



Date: Aug. 12, 2010

Client: Concentric Associates International Incorporated

Location: Geraldine Dam, Iqaluit, NU

Job Scope:

- Perform an underwater visual inspection of the upstream concrete face of the dam.
- The diver shall note on the drawings provided areas of deterioration, including but not limited to; concrete deterioration, cracking, erosion, etc. Additional attention is required at locations where leaking is observed on the downstream side of the dam, along expansion joints, construction joints, and where the dam meets the lake bed.
- The diver shall visually inspect the entire length of the dam, at 1m depth intervals starting at the surface. The diver shall make all efforts to limit disturbances to the surrounding lake bed to provide adequate clarity during inspection.
- The diver shall take photographic images of areas of concern; concrete deterioration, cracking, etc. A full underwater video record of the inspection shall also be undertaken.
- The diver shall provide adequate lighting during the inspection at all times.

Crew: Jason Golka

Dave Podealuk

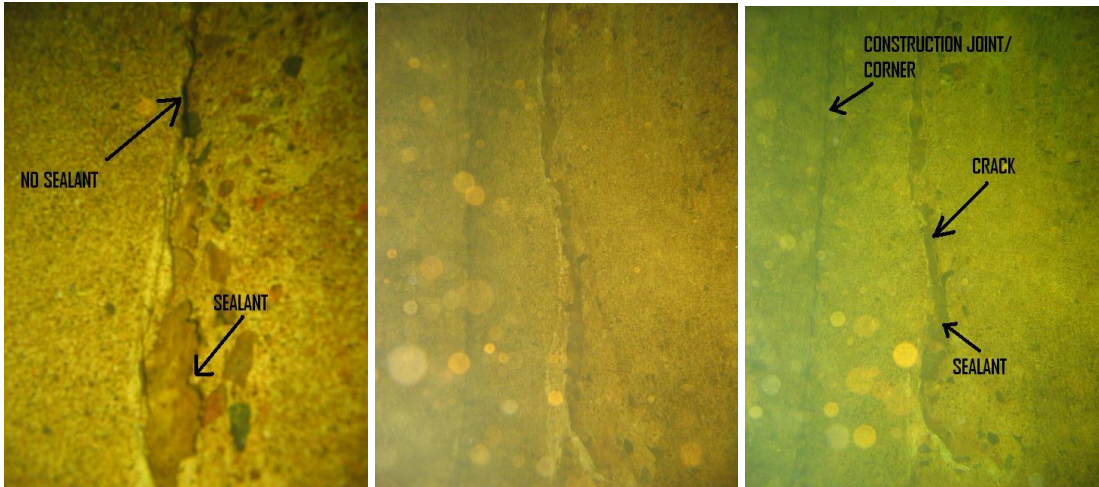
Dylan Lukenbill

Summary: Overall, the dam is in excellent condition. All of the concrete is intact and there are no signs of degradation. There are some spots on the downstream side that show a minimal amount of leakage. These were noted by the client previous to the inspection. The upstream side however, does not yield much evidence of these leaks. The diver found only one crack on the upstream side of the dam and it had already been filled with some sort of sealant. The crack was however in line with one of the leaks on the downstream side.

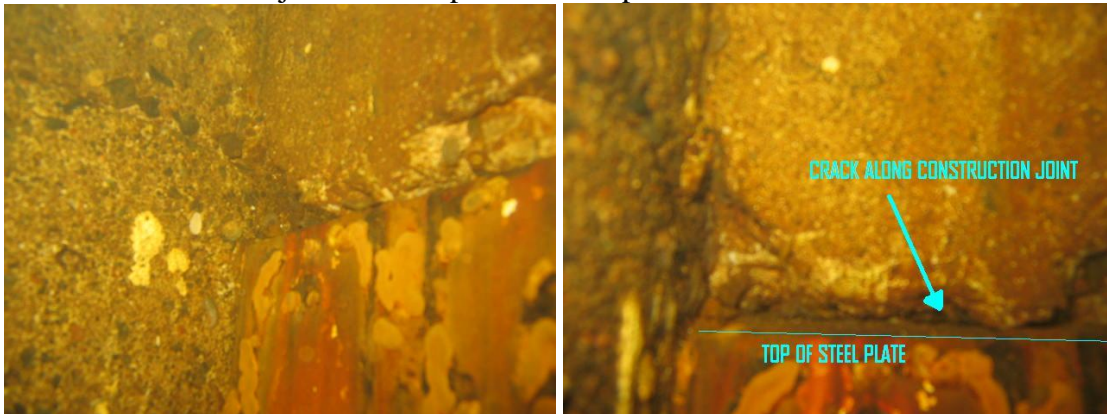
The other leaks are minimal and the water is likely moving through a cold joint or expansion joint, and would be difficult to find due to the lack of flow. The diver did note that the new addition to the dam had sealant in the expansion joints but only at the top. It appears as though the sealant was used when the expansion to the dam was done. There is no evidence of sealant lower on the dam. It is assumed that the workers placed the sealant down to the water at the time, and that was all that could be reached. **Note:** The leaks found on the downstream side are well below the new addition to the dam where there is no sealant in the expansion joints.

These photos were taken of the crack found about +8050mm from line D, very close to line E, and between elevation 2 and 3 on the drawing.

The crack seems to have had some type of sealant injected into it, and is also in line with one of the leaks found on the downstream side.



The top of the crack starts at the construction joint between the old concrete and the newer addition. It runs almost parallel with the construction joint in the corner down to the next construction joint at the top of the steel plate.



The photos below show the sealant in the expansion joints. This sealant does not go beyond the new concrete. The photos clearly show that there was no sealant in the joint previous to the placement of the sealant shown. All of the expansion joints look like this. More visual evidence can be seen in the video that was produced.

