



# Blackwater Mine



## EMA Permit #110602 Annual Report for 2022

## Table of Contents

Executive Summary .....	1-1
Definitions .....	3
1.0 Authorized Discharges .....	5
1.1 Treated Stormwater Effluent to Ground .....	5
2.0 General Requirements .....	5
2.1 Maintenance of Works and Emergency Procedures .....	5
2.2 Publication of Documents .....	6
3.0 Operational Requirements .....	6
3.1 Water Management and Pollution Control Works .....	6
3.2 Rapid Infiltrations Conceptual Design and Site Investigation .....	7
3.3 Erosion and Sediment Control Plan (ESCP) .....	7
3.4 Decommissioning of the Sediment Control Pond and Rapid Infiltration Basins .....	9
3.5 Visual Monitoring .....	9
4.0 Reporting Requirements .....	10
4.1 Non-Compliance Notification .....	10
4.2 Non-Compliance Reporting .....	10
4.3 Annual Reporting .....	10
4.4 Reporting to Indigenous Groups .....	11



## Executive Summary

This report provides an overview of Blackwater Gold project early works construction operations, which commenced during the period of September – December 2022, with a focus on how the project has satisfied the terms of EMA permit #110602.

There were two (2) main work fronts that kicked off in 2022:

- Commencement of tree clearing, earthworks and ground prep for an approximately 26.4 ha area where the plant site will be located
- Commencement of the installation of a new construction camp in a previously disturbed area proximal to the ore body

The main earthworks contractors on site were Nechako Plateau and OCL Construction. Nechako plateau maintained a crew of approximately 12 operators and staff on site and OCL a crew of approximately 10-14 operators and staff. Each contractor maintained relatively small fleets of equipment including a feller buncher, small excavators, 40 t haul trucks, packers, dozers and graders.

The figures below demonstrate general progress made on both work fronts described above.



**Figure 1 - Plant Site Drone Image January 2023**



**Figure 2 – Construction Camp Installation – Jan 2023**

## Definitions

<b>Authorized Works</b>	Means works referred to in Section 1.1.3 of Permit 110602.
<b>Early Works</b>	Means clearing, grubbing ditching, and site levelling at the Plant Site location and sediment and erosion control including the construction of the Sediment Control Pond.
<b>Facility</b>	Means the Blackwater Mine, a gold and silver mine located near Vanderhoof, British Columbia.
<b>Officer</b>	Means an Officer as defined by Section 1(1) of the Environmental Management Act.
<b>Plant Site</b>	Means the area on the plant site area of the Blackwater Mine where surface disturbance including, but not limited to, clearing, grubbing, ditching, site levelling and sediment pond construction will occur.
<b>Province</b>	Means Her Majesty the Queen in right of British Columbia.
<b>Qualified Professional</b>	<p>Means an applied scientist or technologist specializing in an applied science or technology applicable to the duty or function, including, if applicable and without limiting this, agrology, biology, chemistry, engineering, geology or hydrogeology and who:</p> <ol style="list-style-type: none"><li>Is registered with the appropriate professional organization, is acting under that organization's code of ethics and is subject to disciplinary action by that organization,</li><li>Through suitable education, experience, accreditation and/or knowledge, may be reasonably relied on to provide advice within their area of expertise; and</li><li>Provides the completed Declaration of Competency and Conflict of Interest Disclosure Statements.</li></ol> <p>All documents submitted to the Director by a Qualified Professional must be signed by the author(s).</p>
<b>Rapid Infiltration Basin</b>	Means the engineered structures adjacent to the Sediment Control Pond where the effluent is discharged into, contained, and allowed to infiltrate into the surficial overburden layer.
<b>Rapid Infiltration Concept Design</b>	Means the Rapid Infiltration Concept for the Plant Site Sediment Collection Pond Discharge, dated April 20, 2021, prepared by Senior Engineer Carlos Penate, P.Eng with Knight Piésold Ltd.
<b>Regulatory Document</b>	<p>Means any document that the Permittee is required to provide to the Director or the Province pursuant to:</p> <ol style="list-style-type: none"><li>This Authorization,</li><li>Any regulation made under the Environmental Management Act that regulates the Facility described in this Authorization or the discharge of waste from that Facility, or</li></ol>

- iii. any order issued under the Environmental Management Act directed against the permittee that is related to the Facility described in this Authorization or the discharge of waste from that Facility.

**Sediment Control Pond (SCP)**

Means the engineered sediment control structure designed to manage surface water runoff and control sediment release from the plant site during Early Works. The SCP will provide controlled discharge of flows up to the 1-in-10-year, 24-hour storm event through a pipe, and provide controlled discharge of flows up to the 1-in-200-year, 24-hour storm event through a broad crested rectangular weir spillway.

## 1.0 Authorized Discharges

### 1.1 Treated Stormwater Effluent to Ground

*This section applies to the discharge of treated effluent from a Sediment Control Pond during Early Works to ground through an Infiltration Basin. The influent to the Sediment Control Pond is comprised of contact water from the Plant Site construction area. The site reference number for this discharge is E324811. The permittee must not discharge under this Authorization unless the Authorized Works are complete and fully operational.*

#### **2022 Compliance Details**

BW Gold did not discharge any treated or other effluent from a Sediment Control Pond during Early Works (Sept- Dec 2022) to ground through an Infiltration Basin in 2022. Construction of the Rapid Infiltration Basins (RIBs) was kicked off but authorized works were still under construction at the end of 2022 no release of treated stormwater effluent to ground occurred.

## 2.0 General Requirements

### 2.1 Maintenance of Works and Emergency Procedures

*The permittee must regularly inspect the Authorized Works and maintain them in good working order. If components of the Authorized Works have a Qualified Professional's recommended maintenance schedule, then those components must, at a minimum, be maintained in accordance with that schedule.*

*The permittee must maintain a record of inspections and maintenance of the Authorized Works and make the record available to an Officer upon request.*

*In the event of an emergency or other condition which prevents normal operation of the Authorized Works or leads to an unauthorized discharge, the permittee must take remedial action immediately to restore the normal operation of the Authorized Works and to prevent any unauthorized discharges. The permittee must immediately report the emergency or other condition and the remedial action that has and will be taken to [the EnvironmentalCompliance@gov.bc.ca](mailto:EnvironmentalCompliance@gov.bc.ca) email address or as otherwise instructed by the director.*

#### **2022 Compliance Details**

BW Gold subcontracted a dedicated group of representatives from Knight Piésold in Q4 2022 on site to perform the following QA tasks:

- Carry out spot checks to verify the construction is being completed as per the construction drawings.
- Be present for any subgrade inspection.
- Provide a Daily Site Report (DSR), summarizing the main activities completed in a daily basis.
- Review test results derived from QC testing as they become available.
- Verify the accuracy of the data and carry out an independent analysis of test results as necessary for QA purposes. This review will be used to summarize the following:
  - Conformance of the materials and workmanship with the Technical Specifications and the Drawings.



- Identification of any non-compliant test results and trends with respect to compliance over time.
- At the completion of work, the Constructor will provide a QC summary of all results as part of any approval request.

During QA inspections, any quality issues detected are communicated to QC personnel on site so that appropriate corrective actions are immediately taken. If the QC testing identifies samples that do not comply with the requirements of the Technical Specifications and the Drawings and if subsequent re-testing confirms this, then appropriate corrective measures are taken. This may include removal of the non-compliant materials, developing modifications to the construction procedures and/or reviewing the design objectives for the material.

## 2.2 Publication of Documents

*The Ministry of Environment and Climate Change Strategy publishes Regulatory Documents on its website for the purpose of research, public education and to provide transparency in the administration of environmental laws. The permittee acknowledges that the Province may publish any Regulatory Documents submitted by the permittee, excluding information that would be exempted from disclosure if the document was disclosed pursuant to a request under section 5 of the Freedom of Information and Protection of Privacy Act, and the permittee consents to such publication by the Province.*

### **2022 Compliance Details**

BW Gold acknowledges that the Province may publish any Regulatory Documents submitted by the permittee, excluding information that would be exempted from disclosure if the document was disclosed pursuant to a request under section 5 of the Freedom of Information and Protection of Privacy Act, and BW Gold consents to such publication by the Province.

## 3.0 Operational Requirements

### 3.1 Water Management and Pollution Control Works

*The permittee must ensure that the plans and specifications for the Authorized Works described in Section 1.1.3 are developed by a Qualified Professional, and that the Authorized Works have been constructed in accordance with the plans and specifications before discharge commences under this authorization. The permittee must provide the signed plans and specifications to Ministry staff if requested.*

*The permittee must design and operate the Sediment Control Pond (SCP) and the Rapid Infiltration Basins (RIBs) to prevent discharge from the emergency overflow spillway unless there is an event greater than the 1-in-10-year storm. The permittee must notify the director within 24 hours at [EnvAuthorizationsReporting@gov.bc.ca](mailto:EnvAuthorizationsReporting@gov.bc.ca) in the event that effluent is discharged from the emergency overflow spillway.*

### **2022 Compliance Details**

BW Gold retained qualified professionals from Knight Piésold as well as employed an on-site team of engineers and environmental specialists to ensure that the Authorized Works were constructed in accordance with the plans and specifications before any discharge commences under this authorization. BW Gold will provide the signed plans and specifications to Ministry staff if requested. BW Gold has worked with Knight Piésold to design the Sediment Control Pond (SCP) and the Rapid Infiltration Basins



(RIBs) to prevent discharge from the emergency overflow spillway unless there is an event greater than the 1-in-10-year storm.

Ground works on the Sediment Control Pond and Rapid Infiltration Basins began in October 2022. Due to poor soil conditions, as a result of the cooling temperatures and freezing ground, work on the SCP and RIBs was paused, while other general earthworks continued within the Plant Site footprint. To date the SCP and RIBs are 70 % complete with further works and completion planned for Q2 2023.

## 3.2 Rapid Infiltrations Conceptual Design and Site Investigation

*The permittee must complete the hydrological site investigation that is outlined in the Rapid Infiltration Conceptual Design prior to the construction of the Sediment Control Pond. Information obtained during the site investigation must be used to inform the design and land area requirements for the Rapid Infiltration Basins on site. Any changes to the design of the Rapid Infiltration Basins after the site investigation is completed must be submitted to the director 60 days prior to the start of construction of the Rapid Infiltration Basins. Changes are also to be included in the annual reclamation report for the year when the Rapid Infiltration Basins are constructed.*

### **2022 Compliance Details**

An updated Site Investigation Report was submitted to ENV as part of the updated ESCP submission on March 29, 2022. Construction of the Rapid Infiltration Basins kicked off in Q4 2022, as required by this condition, changes to the design of the Rapid Infiltration Basins will also be included in the annual reclamation report for the year when the Rapid Infiltration Basins are constructed.

## 3.3 Erosion and Sediment Control Plan (ESCP)

*To minimize and control the runoff of sediments in stormwater and to manage the treatment of stormwater, the permittee must implement, maintain and comply with all aspects of the ESCP during the Early Works. The ESCP must be prepared by a Qualified Professional. The Plan must be submitted to the director 90 days prior to construction at the site. Any modifications made to the ESCP must be submitted to the director within 30 days of the modification.*

*The director may require the permittee to update the ESCP based on environmental data, public complaints, and/or any other information obtained by Environmental Protection in connection with the mine operation and receiving environment.*

### **2022 Compliance Details**

The Erosion Prevention and Sediment Control Plan (ESCP) has been developed to provide the erosion and sediment control framework that will be implemented during all Project phases, including Construction. The ESCP provides the overall approach BW Gold will take; site-specific erosion and sediment control plans and associated activities are provided on the Issued for Construction (IFC) drawings. The EM will monitor the status of erosion and sediment control measures and report on any increased risk at specific sites to the Mine Manager. Erosion and Sediment Control (ESC) measures will be field-fit by the EPCM Contractor based on conditions encountered in the field.

In 2022, construction earthworks began during fall/winter in dry or frozen conditions. Silt fencing and slope protection mitigation measures were pre-emptively placed along northern and southern portions of downslope at temporary construction camp site.



**Figure 3 – Erosion control blankets installed on slopes adjacent to the temporary camp**



**Figure 4 - Erosion control blankets installed on slopes adjacent to the temporary camp**

Historical sediment ponds and ditches were upgraded and maintained at various locations around site. Planning for 2023 freshet E&SC was kicked off in Q4 2022 has been ongoing (and will continue) within the Environment Department on-site. Due to anticipated snow damage, maintenance of silt fencing will be



assessed and addressed as required during 2023. E&SC supplies were ordered in 2022 (ex. various mats, silt fencing, stakes, seed, hay mats, straw bales, various cloth, sandbags) - stock will be reassessed prior to 2023 freshet. BW Gold is working to develop an RFP to bring in a consultant to come to site to complete ESC field training with site services and Enviro staff on site.



Figure 5– ESCP Storage Area

### 3.4 Decommissioning of the Sediment Control Pond and Rapid Infiltration Basins

*The permittee must develop and implement a Decommissioning Plan for the Sediment Control Pond. The Plan must be submitted to the director 90 days prior to the decommissioning of the pond. At a minimum, the Plan must include the following:*

- *The pump out procedure for the effluent that cannot be discharged through the primary outlet,*
- *The sediment dewatering procedure,*
- *The decommissioning of the ponds, ditches, liners and outlets.*

#### **2022 Compliance Details**

No decommissioning report is required at this time as the authorized works were still being constructed at the end of 2022.

### 3.5 Visual Monitoring

*The permittee must conduct visual monitoring of the Sediment Control Pond daily while discharging to the Rapid Infiltration Basins. The permittee must conduct visual monitoring of the Rapid Infiltration Basins daily when there is effluent in the basins. Visual monitoring must include monitoring for adequate infiltration in the Rapid Infiltration Basins and monitoring for seepage, overland flow, and erosion in the area outside the Sediment Control Pond and Rapid Infiltration Basins. Daily inspections must be recorded and maintained on site for three years and must be made available to Ministry staff upon request.*

#### **2022 Compliance Details**

The SCP and RIBs construction was not completed as of December 31, 2022. No visual monitoring was required during 2022 because no discharging of effluent to the Rapid Infiltration Basins occurred. Inspections were carried out nonetheless, however, as described in Section 2.1 of this report

## 4.0 Reporting Requirements

### 4.1 Non-Compliance Notification

*The permittee must immediately notify the director or designate by email at [EnvironmentalCompliance@gov.bc.ca](mailto:EnvironmentalCompliance@gov.bc.ca) or as otherwise instructed by the director, of any non-compliance with the requirements of this authorization. The permittee must immediately take remedial action to remedy any effects of such non-compliance.*

*The Permittee must provide the Director with written confirmation of all such non-compliance events, including available test results within 24 hours of the original notification by email at [EnvironmentalCompliance@gov.bc.ca](mailto:EnvironmentalCompliance@gov.bc.ca), or as otherwise instructed by the Director.*

#### **2022 Compliance Details**

There were no non-compliances reported in 2022 as the authorized works were still being constructed at the end of 2022.

### 4.2 Non-Compliance Reporting

*If the permittee fails to comply with any of the requirements of this authorization, the permittee must, within 30 days of such non-compliance, submit to the director a written report that includes, but is not necessarily limited to, the following:*

- a) An explanation of the most probable cause(s) of the noncompliance, and*
- b) A description of remedial action planned and/or taken by the permittee to prevent similar noncompliance(s) in the future.*

*The permittee must submit all non-compliance reporting required to be submitted under this Section by email to the Ministry's Compliance Reporting Submission Mailbox (CRSM) at [EnvironmentalCompliance@gov.bc.ca](mailto:EnvironmentalCompliance@gov.bc.ca) or as otherwise instructed by the director.*

*For guidelines on how to report a non-compliance or for more information visit the Ministry website: <https://www2.gov.bc.ca/gov/content/environment/waste-management/waste-discharge-authorization/comply#reportnoncompliance>*

#### **2022 Compliance Details**

There were no non-compliances reported in 2022 as the authorized works were still being constructed at the end of 2022.

### 4.3 Annual Reporting

*The permittee must submit the Annual Report from the previous year to the director within 60 days of the end of the calendar year. The permittee must submit the report by email to the Ministry's Routine Environmental Reporting Submission Mailbox at [EnvAuthorizationsReporting@gov.bc.ca](mailto:EnvAuthorizationsReporting@gov.bc.ca) or as otherwise instructed by the director. For guidelines on how to properly name the files and email subject lines or for more information visit the Ministry website: <https://www2.gov.bc.ca/gov/content/environment/waste-management/waste-discharge-authorization/comply#reportnoncompliance>*

*The Annual Report must include a summary outlining all the non-compliance report(s) required by Section 4.3 including any use of the emergency spillway. If no non-compliances have occurred indicate that in the report.*



## **2022 Compliance Details**

This report is being provided for compliance to condition 4.3.

### **4.4 Reporting to Indigenous Groups**

*The director may require the permittee to submit copies of reports and notifications required under Section 4.3, 4.4, within timelines identified in those Sections, by electronic means to specified Indigenous Groups. The permittee may exclude proprietary information that may be exempt from disclosure if the report were disclosed pursuant to a request under Section 5 of the Freedom of Information and Protection of Privacy Act.*

## **2022 Compliance Details**

This report is being provided to Indigenous Groups for compliance to condition 4.4.