AMENDED ENVIRONMENTAL COMPLIANCE APPROVAL

NUMBER 7768-B6ZMLP
Issue Date: February 19, 2019

Goldcorp Canada Ltd.
17 Eric Radford Way P.O. Box 2000
Red Lake, Ontario
P0V 1C0

Site Location: Goldcorp - Red Lake Gold Mines
15 Eric Radford Way Balmertown
Red Lake Municipality, District of Kenora
P0V 1C0

You have applied under section 20.2 of Part II.1 of the Environmental Protection Act, R.S.O. 1990, c. E. 19 (Environmental Protection Act) for approval of:

Establishment of sewage works for the collection, transmission, treatment and disposal of mine wastewater from Red Lake Mine and sanitary sewage from the Balmer Mine Complex consisting of the following:

PROPOSED WORKS:

Upgrade of the existing North Dam and South Dam of the Secondary Pond to mitigate potential internal erosion and dam safety issues, consisting of the following:

- Reducing the crest elevation of the North Dam and South Dam of the Secondary Pond by 1.3 m to an elevation of 362.0 masl and reducing the maximum pond operating level of the Secondary Pond by 1.1 m to 361.0 masl, thereby providing a minimum freeboard of approximately 1.0 m;
- Replacing the existing tailings liner with a compacted low permeability core and graded filter; and
- Flattening the overall upstream and downstream slopes of the North Dam and South Dam to a minimum of 3H:1V slope.

Including all controls and appurtenances.

All in accordance with the documents listed in Schedule 'A'.

PREVIOUS WORKS:

TAILINGS MANAGEMENT AREA

Tailings Management Area (TMA) system and a permanent recycling system to enable the re-use of the Secondary Pond water for process water in the milling circuit, discharging to the Balmer Lake, consisting of the following Works:

Primary Dam

- Existing Primary Dam with an average crest elevation of 363.4 masl.

Dyke # 1

- Existing Dyke #1 with an average dam crest elevation of 373.3 masl and approximate length of 800 m;
- An emergency spillway at an elevation of 372.8 masl;
- A corrugated steel culvert with water levels regulated by the use of a stop log control inlet weir to the north of the existing culvert;
- A non-woven geotextile layer to function as a filter between mine waste rock and the upstream impervious clay zone; and
- Operation of Dyke #1 with a low permeability upstream face (clay liner) to decrease seepage through the dyke and increase effluent storage capacity, equipped with an emergency spillway at the north end of the dyke, with liquid effluent discharging into the Tailings Area 2 Pond through a corrugated steel culvert, with water levels regulated by use of stop log control inlet, and the toe of the tailings beach to be below the crest of the diversion ditch access road to prevent discharges into the diversion channel located on the north side of the tailings area.

Dyke #2

- Existing Dyke #2 with a current average dam crest elevation of 368.8 masl and an approved but not yet constructed average dam crest elevation of 369.8 masl;
- An Emergency Spillway located 0.5 m below crest elevation;
- Liquid effluent discharging into the Primary Pond through a corrugated steel culvert with water levels regulated by a stop log control inlet;
- A non-woven geotextile layer to function as a filter between mine waste rock and the upstream impervious clay zone; and

- Operation of Dyke #2 with a low permeability upstream face, equipped with an emergency spillway at the north end of the dyke, providing a pond with an approximate water storage volume of 625,000 cubic meters, with liquid effluent discharging into the primary pond through a corrugated steel culvert with water levels regulated by use of stop log control inlet.

East End Dam

- East End Dam with an average crest elevation of 373.3 masl and emergency spillway crest elevation of 370.40 masl; and

- A swale at the far north end of the East End Dam to prevent upstream runoff flows entering the expanded TMA, and designed for including the ½ the Probable Maximum Precipitation (PMP) 24 hour event using the SCS type 2 distribution with peak flows from the East Drainage Area of 30 m^3/s.

Tailings Area 1 North Dam

- Tailings Area 1 North Dam having an approximate length of 1,100 m and with a crest elevation of 373.3m masl extending past Splitter Dam #1 towards Splitter Dam #2;

- A non-woven geotextile layer to function as a filter between mine waste rock and the upstream impervious clay zone.

Water Recycling System

- A permanent water recycling system to reduce the volume of water entering the TMA, consisting of a double walled pipeline running from the Secondary Pond to the main mine site tied into an existing line to feed the milling circuits, equipped with a submersible pump in the Secondary Pond rated at a maximum capacity of 2,500 m^3/d; and

- Including all controls and appurtenances.

All in accordance with the documents listed in Schedule 'A'.

MINE WASTEWATER TREATMENT FACILITY

Sewage works with a Rated Capacity of 30,000 m^3/d for the collection, transmission, treatment and disposal of sewage from the Red Lake Mine Tailings Management Area (TMA) of the existing Red Lake Mine gold mine and mill complex operating at a planned average capacity of approximately 1,500 tonnes/day, a permanent recycling system to enable the re-use of Secondary Pond water for process water in the milling circuit at a maximum capacity of 2,500 m^3/d, discharging to Balmer Lake, Balmer Creek and ultimately to the Chukuni River, consisting of the following:

Primary Pond Wetland (Phases I, II and III)

- Construction of a wetland treatment system within the Primary Pond with a total approximate area of 11 hectares. Designed to improve the natural degradation of ammonia within the system, the wetlands are to be constructed in three (3) phases over several years based on the performance of previous phases. The estimated water depth of 0.1 to 0.2 m, all as per the Wetland Design Report.

- Construction of low height perimeter dykes surrounding the wetland cells to optimize treatment and retention time. The proposed internal cells are approximately 30 m in width and are to be separated by internal structures. The dykes are designed to have a maximum height and crest width of 1.0 m and 4.0 m respectively, with minimum 2H:1V slopes.

- Installation of one (1) open channel flow monitoring device at the entrance of the wetland treatment system.

Tailings Area #2 Wetland (Phase IV)

- Construction of a wetland treatment system on the natural height of ground between Dyke #1 and Dyke #2 with a total approximate area of 12 hectares. The wetland is to be constructed in phases over several years based on the performance of previous phases.

- Construction of low height perimeter dykes surrounding the wetland cells to optimize treatment and retention time. The proposed internal cells are approximately 30 m in width and are to be separated by internal structures. The dykes are designed to have a maximum height and crest width of 1.0 m and 4.0 m respectively, with minimum 2H:1V slopes.

Cyanide Destruction System

- One (1) slurry-type INCO SO_2/Air Wastewater Treatment System to service the 1,500 tonnes per day gold mine mill complex consisting of two (2) cyanide destruction and heavy metal (including arsenic) precipitation reaction tanks equipped with agitator mixers, a process air compressor (blower) delivering oil free air, a lime mixing tank and feed pump, liquid sulphur dioxide (SO_2) storage and metering system, and a ferric sulphate system with mixing and delivery tanks and two (2) metering pumps, with the treated effluent flowing by gravity to the existing final tailings pump box;

Balmer Lake

- Operation of a control structure from Balmer Lake, having a normal operating level of 359.1 masl, a minimum operating level of 358.5 masl and a maximum operating level of 360 masl, with a design crest elevation of the control structure 361.3 masl and a bottom of deck elevation of 360.9 masl, allowing an effective freeboard at the maximum operating level of 1.0 meter; and

- Including all controls and appurtenances to achieve a final treated effluent discharge to Balmer Lake, Balmer Creek and ultimately, to the Chukuni River.

Ammonia Treatment (Trial Works)

Establishment either of the two options listed here to reduce ammonia concentrations in the treated effluent discharge from the Works:

- A set of windmills/compressors to aerate the secondary pond and/or primary pond water for ammonia reduction prior to its transfer to the physical-chemical treatment system for further treatment;

- Use of a set of submerged "Aquamats" and a set of aeration headers with blowers installed in the secondary pond and/or primary pond for ammonia reduction; and

- Including all controls and appurtenances.

PHYSICAL/CHEMICAL WASTEWATER TREATMENT SYSTEM

Tailings Wastewater Pumping Station

A raw tailings wastewater pumping station consisting of the following:

- A Secondary Pond water pumping station consisting of two (2) vertical shaft pumps, mounted on a platform at the end of a road extending in the Secondary Pond of the TMA, each rated at 174 L/s against 24.9 m Total Dynamic Head (TDH); and

- A 500 mm diameter pipe from the pumping station to the treatment plant building.

Tailings Wastewater Treatment System

A tailing wastewater treatment system consisting of the following:

Chemical Storage and Feeding - Primary Coagulant

- A coagulant feed system consisting of two (2) 47,000 L capacity liquid coagulant storage tanks, one (1) 3,700 L day tank, two (2) (one duty, one standby) chemical feed metering pumps, and chemical feed line to the raw water header upstream the static mixer;

Coagulant Aid for Clarification

- One (1) dry polymer preparation system with three (3) (two duty, one standby) chemical feed metering pumps, and chemical feed lines to the two package treatment units injection chambers;

Coagulant Aid for Thickening

- One (1) dry polymer preparation system with two (2) (one duty, one standby) chemical feed metering pumps, and chemical feed lines to the flocculation chamber of the sludge thickener;

Mixing

- An in-line static mixer, 450 mm diameter;

Flocculation/Clarification

- Two (2) package flocculation/clarification treatment units, each rated at 15,000 m³/d and each consisting of the following:
  - one (1) rapid mixing basin;
  - one (1) injection chamber;
  - one (1) maturation chamber;
  - one (1) high rate ballasted settling basin complete with inclined tube settlers having a sedimentation rate of 42.1 m/hr; and
  - four (4) sand recirculation pumps and four (4) hydrocyclones.

Sludge Thickening

- One (1) sludge thickener consisting of a flocculation basin where the sludge is mixed with a polymer, a lamella settling zone where the sludge is allowed to settle and the supernatant discharged back to the Primary Pond of the TMA;

pH/Alkalinity Adjustment

- A standby system suitable for seasonal pH adjustment with soda ash, caustic soda, or lime if required;

Oxidation

- Potassium permanganate feed system consisting of one (1) saturator and two (2) (one duty, one standby) chemical feed metering pumps, each rated at a flow rate of 46 L/hr, and chemical feed line to the raw water header upstream the static mixer;

Process Instrumentation

- one (1) continuous turbidity meter located on the inlet header to the water treatment plant;
- two (2) continuous turbidity monitors located on the clarifier discharge;
- two (2) continuous pH metres located in the clarifiers;

Sludge Lagoons

- Sludge from the thickener to be discharged to one of the two lagoons, each having an area of approximately 8,670 m^2 to condition the sludge through a freeze thaw cycle and provide sludge storage. The supernatant from the sludge ponds to be discharged to the tailings pond with the sludge residing in the sludge pond;

Effluent Recirculation

- Treated effluent from the treatment system which does not meet discharge criteria shall be automatically diverted from the discharge location and recirculated through a pipeline to the primary pond;

Effluent Discharge Location

- Creation of a new final discharge location for treated effluent from the physical-chemical treatment system "G2" discharging directly into Balmer Lake;

SCADA

- One Supervisor Control and Data Acquisition (SCADA) system connected to all equipment PLC units to be located in the control room of the treatment plant building. Control of the plant shall be available in the plant building as well as from remote locations in the mill central control room; and
- Including all controls and appurtenances.

All in accordance with the documents listed in Schedule 'A'.

SANITARY SEWAGE WORKS (BALMER COMPLEX)

Balmer Complex Sanitary Sewage Works

A sanitary sewage treatment plant with a Rated Capacity of 178 m^3/d and a Peak Flow Rate of 444 m^3/d for the treatment of domestic sewage generated from the Balmer Complex building and service area, discharging to Balmer Creek and ultimately to the Chukuni River, consisting of:

Sewage Lift Station

- One (1) sewage lift station consisting of a precast concrete wet well with approximate dimensions of 3.05 m diameter and 3.60 m depth equipped with one (1) 162 L/min @ 7.63 m TDH capacity VFD submersible pump and one (1) 258 L/min @ 9.15 m TDH capacity VFD submersible pump discharging through a 75 mm diameter forcemain to the parallel Rotating Biological Contactor (RBC) Sewage Treatment Systems and a flow equalization tank described below;

Flow Equalization Tank

- One (1) 144 m^3 storage capacity flow equalization tank with approximate dimensions of 6.1 m diameter and 6.1 m depth, equipped with an a 200 mm diameter overflow pipe to the sewage lift pump station, discharging by gravity to a Rotating Biological Contactor (RBC) sewage treatment systems described below and above;

Rotating Biological Contactor (RBC) Sewage Treatment Systems

Two (2) Rotating Biological Contactors (RBC) sewage treatment systems, each consisting of the following:

- One (1) primary clarifier chamber with effective settling volume of 86.55 m^3 and sludge storage volume of 47.57 m^3;

- One (1) biozone chamber with effective volume of 21.33 m^3 partially submerged in the Rotating Biological Contactor unit;

- One (1) Rotating Biological Contactor (RBC) (Biodisk™ Model L-666) with a total area of 3,902 m^2 of biological support media arranged in three (3) separate stages for BOD5 reduction and nitrification of ammonia nitrogen equipped with a recycle from the third stage of RBC to the first stage of RBC;

- One (1) secondary clarifier chamber with an effective secondary settling volume of 35.60 m^3, and sludge storage volume of 10.99 m^3, equipped with two (2) 238.5 L/min capacity effluent pumps discharging to effluent filters described below;

- One (1) chemical feed system to be used for phosphorus control and pH adjustment;

Effluent Filters

- Six (6) multi-media effluent filters, each filter unit consisting of 0.76 m (30") diameter by 1.83 m (72") high tank, filled with anthracite, sand, and garnet filtration media, each providing a filtration

area of 0.455 m^2 (4.9 ft^2), and designed for a peak operating flow rate of 417 L/min.m^2 (10 gpm/ft^2), discharging through a UV disinfection system described below;

UV Disinfection

- Two (2) UV disinfection systems, each consisting of six (6) high intensity low pressure UV lamps, designed for 156 mJ/cm^2 at UV transmittance of 65%, discharging to the effluent filter backwash tank; and

- Including all controls and associated appurtenances.

Effluent Filter Backwash Tank

- One (1) buried 20,000 L capacity fiber glass effluent storage tank to be used for filter backwash and chemical mixing, equipped with two (2) 371 L/min capacity submersible pumps (one duty, one standby) providing effluent for filter backwash and one (1) 38 L/min capacity submersible pump providing effluent for chemical mixing, and an overflow pipe with a manual valve, discharging by gravity to the Balmer Creek effluent outfall described below;

Polymer Dosing System

A polymer dosing system to the existing Rotating Biological Contactor (RBC) of the Balmer Complex Sanitary Sewage Works approved on June 8, 2010 consisting of the following:

- One (1) 68 L capacity polymer mixing tank equipped with one (1) VFD polymer mixer and one (1) 60 L capacity polymer storage (feed) tank equipped with one (1) 180 L/day capacity polymer dosing pump, dosing polymer into the second stage of the RBC unit as required;

- Including all controls and associated appurtenances.

All in accordance with the documents listed in Schedule 'A'.

For the purpose of this environmental compliance approval, the following definitions apply:

"Approval" means this entire document and any schedules attached to it, and the application;

"Average Daily Flow" means the cumulative total sewage flow to the sewage works during a calendar year divided by the number of days during which sewage was flowing to the sewage works that year;

"By-pass" means any discharge from the Works that does not undergo any treatment or only receives partial treatment before it is discharged to the environment;

"Daily Concentration" means the concentration of a contaminant in the effluent discharged over any single day, as measured by a composite or grab sample, whichever is required;

"Director" means a person appointed by the Minister pursuant to section 5 of the EPA for the purposes of Part II.1 of the EPA.

"District Manager" means the District Manager of the Kenora Area Office/Thunder Bay District Office;

"E. Coli" refers to the thermally tolerant forms of Escherichia that can survive at 44.5 degrees Celsius;

"EPA" means the Environmental Protection Act, R.S.O. 1990, c.E.19, as amended;

"G2" means final discharge location for treated effluent from the physical-chemical treatment system discharging directly into Balmer Lake;

"{if used}" means discharge location G1 shall be used for effluent discharge only in case of emergency (as of July 01, 2007 i.e., after the expiry of the allowance for batch ferric sulphate treatment within the secondary pond) including but not limited to: effluent treatment plant failure, unplanned discharge, heavy storm conditions etc., with notification to the District Manager and/or the spills action centre forthwith;

"Geometric Mean Density" is the nth root of the product of multiplication of the results of n number of samples over the period specified;

“Equivalent Equipment" means a substituted equipment or like-for-like equipment that meets the required quality and performance standards of a named equipment;

"Limited Operational Flexibility” (LOF) means any modifications that the Owner is permitted to make to the Works under this Approval;

"Ministry" means the ministry of the government of Ontario responsible for the EPA and OWRA

and includes all officials, employees or other persons acting on its behalf;

“Notice of Modifications” means the form entitled “Notice of Modifications to Sewage Works”;

“Owner” means Red Lake Gold Mines and its successors and assignees;

“OWRA” means the Ontario Water Resources Act, R.S.O. 1990, c. O.40, as amended;

"Peak Flow Rate" means the maximum rate of sewage flow for which the plant or process unit was designed;

"Previous Works" means those portions of the sewage works previously constructed and approved under an Approval;

“Proposed Works” means the sewage works described in the Owner’s application, this Approval, and to the extent approved by this Approval;

"Rated Capacity" means the Average Daily Flow for which the Works are approved to handle;

"Regional Director" means the Regional Director of the Northern Region of the Ministry; and

“Works” means the sewage works described in the Owner's application, and this Approval, and includes Proposed Works, Previous Works, and modifications made under Limited Operational Flexibility.

You are hereby notified that this environmental compliance approval is issued to you subject to the terms and conditions outlined below:

TERMS AND CONDITIONS

PART I - GENERAL

1. GENERAL PROVISIONS

(1) The Owner shall ensure that any person authorized to carry out work on or operate any aspect of the Works is notified of this Approval and the conditions herein and shall take all reasonable measures to ensure any such person complies with the same.

(2) Except as otherwise provided by these conditions, the Owner shall design, build, install, operate and maintain the Works in accordance with the description given in this Approval, and the application for approval of the Works.

(3) Where there is a conflict between a provision of any submitted document referred to in this Approval and the conditions of this Approval, the conditions in this Approval shall take precedence, and where there is a conflict between the listed submitted documents in the schedule, the document bearing the most recent date shall prevail.

(4) Where there is a conflict between the documents listed in the Schedule and the application, the application shall take precedence unless it is clear that the purpose of the document was to amend the application.

(5) The conditions of this Approval are severable. If any condition of this Approval, or the application of any condition of this Approval to any circumstance, is held invalid or unenforceable, the application of such condition to other circumstances and the remainder of this Approval shall not be affected thereby.

2. CHANGE OF OWNER

(1) The Owner shall notify the District Manager and the Director, in writing, of any of the following changes within thirty (30) days of the change occurring:

(a) change of Owner;

(b) change of address of the Owner;

(c) change of partners where the Owner is or at any time becomes a partnership, and a copy of the most recent declaration filed under the Business Names Act, R.S.O.

1990, c.B17 shall be included in the notification to the District Manager;

(d) change of name of the corporation where the Owner is or at any time becomes a corporation, and a copy of the most current information filed under the Corporations Information Act, R.S.O. 1990, c. C39 shall be included in the notification to the District Manager;

(2) In the event of any change in Ownership of the Works, other than a change to a successor municipality, the Owner shall notify in writing the succeeding Owner of the existence of this Approval, and a copy of such notice shall be forwarded to the District Manager and the Director.

3. LIMITED OPERATIONAL FLEXIBILITY

(1) The Owner may make modifications to the Works in accordance with the Terms and Conditions of this Approval and subject to the Ministry's "Limited Operational Flexibility Criteria for Modifications to Sewage Works", included under Schedule B of this Approval, as amended.

(2) Sewage works under Limited Operational Flexibility shall adhere to the design guidelines contained within the Ministry's publication "Design Guidelines for Sewage Works 2008", as amended.

(3) The Owner shall ensure at all times, that the Works, related equipment and appurtenances which are installed or used to achieve compliance are operated in accordance with all Terms and Conditions of this Approval.

(4) For greater certainty, the following are not permitted as part of Limited Operational Flexibility:

(a) Modifications to the Works that result in an increase of the approved Rated Capacity of the Works;

(b) Modifications to the Works that may adversely affect the approved effluent quality criteria or the location of the discharge/outfall;

(c) Modifications to the treatment process technology of the Works, or modifications that involve construction of new reactors (tanks) or alter the treatment train process design;

(d) Modifications to the Works approved under s.9 of the EPA, and

(e) Modifications to the Works pursuant to an order issued by the Ministry.

(5) Implementation of Limited Operational Flexibility is not intended to be used for

piecemeal measures that result in major alterations or expansions.

(6) If the implementation of Limited Operational Flexibility requires changes to be made to the Emergency Response, Spill Reporting and Contingency Plan, the Owner shall, provide a revised copy of this plan for approval to the local fire services authority prior to implementing Limited Operational Flexibility.

(7) For greater certainty, any modification made under the Limited Operational Flexibility may only be carried out after other legal obligations have been complied with, including those arising from the *Environmental Protection Act, Lakes and Rivers Improvements Act* and the *Mining Act.*

(8) At least thirty (30) days prior to implementing Limited Operational Flexibility, the Owner shall complete a Notice of Modifications describing any proposed modifications to the Works and submit it to the District Manager.

(9) The Owner shall not proceed with implementation of Limited Operational Flexibility until the District Manager has provided written acceptance of the Notice of Modifications or a minimum of thirty (30) days have passed since the day the District Manager acknowledged the receipt of the Notice of Modifications.

PART II - MINE WASTEWATER TREATMENT FACILITY

4. CHANGES IN PROCESSES OR PROCESS MATERIALS

The Owner shall give written notice to the District Manager of any plans to change the processes or process materials in the Owner's enterprise serviced by the Works where the change may not significantly alter the quantity or quality of the influent to the Works, while complying with the approved effluent quantity and quality from the Works, and no such change(s) shall be made unless with the written concurrence or approval of the District Manager.

5. AS-CONSTRUCTED DRAWINGS

(1) The Owner shall prepare within **six (6) months** of substantial completion of construction of the Proposed Works as approved by this Approval, a complete set of drawings showing the sewage works as approved by this Approval as-constructed and shall amend the drawings from time to time to reflect all changes in or additions to the Works.

(2) The Owner shall retain the as-constructed drawings, at the location of the sewage works for so long as it is in operation, and shall make them available for inspection by Ministry employees upon request.

(3) The Owner shall confirm that full-time inspection under the direction of a qualified geotechnical engineer is provided during the construction of the dam and preparation of the

foundations, including verification of testing requirements and instrumentation schedule, to ensure that the design intent and specification are satisfied as per Design of Facility Upgrades - Red Lake Complex TMA, prepared by AMEC Earth & Environmental, dated December 22, 2009.

6. EFFLUENT OBJECTIVES

(1) The Owner shall use best efforts to operate the Works with the objective that the concentration of Arsenic as an effluent parameter is not exceeded from 0.05 mg/L in the effluent from the Works as of **July 01, 2008**.

(2) The Owner shall also use best efforts to operate the Works with the objective that the concentration of Iron as an effluent parameter is not exceeded from a maximum daily concentration and monthly average concentration of 3.0 mg/L and 1.5 mg/L respectively, in the effluent from the Works.

(3) The Owner shall include in all reports submitted in accordance with Condition 11 a summary of the efforts made and results achieved under this Condition.

7. EFFLUENT LIMITS

(1) The Owner shall design, construct, operate and maintain the Works such that the concentrations of the materials named below as effluent parameters are not exceeded in the effluent from the Works at location G2.

Table 1 - Effluent Limits

Effluent Parameter	**Maximum Daily Concentration** (milligrams per litre unless otherwise indicated)	**Monthly Average Concentration** (milligrams per litre unless otherwise indicated)
Column 1	Column 2	Column 3
Total Suspended Solids	30	15
Total Ammonia Nitrogen (Ammonia + Ammonium)	10	-
Arsenic	1.0 (0.5)*	0.5 (0.25)*
Copper	0.6	0.3
Nickel	1.0	0.5
Lead	0.4	0.2
Zinc	1.0	0.5
Total Cyanide	2.0	1.0
pH of the effluent maintained between 6.0 to 9.5, inclusive, at all times		

* Treatment facility limits for Arsenic shall reduce to the numbers given in ( ) and remain at these levels as of July 01, 2008.

(2) For the purposes of determining compliance with and enforcing subsection (1):

(a) Non-compliance with respect to a Maximum Daily Concentration limit is deemed to have occurred when any single grab sample analysed for a parameter named in Column 1 of subsection (1) is greater than the corresponding Maximum Daily Concentration limit set out in subsection (1); and the sample represents a day when discharge of effluent from the discharge location as mentioned in subsection (1) occurred.

(b) Non-compliance with respect to a Monthly Average Concentration limit is deemed to have occurred when the arithmetic mean concentration of all samples taken in a month analysed for a parameter named in Column 1 of subsection (1) is greater than the corresponding Monthly Average Concentration limit set out in subsection (1); and the sample represents a day when discharge of effluent from the discharge location as mentioned in subsection (1) occurred.

(c) Non-compliance with respect to pH is deemed to have occurred when any single measurement is outside of the indicated range; and the sample represents a day when discharge of effluent from the discharge location as mentioned in subsection (1) occurred.

(3) During the commissioning phase and subsequent operations of the Works, the Owner shall ensure that treated effluent shall not be discharged to the Balmer Lake, unless it is demonstrated that the Total Ammonia Nitrogen concentration in the effluent is less than 10 mg/L and the acute lethality test results comply with subsection (4).

(4) The Owner shall control the quality of the effluent from the discharge location as mentioned in subsection (1) to ensure that each rainbow trout acute lethality test and each daphnia magna acute lethality test performed on any grab sample of effluent results in mortality for no more than 50 per cent of the test organisms in 100 per cent effluent.

(5) As of **July 01, 2007** i.e., after the expiry of the allowance for batch ferric sulphate treatment within the secondary pond, the discharge location G1 is to be used only in case of an emergency including but not limited to: effluent treatment plant failure, unplanned discharge, heavy storm conditions etc. The Owner shall ensure that all of the above mentioned limitations shall be applicable on that discharge.

8. OPERATION AND MAINTENANCE

(1) The Owner shall ensure compliance with all the terms and conditions of this Approval. Any non-compliance constitutes a violation of Ontario Water Resources Act and is grounds for enforcement.

(2) The Owner shall furnish to the Regional Director any information which the Regional Director may request concerning compliance with this Approval, pursuant to Section 31 of

the Ontario Water Resources Act and copies of any records required to be kept by this Approval.

(3) The Owner shall take all reasonable steps to minimize any adverse impact to surface or ground waters resulting from non-compliance with the effluent requirements specified in this Approval including, but not limited to, such accelerated or additional monitoring as necessary to determine the nature and impact of the discharge in respect of which there is non-compliance.

(4) The Owner shall prepare an operations manual within **six (6) months** of the date of issuance of this Approval, that includes, but not necessarily limited to, the following information:

(a) operating procedures for routine operation of the Works;

(b) inspection programs, including frequency of inspection, for the Works and the methods or tests employed to detect when maintenance is necessary;

(c) repair and maintenance programs, including the frequency of repair and maintenance for the Works;

(d) contingency plans and procedures for dealing with potential spill, bypasses and any other abnormal situations and for notifying the District Manager; and,

(e) complaint procedures for receiving and responding to public complaints.

(5) The Owner shall maintain the operations manual up to date through revisions undertaken from time to time and retain a copy at the location of the sewage works. Upon request, the Owner shall make the manual available for inspection and copying by Ministry personnel.

(6) The Owner shall ensure that at all times, the sewage Works and related equipment and appurtenances which are installed or used to achieve compliance with this Approval are properly operated and maintained.

(7) In furtherance of, but without limiting the generality of, the obligation imposed by subsection (1) the Owner shall ensure that:

(a) funding, staffing, training of staff, laboratory and process controls, quality assurance and quality control procedures of or in relation to the sewage works are adequate to achieve compliance with this Approval; and,

(b) equipment and material are kept on hand and in good repair for immediate use in the event of:

(i) upset;

(ii) bypass;
(iii) abnormal loss of any product, by-product, intermediate product, oil, solvent, waste material or any other polluting substance into the environment or interior of any building; or,
(iv) spill within the meaning of Part X of the Environmental Protection Act, and staff are trained in the use of said equipment and material and in the methods and procedures to be employed upon the occurrence of such an event.

(8) The Owner shall develop a formal strategy to address long term storage of the sludge within 5 years of the date of issuance of this Approval.

9. CONTINGENCY PLAN FOR TOTAL AMMONIA NITROGEN

(1) The Owner shall submit, as part of the annual performance report as per Condition 11(2), an assessment of the measures applied up to date to address the effluent ammonia nitrogen issue, its effectiveness and recommended next steps as per the Ammonia Reduction Strategy Report, prepared by AMEC Earth and Environmental, dated **May 28, 2008**.

10. MONITORING AND RECORDING

The Owner shall carry out and maintain the following monitoring program:

(1) Any of the sampling locations as set out in subsection (2) may be changed or abandoned and new locations may be added following commencement of monitoring if, in the opinion of the District Manager, it is necessary to do so to ensure that representative samples are being collected.

(2) The effluent shall be sampled at the sampling point(s) named below, in accordance with the measurement frequency and sample type specified for each parameter named below:

Table 2 - Influent Monitoring (during discharge)
(Samples to be collected at the influent wastewater pumping station or at the inlet of the physical-chemical treatment plant)

Parameters	Sample Type	Minimum Frequency
Arsenic	Grab	3 times per week
Copper	Grab	Monthly
Nickel	Grab	Monthly
Lead	Grab	Monthly
Zinc	Grab	Monthly
Iron	Grab	3 times per week
Total Suspended Solids	Grab	3 times per week
pH	Grab	3 times per week

Table 3 - Effluent Monitoring (during discharge) (Samples of the effluent discharge to be collected at sampling location G2 or at the outlet of the clarifier and G1 {if used})		
Parameters	**Sample Type**	**Minimum Frequency**
Total Suspended Solids	Grab	3 times per week
Total Ammonia Nitrogen (Ammonia + Ammonium)	Grab	Weekly
Total Cyanide	Grab	Weekly
Arsenic	Grab	3 times per week
Copper	Grab	Weekly
Nickel	Grab	Weekly
Lead	Grab	Weekly
Zinc	Grab	Weekly
Iron	Grab	3 times per week
Acute Lethality to Rainbow Trout	Grab	Monthly
Acute Lethality to Daphnia magna	Grab	Monthly
pH	Grab/Probe	3 times per week
Temperature	Grab/Probe	3 times per week

Table 4 - Receiver Monitoring (Samples to be collected in at the control structure in Balmer Lake, known as L2)		
Parameters	**Sample Type**	**Minimum Frequency**
Total Suspended Solids	Grab	Monthly
Total Phosphorus (MDL 1 µg/L)	Grab	Monthly
Total Dissolved Solids	Grab	Monthly
Total Ammonia Nitrogen (Ammonia + Ammonium)	Grab	Monthly
Unionized Ammonia	Grab	Monthly
Arsenic	Grab	Monthly
Copper	Grab	Monthly
Nickel	Grab	Monthly
Lead	Grab	Monthly
Zinc	Grab	Monthly
Dissolved Oxygen	Grab/Probe	Monthly
pH	Grab/Probe	Monthly
Temperature	Grab/Probe	Monthly

(3) The time interval between consecutive 3 times per week weekly, monthly and quarterly samples shall be, at least, 1, 4, 15, and 45 days respectively.

(4) The methods and protocols for sampling, analysis, toxicity testing, and recording shall conform, in order or precedence, to the methods and protocols specified in the following:

(a) the Ministry's publication "Protocol for the Sampling and Analysis of Industrial/Municipal Wastewater Version 2.0" (January 2016), PIBS 2724e02, as amended from time to time by more recently published editions; and

(b) the publication “Standard Methods for the Examination of Water and Wastewater” (21st edition) as amended from time to time by more recently published editions;

(c) the Environment Canada publications “Reference Method for Determining Acute Lethality of Effluents to Rainbow Trout”(July 1990) and “Reference Method for Determining Acute Lethality of Effluents to Daphnia magna” (July 1990); and

(d) in respect of any parameters not mentioned in documents (a) to (c) above, the written approval of the District Manager shall be obtained prior to sampling.

(5) The Owner shall install, maintain and operate (a) flow measuring device(s) so as to measure effluent flow rate at G2 and G1 {if used} with an accuracy to within plus or minus 15 percent of the actual flow rate for the entire design range of the flow measuring device, which must be operable under winter conditions.

(6) After **twelve (12) months** of effluent monitoring under Subsection (2), the monitoring frequency specified in Subsection (2) may be changed to such frequency as the District Manager may specify in writing from time to time, provided that the new specified frequency is never less than annual.

(7) The following information shall be retained by the Owner for a period of at least **three (3) years** from the date of preparation:

(a) Laboratory analytical results of the samples taken pursuant to the sampling program set out in this Condition.

(b) Sewage works operation, performance and maintenance results, including logbooks associated with the operation, performance and maintenance of the sewage works.

11. REPORTING

(1) The Owner shall prepare and submit to the District Manager a monthly activity report by the last day of the month following the month being reported upon. The first monthly activity report shall cover the first **two (2) months** following the date of issuance of this

Approval and monthly activity reports shall be submitted to cover successive monthly intervals thereafter. (Preparation of the monthly activity reports will be simplified by maintaining a logbook for the operation and performance monitoring of the settling pond in which all relevant occurrences are recorded in chronological order). The monthly activity report shall contain the following in a format that is acceptable to the District Manager:

(a) estimate of total effluent discharged from the sewage works during the reporting period;

(b) status of storage capacity occupied and remaining in sewage works system;

(c) a summary and interpretation of all monitoring data collected relative to the sewage works facility during the period being reported upon, including statistical evaluation (minimum, maximum, average), evaluation of compliance with this Approval and Ministry guidelines;

(d) a description of any operating problems and the corrective action taken during the reporting period, including anomalies in data due to changes in, or upsets of the sewage works; and,

(e) a summary of all information generated under the requirements of Condition 10.

(2) The Owner shall prepare, and submit to the District Manager, a performance report, on an annual basis, by **March 31st** for the previous calendar year. The first such report shall cover the first annual period following the commencement of operation of the Works and subsequent reports shall be submitted to cover successive annual periods following thereafter. The reports shall contain, but shall not be limited to, the following information:

(a) a summary analysis/interpretation of all monitoring data (effluent and receiving environment) and a comparison to the effluent limits and objectives outlined in Condition 7 and Condition 6, including an overview of the success and adequacy of the Works;

(b) a description of any operating problems encountered and corrective actions taken;

(c) a summary of all maintenance carried out on any major structure, equipment, apparatus, mechanism or thing forming part of the Works;

(d) a summary of any effluent quality assurance or control measures undertaken in the reporting period;

(e) a summary of the calibration and maintenance carried out on all effluent monitoring equipment;

(f) all flow data and arsenic loading calculations; and,

(g) any other information the District Manager requires from time to time.

(3) The Owner shall prepare, and submit to the District Manager, a notification **thirty (30) days** before the commencement of the construction works for Phase II, III and IV as well as the commencement of the operation of the works as per the calendar, as modified from time to time, as detailed in the letter from David Gelderland of Goldcorp to Edgardo Tovilla, of the MOE dated June 4, 2009.

PART III - SANITARY SEWAGE WORKS

12. UPON THE SUBSTANTIAL COMPLETION OF THE WORKS

(1) Within **six (6) months** of the Substantial Completion of the Proposed Works, a set of as-built drawings showing the works "as constructed" shall be prepared. These drawings shall be kept up to date through revisions undertaken from time to time and a copy shall be retained at the Works for the operational life of the Works.

13. BY-PASSES

(1) Any By-pass of sewage from any portion of the Works is prohibited, except where:

(a) it is necessary to avoid loss of life, personal injury, danger to public health or severe property damage;

(b) the District Manager agrees that it is necessary for the purpose of carrying out essential maintenance and the District Manager has given prior written acknowledgment of the by-pass; or

(2) The Owner shall maintain a logbook of all By-pass events which shall include, at a minimum, the time, location, duration, quantity of By-pass, the authority for By-pass pursuant to subsection (1), and the reasons for the occurrence.

(3) The Owner shall, in the event of a By-pass event pursuant to subsection (1), disinfect the by-passed effluent prior to it reaching the receiver such that the receiver is not negatively impacted.

14. EFFLUENT OBJECTIVES

(1) The Owner shall use best efforts to design, construct and operate the Works with the objective that the concentrations of the materials named below as effluent parameters are

not exceeded in the effluent from the Works.

Table 5 - Effluent Objectives	
Effluent Parameter	**Concentration Objective** (milligrams per litre unless otherwise indicated)
CBOD5	10.0
Total Suspended Solids	10.0
Total Phosphorus	1.0
Total Ammonia Nitrogen (Ammonia + Ammonium)	5.0
pH	6.0 - 7.5
E. Coli	100 organisms/ 100 mL

(2) The Owner shall use best efforts to:

(a) operate the works within the Rated Capacity of 178. m³/d and does not exceed the Peak Flow Rate of 444 m³/d;

(b) ensure that the effluent from the Works is essentially free of floating and settleable solids and does not contain oil or any other substance in amounts sufficient to create a visible film or sheen or foam or discolouration on the receiving waters.

(3) The Owner shall include in all reports submitted in accordance with Condition 18 a summary of the efforts made and results achieved under this Condition.

(4) The Owner shall use best efforts to control the quality of the effluent from the Works to ensure that each rainbow trout acute lethality test and each daphnia magna acute lethality test performed on any grab sample of effluent results in mortality for no more than 50 per cent of the test organisms in 100 per cent effluent.

15. EFFLUENT LIMITS

(1) The Owner shall operate and maintain the Works such that the concentrations and waste loadings of the materials named below as effluent parameters are not exceeded in the effluent from the Works.

Table 6 - Effluent Limits	
Effluent Parameter	**Monthly Average Concentration** (milligrams per litre unless otherwise indicated)
Column 1	Column 2
CBOD5	10.0
Total Suspended Solids	15.0
Total Phosphorus (May 1 to September 30)	1.0
Total Phosphorus (October 1 to April 30)	2.0
Total Ammonia Nitrogen (Ammonia + Ammonium)	10.0
pH of the effluent maintained between 6.0 to 8.5, inclusive, at all times	

(2) For the purposes of determining compliance with and enforcing subsection (1):

(a) The Monthly Average Concentration of **CBOD5, Total Suspended Solids, Total Phosphorus**, and **Total Ammonia Nitrogen** named in Column 1 of subsection (1) shall not exceed the corresponding maximum concentration set out in Column 2 of subsection (1).

(b) The pH of the effluent shall be maintained within the limits outlined in subsection (1), at all times.

(3) Notwithstanding subsection (1), the Owner shall operate and maintain the Works such that the effluent is continuously disinfected so that the monthly Geometric Mean Density of E. Coli does not exceed 200 organisms per 100 millilitres of effluent discharged from the works.

(4) The effluent limits set out in subsection (1) shall apply upon the commencement of operation of the Works .

16. OPERATION AND MAINTENANCE

(1) The Owner shall exercise due diligence in ensuring that, at all times, the Works and the related equipment and appurtenances used to achieve compliance with this Approval are properly operated and maintained. Proper operation and maintenance shall include effective performance, adequate funding, adequate operator staffing and training, including training in all procedures and other requirements of this Approval, adequate laboratory facilities, process controls and alarms and the use of process chemicals and other substances used in the Works.

(2) The Owner shall prepare an operations manual within **six (6) months** of the commencement of operation of the Works, that includes, but not necessarily limited to, the

following information:

(a) operating procedures for routine operation of the Works;

(b) inspection programs, including frequency of inspection, for the Works and the methods or tests employed to detect when maintenance is necessary;

(c) repair and maintenance programs, including the frequency of repair and maintenance for the Works;

(d) procedures for the inspection and calibration of monitoring equipment;

(e) a spill prevention control and countermeasures plan, consisting of contingency plans and procedures for dealing with equipment breakdowns, potential spills and any other abnormal situations, including notification of the District Manager; and

(f) procedures for receiving, responding and recording public complaints, including recording any follow up actions taken.

(3) The Owner shall maintain the operations manual current and retain a copy at the location of the Works for the operational life of the Works. Upon request, the Owner shall make the manual available to Ministry staff.

(4) The Owner shall provide for the overall operation of the Works with an operator who holds a licence that is applicable to that type of facility and that is of the same class as or higher than the class of the facility in accordance with Ontario Regulation 129/04.

17. MONITORING AND RECORDING

The Owner shall carry out the following monitoring program:

(1) All samples and measurements taken for the purposes of this Approval are to be taken at a time and in a location characteristic of the quality and quantity of the effluent stream over the time period being monitored.

(2) For the purposes of this Condition, the following definitions apply:

(a) Daily means once each day;

(b) Weekly means once each week;

(c) Monthly means once every month; and

(d) Semi-annually means once every six months;

(3) Samples shall be collected at the following sampling points, at the frequency specified, by means of the specified sample type and analyzed for each parameter listed and all results recorded:

Table 7 - Influent Monitoring Sampling Location: Inlet Works		
Parameters	**Sample Type**	**Frequency**
BOD5	Composite	Monthly
Total Suspended Solids	Composite	Monthly
Total Phosphorus	Composite	Monthly
Total Kjeldahl Nitrogen	Composite	Monthly
pH	Grab	Weekly
Temperature	Grab	Weekly

Table 8 - Effluent Monitoring Sampling Location: Effluent Discharge Point		
Parameters	**Sample Type**	**Frequency**
CBOD5	Composite	Weekly
Total Suspended Solids	Composite	Weekly
Total Phosphorus	Composite	Weekly
Total Ammonia Nitrogen	Composite	Weekly
E. Coli	Grab	Weekly
pH	Grab	Weekly
Temperature	Grab	Weekly
Acute Lethality to Rainbow Trout	Grab	Semi-annually (Summer and Fall)
Acute Lethality to Daphnia magna	Grab	Semi-annually (Summer and Fall)

Table 9 - Receiver Monitoring

Sampling Locations:
1 - Upstream of the effluent discharge outfall at the mine road culver crossing
2 - Immediately downstream from the effluent discharge point
3 - Further downstream from the effluent discharge point

Parameters	Sample Type	Minimum Frequency
CBOD5	Grab*	Monthly**
Total Suspended Solids	Grab*	Monthly**
Total Phosphorus	Grab*	Monthly**
Total Ammonia Nitrogen (Ammonia + Ammonium)	Grab*	Monthly**

E. Coli	Grab*	Monthly**
pH	Grab*	Monthly**
Temperature	Grab*	Monthly**
Conductivity	Grab*	Monthly**
DOC	Grab*	Monthly**
Dissolved Oxygen	Grab*	Monthly**

NOTES:

* Samples shall be collected from subsurface at mid-stream or minimum of 1.5 m from shore.

** Samples shall be collected at a monthly frequency from May to October.

(4) The methods and protocols for sampling, analysis and recording shall conform, in order of precedence, to the methods and protocols specified in the following:

(a) the Ministry's Procedure F-10-1, “Procedures for Sampling and Analysis Requirements for Municipal and Private Sewage Treatment Works (Liquid Waste Streams Only), as amended from time to time by more recently published editions;

(b) the Ministry's publication "Protocol for the Sampling and Analysis of Industrial/Municipal Wastewater" (January 1999), ISBN 0-7778-1880-9, as amended from time to time by more recently published editions;

(c) the publication "Standard Methods for the Examination of Water and Wastewater" (21st edition), as amended from time to time by more recently published editions;

(5) The Owner shall install and maintain a continuous flow measuring device, to measure the flow rate of the effluent from the Works with an accuracy to within plus or minus 15 per cent (+/- 15%) of the actual flow rate for the entire design range of the flow measuring device, and record the flow rate at a daily frequency.

(6) Within **three (3) months** of the issuance date of this Approval, the Owner shall prepare and submit to the District Manager an Operational Plan for providing a naturally regulated flows from the outlet of Balmer Lake and obtain concurrence of the District Manager prior to its implementation. The Operational Plan shall include implementation dates, Balmer Lake elevations, stoplog settings, expected flows, conditions under which flows would need to cease or increase, and any other relevant measures.

(7) The Owner shall retain for a minimum of **five (5) years** from the date of their creation, all records and information related to or resulting from the monitoring activities required by this Approval.

18. REPORTING

(1) **One (1) week** prior to the start up of the operation of the Works the Owner shall notify the District Manager (in writing) of the pending start up date.

(2) **Ten (10) days** prior to the date of a planned By-pass being conducted pursuant to Condition 13 and as soon as possible for an unplanned By-pass, the Owner shall notify the District Manager (in writing) of the pending start date, in addition to an assessment of the potential adverse effects on the environment and the duration of the By-pass.

(3) The Owner shall report to the District Manager or designate, any exceedence of any parameter specified in Condition 15 orally, as soon as reasonably possible, and in writing within **seven (7) days** of the exceedence.

(4) In addition to the obligations under Part X of the Environmental Protection Act, the Owner shall, within **ten (10) working days** of the occurrence of any reportable spill as defined in Ontario Regulation 675/98, bypass or loss of any product, by-product, intermediate product, oil, solvent, waste material or any other polluting substance into the environment, submit a full written report of the occurrence to the District Manager describing the cause and discovery of the spill or loss, clean-up and recovery measures taken, preventative measures to be taken and schedule of implementation.

(5) The Owner shall, upon request, make all manuals, plans, records, data, procedures and supporting documentation available to Ministry staff.

(6) The Owner shall prepare, and submit to the District Manager, a performance report, on an annual basis, by **March 31st** for the previous calendar year. The first such report shall cover the first annual period following the commencement of operation of the Works and subsequent reports shall be submitted to cover successive annual periods following thereafter. The reports shall contain, but shall not be limited to, the following information:

(a) a summary and interpretation of all monitoring data and a comparison to the effluent limits outlined in Condition 15, including an overview of the success and adequacy of the Works and adequacy of mitigation efforts to control un-ionized ammonia concentration in Balmer Creek;

(b) a description of any operating problems encountered and corrective actions taken;

(c) a summary of all maintenance carried out on any major structure, equipment, apparatus, mechanism or thing forming part of the Works;

(d) a summary of any effluent quality assurance or control measures undertaken in the reporting period;

(e) a summary of the calibration and maintenance carried out on all effluent monitoring equipment;

(f) a description of efforts made and results achieved in meeting the Effluent Objectives outlined in Condition 14;

(g) a summary of any complaints received during the reporting period and any steps taken to address the complaints;

(h) a summary of all By-pass, spill or abnormal discharge events; and

(i) any other information the District Manager requires from time to time.

The reasons for the imposition of these terms and conditions are as follows:

1. Condition 1 is imposed to ensure that the Works are built and operated in the manner in which they were described for review and upon which approval was granted. This condition is also included to emphasize the precedence of Conditions in the Approval and the practice that the Approval is based on the most current document, if several conflicting documents are submitted for review. In addition, this Condition is included to emphasize that the issuance of the Approval does not diminish any other statutory and regulatory obligations to which the owner is subject in the construction, maintenance and operation of the Works.

2. Condition 2 is included to ensure that the Ministry records are kept accurate and current with respect to approved works and to ensure that subsequent owners of the Works are made aware of the Approval and continue to operate the works in compliance with it.

3. Condition 3 is included to ensure that the Works are operated in accordance with the application and supporting documentation submitted by the Owner, and not in a manner which the Director has not been asked to consider. These Conditions are also included to ensure that a Professional Engineer has reviewed the proposed modifications and attests that the modifications are in line with that of Limited Operational Flexibility, and provide assurance that the proposed modifications comply with the Ministry's requirements stipulated in the Terms and Conditions of this Approval, MOE policies, guidelines, and industry engineering standards and best management practices.

4. Condition 4 is included to ensure that the Works is operated in accordance with the information submitted by the Owner relating to the process and materials which are served by the Works, and to ensure that any contemplated changes in them which could potentially affect the characteristics of effluent from the Works will be properly reviewed and approved.

5. Conditions 5 and 12 are included to enable the owner to record and the Ministry to verify

that the Works are constructed and operated in accordance with the Approval.

6. Conditions 6 and 14 are imposed to establish non-enforceable effluent quality objectives which the Owner is obligated to use best efforts to strive towards on an ongoing basis. These objectives are to be used as a mechanism to trigger corrective action proactively and voluntarily before environmental impairment occurs.

7. Conditions 7 and 15 are imposed to ensure that the effluent discharged from the sewage works to Balmer Lake meets the Ministry's effluent quality requirements as specified on a continual basis thus minimizing environmental impact on the receiver.

8. Conditions 8, 9, and 16 are included to emphasize that the Owner has an ongoing duty to mitigate any adverse impacts resulting from non-compliance with the Approval. These Condition are included to ensure that the sewage works will be operated, maintained, funded, staffed and equipped in a manner enabling compliance with the terms and conditions of this Approval, such that the environment is protected and deterioration, loss, injury or damage to any person or property is prevented. Conditions 8 and 16 are also included to ensure that a comprehensive operations manual governing all significant areas of operation, maintenance and repair is prepared, implemented and kept up-to-date by the Owner and made available to the Ministry. Such a manual is an integral part of the operation of the Works. Its compilation and use should assist the owner in staff training, in proper plant operation and in identifying and planning for contingencies during possible abnormal conditions. The manual will also act as a benchmark for Ministry staff when reviewing the Owner's operation of the Works.

9. Conditions 10 and 17 are included to require the Owner to demonstrate on a continual basis that the quality and quantity of the effluent from the approved sewage works is consistent with the design objectives and effluent limits specified in the Approval and that the approved sewage works does not cause any impairment to the receiving water body.

10. Conditions 11 and 18 are included to provide a performance record for future references and to ensure that the Ministry is made aware of problems as they arise, so that the Ministry can work with the Owner in resolving the problems in a timely manner.

11. Condition 13 is included to indicate that by-passes of untreated sewage to the receiving watercourse is prohibited, save in certain limited circumstances where the failure to By-pass could result in greater injury to the public interest than the By-pass itself where a By-pass will not violate the approved effluent requirements, or where the By-pass can be limited or otherwise mitigated by handling it in accordance with an approved contingency plan. The notification and documentation requirements allow the Ministry to take action in an informed manner and will ensure the Owner is aware of the extent and frequency of By-pass events.

Schedule 'A'

I. **PREVIOUS WORKS APPROVED UNDER THE FOLLOWING APPROVALS AND DOCUMENTATION:**

1. Certificate of Approval # 4-0059-86-918, issued on August 8, 1991.
2. Certificate of Approval # 8559-6RGQVW, issued on July 18, 2006.
3. Certificate of Approval # 1105-72TN5S, issued on May 25, 2007.
4. Certificate of Approval # 4547-7GU7J9D, issued on August 11, 2008.
5. Certificate of Approval # 3672-7S7KN7, issued on August 21, 2009.
6. Certificate of Approval # 4967-7YYS75, issued on June 8, 2010
7. Application for Approval of Industrial Sewage Works submitted by David Gelderland, Environmental Manager, of Goldcorp Red Lake Gold Mines, dated January 21, 2010;
8. Design of Facility Upgrades - Red Lake Complex Tailings Management Facility, prepared by AMEC Earth and Environmental, of Burnaby, BC, dated December 22, 2009.
9. Email from James Russell of Goldcorp Red Lake Gold Mines to Edgardo Tovilla of the MOE, dated July 27, 2010, with final comments to the Draft Certificate.
10. Certificate of Approval # 0565-84XTBB, issued on July 29, 2010
11. Certificate of Approval # 6369-8JALK5, issued on September 2, 2011

II. ***PREVIOUS WORKS*** **APPROVED ON SEPTEMBER 2, 2011 UNDER ECA No. 6369-8JALK5*:***

1. Application for the Approval of Sewage Works submitted by Goldcorp Incorporated/Goldcorp Canada Limited dated March 25, 2011 and design specifications and drawings prepared by AECOM, Guelph, Ontario.
2. Letter and email from J. Andrew Johnston, Goldcorp - Red Lake Gold Mines, to Stefanos Habtom, P. Eng., MOE dated April 15, 2011 providing sizing calculation for the proposed polymer storage and dosing system.
3. Application for the Approval of Sewage Works supporting documentation submitted by Goldcorp Incorporated/Goldcorp Canada Limited dated May 9, 2011 and a letter dated June 27, 2011 from Jim Sutton, Surface Water Specialist, MOE, providing assessment and recommendation on the proposed amended effluent limits for Total Ammonia Nitrogen.

III. **PREVIOUS WORKS APPROVED ON JANUARY 14, 2013 UNDER ECA No. 9675-8TYP3E;**

1. Application for Environmental Compliance Approval submitted by Gold Corp Canada Limited dated April 18, 2012 and design specifications and drawings prepared by AECOM, Guelph, Ontario.

2. "Design Basis Report for Twinning the RBC WWTP at the Balmer Complex - FINAL" dated March 19, 2012 prepared by AECOM, Winnipeg, Canada.

3. "Balmer Complex Sewage Treatment Plant Receiving Water Impact Assessment (2012)" dated March 2012 prepared by Minnow Environmental Inc., Georgetown, Ontario.

4. Memorandum to Matt Hoffmeister, Senior Environmental Office, Kenora Area Office from Jim Sutton, Surface Water Specialist, Technical Support Section, Northern Region, MOE dated August 22, 2012, providing assessment of the surface impact assessment report listed in item 3 above and recommendation on effluent limits for the site.

IV. **PROPOSED WORKS:**

1. Application for Environmental Compliance Approval submitted by Gold Corp Canada Limited dated August 9, 2018 and design specifications and drawings prepared by Woods PLC (formerly AMEC Foster Wheeler Environment & Infrastructure), Edmonton, Alberta.

Schedule B

Limited Operational Flexibility Criteria for Modifications to Industrial Sewage Works

1. The modifications to sewage works approved under an Environmental Compliance Approval (Approval) that are permitted under the Limited Operational Flexibility (LOF), are outlined below and are subject to the LOF conditions in the Approval, and require the submission of the Notice of Modifications. If there is a conflict between the sewage works listed below and the Terms and Conditions in the Approval, the Terms and Conditions in the Approval shall take precedence.

   1.1 Sewage Pumping Stations

   a. Alter pumping capacity by adding or replacing equipment where new equipment is located within an existing sewage treatment plant site or an existing sewage pumping station site, provided that the modifications do not result in an increase of the sewage treatment plant Rated Capacity and the existing flow process and/or treatment train are maintained, as applicable.

   b. Forcemain relining and replacement with similar pipe size where the nominal diameter is not greater than 1,200 mm.

   1.2 Sewage Treatment Process

   a. Installing additional chemical dosage equipment including replacing with alternative chemicals for pH adjustment or coagulants (non-toxic polymers) provided that there are no modifications of treatment processes or other modifications that may alter the intent of operations and may have negative impacts on the effluent quantity and quality.

   b. Expanding the buffer zone between a sanitary sewage lagoon facility or land treatment area and adjacent uses provided that the buffer zone is entirely on the proponent's land.

   c. Optimizing existing sanitary sewage lagoons with the purpose to increase efficiency of treatment operations provided that existing sewage treatment plant rated capacity is not exceeded and where no land acquisition is required.

   d. Optimizing existing sewage treatment plant equipment with the purpose to increase the efficiency of the existing treatment operations, provided that there are no modifications to the works that result in an increase of the approved rated capacity, and may have adverse effects to the effluent quality or location of the discharge.

   e. Replacement, refurbishment of previously approved equipment in whole or in part with Equivalent Equipment, like-for-like of different make and model, provided that the firm capacity, reliability, performance standard, level of quality and redundancy of the group of

equipment is kept the same or exceeded. For clarity purposes, the following equipment can be considered under this provision: pumps, screens, grit separators, blowers, aeration equipment, sludge thickeners, dewatering equipment, UV systems, chlorine contact equipment, bio-disks, and sludge digester systems.

1.3 Sewage Treatment Plant Outfall

a. Replacement of discharge pipe with similar pipe size or diffusers provided that the outfall location is not changed.

1.4 Sanitary Sewers

a. Pipe relining and replacement with similar pipe size within the Sewage Treatment Plant site, where the nominal diameter is not greater than 1,200 mm.

1.5 Pilot Systems

a. Installation of pilot systems for new or existing technologies provided that:

i. any effluent from the pilot system is discharged to the inlet of the sewage treatment plant or hauled off-site for proper disposal,

ii. any effluent from the pilot system discharged to the inlet of the sewage treatment plant or sewage conveyance system does not significantly alter the composition/concentration of the influent sewage to be treated in the downstream process; and that it does not add any inhibiting substances to the downstream process, and

iii. the pilot system's duration does not exceed a maximum of two years; and a report with results is submitted to the Director and District Manager three months after completion of the pilot project.

1.6 Tailings Management Facilities

a. Routine dam raises and dam extensions to allow continued management of tailings and storage of mineral materials and sewage, provided that:

i. Routine dam raises and extensions are in adherence with a tailings management plan prepared by a Professional Engineer licensed under the *Professional Engineers Act* in Ontario.

ii Routine dam raises and extensions are sealed by a Professional Engineer licensed under the *Professional Engineers Act* in Ontario.

iii Routine dam raises and extensions have an associated Erosion and Sediment Control

Plan applying best management practices that is to be implemented during construction.

b. New dams are not eligible under LOF, unless described in an Amended Environmental Compliance Approval.

c. Pipe replacement or extension with similar pipe size within the Tailings Management area, where the nominal diameter is not greater than 1,200 mm.

2. Sewage works that are exempt from section 53 of the OWRA by O. Reg. 525/98 continue to be exempt and are not required to follow the notification process under this Limited Operational Flexibility.

3. Normal or emergency operational modifications, such as repairs, reconstructions, or other improvements that are part of maintenance activities, including cleaning, renovations to existing approved sewage works equipment, provided that the modification is made with Equivalent Equipment, are considered pre-approved.

4. The modifications noted in section (3) above are not required to follow the notification protocols under Limited Operational Flexibility, provided that the number of pieces and description of the equipment as described in the Approval does not change.

Ontario
Ministry of
the Environment

Notice of Modification to Sewage Works

RETAIN COPY OF COMPLETED FORM AS PART OF THE ECA AND SEND A COPY TO THE WATER SUPERVISOR (FOR MUNICIPAL) OR DISTRICT MANAGER (FOR NON-MUNICIPAL SYSTEMS)

Part 1 – Environmental Compliance Approval (ECA) with Limited Operational Flexibility

(Insert the ECA's owner, number and issuance date and notice number, which should start with "01" and consecutive numbers thereafter)

ECA Number	Issuance Date (mm/dd/yy)	Notice number (if applicable)

ECA Owner	Municipality

Part 2: Description of the modifications as part of the Limited Operational Flexibility

(Attach a detailed description of the sewage works)

Description shall include:
1. A detail description of the modifications and/or operations to the sewage works (e.g. sewage work component, location, size, equipment type/model, material, process name, etc.)
2. Confirmation that the anticipated environmental effects are negligible.
3. List of updated versions of, or amendments to, all relevant technical documents that are affected by the modifications as applicable, i.e. submission of documentation is not required, but the listing of updated documents is (design brief, drawings, emergency plan, etc.)

Part 3 – Declaration by Professional Engineer

I hereby declare that I have verified the scope and technical aspects of this modification and confirm that the design:
1. Has been prepared or reviewed by a Professional Engineer who is licensed to practice in the Province of Ontario;
2. Has been designed in accordance with the Limited Operational Flexibility as described in the ECA;
3. Has been designed consistent with Ministry's Design Guidelines, adhering to engineering standards, industry's best management practices, and demonstrating ongoing compliance with s.53 of the Ontario Water Resources Act; and other appropriate regulations.

I hereby declare that to the best of my knowledge, information and belief the information contained in this form is complete and accurate

Name (Print)	PEO License Number

Signature	Date (mm/dd/yy)

Name of Employer

Part 4 – Declaration by Owner

I hereby declare that:
1. I am authorized by the Owner to complete this Declaration;
2. The Owner consents to the modification; and
3. This modifications to the sewage works are proposed in accordance with the Limited Operational Flexibility as described in the ECA.
4. The Owner has fulfilled all applicable requirements of the *Environmental Assessment Act*.

I hereby declare that to the best of my knowledge, information and belief the information contained in this form is complete and accurate

Name of Owner Representative (Print)	Owner representative's title (Print)

Owner Representative's Signature	Date (mm/dd/yy)

Notice of Modifications Dec-2013.pdf

Upon issuance of the environmental compliance approval, I hereby revoke Approval No(s). 9675-8TYP3E issued on January 14, 2013

In accordance with Section 139 of the Environmental Protection Act, you may by written Notice served upon me and the Environmental Review Tribunal within 15 days after receipt of this Notice, require a hearing by the Tribunal. Section 142 of the Environmental Protection Act provides that the Notice requiring the hearing shall state:

a. The portions of the environmental compliance approval or each term or condition in the environmental compliance approval in respect of which the hearing is required, and;
b. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

Pursuant to subsection 139(3) of the Environmental Protection Act, a hearing may not be required with respect to any terms and conditions in this environmental compliance approval, if the terms and conditions are substantially the same as those contained in an approval that is amended or revoked by this environmental compliance approval.

The Notice should also include:

1. The name of the appellant;
2. The address of the appellant;
3. The environmental compliance approval number;
4. The date of the environmental compliance approval;
5. The name of the Director, and;
6. The municipality or municipalities within which the project is to be engaged in.

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

The Secretary*
Environmental Review Tribunal
655 Bay Street, Suite 1500
Toronto, Ontario
M5G 1E5

AND

The Director appointed for the purposes of Part II.1 of the Environmental Protection Act
Ministry of the Environment, Conservation and Parks
135 St. Clair Avenue West, 1st Floor
Toronto, Ontario
M4V 1P5

*** Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 212-6349, Fax: (416) 326-5370 or www.ert.gov.on.ca**

The above noted activity is approved under s.20.3 of Part II.1 of the Environmental Protection Act.

DATED AT TORONTO this 19th day of February, 2019

Fariha Pannu.

Fariha Pannu, P.Eng.
Director
appointed for the purposes of Part II.1 of the
Environmental Protection Act

SH/

c: Area Manager, MECP Kenora
c: District Manager, MECP Thunder Bay - District
Tara Rothrock, Wood PLC and James Russell, Goldcorp Canada Ltd.

Notice of Modifications Dec-2013.002.pdf