur was determined by Assayers Canada by leaching a known weight of sample with 25% HCl to dissolved sulphate sulphur. The sulphur is then analyzed by ICP and expressed as sulphate-sulphur.

From ACME ANALYTICAL LABORATORIES LTD. 852 E. HASTINGS ST. VANCOUVER BC V6A 1R6 PHONE(604)253-3158 FAX(604)253-1716 @ CSV TEXT FORMAT
 To CMC Metals Ltd.

Acme file # A506163R Received: APR 2 2008 * 9 samples in this disk file.

Analysis: GROUP 1F - 0.50 GM SAMPLE LEACHED WITH 3 ML 2-2-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR DILUTED TO 10 ML ANALYSED BY ICP/ES & MS.

ELEMENT	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P
SAMPLES	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%
25501	21.73	28.7	53.07	510.6	932	1.6	1.9	594	0.57	6.7	5.3	0.5	11.7	7.2	1.03	0.67	0.18	<2	0.09	0.016
25507	5.22	12.98	27.29	920.2	487	1.2	2.6	513	1.35	3	7.6	0.9	16.7	13.8	1.83	0.49	0.28	10	0.28	0.057
25513	15.27	27.6	1052.2	2717.5	6280	0.8	2.4	4755	1.81	6.1	8.3	1.7	13.8	19.6	13.29	2.91	0.1	<2	0.08	0.029
25517	0.59	5189.89	>10000	1049.8	>100000	0.2	0.7	2471	2.99	185.8	2.6	608.9	2.1	1.2	19.6	>2000	11.03	<2	0.02	0.005
25520	2.26	8.02	94	567.6	1432	0.9	2.3	373	1.28	1.2	6.2	1.1	16.3	18.4	1.18	0.75	0.11	10	0.6	0.047
25522	3.73	12.37	168.71	1406.8	1602	1.8	2.7	566	2.97	79.7	6.5	1.9	14.2	11	4.73	4.29	0.06	6	0.26	0.051
25537	2.29	7.36	37.29	1646.6	473	1.1	3.3	580	1.52	6.9	4.9	3.3	14.4	18.3	4.75	1.32	0.08	5	0.45	0.063
25539	2.31	3.99	1254.69	4138.4	3085	0.5	1.9	7421	2.72	5	4.1	2.2	11	5.3	10	2.18	0.03	5	0.22	0.056
STANDARD DS7	19.48	105.32	69.35	389.1	831	52.8	8.9	646	2.36	45.9	4.7	46.2	4.4	70.9	5.55	4.53	4.3	84	0.91	0.072

From ACME ANALYTIC
To CMC Metals Ltd.
Acme file # A506163R
Analysis:

ELEMENT SAMPLES	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Sc ppm	Tl ppm	S %	Hg ppb	Se ppm	Te ppm	Ga ppm
25501	12.2	4.2	0.03	17	<.001	<20	0.31	0.004	0.11	0.2	0.6	0.09	<.02	<5	<.1	<.02	0.8
25507	38.1	4.8	0.13	29.9	0.005	<20	0.64	0.007	0.17	0.3	1.8	0.14	<.02	5	<.1	<.02	2.2
25513	21.6	4	0.01	17.8	<.001	<20	0.24	0.002	0.2	0.2	1.1	0.2	0.1	5	0.1	<.02	0.9
25517	0.7	0.6	0.01	9.9	<.001	<20	0.08	<.001	0.08	0.1	0.4	0.6	9.57	83	0.3	0.04	0.4
25520	30.5	8.1	0.29	35.1	0.008	<20	0.63	0.01	0.18	0.1	1.7	0.12	0.08	9	0.1	0.03	2.4
25522	20.6	7.1	0.1	33.4	0.002	<20	0.56	0.005	0.19	0.2	1.5	0.29	1.88	<5	0.1	<.02	1.8
25537	31.7	3.5	0.11	28.2	0.001	<20	0.56	0.003	0.18	0.3	1.8	0.24	0.08	<5	0.1	<.02	1.5
25539	25.4	2.8	0.1	10.2	<.001	<20	0.3	0.002	0.21	0.2	1.8	0.23	0.17	15	0.2	<.02	1.2
STANDARD DS7	13.5	201.8	1.06	381.3	0.124	40	1.06	0.088	0.44	3.3	2.8	3.96	0.19	213	3.5	1.03	4.4

From ACME ANALYTICAL LABORATORIES LTD. 852 E. HASTINGS ST. VANCOUVER BC V6A 1R6 PHONE(604)253-3158 FAX(604)253-1716 @ CSV TEXT FORMAT
 To CMC Metals Ltd.

Acme file # A506376R Received: APR 2 2008 * 5 samples in this disk file.

Analysis: GROUP 1F - 0.50 GM SAMPLE LEACHED WITH 3 ML 2-2-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR DILUTED TO 10 ML ANALYSED BY ICP/ES & MS.

ELEMENT	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P
SAMPLES	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%
25541	1.59	30.6	90.19	4340	18052	1.2	2.9	884	0.89	5.3	6.3	0.5	13.6	14.7	12.09	15.96	0.08	9	0.34	0.065
25542	1.78	11.32	65.73	1178.3	2354	1	2	659	1.34	3.3	5.3	<.2	16.6	25.9	4.53	7.99	0.17	6	0.7	0.07
25556	3.74	12.63	758.03	2085.6	5106	0.9	2.5	6312	2.58	5.1	8.5	0.9	12.4	14.4	6.37	0.7	0.06	7	0.48	0.061
25560	0.87	5.06	160.45	1012.3	1752	0.9	3	774	1.6	0.5	6.2	<.2	16.5	34.1	3.64	3.84	0.03	16	0.8	0.066
STANDARD DS7	19.71	107.42	66.32	381	836	53.9	9.5	611	2.34	44.7	5	53.4	4.4	68.9	5.68	4.59	4.29	83	0.9	0.071

From ACME ANALYTIC
To CMC Metals Ltd.
Acme file # A506376R
Analysis: GROUP 1F - 0

ELEMENT	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Tl	S	Hg	Se	Te	Ga
SAMPLES	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm
25541	35.7	3	0.07	27.3	0.001	<20	0.55	0.005	0.13	0.3	2.6	0.19	0.1	15	0.1	<.02	1.6
25542	34.1	4.2	0.14	43.4	0.002	<20	0.44	0.004	0.19	0.5	2	0.14	0.07	6	0.2	<.02	1.4
25556	32.2	5	0.11	39.5	0.001	<20	0.36	0.002	0.27	0.3	1.9	0.39	0.14	8	0.4	<.02	1.3
25560	40.8	4.9	0.25	59.8	0.01	<20	0.71	0.013	0.23	0.1	2.4	0.18	0.05	<5	0.2	<.02	2.9
STANDARD DS7	12.5	199.1	1.02	375.1	0.126	34	1.02	0.084	0.44	3.5	2.6	4.01	0.2	199	3.2	1.22	4.4

From ACME ANALYTICAL LABORATORIES LTD. 852 E. HASTINGS ST. VANCOUVER BC V6A 1R6 PHONE(604)253-3158 FAX(604)253-1716 @ CSV TEXT FORMAT
To CMC Metals Ltd.

Acme file # A506765R Received: APR 2 2008 * 27 samples in this disk file.

Analysis: GROUP 1F - 0.50 GM SAMPLE LEACHED WITH 3 ML 2-2-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR DILUTED TO 10 ML ANALYSED BY ICP/ES & MS.

ELEMENT	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P
SAMPLES	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%
25816	0.79	69.86	543.97	>10000	30359	0.9	1.8	5005	2.06	214	5.4	13	8.2	4.5	32.95	10.57	0.21	<2	0.08	0.028
25818	2.83	34	397.66	7790.3	3890	2	1	533	0.73	39.5	3	5.8	2.2	3.1	21.53	5.07	0.29	<2	0.02	0.01
25819	1.52	190	830.54	>10000	67902	5.8	1.6	1966	1.18	100.7	4.1	36.9	2.9	2.2	160.1	37.79	0.36	<2	0.02	0.013
25822	3.82	48.16	216.68	3106.5	26823	0.8	0.9	85	0.71	420.7	3.7	19.6	7.3	11.5	7.37	13.17	0.43	<2	0.04	0.037
25823	0.67	15.21	528.17	4534.1	4125	1.2	1	7867	2.12	31.2	6.5	5.8	8.3	5.5	11.81	5.22	0.09	<2	0.14	0.051
25824	2.42	22	113.79	2906.2	5400	1.3	1.3	2261	1.21	4.2	5.5	2.6	8.3	30.1	1.99	3	0.12	3	0.67	0.042
25861	2.63	46.5	66.35	547.6	909	1.4	2.4	402	0.67	8.9	4.8	1.2	8.5	11.1	0.97	1.11	0.31	2	0.16	0.048
25864	0.94	27.55	41.91	382.4	692	1	1.4	290	0.81	6.4	5.1	0.9	9.3	32.5	0.66	1.04	0.1	3	0.47	0.034
25866	4.17	133.61	228.57	1730.2	15114	0.9	2.4	2345	1.34	38.6	8.5	2.7	8.5	9.1	5.94	6.01	0.38	<2	0.07	0.022
25867	4.66	86.37	419.1	1167.6	46620	0.9	1.6	869	1.06	44.6	9.9	5.2	7.3	13.4	4.14	8.05	0.22	<2	0.04	0.03
25870	1.15	34.89	128.43	8671.6	4174	0.7	1.2	1077	0.84	15.7	9.4	0.9	8	7.5	7.77	5.7	0.1	<2	0.11	0.042
25873	0.62	8.09	148.55	2403.5	2538	0.8	1.3	3855	1.65	22	6.2	1.6	5.7	8.8	5.42	1.59	0.14	<2	0.12	0.043
25877	0.43	29.52	244.21	2929.2	10953	1.1	1.6	2258	0.97	57.2	7.1	3.7	6.1	7.6	6.07	4.29	0.12	<2	0.09	0.038
25878	0.63	5.08	317.21	2452.3	1157	1.8	1.7	4745	1.61	4.9	10.6	1	9.6	22.3	3	0.72	0.07	2	0.33	0.053
25929	0.49	12.56	9.59	231.6	147	1.3	1.1	179	0.92	1.8	7.9	<2	9.2	8	0.3	0.19	0.06	4	0.11	0.036
25931	6.76	60.35	771.31	2298.5	21656	0.8	2.1	8848	2.8	56.4	6.6	0.6	7.5	24.9	8.45	5.16	0.31	<2	0.1	0.045
25933	1.48	7.53	36.96	2302.2	2826	1.4	2	636	1.13	48.3	5	0.3	12.2	9.4	1.61	1.14	0.03	4	0.12	0.033
25935	6.7	101.77	109.08	4104.7	21544	1.1	2.1	4042	1.96	33.8	6.6	4.6	9	12	9.59	8.53	0.4	<2	0.15	0.049
25938	1.67	35.65	129.84	1302.2	6392	0.7	1.7	849	0.85	46.6	7.7	0.9	7.2	33.5	2	4.43	0.12	<2	0.54	0.051
25941	2.22	15.26	385.54	4147	2495	1	1.8	3757	1.22	59.5	5.1	0.4	8.5	20.8	9.74	2.4	0.11	<2	0.3	0.054
25944	0.79	49.87	152.47	>10000	1622	18.1	9.9	2465	4.24	78.8	4.6	0.4	9.2	63.2	30.47	2.64	0.18	43	1.18	0.176
25948	5.15	4.03	104.69	4152.9	1076	1.7	2.1	1425	0.89	7.8	7.1	<2	9.3	29.6	3.53	0.82	0.05	<2	0.42	0.057
25951	1.55	2514.47	299.35	>10000	>100000	0.8	1.7	>10000	3.84	587.2	5.2	112	4.8	5.2	155.91	1781.64	0.1	2	0.1	0.029
25953	0.87	11.87	183.59	2193.2	3526	1	1.1	9021	2.86	56.7	7.3	1.4	10	9.9	3.32	2.56	0.04	2	0.21	0.06
25954	0.55	3.25	693.19	2016.7	744	1.1	1.3	4495	1.38	4.4	8.3	0.2	9.7	15.3	3.58	0.44	0.06	<2	0.33	0.059
RE 25954	0.56	3.21	708.67	2030.9	744	1	1.3	4558	1.37	4.6	8.6	<2	9.9	15.3	3.7	0.47	0.05	<2	0.33	0.061
25955	0.79	5.74	57.02	3553	578	1.6	2	627	0.9	7.8	10.7	<2	10.7	28.3	2.06	0.94	0.04	2	0.53	0.05
STANDARD DS7	19.71	107.42	66.32	381	836	53.9	9.5	611	2.34	44.7	5	53.4	4.4	68.9	5.68	4.59	4.29	83	0.9	0.071

From ACME ANALYTIC
To CMC Metals Ltd.
Acme file # A506765R
Analysis: GROUP 1F - 0

ELEMENT	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Tl	S	Hg	Se	Te	Ga
SAMPLES	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm
25816	10.8	3.5	0.05	7.8	<.001	<20	0.18	0.001	0.17	0.3	0.7	0.16	0.72	19	<.1	0.03	0.8
25818	3.2	3.7	0.01	6.2	<.001	<20	0.11	0.001	0.13	0.1	0.2	0.11	0.64	24	<.1	0.06	0.4
25819	3.1	4.2	0.03	6.1	<.001	<20	0.12	0.002	0.14	0.2	0.3	0.12	2.23	79	<.1	0.03	0.6
25822	8.9	2.6	0.01	11.9	<.001	<20	0.17	0.001	0.22	0.4	0.4	0.16	0.23	<5	0.1	0.02	0.5
25823	14.5	3.5	0.07	7.8	<.001	<20	0.21	0.002	0.22	1.2	0.6	0.25	0.17	11	<.1	0.02	1.1
25824	14.6	3.7	0.12	14.4	0.002	<20	0.35	0.012	0.19	0.1	0.6	0.16	0.14	13	0.2	0.02	1.1
25861	15.5	4.4	0.05	17.8	0.001	<20	0.32	0.002	0.14	0.5	0.8	0.13	0.05	<5	0.2	<.02	0.8
25864	17.2	3.2	0.1	16.2	0.003	<20	0.35	0.015	0.15	0.2	0.7	0.13	0.06	<5	0.2	<.02	1
25866	10.1	3.2	0.03	16.1	<.001	<20	0.2	0.003	0.19	0.2	0.7	0.15	0.37	13	0.1	<.02	0.6
25867	7.8	3.9	0.01	12.5	<.001	<20	0.2	0.004	0.18	0.3	0.6	0.15	0.16	7	0.2	0.03	0.6
25870	14.7	4.9	0.03	11.4	0.001	<20	0.28	0.006	0.18	0.2	0.6	0.12	0.04	11	<.1	<.02	0.6
25873	9.1	2.5	0.05	10.8	<.001	<20	0.22	0.002	0.21	0.5	0.5	0.15	0.37	11	<.1	<.02	0.8
25877	10.2	3.4	0.03	10.7	<.001	<20	0.19	0.002	0.2	0.3	0.4	0.16	0.28	8	0.1	<.02	0.7
25878	16.9	6.5	0.09	13.2	0.001	<20	0.26	0.002	0.21	0.4	0.7	0.16	0.09	12	0.1	<.02	0.9
25929	17.5	4.8	0.1	15.1	0.004	<20	0.46	0.026	0.14	0.1	0.7	0.1	<.02	<5	0.1	<.02	1.6
25931	12.6	3	0.02	11.9	<.001	<20	0.24	0.002	0.22	0.6	0.6	0.16	0.13	8	0.3	<.02	1.2
25933	21	5.6	0.1	18.3	0.003	<20	0.58	0.02	0.18	<.1	0.8	0.12	<.02	<5	0.1	<.02	1.5
25935	12.3	5.8	0.04	13.7	0.001	<20	0.29	0.004	0.25	0.3	0.6	0.18	0.36	8	0.1	0.03	1
25938	11.5	4.8	0.07	17.7	0.001	<20	0.25	0.003	0.21	0.2	0.5	0.16	0.22	<5	0.1	<.02	0.6
25941	14.3	6.4	0.07	12.1	0.001	<20	0.26	0.003	0.23	0.3	0.7	0.18	0.11	15	0.1	<.02	0.8
25944	32.9	38.4	0.76	180.3	0.012	<20	3.02	0.008	0.15	0.2	6.6	0.08	0.05	12	<.1	<.02	7.1
25948	16.9	5.6	0.09	14.4	0.001	<20	0.28	0.002	0.24	0.2	0.6	0.18	0.07	8	0.1	0.02	0.7
25951	5.4	3.9	0.08	12.2	<.001	<20	0.22	0.003	0.19	0.2	0.5	0.18	2.49	128	<.1	0.02	2
25953	19.1	3.7	0.13	11	0.001	<20	0.3	0.003	0.25	0.6	0.9	0.19	0.08	9	0.1	<.02	1.3
25954	18.4	5.1	0.11	12.6	0.001	<20	0.31	0.003	0.25	0.3	0.7	0.2	0.13	9	0.2	<.02	1.1
RE 25954	17.9	4.6	0.11	12.7	0.001	<20	0.31	0.003	0.25	0.3	0.7	0.2	0.13	<5	0.1	0.02	1
25955	21	5.4	0.11	19.1	0.002	<20	0.43	0.015	0.21	<.1	0.7	0.16	0.05	<5	0.1	<.02	1.1
STANDARD DS7	12.5	199.1	1.02	375.1	0.126	34	1.02	0.084	0.44	3.5	2.6	4.01	0.2	199	3.2	1.22	4.4

From ACME ANALYTICAL LABORATORIES LTD. 852 E. HASTINGS ST. VANCOUVER BC V6A 1R6 PHONE(604)253-3158 FAX(604)253-1716 @ CSV TEXT FORMAT

To CMC Metals Ltd. PROJECT CMB-06-01-YT

Acme file # A607391R Received: APR 2 2008 * 6 samples in this disk file.

Analysis: GROUP 1F - 0.50 GM SAMPLE LEACHED WITH 3 ML 2-2-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR DILUTED TO 10 ML ANALYSED BY ICP/ES & MS.

ELEMENT	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P
SAMPLES	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%
308551	2.72	6.75	558.43	1958.4	1180	1.2	3.2	>10000	3.38	2	5.6	1.2	14.3	15	4.38	0.36	0.05	4	0.4	0.06
308553	2.23	9.72	843.78	3544.4	1944	1.2	3.4	>10000	3.08	6.9	4.7	0.7	17.6	7.2	8.54	1.73	0.1	3	0.23	0.06
308555	0.56	3.49	236.56	924.7	534	1.2	3.2	4787	2.17	3.2	4.6	0.3	20.4	70.8	1.82	0.18	0.07	2	1.33	0.063
308560	3.8	10.8	822.16	1668.9	4017	0.8	3.8	3740	2.23	2.6	6	0.7	21.4	51.7	4.83	1.12	0.11	6	1.31	0.068
308561	13.11	6.85	20.99	69.9	222	1.8	3.7	381	1.82	2.1	4.5	0.3	21.2	54.8	0.17	0.67	0.12	17	0.86	0.065
STANDARD DS7	19.48	105.32	69.35	389.1	831	52.8	8.9	646	2.36	45.9	4.7	46.2	4.4	70.9	5.55	4.53	4.3	84	0.91	0.072

From ACME ANALYTIC/
To CMC Metals Ltd. PRC
Acme file # A607391R
Analysis: GROUP 1F - 0.

ELEMENT	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Tl	S	Hg	Se	Te	Ga
SAMPLES	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm
308551	32.8	5	0.16	25.3	0.001	<20	0.36	0.003	0.32	0.2	2	0.26	0.12	6	<.1	<.02	1.6
308553	36.5	3.7	0.15	16.7	0.001	<20	0.33	0.003	0.29	0.5	1.9	0.25	0.19	12	0.2	<.02	1.7
308555	43.6	4	0.24	23.2	0.001	<20	0.34	0.005	0.25	0.1	2	0.23	0.05	11	0.1	<.02	1.1
308560	46.1	4.3	0.24	27.6	0.001	<20	0.39	0.011	0.25	<.1	1.7	0.31	0.13	13	0.3	0.03	1.5
308561	44.7	8.2	0.34	70.2	0.031	<20	0.6	0.036	0.26	0.2	2.5	0.24	0.04	8	0.2	0.04	3.2
STANDARD DS7	13.5	201.8	1.06	381.3	0.124	40	1.06	0.088	0.44	3.3	2.8	3.96	0.19	213	3.5	1.03	4.4

	Method	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F
	Analyte	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca
	Unit	PPM	PPM	PPM	PPM	PPB	PPM	PPM	PPM	%	PPM	PPM	PPB	PPM	PPM	PPM	PPM	PPM	PPM	%
	MDL	0.01	0.01	0.01	0.1	2	0.1	0.1	1	0.01	0.1	0.1	0.2	0.1	0.5	0.01	0.02	0.02	2	0.01
Sample	Type																			
305901	Drill Core	18.21	24.84	298.51	1318.8	7303	1	1.6	4255	2.16	273	6.6	<0.2	8.3	15.2	1.98	20.2	0.21	<2	0.12
305903	Drill Core	24.48	11.48	517.96	1391.9	4161	0.9	2.5	4293	1.5	15	7	1.1	8.9	7.3	3.46	3.25	1.09	<2	0.14
305904	Drill Core	12.18	17.31	464.22	1159.5	4585	1.3	0.9	2954	1.28	95.4	4.6	<0.2	7.8	8.1	3.27	23.08	0.59	<2	0.13
305906	Drill Core	27.68	98	230.23	>10000.0	8693	1.1	2.8	1728	0.79	16.1	3.8	1.1	6.9	7.5	3.61	4.42	0.24	<2	0.15
305907	Drill Core	19.34	92.19	804.98	1859.7	30850	1.1	2.5	7067	2.31	51.1	4.9	2.2	6.9	6.5	10.53	12.08	0.2	<2	0.16
305908	Drill Core	5.99	4232.16	>10000.00	>10000.0	>100000	1.3	7.4	6436	3.6	3779.1	3.2	374.8	2.1	1.9	805.28	1056.1	34.74	<2	0.02
305911	Drill Core	1.01	22.05	172.45	2319.9	6328	0.7	0.7	2818	1.11	27.3	4.7	1.6	4	3.3	10.69	5.86	0.32	<2	0.05
305938	Drill Core	3.62	72.17	156.57	1409.5	2463	1.2	2.2	1240	1.2	19.9	7.3	<0.2	11.8	14.4	2.7	6.24	0.23	<2	0.23
305941	Drill Core	3.75	16.56	132.48	964.2	1049	0.8	1.1	1075	1.02	14.5	5	2	8.3	28.9	2.02	1.75	0.16	<2	0.51
305942	Drill Core	4.97	31.82	255.76	1555	4091	0.9	1.2	1933	1.04	65.7	4.2	<0.2	9.5	14.9	2.54	6.58	1.55	<2	0.17
305943	Drill Core	1.52	35.18	140.66	2220.7	15943	0.9	1.7	8699	3.05	15.7	10.3	0.4	8.2	7.7	5.98	8.26	0.77	<2	0.15
305944	Drill Core	2.9	76.02	77.57	507.1	51503	0.9	1.4	7376	2.7	40.1	5.8	4.5	7.1	6	1.95	21.79	0.22	<2	0.12
305946	Drill Core	1.98	71.26	574.65	>10000.0	25232	0.7	0.8	6127	2.22	88.3	7.6	8.8	8.4	6.7	40.38	8.06	1.89	<2	0.15
305954	Drill Core	4.92	3644.33	>10000.00	>10000.0	>100000	0.6	2.5	2975	2.29	775	2.7	249.6	0.9	1.5	801.46	>2000.00	13.61	<2	0.01
305956	Drill Core	2	30.47	869.04	2916.7	14775	0.7	0.8	6816	3.19	808.4	8.7	2.2	6.2	6.9	16.04	38.69	0.13	<2	0.15
305957	Drill Core	0.42	17.15	71.55	3858.9	5801	0.6	0.7	5121	1.71	62.3	8.5	2.9	6.6	8.8	10.7	5.21	0.07	<2	0.69
305981	Drill Core	0.5	4.2	86.7	671.8	368	0.7	1.4	1502	0.94	4.8	11.9	<0.2	8.7	55.6	0.91	0.28	0.07	<2	0.86
305984	Drill Core	1.46	28.52	574.7	>10000.0	5492	1	3.4	7146	2.19										

	1F P %	1F La PPM	1F Cr PPM	1F Mg %	1F Ba PPM	1F Ti %	1F B PPM	1F Al %	1F Na %	1F K %	1F W PPM	1F Sc PPM	1F Ti PPM	1F S %	1F Hg PPB	1F Se PPM	1F Te PPM	1F Ga PPM
Sample	0.001	0.5	0.5	0.01	0.5	0.001	20	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1
305901	0.044	14.5	3.2	0.04	27.2	<0.001	<20	0.22	0.004	0.22	0.4	0.5	0.18	0.04	<5	<0.1	<0.02	0.7
305903	0.047	11.7	3.1	0.06	11.1	<0.001	<20	0.19	0.002	0.2	0.5	0.6	0.18	0.31	6	<0.1	0.03	0.6
305904	0.05	14.5	3.5	0.04	10.5	<0.001	<20	0.18	0.002	0.19	0.9	0.4	0.16	0.07	<5	<0.1	<0.02	0.7
305906	0.048	14.1	2.8	0.03	13.4	<0.001	<20	0.2	0.003	0.19	0.3	0.5	0.16	0.31	<5	0.6	<0.02	0.6
305907	0.046	11.7	2.9	0.09	13.3	<0.001	<20	0.23	0.005	0.21	0.5	0.5	0.19	0.47	<5	0.1	<0.02	0.8
305908	0.005	2.1	2	0.03	7.4	<0.001	<20	0.08	0.002	0.07	62.8	0.5	0.24	7.13	381	10.9	0.03	3
305911	0.013	5.3	6.8	0.04	7.8	<0.001	<20	0.13	0.002	0.14	0.4	0.4	0.11	0.22	5	0.1	<0.02	0.5
305938	0.055	19.2	3.5	0.07	25.6	0.002	<20	0.4	0.008	0.22	0.3	0.7	0.17	0.07	<5	0.2	<0.02	1.3
305941	0.056	17	3.8	0.06	23.8	<0.001	<20	0.26	0.004	0.25	0.3	0.7	0.18	0.09	<5	0.1	<0.02	0.8
305942	0.053	21	4.3	0.02	25.7	<0.001	<20	0.25	0.003	0.23	0.3	0.7	0.21	0.02	8	0.3	0.05	0.8
305943	0.054	12.8	3.3	0.08	12.8	<0.001	<20	0.26	0.003	0.23	0.5	0.8	0.19	0.3	5	0.2	0.03	0.9
305944	0.045	11.9	3.3	0.06	10.4	<0.001	<20	0.21	0.003	0.19	0.4	0.7	0.16	0.19	5	<0.1	<0.02	0.9
305946	0.041	11.2	2.7	0.08	11.4	<0.001	<20	0.21	0.003	0.21	0.3	0.7	0.16	0.53	28	0.4	<0.02	0.9
305954	0.004	<0.5	2.1	0.01	6.2	<0.001	<20	0.08	0.001	0.06	9.4	<0.1	0.44	8.38	545	11	<0.02	3.2
305956	0.051	11.1	2.5	0.09	10.2	<0.001	<20	0.22	0.002	0.21	0.3	0.4	0.16	0.21	6	0.2	<0.02	0.8
305957	0.053	11.4	4.4	0.37	9.3	<0.001	<20	0.24	0.002	0.21	0.4	0.4	0.17	0.2	10	0.2	<0.02	0.7
305981	0.032	15.8	3.6	0.14	13.7	<0.001	<20	0.24	0.003	0.19	0.3	0.8	0.14	0.06	<5	<0.1	<0.02	0.6
305984	0.049	9.1	2.8	0.06	9.9	<0.001	<20	0.26	0.003	0.24	0.3	0.6	0.19	0.96	21	0.9	<0.02	0.9
305986	0.05	10.1	3	0.09	10	<0.001	<20	0.24	0.003	0.23	0.3	0.8	0.18	0.68	11	0.6	<0.02	1
305988	0.25	49.2	65.3	1.3	267.5	0.043	<20	4.45	0.012	0.19	0.3	10.3	0.13	0.1	<5	0.8	<0.02	10.3
305991	0.052	11.2	4.1	0.06	15.7	0.001	<20	0.3	0.002	0.23	0.3	0.7	0.18	0.21	6	0.1	<0.02	1

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 To CMC Metals Ltd.

Acme file # A506163R2 Received: APR 2 2008 * 5 samples in this disk file.

Analysis: GROUP 4A - 0.200 GM SAMPLE BY LIBO2/LI2B4O7 FUSION ANALYSIS BY ICP-ES. (LIBO2/LI2B4O7 FUSION MAY NOT BE SUITABLE FOR MASSIVE SULFIDE

ELEMENT	SiO2	Al2O3	Fe2O3	MgO	CaO	Na2O	K2O	TiO2	P2O5	MnO	Cr2O3
SAMPLES	%	%	%	%	%	%	%	%	%	%	%
25501	75.75	13.55	1.22	0.23	0.18	0.18	5.63	0.16	0.08	0.09	<.001
25513	74.24	13.16	3.35	0.23	0.13	0.04	4.22	0.24	0.09	0.72	<.001
25522	71.13	13.28	4.88	0.4	0.51	0.44	3.91	0.31	0.14	0.08	<.001
25539	69.03	13.58	4.77	0.36	0.36	0.03	3.98	0.34	0.16	1.1	<.001
STANDARD SO-18	57.81	14.04	7.8	3.45	6.45	3.75	2.14	0.7	0.83	0.41	0.585

ELEMENT	Ba	Ni	Sr	Zr	Y	Nb	Sc	LOI	SUM
SAMPLES	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%
25501	454	7	50	70	21	30	3	2.7	99.85
25513	237	<5	30	103	26	18	4	3.1	99.57
25522	831	8	84	142	15	20	5	4.5	99.71
25539	240	<5	13	153	17	21	5	5.6	99.37
STANDARD SO-18	477	48	397	275	31	24	25	1.9	100.02

Review of Geoenvironmental Analyses, TM and S Zones

Appendix VI
Analysis Reports

Report: Major Element - A506765R2

From ACME ANALYTICAL LABORATORIES LTD. 852 E. HASTINGS ST. VANCOUVER BC V6A 1R6 PHONE(604)253-3158 FAX(604)253-1716 @ CSV TEXT F
To CMC Metals Ltd.

Acme file # A506765R2 Received: APR 2 2008 * 8 samples in this disk file.

Analysis: GROUP 4A - 0.200 GM SAMPLE BY LIBO2/LI2B4O7 FUSION ANALYSIS BY ICP-ES. (LIBO2/LI2B4O7 FUSION MAY NOT BE SUITABLE FOR MASSI

ELEMENT	SiO2	Al2O3	Fe2O3	MgO	CaO	Na2O	K2O	TiO2	P2O5	MnO	Cr2O3
SAMPLES	%	%	%	%	%	%	%	%	%	%	%
25819	78.29	6.59	2.05	0.23	0.04	0.02	2.02	0.08	0.05	0.27	<.001
25823	71	13.61	3.63	0.32	0.23	0.06	4.69	0.19	0.15	1.07	<.001
25870	73.1	13.91	1.61	0.25	0.21	0.6	6.17	0.18	0.14	0.15	0.001
25933	72.79	14.35	2.05	0.28	0.34	1.63	5.74	0.18	0.13	0.09	<.001
25938	74.14	13.78	1.64	0.32	0.87	0.11	5.98	0.17	0.15	0.12	0.001
25944	49.51	14.98	8.69	2.15	1.84	0.14	1.48	1.17	0.49	0.35	0.012
25948	74.78	13.23	1.85	0.41	0.66	0.07	5.05	0.18	0.15	0.19	0.002
STANDARD SO-18	57.81	14.04	7.8	3.45	6.45	3.75	2.14	0.7	0.83	0.41	0.585

ELEMENT	Ba	Ni	Sr	Zr	Y	Nb	Sc	LOI	SUM
SAMPLES	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%
25819	65	16	<5	31	6	9	2	3.7	93.36
25823	206	5	19	86	14	15	4	4.4	99.39
25870	577	8	58	79	13	22	4	2.5	98.91
25933	553	7	91	84	15	20	4	2.1	99.77
25938	496	5	58	79	14	19	4	2.5	99.86
25944	672	28	82	174	20	15	15	15.3	96.23
25948	341	8	41	81	14	16	4	2.9	99.53
STANDARD SO-18	477	48	397	275	31	24	25	1.9	100.02

Review of Geoenvironmental Analyses, TM and S Zones

Appendix VI
Analysis Reports

Report: Major Element - A607391R2

From ACME ANALYTICAL LABORATORIES LTD. 852 E. HASTINGS ST. VANCOUVER BC V6A 1R6 PHONE(604)253-3158 FAX(604)253-1716 @ CSV TEXT F
To CMC Metals Ltd. PROJECT CMB-06-01-YT

Acme file # A607391R2 Received: APR 2 2008 * 3 samples in this disk file.

Analysis: GROUP 4A - 0.200 GM SAMPLE BY LIBO2/LI2B4O7 FUSION ANALYSIS BY ICP-ES. (LIBO2/LI2B4O7 FUSION MAY NOT BE SUITABLE FOR MASSI'

ELEMENT	SiO2	Al2O3	Fe2O3	MgO	CaO	Na2O	K2O	TiO2	P2O5	MnO	Cr2O3
SAMPLES	%	%	%	%	%	%	%	%	%	%	%
308551	67.09	13.47	5.82	0.52	0.63	0.04	4.38	0.35	0.15	1.59	0.001
308555	68.45	13.17	3.88	0.68	2.01	0.31	4.68	0.35	0.15	0.68	0.001
STANDARD SO-18	57.81	14.04	7.8	3.45	6.45	3.75	2.14	0.7	0.83	0.41	0.585

ELEMENT	Ba	Ni	Sr	Zr	Y	Nb	Sc	LOI	SUM
SAMPLES	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%
308551	329	<5	28	154	17	23	5	5.6	99.71
308555	880	<5	134	150	17	23	5	5.4	99.9
STANDARD SO-18	477	48	397	275	31	24	25	1.9	100.02

ACME ANALYTICAL LABORATORIES LTD., Final Report

Client: CMC Metals Ltd.

File Created: 09-May-2008

Job Number: VAN07000388

Number of Samples: 100

Project: Silverhart

Shipment ID:

P.O. Number:

Received: 23-Aug-2007

Sample	Method	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A
	Analyte	SiO2	Al2O3	Fe2O3	MgO	CaO	Na2O	K2O	TiO2	P2O5	MnO	Cr2O3
	Unit	%	%	%	%	%	%	%	%	%	%	%
	MDL	0.01	0.01	0.04	0.01	0.01	0.01	0.01	0.01	0.001	0.01	0.002
	Type											
305903	Drill Core	73.89	12.89	2.83	0.37	0.22	0.05	4.53	0.18	0.128	0.59	<0.002
305943	Drill Core	70.03	13.03	5.14	0.37	0.22	0.03	4	0.2	0.14	1.12	<0.002
305946	Drill Core	71.75	12.31	3.9	0.39	0.23	0.03	3.8	0.2	0.122	0.77	<0.002
305954	Drill Core	33.18	1.78	3.27	0.06	0.02	<0.01	0.52	0.02	0.012	0.36	<0.002
305984	Drill Core	70.35	12.3	3.82	0.32	0.21	0.03	3.73	0.17	0.123	0.94	<0.002
305986	Drill Core	67.78	12.47	5.61	0.4	0.25	0.03	3.79	0.18	0.128	1.5	<0.002
305988	Drill Core	43.54	17.43	10.31	2.98	2.61	0.2	1.11	1.56	0.608	0.12	0.014
305996	Drill Core	69.59	11.66	5.55	0.42	0.53	0.03	3.4	0.16	0.117	1.49	<0.002
305997	Drill Core	68.3	13.21	2.98	1.12	1.48	0.06	4.72	0.19	0.137	0.78	<0.002
305986	Drill Core	67.78	12.47	5.61	0.4	0.25	0.03	3.79	0.18	0.128	1.5	<0.002
305904	REP											
305986	Drill Core	67.78	12.47	5.61	0.4	0.25	0.03	3.79	0.18	0.128	1.5	<0.002
305986	REP	67.9	12.46	5.51	0.4	0.25	0.03	3.8	0.18	0.115	1.49	<0.002
STD DS7	STD											
STD DS7	STD											
STD SO-18	STD	57.74	14.03	7.57	3.31	6.33	3.67	2.14	0.68	0.796	0.39	0.545
STD SO-18	STD	57.71	14.02	7.57	3.31	6.33	3.67	2.14	0.68	0.799	0.39	0.545
BLK	BLK											
BLK	BLK	<0.01	<0.01	<0.04	<0.01	<0.01	<0.01	<0.01	<0.01	<0.001	<0.01	<0.002

Method	4A	4A	4A	4A	4A	4A	4A	4A	4A	2A C/S	2A C/S
Analyte	Ba	Ni	Sr	Zr	Y	Nb	Sc	LOI	Sum	C/TOT	S/TOT
Unit	PPM	PPM	PPM	PPM	PPM	PPM	PPM	%	%	%	%
MDL	5	20	2	5	3	5	1	-5.1	0.01	0.02	0.02
Sample											
305903	240	<20	17	96	14	16	4	3.4	99.09	0.39	0.3
305943	179	<20	10	104	18	15	4	4.8	99.1	0.84	0.29
305946	177	<20	11	99	14	13	4	4.4	97.94	0.62	0.54
305954	24	<20	3	10	<3	<5	<1	9.3	48.54	0.29	16.54
305984	119	<20	10	80	15	13	3	4.8	96.86	0.62	1.04
305986	125	<20	10	89	17	21	4	5.5	97.66	1.04	0.74
305988	847	39	113	247	27	23	19	17.4	98.06	0.12	0.07
305996	122	<20	12	83	12	17	3	5.5	98.44	1.15	0.26
305997	277	<20	28	94	13	16	4	5.4	98.38	1.06	0.15
305986	125	<20	10	89	17	21	4	5.5	97.66	1.04	0.74
305904											
305986	125	<20	10	89	17	21	4	5.5	97.66	1.04	0.74
305986	125	<20	10	90	18	20	4	5.5	97.66		
STD DS7											
STD DS7											
STD SO-18	498	48	402	290	33	20	25	1.9	99.26		
STD SO-18	501	31	402	292	32	20	25	1.9	99.23		
BLK											
BLK	<5	<20	<2	<5	<3	<5	<1	0	<0.01		

**SGS CEMI**

**Environmental and Metallurgical Laboratory Testing, Process Development
& Innovative Water Treatment**

CLIENT : CMC Metals (Diane Lister)
PROJECT : Rock Samples
CEMI Project # : 0835
Test : Modified Acid-Base Accounting
Date : April 17, 2008

Sample ID	Paste pH	CO2 %	CaCO3 NP	S(T) %	S(SO4) %	S(S-2) %	AP	NP	Net NP	Fizz Test
25501	7.51	0.04	0.9	0.04	<0.01	0.04	1.3	2.3	1.1	None
25513	6.46	0.11	2.5	0.11	0.03	0.08	2.5	3.1	0.6	None
25517	5.80	0.8	18.2	9.74	0.57	9.17	286.6	-5.4	-292.0	Slight
25522	7.38	0.24	5.5	1.84	0.03	1.81	56.6	5.3	-51.3	None
25539	7.18	2.89	65.7	0.2	<0.01	0.20	6.3	8.0	1.8	Slight
25541	7.46	0.83	18.9	0.11	<0.01	0.11	3.4	9.9	6.5	Slight
25556	8.06	2.55	58.0	0.15	0.01	0.14	4.4	13.4	9.0	Slight
25819	6.65	0.72	16.4	3.15	0.02	3.13	97.8	3.3	-94.5	None
25823	7.06	2.69	61.1	0.2	<0.01	0.20	6.3	7.0	0.8	Slight
25866	7.46	0.45	10.2	0.33	<0.01	0.33	10.3	4.8	-5.5	None
25870	7.56	0.8	18.2	0.05	<0.01	0.05	1.6	5.1	3.5	Slight
25933	7.74	0.03	0.7	<0.02	<0.01	<0.02	<0.6	2.9	2.9	None
25938	8.64	0.98	22.3	0.22	<0.01	0.22	6.9	16.4	9.5	Slight
25944	7.34	1.93	43.9	0.08	<0.01	0.08	2.5	16.4	13.9	Slight
25948	8.42	1.38	31.4	0.07	<0.01	0.07	2.2	13.4	11.2	Slight
305903	7.58	1.6	36.4	0.31	<0.01	0.31	9.7	6.8	-2.9	Slight
305906	8.02	1.3	29.5	0.27	<0.01	0.27	8.4	8.5	0.1	Slight
305911	7.05	1	22.7	0.23	<0.01	0.23	7.2	5.0	-2.2	Slight
305942	7.90	0.16	3.6	0.04	<0.01	0.04	1.3	6.5	5.3	None
305943	7.68	3.22	73.2	0.26	<0.01	0.26	8.1	5.8	-2.3	Slight
305946	7.62	2.43	55.2	0.53	<0.01	0.53	16.6	6.5	-10.1	Slight
305954	6.65	1.1	25.0	16.3	0.02	16.28	508.8	2.8	-506.0	Slight
305957	8.93	3.27	74.3	0.23	<0.01	0.23	7.2	32.8	25.6	Slight
305984	7.52	2.34	53.2	1.04	0.01	1.03	32.2	6.9	-25.3	Slight
305986	7.68	3.83	87.0	0.77	<0.01	0.77	24.1	9.9	-14.2	Slight
305988	7.88	0.36	8.2	0.12	<0.01	0.12	3.8	21.0	17.3	None
305996	7.73	4.53	103.0	0.27	<0.01	0.27	8.4	15.9	7.5	Slight
305997	8.75	3.83	87.0	0.16	<0.01	0.16	5.0	44.8	39.8	Slight
308551	8.14	4.15	94.3	0.14	<0.01	0.14	4.4	17.0	12.6	Slight
308553	7.42	3.62	82.3	0.2	<0.01	0.20	6.3	11.3	5.1	Slight
308555	8.41	3.97	90.2	0.09	<0.01	0.09	2.8	41.4	38.6	Slight
Duplicates										
25501	IS				<0.01			2.4		None
25866					<0.01					
25948	IS	1.39						13.3		Slight
305903	IS							5.5		Slight
305942				0.05						

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**SGS CEMI****Environmental and Metallurgical Laboratory Testing, Process Development
& Innovative Water Treatment**

305943					<0.01				
305984		2.32							
305986					<0.01				
308553	IS						11.8		Slight

Note:

AP = Acid potential in tonnes CaCO₃ equivalent per 1000 tonnes of material. AP is determined from calculated sulphide sulphur content: S(T) - S(SO₄).

NP = Neutralization potential in tonnes CaCO₃ equivalent per 1000 tonnes of material.

NET NP = NP -

AP

Carbonate NP is calculated from the CO₂ originating from carbonates and is expressed in kg CaCO₃/tonne.

IS = Insufficient sample for analysis.

CEMI assumes the liabilities for actual cost of the test work only.

Rik Vos
Director
SGS CEMI

SGS CEMI

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Silver Hart Property

**Additional Info for Yukon Environmental and
Socio-Economic Assessment Board**

Appendix III

**SGS Lakefield Research Limited
Report 11440-002**

**An Investigation into
ENVIRONMENTAL TESTING OF THE SILVER HART
TM ZONE ROCK AND TAILINGS SAMPLES**

prepared for

CMC METALS LTD.

Project 11440-002 – Final Report
June 9, 2008

NOTE:

This report refers to the samples as received.

The practice of this Company in issuing reports of this nature is to require the recipient not to publish the report or any part thereof without the written consent of SGS Minerals Services.

Table of Contents

	Page No.
Executive Summary	iv
Introduction	1
Scope of Work	2
Sample Descriptions and Test Methods	3
1. Sample Descriptions and Handling.....	3
2. Test Methods.....	3
2.1. ICP-OES/MS Strong Acid Digest Elemental Analyses	3
2.2. Synthetic Precipitation Leaching Procedure 1312 Extraction	4
2.3. Shake Flask Extraction	4
2.4. Modified Acid Base Accounting	4
2.5. Net Acid Generation Testing	5
2.6. Humidity Cell Testing	5
2.7. Adit Water Treatability Testing.....	6
Results	7
1. ICP-OES/MS Strong Acid Digest Elemental Analyses.....	7
2. Synthetic Precipitation Leaching Procedure 1312 Extraction	7
3. Shake Flask Extraction	8
4. Modified Acid Base Accounting	9
5. Net Acid Generation Testing	9
6. Humidity Cell Testing.....	10
7. Adit Water Treatability Testing.....	10
Discussion	14
Conclusions and Recommendations	22
<i>Appendix 1 Analytical Data Tables</i>	
<i>Appendix 2 Laboratory Certificates of Analysis</i>	
<i>Appendix 3 Humidity Cell Test Report</i>	
<i>Appendix 4 Humidity Cell Laboratory Certificates of Analysis</i>	
<i>Appendix 5 Chain of Custody Forms</i>	
<i>Appendix 6 Qualifications and Limitations</i>	

List of Tables

		Page No.
Table 1	ICP-OES/MS Strong Acid Digest Elemental Analyses Results	7
Table 2	Synthetic Precipitation Leaching Procedure 1312 Extraction Results	8
Table 3	Shake Flask Extraction Results.....	8
Table 4	Modified Acid Base Accounting Test Results.....	9
Table 5	Net Acid Generation Test Results.....	9
Table 6	Weekly Leachate Results – TM Zone LCT	11
Table 7	Dissolved Metal Concentrations – TM Zone LCT	12
Table 8	Adit Water Treatability Results	13
Table 9	Synthetic Adit Water Treatability Results	13

List of Figures

		Page No.
Figure 1	ICP-OES/MS Strong Acid Digest Elemental Analyses Results	14
Figure 2	Synthetic Precipitation Leaching Procedure Extraction Results	15
Figure 3	Shake Flask Extraction Results.....	16
Figure 4	Modified Acid Base Accounting Results.....	17
Figure 5	Conductivity, pH and SO ₄ Concentrations in the Humidity Cell Leachates	18
Figure 6	Cumulative Sulphide and NP Depletion Rates	19
Figure 7	Treatability by Alkalinity Adjustment Results - Adit Water	20
Figure 8	Treatability by Alkalinity Adjustment Results – Synthetic Adit Water	20
Figure 9	(a) Pb and Zn Treatability (b) As and Cu Treatability	21
Figure 10	(a) Cd and Co Treatability (b) Mn and Ni Treatability.....	21

References

Department of Justice Canada. 2002. *Metal Mining Effluent Regulations, Fisheries Act SOR-2002-222*.
Updated 2004. Available Online: <http://laws.justice.gc.ca/en/F-14/SOR-2002-222/119716.html>

Executive Summary

SGS was contracted by CMC Metals Ltd. to complete environmental characterisation of samples representative of the TM zone of the Silver Hart project located in the Yukon. The purpose of the environmental test program was to assess the acid rock drainage (ARD) and contaminant release potential associated with the core and tailings samples. Environmental tests were conducted on one footwall (*TM-FW-01*), two hanging wall (*TM-HW-01* and *TM-HW-02*), one ore zone (*TM-OZ-01*) and one tailings sample (*TM Zone LCT*). The tailings sample was produced at SGS facilities in Lakefield (SGS Project Reference No. 11440-001). Treatability testing to limit the solubility of lead and zinc was also conducted on samples of *Adit Water*, and a *Synthetic Adit Water* prepared from pulverized *TM-OZ-02* (second ore zone sample).

Inductively coupled plasma, optical emission spectroscopy/mass spectroscopy (ICP-OES/MS) strong acid digest elemental analyses indicate that the footwall, hanging wall and ore zone samples contain significant amounts of aluminium, iron and potassium. High levels of lead and considerable arsenic, which may be of environmental concern, were reported in the ore zone sample (*TM-OZ-01*).

Synthetic precipitation leaching procedure (SPLP, US EPA Method 1312) extraction tests conducted on the footwall, hanging wall and ore zone samples reported initial slurry pH values below the lower limit specified by the Metal Mining Effluent Regulations (MMER). The *TM-OZ-01* (ore zone) sample also reported a final slurry pH below the MMER limit and significant lead and zinc concentrations in excess of the designated limit. Zinc in excess of the specified limit was also observed in the *TM-FW-01* leachate.

The *TM-OZ-01* shake flask extraction showed initial slurry pH and final leachate pH values below the MMER lower limit. Zinc concentrations greater than the specified limit were observed in the *TM-FW-01* and *TM-HW-01* leachates and zinc and lead concentrations in excess of the designated limits were seen in the ore zone (*TM-OZ-01*) leachate.

The modified acid base accounting (ABA) test showed a strong potential for acid generation from the ore zone (*TM-OZ-01*) sample. Net acid generation (NAG) testing of this sample however, suggested that the sulphide content reported by the ABA test method is not readily available.

ABA testing of the hanging wall (*TM-HW-01*, *TM-HW-02*) and tailings (*TM Zone LCT*) suggested uncertain acid generation potentials based on the Net NP values and low carbonate concentrations; however, the very low sulphide concentrations indicate that acid generation from these samples is highly unlikely to occur. Similarly, although ABA testing of the footwall sample (*TM-FW-01*) indicated the potential for acid generation, the low sulphide concentration suggests that this sample is also unlikely to generate acidity. This unlikely acid generation designation was confirmed by the near neutral final pH values reported after aggressive oxidation of these samples during NAG testing.

The *TM Zone LCT* humidity cell leachates maintained near neutral pH values and reported progressively decreasing concentrations of sulphate throughout the 20 week test period. Low levels of alkalinity were observed in the weekly leachates and free acidity was not released. All controlled parameters reported at concentrations well within the limits dictated by the MMER.

Treatability testing of the as received *Adit Water* sample indicated that a target pH of 8.55 will result in significant reductions in not only Pb and Zn but also in As, Cd, Cu and Mn concentrations in solution. A pH of 8.55 resulted in all MMER limits being satisfied.

Introduction

SGS was contracted by CMC Metals Ltd. to complete environmental characterisation of footwall, hanging wall, ore zone and tailings samples representative of the TM zone of the Silver Hart project located in Yukon. The single tailings sample was generated from a concurrent test program (SGS Project Reference No. 11440-001). Treatability testing was also conducted on samples of adit water and synthetic adit water. The purpose of the environmental test program, entitled “Environmental Testing of Silver Hart TM Zone Waste Rock and Tailings”, was to assess the acid rock drainage (ARD) and contaminant release potential associated with the footwall, hanging wall, ore zone, tailings and adit water.

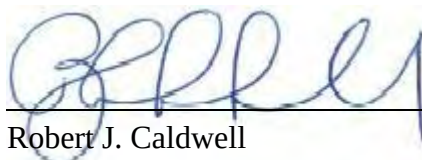
The following report provides a summary of the environmental testwork completed and the results thereof.

SGS LAKEFIELD RESEARCH LIMITED

Minerals Services



Barbara Bowman
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Scope of Work

The scope of test work completed on the samples received included:

- Inductively coupled plasma, optical emission spectroscopy/mass spectroscopy (ICP-OES/MS) strong acid digest elemental analyses.
- Synthetic precipitation leaching procedure (SPLP) US EPA method 1312 extraction testing.
- Shake flask extraction (SFE) testing.
- Modified acid base accounting (ABA) testing.
- Net acid generation (NAG) testing.
- Humidity cell testing.
- Adit water and synthetic adit water (*TM-OZ-02*) treatability testing.

Sample Descriptions and Test Methods

1. Sample Descriptions and Handling

Environmental testing was conducted on one footwall (*TM-FW-01*), two hanging wall (*TM-HW-01* and *TM-HW-02*), one ore zone (*TM-OZ-01*) and one tailings sample (*TM Zone LCT*). The footwall, hanging wall and ore zone samples were submitted for SPLP, SFE, modified ABA, NAG and ICP-OES/MS elemental analyses. All samples were prepared for the proposed test work and analyses according to specified test method protocols and SGS Standard Operating Procedures.

The tailings sample (*TM Zone LCT*), produced at SGS facilities in Lakefield (SGS Project Reference No. 11440-001), was mixed at 200 rpm for 60 minutes to ensure all solids were thoroughly recombined. Once recombined, the pulp was filtered on a No. 50 Whatman filter paper. The resultant filter cake solids were submitted for modified ABA and humidity cell testing.

Treatability testing was conducted on 1 L aliquots of *Adit Water* provided by CMC Metals Ltd. and *Synthetic Adit Water*, prepared from pulverized *TM-OZ-02* (a separate ore zone sample) and deionized water (DI), to determine the affect of pH control on Pb and Zn solubility.

2. Test Methods

The following sections provide a brief overview of the test methods included in the environmental characterisation program.

2.1. ICP-OES/MS Strong Acid Digest Elemental Analyses

The footwall, hanging wall and ore zone samples were digested using an acid mixture of HNO₃, HF, HClO₄, and HCl to obtain a near total digest of the parameters being analyzed. ICP-OES/MS trace metal scans were performed to provide quantitative analyses of the elemental components of the sample material. Analyses requested included: Ag, Al, As, B, Ba, Be, Bi, Ca, Cd, Co, Cr, Cu, Fe, Hg, K, Li, Mg, Mn, Mo, Na, Ni, Pb, P, Sb, Se, Sn, Sr, Ti, Tl, U, Y, V and Zn. Mercury analyses were completed by cold vapour atomic absorption spectroscopy (CVAAS).

2.2. Synthetic Precipitation Leaching Procedure 1312 Extraction

The major objective of the SPLP extraction was to determine the mobility of contaminants from the footwall, hanging wall and ore zone samples under acidic conditions such as those created by ARD or acid rain. For the Silver Hart samples, the SPLP leachant was adjusted to a pH of 4.2 through the addition of a 60:40 weight percent mix of sulphuric and nitric acid to deionised water. The leachant was combined with the sample in a 20:1 ratio and the sample container was rotated end over end for 18 hours. The resultant slurry was filtered through a 0.7 µm glass fibre filter. The resultant filtrates were submitted for total metals analyses including Ag, Al, As, B, Ba, Bi, Ca, Cd, Cl, Co, Cr, Cu, Fe, Hg, K, Li, Mg, Mn, Mo, Na, Ni, Pb, P, Sb, Se, Sn, Sr, Si, Ti, Tl, U, V, Y and Zn. Mercury analyses were completed by CVAAS.

2.3. Shake Flask Extraction

The shake flask extraction is used to determine the mobility of contaminants under the chemical environment dictated by the samples intrinsic properties. Deionised water leachant was added to the footwall, hanging wall and ore zone samples at a 3:1 liquid to solid ratio. The samples were rotated end over end at 29 ± 2 rpm for a period of 24 hours prior to being filtered through a 0.7 µm cellulose acetate membrane filter. The resultant filtrates were analysed for total metals utilising the same suite of analyses as noted for the SPLP leachates.

2.4. Modified Acid Base Accounting

The modified acid base accounting (ABA) test provided quantification of the total sulphur, sulphide sulphur, and sulphate concentrations present and the potential acid generation (AP) related to the oxidation of the sulphide sulphur concentration. The test method determined the neutralization potential (NP) of the samples by facilitating a reaction with excess acid and then identified the quantity of acid neutralized by the samples NP by back-titrating to pH 8.3 with NaOH. The balance between the AP and NP assists in defining the potential of the sample to generate acid drainage. In addition, quantification of the extent of carbonate mineral content permitted calculation of the theoretical carbonate NP.

2.5. Net Acid Generation Testing

NAG tests were conducted to determine the balance between the acid consuming and acid producing components of the samples. The NAG test initiated a reaction between the sample and concentrated hydrogen peroxide in order to force complete oxidation and reaction of the acidity produced with the neutralizing minerals present within the sample. After the reaction ceased, the pH of the solution was measured (NAG pH). The acid remaining after the reaction was titrated with standardized NaOH to pH 4.5 and the net acid generated by the reaction was calculated and expressed in units of kg H₂SO₄ equivalent per tonne. The NAG_{4.5} value is indicative of the contribution from free acid, Al and Fe. Titration from pH 4.5 to pH 7.0 can provide additional information for sample characterization as, under certain conditions, the NAG_{7.0} is indicative of the presence of metallic ions that consume alkalinity over this pH range, such as Cu and Zn.

2.6. Humidity Cell Testing

The humidity cell test is used to predict the potential for acidic leachate generation and the primary rates of reaction under aerobic weathering conditions. Humidity cell testing was initiated on the tailings sample at the ‘as received’ particle size according to the standard ASTM D5744-96 (2001) method.

The tailings sample was placed in a cell with dimensions of 203.2 mm (8”) ID by 101.6 mm (4”) height. A perforated disk was located approximately 12.5 mm (1/2”) above the cell bottom to support the solid tailings samples. A filter media was placed on the perforated disk to transmit air and to allow leachate to drain and collect in the cell bottom. A valve located at the bottom of the cell allows leachate to pass into the collection vessel.

A 1000 g dry tailings sample was loaded into the cell. The first leach, designated as the Week 0 leach, initiated the humidity cell test and established the initial characteristics of the leachate. The first leach was performed by flooding the tailings sample with 1000 mL of DI for one hour, followed by the collection of leachate for analyses.

Subsequent stages of the humidity cell test involved three stages over a 7-day cycle: (1) dry air (which entered the bottom of the cell and flowed upward through the sample) was passed through the sample for 3 days; (2) humid air was passed through the cell in the same manner as

the dry air for 3 days; and (3) on the last day of the cycle, DI was added through the top of the cell and allowed to flood the cell for one hour prior to the leachate being collected. Weekly leachate samples from the humidity cell tests were submitted for general analyses including: pH, acidity, alkalinity, conductivity, sulphate, Cl, Ca and Fe. ICP-MS/OES trace metal scans were initially performed on a weekly basis (Weeks 0 through 5). Subsequent ICP-MS/OES trace metal scans were completed on the Weeks 10, 15 and 20 leachates.

2.7. *Adit Water Treatability Testing*

Treatability testing was conducted to determine the efficacy of pH control as a means of controlling the solubility of Pb and Zn found in the adit and synthetic adit waters tested. The *Synthetic Adit* water was generated at SGS facilities in Lakefield using a 10:1 liquid (DI) to solid ratio. The solids were blended with the solids periodically over a one month period, then allowed to settle.

A sub sample of the *Adit Water* was mixed with increasing quantities of hydrated high calcium lime in order to determine the amount required to achieve a pH of 11.0. It was determined that a 0.5 g/L was required to reach the targeted maximum pH. One litre aliquots of the as-received *Adit Water* and the as-generated *Synthetic Adit Water* were used to establish baselines, while seven additional one litre aliquots of each of the waters were treated with incremental additions (0.05, 0.10, 0.15, 0.20, 0.30, 0.40, and 0.50 g) of hydrated high calcium lime.

Results

Results of the test work completed are summarised in the following sections.

1. ICP-OES/MS Strong Acid Digest Elemental Analyses

ICP-OES/MS strong acid digest elemental analyses completed on the footwall, hanging wall and ore zone samples are summarised in Table 1. Results are presented in detail in Appendix 1.

Table 1 ICP-OES/MS Strong Acid Digest Elemental Analyses Results

Parameter	Unit	TM-FW-01	TM-OZ-01	TM-HW-01	TM-HW-02
Hg	g/t	< 0.1	0.4	< 0.1	< 0.1
Al	g/t	65000	35000	69000	78000
As	g/t	59	440	23	61
Ba	g/t	130	82	180	360
Bi	g/t	0.11	31	0.17	0.48
Ca	g/t	1000	240	980	1000
Cr	g/t	130	130	130	25
Cu	g/t	310	3200	97	120
Fe	g/t	27000	13000	26000	15000
K	g/t	32000	17000	36000	48000
Mg	g/t	2100	990	1700	1600
Mn	g/t	3900	79	8200	4700
Mo	g/t	5.2	1.3	4.3	7.2
Na	g/t	330	180	370	780
Pb	g/t	710	150000	1100	780
P	g/t	610	240	530	620
Sb	g/t	73	3100	57	55
Ti	g/t	280	140	240	320
V	g/t	10	5	12	12
Y	g/t	5.8	1.6	5.6	7.6
Zn	g/t	2800	1200	2300	2000

2. Synthetic Precipitation Leaching Procedure 1312 Extraction

Summary results of the SPLP 1312 extraction tests conducted on the footwall, hanging wall and ore zone samples are provided in Table 2. Detailed test results are shown in Appendix 1.

Table 2 Synthetic Precipitation Leaching Procedure 1312 Extraction Results

Parameter	Unit	MMER ¹	TM-FW-01	TM-OZ-01	TM-HW-01	TM-HW-02
Initial pH	units	6-9.5	5.97	5.54	5.40	5.45
Final pH	units	6-9.5	6.87	5.89	6.53	6.64
pH	units	6-9.5	7.25	6.34	7.08	7.12
Alkalinity	mg/L as CaCO ₃		10	3	7	8
Acidity	mg/L as CaCO ₃		< 2	10	< 2	< 2
Hg	mg/L		< 0.0001	< 0.0001	< 0.0001	< 0.0001
Al	mg/L		0.12	0.02	0.18	0.99
As	mg/L	0.50	0.0006	0.0004	0.0004	0.0056
Ag	mg/L		0.00007	0.00043	0.00025	0.00281
Ca	mg/L		1.55	2.66	1.16	0.82
Cu	mg/L	0.30	0.0063	0.0009	0.0010	0.0073
Fe	mg/L		0.04	< 0.01	0.06	0.41
K	mg/L		3.43	3.39	3.21	3.49
Mg	mg/L		0.422	0.426	0.291	0.144
Na	mg/L		2.73	2.12	4.31	7.63
Ni	mg/L	0.50	0.0011	0.0019	< 0.0007	< 0.0007
Pb	mg/L	0.20	0.00288	21.5	0.0144	0.0828
Si	mg/L		2.08	2.22	2.22	4.05
Zn	mg/L	0.50	1.22	1.74	0.441	0.424

¹Department of Justice Canada, 2002. Metal Mining Effluent Regulations, Fisheries Act SOR-2002-222.

Parameters reporting at values outside the MMER limits are indicated in bold type.

3. Shake Flask Extraction

Results of the shake flask extraction tests completed on the footwall, hanging wall and ore zone samples are summarised in Table 3. Complete results are provided in Appendix 1.

Table 3 Shake Flask Extraction Results

Parameter	Unit	MMER ¹	TM-FW-01	TM-OZ-01	TM-HW-01	TM-HW-02
Initial pH	units	6-9.5	6.42	5.36	6.01	6.34
Final pH	units	6-9.5	6.48	6.18	6.66	7.24
pH	units	6-9.5	7.01	5.34	6.62	6.34
Alkalinity	mg/L as CaCO ₃		16	2	7	2
Acidity	mg/L as CaCO ₃		< 2	22	< 2	< 2
Hg	mg/L		< 0.0001	< 0.0001	0.0002	< 0.0001
Al	mg/L		0.03	< 0.01	< 0.01	0.21
As	mg/L	0.50	0.0005	< 0.0002	0.0002	0.0025
Ag	mg/L		0.00004	0.00004	0.00004	0.00059
Ca	mg/L		3.40	8.01	4.11	0.51
Cu	mg/L	0.30	0.0042	0.0004	0.0018	0.0114
Fe	mg/L		0.02	< 0.01	< 0.01	0.02
K	mg/L		14.8	25.9	16.4	5.82
Mg	mg/L		0.977	1.37	1.15	0.053
Na	mg/L		0.57	0.34	0.37	4.64
Ni	mg/L	0.50	0.0022	0.0051	0.0009	< 0.0007
Pb	mg/L	0.20	0.008	15.3	0.053	0.058
Si	mg/L		4.39	4.24	4.59	4.78
Zn	mg/L	0.50	1.52	2.33	1.48	0.247

¹Department of Justice Canada, 2002. Metal Mining Effluent Regulations, Fisheries Act SOR-2002-222.

Parameters reporting at values outside the MMER limits are indicated in bold type.

4. Modified Acid Base Accounting

Summary results of the modified ABA tests conducted on the footwall, hanging wall, ore zone and tailings (humidity cell feed) samples are shown in Table 4. Detailed results are provided in Appendix 1.

Table 4 Modified Acid Base Accounting Test Results

Parameter	Unit	TM-FW-01	TM-OZ-01	TM-HW-01	TM-HW-02	TM Zone LCT
Paste pH	units	7.91	5.82	6.85	8.59	8.10
NP ¹	t CaCO ₃ /1000 t	7.4	10.3	5.1	5.7	12.4
AP	t CaCO ₃ /1000 t	2.8	46.2	0.31	0.31	0.31
Net NP	t CaCO ₃ /1000 t	4.6	-35.9	4.8	5.4	12.1
NP/AP	ratio	2.6	0.22	16.5	18.4	40.0
S	%	0.178	4.75	0.070	0.054	0.088
SO ₄	%	0.09	3.27	0.06	0.05	0.09
Sulphide	%	0.09	1.48	0.01	< 0.01	< 0.01
C	%	0.233	0.269	0.104	0.016	0.533
Carbonate	%	0.035	0.049	0.044	0.023	0.269
CO ₃ NP ²	t CaCO ₃ /1000 t	0.6	0.8	0.7	0.4	4.5
CO ₃ Net NP	t CaCO ₃ /1000 t	-2.2	-45.4	0.4	0.1	4.2
CO ₃ NP/AP	Ratio	0.21	0.02	2.4	1.2	14.4
Classification	based on ABA NP ¹	uncertain	PAG	uncertain	uncertain	uncertain
Classification	based on CO ₃ NP ²	PAG	PAG	uncertain	uncertain	uncertain

¹Measured in ABA test.

²Theoretical, based on CO₃ content alone.

Green highlighting indicates Net NP values less than 20 t CaCO₃/1000 t.

Orange highlighting represents NP/AP ratios less than 3.

PAG – Potentially Acid Generating based on ABA test data alone.

PAN – Potentially Acid Neutralizing based on ABA test data alone.

Uncertain – acid generation potential is uncertain based on ABA test data alone.

5. Net Acid Generation Testing

Results of the NAG tests performed on the footwall, hanging wall and ore zone samples are summarised in Table 5. Complete test results are presented in Appendix 1.

Table 5 Net Acid Generation Test Results

Parameter	Unit	TM-FW-01	TM-OZ-01	TM-HW-01	TM-HW-02
Final pH	units	6.92	5.30	7.44	7.61
NAG@pH4.5	kg H ₂ SO ₄ /t	0	0	0	0
NAG@pH7.0	kg H ₂ SO ₄ /t	0.20	3.5	0	0

6. Humidity Cell Testing

Results of the pH, conductivity, acidity, alkalinity and sulphate analyses and calculated cumulative depletion rates for the *TM Zone LCT* humidity cell test leachates are summarised in Table 6. Summary results of the dissolved metal concentrations in the *TM Zone LCT* leachates, as compared to the MMER limits, are presented in Table 7. Complete humidity cell test reports are provided in Appendix 3. Humidity cell certificates of analysis are included in Appendix 4.

7. Adit Water Treatability Testing

Summary results of the *Adit Water* and *Synthetic Adit Water* treatability tests are presented in Tables 8 and 9, respectively. Complete test results are provided in Appendix 1.

Table 6 Weekly Leachate Results – TM Zone LCT

Week	pH	Acidity	Alkalinity	Conductivity	SO ₄	Cum. S ⁼ Depletion	Cum. NP Depletion	Cum. CO ₃ NP Depletion
	units	CaCO ₃ eq. mg/L	CaCO ₃ eq. mg/L	µmhos/cm	mg/L	%	%	%
0	8.56	<2	85	249	39	9.50	0.24	0.66
1	7.92	<2	63	275	70	31.02	0.78	2.15
2	8.32	<2	81	389	97	62.74	1.58	4.36
3	8.06	<2	69	283	67	83.71	2.11	5.81
4	7.97	<2	68	212	45	97.78	2.46	6.79
5	7.90	<2	54	185	34	108.66	2.74	7.55
6	8.05	<2	53	156	26	116.85	2.94	8.11
7	7.46	<2	48	146	20	123.31	3.11	8.56
8	7.56	<2	23	70	9.5	126.07	3.18	8.75
9	7.39	<2	22	64	9.3	128.84	3.25	8.95
10	7.79	<2	39	104	14	133.39	3.36	9.26
11	7.52	<2	16	45	6.7	135.27	3.41	9.39
12	7.45	<2	16	54	7.8	137.49	3.47	9.55
13	7.35	<2	17	54	7.9	139.83	3.52	9.71
14	7.31	<2	12	37	5.4	141.32	3.56	9.81
15	6.92	<2	15	50	7.6	143.57	3.62	9.97
16	7.00	<2	15	46	7.9	145.92	3.68	10.13
17	6.94	<2	15	38	5.7	147.59	3.72	10.25
18	6.75	<2	11	52	6.9	149.70	3.77	10.40
19	7.89	< 2	17	55	7	151.84	3.83	10.54
20	7.23	< 2	14	46	6.5	153.76	3.87	10.68

Table 7 Dissolved Metal Concentrations – TM Zone LCT

Parameter	Units	MMER ¹	0	1	2	3	4	5	6	7	8	9	10
pH	units	9-9.5	8.56	7.92	8.32	8.06	7.97	7.90	8.05	7.46	7.56	7.39	7.79
Cl	mg/L		1.1	74	0.6	0.3	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Ca	mg/L		2.22	2.12	1.72	1.17	0.90	1.23	1.09	1.18	0.64	0.87	1.22
Fe	mg/L		0.02	0.03	0.02	0.02	0.04	0.02	0.02	0.01	< 0.01	0.01	0.02
Hg	mg/L		< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	---	---	---	---	< 0.0001
As	mg/L	0.50	0.0197	0.0085	0.0094	0.0100	0.0094	0.0070	---	---	---	---	0.0041
Cu	mg/L	0.30	0.0020	0.0016	0.0027	0.0012	0.0010	0.0010	---	---	---	---	0.0006
Na	mg/L		68.1	59.9	120	59.4	42.9	37.9	---	---	---	---	19.1
Ni	mg/L	0.50	< 0.0007	0.0001	< 0.0001	< 0.0001	< 0.0001	0.0004	---	---	---	---	0.0003
Pb	mg/L	0.20	0.0033	0.00270	0.00151	0.00195	0.00185	0.00146	---	---	---	---	0.00041
S	mg/L		15.2	22.7	32.4	< 0.01	15.3	11.6	---	---	---	---	4.68
Zn	mg/L	0.50	0.041	0.088	0.158	0.099	0.064	0.108	---	---	---	---	0.087

¹Department of Justice Canada. 2002. Metal Mining Effluent Regulations, Fisheries Act SOR-2002-222.

Parameter	Units	MMER ¹	11	12	13	14	15	16	17	18	19	20
pH	units	9-9.5	7.52	7.45	7.35	7.31	6.92	7.00	6.94	6.75	7.89	7.23
Cl	mg/L		< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	***	< 0.2
Ca	mg/L		0.71	0.81	0.87	0.78	1.17	1.31	0.98	1.64	1.89	1.71
Fe	mg/L		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hg	mg/L		---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
As	mg/L	0.50	---	---	---	---	0.0038	---	---	---	---	0.0024
Cu	mg/L	0.30	---	---	---	---	0.0009	---	---	---	---	< 0.0005
Na	mg/L		---	---	---	---	9.32	---	---	---	---	6.92
Ni	mg/L	0.50	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Pb	mg/L	0.20	---	---	---	---	0.0005	---	---	---	---	0.00020
S	mg/L		---	---	---	---	2.42	---	---	---	---	1.87
Zn	mg/L	0.50	---	---	---	---	0.086	---	---	---	---	0.083

¹Department of Justice Canada. 2002. Metal Mining Effluent Regulations, Fisheries Act SOR-2002-222.

Table 8 Adit Water Treatability Results

Parameter	Unit	MMER ¹	Adit Water	Adit Water 0.05	Adit Water 0.10	Adit Water 0.15	Adit Water 0.20	Adit Water 0.30	Adit Water 0.40	Adit Water 0.50
pH	units	6-9.5	7.37	8.55	8.76	9.72	10.2	11.0	11.4	11.6
Hg	mg/L		< 0.0001	0.0009	0.0022	0.0024	< 0.0001	< 0.0001	< 0.0001	< 0.0001
As	mg/L	0.50	0.0089	0.0020	0.0031	0.0023	0.0002	0.0003	0.0006	0.0005
Cd	mg/L		0.0102	0.000473	0.000165	0.000028	0.000019	0.000005	0.000009	0.000007
Co	mg/L		0.000424	0.000208	0.000073	0.000019	0.000029	0.000046	0.000073	0.000093
Cr	mg/L		< 0.0005	< 0.0005	< 0.0005	0.0006	0.0009	0.0014	0.0021	0.0028
Cu	mg/L	0.30	0.0018	0.0007	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.0019	< 0.0005
Mn	mg/L		0.138	0.0435	0.00947	0.00024	< 0.00001	< 0.00001	0.00009	0.00007
Ni	mg/L	0.50	0.0056	0.0041	0.0025	0.0003	0.0002	0.0002	0.0006	0.0004
Pb	mg/L	0.20	0.00063	0.00014	0.00014	0.00008	0.00013	0.00011	0.00032	0.00019
Sn	mg/L		0.00001	0.00009	0.00007	0.00029	0.00011	0.00008	0.00048	0.00005
V	mg/L		< 0.00003	0.00016	0.00026	0.00040	0.00029	0.00034	0.00041	0.00044
Zn	mg/L	0.50	5.98	0.132	0.041	0.036	0.011	0.002	0.006	0.004

¹Department of Justice Canada. 2002. Metal Mining Effluent Regulations, Fisheries Act SOR-2002-222.

Parameters reporting at values outside the MMER limits are indicated in bold type.

Table 9 Synthetic Adit Water Treatability Results

Parameter	Unit	MMER ¹	Synthetic Adit Water	Synthetic Adit Water 0.05	Synthetic Adit Water 0.10	Synthetic Adit Water 0.15	Synthetic Adit Water 0.20	Synthetic Adit Water 0.30	Synthetic Adit Water 0.40	Synthetic Adit Water 0.50
pH	units	6-9.5	5.59	10.0	10.9	11.1	11.3	11.6	11.8	11.9
Hg	mg/L		< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
As	mg/L	0.50	0.0009	0.0006	0.0008	0.0006	0.0007	0.0007	0.0007	0.0010
Cd	mg/L		0.131	0.000096	0.00238	0.000083	0.000054	0.000077	0.000081	0.000092
Co	mg/L		0.0206	0.000078	0.000454	0.000107	0.000119	0.000146	0.000163	0.000201
Cr	mg/L		< 0.0005	< 0.0005	< 0.0005	0.0007	0.0008	0.0012	0.0016	0.0019
Cu	mg/L	0.30	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.0005
Mn	mg/L		4.21	0.00283	0.0734	0.00218	0.00166	0.00192	0.00195	0.00205
Ni	mg/L	0.50	0.0750	0.0008	0.0017	0.0005	0.0005	0.0005	0.0005	0.0007
Pb	mg/L	0.20	6.78	0.0455	0.315	0.466	0.739	1.25	1.64	1.96
Sn	mg/L		0.00005	0.00009	0.00014	0.00010	0.00010	0.00010	0.00006	0.00009
V	mg/L		< 0.00003	< 0.00003	0.00006	0.00006	0.00010	0.00018	0.00025	0.00027
Zn	mg/L	0.50	6.59	0.020	0.181	0.095	0.120	0.154	0.181	0.214

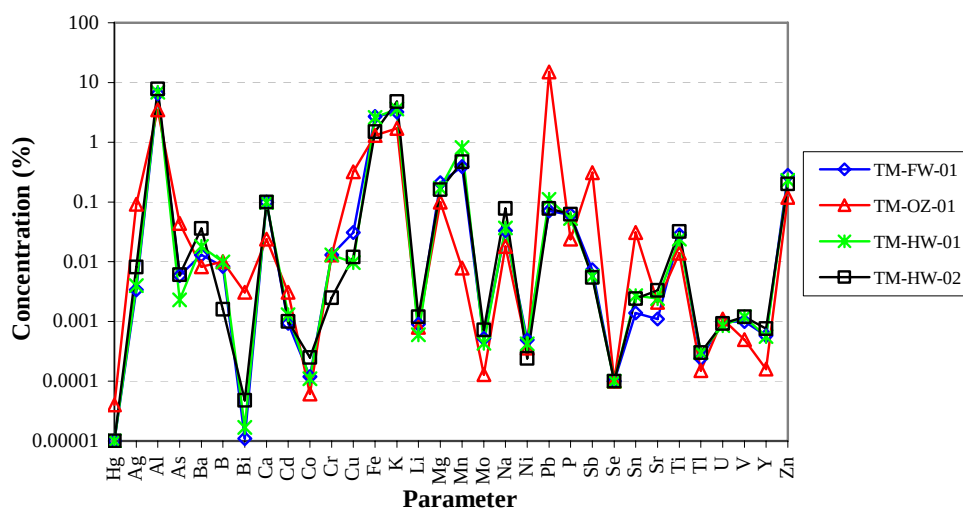
¹Department of Justice Canada. 2002. Metal Mining Effluent Regulations, Fisheries Act SOR-2002-222.

Parameters reporting at values outside the MMER limits are indicated in bold type.

Discussion

Results of the ICP-OES/MS¹ strong acid digest elemental analyses indicate that the samples contain significant amounts of Al (3.5 to 7.8%), Fe (1.3 to 2.7%) and K (1.7 to 4.8%). With the exception of the ore zone sample (*TM-OZ-01*), the samples typically reported intermediate concentrations of Ca, Mg, Mn, Pb and Zn and low levels of Ba, Cr, Cu, Na, P and Ti. The ore zone sample (*TM-OZ-01*) reported high levels of Pb (15%) and considerable amounts of As (0.04%), which may be of environmental concern. Lesser concentrations of Ca (0.02%), Mn (0.01%) and increased concentrations of Cu (0.32%) and Sb (0.31%) were also observed in the ore zone sample (*TM-OZ-01*) in comparison to the hanging wall and footwall samples. The elemental components of the samples are given in Figure 1, illustrating the disparity in the concentrations of the elements noted, as well as the less prominent Bi, Mo, V and Y.

Figure 1 ICP-OES/MS Strong Acid Digest Elemental Analyses Results



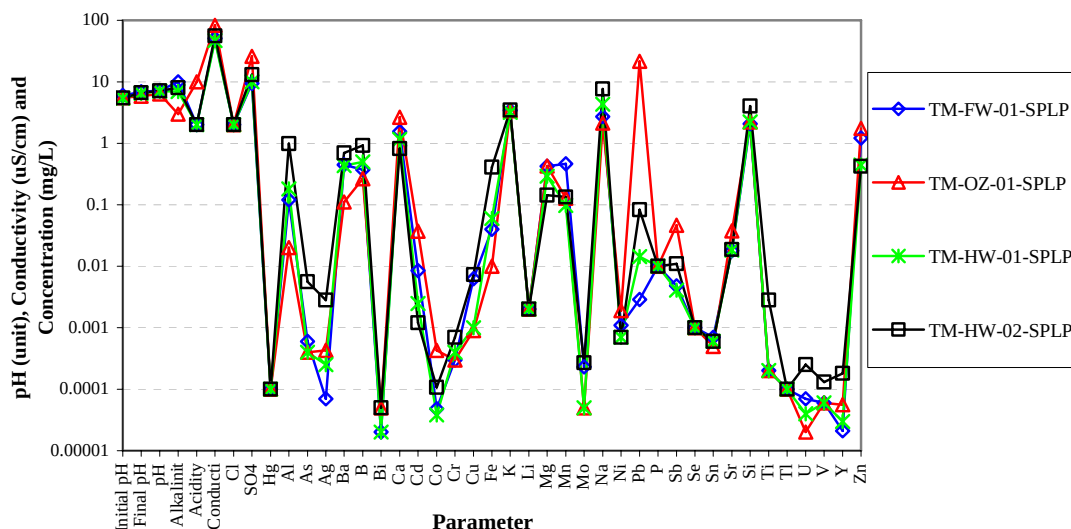
Although the SPLP 1312² extract pH values were all above the limit of 6.0, the tests reported initial slurry pH values below the lower limit specified by the MMER for all four samples. The ore zone leachate (*TM-OZ-01*) was the only sample to report a final slurry pH below the Metal Mining Effluent Regulations (MMER) limit, a Pb concentration (21.5 mg/L) well in excess of the designated limit and a measurable amount of free acidity. Zinc concentrations greater than the specified limit (1.74 and 1.22 mg/L) were also evident in the ore zone and footwall leachates

¹ ICP-OES/MS strong acid digest elemental analyses are summarised in Table 1.

² SPLP 1312 extraction test results are summarised in Table 2.

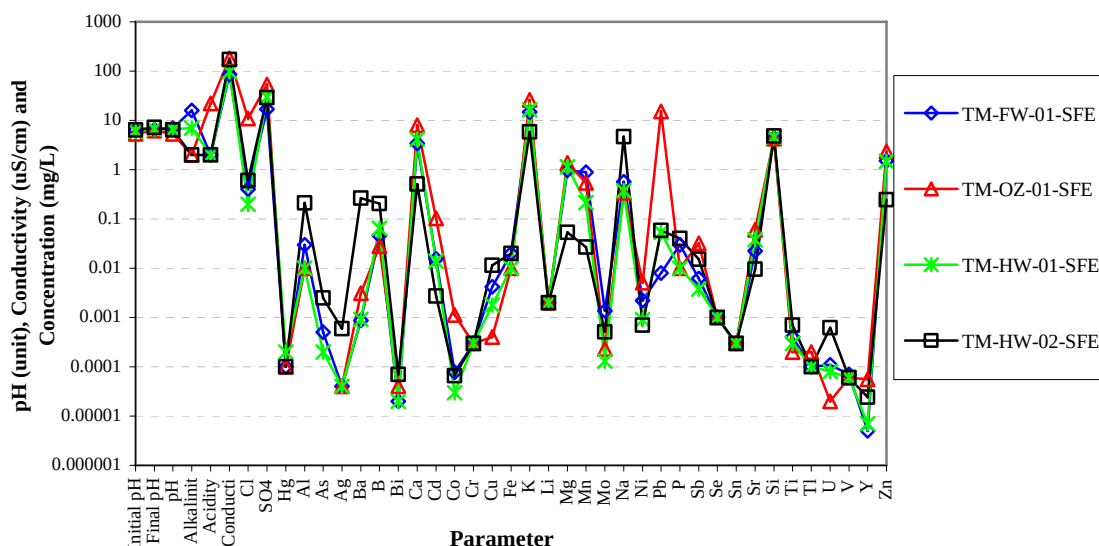
(*TM-OZ-01* and *TM-FW-01*, respectively). All other MMER controlled parameters measured in the SPLP leachates were within their respective limits. The 2nd hanging wall sample leachate (*TM-HW-02*) showed increased concentrations of Al, As, Ag, Fe and Na and decreased concentrations of Ca and Mg in comparison to the 1st hanging wall sample leachate (*TM-HW-01*). A graphical representation of the SPLP results is presented in Figure 2.

Figure 2 Synthetic Precipitation Leaching Procedure Extraction Results



Shake flask extraction³ results for the ore zone leachate (*TM-OZ-01*) reported initial slurry (5.36) and final leachate (5.34) pH values below the MMER lower limit of 6.0, resulting in Pb (15.3 mg/L) and Zn (2.33 mg/L) concentrations well in excess of the designated limits. Zinc concentrations greater than the specified limit were also observed in the 1st hanging wall (*TM-FW-01*) and footwall (*TM-HW-01*) leachates (1.52 and 1.48 mg/L, respectively). Similar to the results of the shake flask extraction, increased concentrations of Al, As, Ag and Na and decreased concentrations of Ca and Mg were again observed in *TM-HW-02* leachate. All other parameters controlled by the MMER were within the specified limits. Figure 3 illustrates the results of the shake flask extractions.

³ SFE results are summarised in Table 3.

Figure 3 Shake Flask Extraction Results

Modified ABA⁴ testing indicated a strong potential for acid generation from the ore zone sample (*TM-OZ-01*). The negative net neutralization potential (Net NP) value (-35.9 t CaCO₃/1000 t) and NP/AP ratio (0.22) indicate that the NP of this sample is insufficient to counteract the potential acidity determined based on the sulphide concentration present (1.48%). Significant sulphate (3.27%) was also contained within this sample. NAG⁵ testing of this sample however showed no net generated with a final pH of 5.30 suggesting that the sulphide content reported by the ABA test method is not readily available. Titration to pH 7.0 however suggested a low potential for acid generation.

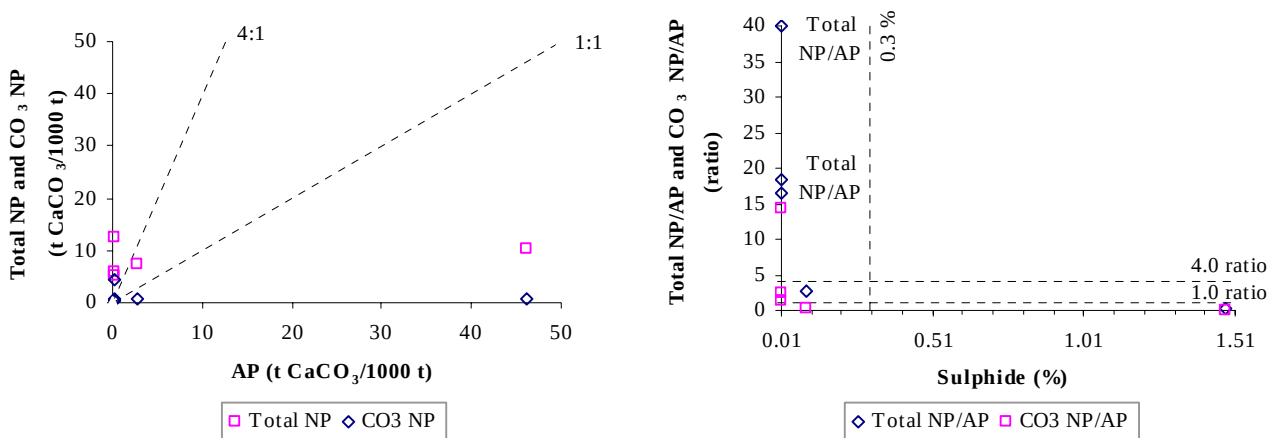
ABA testing of the hanging wall (*TM-HW-01* and *TM-HW-02*) and tailings (*TM Zone LCT*) samples suggested uncertain acid generation potentials based on the Net NP values of < 20 t CaCO₃/1000 t, and in the case of the hanging wall samples, the very low carbonate concentrations (0.023 to 0.044%). The very low sulphide concentrations (<0.01 to 0.01%) reported however indicate that acid generation from these samples is highly unlikely to occur. Similarly, although ABA testing of the footwall sample (*TM-FW-01*) indicated the potential for acid generation based on the negative CO₃ Net NP (-2.2 t CaCO₃/1000 t) and CO₃ NP/AP ratio (0.21), the low sulphide concentration (0.09%) suggests that this sample is also unlikely to generate acidity. The unlikely acid generation potential of the footwall and hanging wall

⁴ Summary results of the modified ABA tests completed on the feed samples are presented in Table 4.

⁵ NAG test results are summarised in Table 5.

samples (*TM-FW-01*, *TM-HW-01* and *TM-HW-02*) was confirmed by the near neutral final pH values (6.92 to 7.61) reported after aggressive oxidation of these samples during NAG testing. NAG testing was not completed on the tailings sample. The total and CO₃ NP as compared to the AP and the total and CO₃ NP/AP ratio versus the sulphide of the samples are illustrated in Figure 4 below.

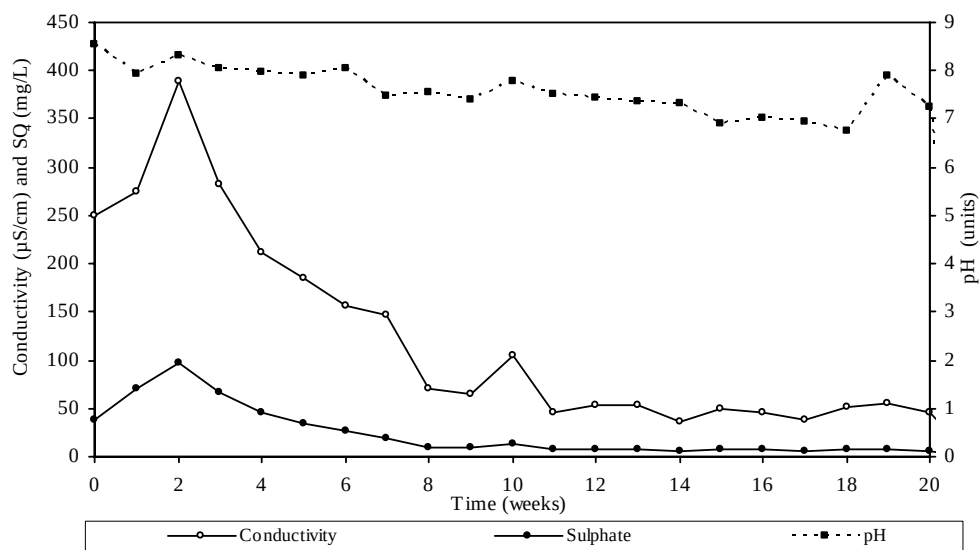
Figure 4 Modified Acid Base Accounting Results



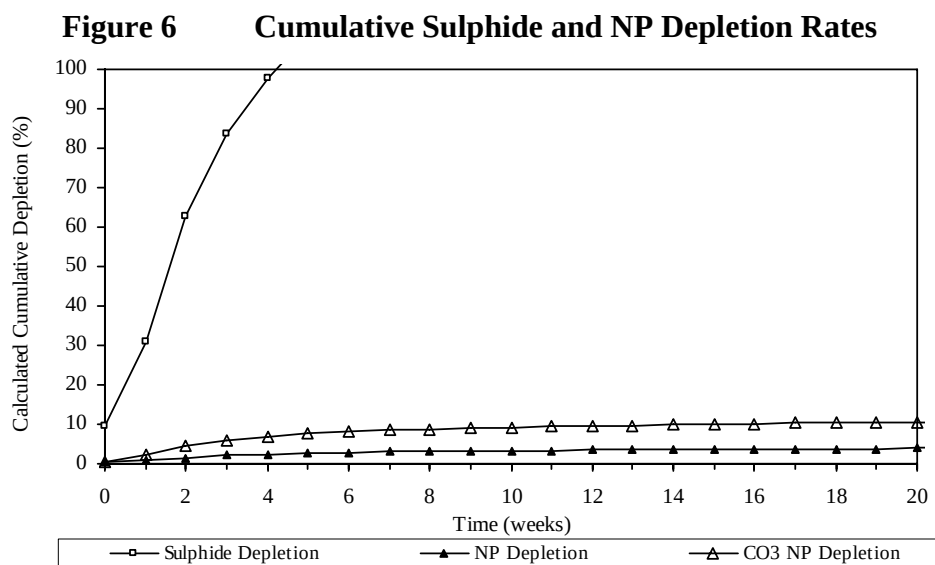
Although the initially alkaline *TM Zone LCT* humidity cell⁶ leachates reported a decrease of approximately 1.5 pH units over the 20 week humidity cell test period, near neutral pH values were maintained throughout the test. Progressively decreasing concentrations of sulphate were released over the course of the test period. Low levels of alkalinity were maintained and free acidity was not observed in the weekly leachates. All controlled parameters reported at concentrations well within the limits dictated by the MMER. Comparisons of the pH, conductivity and sulphate concentrations reported in the weekly leachates are presented graphically in Figure 5.

⁶ Results of the humidity cell tests completed on the *TM Zone LCT* tailings samples are summarised in Tables 6 and 7.

Figure 5 Conductivity, pH and SO₄ Concentrations in the Humidity Cell Leachates



Cumulative depletion rates, based on the concentrations of sulphate released into the weekly leachates, suggest that the sulphide content of the *TM Zone LCT* tailings was exhausted by Week 5. However, since the majority of the sulphur contained within this sample was sulphate (0.09%) rather than sulphide (<0.01%), this is the likely source for much of the sulphate reported in solution. In comparison, after twenty weeks of leaching, a calculated cumulative total NP depletion of 3.9% (from 12.4 to 11.9 t CaCO₃/100 t total NP) was determined for the *TM Zone LCT* tailings. Although much of this total NP (~36%) is from less reactive sources, the CO₃ NP depletion calculated (10.7%) indicates that the sulphide (or sulphur) in the sample is depleting more than ten times faster than the carbonate. These results suggest an excess of carbonate remaining available upon consumption of the sulphide. Comparative results of the cumulative sulphide, NP and CO₃ NP depletion rates are illustrated in Figure 6.



Treatability testing⁷ was conducted to determine if Pb and Zn concentrations in the *Adit Water* and *Synthetic Adit Water* could be suitably treated through pH adjustment. Although high levels of Pb were measured in the as-generated *Synthetic Adit Water* sample, only low level Pb was reported in the as-received *Adit Water*. The results of the *Adit Water* treatability indicated that a pH of 8.55 was sufficient to bring the elevated Zn concentration down to below the MMER limit of 0.5 mg/L. Due to the greater sensitivity of the *Synthetic Adit Water* to the addition of lime, the pH jumped from 5.59 to 10.0 once the smallest lime addition (50 mg/L) was employed. Amphoteric lead hydroxide has its lowest solubility at a pH of approximately 10, with solubility increasing with increasing/decreasing pH. Although the available results indicate that a target pH of 10 will result in the most significant precipitation of both Pb and Zn from solution, it is expected that a pH of less than the MMER maximum of 9.5 would also be capable of generating Pb and Zn concentrations below the limits (0.20 and 0.50, respectively). Significant decreases in the concentrations of As, Cd, Co, Mn and Ni in solution were also evident at a pH of 10. Increasing pH above the MMER limit typically resulted in only very minor increases to the concentrations of Cr, Sn and V in solution. Figures 7 and 8 illustrate the overall results of the treatability tests. Results for selected parameters are provided in Figures 9 and 10.

⁷ Results of the treatability testing completed on the *Adit Water* and *Synthetic Adit Water* samples are summarised in Tables 8 and 9, respectively.

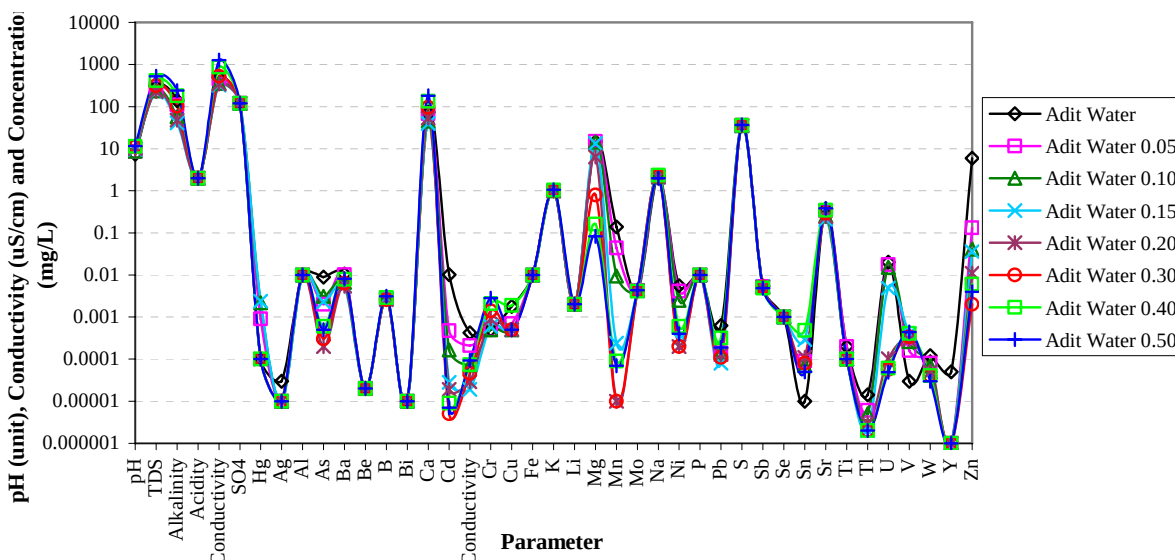
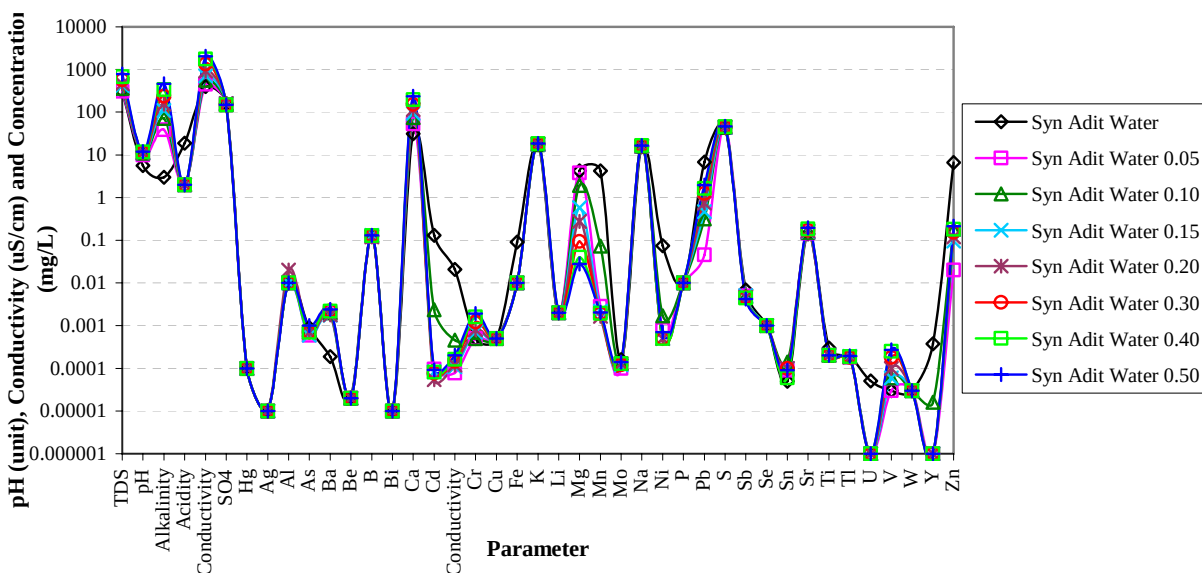
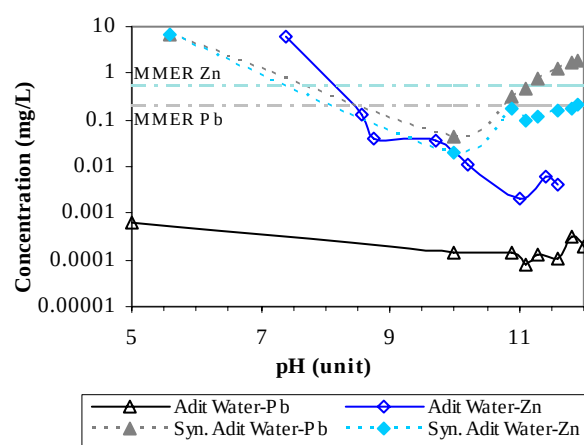
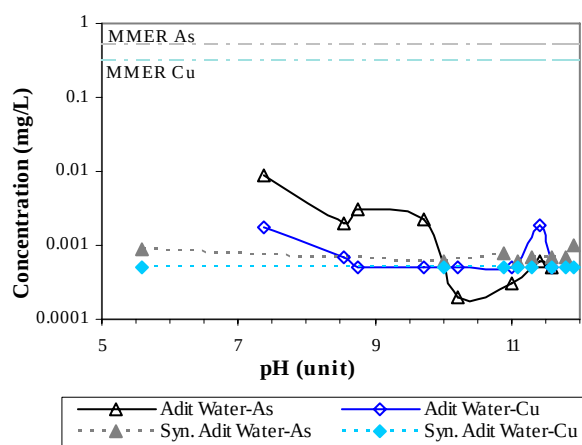
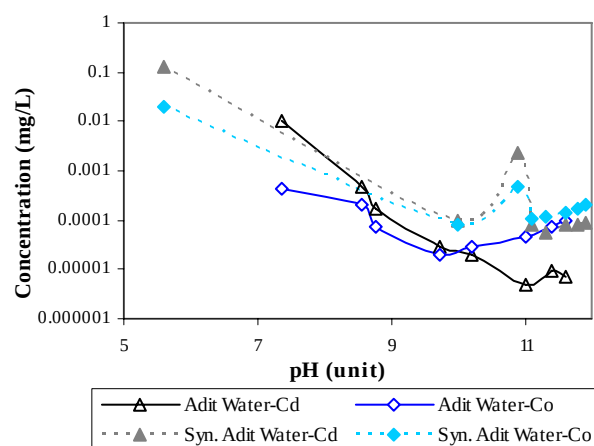
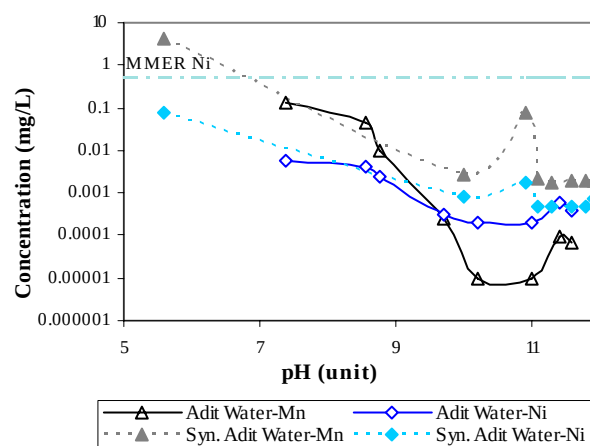
Figure 7 Treatability by Alkalinity Adjustment Results - Adit Water**Figure 8 Treatability by Alkalinity Adjustment Results – Synthetic Adit Water**

Figure 9 (a) Pb and Zn Treatability**(b) As and Cu Treatability****Figure 10 (a) Cd and Co Treatability****(b) Mn and Ni Treatability**

Conclusions and Recommendations

This report has been provided to CMC Metals Ltd. to summarise results of the testwork completed on the Silver Hart samples. In conclusion:

- ICP-OES/MS elemental analyses indicated significant amounts of aluminium, iron and potassium in all five of the samples tested. High levels of lead and considerable arsenic were also reported in the ore zone sample.
- The SPLP leachate from the ore zone reported an acidic final pH and lead and zinc at concentrations greater than the MMER limits. Initial slurry pH values below the MMER lower limit were noted for all four samples tested.
- Shake flask extraction testing similarly showed initial slurry and final leachate pH values and zinc concentrations outside of the MMER designated limits. Excess lead was also observed in the ore zone leachate.
- Although ABA testing indicated strong acid generation potential from the ore zone sample, NAG testing suggested that the sulphide content is not readily available.
- The very low sulphide concentrations reported by the ABA test method suggested that the tailings, footwall and hanging wall samples are highly unlikely to generate acidity.
- NAG testing verified that the footwall and hanging wall samples generated no net acidity under highly oxidizing conditions.
- The humidity cell leachates reported all MMER controlled parameters at concentrations well within the specified limits.
- Treatability testing of the *Adit Water* sample indicated that a target pH of 8.55 will result in reductions in all MMER controlled parameters in solution to values within the 2002 limits.

Appendix 1 Analytical Data Tables



Modified Acid Base Accounting

Parameter	Unit	TM-FW-01	TM-OZ-01	TM-HW-01	TM-HW-02	TM Zone LCT
LIMS		10273-AUG07	10273-AUG07	10273-AUG07	10273-AUG07	10506-AUG07
Paste pH	units	7.91	5.82	6.85	8.59	8.10
Fizz Rate	---	1	1	1	1	1
Sample	weight(g)	2.0	2.0	2.0	2.0	2.01
HCl added	mL	20.00	20.00	20.00	20.00	30.60
HCl	Normality	0.10	0.10	0.10	0.10	0.10
NaOH	Normality	0.10	0.10	0.10	0.10	0.10
NaOH to	pH=8.3 mL	17.10	15.90	18.00	17.70	25.60
Final pH	units	1.37	1.62	1.46	1.44	1.93
NP	t CaCO ₃ /1000 t	7.4	10.3	5.1	5.7	12.4
AP	t CaCO ₃ /1000 t	2.8	46.2	0.31	0.31	0.31
Net NP	t CaCO ₃ /1000 t	4.6	-35.9	4.8	5.4	12.1
NP/AP	ratio	2.6	0.22	16.5	18.4	40.0
S	%	0.178	4.75	0.070	0.054	0.088
SO ₄ -S	%	0.09	3.27	0.06	0.05	0.09
Sulphide-S	%	0.09	1.48	0.01	< 0.01	< 0.01
C	%	0.233	0.269	0.104	0.016	0.533
Carbonate	%	0.035	0.049	0.044	0.023	0.269
CO ₃ NP ¹	t CaCO ₃ /1000 t	0.58	0.81	0.73	0.38	4.5
CO ₃ NET NP ¹	t CaCO ₃ /1000 t	-2.2	-45.4	0.42	0.07	4.2
CO ₃ NP/AP ¹	ratio	0.21	0.02	2.4	1.2	14.4

¹ Calculated based on carbonate content.



Net Acid Generation Testing

Parameter	Unit	TM-FW-01	TM-OZ-01	TM-HW-01	TM-HW-02
LIMS		10274-AUG07	10274-AUG07	10274-AUG07	10274-AUG07
Sample	weight(g)	2.50	2.50	2.50	2.50
vol H2O2	mL	250	250	250	250
Final pH	units	6.92	5.30	7.44	7.61
NaOH	Normality	0.10	0.10	0.10	0.10
Vol NaOH to PH 4.5	mL	0.00	0.00	0.00	0.00
Vol NaOH to PH 7.0	mL	0.10	1.80	0.00	0.00
NAG	@pH4.5	0	0	0	0
NAG	@pH7.0	0.20	3.5	0	0

ICP-OES/MS Strong Acid Digest Elemental Analyses

Parameter	Unit	TM-FW-01	TM-OZ-01	TM-HW-01	TM-HW-02
LIMS		10275-AUG07	10275-AUG07	10275-AUG07	10275-AUG07
Hg	g/t	< 0.1	0.4	< 0.1	< 0.1
Ag	g/t	34	920	40	81
Al	g/t	65000	35000	69000	78000
As	g/t	59	440	23	61
Ba	g/t	130	82	180	360
B	g/t	83	100	99	16
Bi	g/t	0.11	31	0.17	0.48
Ca	g/t	1000	240	980	1000
Cd	g/t	9.3	31	13	10
Co	g/t	1.2	0.61	1.1	2.5
Cr	g/t	130	130	130	25
Cu	g/t	310	3200	97	120
Fe	g/t	27000	13000	26000	15000
K	g/t	32000	17000	36000	48000
Li	g/t	9	8	6	12
Mg	g/t	2100	990	1700	1600
Mn	g/t	3900	79	8200	4700
Mo	g/t	5.2	1.3	4.3	7.2
Na	g/t	330	180	370	780
Ni	g/t	4.9	3.6	4.2	2.4
Pb	g/t	710	150000	1100	780
P	g/t	610	240	530	620
Sb	g/t	73	3100	57	55
Se	g/t	< 1	< 1	< 1	< 1
Sn	g/t	14	310	27	24
Sr	g/t	11	21	24	33
Ti	g/t	280	140	240	320
Tl	g/t	2.4	1.5	3.0	3.0
U	g/t	9.9	11	8.5	9.2
V	g/t	10	5	12	12
Y	g/t	5.8	1.6	5.6	7.6
Zn	g/t	2800	1200	2300	2000

Synthetic Precipitation Leaching Procedure

Parameter	Unit	MMER ¹	TM-FW-01	TM-OZ-01	TM-HW-01	TM-HW-02
LIMS			10276-AUG07	10276-AUG07	10276-AUG07	10276-AUG07
Sample	weight(g)		100	100	100	100
Ext. Fluid	#1 or #2		1	1	1	1
Ext. Volume	ml		2000	2000	2000	2000
Initial pH	units	6-9.5	5.97	5.54	5.40	5.45
Final pH	units	6-9.5	6.87	5.89	6.53	6.64
pH	units	6-9.5	7.25	6.34	7.08	7.12
Alkalinity	mg/L as CaCO ₃		10	3	7	8
Acidity	mg/L as CaCO ₃		< 2	10	< 2	< 2
Conductivity	uS/cm		51	83	47	56
Cl	mg/L		< 2	< 2	< 2	< 2
SO ₄	mg/L		9.4	26	10	13
Hg	mg/L		< 0.0001	< 0.0001	< 0.0001	< 0.0001
Al	mg/L		0.12	0.02	0.18	0.99
As	mg/L	0.50	0.0006	0.0004	0.0004	0.0056
Ag	mg/L		0.00007	0.00043	0.00025	0.00281
Ba	mg/L		0.449	0.111	0.433	0.696
B	mg/L		0.374	0.266	0.499	0.923
Bi	mg/L		< 0.00002	0.00005	0.00002	0.00005
Ca	mg/L		1.55	2.66	1.16	0.82
Cd	mg/L		0.00854	0.0370	0.00247	0.00121
Co	mg/L		0.000048	0.000428	0.000038	0.000107
Cr	mg/L		0.0003	< 0.0003	0.0004	0.0007
Cu	mg/L	0.30	0.0063	0.0009	0.0010	0.0073
Fe	mg/L		0.04	< 0.01	0.06	0.41
K	mg/L		3.43	3.39	3.21	3.49
Li	mg/L		< 0.002	< 0.002	< 0.002	< 0.002
Mg	mg/L		0.422	0.426	0.291	0.144
Mn	mg/L		0.463	0.128	0.098	0.133
Mo	mg/L		0.00023	< 0.00005	< 0.00005	0.00027
Na	mg/L		2.73	2.12	4.31	7.63
Ni	mg/L	0.50	0.0011	0.0019	< 0.0007	< 0.0007
Pb	mg/L	0.20	0.00288	21.5	0.0144	0.0828
P	mg/L		< 0.01	< 0.01	< 0.01	0.01
Sb	mg/L		0.0048	0.0466	0.0041	0.0110
Se	mg/L		< 0.001	< 0.001	< 0.001	< 0.001
Sn	mg/L		0.0007	0.0005	0.0006	0.0006
Sr	mg/L		0.0179	0.0378	0.0184	0.0187
Si	mg/L		2.08	2.22	2.22	4.05
Ti	mg/L		< 0.0002	< 0.0002	< 0.0002	0.0028
Tl	mg/L		< 0.0001	< 0.0001	< 0.0001	< 0.0001
U	mg/L		0.00007	< 0.00002	0.00004	0.00025
V	mg/L		< 0.00006	< 0.00006	< 0.00006	0.00013
Y	mg/L		0.000021	0.000056	0.000030	0.000181
Zn	mg/L	0.50	1.22	1.74	0.441	0.424

Shake Flask (3:1 Liquid to Solid Ratio)

Parameter	Unit	MMER ¹	TM-FW-01	TM-OZ-01	TM-HW-01	TM-HW-02
LIMS			10347-JAN08	10347-JAN08	10347-JAN08	10347-JAN08
Sample	weight(g)		200	200	200	200
Volume mL	D.I. H ₂ O		600	600	600	600
Initial pH	units	6-9.5	6.42	5.36	6.01	6.34
Final pH	units	6-9.5	6.48	6.18	6.66	7.24
pH	units	6-9.5	7.01	5.34	6.62	6.34
Alkalinity	mg/L as CaCO ₃		16	2	7	2
Acidity	mg/L as CaCO ₃		< 2	22	< 2	< 2
Conductivity	uS/cm		86	182	97	172
Cl	mg/L		0.4	11	0.2	0.6
SO ₄	mg/L		17	53	30	29
Hg	mg/L		< 0.0001	< 0.0001	0.0002	< 0.0001
Al	mg/L		0.03	< 0.01	< 0.01	0.21
As	mg/L	0.50	0.0005	< 0.0002	0.0002	0.0025
Ag	mg/L		0.00004	0.00004	0.00004	0.00059
Ba	mg/L		0.00087	0.00312	0.00091	0.266
B	mg/L		0.046	0.028	0.065	0.206
Bi	mg/L		< 0.00002	0.00004	< 0.00002	0.00007
Ca	mg/L		3.40	8.01	4.11	0.51
Cd	mg/L		0.0155	0.103	0.0138	0.00271
Co	mg/L		0.000077	0.00113	0.000030	0.000066
Cr	mg/L		< 0.0003	< 0.0003	< 0.0003	< 0.0003
Cu	mg/L	0.30	0.0042	0.0004	0.0018	0.0114
Fe	mg/L		0.02	< 0.01	< 0.01	0.02
K	mg/L		14.8	25.9	16.4	5.82
Li	mg/L		< 0.002	< 0.002	< 0.002	< 0.002
Mg	mg/L		0.977	1.37	1.15	0.053
Mn	mg/L		0.893	0.538	0.213	0.027
Mo	mg/L		0.00136	0.00023	0.00013	0.00051
Na	mg/L		0.57	0.34	0.37	4.64
Ni	mg/L	0.50	0.0022	0.0051	0.0009	< 0.0007
Pb	mg/L	0.20	0.00283	---	---	0.0452
Pb	mg/L	0.20	0.008	15.3	0.053	0.058
P	mg/L		0.03	< 0.01	0.01	0.04
Sb	mg/L		0.0062	0.0321	0.0038	0.0151
Se	mg/L		< 0.001	< 0.001	< 0.001	< 0.001
Sn	mg/L		< 0.0003	< 0.0003	< 0.0003	< 0.0003
Sr	mg/L		0.0223	0.0598	0.0380	0.0095
Si	mg/L		4.39	4.24	4.59	4.78
Ti	mg/L		0.0004	0.0002	0.0003	0.0007
Tl	mg/L		< 0.0001	0.0002	< 0.0001	< 0.0001
U	mg/L		0.00011	0.00002	0.00008	0.00062
V	mg/L		0.00007	< 0.00006	< 0.00006	< 0.00006
Y	mg/L		0.000005	0.000056	0.000007	0.000024
Zn	mg/L	0.50	1.52	2.33	1.48	0.247

Adit Water Treatability

Parameter	Unit	MMER ¹	Adit Water	Adit Water 0.05	Adit Water 0.10	Adit Water 0.15	Adit Water 0.20	Adit Water 0.30	Adit Water 0.40	Adit Water 0.50
LIMS			10346-DEC07	10346-DEC07	10346-DEC07	10346-DEC07	10346-DEC07	10346-DEC07	10346-DEC07	10346-DEC07
TDS	mg/L		303	283	237	220	229	314	417	529
pH	units	6-9.5	7.37	8.55	8.76	9.72	10.2	11.0	11.4	11.6
Alkalinity	mg/L as CaCO ₃		138	109	57	41	48	103	180	241
Acidity	mg/L as CaCO ₃		< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Conductivity	uS/cm		497	449	356	325	344	522	871	1270
SO ₄	mg/L		120	120	120	120	120	120	120	120
Hg	mg/L		< 0.0001	0.0009	0.0022	0.0024	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Ag	mg/L		0.00003	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Al	mg/L		< 0.01	0.01	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
As	mg/L	0.50	0.0089	0.0020	0.0031	0.0023	0.0002	0.0003	0.0006	0.0005
Ba	mg/L		0.0104	0.0101	0.00663	0.00543	0.00541	0.00638	0.00796	0.00817
Be	mg/L		< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002
B	mg/L		0.0028	0.0027	0.0027	0.0028	0.0026	0.0026	0.0029	0.0031
Bi	mg/L		< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Ca	mg/L		71.9	68.0	45.4	40.0	54.0	95.9	134	182
Cd	mg/L		0.0102	0.000473	0.000165	0.000028	0.000019	0.000005	0.000009	0.000007
Co	mg/L		0.000424	0.000208	0.000073	0.000019	0.000029	0.000046	0.000073	0.000093
Cr	mg/L		< 0.0005	< 0.0005	< 0.0005	0.0006	0.0009	0.0014	0.0021	0.0028
Cu	mg/L	0.30	0.0018	0.0007	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.0019	< 0.0005
Fe	mg/L		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
K	mg/L		1.01	1.01	1.00	1.00	0.99	1.02	1.03	1.06
Li	mg/L		< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Mg	mg/L		14.6	14.8	14.3	13.2	6.36	0.798	0.160	0.083
Mn	mg/L		0.138	0.0435	0.00947	0.00024	< 0.00001	< 0.00001	0.00009	0.00007
Mo	mg/L		0.00426	0.00423	0.00432	0.00420	0.00425	0.00413	0.00414	0.00431
Na	mg/L		2.02	2.25	2.21	2.13	2.14	2.18	2.33	2.00
Ni	mg/L	0.50	0.0056	0.0041	0.0025	0.0003	0.0002	0.0002	0.0006	0.0004
P	mg/L		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pb	mg/L	0.20	0.00063	0.00014	0.00014	0.00008	0.00013	0.00011	0.00032	0.00019
S	mg/L		35.4	35.8	35.1	34.9	35.1	35.6	36.0	36.3
Sb	mg/L		0.00551	0.00532	0.00522	0.00529	0.00508	0.00508	0.00491	0.00489
Se	mg/L		< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Sn	mg/L		0.00001	0.00009	0.00007	0.00029	0.00011	0.00008	0.00048	0.00005
Sr	mg/L		0.370	0.336	0.252	0.211	0.244	0.294	0.343	0.380
Ti	mg/L		0.0002	0.0002	0.0001	0.0001	< 0.0001	< 0.0001	0.0001	0.0001
Tl	mg/L		0.000014	0.000006	0.000005	< 0.000002	0.000003	< 0.000002	< 0.000002	< 0.000002
U	mg/L		0.0200	0.0177	0.0151	0.00491	0.000102	0.000056	0.000061	0.000049
V	mg/L		< 0.00003	0.00016	0.00026	0.00040	0.00029	0.00034	0.00041	0.00044
W	mg/L		0.00012	0.00008	0.00007	0.00005	0.00005	0.00004	0.00004	< 0.00003
Y	mg/L		0.000050	0.000001	0.000001	< 0.000001	< 0.000001	< 0.000001	< 0.000001	< 0.000001
Zn	mg/L	0.50	5.98	0.132	0.041	0.036	0.011	0.002	0.006	0.004

Synthetic Adit Water Treatability

Parameter	Unit	MMER ¹	Synthetic Adit Water	Synthetic Adit Water 0.05	Synthetic Adit Water 0.10	Synthetic Adit Water 0.15	Synthetic Adit Water 0.20	Synthetic Adit Water 0.30	Synthetic Adit Water 0.40	Synthetic Adit Water 0.50
LIMS	Receipt °C		10347-DEC07	10347-DEC07	10347-DEC07	10347-DEC07	10347-DEC07	10347-DEC07	10347-DEC07	10347-DEC07
TDS	mg/L		306	309	363	417	460	571	680	789
pH	units	6-9.5	5.59	10.0	10.9	11.1	11.3	11.6	11.8	11.9
Alkalinity	mg/L as CaCO ₃		3	39	71	110	154	235	340	463
Acidity	mg/L as CaCO ₃		19	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Conductivity	uS/cm		402	445	566	714	928	1340	1750	2040
SO ₄	mg/L		160	150	150	160	160	150	150	150
Hg	mg/L		< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Ag	mg/L		0.00001	< 0.00001	0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Al	mg/L		< 0.01	0.01	0.01	< 0.01	0.02	< 0.01	< 0.01	< 0.01
As	mg/L	0.50	0.0009	0.0006	0.0008	0.0006	0.0007	0.0007	0.0007	0.0010
Ba	mg/L		0.00019	0.00201	0.00202	0.00177	0.00179	0.00222	0.00219	0.00241
Be	mg/L		< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002
B	mg/L		0.123	0.123	0.127	0.131	0.119	0.128	0.128	0.131
Bi	mg/L		< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Ca	mg/L		31.6	52.7	74.4	94.6	114	152	196	235
Cd	mg/L		0.131	0.000096	0.00238	0.000083	0.000054	0.000077	0.000081	0.000092
Co	mg/L		0.0206	0.000078	0.000454	0.000107	0.000119	0.000146	0.000163	0.000201
Cr	mg/L		< 0.0005	< 0.0005	< 0.0005	0.0007	0.0008	0.0012	0.0016	0.0019
Cu	mg/L	0.30	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.0005
Fe	mg/L		0.09	< 0.01	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
K	mg/L		17.4	17.7	17.5	17.7	17.8	18.1	18.2	18.5
Li	mg/L		< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Mg	mg/L		4.25	3.80	1.91	0.578	0.277	0.094	0.040	0.028
Mn	mg/L		4.21	0.00283	0.0734	0.00218	0.00166	0.00192	0.00195	0.00205
Mo	mg/L		0.00016	0.00010	0.00013	0.00012	0.00013	0.00012	0.00013	0.00014
Na	mg/L		15.6	16.1	15.9	15.9	16.0	16.2	16.5	16.6
Ni	mg/L	0.50	0.0750	0.0008	0.0017	0.0005	0.0005	0.0005	0.0005	0.0007
P	mg/L		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	< 0.01
Pb	mg/L	0.20	6.78	0.0455	0.315	0.466	0.739	1.25	1.64	1.96
S	mg/L		43.7	44.4	44.3	44.3	44.7	45.1	45.8	46.7
Sb	mg/L		0.00686	0.00494	0.00485	0.00502	0.00460	0.00457	0.00438	0.00418
Se	mg/L		< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Sn	mg/L		0.00005	0.00009	0.00014	0.00010	0.00010	0.00010	0.00006	0.00009
Sr	mg/L		0.141	0.147	0.153	0.158	0.164	0.173	0.185	0.195
Ti	mg/L		0.0003	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
Tl	mg/L		0.000192	0.000183	0.000189	0.000192	0.000181	0.000183	0.000189	0.000194
U	mg/L		0.000051	< 0.000001	0.000001	< 0.000001	< 0.000001	< 0.000001	< 0.000001	< 0.000001
V	mg/L		< 0.00003	< 0.00003	0.00006	0.00006	0.00010	0.00018	0.00025	0.00027
W	mg/L		< 0.00003	< 0.00003	< 0.00003	< 0.00003	< 0.00003	< 0.00003	< 0.00003	< 0.00003
Y	mg/L		0.000376	< 0.000001	0.000016	< 0.000001	< 0.000001	< 0.000001	< 0.000001	< 0.000001
Zn	mg/L	0.50	6.59	0.020	0.181	0.095	0.120	0.154	0.181	0.214

Appendix 2 Laboratory Certificates of Analysis



SGS Lakefield Research Limited
P.O. Box 4300 - 185 Concession St.
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Modified ABA (Price 1997)

Project : CALR-11440-002

Environmental Met

Attn : Rob Caldwell

Tuesday, August 28, 2007

Date Rec. : 14 August 2007
LR Report: CA10273-AUG07

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: TM-FW-01	6: TM-OZ-01	7: TM-HW-01	8: TM-HW-02
Sample Date & Time			Date;NA	Date;NA	Date;NA	Date;NA
Paste pH [units]	28-Aug-07	12:14	7.91	5.82	6.85	8.59
Fizz Rate [---]	28-Aug-07	12:14	1	1	1	1
Sample [weight(g)]	28-Aug-07	12:14	2.0	2.0	2.0	2.0
HCl added [mL]	28-Aug-07	12:14	20.00	20.00	20.00	20.00
HCl [Normality]	28-Aug-07	12:14	0.10	0.10	0.10	0.10
NaOH [Normality]	28-Aug-07	12:14	0.10	0.10	0.10	0.10
NaOH to [pH=8.3 mL]	28-Aug-07	12:14	17.10	15.90	18.00	17.70
Final pH [units]	28-Aug-07	12:14	1.37	1.62	1.46	1.44
NP [t CaCO3/1000t]	28-Aug-07	12:14	7.4	10.3	5.1	5.7
AP [t CaCO3/1000 t]	28-Aug-07	12:12	2.8	46.2	0.31	0.31
Net NP [t CaCO3/1000 t]	28-Aug-07	12:12	4.6	-35.9	4.8	5.4
NP/AP [ratio]	28-Aug-07	12:12	2.6	0.22	16.5	18.4
Total Sulphur [%]	21-Aug-07	11:34	0.178	4.75	0.070	0.054
Acid Leachable SO4-S [%]	28-Aug-07	12:12	0.09	3.27	0.06	0.05
Sulphide-S [%]	28-Aug-07	12:12	0.09	1.48	0.01	< 0.01
Total Carbon [%]	21-Aug-07	11:34	0.233	0.269	0.104	0.016
Carbonate [%]	20-Aug-07	07:58	0.035	0.049	0.044	0.023



SGS Lakefield Research Limited

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Modified ABA (Price 1997)

Project : CALR-11440-002

LR Report : CA10273-AUG07

*NP (Neutralization Potential)

$$= 50 \times (N \text{ of HCL} \times \text{Total HCL added} - N \text{ NaOH} \times \text{NaOH added})$$

Weight of Sample

*AP (Acid Potential) = % Sulphide Sulphur x 31.25

*Net NP (Net Neutralization Potential) = NP-AP

NP/AP Ratio = NP/AP

*Results expressed as tonnes CaCO₃ equivalent/1000 tonnes of material

Samples with a % Sulphide value of <0.01 will be calculated using a 0.01 value.

Sulphur analysis performed following BC ARD Guidelines (Price 1997)

Brian Graham B.Sc.

Project Specialist

Environmental Services, Analytical



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Modified ABA (Price 1997)

Project : CALR-11440-002

Environmental Met
Attn : Barb Bowman

Friday, August 31, 2007

Date Rec. : 22 August 2007
LR Report: CA10506-AUG07

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: TM Zone LCT
Sample Date & Time			Date:NA
Paste pH [units]	30-Aug-07	15:16	8.10
Fizz Rate [---]	30-Aug-07	15:16	1
Sample [weight(g)]	30-Aug-07	15:16	2.01
HCl added [mL]	30-Aug-07	15:16	30.60
HCl [Normality]	30-Aug-07	15:16	0.10
NaOH [Normality]	30-Aug-07	15:16	0.10
NaOH to [pH=8.3 mL]	30-Aug-07	15:16	25.60
Final pH [units]	30-Aug-07	15:16	1.93
NP [t CaCO3/1000t]	30-Aug-07	15:16	12.4
AP [t CaCO3/1000 t]	28-Aug-07	12:15	0.31
Net NP [t CaCO3/1000 t]	30-Aug-07	15:16	12.1
NP/AP [ratio]	30-Aug-07	15:16	40.0
Total Sulphur [%]	28-Aug-07	10:21	0.088
Acid Leachable SO4-S [%]	28-Aug-07	12:15	0.09
Sulphide-S [%]	28-Aug-07	12:15	< 0.01
Total Carbon [%]	28-Aug-07	10:21	0.533
Carbonate [%]	28-Aug-07	09:34	0.269

SGS Lakefield Research Limited

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Modified ABA (Price 1997)

Project : CALR-11440-002

LR Report : CA10506-AUG07

*NP (Neutralization Potential)

$$= 50 \times (N \text{ of HCL} \times \text{Total HCL added} - N \text{ NaOH} \times \text{NaOH added})$$

Weight of Sample

*AP (Acid Potential) = % Sulphide Sulphur x 31.25

*Net NP (Net Neutralization Potential) = NP-AP

NP/AP Ratio = NP/AP

*Results expressed as tonnes CaCO₃ equivalent/1000 tonnes of material

Samples with a % Sulphide value of <0.01 will be calculated using a 0.01 value.

Sulphur analysis performed following BC ARD Guidelines (Price 1997)



Brian Graham B.Sc.
Project Specialist
Environmental Services, Analytical



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NAG Test

Project : CALR-11440-002

Environmental Met
Attn : Rob Caldwell

Tuesday, August 28, 2007

Date Rec. : 14 August 2007
LR Report: CA10274-AUG07

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: TM-FW-01	6: TM-OZ-01	7: TM-HW-01	8: TM-HW-02
Sample Date & Time			Date;NA	Date;NA	Date;NA	Date;NA
Sample [weight(g)]	28-Aug-07	14:49	2.50	2.50	2.50	2.50
vol H2O2 [mL]	28-Aug-07	14:49	250	250	250	250
Final pH [units]	28-Aug-07	14:49	6.92	5.30	7.44	7.61
NaOH [Normality]	28-Aug-07	14:49	0.10	0.10	0.10	0.10
Vol NaOH to PH 4.5 [mL]	28-Aug-07	14:49	0.00	0.00	0.00	0.00
Vol NaOH to PH 7.0 [mL]	28-Aug-07	14:49	0.10	1.80	0.00	0.00
NAG [@pH4.5]	28-Aug-07	14:49	0	0	0	0
NAG [@pH7.0]	28-Aug-07	14:49	0.20	3.5	0	0

NAG = (49 x Vol. of base x N of base)/sample weight
kg H2SO4/tonne

Brian Graham B.Sc.
Project Specialist
Environmental Services, Analytical



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Project : CALR-11440-002

Environmental Met
Attn : Rob Caldwell

Friday, August 31, 2007

Date Rec. : 14 August 2007
LR Report: CA10275-AUG07

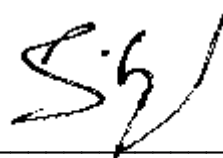
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CERTIFICATE OF ANALYSIS

Final Report

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: TM-FW-01	6: TM-OZ-01	7: TM-HW-01	8: TM-HW-02
Sample Date & Time			Date;NA	Date;NA	Date;NA	Date;NA
Mercury [µg/g]	24-Aug-07	08:37	< 0.1	0.4	< 0.1	< 0.1
Silver [g/t]	30-Aug-07	09:22	34	920	40	81
Aluminum [µg/g]	30-Aug-07	09:22	65000	35000	69000	78000
Arsenic [g/t]	30-Aug-07	09:22	59	440	23	61
Barium [µg/g]	30-Aug-07	09:22	130	82	180	360
Boron [g/t]	30-Aug-07	09:22	83	100	99	16
Bismuth [g/t]	30-Aug-07	09:22	0.11	31	0.17	0.48
Calcium [µg/g]	30-Aug-07	09:22	1000	240	980	1000
Cadmium [g/t]	30-Aug-07	09:22	9.3	31	13	10
Cobalt [g/t]	30-Aug-07	09:22	1.2	0.61	1.1	2.5
Chromium [g/t]	30-Aug-07	09:22	130	130	130	25
Copper [g/t]	30-Aug-07	09:22	310	3200	97	120
Iron [µg/g]	30-Aug-07	09:22	27000	13000	26000	15000
Potassium [µg/g]	30-Aug-07	09:22	32000	17000	36000	48000
Lithium [g/t]	30-Aug-07	09:22	9	8	6	12
Magnesium [µg/g]	30-Aug-07	09:22	2100	990	1700	1600
Manganese [g/t]	30-Aug-07	09:22	3900	79	---	---
Manganese [µg/g]	30-Aug-07	09:22	---	---	8200	4700
Molybdenum [g/t]	30-Aug-07	09:22	5.2	1.3	4.3	7.2
Sodium [µg/g]	30-Aug-07	09:22	330	180	370	780
Nickel [g/t]	30-Aug-07	09:22	4.9	3.6	4.2	2.4
Lead [g/t]	30-Aug-07	09:22	710	---	1100	780
Lead [µg/g]	30-Aug-07	09:22	---	150000	---	---
Total Phosphorus [µg/g]	30-Aug-07	09:22	610	240	530	620
Antimony [g/t]	30-Aug-07	09:22	73	3100	57	55
Selenium [g/t]	30-Aug-07	09:22	< 1	< 1	< 1	< 1
Tin [g/t]	30-Aug-07	09:22	14	310	27	24
Strontium [µg/g]	30-Aug-07	09:22	11	21	24	33
Titanium [µg/g]	30-Aug-07	09:22	280	140	240	320

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: TM-FW-01	6: TM-OZ-01	7: TM-HW-01	8: TM-HW-02
Thallium [g/t]	30-Aug-07	09:22	2.4	1.5	3.0	3.0
Uranium [g/t]	30-Aug-07	09:22	9.9	11	8.5	9.2
Vanadium [g/t]	30-Aug-07	09:22	10	5	12	12
Yttrium [g/t]	30-Aug-07	09:22	5.8	1.6	5.6	7.6
Zinc [g/t]	30-Aug-07	09:22	2800	1200	2300	2000



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Phone: 705-652-2000 FAX: 705-652-6365

SPLP1312

Project : CALR-11440-002

Environmental Met

Attn : Rob Caldwell

Thursday, September 06, 2007

Date Rec. : 14 August 2007
LR Report: CA10276-AUG07

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: TM-FW-01	6: TM-OZ-01	7: TM-HW-01	8: TM-HW-02
Sample Date & Time			23-Aug-07	23-Aug-07	23-Aug-07	23-Aug-07
Sample [weight(g)]	23-Aug-07	10:25	100	100	100	100
Ext.Fluid [#1 or #2]	23-Aug-07	10:25	1.0	1.0	1.0	1.0
ExtVolume [ml]	23-Aug-07	10:25	2000	2000	2000	2000
InitialpH [units]	23-Aug-07	10:25	5.97	5.54	5.40	5.45
Final pH [units]	23-Aug-07	10:25	6.87	5.89	6.53	6.64
pH [no unit]	29-Aug-07	11:01	7.25	6.34	7.08	7.12
Alkalinity [mg/L as CaCO3]	29-Aug-07	11:01	10	3	7	8
Acidity [mg/L as CaCO3]	29-Aug-07	11:01	< 2	10	< 2	< 2
Conductivity [uS/cm]	29-Aug-07	11:01	51	83	47	56
Chloride [mg/L]	06-Sep-07	09:37	< 2	< 2	< 2	< 2
Sulphate [mg/L]	06-Sep-07	09:37	9.4	26	10	13
Mercury [mg/L]	30-Aug-07	13:29	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Aluminum [mg/L]	31-Aug-07	09:05	0.12	0.02	0.18	0.99
Arsenic [mg/L]	04-Sep-07	15:05	0.0006	0.0004	0.0004	0.0056
Silver [mg/L]	04-Sep-07	15:05	0.00007	0.00043	0.00025	0.00281
Barium [mg/L]	04-Sep-07	15:05	0.449	0.111	0.433	0.696
Boron [mg/L]	04-Sep-07	15:05	0.374	0.266	0.499	0.923
Bismuth [mg/L]	04-Sep-07	15:05	< 0.00002	0.00005	0.00002	0.00005
Calcium [mg/L]	31-Aug-07	09:05	1.55	2.66	1.16	0.82
Cadmium [mg/L]	04-Sep-07	15:05	0.00854	0.0370	0.00247	0.00121
Cobalt [mg/L]	04-Sep-07	15:05	0.000048	0.000428	0.000038	0.000107
Chromium [mg/L]	04-Sep-07	15:05	0.0003	< 0.0003	0.0004	0.0007
Copper [mg/L]	04-Sep-07	15:05	0.0063	0.0009	0.0010	0.0073
Iron [mg/L]	31-Aug-07	09:05	0.04	< 0.01	0.06	0.41
Potassium [mg/L]	31-Aug-07	09:05	3.43	3.39	3.21	3.49
Lithium [mg/L]	31-Aug-07	09:05	< 0.002	< 0.002	< 0.002	< 0.002
Magnesium [mg/L]	31-Aug-07	09:05	0.422	0.426	0.291	0.144
Manganese [mg/L]	31-Aug-07	09:05	0.463	0.128	0.098	0.133
Molybdenum [mg/L]	04-Sep-07	15:05	0.00023	< 0.00005	< 0.00005	0.00027

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: TM-FW-01	6: TM-OZ-01	7: TM-HW-01	8: TM-HW-02
Sodium [mg/L]	31-Aug-07	09:05	2.73	2.12	4.31	7.63
Nickel [mg/L]	04-Sep-07	15:05	0.0011	0.0019	< 0.0007	< 0.0007
Lead [mg/L]	04-Sep-07	15:05	0.00288	---	0.0144	0.0828
Lead [mg/L]	04-Sep-07	15:05	---	21.5	---	---
Phosphorus [mg/L]	31-Aug-07	15:44	< 0.01	< 0.01	< 0.01	0.01
Antimony [mg/L]	04-Sep-07	15:05	0.0048	0.0466	0.0041	0.0110
Selenium [mg/L]	04-Sep-07	15:05	< 0.001	< 0.001	< 0.001	< 0.001
Tin [mg/L]	04-Sep-07	15:05	0.0007	0.0005	0.0006	0.0006
Strontium [mg/L]	04-Sep-07	15:05	0.0179	0.0378	0.0184	0.0187
Silica [mg/L]	31-Aug-07	09:05	2.08	2.22	2.22	4.05
Titanium [mg/L]	04-Sep-07	15:05	< 0.0002	< 0.0002	< 0.0002	0.0028
Thallium [mg/L]	04-Sep-07	15:05	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Uranium [mg/L]	04-Sep-07	15:05	0.00007	< 0.00002	0.00004	0.00025
Vanadium [mg/L]	04-Sep-07	15:05	< 0.00006	< 0.00006	< 0.00006	0.00013
Yttrium [mg/L]	04-Sep-07	15:05	0.000021	0.000056	0.000030	0.000181
Zinc [mg/L]	04-Sep-07	15:05	1.22	1.74	0.441	0.424



Brian Graham B.Sc.
Project Specialist
Environmental Services, Analytical



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Shake Flask 3:1 with DI- 24 hour

Project : CALR-11440-002

Environmental Met
Attn : Rob Caldwell

Thursday, May 08, 2008

Date Rec. : 21 January 2008
LR Report: CA10347-JAN08
Reference: Reassay

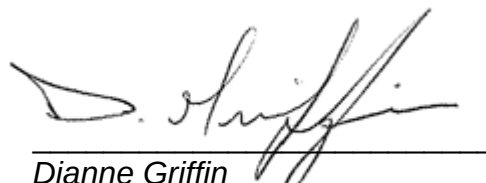
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CERTIFICATE OF ANALYSIS

Final Report - Revised

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: TM-FW-01	6: TM-OZ-01	7: TM-HW-01	8: TM-HW-02	10:BLK: SD.I. Leachate Blank
Sample Date & Time			23-Jan-08	23-Jan-08	23-Jan-08		
Sample [weight(g)]	23-Jan-08	15:05	200	200	200	200	N/A
Volume mL [D.I. H ₂ O]	23-Jan-08	15:05	600	600	600	600	600
Initial pH [units]	23-Jan-08	15:05	6.42	5.36	6.01	6.34	5.54
Final pH [units]	23-Jan-08	15:05	6.48	6.18	6.66	7.24	5.71
pH [no unit]	25-Jan-08	16:23	7.01	5.34	6.62	6.34	5.25
Alkalinity [mg/L as CaCO ₃]	25-Jan-08	16:23	16	2	7	2	< 2
Acidity [mg/L as CaCO ₃]	25-Jan-08	16:23	< 2	22	< 2	< 2	2
Conductivity [uS/cm]	25-Jan-08	16:23	86	182	97	47	5
Chloride [mg/L]	25-Jan-08	15:05	0.4	11	0.2	0.6	< 0.2
Sulphate [mg/L]	25-Jan-08	15:28	17	53	30	29	< 0.5
Mercury [mg/L]	28-Jan-08	11:18	< 0.0001	< 0.0001	0.0002	< 0.0001	< 0.0001
Aluminum [mg/L]	28-Jan-08	10:34	0.03	< 0.01	< 0.01	0.21	< 0.01
Arsenic [mg/L]	28-Jan-08	10:45	0.0005	< 0.0002	0.0002	0.0025	< 0.0002
Silver [mg/L]	28-Jan-08	10:45	0.00004	0.00004	0.00004	0.00059	0.00002
Barium [mg/L]	28-Jan-08	10:45	0.00087	0.00312	0.00091	0.266	0.0021
Boron [mg/L]	28-Jan-08	10:45	0.046	0.028	0.065	0.206	0.003
Bismuth [mg/L]	28-Jan-08	10:45	< 0.00002	0.00004	< 0.00002	0.00007	< 0.00002
Calcium [mg/L]	28-Jan-08	10:34	3.40	8.01	4.11	0.51	0.04
Cadmium [mg/L]	28-Jan-08	10:45	0.0155	0.103	0.0138	0.00271	< 0.00006
Cobalt [mg/L]	28-Jan-08	10:45	0.000077	0.00113	0.000030	0.000066	0.000016
Chromium [mg/L]	28-Jan-08	10:45	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003
Copper [mg/L]	28-Jan-08	10:45	0.0042	0.0004	0.0018	0.0114	0.0005
Iron [mg/L]	28-Jan-08	10:33	0.02	< 0.01	< 0.01	0.02	< 0.01
Potassium [mg/L]	28-Jan-08	10:33	14.8	25.9	16.4	5.82	0.04
Lithium [mg/L]	28-Jan-08	10:33	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Magnesium [mg/L]	28-Jan-08	10:33	0.977	1.37	1.15	0.053	0.005
Manganese [mg/L]	28-Jan-08	10:33	0.893	0.538	0.213	0.027	0.001
Molybdenum [mg/L]	28-Jan-08	10:45	0.00136	0.00023	0.00013	0.00051	0.00041
Sodium [mg/L]	28-Jan-08	10:33	0.57	0.34	0.37	4.64	< 0.01
Nickel [mg/L]	28-Jan-08	10:45	0.0022	0.0051	0.0009	< 0.0007	< 0.0007
Lead [mg/L]	28-Jan-08	10:45	0.00283	---	---	0.0452	0.0203
Lead [mg/L]	28-Jan-08	15:49	0.008	15.3	0.053	0.058	0.021

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: TM-FW-01	6: TM-OZ-01	7: TM-HW-01	8: TM-HW-02	10:BLK: SD.I. Leachate Blank
Phosphorus [mg/L]	28-Jan-08	10:33	0.03	< 0.01	0.01	0.04	0.01
Antimony [mg/L]	28-Jan-08	10:45	0.0062	0.0321	0.0038	0.0151	0.0005
Selenium [mg/L]	28-Jan-08	10:45	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Tin [mg/L]	28-Jan-08	10:45	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003
Strontium [mg/L]	28-Jan-08	10:45	0.0223	0.0598	0.0380	0.0095	< 0.0002
Silica [mg/L]	28-Jan-08	10:33	4.39	4.24	4.59	4.78	< 0.01
Titanium [mg/L]	28-Jan-08	10:46	0.0004	0.0002	0.0003	0.0007	< 0.0002
Thallium [mg/L]	28-Jan-08	10:46	< 0.0001	0.0002	< 0.0001	< 0.0001	< 0.0001
Uranium [mg/L]	28-Jan-08	10:46	0.00011	0.00002	0.00008	0.00062	< 0.00002
Vanadium [mg/L]	28-Jan-08	10:46	0.00007	< 0.00006	< 0.00006	< 0.00006	< 0.00006
Yttrium [mg/L]	28-Jan-08	10:46	0.000005	0.000056	0.000007	0.000024	< 0.000005
Zinc [mg/L]	28-Jan-08	10:46	1.52	2.33	1.48	0.247	0.0020



Dianne Griffin
Project Specialist



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Environmental Met

Attn : Barb Bowman

Env ICP-MS Metals

Project : CALR-11440-002

Thursday, March 13, 2008

Date Rec. : 14 December 2007

LR Report: CA10346-DEC07

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: Adit Water	6: Adit Water 0.05	7: Adit Water 0.10	8: Adit Water 0.15	9: Adit Water 0.20	10: Adit Water 0.30	11: Adit Water 0.40	12: Adit Water 0.50
Sample Date & Time			Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA
Temperature Upon Receipt [°C]	---	---	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0
Solids (Total Dissolved) [mg/L]	20-Dec-07	14:20	303	283	237	220	229	314	417	529
pH [no unit]	18-Dec-07	11:53	7.37	8.55	8.76	9.72	10.2	11.0	11.4	11.6
Alkalinity [mg/L as CaCO ₃]	18-Dec-07	11:53	138	109	57	41	48	103	180	241
Acidity [mg/L as CaCO ₃]	20-Dec-07	11:58	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Conductivity [uS/cm]	18-Dec-07	11:53	497	449	356	325	344	522	871	1270
Sulphate [mg/L]	15-Dec-07	14:32	120	120	120	120	120	120	120	120
Mercury [mg/L]	18-Dec-07	10:07	< 0.0001	0.0009	0.0022	0.0024	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Silver [mg/L]	18-Dec-07	16:03	0.00003	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Aluminum [mg/L]	21-Dec-07	15:22	< 0.01	0.01	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Arsenic [mg/L]	18-Dec-07	16:03	0.0089	0.0020	0.0031	0.0023	0.0002	0.0003	0.0006	0.0005
Barium [mg/L]	18-Dec-07	16:03	0.0104	0.0101	0.00663	0.00543	0.00541	0.00638	0.00796	0.00817
Beryllium [mg/L]	18-Dec-07	16:03	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002
Boron [mg/L]	18-Dec-07	16:03	0.0028	0.0027	0.0027	0.0028	0.0026	0.0026	0.0029	0.0031
Bismuth [mg/L]	18-Dec-07	16:03	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Calcium [mg/L]	21-Dec-07	15:22	71.9	68.0	45.4	40.0	54.0	95.9	134	182
0 [mg/L]	18-Dec-07	16:03	0.0102	0.000473	0.000165	0.000028	0.000019	0.000005	0.000009	0.000007
Cobalt [mg/L]	18-Dec-07	16:03	0.000424	0.000208	0.000073	0.000019	0.000029	0.000046	0.000073	0.000093
Chromium [mg/L]	18-Dec-07	16:03	< 0.0005	< 0.0005	< 0.0005	0.0006	0.0009	0.0014	0.0021	0.0028
Copper [mg/L]	18-Dec-07	16:03	0.0018	0.0007	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.0019	< 0.0005

Online LIMS



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Env ICP-MS Metals

Project : CALR-11440-002

LR Report : CA10346-DEC07

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: Adit Water	6: Adit Water 0.05	7: Adit Water 0.10	8: Adit Water 0.15	9: Adit Water 0.20	10: Adit Water 0.30	11: Adit Water 0.40	12: Adit Water 0.50
Iron [mg/L]	21-Dec-07	15:23	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Potassium [mg/L]	21-Dec-07	15:23	1.01	1.01	1.00	1.00	0.99	1.02	1.03	1.06
Lithium [mg/L]	21-Dec-07	15:23	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Magnesium [mg/L]	21-Dec-07	15:23	14.6	14.8	14.3	13.2	6.36	0.798	0.160	0.083
Manganese [mg/L]	18-Dec-07	16:03	0.138	0.0435	0.00947	0.00024	< 0.00001	< 0.00001	0.00009	0.00007
Molybdenum [mg/L]	18-Dec-07	16:03	0.00426	0.00423	0.00432	0.00420	0.00425	0.00413	0.00414	0.00431
Sodium [mg/L]	21-Dec-07	15:23	2.02	2.25	2.21	2.13	2.14	2.18	2.33	2.00
Nickel [mg/L]	18-Dec-07	16:03	0.0056	0.0041	0.0025	0.0003	0.0002	0.0002	0.0006	0.0004
Phosphorus [mg/L]	21-Dec-07	15:23	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Lead [mg/L]	18-Dec-07	16:03	0.00063	0.00014	0.00014	0.00008	0.00013	0.00011	0.00032	0.00019
Sulphur [mg/L]	21-Dec-07	15:23	35.4	35.8	35.1	34.9	35.1	35.6	36.0	36.3
Antimony [mg/L]	18-Dec-07	16:03	0.00551	0.00532	0.00522	0.00529	0.00508	0.00508	0.00491	0.00489
Selenium [mg/L]	18-Dec-07	16:03	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Tin [mg/L]	18-Dec-07	16:03	0.00001	0.00009	0.00007	0.00029	0.00011	0.00008	0.00048	0.00005
Strontium [mg/L]	21-Dec-07	15:23	0.370	0.336	0.252	0.211	0.244	0.294	0.343	0.380
Titanium [mg/L]	18-Dec-07	16:03	0.0002	0.0002	0.0001	0.0001	< 0.0001	< 0.0001	0.0001	0.0001
Thallium [mg/L]	18-Dec-07	16:03	0.000014	0.000006	0.000005	< 0.000002	0.000003	< 0.000002	< 0.000002	< 0.000002
Uranium [mg/L]	18-Dec-07	16:03	0.0200	0.0177	0.0151	0.00491	0.000102	0.000056	0.000061	0.000049
Vanadium [mg/L]	18-Dec-07	16:03	< 0.00003	0.00016	0.00026	0.00040	0.00029	0.00034	0.00041	0.00044
Tungsten [mg/L]	18-Dec-07	16:03	0.00012	0.00008	0.00007	0.00005	0.00005	0.00004	0.00004	< 0.00003
Yttrium [mg/L]	18-Dec-07	16:03	0.000050	0.000001	0.000001	< 0.000001	< 0.000001	< 0.000001	< 0.000001	< 0.000001
Zinc [mg/L]	18-Dec-07	16:03	5.98	0.132	0.041	0.036	0.011	0.002	0.006	0.004

Brian Graham B.Sc.
Project Specialist
Environmental Services, Analytical



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Environmental Met

Attn : Barb Bowman

Env ICP-MS Metals

Project : CALR-11440-002

Thursday, March 13, 2008

Date Rec. : 14 December 2007

LR Report: CA10347-DEC07

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: Synthetic Adit Water	6: Synthetic Adit Water 0.05	7: Synthetic Adit Water 0.10	8: Synthetic Adit Water 0.15	9: Synthetic Adit Water 0.20	10: Synthetic Adit Water 0.30	11: Synthetic Adit Water 0.40	12: Synthetic Adit Water 0.50
Sample Date & Time			Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA
Temperature Upon Receipt [°C]	---	---	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0
Solids (Total Dissolved) [mg/L]	20-Dec-07	14:17	306	309	363	417	460	571	680	789
pH [no unit]	18-Dec-07	11:51	5.59	10.0	10.9	11.1	11.3	11.6	11.8	11.9
Alkalinity [mg/L as CaCO ₃]	18-Dec-07	11:51	3	39	71	110	154	235	340	463
Acidity [mg/L as CaCO ₃]	18-Dec-07	11:51	19	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Conductivity [uS/cm]	18-Dec-07	11:51	402	445	566	714	928	1340	1750	2040
Sulphate [mg/L]	15-Dec-07	14:33	160	150	150	160	160	150	150	150
Mercury [mg/L]	18-Dec-07	10:07	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Silver [mg/L]	18-Dec-07	16:03	0.00001	< 0.00001	0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Aluminum [mg/L]	21-Dec-07	15:22	< 0.01	0.01	0.01	< 0.01	0.02	< 0.01	< 0.01	< 0.01
Arsenic [mg/L]	18-Dec-07	16:03	0.0009	0.0006	0.0008	0.0006	0.0007	0.0007	0.0007	0.0010
Barium [mg/L]	18-Dec-07	16:03	0.00019	0.00201	0.00202	0.00177	0.00179	0.00222	0.00219	0.00241
Beryllium [mg/L]	18-Dec-07	16:03	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002
Boron [mg/L]	18-Dec-07	16:03	0.123	0.123	0.127	0.131	0.119	0.128	0.128	0.131
Bismuth [mg/L]	18-Dec-07	16:03	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Calcium [mg/L]	21-Dec-07	15:22	31.6	52.7	74.4	94.6	114	152	196	235
0 [mg/L]	18-Dec-07	16:03	0.131	0.000096	0.00238	0.000083	0.000054	0.000077	0.000081	0.000092
Cobalt [mg/L]	18-Dec-07	16:03	0.0206	0.000078	0.000454	0.000107	0.000119	0.000146	0.000163	0.000201
Chromium [mg/L]	18-Dec-07	16:03	< 0.0005	< 0.0005	< 0.0005	0.0007	0.0008	0.0012	0.0016	0.0019
Copper [mg/L]	18-Dec-07	16:03	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.0005

Online LIMS



SGS Lakefield Research Limited
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - K0L 2H0
Phone: 705-652-2000 FAX: 705-652-6365

Env ICP-MS Metals

Project : CALR-11440-002

LR Report : CA10347-DEC07

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: Synthetic Adit Water	6: Synthetic Adit Water 0.05	7: Synthetic Adit Water 0.10	8: Synthetic Adit Water 0.15	9: Synthetic Adit Water 0.20	10: Synthetic Adit Water 0.30	11: Synthetic Adit Water 0.40	12: Synthetic Adit Water 0.50
Iron [mg/L]	21-Dec-07	15:22	0.09	< 0.01	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Potassium [mg/L]	21-Dec-07	15:22	17.4	17.7	17.5	17.7	17.8	18.1	18.2	18.5
Lithium [mg/L]	21-Dec-07	15:22	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Magnesium [mg/L]	21-Dec-07	15:22	4.25	3.80	1.91	0.578	0.277	0.094	0.040	0.028
Manganese [mg/L]	18-Dec-07	16:03	4.21	0.00283	0.0734	0.00218	0.00166	0.00192	0.00195	0.00205
Molybdenum [mg/L]	18-Dec-07	16:03	0.00016	0.00010	0.00013	0.00012	0.00013	0.00012	0.00013	0.00014
Sodium [mg/L]	21-Dec-07	15:22	15.6	16.1	15.9	15.9	16.0	16.2	16.5	16.6
Nickel [mg/L]	18-Dec-07	16:03	0.0750	0.0008	0.0017	0.0005	0.0005	0.0005	0.0005	0.0007
Phosphorus [mg/L]	21-Dec-07	15:22	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	< 0.01
Lead [mg/L]	18-Dec-07	16:03	6.78	0.0455	0.315	0.466	0.739	1.25	1.64	1.96
Sulphur [mg/L]	21-Dec-07	15:22	43.7	44.4	44.3	44.3	44.7	45.1	45.8	46.7
Antimony [mg/L]	18-Dec-07	16:03	0.00686	0.00494	0.00485	0.00502	0.00460	0.00457	0.00438	0.00418
Selenium [mg/L]	18-Dec-07	16:03	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Tin [mg/L]	18-Dec-07	16:03	0.00005	0.00009	0.00014	0.00010	0.00010	0.00010	0.00006	0.00009
Strontium [mg/L]	21-Dec-07	15:22	0.141	0.147	0.153	0.158	0.164	0.173	0.185	0.195
Titanium [mg/L]	18-Dec-07	16:03	0.0003	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
Thallium [mg/L]	18-Dec-07	16:03	0.000192	0.000183	0.000189	0.000192	0.000181	0.000183	0.000189	0.000194
Uranium [mg/L]	18-Dec-07	16:03	0.000051	< 0.000001	0.000001	< 0.000001	< 0.000001	< 0.000001	< 0.000001	< 0.000001
Vanadium [mg/L]	18-Dec-07	16:03	< 0.00003	< 0.00003	0.00006	0.00006	0.00010	0.00018	0.00025	0.00027
Tungsten [mg/L]	18-Dec-07	16:03	< 0.00003	< 0.00003	< 0.00003	< 0.00003	< 0.00003	< 0.00003	< 0.00003	< 0.00003
Yttrium [mg/L]	18-Dec-07	16:03	0.000376	< 0.000001	0.000016	< 0.000001	< 0.000001	< 0.000001	< 0.000001	< 0.000001
Zinc [mg/L]	18-Dec-07	16:03	6.59	0.020	0.181	0.095	0.120	0.154	0.181	0.214

Brian Graham B.Sc.
Project Specialist
Environmental Services, Analytical

Appendix 3 Humidity Cell Test Report

**Test Specimen**

Sample	Weight (g)
TM Zone LCT	1000

Analysis of Weekly Humidity Cell Leachate

Parameter	Units	MMER ¹	0	1	2	3	4	5	6	7	8	9	10
LIMS			10674-AUG07	10004-SEP07	10153-SEP07	10288-SEP07	10463-SEP07	10043-OCT07	10246-OCT07	10376-OCT07	10614-OCT07	10762-OCT07	10042-NOV07
Hum Cell Leachate Vol	mLs		731	922	981	939	938	960	945	970	870	895	975
pH	units	9-9.5	8.56	7.92	8.32	8.06	7.97	7.90	8.05	7.46	7.56	7.39	7.79
Conductivity	uS/cm		249	275	389	283	212	185	156	146	70	64	104
Acidity	mg/L as CaCO ₃		< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Alkalinity	mg/L as CaCO ₃		85	63	81	69	68	54	53	48	23	22	39
SO ₄	mg/L		39	70	97	67	45	34	26	20	9.5	9.3	14
Cl	mg/L		1.1	74	0.6	0.3	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Ca	mg/L		2.22	2.12	1.72	1.17	0.90	1.23	1.09	1.18	0.64	0.87	1.22
Fe	mg/L		0.02	0.03	0.02	0.02	0.04	0.02	0.02	0.01	< 0.01	0.01	0.02
Hg	mg/L		< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	---	---	---	---	< 0.0001
Ag	mg/L		0.00006	0.00012	0.00010	0.00006	0.00008	0.00003	---	---	---	---	0.00006
Al	mg/L		0.0199	0.0053	0.0032	0.0028	0.0024	0.0019	---	---	---	---	0.0008
As	mg/L	0.50	0.0197	0.0085	0.0094	0.0100	0.0094	0.0070	---	---	---	---	0.0041
Ba	mg/L		0.00013	0.00005	0.00005	0.00005	0.00002	0.00006	---	---	---	---	0.00004
Be	mg/L		< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	---	---	---	---	< 0.00002
B	mg/L		0.008	0.008	< 0.002	0.004	0.002	0.011	---	---	---	---	0.065
Bi	mg/L		0.00002	0.00002	0.00001	0.00001	0.00001	0.00003	---	---	---	---	0.00010
Co	mg/L		0.000067	0.000032	0.000029	0.000024	0.000011	0.000038	---	---	---	---	0.000025
Cd	mg/L		0.000530	0.000559	0.000617	0.000411	0.000292	0.000361	---	---	---	---	0.000289
Cr	mg/L		0.0029	0.0025	0.0030	0.0026	0.0015	0.0021	---	---	---	---	0.0012
Cu	mg/L	0.30	0.0020	0.0016	0.0027	0.0012	0.0010	0.0010	---	---	---	---	0.0006
Li	mg/L		< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	---	---	---	---	< 0.002
K	mg/L		0.24	0.30	0.45	0.40	0.29	0.25	---	---	---	---	0.19
Mg	mg/L		0.062	0.056	0.062	0.044	0.041	0.044	---	---	---	---	0.047
Mn	mg/L		0.00876	0.00987	0.00905	0.00758	0.00797	0.00668	---	---	---	---	0.00450
Mo	mg/L		0.123	0.0650	0.0643	0.0579	0.0419	0.0360	---	---	---	---	0.0200
Na	mg/L		68.1	59.9	120	59.4	42.9	37.9	---	---	---	---	19.1
Ni	mg/L	0.50	< 0.0007	0.0001	< 0.0001	< 0.0001	< 0.0001	0.0004	---	---	---	---	0.0003
Pb	mg/L	0.20	0.0033	0.00270	0.00151	0.00195	0.00185	0.00146	---	---	---	---	0.00041
P	mg/L		< 0.01	< 0.01	0.01	0.02	< 0.01	< 0.01	---	---	---	---	< 0.01
S	mg/L		15.2	22.7	32.4	< 0.01	15.3	11.6	---	---	---	---	4.68
Sb	mg/L		0.0129	0.00612	0.00504	0.00421	0.00362	0.00341	---	---	---	---	0.00255
Se	mg/L		< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	---	---	---	---	< 0.001
Sn	mg/L		0.00169	0.00091	0.00048	0.00039	0.00039	0.00020	---	---	---	---	0.00008
Sr	mg/L		0.00252	0.00303	0.00313	0.00215	0.00176	0.00188	---	---	---	---	0.00227
Ti	mg/L		0.0002	< 0.0002	< 0.0001	< 0.0001	< 0.0001	< 0.0001	---	---	---	---	< 0.0001
Tl	mg/L		< 0.0001	< 0.0001	< 0.00001	0.00002	< 0.00001	< 0.00001	---	---	---	---	0.00002
U	mg/L		0.00235	0.00112	0.00169	0.00116	0.000848	0.000665	---	---	---	---	0.000353
V	mg/L		< 0.00006	0.00008	< 0.00003	0.00015	< 0.00003	0.00010	---	---	---	---	< 0.00003
Y	mg/L		< 0.000005	0.000004	< 0.000001	0.000002	0.000002	0.000003	---	---	---	---	< 0.000001
W	mg/L		0.00031	0.00007	< 0.00003	0.00004	< 0.00003	0.00007	---	---	---	---	< 0.00003
Zn	mg/L	0.50	0.041	0.088	0.158	0.099	0.064	0.108	---	---	---	---	0.087

¹ Metal Mining Effluent Regulations, Fisheries Act SOR-2002-222.

Test Specimen

Sample	Weight (g)
TM Zone LCI	1000

Analysis of Weekly Humidity Cell Leachate

Parameter	Units	MMER ¹	11	12	13	14	15	16	17	18	19	20
LIMS			10243-NOV07	10371-NOV07	10616-NOV07*	10003-DEC07	10156-DEC07	10320-DEC07	10482-DEC07	10015-JAN08	10082-JAN08	10225-JAN08
Hum Cell Leachate Vol	mLs		840	856	887	830	888	892	878	916	919	885
pH	units	9-9.5	7.52	7.45	7.35	7.31	6.92	7.00	6.94	6.75	7.89	7.23
Conductivity	uS/cm		45	54	54	37	50	46	38	52	55	46
Acidity	mg/L as CaCO ₃		< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Alkalinity	mg/L as CaCO ₃		16	16	17	12	15	15	15	11	17	14
SO ₄	mg/L		6.7	7.8	7.9	5.4	7.6	7.9	5.7	6.9	7	6.5
Cl	mg/L		< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Ca	mg/L		0.71	0.81	0.87	0.78	1.17	1.31	0.98	1.64	1.89	1.71
Fe	mg/L		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hg	mg/L		---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Ag	mg/L		---	---	---	---	0.00004	---	---	---	---	0.00001
Al	mg/L		---	---	---	---	0.0038	---	---	---	---	0.0007
As	mg/L	0.50	---	---	---	---	0.0038	---	---	---	---	0.0024
Ba	mg/L		---	---	---	---	0.00016	---	---	---	---	0.00004
Be	mg/L		---	---	---	---	< 0.00002	---	---	---	---	< 0.00002
B	mg/L		---	---	---	---	0.004	---	---	---	---	< 0.002
Bi	mg/L		---	---	---	---	< 0.00001	---	---	---	---	< 0.00001
Co	mg/L		---	---	---	---	< 0.000002	---	---	---	---	0.000008
Cd	mg/L		---	---	---	---	0.000258	---	---	---	---	0.000258
Cr	mg/L		---	---	---	---	0.0008	---	---	---	---	0.0006
Cu	mg/L	0.30	---	---	---	---	0.0009	---	---	---	---	< 0.0005
Li	mg/L		---	---	---	---	< 0.002	---	---	---	---	< 0.002
K	mg/L		---	---	---	---	0.14	---	---	---	---	0.14
Mg	mg/L		---	---	---	---	0.054	---	---	---	---	0.076
Mn	mg/L		---	---	---	---	0.00618	---	---	---	---	0.00403
Mo	mg/L		---	---	---	---	0.00967	---	---	---	---	0.00658
Na	mg/L		---	---	---	---	9.32	---	---	---	---	6.92
Ni	mg/L	0.50	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Pb	mg/L	0.20	---	---	---	---	0.0005	---	---	---	---	0.00020
P	mg/L		---	---	---	---	< 0.01	---	---	---	---	< 0.01
S	mg/L		---	---	---	---	2.42	---	---	---	---	1.87
Sb	mg/L		---	---	---	---	0.00119	---	---	---	---	0.00079
Se	mg/L		---	---	---	---	< 0.001	---	---	---	---	< 0.001
Sn	mg/L		---	---	---	---	0.00014	---	---	---	---	0.00013
Sr	mg/L		---	---	---	---	0.00183	---	---	---	---	0.00236
Ti	mg/L		---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Tl	mg/L		---	---	---	---	< 0.000002	---	---	---	---	< 0.000002
U	mg/L		---	---	---	---	0.00012	---	---	---	---	0.000121
V	mg/L		---	---	---	---	0.00007	---	---	---	---	0.00008
Y	mg/L		---	---	---	---	0.000002	---	---	---	---	0.000002
W	mg/L		---	---	---	---	< 0.00003	---	---	---	---	< 0.00003
Zn	mg/L	0.50	---	---	---	---	0.086	---	---	---	---	0.083

¹ Metal Mining Effluent Regulations, Fisheries Act SOR-2002-222.

*Due to analytical error, leachate volume for Week 13 is estimated based on previous 5 weeks.



TEST REPORT

Humidity Cell Test (ASTM D 5744-96)

Test Specimen

Sample	Weight (g)
TM Zone LCT	1000

Summary of ABA Test Data

Parameter	Units	Reference No.: 10506-AUG07
Sulphur (S)	%	0.088
Sulphide (S ²⁻)	%	<0.01
NP	t CaCO ₃ /1000 t	12.4
CO ₃ NP	t CaCO ₃ /1000 t	4.5

Leachate Parameters Measured							Acid Generation ¹				Acid Neutralization ¹		
Weekly Leach No.	Volume Collected mL	pH units	Acidity CaCO ₃ eq. mg/L	Alkalinity CaCO ₃ eq. mg/L	Conductivity µmhos/cm	SO ₄ mg/L	SO ₄ Production Rate g/t/wk	Cumulative SO ₄ Production g/t	Weekly S= Depletion %	Cumulative S= Depletion %	NP Consumption CaCO ₃ g/t/wk	Cumulative NP Depletion %	Cumulative CO ₃ NP Depletion %
0	731	8.56	<2	85	249	39	28.5	28.5	9.50	9.50	29.70	0.24	0.66
1	922	7.92	<2	63	275	70	64.5	93.0	21.51	31.02	67.23	0.78	2.15
2	981	8.32	<2	81	389	97	95.2	188.2	31.72	62.74	99.12	1.58	4.36
3	939	8.06	<2	69	283	67	62.9	251.1	20.97	83.71	65.53	2.11	5.81
4	938	7.97	<2	68	212	45	42.2	293.3	14.07	97.78	43.97	2.46	6.79
5	960	7.90	<2	54	185	34	32.6	326.0	10.88	108.66	34.00	2.74	7.55
6	945	8.05	<2	53	156	26	24.6	350.5	8.19	116.85	25.59	2.94	8.11
7	970	7.46	<2	48	146	20	19.4	369.9	6.47	123.31	20.21	3.11	8.56
8	870	7.56	<2	23	70	9.5	8.3	378.2	2.76	126.07	8.61	3.18	8.75
9	895	7.39	<2	22	64	9.3	8.3	386.5	2.77	128.84	8.67	3.25	8.95
10	975	7.79	<2	39	104	14	13.7	400.2	4.55	133.39	14.22	3.36	9.26
11	840	7.52	<2	16	45	6.7	5.6	405.8	1.88	135.27	5.86	3.41	9.39
12	856	7.45	<2	16	54	7.8	6.7	412.5	2.23	137.49	6.96	3.47	9.55
13	887	7.35	<2	17	54	7.9	7.0	419.5	2.34	139.83	7.30	3.52	9.71
14	830	7.31	<2	12	37	5.4	4.5	424.0	1.49	141.32	4.67	3.56	9.81
15	888	6.92	<2	15	50	7.6	6.7	430.7	2.25	143.57	7.03	3.62	9.97
16	892	7.00	<2	15	46	7.9	7.0	437.8	2.35	145.92	7.34	3.68	10.13
17	878	6.94	<2	15	38	5.7	5.0	442.8	1.67	147.59	5.21	3.72	10.25
18	916	6.75	< 2	11	52	6.9	6.3	449.1	2.11	149.70	6.58	3.77	10.40
19	919	7.89	< 2	17	55	7	6.4	455.5	2.14	151.84	6.70	3.83	10.54
20	885	7.23	< 2	14	46	6.5	5.8	461.3	1.92	153.76	5.99	3.87	10.68

* Initial Week 0 leachate may include soluble sulphate, and may not indicate oxidation of sulphide in the sample material has occurred.

¹ Calculated values

Summary - Weeks 0 to 20

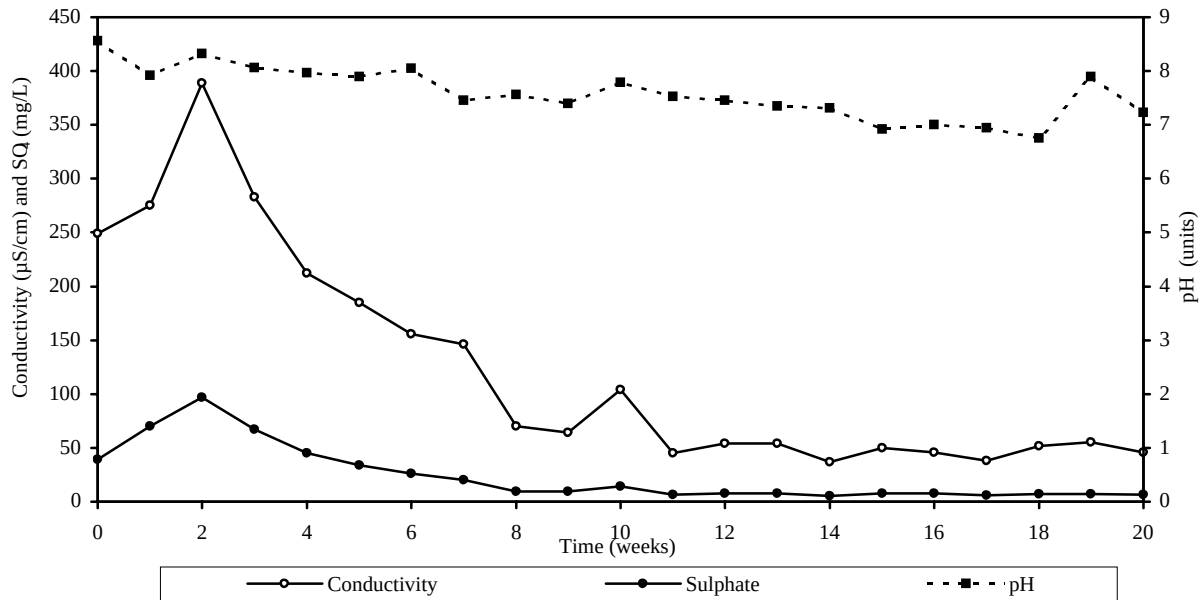
Maximum Value	8.56	<2	85	389	97	95.2	-	31.72	-	99	-	-
Minimum Value	6.75	<2	11	37	5	4.5	-	1.49	-	4.7	-	-
Average Value	7.36	<2	36	124	24	22.0	-	7.32	-	22.88	-	-

TEST REPORT

Humidity Cell Test (ASTM D 5744-96)

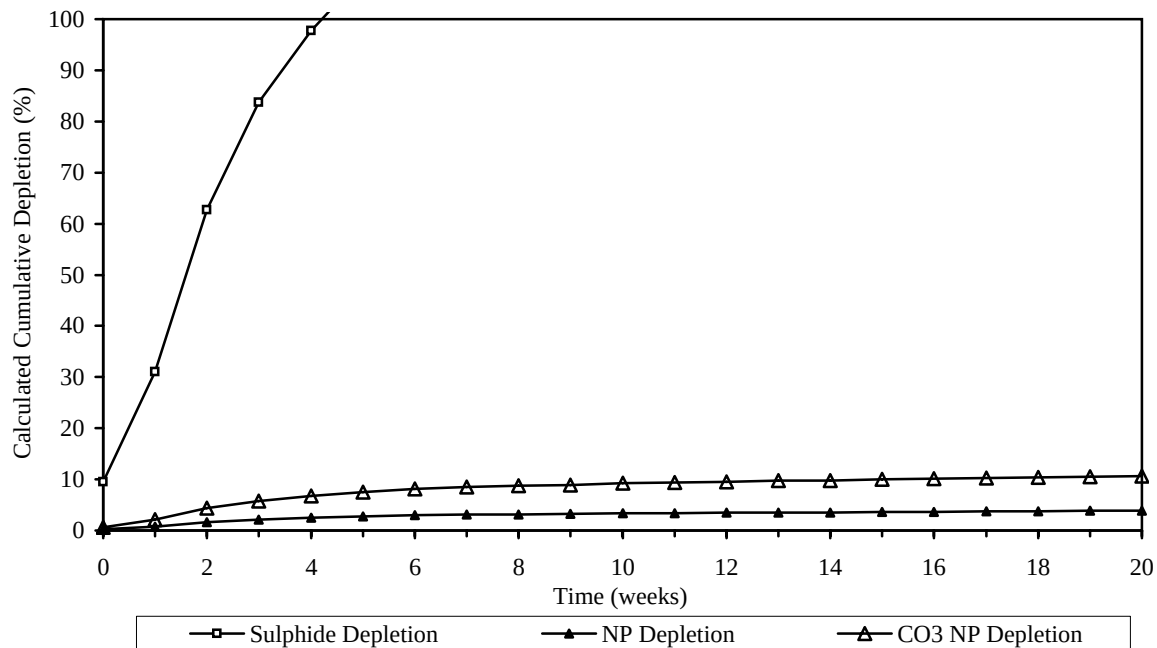
Conductivity, Sulphate, and pH in Weekly Humidity Cell Leachate -

TM Zone LCT



Cumulative Sulphide and NP Depletion -

TM Zone LCT



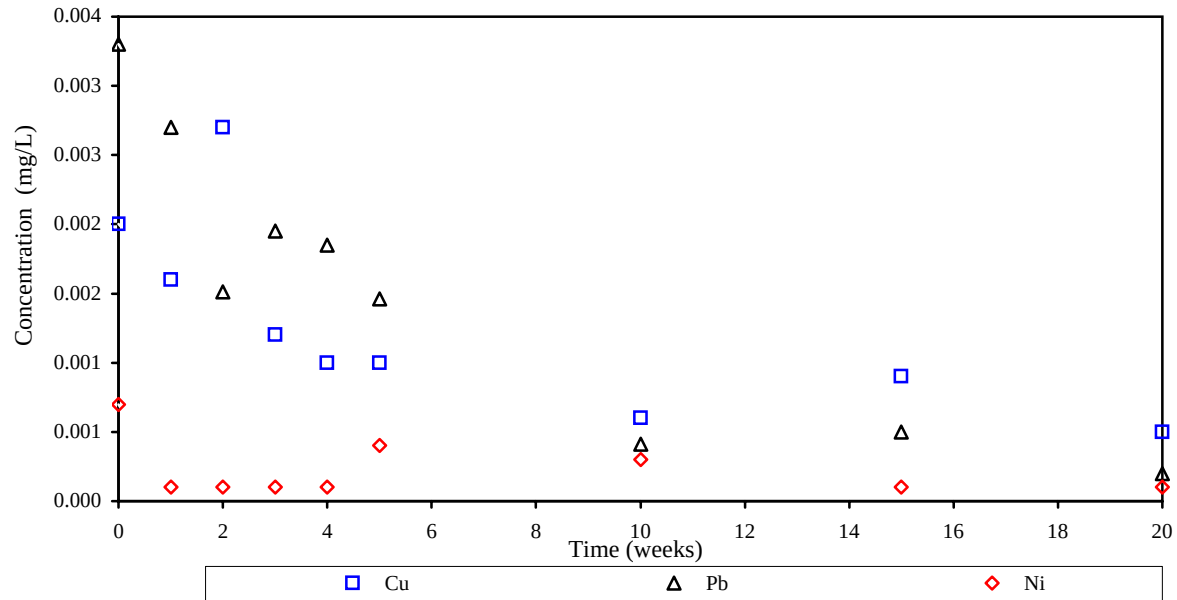
Note: NP depletion calculated based on sulphate assay.

TEST REPORT

Humidity Cell Test (ASTM D 5744-96)

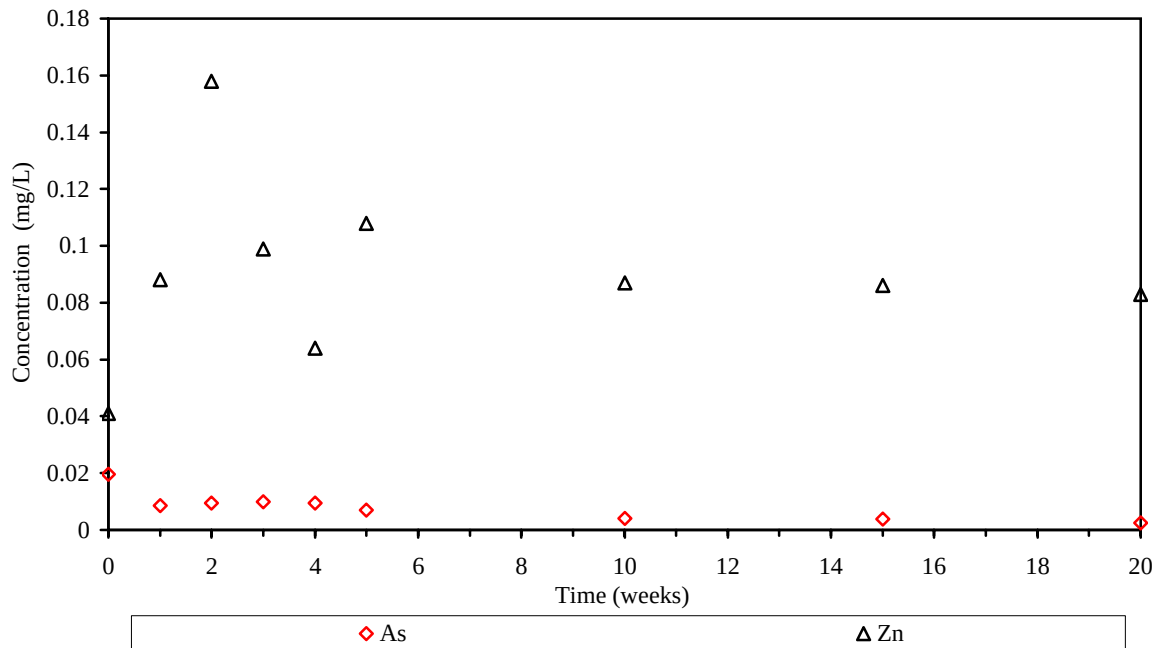
Cu, Pb and Ni in Weekly Humidity Cell Leachate -

TM Zone LCT



As and Zn in Weekly Humidity Cell Leachate -

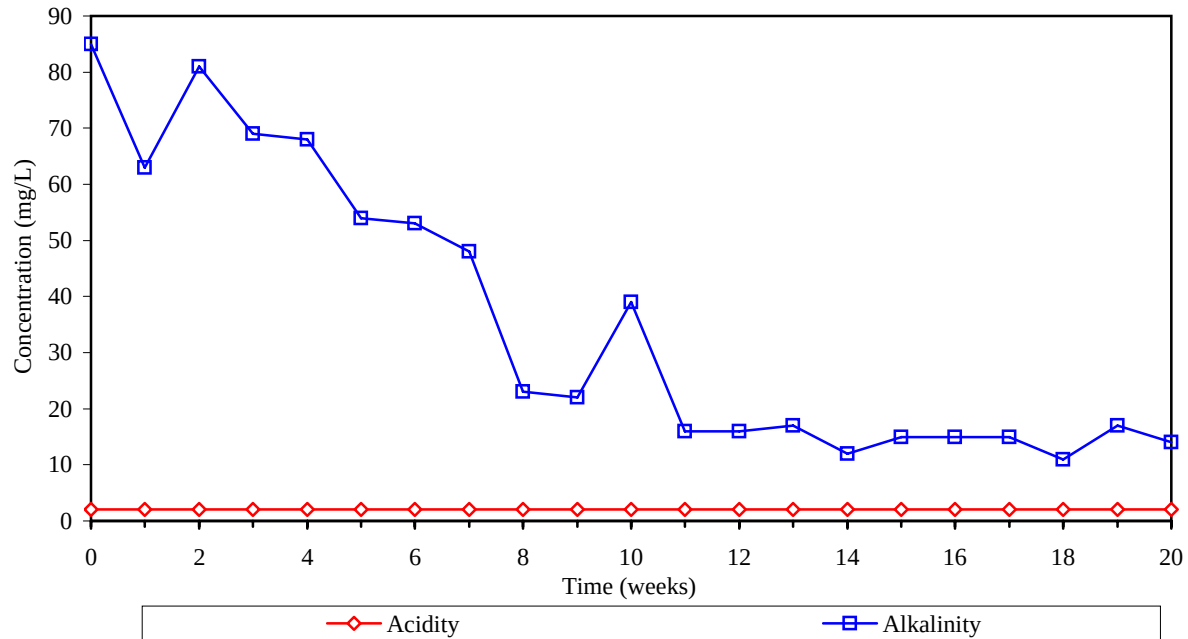
TM Zone LCT



TEST REPORT

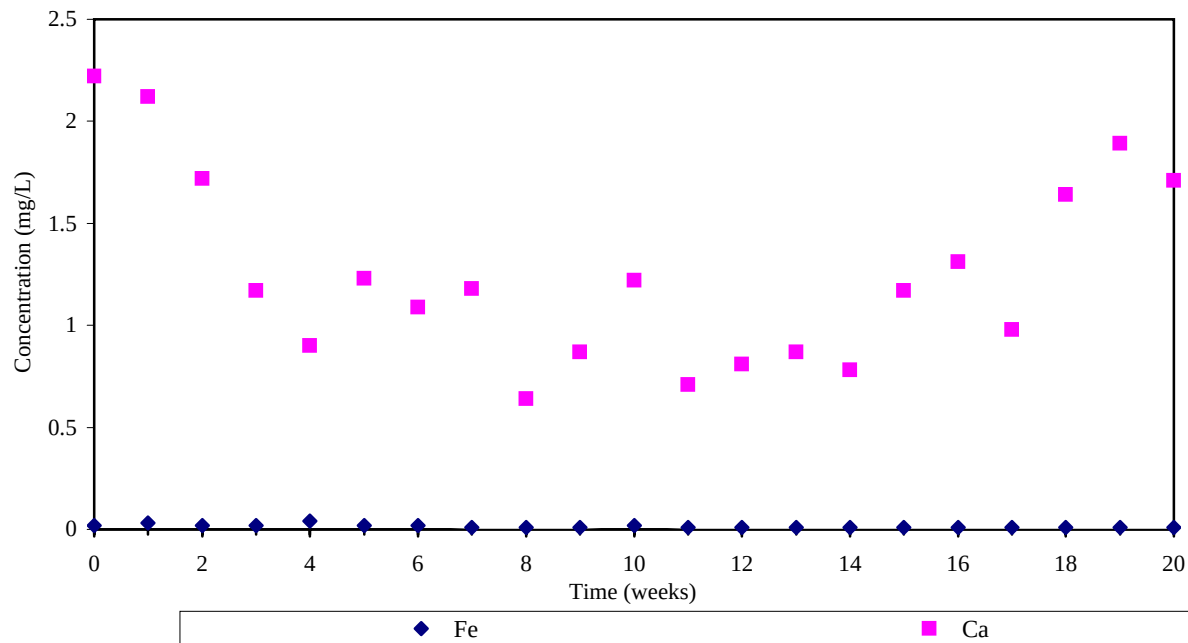
Humidity Cell Test (ASTM D 5744-96)

Acidity vs. Alkalinity in Weekly Humidity Cell Leachate - TM Zone LCT



Note: Acidity and alkalinity have detection limit of 2 mg/L.

Fe and Ca in Weekly Humidity Cell Leachate TM Zone LCT



Appendix 4 Humidity Cell Laboratory Certificates of Analysis



SGS Lakefield Research Limited
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - K0L 2H0
Phone: 705-652-2000 FAX: 705-652-6365

Project : CALR-11440-002

Environmental Met
Attn : Barb Bowman

Friday, September 14, 2007

Date Rec. : 29 August 2007
LR Report: CA10674-AUG07
Reference: Week#0

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: TM Zone LCT Wk#0
Sample Date & Time			29-Aug-07
Hum Cell Leachate Volume [mLs]	---	---	731
pH [no unit]	04-Sep-07	10:03	8.56
Conductivity [uS/cm]	04-Sep-07	10:03	249
Acidity [mg/L as CaCO3]	04-Sep-07	10:03	< 2
Alkalinity [mg/L as CaCO3]	04-Sep-07	10:03	85
Sulphate [mg/L]	11-Sep-07	15:19	39
Chloride [mg/L]	14-Sep-07	15:06	1.1
Calcium [mg/L]	06-Sep-07	08:31	2.22
Iron [mg/L]	06-Sep-07	08:31	0.02
Mercury [mg/L]	31-Aug-07	15:37	< 0.0001
Silver [mg/L]	06-Sep-07	08:31	0.00006
Aluminum [mg/L]	06-Sep-07	08:31	0.0199
Arsenic [mg/L]	06-Sep-07	08:31	0.0197
Barium [mg/L]	06-Sep-07	08:31	0.00013
Beryllium [mg/L]	06-Sep-07	08:31	< 0.00002
Boron [mg/L]	05-Sep-07	11:13	0.008
Bismuth [mg/L]	06-Sep-07	08:31	0.00002
Cobalt [mg/L]	06-Sep-07	08:31	0.000067
Cadmium [mg/L]	06-Sep-07	08:31	0.000530
Chromium [mg/L]	06-Sep-07	08:31	0.0029
Copper [mg/L]	06-Sep-07	08:31	0.0020
Lithium [mg/L]	05-Sep-07	11:13	< 0.002
Potassium [mg/L]	05-Sep-07	11:13	0.24
Magnesium [mg/L]	05-Sep-07	11:13	0.062
Manganese [mg/L]	06-Sep-07	08:31	0.00876
Molybdenum [mg/L]	06-Sep-07	08:31	0.123
Sodium [mg/L]	05-Sep-07	11:13	68.1
Nickel [mg/L]	06-Sep-07	08:31	< 0.0007
Lead [mg/L]	06-Sep-07	08:31	0.0033

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Project : CALR-11440-002**LR Report :** CA10674-AUG07

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: TM Zone LCT Wk#0
Phosphorus [mg/L]	05-Sep-07	11:13	< 0.01
Sulphur [mg/L]	05-Sep-07	15:35	15.2
Antimony [mg/L]	06-Sep-07	08:31	0.0129
Selenium [mg/L]	06-Sep-07	08:31	< 0.001
Tin [mg/L]	06-Sep-07	08:31	0.00169
Strontium [mg/L]	06-Sep-07	08:31	0.00252
Titanium [mg/L]	06-Sep-07	08:31	0.0002
Thallium [mg/L]	06-Sep-07	08:31	< 0.0001
Uranium [mg/L]	06-Sep-07	08:31	0.00235
Vanadium [mg/L]	06-Sep-07	08:31	< 0.00006
Yttrium [mg/L]	06-Sep-07	08:31	< 0.000005
Tungsten [mg/L]	06-Sep-07	08:31	0.00031
Zinc [mg/L]	06-Sep-07	08:31	0.041

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Project : CALR-11440-002

Environmental Met
Attn : Barb Bowman

Wednesday, September 12, 2007

Date Rec. : 04 September 2007
LR Report: CA10004-SEP07
Reference: Week# 1

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: TM Zone LCT WK# 1
Sample Date & Time			04-Sep-07
Hum Cell Leachate Volume [mLs]	---	---	922
pH [no unit]	05-Sep-07	16:40	7.92
Conductivity [uS/cm]	05-Sep-07	16:40	275
Acidity [mg/L as CaCO3]	05-Sep-07	16:40	< 2
Alkalinity [mg/L as CaCO3]	05-Sep-07	16:40	63
Sulphate [mg/L]	10-Sep-07	08:13	70
Chloride [mg/L]	11-Sep-07	17:07	74
Calcium [mg/L]	07-Sep-07	08:06	2.12
Iron [mg/L]	07-Sep-07	08:06	0.03
Mercury [mg/L]	06-Sep-07	08:56	< 0.0001
Silver [mg/L]	06-Sep-07	14:32	0.00012
Aluminum [mg/L]	06-Sep-07	14:32	0.0053
Arsenic [mg/L]	06-Sep-07	14:32	0.0085
Barium [mg/L]	06-Sep-07	14:32	0.00005
Beryllium [mg/L]	06-Sep-07	14:32	< 0.00002
Boron [mg/L]	07-Sep-07	08:06	0.008
Bismuth [mg/L]	06-Sep-07	14:32	0.00002
Cobalt [mg/L]	06-Sep-07	14:32	0.000032
Cadmium [mg/L]	06-Sep-07	14:32	0.000559
Chromium [mg/L]	06-Sep-07	14:32	0.0025
Copper [mg/L]	06-Sep-07	14:32	0.0016
Lithium [mg/L]	07-Sep-07	08:06	< 0.002
Potassium [mg/L]	07-Sep-07	08:06	0.30
Magnesium [mg/L]	07-Sep-07	08:06	0.056
Manganese [mg/L]	06-Sep-07	14:32	0.00987
Molybdenum [mg/L]	06-Sep-07	14:32	0.0650
Sodium [mg/L]	07-Sep-07	08:06	59.9
Nickel [mg/L]	06-Sep-07	14:32	0.0001
Lead [mg/L]	06-Sep-07	14:32	0.00270

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Project : CALR-11440-002**LR Report :** CA10004-SEP07

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: TM Zone LCT WK# 1
Phosphorus [mg/L]	07-Sep-07	08:06	< 0.01
Sulphur [mg/L]	07-Sep-07	08:06	22.7
Antimony [mg/L]	06-Sep-07	14:32	0.00612
Selenium [mg/L]	06-Sep-07	14:32	< 0.001
Tin [mg/L]	06-Sep-07	14:32	0.00091
Strontium [mg/L]	06-Sep-07	14:32	0.00303
Titanium [mg/L]	06-Sep-07	14:32	< 0.0002
Thallium [mg/L]	06-Sep-07	14:32	< 0.0001
Uranium [mg/L]	06-Sep-07	14:32	0.00112
Vanadium [mg/L]	06-Sep-07	14:32	0.00008
Yttrium [mg/L]	06-Sep-07	14:32	0.000004
Tungsten [mg/L]	06-Sep-07	14:32	0.00007
Zinc [mg/L]	06-Sep-07	14:32	0.088

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Project : CALR-11440-002

Environmental Met
Attn : Barb Bowman

Thursday, September 27, 2007

Date Rec. : 10 September 2007
LR Report: CA10153-SEP07
Reference: Week#2

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: TM Zone LCT Wk #2
Sample Date & Time			11-Sep-07
Hum Cell Leachate Volume [mLs]	---	---	981
pH [no unit]	13-Sep-07	15:57	8.32
Conductivity [uS/cm]	13-Sep-07	15:57	389
Acidity [mg/L as CaCO3]	13-Sep-07	15:57	< 2
Alkalinity [mg/L as CaCO3]	13-Sep-07	15:57	81
Sulphate [mg/L]	20-Sep-07	15:22	97
Chloride [mg/L]	20-Sep-07	15:22	0.6
Mercury [mg/L]	13-Sep-07	15:10	< 0.0001
Silver [mg/L]	17-Sep-07	12:11	0.00010
Aluminum [mg/L]	17-Sep-07	12:11	0.0032
Arsenic [mg/L]	17-Sep-07	12:11	0.0094
Barium [mg/L]	17-Sep-07	12:11	0.00005
Beryllium [mg/L]	17-Sep-07	12:11	< 0.00002
Boron [mg/L]	13-Sep-07	12:04	< 0.002
Bismuth [mg/L]	17-Sep-07	12:11	0.00001
Calcium [mg/L]	13-Sep-07	12:04	1.72
Cobalt [mg/L]	17-Sep-07	12:11	0.000029
Cadmium [mg/L]	17-Sep-07	12:11	0.000617
Chromium [mg/L]	17-Sep-07	12:11	0.0030
Copper [mg/L]	17-Sep-07	12:11	0.0027
Iron [mg/L]	13-Sep-07	12:04	0.02
Lithium [mg/L]	13-Sep-07	12:04	< 0.002
Potassium [mg/L]	13-Sep-07	12:04	0.45
Magnesium [mg/L]	13-Sep-07	12:04	0.062
Manganese [mg/L]	17-Sep-07	12:11	0.00905
Molybdenum [mg/L]	17-Sep-07	12:11	0.0643
Sodium [mg/L]	17-Sep-07	12:11	120
Nickel [mg/L]	17-Sep-07	12:11	< 0.0001
Lead [mg/L]	17-Sep-07	12:11	0.00151

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: TM Zone LCT Wk #2
Phosphorus [mg/L]	13-Sep-07	12:04	0.01
Sulphur [mg/L]	13-Sep-07	12:04	32.4
Antimony [mg/L]	17-Sep-07	12:11	0.00504
Selenium [mg/L]	17-Sep-07	12:11	< 0.001
Tin [mg/L]	17-Sep-07	12:11	0.00048
Strontium [mg/L]	17-Sep-07	12:11	0.00313
Titanium [mg/L]	17-Sep-07	12:11	< 0.0001
Thallium [mg/L]	17-Sep-07	12:11	< 0.00001
Uranium [mg/L]	17-Sep-07	12:11	0.00169
Vanadium [mg/L]	17-Sep-07	12:11	< 0.00003
Yttrium [mg/L]	17-Sep-07	12:11	< 0.000001
Tungsten [mg/L]	17-Sep-07	12:11	< 0.00003
Zinc [mg/L]	17-Sep-07	12:11	0.158



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Project : CALR-11440-002

Environmental Met
Attn : Barb Bowman

Tuesday, September 25, 2007

Date Rec. : 18 September 2007
LR Report: CA10288-SEP07
Reference: Week# 3

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: TM Zone LCT WK # 3
Sample Date & Time			18-Sep-07
Hum Cell Leachate Volume [mLs]	---	---	939
pH [no unit]	20-Sep-07	10:26	8.06
Conductivity [uS/cm]	20-Sep-07	10:26	283
Acidity [mg/L as CaCO ₃]	20-Sep-07	10:26	< 2
Alkalinity [mg/L as CaCO ₃]	20-Sep-07	10:26	69
Sulphate [mg/L]	21-Sep-07	12:35	67
Chloride [mg/L]	21-Sep-07	12:35	0.3
Mercury [mg/L]	19-Sep-07	15:33	< 0.0001
Silver [mg/L]	24-Sep-07	14:40	0.00006
Aluminum [mg/L]	24-Sep-07	14:40	0.0028
Arsenic [mg/L]	24-Sep-07	14:40	0.0100
Barium [mg/L]	24-Sep-07	14:40	0.00005
Beryllium [mg/L]	24-Sep-07	14:40	< 0.00002
Boron [mg/L]	21-Sep-07	14:20	0.004
Bismuth [mg/L]	24-Sep-07	14:40	0.00001
Calcium [mg/L]	21-Sep-07	14:20	1.17
Cobalt [mg/L]	24-Sep-07	14:40	0.000024
Cadmium [mg/L]	24-Sep-07	14:40	0.000411
Chromium [mg/L]	24-Sep-07	14:40	0.0026
Copper [mg/L]	24-Sep-07	14:40	0.0012
Iron [mg/L]	21-Sep-07	14:20	0.02
Lithium [mg/L]	21-Sep-07	14:20	< 0.002
Potassium [mg/L]	21-Sep-07	14:21	0.40
Magnesium [mg/L]	21-Sep-07	14:21	0.044
Manganese [mg/L]	24-Sep-07	14:40	0.00758
Molybdenum [mg/L]	24-Sep-07	14:40	0.0579
Sodium [mg/L]	21-Sep-07	14:21	59.4
Nickel [mg/L]	24-Sep-07	14:40	< 0.0001
Lead [mg/L]	24-Sep-07	14:40	0.00195

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Project : CALR-11440-002**LR Report :** CA10288-SEP07

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: TM Zone LCT WK # 3
Phosphorus [mg/L]	21-Sep-07	14:21	0.02
Sulphur [mg/L]	21-Sep-07	14:21	< 0.01
Antimony [mg/L]	24-Sep-07	14:40	0.00421
Selenium [mg/L]	24-Sep-07	14:40	< 0.001
Tin [mg/L]	24-Sep-07	14:40	0.00039
Strontium [mg/L]	24-Sep-07	14:40	0.00215
Titanium [mg/L]	24-Sep-07	14:40	< 0.0001
Thallium [mg/L]	24-Sep-07	14:40	0.00002
Uranium [mg/L]	24-Sep-07	14:40	0.00116
Vanadium [mg/L]	24-Sep-07	14:40	0.00015
Yttrium [mg/L]	24-Sep-07	14:40	0.000002
Tungsten [mg/L]	24-Sep-07	14:40	0.00004
Zinc [mg/L]	24-Sep-07	14:40	0.099

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Project : CALR-11440-002

Environmental Met
Attn : Barb Bowman

Tuesday, October 16, 2007

Date Rec. : 25 September 2007
LR Report: CA10463-SEP07
Reference: Week#4

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: TM Zone LCT Wk#4
Sample Date & Time			25-Sep-07
Hum Cell Leachate Volume [mLs]	---	---	938
pH [no unit]	26-Sep-07	15:42	7.97
Conductivity [uS/cm]	26-Sep-07	15:42	212
Acidity [mg/L as CaCO3]	26-Sep-07	15:42	< 2
Alkalinity [mg/L as CaCO3]	26-Sep-07	15:42	68
Sulphate [mg/L]	28-Sep-07	09:12	45
Chloride [mg/L]	28-Sep-07	09:12	< 0.2
Calcium [mg/L]	03-Oct-07	12:59	0.90
Iron [mg/L]	03-Oct-07	12:59	0.04
Mercury [mg/L]	27-Sep-07	10:40	< 0.0001
Silver [mg/L]	02-Oct-07	13:48	0.00008
Aluminum [mg/L]	02-Oct-07	13:48	0.0024
Arsenic [mg/L]	02-Oct-07	13:48	0.0094
Barium [mg/L]	02-Oct-07	13:48	0.00002
Beryllium [mg/L]	02-Oct-07	13:48	< 0.00002
Boron [mg/L]	03-Oct-07	12:59	0.002
Bismuth [mg/L]	02-Oct-07	13:48	0.00001
Cobalt [mg/L]	02-Oct-07	13:48	0.000011
Cadmium [mg/L]	02-Oct-07	13:48	0.000292
Chromium [mg/L]	02-Oct-07	13:48	0.0015
Copper [mg/L]	02-Oct-07	13:48	0.0010
Lithium [mg/L]	03-Oct-07	12:59	< 0.002
Potassium [mg/L]	03-Oct-07	12:59	0.29
Magnesium [mg/L]	03-Oct-07	12:59	0.041
Manganese [mg/L]	02-Oct-07	13:48	0.00797
Molybdenum [mg/L]	02-Oct-07	13:48	0.0419
Sodium [mg/L]	03-Oct-07	12:59	42.9
Nickel [mg/L]	02-Oct-07	13:48	< 0.0001
Lead [mg/L]	02-Oct-07	13:48	0.00185

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: TM Zone LCT Wk#4
Phosphorus [mg/L]	03-Oct-07	12:59	< 0.01
Sulphur [mg/L]	07-Oct-07	12:22	15.3
Antimony [mg/L]	02-Oct-07	13:48	0.00362
Selenium [mg/L]	02-Oct-07	13:48	< 0.001
Tin [mg/L]	02-Oct-07	13:48	0.00039
Strontium [mg/L]	02-Oct-07	13:48	0.00176
Titanium [mg/L]	02-Oct-07	13:48	< 0.0001
Thallium [mg/L]	02-Oct-07	13:48	< 0.00001
Uranium [mg/L]	02-Oct-07	13:48	0.000848
Vanadium [mg/L]	02-Oct-07	13:48	< 0.00003
Yttrium [mg/L]	02-Oct-07	13:48	0.000002
Tungsten [mg/L]	02-Oct-07	13:48	< 0.00003
Zinc [mg/L]	02-Oct-07	13:48	0.064



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Project : CALR-11440-002

Environmental Met
Attn : Barb Bowman

Tuesday, October 16, 2007

Date Rec. : 02 October 2007
LR Report: CA10043-OCT07
Reference: Week# 5

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: TM Zone LCT WK # 5
Sample Date & Time			02-Oct-07
Hum Cell Leachate Volume [mLs]	---	---	960
pH [no unit]	03-Oct-07	11:39	7.90
Conductivity [uS/cm]	03-Oct-07	11:39	185
Acidity [mg/L as CaCO3]	03-Oct-07	11:39	< 2
Alkalinity [mg/L as CaCO3]	03-Oct-07	11:39	54
Sulphate [mg/L]	09-Oct-07	16:42	34
Chloride [mg/L]	09-Oct-07	16:42	< 0.2
Calcium [mg/L]	12-Oct-07	08:47	1.23
Iron [mg/L]	12-Oct-07	08:47	0.02
Mercury [mg/L]	05-Oct-07	07:41	< 0.0001
Silver [mg/L]	11-Oct-07	15:21	0.00003
Aluminum [mg/L]	11-Oct-07	15:21	0.0019
Arsenic [mg/L]	11-Oct-07	15:21	0.0070
Barium [mg/L]	11-Oct-07	15:21	0.00006
Beryllium [mg/L]	11-Oct-07	15:21	< 0.00002
Boron [mg/L]	12-Oct-07	08:47	0.011
Bismuth [mg/L]	11-Oct-07	15:21	0.00003
Cobalt [mg/L]	11-Oct-07	15:21	0.000038
Cadmium [mg/L]	11-Oct-07	15:21	0.000361
Chromium [mg/L]	11-Oct-07	15:21	0.0021
Copper [mg/L]	11-Oct-07	15:21	0.0010
Lithium [mg/L]	12-Oct-07	08:50	< 0.002
Potassium [mg/L]	12-Oct-07	08:50	0.25
Magnesium [mg/L]	12-Oct-07	08:49	0.044
Manganese [mg/L]	11-Oct-07	15:21	0.00668
Molybdenum [mg/L]	11-Oct-07	15:21	0.0360
Sodium [mg/L]	12-Oct-07	08:50	37.9
Nickel [mg/L]	11-Oct-07	15:21	0.0004
Lead [mg/L]	11-Oct-07	15:21	0.00146

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Project : CALR-11440-002**LR Report :** CA10043-OCT07

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: TM Zone LCT WK # 5
Phosphorus [mg/L]	12-Oct-07	08:49	< 0.01
Sulphur [mg/L]	12-Oct-07	08:49	11.6
Antimony [mg/L]	11-Oct-07	15:21	0.00341
Selenium [mg/L]	11-Oct-07	15:21	< 0.001
Tin [mg/L]	11-Oct-07	15:21	0.00020
Strontium [mg/L]	11-Oct-07	15:21	0.00188
Titanium [mg/L]	11-Oct-07	15:21	< 0.0001
Thallium [mg/L]	11-Oct-07	15:21	< 0.00001
Uranium [mg/L]	11-Oct-07	15:21	0.000665
Vanadium [mg/L]	11-Oct-07	15:21	0.00010
Yttrium [mg/L]	11-Oct-07	15:21	0.000003
Tungsten [mg/L]	11-Oct-07	15:21	0.00007
Zinc [mg/L]	11-Oct-07	15:21	0.108

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Project : CALR-11440-002

Environmental Met
Attn : Barb Bowman

Tuesday, October 16, 2007

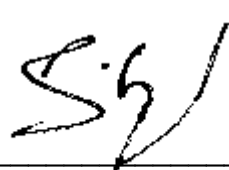
Date Rec. : 09 October 2007
LR Report: CA10246-OCT07
Reference: Week#6

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: TM Zone LCT Wk#6
Sample Date & Time			09-Oct-07
Hum Cell Leachate Volume [mLs]	---	---	945
pH [no unit]	10-Oct-07	15:01	8.05
Conductivity [uS/cm]	10-Oct-07	15:01	156
Acidity [mg/L as CaCO3]	10-Oct-07	15:01	< 2
Alkalinity [mg/L as CaCO3]	10-Oct-07	15:01	53
Sulphate [mg/L]	16-Oct-07	08:50	26
Chloride [mg/L]	16-Oct-07	08:50	< 0.2
Calcium [mg/L]	12-Oct-07	13:23	1.09
Iron [mg/L]	12-Oct-07	13:23	0.02



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Project : CALR-11440-002

Environmental Met
Attn : Barb Bowman

Friday, November 30, 2007

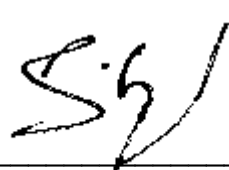
Date Rec. : 16 October 2007
LR Report: CA10376-OCT07
Reference: Week# 7

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: TM Zone LCT WK # 7
Sample Date & Time			16-Oct-07
Hum Cell Leachate Volume [mLs]	---	---	970
pH [no unit]	17-Oct-07	13:30	7.46
Conductivity [uS/cm]	17-Oct-07	13:30	146
Acidity [mg/L as CaCO3]	17-Oct-07	13:30	< 2
Alkalinity [mg/L as CaCO3]	17-Oct-07	13:30	48
Sulphate [mg/L]	25-Oct-07	08:41	20
Chloride [mg/L]	23-Oct-07	14:27	< 0.2
Calcium [mg/L]	25-Oct-07	14:08	1.18
Iron [mg/L]	25-Oct-07	14:08	0.01



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Project : CALR-11440-002

Environmental Met
Attn : Barb Bowman

Friday, November 30, 2007

Date Rec. : 19 October 2007
LR Report: CA10614-OCT07
Reference: Week#8

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: TM Zone LCT Wk#8
Sample Date & Time			23-Oct-07
Hum Cell Leachate Volume [mLs]	---	---	870
pH [no unit]	24-Oct-07	15:21	7.56
Conductivity [uS/cm]	24-Oct-07	15:21	70
Acidity [mg/L as CaCO ₃]	24-Oct-07	15:21	< 2
Alkalinity [mg/L as CaCO ₃]	24-Oct-07	15:21	23
Sulphate [mg/L]	01-Nov-07	13:32	9.5
Chloride [mg/L]	01-Nov-07	13:32	< 0.2
Calcium [mg/L]	31-Oct-07	13:09	0.64
Iron [mg/L]	31-Oct-07	13:09	< 0.01

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Friday, November 30, 2007

Date Rec. : 30 October 2007
LR Report: CA10762-OCT07
Reference: Week# 9

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: TM Zone LCT Wk #9
Sample Date & Time			30-Oct-07
Hum Cell Leachate Volume [mLs]	---	---	895
pH [no unit]	02-Nov-07	12:55	7.39
Conductivity [uS/cm]	02-Nov-07	12:55	64
Acidity [mg/L as CaCO3]	02-Nov-07	12:55	< 2
Alkalinity [mg/L as CaCO3]	02-Nov-07	12:55	22
Sulphate [mg/L]	13-Nov-07	15:29	9.3
Chloride [mg/L]	13-Nov-07	15:29	< 0.2
Calcium [mg/L]	05-Nov-07	12:41	0.87
Iron [mg/L]	05-Nov-07	12:41	0.01

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Environmental Met
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Friday, November 30, 2007

Date Rec. : 06 November 2007
LR Report: CA10042-NOV07
Reference: Week#10

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: TM Zone LCT Wk#10
Sample Date & Time			06-Nov-07
Hum Cell Leachate Volume [mLs]	---	---	975
pH [no unit]	07-Nov-07	15:01	7.79
Conductivity [uS/cm]	15-Nov-07	09:51	104
Acidity [mg/L as CaCO3]	07-Nov-07	15:01	< 2
Alkalinity [mg/L as CaCO3]	07-Nov-07	15:01	39
Sulphate [mg/L]	09-Nov-07	15:41	14
Chloride [mg/L]	09-Nov-07	15:41	< 0.2
Calcium [mg/L]	14-Nov-07	09:32	1.22
Iron [mg/L]	14-Nov-07	09:32	0.02
Mercury [mg/L]	08-Nov-07	07:46	< 0.0001
Silver [mg/L]	09-Nov-07	10:40	0.00006
Aluminum [mg/L]	09-Nov-07	10:40	0.0008
Arsenic [mg/L]	09-Nov-07	10:40	0.0041
Barium [mg/L]	09-Nov-07	10:40	0.00004
Beryllium [mg/L]	09-Nov-07	10:40	< 0.00002
Boron [mg/L]	14-Nov-07	09:32	0.065
Bismuth [mg/L]	09-Nov-07	10:40	0.00010
Cobalt [mg/L]	09-Nov-07	10:40	0.000025
Cadmium [mg/L]	09-Nov-07	10:40	0.000289
Chromium [mg/L]	09-Nov-07	10:40	0.0012
Copper [mg/L]	09-Nov-07	10:40	0.0006
Lithium [mg/L]	14-Nov-07	09:32	< 0.002
Potassium [mg/L]	14-Nov-07	09:32	0.19
Magnesium [mg/L]	14-Nov-07	09:32	0.047
Manganese [mg/L]	09-Nov-07	10:40	0.00450
Molybdenum [mg/L]	09-Nov-07	10:40	0.0200
Sodium [mg/L]	14-Nov-07	09:32	19.1
Nickel [mg/L]	09-Nov-07	10:40	0.0003
Lead [mg/L]	09-Nov-07	10:40	0.00041

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: TM Zone LCT Wk#10
Phosphorus [mg/L]	14-Nov-07	09:32	< 0.01
Sulphur [mg/L]	14-Nov-07	09:32	4.68
Antimony [mg/L]	09-Nov-07	10:40	0.00255
Selenium [mg/L]	09-Nov-07	10:40	< 0.001
Tin [mg/L]	09-Nov-07	10:40	0.00008
Strontium [mg/L]	09-Nov-07	10:40	0.00227
Titanium [mg/L]	09-Nov-07	10:40	< 0.0001
Thallium [mg/L]	09-Nov-07	10:40	0.00002
Uranium [mg/L]	09-Nov-07	10:40	0.000353
Vanadium [mg/L]	09-Nov-07	10:40	< 0.00003
Yttrium [mg/L]	09-Nov-07	10:40	< 0.000001
Tungsten [mg/L]	09-Nov-07	10:40	< 0.00003
Zinc [mg/L]	09-Nov-07	10:40	0.087



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Project : CALR-11440-002

Environmental Met
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Friday, November 30, 2007

Date Rec. : 13 November 2007
LR Report: CA10243-NOV07
Reference: Week#11

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: TM Zone LCT Wk#11
Sample Date & Time			12-Nov-07
Hum Cell Leachate Volume [mLs]	---	---	840
pH [no unit]	15-Nov-07	12:15	7.52
Conductivity [uS/cm]	15-Nov-07	12:15	45
Acidity [mg/L as CaCO3]	15-Nov-07	12:15	< 2
Alkalinity [mg/L as CaCO3]	15-Nov-07	12:15	16
Sulphate [mg/L]	16-Nov-07	11:11	6.7
Chloride [mg/L]	16-Nov-07	11:11	< 0.2
Calcium [mg/L]	16-Nov-07	07:40	0.71
Iron [mg/L]	16-Nov-07	07:40	< 0.01

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Friday, November 30, 2007

Date Rec. : 20 November 2007
LR Report: CA10371-NOV07
Reference: Week# 12

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: TM Zone LCT Wk # 12
Sample Date & Time			20-Nov-07
Hum Cell Leachate Volume [mLs]	---	---	856
pH [no unit]	23-Nov-07	10:42	7.45
Conductivity [uS/cm]	23-Nov-07	10:42	54
Acidity [mg/L as CaCO ₃]	23-Nov-07	10:42	< 2
Alkalinity [mg/L as CaCO ₃]	23-Nov-07	10:42	16
Sulphate [mg/L]	23-Nov-07	11:52	7.8
Chloride [mg/L]	23-Nov-07	11:52	< 0.2
Calcium [mg/L]	26-Nov-07	15:56	0.81
Iron [mg/L]	26-Nov-07	15:56	< 0.01

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Project : CALR-11440-002

Environmental Met
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Thursday, March 13, 2008

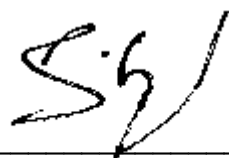
Date Rec. : 27 November 2007
LR Report: CA10616-NOV07
Reference: Week#13

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: TM Zone LCT Wk#13
Sample Date & Time			27-Nov-07
Hum Cell Leachate Volume [mLs]	---	---	*
pH [no unit]	28-Nov-07	11:49	7.35
Conductivity [uS/cm]	28-Nov-07	11:49	54
Acidity [mg/L as CaCO3]	28-Nov-07	11:49	< 2
Alkalinity [mg/L as CaCO3]	28-Nov-07	11:49	17
Sulphate [mg/L]	03-Dec-07	14:06	7.9
Chloride [mg/L]	03-Dec-07	14:06	< 0.2
Calcium [mg/L]	04-Dec-07	09:06	0.87
Iron [mg/L]	04-Dec-07	09:06	< 0.01



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Thursday, March 13, 2008

Date Rec. : 04 December 2007
LR Report: CA10003-DEC07
Reference: Week#14

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: TM Zone LCT Wk#14
Sample Date & Time			04-Dec-07
Hum Cell Leachate Volume [mLs]	---	---	830
pH [no unit]	05-Dec-07	08:56	7.31
Conductivity [uS/cm]	05-Dec-07	08:56	37
Acidity [mg/L as CaCO3]	05-Dec-07	08:56	< 2
Alkalinity [mg/L as CaCO3]	05-Dec-07	08:56	12
Sulphate [mg/L]	10-Dec-07	09:51	5.4
Chloride [mg/L]	10-Dec-07	09:51	< 0.2
Calcium [mg/L]	07-Dec-07	13:43	0.78
Iron [mg/L]	07-Dec-07	13:43	< 0.01

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Thursday, March 13, 2008

Date Rec. : 11 December 2007
LR Report: CA10156-DEC07
Reference: Week#15

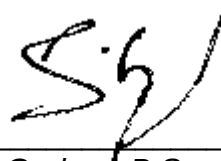
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CERTIFICATE OF ANALYSIS

Final Report

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: TM Zone LCT Wk#15
Sample Date & Time			11-Dec-07
Hum Cell Leachate Volume [mLs]	---	---	888
pH [no unit]	12-Dec-07	16:54	6.92
Conductivity [uS/cm]	12-Dec-07	16:54	50
Acidity [mg/L as CaCO3]	12-Dec-07	16:54	< 2
Alkalinity [mg/L as CaCO3]	12-Dec-07	16:54	15
Sulphate [mg/L]	15-Dec-07	14:07	7.6
Chloride [mg/L]	15-Dec-07	14:07	< 0.2
Calcium [mg/L]	18-Dec-07	12:04	1.17
Iron [mg/L]	18-Dec-07	12:04	< 0.01
Mercury [mg/L]	13-Dec-07	09:19	< 0.0001
Silver [mg/L]	13-Dec-07	13:54	0.00004
Aluminum [mg/L]	13-Dec-07	13:54	0.0038
Arsenic [mg/L]	13-Dec-07	13:54	0.0038
Barium [mg/L]	13-Dec-07	13:54	0.00016
Beryllium [mg/L]	13-Dec-07	13:54	< 0.00002
Boron [mg/L]	18-Dec-07	12:04	0.004
Bismuth [mg/L]	13-Dec-07	13:54	< 0.00001
Cobalt [mg/L]	13-Dec-07	13:54	< 0.000002
Cadmium [mg/L]	13-Dec-07	13:54	0.000258
Chromium [mg/L]	13-Dec-07	13:54	0.0008
Copper [mg/L]	13-Dec-07	13:54	0.0009
Lithium [mg/L]	18-Dec-07	12:04	< 0.002
Potassium [mg/L]	18-Dec-07	12:04	0.14
Magnesium [mg/L]	18-Dec-07	12:04	0.054
Manganese [mg/L]	13-Dec-07	13:54	0.00618
Molybdenum [mg/L]	13-Dec-07	13:54	0.00967
Sodium [mg/L]	18-Dec-07	12:04	9.32
Nickel [mg/L]	13-Dec-07	13:54	< 0.0001
Lead [mg/L]	13-Dec-07	13:54	0.0005

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: TM Zone LCT Wk#15
Phosphorus [mg/L]	18-Dec-07	12:04	< 0.01
Sulphur [mg/L]	18-Dec-07	12:04	2.42
Antimony [mg/L]	13-Dec-07	13:54	0.00119
Selenium [mg/L]	13-Dec-07	13:54	< 0.001
Tin [mg/L]	13-Dec-07	13:54	0.00014
Strontium [mg/L]	13-Dec-07	13:54	0.00183
Titanium [mg/L]	13-Dec-07	13:54	< 0.0001
Thallium [mg/L]	13-Dec-07	13:54	< 0.000002
Uranium [mg/L]	13-Dec-07	13:54	0.000120
Vanadium [mg/L]	13-Dec-07	13:54	0.00007
Yttrium [mg/L]	13-Dec-07	13:54	0.000002
Tungsten [mg/L]	13-Dec-07	13:54	< 0.00003
Zinc [mg/L]	13-Dec-07	13:54	0.086



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Project : CALR-11440-002

Environmental Met
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Thursday, March 13, 2008

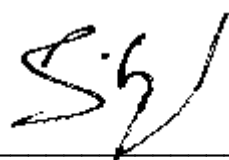
Date Rec. : 18 December 2007
LR Report: CA10320-DEC07
Reference: Week#16

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: TM Zone LCT Wk# 16
Sample Date & Time			18-Dec-07
Hum Cell Leachate Volume [mLs]	---	---	892
pH [no unit]	20-Dec-07	12:10	7.00
Conductivity [uS/cm]	20-Dec-07	12:10	46
Acidity [mg/L as CaCO3]	20-Dec-07	12:10	< 2
Alkalinity [mg/L as CaCO3]	20-Dec-07	12:10	15
Sulphate [mg/L]	28-Dec-07	13:05	7.9
Chloride [mg/L]	28-Dec-07	13:05	< 0.2
Calcium [mg/L]	28-Dec-07	15:57	1.31
Iron [mg/L]	28-Dec-07	15:57	< 0.01



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Environmental Met
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Thursday, March 13, 2008

Date Rec. : 24 December 2007
LR Report: CA10482-DEC07
Reference: Week#17

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: TM Zone LCT Wk#17
Sample Date & Time			24-Dec-07
Hum Cell Leachate Volume [mLs]	---	---	878
pH [no unit]	27-Dec-07	13:16	6.94
Conductivity [uS/cm]	27-Dec-07	13:16	38
Acidity [mg/L as CaCO3]	27-Dec-07	13:16	< 2
Alkalinity [mg/L as CaCO3]	27-Dec-07	13:16	15
Sulphate [mg/L]	02-Jan-08	09:57	5.7
Chloride [mg/L]	02-Jan-08	09:57	< 0.2
Calcium [mg/L]	02-Jan-08	11:28	0.98
Iron [mg/L]	02-Jan-08	11:28	< 0.01



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Thursday, March 13, 2008

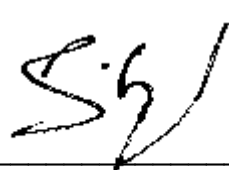
Date Rec. : 02 January 2008
LR Report: CA10015-JAN08
Reference: Week#18

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: TM Zone LCT Wk#18
Sample Date & Time			02-Jan-08
Hum Cell Leachate Volume [mLs]	---	---	916
pH [no unit]	04-Jan-08	12:37	6.75
Conductivity [uS/cm]	04-Jan-08	12:37	52
Acidity [mg/L as CaCO3]	04-Jan-08	12:37	< 2
Alkalinity [mg/L as CaCO3]	04-Jan-08	12:37	11
Sulphate [mg/L]	07-Jan-08	08:28	6.9
Chloride [mg/L]	07-Jan-08	08:28	< 0.2
Calcium [mg/L]	05-Jan-08	08:08	1.64
Iron [mg/L]	05-Jan-08	08:08	< 0.01



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Project : CALR-11440-002

Environmental Met
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Thursday, March 13, 2008

Date Rec. : 08 January 2008
LR Report: CA10082-JAN08
Reference: Wk # 19

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: TM Zone LCT WK# 19
Sample Date & Time			08-Jan-08
Hum Cell Leachate Volume [mLs]	---	---	919
pH [no unit]	10-Jan-08	14:47	7.89
Conductivity [uS/cm]	10-Jan-08	14:47	55
Acidity [mg/L as CaCO3]	10-Jan-08	14:47	< 2
Alkalinity [mg/L as CaCO3]	10-Jan-08	14:47	17
Sulphate [mg/L]	14-Jan-08	12:50	7.0
Chloride [mg/L]	13-Feb-08	15:29	< 0.2
Calcium [mg/L]	11-Jan-08	08:47	1.89
Iron [mg/L]	11-Jan-08	08:47	< 0.01



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Project : CALR-11440-002

Environmental Met
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Thursday, March 13, 2008

Date Rec. : 16 January 2008
LR Report: CA10225-JAN08
Reference: Week#20

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: TM Zone LCT Wk#20
Sample Date & Time			16-Jan-08
Hum Cell Leachate Volume [mLs]	---	---	885
pH [no unit]	17-Jan-08	10:53	7.23
Conductivity [uS/cm]	17-Jan-08	10:53	46
Acidity [mg/L as CaCO3]	17-Jan-08	10:53	< 2
Alkalinity [mg/L as CaCO3]	17-Jan-08	10:53	14
Sulphate [mg/L]	18-Jan-08	15:29	6.5
Chloride [mg/L]	18-Jan-08	15:31	< 0.2
Calcium [mg/L]	17-Jan-08	13:08	1.71
Iron [mg/L]	17-Jan-08	13:08	< 0.01
Mercury [mg/L]	18-Jan-08	14:22	< 0.0001
Silver [mg/L]	18-Jan-08	13:47	0.00001
Aluminum [mg/L]	18-Jan-08	13:47	0.0007
Arsenic [mg/L]	18-Jan-08	13:47	0.0024
Barium [mg/L]	18-Jan-08	13:47	0.00004
Beryllium [mg/L]	18-Jan-08	13:47	< 0.00002
Boron [mg/L]	18-Jan-08	13:48	< 0.002
Bismuth [mg/L]	18-Jan-08	13:47	< 0.00001
Cobalt [mg/L]	18-Jan-08	13:47	0.000008
Cadmium [mg/L]	18-Jan-08	13:47	0.000258
Chromium [mg/L]	18-Jan-08	13:47	0.0006
Copper [mg/L]	18-Jan-08	13:47	< 0.0005
Lithium [mg/L]	18-Jan-08	13:48	< 0.002
Potassium [mg/L]	18-Jan-08	13:48	0.14
Magnesium [mg/L]	18-Jan-08	13:48	0.076
Manganese [mg/L]	18-Jan-08	13:47	0.00403
Molybdenum [mg/L]	18-Jan-08	13:47	0.00658
Sodium [mg/L]	18-Jan-08	13:47	6.92
Nickel [mg/L]	18-Jan-08	13:47	< 0.0001
Lead [mg/L]	18-Jan-08	13:47	0.00020

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Project : CALR-11440-002**LR Report :** CA10225-JAN08

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: TM Zone LCT Wk#20
Phosphorus [mg/L]	18-Jan-08	13:48	< 0.01
Sulphur [mg/L]	18-Jan-08	13:48	1.87
Antimony [mg/L]	18-Jan-08	13:48	0.00079
Selenium [mg/L]	18-Jan-08	13:48	< 0.001
Tin [mg/L]	18-Jan-08	13:48	0.00013
Strontium [mg/L]	18-Jan-08	13:48	0.00236
Titanium [mg/L]	18-Jan-08	13:48	< 0.0001
Thallium [mg/L]	18-Jan-08	13:48	< 0.000002
Uranium [mg/L]	18-Jan-08	13:48	0.000121
Vanadium [mg/L]	18-Jan-08	13:48	0.00008
Yttrium [mg/L]	18-Jan-08	13:48	0.000002
Tungsten [mg/L]	18-Jan-08	13:48	< 0.00003
Zinc [mg/L]	18-Jan-08	13:48	0.083

*Brian Graham B.Sc.
Project Specialist
Environmental Services, Analytical*

Appendix 5 Chain of Custody Forms



Lakefield Research Limited

Request for Laboratory Services and Chain of Custody Form

No 11440-002-3

Environmental Services

P.O. Box 4300, 185 Concession St., Lakefield, ON, K0L 2H0, Phone (705) 652-2038, Fax (705) 652-6441

Report Results to:	Name: Barb Bowman	LRL LIMS No.: DEC 10346 R01																																																																																																																																				
	Company: SGS Lakefield Research Ltd	Received by (Date & Time): 12/14/07																																																																																																																																				
	Address:	Logged in by (Date):																																																																																																																																				
	City:	Lab Batch ID:																																																																																																																																				
	Province, Postal Code	Project No.: 11440-002																																																																																																																																				
Send Invoice to:	Telephone Number: 2524 Fax:	Plant No.:																																																																																																																																				
	Name: Rob Caldwell	Quote No.:																																																																																																																																				
	Company:	Purchase Order No.:																																																																																																																																				
	Address:	TAT (Turnaround Time) * Some exceptions apply, please contact lab																																																																																																																																				
	City:	Standard ☐ RUSH ☒ Specify Date: Time:																																																																																																																																				
Chain of Custody	Province, Postal Code	PLEASE CONTACT LAB PRIOR TO SUBMITTING RUSH PROJECTS																																																																																																																																				
	Telephone Number: 2043 Fax:	Sample condition upon receipt:																																																																																																																																				
	Sampled by: R Caldwell	Temperature upon receipt: °C																																																																																																																																				
Packed and Shipped by: Date /Time:		Analysis Requested (X) as Required (Enter an "X" in the boxes to indicate which request(s) apply to each sample)																																																																																																																																				
Shipment Method and WB#: Date /Time:																																																																																																																																						
Please specify any guideline or regulation that these samples may apply (i.e. ODWS, PWQO, Reg 559, GCSO, MISA, MMER, CBWA).																																																																																																																																						
Guideline: Regulation: initial:																																																																																																																																						
Metals suite: Hg, Ag, Al, As, B, Ba, Be, Bi, Ca, Cd, Co, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, Pb, P, S, Sb, Se, Sn, Sr, Ti, Tl, U, V, W, Y and Zn.																																																																																																																																						
<table border="1"><thead><tr><th>Sample Matrix*</th><th>Sample Identifier</th><th>No. Bottles</th><th>Date Sampled</th><th>Time Sampled</th><th>dissolved ICP-OES/MS Elemental Analyses</th><th>Total Dissolved Solids</th><th>pH, alkalinity, acidity</th><th>Sulphate</th><th>Mercury CVAAS</th><th></th><th></th></tr></thead><tbody><tr><td>1</td><td>EFF</td><td>Adit Water</td><td>1</td><td></td><td></td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td></td></tr><tr><td>2</td><td>EFF</td><td>Adit Water 0.05</td><td>1</td><td></td><td></td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td></td></tr><tr><td>3</td><td>EFF</td><td>Adit Water 0.10</td><td>1</td><td></td><td></td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td></td></tr><tr><td>4</td><td>EFF</td><td>Adit Water 0.15</td><td>1</td><td></td><td></td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td></td></tr><tr><td>5</td><td>EFF</td><td>Adit Water 0.20</td><td>1</td><td></td><td></td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td></td></tr><tr><td>6</td><td>EFF</td><td>Adit Water 0.30</td><td>1</td><td></td><td></td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td></td></tr><tr><td>7</td><td>EFF</td><td>Adit Water 0.40</td><td>1</td><td></td><td></td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td></td></tr><tr><td>8</td><td>EFF</td><td>Adit Water 0.50</td><td>1</td><td></td><td></td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td></td></tr><tr><td>9</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>10</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></tbody></table>			Sample Matrix*	Sample Identifier	No. Bottles	Date Sampled	Time Sampled	dissolved ICP-OES/MS Elemental Analyses	Total Dissolved Solids	pH, alkalinity, acidity	Sulphate	Mercury CVAAS			1	EFF	Adit Water	1			X	X	X	X	X		2	EFF	Adit Water 0.05	1			X	X	X	X	X		3	EFF	Adit Water 0.10	1			X	X	X	X	X		4	EFF	Adit Water 0.15	1			X	X	X	X	X		5	EFF	Adit Water 0.20	1			X	X	X	X	X		6	EFF	Adit Water 0.30	1			X	X	X	X	X		7	EFF	Adit Water 0.40	1			X	X	X	X	X		8	EFF	Adit Water 0.50	1			X	X	X	X	X		9												10											
Sample Matrix*	Sample Identifier	No. Bottles	Date Sampled	Time Sampled	dissolved ICP-OES/MS Elemental Analyses	Total Dissolved Solids	pH, alkalinity, acidity	Sulphate	Mercury CVAAS																																																																																																																													
1	EFF	Adit Water	1			X	X	X	X	X																																																																																																																												
2	EFF	Adit Water 0.05	1			X	X	X	X	X																																																																																																																												
3	EFF	Adit Water 0.10	1			X	X	X	X	X																																																																																																																												
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5	EFF	Adit Water 0.20	1			X	X	X	X	X																																																																																																																												
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7	EFF	Adit Water 0.40	1			X	X	X	X	X																																																																																																																												
8	EFF	Adit Water 0.50	1			X	X	X	X	X																																																																																																																												
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Work Authorized by(Client or representative signature must accompany request): Date: Dec 14/07																																																																																																																																						



SGS Lakefield Research Limited
Environmental Services

Request for Laboratory Services and Chain of Custody Form

No 11440-002-4

P.O. Box 4300, 185 Concession St., Lakefield, ON. K0L 2H0, Phone (705) 652-2038, Fax (705) 652-6441

Report
Results
to:

Name: Barb Bowman
Company: SGS Lakefield Research Ltd
Address:
City
Province, Postal Code
Telephone Number: 2524 Fax:

LRL LIMS No.: DEC 10347207
Received by (Date & Time): 21/11/07
Logged in by (Date):
Lab Batch ID:

Send
Invoice to:

Name: Rob Caldwell
Company:
Address:
City
Province, Postal Code
Telephone Number: 2043 Fax:

Project No.: 11440-002
Plant No.:
Quote No.:
Purchase Order No.:
TAT (Turnaround Time) * Some exceptions apply, please contact lab
Standard ☐ RUSH ☒ Specify Date:
Time:

Chain of
Custody

Sampled by: R Caldwell
Packed and Shipped by: Date /Time:
Shipment Method and WB#: Date /Time:

PLEASE CONTACT LAB PRIOR TO SUBMITTING RUSH PROJECTS

Sample condition upon receipt:

Please specify any guideline or regulation that these samples may apply (i.e. ODWS, PWQO, Reg 558, GCSO, MISA, MMER, CBWA).

Guideline: Regulation: initial:

Temperature upon receipt: °C

Metals suite: Hg, Ag, Al, As, B, Ba, Be, Bi, Ca, Cd, Co, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, Pb, P, S, Sb, Se, Sn, Sr, Ti, Tl, U, V, W, Y and Zn.

Analysis Requested (X) as Required

(Enter an "X" in the boxes to indicate which request(s) apply to each sample)

	Sample Matrix*	Sample Identifier	No. Bottles	Date Sampled	Time Sampled	dissolved ICP-OES/MS Elemental Analyses	Total Dissolved Solids	pH, alkalinity, acidity,	Sulphate	Mercury CVAAS		
1	EFF	Synthetic Adit Water	1			X	X	X	X	X		
2	EFF	Synthetic Adit Water 0.05	1			X	X	X	X	X		
3	EFF	Synthetic Adit Water 0.10	1			X	X	X	X	X		
4	EFF	Synthetic Adit Water 0.15	1			X	X	X	X	X		
5	EFF	Synthetic Adit Water 0.20	1			X	X	X	X	X		
6	EFF	Synthetic Adit Water 0.30	1			X	X	X	X	X		
7	EFF	Synthetic Adit Water 0.40	1			X	X	X	X	X		
8	EFF	Synthetic Adit Water 0.50	1			X	X	X	X	X		
9												
10												

* Matrix Codes: GW-ground water, SW-surface water, RES -Residential Water, EFF -Effluent, PROC-Process Water, SOIL -Soil, SED-Sediment, SWAB-Swabs, FILT -Filters

* Regulated Water Codes: GRW-ground raw water, SRW-surface raw water, TDW-Treated Drinking Water, DDW-Distribution Drinking Water

Work Authorized by(Client or representative signature must accompany request): Date: Dec 14/07

Lakefield Research Limited

Request for Laboratory Services and Chain of Custody Form

No 11440-002-01

Environmental Services

P.O. Box 4300, 185 Concession St., Lakefield, ON. K0L 2H0, Phone (705) 652-2038, Fax (705) 652-6441

Report Results to:	Name: Rob Caldwell		LRL LIMS No.: <u>Aug 107</u>	
	Company:		Received by (Date & Time):	
	Address:		Logged in by (Date): <u>0813 K</u>	
	City		Lab Batch ID:	
	Province, Postal Code		Project No.: <u>11440-002</u>	
	Telephone Number:	2043	Fax:	Plant No.:
Send Invoice to:	Name: Rob Caldwell		Quote No.:	
	Company:		Purchase Order No.:	
	Address:		TAT (Turnaround Time) * Some exceptions apply, please contact lab	
	City		Standard ☒ RUSH ☐ Specify Date: _____	
	Province, Postal Code		Time: _____	
	Telephone Number:	2043	Fax:	PLEASE CONTACT LAB PRIOR TO SUBMITTING RUSH PROJECTS
Chain of Custody	Sampled by: <u>V Robinson</u>		Sample condition upon receipt:	
	Packed and Shipped by: _____		Date /Time: _____	
	Shipment Method and WB#:		Date /Time: _____	

Please specify any guideline or regulation that these samples may apply (i.e. ODWS, PWQO, Reg 558, GCSO, MISA, MMR, CBWA).

Guideline: Regulation: initial:

Temperature upon receipt: °C

Metals: Al, Ag, As, Ba, Bi, B, Ca, Cd, Co, Cr, Cu, Fe, Hg(CVAAS), Li, Mg, Mn, Mo, Na, Ni, Pb, P, K, Sb, Sn, Se, Sr, Si, Ti, Tl, U, Y, V, Zn

Analysis Requested (X) as Required

(Enter an "X" in the boxes to indicate which request(s) apply to each sample)

[illegible]

* Matrix Codes: GW-ground water, SW-surface water, RES -Residential Water, EFF-Effluent, PROC-Process Water, SOIL -Soil, SED-Sediment, SWAB-Swabs, FILT-Filters

* Regulated Water Codes: GRW-ground raw water, SRW-surface raw water, TDW-Treated Drinking Water, DDW-Distribution Drinking Water

Work Authorized by (Client or representative signature must accompany request):

Date: 13 Aug 07



Lakefield Research Limited

Request for Laboratory Services and Chain of Custody Form

No 11440-002-2

Environmental Services

P.O. Box 4300, 185 Concession St., Lakefield, ON. K0L 2H0, Phone (705) 652-2038, Fax (705) 652-6441

Report Results to:	Name: Barb Bowman	LRL LIMS No.: <u>Aug</u>
	Company: SGS Lakefield Research Ltd	Received by (Date & Time): <u>10:07</u>
	Address:	Logged in by (Date): <u>08 21 07</u>
	City:	Lab Batch ID: <u>11440-002</u>
	Province, Postal Code:	Project No.: <u>11440-002</u>
Send Invoice to:	Telephone Number: 2524 Fax:	Plant No.:
	Name: Rob Caldwell	Quote No.:
	Company:	Purchase Order No.:
	Address:	TAT (Turnaround Time) * Some exceptions apply, please contact lab
	City:	Standard ☒ RUSH ☐ Specify Date: _____
Chain of Custody	Province, Postal Code:	Time: _____
	Telephone Number: 2043 Fax:	PLEASE CONTACT LAB PRIOR TO SUBMITTING RUSH PROJECTS
	Sampled by: B Bowman	Sample condition upon receipt:
	Packed and Shipped by: _____ Date /Time: _____	
	Shipment Method and WB#: _____ Date /Time: _____	

Please specify any guideline or regulation that these samples may apply (i.e. ODWS, PWQO, Reg 558, GCSD, MISA, MMER, CBWA).

Guideline: Regulation: initial:

Temperature upon receipt: °C

ABA as per 10273-AUG07

HUMIDITY CELL TEST : WEEKLY - pH, acidity, alkalinity, conductivity, SO₄, Cl, Ca and Fe.

WEEKS 0 through 5 AND WEEKS 10, 15 and 20: Metals suite: Hg, Ag, Al, As, B, Ba, Be, Bi, Ca, Cd, Co, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, Pb, P, S, Sb, Se, Sn, Sr, Tl, U, V, W, Y and Zn.

						Analysis Requested (X) as Required						
						(Enter an "X" in the boxes to indicate which request(s) apply to each sample)						
Sample Matrix*	Sample Identifier	No. Bottles	Date Sampled	Time Sampled	Mod ABA	Hum Cell						
1	TM Zone LCT				X	X						
2												
3												
4												
5												
6												
7												
8												
9												
10												

* Matrix Codes: GW-ground water, SW-surface water, RES -Residential Water, EFF -Effluent, PROC -Process Water, SOIL -Soil, SED -Sediment, SWAB -Swabs, FILT -Filters

* Regulated Water Codes: GRW-ground raw water, SRW-surface raw water, TDW-Treated Drinking Water, DDW-Distribution Drinking Water

Work Authorized by (Client or representative signature must accompany request)

Date: Aug 21/07

Sept 10 10:01 AM '07

SGS Lakefield Research Limited Environmental Services		Request for Laboratory Services and Chain of Custody Form				No 11440-001-02					
P.O. Box 4300, 185 Concession St., Lakefield, ON. K0L 2H0, Phone (705) 652-2038, Fax (705) 652-6441											
Report Results to:	Name: Rob Caldwell	LRL LIMS No.:				Received by (Date & Time) <u>W 09/06/07</u>					
	Company: SGS	Logged in by (Date):				Lab Batch ID:					
	Address:	Project No.: 11440-001				Plant No.:					
	City:	Quote No.:				Purchase Order No.:					
	Province, Postal Code	TAT (Turnaround Time) * Some exceptions apply, please contact lab				Standard ☒ RUSH ☐ Specify Date: _____					
	Telephone Number: 2043 Fax:	Time: _____				PLEASE CONTACT LAB PRIOR TO SUBMITTING RUSH PROJECTS					
Send Invoice to:	Name: Rob Caldwell	Sample condition upon receipt:				Temperature upon receipt: <u>11</u> °C					
	Company: SGS										
	Address:										
	City:										
Chain of Custody	Province, Postal Code										
	Telephone Number: 2043 Fax:										
	Sampled by: <u>Virginia Robinson</u>										
Packed and Shipped by: _____ Date /Time: _____											
Shipment Method and WB#: _____ Date /Time: _____											
Please specify any guideline or regulation that these samples may apply (i.e. ODWS, PWQO, Reg 558, GCSO, MISA, MMR, CBWA).											
Guideline: _____ Regulation: _____ initial: _____											
Metals Suite; Al, Ag, As, Ba, Be, Bi, B, Ca, Cd, Co, Cr, Cu, Fe, Hg(CVAAS) Li, Mg, Mn, Mo, Na, Ni, Pb, P, K, Sb, Sn, Se, Sr, Si, Ti, Tl, U, V, Zn											
						Analysis Requested (X) as Required (Enter an "X" in the boxes to indicate which request(s) apply to each sample)					
	Sample Matrix*	Sample Identifier	No. Bottles	Date Sampled	Time Sampled	Total Dissolved Solids	Dissolved trace metals	pH	Alkalinity, Acidity, Conductivity	Sulphate	Mercury(CVAAS)
1		Adit Discharge	1	Sept 6/07		X	X	X	X	X	X
2		Simulated Adit Discharge	1	Sept 6/07			X	X	X		
3											
4											
5											
6											
7											
8											
9											
10											
* Matrix Codes: GW-ground water, SW-surface water, RES -Residential Water, EFF -Effluent, PROC -Process Water, SOIL -Soil, SED-Sediment, SWAB -Swabs, FILT -Filters											
* Regulated Water Codes: GRW-ground raw water, SRW-surface raw water, TDW-Treated Drinking Water, DDW-Distribution Drinking Water											
Work Authorized by(Client or representative signature must accompany request): <u>[Signature]</u>										Date: <u>Sept 6/07</u>	

Appendix 6 Qualifications and Limitations

QUALIFICATIONS AND LIMITATIONS

Limited Warranty

In performing work on behalf of a client, SGS Lakefield Research Limited relies on its client to provide instructions on the scope of its retainer and, on that basis, SGS Lakefield Research Limited determines the precise nature of the work to be performed. SGS Lakefield Research Limited undertakes all work in accordance with applicable accepted industry practices and standards. Unless required under local laws, other than as expressly stated herein, no other warranties or conditions, either expressed or implied, are made regarding the services, work or reports provided.

Reliance on Materials and Information

The findings and results presented in reports prepared by SGS Lakefield Research Limited are based on the materials and information provided by the client to SGS Lakefield Research Limited and on the facts, conditions and circumstances encountered by SGS Lakefield Research Limited during the performance of the work requested by the client. In formulating its findings and results into a report, SGS Lakefield Research Limited assumes that the information and materials provided by the client or obtained by SGS Lakefield Research Limited from the client or otherwise are factual, accurate and represent a true depiction of the circumstances that exist. SGS Lakefield Research Limited relies on its client to inform SGS Lakefield Research Limited if there are changes to any such information and materials. SGS Lakefield Research Limited does not review, analyze or attempt to verify the accuracy or completeness of the information or materials provided, or circumstances encountered, other than in accordance with applicable accepted industry practice. SGS Lakefield Research Limited will not be responsible for matters arising from incomplete, incorrect or misleading information or from facts or circumstances that are not fully disclosed to or that are concealed from SGS Lakefield Research Limited during the provision of services, work or reports.

Facts, conditions, information and circumstances may vary with time and locations and SGS Lakefield Research Limited's work is based on a review of such matters as they existed at the particular time and location indicated in its reports. No assurance is made by SGS Lakefield Research Limited that the facts, conditions, information, circumstances or any underlying assumptions made by SGS Lakefield Research Limited in connection with the work performed will not change after the work is completed and a report is submitted. If any such changes occur or additional information is obtained, SGS Lakefield Research Limited should be advised and requested to consider if the changes or additional information affect its findings or results.

When preparing reports, SGS Lakefield Research Limited considers applicable legislation, regulations, governmental guidelines and policies to the extent they are within its knowledge, but SGS Lakefield Research Limited is not qualified to advise with respect to legal matters. The presentation of information regarding applicable legislation, regulations, governmental guidelines and policies is for information only and is not intended to and should not be interpreted as constituting a legal opinion concerning the work completed or conditions outlined in a report. All legal matters should be reviewed and considered by an appropriately qualified legal practitioner.

Site Assessments

A site assessment is created using data and information collected during the investigation of a site and based on conditions encountered at the time and particular locations at which fieldwork is conducted. The information, sample results and data collected represent the conditions only at the specific times at which and at those specific locations from which the information, samples and data were obtained and the information, sample results and data may vary at other locations and times. To the extent that SGS Lakefield Research Limited's work or report considers any locations or times other than those from which information, sample results and data was specifically received, the work or report is based on a reasonable extrapolation from such information, sample results and data but the actual conditions encountered may vary from those extrapolations.

Only conditions at the site and locations chosen for study by the client are evaluated; no adjacent or other properties are evaluated unless specifically requested by the client. Any physical or other aspects of the site chosen for study by the client, or any other matter not specifically addressed in a report prepared by SGS Lakefield Research Limited, are beyond the scope of the work performed by SGS Lakefield Research Limited and such matters have not been investigated or addressed.

No Reliance

SGS Lakefield Research Limited's services, work and reports are provided solely for the exclusive use of the client which has retained the services of SGS Lakefield Research Limited and to which its reports are addressed. SGS Lakefield Research Limited is not responsible for the use of its work or reports by any other party, or for the reliance on, or for any decision which is made by any party using the services or work performed by or a report prepared by SGS Lakefield Research Limited without SGS Lakefield Research Limited's express written consent. Any party that relies on services or work performed by SGS Lakefield Research Limited or a report prepared by SGS Lakefield Research Limited without SGS Lakefield Research Limited's express written consent, does so at its own risk. No report of SGS Lakefield Research Limited may be disclosed or referred to in any public document without SGS Lakefield Research Limited's express prior written consent. SGS Lakefield Research Limited specifically disclaims any liability or responsibility to any such party for any loss, damage, expense, fine, penalty or other such thing which may arise or result from the use of any information, recommendation or other matter arising from the services, work or reports provided by SGS Lakefield Research Limited.

Limitation of Liability

SGS Lakefield Research Limited is not responsible for any lost revenues, lost profits, cost of capital, or any special, indirect, consequential or punitive damages suffered by the client or any other party in reliance on any SGS Lakefield Research Limited work or report. SGS Lakefield Research Limited's total liability and responsibility to the client or any other person for any and all losses, costs, expenses, damages, claims, causes of action or other liability whatsoever which do or may result or arise from or be in relation to SGS Lakefield Research Limited's services, work (or failure to perform services or work) or reports shall be limited to the invoiced charges for the work performed by SGS Lakefield Research Limited.

Fiscal Allowances in Canada for Organizations Conducting Experimental Research

SGS Lakefield Research Limited may apply to CCRA (Canada Customs and Revenue Agency) for fiscal allowances permitted to Canadian laboratories undertaking accreditable experimental research and development within Canada. The high success rate of SGS Lakefield Research Limited in meeting the technological objectives of its clients and in providing quality experimental work and results requires it to undertake internal experimental research. This is done to perfect its technological approaches and methodology, as well as overcome unanticipated or unavoidable technical challenges that occur in the course of much work undertaken for its clients.

It is implicit in this contract that the experimental work performed by SGS Lakefield Research Limited may sometimes be cited, in an anonymous manner, for the purpose of requesting fiscal credits for risks assumed by SGS Lakefield Research Limited in the course of performing services for its clients.

Notwithstanding the presence of an obligatory agreement of confidentiality between CCRA and SGS Lakefield Research Limited, any information used by the latter to support claims for the assumption of risk in experimental research, will be presented in an anonymous form. For example, no mention will be made of the names of companies, ore bodies or proprietary processes in these claims. Throughout this process, SGS Lakefield Research Limited will fully respect the trust and the agreements of confidentiality that exist with all of its clients.



Silver Hart Property

**Additional Info for Yukon Environmental and
Socio-Economic Assessment Board**

Appendix IV

**CMC Metals Property Water Quality Database
2006-2007**

Sample Description:		Detection Limits	CCME Guidelines for Freshwater Aquatic Life	CMC-01		CMC-02		CMC-03		CMC-03a		CMC-04		CMC-05			
Norwest Labs Number:				491618-1	496018-10	569012-21	491618-3	496018-12	496018-9	569012-2	569012-9	491618-3	496018-9	569012-3	491618-5	569012-13	
Collected by:				PI	CSF	PI	CSF	PI	CSF	PI	CSF	PI	CSF	PI	CSF	PI	CSF
Sample Date:				06-Sep-06	22-Sep-06	21-Aug-07	06-Sep-06	22-Sep-06	21-Aug-07	06-Sep-06	22-Sep-06	21-Aug-07	07-Sep-06	22-Sep-06	21-Aug-07	06-Sep-06	22-Sep-06
Metric:				Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Parameter	Unit																
Internal Analysis																	
pH		6.5-9.0	7.8	7.1	7.5	7.4	7.9	7.8		7.8	7.9		7.9	8	7.9		
Temperature C	C		NR	8.3	NR	7.0	NR	5.1		NR	4.7		9.8	7.8	11.8		
Conductivity	µS/cm		110.1	106.3	96.7	101.8	112.4	123.5		116.8	126.9		107.9	108.8	104		
Total Dissolved Solids TDS	mg/L		54.8	53.2	48.7	50.6	56.5	61.7		59.3	63.5		50.3	54.4	51.7		
Flow	m3/s		3.82	3.001	0.008	0.005	0.043	0.048		0.015	0.012		Too high	2.785	Too high		
Dissolved Oxygen	mg/L	5.5-9.5	8.02	8.57	8.00	8.49	7.85	8.63		7.97	8.66		9.46	9.15	8.88		
External Analysis																	
Metals Dissolved (Trace)																	
Silicon	mg/L		2.73	2.94	3.25	3.63	3.71	4.06	4.32	4.76	2.96	4.21	4.47	4.76	2.75		
Sulfur	mg/L		2.4	2.2	2.3	1.6	1.7	2.8	2.9	3.4	1.1	3.7	3.7	3.4	2.3		
Aluminum	mg/L		0.011	0.006	0.025	0.01	<0.005	0.018	0.005	0.023	0.016	0.008	0.023	0.012	0.005		
Antimony	mg/L		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002		
Arsenic	mg/L		0.0002	0.0003	0.0002	0.0011	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0003		
Barium	mg/L		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Beryllium	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001		
Bismuth	mg/L		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005		
Boron	mg/L		0.003	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002		
Cadmium	mg/L		<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	0.00002	0.00003	0.00001	0.00001	0.00001	0.00001	0.00001	<0.00001		
Chromium	mg/L		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0029	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005		
Cobalt	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001		
Copper	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		
Lead	mg/L		0.0001	<0.0001	0.0001	0.0013	<0.0001	0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0001		
Lithium	mg/L		0.002	0.002	0.001	0.002	<0.001	0.002	0.002	0.002	<0.001	0.002	0.003	0.002	0.002		
Molybdenum	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001	0.001	0.001	0.003	<0.001	0.001	0.003	0.003	<0.001		
Nickel	mg/L		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005		
Selenium	mg/L		<0.0002	0.0004	<0.0002	0.0002	<0.0002	0.0002	0.0002	0.0004	<0.0002	<0.0002	<0.0002	<0.0002	0.0003		
Silver	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001		
Strontium	mg/L		0.097	0.097	0.098	0.055	0.05	0.088	0.087	0.114	0.063	0.12	0.122	0.114	0.099		
Thallium	mg/L		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005		
Tin	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		
Titanium	mg/L		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0011	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005		
Uranium	mg/L		0.0009	0.0009	0.0009	<0.0005	<0.0005	0.0005	0.0006	<0.0005	0.0006	<0.0005	0.0009	0.0009	0.0009		
Vanadium	mg/L		0.0004	0.0001	0.0005	0.0003	<0.0002	0.0002	0.0004	<0.0001	0.0002	0.0003	0.0001	0.0004	0.0003		
zinc	mg/L		0.001	0.003	0.007	0.002	0.002	0.004	0.004	0.007	0.006	0.004	0.004	0.007	0.002		
Metals Total (Trace)																	
Calcium	mg/L		17	17	16.5	15	16	18	20.3	17.4	7.7	18	20.2	17.4	17		
Iron	mg/L	0.1-0.2	<0.2	<0.2	<0.1	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.2	<0.2	<0.1	<0.2		
Magnesium	mg/L		1	1	1.1	0.8	0.9	0.8	1	1.7	0.8	1	2	1.7	1		
Manganese	mg/L		<0.01	<0.01	<0.005	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.023		
Potassium	mg/L		<0.1	<0.1	0.5	1	1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		
Silicon	mg/L		2.87	2.38	3.12	3.66	3.68	4.13	3.23	4.76	2.81	4.46	4.19	4.76	2.97		
Sodium	mg/L		1	1	1.3	1	1	1	2	3.3	1.1	3.5	1	3	1		
Sulfur	mg/L		2.3	2	2.3	1	2	2.8	2.7	3.3	1	3.5	1	3	2.2		
Mercury	mg/L				0.02					<0.02	<0.02			<0.02	<0.02		
Aluminum	mg/L		0.002	0.0025	0.036	0.01	0.01	0.021	0.02	0.168	0.038	0.024	0.02	0.168	0.023		
Arsenic	mg/L		<0.0004	<0.0004	<0.0002	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004		
Arsenic	mg/L	0.0004	0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004		
Barium	mg/L		0.009	0.01	0.009	0.004	0.005	0.004	0.005	0.01	0.006	0.006	0.006	0.01	0.009		
Beryllium	mg/L		<0.0002	<0.0002	<0.0001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0001	<0.0001	<0.0002	<0.0002	<0.0001	<0.0002		
Bismuth	mg/L		<0.001	<0.001	0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		
Boron	mg/L		<0.004	<0.004	<0.002	<0.004	<0.004	<0.004	<0.004	<0.002	0.002	<0.004	<0.004	<0.002	<0.004		
Cadmium	mg/L	0.00001-0.00002	0.000017	<0.00001	<0.00002	<0.00002	<0.00002	<0.00002	0.00001	<0.00001	<0.00002	0.00001	<0.00002	<0.00002	<0.00001		
Chromium	mg/L	0.0005-0.001	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		
Cobalt	mg/L		<0.0002	<0.0002	0.0001	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002		
Copper	mg/L		0.002	0.002	<0.001	<0.002	<0.002	<0.002	<0.001	<0.001	<0.002	<0.002	<0.001	<0.002	<0.002		
Lead	mg/L	0.0002	0.001-0.0007	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002		
Lithium	mg/L		0.002	0.002	<0.001	<0.002	<0.001	<0.002	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.002		
Molybdenum	mg/L		0.002	<0.002	<0.001	<0.002	<0.002	<0.002	0.003	0.003	<0.001	0.003	0.004	0.003	<0.002		
Nickel	mg/L	0.0025-0.015	<0.001	<0.001	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.001	<0.001	0.0011	<0.001	<0.0005		
Selenium	mg/L	0.0004	0.001	<0.0004	<0.0004	<0.0002	<0.0004	<0.0004	<0.0004	<0.0002	<0.0002	<0.0004	<0.0004	<0.0002	<0.0004		
Silver	mg/L	0.0002	0.0001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002		
Strontium	mg/L		0.099	0.09	0.1	0.053	0.052	0.082	0.083	0.126	0.086	0.11	0.12	0.126	0.1		
Thallium	mg/L	0.0008	<0.0001	<0.0005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0005	<0.0005	<0.0001	<0.001	<0.0005	<0.0001		
Tin	mg/L		<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002		
Titanium	mg/L		0.001	<0.001	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0199	<0.0005	<0.001	<0.001	0.0199	<0.001		
Uranium	mg/L		0.001	<0.001	0.001	<0.001	<0.001	<0.001	<0.001	<0.0005	0.0012	<0.001	<0.001	<0.0005	<0.001		
Vanadium	mg/L		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0003	0.0002	<0.0002	<0.0002	0.0003	<0.0002		
zinc	mg/L	0.002	<0.002	<0.002	0.005	<0.002	0.002	0.003	0.004	0.007	0.007	<0.002	0.002	0.005	<0.002		
zirconium	mg/L		<0.0002	<0.0002	<0.001	<0.002	<0.002	<0.002	<0.002	<0.001	<0.001	<0.002	<0.002	<0.001	<0.002		
Physical and Aggregate																	
Turbidity	NTU		0.4	NR	<0.1	0.2	NR	0.3		<0.1	<0.1	0.5	NR	<0.1	0.4		
Total Suspended Solids	mg/L		<2	<2	<2	<2	<2	<2		<2	<2	<2	<2	<2	<2		
Colour	Colour units				10					10	8		10	10			
Total Dissolved Solids	mg/L				80					98	78		98	98			
Routine Water																	
pH (8-25 °C)		6.5-9	NR	7.35	7.7	NR	7.34	NR	7.32	7.72	7.32	NR	7.29	7.72	NR		
Electrical Conductivity	µS/cm	</															

Notes:

- * Other than pH units are expressed in mg/L
- ¹ Range is based on an average pH of 8.0 and a temperature range of 0 to 10°C
- ² at pH $\geq$
- ³ Cadmium guideline can also be calculated if hardness is known: $10 \left(\frac{[0.002(\text{mg}/\text{hardness}) - 3.2]}{100} \right)$
- ⁴ Based on guideline for Hexavalent chromium (Cr(VI))
- ⁵ Guideline can be refined if hardness is known

Sample Description:		Detection Limits	CCME Guidelines for Freshwater Aquatic Life	CMC-M2				CMC-OC2				CMC-OC3			CMC-U1			CMC-U2
Norwest Labs Number:				491618-11	496018-2	559841-4	569012-12	491618-9	496018-15	559841-5	569012-7	491618-9	496018-14	559841-6	496018-4	559841-7	569012-6	491618-7
Collected by:				PI	CSF	PIJM	PI	PI	CSF	PIJM	PI	PI	CSF	PIJM	CSF	PIJM	PI	PI
Sample Date:				07-Sep-06	21-Sep-06	12-Jul-07	21-Aug-07	07-Sep-06	23-Sep-06	12-Jul-07	21-Aug-07	07-Sep-06	23-Sep-06	12-Jul-07	21-Sep-06	12-Jul-07	21-Aug-07	07-Sep-06
Metric:				Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Parameter	Unit																	
Internal Analysis																		
pH		7.3	7.5			7.3	7.3			7.2	7.4			7.9			7.5	
Temperature C	C					11.2	6			7.1	6.7			8.4	6.5	5.4	10.6	
Conductivity	µS/cm					52.4	56.2			101.8	59.2			51.8	60.4	146.4	87.3	
Total Dissolved Solids TDS	mg/L					26.2	28			50.8	29.5			25.8	30.1	73.2	43.1	
Flow	m3/s					0.247	0.339			Too Low	0.543			0.61	1.211	Too low	Too low	
Dissolved Oxygen	mg/L					6.75	8.05			7.51	8.38			8.36	8.23	7.41	NIR	
External Analysis																		
Metals Dissolved (Trace)																		
Silicon	mg/L			3.30	3.68	3.35	3.96	2.64	2.78	2.80	2.96	2.61	2.91	2.79	2.54	4.23	4.94	3.27
Sulfur	mg/L			1.5	2	1.4	1.7	1	1.1	1.1	1	1.1	1.2	1.1	4.6	3.9	5.4	5.3
Aluminum	mg/L			0.051	0.029	0.066	0.05	0.022	0.012	0.031	0.044	0.026	0.015	0.028	0.015	0.053	0.107	0.03
Antimony	mg/L			<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Arsenic	mg/L			<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Barium	mg/L			0.0	0.0	0.0	0.008	0.0	0.0	0.0	0.008	0.0	0.0	0.006	0.0	0.0	0.011	0.006
Beryllium	mg/L			<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Bismuth	mg/L			0.0	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Boron	mg/L			<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	mg/L			<0.0001	0.00001	<0.0001	0.00001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.00004	<0.0001	<0.0001	0.00002	0.00002	0.00003
Chromium	mg/L			0.0005	<0.0002	<0.0005	<0.0005	<0.0005	0.001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0012	0.0006
Cobalt	mg/L			<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0004	<0.0001	<0.0001
Copper	mg/L			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	0.001
Lead	mg/L			0.0002	<0.0001	<0.0001	<0.0001	0.0004	<0.0001	<0.0001	<0.0001	<0.0001	0.0003	<0.0001	<0.0001	<0.0001	0.0002	0.0002
Lithium	mg/L			0.001	0.001	<0.001	<0.001	0.001	0.001	<0.001	<0.001	0.002	0.001	<0.001	0.002	0.001	0.002	0.001
Molybdenum	mg/L			0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.002	<0.001	<0.001	0.011	0.011	0.013	0.003
Nickel	mg/L			<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0011	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Selenium	mg/L			<0.0002	0.0003	<0.0002	<0.0002	0.0004	<0.0002	0.0004	<0.0002	0.0003	0.0003	<0.0002	0.0004	<0.0002	<0.0002	<0.0002
Silver	mg/L			<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Strontium	mg/L			0.076	0.074	0.067	0.083	0.075	0.074	0.065	0.072	0.081	0.086	0.08	0.116	0.096	0.117	0.146
Thallium	mg/L			<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Tin	mg/L			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Titanium	mg/L			0.0009	0.0006	0.001	0.0006	<0.0005	<0.0005	<0.0005	0.0013	0.0008	<0.0005	<0.0005	0.0005	0.0008	0.0047	0.0006
Uranium	mg/L			0.0007	0.0005	0.0006	0.0007	0.0008	0.0009	0.0011	0.0011	0.0014	0.001	0.0011	<0.0005	<0.0005	0.0005	0.0016
Vanadium	mg/L			0.0002	0.0001	0.0007	0.0003	0.0002	<0.0001	0.0003	0.0002	0.0004	0.0003	<0.0001	0.0004	0.0006	0.0002	0.0002
Zinc	mg/L			0.003	0.004	0.005	0.008	0.002	0.003	0.002	0.004	0.003	0.003	<0.001	0.004	<0.001	0.008	0.007
Metals Total (Trace)																		
Calcium	mg/L			6.5	7.6	6.3	7.9	6.5	7.4	6.7	6.7	7	8.2	7.6	24.6	18.4	24.9	15
Iron	mg/L	0.1-0.2	0.3	<0.2	<0.2	<0.1	<0.1	<0.2	<0.2	<0.1	<0.1	<0.2	<0.2	<0.1	<0.2	<0.1	0.2	0.2
Magnesium	mg/L			0.5	0.7	0.6	0.8	0.5	0.7	0.6	0.7	0.6	0.9	0.7	0.9	0.7	0.9	1
Manganese	mg/L			<0.01	<0.01	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	0.024	<0.01	0.006	<0.02	<0.005	0.017	0.1
Potassium	mg/L			<0.8	<0.8	<0.4	<0.4	<0.8	<0.8	<0.4	<0.4	<0.8	<0.8	<0.4	<0.8	<0.4	<0.8	<0.4
Silicon	mg/L			3.57	3.41	3.23	3.84	2.86	2.5	2.82	2.72	2.93	2.73	2.84	3.79	4.2	4.88	3.7
Sodium	mg/L			1	2	1.7	1.6	1	1	1.8	1.4	1	2	1.9	1	1.7	1.2	1
Sulfur	mg/L			1	2	1.4	1.7	0.9		1		0.9	1	1	1.1	4.3	3.8	5.1
Mercury	mg/L						<0.02				<0.02							<0.02
Aluminum	mg/L		0.1 *	0.065	0.064	0.099	0.077	0.028	0.027	0.04	0.042	0.058	0.025	0.043	0.048	0.079	0.286	0.098
Antimony	mg/L			<0.0004	<0.0004	<0.0002	<0.0002	<0.0004	<0.0004	<0.0002	<0.0002	<0.0004	<0.0004	<0.0002	<0.0004	<0.0002	<0.0002	<0.0004
Arsenic	mg/L	0.0004	0.005	<0.0004	<0.0004	<0.0002	<0.0002	<0.0004	<0.0004	<0.0002	<0.0002	<0.0004	<0.0004	<0.0002	<0.0004	<0.0002	<0.0002	<0.0004
Barium	mg/L			0.007	0.008	0.008	0.011	0.005	0.007	0.007	0.006	0.007	0.006	0.008	0.008	0.007	0.011	0.008
Beryllium	mg/L			<0.0002	<0.0002	<0.0001	<0.0001	<0.0002	<0.0002	<0.0001	<0.0001	<0.0002	<0.0002	<0.0001	<0.0002	<0.0001	<0.0001	<0.0002
Bismuth	mg/L			<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.0005	<0.001
Boron	mg/L			<0.004	<0.004	0.002	<0.002	<0.004	<0.004	<0.002	0.002	<0.004	<0.004	0.002	<0.004	0.003	0.003	<0.004
Cadmium	mg/L	0.00001-0.00002	0.00001 *	<0.00002	<0.00002	0.00001	<0.00002	<0.00002	<0.00002	<0.00001	<0.00001	<0.00002	<0.00002	<0.00001	<0.00002	<0.00001	0.00002	<0.00002
Chromium	mg/L	0.00005-0.001	0.001 *	<0.0001	0.0001	<0.0005	<0.0005	<0.0001	<0.0001	<0.0005	<0.0005	<0.0001	<0.0001	<0.0005	<0.0001	<0.0005	0.0008	<0.001
Cobalt	mg/L			<0.0002	<0.0002	<0.0001	0.0003	0.0002	<0.0002	<0.0001	<0.0001	<0.0002	<0.0002	<0.0001	<0.0002	<0.0001	0.0003	<0.0003
Copper	mg/L	0.002	0.002 - 0.004 *	<0.002	<0.002	0.002	<0.001	<0.002	<0.002	<0.001	<0.001	<0.002	<0.002	<0.001	<0.002	<0.001	0.001	<0.002
Lead	mg/L	0.0002	0.001 - 0.007 *	0.0002	<0.0002	0.0001	<0.0001	<0.0002	<0.0002	<0.0001	<0.0001	0.0003	<0.0002	<0.0001	<0.0002	0.0003	0.0003	0.0002
Lithium	mg/L			<0.002	<0.002	0.001	0.001	<0.002	<0.002	<0.001	<0.001	<0.002	<0.002	<0.001	<0.002	0.002	0.003	<0.002
Molybdenum	mg/L	0.002	0.073	<0.002	<0.002	<0.001	<0.001	<0.002	<0.002	<0.001	<0.001	0.01	<0.002	<0.001	0.01	0.012	0.014	0.003
Nickel	mg/L	0.001	0.025 - 0.15 *	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.0005	0.001	<0.0005	0.0012	<0.002
Selenium	mg/L	0.0004	0.001	<0.0004	<0.0004	0.0002	<0.0002	<0.0004	<0.0004	<0.0002	<0.0002	<0.0004	<0.0004	0.0002	<0.0004	0.0003	<0.0002	<0.0004
Silver	mg/L	0.0002	0.0001	<0.0002	<0.0002	<0.0001	<0.0001	<										

CMC Metals
SILVER HART PROPERTY

YESAA Executive Committee Submission

APPENDIX N
ADDITIONAL INFORMATION REQUEST FOR YESAB
WATSON LAKE DISTRICT OFFICE III (July 2008)

November 2009

Re: Notice that Supplementary Information Submitted is Inadequate
YESAB Project Number: 2007-0206
Project Title: Silver Hart Mine Development and Production

Jun 25, 2008

Dear Inglis

Thank you for your submission of supplementary information for this project pursuant to the Notice of Supplementary Information Required sent to you on December 28, 2007. The Watson Lake Designated Office of the Yukon Environmental and Socio-economic Assessment Board (YESAB) has determined that the information submitted is not sufficient for the evaluation to begin. Please find, attached to this notice, a list of required information that must be submitted in order for the assessment to continue.

All supplementary information related to your project proposal can be submitted via the YESAB On-line Registry or by contacting the Project Assessment Officer. The Assessment Officer for this proposed project is Aliesha Narain and she can be contacted via email at aliesha.narain@yesab.ca, by phone at 867-536-4040, by fax at 867-536-4049 or by mail at the YESAB Watson Lake Designated Office. P.O. Box 294, Watson Lake, Y0A 1C0.

In order to avoid having this project proposal deemed withdrawn, you are required to submit the requested supplementary information, or advise the Assessment Officer in writing when you will be submitting the information, before the end of December 22, 2008.

For more information about this assessment under the Yukon Environmental and Socio-economic Assessment Act, please see the YESAB On-line Registry at www.yesab.ca/registry.

Thank you.

Thank you for your response to our Information Request, which issued on December 28, 2007. We have reviewed your submission and have found the information to be well described and comprehensive. There are a few areas where further explanation or clarification is needed in order to enable us to fully understand your conclusions.

1. Granodiorite was only sampled close to the ore and veins assumption that granodiorite in distal position of the ore and veins is based on trends established from samples collected only close to the ore and veins - would seem logical that more distal samples were represented. There are no trends or data that would indicate or confirm that the acid potential would decrease as you move away from the ore zone. Please validate your conclusion.
2. The granodiorite has not been subdivided by alteration, which could allow for better segregation and identification of NP:AP trends. The Altura Geoenvironmental Analyses Review recommended this subdivision to improve the identification and to improve waste rock management handling procedures. Please provide further information.
3. Andesite has been estimated to represent less than 5% of the TM zone waste rock, which would roughly amount to less than 19,000 tonnes). There was only one andesite sample submitted for multi element analysis via ICP-MS and ABA tests. It is difficult to identify trends with one sample, and based on the criteria for screening as indicated in the Waste Rock Management Plan it is suggested that there should be at least 3-4 samples of the andesite to establish any kind of trend or statistic to demonstrate its non-acid generation potential. Please demonstrate (and provide any supporting data) why you have not conducted further sampling of the andesite.
4. The SGS Lakefield conclusions regarding net acid generation do not match the conclusions made in the Altura Geoenvironmental Analyses Review. Is this discrepancy as a result of a smaller sample size, or is it due to differing methodologies? Please clarify.
5. The SGS Lakefield report indicated that only one 20 week kinetic test on a sample of potential tailings material was conducted (we understand that the SPLP test performed by SGS Lakefield may be a reasonable surrogate for certain applications). The Altura Geoenvironmental Analyses Review did not conduct kinetic tests and did not provide any reasons for not conducting kinetic tests for the low NP:AP samples (i.e., those less than 3.0). They did note that low NP:AP rock would be most likely ore that would be processed and ultimately directed to tailings that had zero discharge facility or which at the end of 3 years possibly requiring treatment. In addition the treatability tests showed positive results for neutralizing acid generation and metals (primarily zinc) precipitation. Please provide a rational or reasoning for why no further kinetic tests were undertaken or are proposed.
6. The water balance you have described in your submission is based on average climate conditions and uniform mining inputs, which are both high probability scenarios. The upset conditions are not necessarily extreme, for example what is the risk of a 5-day shutdown (could it be a 10 day shutdown) and will this occur only once in the 3-year mine life? Also, there is need to quantify the extreme precipitation or snow melt event in terms of probability (i.e., odds of a 1:10 rainfall occurring in the 3 year period, etc). The net volume of the pond has little room for error, for example from potential capacity reduction by siltation, or from having to accommodate groundwater input (i.e., dewatered mine discharge). The argument for zero groundwater is tenuous at best (i.e., not substantiated with data). The conclusion

that the phreatic surface is below the lowest pit elevation is tenuously based on 1980s anecdotal information about a supply well, but there is no historical static water level data. A groundwater monitoring well could be advanced to prove that no water will come from the pit. At this point, it appears that there is a reasonable probability that the capacity will be exceeded, which suggests zero discharge cannot be maintained and therefore treatment will be needed. Please provide further explanation on the risks of water balance as they relate to standard risk scenarios. What are the contingency measures to deal with the identified risk scenarios?

7. The water quality database is not fully representative of the ice-free season. Water samples were collected twice in September 2006, once in July 2007, and once in August 2007 and not at the same times for all sample sites. As such the baseline date for water quality is not correctly characterized. Samples should be collected from break-up through freeze-up for each year (monthly is typical). Please provide further information.

8. Overburden is proposed to be used as a cap but, based on the information you have provided as well as the notation that no ponding occurs, it is considered to have some infiltration capacity. If at some point there is need to have an impervious cap for waste rock (as a result of high acid generation potential), the overburden may not be suitable as capping material without some engineering, selection, and/or high-grading process. Please indicate how you intend to make the overburden cap impermeable?



July 25, 2008

To:
Yukon Environmental and Socioeconomic Assessment Board
Watson Lake Designated Office
P.O. Box 294 Watson Lake, Yukon Y0A 1C0

Attention Ms. Aliesha Narain, Project Assessment Officer

Regarding: Silver Hart Mine Development YESAB Project Number 2007-0206 Notice that Supplementary Information Submitted is Inadequate, June 25, 2008

1. Granodiorite was only sampled close to the ore and veins assumption that granodiorite in distal position of the ore and veins is based on trends established from samples collected only close to the ore and veins - would seem logical that more distal samples were represented. There are no trends or data that would indicate or confirm that the acid potential would decrease as you move away from the ore zone. Please validate your conclusion.

Figures 7 through 10 in the Review of Geoenvironmental Analyses (Annex 1 of Waste Rock Management Plan) show the trend of lower zinc and sulphur and higher NP:AP for the samples distal from the vein zone. The drilling core photographs provided in Appendix V of the Review of Geoenvironmental Analyses also show the tendency for less hydrothermally altered country rock distal from the vein zones (as demonstrated by less bleaching). This indicates the overall tendency for less reactive rock in the upper hangingwall area of the proposed TM pit.

With seasonal access to the site now re-established, CMC will conduct the additional upper hangingwall sampling recommended in section 5.2.1 of the geochemical review. It is expected that results will confirm the low sulphur and zinc content of the upper hangingwall rock, nonetheless results will be carefully reviewed, and the Waste Rock Management Plan updated if required.

2. The granodiorite has not been subdivided by alteration, which could allow for better segregation and identification of NP:AP trends. The Altura Geoenvironmental Analyses Review recommended this subdivision to improve the identification and to improve waste rock management handling procedures. Please provide further information.

Section 5.2.4 of the Review of Geoenvironmental Analyses states that "The assignment of alteration information for each sample in the static test database may help to delineate any mineral assemblage controls with respect to acid generation and metal leaching potential."

This is because wall rock alteration surrounding the TM and S veins is interpreted to be epithermal in style, with varying degrees of silicification and 'claying' or argillic alteration proximal to the veins, sericite as the next outer shell, and weak to intense propylitic alteration as the outer-most alteration halo. The higher-altered zones nearer the mineralization tend to be enriched in sulphide and zinc minerals while depleted in neutralizing minerals. Thus, rock considered to be more reactive corresponds to the more altered rock. While it is recognized that degree of alteration likely plays a key role in a sample's geoenvironmental characteristics, it is also recognized that on a meter-by-meter scale hydrothermal alteration is patchy and the rock is often overprinted with oxidation rinds. Alteration information of a given sample is therefore of interest and likely relevant, but at the same time complex to record for statistical analysis purposes.

CMC intends to augment the 67-sample static test database with key alteration information, and incorporate recording of alteration information into future sampling programs. Nonetheless, due to the above-mentioned complexity and patchiness of alteration on a sample scale, it should be recognized that at best, only a general zone-scale relationships may be discernible.

3. Andesite has been estimated to represent less than 5% of the TM zone waste rock, which would roughly amount to less than 19,000 tonnes). There was only one andesite sample submitted for multi element analysis via ICP-MS and ABA tests. It is difficult to identify trends with one sample, and based on the criteria for screening as indicated in the Waste Rock Management Plan it is suggested that there should be at least 3-4 samples of the andesite to establish any kind of trend or statistic to demonstrate its non-acid generation potential. Please demonstrate (and provide any supporting data) why you have not conducted further sampling of the andesite.

As presented in previous information submissions, occasional narrow (up to 1.5 m), discontinuous, and pervasively clay-altered dykes of andesitic composition are seen in the TM deposit. The dykes tend to occur parallel to and within several metres of the vein zones, and are estimated to represent less than 5% of the TM zone waste rock. While the one sample of andesite tested indicated non-acid generating potential, zinc content was elevated (9796 ppm) and thus this sample is considered to be potentially metal-leaching if placed under conditions where water may infiltrate and net drainage may occur.

Based on the Waste Rock Management Plan, one key goal is to minimize water infiltration through intercept surface run-on ditching and capping the waste rock as the site proceeds. This waste rock material will be managed with the long-term objective of minimizing infiltration in storage areas such that no net drainage occurs.

Nevertheless, with seasonal access to the site now re-established, CMC will conduct the additional andesite sampling recommended in section 5.2.1 of the geochemical review. Results will be carefully reviewed, and the Waste Rock Management Plan updated if required.

4. The SGS Lakefield conclusions regarding net acid generation do not match the conclusions made in the Altura Geoenvironmental Analyses Review. Is this discrepancy as a result of a smaller sample size, or is it due to differing methodologies? Please clarify.

The SGS Lakefield initial study was conducted on three waste rock samples collected in 2007 from surface exposures in the TM zone. Following this, additional analyses were performed on 48 waste rock samples from drill holes at depth within the TM and S zones. The acid base accounting methodologies utilized in both studies were the same (modified ABA procedure).

By the nature of their surface exposure source the SGS study samples were well-oxidized, with most of the sulphur present in sulphate rather than sulphide form. The study concluded that the three waste rock samples tested are unlikely to generate net acidity. The results on the deeper waste rock samples show overall low but variable sulphur, with most sulphur present as sulphide. While samples distal from the vein structures tend to show lower overall sulphur and higher NP:AP ratios, a portion of the samples tested (the majority occurring within 4 metres of the mineralized zones), have NP:AP ratios less than 1.0, indicating possible acid generation from rock in this sector. It should be noted that with the samples being within 4 metres of the mineralized zone, this is a worst case scenario that was tested.

5. The SGS Lakefield report indicated that only one 20 week kinetic test on a sample of potential tailings material was conducted (we understand that the SPLP test performed by SGS Lakefield may be a reasonable surrogate for certain applications). The Altura Geoenvironmental Analyses Review did not conduct kinetic tests and did not provide any reasons for not conducting kinetic tests for the low NP:AP samples (i.e., those less than 3.0). They did note that low NP:AP rock would be most likely ore that would be processed and ultimately directed to tailings that had zero discharge facility or which at the end of 3 years possibly requiring treatment. In addition the treatability tests showed positive results for neutralizing acid generation and metals (primarily zinc) precipitation. Please provide a rational or reasoning for why no further kinetic tests were undertaken or are proposed.

We believe that the results of the testwork conducted to date are sufficient to indicate that some management measures of the near vein waste rock will be required during operation, in large part due to the elevated zinc signature of rock in these areas of the TM and S zones. As concluded in the Geoenvironmental Review, this material “may produce drainage with zinc concentrations in excess of Metal Mining Effluent Regulations, possibly accompanied by weak acidity.”

We consider it unlikely that additional information by way of laboratory scale kinetic testing such as humidity cells will significantly modify this conclusion. This waste rock material will be managed with the long-term objective of minimizing infiltration in storage areas such that no net drainage occurs.

6. The water balance you have described in your submission is based on average climate conditions and uniform mining inputs, which are both high probability scenarios. The upset conditions are not necessarily extreme, for example what is the risk of a 5-day shutdown (could it be a 10 day shutdown) and will this occur only once in the 3-year mine

life? Also, there is need to quantify the extreme precipitation or snow melt event in terms of probability (i.e., odds of a 1:10 rainfall occurring in the 3 year period, etc). The net volume of the pond has little room for error, for example from potential capacity reduction by siltation, or from having to accommodate groundwater input (i.e., dewatered mine discharge). The argument for zero groundwater is tenuous at best (i.e., not substantiated with data). The conclusion that the phreatic surface is below the lowest pit elevation is tenuously based on 1980s anecdotal information about a supply well, but there is no historical static water level data. A groundwater monitoring well could be advanced to prove that no water will come from the pit. At this point, it appears that there is a reasonable probability that the capacity will be exceeded, which suggests zero discharge cannot be maintained and therefore treatment will be needed. Please provide further explanation on the risks of water balance as they relate to standard risk scenarios. What are the contingency measures to deal with the identified risk scenarios?

Table 2 of our June 18 additional information submission provides contingency measures to manage excess water inventories within the tailings impoundment. If necessary, should the water level increase to the spillway elevation, it be directed to the Evaporation / Settlement Pond. The water balance shown in Table 1 of the June submission indicates that there is substantial excess operational storage capacity (>20,000 m³, or 50 percent) remaining in the impoundment through until almost the end of the sixth quarter of operation (Q6). In order to ensure conservativity for water input variables such as pit and adit flows, by the end of Q6 of operation CMC commits to have installed and commissioned a standby treatment system capable of treating any excess water inventories to levels that meet or exceed requirements of MEMR. As discussed in the report completed by SGS Lakefield and provided in our June submission, testing to date has demonstrated the adit water flow is amenable to treatment by basic lime slurry addition.

CMC will be installing a monitoring well in the TM pit area in 2008 in order to better define the location of the phreatic surface and to estimate basic hydrogeological properties.

7. The water quality database is not fully representative of the ice-free season. Water samples were collected twice in September 2006, once in July 2007, and once in August 2007 and not at the same times for all sample sites. As such the baseline data for water quality is not correctly characterized. Samples should be collected from break-up through freeze-up for each year (monthly is typical). Please provide further information.

While the database is not fully representative of the ice-free season samples have been obtained in most months and can be considered representative for all but freshet and winter conditions. This allows for a characterization of the local environment that can be augmented by future baseline sampling. CMC Metals has committed to completing the baseline information in 2008 and 2009 by undertaking water quality sampling during those months not currently characterized.

During the meeting on July 7th, 2008 attended by representatives of YESAB and their technical consultant, Access Consulting Group and Altura Environmental Consulting the suggestion was made by YESAB that the comparison of the baseline water quality data to the CCME guidelines was interpreted by YESAB as being the proposed water quality standards as no other standards were proposed. This

was not the intention of the comparison of the existing natural conditions to the CCME guidelines, the comparison was only intended to create a context and was not proposed as discharge standards for the proposed mine. No standards have been proposed at this stage.

8. Overburden is proposed to be used as a cap but, based on the information you have provided as well as the notation that no ponding occurs, it is considered to have some infiltration capacity. If at some point there is need to have an impervious cap for waste rock (as a result of high acid generation potential), the overburden may not be suitable as capping material without some engineering, selection, and/or high-grading process. Please indicate how you intend to make the overburden cap impermeable?

To clarify, our response to question 11 in the previous submission does indeed indicate that the overburden demonstrates water ponding capabilities, where we state “the overburden does contain sufficient fines to cause localized surface ponding in depressions, as referenced in Section 4.1.2 of the Application, and as seen in the overburden in the proposed waste rock pile area...”.

We do recognize that capping material placed over waste rock having potential for net acidity and/or metal leaching will need to meet engineering specifications appropriate to the soil barrier performance objectives. As stated in our response to question 5, this material will be managed with the long-term objective of minimizing infiltration in storage areas such that no net drainage occurs.

Please Note:

We also wish to point out a formatting error in the Waste Rock Management Plan. Please note that sections 4.5 to 4.6 of this document are intended to be subheadings under the Section 4.4 entitled "Management During Operations". The appropriate indexing for this portion of the document is therefore as follows:

4.4 Management During Operations**4.4.1 TM Waste Rock Pile****4.4.1.1 Preparation****4.4.1.2 Waste Rock Placement****4.4.1.3 Closure****4.4.2 Rock for General Construction Purposes****4.4.2.1 Selection Criteria****4.4.2.1.1 Waste Rock****4.4.2.1.2 Overburden****4.4.2.2 Process to Extract and Identify Rock for General Construction**

We apologize for any confusion this may have caused

Sincerely,

Don Wedman, P.Eng.,

President, CMC Metals Inc.

Attachments: none.

CMC Metals
SILVER HART PROPERTY

YESAA Executive Committee Submission

APPENDIX O
ADDITIONAL INFORMATION REQUEST FOR YESAB
WATSON LAKE DISTRICT OFFICE IV (August 2008)

November 2009

Jul 30, 2008

Our Reference: 2007-0206-015-1

Inglis
Access Consulting Group
#3 Calcite Business Centre, 151 Industrial Rd.
Whitehorse, Yukon, CA
Y1A2V3

Re: Insufficient response - Completeness
YESAB Project Number: 2007-0206
Project Title: Silver Hart Mine Development and Production

Dear Inglis

Thank you for your submission of supplementary information for this project pursuant to the Supplementary Information Request sent to you on June 25, 2008. The Watson Lake Designated Office of the Yukon Environmental and Socio-economic Assessment Board (YESAB) has determined that the supplementary information submitted is not sufficient for the evaluation to begin. Please find, (attached) to this letter, the required information that must be submitted.

All supplementary information related to your project proposal can be submitted via the YESAB Online Registry or by contacting the assessor.

In order to avoid having this project proposal deemed withdrawn, you are required to submit the requested supplementary information, or advice the assessor in writing when you will be submitting the information, before the end of January 26, 2009.

We encourage you to follow the progress of this proposal through the assessment process by regularly visiting the YESAB Online Registry. The registry can be accessed by [clicking here](http://www.yesab.ca/registry) or via www.yesab.ca/registry.

Thank you.

Information Request

1. In your response to our request for further information on the water quality database, you have indicated a commitment to conduct additional baseline water quality sampling in 2008 and 2009. However, you have implied that these samples will be collected for only those months not currently characterized. This is not an adequate sampling protocol and we recommend that sample months are not just filled in but an entire year's water quality baseline be established. Some measurement prior to ice break-up will give the needed picture for the winter low flow period. Based on the information you have provided (2 samples in September 2006 and one sample in July and August 2007, which were not collected at the same times for all sample sites) there is little opportunity to understand the seasonal variability and the data does not address all hydrological events that occur at the site. Water chemistry conditions at a particular location, for example, can exhibit significant variations from year to year in concentrations and loadings based on variability in point sources, variations in wet and dry years, and differences due to light or heavy snowpacks that effect flushing rates.

For mining projects that are set to advance to the production phase, it is expected that adequate baseline data exists for the site in order to go through the environmental assessment and permitting phase. The Proponent's Guide to Project Proposal Submission to a Designated Office, that is available to the public, speaks to environmental and socio-economic components to be considered in describing existing conditions. Establishing an adequate water quality baseline prior to submitting a project proposal, such as this one, for an assessment allows the assessor to predict downstream quality as a result of mine production with the objective of determining and evaluating potential adverse effects to aquatic resources. The absence of a baseline restricts the assessor in understanding how existing conditions may change upon the implementation of an activity and makes it difficult to identify appropriate mitigation.

Please provide a fully characterized water quality baseline for this site.

2. Our review of Figures 7 through 10 (in the Review of Geoenvironmental Analyses: Annex 1 of the Waste Rock Management Plan) for all the drillholes (taken as a whole) do not demonstrate any obvious trends with zinc, sulphur or NP:AP – with distance from the vein zones (as differentiated by colours on the cross section), although there are a couple individual drillholes that exhibit lower zinc and sulphur and higher NP:AP away from the vein zones, most of the sample distributions from the drillholes shown on Figures 7-10 are equivocal. Furthermore, none of the samples represent distal locations from the zones (they are all within <10 m of the vein rock), and much of the granodiorite is not characterized as ABA.

You have implied that further sampling will be conducted on the upper hanging wall rock. In light of the time needed to provide the information requested in question 1 above, please demonstrate (upon the availability of results) that any or all waste rock that will not be capped (e.g., used for road material) has been adequately characterized as non PAG. Furthermore, it is also not entirely clear how the differentiation between assumed PAG and

non-PAG rock will be made (i.e., “near vein waste rock” has not been explicitly defined, nor given dimensions). If general zone-scale relationships (or more refined) can be determined for use in the field, the overall management of waste rock will be improved.

3. Although not explicitly stated, it appears that your intent is to manage the andesite as PAG. Unless otherwise stated, we will assume that the term “this waste rock” referred to in the second paragraph of your response to our previous question #3 refers to all the andesite and will be managed as PAG.
4. Upon further consideration of your objectives and operating guidelines for final decommissioning and closure we are not satisfied that you have demonstrated conceptually how closure may be achieved or undertaken. Please provide a conceptual closure plan that include, but is not limited to, an identification and description of the total footprint of the project (all components of the mine), what the site is expected to look like upon completion of mining/decommissioning/closure, closure design criteria and conceptual closure activities per mine component, demonstration of how footprint effects will be minimized, and a criteria that will be used to assess when the closure process is complete. We expect that this conceptual closure plan will set the framework for a more comprehensive closure plan during the first few years of project implementation as experience with site specific conditions is obtained.



August 20, 2008

To:

Yukon Environmental and Socioeconomic Assessment Board
Watson Lake Designated Office
P.O. Box 294 Watson Lake, Yukon Y0A 1C0

Attention Ms. Aliesha Narain, Project Assessment Officer

Re: Insufficient response – Completeness (YESAB Reference # 2007-0206-015-1)

July 30, 2008

YESAB Project Number: 2007-0206

Project Title: Silver Hart Mine Development and Production

YESAB question: 1. In your response to our request for further information on the water quality database, you have indicated a commitment to conduct additional baseline water quality sampling in 2008 and 2009. However, you have implied that these samples will be collected for only those months not currently characterized. This is not an adequate sampling protocol and we recommend that sample months are not just filled in but an entire year's water quality baseline be established. Some measurement prior to ice break-up will give the needed picture for the winter low flow period. Based on the information you have provided (2 samples in September 2006 and one sample in July and August 2007, which were not collected at the same times for all sample sites) there is little opportunity to understand the seasonal variability and the data does not address all hydrological events that occur at the site. Water chemistry conditions at a particular location, for example, can exhibit significant variations from year to year in concentrations and loadings based on variability in point sources, variations in wet and dry years, and differences due to light or heavy snowpacks that effect flushing rates. For mining projects that are set to advance to the production phase, it is expected that adequate baseline data exists for the site in order to go through the environmental assessment and permitting phase. The Proponent's Guide to Project Proposal Submission to a Designated Office, that is available to the public, speaks to environmental and socioeconomic components to be considered in describing existing conditions. Establishing an adequate water quality baseline prior to submitting a project proposal, such as this one, for an assessment allows the assessor to predict downstream quality as a result of mine production with the objective of determining and evaluating potential adverse effects to aquatic resources. The absence of a baseline restricts the assessor in understanding how existing conditions may change upon the implementation of an activity and makes it difficult to identify appropriate mitigation. Please provide a fully characterized water quality baseline for this site.

CMC Response ;

CMC Metals has committed to completing the baseline background water quality information by collecting additional information prior to and during the construction phases of development. It is unfortunate that YESAB has interpreted this as indicating that CMC Metals Ltd (CMC) will only sample for the those months. This is not how CMC intended this commitment to be interpreted. A proposed monitoring program was outlined in December 21, 2007 response to the November 7, 2007 Notice of Supplementary Information Required question 24 that described the frequency of sampling to be undertaken. This plan will be discussed with the regulatory authorities to determine the timing of implementation for the collection of background information. CMC understands the importance of

background water quality information but based on the statement from *The Proponent's Guide to Project Proposal Submission to a Designated Office* (page 18):

"As the potential for significant adverse effect increases so too should your efforts in:

1. Providing baseline Information."

it was determined that this small scale project did not have a high potential for significant adverse impacts. This conclusion was based on the sliding scale in Figure 2 (Small footprint, mid to high level of complexity, semi-intrusive nature, and mid level sensitive land values). The scale of this project must be also reemphasized as Figure 2 (page 18) indicates that scale plays a role in determining the effort required for baseline information.

The proposed mine is an 80 tonne per day milling operation, barely 5% of threshold for a project that requires a review by the executive committee (1500 t/day). It does not indicate in *The Proponent's Guide to Project Proposal Submission to a Designated Office* the level of detail required for this type of project as it only states the type of detail that may be appropriate for Water and Water Quality information: "names and sources, quality (known conditions), flow characteristics, other developments or uses". A mine with that milling rate does not trigger a requirement for a Type A Water Use Licence from the Yukon Water Board like most operating mines.

In the November 7, 2007 there is no mention of a requirement for additional baseline information even though Appendix E of the October 2007 Project Description contains the lab results of all of the baseline water quality sampling undertaken and shows the dates when the samples were taken. Similarly the December 28, 2007 Notice that Supplementary Information Submitted is Inadequate makes no mention of a need for additional baseline water quality sampling, only presentation of baseline information. The proponent then submitted a summary table of the baseline information previously submitted as an appendix to the Project Description. The June 25, 2008 Notice that Supplementary Information Submitted is Inadequate states that "The water quality database is not fully representative of the ice-free season". The July 30, 2008 letter Insufficient response – Completeness (YESAB file #2007-0206-015-1) states that "Water chemistry conditions at a particular location, for example, can exhibit significant variations from year to year in concentrations and loadings based on variability in point sources, variations in wet and dry years, and differences due to light or heavy snowpacks that effect flushing rates." This appears to infer very different levels baseline information requirements for a project of this size and yet nowhere in any of the information requests has YESAB stated what would constitute "a fully characterized water quality baseline for this site".

YESAB Question 2 Our review of Figures 7 through 10 (in the Review of Geoenvironmental Analyses: Annex 1 of the Waste Rock Management Plan) for all the drillholes (taken as a whole) do not demonstrate any obvious trends with zinc, sulphur or NP:AP – with distance from the vein zones (as differentiated by colours on the cross section), although there are a couple individual drillholes that exhibit lower zinc and sulphur and higher NP:AP away from the vein zones, most of the sample distributions from the drillholes shown on Figures 7-10 are equivocal. Furthermore, none of the samples represent distal locations from the zones (they are all within <10 m of the vein rock), and much of the granodiorite is not characterized as ABA. You have implied that further sampling will be conducted on the upper hanging wall rock. In light of the time needed to provide the information requested in question 1 above, please demonstrate (upon the availability of results) that any or all waste rock that will not be capped (e.g., used for road material) has

been adequately characterized as non PAG. Furthermore, it is also not entirely clear how the differentiation between assumed PAG and non-PAG rock will be made (i.e., "near vein waste rock" has not been explicitly defined, nor given dimensions). If general zone-scale relationships (or more refined) can be determined for use in the field, the overall management of waste rock will be improved.

CMC Response: CMC would like to re-emphasize their commitment to undertake additional sampling of the waste rock as described in the July 25, 2008 response to Silver Hart Mine Development YESAB Project Number 2007-0206 Notice that Supplementary Information Submitted is Inadequate, June 25, 2008.

YESAB Question 3: Although not explicitly stated, it appears that your intent is to manage the andesite as PAG. Unless otherwise stated, we will assume that the term "this waste rock" referred to in the second paragraph of your response to our previous question #3 refers to all the andesite and will be managed as PAG.

CMC Response: CMC will undertake a conservative approach to waste rock management and assume that, unless further testing indicates otherwise, all uncharacterized rock (including all andesite) will be managed as PAG.

YESAB Question 4: . Upon further consideration of your objectives and operating guidelines for final decommissioning and closure we are not satisfied that you have demonstrated conceptually how closure may be achieved or undertaken. Please provide a conceptual closure plan that include, but is not limited to, an identification and description of the total footprint of the project (all components of the mine), what the site is expected to look like upon completion of mining/decommissioning/closure, closure design criteria and conceptual closure activities per mine component, demonstration of how footprint effects will be minimized, and a criteria that will be used to assess when the closure process is complete. We expect that this conceptual closure plan will set the framework for a more comprehensive closure plan during the first few years of project implementation as experience with site specific conditions is obtained.

CMC Response: Please see attached Conceptual Closure Plan.

It is hoped that this response will now permit this project to begin undergoing environmental assessment and then enter the permitting phase. CMC Metals requests that the YESAA assessment process begin with the information provided to date.

Sincerely,

Don Wedman, P.Eng.,

President, CMC Metals Inc.

Attachments: *Silver Hart Property Conceptual Closure Plan*

Silver Hart Property

Conceptual Closure Plan

1.0 Philosophy

In keeping with its high standards for environmental and social responsibility, CMC Metals intends to implement environmentally sound and technically feasible decommissioning and reclamation measures. To ensure that the overall closure philosophy can be achieved, the following objectives were emphasized during the development of this plan:

- protection of public health and safety;
- implementation of environmental protection measures that prevent adverse environmental impact;
- ensuring land use commensurate with surrounding lands;
- ensuring full consultation with the First Nations, so that closure measures are appropriate and supported by the local peoples; and
- progressive reclamation measures implemented during operational activities

The following activities are intended to meet Operating Conditions related to final decommissioning and the following closure objectives:

- Leave the site clean following project completion;
- Remove hazardous materials and petroleum products including items from previous work such as tanks and storage buckets; and
- Re-contour major cuts and side slopes, prevent long-term erosion/slumping and promote successful revegetation of disturbed areas.

The decommissioning goal will be to return the site as close as possible to its pre-program condition. To ensure slope stability and erosion control, the following Best Management Practices will be integrated into the final decommissioning activities:

- Capping the tailings pond with overburden and any reserved topsoil and reseeding with a native species;
- Re-contouring/re-sloping of disturbed areas to a 2.5:1 slope should be achievable in most locations, with contouring aimed at matching natural topography;
- Runoff control measures such as slope drains, cross drains or rock-lined ditches will be employed where feasible (during the project where possible, otherwise during decommissioning activities) to minimize the requirements for more expensive and less effective erosion and sediment control by diverting runoff and decreasing flow velocities;
- Long slopes (>15 m high) will be benched and slopes will be roughened mechanically across contour to discourage rill-and-gully type erosion and to provide growing sites for revegetation;

- Where possible, topsoil from disturbed areas will be stockpiled for use in preparing reclaimed areas for re-establishment of vegetation;
- Where native vegetation is not expected to re-establish naturally, an appropriate native seed mixture and fertilizing regime will be selected and applied;
- Periodic monitoring of the run-off and erosion control measures will be conducted, and if failing in sensitive areas, sediment control measures (silt fences, check dams, straw dikes) may be employed and monitored to prevent sediment transport into streams;
- Sediment control measures will be instituted in areas of high run-off/sediment transport potential to avoid downstream sedimentation (this may include sump/silt trap construction or use of slash windrows and natural vegetation buffers); and
- Systematic approach to decommissioning (progressive reclamation)

In addition to progressive cleanup during each phase of the operations, the following measures will be employed with respect to cleanliness and waste disposal upon the decision to permanently forego further exploration/development at the site being taken:

- All machinery, materials, fuel drums, used hydrocarbons, and metal waste will be removed from the site including items on site previous to the current exploration and mine development programs;
- All non-combustible solid camp waste will be backhauled to a permitted landfill;
- Compacted areas will be loosened and prepared for revegetation measures if necessary;
- Fire hazard will be reduced by burning wood waste in accordance with a valid Burning Permit; and
- Wildlife hazards (barbed wire, glass or plastic debris) will be removed.

A detailed Decommissioning and Reclamation Plan will be submitted within six months of start-up.

2.0 Decommissioning Measures

Site decommissioning measures are addressed in the following sections.

2.1 Open Pit

The berms and diversion channels around the open pit will be left in place to minimize the amount of surface runoff into the pit. The connection with the existing underground working will be sealed with available waste rock and overburden to minimized water infiltration from the open pit through the underground workings.

2.2 Waste Rock Storage Area

Any potentially and identified AML waste rock from the advanced exploration activities will be placed into an engineered waste rock storage area. The waste rock materials will be placed, contoured and covered with a suitable growth medium such that meteoric runoff from the materials will not report to surface. To characterize and assess long term geochemical stability of waste rock piles, sample material from the external waste rock storage areas will be analyzed for standard acid base accounting, as well as metal leachate test work. Monitoring is discussed in

the Waste Rock Management Plan provided in the June 18, 2008 *Additional Info for Yukon Environmental and Socio-Economic Assessment Board* (Appendix I Figure K., and Appendix II). The decommissioning of the Waste Rock Storage Area will adhere to the following closure objectives:

- An overall objective to re-contour major cuts and side slopes, prevent long-term erosion/slumping and promote successful revegetation of disturbed areas;
- Re-contouring/re-sloping of disturbed areas to a 2.5:1 slope should be achievable in most locations, with contouring aimed at matching natural topography;
- Long slopes (>15 m high) will be benched and slopes will be roughened mechanically across contour to discourage rill-and-gully type erosion and to provide growing sites for revegetation;
- Where possible, topsoil from disturbed areas will be stockpiled for use in preparing reclaimed areas for re-establishment of vegetation;
- Where native vegetation is not expected to re-establish naturally, an appropriate native seed mixture and fertilizing regime will be selected and applied;
- Periodic monitoring of the run-off and erosion control measures will be conducted, and if failing in sensitive areas, sediment control measures (silt fences, check dams, straw dikes) may be employed and monitored to prevent sediment transport into streams;
- Sediment control measures will be instituted in areas of high run-off/sediment transport potential to avoid downstream sedimentation (this may include sump/silt trap construction or use of slash windrows and natural vegetation buffers); and
- Systematic approach to decommissioning (progressive reclamation)

2.3 Camp

The camp and all attendant structures and any other foreign materials (tanks, signs, fencing, scrap metal, etc.) will be removed from site for re-use or proper disposal. Any areas suspected of contamination (from hydrocarbon spills or leaks for example) will be tested and treated or removed from site and transported to a permitted treatment facility. The site surface will be recontoured and scarified to facilitate natural revegetation. Large disturbed areas will be reseeded with a native seed mix to facilitate rapid revegetation.

2.4 Mill

The mill and all attendant structures and any other foreign materials (tanks, signs, fencing, scrap metal, etc.) will be removed from site for re-use or proper disposal. The area of the mill will be sampled for metals contamination and any contaminated soils will be excavated and placed in the tailings storage area. Any areas suspected of additional contamination (from hydrocarbon spills or leaks for example) will be tested and treated or removed from site and transported to a permitted treatment facility. The site surface will be recontoured and scarified to facilitate natural revegetation. Large disturbed areas will be reseeded with a native seed mix to facilitate rapid revegetation.

2.5 Tailings Storage Area

The tailings area will be covered with a contoured layer of low porosity, compacted soil. This compacted soil layer will be covered with a suitable growth medium reseeded to allow for vegetation and the establishment of an impermeable cover. This impermeable cover will thus prevent meteoric runoff from infiltrating to the tailings deposit. All berms and diversion channels will be reinforced and retained to continue to minimize the amount of surface water that travels over the tailings storage area. Post-closure monitoring of this area will be undertaken to ensure the success of the closure and decommissioning methods as established in the detailed

Decommissioning and Reclamation Plan that will be submitted to the regulatory authorities within 6 months of start-up.

2.6 Ancillary Facilities (roads, ditches, channels, fuel storage area)

As in other areas an overall objective is to re-contour major cuts and side slopes, prevent long-term erosion/slumping and promote successful revegetation of disturbed areas. All roads will be subject to standard road decommissioning and reclamation measures at closure, including culvert excavation, drainage recontouring, and surface scarification. Regrading/contouring the roads will ensure that runoff sheds off the road surface. The surface of the existing access road and all additional operational roads will be scarified to encourage natural revegetation. Large disturbed areas will be reseeded with a native seed mix to facilitate rapid revegetation. Berms, ditches, and diversions channels will be left in the existing state to continue to divert surface runoff around the open pit, tailings storage area, and waste rock storage area. All ditches will be reinforced with non-AML rocks to scatter the force of channelized surface runoff and minimize the potential for erosion and the movement of sediments.

CMC Metals
SILVER HART PROPERTY

YESAA Executive Committee Submission

APPENDIX P
CONCEPTUAL DECOMMISSIONING AND
RECLAMATION PLAN

November 2009



**CONCEPTUAL DECOMMISSIONING AND
RECLAMATION PLAN**

**SILVER HART PROPERTY
YUKON**

Prepared by:



ACCESS
CONSULTING GROUP

June 2009

1.0 CONCEPTUAL DECOMMISSIONING AND RECLAMATION PLAN

1.1 PHILOSOPHY

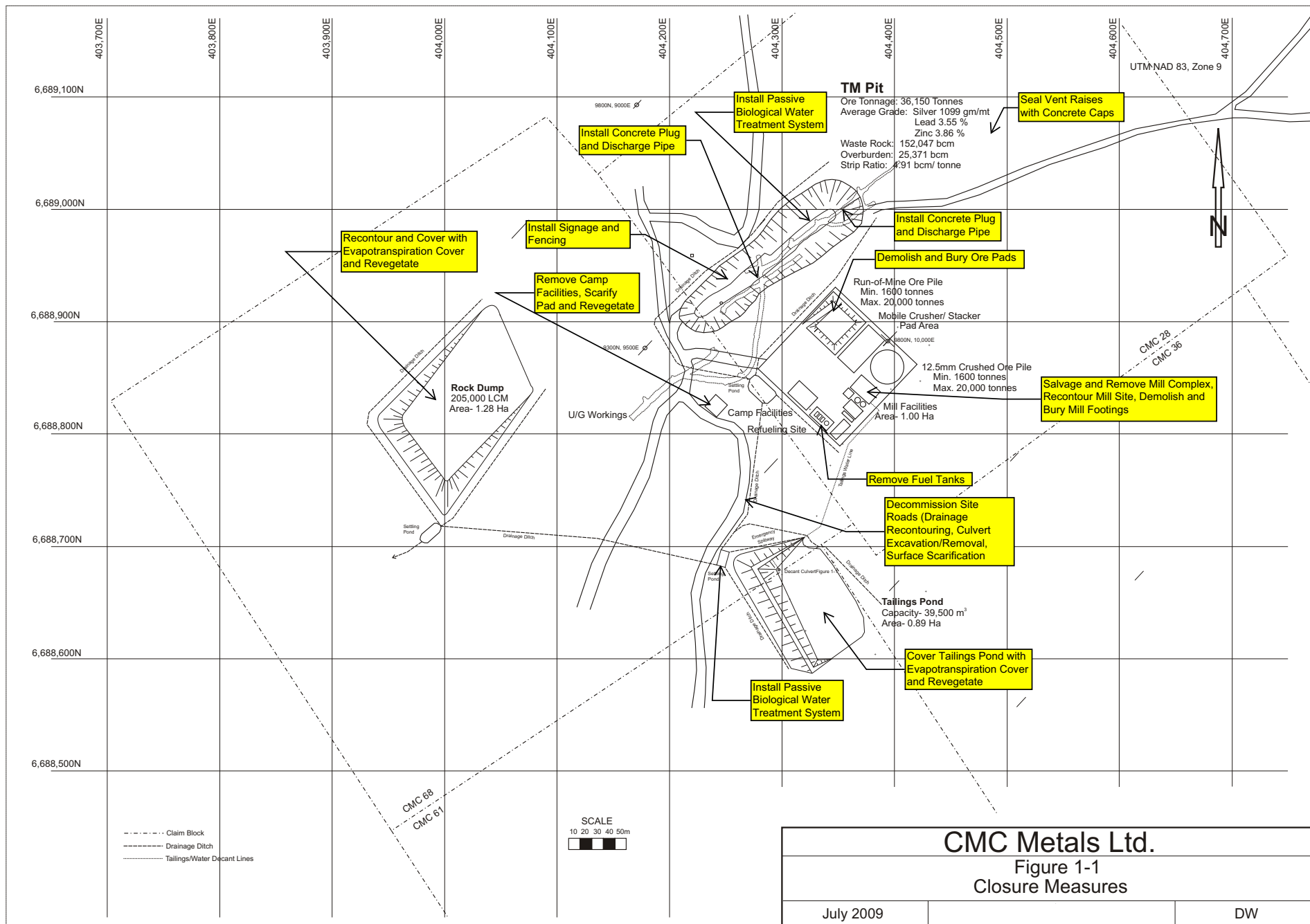
Closure objectives, issues, and options are being developed in a thorough process that involves field investigations, pilot studies and test work to identify appropriate closure options supplemented by public consultation in order to ensure that closure measures with the best potential for success as viewed by all stakeholders are selected for implementation.

Upon cessation of mining activities, closure measures identified herein will be implemented. In keeping with its high standards for environmental and social responsibility, CMC intends to implement environmentally sound and technically feasible decommissioning and reclamation measures.

To ensure that the overall closure philosophy can be achieved, the following objectives were emphasized during the development of this plan:

- protection of public health and safety;
- implementation of environmental protection measures that prevent adverse environmental impact;
- ensuring land use commensurate with surrounding lands;
- ensuring full consultation with the stakeholders including the trappers and outfitters in the area, the Liard First Nation, Ross River Dena First Nation, and the Teslin Tlingit Council so that closure measures are appropriate and supported by the local peoples who are most affected; and
- progressive reclamation measures implemented during development and operations phases.

Please refer to Figure 1-1 for an overview of the closure measures that will be undertaken at the various mine area components associated with the Silver Hart Mine. CMC commits to developing a Detailed Decommissioning and Reclamation Plan (DDRP) once the mine has been constructed, which will then be accurately designed for actual as-built features and structures. However, at a minimum, this plan will include the conceptual measures described in this document.



CMC Metals Ltd.

Figure 1-1
Closure Measures

July 2009

DW

The following activities are intended to meet Operating Conditions related to final decommissioning and the following closure objectives:

- Leave the site clean following project completion;
- Remove hazardous materials and petroleum products including items from previous work such as tanks and storage buckets; and
- Re-contour major cuts and side slopes, prevent long-term erosion/slumping and promote successful revegetation of disturbed areas.

The decommissioning goal will be to return the site as close as possible to its condition prior to the exploration and development program undertaken by CMC Metals Ltd.. To ensure slope stability and erosion control, the following Best Management Practices will be integrated into the final decommissioning activities:

- Capping the tailings pond with overburden and any reserved topsoil and reseeding with a native species;
- Re-contouring/re-sloping of disturbed areas to a 2.5:1 slope should be achievable in most locations except for the open pit, with contouring aimed at matching natural topography when feasible;
- Runoff control measures such as slope drains, cross drains or rock-lined ditches will be employed where feasible (during the project where possible, otherwise during decommissioning activities) to minimize the requirements for more expensive and less effective erosion and sediment control by diverting runoff and decreasing flow velocities;
- Long slopes (>15 m high) will be benched and slopes will be roughened mechanically across contour to discourage rill-and-gully type erosion and to provide growing sites for revegetation;
- Where possible, topsoil from disturbed areas will be stockpiled for use in preparing reclaimed areas for re-establishment of vegetation;
- Where native vegetation is not expected to re-establish naturally, an appropriate native seed mixture and fertilizing regime will be selected and applied;
- Periodic monitoring of the run-off and erosion control measures will be conducted, and if failing in sensitive areas, sediment control measures (silt fences, check dams, straw dikes) may be employed and monitored to prevent sediment transport into streams;

- Sediment control measures will be instituted in areas of high run-off/sediment transport potential to avoid downstream sedimentation (this may include sump/silt trap construction or use of slash windrows and natural vegetation buffers); and
- Systematic approach to decommissioning (progressive reclamation)

A DDRP will be completed and submitted for approval within the first year of production.

1.2 Current Site Conditions

The majority of the footprint of this mine will take place on previously impacted terrain and watersheds. As described in Section 2.1, *Project Description*, The Silver Hart mine site is a previously discovered precious metals deposit that has seen a number of advanced exploration programs since it was initially discovered. In addition to previously impacted areas and historical liabilities, closure measures will involve reclamation of all new, additional impacts. Between 2006 and 2007, CMC engaged in reclamation of past site operators camp facilities, closure of the adit opening and upgrading of access road on the claims.

Procedures and environmental mitigation measures such as the waste rock management plan have been used to assist in development of technically sound assumptions for this conceptual closure plan.

1.3 Revegetation Measures

The closure measures that are expressed herein are based on the general approach used by the mining industry today, which has in recent years developed a great deal of experience in different climates and physical circumstances with revegetation. In general, revegetation measures can be grouped into two categories:

- Linear disturbances (roads, cut lines, power lines, etc.) that by their nature are within close proximity to natural seed sources are best prepared by decompacting the surface but allowing the surrounding flora to volunteer seed for the clearing. This has been shown to promote the most biologically authentic and hence natural performing and revegetated sites. The natural revegetation observed on the historic haul roads at Keno Hill probably took many years to

become revegetated on a strictly volunteer basis because the road surfaces were compacted from truck traffic, and therefore water and seed had difficulty penetrating the surface. Therefore, simple surface preparation, known as scarification/decompacting, has been shown to produce excellent natural revegetation results and will normally suffice for revegetation. In certain circumstances, however, areas of access roads which may require drainage/erosion control will be assisted with reseeding.

- Areal disturbances (such as tailings areas, mill pad clearings, etc.) tend to require assisted revegetation to promote biologically authentic revegetation in a timely manner. Areas which have been compacted (mill pad and other areas subject to truck traffic) will be scarified/decompacted and reseeded. The tailings pond will be covered with 0.5m evapotranspiration soil cover and actively revegetated. Organic duff stockpiled during stripping of the open pit area will be used as available and will encourage natural regrowth. Experience at other sites has shown that simple grass seeding may create large open areas of grass species that have the tendency to out-compete woody stemmed vegetation, thereby creating an unnatural 'pasture' in the boreal forest. Therefore, revegetation of these sites is focused on stabilizing the surface from erosion but allowing natural succession (willows, etc).

1.4 DECOMMISSIONING MEASURES

Conceptual closure measures have been developed to address the following components of the mine:

- Access and Mill Site Roads;
- Open Pit
- TM Waste Rock Pile
- Tailings Pond;
- Tailings Settling Pond Water Treatment Facility
- Underground Mine and Adit;
- Vent Raises;
- Ore Stockpile Areas;
- General Mill and Mine Site;

- Mill building and ancillary facilities;
- Mill Site Camp;
- Fuel Storage Area;
- Post Closure Monitoring and Maintenance.

1.4.1 Access and Haul Roads

The site access road is currently used by the public for recreational and subsistence use to areas before and beyond the mine site and will remain open upon closure. All new roads constructed during the project to and around the mill site will be subject to standard road decommissioning and reclamation measures at closure, including culvert excavation/removal, drainage recontouring, and surface scarification. Regrading/contouring the roads will ensure that runoff sheds off the road surface.

1.4.2 Open Pit

In order to protect public safety and wildlife, signage will be posted in the vicinity of the open pit area and fencing will be installed to restrict access to areas which may pose a physical hazard. As discussed further in Section 1.4.6, the mine pool will be treated either using a carbon source within the flooded mine to reduce soluble zinc loads, or adit discharge will be treated with a passive bio-reactor system installed in the pit floor.

1.4.3 TM Waste Rock Pile

Decommissioning of the TM waste rock pile will be consistent with the closure objectives and Best Management Practices described in Section 7.2 of the *Project Proposal*. Those relevant to the decommissioning of the TM waste rock pile include:

- Re-contouring/re-sloping to a 2.5:1 slope with contouring aimed at matching natural topography;
- Cover with an approximately 0.5m thick low permeability evapotranspirative overburden cover followed by stockpiled topsoil and allow natural revegetation;
- Where native vegetation is not expected to re-establish naturally, an appropriate native seed mixture and fertilizing regime will be selected and applied;
- Periodic monitoring of the run-off and erosion control measures will be conducted, and if failing in sensitive areas, sediment control measures (silt

fences, check dams, straw dikes) may be employed and monitored to prevent sediment transport into streams;

- Systematic approach to decommissioning (progressive reclamation)

Following re-contouring of slopes, the overburden material stripped from the waste rock pile footprint will be available to be pulled back over the side slopes and top of the pile, in order to minimize infiltration and encourage natural revegetation.

1.4.4 Tailings Pond

Closure measures will include covering the stack with an approximately 0.5 meter thick evapotranspiration cover. This cover will be fertilized and seeded to encourage revegetation. This cover will limit water migration through the tailings.

Diversion (interceptor) ditches and collection ditches will be resloped and allowed to naturally revegetate.

If monitoring during operations indicates that treatment will be required for meteoric water after closure, a passive bioreactor treatment system will be constructed at the site of the active lime treatment settling pond at the toe of the dam. This pond can be reconstructed and used for the development of a bioreactor cell (see below).

1.4.5 Tailings Pond Water Treatment Facility

The water treatment system constructed prior to mining and used during the operational phase of the mine will be decommissioned and a passive treatment system will be constructed. The ethanol-based, gravel infiltration gallery bioreactor similar to the one currently in operation and demonstration by Elsa Reclamation and Development Company at the Galkeno 900 adit in the Keno Hill Silver District will be developed at the site. There will be a transition period from active chemical treatment to a passive biological treatment system.

1.4.6 Underground Mine and Adit

Because the existing adit is a positive incline, current flows of approximately 0.5-1.0 L/s will continue to discharge after closure but will discharge into the open pit. Therefore, the closure measures presented for the adit are predicated on a hydraulic plug at the upstream end of the pit to allow controlled discharge from the plug for additional

treatment as necessary. An additional plug will be installed in the downstream edge of the open pit to retain the mine pool. . A detailed hydrologic study of the mined out Silver Hart Mine will be required to determine the final elevation of the static water once plugs has been installed. Mine pool treatment using a carbon source such as molasses may be implemented within the flooded mine to reduce soluble zinc loads. Alternatively, adit discharge treatment may be conducted in a passive bio-reactor system in the floor of the open pit. Additional closure measures will include:

- Removal of any in-adit hydraulic control structures;
- Filing of final plans to appropriate regulatory agencies with the locations of subsurface features;
- Reconstruction of adit decant channels;
- Signage will be posted at the site indicating the presence of an adit and discharge channel;

1.4.7 Vent Raises

Any vent raises will be capped with a pre-stressed concrete cap similar to what is used at mines elsewhere in Canada. This plug will prevent air movement and possible ice plug formation in the adit.

1.4.8 Ore Stockpile Pads

Ore produced during mining will be transported to the coarse ore stockpile. Ore stockpile pads will be lined with a geosynthetic liner, a protective bed, and a 1.0 metre layer of low grade ore. It is expected that at closure the material beneath the ore stockpiles will be processed through the mill to remove any remaining economic values as well as eliminating any potential contaminant of concern from the material. The impermeable liner will be buried once cleaned of all metal contaminants.

1.4.9 General Mill and Mine Site

The following closure measures will be implemented at the mine and mill site:

- Dismantling and removal of foreign materials from the portal location (buildings, tanks, signs, fencing, scrap metal, etc.) for re-use or proper disposal;

- All machinery, materials, fuel drums, used hydrocarbons, and metal waste will be removed from the site including items on site previous to the advanced exploration program;
- Wildlife hazards (barbed wire, glass or plastic debris) will be removed.
- All non-combustible solid camp waste will be backhauled to a public permitted Waste Disposal Facility;
- Recontouring and surface scarification of the site surface and access roads constructed for this program to facilitate natural revegetation;
- Sampling and testing of any settling pond sludge material for contaminants;
- Recontouring of the site settling ponds, including removal of and disposal of pond sludge to the tailings pond, removal of liners and scarification of surface to facilitate natural revegetation;
- On-site land farm remediation of any contaminated soils when practical or remove to a land treatment facility in Watson Lake or Whitehorse;
- Rehandle any temporary ore stockpile back underground to be deposited below rest water level; and
- Loosen and prepare compacted areas for revegetation measures if necessary.

1.4.10 Mill Building and Ancillary Facilities

The entire mill complex is modularized and will be dismantled and removed from the site. Concrete footings will be demolished and buried *in situ*.

The pad area will have its embankment shoulders re-graded to prevent water ponding, and the surface will be scarified and reseeded to promote vegetative cover.

1.4.11 Mill Site Camp

Reclamation of the 25 person camp facilities will involve removal and salvage of the bunkhouse units, dry, kitchen and dining facilities, recreation room and office/First Aid unit. The septic system will be closed off. The septic cistern will be removed from the site or backfilled with a sand slurry. The grey water sump will be filled in and revegetated.

1.4.12 Fuel Storage Area

All diesel, gas and propane fuel tanks will be removed from the site. If contaminated soils exist, they will be land farm remediation treated onsite.

1.5 Post Closure Monitoring and Maintenance

Post closure monitoring activity will be undertaken to determine the ongoing and continued success of closure measures in meeting the closure objectives. The adaptive management approach will be utilized to determine if criteria triggers for remedial action have been triggered, and then the success of the remedial measures will need to be incorporated into the monitoring and surveillance regimen.

At the time of closure, monitoring would continue to be undertaken by an Environmental Monitor. Monitoring will consist of the following areas of attention:

- Water quality sampling at monitoring stations identified in the Type B water licence;
- Monitoring of road bank and drainage along on claim access road;
- Physical inspection of tailings area;
- Physical inspection of the passive water treatment system;
- Physical stability of all waste rock storage areas;
- Success of revegetation measures where employed (principally mill pad area);
- Integrity of covers (cover on TM Waste Rock Storage area, and Tailings Pond); and
- Physical inspection of impacted earthen surfaces for evidence of erosion, gully, sediment transport to water courses.

The proposed program includes continued water sampling at the sites that will be provided for in the Type B Water Use Licence. At the time of closure, monitoring would continue to be undertaken by an Environmental Monitor.

1.6 Reclamation Security and Costing

Once final security has been assessed for the Silver Hart Mine, bond will be set by Yukon Government as necessary to cover the cost of closure measures for mine related infrastructure such as the mill site, tailings facility and waste rock storage areas.

Reclamation costs for each of the components will be based on costs derived from experience in similar situations. Closure costs for these sites will involve discussions with mine contractors and management to come up with realistic third party costs to apply to unit costs and equipment hours. At the above noted sites, detailed closure costs will be audited by an independent engineer on behalf of Yukon Government and used to review closure security requirements.

CMC Metals
SILVER HART PROPERTY

YESAA Executive Committee Submission

APPENDIX Q
STREAM FLOW METERING RESULTS

November 2009

CMC-01 September 22, 2006									
Bank	Distance	Depth of Channel	Depth of Measurement	Revs	Time (s)	Velocity	Average Width	Area	Q
LHB	3.91								
	4.00	0.04	0.02	0	30	0.014	1.045	0.0418	0.0005852
	6.00	0.24	0.14	1	25	0.02552	2	0.48	0.0122496
	8.00	0.48	0.29	10	35	0.096285714	2	0.96	0.092434286
	10.00	0.64	0.38	20	23	0.264434783	2	1.28	0.338476522
	12.00	0.78	0.47	20	16	0.374	2	1.56	0.58344
	14.00	0.86	0.52	30	20	0.446	2	1.72	0.76712
	16.00	0.86	0.52	30	22	0.406727273	2	1.72	0.699570909
	18.00	0.56	0.34	20	26	0.235538462	2	1.12	0.263803077
	20.00	0.35	0.21	10	19	0.165578947	2	0.7	0.115905263
	22.00	0.19	0.11	10	20	0.158	2	0.38	0.06004
	24.00	0.28	0.17	10	27	0.120666667	2	0.56	0.067573333
RHB	26.00								
Total Discharge =									3.00119819 m ³ /sec

CMC-02 September 22, 2006									
Bank	Distance	Depth of Channel	Depth of Measurement	Revs	Time (s)	Velocity	Average Width	Area	Q
LHB	0.78								
	0.85	0.04	0.02	0	30	0.014	0.065	0.0026	0.0000364
	0.91	0.05	0.03	0	30	0.014	0.06	0.003	0.000042
	0.97	0.05	0.03	0	30	0.014	0.06	0.003	0.000042
	1.03	0.04	0.02	0	30	0.014	0.06	0.0024	0.0000336
	1.09	0.06	0.04	20	28	0.219714286	0.06	0.0036	0.000790971
	1.15	0.07	0.04	10	12	0.254	0.075	0.00525	0.0013335
	1.24	0.07	0.04	10	13	0.235538462	0.07	0.0049	0.001154138
	1.29	0.08	0.05	5	19	0.089789474	0.055	0.0044	0.000395074
	1.35	0.07	0.04	5	32	0.059	0.06	0.0042	0.0002478
	1.41	0.07	0.04	10	44	0.079454545	0.06	0.0042	0.000333709
	1.47	0.06	0.04	0	30	0.014	0.06	0.0036	0.0000504
	1.53	0.06	0.04	0	30	0.014	0.09	0.0054	0.0000756
RHB	1.65								
Total Discharge =									0.004535193 m ³ /sec

CMC-03 September 22, 2006									
Bank	Distance	Depth of Channel	Depth of Measurement	Revs	Time (s)	Velocity	Average Width	Area	Q
RHB	0.98								
	1.03	0.08	0.05	5	37	0.052918919	0.18	0.0144	0.000762032
	1.34	0.16	0.10	20	17	0.352823529	0.235	0.0376	0.013266165
	1.50	0.18	0.11	10	23	0.139217391	0.18	0.0324	0.004510643
	1.70	0.19	0.11	10	25	0.1292	0.25	0.0475	0.006137
	2.00	0.19	0.11	10	50	0.0716	0.25	0.0475	0.003401
	2.20	0.2	0.12	5	30	0.062	0.2	0.04	0.00248
	2.40	0.2	0.12	10	22	0.144909091	0.2	0.04	0.005796364
	2.60	0.12	0.07	17	20	0.2588	0.2	0.024	0.0062112
	2.80	0.13	0.08	10	17	0.183411765	0.2	0.026	0.004768706
	3.00	0.11	0.07	0	30	0.014	0.2	0.022	0.000308
	3.20	0.08	0.05	2	36	0.03	0.1	0.008	0.00024
LHB	3.20								
Total Discharge =									0.04788111 m ³ /sec

CMC-03A September 22, 2006

Bank	Distance	Depth of Channel	Depth of Measurement	Revs	Time (s)	Velocity	Average Width	Area	Q
LHB	0.62								
	0.62	0.06	0.04	0	30	0.014	0.04	0.0024	0.0000336
	0.70	0.07	0.04	10	50.19	0.071381949	0.09	0.0063	0.000449706
	0.80	0.1	0.06	10	23.06	0.138891587	0.1	0.01	0.001388916
	0.90	0.13	0.08	10	23.92	0.134401338	0.1	0.013	0.001747217
	1.00	0.09	0.05	10	26.54	0.122515448	0.1	0.009	0.001102639
	1.10	0.09	0.05	10	29	0.113310345	0.1	0.009	0.001019793
	1.20	0.06	0.04	10	34	0.098705882	0.1	0.006	0.000592235
	1.30	0.09	0.05	10	14	0.219714286	0.1	0.009	0.001977429
	1.40	0.1	0.06	20	34	0.183411765	0.1	0.01	0.001834118
	1.50	0.1	0.06	10	24	0.134	0.1	0.01	0.00134
	1.60	0.08	0.05	5	30	0.062	0.1	0.008	0.000496
	1.70	0.05	0.03	5	23	0.076608696	0.085	0.00425	0.000325587
RHB	1.77								
Total Discharge =									0.01230724 m ³ /sec

CMC-04 September 22, 2006

Bank	Distance	Depth of Channel	Depth of Measurement	Revs	Time (s)	Velocity	Average Width	Area	Q
RHB	6.04								
	6.50	0.06	0.04	0	30	0.014	1.48	0.0888	0.0012432
	9.00	0.41	0.25	21	30.75	0.210682927	2.5	1.025	0.21595
	11.50	0.27	0.16	11	31.05	0.116028986	2.5	0.675	0.078319565
	14.00	0.33	0.20	20	31.47	0.197031459	2.5	0.825	0.162550953
	16.50	0.28	0.17	10	34.26	0.098063047	2.5	0.7	0.068644133
	19.00	0.35	0.21	27	31.27	0.262672849	2.5	0.875	0.229838743
	21.50	0.18	0.11	41	30.61	0.399756289	2.5	0.45	0.17989033
	24.00	0.46	0.28	40	34.94	0.343708071	2.5	1.15	0.395264282
	26.50	0.48	0.29	40	32.6	0.367374233	2.5	1.2	0.44084908
	29.00	0.5	0.30	30	33.79	0.269696952	2.5	1.25	0.33712119
	31.50	0.46	0.28	30	31.52	0.288111675	2.5	1.15	0.331328426
	34.00	0.28	0.17	40	31.42	0.380645449	1.9	0.532	0.202503379
	35.30	0.38	0.23	25	32.38	0.236359481	1.25	0.475	0.112270754
	36.50	0.24	0.14	6	31.62	0.068648956	0.95	0.228	0.015651962
LHB	37.40	0.18	0.11	20	38.64	0.163068323	0.45	0.081	0.013208534
Total Discharge =									2.784634531 m ³ /sec

CMC-05 September , 2006									
West Channel									
Bank	Distance (m)	Depth of Channel	Depth of Measurement	Revs	Time (s)	Velocity	Average Width	Area	Q
LHB	2.22								
	3.00	0.32	0.19	30	30	0.6864	1.14	0.3648	0.25039872
	4.50	0.48	0.29	70	30	1.5936	1.5	0.72	1.147392
	6.00	0.56	0.34	52	30	1.18536	1.5	0.84	0.9957024
	7.50	0.56	0.34	74	21	2.4036	1.5	0.84	2.019024
	9.00	0.5	0.30	70	35	1.3668	1.5	0.75	1.0251
	10.50	0.5	0.30	60	30	1.3668	1.5	0.75	1.0251
	12.00	0.4	0.24	48	30	1.09464	1.5	0.6	0.656784
	13.50	0.46	0.28	29	30	0.66372	1.5	0.69	0.4579668
	15.00	0.24	0.14	12	30	0.27816	1.35	0.324	0.09012384
	16.20	0.1	0.06	15	30	0.3462	1.25	0.125	0.043275
	17.50	0.1	0.06	0	30	0.006	0.7	0.07	0.00042
	17.60	0.08	0.05	0	30	0.006	0.75	0.06	0.00036
	19.00	0.18	0.11	0	30	0.006	0.7	0.126	0.000756
RHB	19.00								
East Channel									
Bank	Distance (m)	Depth of Channel	Depth of Measurement	Revs	Time (s)	Velocity	Average Width	Area	Q
LHB	0.60								
	0.90	0.14	0.08	10	34	0.206117647	0.3	0.042	0.008656941
	1.20	0.15	0.09	10	31	0.225483871	0.3	0.045	0.010146774
	1.50	0.15	0.09	6	35	0.12264	0.3	0.045	0.0055188
	1.80	0.16	0.10	3	30	0.07404	0.3	0.048	0.00355392
	2.10	0.1	0.06	7	30	0.16476	0.3	0.03	0.0049428
	2.40	0.12	0.07	10	32	0.218625	0.3	0.036	0.0078705
	2.70	0.14	0.08	5	30	0.1194	0.3	0.042	0.0050148
	3.00	0.16	0.10	6	30	0.14208	0.3	0.048	0.00681984
	3.30	0.1	0.06	5	34	0.106058824	0.3	0.03	0.003181765
	3.60	0.1	0.06	0	30	0.006	0.3	0.03	0.00018
	3.90	0.06	0.04	0	30	0.006	0.3	0.018	0.000108
	4.20	0.06	0.04	5	35	0.1032	0.25	0.015	0.001548
	4.40	0.06	0.04	4	31	0.093793548	0.2	0.012	0.001125523
RHB	4.60								
Total Discharge =									7.7711 m ³ /sec
CMC-06 September 22, 2006									
Bank	Distance	Depth of Channel	Depth of Measurement	Revs	Time (s)	Velocity	Average Width	Area	Q
LHB	3.60								
	4.20	0.16	0.10	1	28	0.024285714	0.6	0.096	0.002331429
	4.80	0.38	0.23	5	30	0.062	0.6	0.228	0.014136
	5.40	0.54	0.32	7	30	0.0812	0.6	0.324	0.0263088
	6.00	0.6	0.36	6	30	0.0716	0.6	0.36	0.025776
	6.60	0.5	0.30	4	31	0.05116129	0.6	0.3	0.015348387
	7.20	0.62	0.37	11	31	0.116193548	0.6	0.372	0.043224
	7.80	0.7	0.42	30	30	0.302	0.6	0.42	0.12684
	8.40	0.58	0.35	33	30	0.3308	0.6	0.348	0.1151184
	9.00	0.7	0.42	18	30	0.1868	0.6	0.42	0.078456
	9.60	0.58	0.35	9	31	0.097612903	0.6	0.348	0.03396929
	10.20	0.49	0.29	2	35	0.030457143	0.6	0.294	0.0089544
	10.80	0.16	0.10	2	36	0.03	0.4	0.064	0.00192
RHB	11.00								
Total Discharge =									0.492382706 m ³ /sec

CMC-07 September 21, 2006									
Bank	Distance	Depth of Channel	Depth of Measurement	Revs	Time (s)	Velocity	Average Width	Area	Q
LHB	3.20								
	3.20	0.14	0.08	0	30	0.006	0.15	0.021	0.000126
	3.50	0.12	0.07	5	24	0.14775	0.8	0.096	0.014184
	4.80	0.11	0.07	5	21.3	0.16571831	1	0.11	0.018229014
	5.50	0.1	0.06	1	29	0.029462069	0.8	0.08	0.002356966
	6.40	0.1	0.06	5	37.9	0.095762533	2	0.2	0.019152507
	9.50	0.14	0.08	5	34.3	0.105183673	2.05	0.287	0.030187714
	10.50	0.2	0.12	10	27.7	0.251631769	1	0.2	0.050326354
	11.50	0.27	0.16	10	28	0.249	1	0.27	0.06723
	12.50	0.28	0.17	10	23	0.301826087	1	0.28	0.084511304
	13.50	0.3	0.18	5	40	0.09105	1	0.3	0.027315
	14.50	0.07	0.04	10	72	0.1005	0.75	0.0525	0.00527625
	15.00	0.07	0.04	0	27	0.006	1.435	0.10045	0.0006027
RHB	17.37								
Total Discharge =									0.319497809 m ³ /sec

CMC-10 September 22, 2006									
Bank	Distance	Depth of Channel	Depth of Measurement	Revs	Time (s)	Velocity	Average Width	Area	Q
LBH	0.93								
	1.2	0.08	0.05	10	20	0.3462	0.285	0.0228	0.00789336
	1.5	0.15	0.09	10	24	0.2895	0.3	0.045	0.0130275
	1.8	0.2	0.12	10	18	0.384	0.3	0.06	0.02304
	2.1	0.18	0.11	10	21	0.33	0.3	0.054	0.01782
	2.4	0.19	0.11	20	18	0.762	0.3	0.057	0.043434
	2.7	0.15	0.09	20	24	0.573	0.3	0.045	0.025785
	3	0.12	0.07	20	33	0.418363636	0.3	0.036	0.015061091
	3.3	0.08	0.05	20	31	0.444967742	0.3	0.024	0.010679226
	3.6	0.08	0.05	20	46	0.301826087	0.3	0.024	0.007243826
	3.9	0.03	0.02	10	48	0.14775	0.3	0.009	0.00132975
	4.2	0.01	0.01	0	30	0.006	0.3	0.003	0.000018
RBH	4.5								
Total Discharge =									0.165331753 m ³ /sec

CMC-11 September 21, 2006									
no flows taken due to low flow volumes									

CMC-M1 September 23, 2006									
Bank	Distance	Depth of Channel	Depth of Measurement	Revs	Time (s)	Velocity	Average Width	Area	Q
LHB	0.35								
	0.35	0.16	0.10	5	33.7	0.106949555	0.325	0.052	0.005561377
	1.00	0.29	0.17	10	39.2	0.179571429	0.525	0.15225	0.02733975
	1.40	0.27	0.16	20	26.3	0.523414449	0.4	0.108	0.05652876
	1.80	0.2	0.12	10	22.4	0.30975	0.4	0.08	0.02478
	2.20	0.22	0.13	10	24.5	0.283714286	0.4	0.088	0.024966857
	2.60	0.17	0.10	10	31.6	0.221316456	0.4	0.068	0.015049519
	3.00	0.12	0.07	10	37.9	0.185525066	0.475	0.057	0.010574929
	3.55	0.24	0.14	10	16.9	0.40860355	0.5	0.12	0.049032426
	4.00	0.16	0.10	10	37.9	0.185525066	0.475	0.076	0.014099905
	4.50	0.1	0.06	10	18.1	0.381911602	0.5	0.05	0.01909558
	5.00	0.17	0.10	3	30.9	0.072058252	0.5	0.085	0.006124951
	5.50	0.14	0.08	5	23.6	0.150152542	0.34	0.0476	0.007147261
	5.68	0.05	0.03	0	30	0.006	0.09	0.0045	0.000027
RHB	5.68								
Total Discharge =									0.260328316 m ³ /sec

CMC-M2 September 21, 2006

Bank	Distance	Depth of Channel	Depth of Measurement	Revs	Time (s)	Velocity	Average Width	Area	Q
LHB	1.59								
	1.59	0.24	0.14	0	30	0.006	0.055	0.0132	7.92E-05
	1.70	0.24	0.14	2	23.8	0.063176471	0.205	0.0492	0.003108282
	2.00	0.31	0.19	4	60.4	0.051059603	0.4	0.124	0.006331391
	2.50	0.25	0.15	20	27.1	0.508140221	0.5	0.125	0.063517528
	3.00	0.29	0.17	10	30.8	0.226909091	0.5	0.145	0.032901818
	3.50	0.26	0.16	5	53.3	0.069827392	0.5	0.13	0.009077561
	4.00	0.42	0.25	20	24.5	0.561428571	0.5	0.21	0.1179
	4.50	0.3	0.18	10	35.7	0.196588235	0.45	0.135	0.026539412
	4.90	0.22	0.13	10	36.7	0.191395095	0.5	0.11	0.02105346
	5.50	0.2	0.12	10	29.6	0.235864865	0.55	0.11	0.025945135
	6.00	0.22	0.13	10	27.5	0.253418182	0.5	0.11	0.027876
	6.50	0.14	0.08	2	29.7	0.051818182	0.5	0.07	0.003627273
	7.00	0.18	0.11	0	30	0.006	0.395	0.0711	0.0004266
	7.29	0.18	0.11	0	30	0.006	0.145	0.0261	0.0001566
RHB	7.29								
Total Discharge =									0.33854026 m ³ /sec

CMC-OC2 September 23, 2006

Bank	Distance	Depth of Channel	Depth of Measurement	Revs	Time (s)	Velocity	Average Width	Area	Q
LHB	6.70								
	6.70	0.1	0.06	0	30	0.006	0.15	0.015	0.00009
	7.00	0.11	0.07	0	30	0.006	0.4	0.044	0.000264
	7.50	0.17	0.10	5	38	0.095526316	0.5	0.085	0.008119737
	8.00	0.3	0.18	10	40	0.1761	0.5	0.15	0.026415
	8.50	0.49	0.29	10	32.9	0.212808511	0.5	0.245	0.052138085
	9.00	0.66	0.40	10	34.4	0.203790698	0.5	0.33	0.06725093
	9.50	0.69	0.41	10	31.3	0.223380192	0.5	0.345	0.077066166
	10.00	0.7	0.42	10	32	0.218625	0.5	0.35	0.07651875
	10.50	0.66	0.40	10	32.4	0.216	0.5	0.33	0.07128
	11.00	0.68	0.41	10	36.6	0.191901639	0.5	0.34	0.065246557
	11.50	0.59	0.35	10	42	0.168	0.5	0.295	0.04956
	12.00	0.54	0.32	5	29.2	0.122506849	0.585	0.3159	0.038699914
	12.67	0.22	0.13	4	44.5	0.067159551	0.59	0.1298	0.00871731
	13.18	0.12	0.07	2	38.2	0.041623037	0.255	0.0306	0.001273665
RHB	13.18								
Total Discharge =									0.542640114 m ³ /sec

CMC-OC3 September 23, 2006

Bank	Distance	Depth of Channel	Depth of Measurement	Revs	Time (s)	Velocity	Average Width	Area	Q
LHB	3.75								
	3.75	0.04	0.02	0	30	0.006	0.625	0.025	0.00015
	5.00	0.08	0.05	15	34.1	0.305296188	1.225	0.098	0.029919026
	6.20	0.14	0.08	10	20.1	0.344507463	1.2	0.168	0.057877254
	7.40	0.2	0.12	5	31.5	0.114	1.1	0.22	0.02508
	8.40	0.1	0.06	0	30	0.006	0.8	0.08	0.00048
	9.00	0.06	0.04	0	30	0.006	1.025	0.0615	0.000369
	10.45	0.1	0.06	0	30	0.006	1.05	0.105	0.00063
	11.10	0.09	0.05	5	43.9	0.083494305	0.925	0.08325	0.006950901
	12.30	0.12	0.07	5	27.2	0.131073529	1.2	0.144	0.018874588
	13.50	0.18	0.11	20	34.7	0.398161383	1.2	0.216	0.086002859
	14.70	0.28	0.17	20	26.8	0.513761194	1.2	0.336	0.172623761
	15.90	0.3	0.18	20	24.3	0.566	1.2	0.36	0.20376
	17.10	0.36	0.22	20	29.4	0.468857143	0.9	0.324	0.151909714
	17.70	0.48	0.29	20	25.3	0.543865613	1.75	0.84	0.456847115
	18.40	0.04	0.02	0	30	0.006	-8.85	-0.354	-0.002124
RHB	20.60								
Total Discharge =									1.211474218 m ³ /sec

CMC-01 August 21, 2007						
Bank	Distance (m)	Depth of Channel (m)	Velocity (m/s)	Average Width (m)	Area (m ²)	Q (m ³ /s)
LHB	2.00					
	4.00	0.18	0.35	2	0.36	0.126
	6.00	0.325	0.26	2	0.65	0.169
	8.00	0.415	0.51	2	0.83	0.4233
	10.00	0.42	0.63	2	0.84	0.5292
	12.00	0.435	0.7	2	0.87	0.609
	14.00	0.49	0.78	2	0.98	0.7644
	16.00	0.61	0.66	2	1.22	0.8052
	18.00	0.665	0.68	2	1.33	0.9044
	20.00	0.56	0.65	2	1.12	0.728
	22.00	0.59	0.65	2	1.18	0.767
	24.00	0.5	0.75	2	1	0.75
	26.00	0.43	1.06	2	0.86	0.9116
	28.00	0.44	0.83	2	0.88	0.7304
	30.00	0.51	0.85	2	1.02	0.867
	32.00	0.36	0.72	2	0.72	0.5184
	34.00	0.36	0.89	2	0.72	0.6408
	36.00	0.29	0.88	2	0.58	0.5104
RHB	38.00					
Total Discharge =				10.7541	m ³ /sec	

CMC-02 Removed from sampling program

CMC-03 August 21, 2007						
Bank	Distance (m)	Depth of Channel (m)	Velocity (m/s)	Average Width (m)	Area (m ²)	Q (m ³ /s)
RHB	0.43					
	0.53	0.15	0.59	0.15	0.0225	0.013275
	0.73	0.135	0.71	0.2	0.027	0.01917
	0.93	0.155	0.64	0.2	0.031	0.01984
	1.13	0.18	0.41	0.2	0.036	0.01476
	1.33	0.12	0.38	0.2	0.024	0.00912
	1.53	0.09	0.19	0.2	0.018	0.00342
	1.73	0.08	0.28	0.2	0.016	0.00448
	1.93	0.1	0.28	0.2	0.02	0.0056
	2.13	0.07	0.16	0.2	0.014	0.00224
	2.33	0.075	0.13	0.2	0.015	0.00195
	2.53	0.12	0.38	0.2	0.024	0.00912
	2.73	0.125	0.18	0.2	0.025	0.0045
	2.93	0.09	0.06	0.16	0.0144	0.000864
LHB	3.05					
Total Discharge =				0.108339	m ³ /sec	

CMC-03A August 21, 2007						
Bank	Distance (m)	Depth of Channel (m)	Velocity (m/s)	Average Width (m)	Area (m ²)	Q (m ³ /s)
LHB	0.65					
	0.70	0.16	0.19	0.05	0.008	0.00152
	0.75	0.165	0.25	0.05	0.00825	0.0020625
	0.80	0.16	0.33	0.05	0.008	0.00264
	0.85	0.16	0.33	0.05	0.008	0.00264
	0.90	0.145	0.28	0.05	0.00725	0.00203
	0.95	0.15	0.28	0.075	0.01125	0.00315
	1.05	0.2	0.2	0.1	0.02	0.004
	1.15	0.19	0.22	0.1	0.019	0.00418
	1.25	0.16	0.18	0.1	0.016	0.00288
	1.35	0.15	0.15	0.1	0.015	0.00225
	1.45	0.18	0.06	0.1	0.018	0.00108
	1.55	0.18	0.13	0.1	0.018	0.00234
	1.65	0.16	0.1	0.1	0.016	0.0016
	1.75	0.1	0.04	0.1	0.01	0.0004
RHB	1.85					
Total Discharge =				0.0327725	m ³ /sec	

CMC-04 August 21, 2007

Right Channel

Bank	Distance (m)	Depth of Channel (m)	Velocity (m/s)	Average Width (m)	Area (m ²)	Q (m ³ /s)
LHB	0.00					
	0.25	0.29	0.29	0.5	0.145	0.04205
	1.00	0.68	0.42	0.875	0.595	0.2499
	2.00	0.76	0.65	1	0.76	0.494
	3.00	0.77	0.5	1	0.77	0.385
	4.00	0.68	0.62	1	0.68	0.4216
	5.00	0.54	0.71	1	0.54	0.3834
	6.00	0.54	0.66	1	0.54	0.3564
	7.00	0.54	0.57	1	0.54	0.3078
	8.00	0.4	0.53	1	0.4	0.212
	9.00	0.33	0.7	1	0.33	0.231
	10.00	0.28	0.71	1	0.28	0.1988
	11.00	0.265	0.43	1	0.265	0.11395
	12.00	0.2	0.42	1	0.2	0.084
	13.00	0.21	0.24	1	0.21	0.0504
	14.00	0.145	0.28	1	0.145	0.0406
	15.00	0.13	0	1	0.13	0
	16.00	0.15	0.11	1	0.15	0.0165
	17.00	0.15	0	0.9	0.135	0

RHB 17.80 Channel Discharge = 3.5874 m³/sec

Left Channel

Bank	Distance (m)	Depth of Channel (m)	Velocity (m/s)	Average Width (m)	Area (m ²)	Q (m ³ /s)
LHB	5.30					
	6.00	0.1	0.16	0.85	0.085	0.0136
	7.00	0.2	0.41	1	0.2	0.082
	8.00	0.29	0.6	1	0.29	0.174
	9.00	0.21	1.03	1	0.21	0.2163
	10.00	0.33	0.35	1	0.33	0.1155
	11.00	0.34	1.12	1	0.34	0.3808
	12.00	0.38	1.13	1	0.38	0.4294
	13.00	0.28	1.25	1	0.28	0.35
	14.00	0.52	0.95	1	0.52	0.494
	15.00	0.32	1.33	1	0.32	0.4256
	16.00	0.59	0.98	1	0.59	0.5782
	17.00	0.55	0.91	1	0.55	0.5005
	18.00	0.55	1.07	1	0.55	0.5885
	19.00	0.34	1.22	1	0.34	0.4148
	20.00	0.55	0.84	1	0.55	0.462
	21.00	0.52	1.01	1	0.52	0.5252
	22.00	0.4	1.05	1	0.4	0.42
	23.00	0.48	0.91	1	0.48	0.4368
	24.00	0.37	0.67	1	0.37	0.2479
	25.00	0.31	0.61	1	0.31	0.1891
	26.00	0.135	0.69	1	0.135	0.09315
	27.00	0.2	0.86	1	0.2	0.172
	28.00	0.2	0.62	1	0.2	0.124
	29.00	0.25	0.64	1	0.25	0.16

RHB 30.00 Channel Discharge = 7.59335 m³/sec

Total Discharge = 11.18075 m³/sec

CMC-05 No Measurements taken, water level dangerously high

CMC-06 August 21, 2007						
Bank	Distance (m)	Depth of Channel (m)	Velocity (m/s)	Average Width (m)	Area (m ²)	Q (m ³ /s)
RHB	0.50					
	1.00	0.16	0.11	0.75	0.12	0.0132
	2.00	0.24	0.26	1	0.24	0.0624
	3.00	0.3	0.41	1	0.3	0.123
	4.00	0.27	0.63	1	0.27	0.1701
	5.00	0.33	0.75	1	0.33	0.2475
	6.00	0.32	0.47	1	0.32	0.1504
	7.00	0.3	0.65	0.75	0.225	0.14625
	7.50	0.295	0.59	0.5	0.1475	0.087025
	8.00	0.33	0.63	0.5	0.165	0.10395
	8.50	0.31	0.61	0.5	0.155	0.09455
	9.00	0.36	0.62	-0.5	-0.18	-0.1116
	7.50	0.355	0.67	0.5	0.1775	0.118925
	10.00	0.36	0.55	1.75	0.63	0.3465
	11.00	0.25	0.74	1	0.25	0.185
	12.00	0.165	0.57	0.75	0.12375	0.0705375
	12.50	0.06	0.43	1	0.06	0.0258
LHB	13.00					
Total Discharge =				1.8335	m ³ /sec	

CMC-07 August 21, 2007						
Bank	Distance (m)	Depth of Channel (m)	Velocity (m/s)	Average Width (m)	Area (m ²)	Q (m ³ /s)
LHB	0.00					
	1.00	0.09	0.42	0.75	0.0675	0.02835
	1.50	0.13	0.34	0.5	0.065	0.0221
	2.00	0.16	0.42	0.5	0.08	0.0336
	2.50	0.16	0.08	0.5	0.08	0.0064
	3.00	0.17	0.56	0.5	0.085	0.0476
	3.50	0.21	0.56	0.5	0.105	0.0588
	4.00	0.24	0.33	0.5	0.12	0.0396
	4.50	0.18	0.51	0.5	0.09	0.0459
	5.00	0.22	0.58	0.5	0.11	0.0638
	5.50	0.23	0.54	0.5	0.115	0.0621
	6.00	0.14	0.47	0.75	0.105	0.04935
	7.00	0.08	0.26	1	0.08	0.0208
	8.00	0.06	0	1	0.06	0
	9.00	0.09	0.07	0.75	0.0675	0.004725
	9.50	0.1	0.24	0.5	0.05	0.012
	10.00	0.85	0.48	0.75	0.6375	0.306
	11.00	0.11	0.29	1	0.11	0.0319
	12.00	0.05	0.22	0.8	0.04	0.0088
RHB	12.60		0.24			
Total Discharge =				0.841825	m ³ /sec	

CMC-10 August 21, 2007						
Bank	Distance (m)	Depth of Channel (m)	Velocity (m/s)	Average Width (m)	Area (m ²)	Q (m ³ /s)
RHB	0.35					
	0.55	0.17	0.35	0.2	0.034	0.0119
	0.75	0.2	0.38	0.2	0.04	0.0152
	0.95	0.235	0.57	0.2	0.047	0.02679
	1.15	0.225	0.49	0.2	0.045	0.02205
	1.35	0.22	0.41	0.2	0.044	0.01804
	1.55	0.19	0.48	0.2	0.038	0.01824
	1.75	0.2	0.26	0.2	0.04	0.0104
	1.95	0.17	0.51	0.2	0.034	0.01734
	2.15	0.18	0.55	0.2	0.036	0.0198
	2.35	0.15	0.53	0.2	0.03	0.0159
	2.55	0.165	0.45	0.2	0.033	0.01485
	2.75	0.13	0.39	0.2	0.026	0.01014
	2.95	0.16	0.03	0.2	0.032	0.00096
	3.15	0.17	0.26	0.2	0.034	0.00884
	3.35	0.09	0.19	0.2	0.018	0.00342
	3.55	0.08	0.11	0.2	0.016	0.00176
LHB	3.75					
Total Discharge =				0.21563	m ³ /sec	

CMC-11 - Bucket Flows August 21, 2007

Time (s)	Volume (L)	Q (m ³ /s)
7	7	1.0000
7.5	7	0.9333
8	8	1.0000
8.5	8	0.9412
7	7.5	1.0714
	average	0.9892

CMC-M1 August 21, 2007

Bank	Distance	Depth of Channel	Velocity	Average Width	Area	Q
LHB	1.00					
	1.50	0.135	0	0.375	0.050625	0
	1.75	0.2	0	0.25	0.05	0
	2.00	0.19	0.15	0.175	0.03325	0.0049875
	2.10	0.2	0.45	0.1	0.02	0.009
	2.20	0.24	0.38	0.1	0.024	0.00912
	2.30	0.21	0.27	0.1	0.021	0.00567
	2.40	0.24	0.27	0.1	0.024	0.00648
	2.50	0.2	0.34	0.1	0.02	0.0068
	2.60	0.2	0.37	0.1	0.02	0.0074
	2.70	0.195	0.38	0.1	0.0195	0.00741
	2.80	0.19	0.21	0.1	0.019	0.00399
	2.90	0.155	0.25	0.1	0.0155	0.003875
	3.00	0.16	0.28	0.1	0.016	0.00448
	3.10	0.09	0.15	0.1	0.009	0.00135
	3.20	0.2	0.14	0.1	0.02	0.0028
	3.30	0.21	0.12	0.1	0.021	0.00252
	3.40	0.22	0.14	0.1	0.022	0.00308
	3.50	0.235	0.09	0.1	0.0235	0.002115
	3.60	0.21	0.07	0.1	0.021	0.00147
	3.70	0.24	0.1	0.1	0.024	0.0024
	3.80	0.21	0.09	0.1	0.021	0.00189
	3.90	0.2	0.11	0.1	0.02	0.0022
	4.00	0.195	0.12	0.1	0.0195	0.00234
	4.10	0.18	0	0.1	0.018	0
	4.20	0.165	0.03	0.1	0.0165	0.000495
	4.30	0.14	0.01	0.1	0.014	0.00014
RHB	4.40					
Total Discharge =						0.0920125 m ³ /sec

CMC-M2 August 21, 2007

Bank	Distance (m)	Depth of Channel (m)	Velocity (m/s)	Average Width (m)	Area (m ²)	Q (m ³ /s)
IHB	0.70					
	0.80	0.07	0.18	0.3	0.021	0.00378
	1.30	0.14	0	0.5	0.07	0
	1.80	0.195	0.1	0.5	0.0975	0.00975
	2.30	0.2	0.3	0.5	0.1	0.03
	2.80	0.16	0.23	0.5	0.08	0.0184
	3.30	0.15	0.45	0.5	0.075	0.03375
	3.80	0.15	0.38	0.5	0.075	0.0285
	4.30	0.26	0.33	0.5	0.13	0.0429
	4.80	0.205	0.2	0.5	0.1025	0.0205
	5.30	0.19	0.21	0.5	0.095	0.01995
	5.80	0.11	0.24	0.5	0.055	0.0132
	6.30	0.06	0.19	0.5	0.03	0.0057
	6.80	0.07	0.12	0.5	0.035	0.0042
	7.30	0.085	0.09	0.5	0.0425	0.003825
	7.80	0.05	0.2	0.5	0.025	0.005
	8.30	0.02	0	0.55	0.011	0
LHB	8.90					
Total Discharge =						0.239455 m ³ /sec

CMC-OC2 August 21, 2007

Bank	Distance (m)	Depth of Channel (m)	Velocity (m/s)	Average Width (m)	Area (m ²)	Q (m ³ /s)
LHB	0.00					
	0.50	0.18	0.07	0.5	0.09	0.0063
	1.00	0.23	0.21	0.5	0.115	0.02415
	1.50	0.385	0.21	0.5	0.1925	0.040425
	2.00	0.54	0.25	0.5	0.27	0.0675
	2.50	0.625	0.29	0.4	0.25	0.0725
	2.80	0.67	0.25	0.3	0.201	0.05025
	3.10	0.735	0.25	0.3	0.2205	0.055125
	3.40	0.74	0.23	0.3	0.222	0.05106
	3.70	0.77	0.29	0.3	0.231	0.06699
	4.00	0.82	0.22	0.4	0.328	0.07216
	4.50	0.76	0.21	0.5	0.38	0.0798
	5.00	0.315	0.3	0.5	0.1575	0.04725
	5.50	0.335	0.24	0.5	0.1675	0.0402
	6.00	0.08	0.28	0.5	0.04	0.0112
RHB	6.50					
Total Discharge =						0.68491 m ³ /sec

CMC-OC3 August 21, 2007

Bank	Distance (m)	Depth of Channel (m)	Velocity (m/s)	Average Width (m)	Area (m ²)	Q (m ³ /s)
LHB	0.00					
	1.00	0.46	0.37	1	0.46	0.1702
	2.00	0.38	0.59	0.75	0.285	0.16815
	2.50	0.41	0.63	0.5	0.205	0.12915
	3.00	0.38	0.57	0.5	0.19	0.1083
	3.50	0.375	0.28	0.5	0.1875	0.0525
	4.00	0.33	0.36	0.5	0.165	0.0594
	4.50	0.12	0.55	0.5	0.06	0.033
	5.00	0.26	0.33	0.5	0.13	0.0429
	5.50	0.33	0.5	0.5	0.165	0.0825
	6.00	0.32	0.31	0.5	0.16	0.0496
	6.50	0.18	0.2	0.5	0.09	0.018
	7.00	0.17	0.19	0.75	0.1275	0.024225
	8.00	0.145	0.25	1	0.145	0.03625
	9.00	0.16	0	1	0.16	0
	10.00	0.08	0	1	0.08	0
	11.00	0.195	0.13	1	0.195	0.02535
	12.00	0.25	0.25	0.75	0.1875	0.046875
	12.50	0.25	0.43	0.5	0.125	0.05375
	13.00	0.16	0.02	0.5	0.08	0.0016
	13.50	0.21	0.33	0.5	0.105	0.03465
	14.00	0.14	0.49	0.55	0.077	0.03773
RHB	14.60					
Total Discharge =						1.17413 m ³ /sec

CMC-U1 - Bucket Flows August 21, 2007

Channel	Time (s)	Volume (L)	Q (m ³ /s)
East	3.2	4	1.2500
	3	3	1.0000
	3	4	1.3333
	3.5	4	1.1429
	2.8	4	1.4286
	average		1.2310
West	3	1.5	0.5000
	3.2	1.4	0.4375
	4	1.6	0.4000
	4	2	0.5000
	3.5	1.5	0.4286
	average		0.4532
total			1.6842

CMC-U2 - not sampled

CMC-M2 May 20, 2009									
Bank	Distance	Depth of Channel	Depth of Measurement	Revs	Time (s)	Velocity	Average Width	Area	Q
LHB	1.90								
	2.00	0.20	0.12	11	39	0.194968	0.2	0.04	0.007799
	2.30	0.12	0.07	21	42	0.341430	0.3	0.036	0.012291
	2.60	0.10	0.06	18	43	0.286732	0.3	0.03	0.008602
	2.90	0.10	0.06	41	41	0.677430	0.3	0.03	0.020323
	3.20	0.16	0.10	19	40	0.324630	0.3	0.048	0.015582
	3.50	0.20	0.12	12	40	0.207030	0.3	0.06	0.012422
	3.80	0.20	0.12	22	42	0.357430	0.3	0.06	0.021446
	4.10	0.18	0.11	14	42	0.229430	0.3	0.054	0.012389
	4.40	0.21	0.13	9	43	0.146081	0.3	0.063	0.009203
	4.70	0.22	0.13	26	45	0.393697	0.3	0.066	0.025984
	5.00	0.30	0.18	24	40	0.408630	0.3	0.09	0.036777
	5.30	0.30	0.18	13	42	0.213430	0.3	0.09	0.019209
	5.60	0.26	0.16	12	42	0.197430	0.3	0.078	0.015400
	5.90	0.22	0.13	3	44	0.051248	0.3	0.066	0.003382
	6.20	0.16	0.10	4	47	0.062621	0.3	0.048	0.003006
	6.50	0.11	0.07	3	43	0.052314	0.3	0.033	0.001726
	6.80	0.10	0.06	18	41	0.300454	0.35	0.035	0.010516
	7.20	0.10	0.06	11	40	0.190230	0.4	0.04	0.007609
	7.60	0.90	0.54	26	42	0.421430	0.3	0.27	0.113786
RHB	7.80								
Total Discharge =									0.357452 m ³ /sec

CMC-M1 May 20, 2009									
Bank	Distance	Depth of Channel	Depth of Measurement	Revs	Time (s)	Velocity	Average Width	Area	Q
LHB	1.65								
	1.80	0.05	0.03	44	40	0.744630	0.175	0.0088	0.006516
	2.00	0.05	0.03	3	47	0.048324	0.200	0.0100	0.000483
	2.20	0.11	0.07	24	42	0.389430	0.200	0.0220	0.008567
	2.40	0.1	0.06	31	42	0.501430	0.200	0.0200	0.010029
	2.60	0.22	0.13	26	41	0.431576	0.200	0.0440	0.018989
	2.80	0.16	0.10	20	42	0.325430	0.150	0.0240	0.007810
	2.90	0.25	0.15	37	42	0.597430	0.100	0.0250	0.014936
	3.00	0.31	0.19	30	42	0.485430	0.100	0.0310	0.015048
	3.10	0.34	0.20	40	39	0.694661	0.100	0.0340	0.023618
	3.20	0.25	0.15	46	41	0.759381	0.100	0.0250	0.018985
	3.30	0.3	0.18	32	43	0.505523	0.100	0.0300	0.015166
	3.40	0.28	0.17	30	40	0.509430	0.100	0.0280	0.014264
	3.50	0.2	0.12	22	43	0.349244	0.100	0.0200	0.006985
	3.60	0.19	0.11	19	42	0.309430	0.115	0.0219	0.006761
	3.73	0.3	0.18	13	40	0.223830	0.150	0.0450	0.010072
	3.90	0.22	0.13	4	37	0.078079	0.185	0.0407	0.003178
	4.10	0.2	0.12	2	40	0.039030	0.200	0.0400	0.001561
	4.30	0.22	0.13	2	69	0.024908	0.250	0.0550	0.001370
RHB	4.60								
Total Discharge =									0.184339 m ³ /sec

CMC-OC2 May 20, 2009									
Bank	Distance	Depth of Channel	Depth of Measurement	Revs	Time (s)	Velocity	Average Width	Area	Q
LHB	1.00								
	1.50	0.10	0.06	1.5	47	0.026877	0.450	0.0450	0.001209
	1.90	0.26	0.16	3	47	0.048324	0.350	0.0910	0.004397
	2.20	0.31	0.19	3	40	0.055830	0.300	0.0930	0.005192
	2.50	0.47	0.28	3	36	0.061430	0.300	0.1410	0.008662
	2.80	0.55	0.33	7	46	0.107691	0.300	0.1650	0.017769
	3.10	0.62	0.37	7	40	0.123030	0.300	0.1860	0.022884
	3.40	0.62	0.37	8	41	0.136552	0.300	0.1860	0.025399
	3.70	0.52	0.31	10	42	0.165430	0.300	0.1560	0.025807
	4.00	0.58	0.35	11	41	0.185723	0.300	0.1740	0.032316
	4.30	0.64	0.38	12	41	0.202113	0.300	0.1920	0.038806
	4.60	0.67	0.40	12	41	0.202113	0.300	0.2010	0.040625
	4.90	0.62	0.37	13	41	0.218503	0.300	0.1860	0.040642
	5.20	0.58	0.35	13	42	0.213430	0.300	0.1740	0.037137
	5.50	0.6	0.36	12	44	0.188703	0.300	0.1800	0.033966
	5.80	0.52	0.31	12	42	0.197430	0.300	0.1560	0.030799
	6.10	0.56	0.34	10	39	0.177738	0.300	0.1680	0.029860
	6.40	0.44	0.26	8	38	0.146904	0.300	0.1320	0.019391
	6.70	0.36	0.22	9	41	0.152942	0.300	0.1080	0.016518
	7.00	0.28	0.17	6	41	0.103771	0.300	0.0840	0.008717
	7.30	0.22	0.13	3	41	0.054601	0.250	0.0550	0.003003
RHB	7.50								
Total Discharge =									0.443098 m ³ /sec

CMC-07 May 20, 2009

Bank	Distance	Depth of Channel	Depth of Measurement	Revs	Time (s)	Velocity	Average Width	Area	Q
LHB	1.10								
	2.10	0.1	0.06	16	39	0.281122	0.650	0.0650	0.018273
	2.40	0.12	0.07	19	41	0.316845	0.300	0.0360	0.011406
	2.70	0.16	0.10	23	40	0.391830	0.300	0.0480	0.018808
	3.00	0.18	0.11	23	40	0.391830	0.300	0.0540	0.021159
	3.30	0.2	0.12	23	41	0.382406	0.300	0.0600	0.022944
	3.60	0.19	0.11	21	40	0.358230	0.300	0.0570	0.020419
	3.90	0.16	0.10	23	42	0.373430	0.300	0.0480	0.017925
	4.20	0.12	0.07	19	40	0.324630	0.300	0.0360	0.011687
	4.50	0.15	0.09	21	41	0.349625	0.300	0.0450	0.015733
	4.80	0.1	0.06	15	41	0.251284	0.300	0.0300	0.007539
	5.10	0.08	0.05	15	40	0.257430	0.300	0.0240	0.006178
	5.40	0.07	0.04	24	41	0.398796	0.300	0.0210	0.008375
	5.70	0.06	0.04	14	41	0.234893	0.300	0.0180	0.004228
	6.00	0.1	0.06	21	41	0.349625	0.300	0.0300	0.010489
	6.30	0.09	0.05	21	41	0.349625	0.300	0.0270	0.009440
	6.60	0.11	0.07	17	41	0.284064	0.300	0.0330	0.009374
	6.90	0.13	0.08	7	43	0.114825	0.250	0.0325	0.003732
	7.10	0.06	0.04	1	50	0.018870	0.200	0.0120	0.000226
RHB	7.30								
Total Discharge =									0.217935 m ³ /sec

CMC-11 May 20, 2009

Adit Bucket Flow Test

Test	Time (s)	Volume (ltr)	Flow (m ³ /sec)	Flow (l/sec)
1	6.2	6.5	0.001048	1.05
2	4.8	5.0	0.001042	1.04
3	5.1	5.5	0.001078	1.08
4	4.4	5.5	0.001250	1.25
5	4.0	4.8	0.001200	1.20
6	4.8	5.0	0.001042	1.04
Average Flow-			0.001110	1.11

CMC-M2 June 24, 2009									
Bank	Distance	Depth of Channel	Depth of Measurement	Revs	Time (s)	Velocity	Average Width	Area	Q
LHB	2.70								
	3.00	0.20	0.12	35	31.0	0.764140	0.400	0.0800	0.061131
	3.50	0.27	0.16	10	43.6	0.159558	0.500	0.1350	0.021540
	4.00	0.22	0.13	30	37.7	0.540178	0.500	0.1100	0.059420
	4.50	0.32	0.19	40	28.6	0.945290	0.500	0.1600	0.151246
	5.00	0.22	0.13	40	37.3	0.726073	0.500	0.1100	0.079868
	5.50	0.28	0.17	40	40.3	0.672428	0.500	0.1400	0.094140
	6.00	0.32	0.19	20	36.8	0.370647	0.500	0.1600	0.059304
	6.50	0.40	0.24	40	25.1	1.076346	0.500	0.2000	0.215269
	7.00	0.40	0.24	40	64.2	0.424122	0.500	0.2000	0.084824
	7.50	0.32	0.19	20	46.5	0.294462	0.500	0.1600	0.047114
	8.00	0.23	0.14	15	46.6	0.221739	0.500	0.1150	0.025500
	8.50	0.28	0.17	50	37.5	0.901430	0.500	0.1400	0.126200
	9.00	0.16	0.10	10	42.1	0.165050	0.500	0.0800	0.013204
	9.50	0.10	0.06	20	42.3	0.323160	0.500	0.0500	0.016158
	10.00	0.08	0.05	20	42.4	0.322411	0.500	0.0400	0.012896
	10.50	0.10	0.06	60	24.9	1.624707	0.500	0.0500	0.081235
RHB	11.00								
pH-	7.51	Conductivity-	33.00	µs			Total Discharge =	1.149051	m³/sec

CMC-M1 June 24, 2009									
Bank	Distance	Depth of Channel	Depth of Measurement	Revs	Time (s)	Velocity	Average Width	Area	Q
LHB	1.30								
	1.50	0.10	0.06	14	36.4	0.263892	0.250	0.0250	0.006597
	1.80	0.19	0.11	3	40.0	0.055830	0.300	0.0570	0.003182
	2.10	0.34	0.20	9	41.0	0.152942	0.300	0.1020	0.015600
	2.40	0.38	0.23	40	31.5	0.858763	0.300	0.1140	0.097899
	2.70	0.34	0.20	30	42.5	0.479783	0.300	0.1020	0.048938
	3.00	0.34	0.20	40	41.9	0.646957	0.300	0.1020	0.065990
	3.30	0.34	0.20	5	35.0	0.101430	0.300	0.1020	0.010346
	3.60	0.32	0.19	20	40.2	0.339758	0.300	0.0960	0.032617
	3.90	0.34	0.20	40	30.1	0.898453	0.250	0.0850	0.076369
	4.10	0.36	0.22	40	23.9	1.130116	0.200	0.0720	0.081368
	4.30	0.36	0.22	40	40.0	0.677430	0.250	0.0900	0.060969
	4.60	0.38	0.23	12	41.6	0.199276	0.300	0.1140	0.022717
	4.90	0.30	0.18	30	48.0	0.425430	0.300	0.0900	0.038289
	5.20	0.26	0.16	25	38.9	0.437307	0.250	0.0650	0.028425
	5.40	0.28	0.17	15	45.2	0.228439	0.250	0.0700	0.015991
	5.70	0.14	0.08	5	35.7	0.099548	0.300	0.0420	0.004181
RHB	6.00								
pH-	7.51	Conductivity-	25.70	µs			Total Discharge =	0.609477	m³/sec

CMC-OC2 June 24, 2009									
Bank	Distance	Depth of Channel	Depth of Measurement	Revs	Time (s)	Velocity	Average Width	Area	Q
LHB	1.40								
	1.50	0.42	0.25	17	42.4	0.274864	0.300	0.1260	0.034633
	2.00	0.44	0.26	20	34.7	0.392750	0.500	0.2200	0.086405
	2.50	0.67	0.40	15	44.0	0.234521	0.500	0.3350	0.078565
	3.00	0.78	0.47	25	39.4	0.431826	0.500	0.3900	0.168412
	3.50	0.84	0.50	25	37.1	0.458260	0.500	0.4200	0.192469
	4.00	0.91	0.55	20	46.5	0.294462	0.500	0.4550	0.133980
	4.50	0.97	0.58	25	35.3	0.481351	0.500	0.4850	0.233455
	5.00	1.04	0.62	25	33.7	0.503946	0.500	0.5200	0.262052
	5.50	1.10	0.66	25	36.1	0.470804	0.500	0.5500	0.258942
	6.00	1.08	0.65	25	36.4	0.466968	0.500	0.5400	0.252163
	6.50	1.01	0.61	25	38.0	0.447535	0.500	0.5050	0.226005
	7.00	0.96	0.58	20	30.6	0.444646	0.500	0.4800	0.213430
	7.50	0.89	0.53	20	33.5	0.406624	0.500	0.4450	0.180948
	8.00	0.80	0.48	20	37.2	0.366720	0.500	0.4000	0.146688
	8.50	0.70	0.42	20	35.8	0.380849	0.500	0.3500	0.133297
	9.00	0.68	0.41	20	53.7	0.255709	0.500	0.3400	0.086941
	9.50	0.60	0.36	15	29.1	0.351822	0.500	0.3000	0.105547
	10.00	0.53	0.32	20	45.3	0.302119	0.500	0.2650	0.080061
	10.50	0.50	0.30	20	52.5	0.261430	0.500	0.2500	0.065358
	11.00	0.50	0.30	10	37.6	0.184153	0.350	0.1750	0.032227
RHB	11.20								
pH-	7.51	Conductivity-	45.10	µs			Total Discharge =	2.971578	m³/sec

CMC-07 June 24, 2009									
Bank	Distance	Depth of Channel	Depth of Measurement	Revs	Time (s)	Velocity	Average Width	Area	Q
LHB	0.80								
	1.00	0.28	0.17	30	40.6	0.501982	0.600	0.1680	0.084333
	2.00	0.27	0.16	30	35.7	0.570136	1.000	0.2700	0.153937
	3.00	0.30	0.18	30	40.2	0.506923	1.000	0.3000	0.152077
	4.00	0.38	0.23	20	42.4	0.322411	1.000	0.3800	0.122516
	5.00	0.34	0.20	20	57.1	0.240807	1.000	0.3400	0.081874
	6.00	0.26	0.16	15	32.0	0.320430	1.000	0.2600	0.083312
	7.00	0.23	0.14	15	23.8	0.428959	1.000	0.2300	0.098661
	8.00	0.34	0.20	20	25.6	0.530430	0.750	0.2550	0.135260
	8.50	0.36	0.22	30	36.1	0.563879	0.500	0.1800	0.101498
	9.00	0.42	0.25	30	26.2	0.774896	0.750	0.3150	0.244092
	10.00	0.40	0.24	30	32.1	0.633467	1.000	0.4000	0.253387
	11.00	0.36	0.22	25	34.4	0.493802	1.000	0.3600	0.177769
	12.00	0.16	0.10	20	26.4	0.514521	1.000	0.1600	0.082323
	13.00	0.18	0.11	20	35.8	0.380849	1.000	0.1800	0.068553
	14.00	0.24	0.14	20	34.3	0.397267	1.000	0.2400	0.095344
	15.00	0.24	0.14	10	44.6	0.156103	0.600	0.1440	0.022479
RHB	15.20								
pH-	7.75	Conductivity-	46.60	µs			Total Discharge =	1.957414	m³/sec

CMC-11 June 24, 2009

Adit Bucket Flow Test

Test	Time (s)	Volume (ltr)	Flow (m³/sec)	Flow (l/sec)
1	11.1	15.5	0.001396	1.40
2	10.7	15.5	0.001449	1.45
3	11.4	15.5	0.001360	1.36
4	11.6	15.5	0.001336	1.34
5	11.8	15.5	0.001314	1.31
6	11.5	15.5	0.001348	1.35
7	11.2	15.5	0.001384	1.38
8	11.8	15.5	0.001314	1.31
9	10.7	15.5	0.001449	1.45
10	10.9	15.5	0.001422	1.42
Average Flow-			0.001377	1.38

CMC-M2 July19, 2009									
Bank	Distance	Depth of Channel	Depth of Measurement	Revs	Time (s)	Velocity	Average Width	Area	Q
LHB	3.00								
	3.20	0.10	0.06	3	42.2	0.053203	0.300	0.0300	0.001596
	3.60	0.14	0.08	15	43.5	0.237154	0.400	0.0560	0.013281
	4.00	0.19	0.11	30	44.8	0.455430	0.400	0.0760	0.034613
	4.40	0.24	0.14	30	46.9	0.435281	0.400	0.0960	0.041787
	4.80	0.16	0.10	20	47.1	0.290780	0.400	0.0640	0.018610
	5.20	0.12	0.07	10	40.6	0.170947	0.400	0.0480	0.008205
	5.60	0.18	0.11	10	52.7	0.132944	0.400	0.0720	0.009572
	6.00	0.22	0.13	30	46.1	0.442740	0.400	0.0880	0.038961
	6.40	0.32	0.19	30	50.8	0.402280	0.400	0.1280	0.051492
	6.80	0.34	0.20	7	44.1	0.112097	0.400	0.1360	0.015245
	7.20	0.23	0.14	13	44.8	0.200430	0.400	0.0920	0.018440
	7.60	0.20	0.12	12	55.8	0.149946	0.400	0.0800	0.011996
	8.00	0.12	0.07	10	37.7	0.183679	0.400	0.0480	0.008817
	8.40	0.18	0.11	15	37.8	0.272097	0.400	0.0720	0.019591
	8.80	0.10	0.06	5	34.2	0.103676	0.400	0.0400	0.004147
	9.20	0.06	0.04	2	35.1	0.043721	0.400	0.0240	0.001049
	9.60	0.05	0.03	9	40.3	0.155504	0.400	0.0200	0.003110
	10.00	0.04	0.02	40	37.1	0.729958	0.450	0.0180	0.013139
	10.50	0.06	0.04	40	28.1	0.962014	0.300	0.0180	0.017316
RHB	10.60								
pH-		Conductivity-		µs			Total Discharge =	0.330967	m³/sec

CMC-M1 July 19, 2009									
Bank	Distance	Depth of Channel	Depth of Measurement	Revs	Time (s)	Velocity	Average Width	Area	Q
LHB	1.60								
	2.00	0.20	0.12	0.5	38.4	0.014180	0.300	0.0600	0.000851
	2.20	0.19	0.11	3	40.0	0.055830	0.200	0.0380	0.002122
	2.40	0.21	0.13	30	41.0	0.497137	0.200	0.0420	0.020880
	2.60	0.17	0.10	8	31.5	0.176097	0.200	0.0340	0.005987
	2.80	0.14	0.08	10	42.5	0.163548	0.200	0.0280	0.004579
	3.00	0.16	0.10	25	41.9	0.406385	0.200	0.0320	0.013004
	3.20	0.18	0.11	8	35.0	0.159030	0.200	0.0360	0.005725
	3.40	0.2	0.12	10	40.2	0.172594	0.200	0.0400	0.006904
	3.60	0.21	0.13	35	30.1	0.786825	0.200	0.0420	0.033047
	3.80	0.17	0.10	40	23.9	1.130116	0.200	0.0340	0.038424
	4.00	0.26	0.16	25	40.0	0.425430	0.200	0.0520	0.022122
	4.20	0.22	0.13	20	41.6	0.328507	0.200	0.0440	0.014454
	4.40	0.18	0.11	9	48.0	0.131430	0.200	0.0360	0.004731
	4.60	0.22	0.13	10	38.9	0.178181	0.200	0.0440	0.007840
	4.80	0.21	0.13	3	45.2	0.050032	0.300	0.0630	0.003152
	5.00	0.18	0.11	1					
	5.20	0.18	0.11	0.5	35.7	0.014842	0.250	0.0450	0.000668
RHB	5.30								
pH-		Conductivity-		µs			Total Discharge =	0.184490	m³/sec

CMC-OC2 July 19, 2009									
Bank	Distance	Depth of Channel	Depth of Measurement	Revs	Time (s)	Velocity	Average Width	Area	Q
LHB	1.50								
	2.00	0.20	0.12	15	43.9	0.235043	0.500	0.1000	0.023504
	2.50	0.38	0.23	15	48.2	0.214559	0.500	0.1900	0.040766
	3.00	0.3	0.18	16	41.1	0.267036	0.500	0.1500	0.040055
	3.50	0.66	0.40	15	41.8	0.246578	0.500	0.3300	0.081371
	4.00	0.66	0.40	7	42.2	0.116899	0.500	0.3300	0.038577
	4.50	0.72	0.43	15	39	0.263892	0.500	0.3600	0.095001
	5.00	0.85	0.51	13	42.3	0.211955	0.500	0.4250	0.090081
	5.50	0.88	0.53	15	39	0.263892	0.500	0.4400	0.116112
	6.00	0.86	0.52	15	41.7	0.247157	0.500	0.4300	0.106277
	6.50	0.8	0.48	15	41.9	0.246003	0.500	0.4000	0.098401
	7.00	0.74	0.44	12	43.5	0.190809	0.500	0.3700	0.070599
	7.50	0.66	0.40	13	40.7	0.220074	0.500	0.3300	0.072624
	8.00	0.57	0.34	13	43	0.208593	0.500	0.2850	0.059449
	8.50	0.38	0.23	13	42.1	0.212936	0.500	0.1900	0.040458
	9.00	0.47	0.28	4	40.4	0.071965	0.500	0.2350	0.016912
	9.50	0.27	0.16	12	41	0.202113	0.500	0.1350	0.027285
	10.00	0.29	0.17	10	40.3	0.172179	0.500	0.1450	0.024966
	10.50	0.28	0.17	9	44.1	0.142573	0.500	0.1400	0.019960
RHB	11.00								
pH-		Conductivity-		µs			Total Discharge =	1.062400	m³/sec

CMC-07 July 19, 2009									
Bank	Distance	Depth of Channel	Depth of Measurement	Revs	Time (s)	Velocity	Average Width	Area	Q
LHB	0.70								
	0.75	0.2	0.12	15	52	0.199276	0.400	0.0800	0.015942
	1.50	0.18	0.11	20	38.9	0.350931	0.750	0.1350	0.047376
	2.25	0.15	0.09	20	36.7	0.371643	0.750	0.1125	0.041810
	3.00	0.2	0.12	25	42.2	0.403534	0.750	0.1500	0.060530
	3.75	0.24	0.14	20	44.6	0.306775	0.750	0.1800	0.055220
	4.50	0.26	0.16	5	36.0	0.098763	0.750	0.1950	0.019259
	5.25	0.22	0.13	10	51.5	0.135915	0.750	0.1650	0.022426
	6.00	0.17	0.10	7	41.4	0.119053	0.750	0.1275	0.015179
	6.75	0.12	0.07	9	43.2	0.145430	0.750	0.0900	0.013089
	7.50	0.14	0.08	20	46.4	0.295085	0.750	0.1050	0.030984
	8.25	0.18	0.11	30	40.3	0.505678	0.750	0.1350	0.068267
	9.00	0.28	0.17	30	41.9	0.486576	0.750	0.2100	0.102181
	9.75	0.31	0.19	35	41	0.579089	0.750	0.2325	0.134638
	10.50	0.28	0.17	30	43.6	0.467815	0.750	0.2100	0.098241
	11.25	0.2	0.12	15	43.8	0.235567	0.750	0.1500	0.035335
	12.00	0.06	0.04	10	40.1	0.173011	0.750	0.0450	0.007785
	12.75	0	0.00	0	0.0000001	0.005430	0.750	0.0000	0.000000
	13.50	0.12	0.07	8	43.6	0.128733	0.750	0.0900	0.011586
	14.25	0.14	0.08	10	40	0.173430	0.750	0.1050	0.018210
	15.00	0.18	0.11	3	37.2	0.059624	0.475	0.0855	0.005098
RHB	15.20								
pH-		Conductivity-		µs			Total Discharge =	0.803155	m³/sec

CMC-11 July 19, 2009

Adit Bucket Flow Test

Test	Time (s)	Volume (ltr)	Flow (m³/sec)	Flow (l/sec)
1	16.4	15.5	0.000947	0.95
2	15.8	15.5	0.000982	0.98
3	16.5	15.5	0.000941	0.94
4	16.3	15.5	0.000949	0.95
5	16.3	15.5	0.000949	0.95
6	16.7	15.5	0.000928	0.93
7	16.4	15.5	0.000947	0.95
8	16.5	15.5	0.000942	0.94
9	16.4	15.5	0.000948	0.95
10	16.4	15.5	0.000943	0.94
Average Flow-			0.000947	0.95

CMC-M2 August 31, 2009									
Bank	Distance	Depth of Channel	Depth of Measurement	Revs	Time (s)	Velocity	Average Width	Area	Q
LHB	2.90								
	3.30	0.11	0.07			0.150000	0.400	0.0440	0.006600
	3.70	0.16	0.10			0.200000	0.400	0.0640	0.012800
	4.10	0.18	0.11			0.170000	0.400	0.0720	0.012240
	4.50	0.13	0.08			0.200000	0.400	0.0520	0.010400
	4.90	0.11	0.07			0.550000	0.400	0.0440	0.024200
	5.30	0.14	0.08			0.560000	0.400	0.0560	0.031360
	5.70	0.16	0.10			0.340000	0.400	0.0640	0.021760
	6.10	0.21	0.13			0.170000	0.400	0.0840	0.014280
	6.50	0.25	0.15			0.210000	0.400	0.1000	0.021000
	6.90	0.31	0.19			0.150000	0.400	0.1240	0.018600
	7.30	0.22	0.13			0.080000	0.400	0.0880	0.007040
	7.70	0.13	0.08			0.030000	0.400	0.0520	0.001560
	8.10	0.13	0.08			0.110000	0.400	0.0520	0.005720
	8.50	0.15	0.09			0.190000	0.400	0.0600	0.011400
	8.90	0.06	0.04			0.150000	0.400	0.0240	0.003600
	9.30	0.04	0.02			0.030000	0.400	0.0160	0.000480
	9.70	0.03	0.02			0.140000	0.400	0.0120	0.001680
	10.10	0.01	0.01			0.450000	0.400	0.0040	0.001800
	10.50	0.04	0.02			0.520000	0.300	0.0120	0.006240
RHB	10.70								
pH-	N/A	Conductivity-	N/A	μs			Total Discharge =		0.212760 m³/sec

CMC-M1 August 31, 2009									
Bank	Distance	Depth of Channel	Depth of Measurement	Revs	Time (s)	Velocity	Average Width	Area	Q
LHB	1.80								
	2.00	0.14	0.08			0.090000	0.200	0.0280	0.002520
	2.20	0.18	0.11			0.010000	0.200	0.0360	0.000360
	2.40	0.18	0.11			0.270000	0.200	0.0360	0.009720
	2.60	0.13	0.08			0.060000	0.200	0.0260	0.001560
	2.80	0.13	0.08			0.130000	0.200	0.0260	0.003380
	3.00	0.20	0.12			0.210000	0.200	0.0400	0.008400
	3.20	0.16	0.10			0.120000	0.200	0.0320	0.003840
	3.40	0.20	0.12			0.390000	0.200	0.0400	0.015600
	3.60	0.18	0.11			0.420000	0.200	0.0360	0.015120
	3.80	0.18	0.11			0.460000	0.200	0.0360	0.016560
	4.00	0.20	0.12			0.260000	0.200	0.0400	0.010400
	4.20	0.19	0.11			0.280000	0.200	0.0380	0.010640
	4.40	0.19	0.11			0.150000	0.200	0.0380	0.005700
	4.60	0.17	0.10			0.070000	0.200	0.0340	0.002380
	4.80	0.16	0.10			0.010000	0.200	0.0320	0.000320
	5.00	0.10	0.06			0.010000	0.200	0.0200	0.000200
	5.20	0.11	0.07			0.010000	0.200	0.0220	0.000220
	5.40	0.10	0.06			0.000000	0.150	0.0150	0.000000
RHB	5.50								
pH-	N/A	Conductivity-	N/A	μs			Total Discharge =		0.106920 m³/sec

CMC-OC2 August 31, 2009									
Bank	Distance	Depth of Channel	Depth of Measurement	Revs	Time (s)	Velocity	Average Width	Area	Q
LHB	1.30								
	1.50	0.65	0.39			0.010000	0.350	0.2275	0.002275
	2.00	0.66	0.40			0.070000	0.500	0.3300	0.023100
	2.50	0.97	0.58			0.020000	0.500	0.4850	0.009700
	3.00	0.75	0.45			0.060000	0.500	0.3750	0.022500
	3.50	1.07	0.64			0.060000	0.500	0.5350	0.032100
	4.00	1.14	0.68			0.060000	0.500	0.5700	0.034200
	4.50	1.16	0.70			0.060000	0.500	0.5800	0.034800
	5.00	1.3	0.78			0.070000	0.500	0.6500	0.045500
	5.50	1.33	0.80			0.060000	0.500	0.6650	0.039900
	6.00	1.3	0.78			0.060000	0.500	0.6500	0.039000
	6.50	1.2	0.72			0.060000	0.500	0.6000	0.036000
	7.00	1.16	0.70			0.050000	0.500	0.5800	0.029000
	7.50	1.11	0.67			0.050000	0.500	0.5550	0.027750
	8.00	1.04	0.62			0.040000	0.500	0.5200	0.020800
	8.50	0.96	0.58			0.040000	0.500	0.4800	0.019200
	9.00	0.89	0.53			0.010000	0.500	0.4450	0.004450
	9.50	0.85	0.51			0.040000	0.500	0.4250	0.017000
	10.00	0.75	0.45			0.020000	0.500	0.3750	0.007500
	10.50	0.74	0.44			0.030000	0.500	0.3700	0.011100
	11.00	0.68	0.41			0.010000	0.300	0.2040	0.002040
RHB	11.10								
pH-	N/A	Conductivity-	N/A	μs			Total Discharge =		0.457915 m³/sec

CMC-07 August 31, 2009									
Bank	Distance	Depth of Channel	Depth of Measurement	Revs	Time (s)	Velocity	Average Width	Area	Q
LHB	0.70								
	1.00	0.15	0.09			0.130000	0.650	0.0975	0.012675
	2.00	0.11	0.07			0.160000	1.000	0.1100	0.017600
	3.00	0.16	0.10			0.150000	1.000	0.1600	0.024000
	4.00	0.21	0.13			0.070000	1.000	0.2100	0.014700
	5.00	0.21	0.13			0.020000	1.000	0.2100	0.004200
	6.00	0.13	0.08			0.020000	1.000	0.1300	0.002600
	7.00	0.08	0.05			0.120000	1.000	0.0800	0.009600
	8.00	0.19	0.11			0.200000	1.000	0.1900	0.038000
	9.00	0.24	0.14			0.280000	1.000	0.2400	0.067200
	10.00	0.26	0.16			0.440000	1.000	0.2600	0.114400
	11.00	0.16	0.10			0.280000	1.000	0.1600	0.044800
	12.00	0.03	0.02			0.120000	1.000	0.0300	0.003600
	13.00	0.1	0.06			0.010000	1.000	0.1000	0.001000
	14.00	0.08	0.05			0.060000	1.000	0.0800	0.004800
	15.00	0.11	0.07			0.010000	0.650	0.0715	0.000715
RHB	15.30								
pH-	N/A	Conductivity-	N/A	µs				Total Discharge =	0.359890 m ³ /sec

CMC-11 August 29, 2009

Adit Bucket Flow Test Adit Permanently Closed on August 31, 2009

Test	Time (s)	Volume (ltr)	Flow (m ³ /sec)	Flow (l/sec)
1	19.8	15.5	0.000782	0.78
2	21.3	15.5	0.000727	0.73
3	19.3	15.5	0.000805	0.81
4	19.3	15.5	0.000803	0.80
5	18.9	15.5	0.000821	0.82
6	18.7	15.5	0.000829	0.83
7	18.8	15.5	0.000826	0.83
8	19.6	15.5	0.000792	0.79
9	19.6	15.5	0.000791	0.79
10	18.5	15.5	0.000839	0.84
Average Flow-			0.000802	0.80

CMC-M2 September 29, 2009									
Bank	Distance	Depth of Channel	Depth of Measurement	Revs	Time (s)	Velocity	Average Width	Area	Q
LHB	2.90								
	3.30	0.20	0.12			0.060000	0.400	0.0800	0.004800
	3.70	0.22	0.13			0.050000	0.400	0.0880	0.004400
	4.10	0.25	0.15			0.120000	0.400	0.1000	0.012000
	4.50	0.20	0.12			0.410000	0.400	0.0800	0.032800
	4.90	0.18	0.11			0.610000	0.400	0.0720	0.043920
	5.30	0.18	0.11			0.400000	0.400	0.0720	0.028800
	5.70	0.22	0.13			0.440000	0.400	0.0880	0.038720
	6.10	0.26	0.16			0.270000	0.400	0.1040	0.028080
	6.50	0.31	0.19			0.500000	0.400	0.1240	0.062000
	6.90	0.31	0.19			0.230000	0.400	0.1240	0.028520
	7.30	0.26	0.16			0.170000	0.400	0.1040	0.017680
	7.70	0.21	0.13			0.080000	0.400	0.0840	0.006720
	8.10	0.16	0.10			0.100000	0.400	0.0640	0.006400
	8.50	0.21	0.13			0.680000	0.400	0.0840	0.057120
	8.90	0.11	0.07			0.330000	0.400	0.0440	0.014520
	9.30	0.09	0.05			0.030000	0.400	0.0360	0.001080
	9.70	0.07	0.04			0.020000	0.400	0.0280	0.000560
	10.10	0.04	0.02			0.540000	0.400	0.0160	0.008640
	10.50	0.05	0.03			0.620000	0.450	0.0225	0.013950
RHB	11.00		0.00						
pH-	N/A	Conductivity-	N/A	μs			Total Discharge =		0.410710 m³/sec

CMC-M1 September 29, 2009									
Bank	Distance	Depth of Channel	Depth of Measurement	Revs	Time (s)	Velocity	Average Width	Area	Q
LHB	1.50								
	2.00	0.20	0.12			0.020000	0.350	0.0700	0.001400
	2.20	0.26	0.16			0.020000	0.200	0.0520	0.001040
	2.40	0.26	0.16			0.350000	0.200	0.0520	0.018200
	2.60	0.25	0.15			0.220000	0.200	0.0500	0.011000
	2.80	0.28	0.17			0.200000	0.200	0.0560	0.011200
	3.00	0.26	0.16			0.180000	0.200	0.0520	0.009360
	3.20	0.28	0.17			0.210000	0.200	0.0560	0.011760
	3.40	0.25	0.15			0.060000	0.200	0.0500	0.003000
	3.60	0.27	0.16			0.270000	0.200	0.0540	0.014580
	3.80	0.26	0.16			0.780000	0.200	0.0520	0.040560
	4.00	0.25	0.15			0.700000	0.200	0.0500	0.035000
	4.20	0.24	0.14			0.540000	0.200	0.0480	0.025920
	4.40	0.25	0.15			0.390000	0.200	0.0500	0.019500
	4.60	0.30	0.18			0.200000	0.200	0.0600	0.012000
	4.80	0.27	0.16			0.160000	0.200	0.0540	0.008640
	5.00	0.20	0.12			0.020000	0.200	0.0400	0.000800
	5.20	0.20	0.12			0.010000	0.200	0.0400	0.000400
	5.40	0.18	0.11			0.010000	0.200	0.0360	0.000360
RHB	5.60								
pH-	N/A	Conductivity-	N/A	μs			Total Discharge =		0.224720 m³/sec

CMC-OC2 September 30, 2009									
Bank	Distance	Depth of Channel	Depth of Measurement	Revs	Time (s)	Velocity	Average Width	Area	Q
LHB	1.50								
	2.00	0.75	0.45			0.110000	0.500	0.3750	0.041250
	2.50	0.96	0.58			0.080000	0.500	0.4800	0.038400
	3.00	1.05	0.63			0.100000	0.500	0.5250	0.052500
	3.50	1.14	0.68			0.100000	0.500	0.5700	0.057000
	4.00	1.2	0.72			0.080000	0.500	0.6000	0.048000
	4.50	1.26	0.76			0.110000	0.500	0.6300	0.069300
	5.00	1.37	0.82			0.110000	0.500	0.6850	0.075350
	5.50	1.40	0.84			0.100000	0.500	0.7000	0.070000
	6.00	1.37	0.82			0.100000	0.500	0.6850	0.068500
	6.50	1.32	0.79			0.110000	0.500	0.6600	0.072600
	7.00	1.25	0.75			0.090000	0.500	0.6250	0.056250
	7.50	1.21	0.73			0.080000	0.500	0.6050	0.048400
	8.00	1.15	0.69			0.080000	0.500	0.5750	0.046000
	8.50	1.04	0.62			0.070000	0.500	0.5200	0.036400
	9.00	0.96	0.58			0.040000	0.500	0.4800	0.019200
	9.50	0.90	0.54			0.050000	0.500	0.4500	0.022500
	10.00	0.85	0.51			0.050000	0.500	0.4250	0.021250
	10.50	0.81	0.49			0.070000	0.500	0.4050	0.028350
	11.00	0.80	0.48			0.020000	0.300	0.2400	0.004800
RHB	11.10								
pH-	N/A	Conductivity-	N/A	μs			Total Discharge =		0.876050 m³/sec

CMC-07 September 30, 2009

Bank	Distance	Depth of Channel	Depth of Measurement	Revs	Time (s)	Velocity	Average Width	Area	Q
LHB	0.70								
	1.00	0.19	0.11			0.310000	0.650	0.1235	0.038285
	2.00	0.15	0.09			0.230000	1.000	0.1500	0.034500
	3.00	0.20	0.12			0.230000	1.000	0.2000	0.046000
	4.00	0.25	0.15			0.150000	1.000	0.2500	0.037500
	5.00	0.24	0.14			0.150000	1.000	0.2400	0.036000
	6.00	0.19	0.11			0.050000	1.000	0.1900	0.009500
	7.00	0.11	0.07			0.120000	1.000	0.1100	0.013200
	8.00	0.23	0.14			0.220000	1.000	0.2300	0.050600
	9.00	0.28	0.17			0.230000	1.000	0.2800	0.064400
	10.00	0.3	0.18			0.360000	1.000	0.3000	0.108000
	11.00	0.19	0.11			0.340000	1.000	0.1900	0.064600
	12.00	0.07	0.04			0.330000	1.000	0.0700	0.023100
	13.00	0.08	0.05			0.090000	1.000	0.0800	0.007200
	14.00	0.15	0.09			0.060000	1.000	0.1500	0.009000
	15.00	0.17	0.10			0.040000	0.650	0.1105	0.004420
RHB	15.30								
pH-	N/A	Conductivity-	N/A	µs			Total Discharge =	0.546305	m ³ /sec

CMC-11 August 29, 2009

Adit Bucket Flow Test Adit Permanently Closed on August 31, 2009

Volume calculated by measured wetted area of a pipe cross section and Velocity of flow with a flow meter.

Pipe Diameter: 75 cm
 Max. Wetted Width: 6 cm
 Height of flow: 2 cm
 Cross sectional Area: 8 cm*2 0.00080 m*2

Flow Velocity: 0.32 m/s

Flow Rate: 0.00026 m*3/s 0.26 litres/s

Note: Flow is from ground seeps and inflow from drainage into the adit cut.

CMC Metals
SILVER HART PROPERTY

YESAA Executive Committee Submission

APPENDIX R
HUMIDITY CELL TEST REPORT

November 2009