

LaFleur Minerals Inc. (9511-2090 Quebec Inc.)

REPORT FOR:

EVALUATION OF THE BEACON PLANT - VAL-D'OR

BUMIGEME Inc.

#C25010



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EVALUATION OF THE BEACON PLANT – VAL-D'OR

1 INTRODUCTION

LaFleur Minerals Inc. has mandated the Montreal-based engineering firm Bumigeme Inc. to evaluate the condition of the Beacon Plant located in Val-d'Or and the costs to refurbish it and the commissioning. The mandate has been realized with the collaboration of Mr. Ahmed Bouajila, P. Eng and Mr. Roger Jolicoeur of RWJ Consultant.

Bumigeme Inc.'s professional responsibility within this mandate is strictly limited to:

- Assessing the general condition of the Beacon plant and evaluating the rehabilitation costs for this plant, along with commissioning costs;
- Evaluating the construction costs for a similar plant in 2025.

2 PROCESS DESCRIPTION

The detailed description of the process areas is given below:

2.1 Ore receiving

The ore from different mines will be trucked to the concentrator site, and each truckload will be identified, weighed, and dumped into a hopper.

2.2 Crushing

The crushing section consists of a 32" × 40" jaw crusher in open circuit and two 4 ¼ feet cone crushers in closed circuit with a double deck 4 feet wide × 12 feet long vibrating screen.

The ROM ore will be extracted from the hopper by a vibrating feeder installed underneath, which feeds in series conveyor #1 and #2 and the #2 feeding the jaw crusher.

The jaw crusher will deliver a product with a particle size distribution of P80 = 4". The crushed ore is collected on conveyor #3 and on conveyor #4. The conveyor #4 feeds conveyor #5 that feeds the double deck screen. The ore from the first deck feeds the secondary cone crusher; the second deck feeds the tertiary cone crusher. Both cone crushers discharge on conveyor #3. The fines from the screen are collected on the conveyor #7. The conveyor #7 discharges on reversible conveyor #8 which feeds silos #1 and #2. The tertiary crusher has an opening of 5/16".

2.3 Grinding

From the silos #1 and #2, the ore is reclaimed by four vibrating feeders of 24" by 60", that feed the rod mill (8 feet diameter by 12 feet long). The rod mill and the ball mill (8 feet diameter by 12 feet long) discharge in a pump box. The pulp from the box is pumped to the cluster cyclones of 15" diameter. The cyclone overflow flows by gravity to the 35 feet diameter thickener. The cyclone under flow feeds the ball mill. Lime and cyanide are added to the rod mill.

2.4 Cyanidation

The underflow from the 35 feet thickener, is pumped by 3 x 3 SRL pumps at 50% solids to the first leaching tank of 20 feet diameter by 26 feet height. There are four leaching tanks communicating by gravity.

The overflow from the thickener is pumped to the pregnant solution tank (25 feet diameter by 30 feet height).

The leached pulp from the last tank is pumped to the drum filters (11 feet 8 inches diameter by 16 feet long) consisting of two stages in series (two filters by series). From the last stage, the pulp is pumped to the tailings pond by 8 x 6 SRL pumps. The filtrates are pumped to the pregnant solution tank.

2.5 Merrill-Crowe

The overflow from the thickener is collected in the pregnant tank of 25 feet diameter by 30 feet height. The pregnant solution from the tank is pumped to the Merrill-Crowe plant where gold and silver are recovered by adding fine metallic zinc dust to the solution. The resulting precipitate is filtered out using a filter press. The precipitate cake is dried, blended with fluxes, and smelted to produce doré bars containing gold and silver.

The gold and silver recovery process by the Merrill-Crowe method includes:

- Clarification and filtration of the pregnant solution to remove suspended solids
- De-aeration of the pregnant solution to reduce dissolved oxygen
- Precipitation of gold and silver by addition of metallic zinc dust
- Filtering and air drying of the precipitate (oven drying may be required)
- Melting the precious metal precipitate in a crucible furnace to produce doré bars. The refining building (refinery) will be constructed as a secure facility.

See Appendix A for flowsheet of the Beacon Plant.

3 DESCRIPTION OF WORKS TO BE REALIZED

The description of the work is based on getting the plant into operation, not in its new state, considering the preservation of the current process: primary, secondary, tertiary crushing, grinding, leaching, filtration, Merrill-Crowe, and refining, with the laboratory section used only for sample preparation for third-party analysis.

It is important to note that the instrumentation and all electrical components were newly installed during the 2021/2022 rehabilitation. Based on our observations, everything appears to be in excellent condition.

Time is scheduled for an electrician/instrumentation technician to inspect everything and make it operational.

The mechanical, structural, and plumbing work would be carried out using labor from independent firms selected by the project staff, under the supervision of the owners' representatives, assisted by a consultant.

Fire protection equipment, adequate lighting, and exits would be clearly marked and equipped with emergency lighting. Services such as water supply, restrooms, men's and women's shower rooms, and the dining room would be rehabilitated before any mechanical, electrical, welding, or piping work related to the process could begin.

An employee orientation would be required before any employee could begin rehabilitation work.

All equipment must be clearly identified at the beginning of the rehabilitation work.

3.1 Crushing Sector

The Grizzly:

- The openings would be modified to 12" x 12".

The Hydraulic Hammer:

- The hammer would be repaired and installed, including the hydraulic system, based on information obtained from people previously involved in the plant. Funding is allocated for the required installations to operate the hammer remotely. This modification will minimize operating labor.

Hopper:

- Nothing really needs to be repaired.

Discharge Chute and Vibrating Feeder:

- The feeder, chute, and tail of the conveyor will be subject to an electrical and mechanical inspection, and rehabilitation work will be carried out as needed.

Overhead Cranes:

- Overhead cranes, the two 5-ton overhead cranes, one located to serve the crushing sector and the other the grinding sector, must be inspected by a certified firm before they can be used.

Magnet:

- It is essential to relocate the magnet to the head of conveyor 5110-CV-001. The projected cost is \$70,000.

Metal Detector:

- A metal detector will be installed on belt 5210-CV-002 to prevent metal parts from being found and to prevent damage to the belts and cone crushers.

Jaw Crusher:

- The jaw crusher's lubrication system must be cleaned and started up. The crusher has been reconditioned. It is recommended that the opening be adjusted to ± 4 inches. The discharge chute should be modified and a section of the belt replaced.

Cone Crushers:

- The secondary and tertiary cone crushers must be disassembled to inspect the bronze seats and gears, replace the oil, inspect the oil distribution pumps, repair any leaks, and adjust the openings properly at 1-1/4" and 5/16" respectively.
- The secondary crusher's grout will need to be redone.

Double Vibrating Screen:

- The screen must have a complete evaluation. There are several welds on the components, some of which will need to be replaced. Inspect the ball bearings, change the oil, check the belts and pulleys, and replace them if necessary.
- New clothes with the desired openings will be installed on both decks.

Dust Collector:

- The dust collector, a type (water scrubber), was installed new in 2022; however, the piping will need to be completed. The pump that supplies water to the unit will need to be replaced with a higher-flow pump.

Conveyor Scales:

- Both scales on conveyors 5310-CV-007 and 5410-CV-010 will need to be checked and calibrated.
- The sampler on conveyor 5320-CV-009 is manually operated and needs to be modified to operate in automatic mode.

Conveyors:

- All conveyors must be thoroughly inspected: rollers, speed reducers, pulleys, and belts, and the oils must be replaced. Safety items must be checked and repaired as needed.
- Conveyor 5210-CV-004, The head pulley must be relocated.

3.2 Ore Bins

- At the top of the silos. Verify that all safety guards are in place, applying the same guidelines as for the other conveyors.
- The #1 is empty; the vibratory feeders must be relocated, and chutes #3 and #4 require modifications for use. Silo #2 will need to be emptied to modify the chutes gates.

3.3 Grinding

Conveyor Scale 200-CV-02:

- The scale on the conveyor that feed the rod mill must be cleaned, inspected, and calibrated.

Rod Mill:

- The mill chute must be replaced with a new one, reinstalled, and the seal replaced. Check the two fiber main bearings by removing them from their respective cages; replace if necessary. Modify the cooling water return piping for the mill's main bearings. Place the mill back on the main bearings, check the

lubrication and grease in the pinion and drive gear bearings. The alignment, clearance, and condition of the gears must be checked and adjusted.

- Clean and inspect the gear grease system, ensuring there is grease in the barrel.
- Check the speed reducer, replace the oil, and check and grease the couplings.
- Reinstall the trummel screen and chute cover at the mill outlet. Load the mill with grinding rods.

Ball Mill:

- Install the new chute at the mill feed.
- Check the two Babbitt main bearings by removing them from their respective cages, repair if necessary.
- Replace the mill on the main bearings, check the grease in the main bearings and the grease in the drive gear bearings. The gears should be checked for alignment, clearance, and condition.
- Clean and check the gear grease system and ensure there is grease in the barrel.
- Check the speed reducer, replace the oil, check and grease the couplings.
- Reinstall the rubber liners with new bolts and seals and reload the grinding balls in the mill.
- Reinstall the trummel screen and chute cover at the mill outlet.

Mills discharge boxes:

- The boxes and pumps are in good condition; the feed and bypass holes need to be modified.

Cyclones:

- Inspect components.

Trash screen:

- Inspect the screen, pulleys, and belts, change the oils, and clean the clothes openings.
- Grinding area sump pump:
- Recondition and reinstall the vertical pump in the appropriate location.

Slurry Pumps:

- All pulp pumps must be disassembled and replaced if any parts are worn. The pulleys must be checked, cleaned if rusted, and the belts checked and replaced if necessary. Grease all pumps.
- The seals and gland water supply to all pumps must be checked. Seal beads will be added if necessary. Reinstall the solenoid valves and ensure that the seal supply pipes are not obstructed.
- The motors will be inspected by manually rotating the shaft to check and lubricate the bearings.

3.4 Thickening and Leaching

Thickener:

- The thickener tank: no anomalies were observed.
- Check the rake level and the thickener lifting system.
- Raise the two thickener discharge pumps.

Leaching:

- All speed reducers and gears will be inspected, and the oils will be replaced. The agitator rakes will be cleaned and repaired.
- Replace or relocate some air pipes that were modified during the plant shutdown.
- Modify the leaching tank bypass piping.
- Clean the sludge in the retention basin around the leachate tanks.

Recommendations for the future: In the medium term, it is recommended to replace the current rake agitators with paddle agitators. This modification will increase leaching efficiency, prevent accumulation in the tanks, and reduce maintenance. The replacement cost will be approximately \$600,000.

3.5 Filtration

Drum filters:

- Replace the vacuum valves, wear plates, and some pipes that have been damaged by pulp. Inspect the piping in general and repair as needed. The clothes must be replaced. Some plastic grate will need to be repaired or replaced (spare grates is available in the plant). The drum drive reducers, rake reducers, and beater (pulper) reducers are in good condition. The oils must be replaced. Check the pulleys, belts, and couplings.

Filters Ventilation:

- Complete the ventilation above the filters to evacuate acid vapors during acid washing.

Filtrate:

- The tanks must be cleaned, the piping checked and replaced if necessary and the two pumps reconditioned.

Filters Vacuum Pumps:

- The circuit is equipped with two Nash vacuum pumps, one 200 HP for normal operation and the other 100 HP as a backup. The 200 HP pump will need to be disassembled for internal inspection due to pulp circulating inside. The 100 HP pump is in disassembled parts, the components are completely rusted, and it requires a complete reconditioning. The nearby sump pump will need to be checked. A section of protective wall must be built along 5210-CV-003 to prevent rocks from falling into the sump.

3.6 Tailings and Water recycling Pipes

Comments;

A site visit did not reveal any major problems with the tailings pond. The tailings pond consists of a tailings retention basin, a polishing basin, and a buffer basin from which water is discharged into the environment when necessary.

At the time of the visit, as the plant was shut down, the water volume in the pond was very low, but some of the water from the polishing basin was pumped into the buffer basin to maintain the water in the polishing basin at an acceptable level. Even when the plant is not operating, the level of the polishing basin can vary depending on heavy rains or snowmelt in the spring.

The water pumped into the buffer basin is measured and analyzed, and the results are reported to the various environmental ministries.

However, during the visit, a problem with the dike near the decantation tower was mentioned.

The pipes from the old decantation tower that transfer water from the tailings pond to the polishing basin are either broken or leaking, which could weaken the dike where the pipes pass.

We also noted that the water reclaimed to the mill is pumped from the tailings pond and not from the polishing basin. This should be corrected.

Works to be done;

- Start the automatic sampler.
- During the plant shutdown, the tailings line was cut in section to unfrost it. It is planned to fusion the cut sections and connect some sections to the water return line to the plant.
- In the short term, or until the plant is back in operation, close the valves in the tailings pond's decantation tower and install permanent plugs in the pipes to prevent any possibility of leakage.
- The necessary corrections would be to excavate the dike where the pipes from the old decantation tower pass, remove them, and rebuild this section of the dike.
- Water transfers from the tailings pond to the polishing basin and from the polishing basin to the buffer basin should be carried out using siphons.
- Relocate the water return pump to the mill from the tailings pond to the polishing basin.

Budget;

We do not know who has done the budget of \$1,447,000 coming from the Beacon TSF Restart study. We believe that this number could be reduced to approximately \$250,000 CA. To get a more accurate cost, we recommend to proceed with a more detailed study.

3.7 Merrill Crowe Circuit

- All tanks are in good condition; just ensure they are clean before startup.
- Calibrate the level instruments.
- The clarifier tank is in excellent condition. Install a steel plate to divide the tank into two sections, modify the solution feed and overflow piping, replace the bags, and check all valves, replacing any that are defective.
- The hoist structure above the clarifier used to handle the bags needs to be extended.
- It normally has two precipitation pumps; currently, only one is installed. The other one, which is in the workshop, needs to be reconditioned and reinstalled.

- The zinc conveyor, the cone, and the lead acetate distributor need to be cleaned; they are in good condition.
- The aeration tank has been replaced; the inside of the tank needs to be checked to ensure that the plastic used for deaeration is not loaded with scale.
- Calibrate the level control connected to an electrically motorized valve to allow control of the desired tank level.
- Install the vacuum loss protection system with an alarm.
- The vacuum pump requires no explicit work, except for a thorough cleaning and routine inspection.
- The presses should be covered with double cotton; the polymer frames are in very good condition.
- The flow rate measurement at the press outlet is produced with a V-notch, the height of which is measured by an ultrasonic probe. Everything is in excellent condition; calibration is required.
- The solution at the press outlet is pumped by two pumps. The box and one pump must be relocated to the lower cement floor to avoid flooding the adjacent offices. The other pump will replace the damaged solution pump.

3.8 Refinery

Induction Furnace:

- The furnace and its components have been refurbished; the cooling and hydraulic systems must be checked.
- It is recommended to hire an expert for commissioning.

3.9 Reagents Distribution Section

Cyanide System:

- Repair leaks in the tank and piping, modify the distribution pump, primarily the motor/pump alignment. The problem generates vibration, which results in the destruction of the mechanical joints in the piping.
- Check the instruments and make them operational.

Lime System:

- The lime tank contains lime. It has a live bottom. We don't think this is a problem. If, for any reason, we need to empty it, we will take off the screw and empty it

onto the floor. It will be recovered with a vacuum truck and transported to the tailing disposal pond.

- Inspect the screw, replace the bearings, and change the oil in the gear reducer.

Flocculant Distribution:

- Modification of existing system should be purchased and incorporated.

Lead Nitrate Distribution:

- Check all components, change the oil in the screw reducer, and ensure proper ventilation.

Metering Pumps:

- Check the metering pumps required for the sample. Sampling of the lean and rich solutions and feeding of lead acetate into the zinc cone.

3.10 Services

Standby Generator:

- Update the generator, replace the oil, filters, and perform a service inspection. Commissioning it by an expert

Compressed Air:

- Complete the construction of the compressor building. The two Sullair compressors were in working order when the plant was shut down; they only require a tune-up.
- Relocate them in the building for this purpose, when the construction is completed.
- A new 1200 CFM, 110 PSI, 250 HP, 575 V compressor must be purchased as a backup for maintenance or in the event of a breakdown of one of the other two compressors.
- The air tanks are in new and certified condition; check the instrumentation.

3.11 Electrical/Instrumentation

- Everything was refurbished in 2022 and well protected. A routine inspection with individual tests will be performed before the equipment is commissioned.

3.12 Buildings

- Reflection work on the plant building, the roof, and some metal sheets on the walls must be completed promptly.
- No structures with major anomalies have been identified; some sections could be painted.
- The compressor building is to be completed.
- The primary crusher ore feed hopper and shelter have to be repaired, and doors should be installed.

3.13 Supervision

- The rehabilitation project will be spread over a period of three months, and one month for commissioning. The composition of the company's permanent workforce is attached to the document.

3.14 Workforce for the work

- To carry out the electrical and instrumentation work, a total of 500 hours is planned over a period of three months, excluding the start-up period. A Class 1 mechanical/electrical foreman is expected for the entire duration of the rehabilitation and one month for commissioning.
- Regarding the rental labor for all mechanical, piping, and cleaning work, 6,552 hours are allocated, with the hourly rate applied to all these employees being \$125.00 per hour.
- Amounts are allocated for expert start-up of the compressors, overhead cranes, induction furnace, and emergency generator.

3.15 Environment

- We conducted a tour of the facilities and tailings ponds and noted the work to be done. Given that the owners provided us with a recent assessment from an environmental expert firm, we have included this submission.

3.16 Safety

- As mentioned at the beginning of the report, ensure that safety equipment is in place and compliant with regulations.

- Safety documents such as SIMDUT and prevention must be updated, handrails, machine guards will be brought into compliance with occupational health and safety regulations.
- Identification adequately all the equipment's
- Update the surveillance camera system and entry control system.

4 DETAILED LIST OF ALL EQUIPMENT WITH REFURBISHMENT COSTS

Table 4.1 : List of equipment and refurbishment costs

# Equipment's	Description:	Make Suppliers	Dimensions	Motor H.P.	Material Cost	Manpower Hours/ \$125.	Total Cost:	Work to be done Refer to the detail discription in the report.
Section 5000 SERVICE								
5000-PB-032	Sewer pump to septic tank					4	\$500	Commissioning
5000-PE-033	Water processing pump in shaft	Submersible	4"	30		20	\$2 500	Get it down in the shaft
5000-PE-034	Service after pump (Sanitary)					10	\$1 250	Repair pump
50000-PE-035	Recirculating tailing water pump	Submersible	4"	50				OK
	Tailing pipe (Mill to Tailing Pond)		8" X 3000'			120	\$15 000	Fusion piping joints
5000-CO-001	Screw Hight pressure compressor	Sullar/ 40 PSI	2000 CFM	200			\$4 000	Commisionning Expert
5000-CO-003	Low pressure compressor	Sullar/110 PSI	1200 CFM	250			\$4 000	Commisionning Expert
5000-CO-002	New compressor c/w installation		1200 CFM	250	\$130 000	40	\$135 000	Backup for plant air
5000-AA-001	Instrumentation air dryer				\$500	10	\$1 750	Clean/commissioning
5000*RA-001	Process air tank							OK
5000-RA-002	Instrumentation air tank							OK
5000-RA-003	Low pressure air tank							OK
5000-UV-001	Factory ventilation unit (Not installed)							
5000-UV-001	Ventilation unit dryer							
5000-PP-036	Sump pump in compressors area	Galliger	2"	3	\$2 500	40	\$7 500	Install protecting wall from trash
5000-GE-001	Emergency generator c/w dist. panel	Caterpillar	1000kW/4100v				\$4 000	Commisionning Expert

Section 5100 GRIZZLY							
5110-MH-001	Hydraulic Hammer				\$25 000	100	\$37 500 Install and distance controls
5110-HY-001	Hydraulic Hammer system				\$5 000	50	\$11 250 Instal unit and hosing
5110-GR-001	Grizzly (repair)				\$25 000	300	\$62 500 Modify opening 12" X 12"
5110-TR-001	Ore hopper						OK
5110-CH-001	Vibrating feeder chute						OK
5110-AL-001	Vibrating feeder				\$3 000	20	\$5 500 Repair power unit
5110-CV-001	Hopper discharge conveyor		30" X 125"		\$3 000	20	\$5 500 Repair/Commissioning
5110-CH-002	Transfer chute CV001						\$0 OK
5110-SM-001	Magnet	Eriez	30" X 42"	Magnet	\$50 000	160	\$70 000 Steel structure and a new magnet

Section 5200 CRUSHING							
5200-PR-001	Overhead crane		5 Tonnes				\$4 000 Commissioning Expert
5200-DP-001	Dust collector				\$5 000	200	\$30 000 Complete installation
5200-VE-001	Dust collector fan				\$1 500	20	\$4 000 Replaced water pump
5210-CV-002	Jaw crusher feed conveyor		30" X 150'	75	\$4 000	40	\$9 000 Oil change/check components
5210-BC-001	CV-002 Belt scale					4	\$500 Calibration
5210-MD-001	Metal Detector		30"		\$12 000	20	\$14 500 New installation 5210-CV-002
5210-CH-003	Jaw crusher feed chute						OK
5210-CM-010	Primary jaw crusher	Birdsborough	32" X 40"	125	\$2 000	40	\$7 000 Overhaul checkup/Adjust
5210-LG-001	Jaw crusher lubrication system	Buchanan					check unit and distribution
5210-CH-004	Jaw crusher discharge chute					20	\$2 500 Modify
5210-CV-003	Jaw crusher discharge conveyor		30" X 110'	50	\$1 500	30	\$5 250 Oil change/check components
							Replace section of belt
5210-CH-005	CV-003 transfer chute						OK
5210-CV-004	Transfer conveyor		30" X 18'	10	\$4 000	30	\$7 750 Oil change/check components
5210-CH-006	CV-004 Transfer chute						OK
5210-CV-005	Vibrating screen feed conveyor		30" X 65'	30	\$3 000	30	\$6 750 Oil change/check components
5220-CH-007	Vibration screen feed chute						OK
5220-TM-052	Vibrating screen (Crushing)		4' X 12' Double	7,5	\$9 000	60	\$16 500 Re-conditioning
5220-CH-008	Fine ore discharge chute						OK
5220-CV-006	Fine ore discharge conveyor		30" X 10'	5	\$2 500	30	\$6 250 Oil change/check components
5220-CH-009	Secondary crusher feed chute						OK
5220-CC-020	Cone crusher (Secondary)	Nordberg	STD 4-1/4	125	\$14 000	80	\$24 000 Dismantle to check components
							Replace brass parts (Head socket)
					\$3 000	80	\$13 000 Redo grout under crusher
5220-HY-002	Sec. cone crusher lubrication system			3	\$7 000	20	\$9 500 Replace oil
5220-PH-001	Sec. cone crusher lubrication pump			3	\$400	10	\$1 650 Check/repair leaks
5230-CH-010	Tertiary cone crusher feed chute						OK
5230-CC-030	Tertiary cone crusher	Nordberg	SH 4-1/4	150	\$18 000	80	\$28 000 Dismantle to check components
							Replace brass parts (Head socket)
5230-HY-003	# 3 cone crusher lubrication system				\$7 000	20	\$9 500 Oil replacement
5230-PH-002	# 3 cone crusher lubrication pump			3	\$400	10	\$1 650 Check/repair leaks

Section 5300 ORE STORAGE							
5310-CV-007	Ore transfer conveyor		24" X 125'		\$3 000	20	\$5 500 Oil change/check components
5310-BC-001	Feed ore bins belt scale					10	\$1 250 Calibration
5310-CH-011	CV-007 transfer chute						OK
5310-CV-008	Ore bins feed conveyor		24" X 50'	40	\$2 000	10	\$3 250 Oil change/check components
5320-BM-001	Ore bin # 1	30' X 30'	1 000 tonnes				OK
5320-BM-002	Ore bin # 2	30' X 30'	1 000 tonnes			80	\$10 000 Empty to modify chute
5320-AL-011	# 1 Vibrating feeder		24" X 60"			40	\$5 000 Relocate feeder
5320-CH-011	# 1 Vibrating feeder feed chute		24" X 24" X 60"		\$1 000	60	\$8 500 Modify chute
5320-AL-012	# 2 Vibrating feeder		24" X 60"			40	\$5 000 Relocate feeder
5320-CH-012	# 2 Vibrating feeder feed chute		24" X 24" X 60"		\$1 000	60	\$8 500 Modify chute
5320-AL-023	# 3 Vibrating feeder		24" X 60"			10	\$1 250 Testing
5320-CH-023	# 1 Vibrating feeder feed chute		24" X 24" X 60"		\$1 000	20	\$3 500 Modifying gate
5320-AL-024	# 4 Vibrating feeder		24" X 60"			10	\$1 250 Testing
5320-CH-024	# 1 Vibrating feeder feed chute		24" X 24" X 60"		\$1 000	20	\$3 500 Modifying gate
5320-CV-009	Ore bins discharge conveyor		24" X 60'		\$1 500	30	\$5 250 Oil change/check components

Section 5400 GRINDING								
5400-PR-002	Grinding area Overhead crane		5 Tonnes				\$4 000	Commisionning Expert
5410-PP-004	Grinding area sump pump	Galliger	2"		\$2 500	20	\$5 000	Overhaul pump
5410-CV-010	Rod Mill feed conveyor		24" X 30	15	\$2 500	30	\$6 250	Oil change/check components
5410-BC-002	Rod Mill feed conveyor scale belt					10	\$1 250	Calibration
5410-EC-001	Rod Mill feed conveyor sampler	Manual			\$2 500	20	\$5 000	Modified to Auto
5410-CH-040	Rod Mill feed chute				\$3 000	60	\$10 500	Require new chute
5410-BR-001	Rod Mill	Hardline	8' X 12'	350		20	\$2 500	Sit on bearings/check
	Driven gears					10	\$1 250	Check Gears alignment
	Bearings cooling system				\$1 500	40	\$6 500	Repair bearings water drain piping
	Gear reducer				\$1 500	10	\$2 750	Change oil
	Mill rods load		3- 1/2" New			30	\$3 750	Load Rods Charge
	Mill rod charger				\$2 000	20	\$4 500	Modify unit
5420-BB-002	Ball Mill	Allis-Chalme	8' X 12'	350		20	\$2 500	Sit on bearings/check
	Driven gears					10	\$1 250	Check Gears alignment
	Reducer				\$1 500	30	\$5 250	Change oil/Check gears condition
	Ball Mill feed chute	Home Made	8 "		\$3 000	10	\$4 250	Install new chute
	Mill liners				\$12 000	300	\$49 500	Relined (Old liners) new bolts
	Ball load		1-1/2" New			60	\$7 500	Load Ball Charge
5410-BP-001	Mills discharge box				\$1 000	10	\$2 250	Modify distribution opening
5410-PB-001	Cyclones feed pump # 1	Gould	8 X 6 X 18 SRL-C	30	\$1 500	20	\$4 000	Check/repacked
5420-BP-002	Mills discharge box				\$1 500	20	\$4 000	Modify distribution opening
5420-PB-002	Cyclones feed pump # 2	Gould	8 X 6 X 18 SRL-C	30	\$1 500	12	\$3 000	Check/repacked
5410-CY-001	Cyclone # 1	Kreb	15"			4	\$500	Inspection
5420-CY-002	Cyclone # 2	Kreb	15"			4	\$500	Inspection
5420-SV-045	Cyclones overflow box					4	\$500	Clean
5420-BP-008	Trash pump box					4	\$500	Clean/Modify
5420-PB-003	Trash screen pump	Gould	5X 5 SRL	10	\$1 500	12	\$3 000	Check/Repacked
5420-TM-054	Vibrating trash screen	3' X 10'			\$4 500	20	\$7 000	Replacing Oil and Clothe

Section 5510 ÉPAISSISSEUR								
5510-EP-001	Thickener tank	Eimco	35' Dia.					OK
5510-RT-001	Thickener rakes			3		30	\$3 750	Leveling
5510-ML-001	Rakes lifting mechanism					10	\$1 250	Inspection
5510-PB-005	Thickener discharge pump	Gould	3 X 3 SRL-C	10	\$500	30	\$4 250	Check/Repacked/Relocate
5510-PB-006	Thickener discharge pump	Gould	3 X 3 SRL-C	10	\$500	30	\$4 250	Check/Repacked/Relocate
5510-PP-007	Sump pump thickener area	Galliger	3"	5	\$3 000	20	\$5 500	Overhaul

Section 5520 LEACHING								
5520-RL-001	Leaching tank # 1	steel	20' X 26'		\$4 000	40	\$9 000	Modified bypass
5520-AG-001	Agitator # 1	Rakes		20	\$2 000	80	\$12 000	Mechanical and Air lift
5520-RL-002	Leaching tank # 2		20' X 26'		\$4 000	40	\$9 000	Modified bypass
5520-AG-002	Agitator # 2	Rakes		20	\$2 000	80	\$12 000	Mechanical and Air lift
5520-RL-003	Leaching tank # 3		20' X 26'		\$4 000	40	\$9 000	Modified bypass
5520-AG-003	Agitator # 3	Rakes		20	\$2 000	80	\$12 000	Mechanical and Air lift
5520-RL-004	Leaching tank # 4		20' X 26'		\$4 000	40	\$9 000	Modified bypass
5520-AG-004	Agitator # 4	Rakes		20	\$2 000	80	\$12 000	Mechanical and Air lift

Section 5600 FILTRATION									
5600-VT-001	Ventilation primary filters	Exhaust			\$2 000	40	\$7 000	Complete installation	
5600-VT-002	Ventilation secondary filters				\$2 000	40	\$7 000	Complete installation	
5600-RE-015	Vacuum pump exhaust tank				\$1 000	20	\$3 500	Check Tank. & Piping	
5600-RE-016	Barometric tank	42" X 60"				30	\$3 750	Washed/inspection	
5600-PV-037	Filters vacuum pump # 1	Nash			\$8 000	80	\$18 000	Overhaul	
5600-PV-038	Filters vacuum # 2	Nash			\$25 000	80	\$35 000	Overhaul	
5620-EC-002	Tailing box automatic sampler				\$1 500	20	\$4 000	Repair	
5610-BP-003	Primary filters feed box					5	\$625	Clean	
5610-PB-008	Primary filters feed pump	Gould	3 X 3 SRL-C	7,5	\$1 000	20	\$3 500	Check/Repacked	
5610-FT-001	Primary # 1 drum filter	Eimco	11'-6" X 16	5	\$10 000	300	\$47 500	Replaced clothe/repair piping	
					\$7 000	10	\$8 250	New main vacuum valve (Head)	
5610-RT-001	Drum filter # 1 rakes			3		12	\$1 500	Check	
5610-RE-001	Filtrate tank primary filters	Eimco	30" X 60"		\$10 000	100	\$22 500	Check Tank & Piping	
5610-PF-011	Primary filtrate pump	Eimco	Inline 8"	20	\$5 000	30	\$8 750	Overhaul Pump	
5610-RP-001	Repulper # 1 to leach # 1	Eimco		3	\$500	10	\$1 750	Check/Repacked	
5610-FT-002	Primary # 2 drum filter	Eimco	11'-6" X 16	5	\$10 000	300	\$47 500	Replaced clothe/repair piping	
					\$7 000	20	\$9 500	New main vacuum valve (Head)	
5610-RT-002	Drum filter # 2 rakes			3		12	\$1 500	Check	
5610-RP-002	Repulper # 2 to leach # 1	Pallets		3	\$500	10	\$1 750	Check/Repacked	
5610-BP-004	Pump box to leach tank # 4					5	\$625	Clean	
5610-PB-010	Pump to leach tank # 4	Gould	3 X 3 -SRL	7,5	\$500	20	\$3 000	Check/Repacked	
5620-BP-005	Secondary drum filters pump box					5	\$625	Clean	
5620-PB-009	Secondary drum filters pump (3 & 4)	Gould	3 X 3 -SRL	7,5	\$1 000	20	\$3 500	Check/Repacked	
5620-FT-003	Secondary drum filters # 3	Eimco	11'-6" X 16	5	\$10 000	300	\$47 500	Replaced clothe/repair piping	
					\$7 000	20	\$9 500	New main vacuum valve (Head)	
5620-RT-003	Drum filter # 3 rakes			3		12	\$1 500	Check	
5620-RE-002	Filtrate tank # 2	Eimco	30" X 60"		\$10 000	100	\$22 500	Check Tank & Repair Piping	
5620-PF-012	Secondary filtrate pump	Eimco	Inline 8"	20	\$5 000	30	\$8 750	Overhaul Pump	
5620-RP-003	Secondary Repulper # 3 to tailing	Pallets		3	\$500	10	\$1 750	Check/Repacked	
5620-FT-004	Drum filter # 4	Eimco	11'-6" X 16	5	\$10 000	300	\$47 500	Replaced clothe/repair piping	
					\$7 000	20	\$9 500	New main vacuum valve (Head)	
5620-RT-004	Drum filter # 4 Rakes			3		12	\$1 500	Check	
5620-RP-004	Secondary Repulper # 4 to tailing	Pallets		3	\$500	10	\$1 750	Check/Repacked	
5620-BP-006	Tailing pump box					10	\$1 250	Clean	
5620-PB-015	Tailing pump	Gould	8 X 6 X 18 SRL-C	50	\$1 500	20	\$4 000	Check/Repacked	
5620-PB-016	tailing pump	Gould	8 X 6 X 18 SRL-C	50	\$1 500	20	\$4 000	Check/Repacked	
Section 5700 CLARIFICATION									
5700-PC-003	Chain hoist	Nouveau	500kg.			24	\$3 000	Modify beam & Check Hoist	
5710-RE-005	Preg solution tank	steel	20' X 30'					OK	
5710-PR-017	Preg solution pump	Gould	5 X 5 SRL	15	\$1 500	20	\$4 000	Check/Repacked	
5710-PR-018	Preg solution pump	Gould	5 X 5 SRL	15	\$1 500	20	\$4 000	Check/Repacked	
5710-CL-100	Clarifier tank				\$1 000	60	\$8 500	Modify feed/Divide un 2 sections	
5710-FR-029	Clarifier bags (29)				\$6 400	300	\$43 900	Replaced bags	
5710-RE-006	Merrill-Crowe tank	New	36" X 84"		\$500	20	\$3 000	Check/ gauges/instrument	
5710-PV-019	Merrill-Crowe vacuum pump	Nash	1-1/2"	7,5	\$500	10	\$1 750	Check/Repacked	
5710-PV-020	Merrill-Crowe vacuum pump	Nash	1-1/2"	7,5	\$500	10	\$1 750	Spare	
5710-CV-011	Zinc conveyor			1/8 HP		5	\$625	Check	
5710-CZ-001	Zinc cone				\$500	10	\$1 750	Clean/Replaced valves	
5720-PN-021	Precipitation pump	GP Pump VG	4" X 3"	30	\$1 500	20	\$4 000	Check/Repacked	
5720-PN-022	Precipitation pump (Future)							Not available	
5720-PR-001	40 Frames presses	Perrin	40" X 40"		\$3 000	40	\$8 000	Cut cottons and dressed	
5720-PR-002	40 Frames presses	Perrin	40" X 40"		\$3 000	40	\$8 000	Cut cottons and dressed	
5720-PR-0023	40 Frames presses	Perrin	40" X 40"		\$3 000	40	\$8 000	Cut cottons and dressed	
5720-RE-007	Barren measure tank	steel	4' X 8' X 4'					OK	
5720-PS-023	Presse barren pump	Gould	5" X 5" SRL	20		8	\$1 000	Take out circuit	
5720-PS-024	Presse barren pump	Gould	5" X 5" SRL	20	\$12 000	60	\$19 500	Relocated Box and Pumps	
5730-RE-008	Process water tank	steel	25' X 30'					OK	
5730-PE-025	Process water pump	Gould	5" X 5" SRL	15	\$1 500	20	\$4 000	Check/Repacked	
5740-RE-009	Barren solution tank	steel	20' X 30'					OK	
5740-PS-026	Barren solution pump	M/P	4" X 3"	40	\$1 500	20	\$4 000	Replaced with 5720-PS-023	
5740-PS-027	Barren solution pump	M/P	4" X 3"	40	\$1 500	20	\$4 000	Check/Repacked	

Section 5800 REFINERY									
5800-VT-005	Furnace ventilation	MELT	250kW/500kg.			10	\$1 250	Check	
5810-FI-001	Induction furnace c/w cooling system						\$5 000	Commissioning Expert	
5810-PH-001	Furnace hydraulic pumps							OK	
5810-CR-001	Gold concentrate calcinatory							OK	

Section 5900 REAGENT									
	Flocculant system				\$45 000	20	\$47 500	Modification of existing system	
5910-RE-010	Flocculant mixing tank							should be purchased and	
5900-DP-002	Flocculant dust collector							incorporated	
5910-AG-010	Flocculant agitator								
5910-PF-028	Flocculant transfer pump								
5910-RE-011	Flocculant distribution tank								
5910-PF-029	Flocculant distribution pump								
5920-RE-012	Lime bin				\$3 000	40	\$8 000	Empty/check condition	
5920-DP-003	Lime bin dust collector				\$1 200	30	\$4 950	Clean/replaced bags	
5920-VB-001	Life Bin Button (Vibrating button)				\$500	20	\$3 000	Check /commissioning	
5920-VC-001	Lime screw					20	\$2 500	Commissioning/empty	
5930-RE-013	Cyanide tank					20	\$2 500	Repair leaks	
5930-PC-030	Cyanide distribution pump & Piping					20	\$2 500	Testing	
5940-RE-014	Acid mixing tank					4	\$500	Check pump and piping	
5940-PA-031	Acid distribution pump				\$1 500	10	\$2 750	Replaced	
5950-VT-008	Lead system ventilation					10	\$1 250	Checking capacity	
5950-VP-002	Lead screw feeder c/w distribution box					10	\$1 250	Clean/oil change	

Total mechanical parts/men power				\$655 900	6 552	\$1 499 900			
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SUMMARY EQUIPMENTS REHABILITATION:

SUPPLIES: \$655 900

MANPOWER: \$819 000

COMMISSIONING EXPERTS: \$25 000

TOTAL EQUIP. REHABILITATION: \$1 499 900

Table 4.2 : Cost Summary

Detailed Engineering	\$168 000
Rehabilitation Staff	\$295 500
Commissioning Staff	\$443 900
Equipment's reconditioning	
Supplies	\$655 900
Labor Rental	\$819 000
Equipment's Commissioning by Expert	\$25 000
Consumables:	
First charge & 1 month inventory	\$354 371
Building	\$340 000
Require equipment's rental	\$62 000
TSF Restart Cost	\$250 000
Total:	\$3 413 671
Contingencies 20%	\$682 734
Total Anticipated Rehabilitation and Commissioning costs:	\$4 096 405

Project costs are in Canadian dollars.

This assessment was produced using information obtained from various interveners, information obtained on site, and the experience of Florent Baril and Roger W. Jolicoeur in the ore processing.

Bumigeme Inc.'s responsibility is limited to the anticipated assessment of the rehabilitation and commissioning costs of the Beacon plant. Bumigeme cannot be held liable for the results obtained with respect to this document.

5 PROCESS WATER SUPPLY CONDITIONS

Under normal conditions, the water balance is negative for most treatment plants. This is because some of the water is retained in the tailings pond and some of the surface water in the

tailings pond and polishing pond is lost through evaporation. These losses can range from 15 to 25%. In the case of Beacon, makeup water is supplied by groundwater from the old mining well. In theory, there would be no water released into the environment except in cases of heavy rain; spring snowmelt; and in the case of accumulation of metal ions in the polishing pond water, which requires chemical treatment before release into the environment. According to the information obtained, the groundwater is of good quality.

6 POWER SUPPLY

Electricity is supplied by the Hydro-Québec network. The connected power is approximately 2,400 kW. The current substation has a capacity of 4,000 kW, which is more than sufficient.

7 ENVIRONMENT SITUATION

Currently, the plant is inoperative and the volume of water discharged into the environment is very low and the quality is in compliance with environmental guidelines. After the startup of the concentrator, water quality will need to be monitored even if the quantities discharged into the environment will be very low or zero.

8 ENVIRONMENTAL AND CONSTRUCTION PERMITS

For new plants, it takes approximately five years to obtain all permits and authorizations (see list in appendix B) before studies and construction.

After the PEA study the following steps must be realized:

- Feasibility Study (12 months).
- Environmental Impact Study (6 months).
- BAPE : Bureau d'audiences publiques sur l'environnement (6 months).
- Permits Approbation: Federal, Provincial and Municipal (3 years).
- Cost of above items: 10M CAD.

Note: these schedules and costs can vary according to the sites of the project.

9 ESTIMATED COSTS TO BUILD A NEW SIMILAR CONCENTRATOR

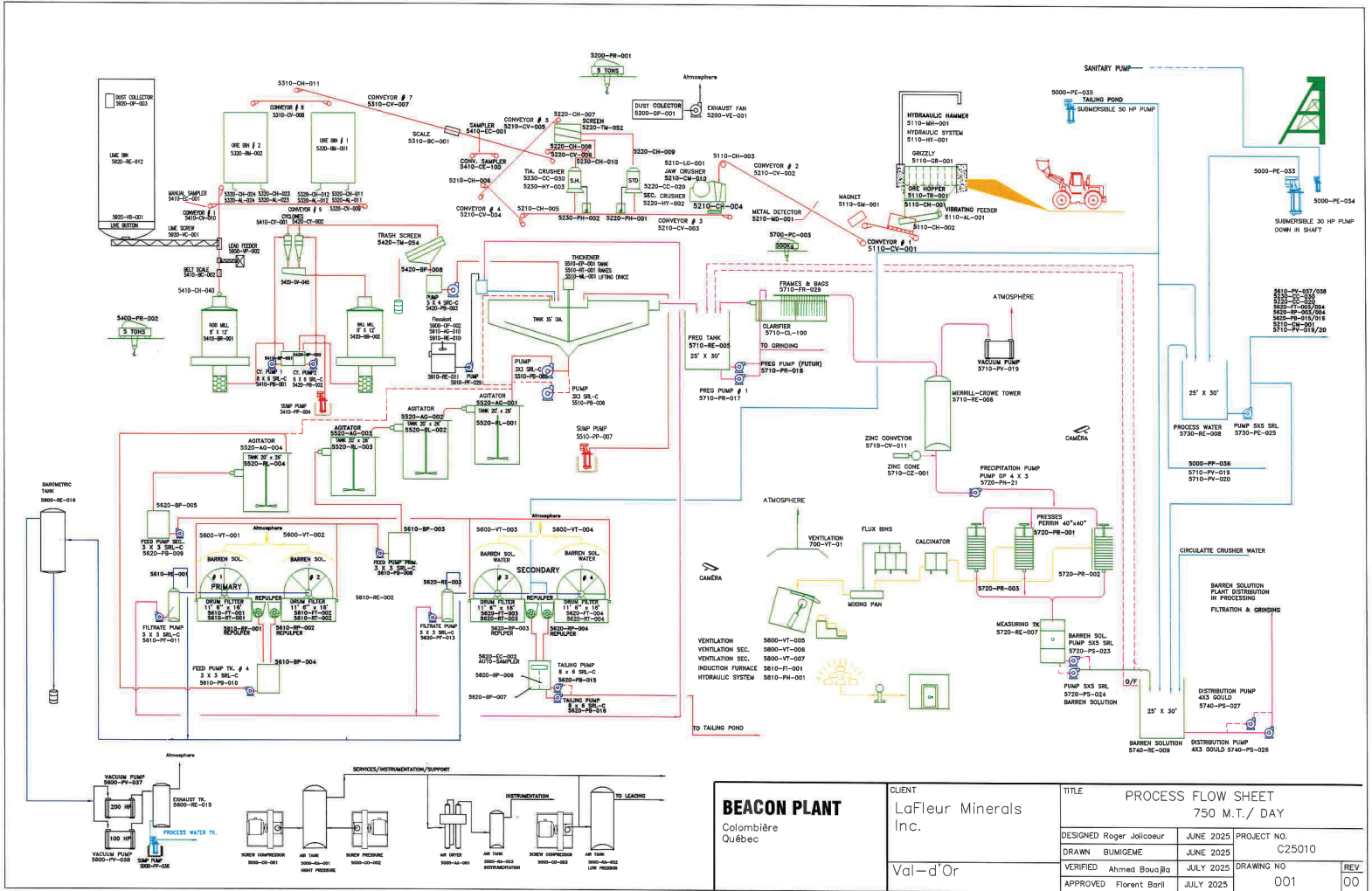
The cost (CAPEX) to build a new similar concentrator is estimated to 49,446,878 CAD. This cost does not include the tailings cost (tailings pond, finishing basin, piping, pumping station, etc.) which could be around 12M CAD.

The construction schedule for a new mill and a new tailings pond is approximately 18 months.

Table 9.1 : Cost Summary

New Beacon Plant	CAD
Equipment Cost	12 885 760
Civil and Structure for Equipment	1 288 576
Installation	3 865 728
Electrical	2 577 152
Piping	1 932 864
Instrumentation	1 030 861
Transport	644 288
Spare parts	644 288
Lab with pyroanalyse	850 000
Total	25 719 517
Infrastructure	
Main Mill Building (22,500 pi2)	10 125 000
Guard Building (432 p2)	64 800
Generator Building (600 pi2)	150 000
Compressor Building (1,200 pi2)	300 000
Hopper Building (900 pi2)	135 000
Fence (1330 Pi Lin)	133 000
Total	10 907 800
EPCM (15%)	5 494 098
Unforeseen, miscellaneous (20%)	7 325 463
Total	12 819 561
CAPEX Total	49 446 878

Appendix A
Flowsheet Diagram



Appendix B

Environmental, mining and municipal regulations for new mining project.

The construction of a gold enrichment plant in Quebec is a major industrial project, subject to strict environmental, mining and municipal regulations. Here is a general list of documents to be provided for such a project:

1. Required Authorizations and Permits

a) Environmental Permits

- Environmental Impact Assessment (EIA) (if required under the Environment Quality Act - LQE)
- Certificate of Authorization (CA) issued by the MELCCFP (Ministry of the Environment, Climate Change, Wildlife and Parks)
- Mine Tailings Management Plan (waste rock and sludge)
- Air, Noise, and Water Quality Modeling

b) Mining Permits

- Mining Operation Permit (issued by the MERN - Ministry of Natural Resources and Forests)
- Technical and Economic Feasibility Study
- Site Redevelopment and Restoration Plan

c) Municipal Permits

- Building Permit
- Certificate of Compliance with Zoning and Urban Planning Regulations
- Road Access Authorization (if local roads are affected)

2. Technical Documents

- Detailed engineering plans of the plant and related infrastructure (buildings, processing facilities, settling ponds, etc.)
- Metallurgical process flowsheet (e.g., grinding, gravimetry, flotation, cyanidation)
- Hydrogeological and geotechnical study of the site
- Wastewater and runoff management plan
- Industrial safety and risk management plan

3. Consultation and Social Acceptability

- Consultation report with local and Indigenous communities
- Agreement with Indigenous communities (if applicable)
- Public communication and social engagement plan

4. Economic and Financial Aspects

- Economic study of the project
- Financing plan
- Financial guarantee for environmental restoration (filed with the MERN)

5. Administrative Documents

- Proof of land ownership or operating authorization
- Company registration documents
- Civil and environmental liability insurance

Notes:

- Some projects may be subject to a federal assessment if they affect areas under federal jurisdiction (e.g., fish, species at risk, Indigenous peoples).
- The process can be coordinated through the Bureau d'audiences publiques sur l'environnement (BAPE) if required