

Mr. Robert Grant, Consultant  
Curragh Resources Ltd.  
117 Industrial Road  
Whitehorse, Yukon  
Y1A 2T8

Re: Diversion Channel Fish Monitoring Program

Dear Robert:

The following report outlines the results of our preliminary investigation of the presence or absence of fish species within the diversion ditch below the pumphouse. This assessment was conducted on November 3 and 4, 1986.

Sincerely,

*GMcDougall for D. Leverton*

David Leverton

**CURRAGH RESOURCES LTD.**

**DIVERSION CHANNEL  
FISH MONITORING PROGRAM**

A total of five sample sites were examined. The principal sampling technique was by electroshocking; however, a 10 m seine net and angling gear were used on an as-required basis. Any fish captured were measured and released.

When we arrived at the diversion channel, water levels were down to less than 1 m in all the major visible pools. Average levels were less than 0.5 m in most locations. The diversion channel is in the process of freezing. In most sections freezing appears to be continuous from the surface to the bottom and encroaching toward the middle of the stream. In many areas along the diversion channel this has already resulted in a certain amount of glaciating and overflow activity. Glaciating is especially common along the two sections of the fish ladder (refer to Figure 1).

The fish sampling locations were selected on the basis of habitat suitability for Arctic grayling. Each site provided the largest open areas for migrating or over-wintering fish. The maximum depth of each of these sites was less than 0.75 m. No larger pools were found anywhere within the open water sections. Photos of a number of the sites are provided in Appendix A.

Each of the sampling locations is shown in Figure 1. The first site is located at the outflow of the pumphouse reservoir. The second site is at

the base of a tributary stream on the south side of the upper section of the diversion channel. The third site is located along a narrow side pool on the north side of the diversion. The fourth sampling site is near the point of intersection of what appears to be the old and new sections of the diversion channel. The last major sampling location is a series of pools near the confluence of the diversion channel and Rose Creek.

The results of our sampling efforts are presented in Table 1 below. The only fish species present in any of the sampling sites is the slimy sculpin *Cottus cognatus*. The slimy sculpin is a bottom-dwelling fish which feeds on benthic organisms. They are common in northern rivers and streams where there is an abundance of rock and sand substrate.

Table 1: Fish Sampling Along the Diversion Ditch

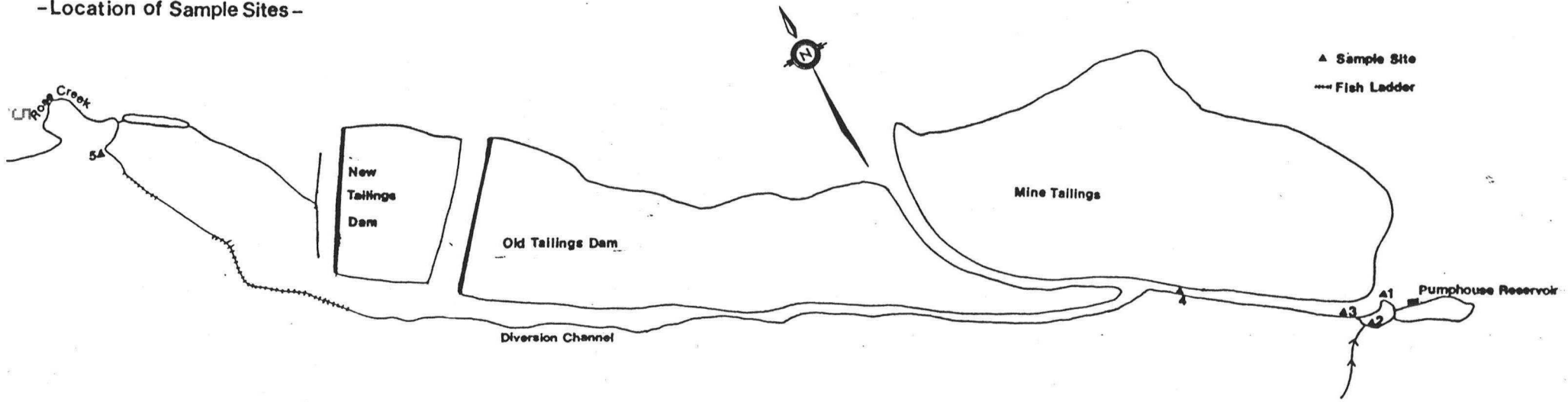
Station	Fish Species	Number Caught	Length (mm)
1	Slimy Sculpin	4	85; 85; 45; 45
2	Slimy Sculpin	4	105; 85; 85; 80
3	Slimy Sculpin	8	105; 95; 90; 80; 50; 50; 45; 45
4	Slimy Sculpin	2	100; 95
5	None	-	---

In 1981, an addition was apparently made to the diversion channel in the vicinity of the new tailings pond which supposedly created a major depression in the channel. This area was partially frozen when we arrived, so it was impossible to verify the actual depth. We did, however, sample upstream of this site in two open pools approximately 0.5 m deep. There was no evidence of Arctic grayling in either of these sites.

Apparently Arctic grayling were taken by an angler near the pumphouse just prior to freeze-up. This would appear to be a much more suitable location for over-wintering since it is a very large deep pool.<sup>1</sup> The diversion channel is for the most part, relatively shallow and exposed to a very irregular freezing pattern. Substantial glaciation in the vicinity of the fish ladder is already occurring. Given that there were no signs of Arctic grayling in any of the riffle sections or large open pools sampled along the diversion channel, it seems unlikely that there would be any over-wintering in other locations at this time.

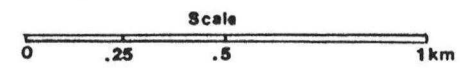
1. Unfortunately the ice was not safe enough to determine the actual depth of the reservoir.

**Diversion Channel**  
**-Location of Sample Sites-**



▲ Sample Site  
--- Fish Ladder

FIGURE 1



APPENDIX A

Photos of the  
Diversion Channel



Photo One: Location of Station One at the  
Outflow of the Pumphouse Reservoir.



Photo Two: Location of Station Two at the Base  
of a Tributary Stream.

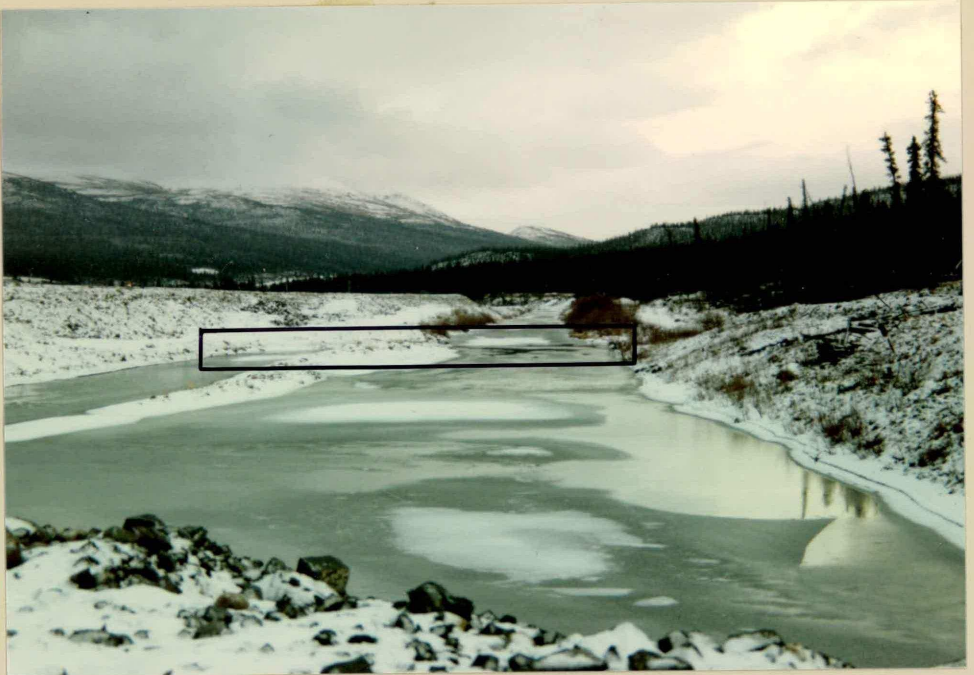


Photo Three: Intersection of Old and New Diversion Channel with Station Five in the Background.



Photo Four: Glaciation from the Tributary Stream along the Fish Ladder.



Photo Five: Glaciation along the Lower Section of the Fish Ladder.



Photo Six: Station Five near the Confluence of the Diversion Channel and Rose Creek.