

Environment and Climate Change Canada's Presentation to the Nunavut Water Board Respecting the Whale Tail Pit Expansion Project

[illegible]

2AM-WTP1826 – Technical Meeting

October to 29, 2019

Baker Lake, Nunavut

2AM-WTP1826 – ለፕላንቢንግ ቤት

April 29, 2019

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Canada

Overview ၵမံၤငါးၵံၤၵံၤၵံၤ

- Mandate
 - Relevant Acts and Regulations
 - Status of Environment and Climate Change Canada's Concerns
 - Technical Comments and Recommendations
-
- ᐱᑦᑕᑦᑎᐱᑦᑭᑦᑭᑦ
 - ᐱᑦᑕᑦᑎᐱᑦᑭᑦᑭᑦ ᐱᑦᑕᑦᑎᐱᑦᑭᑦᑭᑦ ᐱᑦᑕᑦᑎᐱᑦᑭᑦᑭᑦ
 - ᐱᑦᑕᑦᑎᐱᑦᑭᑦᑭᑦ ᐱᑦᑕᑦᑎᐱᑦᑭᑦᑭᑦ ᐱᑦᑕᑦᑎᐱᑦᑭᑦᑭᑦ
 - ᐱᑦᑕᑦᑎᐱᑦᑭᑦᑭᑦ ᐱᑦᑕᑦᑎᐱᑦᑭᑦᑭᑦ ᐱᑦᑕᑦᑎᐱᑦᑭᑦᑭᑦ

[illegible]

- [illegible]

Relevant Acts and Regulations

- Department of the Environment Act
 - Canadian Environmental Protection Act
 - Fisheries Act – Pollution Prevention Provisions
 - Migratory Birds Convention Act
 - Species at Risk Act
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- ᐃᑲᓕᒋᔭ ᐱᖅᑐᖅ
 - ᐆᐳᑦᑎᐣᐤ ᐃᑲᓕᒋᔭ ᐄᓂᖁᓂᐣ ᐱᖅᑐᖅ
 - ᐃᖁᓂᐣ ᐱᖅᑐᖅ - ᐱᐸᙴᐣᐇᖁᓂᐣ ᐡᓚᓗᐈᓂᐣ
 - ᓂᓯᐣᐇᐣ ᓂᙴᐣᐇᓂᐣ ᐱᖅᑐᖅ
 - ᐊᓪᓶᐣᐇᓂᐣ ᐇᐣᐣᐣ ᐱᖅᑐᖅ

Current Status of ECCC Technical Comments

ᐱᑦᑕᑕᑕ ᑕᑦᑎᑦᑕᑦ ᑕᑦᑎᑦᑕᑦ ᑕᑦᑎᑦᑕᑦ ᑕᑦᑎᑦᑕᑦ (ECCC)

ᐱᑦᑕᑕᑕ ᑕᑦᑎᑦᑕᑦ ᑕᑦᑎᑦᑕᑦ ᑕᑦᑎᑦᑕᑦ

ECCC-TC1	Flooded Pit Reconnection ᑕᑦᑎᑦᑕᑕ ᑕᑦᑎᑦᑕᑕ ᑕᑦᑎᑦᑕᑕ ᑕᑦᑎᑦᑕᑕ	Unresolved ᐱᑦᑕᑕᑕ ᑕᑦᑎᑦᑕᑕ
ECCC-TC2	Closure of the Groundwater Storage Ponds ᑕᑦᑎᑦᑕᑕ ᑕᑦᑎᑦᑕᑕ ᑕᑦᑎᑦᑕᑕ ᑕᑦᑎᑦᑕᑕ	Unresolved ᐱᑦᑕᑕᑕ ᑕᑦᑎᑦᑕᑕ
ECCC-TC3	Removal of Seepage from Model Inputs ᑕᑦᑎᑦᑕᑕ ᑕᑦᑎᑦᑕᑕ ᑕᑦᑎᑦᑕᑕ ᑕᑦᑎᑦᑕᑕ	Resolved - Commitment ᐱᑦᑕᑕᑕ ᑕᑦᑎᑦᑕᑕ – ᑕᑦᑎᑦᑕᑕ ᑕᑦᑎᑦᑕᑕ
ECCC-TC4	Wet Climate Years – Water Management Plan ᑕᑦᑎᑦᑕᑕ ᑕᑦᑎᑦᑕᑕ ᑕᑦᑎᑦᑕᑕ ᑕᑦᑎᑦᑕᑕ	Unresolved ᐱᑦᑕᑕᑕ ᑕᑦᑎᑦᑕᑕ
ECCC-TC5	Landfarm Management Plan ᑕᑦᑎᑦᑕᑕ ᑕᑦᑎᑦᑕᑕ ᑕᑦᑎᑦᑕᑕ ᑕᑦᑎᑦᑕᑕ	Resolved ᐱᑦᑕᑕᑕ ᑕᑦᑎᑦᑕᑕ
ECCC-TC6	Landfarm Acceptance Criteria ᑕᑦᑎᑦᑕᑕ ᑕᑦᑎᑦᑕᑕ ᑕᑦᑎᑦᑕᑕ ᑕᑦᑎᑦᑕᑕ	Resolved ᐱᑦᑕᑕᑕ ᑕᑦᑎᑦᑕᑕ
ECCC-TC7	Active Layer Depth ᑕᑦᑎᑦᑕᑕ ᑕᑦᑎᑦᑕᑕ ᑕᑦᑎᑦᑕᑕ ᑕᑦᑎᑦᑕᑕ	Resolved ᐱᑦᑕᑕᑕ ᑕᑦᑎᑦᑕᑕ
ECCC-TC8	Water Quality Monitoring and Management Plan for Dike Construction and Dewatering (Errata) ᑕᑦᑎᑦᑕᑕ ᑕᑦᑎᑦᑕᑕ ᑕᑦᑎᑦᑕᑕ ᑕᑦᑎᑦᑕᑕ ᑕᑦᑎᑦᑕᑕ ᑕᑦᑎᑦᑕᑕ ᑕᑦᑎᑦᑕᑕ ᑕᑦᑎᑦᑕᑕ	Resolved ᐱᑦᑕᑕᑕ ᑕᑦᑎᑦᑕᑕ



ᐃᑭᓂᓴᔪᓪ ᐱᕐᒪ ᓯᒪ ᐱᓯᔪᓪ ᓄᓇᒪ - ᐱᓕᐱᓚᐱᓯᓪ ᓄᓪᓕᐅᑕᐅᓯᓪ 1
(Unresolved/ᐱᐱᓄᓪᓯᒪᓇᓯᓪᑖ)

[illegible]

ᐃᑭᑦᑎᑦᑎᐱᑦ ᐃᑭᑦᑎᑦᑎᐱᑦ ᐃᑭᑦᑎᑦᑎᐱᑦ ᐃᑭᑦᑎᑦᑎᐱᑦ - ᐃᑭᑦᑎᑦᑎᐱᑦ ᐃᑭᑦᑎᑦᑎᐱᑦ 2
(Unresolved / ᐃᑭᑦᑎᑦᑎᐱᑦ ᐃᑭᑦᑎᑦᑎᐱᑦ)

$\triangleright d \triangleleft^{\text{cb}} C \triangleright \sigma \triangleleft^{\text{cb}} \mathcal{C}^c \quad \Delta \Gamma^{\text{cb}} \mathcal{C}^{\text{cb}} C \triangleright \epsilon \mathcal{C}^c \quad C \gamma^c$

- ECCC recommends that the Proponent:
 - Clarify the options for closure of the groundwater storage ponds.
 - Identify what would constitute appropriate water quality to change from backfilling the groundwater storage ponds.
 - Identify impacts to post-closure pond water quality if the groundwater storage ponds are not covered.
- ᐱᓕᑎᓕᒃ ᐱᓕᑎᓕᑦ ᐱᓕᑎᓕᑦ ᐱᓕᑎᓕᑦ (ECCC) ᐱᓕᑎᓕᑦ ᐱᓕᑎᓕᑦ:
 - ᐱᓕᑎᓕᑦ ᐱᓕᑎᓕᑦ ᐱᓕᑎᓕᑦ ᐱᓕᑎᓕᑦ ᐱᓕᑎᓕᑦ ᐱᓕᑎᓕᑦ.
 - ᐱᓕᑎᓕᑦ ᐱᓕᑎᓕᑦ ᐱᓕᑎᓕᑦ ᐱᓕᑎᓕᑦ ᐱᓕᑎᓕᑦ ᐱᓕᑎᓕᑦ ᐱᓕᑎᓕᑦ ᐱᓕᑎᓕᑦ.
 - ᐱᓕᑎᓕᑦ ᐱᓕᑎᓕᑦ ᐱᓕᑎᓕᑦ ᐱᓕᑎᓕᑦ ᐱᓕᑎᓕᑦ ᐱᓕᑎᓕᑦ ᐱᓕᑎᓕᑦ ᐱᓕᑎᓕᑦ.

ᐃᓄᑦᑎᕋᒃ ᐱᓚ ᓯᓚ ᐱᓯᔪᓴᓂᓴᓴ ᑲᓇᑕ – ᐱᕋᐱᑎᐱᓴᓴ ᓂᕐᕋᐅᑕᐅᕐᕐ 3
(Resolved – Commitment / ᐱᐱᓂᔪᓯᓚᕐᕐ – ᑲᓚᓯᔭᐅᓂᐱᓯᓚᓂᕋᐱᕐᕐ)

הַיְיָ אֱלֹהֵינוּ הַיְיָ אֱלֹהֵינוּ הַיְיָ אֱלֹהֵינוּ

- ECCC recommends that the Proponent:
 - Identify monitoring that will be done to ground-truth the prediction of negligible seepage from the Waste Rock Storage Facility.
 - Use monitoring results to inform ongoing water quality model and water balance updates.
- ᐃᑦᑎᑦᑕᑦ ᐃᑦᑎ ᑦᑕ ᐃᑦᑎᑦᑕᑦ ᑕᑦᑕ (ECCC) ᑎᑦᑦᑦᑦ ᐃᑦᑎᑦᑕᑦᑕᑦ:
 - ᐃᑦᑎᑦᑕᑦ ᑕᑦᑎᑦᑕᑦᑕᑦᑕᑦ ᐃᑦᑎᑦᑕᑦᑕᑦᑕᑦ ᐃᑦᑎᑦᑕᑦᑕᑦᑕᑦ ᐃᑦᑎᑦᑕᑦᑕᑦᑕᑦ ᐃᑦᑎᑦᑕᑦᑕᑦᑕᑦ ᐃᑦᑎᑦᑕᑦᑕᑦᑕᑦ.
 - ᐃᑦᑎᑦᑕᑦ ᐃᑦᑎᑦᑕᑦ ᐃᑦᑎᑦᑕᑦᑕᑦᑕᑦ ᐃᑦᑎᑦᑕᑦᑕᑦᑕᑦ ᐃᑦᑎᑦᑕᑦᑕᑦᑕᑦ ᐃᑦᑎᑦᑕᑦᑕᑦᑕᑦ ᐃᑦᑎᑦᑕᑦᑕᑦᑕᑦ ᐃᑦᑎᑦᑕᑦᑕᑦᑕᑦ.

ECCC-TC4
ᐱᑭᓂᕈᕋᐅ ᐱᒻᒪ ᓯᔨ ᐱᓴᓴᕐᕐᕐᕆᕐᕆ ᑲᑹᑦ - ᐱᑦᐱᕈᕋᐅ ᕐᕋᑦᐱᑦᐱᕐᕐᕆ 4
(Unresolved/ᐱᑦᐱᕐᕐᕆᕐᕆ)

[illegible]

-  Environment and Climate Change Canada Environnement et Changement climatique Canada ᐱᑦᓴᓂᕋᓇᓂᕐ ᐱᑦᓴᓂᕋᓇᓂᕐ ᐱᑦᓴᓂᕋᓇᓂᕐ

ECCC-TC5

ᐱᑭᓂᕈᓴ ᐱᕐᒪ ᓯᒪ ᐱᓯᓯᓄᓆᕐᒪ ᑲᓇᑕ – ᐱᑦᐱᓂᐱᓯᓄᓆᕐᒪ 5

(Resolved / ᐱᐱᓄᓆᕐᒪᓴᕐ)

$\mathcal{M} \vdash \mathcal{P}^{\text{sb}} \mathcal{C} \triangleright \mathcal{T}^{\text{sb}} \triangleleft \mathcal{D} \mathcal{C}^{\text{sb}} \cap \mathcal{V} \mathcal{P}^{\text{sb}} \mathcal{D}^{\text{sb}} \triangleleft \mathcal{E} \mathcal{C} \triangleright \mathcal{T}^{\text{sb}}$

-  Environment and Climate Change Canada Environnement et Changement climatique Canada ᐱᑦᓴᓂᕋᓇᓂᕐ ᐱᑦᓴᓂᕋᓇᓂᕐ ᐱᑦᓴᓂᕋᓇᓂᕐ

ᐃᓚᐅᓂᔭᕐ ᐃᑦᒪ ᓯᒪ ᐃᓯᔭᕐᓂᓴᒪ ᑲᓇᑕ – ᐱᑕᐃᓂᐃᑭᕐ ᓂᐳᑕᐃᐳᕐᖅ 6
(Resolved / ᐱᐃᓂᔭᓯᒪᕐᖅ)

መጋቢት ፳፭ ፳፻፲፭

- ECCC recommends that the Proponent follow soil restrictions in order to avoid microorganism toxicity, as outlined in the Federal Guidelines for Landfarming Petroleum Hydrocarbon Contaminated Soils.
- ECCC-ᑦᑕ ᑎᓕᓯᐅᓪᑕ ᐅᓴᑖᑲᑕᑏᑦᑕ ᑕᓕᓯᑦᑕᓕ ᓄᓇ ᓱᓯᑆᓱᑕᑖᑏᓪᑕ ᑕᓕᓯᑦᑕᓕ ᐅᑕᒻᑦᑕ ᑕᓯᑦᑕᓂᓯᑕ ᑕᑕᓇ ᓇᑐᓇᑕᓴᑆᓱᑕᒻᑕ ᓴᑭᑕᑕᑆᑕᓂᑦ ᓇᑐᓇᑕᑦᑕᑦᑕ ᓄᓇ ᓱᓯᑆᓱᑕᒻᑕ ᓇᑦᑕᑕᐅᓂᑦᑕᑎᑐᑕ ᐅᑆᓱᑆᑎᓯᑎᑕ ᐅᑆᓱᑆ ᓄᓇ ᓱᓯᑆᓱᑕᒻᑕ.

[illegible]

⌘⇧> ⌨Lσ^aL ▷^b↵^cC▷ʹLσ◁

- [illegible]

[illegible]

ᐃᓚᑦᑎᐸᓇᑦᑐᑦ ᑦᑲᑭᓴᒋᐸᐸᑦᑳᑦᐅᑦ ᐸᓚ ᐸᑭᓚᑦᑎᑳᑦᐅᑦ ᐸᓚᑯᑦᑲᑦ ᑲᓚᓂᑭᓄᐸᐸ ᐸᓚ ᐃᓚᐃᓗᐃᓴᓯᑦᑲ
(ᑎᑎᑦᑦᑲᑦᓯᓚᑳᐸ ᑕᑦᓚᑦᑲᑦᓯᓚᓴᑦᑲ)

- ECCC recommends that in the next plan update the Proponent reference the *Metal and Diamond Mining Effluent Regulations* in Section 2.2.1 (TSS), Table 2.1 (Existing Federal TSS Guidelines) and Section 5.1.2 (Standard Operating Procedure for Monitoring and Management During Dewatering).
- ECCC-ᑳᓐ ᑎᕋᓯᔭᓐ <ᓇᐅᑕᐅᓯᒪᓴᖃ ᑐካᓗᑕᐅᑲᓄᓂᐱᓐᑦᑕᓐ ᐅᓶᓴᓴᖃᑕᐱᓐᑦ ᐅᓇ ᒪᕋᒐᖃ ነᓻᓸᓐᑦ
ᑕᐱᒪᓐᑦᑕᓐ ᐅᓶᓴᓴᓐᑦᑕᓐᑦᑕᓐ ᓯᓐᓸᓐᑦᑕᐱᓐᑦᑕᓐ ᐱᑐᐱᒐᖃ ᐱᕋᒐ 2.2.1 (ᑲᑎᓴᓯᓐ ᓯᑎᓴᓐ [TSS]), ᓴᓵᓴᓐᑕᓯᒪᓴᖃ
2.1 (ᓚᓰᒪᑐᖃᓐ ᒪᓄᓇ TSS ᖃᓐᓴᓗᑎᑲᓐᑦ) ᐱᒪᓐ ᓴᓵᓴᓐᑕᐅᓯᒪᓴᖃ ᐱᕋᒐ 5.1.2 (ᐱᑐᖃᑕᐅᓴᓐᑦ ᐱᐅᕋᓗᓗᓴᓐᑦ
ᖃᐅᓴᓯᐱᓗᓴᓐ ᐱᐅᕋᓐᑕᑎᓴᓯᖃ ᐱᒪᐱᓐᓴᓐᑕᓐᑦᑕᓐᑦ).

Additional Information Request (Unresolved/Λ◁σⁱʳL~ʳᶜᵀᶜ)

Effluent Mixing Zone

- ECCC Information Request – IR6 requested a description and map of the mixing zones
- The Proponents response indicated approximate mixing zones but did not include the size of the mixing zone in each receiver.

ECCC is recommending that the Proponent clarify:

- Whether a 100 meter mixing zone is proposed around each of the three diffuser pipes located in Mammoth Lake and in Whale Tail (South Basin)
- The size of the entire mixing zone for each receiver

Thank You ᐅᐅᐅᐅᐅᐅᐅ



Environment and
Climate Change Canada

Environnement et
Changement climatique Canada

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