



GEORGIA
DEPARTMENT OF NATURAL RESOURCES

ENVIRONMENTAL PROTECTION DIVISION

Richard E. Dunn, Director

EPD Director's Office

2 Martin Luther King, Jr. Drive
Suite 1456, East Tower
Atlanta, Georgia 30334
404-656-4713

JAN 23 2018

Mr. Chris Babcock
Royal Vindicator Mine
202 Bradley Street #8
Carrollton, Georgia 30117

RE: Permit Issuance
Royal Vindicator Mine
Permit No. GA0050259
Tallapoosa, Haralson County

Dear Mr. Babcock:

Pursuant to the Georgia Water Quality Control Act, as amended, the Federal Clean Water Act, as amended, and the Rules and Regulations promulgated thereunder, we have issued the attached permit for the above-referenced facility.

Your facility has been assigned to the following EPD office for reporting and compliance. Signed copies of all required reports shall be submitted to the following address:

Environmental Protection Division
Watershed Protection Branch
Watershed Compliance Program
2 Martin Luther King Jr. Drive, Suite 1152
Atlanta, Georgia 30334

Please be advised that on and after the effective date indicated in the permit, the permittee must comply with all terms, conditions, and limitations of the permit. If you have questions concerning this correspondence, please contact Whitney Fenwick at 404.656.2795 or whitney.fenwick@dnr.ga.gov.

Sincerely,

Richard E. Dunn
Director

RED:wf

Enclosure(s)

cc: EPD Watershed Compliance Program, Mr. Shea Buettner (e-mail)

Permit No. GA0050259

Issuance Date: JAN 23 2018



GEORGIA

DEPARTMENT OF NATURAL RESOURCES

ENVIRONMENTAL PROTECTION DIVISION

National Pollutant Discharge Elimination System Permit

In accordance with the provisions of the Georgia Water Quality Control Act (Georgia Laws 1964, p. 416, as amended), hereinafter called the State Act; the Federal Water Pollution Control Act, as amended (33 U.S. C. 1251 et seq.), hereinafter called the Federal Act; and the Rules and Regulations promulgated pursuant to each of these Acts,

Royal Vindicator Mine
202 Bradley Street #8
Carrollton, Georgia 30117

is issued a permit to discharge from a facility located at

Royal Vindicator Mine
2202 GA Highway 100
Tallapoosa, Georgia 30176
Haralson County

to receiving waters

unnamed tributary to Walker Creek in the Tallapoosa River Basin.

in accordance with effluent limitations, monitoring requirements and other conditions set forth in the permit.

This permit is issued in reliance upon the permit application signed on August 14, 2017, any other applications upon which this permit is based, supporting data entered therein or attached thereto, and any subsequent submittal of supporting data.

This permit shall become effective on February 1, 2018.

This permit and the authorization to discharge shall expire at midnight January 31, 2023.



Richard E. Dunn, Director
Environmental Protection Division

PART I

A.1. Effluent Limitations and Monitoring Requirements

During the period specified on the first page of this permit, the permittee is authorized to discharge from outfall number 001 – stormwater and wastewater^{1,2}.

Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristics (Units)	Discharge Limitations				Monitoring Requirements ³		
	Mass Based (lbs/day)		Concentration Based (mg/L)		Measurement Frequency	Sample Type	Sample Location
	Daily Avg.	Daily Max.	Daily Avg.	Daily Max.			
Flow (MGD)	Report	Report	--	--	2/Month	Instant	Final Effluent
BOD ₅	--	--	Report	Report	1/Quarter	Grab	Final Effluent
Oil & Grease	--	--	10	15	2/Month	Grab	Final Effluent
Turbidity (NTU)	--	--	50	75	2/Month	Grab	Final Effluent
Settleable Solids (mL/L)	--	--	0.2	0.2	2/Month	Grab	Final Effluent
Total Suspended Solids	--	--	Report	Report	2/Month	Grab	Final Effluent
Total Phosphorus	8.34	8.34	--	--	1/Quarter	Grab	Final Effluent
Cyanide, free	--	--	Report	Report	2/Month	Grab	Final Effluent
Copper, total	0.001	0.001	0.004	0.004	2/Month	Grab	Final Effluent
Mercury, total	0.000004	0.000006	0.00001	0.00002	2/Month	Grab	Final Effluent
Zinc, total	0.013	0.013	0.04	0.04	2/Month	Grab	Final Effluent
Acute Whole Effluent Toxicity ⁴	--	--	See Footnote ⁴	See Footnote ⁴	See Footnote ⁴	Grab	Final Effluent

The pH shall not be less than 6.0 standard units nor greater than 8.5 standard units and shall be monitored once per week by grab sample.

- ¹ There shall be no discharge of process wastewater from the cyanidation gold extraction process. Water used in the cyanidation process shall be recycled in a closed system.
- ² There shall be no discharge of floating solids or visible foam other than trace amounts.
- ³ All the parameters must be monitored, at a minimum, at the measurement frequency stated above if there is any discharge. If there is no discharge, state such in the discharge monitoring report in accordance with the reporting requirements in Part 1.D of this permit.
- ⁴ See Special Conditions of this permit Part III.C.6.

B. Monitoring

1. Representative Sampling

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge. The permittee shall maintain a written sampling plan and schedule onsite.

2. Sampling Period

- a. Unless otherwise specified in this permit, quarterly samples shall be taken during the periods January-March, April-June, July-September, and October-December.
- b. Unless otherwise specified in this permit, semiannual samples shall be taken during the periods January-June and July-December.
- c. Unless otherwise specified in this permit, annual samples shall be taken during the period of January-December.

3. Monitoring Procedures

Analytical methods, sample containers, sample preservation techniques, and sample holding times must be consistent with the techniques and methods listed in 40 CFR Part 136. The analytical method used shall be sufficiently sensitive. EPA-approved methods must be applicable to the concentration ranges of the NPDES permit samples.

4. Detection Limits

All parameters will be analyzed using the appropriate detection limits. If the results for a given sample are such that a parameter is not detected at or above the specified detection limit, a value of "NOT DETECTED" will be reported for that sample and the detection limit will also be reported.

5. Recording of Results

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information:

- a. The exact place, date, and time of sampling or measurements, and the person(s) performing the sampling or the measurements;
- b. The dates and times the analyses were performed, and the person(s) performing the analyses;
- c. The analytical techniques or methods used;
- d. The results of all required analyses.

6. Additional Monitoring by Permittee

If the permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit, using approved analytical methods as specified above, the results of such monitoring shall be included in the calculation and reporting of the values required in the Discharge Monitoring Report. Such increased monitoring frequency shall also be indicated. EPD may require, by written notification, more frequent monitoring or the monitoring of other pollutants not required in this permit.

7. Records Retention

The permittee shall retain records of all monitoring information, including all records of analyses performed, calibration and maintenance of instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a minimum of three (3) years from the date of the sample, measurement, report or application, or longer if requested by EPD.

8. Penalties

The Federal Clean Water Act and the Georgia Water Quality Control Act provide that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit, makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance shall, upon conviction, be punished by a fine or by imprisonment, or by both. The Federal Clean Water Act and the Georgia Water Quality Control Act also provide procedures for imposing civil penalties which may be levied for violations of the Act, any permit condition or limitation established pursuant to the Act, or negligently or intentionally failing or refusing to comply with any final or emergency order of the Director of EPD

C. Definitions

1. The "daily average" mass means the total discharge by mass during a calendar month divided by the number of days in the month that the production or commercial facility was operating. Where less than daily sampling is required by this permit, the daily average discharge shall be determined by the summation of all the measured daily discharges by weight divided by the number of days sampled during the calendar month when the measurements were made.
2. The "daily maximum" mass means the total discharge by mass during any calendar day.
3. The "daily average" concentration means the arithmetic average of all the daily determinations of concentrations made during a calendar month. Daily determinations of concentration made using a composite sample shall be the concentration of the composite sample.
4. The "daily maximum" concentration means the daily determination of concentration for any calendar day.
5. A "calendar day" is defined as any consecutive 24-hour period.
6. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility.
7. "Severe property damage" means substantial physical damage to property, damage to treatment facilities that causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.
8. "EPD" as used herein means the Environmental Protection Division of the Department of Natural Resources.
9. "State Act" as used herein means the Georgia Water Quality Control Act (Official Code of Georgia Annotated; Title 12, Chapter 5, Article 2).
10. "Rules" as used herein means the Georgia Rules and Regulations for Water Quality Control.

D. Reporting Requirements

1. The permittee must electronically report the DMR, OMR and additional monitoring data using the web based electronic NetDMR reporting system, unless a waiver is granted by EPD.
 - a. The permittee must comply with the Federal National Pollutant Discharge Elimination System Electronic Reporting regulations in 40 CFR §127. The permittee must electronically report the DMR, OMR, and additional monitoring data using the web based electronic NetDMR reporting system online at: <https://netdmr.epa.gov/netdmr/public/home.htm>
 - b. Monitoring results obtained during the calendar month shall be summarized for each month and reported on the DMR. The results of each sampling event shall be reported on the OMR and submitted as an attachment to the DMR.
 - c. The permittee shall submit the DMR, OMR and additional monitoring data no later than 11:59 p.m. on the 15th day of the month following the sampling period.
 - d. All other reports required herein, unless otherwise stated, shall be submitted to the EPD Office listed on the permit issuance letter signed by the Director of EPD.
2. No later than December 21, 2020, the permittee must electronically report the following compliance monitoring data and reports using the online web based electronic system approved by EPD, unless a waiver is granted by EPD:
 - a. Sewer Overflow/Bypass Event Reports;
 - b. Noncompliance Notification;
 - c. Other noncompliance; and
 - d. Bypass

3. Other Reports

All other reports required in this permit not listed above in Part I.D.2 or unless otherwise stated, shall be submitted to the EPD Office listed on the permit issuance letter signed by the Director of EPD.

4. Other Noncompliance

All instances of noncompliance not reported under Part I.B. and Part II. A. shall be reported to EPD at the time the monitoring report is submitted.

5. Signatory Requirements

All reports, certifications, data or information submitted in compliance with this permit or requested by EPD must be signed and certified as follows:

- a. Any State or NPDES Permit Application form submitted to the EPD shall be signed as follows in accordance with the Federal Regulations, 40 C.F.R. 122.22:
 1. For a corporation, by a responsible corporate officer. A responsible corporate officer means:
 - i a president, secretary, treasurer, or vice president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision making functions for the corporation, or
 - ii. the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding \$25 million (in second-quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.
 2. For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or
 3. For a municipality, State, Federal, or other public facility, by either a principal executive officer or ranking elected official.
- b. All other reports or requests for information required by the permit issuing authority shall be signed by a person designated in (a) above or a duly authorized representative of such person, if:
 1. The representative so authorized is responsible for the overall operation of the facility from which the discharge originates, e.g., a plant manager, superintendent or person of equivalent responsibility;
 2. The authorization is made in writing by the person designated under (a) above; and
 3. The written authorization is submitted to the Director.
- c. Any changes in written authorization submitted to the permitting authority under (b) above which occur after the issuance of a permit shall be reported to the permitting authority by submitting a copy of a new written authorization which meets the requirements of (b) and (b.1) and (b.2) above.

- d. Any person signing any document under (a) or (b) above shall make the following certification:

“I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”

PART II

A. Management Requirements

1. Notification of Changes

- a. The permittee shall provide EPD at least 90 days advance notice of any planned physical alterations or additions to the permitted facility that meet the following criteria:
 1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR 122.29(b);
 2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements under 40 CFR 122.42(a)(1); or
 3. The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.
- b. The permittee shall give at least 90 days advance notice to EPD of any planned changes to the permitted facility or activity which may result in noncompliance with permit requirements.
- c. Following the notice in paragraph a. or b. of this condition the permit may be modified. The permittee shall not make any changes, or conduct any activities, requiring notification in paragraph a. or b. of this condition without approval from EPD.
- d. The permittee shall provide at least 30 days advance notice to EPD of:
 1. any planned expansion or increase in production capacity; or
 2. any planned installation of new equipment or modification of existing processes that could increase the quantity of pollutants discharged or result in the discharge of pollutants that were not being discharged prior to the planned change

if such change was not identified in the permit application(s) upon which this permit is based and for which notice was not submitted under paragraphs a. or b. of this condition.

- e. All existing manufacturing, commercial, mining, and silvicultural dischargers shall notify EPD as soon as it is known or there is reason to believe that any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant not limited in the permit, if that discharge will exceed (i) 100 µg/L, (ii) five times the maximum concentration reported for that pollutant in the permit application, or (iii) 200 µg/L for acrolein and acrylonitrile, 500 µg/L for 2,4 dinitrophenol and for 2-methyl-4-6-dinitrophenol, or 1 mg/L antimony.
- f. All existing manufacturing, commercial, mining, and silvicultural dischargers shall notify EPD as soon as it is known or there is reason to believe that any activity has occurred or will occur which would result in any discharge on a nonroutine or infrequent basis, of any toxic pollutant not limited in the permit, if that discharge will exceed (i) 500 µg/L, (ii) ten times the maximum concentration reported for that pollutant in the permit application, or (iii) 1 mg/L antimony.
- g. Upon the effective date of this permit, the permittee shall submit to EPD an annual certification in June of each year certifying whether or not there has been any change in processes or wastewater characteristics as described in the submitted NPDES permit application that required notification in paragraph a., b., or d. of this condition. The permittee shall also certify annually in June whether the facility has received offsite wastes or wastewater and detail any such occurrences.

2. Noncompliance Notification

If, for any reason, the permittee does not comply with, or will be unable to comply with any effluent limitation specified in this permit, the permittee shall provide EPD with an oral report within 24 hours from the time the permittee becomes aware of the circumstances followed by a written report within five (5) days of becoming aware of such condition. The written submission shall contain the following information:

- a. A description of the discharge and cause of noncompliance; and
- b. The period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the noncomplying discharge.

3. Facility Operation

The permittee shall at all times maintain in good working order and operate as efficiently as possible all treatment or control facilities or systems installed or used by the permittee to achieve compliance with the terms and conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of the permit.

4. Adverse Impact

The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment, including such accelerated or additional monitoring as necessary to determine the nature and impact of the noncomplying discharge.

5. Bypassing

- a. If the permittee knows in advance of the need for a bypass, it shall submit prior notice to EPD at least 10 days (if possible) before the date of the bypass. The permittee shall submit notice of any unanticipated bypass with an oral report within 24 hours from the time the permittee becomes aware of the circumstances followed by a written report within five (5) days of becoming aware of such condition. The written submission shall contain the following information:
 1. A description of the discharge and cause of noncompliance; and
 2. The period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate and prevent recurrence of the noncomplying discharge.
- b. Any diversion or bypass of facilities covered by this permit is prohibited, except (i) where unavoidable to prevent loss of life, personal injury, or severe property damage; (ii) there were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime (this condition is not satisfied if the permittee could have installed adequate back-up equipment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance); and (iii) the permittee submitted a notice as required above. The permittee shall operate the treatment works, including the treatment plant and total sewer system, to minimize discharge of the pollutants listed in Part I of this permit from combined sewer overflows or bypasses. Upon written notification by EPD, the permittee may be required to submit a plan and schedule for reducing bypasses, overflows, and infiltration in the system.

6. Sludge Disposal Requirements

Sludge shall be disposed of in accordance with the regulations and guidelines established by EPD, the Federal Clean Water Act, and the Resource Conservation and Recovery Act (RCRA). Prior to disposal of sludge by any method other than co-disposal in a permitted sanitary landfill, the permittee shall submit a sludge management plan to the Watershed Protection Branch of EPD for written approval. For land application of nonhazardous sludge, the permittee shall comply with the applicable criteria outlined in the most current version of EPD's "Guidelines for Land Application of Sewage Sludge (Biosolids) at Agronomic Rates" and with the State Rules, Chapter 391-3-6-.17. EPD may require more stringent control of this activity. Prior to land applying nonhazardous sludge, the permittee shall submit a sludge management plan to EPD for review and approval. Upon approval, the plan for land application will become a part of the NPDES permit upon modification of the permit.

7. Sludge Monitoring Requirements

The permittee shall develop and implement procedures to ensure adequate year-round sludge disposal. The permittee shall monitor the volume and concentration of solids removed from the plant. Records shall be maintained which document the quantity of solids removed from the plant. The ultimate disposal of solids shall be reported (in the unit of lbs) as specified in Part I.D of this permit.

8. Power Failures

Upon the reduction, loss, or failure of the primary source of power to said water pollution control facilities, the permittee shall use an alternative source of power if available to reduce or otherwise control production and/or all discharges in order to maintain compliance with the effluent limitations and prohibitions of this permit.

If such alternative power source is not in existence, and no date for its implementation appears in Part I, the permittee shall halt, reduce or otherwise control production and/or all discharges from wastewater control facilities upon the reduction, loss, or failure of the primary source of power to said wastewater control facilities.

9. Operator Certification Requirements

The permittee shall ensure that, when required, a certified operator is in charge of the facility in accordance with Georgia State Board of Examiners for Certification of Water and Wastewater Treatment Plant operators And Laboratory Analysts Rule 43-51-6.(b)

10. Laboratory Analyst Certification Requirements

The permittee shall ensure that, when required, the person in responsible charge of the laboratory performing the analyses for determining permit compliance is certified in accordance with the Georgia Certification of Water and Wastewater Treatment Plant operators and Laboratory Analysts Act, as amended, and the Rules promulgated thereunder.

B. Responsibilities

1. Right of Entry

The permittee shall allow the Director of EPD, the Regional Administrator of EPA, and/or their authorized representatives, agents, or employees, upon the presentation of credentials:

- a. To enter upon the permittee's premises where a discharge source is located or in which any records are required to be kept under the terms and conditions of this permit; and
- b. At reasonable times, to have access to and copy any records required to be kept under the terms and conditions of this permit; to inspect any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and to sample any substance or parameters in any location.

2. Transfer of Ownership or Control

A permit may be transferred to another person by a permittee if:

- a. The permittee notifies the Director of EPD in writing of the proposed transfer at least thirty (30) days in advance of the proposed transfer;
- b. A written agreement containing a specific date for transfer of permit responsibility and coverage between the current and new permittee (including acknowledgement that the existing permittee is liable for violations up to that date, and that the new permittee is liable for violations from that date on) is submitted to the Director at least thirty (30) days in advance of the proposed transfer; and
- c. The Director, within thirty (30) days, does not notify the current permittee and the new permittee of EPD's intent to modify, revoke and reissue, or terminate the permit and to require that a new application be filed rather than agreeing to the transfer of the permit.

3. Availability of Reports

Except for data deemed to be confidential under O.C.G.A. § 12-5-26 or by the Regional Administrator of the EPA under the Code of Federal Regulations, Title 40, Part 2, all reports prepared in accordance with the terms of this permit shall be available for public inspection at an office of EPD. Effluent data, permit applications, permittee's names and addresses, and permits shall not be considered confidential.

4. Permit Modification

After written notice and opportunity for a hearing, this permit may be modified, suspended, revoked or reissued in whole or in part during its term for cause including, but not limited to, the following:

- a. Violation of any conditions of this permit;
- b. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts;
- c. A change in any condition that requires either a temporary or permanent reduction or elimination of the permitted discharge; or
- d. To comply with any applicable effluent limitation issued pursuant to the order of the United States District Court for the District of Columbia issued on June 8, 1976, in Natural Resources Defense Council, Inc. et.al. v. Russell E. Train, 8 ERC 2120(D.D.C. 1976), if the effluent limitation so issued:
 1. is different in conditions or more stringent than any effluent limitation in the permit; or
 2. controls any pollutant not limited in the permit.

5. Toxic Pollutants

The permittee shall comply with effluent standards or prohibitions established pursuant to Section 307(a) of the Federal Clean Water Act for toxic pollutants, which are present in the discharge within the time provided in the regulations that establish these standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

6. Civil and Criminal Liability

Nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance.

7. State Laws

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law or regulation under authority preserved by Section 510 of the Federal Clean Water Act.

8. Water Quality Standards

Nothing in this permit shall be construed to preclude the modification of any condition of this permit when it is determined that the effluent limitations specified herein fail to achieve the applicable State water quality standards.

9. Property Rights

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations.

10. Expiration of Permit

The permittee shall not discharge after the expiration date. In order to receive authorization to discharge beyond the expiration date, the permittee shall submit such information, forms, and fees as are required by EPD at least 180 days prior to the expiration date.

11. Contested Hearings

Any person who is aggrieved or adversely affected by an action of the Director of EPD shall petition the Director for a hearing within thirty (30) days of notice of such action.

12. Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

13. Best Management Practices

The permittee will implement best management practices to control the discharge of hazardous and/or toxic materials from ancillary manufacturing activities. Such activities include, but are not limited to, materials storage, in-plant transfer, process and material handling, loading and unloading operations, plant site runoff, and sludge and waste disposal.

14. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

15. Duty to Provide Information

- a. The permittee shall furnish to the EPD Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The permittee shall also furnish upon request copies of records required to be kept by this permit.
- b. When the permittee becomes aware that it failed to submit any relevant facts in a permit application or submitted incorrect information in a permit application or any report to the Director, it shall promptly submit such facts and information.

16. Duty to Comply

- a. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Georgia Water Quality Control Act (O.C.G.A. § 12-5-20 et. seq.) and is grounds for enforcement action; for permit termination; revocation and reissuance, or modification; or for denial of a permit renewal application. Any instances of noncompliance must be reported to EPD as specified in Part I. D and Part II.A. of this permit.
- b. Penalties for violations of permit conditions. The Federal Clean Water Act and the Georgia Water Quality Control Act (O.C.G.A. § 12-5-20 et. seq.) provide that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required under this permit, makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance shall, upon conviction be punished by a fine or by imprisonment, or by both. The Georgia Water Quality Control Act (Act) also provides procedures for imposing civil penalties which may be levied for violations of the Act, any permit condition or limitation established pursuant to the Act, or negligently or intentionally failing or refusing to comply with any final or emergency order of the Director.

17. Upset Provisions

Provisions of 40 CFR 122.41(n)(1)-(4), regarding "Upset" shall be applicable to any civil, criminal, or administrative proceeding brought to enforce this permit.

PART III

A. Previous Permits

1. All previous State wastewater permits issued to this facility, whether for construction or operation, are hereby revoked by the issuance of this permit. This action is taken to assure compliance with the Georgia Water Quality Control Act, as amended, and the Federal Clean Water Act, as amended. Receipt of the permit constitutes notice of such action. The conditions, requirements, terms and provisions of this permit authorizing discharge under the National Pollutant Discharge Elimination System govern discharges from this facility.

B. Schedule of Compliance

1. The permittee shall achieve compliance with the effluent limitations specified for discharges in accordance with the following schedule: N/A
2. No later than 14 calendar days following a date identified in the above schedule of compliance, the permittee shall submit either a report of progress or, in the case of specific actions being required by identified dates, a written notice of compliance or noncompliance, any remedial actions taken, and the probability of meeting the next scheduled requirement.

C. Special Conditions

1. No later than two years from the commencement of discharge, the permittee must complete and submit to EPD Items V and VI of NPDES application Form 2C (EPA Form 3510-2C). The required form can be found at the following web address: <https://www3.epa.gov/npdes/pubs/3510-2C.pdf>
2. Process wastewater shall be treated and recycled to the maximum extent practicable, consistent with demonstrated industry standard technology, for use in processing and dust suppression. The permittee shall maintain records onsite to document these actions.
3. When applicable, the permittee shall implement and adhere to industry recognized Best Management Practices (BMPs). Document(s) describing industry recognized BMPs can be found on EPD's website at the following web address: <https://epd.georgia.gov/permit-requirements-guidance-and-forms>.
4. Permittee shall follow the erosion and sediment control measures described in its Surface Mine Land Use Plan in order to ensure that there will be no point source discharge of pollutants from the permittee's mining activities into waters of the state, except as allowed in this permit.

5. The following best management practices shall be implemented to the greatest extent applicable:
 - a. Surface water diversion: The flow of surface waters into the plant site shall be interrupted and these waters diverted around and away from incursion into the plant site.
 - b. Berm construction: Berms, including any pond walls, dikes, low dams and similar water retention structures shall be constructed in a manner such that they are reasonably expected to reject the passage of water.
 - c. Pollutant materials storage: Measures shall be taken to assure that pollutant materials removed from the process water and wastewater streams will be retained in storage areas and not discharged or released to the waters of the United States.
 - d. New water control: The amount of new water allowed to enter the plant site for use in ore processing shall be limited to the minimum amount required as make-up water for processing operations.
 - e. Maintenance of water control and solids retention devices: All water control devices such as diversion structures and berms and all solids retention structures such as berms, dikes, pond structures and dams shall be maintained to continue their effectiveness and to protect from unexpected and catastrophic failure.

6. Whole Effluent Toxicity (WET) Test:
 - a. Within 6 months of the first discharge event, the permittee shall conduct an acute WET test and shall submit the test result with the following month DMR after the test has been completed in accordance with Part I.D of this permit.
 - b. Within 18 months of the first discharge event, the permittee shall conduct an acute WET test and submit the test result with the following month DMR after the test has been completed in accordance with Part I.D of this permit.
 - c. The WET testing must comply with the most current U.S. Environmental Protection Agency (EPA) acute aquatic toxicity testing manuals. The referenced document is entitled Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, 5th Edition, U.S. EPA, 821-R-02-012, October 2002. Definitive tests must be run on the same samples concurrently using both Ceriodaphnia dubia and Fathead minnows (Pimephales promelas). The testing must incorporate the most current U.S. EPA acute aquatic toxicity testing manuals.

D. Biomonitoring and Toxicity Reduction Requirements

1. The permittee shall comply with effluent standards or prohibitions established by section 307(a) of the Federal Act and with chapter 391-3-6-.03(5)(e) of the State Rules and may not discharge toxic pollutants in concentrations or combinations that are harmful to humans, animals, or aquatic life.

If toxicity is suspected in the effluent, EPD may require the permittee to perform any of the following actions:

- a. Acute biomonitoring tests;
 - b. Chronic biomonitoring tests;
 - c. Stream studies;
 - d. Priority pollutant analyses;
 - e. Toxicity reduction evaluations (TRE); or
 - f. Any other appropriate study.
2. EPD will specify the requirements and methodologies for performing any of these tests or studies. Unless other concentrations are specified by EPD, the critical concentration used to determine toxicity in biomonitoring tests will be the effluent instream wastewater concentration (IWC) based on the representative plant flow of the facility and the critical low flow of the receiving stream (7Q10). The endpoints that will be reported are the effluent concentration that is lethal to 50% of the test organisms (LC50) if the test is for acute toxicity, and the no observed effect concentration (NOEC) of effluent if the test is for chronic toxicity.

The permittee must eliminate effluent toxicity and supply EPD with data and evidence to confirm toxicity elimination.



ENVIRONMENTAL PROTECTION DIVISION

The Georgia Environmental Protection Division proposes to issue an NPDES permit to the applicant identified below. The draft permit places conditions on the discharge of pollutants from the wastewater treatment plant to waters of the State.

Technical Contact: Whitney Fenwick (*Whitney.Fenwick@dnr.ga.gov*)
404-656-2795

- Draft permit:**
- first issuance
 - reissuance with no or minor modifications from previous permit
 - reissuance with substantial modifications from previous permit
 - modification of existing permit
 - requires EPA review
 - Designated as a Major facility

1.0 FACILITY INFORMATION

1.1 NPDES Permit No.: GA0050259

1.2 Name and Address of Owner/Applicant

Royal Vindicator Mine
202 Bradley Street #8
Carrolton, Georgia 30117

1.3 Name and Address of Facility

Royal Vindicator Mine
2202 GA Highway 100
Tallapoosa, Georgia 30176
(Haralson County)

1.4 Location and Description of the discharge (as reported by applicant)

Outfall ID	Latitude	Longitude	Receiving Waterbody
001	33° 42' 26.00" N (33.707222)	85° 16' 55.00" W (-85.281944)	Unnamed Tributary to Walker Creek

1.5 Production Capacity

Not applicable

1.6 SIC Code & Description

1041 – Gold Ores

1.7 Description of Industrial Processes

The Royal Vindicator Mine is a proposed gold mine to be located at the area of an old abandoned underground gold mine that was mined intermittently from 1840 to 1920. At present, the area has naturally revegetated itself over the years. Phase 1 of this project consists of reprocessing (vat leaching) the tailings present on the surface of the proposed permit area. The tailing will be excavated and transported to the newly constructed concrete lined vats (onsite) for cyanidation gold extraction. A dilute cyanide solution (200 parts per million) of 11 pH water will be used to repeatedly saturate the tailings over a period of time until all available gold has been extracted. This cyanide solution (process water) will be totally contained in this closed concrete vat system and never allowed to commingle with or contaminate the surface water runoff. The pregnant solution (gold containing solution removed from the concrete vats) will be further processed through carbon filters to remove the gold from the solution. The gold containing carbon filters will be transported to an out of state facility for final gold extraction.

Approximately 2,000 cubic yards of tailings material will be processed in the concrete leaching vats per batch. Because cyanide naturally degrades through the pumping, handling and leaching process, during the initial stages of the leaching process of a batch of tailings, additional cyanide must be introduced to the process water. Toward the end of the leaching process of a single process of a single batch of tailings, no additional cyanide will be introduced, allowing the cyanide to naturally degrade in order to expedite the tailings material detoxification. After completing an entire processing cycle on a batch of tailings, the gold free tailings will be detoxified (cyanide destruction, liberation and/or dilution) by slowly introducing fresh (near neutral pH water) which will destroy the cyanide and/or dilute the cyanide concentration in the processed tailings to the point that the tailings are harmless to human health and the environment. The previously processed, detoxified tailings material will then be transported back to the previously excavated area to be utilized as fill material in the final reclamation process. The previously used, gold free, cyanide degraded process water will then have its pH raised back to a level of 11, its cyanide concentration raised back to the 200 parts per million and will then be reused in the leaching process of the next batch of tailings.

If Phase 1 is successful, Phase 2 will consist of reopening the old underground gold mine and will be appropriately addressed through new or modified permit applications.

1.8 Description of the Wastewater Treatment Facility

Discharges from the proposed sediment basin will be solely (uncontaminated by water from the cyanidation process) surface water runoff from disturbed areas such as tailings excavation area, spoiling area, office, storage and parking areas, equipment storage area, roads, etc. Discharges from proposed sediment basin will occur by gravity flow discharge, siphoning and/or pumping. Discharges from proposed sediment basin will be managed to control discharges to the receiving stream at the optimum time when discharge water turbidity and TSS levels are at their lowest. This will be accomplished by maintaining low in-pond water elevations in anticipation of periodic storm events.

There will be no discharges of process wastewater from the cyanidation gold extraction process. Water used in the cyanidation process shall be recycled in a closed system. Any buildup of contaminants in the cyanide process solution will be loaded on trucks and sent to an approved disposal facility.

Outfall	Operation Description	Treatment Description
001	Stormwater runoff	Sedimentation

1.9 Type of Wastewater Discharge

- process wastewater stormwater
 domestic wastewater other (description)
 combined (stormwater and wastewater from mine site runoff)

1.10 Characterization of Effluent Discharge as Reported by Applicant

(Form 2D, Section V, Part A only. Please refer to the application for additional analysis)

1.10.a Outfall No. 001 Stormwater and wastewater

Effluent Characteristics (as Reported by Applicant)	Maximum Daily Value	Average Daily Value
Flow (MGD)	0.038	0.019
Biochemical Oxygen Demand _{5-day} (mg/L)	10.0	4.0
Total Suspended Solids (mg/L)	7.5	3.0
Temperature, Winter (°F)	45	N/A
Temperature, Summer (°F)	79	N/A
Ammonia (mg/L)	0.75	0.3

2.0 APPLICABLE REGULATIONS

2.1 State Regulations

Chapter 391-3-6 of the Georgia Rules and Regulations for Water Quality Control

2.2 Federal Regulations

Source	Activity	Applicable Regulation
Industrial	Non-Process Water	40 CFR 122
	Discharges	40 CFR 125
		40 CFR 122
	Process Water Discharges	40 CFR 125 40 CFR 440

2.3 Industrial Effluent Limit Guideline(s)

40 CFR 440 – Ore Mining and Dressing Point Source Category

- 40 CFR Subpart J – Copper, Lead, Zinc, Gold, Silver, and Molybdenum Ores Subcategory (Regulations for cyanide gold extraction process)
- 40 CFR Subpart M – Gold Placer Mine Subcategory (Regulations from placer mining)

See Appendix A of the Fact Sheet

3.0 WATER QUALITY STANDARDS & RECEIVING WATERBODY INFORMATION

Section 301(b)(1)(C) of the Clean Water Act (CWA) requires the development of limitations in permits necessary to meet water quality standards. Federal Regulations 40 CFR 122.4(d) require that conditions in NPDES permits ensure compliance with the water quality standards which are composed of use classifications, numeric and or narrative water quality criteria and an anti-degradation policy. The use classification system designates the beneficial uses that each waterbody is expected to achieve, such as drinking water, fishing, or recreation. The numeric and narrative water quality criteria are deemed necessary to support the beneficial use classification for each water body. The antidegradation policy represents an approach to maintain and to protect various levels of water quality and uses.

3.1 Receiving Waterbody Classification and Information

[391-3-6-.03(6)]

The designated water use for every receiving stream is fishing. The unnamed tributary to Walker Creek is not listed; hence it is classified as fishing.

Fishing: Propagation of Fish, Shellfish, Game and Other Aquatic Life; secondary contact recreation in and on the water; or for any other use requiring water of a lower quality.

- (i) Dissolved Oxygen: A daily average of 6.0 mg/L and no less than 5.0 mg/L at all times for water designated as trout streams by the Wildlife Resources Division. A daily average of 5.0 mg/L and no less than 4.0 mg/L at all times for waters supporting warm water species of fish.
- (ii) pH: Within the range of 6.0 - 8.5.
- (iii) Bacteria:
 1. For the months of May through October, when water contact recreation activities are expected to occur, fecal coliform not to exceed a geometric mean of 200 per 100 mL based on at least four samples collected from a given sampling site over a 30-day period at intervals not less than 24 hours. Should water quality and sanitary studies show fecal coliform levels from non-human sources exceed 200/100 mL (geometric mean) occasionally, then the allowable geometric mean fecal coliform shall not exceed 300 per 100 mL in lakes and reservoirs and 500 per 100 mL in free flowing freshwater streams. For the months of November through April, fecal coliform not to exceed a geometric mean of 1,000 per 100 mL based on at least four samples collected from a given sampling site over a 30-day period at intervals not less than 24 hours and not to exceed a maximum of 4,000 per 100 mL for any sample. The State does not encourage swimming in these surface waters since a number of factors which are beyond the control of any State regulatory agency contribute to elevated levels of bacteria.
 2. For waters designated as shellfish growing areas by the Georgia DNR Coastal Resources Division, the requirements will be consistent with those established by the State and Federal agencies responsible for the National Shellfish Sanitation Program. The requirements are found in National Shellfish Sanitation Program Guide for the Control of Molluscan Shellfish, 2007 Revision (or most recent version), Interstate Shellfish Sanitation Conference, U.S. Food and Drug Administration.

3.2 Ambient Information

Outfall ID	7Q10 (cfs)	1Q10 (cfs)	30Q3 (cfs)	Hardness (mg/L as CaCO ₃)	Annual Average Flow (cfs)	Upstream Total Suspended Solids (mg/L)
001	0.01	0.01	0.03	N/A ¹	0.15	N/A ²

¹ For the Reasonable Potential Analysis calculations, EPD used 25 mg/l as a conservative value.

² For the Reasonable Potential Analysis calculations, EPD used 10 mg/l as a conservative value.

3.3 Georgia 305(b)/303(d) List Documents

Unnamed tributary to Walker Creek is not listed, hence it is considered to be supporting the designating use. Walker Creek is listed as not supporting the designated use.

Walker Creek	Black Creek to Tallapoosa River	Tallapoosa	FC	NP	7	miles	4a	TMDL completed FC 2009.
REG1501560302	Harrison County	Fishing						
10								

3.4 Total Maximum Daily Load (TMDL)

There was a TMDL developed for Fecal Coliform in the Tallapoosa River Basin in 2009. The TMDL requires that in the future, all municipal and industrial wastewater treatment facilities with the potential for the occurrence of fecal coliform in their discharge be given end-of-pipe limits equivalent to the water quality standard of 200 counts/100 mL. The discharge from this site does not have the potential for the occurrence of fecal coliform therefore no limit will be applied.

3.5 Wasteload Allocation Date (if applicable)

See Appendix B of the Fact Sheet

4.0 EFFLUENT LIMITS AND PERMIT CONDITIONS

4.1 Reasonable Potential Analysis (RP)

Title 40 of the Federal Code of Regulations, 40 CFR 122.44(d) requires delegated States to develop procedures for determining whether a discharge causes, has the reasonable potential to cause, or contributes to an instream excursion above a narrative or numeric criteria within a State water. If such reasonable potential is determined to exist, the NPDES permit must contain pollutant effluent limits and/or effluent limits for whole effluent toxicity. Georgia's Reasonable Potential Procedures are based on Georgia's Rules and Regulations for Water Quality Control (Rules), Chapter 391-3-6-.06(4)(d)5. The chemical specific and biomonitoring data and other pertinent information in EPD's files will be considered in accordance with the review procedures specified in the Rules in the evaluation of a permit application and in the evaluation of the reasonable potential for an effluent to cause an exceedance in the numeric or narrative criteria.

A Reasonable Potential Analysis was performed on the data submitted with the application and the results of those analyses are stated below in the following sections.

EPD evaluated the data provided in the application and supporting documents. If a pollutant is listed below, EPD determined it was a pollutant of concern and there may be a reasonable potential to cause or contribute to an instream violation of the GA Water Quality Standards. If a pollutant is not listed below, EPD determined that the pollutant is not a pollutant of concern or has determined, based on the data provided in the application, there is no reasonable potential to cause or contribute to an instream violation of the GA Water Quality Standards. An example would be if the applicant reported "not detect," "below detection limit," or a value that was below the detection limit for a pollutant.

4.2 Applicable Water Quality and Technology Based Effluent Limitations

Water Quality Based Effluent Limits (WQBELs)

When drafting a National Pollutant Discharge Elimination System (NPDES) permit, a permit writer must consider the impact of the proposed discharge on the quality of the receiving water. Water quality goals for a waterbody are defined by state water quality standards. By analyzing the effect of a discharge on the receiving water, a permit writer could find that technology-based effluent limitations (TBELs) alone will not achieve the applicable water quality standards. In such cases, the Clean Water Act (CWA) and its implementing regulations require development of water quality-based effluent limitations (WQBELs). WQBELs help meet the CWA objective of restoring and maintaining the chemical, physical, and biological integrity of the nation's waters and the goal of water quality that provides for the protection and propagation of fish, shellfish, and wildlife and recreation in and on the water (*fishable/swimmable*).

WQBELs are designed to protect water quality by ensuring that water quality standards are met in the receiving water and downstream uses are protected. On the basis of the requirements of Title 40 of the *Code of Federal Regulations* (CFR) 125.3(a), additional or more stringent effluent limitations and conditions, such as WQBELs, are imposed when TBELs are not sufficient to protect water quality.

The term *pollutant* is defined in CWA section 502(6) and § 122.2. Pollutants are grouped into three categories under the NPDES program: conventional, toxic, and nonconventional. Conventional pollutants are those defined in CWA section 304(a)(4) and § 401.16 (BOD₅, TSS, fecal coliform, pH, and oil and grease). Toxic (priority) pollutants are those defined in CWA section 307(a)(1) and include 126 metals and manmade organic compounds. Nonconventional pollutants are those that do not fall under either of the above categories (conventional or toxic pollutants) and include parameters such as chlorine, ammonia, nitrogen, phosphorus, chemical oxygen demand (COD), and whole effluent toxicity (WET).

Applicable Technology Based Effluent Limits (TBELs)

Technology-based effluent limitations aim to prevent pollution by requiring a minimum level of effluent quality that is attainable using demonstrated technologies for reducing discharges of pollutants or pollution into the waters of the United States. TBELs are developed independently of the potential impact of a discharge on the receiving water, which is addressed through water quality standards and water quality-based effluent limitations. The NPDES regulations at Title 40 of the Code of Federal Regulations 125.3(a) require NPDES permit writers to develop technology-based treatment requirements, consistent with CWA section 301(b), that represent the minimum level of control that must be imposed in a permit. The regulation also indicates that permit writers must include in permits additional or more stringent effluent limitations and conditions, including those necessary to protect water quality.

For pollutants not specifically regulated by Federal Effluent Limit Guidelines, the permit writer must identify any needed technology-based effluent limitations and utilize best professional judgment to establish technology-based limits or determine other appropriate

means to control its discharge if there is a reasonable potential to cause or contribute to a violation of the water quality standards.

4.3 Conventional Pollutants

Pollutants of Concern	Basis
pH	<u>WQBEL</u> The instream waste concentration is 85%. When the instream waste concentration is above 50%, it results in a reasonable potential to cause or contribute to violation of the instream Georgia Water Quality Standard; therefore a limit of 6.0 s.u. to 8.5 s.u has been added.
	<u>TBEL</u> There is no applicable federal technology based effluent limit.
5-Day Biochemical Oxygen Demand	<u>WQBEL</u> Based on the data provided in the application, there is a reasonable potential for the presence of oxygen-demanding substances in the discharge. Monitoring for BOD ₅ has been added.
	<u>TBEL</u> There is no applicable federal technology based effluent limit.
Total Suspended Solids	<u>WQBEL</u> Georgia has a narrative Water Quality Standard for total suspended solids. A narrative permit condition stating, “there shall be no floating solids or visible foam other than in trace amounts” has been added. This specific type of industrial discharge has the reasonable potential to have high concentrations of TSS. Based on the data submitted in the application, monitoring only for TSS has been added to the permit.
	<u>TBEL</u> There is no applicable federal technology based effluent limit.
Temperature	<u>WQBEL</u> Based on the data provided in the application, there is no reasonable potential to cause or contribute to an in-stream excursion of the state WQS for temperature.
	<u>TBEL</u> There is no applicable federal technology based effluent limit.

Oil and Grease	<u>WQBEL</u> Georgia has a narrative Water Quality Standard for oil and grease.
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	<u>TBEL</u> The limits are based on EPD's best professional judgment, on a case by case basis in accordance with 40 C.F.R. 125.3(c). This specific type of industry has the reasonable potential to have discharges of oil and grease. The long standing technology based effluent limits of 10 mg/L, daily average and 15 mg/L, daily maximum is representative of the concentration at which a visible oil sheen is likely to occur and may have the reasonable potential to cause or contribute to a WQS. The daily maximum value is 1.5 times the daily average value.
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4.4 Nonconventional Pollutants

Pollutants of Concern	Basis
Turbidity	<u>WQBEL</u> Georgia has narrative Water Quality Standards for turbidity.
	<u>TBEL</u> The limits are based on EPD's best professional judgment, on a case by case basis in accordance with 40 C.F.R. 125.3(c). This specific type of industrial discharge has a reasonable potential to have discharges with high turbidity. The turbidity limits are derived from the narrative water quality criteria in the State of Georgia's Water Quality Standards, Chapter 391-3-6-.03(5)(c) & (d), whereas the baseline translation would be 50 NTU daily average, 75 NTU daily maximum. Therefore, the limitation of 50 NTU daily average, 75 NTU daily maximum has been added.
Settleable Solids	<u>WQBEL</u> Georgia does not have a Water Quality Standard for settleable solids.
	<u>TBEL</u> Based on 40 CFR Part 440 Subpart M, the New Sources Performance Standards, the instantaneous maximum settleable solids should not exceed 0.2 ml/l

Total Phosphorus	<p><u>WQBEL</u> Per the requirements of the Strategy for Addressing Phosphorus in NPDES Permitting, effluent limits of 8.34 lbs/day daily average and daily maximum have been added to this permit.</p>
	<p><u>TBEL</u> There is no applicable federal technology based effluent limit.</p>
Ammonia	<p><u>WQBEL</u> The reasonable potential analysis shows a predicted instream ammonia concentration of 46% of the instream toxicity criteria. Per the Ammonia Reasonable Potential Analysis Procedure for NPDES Permits, if less than 10 data points are available to calculate an instream concentration and if the calculated instream concentration is less than 50% of the applicable site-specific instream ammonia criteria, then ammonia will be considered not to be present at levels of concern and EPD will not require additional monitoring or include a numeric effluent limit in the permit.</p>
	<p><u>TBEL</u> There is no applicable federal technology based effluent limit.</p>

4.5 Toxics & Manmade Organic Compounds (126 priority pollutants and metals)

Pollutants of Concern	Basis
Arsenic	<p><u>WQBEL</u> Based on the data reported on the application, the reasonable potential analysis showed there is no reasonable potential to cause or contribute to an instream violation of the Georgia Water Quality Standard for arsenic.</p>
	<p><u>TBEL</u> There is no applicable federal technology based effluent limit.</p>
Antimony	<p><u>WQBEL</u> Based on the data reported on the application, the reasonable potential analysis showed there is no reasonable potential to cause or contribute to an instream violation of the Georgia Water Quality Standard for antimony.</p>
	<p><u>TBEL</u> There is no applicable federal technology based effluent limit.</p>
Cadmium	<p><u>WQBEL</u> Based on the data reported on the application, the reasonable potential analysis showed there is no reasonable potential to cause or contribute to an instream violation of the Georgia Water Quality Standard for cadmium.</p>

	<p><u>TBEL</u> There is no applicable federal technology based effluent limit.</p>
Chromium	<p><u>WQBEL</u> Based on the data reported on the application, the reasonable potential analysis showed there is no reasonable potential to cause or contribute to an instream violation of the Georgia Water Quality Standard for chromium.</p>
	<p><u>TBEL</u> There is no applicable federal technology based effluent limit.</p>
Copper	<p><u>WQBEL</u> Based on the data reported on the application, effluent limits of 0.001 lbs/day daily average and daily maximum and 0.004 mg/L daily average and daily maximum, have been added to this permit.</p>
	<p><u>TBEL</u> There is no applicable federal technology based effluent limit.</p>
Cyanide	<p><u>WQBEL</u> Based on the data reported on the application, cyanide is not believed to be present in the effluent. There will be no discharge of process wastewater from the cyanidation gold extraction process. Due to the close proximity of the cyanidation process on the site, cyanide monitoring is included in the permit.</p>
	<p><u>TBEL</u> There is no applicable federal technology based effluent limit.</p>
Lead	<p><u>WQBEL</u> Based on the data reported on the application, the reasonable potential analysis showed there is no reasonable potential to cause or contribute to an instream violation of the Georgia Water Quality Standard for lead.</p>
	<p><u>TBEL</u> There is no applicable federal technology based effluent limit.</p>
Mercury	<p><u>WQBEL</u> Based on the data reported on the application, effluent limits of 0.000004 lbs/day and 0.000006 lbs/day, daily average and daily maximum; respectively, and 0.00001 mg/L and 0.00002 mg/L, daily average and daily maximum; respectively, have been added to this permit. The daily maximum was calculated by multiplying the daily average concentration limit by 1.5.</p>
	<p><u>TBEL</u> There is no applicable federal technology based effluent limit.</p>

Nickel WQBEL
Based on the data reported on the application, the reasonable potential analysis showed there is no reasonable potential to cause or contribute to an instream violation of the Georgia Water Quality Standard for nickel.

TBEL
There is no applicable federal technology based effluent limit.

Phenols WQBEL
Based on the data reported on the application, the reasonable potential analysis showed there is no reasonable potential to cause or contribute to an instream violation of the Georgia Water Quality Standard for phenols.

TBEL
There is no applicable federal technology based effluent limit.

Selenium WQBEL
Based on the data reported on the application, the reasonable potential analysis showed there is no reasonable potential to cause or contribute to an instream violation of the Georgia Water Quality Standard for selenium.

TBEL
There is no applicable federal technology based effluent limit.

Thallium WQBEL
Based on the data reported on the application, the reasonable potential analysis showed there is no reasonable potential to cause or contribute to an instream violation of the Georgia Water Quality Standard for thallium.

TBEL
There is no applicable federal technology based effluent limit.

Zinc WQBEL
Based on the data reported on the application, effluent limits of 0.013 lbs/day daily average and daily maximum and 0.04 mg/L daily average and daily maximum, have been added to this permit.

TBEL
There is no applicable federal technology based effluent limit.

4.6 Calculations for Water Quality Based Effluent Limits

4.6.a Instream Waste Concentration (IWC)

$$IWC = \frac{\text{Effluent Flow (gal/day)}}{\text{Effluent Flow (gal/day)} + 7Q10 \text{ (gal/day)}}$$

$$IWC = \frac{37,290 \text{ (gal/day)}}{(37,290 \text{ (gal/day)} + 6,463 \text{ (gal/day)})} \times 100\%$$

$$IWC = 85\%$$

4.6.b Ammonia Toxicity Analysis

See the calculations in Appendix C of Fact Sheet

CCC= Chronic Criterion based on Villosa iris (rainbow mussel)

$$CCC = 0.8876 \times (0.0278 / (1 + 10^{(7.688 - \text{pH})}) + 1.1994 / (1 + 10^{(\text{pH} - 7.688)})) \times (2.126 \times 10^{0.028 \times (20 - \text{MAX}(T,7))})$$

$$NH_3 = \frac{(CCC \times (7Q10 \text{ (cfs)} + \text{Effluent Flowrate(cfs)}) - (7Q10 \text{ (cfs)} \times \text{Stream Background } NH_3 \text{ (mg/L)})}{\text{Effluent Flowrate (cfs)}}$$

Calculated instream NH_3 concentration = 0.54 mg/L

Instream criteria = 1.18 mg/L

$$\text{Predicted instream concentration, as \% of criteria} = \frac{\text{Calc. instream } NH_3 \text{ conc.}}{\text{Instream criteria}} \times 100\%$$

$$\text{Predicted instream concentration, as \% of criteria} = \frac{0.54 \text{ mg/L}}{1.18 \text{ mg/L}} \times 100\%$$

Predicted instream concentration, as % of criteria = 46%

4.6.c Metals

See the calculations for applicable metals in Appendix C of Fact Sheet

Outfall ID 001: Copper

Mass Based Limits

Daily Maximum Loading = Acute C_T
Daily Maximum = 0.001 (lbs/day)

$$\text{Acute } C_T = \frac{\frac{WQC_{Acute}}{f_D} \times (Q_E + 1Q10)}{Q_E}$$

Concentration Based Limits

Daily Maximum Concentration = Acute C_T

$$\text{Acute } C_T = \frac{\frac{WQC_{Acute}}{f_D} \times (Q_E + 1Q10)}{Q_E}$$

Daily Maximum = 4.27 ($\mu\text{g/L}$)
Daily Maximum (mg/L) = 0.001 x Daily Maximum ($\mu\text{g/L}$)
Daily Maximum (mg/L) = 0.001 x 4.274 ($\mu\text{g/L}$)
Daily Maximum = 0.004 (mg/L)

Outfall ID 001: Mercury

Mass Based Limits

Daily Average Loading = Chronic C_T
Daily Average = 0.000004 (lbs/day)

$$\text{Chronic } C_T = \frac{\frac{WQC_{Chronic}}{f_D} \times (Q_E + 7Q10)}{Q_E}$$

Daily Maximum Loading = 1.5 x Daily Average (lbs/day)
Daily Maximum = 1.5 x 0.000004 (lbs/day)
Daily Maximum = 0.000006 (lbs/day)

Concentration Based Limits

Daily Average Concentration = Chronic C_T

$$\text{Chronic } C_T = \frac{\frac{WQC_{Chronic}}{f_D} \times (Q_E + 7Q10)}{Q_E}$$

Daily Average = 0.01 ($\mu\text{g/L}$)
Daily Average (mg/L) = 0.001 x Daily Average ($\mu\text{g/L}$)
Daily Average (mg/L) = 0.001 x 0.01 ($\mu\text{g/L}$)
Daily Average: 0.00001 (mg/L)

Daily Maximum Concentration = 1.5 x Daily Average (mg/L)
Daily Maximum = 1.5 x 0.00001 (mg/L)
Daily Maximum = 0.00002 (mg/L)

Outfall ID 001: Zinc

Mass Based Limits

Daily Maximum Loading = Acute C_T
Daily Maximum = 0.013 (lbs/day)

$$\text{Acute } C_T = \frac{\frac{\text{WQC}_{\text{Acute}} \times (Q_E + 1Q_{10})}{f_D}}{Q_E}$$

Concentration Based Limits

Daily Maximum Concentration = Acute C_T

$$\text{Acute } C_T = \frac{\frac{\text{WQC}_{\text{Acute}} \times (Q_E + 1Q_{10})}{f_D}}{Q_E}$$

Daily Maximum = 42.48 ($\mu\text{g/L}$)

Daily Maximum (mg/L) = 0.001 x Daily Maximum ($\mu\text{g/L}$)

Daily Maximum (mg/L) = 0.001 x 42.48 ($\mu\text{g/L}$)

Daily Maximum = 0.04 (mg/L)

4.7 Technology Based Effluent Limitation Calculations

There are several ways to calculate TBELs when developing a case-by-case limitations. EPD can use an approach consistent with the statistical approach EPA has used to develop effluent guidelines or they can utilize several other mathematically and statistically accepted approaches depending on characteristics of the data. In general, EPD utilizes EPA's "NPDES Permit Writer Manual," September 2010, Section 5.2.3, "Case-by-Case TBELs for Industrial Dischargers" and EPA's "Technical Support Document for Water Quality Based Toxic Control," March 1991, Section 5.2, "Basis Principles of Effluent Variability," as guidance to develop limits.

If applicable, when there is no federal technology based effluent limit EPD evaluates the effluent data, operating records and discharge monitoring reports to calculate the long term average for the parameter. The long term average is then used to derive the effluent limits.

EPD recognizes there are several ways to calculate technology based limits and, when applicable, may deviate from the general practice.

4.8 Comparison & Summary of Water Quality vs. Technology Based Effluent Limits

After preparing and evaluating applicable technology-based effluent limitations and water quality-based effluent limitations, the most stringent limits are applied in the permit. Pollutants of concern with an effluent limit of monitor and report are not included in the below table.

Parameter	WQBELs	TBELs	Explanation
pH (s.u.)	6.0-8.5	None	WQBEL - WQS
Oil & Grease (mg/L)	Narrative	10/15	TBEL - BPJ
Turbidity (NTU)	Narrative	50/75	TBEL - BPJ
Settleable Solids (ml/l)	None	0.2	TBEL - ELG
Total Phosphorus (lbs/day)	8.34	None	WQBEL - Phosphorus Strategy
Copper (mg/L)	0.004/0.004	None	WQBEL - WQS
Copper (lbs/day)	0.001/0.001	None	WQBEL - WQS
Mercury (mg/L)	0.00001/0.00002	None	WQBEL - WQS
Mercury (lbs/day)	0.000004/0.000006	None	WQBEL - WQS
Zinc (mg/L)	0.04/0.04	None	WQBEL - WQS
Zinc (lbs/day)	0.013/0.013	None	WQBEL - WQS

5.0 OTHER PERMIT REQUIREMENTS AND CONSIDERATIONS

5.1 **Anti-Degradation Analysis**

The Royal Vindicator Mine is 2.3 miles south of the city of Tallapoosa in Haralson County Georgia. The discharge location will be at 33° 42' 26"N, 85° 16' 55"W into an unnamed tributary to Walker Creek.

According to the Anti-Degradation Analysis, the Royal Vindicator mine will create 10-15 new jobs directly through employment at the mine which would average a salary of \$50,000, which is 19.3% higher than the current median household income in Haralson County. It is predicted to additionally create 4-5 indirect service jobs to provide fuel, lubricants, parts, and maintenance.

The Royal Vindicator Mine will implement a Water Conservation Plan with an ultimate goal of minimizing water use and maximizing recycling and recirculation in the closed loop processing system. Treatment will only include the occasional use of a flocculent such as alum to control turbidity or total suspended solids prior to discharge. A Stormwater Pollution Prevention Plan has been developed and will be strictly administered and adhered to for the entire life of the project through successful reclamation and bond release from the Land Branch.

5.2 **Special Conditions**

1. No later than two years from the commencement of discharge, the permittee must complete and submit to EPD Items V and VI of NPDES application Form 2C (EPA Form 3510-2C). The required form can be found at the following web address: <https://www3.epa.gov/npdes/pubs/3510-2C.pdf>
2. Process wastewater shall be treated and recycled to the maximum extent practicable, consistent with demonstrated industry standard technology, for use in processing and dust suppression. The permittee shall maintain records onsite to document these actions.
3. When applicable, the permittee shall implement and adhere to industry recognized Best Management Practices (BMPs). Document(s) describing industry recognized BMPs can be found on EPD's website at the following web address: <https://epd.georgia.gov/permit-requirements-guidance-and-forms>.
4. Permittee shall follow the erosion and sediment control measures described in its Surface Mine Land Use Plan in order to ensure that there will be no point source discharge of pollutants from the permittee's mining activities into waters of the state, except as allowed in this permit.

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5. The following best management practices shall be implemented to the greatest extent applicable:
 - a. Surface water diversion: The flow of surface waters into the plant site shall be interrupted and these waters diverted around and away from incursion into the plant site.
 - b. Berm construction: Berms, including any pond walls, dikes, low dams and similar water retention structures shall be constructed in a manner such that they are reasonably expected to reject the passage of water.
 - c. Pollutant materials storage: Measures shall be taken to assure that pollutant materials removed from the process water and wastewater streams will be retained in storage areas and not discharged or released to the waters of the United States.
 - d. New water control: The amount of new water allowed to enter the plant site for use in ore processing shall be limited to the minimum amount required as make-up water for processing operations.
 - e. Maintenance of water control and solids retention devices: All water control devices such as diversion structures and berms and all solids retention structures such as berms, dikes, pond structures and dams shall be maintained to continue their effectiveness and to protect from unexpected and catastrophic failure.

 6. Whole Effluent Toxicity (WET) Test:
 - a. Within 6 months of the first discharge event, the permittee shall conduct an acute WET test and shall submit the test result with the following month DMR after the test has been completed in accordance with Part I.D of this permit.
 - b. Within 18 months of the first discharge event, the permittee shall conduct an acute WET test and submit the test result with the following month DMR after the test has been completed in accordance with Part I.D of this permit.
 - c. The WET testing must comply with the most current U.S. Environmental Protection Agency (EPA) acute aquatic toxicity testing manuals. The referenced document is entitled Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, 5th Edition, U.S. EPA, 821-R-02-012, October 2002. Definitive tests must be run on the same samples concurrently using both Ceriodaphnia dubia and Fathead minnows (Pimephales promelas). The testing must incorporate the most current U.S. EPA acute aquatic toxicity testing manuals.

5.3 Compliance Schedules

1. The permittee shall achieve compliance with the effluent limitations specified for discharges in accordance with the following schedule: N/A
2. No later than 14 calendar days following a date identified in the above schedule of compliance, the permittee shall submit either a report of progress or, in the case of specific actions being required by identified dates, a written notice of compliance or noncompliance, any remedial actions taken, and the probability of meeting the next scheduled requirement.

6.0 REPORTING

The facility has been assigned to the following EPD office for reporting, compliance and enforcement.

Georgia Environmental Protection Division
Watershed Compliance Program
2 Martin Luther King Jr. Drive
Suite 1152 East
Atlanta, Georgia 30334

6.1 E-Reporting

The permittee is required to electronically submit documents in accordance with 40 CFR Part 127.

7.0 REQUESTED VARIANCES OR ALTERNATIVES TO REQUIRED STANDARDS

Not applicable

8.0 PERMIT EXPIRATION

The permit will expire five years from the effective date.

9.0 PROCEDURES FOR THE FORMULATION OF FINAL DETERMINATIONS

9.1 **Comment Period**

The Georgia Environmental Protection Division (EPD) proposes to issue an permit to this applicant subject to the effluent limitations and special conditions outlined above. These determinations are tentative.

Georgia Environmental Protection Division
Wastewater Regulatory Program
2 Martin Luther King Jr. Drive
Suite 1152 East
Atlanta, Georgia 30334

The permit application, draft permit, and other information are available for review at 2 Martin Luther King Jr. Drive, Suite 1152 East, Atlanta, Georgia 30334, between the hours of 8:00 a.m. and 4:30 p.m., Monday through Friday. For additional information, you can contact 404-463-1511.

9.2 **Public Comments**

Persons wishing to comment upon or object to the proposed determinations are invited to submit same in writing to the EPD address above, or via e-mail at EPDcomments@dnr.ga.gov within 30 days of the initiation of the public comment period. All comments received prior to that date will be considered in the formulation of final determinations regarding the application. The permit number should be placed on the top of the first page of comments to ensure that your comments will be forwarded to the appropriate staff.

9.3 **Public Hearing**

Any applicant, affected state or interstate agency, the Regional Administrator of the U.S. Environmental Protection Agency (EPA) or any other interested agency, person or group of persons may request a public hearing with respect to an NPDES permit application if such request is filed within thirty (30) days following the date of the public notice for such application. Such request must indicate the interest of the party filing the request, the reasons why a hearing is requested, and those specific portions of the application or other NPDES form or information to be considered at the public hearing.

The Director shall hold a hearing if he determines that there is sufficient public interest in holding such a hearing. If a public hearing is held, notice of same shall be provided at least thirty (30) days in advance of the hearing date.

In the event that a public hearing is held, both oral and written comments will be accepted; however, for the accuracy of the record, written comments are encouraged. The Director or a designee reserves the right to fix reasonable limits on the time allowed for oral statements and such other procedural requirements, as deemed appropriate.

Following a public hearing, the Director, unless it is decided to deny the permit, may make such modifications in the terms and conditions of the proposed permit as may be appropriate and shall issue the permit.

If no public hearing is held, and, after review of the written comments received, the Director determines that a permit should be issued and that the determinations as set forth in the proposed permit are substantially unchanged, the permit will be issued and will become final in the absence of a request for a contested hearing. Notice of issuance or denial will be made available to all interested persons and those persons that submitted written comments to the Director on the proposed permit.

If no public hearing is held, but the Director determines, after a review of the written comments received, that a permit should be issued but that substantial changes in the proposed permit are warranted, public notice of the revised determinations will be given and written comments accepted in the same manner as the initial notice of application was given and written comments accepted pursuant to EPD Rules, Water Quality Control, subparagraph 391-3-6-.06(7)(b). The Director shall provide an opportunity for public hearing on the revised determinations. Such opportunity for public hearing and the issuance or denial of a permit thereafter shall be in accordance with the procedures as are set forth above.

9.4 Final Determination

At the time that any final permit decision is made, the Director shall issue a response to comments. The issued permit and responses to comments can be found at the following address:

<http://epd.georgia.gov/watershed-protection-branch-permit-and-public-comments-clearinghouse-0>

9.5 Contested Hearings

Any person who is aggrieved or adversely affected by the issuance or denial of a permit by the Director of EPD may petition the Director for a hearing if such petition is filed in the office of the Director within thirty (30) days from the date of notice of such permit issuance or denial. Such hearing shall be held in accordance with the EPD Rules, Water Quality Control, subparagraph 391-3-6-.01.

Petitions for a contested hearing must include the following:

1. The name and address of the petitioner;
2. The grounds under which petitioner alleges to be aggrieved or adversely affected by the issuance or denial of a permit;
3. The reason or reasons why petitioner takes issue with the action of the Director;
4. All other matters asserted by petitioner which are relevant to the action in question.

Appendix A
Industrial Effluent Limit Guidelines

Subpart J—Copper, Lead, Zinc, Gold, Silver, and Molybdenum Ores Subcategory

[↑ Back to Top](#)

§440.100 Applicability; description of the copper, lead, zinc, gold, silver, and molybdenum ores subcategory.

(a) The provisions of this subpart J are applicable to discharges from—

(1) Mines that produce copper, lead, zinc, gold, silver, or molybdenum bearing ores, or any combination of these ores from open-pit or underground operations other than placer deposits;

(2) Mills that use the froth-flotation process alone or in conjunction with other processes, for the beneficiation of copper, lead, zinc, gold, silver, or molybdenum ores, or any combination of these ores;

(3) Mines and mills that use dump, heap, in-situ leach, or vat-leach processes to extract copper from ores or ore waste materials; and

(4) Mills that use the cyanidation process to extract gold or silver.

(b) Discharge from mines or mines and mills that use gravity separation methods (including placer or dredge mining or concentrating operations, and hydraulic mining operations) to extract gold ores are regulated under subpart M.

(c) Discharge from mines (including placer or dredge mining, and hydraulic mining operations) or mines and mills that use gravity separation methods to extract silver from placer ores are not covered under this part.

(d) The provisions of this subpart shall not apply to discharges from the Quartz Hill Molybdenum Project in the Tongass National Forest, Alaska.

[47 FR 54609, Dec. 3, 1982, as amended at 53 FR 18788, May 24, 1988]

[↑ Back to Top](#)

§440.101 [Reserved]

[↑ Back to Top](#)

§440.102 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology (BPT).

Except as provided in subpart L of this part and 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT):

(a) The concentration of pollutants discharged in mine drainage from mines operated to obtain copper bearing ores, lead bearing ores, zinc bearing ores, gold bearing ores, or silver bearing ores, or any combination of these ores open-pit or underground operations other than placer deposits shall not exceed:

Effluent characteristic	Effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	Milligrams per liter	
TSS	30	20
Cu	.30	.15
Zn	1.5	.75
Pb	.6	.3
Hg	.002	.001
pH	(1)	(1)

¹Within the range 6.0 to 9.0.

(b) The concentration of pollutants discharged from mills which employ the froth flotation process alone or in conjunction with other processes, for the beneficiation of copper ores, lead ores, zinc ores, gold ores, or silver ores, or any combination of these ores shall not exceed:

Effluent characteristic	Effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	Milligrams per liter	
TSS	30	20
Cu	.30	.15
Zn	1.0	.5
Pb	.6	.3
Hg	.002	.001
Cd	.10	.05
pH	(1)	(1)

¹Within the range 6.0 to 9.0.

(c)(1) Except as provided in paragraph (c) of this section, there shall be no discharge of process wastewater to navigable water from mines and mills which employ dump, heap, in situ leach or vat leach processes for the extraction of copper from ores or ore waste materials. The Agency recognizes that the elimination of the discharge of pollutants to navigable waters may result in an increase in discharges of some pollutants to other media. The Agency has considered these impacts and has addressed them in the preamble published on December 3, 1982.

(2) In the event that the annual precipitation falling on the treatment facility and the drainage area contributing surface runoff to the treatment facility exceeds the annual evaporation, a volume of water equivalent to the difference between annual precipitation falling on the treatment facility and the drainage area contributing surface runoff to the treatment facility and annual evaporation may be discharged subject to the limitations set forth in paragraph (a) of this section.

(d)(1) Except as provided in paragraph (d) of this section, there shall be no discharge of process wastewater to navigable waters from mills which extract gold or silver by use of the cyanidation process. The Agency recognizes that the elimination of the discharge of pollutants to navigable waters may result in an increase in discharges of some pollutants to other media. The Agency has considered these impacts and has addressed them in the preamble published on December 3, 1982.

(2) In the event that the annual precipitation falling on the treatment facility and the drainage area contributing surface runoff to the treatment facility exceeds the annual evaporation, a volume of water equivalent to the difference between annual precipitation falling on the treatment facility and the drainage area contributing surface runoff to the treatment facility and annual evaporation may be discharged subject to the limitations set forth in paragraph (a) of this section.

(e) The concentration of pollutants discharged in mine drainage from mines producing 5,000 metric tons (5,512 short tons) or more of molybdenum bearing ores per year shall not exceed:

Effluent characteristic	Effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	Milligrams per liter	
TSS	30	20
Cd	.10	.05
Cu	.3	.15
Zn	1.0	.5
Pb	.6	.3
As	1.0	.5
pH	(1)	(1)

¹Within the range of 6.0 to 9.0

(f) The concentration of pollutants discharged in mine drainage from mines producing less than 5,000 metric tons (5,512 short tons) or discharged from mills processing less than 5,000 metric tons (5,512 short tons) of molybdenum ores per year by methods other than ore leaching shall not exceed:

Effluent characteristic	Effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	Milligrams per liter	
TSS	50	30
pH	(1)	(1)

¹Within the range 6.0 to 9.0.

(g) The concentration of pollutants discharged from mills processing 5,000 metric tons (5,512 short tons) or more of molybdenum ores per year by purely physical methods including ore crushing, washing, jigging, heavy media separation shall not exceed:

Effluent characteristic	Effluent limitations	
	Maximum for any 1 day	Average of daily value for 30 consecutive days
	Milligrams per liter	
TSS	30	20
Cd	.10	.05
Cu	.30	.15
Zn	1.0	.5
As	1.0	.5
pH	(1)	(1)

¹Within the range 6.0 to 9.0

(h) The concentration of pollutants discharged from mills processing 5,000 metric tons (5,512 short tons) or more of molybdenum ores per year by froth flotation methods shall not exceed:

Effluent characteristics	Effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	Milligrams per liter	
TSS	30	20
Cd	.10	.05
Cu	.30	.15
Zn	1.0	.5
As	1.0	.5
pH	(1)	(1)

¹Within the range 6.0 to 9.0.

[47 FR 54609, Dec. 3, 1982, as amended at 53 FR 18788, May 24, 1988]

[↑](#) Back to Top

§440.103 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).

Except as provided in subpart L of this part and 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT):

(a) The concentration of pollutants discharged in mine drainage from mines that produce copper, lead, zinc, gold, silver, or molybdenum bearing ores or any combination of these ores from open-pit or underground operations other than placer deposits shall not exceed:

Effluent characteristic	Effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	Milligrams per liter	
Cu	0.30	0.15
Zn	1.5	0.75
Pb	0.6	0.3
Hg	0.002	0.001
Cd	0.10	0.05

(b) The concentration of pollutants discharged from mills that use the froth-flotation process alone, or in conjunction with other processes, for the beneficiation of copper, lead, zinc, gold, silver, or molybdenum ores or any combination of these ores shall not exceed:

Effluent characteristic	Effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	Milligrams per liter	
Cu	0.30	0.15
Zn	1.0	0.5
Pb	0.6	0.3
Hg	0.002	0.001
Cd	0.10	0.05

(c)(1) Except as provided in paragraph (c) of this section, there shall be no discharge of process wastewater to navigable waters from mine areas and mills processes and areas that use dump, heap, in situ leach or vat-leach processes to extract copper from ores or ore waste materials. The Agency recognizes that the elimination of the discharge of pollutants to navigable waters may result in an increase in discharges of some pollutants to other media. The Agency has considered these impacts and has addressed them in the preamble published on December 3, 1982.

(2) In the event that the annual precipitation falling on the treatment facility and the drainage area contributing surface runoff to the treatment facility exceeds the annual evaporation, a volume of water equal to the difference between annual precipitation falling on the treatment facility and the drainage area contributing surface runoff to the treatment facility and annual evaporation may be discharged subject to the limitations set forth in paragraph (a) of this section.

(d)(1) Except as provided in paragraph (d) of this section, there shall be no discharge of process wastewater to navigable waters from mills that use the cyanidation process to extract gold or silver. The Agency recognizes that the elimination of the discharge of pollutants to navigable waters may result in an increase in discharges of some pollutants to other media. The Agency has considered these impacts and has addressed them in the preamble published on December 3, 1982.

(2) In the event that the annual precipitation falling on the treatment facility and the drainage area contributing surface runoff to the treatment facility exceeds the annual evaporation, a volume of water equal to the difference between annual precipitation falling on the treatment facility and the drainage area contributing surface runoff to the treatment facility and annual evaporation may be discharged subject to the limitations set forth in paragraph (a) of this section.

[47 FR 54609, Dec. 3, 1982, as amended at 53 FR 18788, May 24, 1988]

[↑ Back to Top](#)

§440.104 New source performance standards (NSPS).

Except as provided in subpart L of this part any new source subject to this subsection must achieve the following NSPS representing the degree of effluent reduction attainable by the application of the best available demonstrated technology (BADT):

(a) The concentration of pollutants discharged in mine drainage from mines that produce copper, lead, zinc, gold, silver, or molybdenum bearing ores or any combination of these ores from open-pit or underground operations other than placer deposits shall not exceed:

Effluent characteristic	Effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	Milligrams per liter	
Cu	0.30	0.15
Zn	1.5	0.75
Pb	0.6	0.3
Hg	0.002	0.001
Cd	0.10	0.05
pH	(1)	(1)
TSS	30.0	20.0

¹Within the range 6.0 to 9.0.

(b)(1) Except as provided in paragraph (b) of this section, there shall be no discharge of process wastewater to navigable waters from mills that use the froth-flotation process alone, or in conjunction with other processes, for the beneficiation of copper, lead, zinc, gold, silver, or molybdenum ores or any combination of these ores. The Agency recognizes that the elimination of the discharge of pollutants to navigable waters may result in an increase in discharges of some pollutants to other media. The Agency has considered these impacts and has addressed them in the preamble published on December 3, 1982.

(2)(i) In the event that the annual precipitation falling on the treatment facility and the drainage area contributing surface runoff to the treatment facility exceeds the annual evaporation, a volume of water equal to the difference between annual precipitation falling on the treatment facility and the drainage area contributing surface runoff to the treatment facility and annual evaporation may be discharged subject to the limitations set forth in paragraph (a) of this section.

(ii) In the event there is a build up of contaminants in the recycle water which significantly interferes with the ore recovery process and this interference can not be eliminated through appropriate treatment of the recycle water, the permitting authority may allow a discharge of process wastewater in an amount necessary to correct the interference problem after installation of appropriate treatment. This discharge shall be subject to the limitations of paragraph (a) of this section. The facility shall have the burden of demonstrating to the permitting authority that the discharge is necessary to eliminate interference in the ore recovery process and that the interference could not be eliminated through appropriate treatment of the recycle water.

(c)(1) Except as provided in paragraph (c) of this section, there shall be no discharge of process wastewater to navigable waters from mine areas and mills processes and areas that use dump, heap, in-situ leach or vat-leach processes to extract copper from ores or ore waste materials. The Agency recognizes that the elimination of the discharge of pollutants to navigable waters may result in an increase in discharges of some pollutants to other media. The Agency has considered these impacts and has addressed them in the preamble published on December 3, 1982.

(2) In the event that the annual precipitation falling on the treatment facility and the drainage area contributing surface runoff to the treatment facility exceeds the annual evaporation, a volume of water equal to the difference between annual precipitation falling on the treatment facility and the drainage area contributing surface runoff to the treatment facility and annual evaporation may be discharged subject to the limitations set forth in paragraph (a) of this section.

(d)(1) Except as provided in paragraph (d) of this section, there shall be no discharge of process wastewater to navigable waters from mills that use the cyanidation process to extract gold or silver. The Agency recognizes that the elimination of the discharge of pollutants to navigable waters may result in an increase in discharges of some pollutants to other media. The Agency has considered these impacts and has addressed them in the preamble published on December 3, 1982.

(2) In the event that the annual precipitation falling on the treatment facility and the drainage area contributing surface runoff to the treatment facility exceeds the annual evaporation, a volume of water equal to the difference between annual

precipitation falling on the treatment facility and the drainage area contributing surface runoff to the treatment facility and annual evaporation may be discharged subject to the limitations set forth in paragraph (a) of this section.

[47 FR 54609, Dec. 3, 1982, as amended at 53 FR 18788, May 24, 1988]

EFFECTIVE DATE NOTE: Paragraph (b)(2)(ii) of §440.104, published at 47 FR 54609, Dec. 3, 1982, contains information collection and recordkeeping requirements and will not become effective until approval has been given by the Office of Management and Budget.

 [Back to Top](#)

§440.105 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT). [Reserved]

Subpart M—Gold Placer Mine Subcategory

SOURCE: 53 FR 18788, May 24, 1988, unless otherwise noted.

[↑ Back to Top](#)

§440.140 Applicability; description of the gold placer mine subcategory.

(a) The provisions of this subpart M are applicable to discharges from—

(1) Mines and dredges that produce gold or gold bearing ores from placer deposits; and

(2) The beneficiation processes which use gravity separation methods for recovering gold from placer deposits.

(b) The provisions of this subpart M are not applicable to any mines or beneficiation processes which process less than 1500 cubic yards (cu yd) of ore per year, or to dredges which process less than 50,000 cu yd of ore per year, or to dredges located in open waters (*i.e.*, open bays, marine waters, or major rivers).

[↑ Back to Top](#)

§440.141 Specialized definitions and provisions.

For the purpose of this subpart M, the general definitions, abbreviations, methods of analysis, and general provisions set forth in 40 CFR part 401 shall apply except as superseded by those below. The general provisions and definitions set forth in 40 CFR part 440, subpart L, shall not apply to this subpart.

(a) *Specialized definitions.* The following specialized definitions apply to this subpart only.

(1) "Beneficiation area" means the area of land used to stockpile ore immediately before the beneficiation process, the area of land used for the beneficiation process, the area of land used to stockpile the tailings immediately after the beneficiation process, and the area of land from the stockpiled tailings to the treatment system (e.g., holding pond or settling pond, and the area of the treatment system).

(2) "Beneficiation process" means the dressing or processing of gold bearing ores for the purpose of—

(i) Regulating the size of, or recovering, the ore or product,

(ii) Removing unwanted constituents from the ore, and

(iii) Improving the quality, purity, or assay grade of a desired product.

(3) "Drainage water" means incidental surface waters from diverse sources such as rainfall, snow melt or permafrost melt.

(4) "Dredge" means a self-contained combination of an elevating excavator (e.g., bucket line dredge), the beneficiation or gold-concentrating plant, and a tailings disposal plant, all mounted on a floating barge.

(5) "Five (5) year, 6-hour precipitation event" means the maximum 6-hour precipitation event with a probable recurrence interval of once in 5 years as established by the U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Weather Service, or equivalent regional or rainfall probability information.

(6) "Gravity separation methods" means the treatment of mineral particles which exploits differences between their specific gravities. The separation is usually performed by means of sluices, jigs, classifiers, spirals, hydrocyclones, or shaking tables.

(7) "Infiltration water" means that water which permeates through the earth into the plant site.

(8) "Mine" means a place where work or other activity related to the extraction or recovery of ore is performed.

(9) "Mine area" means the land area from which overburden is stripped and ore is removed prior to moving the ore to the beneficiation area.

(10) "Mine drainage" means any water drained, pumped or siphoned from a mine.

(11) "New water" means water from any discrete source such as a river, creek, lake or well which is deliberately allowed or brought into the plant site.

(12) "Open cut mine" means any form of recovery of ore from the earth except by a dredge.

(13) "Ore" means gold placer deposit consisting of metallic gold-bearing gravels, which may be: residual, from weathering of rocks in-situ; river gravels in active streams; river gravels in abandoned and often buried channels; alluvial fans; sea-beaches; and sea-beaches now elevated and inland. Ore is the raw "bank run" material measured in place, before being moved by mechanical or hydraulic means to a beneficiation process.

(14) "Permit area" means the area of land specified or referred to in an NPDES permit in which active mining and related activities may occur that result in the discharge regulated under the terms of the permit. Usually this is specifically delineated in an NPDES permit or permit application, but in other cases may be ascertainable from an Alaska Tri-agency permit application or similar document specifying the mine location, mining plan and similar data.

(15) "Plant site" means the area occupied by the mine, necessary haulage ways from the mine to the beneficiation process, the beneficiation area, the area occupied by the wastewater treatment facilities and the storage areas for waste materials and solids removed from the wastewaters during treatment.

(16) "Process wastewater" means all water used in and resulting from the beneficiation process, including but not limited to the water used to move the ore to and through the beneficiation process, the water used to aid in classification, and the water used in gravity separation, mine drainage, and infiltration and drainage waters which commingle with mine drainage or waters resulting from the beneficiation process.

(17) "Settleable solids" means the particulate material (both organic or inorganic) which will settle in one hour expressed in milliliters per liter (ml/l) as determined using an Imhoff cone and the method described for Residue—Settleable in 40 CFR part 136.

(b) *Specialized provisions—storm exemption.* This specialized provision applies to this subpart M only. If, as a result of precipitation (rainfall or snowmelt), a source subject to this subpart has an overflow or discharge of effluent which does not meet the limitations or standards of this subpart, the source may qualify for an exemption from such limitations and standards with respect to such discharge if the following conditions are met:

(1) The treatment system is designed, constructed, and maintained to contain the maximum volume of untreated process wastewater which would be discharged, stored, contained and used or recycled by the beneficiation process into the treatment system during a 4-hour operating period without an increase in volume from precipitation or infiltration, plus the maximum volume of water runoff resulting from a 5-year, 6-hour precipitation event. In computing the maximum volume of water which would result from a 5-year, 6-hour precipitation event, the operator must include the volume which would result from the plant site contributing runoff to the individual treatment facility.

(2) The operator takes all reasonable steps to maintain treatment of the wastewater and minimize the amount of overflow.

(3) The source is in compliance with the BMP in §140.148 and related provisions of its NPDES permit.

(4) The operator complies with the notification requirements of §122.41 (m) and (n) of this title. The storm exemption is designed to provide an affirmative defense to an enforcement action. Therefore, the operator has the burden of demonstrating to the appropriate authority that the above conditions have been met.

 Back to Top

§440.142 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).

Except as provided in 40 CFR 125.30-125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT):

(a) The concentration of pollutants discharged in process wastewater from an open-cut mine plant site shall not exceed:

Effluent limitations	
Effluent characteristics	Instantaneous maximum
Settleable solids	0.2 ml/l

(b) The concentration of pollutants discharged in process wastewater from a dredge plant site shall not exceed:

Effluent characteristics	Effluent limitations—Instantaneous maximum
Settleable solids	0.2 ml/l

[↑ Back to Top](#)

§440.143 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).

Except as provided in 40 CFR 125.30-125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).

(a) The volume of process wastewater which may be discharged from an open-cut mine plant site shall not exceed the volume of infiltration, drainage and mine drainage waters which is in excess of the make up water required for operation of the beneficiation process. The concentration of pollutants in process wastewaters discharged from an open-cut mine plant site shall not exceed:

Effluent characteristics	Effluent limitations—Instantaneous maximum
Settleable solids	0.2 ml/l

(b) The volume of process wastewater which may be discharged from a dredge plant site shall not exceed the volume of infiltration, drainage and mine drainage waters which is in excess of the make up water required for operation of the beneficiation process. The concentration of pollutants in process wastewater discharged from a dredge plant site shall not exceed:

Effluent characteristics	Effluent limitations—Instantaneous maximum
Settleable solids	0.2 ml/l

[↑ Back to Top](#)

§440.144 New source performance standards (NSPS).

Any new source subject to this subpart must achieve the following NSPS representing the degree of effluent reduction attainable by the application of the best available demonstrated technology:

(a) The volume of process wastewater which may be discharged from an open-cut mine plant site shall not exceed the volume of infiltration, drainage and mine drainage waters which is in excess of the make up water required for operation of the beneficiation process. The concentration of pollutants in process wastewaters discharged from an open-cut mine plant site shall not exceed:

Effluent characteristics	Effluent limitations—Instantaneous maximum
Settleable solids	0.2 ml/l

(b) The volume of process wastewater which may be discharged from a dredge plant site shall not exceed the volume of infiltration, drainage and mine drainage waters which is in excess of the make up water required for operation of the beneficiation process. The concentration of pollutants in process wastewater discharged from a dredge plant site shall not exceed:

Effluent characteristics	Effluent limitations—Instantaneous maximum
Settleable solids	0.2 ml/l

(c) Notwithstanding any other provision of this chapter, the Regional Administrator or Director of a State agency with authority to administer the NPDES program shall in designating new source gold placer mines, take into account and base the decision on whether one or more of the following factors has occurred after May 24, 1988.

- (1) The mine will operate outside of the permit area which is covered by a currently valid NPDES Permit.
- (2) The mine significantly alters the nature or quantity of pollutants discharged.
- (3) The mine discharges into a stream into which it has not discharged under its currently valid NPDES permit.
- (4) The mine will operate in a permit area that has not been mined during the term of the currently valid NPDES permit.
- (5) Such other factors as the Regional Administrator or state Director deems relevant.

[↑ Back to Top](#)

§§440.145-440.147 [Reserved]

 [Back to Top](#)

§440.148 Best Management Practices (BMP).

The following best management practices are specific requirements which shall be included in each NPDES permit for all mining operations regulated under this subpart to the greatest extent applicable in each such mining operation.

(a) *Surface water diversion:* The flow of surface waters into the plant site shall be interrupted and these waters diverted around and away from incursion into the plant site.

(b) *Berm construction:* Berms, including any pond walls, dikes, low dams and similar water retention structures shall be constructed in a manner such that they are reasonably expected to reject the passage of water.

(c) *Pollutant materials storage:* Measures shall be taken to assure that pollutant materials removed from the process water and wastewater streams will be retained in storage areas and not discharged or released to the waters of the United States.

(d) *New water control:* The amount of new water allowed to enter the plant site for use in ore processing shall be limited to the minimum amount required as make-up water for processing operations.

(e) *Maintenance of water control and solids retention devices:* All water control devices such as diversion structures and berms and all solids retention structures such as berms, dikes, pond structures and dams shall be maintained to continue their effectiveness and to protect from unexpected and catastrophic failure.

Appendix B

WLA



ENVIRONMENTAL PROTECTION DIVISION

Memorandum

Date: September 15, 2017
 To: Josh Welte
 Through: Audra Dickson
 From: Whitney Fenwick
 Subject: Waste Load Allocation (WLA) Request
 Royal Vindicator Mine
 NPDES Permit No. GA0050259
 Haralson, Tallapoosa River Basin

WLA request for the new issuance of the above referenced facility. The analytical analyses accompanying the application for renewal NPDES permit indicated the presence of oxygen demanding constituents, nutrients or toxics above detectable limits and the Wastewater Regulatory Program is requesting water quality limits for the permit.

Wastewater Regulatory Program: Permit Information (for each outfall)

(Duplicate this section for each outfall you need a WLA for)

Outfall No.: 001	Lat/Long: 33.707222, -85.281944
Name of Receiving Waters: Unnamed tributary to Walker Creek	River Basin: Tallapoosa
Average Flow (mgd): 0.019	Maximum (Design) Flow (mgd): 0.038
Summer Temperature (min & max): 79 °F max	Winter Temperature (min & max): 45 °F max

Based on a review of the permit application, WRP is requesting a waste load allocation for water quality limits to meet in-stream Water Quality Standards for the following constituents.

- | | | |
|--|---|--|
| <input checked="" type="checkbox"/> BOD ₅ | <input checked="" type="checkbox"/> NH ₃ | <input checked="" type="checkbox"/> DO |
| <input type="checkbox"/> Total Phosphorus | <input type="checkbox"/> TRC | <input type="checkbox"/> Temperature |

Watershed Planning and Monitoring Program

Please provide the following items about the receiving stream and indicate "NA" if an item does not apply.

- 7Q10 0.01 cfs
- 1Q10 0.01 cfs
- Mean Annual Stream Flow 0.15 cfs
- Receiving Stream Hardness no data
- Upstream TSS no data

30Q3 0.03 cfs

Instream toxicity criteria for Ammonia RPA 1.18 mg/L

NH3 chronic toxicity limit = 2.3 mg/L

If there is a reasonable potential for the presence of oxygen-demanding substances in the discharge, we recommend BOD monitoring

Appendix C

Reasonable Potential Analysis

Reasonable Potential Analysis for Freshwater

Permit Name Royal Vindicator Mine
NPDES Permit No. GA0050259

Stream Data:

Receiving stream Hardness:	25	mg/L
Upstream TSS:	10	mg/L
7Q10:	0.01	ft ³ /s
	6,463	gal/day
1Q10:	0.01	ft ³ /s
	6,463	gal/day

Effluent Data:

Flow	37,290	gal/day
TSS	7.50	mg/L
Instream TSS:	7.87	mg/L
Acute Dilution factor:	1.17	
Chronic Dilution factor:	1.17	

Water Quality Criteria:

Mean annual streamflow at discharge:	0.15	ft ³ /s
	96,941	gal/day
Dilution factor:	3.600	
IWC	85.22898691	

$$IWC = \frac{Flow \text{ (gal/day)}}{Flow \text{ (gal/day)} + 7Q10 \text{ (gal/day)}}$$

Analytical data provided in the application was in dissolved form for Arsenic, Cadmium, Chromium, Copper, Lead, Nickel, and Zinc. Georgia's in-stream Water Quality Criteria for these pollutants is expressed in terms of the dissolved fraction in the water column. The conversions typically calculated in this worksheet have been removed.

Acute Water Quality Criteria (WQC_{Acute})

Metal	K _{FO}	α	f _D	Maximum effluent C _T (μg/L)	Instream C _D (μg/L)	WQC _{Acute} (μg/L)	Action needed?
Arsenic	NA	NA	NA	0.68	0.58	340.00	no
Cadmium	NA	NA	NA	0.20	0.17	0.52	no
Chromium III	NA	NA	NA	4.10	3.49	183.07	no
Chromium VI	NA	NA	NA	4.10	3.49	16.00	no
Copper	NA	NA	NA	2.25	1.92	3.64	yes
Lead	NA	NA	NA	0.78	0.66	13.88	no
Mercury	NA	NA	NA	0.030	0.0256	1.40	no
Nickel	NA	NA	NA	17.15	14.62	144.92	no
Zinc	NA	NA	NA	41.13	35.05	36.20	yes

$$\text{Acute Dilution Factor} = \frac{1Q10 \left(\frac{\text{gal}}{\text{day}} \right) + \text{Flow} \left(\frac{\text{gal}}{\text{day}} \right)}{\text{Flow} \left(\frac{\text{gal}}{\text{day}} \right)}$$

Chronic Water Quality Criteria (WQC_{Chronic})

Metal	K _{FO}	α	f _D	Average effluent C _T (μg/L)	Instream C _D (μg/L)	WQC _{Chronic} (μg/L)	Action needed?
Arsenic	NA	NA	NA	0.27	0.23	150.00	no
Cadmium	NA	NA	NA	0.08	0.07	0.15	no
Chromium III	NA	NA	NA	1.64	1.40	42.00	no
Chromium VI	NA	NA	NA	1.64	1.40	11.00	no
Copper	NA	NA	NA	0.90	0.77	2.74	no
Lead	NA	NA	NA	0.31	0.26	0.54	no
Mercury	NA	NA	NA	0.010	0.01	0.012	yes
Nickel	NA	NA	NA	6.86	5.85	16.10	no
Zinc	NA	NA	NA	16.45	14.02	36.50	no
Selenium	NA	NA	NA	0.95	0.81	5.00	no

$$f_D = \frac{1}{1 + K_{FO} \times TSS_{Instream} \text{ (mg/L)}^{1+0.5} \times 10^{-6}}$$

$$\text{Instream } C_D = \frac{\text{Effluent } C_T \text{ (mg/L)} \times f_D}{DF} \text{ mg/L}$$

$$\text{Chronic Dilution Factor} = \frac{7Q10 \left(\frac{\text{gal}}{\text{day}} \right) + \text{Flow} \left(\frac{\text{gal}}{\text{day}} \right)}{\text{Flow} \left(\frac{\text{gal}}{\text{day}} \right)}$$

Total Recoverable Effluent Limit

Metal	C _S (μg/L)	Chronic C _T (μg/L) 30-Day Avg	Chronic C _T (lbs/day) 30-Day Avg	Acute C _T (μg/L) Daily Max	Acute C _T (lbs/day) Daily Max
Arsenic	0.0	N/A	N/A	N/A	N/A
Cadmium	0.0	N/A	N/A	N/A	N/A
Chromium III	0.0	N/A	N/A	N/A	N/A
Chromium VI	0.0	N/A	N/A	N/A	N/A
Copper	0.0	N/A	N/A	4.27	0.001
Lead	0.0	N/A	N/A	N/A	N/A
Mercury	0.0	0.01	0.000004	N/A	N/A
Nickel	0.0	N/A	N/A	N/A	N/A
Zinc	0.0	N/A	N/A	42.48	0.013
Selenium	0.0	N/A	N/A	-	-

$$(1) \text{ Acute } C_T = \frac{WQC_{Acute} \times (Q_E + 1Q10) - (1Q10 \times C_S)}{f_D \times Q_E}$$

$$\text{Chronic } C_T = \frac{WQC_{Chronic} \times (Q_E + 7Q10) - (7Q10 \times C_S)}{f_D \times Q_E}$$

$$(2) \text{ Acute } C_T = \frac{WQC_{Acute} \times (Q_E + 1Q10)}{f_D \times Q_E}$$

$$\text{Chronic } C_T = \frac{WQC_{Chronic} \times (Q_E + 7Q10)}{f_D \times Q_E}$$

- NOTES:**
- Chronic and acute total recoverable metal effluent concentration (C_T) from EPA 823-B-96-007, June 1996, page 33:
 - Assuming background dissolved metal concentration (C_S) in the stream is 0 μg/L, equations above become:

NOTES:
Water Quality Criteria (WQC) from State of Georgia Rules and Regulations 391-3-6-.03.

If the calculated instream concentration is less than 50% of the instream water quality criteria, then the constituent will be considered not to be present at levels of concern in the effluent and it will not be included in the permit.

If the calculated instream concentration is 50% or more of the instream water quality criteria, then a permit limit for that constituent will be placed in the permit.

Reasonable Potential Analysis for Freshwater

Royal Vindicator Mine
NPDES Permit No. GA0050259

Stream Data:

Receiving stream Hardness: **25** mg/L
 Upstream TSS: **10** mg/L
 7Q10: **0** ft³/s
 1Q10: **0** ft³/s
 6,463 gal/day
 6,463 gal/day

Effluent Data:

Flow: **38,000** gal/day
 TSS: **8** mg/L
 Instream TSS: **7.86** mg/L
 Acute Dilution factor: **1.17**
 Chronic Dilution factor: **1.17**

Water Quality Criteria:

Mean annual streamflow at discharge: **0** ft³/s
 96,941 gal/day
 Dilution factor: **3.551**

Water Quality Criteria (WQC)

Nonmetal	Maximum effluent C _T (µg/L)	Instream Concentration (µg/L)	WQC (µg/L)	WQC/2 (µg/L)	Action needed?
Antimony	4.8	1.35	640	320	no
Phenols	32.00	9.01	857000	428500	no
Phenols	32.00	27.35	300	150	no
Thallium	0.2	0.06	0.47	0.235	no

$$\text{Dilution Factor} = \frac{\text{Mean annual streamflow at discharge} \left(\frac{\text{gal}}{\text{day}} \right) + \text{Flow} \left(\frac{\text{gal}}{\text{day}} \right)}{\text{Flow} \left(\frac{\text{gal}}{\text{day}} \right)}$$

NOTES:

*Water Quality Criteria (WQC) from State of Georgia Rules and Regulations 391-3-6-.03.

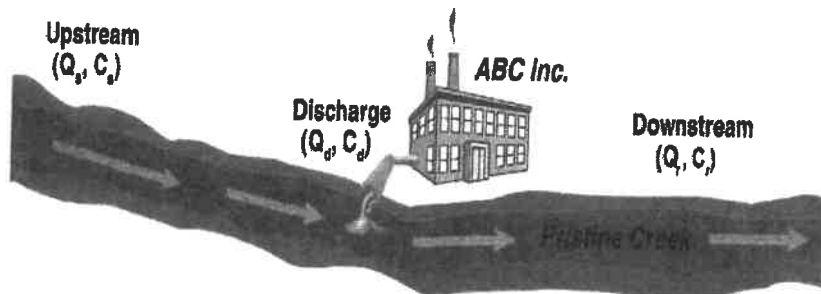
*If the calculated instream concentration is less than 50% of the instream water quality criteria, then the constituent will be considered not to be present at levels of concern in the effluent and it will not be included in the permit.

*If the calculated instream concentration is 50% or more of the instream water quality criteria, then a permit limit for that constituent will be placed in the permit.
 End of report

Ammonia Reasonable Potential Analysis

General Information		
Facility	Royal Vindicator Mine	
Permit #	GA0050259	
Staff	Fenwick	
Date	29.Sep.17	
Upstream Conditions		Basis
Flow, Q_s	0.03 cfs	30Q3 as determined by WPMP
Concentration, C_s	0.13 mg/L	background concentration generally ~0.13 mg/L or as specified by WPMP
Discharge Characteristics		Basis
Flow, Q_d	0.038 MGD	effluent flow rate
Flow, Q_d	0.06 cfs	effluent flow rate
Concentration, C_d	0.75 mg/L	concentration
IWC	66.2 %	instream waste concentration
Predicted Downstream		Basis
Flow, Q_r	0.09 cfs	calculated combined flow
Concentration, C_r	0.54 mg/L	calculated instream concentration
Applicable Criteria	1.18 mg/L	instream toxicity criteria as determined by WPMP
Ratio	46 %	predicted instream concentration as % of criteria
RP	No	is there reasonable potential to exceed criteria?
Action	None	what is appropriate permitting action?

Exhibit 6-14 Example of applying mass-balance equation to conduct reasonable potential analysis for conservative pollutant under conditions of rapid and complete mixing



$$\text{Mass-Balance Equation: } Q_s C_s + Q_d C_d = Q_r C_r$$

Dividing both sides of the mass-balance equation by Q_r gives the following:

$$C_r = \frac{(Q_d)(C_d) + (Q_s)(C_s)}{Q_r}$$

Appendix D

NPDES Permit Rating Work Sheet

NPDES Permit Rating Work Sheet

- Regular Addition
- Discretionary Addition
- Score change, but no status change
- Deletion

NPDES No.: GA0050259

Facility Name:
Royal Vindicator Mine

City: Tallapoosa

Receiving Water: Unnamed tributary to Walker Creek

Reach Number: _____

Is this facility a steam electric power plant (SIC=4911) with one or more of the following characteristics?

Is this permit for a municipal separate storm sewer serving a population greater than 100,000?

- 1. Power output 500 MW or greater (not using a cooling pond/lake)
 - 2. A nuclear power plant
 - 3. Cooling water discharge greater than 25% of the receiving stream's 7Q10 flow rate
- YES; score is 600 (stop here) NO (continue)

- YES; score is 700 (stop here)
- NO (continue)

FACTOR 1: Toxic Pollutant Potential

PCS SIC Code: _____ Primary SIC Code: 1041

Other SIC Codes: _____

Industrial Subcategory Code: 2 (Code 000 if no subcategory)

Determine the Toxicity potential from Appendix A. (Be sure to use the TOTAL toxicity potential column and check one)

Toxicity Group	Code	Points	Toxicity Group	Code	Points	Toxicity Group	Code	Points
<input type="checkbox"/> No process waste streams	0	0	<input type="checkbox"/> 3.	3	15	<input type="checkbox"/> 7	7	35
<input type="checkbox"/> 1.	1	5	<input type="checkbox"/> 4.	4	20	<input type="checkbox"/> 8.	8	40
<input type="checkbox"/> 2.	2	10	<input type="checkbox"/> 5.	5	25	<input checked="" type="checkbox"/> 9.	9	45
			<input type="checkbox"/> 6.	6	30	<input type="checkbox"/> 10.	10	50

Code Number Checked: 9

Total Points Factor 1: 45

FACTOR 2: Flow/Stream Flow Volume *(Complete either Section A or Section B; check only one)*

Section A - Wastewater Flow Only Considered

Section B - Wastewater and Stream Flow Considered

Wastewater type (See Instructions)	Code	Points
Type I: Flow < 5 MGD	<input type="checkbox"/>	11 0
Flow 5 to 10 MGD	<input type="checkbox"/>	12 10
Flow > 10 to 50 MGD	<input type="checkbox"/>	13 20
Flow > 50 MGD	<input type="checkbox"/>	14 30
Type II: Flow < 1 MGD	<input type="checkbox"/>	21 10
Flow 1 to 5 MGD	<input type="checkbox"/>	22 20
Flow > 5 to 10 MGD	<input type="checkbox"/>	23 30
Flow > 10 MGD	<input type="checkbox"/>	24 50
Type III: Flow < 1 MGD	<input type="checkbox"/>	31 0
Flow 1 to 5 MGD	<input type="checkbox"/>	32 10
Flow > 5 to 10 MGD	<input type="checkbox"/>	33 20
Flow > 10 MGD	<input type="checkbox"/>	34 30

Wastewater type (See Instructions)	Percent of Instream Wastewater Concentration at Receiving Stream Low Flow	Code	Points
Type I/III:	<10%	<input type="checkbox"/>	41 0
	≥10% to <50%	<input type="checkbox"/>	42 10
	≥50%	<input type="checkbox"/>	43 20
Type II	<10%	<input type="checkbox"/>	51 0
	≥10% to <50%	<input type="checkbox"/>	52 20
	≥50%	<input checked="" type="checkbox"/>	53 30

Code Checked from Section A or B: 53

Total Points Factor 2: 30

NPDES Permit Rating Work Sheet

FACTOR 3: Conventional Pollutants

NPDES No.: GA0050259

(only when limited by the permit)

A. Oxygen Demanding Pollutants (check one) BOD COD OTHER: _____

Permit Limits (check one)	Code	Points
<input type="checkbox"/> <100 lbs/day	1	0
<input type="checkbox"/> 100 to 1000 lbs/day	2	5
<input type="checkbox"/> >1000 to 3000 lbs/day	3	15
<input type="checkbox"/> >3000 lbs/day	4	20

Code Checked: _____

Points Scored: 0

B. Total Suspended Solids (TSS)

Permit Limits (check one)	Code	Points
<input type="checkbox"/> <100 lbs/day	1	0
<input type="checkbox"/> 100 to 1000 lbs/day	2	5
<input type="checkbox"/> >1000 to 5000 lbs/day	3	15
<input type="checkbox"/> >5000 lbs/day	4	20

Code Checked: _____

Points Scored: 0

C. Nitrogen Pollutants (check one)

Ammonia OTHER: _____

Permit Limits (check one)	Code	Points
<input type="checkbox"/> <300 lbs/day	1	0
<input type="checkbox"/> 300 to 1000 lbs/day	2	5
<input type="checkbox"/> >1000 to 3000 lbs/day	3	15
<input type="checkbox"/> >3000 lbs/day	4	20

Code Checked: _____

Points Scored: 0

Total Points Factor 3: 0

FACTOR 4: Public Health Impact

Is there a public drinking water supply located within 50 miles downstream of the effluent discharge (this includes any body of water to which the receiving water is a tributary)? A public drinking water supply may include infiltration galleries, or other methods of conveyance that ultimately get water from the above referenced supply.

YES (if yes, check toxicity potential number below)

NO (if no, go to Factor 5)

Determine the human health toxicity potential from Appendix A. Use the same SIC Code and subcategory reference as in Factor 1. (Be sure to use the human health toxicity group column and check one below)

Toxicity Group	Code	Points	Toxicity Group	Code	Points	Toxicity Group	Code	Points
<input type="checkbox"/> No process waste streams	0	0	<input type="checkbox"/> 3.	3	0	<input type="checkbox"/> 7.	7	15
<input type="checkbox"/> 1.	1	0	<input type="checkbox"/> 4.	4	0	<input checked="" type="checkbox"/> 8.	8	20
<input type="checkbox"/> 2.	2	0	<input type="checkbox"/> 5.	5	5	<input type="checkbox"/> 9.	9	25
			<input type="checkbox"/> 6.	6	10	<input type="checkbox"/> 10.	10	30

Code Number Checked: 8

Total Points Factor 4: 20

NPDES Permit Rating Work Sheet

FACTOR 5: Water Quality Factors

NPDES No.: GA0050259

A. Is (or will) one or more of the effluent discharge limits based on water quality factors of the receiving stream (rather than technology-based federal effluent guidelines, or technology-based state effluent guidelines), or has a wasteload allocation been assigned to the discharge?

	Code	Points
<input checked="" type="checkbox"/> YES	1	10
<input type="checkbox"/> NO	2	0

B. Is the receiving water in compliance with applicable water quality standards for pollutants that are water quality limited in the permit?

	Code	Points
<input checked="" type="checkbox"/> YES	1	0
<input type="checkbox"/> NO	2	5

C. Does the effluent discharged from this facility exhibit the reasonable potential to violate water quality standards due to whole effluent toxicity?

	Code	Points
<input type="checkbox"/> YES	1	10
<input checked="" type="checkbox"/> NO	2	0

Code Number Checked: A. B. C.

Total Points Factor 5 A. 10 +B. 0 +C. 0 = 10

FACTOR 6: Proximity to Near Coastal Waters

A. Base Score: Enter flow code here (from Factor 2): 53

Enter the multiplication factor that corresponds to the flow code: 0.60

Check appropriate facility HPRI Code (from PCS):

HPRI#	Code	HPRI Score
<input type="checkbox"/> 1	1	20
<input type="checkbox"/> 2	2	0
<input type="checkbox"/> 3	3	30
<input type="checkbox"/> 4	4	0
<input type="checkbox"/> 5	5	20

Flow code	Multiplication Factor
11, 31, or 41	0.00
12, 32, or 42	0.05
13, 33, or 43	0.10
14 or 34	0.15
21 or 51	0.10
22 or 52	0.30
23 or 53	0.60
24	1.00

HPRI Code Checked:

Base Score (HPRI Score) 0 x (Multiplication Factor) 0.60 = 0 (Total Points)

B. Additional Points – NEP Program

For a facility that has an HPRI code of 3, does the facility discharge to one of the estuaries enrolled in the National Estuary Protection (NEP) program (see instructions) or the Chesapeake Bay?

	Code	Points
<input type="checkbox"/> YES	1	10
<input type="checkbox"/> NO	2	0

C. Additional Points – Great Lakes Area of Concern

For a facility that has an HPRI code of 5, does the facility discharge any of the pollutants of concern into one of the Great Lakes' 31 areas of concern (see instructions)?

	Code	Points
<input type="checkbox"/> YES	1	10
<input type="checkbox"/> NO	2	0

Code Number Checked: A. B. C.

Total Points Factor 6 A. 0 +B. 0 +C. 0 = 0

NPDES Permit Rating Work Sheet

Score Summary

NPDES No.: GA0050259

Factor	Description	Total Points
1.	Toxic Pollutant Potential	<u>45</u>
2.	Flow/Streamflow Volume	<u>30</u>
3.	Conventional Pollutants	<u>0</u>
4.	Public Health Impacts	<u>20</u>
5.	Water Quality Factors	<u>10</u>
6.	Proximity to Near Coastal Waters	<u>0</u>
TOTAL (Factors 1 through 6)		<u>105</u>

S1. Is the total score equal to or greater than 80? YES (Facility is a major) NO

S2. If the answer to the above question is no, would you like this facility to be discretionary major?

NO

YES (Add 500 points to the above score and provide reason below:

Reason: _____

NEW SCORE: 105

OLD SCORE: _____

Whitney Fenwick

Permit Reviewer's Name

(404) 656-2795

Phone Number

10/06/2017

Date

Reset Form