



STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

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C. L. "Butch" Otter, Governor
Curt A. Fransen, Director

January 27, 2015

Mr. Bert Doughty
Environmental Manager
Thompson Creek Mining Company
PO Box 600
Challis, Idaho 83226

RE: NWW-2008-00579 Thompson Creek Mine Expansion FINAL Section 401 Water Quality Certification

Dear Mr. Doughty:

Enclosed is the Final Section 401 water quality certification and antidegradation analysis for the above referenced project.

A public comment period occurred from January 5 to January 26, 2014. During that period the Idaho Department of Environmental Quality (DEQ) received no comments on the proposed project. Therefore, DEQ is issuing the FINAL Section 401 water quality certification for the above referenced project.

If Thompson Creek Mining Company complies with the terms and conditions of the Section 404 permit along with the conditions set forth in this water quality certification, then there is reasonable assurance the activity will comply with the acceptable requirements of Sections 301, 302, 303, 306 and 307 of the Clean Water Act, the Idaho Water Quality Standards (IDAPA 58.01.02) and other appropriate water quality requirements of state law.

If you have any further questions or concerns, please contact me at 208.528.2650 or troy.saffle@deq.idaho.gov

Sincerely,

A handwritten signature in black ink, appearing to read "T. Saffle", written over a white background.

Troy Saffle
Regional Manager

c: Greg Martinez, ACOE, Boise Operations Office
Stephen Berry, DEQ, TRIM Reference



Idaho Department of Environmental Quality Final §401 Water Quality Certification

January 27, 2015

404 Permit Application Number: NWW-2008-00579

Applicant/Authorized Agent: Thompson Creek Mining Company/Bert Doughty

Project Location: The proposed project will be located as follows: Bruno Creek, West Fork Bruno Creek and unnamed tributaries are within portions of Section 1, Township 11 North, Range 16 East and portions of Sections 25 and 36, Township 12 North, Range 16 East; Mill Creek is within portions of Section 1, Township 11 North, Range 16 East and Section 6, Township 11 North, range 17 East; Pat Hughes Creek and Squaw Creeks are within Sections 11 and 14, Township 11 North, Range 16 East in Custer County, near Clayton, Idaho.

Receiving Water Bodies: Bruno Creek, West Fork Bruno Creek, unnamed tributaries to Bruno Creek, Mill Creek, Pat Hughes Creek, Squaw Creek

Pursuant to the provisions of Section 401(a)(1) of the Federal Water Pollution Control Act (Clean Water Act), as amended; 33 U.S.C. Section 1341(a)(1); and Idaho Code §§ 39-101 et seq. and 39-3601 et seq., the Idaho Department of Environmental Quality (DEQ) has authority to review activities receiving Section 404 dredge and fill permits and issue water quality certification decisions.

DEQ has reviewed the facts and the figures presented in the public notice and joint application for permit for the above-referenced activity. DEQ has also reviewed and considered other material and information related to the proposed activity, including:

1. The Preliminary Final Environmental Impact Statement (PFEIS) dated September 2014;
2. Technical Report – Water Resources (JBR, 2013); and
3. Technical Report – Fish and Aquatic Resources (JBR, 2014, revised)

Based upon its review and consideration of the information listed above, DEQ certifies that if the permittee(s) comply with the terms and conditions imposed by the above-referenced permit, along with the conditions set forth in this water quality certification, then there is reasonable assurance the activity will comply with the applicable requirements of Sections 301, 302, 303, 306, and 307 of the Clean Water Act, the Idaho Water Quality Standards (WQS) (IDAPA 58.01.02), and other appropriate water quality requirements of state law.

This certification does not constitute authorization of the permitted activities by any other state or federal agency or private person or entity. This certification does not excuse the permit holder from the obligation to obtain any other necessary approvals, authorizations, or permits.

Project Description

Thompson Creek Mining Company (TCMC) proposes to expand its existing operations which will impact the six streams identified below. All of the streams are already impacted by previous mining operations approved through a Plan of Operations for TCMC. The proposed actions include:

Bruno Creek, West Fork Bruno Creek, Mill Creek and unnamed Tributaries: These streams will be permanently inundated with mining tailings and fill for approximately 3,215 linear feet, up to an elevation of 7752' above mean sea level (amsl) compared to its currently approved elevation of 7,724' amsl. These actions represent the preferred alternative known as Alternative M2 in the existing PFEIS. Mill Creek is identified in the 404 application as an unnamed tributary within the Bruno Creek AU but locally referred to as Mill Creek. Mill Creek will also be impacted through the raising of the tailings impoundment. Approximately 4,397 linear feet of stream will be permanently inundated.

Pat Hughes Creek: Pat Hughes Creek will be impacted through the expansion of the Pat Hughes Waste Rock dump, a repository for rock which does not contain any commercially viable molybdenum. Approximately 3,029 linear feet of stream will be permanently filled.

Squaw Creek: Squaw Creek will serve as part of the TCMC mitigation plan for the other proposed actions. TCMC intends to restore approximately 100' linear feet of eroding streambank, as well as other restoration actions such as fencing and wetland construction which do not require water quality certification.

Antidegradation Review

The WQS contain an antidegradation policy providing three levels of protection to water bodies in Idaho (IDAPA 58.01.02.051).

- Tier 1 Protection. The first level of protection applies to all water bodies subject to Clean Water Act jurisdiction and ensures that existing uses of a water body and the level of water quality necessary to protect those existing uses will be maintained and protected (IDAPA 58.01.02.051.01; 58.01.02.052.01). Additionally, a Tier 1 review is performed for all new or reissued permits or licenses (IDAPA 58.01.02.052.07).
- Tier 2 Protection. The second level of protection applies to those water bodies considered high quality and ensures that no lowering of water quality will be allowed unless deemed necessary to accommodate important economic or social development (IDAPA 58.01.02.051.02; 58.01.02.052.08).
- Tier 3 Protection. The third level of protection applies to water bodies that have been designated outstanding resource waters and requires that activities not cause a lowering of water quality (IDAPA 58.01.02.051.03; 58.01.02.052.09).

DEQ is employing a water body by water body approach to implementing Idaho's antidegradation policy. This approach means that any water body fully supporting its beneficial uses will be considered high quality (IDAPA 58.01.02.052.05.a). Any water body not fully supporting its beneficial uses will be provided Tier 1 protection for that use, unless specific

circumstances warranting Tier 2 protection are met (IDAPA 58.01.02.052.05.c). The most recent federally approved Integrated Report and supporting data are used to determine support status and the tier of protection (IDAPA 58.01.02.052.05).

Bruno Creek (including West Fork Bruno Creek, Mill Creek and unnamed Tributaries).

Pollutants of Concern

The primary pollutant of concern for this project is sediment. As part of the Section 401 water quality certification, DEQ is requiring the applicant comply with various conditions to protect water quality and to meet Idaho WQS, including the water quality criteria applicable to sediment. As TCMC processes ore, waste materials are pumped into the tailings impoundment for permanent storage. Under the preferred alternative sections of the PFEIS, all tributaries will be permanently inundated with mine tailings, up to a specific elevation. As part of the final reclamation of the mine, the streams will be captured above the proposed final elevation and routed across the reclaimed tailing impoundment for discharge into lower Bruno Creek.

Receiving Water Body Level of Protection

This project is located within the Upper Salmon Subbasin assessment unit (AU) ID17060201SL026_02 (Bruno Creek – source to mouth). This AU has not yet been designated. Because DEQ presumes most waters in the state will support cold water aquatic life and primary or secondary contact recreation beneficial uses, undesignated waters are protected for these uses (IDAPA 58.01.02.101.01.a). There is no available information indicating the presence of any existing beneficial uses aside from those that are protected as presumed uses.

The cold water aquatic life use in the Bruno Creek AU is not fully supported due to excess combined biota/habitat modifications (2012 Integrated Report). DEQ determined the contact recreation beneficial use is fully supported through monitoring in 1996 and 1997. This data was assessed in 2002, the last time new data was presented for assessment. As such, DEQ will provide Tier 1 protection only for the aquatic life use and Tier 2 protection, in addition to Tier 1, for the recreation beneficial use (IDAPA 58.01.02.051.02; 58.01.02.051.01).

Protection and Maintenance of Existing Uses (Tier 1 Protection)

As noted above, a Tier 1 review is performed for all new or reissued permits or licenses, applies to all waters subject to the jurisdiction of the Clean Water Act, and requires demonstration that existing uses and the level of water quality necessary to protect existing uses shall be maintained and protected. The numeric and narrative criteria in the WQS are set at levels that ensure protection of designated beneficial uses.

During the mine operation, Bruno Creek will be diverted around the Tailings Impoundment, and then returned to its channel downstream of the Tailings Impoundment. After final reclamation, Bruno Creek flow will return to a constructed channel across the reclaimed Tailings Impoundment and eventually reconnecting with historic channel and flowing into Squaw Creek. TCMC will employ Best Management Practices (BMPs) to prevent or minimize increases in sediment and turbidity in the diverted and final channel of Bruno Creek. These BMPs will assure compliance with the narrative and numeric WQS related to sediment. Existing uses will

further be protected in the portions of Bruno Creek not being inundated with tailings material since all materials are pumped into the impoundment from the face of the impoundment dam, gradually raising the elevation of material permanently deposited in Bruno Creek. As long as the project is conducted in accordance with the provisions of the project plans, Section 404 permit, and conditions of this certification, then there is reasonable assurance the project will comply with the state's numeric and narrative criteria. These criteria are set at levels that protect and maintain designated and existing beneficial uses.

There is no available information indicating the presence of any existing beneficial uses aside from those that are already designated and discussed above; therefore, the permit ensures that the level of water quality necessary to protect both designated and existing uses is maintained and protected in compliance with IDAPA 58.01.02.051.01 and 58.01.02.052.07.

High-Quality Waters (Tier 2 Protection)

The Bruno Creek AU is considered high quality for contact recreation. As such, the water quality relevant to contact recreation uses of the Bruno Creek must be maintained and protected, unless a lowering of water quality is deemed necessary to accommodate important social or economic development.

To determine whether degradation will occur, DEQ must evaluate how the permit issuance will affect water quality for each pollutant that is relevant to secondary contact recreation uses of Bruno Creek (IDAPA 58.01.02.052.06). The only pollutant of concern for this project is sediment which is not relevant to recreational uses. Therefore, this project will not result in a lowering of water quality with respect to any pollutant relevant to the Tier 2 protection for this water body. As such, the project complies with IDAPA 58.01.02.051.02 and IDAPA 58.01.02.052.08.

Pat Hughes Creek

Pollutants of Concern

The primary pollutant of concern for this project is sediment. However, the waste rock storage facility in the Pat Hughes drainage is the primary repository for acid generating waste rock. Therefore, sulfate and metals are also of concern.

Receiving Water Body Level of Protection

This project is located within the Upper Salmon Subbasin assessment unit (AU) ID17060201SL029_02 (Pat Hughes Creek – source to mouth). This AU has not yet been designated or assessed. Because DEQ presumes most waters in the state will support cold water aquatic life and primary or secondary contact recreation beneficial uses, undesignated waters are protected for these uses (IDAPA 58.01.02.101.01.a). There is no available information indicating the presence of any existing beneficial uses aside from those that are already protected as presumed uses.

The cold water aquatic life use and contact recreation beneficial use in this AU have not been assessed (2012 Integrated Report). Unassessed waters are provided an appropriate level of protection on a case-by-case basis using available information. (IDAPA 58.01.02.052.05.b)

Currently, much of the Pat Hughes watershed and channel are occupied by the waste rock storage facility (WRSF). The flow of Pat Hughes is captured above the WRSF and routed around the WRSF to the sedimentation pond below the facility. Downstream of the WRSF surface water runoff is collected in the sedimentation pond. Seepage is also collected below the WRSF. The collected water is either discharged to Thompson Creek pursuant to an existing NPDES permit or reused in the mill. Thus, any water below the WRSF is handled as part of the mines water management system. Based upon this information, DEQ has determined that Pat Hughes Creek does not currently support aquatic life or recreational uses, and is afforded only Tier 1 antidegradation protection.

Protection and Maintenance of Existing Uses (Tier 1 Protection)

As noted above, a Tier 1 review is performed for all new or reissued permits or licenses, applies to all waters subject to the jurisdiction of the Clean Water Act, and requires demonstration that existing uses and the level of water quality necessary to protect existing uses shall be maintained and protected. The majority of the natural drainage of the Pat Hughes Creek has been filled and is used by the TCMC as a WRSF. The proposed project will fill in 3,029 linear feet of that portion of Pat Hughes Creek channel that is not already used as a part of the WRSF. Seepage and surface water runoff is captured and under the expansion will continue to be captured below the WRSF. TCMC will relocate the water management system. The system currently installed will be moved lower downstream in Pat Hughes Creek, below the proposed expansions new area of impact. Water captured below the WRSF is then only released to Thompson Creek in accordance with a NPDES permit, under which all pollutants must meet Water Quality Criteria. In this way, the expansion of the WRSF in the Pat Hughes drainage will be accomplished in a manner consistent with the numeric and narrative criteria in the WQS which are set at levels that ensure protection of designated beneficial uses. Therefore, the permit ensures that the level of water quality necessary to protect both designated and existing uses is maintained and protected in compliance with IDAPA 58.01.02.051.01 and 58.01.02.052.07.

Squaw Creek

Pollutants of Concern

The primary pollutant of concern for this project is sediment. As part of the Section 401 water quality certification, DEQ is requiring the applicant comply with various conditions to protect water quality and to meet Idaho WQS, including the water quality criteria applicable to sediment.

Receiving Water Body Level of Protection

This project is located on Squaw Creek within the Upper Salmon assessment unit (AU) ID17060201SL021_04 (Squaw Creek – Cash Creek to mouth). This AU has the following designated beneficial uses: Cold water aquatic life, salmonid spawning and secondary contact recreation. There is no available information indicating the presence of any existing beneficial uses aside from those that are already designated.

The cold water aquatic life use in the Squaw Creek AU is fully supporting cold water aquatic life and salmonid spawning uses (2012 Integrated Report). The secondary contact recreation beneficial use is also fully supported. As such, DEQ will provide Tier 2 protection of the aquatic life use, salmonid spawning and recreation beneficial use (IDAPA 58.01.02.051.02; 58.01.02.051.01).

Protection and Maintenance of Existing Uses (Tier 1 Protection)

As noted above, a Tier 1 review is performed for all new or reissued permits or licenses, applies to all waters subject to the jurisdiction of the Clean Water Act, and requires demonstration that existing uses and the level of water quality necessary to protect existing uses shall be maintained and protected.

As part of the mitigation proposed by TCMC, 5 cubic yards of dirt fill and fiber rolls will be discharged in Squaw Creek to repair bank damaged by erosion. The restoration of eroding banks is intended to secure long-term water quality improvement. The WQS provide that changes in water quality may be allowed without an antidegradation review where determined necessary to secure long-term water quality improvement through restoration projects designed to trend toward natural characteristics and associated uses to a water body where those characteristics and uses have been lost or diminished. (IDAPA 58.01.02.052.02). DEQ believes the Squaw Creek mitigation work qualifies as a restoration project, intended to improve water quality, and therefore may be allowed without an antidegradation review.

Although the Squaw Creek work may be allowed without an antidegradation review, the work will be done in a manner that complies with WQS and therefore supports and maintains existing uses. Both the narrative sediment criterion and the numeric criterion for turbidity will not be violated during construction activities on Squaw Creek.

During the construction phase, the applicant will implement, install, maintain, monitor, and adaptively manage BMPs directed toward reducing erosion and minimizing turbidity levels in receiving water bodies downstream of the project. Specific BMPs are outlined in the “Conditions Necessary to Ensure Compliance with Water Quality Standards or Other Appropriate Water Quality Requirements of State Law” found below.

In addition, through the actions described in the application, some sections of Squaw Creek’s eroding banks will be restored and land use changes will occur. These actions will minimize or prevent future sediment contributions from the project area. As long as the project is conducted in accordance with the provisions of the project plans, Section 404 permit, and conditions of this certification, then there is reasonable assurance the project will comply with the state’s numeric and narrative criteria

There is no available information indicating the presence of any existing beneficial uses aside from those that are already designated and discussed above; therefore, the permit ensures that the level of water quality necessary to protect both designated and existing uses is maintained and protected in compliance with IDAPA 58.01.02.051.01 and 58.01.02.052.07.

High-Quality Waters (Tier 2 Protection)

The Squaw Creek AU is considered high quality for cold water aquatic life, salmonid spawning and contact recreation. As such, the water quality relevant to cold water aquatic life, salmonid spawning and contact recreation uses of the Squaw Creek AU must be maintained and protected, unless a lowering of water quality is deemed necessary to accommodate important social or economic development.

As noted above, DEQ believes the mitigation work constitutes a restoration project that may be allowed without an antidegradation review. Nevertheless, DEQ has reviewed the work to determine whether it is consistent with Tier 2 antidegradation provisions.

To determine whether degradation will occur, DEQ must evaluate how the permit issuance will affect water quality for each pollutant that is relevant to cold water aquatic life, salmonid spawning and contact recreation uses of the Squaw Creek (IDAPA 58.01.02.052.06. The only pollutant of concern for this project is sediment which is not relevant to recreational uses. Therefore DEQ determines no lowering of water quality will occur with respect to recreational uses.

The actions proposed for Squaw Creek are intended to restore stream function and fish use and are intended as mitigation for on-going and future mine impacts. The project will implement common streambank stabilizing techniques and land management changes to improve the cold water aquatic life and salmonid spawning designated uses. Additionally, the project will comply with the terms outlined below in the, "Conditions Necessary to Ensure Compliance with Water Quality Standards or Other Appropriate Water Quality Requirements of State Law". DEQ believes the Squaw Creek mitigation work will result in water quality improvements rather than degradation.

Therefore, this project will not result in a lowering of water quality with respect to sediment pollution related to the Tier 2 protection for cold water aquatic life or salmonid spawning for this water body. As such, the project complies with IDAPA 58.01.02.051.02 and IDAPA 58.01.02.052.08

Conditions Necessary to Ensure Compliance with Water Quality Standards or Other Appropriate Water Quality Requirements of State Law

General Conditions

1. This certification is conditioned upon the requirement that any modification (e.g., change in BMPs, work windows, etc.) of the permitted activity shall first be provided to DEQ for review to determine compliance with Idaho WQS and to provide additional certification pursuant to Section 401. Such modifications may not be implemented until DEQ has determined whether additional certification is necessary.
2. All work completed must be consistent with all approved Records of Decision, Plan of Operations and other authorized permits.

Fill Material

1. Fill material shall be shall be of the same a material previously approved by the Record of Decision. Waste rock shall be contained within the Pat Hughes waste rock storage facility. Mine tailings shall only be stored in the Bruno Creek watershed within the tailings impoundment.

In-water Work

1. Work in open water is to be kept at a minimum and only when necessary. Equipment shall work from an upland site to minimize disturbance of waters of the US. If this is not practicable, appropriate measures must be taken to ensure disturbance to the waters of the US is minimized.
2. Construction affecting the bed or banks shall take place only during periods of low flow.
3. Activities in spawning areas must be avoided to the maximum extent practicable.

Right to Appeal Final Certification

The final Section 401 Water Quality Certification may be appealed by submitting a petition to initiate a contested case, pursuant to Idaho Code § 39-107(5) and the “Rules of Administrative Procedure before the Board of Environmental Quality” (IDAPA 58.01.23), within 35 days of the date of the final certification.

Questions or comments regarding the actions taken in this certification should be directed to Troy Saffle, of the Idaho Falls Regional Office at 208.528.2650, troy.saffle@deq.idaho.gov.



Troy Saffle

Regional Manager

Idaho Falls Regional Office

sources:

“Technical Report –Aquatic Resources, Thompson Creek Mine EIS”, JBR May 2014 (revised)

“Technical Report – Water Resources, Thompson Creek Mine EIS”, JBR February 2013