Ontario

Ministry of the Environment, Conservation and Parks
Ministère de l'Environnement, de la Protection de la nature et des Parcs

AMENDED ENVIRONMENTAL COMPLIANCE APPROVAL

NUMBER 3827-CCJHRD
Issue Date: September 15, 2022

Goldcorp Canada Ltd.,
operating as Porcupine Gold Mines
4315 Gold Mine Rd
Post Office Box, No. 70
Timmins, Ontario
P0N 1H0

Site Location: Pamour Mine
4315 Gold Mine Road
Lot 1, 2, 6, Concession 5,6, Whitney and Cody
City of Timmins, District of Cochrane, Ontario

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:

Upgrades and alterations to, usage and operation of sewage Works for the collection, transmission, treatment of Process Effluent including accumulated site stormwater runoff drainage associated with Tailings Areas and Waste Rock Stockpiles, groundwater from dewatering of an open pit and all contact stormwater runoff from the drainage areas of the Pamour Mine - a open pit mining operation located at the above Site Location, discharging treated effluent into Porcupine River via a new effluent treatment plant (Pamour Effluent Treatment Plant or Interim Effluent Treatment Plant) and a new Final Process Effluent disposal facility, and untreated effluent from existing Tailings Area (T3) into Porcupine River via an existing effluent discharge channel, consisting of the following:

PROPOSED WORKS

Conveyance System

- five (5) de-watering wells and associated pumping equipment and piping, located to the north of west margin of Pamour Mine main open pit (Pamour Open Pit) that intersects different locations within existing underground mine works, discharging with a nominal dewatering flowrate of 2,077 cubic metres per hour (at the early stage when the previously accumulated water needs to be taken out) and a nominal (under steady state) flowrate of 1,039 cubic metre per hour to the Pamour Effluent Treatment Plant.

- one (1) pump and associated pumping equipment and piping, located on the surface of the water of the Pamour Open Pit, discharging, with a maximum dewatering flowrate of 1,200 cubic metres per hour to the Interim Effluent Treatment Plant.

Pamour Effluent Treatment Plant

one (1) Pamour Effluent Treatment Plant, having a nominal design capacity of 2,077 cubic metres per hour and a maximum hydraulic capacity of 2,285 cubic metres per hour, consisting of the following:

- one (1) Ferric Reaction Tank, having dimensions of approximate 7 metres (diameter) by 10.9 metres (height) with an operation volume of 420 cubic metres, equipped coarse bubble diffusers, ferric sulfate dosing system and duplex blowers, discharging into Reaction Tank #1;

- one (1) Alkylation Tank for the storage and dosing of lime;

- one (1) Sludge Conditioning Tank, receiving recirculated solids from a Clarifier and lime dosage from the Alkylation Tank, discharging into Reaction Tank #1;

- two (2) Reaction Tanks #1 and #2, operating in series, receiving effluent from the Ferric Reaction Tank and densified solids from the sludge conditioning tank, each having dimensions of approximate 8.5 metres (diameter) by 9.9 metres (height) with an operation volume of 562 cubic metres, each equipped with a mixer, discharging into a Clarifier;

- one (1) Clarifier, having dimensions of approximate 35 metres (diameter) by a total height of 5.44 metres (tank 3.44 metres, cone 2.0 metres) with a volume of 5,234 cubic metres, complete with feed well, hydraulic driven rake and rake lift mechanism, as well as flocculant/coagulant dosing system, equipped with two sets of duplex sludge pumps to discharge a portion of sludge into a sludge de-watering system and recirculate another port of sludge to the Sludge Conditioning Tank, and discharging effluent in to a Clearwell Tank into Ultra-filtration System;

- one (1) Clearwell Tank, having dimensions of approximate 8.76 metres (diameter) by 8.2 metres (height) with a minimum working volume capacity of 267 cubic metres, discharging into an Ultra-filtration System;

- one (1) Ultra-filtration Unit, consisting of six (6) prestrainers, seven (7) sets of membrane ultra-filtrate modules, complete with a backwashing system, discharging backwash wastewater into a Waste tank and then pumped back to the inlet of the Ferric Reaction Tank, and discharging filtered effluent into a Service Water Tank;

- one (1) CO_2 System consisting of a CO_2 storage tank and two (2) Pressure Solution Feed (PSF) Panels where pressurized CO_2 gas are mixed to produce carbonic acid, dosing via two diffusers each into the Clear well Tank and Service Water Tank, respectively;

- one (1) Service Water Tank, with dimensions of 5.75 metres in diameter by 6 metres high, complete with chemical dosing for pH adjustment, equipped with duplex serve pump for backwash of the

Ultra-filtration unit, an effluent pump to discharge a portion of the treated effluent to Pamour Mine Water Storage Pond for dust suppression, and two (2) pumps discharging treatment effluent a Final Process Effluent Discharge System described below; and

- one (1) sludge de-watering system, consisting of three (3) Geotube bags contained in a sludge management area, retuning filtrate to the Pamour Open Pit, with consolidated sludge to be hauled off-site and disposed of at an approved waste disposal facility.

Interim Effluent Treatment Plant

one (1) Interim Effluent Treatment Plant, operating prior to the commissioning of the Pamour Effluent Treatment Plant described above, having a design capacity of 20,000 cubic metres per day (833.3 cubic metres per hour) and a maximum hydraulic capacity of 24,000 cubic metres per day (1,000 cubic metres per hour), consisting of the following:

- one (1) Metal Precipitation Reactor, comprising a three chambers precipitation reactor, equipped with ferric sulfate, carbamate-based coagulant and alkalinity dosing systems, as well as recirculated sludge (from a Sludge Splitter Box) returning line, discharging effluent into a clarifier;

- one (1) Actiflo Clarifier, a sand-ballasted settling unit, having a total working volume of 41.05 cubic metres, consisting of a Coagulation Chamber, an Injection Chamber and a Maturation Chamber, with microsand and flocculant aid polymers injected into the second chamber, discharging effluent from the Maturation Chamber via collection weirs into a Neutralization Tank, and discharging sand-sludge mixture via scrapers and a centre cone into a hydrocyclone where sludge and microsand are separated and microsand to be returned and sludge discharging into the Sludge Splitter Box;

- one (1) Sludge Splitter Box, discharging part of sludge to a Sludge Tank and recirculating the other part sludge to the Metal Precipitation Reactor;

- one (1) Neutralization Tank, having a total working volume of 57 cubic metres, consisting of a Coagulation Chamber, an Injection Chamber and a Maturation Chamber, with sulphuric acid injected into the second chamber for pH adjustment, discharging effluent from the Maturation Chamber via collection weirs into a Pump Box, and discharging sludge into a Sludge Tank;

- one (1) 5,025 gallon (approximately 22,840 litres) Sludge Tank, receiving sludge from the Sludge Splitter Box and the Maturation Chamber of the Neutralization Tank, discharging into a gravity overflow line that returns back to the Pamour Open Pit; and

- one (1) Pump Box, equipped a pump to discharge Final Process Effluent via a Final Process Effluent Discharge System described below.

Final Process Effluent

- one (1) 600 millimetre diameter discharging pipe (forcemain) having a total length of approximately 2,700 metres, discharging the Final Process Effluent, via an Outfall consisting two flow dispersing

pools connected by a 36.3 metre long rip-rap flow path and a rip-rap outlet, into the Porcupine River;

- Final Process Effluent Sampling Point, on the discharge pipeline from the Service Water Tank at the end of pipeline where it discharges to the Outfall; and

- Final Process Effluent flow measurement device - one (1) flow meter, located on the discharge pipeline.

Surface Water Collection Systems (Previously Approved and to be Constructed)

- Collection Area 1 (CA-1), located within the south-west portion of the Pamour Mine and directly downstream of the West Waste Rock Facility and Tailings Area No.2 , with impacted water diverted through a constructed drainage ditch to the northwest into Pamour No.5 Pit, where the groundwater is connected through historical underground workings to the Pamour Open Pit;

- Collection Area 2 (CA-2), located on the west side of the Pamour Mine and directly downstream from the Low-Grade Ore Stockpile and upstream of Three Nations Lake, with impacted water intercepted and pumped to the nearby Pamour Open Pit; and

- Collection Area 3 (CA-3), constructed drainage ditch located on the north side of the Pamour Mine, intercepting surface water runoff from the North Waste Rock Dump and Tailings Area No.3 (T3), discharging into a ditch and/or pipeline draining southwards to Pamour No.5 Pit.

Miscellaneous

- all other mechanical system, electrical system, instrumentation and control system, standby power system, piping, pumps, valves and appurtenances essential for the proper, safe and reliable operation of the Works in accordance with this Approval, in the context of process performance and general principles of wastewater engineering only.

EXISTING WORKS

Tailings Areas

- Tailings Area No.1 (T1) - tailings facility that has a surface area of approximately 16 hectares and is located immediately north of the Pamour Open Pit, whose drainage reports through perimeter ditching to the Pamour Open Pit;

- Tailings Area No.2 (T2) - tailings facility west of the Pamour Open Pit that is approximately 57 hectares in size, whose drainage reports through perimeter ditching to the South Constructed Channel that will be captured by CA-1;

- Tailings Area No.3 (T3) - tailings facility that has a surface area of approximately 125 hectares, including a ponded area atop T3 that collects precipitation/snow melt and provides for settling of solids, solids retention and natural degradation of constituent concentrations in the collected water, discharging, via the current effluent discharge facility consisting of decant structure (T3 Decant), a 450 millimetre

diameter pipeline, a conveyance ditch and PM122 outlet, into the Porcupine River; and

- one (1) existing Process Effluent Sampling Point and flow measurement device (overflow weir) located at the decant structure (T3 Decant).

Miscellaneous

- all other controls, electrical equipment, instruments, piping, pumps, valves and appurtenances essential for the proper operation of the above sewage Works.

All in accordance with supporting documents listed in Schedule A.

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

1. "Assessment Parameter" means a parameter that is listed in **Schedule C** (Monitoring Program) in this Approval;

2. "Approval" means this environmental compliance approval including any schedules attached to it, and the application;

3. "Bypass" means diversion of sewage around one or more treatment processes within the Works with the diverted sewage flows being returned to the treatment train upstream of an effluent sampling point and discharged via the approved effluent disposal facilities;

4. "**daily volume of effluent**" for a stream volume is the volume that flowed past the sampling point maintained in this Approval on the stream during the twenty four (24)-hour period preceding the Pick-Up of the first sample picked up from the stream for the day.

5. 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;

6. "District Manager" means the District Manager of the appropriate local district office of the Ministry where the Works is geographically located;

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

8. "Equivalent Equipment" means alternate piece(s) of equipment that meets the design requirements and performance specifications of the piece(s) of equipment to be substituted;

9. "Final Process Effluent" means effluent that is discharged to the environment through the approved effluent disposal facilities, that are required to meet the compliance limits stipulated in the Approval for the Interim and Pamour Effluent Treatment Plant at the Final Process Effluent sampling point;

10. "Limited Operational Flexibility" (LOF) means the conditions that the Owner shall follow in order to

undertake any modification that is pre-authorized as part of this Approval;

11. "Licensed Engineering Practitioner" means a person who holds a licence, limited licence or temporary licence under the *Professional Engineers Act,* R.S.O. 1990, c. P.28, as amended;

12. "Limited Parameter" means a parameter for which a limit is specified in **Schedule B** (effluent limits) in this Approval;

13. "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;

14. "Monthly Average Effluent Concentration" is the mean of all Single Sample Results of the concentration of a contaminant in the Final Process Effluent sampled or measured during a calendar month.

15. "Monthly Average Daily Volume of Effluent" means the cumulative total Daily Volume of Effluent discharged during a calendar month divided by the number of days during which the stream effluent was discharged that month;

16. "Operating Agency" means the Owner or the entity that is authorized by the Owner for the management, operation, maintenance, or alteration of the Works in accordance with this Approval;

17. "Owner" means Goldcorp Canada Ltd., operating as Porcupine Gold Mines, and its successors and assignees;

18. "OWRA" means the *Ontario Water Resources Act* , R.S.O. 1990, c. O.40, as amended;

19. "Pick-Up", in relation to a sample, means pick-up for the purpose of storage, including storage within an automatic sampling device, and transportation to and analysis at a laboratory;

20. "Proposed Works" means those portions of the Works included in the Approval that are under construction or to be constructed.

21. "Process Effluent" means:

    a. effluent that, by design, has come into contact with Process Materials (including tailings) other than process materials stored in a materials storage site, including but not limited to a waste rock storage site or a slag storage site,

    b. effluent that results from cleaning or maintenance operations at the Interim and Pamour Effluent Treatment Plant during a period when all or part of the plant is shut down, and

    c. any effluent described in paragraphs (a) to (c) combined with cooling water effluent or stormwater effluent.

22. "Process Effluent Monitoring Stream" means a process effluent stream on which a sampling point is

maintained under Condition 8;

23. "Process Effluent Sampling Point" means a sampling point maintained on a process effluent stream under Condition 8;

24. "Process Materials" means raw materials for use in an industrial process at the plant, manufacturing intermediates produced at the plant, or products or by-products of an industrial process at the plant, but does not include chemicals added to cooling water for the purpose of controlling organisms, fouling and corrosion.

25. "Rated Capacity" means the Maximum Daily Volume of Effluent for which the Works are approved to handle;

26. "Single Sample Result" means the test result of a parameter in the effluent discharged on any day, as measured by a probe, analyzer or in a composite or grab sample, as required;

27. "Tailings Area" means an area that is confined by artificial or natural structures or both and that is used for the disposal of finely divided solid waste materials produced as a result of the processing of metal, metal concentrates or metal-bearing substances.

28. "Works" means the approved sewage works, and includes Proposed Works, Existing 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

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 terms and conditions herein and shall take all reasonable measures to ensure any such person complies with the same.

2. The Owner shall design, construct, operate and maintain the Works in accordance with the conditions of this Approval.

3. Where there is a conflict between a provision of any document referred to in this Approval and the conditions of this Approval, the conditions in this Approval shall take precedence.

4. The issuance of, and compliance with the conditions of this Approval does not:

    a. relieve any person of any obligation to comply with any provision of any applicable statute, regulation or other legal requirement, including, but not limited to, the obligation to obtain approvals

from the Ministry of Northern Development, Mines, Natural Resources and Forestry necessary to construct or operate the sewage Works; or

b. limit in any way the authority of the Ministry to require certain steps be taken to require the Owner to furnish any further information related to compliance with this Approval.

2. CHANGE OF OWNER AND OPERATING AGENCY

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 address of Owner;

   b. change of Owner, including address of new 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. B.17,* shall be included in the notification;

   d. change of name of the corporation, and a copy of the most current information filed under the *Corporations Information Act, R.S.O. 1990, c. C.39,* shall be included in the notification.

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

   a. change of address of the Operating Agency;

   b. change of the Operating Agency, including address of the new Operating Agency.

3. In the event of any change in ownership of the Works, the Owner shall notify the succeeding owner in writing, of the existence of this Approval, and forward a copy of the notice to the District Manager.

4. The Owner shall ensure that all communications made pursuant to this condition refer to the number of this Approval.

3. CONSTRUCTION OF PROPOSED WORKS / RECORD DRAWINGS

1. All Works in this Approval shall be constructed and installed and must commence operation within five (5) years of issuance of this Approval, after which time the Approval ceases to apply in respect of any portions of the Works not in operation. In the event that the construction, installation and/or operation of any portion of the proposed Works is anticipated to be delayed beyond the time period stipulated, the Owner shall submit to the Director an application to amend the Approval to extend this time period, at least six (6) months prior to the end of the period. The amendment application shall include the reason(s) for the delay and whether there is any design change(s).

2. Upon completion of construction of the Works, the Owner shall prepare and submit a written statement to the District Manager, certified by a Licensed Engineering Practitioner, that the Works is constructed in accordance with this Approval.

3. Within one (1) year of completion of construction of the Proposed Works, a set of record drawings of the Works shall be prepared or updated. These drawings shall be kept up to date through revisions undertaken from time to time and a copy shall be readily accessible for reference at the Works.

4. BYPASSES

1. The Owner shall not permit effluent that would ordinarily flow past the Final Process Effluent Sampling Point maintained under this Approval to be discharged from Pamour Mine without flowing past that Final Process Effluent Sampling Point, including during a maintenance operation, a breakdown in equipment or any scheduled or unscheduled event.

2. The Owner shall report orally, as soon as reasonably possible, and in writing, as soon as reasonably possible, any incident in which process effluent is discharged from Pamour Mine without flowing past the Final Process Effluent Sampling Point maintained on a process effluent stream in accordance with this Approval before being discharged.

5. DESIGN OBJECTIVES

1. The Owner shall design and undertake everything practicable to operate the Works in accordance with the following objectives:

    a. Final Process Effluent 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.

    b. Rated Capacity of 2,285 cubic meters per hour for the Final Process Effluent from the Pamour Effluent Treatment Plant.

6. COMPLIANCE LIMITS

1. Upon commencement of the operation of the Proposed Works, the Owner shall operate and maintain the Works such that compliance limits for the Final Process Effluent from the Pamour Effluent Treatment Plant or the Interim Effluent Treatment Plant listed in the Table B-1 included in Schedule B are met.

2. The Owner shall operate and maintain the Works such that compliance limits for the Process Effluent, discharged via the Outlet PM122 from the existing Tailings Area T3 listed in the Table B-2 included in Schedule B are met.

3. The Owner shall submit within six (6) months of the issuance of the Approval, a report containing an assimilative capacity assessment defining receiver-based effluent limits for the effluent discharge point at PM122 outlet, to satisfaction of the District Manager. Upon District Manager acceptance of the

assimilative capacity assessment and receiver-based effluent limits, the Owner shall submit application to amend the Approval. If the assimilative capacity assessment report defines receiver-based effluent limits that cannot be achieved at PM122 outlet, it shall also define interim effluent limits for PM122 outlet and provide a plan with timetable for management of the PM122 effluent, to satisfaction of the District Manager. Upon District Manager acceptance of the interim effluent limits and plan for management of the PM122 effluent, the Owner shall submit application to amend the Approval.

7. OPERATION AND MAINTENANCE

1. The Owner shall ensure 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 laboratory facilities, adequate staffing and training, including training in all procedures and other requirements of this Approval and the OWRA and relevant regulations made under the OWRA, process controls and alarms and the use of process chemicals and other substances used in the Works.

2. The Owner shall prepare/update the operations manual for the Works within sixty (60) days after the issuance of the Approval, that includes, but not necessarily limited to, the following information:

    a. operating procedures for the Works under routine operating conditions;

    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. operating procedures for the Works to handle situations outside routine operating conditions and emergency situations such as a structural, mechanical or electrical failure, or an unforeseen flow condition;

    f. 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 Spills Action Centre (SAC) and District Manager;

    g. procedures for receiving, responding and recording public complaints, including recording any follow-up actions taken.

3. The Owner shall maintain an up to date operations manual and make the manual readily accessible for reference at 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 ensure that the Operating Agency possesses the level of training and experience

sufficient to allow safe and environmentally sound operation of the Works.

8. MONITORING AND RECORDING

1. The Owner shall, upon commencement of operation of the Proposed Works, carry out a scheduled Monitoring Program of collecting samples at the required sampling points, at the frequency specified or higher, by means of the specified sample type and analyzed for each parameter listed in the tables under the monitoring program included in **Schedule C** and record all results, as follows:

    a. All samples and measurements are to be taken at a time and in a location characteristic of the quality and quantity of the sewage stream over the time period being monitored.

    b. Definitions and preparation requirements for each sample type are included in document referenced in subsection 6.a.

    c. definitions for frequency:

        i. Thrice Weekly means three (3) days in every week

        ii. Weekly means once every week

        iii. Monthly means once every month

        iv. Quarterly means once every three (1) months

        v. Semi-annually means once every six months

    d. For Thrice Weekly sampling, there shall be an interval of at least twenty (24) hours between successive Pick-Up days at the Pamour Mine; and all the samples picked up in a week shall be picked up on the same three (3) days in the week.

    e. For Weekly sampling, there shall be an interval of at least four (4) days between successive Pick-Up days at the Pamour Mine; and all the samples picked up in a week shall be picked up on the same day in the week.

    f. For Monthly sampling, there shall be an interval of at least fifteen (15) days between successive Pick-Up days at Pamour Mine; and all the samples picked up in a month shall be picked up on the same day in the month.

    g. For Quarterly, there shall be an interval of at least forty-five (45) days between successive Pick-Up days at Pamour Mine; and all the samples picked up in a quarter shall be picked up on the same day in the quarter.

    h. For Semi-annually, there shall be an interval of at least ninety (90) days between successive Pick-Up days at Pamour Mine; and all the samples picked up in a semi-annual shall be picked up on the same

day in the Semi-annual period.

i. Where picking-up samples are required for parameters requiring Thrice Weekly or Weekly sampling, the Owner shall pick up samples collected over the twenty-four (24) hour period immediately preceding the Pick-Up.

j. The Owner shall undertake the Final Process Effluent monitoring quality control measures as outlined in Table C-2 - Quality Control - Final Process Effluent Monitoring of **Schedule C**.

k. The sampling points, measurement frequencies, and sampling parameters specified in the monitoring program outlined in **Schedule C** in respect to any parameter may, after **one (1) year** of monitoring in accordance with this Condition, be modified by the Director in writing.

2. Despite Subsection 1, the Owner need not collect samples from each Process Effluent Monitoring Stream, including the Final Effluent from the Interim Effluent Treatment Plant or Pamour Effluent Treatment Plant and/or the effluent from PM122 Outlet, on a day on which effluent is not being discharged from Pamour Mine.

3. The methods and protocols for sampling, analysis and recording shall conform, in order of precedence, to the methods and protocols specified in the following documents and all analysis shall be conducted by a laboratory accredited to the ISO/IEC:17025 standard or as directed by the District Manager:

a. the Ministry's publication "Protocol for the Sampling and Analysis of Industrial/Municipal Wastewater Version 2.0" (January 2016), PIBS 2724e02, as amended;

b. the publication "Standard Methods for the Examination of Water and Wastewater" (21st Edition), as amended;

c. the Environment Canada publications, as follow:

i. "Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to Rainbow Trout" (EPS 1/RM/13 Second Edition - December 2000), as amended;

ii. "Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to *Daphnia magna* " (EPS 1/RM/14 Second Edition - December 2000), as amended;

iii. "Biological Test Method: Test of Larval Growth and Survival Using Fathead Minnows" Report EPS1/RM/22 (Second Edition, February 2011), as amended;

iv. "Biological Test Method: Test of Reproduction and Survival Using the Cladoceran *Ceriodaphnia dubia* ", Report EPS 1/RM/21 (Second Edition, February 2007), as amended;

v. "Biological Test Method: Test Method for Measuring the Inhibition of Growth Using the Freshwater Macrophyte, *Lemna minor* ", Report EPS 1/RM/37 (Second Edition, January 2007), as amended;

vi. "Biological Test Method: Growth Inhibition Test Using a Freshwater Alga", Report EPS1/RM/25 (Second Edition, March 2007), as amended; and

d. for any parameters not mentioned in the documents referenced in Paragraphs 6.a, 6.b, and 6.c, the Owner shall ensure that those parameters are analysed by a laboratory accredited, by the Canadian Association for Laboratory Accreditation, to analyse that particular parameter.

4. The minimum monitoring frequency with respect to acute lethality to Rainbow Trout and Daphnia magna shall, after twelve (12) consecutive monthly monitoring results not indicating acute lethality, be reduced to Quarterly. If any Final Process Effluent sample indicates acute lethality to Rainbow Trout or Daphnia magna, the monitoring frequency shall revert back to Monthly and the Owner shall carry out the following immediately:

   a. Review the following:

      i. plant operations around the time of the toxicity event; and

      ii. all data available regarding plant operations and Final Process Effluent quality.

   b. An investigation shall be undertaken to determine the cause or source of the toxicity.

   c. Upon determination of cause or source of acute lethality to Rainbow Trout or Daphnia magna, the Owner shall, in consultation with Ministry District Manager, identify appropriate control measures to achieve non-acutely lethal effluent, specify time lines for the implementation of these measures, and carry out their implementation.

5. The Owner shall notify the Director in writing of any change in the frequency of acute lethality testing under this Approval, within thirty (30) days after the day on which the change begins.

6. Water, benthos, sediment, fish and toxicity sampling and testing shall be done in accordance with the "Pamour Mine Surface Water Monitoring Program" prepared for Newmont by Ecometrix and dated August 2, 2022, as amended from time to time. The District Manager may amend the monitoring plan by letter. The amendment shall be effective immediately upon notification by the District Manager.

7. The Owner shall monitor and record, in cubic metres a **daily volume of effluent** for each day on which a sample is collected under this Approval for each Process Effluent Monitoring Stream, including the Final Effluent from the Interim Effluent Treatment Plant or Pamour Effluent Treatment Plant and/or the effluent from PM122 Outlet, using **continuous flow measuring devices** and instrumentations/pumping rates calibrated to an accuracy within plus or minus fifteen per cent (+/- 15%)

8. The Owner shall determine by calibration or confirm by means of a certified report of a Licensed Engineering Practitioner that each flow measurement method used under above Subsection 7 meets the accuracy requirements for each effluent stream.

9. Where the Owner uses a new flow measurement method or alters an existing flow measurement method,

the Owner shall determine by calibration or confirm by means of a certified report of a Licensed Engineering Practitioner that each new or altered flow measurement method meets the accuracy requirements of Subsection 7 of this section, as the case may be, within two weeks after the day on which the new or altered method or system is used.

10. The Owner shall develop and implement a maintenance schedule and a calibration schedule for each flow measurement system installed at Pamour Mine and shall maintain each flow measurement system according to good operating practices.

11. The Owner shall use reasonable efforts to set up each flow measurement system used for the purposes of this section in a way that permits inspection by a provincial officer.

12. 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.

9. 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 D** 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 <u>not</u> 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.

10. REPORTING

1. The Owner shall report to the District Manager orally as soon as possible any non-compliance with the compliance limits, and in writing within seven (7) days of non-compliance.

2. In addition to the obligations under Part X of the EPA and O. Reg. 675/98 (Classification and Exemption of Spills and Reporting of Discharges) made under the EPA, the Owner shall, within fifteen (15) days of the occurrence of any reportable spill as provided in Part X of the EPA and O. Reg. 675/98, submit a full written report of the occurrence to the District Manager describing the cause and discovery of the spill, clean-up and recovery measures taken, preventative measures to be taken and a schedule of implementation.

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

4. On or before June 1 in each year, the Owner shall prepare a report - Reports Available to the Public, submit to the District Manager upon request, and ensure this report is available to the public, in an electronic format related to the previous calendar year and including the following:

    a. a summary of **effluent loadings** calculated under section 2 of **Schedule E**;

    b. a summary of concentrations determined under section 3 of **Schedule E**;

    c. a summary of the results of monitoring performed under Condition 8 regarding monitoring and reporting; and

    d. a summary of the concentrations or other results that exceeded an limit prescribed in **Schedule B**.

5. The Owner shall prepare a Quarterly Report (in this subsection, "Quarter" means a period of three (3) consecutive months beginning on the first day of January, April, July or October), no later than forty five (45) days after the end of each Quarter, and submit to the District Manager in an electronic format. The reports shall contain, but shall not be limited to, the following information pertaining to the reporting period (throughout the Quarter):

    a. all information relating to reporting requirements of the Approval for Bypass, and non-compliance during the Quarter.

    b. for each month in the Quarter, the **monthly average effluent loadings** and the highest and lowest daily plant loadings calculated under **Schedule E** for each Limited Parameter in **Schedule B**.

    c. for each month in the Quarter, the monthly average concentrations and the highest and lowest analytical results for each Limited Parameter in each of the Process Effluent Monitoring Streams including the Final Effluent from the Interim Effluent Treatment Plant or Pamour Effluent Treatment Plant and the effluent from PM122 Outlet, with Thrice Weekly or Weekly monitoring frequency.

    d. for each month in the Quarter, the monthly average process effluent volume and the highest and lowest daily process effluent volumes for the Process Effluent;

    e. for each day in the Quarter, the daily overflow effluent stream volumes calculated;

    f. the number of days in each month in the Quarter on which Process Effluent was discharged from Pamour Mine; and

    g. for each month in the Quarter, the highest and lowest pH results obtained for the Process Effluent at Pamour Mine.

6. The Owner shall prepare performance reports on a calendar year basis and submit to the District Manager in an electronic format by March 31 of the calendar year following the period being reported upon. The reports shall contain, but shall not be limited to, the following information pertaining to the reporting period:

    a. a summary and interpretation of all Process Effluent (including the Final Process Effluent from the Interim Effluent Treatment Plant or Pamour Effluent Treatment Plant and the effluent from Outlet PM122) monitoring data, including concentration/result, **volume of effluent**, Monthly Average Daily Volume of Effluent, and a comparison to the objectives and compliance limits in this Approval, including an overview of the success and adequacy of the Works;

    b. A surface water monitoring report including at least the following minimum information:

        i. Description and evaluation of any and all aquatic environment effects associated with the mining operations;

        ii. Tabulation and interpretation of current and historical receiver surface water monitoring data

(including electronic file of historical and current data in Excel format), statistical trend analysis, and a comparison to Ontario Provincial Water Quality Objectives, Canadian Water Quality Guidelines, Federal Environmental Quality Guidelines, and for sulphate the British Columbia Water Quality Guideline;

iii. Graphs illustrating current and historical trends with time of key water quality parameters;

iv. Summary and analysis of surface water, sediment, benthic invertebrate, fish and toxicity data, as described in the "Pamour Mine Surface Water Monitoring Program" prepared for Newmont by Ecometrix and dated August 2, 2022, as amended from time to time;

v. Description of any adverse ecological conditions and remedial actions taken in response;

vi. A site plan(s) of the entire site illustrating significant features such as lakes, streams, ponds, seeps, ditches, collection and treatment facilities, and roadways, as well as all of the sampling locations; and

vii. Universal transverse mercator (UTM) coordinates for all sampling locations, North American Datum (1983).

c. a summary of all operating issues encountered and corrective actions taken;

d. a summary of all normal and emergency repairs and maintenance activities carried out on any major structure, equipment, apparatus or mechanism forming part of the Works;

e. a summary of any effluent quality assurance or control measures undertaken;

f. a summary of the calibration and maintenance carried out on all Process Effluent and Stormwater Effluent monitoring equipment to ensure that the accuracy is within the tolerance of that equipment as required in this Approval or recommended by the manufacturer;

g. a tabulation of the volume of sludge generated, an outline of anticipated volumes to be generated in the next reporting period and a summary of the locations to where the sludge was disposed;

h. a summary of any complaints received and any steps taken to address the complaints;

i. a summary of all overflows, other situations outside normal operating conditions and spills within the meaning of Part X of EPA and abnormal discharge events;

j. a summary of all Notice of Modifications to Sewage Works completed under subsection 8 of Condition 11, including a report on status of implementation of all modification; and

k. any other information the District Manager requires from time to time.

7. The Owner shall submit an annual groundwater monitoring report prepared by a licensed independent

Professional Geoscientist or Licensed Engineering Practitioner qualified in the field of hydrogeology, in digital format, to the District Manager on March 31st of each calendar year. This report can be merged with the annual report required pursuant to subsection (6) at the discretion of the District Manager. The annual groundwater monitoring report shall include the following minimum information:

a. a site plan or plans of the entire site illustrating significant site features such as lakes, rivers, seeps, ponds, ditches, collection and treatment facilities, and roadways, as well as all of the sampling locations;

b. a cross section of the subsurface soils, stratigraphy, displaying the groundwater elevations;

c. a groundwater contour map showing the groundwater elevations for each well, water table contours or potentiometric surface and the inferred groundwater flow directions;

d. tables summarizing all historical and current water level data and analytical results for all parameters for each groundwater monitoring well with comparison to MECP Guideline B-7 Guidelines, Provincial Water Quality Objectives (PWQO) or Aquatic Protection Values (APV) where applicable;

e. analysis of the groundwater data to identify spatial and temporal trends, as well as analysis of the data within the context of the site water quality Contingency Plan;

f. graphs illustrating current and historical trends with time of key groundwater quality parameters;

g. a copy of the borehole logs for all groundwater monitoring wells (may be provided electronically);

h. a copy of the original laboratory analytical results (may be provided electronically on CD); and

i. conclusions and recommendations for future monitoring and/or contingency measures.

Schedule A

1. Application for Environmental Compliance Approval dated March 8, 2022 and received on March 8, 2022, submitted by Goldcorp Canada Ltd., operating as Porcupine Gold Mines, including water quality assessment report, site water balance reports, design reports, engineering drawings and specifications, as well as surface water and groundwater monitoring and contingency plans.

Schedule B

Table B-1 Final Process Effluent Compliance Limits

Final Process Effluent from the Interim Effluent Treatment Plant or Pamour Effluent Treatment Plant

Parameter	**Monthly Average Effluent Concentration** (maximum unless otherwise indicated)	**Single Sample Result** (maximum unless otherwise indicated)
Column 1	*Column 2*	*Column 3*
Total Arsenic	0.009 mg/L	0.018 mg/L
Total Cobalt	0.007 mg/L	0.014 mg/L
Total Copper	0.007 mg/L	0.014 mg/L
Total Lead	0.005 mg/L	0.010 mg/L
Total Nickel	0.15 mg/L	0.30 mg/L
Total Zinc	0.051 mg/L	0.102 mg/L
Unionized Ammonia Nitrogen	0.02 mg/L	0.04 mg/L
Nitrate (as N)	3.0 mg/L	6.0 mg/L
Free Cyanide	0.005 mg/L	0.01 mg/L
Total Suspended Solids (TSS)	15.0 mg/L	30.0 mg/L
pH (field)	between 6.5 - 9.5 inclusive (Single Sample Result)	
Toxicity to Rainbow Trout and Daphnia magna	Non-acutely lethal (no more than 50% mortality in 100% effluent) (Single Sample Result)	

Note: mg/L means milligram per litre.

Table B-2 Effluent Limits for Existing Outlet PM122

untreated Process Effluent from the existing Tailings Area T3

Parameter	**Monthly Average Effluent Concentration** (maximum unless otherwise indicated)	**Single Sample Result** (maximum unless otherwise indicated)
Column 1	*Column 2*	*Column 3*
Total Arsenic	0.5 mg/L	1.0 mg/L
Total Cyanide	1.0 mg/L	2.0 mg/L
Total Suspended Solids (TSS)	15.0 mg/L	30.0 mg/L
Total Copper	0.3 mg/L	0.6 mg/L
Total Lead	0.2 mg/L	0.4 mg/L
Total Nickel	0.5 mg/L	1.0 mg/L
Total Zinc	0.5 mg/L	1.0 mg/L
pH (field)	between 6.5 - 9.5 inclusive (Single Sample Result)	
Toxicity to Rainbow Trout and Daphnia magna	Non-acutely lethal (no more than 50% mortality in 100% effluent) (Single Sample Result)	

Note: The above effluent limits will be replaced by receiver-based or interim effluent limits for the Outlet PM122.

Schedule C - Monitoring Program

Table C-1 Process Effluent Monitoring (To be continued)

Sample Points: 1) The Final Process Effluent Sampling Point for the effluent stream from the Interim Effluent Treatment Plant or the Pamour Effluent Treatment Plant; and 2) The Process Effluent Sampling Point (at T3 Decant) for the existing effluent stream from Tailings Area T3.		
Parameter	**Sample Frequency (During Discharge)**	**Sample Type**
Flow Rate	Daily	Continuous
pH (field, lab)*[1]	Thrice Weekly	Grab
Temperature (field)*[1]	Weekly	Grab
Conductivity (field, lab)	Weekly	Grab
Total Dissolved Solids (TDS)	Weekly	Grab
Total Suspended Solids (TSS)	Thrice Weekly	Grab
Turbidity	Weekly	Grab
Hardness	Weekly	Grab
Alkalinity	Weekly	Grab
Acidity	Weekly	Grab
Total Ammonia Nitrogen	Weekly	Grab
Unionized Ammonia Nitrogen (Calculated)	Weekly	Grab
Nitrate (as N)	Weekly	Grab
Nitrite (as N)	Weekly	Grab
Total Phosphorus	Weekly	Grab
Dissolved Organic Carbon (DOC)	Weekly	Grab
Total Organic Carbon (TOC)	Weekly	Grab
Total Cyanide	Thrice Weekly	Grab
Free Cyanide	Weekly	Grab
Sulphate	Weekly	Grab
Chloride	Weekly	Grab
Total and Dissolved (0.45 micron filter) concentration of metals (Aluminium, Antimony, Arsenic, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Uranium, Vanadium and Zinc)	Weekly	Grab

Note*[1]: The temperature and pH of the Final Process Effluent shall be determined in the field at the time of sampling for Total Ammonia Nitrogen. The concentration of Un-ionized Ammonia shall be calculated using the total ammonia concentrations, pH and temperature using the methodology stipulated in "Ontario's Provincial Water Quality Objectives (PWQO)" dated July 1994, as amended, for Ammonia (unionized).

Table C-1 Process Effluent Monitoring (Continued)

Sample Points: 1) The Final Process Effluent Sampling Point for the effluent stream from the Interim Effluent Treatment Plant or the Pamour Effluent Treatment Plant; and 2) The Process Effluent Sampling Point (at T3 Decant) for the existing effluent stream from Tailings Area T3.		
Parameter	**Sample Frequency (During Discharge)**	**Sample Type**
Acute Toxicity to Rainbow Trout	Monthly/Quarterly*[2]	Grab
Acute Toxicity to *Daphnia Magna*		Grab
Sublethal/chronic Toxicity a) 7-day Fathead Minnows larval growth and survival b) 7-day *Ceriodaphnia dubia* larval growth and survival c) 7-day *Lemna minor* growth inhibition test d) 72-hour *Pseudokirchneriella subcapitata* growth inhibition test	**1) Quarterly** during first two (2) years of open pit dewatering when effluent discharged in that quarter, and **Semi-annually** thereafter*[3] for the Interim or Pamour Effluent Treatment Plant; and **2) Semi-annually** for the Outlet PM122	Grab

Note*[2]: Details see Conditions 8.4 and 8.5

Note*[3]: During the initial open pit dewatering period for each toxicity test that results in IC25<100% effluent or LC50<100% effluent, the distance and area of downstream Porcupine River that had effluent concentrations equal to or greater than the IC25 concentration or LC50 concentration will be determined. These calculations, as may be needed, would be reported along with the sublethal toxicity testing data as part of the annual report.

Table C-2 Quality Control - Final Process Effluent Monitoring

1. On one day in each year, on a day on which samples are picked up as in above Table C-1, the Owner shall collect and pick up a duplicate sample for each sample picked up on that day and shall analyze each duplicate sample for the parameters for which the frequency of monitoring, is "Thrice Weekly", or "Weekly".

2. The same Final Process Effluent Sampling Point shall be used for the purposes of sampling under subsection 1 of this Table in a year.

3. The Owner shall prepare a travelling blank and travelling spiked blank sample for each sample for which a duplicated sample is picked up at Pamour Mine under subsection 1 of this Table and shall analyzed the travelling blank and travelling spiked blank samples in accordance with the directions set out in the Ministry publication entitled "Protocol for the Sampling and Analysis of Industrial/Municipal Wastewater Version 2.0" (January 2016), PIBS 2724e02, as amended.

4. There shall be an interval of at least six (6) months between successive Pick-Up days at Pamour Mine under subsection 1 of this Table.

Table C-3 On-site Water Quality Monitoring (part 1)

Sample Stations	as listed in Table C-4
Sample Frequency	Monthly during ice-free periods
Sample Type	Grab
Sample Parameters	pH (field, lab), Conductivity (field, lab), Temperature (field), TDS, TSS, Turbidity, Hardness, Alkalinity, Acidity, Total Ammonia (As N), Unionized Ammonia (As N; calculated), Nitrate (as N), Nitrite (as N), Total Phosphorus, Dissolved Organic Carbon (DOC), Total Organic Carbon (TOC), Total Cyanide, Free Cyanide, Sulphate, Chloride, and Total and Dissolved concentrations of metals*[1] (Aluminium, Antimony, Arsenic, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Uranium, Vanadium, Zinc)

Note*[1]: Metals analysis shall be both total and dissolved (0.45 micron filter) metals

Table C-4 On-site Water Quality Monitoring (Part 2)

Site ID	Sample Location	UTM (NAD83)
PAMPIT*[1]/PAMINF	Water from the underground workings that will be pumped to the Effluent Treatment System	491649, 5374480
CCT2	Southeast corner of West WRP	490915, 5372989
CCUS	Southwest corner of West WRP, Collection Area 1	489987, 5372979
CC	Hallnor Road crossing of constructed channel which drains to Porcupine River - Downstream of Collection Area 1	489620, 5372544
PNFR	Drainage channel on south side of T3 (downstream)	490565, 5374314
PM121A	T3 Tailings northeast drainage ditch, immediately downstream of T3 area at Collection Area 3	490865, 5375301
PM121B	T3 Tailings northeast drainage ditch, upstream of input to Three Nations Creek - Downstream of Collection Area 3	491688, 5375642
PAMSTRM4*[2]	South of East WRP	492590, 5373899
TNLSpring	Seep drainage from Low Grade Ore towards TNL, at Collection Area 2	491842, 5373569
PTNLIN	Down gradient of TNLSpring, and Collection Area 2	492003, 5373328
POBE	North of OB pile, west side	492628, 5375681
PM122DS	Downstream of T3	488983, 5374881

Note*[1]: PAMPIT is an existing monitoring station and is used in this context to represent the influent to the Interim Effluent Treatment Plant or Pamour Effluent Treatment Plant

Note*[2]: PAMSTRM4 would be re-located upon the expansion of the East WRP into the future surface water (runoff) collection system infrastructure to ensure continued monitoring of water quality associated with the East WRP

Table C-5 Receiving and Sub-watershed Water Quality Monitoring (part 1)

Sample Stations	as listed in Table C-6
Sample Frequency	**Monthly**. During periods of Final Effluent discharge, frequency increased to **Weekly** at Stations HALDS, HALUS, PAMUS, and PAMDS.
Sample Type	Grab
Sample Parameters	pH (field, lab), Conductivity (field, lab), Temperature (field), TDS, TSS, Turbidity, Hardness, Alkalinity, Acidity, Total Ammonia (As N), Unionized Ammonia (As N; calculated), Nitrate (as N), Nitrite (as N), Total Phosphorus, Dissolved Organic Carbon (DOC), Total Organic Carbon (TOC), Total Cyanide, Free Cyanide, Sulphate, Chloride, Total and Dissolved (0.45 micron filter) concentrations of metals (Aluminium, Antimony, Arsenic, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Uranium, Vanadium, Zinc)

Table C-6 Receiving and Sub-watershed Water Quality Monitoring (Part 2)

Station ID	Sample Location	UTM (NAD83)
HALDS	Porcupine River downstream of west ditch at second power line.	488343, 5374746
HALUS	Porcupine River upstream of confluence of effluent from drainage ditch from PM122	488658, 5373963
PAMUS	Upstream of Station CC drainage route and discharge to Porcupine River.	488372, 5373147
PAMDS	Downstream of confluence of Porcupine River and drainage channel from Pamour Mine.	488611, 5373745
PTNL	New Three Nations Lake outlet to Three Nations Creek Realignment	493344, 5373637
PTNCDS	Three Nations Creek Realignment downstream at third grade control structure	494295, 5373894
TNCKIDD	Three Nations Creek downstream of input from T3 Tailings northeast drainage ditch	493391, 5375923
TNC101	Three Nations Creek upstream of new Highway 101	493828, 5375740
TNCDS	Original Three Nations Creek channel downstream of T1 Tailings	492156, 5375395

Table C-7 Groundwater Monitoring (Part 1)

Sample Wells	as listed in Table C-8
Sample Frequency	**Quarterly** during ice-free periods
Sample Type	Grab - Groundwater
Sample Parameters	Groundwater level and elevation, pH (field, lab), Conductivity (field, lab), Temperature (field), Total Dissolved Solids (TDS), Turbidity, Hardness, Alkalinity, Total Ammonia (as N), Unionized Ammonia (as N; calculated), Nitrate (as N), Nitrite (as N), Phosphorus (Total and dissolved), Dissolved Organic Carbon (DOC), Total Cyanide, Free Cyanide, Sulphate, Chloride, Dissolved concentrations of metals (Aluminium, Antimony, Arsenic, Beryllium, Barium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Uranium, Vanadium, Zinc

Table C-8 Groundwater Monitoring (Part 2)

As per "Pamour Mine Groundwater Monitoring Program" dated August 11, 2022, and as updated following concurrence from District Manager

Well ID	Location
LTM0927	South-westerly groundwater effects from the T2 Tailings Area within the southern half of a watershed area, associated with a drainage ditch (South Constructed Channel) along the western extent of the Pamour Mine
LTM0631	South-westerly groundwater effects from the T2 Tailings Area within the northern half of a watershed area, associated with a drainage ditch along the western extent of the Pamour Mine
LTM0911	Directly down-gradient of the T2 Tailings Area, in the southern portion of a small watershed, associated with a historical drainage area that flows westerly through a collection ditch
LTM0649	Down-gradient of T2 Tailings Area south of Pamour Mine
LTM0547	Down-gradient of T2 Tailings Area between the toe of the dam and Three Nations Lake
LTM0529	To the south-west of the existing footprint of the East Waste Rock Pile. The well will be in the footprint of the expanded of the East Waste Rock Pile and monitoring will cease once that occurs and replacement shall be installed in consultation with the District Manager
LTM0542	Southeast of the East Waste Rock Pile
LTM0613	Directly down-gradient of T2 along the eastern side of the facility between the toe of the dam and Three Nations Lake
LTM0512	Directly down-gradient of T2 Tailings Area along the north-western side of Pamour Mine
LTM0603	Directly down-gradient of the T3 Tailings Area to the south
LTM0609	Directly down-gradient of the T3 Tailings Area
LTM0592	Within the tailings deposit
BH14-EWR11	East of OB stockpile, west of Hwy 101
LTM0908	To the northwest of T3 Tailings Area
BH21-PAM-01	Located to the northwest of T3 to characterize down-gradient water quality
BH21-PAM-07	To the south of the East Waste Rock Pile, up-gradient of Three Nations Lake
BH21-PAM-08	To the south of the East Waste Rock Pile, up-gradient of Three Nations Lake
BH21-PAM-03	Located to northwest of the main open pit
BH21-PAM-05	Located to the north of T1 to characterize down-gradient water quality
BH21-PAM-02	Located to northeast of the main open pit to track water quality in the area below the former outlet creek of Three Nations Lake
BH14-EWR-09	South of East WRP, between East WRP and new basin of TNL
BH14-EWR-05	South of East WRP, between East WRP and new basin of TNL
BH14-EWR-11	East of Overburden (OB) stockpile, west of Hwy 101

Schedule D

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. Sewage Pumping Stations

        i. 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.

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

    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, de-watering equipment, UV systems, chlorine contact equipment, bio-disks, and sludge digester systems.

3. Effluent Disposal Facilities

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

4. 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.

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.

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 already included as part of the Works for which an Environmental Compliance Approval or an amended Environmental Compliance Approval has already been issued describing how new Works would affect the management of tailings and water at

the site.

c. 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.

d. Clause 1.6 does not relieve the Owner of any obligation to comply with any provision of any applicable statute, regulation or other legal requirement, including, but not limited to, the obligation to obtain necessary approval from Ministry of Natural Resources and Forestry (MNRF) and Ministry of Energy, Northern Development and Mines (ENDM) to proceed with the undertaking.

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.

This page contains an image of the form entitled "Notice of Modification to Sewage Works". A digital copy can be obtained from the District Manager.

Ontario

Ministry of the Environment, Conservation and Parks

Notice of Modification to Sewage Works

RETAIN COPY OF COMPLETED FORM AS PART OF THE ECA ON-SITE PRIOR TO THE SCHEDULED IMPLEMENTATION DATE.

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)

Schedule F

1. CALCULATION OF LOADINGS — GENERAL

1. For the purposes of performing a calculation under sections 2 to 3 of this Schedule, the Owner shall use the actual analytical result obtained by the laboratory.

2. Despite subsection 1 of this section, where the actual analytical result is less than one-tenth of the analytical method detection limit set out in the Ministry's publication "Protocol for the Sampling and Analysis of Industrial/Municipal Wastewater Version 2.0" (January 2016), PIBS 2724e02, as amended, the Owner shall use the value zero for the purpose of performing a calculation under sections 2 to 5 of this Schedule.

3. The Owner shall ensure that each calculation of a process effluent loading required by section 2 and each calculation of a process effluent concentration required by section 4 is performed as soon as reasonably possible after the analytical results on which the calculation is based become available to the Owner.

2. CALCULATION OF LOADINGS — PROCESS EFFLUENT

1. The Owner shall calculate, in kilograms, a **daily process effluent stream loading** for each Limited Parameter, in **Schedule C** in this Approval, in each Process Effluent Monitoring Stream of the Plant for each day on which a sample is collected under this Approval from the stream for analysis for the parameter.

2. When calculating a daily stream loading under subsection 1, the Owner shall multiply, with the necessary adjustment of units to yield a result in kilograms, the analytical result obtained from the sample for the parameter by the daily volume of effluent, as determined under Condition 10 regarding monitoring and reporting, for the stream for the day.

3. The Owner shall calculate, in kilograms, a **daily process effluent loading** for each Limited Parameter for each day for which the Owner is required to calculate a daily process effluent stream loading for the parameter under subsection 1 of this section.

4. For the purposes of subsection 3 of this section, a **daily process effluent loading** for a parameter for a day is the sum, in kilograms, of the daily process effluent stream loadings for the parameter calculated under subsection 1 of this section for the day.

5. Where the Owner calculates only one **daily process effluent stream loading** for a parameter for a day under subsection 1 of this section, the daily process effluent plant loading for the parameter for the day for the purposes of subsection 3 of this section is the single daily process effluent stream loading for the parameter for the day.

6. The Owner shall calculate, in kilograms, a **monthly average process effluent loading** for each

Limited Parameter for each month in which a sample is collected under this Approval more than once from a Process Effluent Monitoring Stream at the Plant for analysis for the parameter.

7. For the purposes of subsection 6 of this section, a **monthly average process effluent loading** for a parameter for a month is the arithmetic mean of the daily process effluent plant loadings for the parameter calculated under subsection 3 of this section for the month.

3. CALCULATION OF CONCENTRATIONS — PROCESS EFFLUENT

1. The Owner shall calculate, in milligrams per litre, a Monthly Average Effluent Concentration for each Limited Parameter in the Final Process Effluent Monitoring Stream for each month.

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

1. Condition 1 regarding general provisions is imposed to ensure that the Works are constructed and operated in the manner in which they were described and upon which approval was granted.

2. Condition 2 regarding change of Owner and Operating Agency is included to ensure that the Ministry records are kept accurate and current with respect to ownership and Operating Agency of the 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 regarding construction of Works/record drawings is included to ensure that the Works are constructed in a timely manner so that standards applicable at the time of Approval of the Works are still applicable at the time of construction to ensure the ongoing protection of the environment, and that prior to the commencement of construction of the portion of the Works that are approved in principle only, the Director will have the opportunity to review detailed design drawings, specifications and an engineer's report containing detailed design calculations for that portion of the Works, to determine capability to comply with the Ministry's requirements stipulated in the terms and conditions of the Approval, and also ensure that the Works are constructed in accordance with the Approval and that record drawings of the Works "as constructed" are updated and maintained for future references.

4. Condition 4 regarding Bypasses is included to indicate that Bypass is prohibited, except in circumstances where the failure to Bypass could result in greater damage to the environment than the Bypass itself. 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 Bypass Events.

5. Condition 5 regarding design objectives is imposed to establish non-enforceable design objectives to be used as a mechanism to trigger corrective action proactively and voluntarily before environmental impairment occurs.

6. Condition 6 regarding compliance limits is imposed to ensure that the Final Process Effluent discharged from the Works to the environment meets the Ministry's effluent quality requirements.

7. Condition 7 regarding operation and maintenance is included to require that the Works be properly operated, maintained, funded, staffed and equipped such that the environment is protected and deterioration, loss, injury or damage to any person or property is prevented. As well, the inclusion of a comprehensive operations manual governing all significant areas of operation, maintenance and repair is prepared, implemented and kept up-to-date by the Owner. 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.

8. Condition 8 regarding monitoring and recording is included to enable the Owner to evaluate and demonstrate the performance of the Works, on a continual basis, so that the Works are properly operated and maintained at a level which is consistent with the design objectives and compliance limits.

9. Condition 9 regarding Limited Operational Flexibility is included to ensure that the Works are constructed, maintained and operated in accordance with the Approval, and that any pre-approved modification will not negatively impact on the performance of the Works.

10. Condition 10 regarding reporting is included to provide a performance record for future references, to ensure that the Ministry is made aware of problems as they arise, and to provide a compliance record for this Approval.

Upon issuance of the environmental compliance approval, I hereby revoke Approval No(s). 3135-AVZRXV and the Notice No.1 of Approval No. 5135-82AMB4 issued on August 20, 2020, and February 3, 2021.

In accordance with Section 139 of the *Environmental Protection Act,* you may by written notice served upon me, the Ontario Land Tribunal and in accordance with Section 47 of the *Environmental Bill of Rights,* 1993, the Minister of the Environment, Conservation and Parks, within 15 days after receipt of this notice, require a hearing by the Tribunal. The Minister of the Environment, Conservation and Parks will place notice of your appeal on the Environmental Registry. Section 142 of the *Environmental Protection Act* provides that the notice requiring the hearing ("the Notice") 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 available 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:

Registrar* Ontario Land Tribunal 655 Bay Street, Suite 1500 Toronto, Ontario M5G 1E5 OLT.Registrar@ontario.ca	and	The Minister of the Environment, Conservation and Parks 777 Bay Street, 5th Floor Toronto, Ontario M7A 2J3	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 Ontario Land Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 212-6349 or 1 (866) 448-2248, or www.olt.gov.on.ca**

This instrument is subject to Section 38 of the *Environmental Bill of Rights,* 1993, that allows residents of Ontario to seek leave to appeal the decision on this instrument. Residents of Ontario may seek leave to appeal within 15 days from the date this decision is placed on the Environmental Registry. By accessing the Environmental Registry at https://ero.ontario.ca/, you can determine when the leave to appeal period ends.

The above noted activity is approved under s.20.3 of Part II.1 of the *Environmental Protection Act.*
DATED AT TORONTO this 15th day of September, 2022

Fariha Pannu.

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

NH/
c: District Manager, MECP Timmins District Office
Brian Fraser, Ecometrix Incorporated