

STATE OF ALASKA

SEAN PARNELL, GOVERNOR

610 University Avenue
Fairbanks, AK 99709-3643
PHONE: (907) 451-2136
FAX: (907) 451-2187
<http://www.dec.state.ak.us>

DEPARTMENT OF ENVIRONMENTAL CONSERVATION DIVISION OF WATER

July __, 2010

File #400.62.001

John Odden, Operations Manager
NovaGold Resources, Inc.
P.O. Box 640
Nome, Alaska 99762-0640

Certified Mail # _____
Return Receipt Requested

Subject: Land Application Permit No. 2010DB0011, Rock Creek Project

Dear Mr. Odden:

Alaska's Department of Environmental Conservation has completed its evaluation of your nondomestic wastewater disposal application for the land application of excess wastewater from the Rock Creek Project using spray evaporators, as detailed in your application materials and in the attached permit. The attached permit covers evaporation and land application of excess wastewater from snowmelt, runoff, and groundwater collected in the mine's paste Tailings Storage Facility (TSF) and the Main sump below the TSF to an approximately 10 acre area located upslope from the TSF and designated as the A3 area on the facility map in Section 3 of the enclosed permit.

The enclosed permit is issued under the provisions of Alaska Statute 46.03, and the Alaska Administrative Code (AAC), 18 AAC 15, 18 AAC 60, 18 AAC 70, and 18 AAC 72 and other applicable state laws and regulations. The permit incorporates the Rock Creek Project's Land Disposal Application as revised on May 20, 2010 and the Final Temporary Closure Plan dated February 20, 2009, revised on June 26, 2009, and April 26, 2010. Please review the conditions and stipulations in this permit and ensure that they are all understood. This permit is effective July __, 2010, and expires after July __, 2015 or upon discharge of new tailings to the TSF, whichever is sooner.

Any person who disagrees with this decision may request an adjudicatory hearing in accordance with 18 AAC 15.195 - 18 AAC 15.340 or an informal review by the Division Director in accordance with 18 AAC 15.185. An informal review request must be delivered to the Director, Division of Water, 555 Cordova Street, Anchorage, AK 99501, within 15 days of receipt of the permit decision. An adjudicatory hearing request must be delivered to the Commissioner of the Department of Environmental Conservation, 555 Cordova Street, Anchorage, AK 99501, within 30 days of the permit decision. If a hearing is not requested within 30 days, the right to appeal is waived.

Sincerely,

Sharon Morgan, Manager
Wastewater Discharge Authorization Program

Enclosures: Land Application Permit 2010DB0011, Rock Creek Project
Responses to comments received during the public notice period

cc: Tim Pilon, DEC, Fairbanks
Cam Leonard, DOL, Fairbanks
Jim Vohden, ADNR/DMLW, Fairbanks

Jack DiMarchi, ADNR/OPMP, Fairbanks
Al Ott, ADF&G, Fairbanks
Steve McGroarty, ADNR/DMLW, Fairbanks
Allan Nakanishi, DEC, Anchorage



STATE OF ALASKA
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
610 UNIVERSITY AVE.
FAIRBANKS, AK 99709-3643

LAND APPLICATION PERMIT

for the

Rock Creek Project

Permit No. 2010DB0011

Date: **July __, 2010**

This Land Application Permit is issued to NovaGold Resources, Inc., P.O. Box 640, Nome, Alaska, 99762-0640, for the disposal of wastewater as defined in Section 1.2 of this permit, from the Rock Creek Project. The facility is located approximately 6 miles north of Nome, AK, in the Snake River Drainage, within sections 14, 15, 22, 23, 24, 25, 26, and 33, T10S, R34E, Kateel River Meridian. The permit is issued under the provisions of Alaska Statutes 46.03, and the Alaska Administrative Code (AAC), 18 AAC 15, 18 AAC 60, 18 AAC 70 and 18 AAC 72, as amended or revised, and other applicable state laws and regulations. This permit is effective **July __, 2010**, and expires after **July __, 2015** or upon discharge of new tailings to the Tailings Storage Facility (TSF), whichever is sooner. It may be terminated or modified in accordance with AS 46.03.120.

The permit incorporates Rock Creek Project's Land Disposal Application as revised on May 20, 2010 and the Final Temporary Closure Plan dated February 20, 2009, revised on June 26, 2009, and April 26, 2010. Changes to the documents incorporated herein must be approved by the Alaska Department of Environmental Conservation (department) if they affect this permit. If the department approves the changes, they become part of this permit.

Sharon Morgan, Manager
Wastewater Discharge Authorization Program

TABLE OF CONTENTS

1. SPECIFIC PERMIT CONDITIONS	3
1.1 INTRODUCTION	3
1.2 LIMITATIONS	3
1.3 SITE MAINTENANCE	5
1.4 SITE CONSTRUCTION AND OPERATION	5
1.5 LAND APPLICATION OF WASTEWATER	6
1.6 MONITORING	6
1.7 REPORTING	9
1.8 CORRECTIVE ACTIONS	10
1.9 TEMPORARY CLOSURE	11
2. GENERAL PERMIT CONDITIONS	11
2.1 ACCESS AND INSPECTION	11
2.2 INFORMATION ACCESS	11
2.3 CIVIL AND CRIMINAL LIABILITY	11
2.4 AVAILABILITY	12
2.5 ADVERSE IMPACT	12
2.6 CULTURAL OR PALENTOLOGCAL RESOURCES	12
2.7 APPLICATIONS FOR RENEWAL	12
2.8 OTHER LEGAL OBLIGATIONS	12
2.9 TRANSFER OF OWNERSHIP	12
2.10 POLLUTION PREVENTION	13
3. FACILITY MAP	14

1. SPECIFIC PERMIT CONDITIONS

1.1 INTRODUCTION

- 1.1.1 NovaGold Resources submitted the final revised version of the land application plan on May 12, 2010. The attached permit covers evaporation and land application of excess wastewater from precipitation, snowmelt, runoff, and groundwater collected in the mine's paste Tailings Storage Facility (TSF) and the Main sump below the TSF to an area approximately 10 acres located directly upslope of the TSF and designated as the A3 area on the facility map in Section 3.
- 1.1.2 In addition to the stipulations in this permit, the permittee shall adhere to the applicable regulations in 18 AAC 60 - Solid Waste Management, 18 AAC 70 - Water Quality Standards, and 18 AAC 72.500 through 72.600 - Nondomestic Wastewater.
- 1.1.3 During the effective term of this permit, the permittee is authorized to dispose of nondomestic wastewater as specified herein using up to three spray evaporators onto land in area A3 bounded upslope by Diversion Channel 1 and downslope by Diversion Channel 3 (DC3) at the Rock Creek Project.

1.2 LIMITATIONS

- 1.2.1 The permittee is allowed to apply wastewater from the TSF and the Main sump to the A3 area using up to three spray evaporators with a combined maximum application capacity not exceeding 300 gallons per minute. Based on the results and conclusions detailed in the September 2, 2009, *Results of Feasibility Study for the Land Application of Wastewater at the Rock Creek Project* prepared by Tetra Tech, this application shall be conducted using the following operating procedures and requirements:
 - 1.2.1.1 Unless agreed to in writing by department, land application is only authorized during the temporary closure period. Specifically, land application is not allowed once new tails are discharged to the TSF.
 - 1.2.1.2 Only wastewater from the TSF and Main sump shall be land applied.
 - 1.2.1.3 Only department-approved spray evaporators may be used for the land application of wastewater, and these units must only be operated with the blower fans running. This maximizes evaporation and misting while helping to prevent the development of subsurface saturated zones and groundwater flow downgradient.
 - 1.2.1.4 To combat the promotion of surface runoff, the spray evaporators must be operated so the spray applications do not overlap on the ground surface.

- 1.2.1.5 Spray evaporators and associated equipment shall be inspected at least twice daily allowing timely responses to malfunctions and minimizing any associated uncontrolled runoff or discharge. A record must be kept and initialed each inspection by an employee with any comments noted regarding the piping, pumps, nozzles, and blower fans. This record shall be available to department upon request.
- 1.2.1.6 Land application during freezing conditions is allowed as long as the equipment is operational and appreciable accumulation of snow does not occur. The land application must be halted if observable snow accumulation does not melt and infiltrate within 24 hours.
- 1.2.1.7 When there is potential for freezing temperatures overnight, the permittee must safely drain piping and the spray evaporators.
- 1.2.1.8 During heavy rain when the potential is great for the spray evaporators to contribute to ground saturation or runoff, application must be halted.
- 1.2.1.9 Application must not adversely impact vegetation. If any stress or evidence of adverse impact to the vegetation is detected, application must be halted and the department must be notified according to Section 1.7.1.
- 1.2.1.10 Spray evaporators must be operated in a manner that ensures the disposal area is used, thus avoiding subsurface saturated zones of significant length from developing down-gradient. The permittee shall keep a record of the location of each spray evaporator, dates and hours of operation, and dates that units were rotated to different areas. These records shall be available to the department upon request.
- 1.2.1.11 Creating ponds, spongy soaked ground, or surface runoff via land application of wastewater is prohibited. If during a twice daily equipment inspection, ponding, spongy soaked ground, or surface runoff is noted, spray evaporator(s) shall be moved to a different area.
- 1.2.1.12 Contributing to groundwater flow downgradient of A3 is prohibited.
 - 1.2.1.12.1 DC3 and historic ditches along the A3 hillside shall be inspected once each day of operation for signs of seepage along the ditch walls. When seepage is noted, application shall stop and the spray evaporator(s) shall be moved to a different area. When seepage along a ditch wall continues for more than three days, all application shall stop until the seepage stops. The permittee shall keep a record of all ditch inspections and take photographs of any noted seepage. These records shall be available to department upon request.

1.2.1.12.2 The three test wells installed for conducting hydrogeologic characterization for the land application feasibility study shall be monitored every two days to determine if a water table is developing. These dry wells are located at the toe of the slope and indicate development of downgradient groundwater flow that could flow off the A3 area. When a groundwater table is encountered in these test wells, land application shall stop and the department shall be notified according to Section 1.7.1. Any water in these wells shall be sampled weekly for the same parameters as required for the monitoring wells down-gradient of the TSF, and the results will be reported to department within seven days of receipt of the lab results. These monitoring records shall be available to department upon request.

1.2.2 Activities at the site which will cause a greater amount of waste material to be disposed of, above that contemplated in this section of the permit, are prohibited without the prior approval by the department.

1.2.3 The department may set or modify permit conditions based on monitoring results or changes in facility processes, after consultation with the permittee, in accordance with permit amendment or modification procedures.

1.3 SITE MAINTENANCE

1.3.1 Information on changes to the evaporators; new sources of water to be discharged; changes in source water chemistry that may impact the surface water, groundwater, or vegetation; and changes to the groundwater monitoring well system must be submitted to the department and approval must be obtained prior to any such changes.

1.3.2 The permittee shall design all piping to allow for routine inspections for leaks.

1.3.3 The permittee shall develop the site in accordance with the plans submitted in the application as required by this permit and approved by the department, and approved amendments to those plans. Pollution prevention concepts shall be incorporated into operations plans for the project.

1.4 SITE CONSTRUCTION AND OPERATION

1.4.1 The permittee shall minimize run-on water from entering the A3 land application area from upgradient sources of surface and groundwater.

1.4.2 The permittee shall control and treat surface water, groundwater, and leachate as necessary to prevent off-site water quality exceedences, and shall not allow wastewater applied to the A3 land application area to flow off.

1.4.3 The permittee shall submit plans to the department, at least 60 days before construction of a modification, and receive department approval of any changes that will significantly modify the quality or quantity of a discharge, significantly modify the operation of a waste treatment component, or significantly modify the

disposal facilities.

1.5 LAND APPLICATION OF WASTEWATER

- 1.5.1 Waste authorized to be land applied under this permit is limited to wastewater from the TSF and Main sump.
- 1.5.2 Upon meeting the conditions above and all other permit conditions, the wastewater may be disposed of by dispersal to the A3 land application area in a manner that will minimize runoff, prevent erosion, and promote absorption.
- 1.5.3 Land application shall not occur during saturated soil conditions.
- 1.5.4 The land application of wastewater shall not result in a direct overland discharge to surface waters. Visual inspections shall be conducted twice daily, according to Condition 1.2.1.5 when wastewater is being land applied to ensure that runoff from the land application is not occurring.

1.6 MONITORING

- 1.6.1 The Final Temporary Closure Plan dated February 20, 2009, revised on June 26, 2009 and April 26, 2010, and approved by the department, is incorporated into this permit. Future department-approved changes to project monitoring will be included as modifications to the Final Temporary Closure Plan and do not require reissuance or modification of this permit.
- 1.6.2 The land application area, A3, is directly uphill from contained water in the TSF pond, which is directly upgradient of the TSF seepage collection system and Main sump. Any negative impacts resulting from land application are best detected in monitoring wells below the TSF seepage collection system, i.e. MW06-08a, MW06-08b, MW06-09a, MW06-09b, and MW06-10a.

1.6.3 Exceedance of any value in Table 1 by a water sample from a TSF monitoring well triggers corrective actions according to Section 1.8.

Table 1: Upper Tolerance Limit Concentrations Triggering Corrective Actions in Section 1.8

Parameter ¹	Units	Location				
		MW06-08a	MW06-08b	MW06-09a	MW06-09b	MW06-10a
antimony*	µg/L ²	1.2	1.0	1.0	1.0	6.9
copper	µg/L	1.5	2.0	1.5	1.5	1.5
cyanide, WAD ³	µg/L	5.2	5.2	5.2	5.2	5.2
molybdenum	µg/L	10.0	10.0	10.0	10.0	10.0
nickel	µg/L	5.0	5.0	5.0	5.0	5.0
nitrate + nitrite as N	mg/L ⁴	0.12	0.27	0.17	0.23	0.13
potassium	mg/L	0.85	0.50	0.95	0.71	0.96
sodium	mg/L	4.0	3.0	5.5	4.0	4.7
sulfate	mg/L	50	30	50	53	30
total dissolved solids	mg/L	350	200	350	300	300

1.6.4 According to the Final Temporary Closure Plan, monitoring of water quality in the TSF pond, Main sump and TSF monitoring wells shall be sampled and analyzed each calendar quarter.

1.6.5 Well water samples shall be analyzed for Profile 2 parameters and surface and ditch water samples shall be analyzed for Profile 3 parameters as listed in appendix D of the Final Temporary Closure Plan.

1.6.6 Daily visual monitoring of land applied wastewater, during periods of land application, to ensure the runoff is not occurring and that vegetation is not adversely affected shall be conducted for compliance with Sections 1.2.1.5, 1.2.1.9, 1.2.1.10, 1.2.1.11, 1.2.1.12, 1.5.2, 1.5.3, and 1.5.4.

1.6.7 The Quality Assurance Project Plan (QAPP) approved by the department under the temporary closure plan remains in effect for this land application. The permittee shall update and maintain the QAPP to include the following:

¹ Measure total and dissolved concentrations for metals with an asterisk, *.

² micrograms per liter

³ weak acid dissociable

⁴ milligrams per liter

- 1.6.7.1 Adhere to conditions in the department-approved Rock Creek Project QAPP Quality Control and Quality Assurance Objectives sections. The QAPP will reflect the current sampling program for the land application of wastewater. Any significant changes in the QAPP procedures shall be submitted to the department for approval.
- 1.6.7.2 Ensure samples are analyzed by a laboratory that follows EPA-approved procedures, quality control requirements, reporting and documentation procedures. The QAPP, containing quality control procedures and criteria, analytical methods, detection limits and reporting requirements pertinent to the permit holder's samples, shall be submitted to the department for approval and must be updated annually and whenever changes to methods or changes in the laboratories used occur.
- 1.6.7.3 Analyze collected samples using methods set out in EPA-600/4-79-020 Methods for Chemical Analysis of Water and Wastes; EPA-600/4-82-057 Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater; Standard Methods for the Examination of Water and Wastewater (edition in effect at the time of sampling); or other methods approved by the department. Each result must be accompanied by a reference, such as the method number, to the method that was used to perform the analysis.
- 1.6.8 Samples taken as required by Section 1.6.1 shall be analyzed in conformance with the most recent Final Temporary Closure Plan and QAPP submitted by the permittee as approved by the department.
- 1.6.9 A sample from any groundwater well or surface water monitoring location that has a positive result for cyanide concentration shall be reported to the department as soon as possible, but no later than the end of the next working day. Resampling for sample confirmation shall be performed as soon as practicable.
- 1.6.10 The permittee shall maintain a log of all wastes applied to the land under this permit. The log shall include the date of disposal, estimated volume of waste and a description of the waste. A summary shall be included in the annual report required in Section 1.7.
- 1.6.11 Maintenance of inspection and sampling logs and procedures for processing, consolidating and reporting inspection and sampling data shall be in conformance with the most recent Final Temporary Closure Plan and QAPP submitted by the permittee as approved by the department.
- 1.6.12 The department may modify monitoring requirements, including the establishment of additional compliance points in response to trends showing changes in the concentration of parameters being monitored.

- 1.6.13 If the permittee monitors any influent, effluent, receiving water, air or solid waste characteristic in addition to those identified in this permit, or more frequently than required, the results of such monitoring shall be available for inspection by the Commissioner or his/her representative at the project site, or other location proposed by the permittee and agreed upon by the department. The permittee shall provide copies of the results to the department upon request.

1.7 REPORTING

- 1.7.1 If a violation of Alaska Water Quality Standards is detected at a surface water or groundwater monitoring location, or if an exceedance of the limits set out in Sections 1.2 or 1.6 is detected, the permittee shall verbally notify the department no later than the end of the next State of Alaska working day after receipt of monitoring results, and shall conduct corrective actions according to Section 1.8.3.
- 1.7.2 For sample collection and analysis, the permittee shall submit to the department quarterly monitoring reports, for a total of three quarterly reports each year and one annual monitoring report, which includes the fourth quarter monitoring data, summarizing the inspection and monitoring results set out in Section 1.6.
- 1.7.2.1 All quarterly reports shall be submitted to the department no later than 60 days after the last day of the quarter.
- 1.7.2.2 The annual report will be due annually by March 1st and will summarize the preceding calendar year.
- 1.7.2.3 Electronic copies of data and reports shall be submitted in a department-approved format.
- 1.7.2.4 Quarterly and annual reports shall include a section on land application of wastewater that provides
- 1.7.2.4.1 the total volume of land applied water,
 - 1.7.2.4.2 a map indicating areas of application,
 - 1.7.2.4.3 the area over which wastewater was land applied,
 - 1.7.2.4.4 the hydraulic load per acre during the quarter, and
 - 1.7.2.4.5 the cumulative hydraulic load per acre from land application of wastewater, and
 - 1.7.2.4.6 visual and water quality monitoring results.
- 1.7.3 Quarterly and annual reports required in Section 1.7.2 shall include information necessary to determine data validity, data variations and trends, and any exceedance of limits contained in this permit, water quality standards or criteria (see Section 1.1.2). All records and information which validate the QAPP, resulting from the monitoring activities required by this permit, including but not limited to all records of analyses performed, calibration and maintenance of

instrumentation, and recordings from continuous monitoring instrumentation, shall be retained in Alaska for observation by the department for five years. Upon request from the department, the permittee shall submit certified copies of such records. The department may at its discretion perform field and laboratory audits of monitoring activities.

- 1.7.4 Notifications and reporting as required under this permit shall be submitted to the department at the following address:

Department of Environmental Conservation
Division of Water
610 University Avenue
Fairbanks, Alaska 99709-3643

Phone: (907) 451-2136

Knowingly making a false statement, by the permittee, the operator or other employees, including contractors, on any such report may result in the imposition of criminal penalties as provided for under AS 46.03.790.

1.8 CORRECTIVE ACTIONS

- 1.8.1 The permittee shall comply with 18 AAC 60.815 if the visual monitoring program discovers damage or potential damage to the waste disposal-related facility that could lead to water quality violations.
- 1.8.2 The permittee shall comply with 18 AAC 60.820-860 if a statistically significant increase above background in water quality in any of the groundwater sampling locations is detected. Statistical significance shall be determined using one of the methods outlined in 18 AAC 60.830(h) and performance standards outlined in 18 AAC 60.830(i). The permittee shall comply with the notification requirements in 18 AAC 850(c) upon determination of a statistically significant increase above background water quality.
- 1.8.3 If a violation of water quality standards is detected at a surface water or groundwater monitoring station, or if an exceedence of the limits set out in Sections 1.2 and 1.6.3 is detected, the permittee shall:
- 1.8.3.1 Verbally notify the department within 24 hours of receipt of monitoring results.
 - 1.8.3.2 Determine the extent of the exceedence.
 - 1.8.3.3 In consultation with the department and documented in writing, implement a plan to determine the cause and/or source of the exceedence.

1.8.3.4 Submit to the department, within seven working days after an exceedence is verified by the permittee, a plan for corrective actions to prevent adverse environmental impacts and further exceedences of applicable water quality standards or permit limits.

1.8.3.5 Implement the corrective action plan as approved by the department.

1.9 TEMPORARY CLOSURE

1.9.1 During temporary closure of the site, the permittee shall:

1.9.1.1 Continue pollution control activities associated with the land application area, including but not limited to, maintenance of the drainage diversion structures, maintenance of all runoff control structures and processes, and maintenance of the monitoring wells as specified by this permit or the temporary closure plan.

1.9.1.2 Continue monitoring and reporting activities of all active portions of the site as specified by this permit and the Final Temporary Closure Plan dated February 20, 2009, revised on June 26, 2009, and April 26, 2010.

1.9.1.3 Complete reclamation and corrective action requirements as appropriate under the Reclamation Plan in light of the nature of the closure.

2. GENERAL PERMIT CONDITIONS

2.1 ACCESS AND INSPECTION

The permittee shall allow the Commissioner or his/her representative access to the permitted facility at reasonable times to conduct scheduled or unscheduled inspections or tests to determine compliance with this permit, state laws, and regulations.

2.2 INFORMATION ACCESS

Except where protected from disclosure by applicable State or Federal law, all records and reports submitted in accordance with the terms of this permit shall be available for public inspection at the Department of Environmental Conservation, 610 University Ave., Fairbanks, Alaska 99709.

2.3 CIVIL AND CRIMINAL LIABILITY

Nothing in this permit shall relieve the permittee from any potential civil or criminal liability for noncompliance with the permit or with applicable laws.

2.4 AVAILABILITY

The permittee shall post or maintain a copy of this permit available to the public at the facility.

2.5 ADVERSE IMPACT

The permittee shall take all necessary means to minimize any adverse impacts to the receiving waters or lands resulting from noncompliance with any limitation specified in this permit, including any additional monitoring needed to determine the nature and impact of the noncomplying activity. The permittee shall cleanup and restore all areas adversely impacted by the noncompliance.

2.6 CULTURAL OR PALEONTOLOGICAL RESOURCES

Should cultural or paleontological resources be discovered as a result of this activity, work, which would disturb such resources, is to be stopped, and the State Historic Preservation Office, Division of Parks and Outdoor Recreation, Department of Natural Resources (907-269-8721), is to be notified promptly.

2.7 APPLICATIONS FOR RENEWAL

In accordance with 18 AAC 15.100(d), an application for renewal or amendment of this permit must be made no later than 30 days before the expiration date of the permit or the planned effective date of the amendment.

2.8 OTHER LEGAL OBLIGATIONS

This permit does not relieve the permittee from the duty to obtain any other necessary permits from the department or from other local, state, or federal agencies, and to comply with the requirements contained in any such permits. All activities conducted, and all plans implemented by the permittee pursuant to the terms of this permit, shall comply with all applicable local, state, and federal laws and regulations.

2.9 TRANSFER OF OWNERSHIP

In the event of any change in control or ownership of the permitted facility, the permittee shall notify the succeeding owner or controller of the existence of this permit by letter, a copy of which shall be forwarded to the Director of the Division of Water. The original permittee remains responsible for permit compliance unless and until the succeeding owner or controller agrees in writing to assume such responsibility, and the department approves assignment of the permit. The department will not unreasonably withhold such approval.

As between the State and the permittee, no transfer of this permit shall relieve the permittee of any liability arising out of operations conducted prior to such transfer, regardless of whether such liability accrues before or after such transfer.

2.10 POLLUTION PREVENTION

In order to prevent and minimize present and future pollution, when making management decisions that effect waste generation, the permittee shall consider the following order of priority options as outlined in AS 46.06.021:

- waste source reduction,
- recycling of waste,
- waste treatment, and
- waste disposal

3. FACILITY MAP

