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*Preliminary*

REPORT FOR CURRAGH RESOURCES

prepared by

MASON RESEARCH AND DEVELOPMENT LTD.

## PREMIS

1. to inspect and research the overburden and drainage of both the Grum and Vangorda pit areas.
2. from the data gathered to plot and show preliminary test hole areas to show soil types and both surface and sub surface drainage.

The overburden on both pits consists of a mixed glacial till containing clay, gravel, silt and sand. There should be a small area of organic soils around Lake Doal.

There are three major glacial push ridges. One North of Lake Doal, one just south of the lake along the road to Vangorda Creek and one south of the road and down the slope in the area of the proposed overburden dump site.

The ridges seem to have been under a lot of ice pressure and should be well packed.

## TEST HOLES

All preliminary test hole sites were chosen to evaluate soil types, drainage and condition of bedrock as it relates to mining plans for both pits.

On all test holes, I recommend that samples be bagged, sealed and tagged every five feet, as to dry, damp and wet. The samples should later be analyzed as to the percentage of sand, silt and clay.

If at all possible areas of permafrost should be recorded and their start and finish parameters recorded.

## VANGORDA PIT AREA

Test hole #1, #2.

check stability. Location on ridge along old air port. morainal blanket probably a push moraine. Sample every 5'.

Test hole #3 #4 #5

check stability, gravel and sand lenses. Ground water percolation. Sample every 5'.

Test hole#6

check for sand lenses and water percolation. Sample every 5'.

Test hole #7 #8 #9

check for general soil types. Should be mixed till, well compressed. Watch for permafrost and silt.

Test hole #10

check for stability. Possible sluff just to the north of test hole site.

Test hole #11 #12 #13

check for general soil types. Watch for sand lenses and silt. Test every 5'.

Spring A

the spring seems to be filtering into a old test pit and runs out into a small stream. It is fairly fast flowing on the day of my observation in spring of 1987.

## VANGORDA CREEK AREA

On the west side of the creek bedrock is exposed with very little cover. The east side, a mixed glacial till is in place in the form of a long glacial push ridge. This ridge seems to have been under a lot of pressure and should be quite firm.

GRUM PIT AREA

Test hole #1 #2 #3

check stability and general soil types. Watch for sub surface percolation along bedrock. Sample every 5'.

Test hole #4 #5 #6

check general soil types. Watch for sand or gravel lenses and sub surface percolation. Sample every 5'.

Test hole #7 #8

check general soil types. Watch for gravel and sub surface percolation. The overburden will be deep (100 meters). Sample every 5'

Test hole #9 #10 #11

check general soil types. Watch for sand and gravel lenses and permafrost. Sample every 5'

Test hole #12

check general soil types. Watch for permafrost. Sample every 5'.

Test hole #13 #14

check general soil types. Watch for sand and gravel lenses, sub surface percolation and permafrost. Sample every 5'.

SPRING A AND B

these springs are slow flowing and being the time of year that I inspected them, they are probably caused by local surface percolation.

I recommend that most of the test holes be cased for future testing.

REPORT PREPARED FOR  
CURRAGH RESOURCES  
BY MASON RESEARCH & DEVELOPMENT LTD.  
OF WHITEHORSE, Y.T.

Area:

The Faro District - in the Yukon Territory of Canada.

This report takes into consideration of the surficial geology of the Grum and Vangorda proposed open pit areas that Curragh Resources is undertaking.

It is based on field observations and air photo interpretations.

PREMIS:

- #1. To inspect and research the overburden and drainage of both the Grum and Vangorda pit areas.
- #2. From the data gathered to plot and show preliminary test hold areas to show soil types and both surfaces and sub surface drainage.

The Vangorda development area has a problem of stream diversion for the optional development of a open pit operation.

Consideration must be given to:

- #1. Surface drainage.
- #2. Subsurface drainage.
- #3. The composition of the till material as to there absorpsion and retention factures.
- #4. Relationship of the till to the bed rock, as to slope, make up and sluff factures.

Some points of consideration to be considered in the damming and diversion of a creek or stream:

- #1. The peak and ebb flow rate of the stream
- #2. The dam and diversion channels must have base for their support.
- #3. If there is not base for their support we must engineer and test for that support to alleviate the problem of chance and error.
- #4. The quality of the diverted channel drainage area.

In the Vangorda pit area, the till material is basically morainal with a mixture of clay, gravel, silt and sand - there are two glacial push ridges, one running from the south east side of the proposed pit to the north-east past the present east-west road. The other is south-east of the proposed pit running the length of the airport.

Both these ridges seem to have been under a lot of ice pressure and should be well packed.

I recommend test holes as is marked on the map; consideration should be given to frozen silt and sand and gravel lenses.

Consideration should be given to the small stream running south of the airport. From airphoto interpretation it seems unstable and prone to sluff. I feel its drainage and stability can be improved with proper clean up.

Find the following test hole recommendation.

The Grum development area is basically morainal with two glacial push ridges, one along the road just south of Doal Lake and the other to the south and east of the old adit. Both push ridges should be well packed, but should be checked for silt and sand lenses.

The only area of organic deposits will be in the area around Doal Lake and a small deposit to the north as marked on the map.

The recommended test holes are as follows:

#### TEST HOLES

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If at all possible areas of permafrost should be recorded and their start and finish parameters recorded.

VANGORDA PIT AREA.

Test Hole #1 & #2.

Check stability. Location on ridge along old airport, morainal blanket probably a push moraine. Sample every 5'.

Test Hole #3, #4, & #5.

Check stability, gravel and sand lenses. Ground water percolation. Sample every 5'.

Test Hole #6.

Check for sand lenses and water percolation. Sample every 5'.

Test Hole #7, #8 & #9.

Check for general soil types. Should be mixed till, well compressed. Watch for permafrost and silt.

Test Hole #10.

Check for stability. Possible sluff just to the north of test hole site.

Test Hole #11, #12 & #13.

Check for general soil types. Watch for sand lenses and silt. Test every 5'.

Spring A

The spring seems to be filtering into a old test pit and runs out into a small stream. It is fairly fast flowing on the day of my observation in spring of 1987.

GRUM PIT AREA

Test Hole #1, #2 & #3.

Check stability and general soil types. Watch for sub surface percolation along bedrock. Sample every 5'.

Test Hole #4, #5 & #6.

Check general soil types. Watch for sand or gravel lenses and sub surface percolation. Sample every 5'.

Test Hole #7 & #8.

Check general soil types. Watch for gravel and sub surface percolation. The overburden will be deep (100 meters). Sample every 5'.

Test Hole #9, #10 & #11.

Check general soil types. Watch for sand and gravel lenses and permafrost. Sample every 5'.

Test hole #12.

Check general soil types. Watch for permafrost. Sample every 5'.

Test Hole #13 & #14.

Check general soil types. Watch for sand and gravel lenses, sub surface percolation and permafrost. Sample every 5'.

SPRING A AND B

These springs are slow flowing and being the time of year that I inspected them, they are probably caused by local surface percolation.

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