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DECISION NO. EAB-EMA-20-A003(b)

In the matter of an appeal under section 100 of the *Environmental Management Act*, S.B.C. 2003, c. 53

BETWEEN:	Mount Polley Mining Corporation	**APPELLANT**
AND:	Director, *Environmental Management Act*	**RESPONDENT**
AND:	Douglas Watt	**PARTICIPANT**
BEFORE:	A panel of the Environmental Appeal Board Linda Michaluk, Panel Chair	
DATE:	Conducted by way of written submissions and oral cross-examinations and closing statements, concluding on May 19, 2022	
APPEARING:	For the Appellant:	Robert M. Lonergan, Counsel Christopher Elrick, Counsel
	For the Respondent:	Stephen E. King, Counsel Cory Bargen, Counsel
	For the Participant:	Self-represented

APPEAL

[1] Mount Polley Mining Corporation ("MPMC") appeals a decision by the Director of Waste Management (the "Director"), *Environmental Management Act* (the "*Act*"), to amend permit no. 11678 (the "Permit") by adding numeric performance metrics to sections 2.8.2(a) and 2.8.2(b) (the "NPM Provisions") in the Permit. The amendment was issued on February 1, 2020 (the "February 2020 Amendment"). The Permit authorizes MPMC to discharge effluent into Quesnel Lake from MPMC's copper and gold mine (the "Mine").

[2] The Environmental Appeal Board (the "Board") has the authority to hear this appeal under section 100 of the *Act*. Under section 103 of the *Act*, the Board has the power to:

a) send the matter back to the Director, with directions,

b) confirm, reverse, or vary the decision that amended the Permit, or

c) make any decision that the Director could have made, and that the Board considers appropriate in the circumstances.

[3] MPMC seeks orders striking the NPM Provisions from the amended Permit.

[4] At the request of the parties, the appeal was conducted in writing with witness cross-examination and closing statements conducted orally.

BACKGROUND

[5] MPMC operates the Mine, which is located southwest of Quesnel Lake, approximately 10 km from the community of Likely. MPMC has held the Permit since 1997. The Permit was originally issued under the *Act*'s predecessor, and the Permit is now authorized under the *Act*.

[6] At the Mine, ore is removed from the ground and processed to extract gold and copper. When ore is processed, waste is produced including a tailings slurry. The slurry is discharged to a tailings storage facility where solids settle out from the liquid. The remaining liquid is called supernatant. Some supernatant is re-used in the milling process. Excess supernatant in the tailings storage facility, as well as "contact water" (i.e., water that has come into contact with mining or milling activities and may have absorbed contaminants) collected at the Mine site, is treated in a water treatment plant ("WTP") and is then discharged as effluent.

[7] On August 4, 2014, part of the dam at the Mine's tailings storage facility failed, releasing millions of cubic metres of tailings into Hazeltine Creek and Polley Lake, and subsequently into Quesnel Lake. After the breach, a pollution abatement order was issued under the *Act* to address the impacts of the breach and the Mine's operations were suspended for some time. MPMC retained an environmental consultant, Golder Associates Ltd. ("Golder") to develop a water management plan for the Mine.

[8] Operations recommenced at the Mine in August 2015. As part of the process leading up to the application for a Permit amendment issued in November 2015, MPMC undertook various assessments including those to ensure that the technology proposed for treating the mine discharge was compliant with the Ministry's Best Available Technology ("BAT") policy. BAT is described in the Ministry policy as technology which can achieve the best waste discharge standards, and that has been shown to be economically feasible through commercial application.

[9] On November 29, 2015, the Permit was amended to authorize the temporary discharge of effluent to Quesnel Lake via the channel of Hazeltine Creek until November 30, 2017. At the time, the Permit allowed a maximum of 12 micrograms of total copper[1] per litre of effluent ("µg/L")[2] to Hazeltine Creek via Springer Pit which acted as a settling pond.

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[1] "Total copper" consists of both dissolved copper and copper in particulate form.

[2] 1 µg/L is equivalent to 0.001 mg/L. Both measurements appear throughout the evidence in this appeal. For ease of understanding, all measurements in this decision are cited as µg/L.

[10] In October 2016, MPMC applied to amend the Permit, seeking authorization to discharge treated effluent from the Mine to Quesnel Lake for the remaining (pre-closure) life of the Mine.

[11] On April 7, 2017, the Director issued an amendment to the Permit (the "2017 Amendment"). The 2017 Amendment authorized MPMC to continuously discharge treated effluent to Quesnel Lake, subject to certain conditions, including those contained in section 2.9: that MPMC assess and optimise the treatment process and works on a regular basis, and file various reports on the optimisation efforts. The maximum discharge for total copper was set at 33 µg/L.

[12] The 2017 Amendment was appealed by MPMC and others. On October 2, 2018, the Director issued a Permit amendment, and this addressed MPMC's concerns with the 2017 Amendment. MPMC withdrew its appeal, but one appeal of the 2017 Amendment remains, and is being heard separately from the present appeal.

[13] In December 2018, Mr. Al Gibson, P.Eng., a Senior Environmental Protection Officer in Mining Operations with the Ministry, concluded that MPMC's approach to copper removal optimisation was not compliant with the Ministry's BAT policy, or the intention of the Permit to optimise copper removal. Mr. Gibson recommended that MPMC implement copper optimisation to reduce total copper to 12 µg/L immediately, ahead of the 2019 freshet. He reached that conclusion after reviewing several documents from MPMC's consultant, Golder, including two memos dated December 2, 2016 and February 8, 2017, and an August 2018 report titled "2018 Copper Removal Optimization". That report recommended possible solutions for implementing a copper removal strategy based on bench scale tests[3].

[14] In a January 15, 2019 memorandum, Golder advised MPMC that there were several considerations concerning the change of the "optimization target from [33 µg/L] to [12 µg/L] copper". Golder's memorandum stated as follows:

- It is unclear whether the lower optimization target is feasible at full scale under field conditions [rather than bench scale test conditions].
- The potential impact of higher TMT [trimercapto-s-triazine trisodium salt[4]] dose on the aquatic toxicity under field conditions is presently unknown – testing this would be prudent but will jeopardize our ability to complete full scale optimization by the 2019 freshet.
- A lower optimization target will result in higher chemical consumption.
- The current permit allows for [33 µg/L], based on demonstration that this level will result in Quesnel Lake [copper] concentrations below BC Water Quality Guidelines. We are not aware of any technical rationale for requiring a lower effluent concentration.

[3] "Bench scale" refers to the testing on a small scale, such as in a laboratory.

[4] TMT is a chemical that Golder used in bench scale testing to treat Mine effluent and reduce its copper concentration.

- The Best Available Technology assessment considered multiple criteria using scientific and engineering principles for present mine water management conditions; it was not based on cost alone.

[15] On March 11, 2019, the Director sent a letter to MPMC, stating that the Ministry had reviewed the 2018 Copper Removal Optimization report. In that letter, the Director directed MPMC to try to reduce the total copper concentration of effluent discharged to Quesnel Lake below 12 µg/L, citing MPMC's bench scale testing results. However, the Director's letter also acknowledged that the authorized limit for total copper in the effluent remained at 33 µg/L.

[16] On May 14, 2019, MPMC applied to amend sections 2.8, 2.9, 2.10 of the Permit. MPMC proposed changes to the timelines for completing studies or reports that were required under those sections of the Permit, related to optimizing the treatment of Mine effluent.

[17] On September 13, 2019, the pollution abatement order issued following the tailings failure in 2014 was rescinded.

[18] On January 23, 2020, Mr. Gibson completed a Ministry Assessment Report (the "MAR") which reviewed MPMC's application to amend the Permit. Among other things, the MAR noted that the Ministry had been working for the last two years to reduce impacts on Quesnel Lake through initiatives that included "Copper Optimization". In that regard, the MAR states that MPMC was ordered on March 11, 2019 "to undertake full scale trial for the 2019 freshet to target a mean total copper concentration of [12 µg/L] (permit limit is [33 µg/L])."

[19] On February 1, 2020, the Director issued the February 2020 Amendment. Because that amendment was deemed by the Director to be a "minor amendment", the Director did not issue reasons for the decision, and he instead relied on the MAR as the background for the decision. This amendment involved several changes to the Permit, including the introduction of an NPM limit of 12 µg/L in section 2.8.2 of the Permit for the total copper concentration in the discharged effluent. However, section 1.2.4 of the Permit still refers to a table that sets a limit of 33 µg /L for the total copper concentration in effluent at the treatment plant outlet.

[20] Sections 2.8.2(a) and 2.8.2(b) state:

> **2.8.2. Water Treatment Plant Optimization**
>
> The Permittee must operate and optimize the Veolia Actiflo Water Treatment Plant (WTP) to remove contaminants present in the mine site contact water to meet the discharge requirements of Section 1.2.4.
>
> (a) "Numeric Performance Metric" (NPM) means a measurable value that quantifies the outcome or result of water treatment and the ability of the treatment to remove specified chemical constituent. It forms the basis for a numeric comparison of untreated water, to water that has been treated by the treatment system.
>
> (b) The Permittee must optimize and operate the treatment plant in a manner to target achievement of any prescribed NPM. The stated NPM target value represents operation that achieves average effluent quality

that is at or below any specified NPM. Assessment of the attainment of NPM values must be included in the optimization update progress report. If the effluent quality does not achieve an NPM value specified by the Director, the Permittee must identify the reason and propose and implement without delay response actions to achieve the target value including treatment plant optimization and/or source control and/or water management improvements.

The following NPM is established:

Total copper 12 µg/L

[21] MPMC appealed the February 2020 Amendment to the Board. On September 18, 2020, following an agreement between MPMC and the Director to resolve some of the issues in MPMC's appeal, the Board issued a consent order (Decision No. EAB-EMA-20-A003(a)) which further amended the Permit.

[22] On October 13, 2020, MPMC submitted an amended notice of appeal that removed references to the Permit clauses that were the subject of the consent order. MPMC's remaining grounds of appeal pertain to sections 2.8.2(a) and 2.8.2(b) of the Permit as amended in the February 2020 Amendment.

[23] MPMC challenges the imposition of the NPM limit of 12 µg/L for the total concentration of copper at the outlet of the effluent treatment plant.

[24] In its amended Notice of Appeal, MPMC asserts that the Director's decision to include the NPM Provisions in the Permit was unreasonable and should be set aside for the following reasons:

(a) *Failure to provide reasons*: MPMC applied for amendments. That application was based on information submitted with the application and subsequently in a process administered by ENV [the Ministry of Environment and Climate Change Strategy (the "Ministry")]. Ultimately, the Director included terms not sought by MPMC without providing reasons for his decision;

(b) *Improper reliance of an inaccurate report without giving MPMC notice and an opportunity to be heard*:

(i) Ministry Assessment Report provided to the Director contains relevant, material errors;

(ii) MPMC was not provided with notice of that report nor an opportunity to respond to it prior to the decision to amend the Permit, nor at all;

(c) *The permit terms are arbitrary, without foundation, and inconsistent*:

(i) Section 2.8.2(b) imposes an NPM limit for the total concentration of copper at the outlet of the Water Treatment Plant of 12 µg/L. This limit:

(A) is not based on any objective evidence, nor on any evidence at all;

(B) is inconsistent with the limit set for the same substance at the same location in a different section of the same Permit;

(d) *Permit terms unlawfully delegate authority to the Director without any procedural safeguards:*

(i) Section 2.8.2(b) purports to authorize the Director to identify an NPM for any substance and require MPMC to ensure that the concentrations of the substance in the effluent are below the NPM. In doing so, Section 2.8.2.(b):

(A) results in uncertainty which is inconsistent with the regulatory certainty provided by the Ministry's Best Achievable Technology ("BAT") policy;

(B) defeats the reasonable expectation of MPMC that it will be authorized to discharge effluent in a manner consistent with existing practice and policy;

(C) amounts to an unlawful sub-delegation of authority;

(D) creates a scheme under which legal prohibitions would be imposed in breach of natural justice.

[25] MPMC seeks orders:

(a) striking out the NPM Provisions of the Permit; and
(b) amending the Permit in the terms sought by MPMC in its application to amend dated May 2019; or, in the alternative;
(c) remitting the amended Permit to the Director for reconsideration, taking into account the Board's decision.

[26] The Director opposes the removal of the NPM Provisions from the Permit and requests that the appeal be dismissed.

[27] Mr. Watt, a member of the Mount Polley Mine Public Liaison Committee[5], requested and was granted Participant status in this appeal. The terms of that status included the ability to provide submissions, receive information and monitor proceedings. Mr. Watt supports the Director's position in this appeal.

ISSUE

[28] The main issue in this appeal is whether the NPM Provisions should be struck from the Permit. For ease of discussion and analysis, I have broken this issue into the following sub-issues:

1. Did the Director err in not providing reasons for the February 2020 Amendment?
2. Is the inclusion of the NPM Provisions, including the NPM target of 12 µg/L, appropriate in the Permit in the circumstances?

[5] Section 2.12 of the Permit requires MPMC to maintain a Public Liaison Committee which must meet at least quarterly to share and receive information about Mine activities and the results of monitoring programs with interested members of the public, two local First Nations, and regulating agencies.

3. Is the language in the NPM Provisions appropriate?

RELEVANT LEGISLATION

[29] Section 6(2) of the *Act* states that, subject to subsection (5), a person must not cause or allow waste to be introduced into the environment while conducting a prescribed industry, trade or business. The Appellant's operation is a prescribed industry for the purposes of section 6(2), because it is a mining and coal mining industry under Schedule 1 of the *Waste Discharge Regulation*. Section 6(5)(a)(i) of the *Act* provides that the discharge of waste is not contrary to the *Act* if the waste discharge complies with a valid permit that is in effect at the time of the discharge.

[30] Permits are issued under section 14 of the *Act*. Section 14(1)(e) is relevant to this appeal, and it states:

> **14** (1) A director may issue a permit authorizing the introduction of waste into the environment *subject to requirements for the protection of the environment that the director considers advisable* and, without limiting that power, may do one or more of the following in the permit:
>
> …
>
> (e) specify procedures for monitoring and analysis, and procedures or *requirements respecting the* handling, treatment, transportation, *discharge* or storage *of waste* that the permittee must fulfill;
>
> [Emphasis added]

[31] Section 16 of the *Act* provides the Director with the authority to amend a permit:

> **16** (1) A director may, subject to section 14 (3) *[permits]*, this section and the regulations, *for the protection of the environment*,
>
> (a) *on the director's own initiative* if he or she considers it necessary, or
>
> (b) on application by a holder of a permit or an approval,
>
> amend the requirements of the permit or approval.
>
> …
>
> (4) A director's power to amend a permit or an approval includes all of the following:
>
> …
>
> (e) *authorizing or requiring a change in the characteristics or components of waste discharged, treated,* handled or transported;
>
> …
>
> (j) *changing or imposing any procedure or requirement that was imposed or could have been imposed under section 14 [permits]* or 15 *[approvals].*

[Emphasis added]

[32] In summary, section 16(1) provides that the Director may amend a permit either under his own initiative if he considers it necessary, or at the request of the permit holder. The Director's powers to amend a permit includes (among other things) requiring a change in the characteristics of the waste discharged or imposing any procedure or requirement that could have been imposed when the permit was issued.

SUMMARY OF SUBMISSIONS AND EVIDENCE

[33] MPMC's evidence consisted of: two affidavits dated August 26, 2021 ("Affidavit #1") and October 28, 2021 ("Affidavit #2") from Mr. Don Parsons, P. Eng., Chief Operating Officer, Imperial Metals Corporation and Interim General Manger of MPMC; and, an expert report dated June 20, 2021 from Mr. Lee Nikl, R.P. Bio., a Senior Scientist at Golder. Mr. Nikl was qualified for the purposes of this appeal as an expert in the field of environmental toxicology and chemistry, effluent permitting and impact assessment. Mr. Parsons and Mr. Nikl were cross-examined during the appeal hearing.

[34] The Director's evidence consisted of his affidavit dated September 27, 2021. The Director was cross-examined during the appeal hearing.

[35] MPMC and the Director presented additional evidence by way of a two volume Joint Book of Documents.

[36] Mr. Watt's submissions consisted of an email dated October 15, 2021.

Summary of MPMC's Submissions and Evidence

MPMC's Submissions

[37] In general, MPMC argues that including the NPM Provisions in the Permit is inappropriate because they require unnecessary water treatment and there is no evidence that the provisions are required to protect the environment, they have legal effect and are a permit limit, they are inconsistent with the Ministry's BAT policy, and they create practical problems in restricting the rate at which effluent can be discharged. MPMC argues that efforts to optimise the WTP's operation have been and are ongoing as required by the previous version of the Permit, and the NPM Provisions are unnecessary and will result in additional cost to MPMC.

[38] MPMC submits that the February 2020 Amendment made a change to the water management system by introducing an NPM limit of 12 µg/L for total copper into sections 2.8.2(a) and 2.8.2(b) of the Permit. MPMC did not ask for the NPM Provisions to be added to the Permit, and MPMC brought its concern about the NPM Provisions to the Director's attention before the February 2020 Amendment was issued. Further, MPMC submits that the Director did not provide any reasons or scientific basis for including the NPM Provisions or for the NPM limit of 12 µg/L for total copper. MPMC submits that imposing the arbitrary NPM Provisions in the Permit has led to numerous practical problems including reducing the rate at which water can be discharged from the Mine site and increasing costs to MPMC.

[39] MPMC submits that section 14 of the *Act* does not give the Director unlimited discretion in imposing Permit conditions. As set out in *Apotex Inc. v Canada (Health),* 2015 FC 1161, at para. 96:

> Discretionary decisions are constrained by the confines of the enabling legislation and must be exercised in accordance with the rule or law. It is thus *ultra vires* for a Minister to make a decision for a purpose other than for which that power was granted by the legislature.

[40] MPMC submits that the purpose of the *Act* places constraints on the Director's discretion. In *Cobble Hill Holdings Ltd. v. British Columbia*, 2020 BCCA 91, at para. 104, the Court made the follow finding regarding the *Act*'s purpose:

> In my view, while the *EMA* does not contain a "purposes" provision, it is clear from ss. 5, 14, and 18 that the overarching aim is directed to the interests of the public; that is, to ensure that if contaminated waste is to be discharged into the environment, the process must occur in a manner that will not be harmful to the environment and human health. This is accomplished by imposing parameters regarding the discharge of waste, monitoring the process, and requiring compliance with the terms of the permit. …

[41] MPMC submits that the Director cannot impose permit terms which are arbitrary – terms must be connected to the purpose for imposing terms, as set out in the *Act*: for the protection of the environment. In this case, the NPM Provisions are arbitrary and are not necessary for the protection of the environment. There has not been any suggestion by the Ministry that the concentration limits set out elsewhere in the Permit are insufficient to prevent harm to the environment.

[42] MPMC submits that although the MAR states that the NPM Provisions will allow MPMC to "pursue the most technically feasible and effective options for treating mine site runoff", the practical implications are, in fact, the opposite. The NPM Provisions require MPMC to treat Mine site effluent even where it meets the requirements of section 1.2.4 of the Permit, which will increase costs to MPMC and restrict the rate of discharge to that of the maximum rate of the WPT.

[43] MPMC submits that the Director provided no reasons, scientific explanation, or rationale for the inclusion of the NPM Provisions or for the NPM limit of 12 µg/L for copper, and in so doing, he did not meet the duty of procedural fairness. MPMC referred to several judicial decisions which MPMC says have confirmed that reasons are required in order to understand a decision maker's reasoning process to justify a decision.

[44] MPMC submits that the Board has previously found that where the duty to provide reasons was breached, the hearing before the Board cured the breach because the *de novo* status of Board hearings allowed the Board to consider whether the permit requirements were advisable for the protection of the environment. In this case, however, the Director provided no explanation or reasons during the hearing for including the NPM Provisions or the NPM limit, and there is no Ministry policy relating to an NPM. Therefore, there is no evidence to suggest that the NPM Provisions are advisable for the protection of the environment and there is no objective basis for the provisions.

[45] MPMC submits that in the absence of reasons for the Director's decision, and because the NPM Provisions are without scientific foundation, arbitrary, and impose practical difficulties for MPMC, the NPM Provisions should be struck from the Permit.

Affidavit Evidence and Cross-examination: Parsons

[46] According to affidavit evidence of Mr. Parsons, MPMC retained Golder following the breach of the tailings dam in 2014, to develop a water management plan for the Mine. Golder undertook investigations required to seek an amendment to the Permit to allow MPMC to discharge water from the Mine, and developed two reports: the 2015 Short Term Water Management Plan Technical Assessment Report (the "Short Term TAR"); and, the 2016 Long Term Water Management Plan Technical Assessment Report (the "Long Term TAR"). The investigations indicated that it was feasible to discharge effluent through pipes directly into Quesnel Lake, without adverse effects on aquatic life or other uses of the receiving environment.

[47] The Short Term TAR included an assessment to ensure that MPMC's water treatment system qualified as BAT, as MPMC was proposing to seek authorization for an initial dilution zone at the point of discharge in Quesnel Lake. On November 29, 2015, the Permit was amended to authorize MPMC to discharge effluent to Quesnel Lake for a two-year period. The limit for total copper was set at 12 µg/L. The Mine was not operating at that time, and effluent was stored in Springer Pit which allowed total copper concentrations to be reduced through settling.

[48] In October 2016, MPMC applied to amend the Permit to authorize discharge of effluent to Quesnel Lake on a long-term basis. The Long Term TAR was submitted in support of that application. The water management system (the Veolia Actiflo Water Treatment Plant and discharge location) assessed in the Long Term TAR was the same system described in the Short Term TAR. The Permit was amended on April 7, 2017. Among other matters, the 2017 Amendment authorized MPMC to continue to discharge to Quesnel Lake, and imposed limits on concentrations of certain substances in the effluent. MPMC appealed some of the requirements in the 2017 Amendment. In October 2018, the Permit was amended again, resolving MPMC's appeal.

[49] Since that time, section 1.2.4 of the Permit has imposed a limit for total copper of 33 µg/L. This limit was based on information from the Long Term TAR and the BC Water Quality Guidelines[6].

[50] In May 2019, MPMC applied to amend sections 2.8, 2.9 and 2.10 as they then read. MPMC did not ask the Director to impose the NPM Provisions that are the subject of this appeal. In October 2019, MPMC was notified that the Ministry was considering including the NPM Provisions, and MPMC provided the Ministry with comments explaining their objection to those provisions.

[51] On February 13, 2020, Mr. Parsons was copied on an email from Mr. Gibson, in which Mr. Gibson states that this was a minor permit amendment, and therefore,

[6] BC Ministry of Environment Water Quality Guidelines, as updated from time to time.

the Director did not write a Reasons for Decision. Mr. Gibson then provided the MAR that accompanied the draft amended Permit.

[52] Mr. Parsons notes that MPMC was not given an opportunity to comment on the MAR prior to receiving the February 2020 Amendment, and he says that the MAR contains the following errors:

- Page 3, paragraph 1: "… the mine was proposed to be a zero discharge tailings impoundment in all weather conditions". This statement is not accurate because although zero discharge was expected initially, it was not envisioned that the Mine would remain zero discharge as operations continued; water balance summaries projected a surplus of water in the tailings pond during later years of operations as shown in the Stage 1 Environmental and Socioeconomic Impact Assessment report, January 1991.
- Page 3, paragraph 2: the MAR references that the tailings dam breach in 2014 resulted in environmental protection orders being issued, but does not refer to the fact that the pollution abatement order, including amendments, has been rescinded. Further, the MAR references a former discharge to Upper and Lower Hazeltine Creek, but does not mention that discharge into Hazeltine Creek is no longer a viable option due to the fact that much of Hazeltine Creek is now fish-bearing and a buried pipe was installed to connect the WTP with the submerged diffusers in Quesnel Lake.
- Page 3, paragraph 4: the Ministry ordered "MPMC on March 11, 2019 to undertake a full scale trial for the 2019 freshet to target a mean total copper concentration of [12 µg/L] (permit limit is [33µg/L])". The MAR does not make note of the fact that MPMC's consultant, Golder, developed a concept design for TMT dosing and undertook safety trials, including toxicity tests, with the chelating agent trimercapto-s-triazine trisodium salt ("TMT"). MPMC installed an injections systems and storage containers to undertake the chelation trials, but the dissolved copper concentrations during freshet in 2019 were too low to complete the chelation trials. The trials were undertaken from April 29 to May 6, 2020, to take advantage of a pulse of high copper levels in the influent during freshet. The trials showed that TMT was effective in converting the dissolved copper to particulate copper; however, there was not a substantial reduction in the total copper after the water was treated using the Actiflo system; the trials did not achieve a mean total copper concentration of [12 µg/L] or less.

[53] Mr. Parsons explained that in order to operate the WTP to try to reduce total copper to the NPM limit of 12 µg/L, MPMC must add chemicals to actively treat effluent even if the total copper in that effluent is below the discharge limit set in section 1.2.4 of the Permit (33 µg/L). Further, in above average wet years, surplus water accumulates and has to be stored on the Mine site because although alternative water treatment technologies are proven on site to reduce the stored water copper concentrations to less than 33 µg/L, the Permit does not allow those waters to bypass the WTP due to the NPM Provisions. The capacity of WTP is not unlimited and has a maximum rate of discharge of 0.21 cubic metres ("m^3") per second, which limits the rate at which effluent can be discharged. The costs of

treatment have increased because of the requirement to actively treat effluent with copper concentrations of less than 33 µg/L.

[54] Mr. Parsons confirmed that MPMC has requested to bypass the WTP because of "surplus" water on the Mine site. He testified that the copper centration in the surplus water was in the range of 20 to 25 µg/L, and that the request was made to enable the WTP to process only the water that was above the Permit limit of 33 µg/L. Mr. Parsons testified that Mr. Gibson refused permission to bypass the WTP because a WTP bypass would only be granted in the event of an emergency or mechanical failure of the WTP.

[55] Mr. Parsons testified that MPMC provided the Ministry with reports from Golder regarding changing the optimisation target from 33 µg/L to 12 µg/L which demonstrated that: it was unclear whether achieving 12 µg/L was achievable in full scale operations under field conditions; it would result in higher chemical consumption; there was no technical rational for requiring an effluent concentration lower than 33 µg/L; and, that the BAT assessment had considered multiple criteria using scientific and engineering principles for the mine water management conditions.

[56] During cross-examination, Mr. Parsons:

- agreed that the 2017 Amendment required assessment and optimisation of the treatment process and works on a regular basis (section 2.9). He agreed that this concept of "continuous improvement" involved making attempts to reduce contaminants of concern in the Mine effluent. He confirmed that MPMC completed and submitted, as required by the 2017 Amendment, a final assessment report on refining and implementing an improved copper removal process, and that he was aware of a letter that the Ministry sent to MPMC in March 2019 directing MPMC to undertake work to implement improved copper removal without further delay.
- testified that the WTP was identified by Golder in the Short Term TAR as BAT.
- testified that the maximum level for total copper set out in section 1.2.4 of the Permit (33 µg/L) was based on an extensive process set out in the Long Term TAR including assessment, what the WTP can achieve, and the receiving environment.
- testified that when the dissolved copper in the effluent exceeds 12 µg/L, the WTP has difficulty discharging treated effluent at a rate above 0.21 m^3 per second. Mr. Parsons testified that the target level could still be achieved by pre-treating on site (i.e., using Springer Pit as a natural settling pond).
- agreed that section 2.2 of the Permit allows MPMC to seek permission to bypass the WTP.
- agreed that optimisation of the WTP includes on-site validation of the WTP's efficacy, and the continued optimisation of the targeted copper treatment specifically, and that optimisation efforts should be undertaken even when the limit of 33 µg/L in section 1.2.4 of the Permit is being met.
- agreed that one of the findings arising from Golder's December 2019 report titled, "Treatment Works and Source Control Optimization Progress Report #5", was that "the target concentration [12 µg/L] is a suitable number that

> the mine should seek to achieve but is not a suitable permit limit based on testing carried out because the effluent concentration is too close to this value." Mr. Parsons agreed that this report would have been before the Director when the February 2020 Amendment was made, including the 12 µg/L performance target under the NPM Provisions.

Affidavit Evidence and Cross-examination of Mr. Nikl

[57] Mr. Nikl was qualified as an expert on environmental toxicology, chemistry, effluent permitting and impact assessment.

[58] Mr. Nikl testified that water treatment facilities need to be well maintained and operated properly; that most permit holders will want to operate a plant so that discharged effluent is well below the limits in their permit, because such limits represent a "prosecution threshold". He testified that in terms of MPMC's Permit, 33 µg/L is a reasonable target for copper concentrations in the effluent, and that for compliance and regulatory safety, the operator should try to be below that concentration.

[59] Mr. Nikl testified that monitoring does not mitigate risk; rather, monitoring may influence the mitigation of risk because it provides data, information, and informs decisions that may need to be made for the purposes of managing a risk. One way to mitigate risk is to put engineering works, such as BAT water treatment plants, in place.

[60] Mr. Nikl testified that he performed Google searches and reached out to numerous individuals to determine if NPMs were in use in other permits of this nature in the province, because he had not previously observed a permit containing NPMs. He learned that NPMs are not in general use in permits in British Columbia. In Mr. Nikl's opinion, the NPM is a problematic concept because it is not how water treatment efficiency or efficacy is commonly measured. In his opinion, the NPM is not a suitable benchmark for characterizing the toxicity of effluent because it is not based on toxicity benchmarks derived from the literature or through empirical means. The NPM will not prevent harm in Quesnel Lake because the Permit limits were already effective at preventing harm to Quesnel Lake's water quality. The NPM is not backed by Ministry policy, lacks supporting scientific rationale in the MAR, and has not received the benefit of study by or consultation with the scientific community.

[61] Mr. Nikl testified that he was involved in preparing both the Short and Long Term TARs. Mr. Nikl testified that the 12 µg/L concentration for copper originated from the Short Term TAR, which involved using Springer Pit as a holding pond that kept the water in a consistent state for a long period of time, allowing solids to effectively settle out of the liquid held in the Pit.

[62] The existing water management system was the subject of the BAT assessment undertaken as part of the Short Term TAR. Mr. Nikl testified that the NPM approach conflicts with the Ministry's BAT policy because it compels a potentially open-ended pursuit of treatment options after the BAT assessment has been accepted.

[63] Mr. Nikl further testified that while bench-scale tests undertaken by Golder in 2019 identified that a copper concentration of 12 µg/L was achievable, it is very difficult to extrapolate from a bench scale test to a full-scale operation. A bench scale test is a fixed container with a batch treatment process, whereas the WTP at the Mine is a flow-through facility. Since that time, Golder has carried out full scale field trials and could not achieve a copper concentration of 12 µg/L in treated effluent. Mr. Nikl testified that there is no scientific basis for an NPM of 12 ug/L for copper.

[64] One of Mr. Nikl's concerns is that to achieve the target of 12 ug/L, higher chemical consumption will be required, which may have environmental impacts and will be more costly to MPMC. MPMC regularly monitors its effluent and has found that it is consistently non-toxic. The NPM of 12 ug/L is not required to provide protection against "pollution"[7] as defined by the *Act* because existing limits in the Permit are sufficient to safeguard Quesnel Lake.

[65] During cross-examination, Mr. Nikl testified that he is not opposed to the use of the word "optimize" in the Permit, and that efforts to optimise the WTP are a good thing. Mr. Nikl also testified that while the following statement is in the May 29, 2019 Technical Memorandum from Golder to MPMC that bears his signature along with others, it was not his language:

> During the field trials, effluent dissolved copper was consistently below [12 µg/L] target, but total copper was around or just at [12 µg/L], implying that solid-liquid separation was the limiting factor in achieving the target of [12 µg/L] for total copper. The target concentration is a suitable number that the mine should seek to achieve but is not a suitable permit limit based on testing carried out because the effluent concentration is too close to this value.

Summary of Respondent's Submissions and Evidence

[66] The Director testified that he has been involved with permitting MPMC's operations since 1997. He was involved in previous iterations of the Permit, and he issued the 2017 Amendment and the February 2020 Amendment.

[67] The Director stated that he employs a cautious approach when assessing permit amendment applications and imposing permit conditions. Permit conditions that set the maximum discharge levels are informed by the British Columbia Water Quality Guidelines, site specific conditions, and BAT assessments. Permit conditions, are designed to ensure that the discharge levels are not harmful to the environment. The Director also considers implementing potential permit conditions, such as NPMs, which encourage continuous improvement of a permittee's water treatment works to reduce levels of specific compounds of concern. He strives to develop permit conditions that will protect the environment, while facilitating

[7] Section 1(1) of the *Act* defines "pollution" to mean the presence in the environment of substances or contaminants that substantially alter or impair the usefulness of the environment.

continuous improvement without imposing stringent requirements that could prevent a permit-holder from complying with its permit.

[68] The Director was aware that ongoing monitoring of Quesnel Lake shows that the BC Water Quality Guidelines value for copper has been exceeded from time to time. It is not known whether this is due to residual contamination from the earlier dam collapse, MPMC's permitted discharge, or background levels from other cumulative sources in the environment. The Director testified that this situation "drove him" to consider the need to have improvement over MPMC discharging up to 33 µg/L copper or stockpiling more water on the Mine site. The Director submits that in his letter dated March 11, 2019, he directed MPMC to undertake work to implement improved copper removal without further delay.

[69] The Director testified that he was aware that MPMC would be applying for Permit amendments, and in April 2019, he advised that he was considering the implementation of NPM Provisions because he wanted to include in the Permit something other than mere compliance with the maximum limit in section 1.2.4, as a goal for optimisation.

[70] The Director provided evidence that NPM provisions have been used in one other permit under the *Act* in BC: Permit no. 15335, associated with the Kemess Mine, has had NPM provisions since 2018.

[71] The Director submits that when MPMC applied to amend the Permit in May 2019, he considered there may be an opportunity to replace section 2.9 of the Permit, which required MPMC to assess and optimise its existing treatment process and works on a regular basis, with an NPM provision setting a descriptive discharge target for copper which would help achieve the optimised performance of the WTP. The Director submits that this would not risk MPMC going out of compliance with the limit of 33 µg/L in section 1.2.4 of the Permit while working to improve the quality of the discharge. This represented a layering approach to reducing risk from the discharge to Quesnel Lake.

[72] The Director testified that in determining what the NPM target for copper should be, he considered information that Golder provided during the Short Term and Long Term TARs, previous versions of the Permit, various technical memoranda, and reports filed by MPMC as part of the 2017 Permit requirements. In particular, the Director decided to use a concentration of 12 µg/L of copper as the NPM target based on the Short Term TAR which was the main BAT assessment. The Director testified that he was aware of other technical memoranda and reports from Golder which indicated that although that number was achievable in bench scale testing, and that number was appropriate when Springer Pit was used as a holding area for effluent, 12 µg/L had not been achieved in the actual operating circumstances of the present Mine operations. The Director testified that while he could have selected an NPM level of 12, 13, or 14 µg/L, he selected 12 µg/L for total copper because that was the number presented in the Short Term TAR which included the main assessment of BAT.

[73] The Director acknowledges that the NPM value for copper was not based on a scientific assessment of toxicological effects, or on an assessment of a specific

quantifiable level of toxicity associated with effluent discharge at a level more than 12 µg/L. Rather, the Director says it was developed and imposed as means for tracking efforts to optimise the WTP operations. The Director testified that there have been times when MPMC had to suspend the effluent discharge because the maximum limit in the Permit was not being met, and there were reports and various recommendations from Golder that the operation of the WTP could be improved. The Director submits that the NPM value for copper is appropriate because it was identified by MPMC as being potentially achievable, and continued efforts to reduce copper in the discharge are cautious and appropriate given the potential long-term impacts of copper in this complex receiving environment.

[74] In August 2019, the Director provided MPMC with a draft version of the amended Permit which included NPM provisions. Over the next 1.5 months, discussions about the draft amended Permit took place between the Ministry staff, MPMC and Golder, which resulted in comments and revised draft permits being circulated. The Director testified that he was aware that MPMC had concerns about the inclusion of the NPM Provisions. The Director testified that although he had originally included selenium in the NPM provisions, the selenium provisions were removed from the draft amended Permit after discussions with MPMC.

[75] The Director submits that the changes made in the February 2020 Amendment were minor, and therefore, he did not prepare formal written reasons for his decision. Instead, he relied upon and adopted the MAR. A copy of the MAR was given to MPMC after the February 2020 Amendment was issued.

[76] Regarding the alleged errors in the MAR, the Director submits that they are unimportant in this appeal. The Director submits that it was clear that MPMC was aware that he was considering adding the NPM Provisions to the Permit, and he was aware that MPMC opposed the provisions. The Director further submits that whether additional information such as the rescission of the pollution abatement order could have been included in the MAR does not impact the decision under appeal.

[77] The Director submits that the Board should disregard Mr. Nikl's expert opinions regarding the presence or absence of NPM provisions in other permits, and on the lack of toxicity of copper levels of 12 µg/L in the receiving environment, as those opinions are irrelevant. The Director's decision to include the NPM Provisions in this Permit was not based on an assessment of specific toxicity levels, but was based on MPMC's and Golder's reporting that a copper concentration of 12 µg/L was achievable through optimisation of the WTP.

[78] The Director submits that the Permit reflects a cautious and pragmatic approach to mitigate potential longer-term impacts to the receiving environment, and this is consistent with the Director's statutory obligations under the *Act*. The NPM Provisions require MPMC to make efforts toward achieving a copper concentration target of 12 µg/L. If efforts show that, in fact, this target is not achievable, MPMC and the Director would assess the situation and determine whether potential additional work or action is necessary.

[79] In summary, the Director argues that the NPM Provisions are consistent with his statutory obligations under the *Act*. He says that copper levels in the Mine's discharge have always been of concern, copper is a contaminant of concern because of its cumulative effects on aquatic life including zooplankton and fish, and MPMC has not been making sufficient progress on WTP optimisation. Further, the NPM Provisions do not set a limit in the Permit, but instead provide a specific target for demonstrating WTP optimisation, as opposed to the previous version of the Permit which simply required that optimisation efforts be undertaken. The discharge limit of 33 µg/L for copper under section 1.2.4 of the Permit remains unchanged by the NPM Provisions.

[80] Finally, the Director submits that although the NPM Provisions are appropriate as presently structured, alternate language could be potentially considered, such as:

> 2.8.2 Water Treatment Plant Optimization
>
> …
>
> (a) The Permittee must operate and optimize the design and performance of the WTP to target achievement of any prescribed NPM. The stated NPM target value represents WTP operation that achieves annual average effluent quality that is at or below any specified NPM. Assessment of the attainment of NPM values must be reported in an annual optimization update progress report appended to the annual report required in section 4.2. If the effluent quality does not achieve an NPM value specified by the Director, the Permittee must identify and propose response actions to bring the effluent quality toward meeting the target value in the annual optimization update progress report. Response action may include treatment plant optimization and/or source control and/or water management improvements, and a schedule for implement the response action must be included in the annual optimization update progress report. …

Summary of Participant's Submissions

[81] Mr. Watt submits that there has been a strong under-current of distrust towards MPMC in the community of Likely since the early 1990's. MPMC promised the community that the Mine would have a negative water balance (meaning that more water would be input to Mine operations than output from Mine operations), that there would be no Mine-site discharges, and there would be no impact on Quesnel Lake. The water balance situation changed over time and MPMC was granted approval in 2012 to discharge into Hazeltine Creek. Following the 2014 dam breach, it came to light that Quesnel Lake was apparently not included in the environmental baseline studies prior to the Mine starting, as there was no pre-breach water quality data.

[82] Mr. Watt submits that although the 2017 Amendment required MPMC to optimise and improve the WTP, the "progress reports" show that MPMC has done very little in this regard over the last 4 ½ years. Mr. Watt submits that the WTP is basically an augmented settling system designed to "handle" about 20,000 m^3 of

fluid per day, compared to the permitted discharge of average 29,000 (maximum 42,000) m^3 per day. Mr. Watt further submits that MPMC has continually and intermittently extended its projections of the Mine's life and had putt off the required research and development. This gives the Ministry no choice but to extend the discharge into Quesnel Lake beyond December 31, 2022. Mr. Watt submits that the Ministry should enforce the Permit requirement to actively optimise the WTP, and MPMC should develop alternatives to discharging basically untreated effluent directly into Quesnel Lake. The extra cost that MPMC says they would experience in meeting the NPM Provisions should not be a consideration. The focus should be on protecting the environment, rather than on protecting MPMC from being out of compliance with the Permit.

[83] Mr. Watt submits that the Director's suggested alternate wording of the NPM Provisions, as submitted during the appeal hearing, amounts to "watering down" the Permit, because having to try to meet the NPM Provisions on an annual basis means MPMC can continue to do nothing.

Summary of MPMC's Reply Submissions

[84] MPMC replies that it has made, and continue to make, efforts to optimise the WTP, and that suggestions to the contrary are simply incorrect.

[85] MPMC replies that the NPM limit for copper is not aspirational, as the Director suggests. Rather, it is a Permit limit with legal effect. Although the Director asserts that the NPM Provisions do not set the copper optimisation goal of 12 µg/L as a Permit limit, section 2.8.2 of the Permit requires MPMC to implement action without delay if the effluent quality does not achieve the NPM value for copper.

[86] Regarding the alternate language that the Director suggested for the NPM Provisions, MPMC replies that it is inappropriate for the Director to present, during the argument phase of the appeal, alternate wording for the NPM Provisions. MPMC is entitled to have notice of such a change, and presenting the wording in this way does not meet that requirement. Further, MPMC says that the Director has not shown that the proposed alternate version of the NPM Provisions is necessary to protect the environment.

[87] In addition, MPMC says the Director cannot suggest that the NPM Provisions are required to optimise the WTP operation, given that the previous version of the Permit already required optimisation of the WTP's operation, and the amended requirement for a copper concentration of 12 µg/L is applicable regardless of how "optimal" the operation of the WTP is.

[88] MPMC also says that the Director's submission that the NPM of 12 µg/L for copper was based on Golder's reporting that that level was achievable, and that a total copper limit of 12 µg/L would reduce the potential longer-term impacts on the receiving environment, demonstrates that this value is not based on a scientific assessment of toxicological effects.

[89] MPMC submits that the Board has found in previous decisions that permit conditions need to be informed by scientifically sound technical analysis (*Toews v. British Columbia (Ministry of Environment)*, [2015] B.C.E.A. No. 25 [*Toews*]; *GFL*

Environmental Inc. v. British Columbia (Ministry of Environment), [2021] B.C.E.A. No. 3 [*GFL*]). The Director did not undertake a scientifically sound technical analysis to determine if the NPM Provisions were necessary.

[90] Finally, MPMC replies that the Director has provided no evidence that the NPM Provisions are necessary for the protection of the environment.

DISCUSSION AND ANALYSIS

1. Did the Director err in not providing reasons for the February 2020 Amendment?

[91] The Director testified that he determined that the Permit amendments in this appeal were minor amendments, and therefore, the Director relied on the MAR and did not prepare separate reasons for his decision to issue the February 2020 Amendment. I note that the *Public Notification Regulation*, B.C. Reg. 202/94, is a regulation under the *Act*. Schedule B in the *Public Notification Regulation* provides that a permit amendment which changes a condition of a permit to result in less impact on the environment is classified as a "minor" amendment.

[92] MPMC did not dispute the Director's characterization of the changes in the February 2020 Amendment as "minor" in nature. However, MPMC argues that this lack of reasons was inappropriate, and MPMC cites judicial decisions in support.

[93] Providing reasons for decisions such as permit amendments helps those who are affected by the decision to understand the basis and justification for it and, if necessary, prepare a case to appeal the decision. It is clear from the evidence that MPMC was consulted about proposed NPM provisions in a draft amended Permit, and it knew that the Director was considering including NPM Provisions in the Permit. Further, the Director modified the proposed NPM provisions in the draft amended Permit based on consultations with MPMC. The NPM Provisions in the February 2020 Amendment were different from those proposed in earlier draft versions, which included an NPM provision for selenium. The proposed NPM provisions for selenium were removed after discussion with MPMC, although other clauses that MPMC objected to were not varied. In terms of the NPM limit of 12 µg/L for copper, this amount was included in the draft permits that were circulated to MPMC throughout the consultation process.

[94] Based on the evidence, it is clear to me that MPMC, having participated in the consultation process leading up to issuing the February 2020 Amendment, had an understanding of the Director's intentions regarding amending the Permit. MPMC may not have agreed with the Director's proposed amendments, but MPMC had a clear indication what the Director was proposing and why. In my view, the MAR that the Director relied on, does not contain errors so much as it may omit details that MPMC considered important. None of the omissions in the MAR, in my opinion, have any bearing on this appeal. I also note that contrary to MPMC's allegation that the MAR failed to note that the pollution abatement order was rescinded, the MAR states on page 6 that the pollution abatement order was rescinded on September 13, 2019.

[95] However, even if the Director erred by not issuing written reasons or by relying on the MAR, any such error has been cured by the appeal hearing before the Board. Section 102(2) of the *Act* provides the Board with the authority to conduct an appeal as a new hearing. A full hearing of the parties' evidence and legal arguments has occurred, and the Board heard both evidence that was before the Director and new evidence that was not before the Director. In this case, the Director has testified about his reasons for his decision. The Board assesses the parties' evidence and legal arguments, and then comes to its own decision. The Board has broad remedial powers under section 103 of the *Act*, and issues full written reasons for its decision. In these circumstances, the hearing before the Board and the Board's issuance of written reasons for its decision cures any unfairness arising from the Director not issuing specific written reasons for his decision.

[96] I find that any lack of fairness arising from the lack of reasons has been cured by the appeal process.

2. Is the inclusion of the NPM Provisions, including the NPM target of 12 µg/L for total copper, appropriate in the Permit in the circumstances?

[97] In terms of WTP optimisation, I have compared the current requirements in the Permit with those in the previous version of the Permit. The Permit previously contained section 2.9 which stated:

> 2.9 Treatment Works and Source Control Optimization
>
> The Permittee must assess and optimise the existing treatment process and works on a regular basis.
>
> A final assessment report on refining and implementing an improved coper removal process must be provided within 60 working days of the issuance of this permit amendment, and the recommended measures implemented prior to July 1st, 2017
>
> …

[98] On March 22, 2019, the Director directed MPMC, as required by (then) section 2.9 of the Permit, to implement copper reduction. The limit in the Permit for total copper concentration remained at 33 µg/L, but the Director required MPMC "to target treatment outcomes to achieve a mean total copper concentration of [12 µg/L] and lower in the "end-of-pipe" discharge to Quesnel Lake".

[99] The February 2020 Amendment replaced (then) section 2.9 with section 2.8.2 (a) and (b), which contain the NPM Provisions. The Director submits that the NPM Provisions set a descriptive discharge target for copper which would help optimise the performance of the WTP, and that use of the NPM is a layering approach to reduce risk to the Quesnel Lake environment.

[100] I note that NPM provisions have been used in one other permit. While the Kemess Mine permit has had NPM provisions since 2018, those provisions differ from the NPM Provisions under appeal in that an NPM numeric target value is not

specified in permit 15335. No evidence was presented to show why the provisions are different. Although the evidence shows there has been discussion within the Ministry and between ministries (Joint Application Information Requirements for *Mines Act* and *Environmental Management Act* permits, Draft, July 2019, BC Ministry of Energy, Mines and Petroleum Resources, and British Columbia Ministry of Environment and Climate Change Strategy) on using NPM provisions, there is no policy to provide guidance on when to use these provisions or how the numeric value of such a provision is to be determined.

[101] Although the Ministry has no specific policy on NPM provisions, there has been discussion within the Ministry on the scope and use of NPM provisions. For example, in a Ministry memo (August 21, 2019, from Arsh Janfada to the Director) the difference between NPM and authorized discharge limits is set out. The memo also addresses the concept of NPM and considerations to take into account to ensure that the NPM is a value or range that is a realistic representation of the treatment plant's best performance capability. In the absence of a specific policy, such documented discussions can assist in a common understanding of employing a concept that may not yet be formalized in a policy. This memo sets out, for example, that the NPM concept can apply to mine sites where (amongst other things) the water treatment system is capable of treating the effluent to a higher quality than specified by the authorized discharge limits. That policy consideration would seem to apply in the present situation.

[102] Ultimately, whether the Ministry has a policy on NPM provisions is not decisive of the issue. The Director has authority under section 14(1) of the *Act* to issue a permit authorizing the introduction of waste into the environment subject to requirements for the protection of the environment that the Director considers advisable. Under section 16 of the *Act*, the Director also has the power to amend a permit "for the protection of the environment", including the powers under sections 16(4)(e) and (j), respectively, to require a change in the characteristics or components of waste discharged, and to change or impose any procedure or requirement that was imposed or could have been imposed under section 14. There is no argument suggesting that the Director exceeded his authority in including a permit provision requiring WTP optimisation efforts. In fact, both MPMC and the Director agree that optimisation is a "good thing". The issue in this appeal is, in effect, whether expressing optimisation efforts in terms of the NPM Provisions takes things too far.

[103] The testimony of both Mr. Nikl and Mr. Parsons showed that MPMC is aware of the need to conduct efforts towards WTP optimisation, and that MPMC has been making such efforts. The Director testified that he was concerned that monitoring has shown that the concentration of copper in Quesnel Lake has occasionally exceeded the BC Water Quality Guidelines value for copper, and that although the discharge of Mine effluent may not have caused the exceedance, the fact that the Mine is discharging effluent containing copper into Quesnel Lake mean that efforts for improvement needed be made. The Director determined that setting a target to gauge optimisation efforts was preferrable to the simple statement that optimisation was required.

[104] I agree with the Director that setting a target in the Permit to gauge optimisation efforts is preferrable to simply stating in the Permit that optimisation is required. A permit is an instrument that sets out the basis for discharging waste to the environment. As a result, if the provisions in a permit are clear and specific rather than vague, the permit holder can better understand what they are expected to do to achieve compliance, The evidence before me shows that from 2017 onward, the Director was moving from a vague permit requirement of optimizing the WTP, to one of setting a particular optimization target that would be achieved over time. The Director took this action because he was concerned that the discharge of copper into Quesnel Lake needed to be addressed given the background levels determined through lake water monitoring, and he wanted to see specific action in terms of WTP optimization.

[105] MPMC did not dispute the Director's testimony that the BC Water Quality Guidelines value for copper in Quesnel Lake has been exceeded, that there have been times when the Mine has had to suspend discharge because the maximum limit for copper in section 1.2.4 of the Permit was not being met, and that there were reports and various recommendations from Golder that the operation of the WTP could be improved. In fact, there was agreement amongst the parties that ongoing optimisation of the WTP is something that should be done. In my view, simply setting out that optimisation efforts are to be undertaken, as required in section 2.9 of the previous version of the Permit, is vague. Setting a numerical optimisation target is more specific and assists in determining whether such efforts are sufficient and whether progress is being made. Creating an optimisation target, in this case by way of an NPM, also removes confusion around what exactly is meant by optimisation. I note that, for example, in at least one instance (Golder memorandum to MPMC regarding full scale treatment of optimisation targets, dated January 15, 2019), the Permit limit of 33 µg/L was taken to also be the optimisation target, which shows that Golder had a different understanding than the Ministry about what constituted the optimisation target.

[106] I disagree with MPMC's argument that the numeric target for copper in the NPM Provisions is in effect a permit limit. The language in the Permit differentiates between the discharge limits and the NPM target. For example, section 1.2.4 provides that "the characteristics of the discharge at the treatment plant outlet must be equivalent to or less than the values specified" [emphasis added]. Section 2.8(b) provides that "the Permittee must optimize and operate the treatment plant in a manner to target achievement of any prescribed NPM" [emphasis added]. I have emphasized the language in those sections that lead me to believe that the two provisions are quite different. Clearly, if MPMC does not try to meet the NPM target set out in section 2.8(b) at any given time, it will be out of compliance with the Permit. However, compliance with the NPM Provisions is not simply question of whether the effluent discharged from the WTP contains a copper concentration of 12 µg/L or less. Section 2.8(b) of the Permit states that if the effluent quality does not achieve the NPM value for copper, MPMC "must identify the reason and propose and implement without delay response actions to achieve the target value including treatment plant optimization and/or source control and/or water management improvements." In addition, the Director testified that if MPMC demonstrates that

achieving a copper concentration of 12 µg/L is not practicable, discussions will be held between the Ministry and MPMC to determine a more reasonable target. I find that this is quite different from assessing compliance with the discharge value established in section 1.2.4.

[107] I find that the NPM Provisions do not amount to a limit in the Permit that must be met at all times; rather, they set a target value and require MPMC to make a timely effort to meet it.

[108] MPMC argues that not meeting the NPM target may have consequences for MPMC. I find that the wording of the previous version of the Permit, stating that MPMC "must assess and optimise" the WTP and report on "implementing an improved coper removal process", also would have had consequences if MPMC had failed to comply. The question is how would such a determination have been made? The reporting requirement in section 2.9 of that version of the Permit stated that the measures recommended in the report were to be implemented prior to July 1st, 2017. On March 11, 2019, after reviewing the 2018 Copper Removal Optimisation report, the Director ordered MPMC to undertake work to meet a target of a mean total copper concentration of 12 µg/L and lower in the Quesnel Lake discharge. The Director was clear in this order that the authorisation for total copper in the discharge was to remain at 33 µg/L. I find that the inclusion of the NPM Provisions in the February 2020 Amendment, in effect, amount to including this previous direction into the Permit.

[109] MPMC submits that the NPM Provisions amount to an open-ended pursuit of treatment options after the BAT has been identified. I find this characterization somewhat puzzling given that MPMC agreed that WTP optimisation was "a good thing" and that they were undertaking efforts in that regard. Indeed, the Ministry's March 2015 Waste Discharges Fact Sheet on BAT states that the outcome from a BAT evaluation is one of the many considerations taken into account when developing waste discharge standards. Other considerations may include (but are not limited to) environmental sensitivity, and cumulative effects.

[110] Clearly, any optimisation effort will have financial consequences, regardless of whether the optimisation requirement is expressed as an NPM. As a result, I find the argument that MPMC would face additional costs arising from the NPM Provisions to be without merit.

[111] The Director, in adding the NPM Provisions, has set out an objective goal for achieving optimisation. A stated optimisation target will assist in ensuring that MPMC clearly understands the Director's expectations regarding optimisation. It is interesting to note that, at one point at least, there appears to have been an assumption that the optimisation target was the same as the permit limit: the Golder memorandum of January 15, 2019, to MPMC sets out a number of considerations concerning "changing the optimization target from [33 µg/L] to [12 µg/L] copper". By adding the NPM Provisions, the Director has clarified what is intended as the target for optimisation.

[112] For the reasons I have discussed above, I find that, in general, including the NPM Provisions in the Permit are appropriate in the circumstances. I next address whether the specific NPM target for total copper is appropriate in the circumstances.

[113] In terms of setting an NPM target, the evidence is clear that the Mine discharge has, in the past, with the use of Springer Pit, been able to meet a discharge limit of 12 µg/L for total copper. However, the present configuration of the Mine's WTP and water management system is not meeting that value. In a Technical Memorandum dated May 29, 2019, Golder concluded that although 12 µg/L for copper was not a suitable permit limit, it was a suitable number that MPMC should seek to achieve. MPMC has included this statement in at least two Treatment Works and Source Control Optimization Progress Reports (Progress Report #4, June 2019, and Progress Report #5, December 2019).

[114] I have considered the Director's testimony that the NPM target could have been 12, 13, or 14, but 12 was selected because it was the number that originated in the Short Term TAR. I understand this to indicate that 12 µg/L for copper was selected as a starting point for quantifying what could constitute appropriate WTP optimisation. I do not find that the use of 12 µg/L as an NPM for copper was arbitrary. Rather, I conclude that the use of 12 µg/L as an NPM for copper for the purposes of gauging optimisation effort has a basis in Golder's reports from bench scale testing on what may be possible to achieve. Whether the target of 12 µg/L copper can be achieved in regular operations is yet to be determined. If efforts to meet that goal prove unsuccessful, the Director has testified that discussions will occur between the Ministry and MPMC to determine what is practicable.

[115] In *GFL*, which was cited by MPMC, the Board found (in part) that a particular permit term was not scientifically sound. However, I find that *GFL* can be distinguished from the present appeal, because *GFL* concerned a permit limit, and exceeding that permit limit constituted noncompliance with the permit which could result in enforcement action. The permit in *GFL* relied on a methodology to convert a subjective characteristic (odour) to an objective measurement (odour units) which would then be applied to determine permit compliance. The Board found that approach to be problematic due to flaws in the system for measuring odour units. In contrast, the NPM value for copper in the Permit is a target that MPMC is required to work towards achieving. I have found that the numeric value for copper in the NPM Provisions is not a permit limit. Rather, the NPM Provisions put a measurable target in place to assess WTP optimisation. The Permit states that if the target is not achieved, MPMC "must identify the reason and propose and implement without delay response actions to achieve the target value ...." That is quite different from the potential consequences for failing to comply with the limit of 33 µg/L in the Permit, which in the past have included having to cease the effluent discharge. Further, the methodology for assessing whether the NPM target has been met is not at issue here.

[116] I find that in the circumstances, setting a NPM target of 12 µg/L for total copper in the permit is appropriate.

[117] In conclusion, I find that the inclusion of the NPM Provisions, including the NPM target of 12 µg/L for total copper, appropriate in the Permit in the circumstances.

3. Is the language in the NPM Provisions appropriate?

[118] I find that the NPM Provisions, as they presently are set out, are not as clear as they could be. During the appeal hearing, the Director submitted alternate language for section 2.8(b) of the Permit, for the Board's consideration. MPMC argued that the Director's presentation of alternate permit language at this time is inappropriate as there was no period of consultation.

[119] A redline version of the original and alternate language is presented below.

> Section 2.8.2 (b)
>
> The Permittee must operate and optimize ~~optimize and operate~~ the design and performance of the WTP ~~treatment plant in a manner~~ to target achievement of any prescribed NPM. The stated NPM target value represents WTP operation that achieves annual average effluent quality that is at or below any specified NPM. Assessment of the attainment of NPM values must be reported in an annual optimization update progress report appended to the annual report required in section 4.2~~included in the optimization update progress report~~. If the effluent quality does not achieve an NPM value specified by the Director, the Permittee must identify and propose response actions to bring the effluent quality toward meeting ~~the reason and purpose and implement without delay response actions to achieve~~ the target value in the annual optimization update progress report. Response action may include ~~including~~ treatment plant optimization and/or source control and/or water management improvements, and a schedule for implement the response action must be included in the annual optimization update progress report.

[120] As regards MPMC's argument that it is unfair for the Director to propose new language at this stage of the appeal, I find that the NPM Provisions have been the very substance of this appeal, and during the appeal hearing MPMC had an opportunity to make submissions on the alternate language proposed by the Director. Further, some of the suggested amendments seem to address some of the comments made on September 18, 2019, by MPMC/Golder on an initial draft of the permit amendments, regarding the use of the term "implement without delay", clarifying the timing of the reporting requirements, and providing options for reasoned discussion. I also note that the Board has the power under section 103 (c) of the *Act* to make any decision that the Director could have made and that the Board considers appropriate in the circumstances. The parties were aware of the Board's broad powers with respect to varying section 2.8(b) of the Permit or making any decision the Director could have made with respect to the aspects of the Permit under appeal. They have had an opportunity to present evidence and arguments about the wording of this section. I find that it is not unfair for the Director to propose a change in wording in these circumstances, or for me to consider and adopt that language, in whole or in part.

[121] I find the alternate language to be an improvement over the original language. The alternate language is clear about the time frame for measuring optimization, and rather than compelling MPMC to take immediate action if the numeric target for copper is not achieved, it now provides the opportunity to propose a response action and set out an implementation schedule. It is clear in its language that the NPM target value for copper is not a permit limit, and helps to clarify that the NPM Provisions are intended to be directed towards WTP optimisation. It also more clearly distinguishes between the Permit Limit and the NPM target value by clarifying a more collaborative process for the latter.

[122] For these reasons, I order that section 2.8.2(b) is to be amended to read as follows:

> The Permittee must operate and optimize the design and performance of the WTP to target achievement of any prescribed NPM. The stated NPM target value represents WTP operation that achieves annual average effluent quality that is at or below any specified NPM. Assessment of the attainment of NPM values must be reported in an annual optimization update progress report appended to the annual report required in section 4.2. If the effluent quality does not achieve an NPM value specified by the Director, the Permittee must identify and propose response actions to bring the effluent quality toward meeting the target value in the annual optimization update progress report. Response action may include treatment plant optimization and/or source control and/or water management improvements, and a schedule for implement the response action must be included in the annual optimization update progress report.
>
> The following NPM is established:
>
> Total copper 12 ug/L

DECISION

[123] In making this decision, I have carefully considered all of the evidence before me, and the submissions and arguments made by the parties, whether or not they have been specifically referenced in this decision.

[124] For the above reasons, I confirm the addition of section 2.8.2 into the Permit but vary the language in section 2.8.2(b) of the Permit, as set out above. The appeal is allowed in part.

"Linda Michaluk"

Linda Michaluk
Panel Chair

August 22, 2022