

EARP MONITORING OVERVIEW CHART. PROJECT: Carmacks Copper Pilot Heap Leach Plant, Carmacks

REQUIRED MITIGATION MEASURES/ RESPONSIBLE AGENCY (in brackets)	FOLLOW-UP AGENCY/ DIVISION	AUTHORITY	REQUIRED DEADLINES	COMPLETED	COMMENTS
Rock Used in Leach Test: Ensuring sulphur level in ore and waste rock is less than 0.3% to avoid ARD.	NAP, Geology		October/93	Yes	Test results (analyses) of Bulk sample received from company. Results below 0.3%.
Site Location: Carmacks Dump Site, YTG land - written consent for use of part of gravel reserve	Yukon Government		September/93	Yes	Company has received consent from YTG.
Project Monitoring & Contingency Plans: a) access restricted, supervision round the clock b) double membrane and leak detection system c) submission of spill contingency plans prior to implementation of pilot plant operations. d) submission of contingency plans for cleanup of spills of stored chemicals prior to commencement of operations. e) inspection of pad and liner system prior to emplacement of crushed ore	NAP, Geology		a) Sept./93 b) Oct./93 c-d) Oct./93 e) Sept./93	a) Yes b-d) Yes e) Yes	a) Company has confirmed. b-d) This is done although instead of leak detection, they have an overflow ("event") pond. Received written description of details on change in design and contingency plans. e) Sept. 20 - Inspection of Liner at Site.

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<p>Raffinate Disposal (approximately 14,800 l raffinate): a) Location: Sewage Pit, YTG gravel reserve north of town - written consent for use of land, City of Carmacks water license b) excavation of pit prior to freezeup, to ensure adequate capacity for 30,000 l of neutralized raffinate</p>	<p>a) Yukon Government b) NAP, Water Resources</p>		<p>a) Sept./93 b) Sept./93</p>	<p>a) Yes b) Yes</p>	<p>a) Company has received consent. b) Carmacks Sewage Pit was enlarged in September. However, in late December (approx. 25th), a leak of solution (estimated at approximately 2000 l (maximum)) was lost from the pilot plant to the liner from the header at the base of the tank. The spilled solution was frozen and sitting on the HDP liner. During plant closure (February), 600 l of solution was pumped from the pile and these were shipped to Gibraltar mines with the other solutions. The 2000 l spilled solutions remained frozen on the liner. The remaining 12,500 l is still contained within the crib as a slurry with the spent crushed ore (300 t). Spring thaw at the end of March resulted in rapid thawing snow build up in the yard area, and also the 2000 l spilled material. Ditches were dug which diverted melt water away from the site. Lime was applied to the event pond (100 kg), and solutions were pumped into the enduction truck and disposed of in the sewage pit (three loads, approximately 2000 l). In July, when the crib was taken apart, another 2500 l (approx.) of solution was pulled off and disposed of in the sewage pit, before the leached tails were removed. This means approximately 9700 l of solution were entrained in the pile of leached tails in the crib.</p>
<p>Waste Electrolyte and organics: taken to Gibraltar Mine, central B.C. for re-use - written consent required prior to commencement of leaching</p>	<p>NAP, Water Resources</p>		<p>Sept./93</p>	<p>Yes</p>	<p>Company has agreed to receive the used organic and electrolyte. Points North Trucking removed the excess sulphuric acid (600 l), 2000 l of electrolyte and 1000 l of petroleum based organic solvents to the Gibraltar Mine.</p>

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<p>Leached Waste Rock: Analysis of waste rock and submission of results to DIAND prior to transportation of rock to Williams Creek and storage in trenches</p>	<p>NAP, Water Resources</p>		<p>July/94</p>	<p>Yes</p>	<p>Last Phase of Project. As originally proposed, the leached tails were shipped back to the property. Since the waste rock (leached tails) decrepitated and produced more fines than expected, the rock retained more sulphuric acid and sulphates than expected. Thus detoxification of the leached tails (rinsing until pH rises to neutral conditions) was not carried out as originally planned. The leached tails had to be handled and transported with appropriate precautions and in accordance with the Yukon's Dangerous Goods. The leached tails along with approximately 200 kg of sulphates from the bottom of the pile, and the plastic liner were redeposited in the trench with the highest net neutralization potential (also the water table is very low in that area). The material is a dry sandy gravel with some white sulphate deposits.</p>
<p>Removal of Infrastructure from Carmacks dump site as soon as practical after completion of test</p>	<p>NAP, Water Resources</p>		<p>July/94</p>	<p>Yes</p>	<p>Last Phase of Project. The plant and the crib have been removed, and only a fence remains around the former pilot plant site. Due to the spill and the acidic nature of the waste rock in the tank, Water Resources inspected the decommissioning of the site.</p>
<p>Permitting: a) Existing Water License at Village of Carmacks sewage pit. b) Government of Yukon - YTG Land Use Authorization for both the YTG land reserve and expansion of sewage pit.</p>	<p>a) NAP, Water b) Yukon Government</p>		<p>a) Dec./93 b) Sept./93</p>	<p>a) Yes b) Yes</p>	<p>a) Since license, no notification needed, but needed permission from the Village of Carmacks. b) Company has received.</p>

Legend: EARP Decision Date: Date of EARP Decision Report (for Level 1 will likely be the same date as date of Screening).
Monitoring Chart Date: Date of preparation of monitoring chart (will change as charts are updated and monitoring progresses).

Monitoring Year: Circle year (i.e. 1 for first year of monitoring).

Project: Insert title of project or proposal (and a project number if you use them).

Required Mitigation Measures/Responsible Agency: A description of the particular mitigation measure, usually taken from the Screening and/or Decision reports. The Responsible Agency (in brackets at end of description) is the agency or company who must actually carry out the particular mitigation.

Follow-up Agency/Division: Government, Department or Division responsible for ensuring the mitigation measure is carried out (e.g. Land Resources, DFO, YTG, etc.).

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Authority: The name and/or number of the permit, licence or other document which this mitigation forms part of (e.g. Water Licence No., Land Use Permit No., etc.).
Required Deadlines: Date the mitigation measure is to be completed, reports are due, etc., if applicable.
Completed: Yes, No, On-going or leave blank if not applicable.
Comments: Any additional information.

Note: Edit "Header A" to change stringer (upper right of all pages except page 1). Project name, version number, etc. should all be changed as necessary.

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