Territorial Diving Technologies

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1.0 INTRODUCTION

Anvil Range Mining Corporation contracted Territorial Diving Technologies, of Whitehorse to;

1. Locate and confirm by use of SCUBA equipment, the intake cage, said to be roughly 200 feet from shore, in the reservoir at the Faro Minesite.
2. Locate and confirm by use of underwater video the condition and design of the "shark cage", said to be located in the reservoir at the Faro Mine site.
3. Locate and confirm by use of underwater still photography the condition and design of the "shark cage", said to be located in the reservoir at the Faro Mine site.
4. Advise of maintenance required for future operation.
5. Advise of possibilities of internal ultra sonic testing within the pipe structure.

2.0 OBJECTIVES:

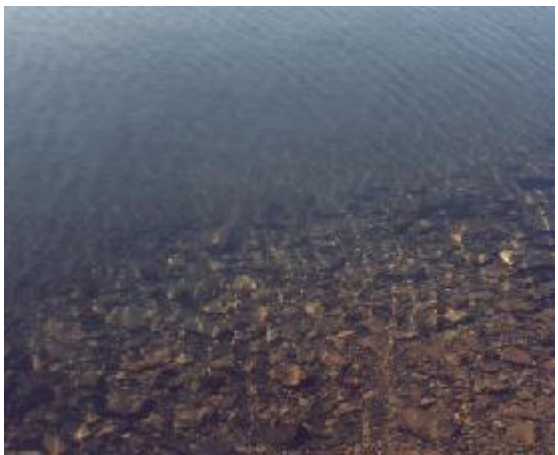
* Territorial Diving Technologies is to advise Anvil Range Mining Corporation of proper proceedures for making an entry into the intake in order to get underwater video imaging.
* Territorial Diving Technologies is to advise Anvil range Mining Corporation of the proper proceedure for making an entry into the intake in order to complete an internal inspection.
* Territorial Diving Technologies is to advise Anvil Range Mining Corporation of the proper lifting proceedures for the removal of the steel plate cover on the "shark cage".
* Territorial Diving Technologies is to advise Anvil Range Mining Corporation of the proper proceedures for making an entry into the intake in order to conduct a metal thickness evaluation of the pipe, using ultra sonic testing equipment.

3.0 LOCATION;

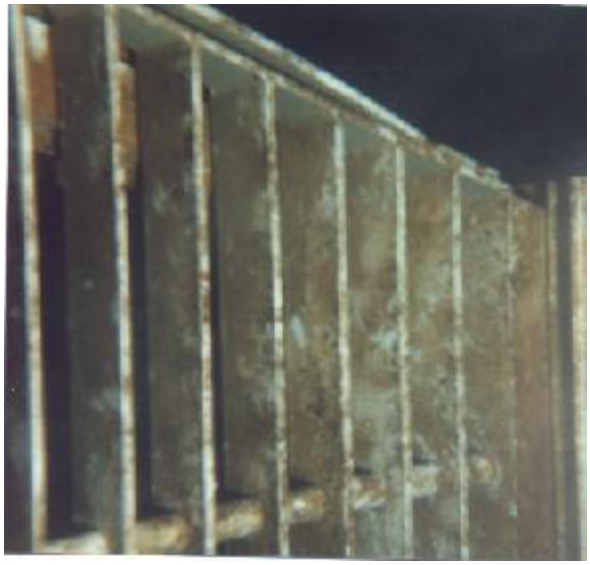
Territorial Diving Technologies confirmed the location of the water intake in the reservoir, by use of two SCUBA divers. The location was marked with a float, then further entries were made with still and video photography. Upon completion the dive replaced the temporary float with a permenant bouy.
Several dives were made to determine structure size and construction, silt composition, depth, available ambient light, and posibilities of penetrating the structure.

4.0 RECOMMENDED PROCEEDURE FOR ENTRY IN TO PIPE;

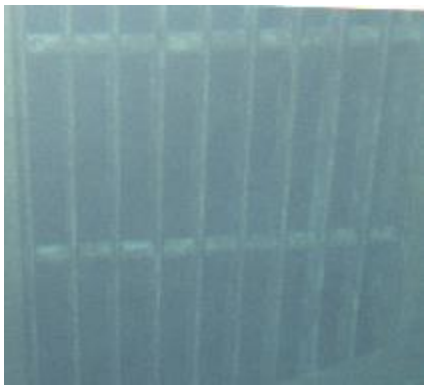
A complete dive station that meets all pipe penetration requirements would be contracted from British Columbia and mobilized to Whitehorse. Once onsite divers would try and remove the cover using conventional tools.If this method was to be un-succesfull, entry will then be made using an ultra thermic cutting station. Once the bolts have been removed a lift bag would be moved in place inorder to relocate the cover to shore (it is estimated that the cover weighs approximately 500 lbs.)
A further recommendation would be to see if an inflatable pig could be inserted within the pipe, downstream of the intake. This would provide an extra line of defense against any delta DP. Proper lockdown procedures of the slide gate would have to occur to ensure maximum safety to the dive crew . The inflattable pig would also reduce the leakage that the current gate is experiencing. It is also recommended that the butterfly valve located in front of the slide gate be inspected again for potential operation as it currently non-functional.
It would be best if a dive station could be built overtop of the intake in order to gain maximum penetration, a possible distance of 400' could then be achieved. OH&S standards recommend that a dive crew of 6 would be a minimum standard that would be acceptable in order to make this type of penetration dive.
It is imperative that all parties overseeing the project are advised that prior to the commencement of the project a thorough onsite safety meeting and hazard and operability study would be completed. The guidelines for pipe penatration that are established through the Canadian Association of Diving Contractors (CADC) and Workers Compensation Board (WCB) will be the basis for the dive plan.
While we would be onsite to perform this task, we would recommend that a visual inspection be conducted of the pumphouse also to advise of any debris causing a blockage.



Picture 1.7
This photograph shows the visibility at the surface, it looks like it will be a couple of feet, with the assistance of the surface penetrating sunlight. The visibility was not this good at depth.
Photographer: Jorgen Ponsioen



Picture 1.1
Clearly shows rack structure, very little growth or silt built up. Top of rack is located in 45 feet of water. Photograph was taken roughly at midday, one can see the visibility of available surface light. Divers had extra lights pointed at the rack to provide sufficient enough light for photograph to be taken.
Photographer: Diver Richard VanderKley
Equipment: Nikonos V with strobe attachment and extra lighting.



Picture 1.4
Shows rack from further back, you can see how rapidly we loose good visibility.
Photographer: Diver Richard VanderKley
Equipment: Nikonos V with strobe attachment and extra lighting.

Picture 1.5
Surface photograph, one can see the marked float in the water showing the location of the "shark cage" rack. This gives a person an indication as to how far from shore the intake is.
Photographer: Jorgen Ponsioen

Picture 1.6
Front right hand side of photograph shows the gate house at the bottom and gives a person an idea of the height if the dike (full size dodge 3\4 ton is shown in top right hand side of photograph)
Photographer: Jorgen Ponsioen