

## SUMMARY OF COMMENTS/RECOMMENDATIONS

**PROPONENT:** Hudson Bay Mining & Smelting Co., Limited  
**PROPOSAL NAME:** Lalor Mine  
**CLASS OF DEVELOPMENT:** 2  
**TYPE OF DEVELOPMENT:** Mining  
**CLIENT FILE NO.:** 5583.00

### OVERVIEW:

On May 7, 2012, the Department received a Proposal dated May 4, 2012 from AECOM on behalf of Hudson Bay Mining and Smelting Co., Limited for the construction and operation of the Lalor Mine, a 4,500 tonnes/day underground copper-zinc-gold mine located at the site of the existing Lalor Advanced Exploration Project (AEP) approximately eight kilometers west of the Town of Snow Lake within the Town of Snow Lake municipal boundary. The proposed Lalor Mine development consists of the operation of the Lalor main shaft with underground ramp and ventilation raises constructed as part of the previously approved Lalor Ramp Project. The development also includes construction of an Administration and Dry Complex and a 45,000 L/day sewage treatment plant. Treated sewage effluent, mine discharge water and polishing pond discharge will be pumped to the Chisel Open Pit for additional treatment at the existing Chisel North Water Treatment Plant. All tailings from the development will be sent to the existing Anderson Tailings Impoundment Area (TIA).

The Department, on June 4, 2012, placed copies of the Proposal in the Public Registries located at 123 Main St. (Union Station), the Millennium Public Library, the Manitoba Eco-Network, the Thompson Public Library, the Flin Flon Public Library, The Pas Regional Library and an electronic registry on the Environmental Approvals Branch website. Copies of the Proposal were also provided to the Technical Advisory Committee (TAC) members. An additional Public Registry was set up at the Snow Lake Library on June 13, 2012. The Department placed public notifications of the Proposal in the Thompson Citizen on Wednesday June 6, 2012, the Snow Lake Underground on Thursday, June 7, 2012, the Flin Flon Reminder on Friday, June 8, 2012, the Thompson Nickel Belt on Friday June 8, 2012, The Pas Opasquia Times on Friday, June 8, 2012 and the Winnipeg Free Press on Saturday, June 9, 2012. The newspaper and TAC notifications invited responses until July 9, 2012.

### COMMENTS FROM THE PUBLIC:

- *The sewage sludge from the on-site plant, where does it go for final disposal? The Process Flow Diagram shows the treated effluent going to the Polishing Pond, then to Chisel Pit, water treatment plant and final underground. But the sludge is shown going to an approved facility. What is the approved facility?*

#### Proponent Response (December 17, 2012):

- Sewage sludge generated at the on-site sewage treatment plant is currently being hauled by a licensed contractor to the Town of Snow Lake for disposal. A new waste disposal ground is

being planned for the Lalor Mine, which will include a sludge drying and disposal facility. Preliminary siting and engineering for this waste disposal facility has been completed. This issue has been discussed with this member of the public in Snow Lake.

Disposition:

Following receipt of the proponent's response, the questions raised by the member of the public have been satisfactorily addressed.

**COMMENTS FROM THE TECHNICAL ADVISORY COMMITTEE:**

**Conservation and Water Stewardship – Environmental Programs and Strategies Branch**

- *It is expected that the project will have no significant impact on air quality (dust, PM, and noise) provided that the measures stated in the proposal are implemented.*

**Conservation and Water Stewardship – Water Quality Management Section**

- *It is understood there are no discharges of wastewater to water bodies in the immediate vicinity of the proposed Lalor Mine, and that ore processing and disposal of tailings would occur at the Chisel North mine and Anderson Lake Tailings disposal facility respectfully.*
- *It is understood that Anderson Lake Tailings facility is nearing capacity and that either a new or expanded tailing facility will be required during the lifetime of the proposed Lalor Mine. It is understood that such an expansion would require a new Environment Act Proposal to be filled and a formal review.*
- *It is also understood a new processing plant is being considered for the new site. We would respectfully request that such a proposal also be circulated for review particularly if any discharge to the environment is proposed.*
- *Of principal concern with many mining operations with respect to water quality is the potential for oxidation of potentially acid generating waste rock and off site migration of impacted runoff to surface waters. The proposal of treating all waste rock as potentially acid generating is logical. While the proposal notes waste rock will either be used as backfill or transported to the Chisel North Open Pit for disposal, it is not noted how waste rock is to be stored in the interim. We recommend that if temporary storage is required it occurs in a contained area with a maximum hydraulic conductivity of  $1 \times 10^{-7}$  cm/s and that all runoff from this area is contained and directed to the Chisel North Waste Water treatment plant.*
- *Concerns with water quality from proposals such as this one also include impacts from accidents or malfunctions at the site including ruptures of waste water lines. Given that mine wastewater will be pumped a considerable distance there is potential for rupture of wastewater lines leading to a release to the environment. The proponent should have a comprehensive spill response plan in place in the event of an accidental spill or malfunction at the site. Installation of pressure sensing monitoring equipment may be considered as an immediate indicator of potential leakage.*
- *Concerning the polishing ponds, the Environment Act Licence should require these be constructed with a maximum hydraulic conductivity of  $1 \times 10^{-7}$  cm/s as per the Environment Act Proposal.*

- *Although no discharge is proposed to the immediate environment around the proposed mine, the Water Stewardship Division requests an ongoing limnological monitoring program to be established similar to what is required at other HBM&S mines. This would include a requirement for an annual report of water quality results and trends in water bodies surrounding the site.*
- *The following effluent standards should be in place for the waste water treatment plant as per the Manitoba Water Quality Standards, Objectives and Guidelines Regulation (196/2011).*
  - *BOD<sub>5</sub>: 25 mg/L*
  - *TSS: 25 mg/L*
  - *Fecal Coliforms: 200 MPN/100mL*
  - *TP: 1 mg/L or required nutrient reduction strategy (see below)*
  - *The Manitoba Water Quality Standards, Objectives and Guidelines Regulation requires new or expanding wastewater treatment facilities to meet a 1 mg/L phosphorus limit or implement a nutrient reduction strategy.*
- *Consistent with the R.M. of Headingly and East St. Paul treatment plant licences, it is recommended to include the following text within the monitoring clause “the monthly geometric mean of 1 grab sample collected at equal intervals on each of a minimum of 3 consecutive days per week”.*
- *In addition to the above it is recommended that the proponent be required to monitor the following additional parameters on a monthly basis based upon a 24 hour composite sample: total phosphorus, ammonia, nitrate-nitrite, total Kjeldahl nitrogen, biochemical oxygen demand, pH, and total suspended solids.*
- *The proposal discusses that biosolids will be truck hauled away from the site. Further information is required regarding the ultimate use/disposal of sewage sludge from the proposed waste water treatment plant.*
- *The Water Quality Management Section is concerned with any discharges that have the potential to impact the aquatic environment and/or restrict present and future uses of the water. Therefore it is recommended that the license require the proponent to actively participate in any future watershed based management study, plan/or nutrient reduction program, approved by the Director.*

Proponent Response (December 17, 2012):

- *It is correct that there will be no discharges of wastewater to water bodies in the immediate facility of the Lalor Mine. However, as a point of clarification, no ore processing occurs or has occurred at the site of the Chisel North Mine.*
- *Please refer to page 22 to 25 of the Lalor Mine Environment Act Proposal Report (EAP Report), which describes in detail the operation of the existing Stall Lake Concentrator and the use of the Anderson TIA.*
- *A new processing plant (concentrator) will be proposed, subject to a further Environment Act Proposal. The new concentrator will be located within the footprint of the existing Lalor AEP and the proposed Lalor Mine. No new tailings facilities will be constructed to support the new concentrator. The new concentrator will use the existing Anderson TIA, which has capacity up to 2017, based on future ore production projections for Lalor Mine.*

- To accommodate additional tailings, the existing Anderson TIA will be expanded through dam construction within the designated legal description of the TIA, subject to a Notice of Alteration concerning the existing Environment Act Licence.
- As indicated in the EAP Report, waste rock produced during production mining will be used as backfill or transported to the Chisel Open Pit for disposal. No waste rock will be stored on surface at the Lalor Mine site. Should interim storage of PAG be required on surface due to unforeseen circumstances, Hudbay will utilize the existing licensed PAG waste rock and ore storage pads located at the Chisel North Mine.
- As the potential for spills as a result of accidents and malfunctions is always a possibility, spills and accidents have been addressed in Section 5.12.4 of the EAP Report. Comprehensive spill response planning is required in all Hudbay operations, pursuant to its existing ISO 14001 Environment Management System. Copies of specific plans can be provided for review upon request.
- The Lalor operation includes a comprehensive spill monitoring and response system, which provides for the detection of leaks and immediate implementation of spill response. The entire discharge line from the Lalor AEP site to the Lalor Booster Pump Station (see Section 2.2.2.1), and all the way to the Chisel Water Treatment Plant (WTP) is fully automated by computer (PLC) control system. The system monitors the discharge pressures, and if pressures fall above or below the commissioned “normal”, the system shuts down all wastewater pumps and issues an alarm. The alarm is sounded in the Lalor Mine hoist house, which is operated 24 hours per day, so that any alarm is immediately detected.
- As an additional measure, the flow exiting the Lalor Booster Pump Station is cross-checked with the flow entering the Chisel WTP in real time, and any discrepancy immediately triggers the PLC control system to shut down all pumps and signal an alarm.
- The polishing ponds include a geosynthetic clay liner to minimize seepage, placed between two woven geotextiles to provide added protection. The synthetic clay liner is rated with a maximum permeability factor of  $5 \times 10^{-9}$  cm/sec, which exceeds the standard of protection requested in Mr. Jacobs’ comment. Please see the enclosed specification sheets for the synthetic clay liner (Bentofix) and the geotextile (Geotex). I also enclose a drawing of the polishing pond.
- It should be noted that the polishing pond will only be utilized during the initial shaft sinking (up to June 2014) after which time the polishing pond will not be receiving any mine discharge water and will only be used to collect precipitation and surface runoff for fire-fighting purposes.
- Any water body that is potentially affected by discharge related to the proposed Lalor Mine is already subject to historic and ongoing aquatic monitoring and sampling programs, pursuant to various Environment Act Licences and the environmental effects monitoring required under the MMER. This is described in Section 1.5.3 of the EAP Report. Thus, these water bodies are studied on an ongoing basis.
- Please see Section 5.7 of the EAP Report, which assesses all realistic pathways for the proposed development to affect surface water and explains why there will not be an effect on any water body in proximity to the proposed development. Absent of such a pathway, there does not appear to be any principled basis for further aquatic studies.

- Hudbay has no objection to the requested effluent standards for BOD, TSS and Fecal Coliform. However, the total phosphorus limit of 1 mg/L that has been proposed does not seem reasonable for the Lalor Mine sewage treatment plant. This plant is not a new development, as it is currently permitted pursuant to the Onsite Wastewater Management Regulation made under *The Environment Act*. The operation of the plant was approved prior to the Manitoba Water Quality Standards, Objectives and Guidelines Regulation (196/2011) coming into force in November 2011, and has been operating in a satisfactory manner.
- In addition, it is our understanding that a 1 mg/L limit is required only for facilities that exceed a total annual threshold of 820 kg of phosphorus. Although testing conducted on the effluent from the Lalor STP exceeds the 1 mg/L limit, the calculated annual volume of total phosphorus discharged from the plant is well below the 820 kg per year threshold. Based on an evaluation of existing discharge rates and measured phosphorus concentrations (approximately 4 mg/L to 6 mg/L), it is estimated that at the current rate the Lalor Mine sewage plant would discharge a total of approximately 5 kg to 7 kg of total phosphorus annually. Although it can be expected that the discharge rate from the Lalor STP will increase when production mining at the Lalor Mine is underway, it is expected that, at most, the discharge rate would increase no more than three times the current rate. Even with this “worst case” increase in flow, the amount of total phosphorus that would be discharge from the STP would be between 15 kg to 21 kg annually, which is well below the maximum threshold of 820 kg per year.
- It should also be noted that the effluent discharged from the Lalor STP does not flow directly to the environment, but is pumped to the Chisel Open Pit with Lalor Mine discharge water for additional treatment at the Chisel Water Treatment Plant. Discharge from the Chisel Water Treatment Plant is analyzed regularly, and the measured total phosphorus values have been below the analytical method detection limit (0.20 mg/L in 2011 and 0.10 mg/L in 2012) for the past two years.
- As for the requirement for “the monthly geometric mean of one grab sample collected at equal intervals on each of a minimum of 3 consecutive days per week”, Hudbay would like to recommend that this be limited to the collection of 3 grab samples (collected within consecutive hours) on one day. There are logistical challenges in shipping environmental samples from Snow Lake to the analytical testing laboratory in Winnipeg. There is no daily bus service from Snow Lake, and therefore shipping on consecutive days would result in samples arriving at the testing lab outside of the required storage holding times. Providing Hudbay with the opportunity to collect consecutive grab samples on the same day for the submission and analysis would minimize the risk of missing a sample holding time due to shipping constraints.
- Sewage sludge generated at the on-site sewage treatment plant is currently being hauled by a licensed contractor to the Town of Snow Lake for disposal. A new waste disposal ground is being planned for the Lalor Mine, which will include a sludge drying and disposal facility. Preliminary siting and engineering for this waste disposal facility has been completed.
- With respect to the recommendation for a nutrient reduction management study, monitoring of nutrients (including total phosphorus) is included in existing monitoring programs, including MMER monitoring and EEM studies for the final point of discharge to the environment (Chisel Water Treatment Plant effluent). Therefore any additional monitoring of nutrients would be redundant.

Conservation and Water Stewardship – Water Quality Management Section Response (January 10, 2013):

- *It is noted that potential pathways for impacts to surface water quality appear to be addressed within the EAP Report, and there are a number of required monitoring programs within the project area. However, as a matter of caution we recommend a standard clause be included in a potential license to address future potential issues or concern should they arise.*
- *Concerning wastewater, it is acknowledged that the phosphorus wastewater standards apply to new and expanding facilities immediately, and existing facilities serving a population or equivalent load over 2000 people by 2016. The proponent's letter notes that the estimated population size and load will be significantly less than 2000 people. However phosphorus loading to surface water is a significant issue and all facilities are encouraged to reduce phosphorus loading downstream as much as practicable. It is noted that discharge does not occur directly to surface water but to the open pit of the Chisel Lake Mine – this water is then again treated through the Chisel treatment plant. The proponent is requested to continue to monitor total phosphorus concentrations from the chisel treatment plant and is encouraged to implement measures within kitchen and dormitory facilities to reduce phosphorus in the wastewater stream.*
- *Regarding watershed monitoring studies or nutrient reduction programs, this is a standard clause within typical Environment Act Licences for wastewater treatment facilities. We recommend a similar clause be included in a licence to enable the proponent to conduct additional monitoring or participate in any study or nutrient reduction program at the discretion of the Director which may or may not occur at a future time.*
- *Regarding sampling frequency, it is understood there can be difficulty in shipping samples from a semi-remote location such as Snow Lake. We would be willing to entertain some flexibility to the sampling regime provided a representative number of samples are obtained from the final discharge point. Sampling frequency should be consistent to other facilities located in Northern Manitoba.*

Disposition:

- A clause requiring the proponent to actively participate in any future watershed and/or aquifer based management study, plan and/or nutrient reduction program is included in the draft Licence.
- Monitoring for a variety of parameters including total phosphorus concentrations are required in Appendix A Clause 16 of the draft Licence.

**Conservation and Water Stewardship – Aboriginal Relations Branch**

- *No comments received.*

**Conservation and Water Stewardship – Office of Drinking Water**

- *The EAP noted that no anticipated adverse effects upon groundwater are anticipated and no groundwater resources are used for drinking water supplies anywhere in the area of the proposed development.*

- *The EAP noted that wastewater discharged into surface watercourses would be treated to Manitoba Conservation and Water Stewardship standards and discharge licence conditions and no adverse effects on surface waters are anticipated. The EAP did not specifically note that the Town of Snow Lake domestic water supply is located downstream of the proposed mine site. The Town has a water treatment plant, which under normal operating conditions, should not be adversely affected by the proposed mine. However in the event of a major spill of any materials which could flow into the upper parts of Snow Lake, the Town water treatment plant could possibly be effected. As such the Office of Drinking Water would recommend that contact information for the Town of Snow Lake water treatment plant operator be included in emergency response plans for the proposed development with instruction that the water plant operators be contacted in the event of a major spill of materials from the development into Snow Lake.*

Proponent Response (December 17, 2012):

- Although the water supply (Snow Lake) for the Town of Snow Lake is located downstream of Lalor Lake, the possibility of the operations at Lalor Mine impacting the town water supply is extremely remote. Surface water flowing from Lalor Lake would flow north via a series of wetlands through Maw Lake, Varnson Lake, Squall Lake and then south via Snow Creek into the western arm of Snow Lake. The total distance any contaminants from a potential spill entering Lalor Lake would be required to migrate in order to reach the Snow Lake water treatment plant is approximately 21 km.
- There will be no planned discharge of untreated wastewater to surface water bodies. Any contamination resulting from a potential spill or accident released into a surface water body would be mitigated or naturally attenuated prior to reaching Snow Lake.
- Although the potential for impacting the town water supply is extremely remote, Hudbay has no objection to including the Town of Snow Lake water treatment supply operators in emergency notifications, if such is required.

Conservation and Water Stewardship – Office of Drinking Water Response (January 24, 2013):

- *I reviewed the letter response from Hudbay. I note the point on Page 6 of the letter in response to my concern about the potential for harmful substances released from an accidental spill at the mine site reaching the drinking water intake of the Town of Snow Lake. I agree that the change of the Town water supply being contaminated by a spill is remote, but water can be rendered unfit for human consumption by very low concentrations (as low as parts per billion) of some chemicals. The risk of contamination may be low, but the potential consequences i.e. the water supply to the entire Town being shut off for days or even weeks, are very serious. Thus, my recommendation that the Town water plant operators be included on an emergency notification procedure for spills. I still recommend this.*

Disposition:

The Office of Drinking Water is satisfied with the information received and has no further concerns.

**Conservation and Water Stewardship – Parks and Natural Areas Branch**

- *No comments to offer*

**Conservation and Water Stewardship - Sustainable Resource & Policy Management Branch**

- *No concerns*

**Conservation and Water Stewardship – Wildlife Branch**

- *No concerns. Comments:*
  - *The report stated that woodland caribou do not occur in the Snow Lake area. In fact, three woodland caribou ranges occur in proximity to Snow Lake, Reed Lake Range to the southwest. Wheadon Range to the north and Wabowden Range to the east. Within the mapped Project Area, surrounding the Lalor mine development, historical data, aerial reconnaissance and currently deployed telemetry collars show no use by any woodland caribou. Within the mapped Project Region, there are a small number of recent caribou points. These location points, from currently deployed telemetry collars, occur on the edge of the Project Region therefore we anticipate minimal, if any effect to the animals.*
  - *Given the minimal use of the Project Region by caribou, the only disturbance we can foresee is noise. Based on the report, noise disturbance will only occur within the project area and will dissipate to ambient levels outside of this area. As caribou occur only within the Project Region and not the Project Area the effect of this disturbance will be minimal.*
  - *HBMS has contributed financially to regional caribou projects since 2009. This support has assisted in telemetry studies on the Reed Lake Range. To date this has been a very successful partnership and we look forward to continuing for the foreseeable future.*
  - *This proposed mine is in an area with high levels of industrial development. This includes the Town of Snow Lake, provincial trunk highways, railways, forestry development and other mines. Other wildlife species including coyote, fox, moose, wolf, otter, beaver, frogs and various bird species do occur in the area. Due to the current level of industrial development there will be little additive affect with the development of this new mine.*

**Conservation and Water Stewardship – Fisheries Branch**

- *Fisheries Branch has reviewed the proposal to construct and operate Lalor Mine. Many of the components have been approved and are being constructed as part of the Lalor Advanced Exploration Project and Lalor Ramp projects. The proponents will also be using existing licensed support facilities to minimize adverse environmental effects and maintain the footprint of the development to as small of size as possible.*
- *Under this framework, they are proposing to direct treated sewage from the sewage treatment plant, effluent from surface runoff, process water and groundwater seepage (via a polishing pond) and waste rock (during production all waste rock is to be considered potentially acid generating) to the Chisel Open Pit which discharges to Woosey Creek/Morgan Lake. Ore will be directed to the Stall Lake Concentrator with tailings and process water being directed to the Anderson Tailings Impoundment Area and concentrate shipped to Flin Flon. Both the Anderson and Chisel North developments fall under existing*

*licenses/order and in the case of water withdrawals (estimated 14 L/s or 441.5 dam<sup>3</sup>/year) from Ghost and Chisel Lake for Lalor Mine and Snow Lake for Anderson Mine under existing Water Rights Licences/Environment Act Licence. Final discharge effluent is also regulated per the requirements of the Federal MMER.*

- *It would seem that at this stage current licensing conditions and the need to meet the requirements of MMER including Environmental Effects Monitoring should address or provide a forum to address any fisheries concerns. It is worth noting that while the proponent has indicated that “EEM data to date for the Anderson TIA has indicated that there is no significant impact to water and sediment quality in the water bodies associated with the TIA and that the differences in fish and benthic communities between near and far-field exposure sites are considered **negligible**” the periodic monitoring study has confirmed effects for yellow perch, brook stickleback and benthic invertebrates which has led to the need for the company to move into the Investigation of Cause phase of EEM phases (periodic and focused monitoring). Therefore any changes to the quantity and characteristic of effluent could exacerbate effects currently being reported.*
- *In addition there are future components associated with this mine (a concentrator at Lalor Mine site and construction of new dams for Anderson TIA, or other alternatives, to address capacity shortfall expected by 2012) that the proponent indicates will be forwarded for review as required which overall seems to provide a very disjointed approach to reviewing the overall mining development and potential impacts.*

Proponent Response (December 17, 2012):

- Although the Initial and Periodic Environmental Effects Monitoring (EEM) studies indicated minor “effects” on benthic community and size of some fish species in Anderson Bay, the question of whether the characteristics identified in these studies are actually associated with Anderson TIA effluent is still the subject of debate.
- The only benthic invertebrate effect that was observed was determined through utilization of the Bray Curtis Index (BCI), which is now the subject of great debate over statistical inaccuracies in the calculation method proposed by Environment Canada. Stantec conducted a research study on the BCI (Stantec, 2011) which indicates that the method used in the Metal Mining Effluent Regulations (MMER) EEM guidance is flawed and skewed towards indicating effects when none are actually present. A subsequent Investigation of Cause (IOC) EEM study (Phase IV) was conducted in August 2011, and BCI results from the previous three phases were re-evaluated using the proposed Stantec alternate calculation. The recalculation eliminated the “effect” observed in the Initial of Periodic (Phase I and II) studies. The IOC report for Anderson has been recently completed, and will be issued the week of December 17, 2012.
- It should be noted that the BCI did not show any effect in the Phase III study, regardless of the calculation methodology used. Phase IV also re-evaluated the Phase I-III data using numerous other benthic community health indices and again came to the conclusion that there was no effect on benthic invertebrates.
- Regarding the effects on Yellow Perch, it appears to us that this too is a result of a flaw in the methodology used in the current version of the MMER. The sampling methodology used in the Pulp and Paper Effluent Regulations applies a “critical effects sizes” criterion to eliminate results that may simply relate to variations between natural habitats. This is

necessary as some differences in communities are bound to be expected. By applying the “critical effect sizes” developed for the Pulp and Paper EEM process, all but one effect on Yellow Perch would have been eliminated. The only remaining effect would have been weight-at-age, which indicated larger fish in Wekusko Lake compared to the Reference Area, Tramping Lake.

- This brings us to the subject of the observed results from the Phase I and II EEM, which indicated younger Yellow Perch in Anderson Bay, which are also much larger in size than in the Reference Area. The Gonadosomatic Index (GSI) indicated relatively smaller gonads in fish from Anderson Bay, but this index is slightly flawed in that it assumes linearity between total weight and gonad weight. We do not consider the slightly lower GSI to be an issue because the index is skewed due to the fish in Anderson Bay being almost double the size of the fish in Tramping Lake. Larger Yellow Perch were observed in the Exposure Area, and that is the opposite effect that is expected in fish exposed to heavy metals.
- The only confirmed effect in Brook Stickleback (after correcting for critical effect sizes) was slightly enlarged livers in males.
- The Phase IV EEM study looked at indicators of metal exposure (metallothionein and metal accumulation in tissues) and indicators of food resource availability (liver glycogen, triglyceride levels and gut contents). A second Reference Area (Goose Bay) was also used to help make better comparison of results. In very general terms, the study found no indication of metal uptake or differences in food resources:
  - No indication of elevated metal accumulation in tissue (iron slightly elevated in Brook Stickleback, selenium slightly elevated in Yellow Perch (although below CCME levels), many more metals were found to actually be lower in the Exposure Area tissues than the Reference Area).
  - No differences in metallothionein levels.
  - Glycogen and triglycerides were the same for Brook Stickleback; Yellow Perch saw no differences in glycogen levels although lower triglycerides were observed in the Tramping Lake Reference Area.
- The key effect endpoints from Phase I to III were also monitored. The largest magnitude and number of “effects” were found when comparing the two reference areas to one another. The overall indication is that the “effects” seen to date are simply the result of natural variations among different lakes and fish populations.
- As a final note (as indicated in Section 2.2.2.1 of the EAP Report), wastewater from the Lalor Mine and Lalor Mine STP will be directed to the Chisel Open Pit, treated at the Chisel Water Treatment Plant, and subsequently discharged to Woosey Creek. None of the wastewater from Lalor Mine will be directed to the Anderson TIA.
- There have been no elevated mercury levels observed in Anderson TIA effluent. For the noted instances where mercury was detected in the analysis, they have been attributed to reductions in the applicable detection limit over the course of Hudbay’s monitoring under the MMER limits (a drop from 0.0002 mg/L to 0.000001 mg/L (0.001 ug/L or one part per trillion) by 2010). Prior to the reduction of the detection limits to 0.001 ug/L, there were only two instances (out of 57 samples) where the analyzed effluent samples exceeded the detection limit (one sample in 2004, and one sample in 2009). In addition, the measured concentration of each of these two samples was within two times (2X) the detection limit,

which would be an indication that the results could be attributed to instrument variation and inaccuracy with the laboratory test methodology.

- Since the reduction of the detection limit to 0.001 ug/L in January 2010, the highest recorded mercury concentration in the tested effluent has been 0.002 ug/L, which is well below the Manitoba guideline for the protection of aquatic life (0.026 ug/L).
- Based on this information, it is our opinion that the elevated mercury levels observed in these samples are not associated with potential impact from the Anderson TIA. The elevated mercury concentration observed in earlier EEM studies is likely the result of improper or inadequate laboratory methodology or analytical protocol, and the inability of some of the laboratories to accurately measure concentrations as low as the prescribed mercury method detection limits.
- As a point of clarification, in Sentence 3 of Paragraph 3, please note that Anderson Mine is no longer in operation. We understand this statement to mean the Stall Lake Concentrator.

Conservation and Water Stewardship – Fisheries Branch Response (January 14, 2013):

- *Fisheries Branch has reviewed the responses from the proponent to TAC and public requests for additional information. In our original review we had indicated that overall current licensing conditions and the need to meet the requirements of MMER including Environmental Effects Monitoring should address or provide a forum to address any fisheries concerns. We made note of the fact that through EEM to date there was in fact confirmed effects for yellow perch, brook stickleback and benthic invertebrates where the proponent had indicated effects were considered negligible.*
- *The proponents have offered an explanation in support of their statement that speaks to inaccuracies with some of the assessment methods proposed by Environment Canada for monitoring. We are not in the position to weigh into that debate but as part of the EEM technical advisory committee will be able to keep apprised of the situation and implications in terms of monitoring and results.*
- *We have no further comments on this component of the project.*

Disposition:

The Fisheries Branch is satisfied with the information received and has no further concerns.

**Innovation, Energy and Mines – Mines Branch**

- *Submit an updated closure plan to the Director of Mines for approval by December 31, 2012.*
- *Consultation is required with Mathias Colomb Cree Nation.*

Proponent Response (December 17, 2012):

- As per the letter from Mr. Liske submitted to Hudbay on December 4, 2012, Hudbay will be issuing an updated Lalor Mine Closure Plan for review and approval by September 30, 2014.

Disposition:

The Mines Branch is satisfied with the information received and has no further concerns.

**Infrastructure and Transportation – Highway Planning and Design Branch**

- *No concerns with the development as proposed.*

**Intergovernmental Affairs – Community & Regional Planning Branch**

- *The project is located within the municipal boundaries of Town of Snow Lake, approximately 8 kilometres west of the town site, east of Lalor Lake on Pf 9-68-18WPM. The subject property is designated Limited Development by the Town of Snow Lake Development Plan By-Law No. 824/03 which allows for resource-based industries and related development. Development Plan Policies related to this proposal are as follows:*
  - *Section Five – Limited Development District Policies*
  - *3.c) The Province of Manitoba shall be encouraged to continue its consultations with the Town of Snow Lake regarding Crown land use and development proposals to ensure proposed uses and developments are sustainable and consistent with the policies of the development plan for the Town.*
  - *3.g) Proposals for all sites exhibiting potential for sand and gravel or other mineral resource extraction must have Council approval prior to extraction.*
- *It is my understanding from information provided by the Mines Branch that the mineral dispositions were issued to HBMS prior to 2007. This granted HBMS legal access to the surface of the land for mineral exploration and development. Since the use of the Lalor Mine site was initiated prior to the February 2007 adoption of the current Snow Lake Zoning By-Law No. 846/06, the project is subject to The Snow Lake Planning Scheme 1963 By-Law No. 78. Under By-Law No. 78 the project site is zoned “Limited Development District” which allows mining as a permitted use.*
- *Based on the above information provided, Thompson Community and Regional Planning Branch has no concerns from a community planning perspective.*

**Canadian Environmental Assessment Agency**

- *Following a survey of federal departments with a potential interest in the proposed development, the application of the Canadian Environmental Assessment Act (the Act) by a federal authority will not likely be required for this project.*
- *Environment Canada and Health Canada have offered to provide specialist advice if requested in the provincial review.*

**PUBLIC HEARING:**

No public concerns were received during the public review period of the environmental assessment and licensing process. A public hearing was not requested by the public and is not recommended for this Development.

**CROWN-ABORIGINAL CONSULTATION:**

The Government of Manitoba recognizes it has a duty to consult in a meaningful way with First Nations, Métis communities and other Aboriginal communities when any proposed provincial

law, regulation, decision or action may infringe upon or adversely affect the exercise of a treaty or Aboriginal right of that First Nation, Métis community or other Aboriginal community.

The Mines Branch from the Department of Innovation, Energy and Mines was responsible for conducting consultations for the proposed Development with potentially affected First Nations and Aboriginal communities.

The Department of Innovation, Energy and Mines has recommended that the proponent and the Mines Branch continue sharing information specific to Aboriginal consultation and is in support of the issuance of an Environment Act Licence for the Lalor Mine.

**RECOMMENDATION:**

The Proponent should be issued a Licence for the construction and operation of the Lalor Mine in accordance with the specifications, terms and conditions of the attached draft Licence. Enforcement of the Licence should be assigned to the Environmental Approvals Branch until construction of the Development is complete.

**PREPARED BY:**

Jennifer Winsor, P.Eng.  
Environmental Engineer  
Environmental Approvals Branch

January 15, 2014  
Telephone: (204) 945-7012  
Fax: (204) 945-5229  
E-mail Address: Jennifer.Winsor@gov.mb.ca