



# Canada – Lupin Mine Tailings Containment Area Discharge Procedure

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### 1 PURPOSE

The following is an overview of the discharge procedure for the tailings area and sewage pond for the Lupin Mine Site.

All samples are to be packed in coolers, with all the appropriate paperwork, and sent to ALS Labs on a weekly basis (or more frequently if planes permit).

### 2 PRE DISCHARGE – TCA

Note – Sample, testing and other important discharge procedural locations have been identified on the attached **TCA Discharge Procedure Site Plan**.

- Discharge from the Tailings Containment Area (TCA) cannot begin before 15 July, as per NWB water licence.
- In June, check the Dam 1A siphons to ensure that they have not suffered ice damage. Check for holes in pipe, coupling integrity, plugged inlets and outlets. Ensure that a vacuum can be created in the pipe to induce siphon flow. Correct any problems so that the siphon process can be started by 15 July.
- Check immersion probes to ensure that they function correctly. All flow monitoring must be calibrated at least once per year and records kept of the calibration procedures and results.
- By 15 June, contact the appropriate laboratory (EP of Environment Canada) to order the 10-litre pails required for the 96-hour Rainbow Trout and Daphnia toxicity pass/fail test.
- Calculate the number and types of sample bottles that will be required for the sampling of the SNP sites and internal sites. Order however many bottles are needed from Las Laboratories. Also order at least four large coolers to have on site before you start sampling. Tell the lab to make sure they send up an empty cooler each week.
- At least one month prior to discharge, sample Pond 2 for the 96-hour Rainbow Trout and Daphnia toxicity pass/fail tests. Sample point is internal station 102, located approximately 100 metres upstream from the siphon intake. UTM coordinates: 7289875N, 486196W.
- Inform lab when samples are shipped. The samples MUST be taken the morning of plane day, as there is a 3-day limit between taking the sample and start of analysis. Results (a 'pass') must be received prior to commencing discharge.
- Check out the portable air compressor to make sure it is working correctly. The compressor is needed to start the vacuum in the siphons. Two months before discharge, haul the air compressor out to Dam 1A.
- By 14 June, at the latest, install the flow meter probes in the siphons and check to ensure that the meter is working.
- Take pH measurements with the portable pH meter in Pond 2, near the siphon intake, daily starting 7 July. pH MUST be in the range of 6.0 to 9.5 or discharge CANNOT commence (it will typically measure in the high 7's to low 8's).



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- We are required by our water licence to provide ten days notice to the INAC inspector prior to the first discharge from the TCA. .
- Also notify the Environment Canada MMER enforcement officer prior to discharge from the TCA.

### 3 PRE DISCHARGE – SEWAGE POND

- Discharge from the sewage pond can begin once ice has melted out of the siphons. We are not regulated by the NWB as to flow volume or dates of discharge.
- Take pH measurements with the portable pH meter in the lower sewage pond, near the siphon intake, as soon as ice is off the pond. pH MUST be in the range of 6.0 to 9.5 or discharge CANNOT commence (it will typically measure in the high 7's to low 8's). Readings must be taken for five days prior to start of discharge (see below) to ensure that pH is within limits.
- We are required by our water licence to provide ten days notice to the INAC inspector prior to the first discharge from the sewage pond.

### 4 DISCHARGE - TCA:

- On July 15, take a pH measurement in Pond 2 by the siphon intakes. If the pH is between 6.0 to 9.5 and the results from the 96-hour trout and daphnia bioassays are a pass - start the siphons.
- Flow meters will have been sent out for calibration to the appropriate manufacturer prior to discharge start up, ensuring that the proper flow readings will be obtained. Spare flow meters may be obtained directly from the manufacturer(s) or supplier(s) as a back up measure. Note that flow meters will be calibrated as per MMER specifications.
- In the Discharge Syphons log, record the date and time that the siphons were started, the pH reading from the portable meter, and the flow volume from each siphon. Sign (legibly) the log.
- All information on the log sheet must also be entered on the Discharge Syphons spreadsheet.
- Water samples must be taken at SNP LUP-10 as per the discharge sampling procedures (separate document).
- If the pH measurement from the field meter indicates that the pH is less than 6.0 or greater than 9.5, the siphons must be shut down IMMEDIATELY and the Environment Canada MMER enforcement officer notified IMMEDIATELY.

### 5 DISCHARGE – SEWAGE POND:

- Prior to initiating discharge, take a pH measurement on the pond side of the dam by the siphon intake. If the pH is between 6.0 to 9.5 - start the siphon.
- In the Discharge Syphons log, record the date and time that the sewage siphon was started, the pH reading from the portable meter, and the flow volume from the siphon. Sign (legibly) the log.
- All information on the log sheet must also be entered on the Discharge Syphons spreadsheet.
- Water samples must be taken at SNP LUP-14 as per the discharge sampling procedures, attached.



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- If the pH measurement from the field meter indicates that the pH is less than 6.0 or greater than 9.5, the siphon must be shut down IMMEDIATELY. Continue taking daily pH measurements in the sewage pond on the siphon intake side. Once the pH returns to within the allowable limits, discharge may be resumed.

### 6 AMENDMENTS

Version	Version Date	Revised By	Approved By	Reason for Change