



Report Date: August 27, 2017

File: 105719

Report Number: 061132

Chieftain Metals Inc.

c/o Grant Thornton, Ltd. (Court Appointed Receiver) 11th Floor, 200 King Street West, Box 11, Toronto, Ontario, M5X 1A4

Dear Chieftain Metals Inc

Re: An Investigation Referral, Permit 105719, Chieftain Metals Inc. - Tulsequah Chief Mine, Effluent

On July 12, 2017, Ministry of Environment and Climate Change Strategy, Environmental Protection Division staff conducted an inspection of your facility, Chieftain Metals Inc.'s Tulsequah Chief Mine located southwest of Atlin, B.C. with authorization number 105719 under the *Environmental Management Act*. Ministry staff were accompanied on site by Nathaniel Amann-Blake, Ministry of Energy, Mines and Petroleum Resources; Michael Olsen, Ministry of Energy, Mines and Petroleum Resources.

For your information, this inspection record is being referred to the Conservation Officer Service for investigation.

Inspection Details:

Requirement Description:	Environmental Management Act, Environmental Management Act 6 (3): Subject to subsection (5), a person must not introduce or cause or allow to be introduced into the environment, waste produced by a prescribed activity or operation.
Details/Findings:	During the onsite inspection of the Tulsequah Chief Mine site (Site) on July 12, 2017, Ministry of Environment and Climate Change Strategy (ENV) Officer Neil Bailey observed refuse including scrap metal, used oil containers, wood waste, white goods (freezers and stoves) and paint cans introduced into the environment at the barge landing area (see Photo 1). This introduction of refuse in the environment is considered "municipal solid waste management", a prescribed activity under Section 2(1) and Schedule 1(2) of the Waste Discharge Regulation. This discharge of waste into the environment is not authorized by permit 105719, or any other authorization.
Compliance:	Out
Actions to be taken:	Cease the unauthorized discharge of refuse.
Requirement Description:	Environmental Management Act, Hazardous Waste Regulation (63/88) (EMA) 2 (5): This regulation, except sections 17.1 and 46 (1), does not apply in relation to hazardous waste that is produced or accumulated in a quantity of less than 5 kilograms or 5 litres in a 30 day period.
Details/Findings:	The Site has been in care and maintenance since shutting down the Interim Acid Water Treatment Plant (IAWTP) on June 22, 2012. As no personnel were present on Site and no activities are currently occurring, there is less than 5 Litres of hazardous waste (waste oil) accumulating in a 30 day periods at present. Therefore, only sections 17.1 and 46(1) of the Hazardous Waste Regulation apply (see Photo 2).
Compliance:	Not Applicable
Actions to be taken:	It is recommended that hazardous wastes are stored using best management practices such being covered, stored in secondary containment, labelled and in closed containers.
Requirement Description:	Interim Acid Water Treatment Plant 1.1.1 1.1.1: The maximum authorized rate of discharge is 2640 m3/day. The average rate of discharge is 1200 m3/day.

Details/Findings:	The IAWTP has been shut down since June 22, 2012, and therefore this requirement is not applicable. There was no discharge of treated mine effluent from the plant at the time of the inspection.
Compliance:	Not Applicable
Actions to be taken:	No action required.
Requirement Description:	Interim Acid Water Treatment Plant Sludge Storage Pond 1.2.3 1.2.3: The authorized works include an exfiltration storage pond that is lined with filter cloth, adjacent to the airstrip, and related appurtenances.
Details/Findings:	The airstrip exfiltration storage pond was observed as part of this inspection. The exfiltration storage pond was located adjacent to the airstrip, and was lined with filter cloth. The pond was not in use at the time of this inspection (see Photo 10).
Compliance:	In
Actions to be taken:	No action required.
Requirement Description:	Bypasses 2.1: Any bypass of the authorized works is prohibited unless the approval of the Director is obtained and confirmed in writing.
Details/Findings:	The authorized works described in section 1.1.5 of the Permit include a water collection and conveyance system, pumps, an acid water treatment plant, a discharge line and outfall. Officer Bailey observed effluent flowing from the 5200 and 5400 level portals to the 5200 level exfiltration pond, overflowing from the exfiltration pond to the Tulsequah River foreshore - bypassing the Interim Acid Water Treatment Plant (see Photo 5). This is a prohibited bypass of the authorized works (IAWTP) where the Permittee failed to obtain the approval of the Director in writing. The pH of the discharge was measured at 3.58. The exfiltration pond was overflowing to the Tulsequah River at the time of this inspection, constituting a bypass of the approved works and therefore an unauthorized discharge. Samples were taken of this unauthorized discharge, and the effluent was found to be acutely toxic with a 96 hr LC50 (Rainbow trout) <6.25 v/v. The effluent was also found to be acutely toxic to Cerio daphnia (see Photos 2, 4, & 5). It should be noted that the additional bypass provisions included in section 3.6.1 of the Permit would not apply to this prohibited bypass of the IAWTP. Section 3.6.1 of the Permit applies to neutral pH water bypassing the IAWTP and diverted to Portal Creek.
Compliance:	Out
Actions to be taken:	The Permittee will remain in non-compliance with Permit 105719 until such a time as the unauthorized bypass of the Interim Acid Water Treatment Plant is ceased, and all effluent is discharged in accordance with the Permit.
Requirement Description:	Maintenance of Works and Emergency Procedures 2.3: The authorized works must be inspected regularly and maintained in good working order. In the event of an emergency or condition beyond the control of the Permittee which prevents effective operation of the authorized works or leads to an unauthorized discharge, the Permittee must take appropriate remedial action and notify the Director immediately. The Director may reduce or suspend operations to protect the environment until the authorized works have been restored, and/or corrective steps taken to prevent unauthorized discharges.
Details/Findings:	The authorized works described in section 1.1.5 of the Permit include a water collection and conveyance system, pumps, an acid water treatment plant, a discharge line and outfall. During the inspection on July 12, 2017, Officer Bailey observed the Portal Creek Diversion broken in places and has been crushed by rock above the 5200 portal, and the Portal Creek Diversion ditch outlined in the February 8, 2016 Compliance Plan is not being maintained. As a result, clean water is mixing with acid mine drainage and then flows through the waste rock piles to the 5200 level exfiltration pond (see Photos 6, 7, 8 & 9). The Permittee has failed to maintain the authorized works in good working order.

Compliance:	Out
Actions to be taken:	Ensure that the authorized works are inspected regularly and are maintained in good working order.
Requirement Description:	Construction of Treatment Plant Sludge Storage Pond 2.5: The treatment plant sludge pond shall be designed, constructed, maintained and modified (as necessary) by a qualified professional who is knowledgeable in mine water treatment plant sludge management. The works shall be located at least one metre above the high water table, 30 m from the nearest water body and constructed in a manner that prevents the escape of sludge.
Details/Findings:	The treatment plant sludge pond was observed to be more than 30 m from the nearest water body and was bermed to prevent the escape of sludge.
Compliance:	In
Actions to be taken:	No action required.
Requirement Description:	Neutral pH Water Diversion from the Underground 3.6.1 3.6.1: Uncontaminated groundwater from underground drill holes with characteristics better than or equal to that specified in section 1.1.3, may bypass the treatment plant and be diverted to Portal Creek.
Details/Findings:	The neutral pH mine water was sampled as part of this inspection. The pH was found to be 7.22, within the required discharge limits for discharge. However, the portal diversion was not conveying the neutral pH water flows at the time of this inspection. The flows were spilling over the rock dam spillway and flowing through waste rock mixing with acid mine drainage to the 5200 level exfiltration pond. The diversion ditch outlined in the February 8, 2016 Compliance Plan was blocked by rock fall, and not conveying the neutral water. Uncontaminated groundwater from underground drill holes is bypassing the treatment plant, but is not being diverted to Portal Creek. As a result, this requirement is not applicable.
Compliance:	Not Applicable
Actions to be taken:	Ensure that any flows diverted to Portal Creek meet the characteristics specified in section 1.1.3.
Requirement Description:	Groundwater Monitoring 3.7: The Permittee shall install groundwater wells and monitor groundwater quality in the vicinity of the sludge disposal area. The well locations and monitoring frequency are subject to the approval of the Director. The Permittee monitoring requirements may be extended or altered by the Director based on results of the monitoring program as well as any other data obtained by Ministry of Environment - Environmental Protection in connection with this site.
Details/Findings:	Groundwater monitoring results have not been reported since April 28, 2016. Therefore, as no quarterly or annual reports have been submitted, it is not possible to determine compliance with this requirement.
Compliance:	Not Determined
Actions to be taken:	Ensure that groundwater monitoring is being conducted in accordance with sections 4.1 and 4.2 of the Permit.
Requirement Description:	Discharge and receiving Environment Water Monitoring Program 4.1: The Permittee must undertake the following meteorological, hydrometric and water quality measurements, samples and analyses: (see attached pdf).
Details/Findings:	Discharge and receiving environment monitoring results have not been reported since April 28, 2016. Therefore, as no quarterly or annual reports have been submitted, it is not possible to determine compliance with this requirement.
Compliance:	Not Determined
Actions to be taken:	Ensure that the Discharge and Receiving Environment Monitoring Program is being conducted in accordance with sections 4.1 and 4.2 of the Permit.

Requirement Description:	Reporting of Monitoring Results 5.1: Field and lab monitoring results, including a summary of non-compliances and corrective actions taken, shall be submitted to the Regional Waste Manager, Environmental Protection or designate within 30 days of the end of the month in which the monitoring occurred. Submissions are to be in tabulated and/or graphical formats approved by the Director, and will include interpretation comments.
Details/Findings:	Discharge and receiving environment monitoring results have not been reported since April 28, 2016. October, 2016, April 2017 and May, 2017 monitoring results have not been submitted by December 30, 2016, May 30, 2017 and June 30, 2017 respectively.
Compliance:	Out
Actions to be taken:	Ensure all field and lab monitoring results are conducted in accordance with the approved Discharge and Receiving Environment Monitoring Program and are reported within 30 days of the end of the month in which the monitoring occurred.
Requirement Description:	Annual Report 5.7: The Permittee shall submit an annual report by March 31st of each year, with the first report submitted on March 31, 2013. The annual report shall include, but not be limited to: summaries of the operation of the treatment facilities and other pollution control works; the discharge quality and quantity; sludge quality and quantity; sampling and analytical requirements; analysis and interpretation of trends in environmental monitoring data, and recommendations for improvements to water management and pollution control works and monitoring programs.
Details/Findings:	The Permittee has failed to submit the 2016 annual report by March 31, 2017.
Compliance:	Out
Actions to be taken:	Immediately submit an annual report for 2017 that meets the minimum requirements outlined above.

Inspection Summary:

On July 12, 2017 Officers Neil Bailey and Kelly Mills conducted a planned, on-site inspection of Chieftain Metals Inc.'s Tulsequah Chief Mine located southwest of Atlin, BC to verify compliance with effluent discharge permit PE-105719 (Permit). We were accompanied on this inspection by Michael Olsen, Inspector, EMPR, and Nathaniel Amann-Blake, Executive Lead, EMPR.

The following observations were noted during this inspection:

- On September 13, 2016 notification was provided of a court order appointing Grant Thornton Ltd. as receiver of Chieftain Metals Inc. and Chieftain Metals Corp.
- The buildings on site showed signs of vandalism (break-ins);
- Suspected waste oil was observed in open, unlabeled containers at the barge landing (see Photo 2);
- The Interim Acid Water Treatment Plant (IAWTP) was not operational at the time of this inspection;
- There were no mine personnel on site, and no mine manager present at the time of this inspection;
- There was a small sludge storage pond installed northwest of the IAWTP, which was located less than 30 m from the Tulsequah River and is not part of the approved works;
- The Portal Creek Diversion was broken in places and has been crushed by rock above the 5200 portal;
- The 5200 level exfiltration pond was overflowing to the Tulsequah River at the time of this inspection.

The results of this July 12, 2017 onsite inspection are being referred to the Conservation Officer Service for Investigation. These non-compliances pose a potential moderate, temporary impact to the environment, and has been assessed as a Level 3 on the Levels of Escalating Environmental, Human Health or Safety Impacts on the Non-compliance Decision Matrix. The Category of Likelihood of Compliance was assessed as Category B - as indications of future and ongoing compliance are uncertain. A link to ENV's compliance and policy is found here:

http://www.env.gov.bc.ca/main/prgs/docs/ce_policy_and_procedure.pdf. It should be highlighted that the results of the last onsite inspection from September 26, 2016, have also been previously referred to the COS for investigation.

Compliance History:

2016-09-26 On-site inspection was referred to investigation for an unauthorized discharge resulting from an unauthorized by-pass of the approved works (IR#30389).

2015-10-15 An Advisory of Non-compliance was issued for an unauthorized bypass of the approved works (IR#23226).

2013-01-16 An Advisory of Non-compliance was issued for not monitoring in accordance with the Discharge and Receiving Environment Authorization Amendment (IR# 7795).

2012-12-06 A Notice of Non-Compliance was issued for a sludge pond seep (IR#7973).

2012-07-24 A Warning was issued for an unauthorized bypass of the water treatment plant (IR# 3204).

2012-05-11 An Advisory was issued for the accidental release of mine water (IR#1991).

Please be advised that this inspection report may be published on the provincial website within 7 days.

Please submit all annual/quarterly/monthly reports and data submissions to the Ministry's Routine Environmental Reporting Submission Mailbox at EnvAuthorizationsReporting@gov.bc.ca. More information about the reporting requirements may be found at <http://www2.gov.bc.ca/gov/content/environment/waste-management/waste-discharge-authorization/data-and-report-submissions/routine-environmental-reporting-submission-mailbox>.

Below are attachments related to this inspection.

If you have any questions about this letter, please contact the undersigned.

Yours truly,

Neil Bailey

Environmental Protection Officer

cc:

Attachments:

1) 2017-07-12 Photo Record - Tulsequah Chief.pdf 2017-07-12
Photo Log Tulsequah Chief PE-105719

Deliver via:

Email: Fax: Mail:
Registered Mail: Hand Delivery:

Ministry of Environment	Compliance Environmental Protection Division	Mailing Address: Bag 5000 3726 Alfred St Smithers BC V0J 2N0	Telephone: 250 847 7260 Facsimile: 250 847 7591 Website: www.gov.bc.ca/env
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DISCLAIMER:

Please note that sections of the permit, regulation or code of practice referenced in this inspection record are for guidance and are not the official version. Please refer to the original permit, regulation or code of practice.

To see the most up to date version of the regulations and codes of practices please visit

<http://www.bclaws.ca>

If you require a copy of the original permit, please contact the inspector noted on this inspection record or visit:

[http://www2.gov.bc.ca/gov/topic.page?id=DF89089126D042FD96DF5D8C1D8B1E41&title=Publically%20Viewable%20A
uthorizations](http://www2.gov.bc.ca/gov/topic.page?id=DF89089126D042FD96DF5D8C1D8B1E41&title=Publically%20Viewable%20A%20uthorizations)

It is also important to note that this inspection record does not necessarily reflect each requirement or condition of the authorization therefore compliance is noted only for the requirements or conditions listed in the inspection record.

Authorization: 105719	Client Name: Chieftain Metals Inc.
NRIS IR #: 61132	(Date) Site Inspection Photos: 2017-07-12

Photo 1
Metal, stoves, freezers and oil containers disposed of at the barge landing site.



Photo 2
Unlabelled, open waste oil containers at the barge landing area.



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Photo 3
Exfiltration pond.



Photo 4
Mixing of the exfiltration pond effluent in the Tulsequah River.



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Photo 5
Effluent overflowing from the exfiltration pond.



Photo 6
Neutral mine water discharge from 5400 Adit to Portal Creek.



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Photo 7
 Portal Creek water flowing over the spillway, through waste rock to the exfiltration pond.



Photo 8
 Portal Creek Diversion is blocked, and not functioning.



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Photo 9
There is very little flow exiting the Portal Creek Diversion.



Photo 10
Sludge storage pond near the airstrip.



