Appendix H

Engagement Material

PROJECT UPDATE
NEW BRITANNIA MILL & ANDERSON TIA

September 27, 2023

HUDBAY

WELCOME

Agenda

- Introductions
- Feedback from March 2022 Meeting
- Proposed Upgrades at the New Britannia Mill
- Proposed Subaerial Tailings Trial Study at the Anderson TIA
- Feedback / Questions

INTRODUCTIONS

- New Hudbay Team:
  - Landice Yestrau, Manager of Environmental Control
  - Trevor Ross, Manager of GeoEngineering and Tailings
  - Jayde Clendenning, Environmental Scientist
  - Zach Zimmerman, Planning and Execution Section Leader

- Hudbay Support Team:
  - Cliff Samoiloff, Senior Scientist & Project Manager, AECOM

HUDBAY ENVIRONMENTAL PUBLIC ENGAGEMENT OBJECTIVE

What Are We Doing?

- Implemented a dedicated **MBU Environment General Inquiry** email account which is monitored by Hudbay Environment:
  - **hb.env@hudbay.com**
- Implemented a quarterly information newsletter to share important information – sign up!
- Developing in-person engagement events
- Developing a tentative meeting schedule with various stakeholders
- More collaboration with Hudbay's Indigenous Liaison Officer and to have more of a presence at Indigenous Relations meetings

NEW BRITANNIA MILL
Proposed Production Rate Increase

FEEDBACK – MAY 2022 PUBLIC INFORMATION SESSION

What We Heard

- Concerns:
  - Increase in dust and impact on visibility
  - Increased noise from trucks through town
  - Safety (residents use the road for walking)
  - Time of day that trucks are on the road
  - Trucks and speeding

NEW BRITANNIA MILL

- New Britannia Mill is permitted to operate in accordance with Environment Act License No. 3320 which allows for a maximum production rate of 1,500 tonnes per day.
- Hudbay is proposing a 1,000 tonnes per day increase in copper, gold, and silver processing which will bring the total production rate to 2,500 tonnes per day.
- Average production rate from 2022 is approximately 1,497 tonnes per day.
- Average hauling is 2.3 trucks/hr.

NEW BRITANNIA MILL PROPOSED UPGRADES

Production Rate Increase

- Existing infrastructure at the Mill will be used to meet the proposed milling needs.

- No additional equipment or upgrades to existing equipment required to accommodate the proposed production rate increase.

- Existing crushing, grinding, floatation, and dewatering systems will remain unchanged.

- No upgrades to access roads or other ancillary facilities will be required.
  - Previous Notice of Alteration to increase the overall trucks from 2 trucks per hour per day up to 4 trucks per hour per day, or a total of up to 90 trucks over a 20-hour period was approved by Environment Branch on November 22, 2022.
  - This approval applies to the anticipated truck traffic required to support the increased Mill production rate.

NEW BRITANNIA MILL PROPOSED UPGRADES

- Water Requirements
  - 90% of water used at the Mill during operation will continue to be comprised of recycled water drawn from the Anderson TIA.

- Wastewater and Sewage
  - No additional upgrades will be needed.

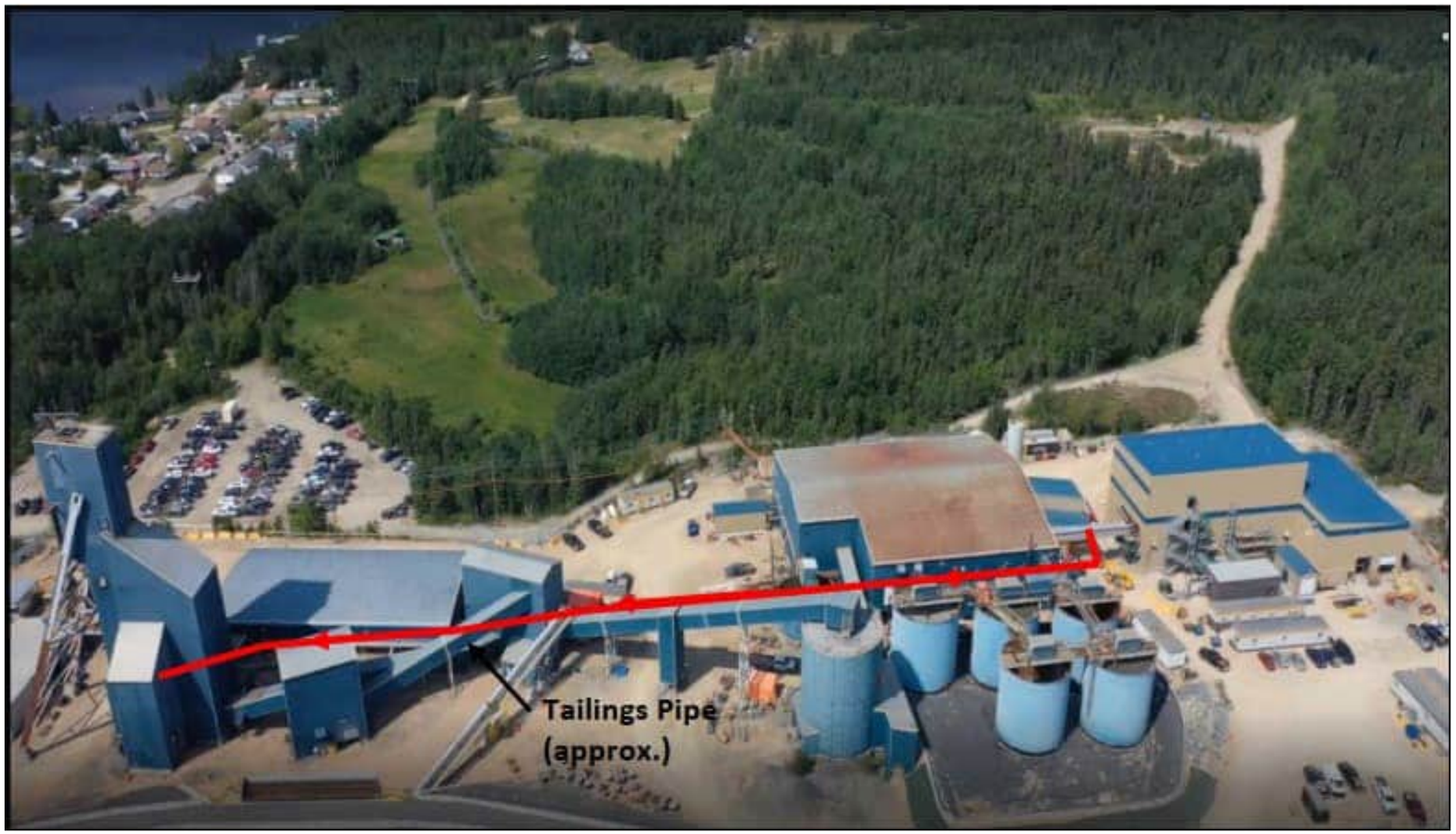
- Waste Management
  - Wastes generated will continue to be managed in accordance with existing operations (no additional upgrades) with final disposal at a licensed waste disposal facility.

- Power and Chemicals
  - No new chemicals or reagents will be used.
  - Existing reagent use will increase by a maximum of approximately 60%.
    - These will continue to be consumed in the milling process or converted to by-products that are discharged with tailings into the Anderson TIA

NEW BRITANNIA MILL UNDERGROUND TAILINGS PIPE

Option Under Review

- Diversion of a portion of the new tailings to the flooded underground at New Britannia Mine (not exceed 1,200 m^3 of tailings per day).



NEW BRITANNIA MILL SHAFT INSPECTION

- A visual inspection of the main shaft via a down-shaft camera conducted in March 2023 determined that the **shaft remains in good condition**.

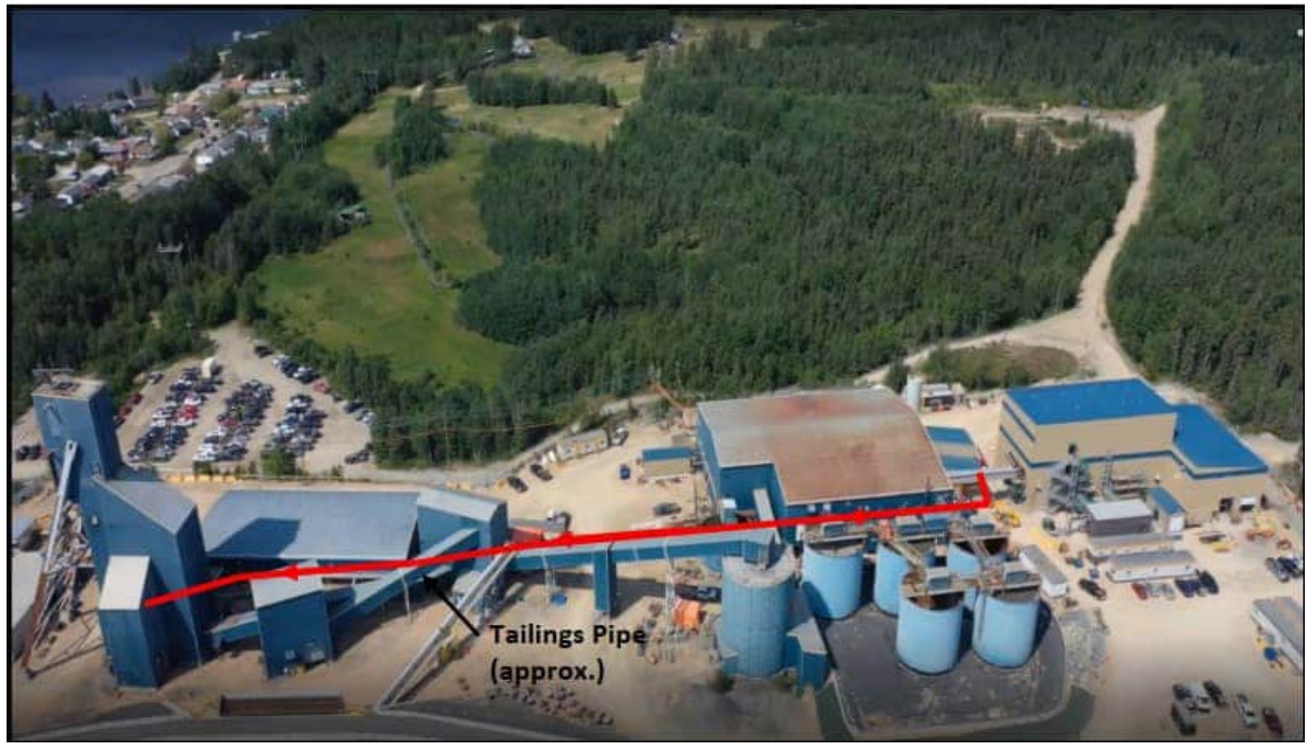
- Shaft water level was determined to be at approx. **2,600 feet**.

- Approximately 986,000 m^3 of the underground workings of the New Britannia Mine have flooded since 2016, leaving approximately **2.2 MM m^3 of void space** available for potential tailings storage.

Shaft water level approx. 2,600 ft level

NEW BRITANNIA MILL UNDERGROUND TAILINGS PIPE

- Underground Tailings Pipe will be comprised of an 8” HDPE fused together with thermal welds.
- New Underground Tailings Pipe features:
  - Leak detection system
  - Emergency response system
- Leak detection along the length of the pipe will be provided by monitoring flow rates. The pipes will be subject to continuous flow (except during period of maintenance) which will prevent freezing.
- The pipes will be visually inspected daily by dedicated personnel.



NEXT STEPS

- Submit a Notice of Alteration to the existing New Britannia Mill License No. 3320.
- Re-evaluate the need for underground tailings deposition at New Britannia Mine and build Underground Tailings Pipeline if required and pending approval from Manitoba Environment and Climate (MEC).
- Hudbay will continue to meet the requirements of the existing Environment Act License in addition to new requirements for the proposed increase in production.

ANDERSON TIA
Proposed Subaerial Tailings Trial Study

HUDBAY LOOKING TO THE FUTURE: ANDERSON TIA

Optimize Processing Operations

Process improvements to increase recoveries.

Process controls to decrease volume of reagent use.

Optimize Tailings Deposition

Safely maximize space in facility.

Design and build dams at optimal times.

Optimize Water Treatment

Monitoring and modeling to predict and respond to effluent quality.

Implement operational controls to ensure compliant release to environment.

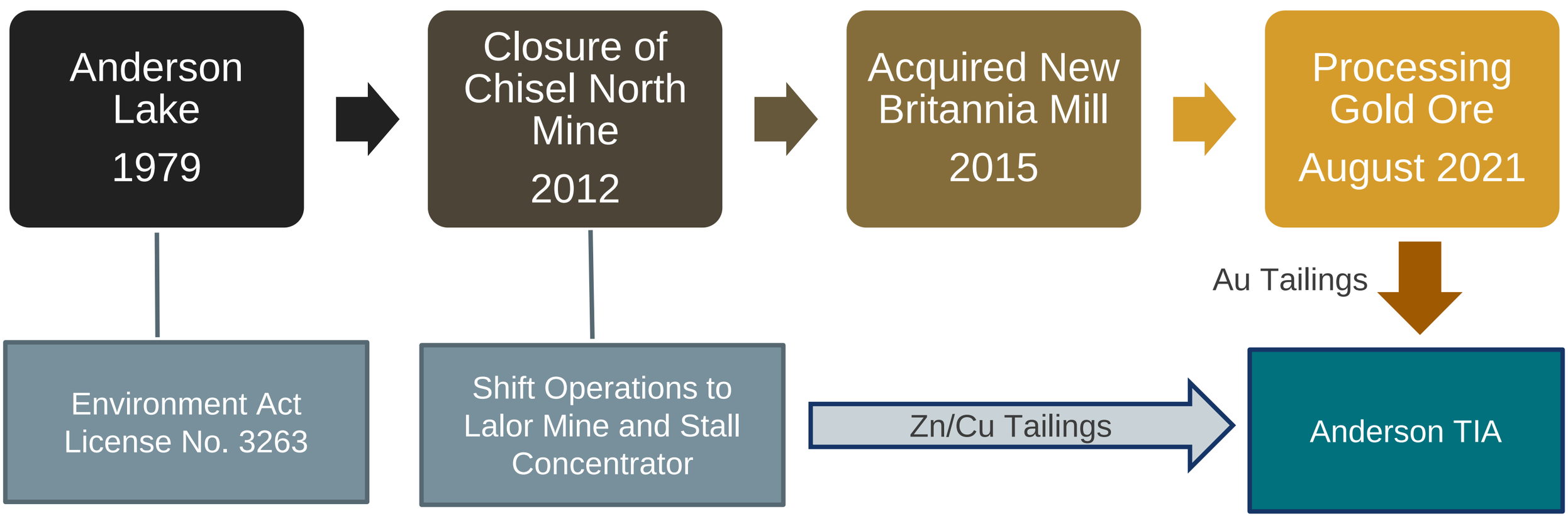
Minimize Environmental Impacts

All optimization leads to reducing environmental impacts:

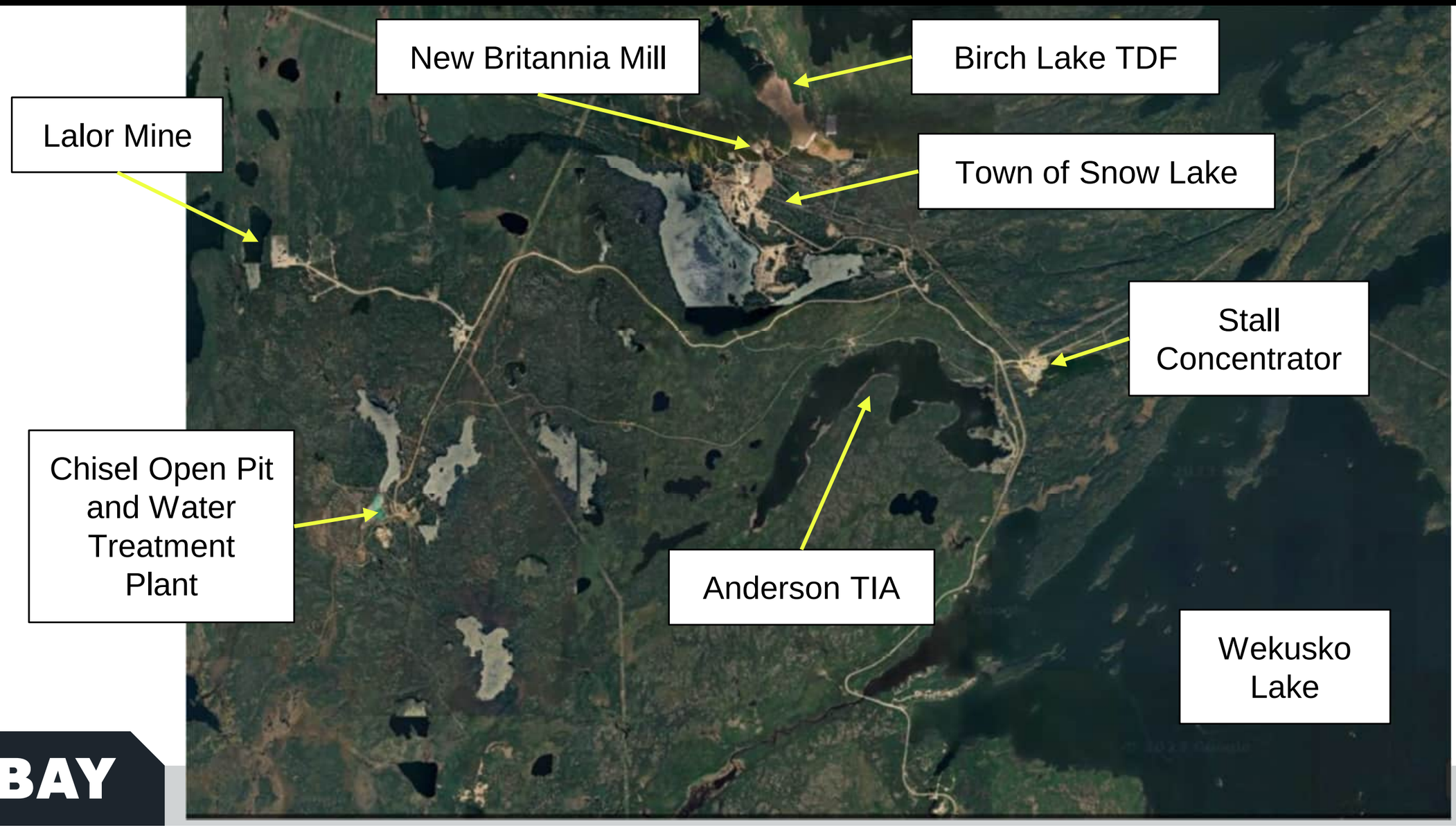
- Reduced dam height and associated risks
- Reduced land disturbance
- Reduced carbon footprint and emissions
- Reduced chemicals in effluent

Optimization of operations = improved business outcomes + **reduction of environmental impacts**

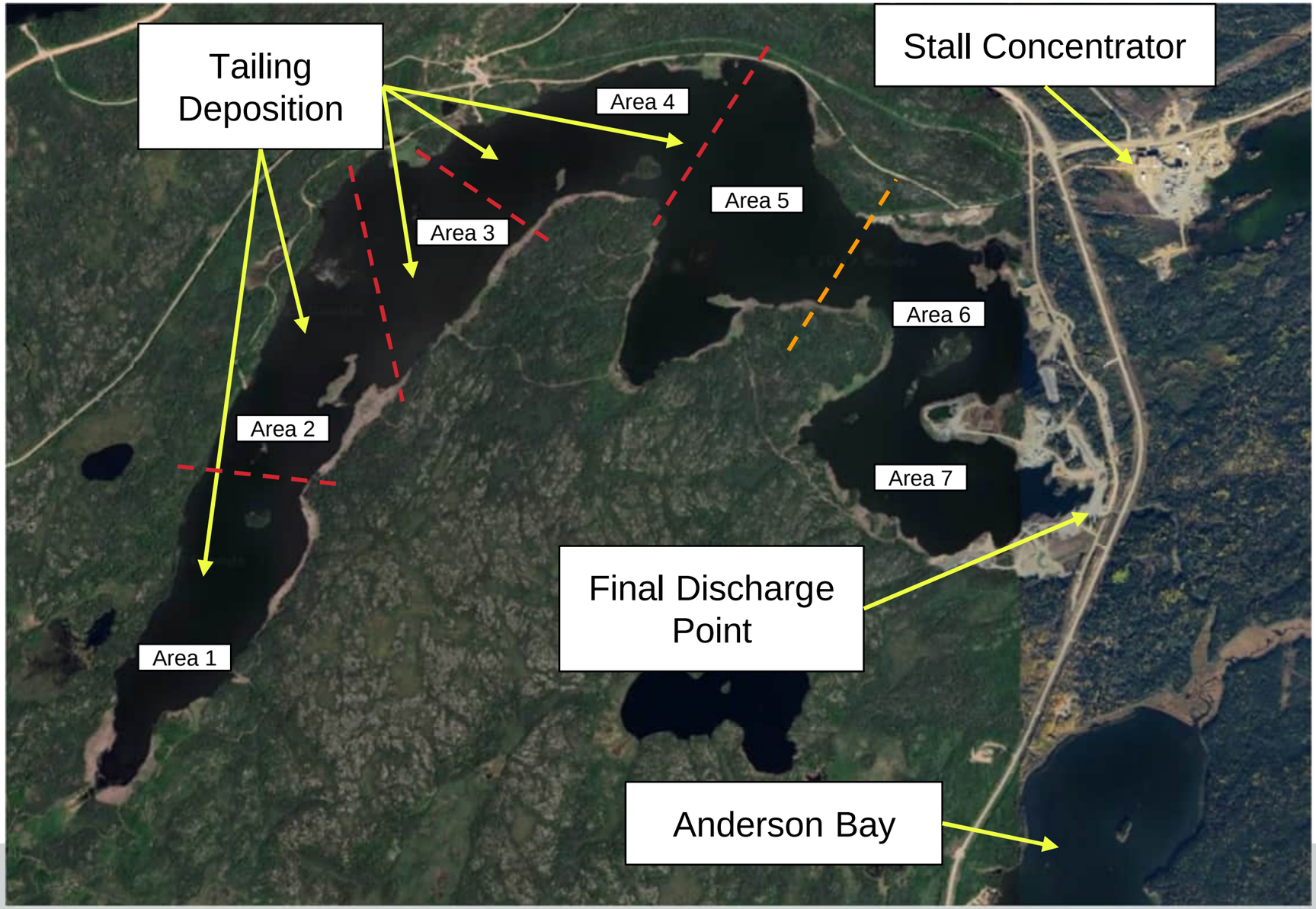
OPERATION OF THE ANDERSON TIA



OVERVIEW OF HUDBAY IN SNOW LAKE

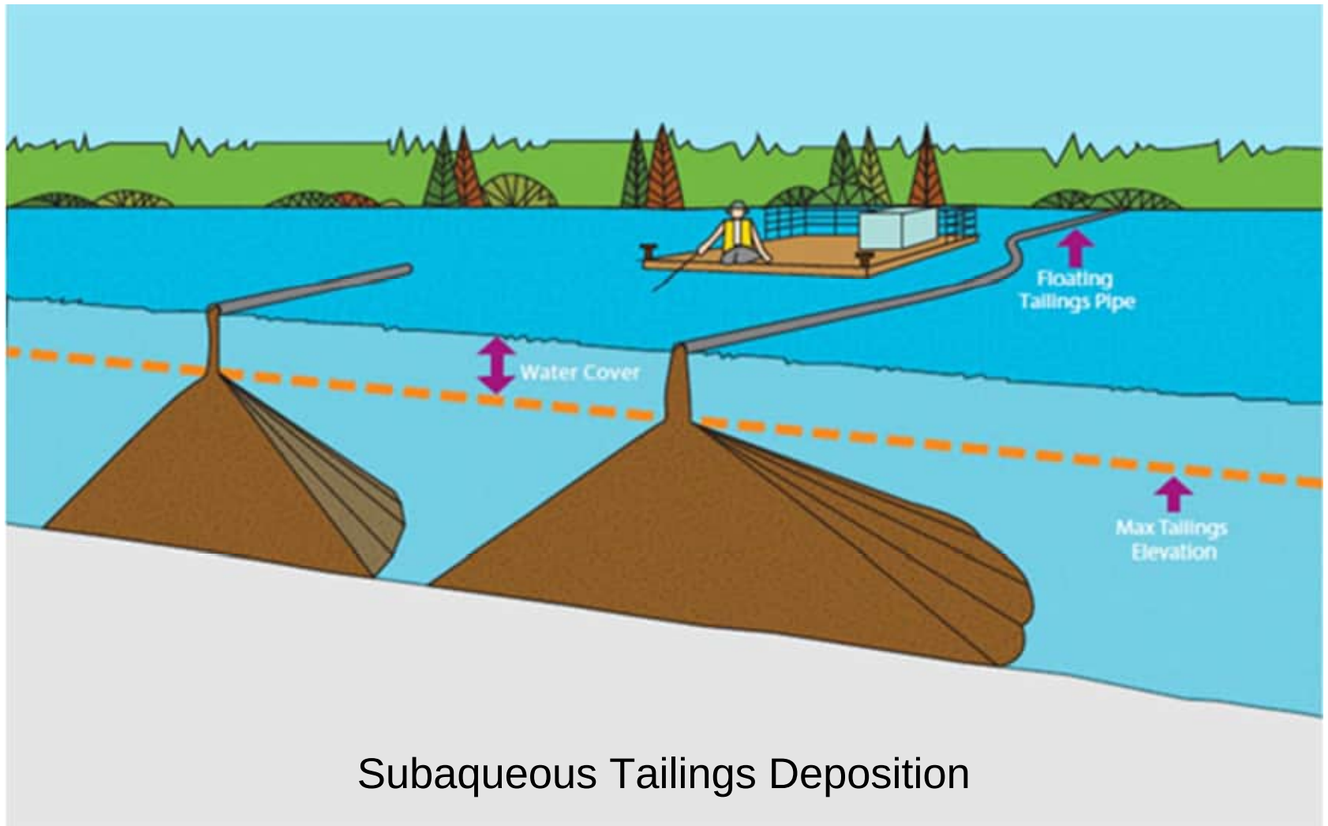


ANDERSON TIA OVERVIEW



OPERATION OF THE ANDERSON TIA

- Since starting operation in **1979**, tailings from the processing of ore obtained from various mine sites were deposited in Anderson TIA, and all tailings have been deposited *sub-aqueously* within the Anderson TIA as per the specifications and operating conditions in Environment Act License No. 3263.



Subaqueous Tailings Deposition

Floating Tailings Pipe in ATIA

CURRENT MITIGATION AND OPTIMIZATION MEASURES

- In 2023, in an effort to optimize tailings deposition within the ATIA, Hudbay has implemented:
  - Additional employees on the Tailings Crew
  - Addition of a Technical Lead to provide guidance and defined deposition planning to crews
  - Addition of dedicated supervisor for the ATIA to provide direct supervision and additional support to Tailings Crew
  - Improved procedures that include multiple pipe moves per day instead of one
  - Improved deposition planning and methodology using 3D modelling software
  - Regular drone surveys to evaluate progress
  - Increased frequency of bathymetric surveys
  - Weekly Key Performance Indicator (KPI) reporting to track progress
  - Additional piping to support deposition in Areas 1 & 2 (farthest from discharge point)
  - Additional equipment to support moving pipe
  - Improved response to maintenance of equipment

OPERATION OF THE ANDERSON TIA

- Hudbay has been successful in maintaining the tailings in the Anderson TIA underwater during most times of the year.
- During the shoulder seasons and extreme weather events, it is unsafe for employees to go onto the water or ice to reposition the floating pipes that deposit tailings into the impoundment area.
- This results in a very small area of exposed tailings; approximately 2%-8% of the total surface area of the ATIA based on operating water level.
- Having identified that exposed tailings do occasionally occur periodically within the Anderson TIA, Hudbay has evaluated the potential environmental effects that may result from exposed tailings in the Anderson TIA and how these exposed tailings may affect overall water quality.

OBSERVED IMPACT OF EXPOSED TAILINGS

- Areas of exposed **tailings remain saturated** (wind and wave action, precipitation, capillary action).

- Ongoing water quality monitoring that is occurring within and downstream of the Anderson TIA confirms **no significant deterioration of water quality** during these periods of tailings exposure.

- Tailings above water appear to consolidate more quickly than tailings underwater; potential to deposit **more tailings in a smaller space** and reduces pore water space.

- Course material appears to remain above water with finer material washing underwater, thus **minimizing risk of dusting.**

- Fine material is encapsulated into the tailings and reduces potential for metal leaching.

SUBAERIAL TAILINGS DEPOSITION

- Hudbay is continuously seeking innovative approaches for the operation and management of the Anderson TIA.
- One of the approaches that Hudbay is exploring is the feasibility of transitioning the Anderson TIA from a subaqueous to a *subaerial* tailings deposition method. This approach involves depositing tailings above the water table.

- The potential advantages of subaerial tailings deposition at Anderson TIA include:
  - Safe placement of tailings during periods of unsafe ice conditions or extreme weather
  - Increase current overall storage capacity within the Anderson TIA
  - Optimize engineering design of current approved and ongoing expansion activities
  - Reduced extent of future expansion of the Anderson TIA
  - Reduce likelihood for the need for new tailings management facilities in the future

PROPOSED SUBAERIAL TAILINGS TRIAL STUDY

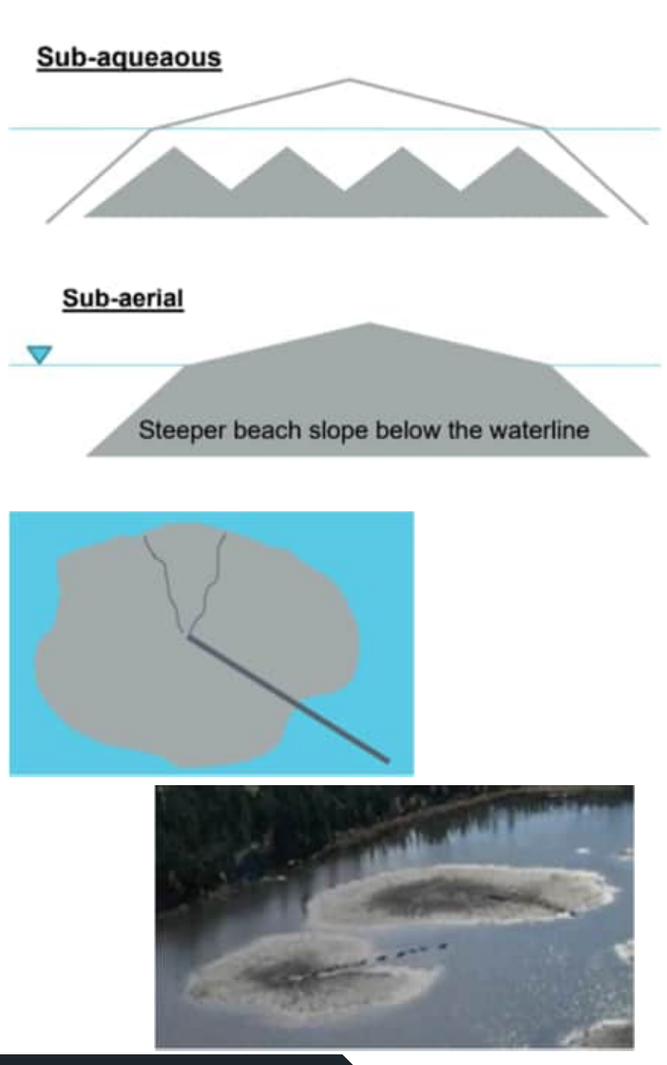
- To evaluate the feasibility of future subaerial tailings deposition at Anderson TIA, Hudbay plans on **conducting a controlled 3-year trial study** within a designated area of the Anderson TIA.

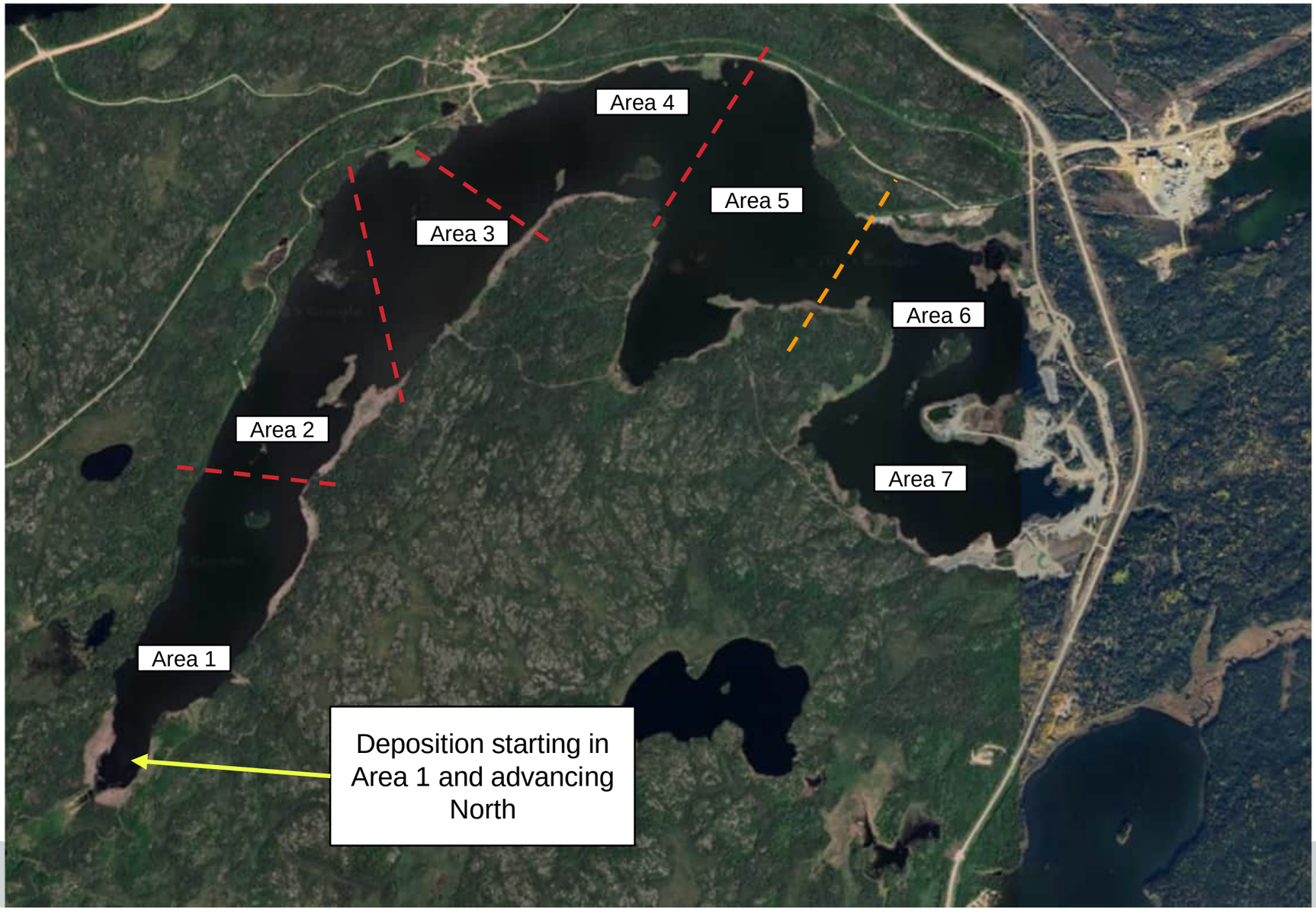
- Proposed study will involve depositing tailings above the water table which will potentially offer a more efficient use of the impoundment space and will address seasonal operational constraints.

- Data collected during the trial study would allow for the ongoing **calibration** and **refinement** of the existing water quality models and will verify the results.

- It will allow for the **optimization of tailings waste** in the Anderson TIA which allows for **further explorations for new ore deposits.**

TASKS THAT SUPPORT OBJECTIVES





ADVANTAGES OF CONDUCTING A TRIAL STUDY

- Conducting a controlled trial study would:
  - Provide **“real-life” data** to support current environmental studies
  - Allow Hudbay to make better operational decisions to **optimize** the use of the facility
  - Yield additional data and inform **operational considerations** for future studies
  - Allow the Environmental Approvals Branch to make better informed licensing decisions
- Data obtained during this trial would:
  - Allow for ongoing calibration and refinement of the existing water quality models
  - Verify results of historical and ongoing geochemical studies
  - Assist with the design, execution, and testing of mitigation plans and procedures
- Knowledge and experience obtained during this trial could be applied to other mining facilities in Manitoba (existing or future) to evaluate or develop tailings management strategies

OBJECTIVES OF TRIAL STUDY

- Tailings deposition methodology (floating pipeline, deposition from shoreline with spigots, winter deposition)
- Characterization of tailings physical and hydraulic properties
- Characterization of tailings geochemical properties (lab testing, field scale pilot testing)
- Characterization of tailings seepage and porewater (field sampling and analysis)
- Development of water quality monitoring plan (chemistry, toxicity)
- Development of Trigger Action Response Plan (TARP)
- Update water balance and water quality model (predicts potential future effects)
- Development of subaerial tailings deposition strategy (ongoing revision based on data and key learnings)

TRIGGER ACTION RESPONSE PLAN (TARP)

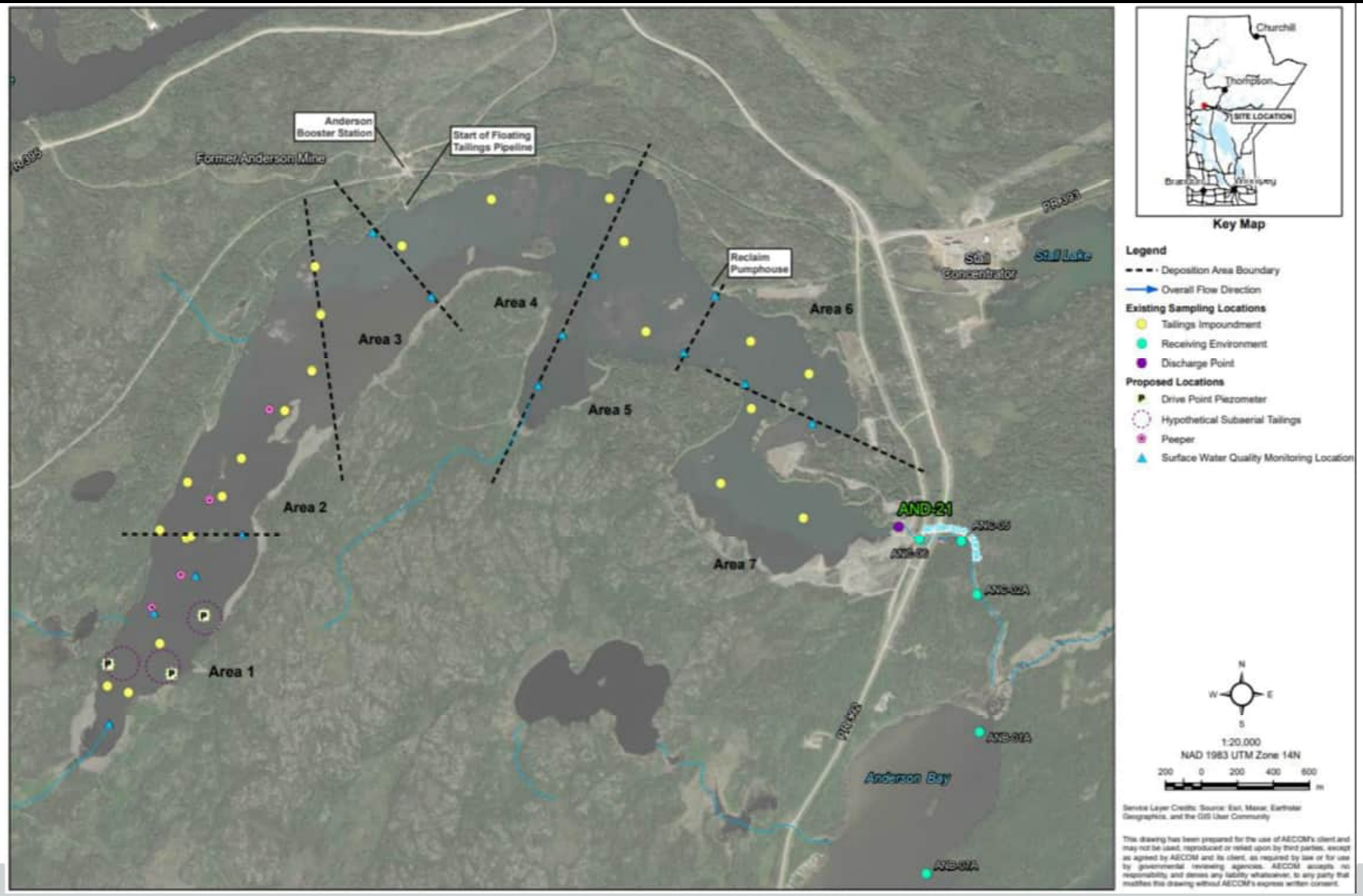
- The goal of the Trigger Action Response Plan (TARP) is to identify and mitigate potential environmental impacts in a timely manner.
- The TARP will identify the normal range of fluctuation for various parameters and establish alert levels (triggers) that would initiate additional monitoring, investigation, or implementation of mitigation measures (actions).
- Examples of triggers include:
  - Increase in the concentration of one or more regulated parameters.
  - Failed toxicity test.
  - Exceedance of a regulatory limit.
- Monitoring results will be evaluated on an ongoing basis to inform the need for any changes to the operation of the Anderson TIA to avoid unacceptable impacts to downstream receiving environment.

MONITORING

- Subaerial deposition would be limited to **Areas 1 - 5** of the Anderson TIA, farthest away from final discharge point.
- Exposed tailings will be **monitored** for saturation and observances of oxidation and mechanically re-saturated as required.
- Continue with ongoing water quality studies, plus the addition of new trial-specific studies at higher monitoring frequency.
- Regular updates to water quality model to **calibrate with real-time data** and use model to predict effluent quality in the Anderson TIA under various subaerial deposition conditions.

MONITORING

Existing and Proposed Sample Locations



MITIGATION AND REPORTING

- Mitigation measures over the course of the trial would be developed, maintained and implemented as needed:
  - **Identify and plan** for any immediate corrective actions (if required)
  - Use predictive water quality modelling results to **proactively plan** for long-term mitigation before water quality deterioration is observed (i.e. dam raises, water treatment)
  - Implement **immediate mitigation** measures if unforeseen deterioration of water quality is observed. For example:
    - Cease discharge to the environment and raise water level to cover exposed tailings
    - Consider technologies to restore water quality or remove water volume from facility without discharge to environment (i.e. temporary water treatment plants, evaporators)

ENVIRONMENTAL ASSESSMENT

- Identification and evaluation of potential environmental impacts resulting from interaction, with an emphasis on:
  - Water quality (Anderson TIA, Anderson Creek, Wekusko Lake)
  - Aquatic habitat (Anderson Creek, Wekusko Lake)
  - Air quality (dust from subaerial tailings)
- Continual review of laboratory and field data and assess actual and potential future impacts (if any)
- Regular updates and evaluation of water balance and results of water quality modelling
- Identify, implement, and assess mitigation measures (if required) and subsequent residual impacts.
- Continually update regulatory agencies and seek guidance from their experts as required.

OTHER ENVIRONMENTAL CONSIDERATIONS

- The study will **not require any further expansion** of the Anderson TIA. All work can be completed within the existing approved footprint.

- There will be **limited additional** infrastructure required to support the study.

- It is expected that there will be **no substantial increase** in the number of vehicles travelling on local roadways, so there is no measurable increase in vehicle emissions (including dust, greenhouse gases, and noise) due to increased vehicle traffic, nor will there be an increase in the risk of animal strikes.

- The mitigation measures provided in the **Anderson TIA Expansion EAP (2016)** and the existing **Hudbay Environmental Management System** will continue to be adhered to throughout the period of the trial study.

ENVIRONMENTAL BENEFITS

- There are various **long term environmental benefits** to optimizing tailings deposition, design, and operation of the Anderson TIA:
  - **Reduced dam heights** and **associated risks for stability** and potential environmental impacts during operation and closure phases
    - Full inundation of tailings would resume before closure
  - **Reduced land disturbance** (i.e. less land for inundation, reduced vegetation clearing, smaller footprint, less need for quarried materials - rock, sand, clay)
  - **Reduced need for heavy equipment, trucking, blasting, construction** resulting in a reduction of greenhouse gas emissions
- Hudbay believes a trial study approach will achieve goals for both Hudbay and the Environmental Approvals Branch by providing proven, real-time data and observations to make:
  - **Improved operational decisions and long range plans** to optimize use of Anderson TIA
  - **Better informed licensing decisions** to ensure Hudbay minimizes their impact to the environment.

NEXT STEPS

- Submit a Notice of Alteration to the existing Anderson TIA Environment Act License No. 3263.
- There will be no changes to the existing Environment Act License for the Anderson TIA; the proposed trial study will be separate.
- Hudbay will continue to operate the Anderson TIA in accordance with requirements of the existing Environment Act License in addition to new requirements for the proposed trial study pending Manitoba Environment and Climate approval.

THANK YOU

hb.env@hudbay.com

Snow Lake Operations Update
Project Questionnaire

We welcome your comments in this brief survey on the operations of New Britannia Mill along with the proposed Trial Study of the Anderson Tailings Impoundment Area (TIA). Your name and contact details are not required. If you would like to submit your questionnaire at another time or pass it along to another community member, please send the filled questionnaire to our General Environment Inquiry email: **hb.env@hudbay.com**

Date: _____

New Britannia Mill

1. In the past year, have you noticed an increase or decrease in the amount of noise related to the New Britannia operations (e.g. haul trucks, Mill operations)?

_____

_____

_____

2. In the past year, have you noticed an increase or decrease in the air quality (dust, odour, opacity) related to New Britannia operations (e.g. haul trucks, Mill operations)?

_____

_____

_____

3. When it comes to personal safety, how do you feel about the current truck haul route?

_____

_____

_____

4. Are there any specific areas within the community where you have safety concerns related to haul trucks?

_____

_____

_____

Subaerial Trial Study on Anderson TIA

5. Do you have any concerns with the current operations of the Anderson TIA? (Yes/No)

    a. If Yes, please provide details:

_____

_____

_____

6. Do you have any concerns about the proposed Trial Study at the Anderson TIA? (Yes/No)

    a. If Yes, please provide details:

_____

_____

7. Would you be interested in receiving regular updates on the status of the trial study? (Yes/No)

    a. If Yes, please provide your email address:

    _____

8. Do you have any suggestions on how we can improve our next Information Session?

_____

_____

9. Do you have any additional comments or feedback regarding either the proposed upgrades at the New Britannia Mill or the proposed Subaerial Trial Study at the Anderson TIA?

_____

_____

_____

10. How did you hear about this Information Session?

_____

_____

11. Any suggestions regarding the day of the week and/or timing for the next Information Session?

_____

_____

12. What information would you like to receive during our next Information Session?

_____

_____

13. Do you have any general comments and/or feedback on any other environmental issues related to Hudbay?

_____

_____

_____

_____

_____

Snow Lake Operations Update Public Information Session

Hudbay Minerals Inc. is hosting two Public Information Sessions to provide an update on the operations at the New Britannia Mill and the Anderson Tailings Impoundment Area. Please join us to learn more about our current and future operations and direct any questions or feedback you may have regarding our operations to Hudbay representatives.

Date & Time:

Wednesday, September 27, 2023
2:00 p.m. to 4:00 p.m.
Presentation Starts at 2:15 p.m.

Wednesday, September 27, 2023
7:00 p.m. to 9:00 p.m.
Presentation Starts at 7:15 p.m.

Location:

Laurie Marsh Community Hall
200 Cherry Ave.
Snow Lake, MB

If you have any questions about the event, please email the General Environment Inquiry email at hb.env@hudbay.com or call Kim at 204-687-2034.