



Water Resources Branch (V-310)
Geotechnical Section
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File Number: Clinton Creek

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Inspection Report

Date of Report: October 12, 2010

Inspection Date: October 7, 2010

Licence Number:

**Licensee: Assessment and Abandoned Mines, Energy Mines and Resources, Yukon
Government**

Location: Clinton Creek minesite near Dawson City

Inspector: Glenn Ford

**Accompanied By: Brett Hartshorn, Dave Barrett, Assessment and Abandoned
Mines, Jodie Mackenzie Grieves Federal Fisheries, Fred Taylor Tr'ondek Hwech'in
Heavy Construction**

Inspector's Statement

On Oct 7, 2010 I met with the above persons at the Clinton Creek mine site to inspect the condition of the Hudgeon Lake outlet control structure and the channel below the structure. High flows during summer 2010 have resulted in severe erosion of the channel directly below the last gabion outlet structure and the channel below the structures. This event has also washed out the road and road crossing of Clinton Creek some 800 metres below the outlet structure.

Background

The Clinton Creek asbestos mine which closed in the late 70's deposited a large amount of waste rock adjacent to the Clinton Creek channel. The company that owned the mine Cassiar Asbestos no longer exists and the mine is under the care of Assessment and Abandoned Mines as a type 2 site.

A significant failure of this waste rock during operations (from Water Resources report no author on Water Resources Clinton Creek file dated July 18, 2000) blocked the creek and formed a 115 ha lake named Hudgeon Lake. The waste rock continues moving down slope and these movements have been documented in previous reports. To prevent the lake from down

cutting through the waste rock and causing a large outflow flood a control structure was installed by DIAND in the early 2000's. This consisted of 4 gabion drop structures with low slope sections in between. The gabion drop structure has been functioning well since the early 2000's and has survived a number of high water events.

Discussion

A large flood during July of 2010 resulted in severe down cutting of the stream channel directly below the last gabion drop structure. This 4 to 5 metre drop and resultant undercutting has caused the end gabions to begin to fall into the void below the structure. The flood and associated heavy rains also eroded the canyon below the gabions and the access to the lake outlet. The access road below the canyon where it crossed Clinton Creek has changed course and is now impassable. This event may have been made worse by debris blocking the lake outlet and storing water which released when the pressure became to great.

The condition is such that the gabion structures could fail during spring freshet allowing the lake storage to release into Clinton Creek and the 40 Mile River causing downstream damage to the environment and property. This has been documented in previous reports on the Water Resources Clinton Creek file.

Equipment will be unable to access this site until after spring freshet if the work is not conducted this fall before the ferry over the Yukon River at Dawson is closed.

Assessment and Abandoned Mines Branch of EM&R has been looking after the site. They have had AECOM conduct a geotechnical inspection of the sight and produce a report on it's condition each year. AECOM was contracted to do an additional inspection this year after the high water event. Please see letter report entitled "AECOM Sept 10 Inspection Report".

Recommendations

- Some form of reinforcing of the structures as outlined in AECOM's letter report entitled "AECOM Sept 10 Inspection Report" is required this fall before the ferry closure at Dawson prevents equipment from reaching the site.
- In order to gain access for these repairs to the gabion structure work will also need to be completed on the access road.
- Woody debris from the flood event should be removed from the gabion structure.
- Old culverts in the stream channel below the gabions should be removed and stored well away from the channel for removal summer 2011.
- As soon as possible a boom should be installed in the lake above the outlet to prevent debris from blocking the outlet.
- It is my opinion that this work should be completed this fall under section 35.1 of the Waters Act.



Lower drop structure Oct 7, 2010



Upper three drop structures



Canyon formed through waste rock below gabion drop structure



Old culvert in canyon below gabion drop structures.



Erosion of road leading to lake outlet

A handwritten signature in black ink, appearing to be 'M. H.', written in a cursive style.

Geotechnical Technician