

Technical Department

017955

LABORATORY REPORT

Project No.

C.D. Bown

1 - 6

July

TR-2

Investigator Pages Period Report Index

TITLE OR PROBLEM:- *X* Limestone Deposit at Kamsalon Inlet on Crowville Channel

OBJECT:- *X* To inspect the deposit as a possible source of supply for mill usage.

SUMMARY:-

- X* 1. The limestone deposit is large. 600 yds. square.
- 2. Samples show the limestone to be 97-100% pure.
- 3. Small amounts of Mg(CO₃) are found with the CaCO₃ in some locations
- 4. Harbour and loading facilities would be excellent.
- 5. No dykes or igneous intrusions were visible.
- 6. The location is only 26 miles south of Watson Island.
- 7. The limestone runs right to the shore of the inlet.

CONCLUSIONS:-

- X* 1. This limestone would be suitable for the mill usage and appears as good as our present supply.
- 2. Handling and loading of the limestone would be no problem from first appearance.
- 3. The area which it is proposed to quarry was extensively sampled and appears excellent.

RECOMMENDATIONS:-

- 1. Explore the possibilities of using this supply from a financial standpoint.

STATUS OF PROBLEM:- Incomplete.

 Inv.

Subject: UNDEVELOPED LIMESTONE DEPOSIT ON INLET
LEASED BY J. JOHNSON, PRINCE RUPERT.

Previous work done on this deposit was by D.W. Burdick-Stein on Nov. 25, 1957. Samples were submitted at this time and all analyzed to show a high purity limestone. Subsequent to this set of samples Messrs. Wm. Dibbon and A. Garland inspected the deposit and were impressed with the appearance of the limestone.

Saturday July 19th, 1958 a second trip was made to assess the prospects of this deposit being able to supply the Columbia Cellulose with high grade limestone. The trip was made aboard the packer, Dickey Boy skippered by Mr. J. Johnson. Captain Reg. Greene skipper for Armour Salvage, Charles Bostuk and two other men concerned with quarrying the limestone also went on the trip.

The deposit as mentioned earlier is on Kuncalon Inlet approximately 2 miles in from the East side of Grenville Channel and is located on the North Shore of the Inlet running North and South. The harbour facilities are excellent as can be seen from the accompanying map, Map I.

Captain Greene felt there would be no problem getting barges in and out of the Inlet. The attached rough sketch shows where the barges would be moored. The location where the barges would load is dry at a low tide. The bottom is flat, however, and as the small bay is well protected from weather, Mr. Greene saw no major problem from the aspect of loading and towing the barge. As there is already a small completed breakwater of rocks from the North (and with very little work limestone fill could complete this breakwater) there would be no danger from the tide rip in the Inlet.

The limestone cliffs run down to the shore fairly steeply for a distance of at least 200 yards. The place along the shore which is proposed for starting the quarry is a flat area approximately 30 - 50 yards.

This position is marked on the sketch. We entered the deposit at this point to inspect the deposit. The cliff of limestone rises steeply approximately 45° behind this flat open area. As this face would be the lot to be opened samples were taken over an 80' length at approximately 30' elevation and parallel to the shore. The samples taken from this face are 'A'-'H' with 'A' being the most northerly sample. The location of the samples is shown on the sketch. Mr. Johnson had blasted the surface of this face in two places at position 'A' and 'C'. Sample 'A' appeared to contain some magnesium carbonate and the analytical results bear this out. As our analysis of Calcium Carbonate is calculated from loss on ignition the results of greater than 100% as CaCO₃ contain magnesium carbonate. As can be seen from the accompanying data Table I the purity of the limestone is excellent along this face except for sample 'H' which has 5.67% acid insoluble. The limestone in this area contains from 97.1-100.0 CaCO₃ and samples 'A' 'B' and 'H' appear to contain some MgCO₃.

The crystalline structure of the limestone on the whole deposit is in the main good and absolutely no dykes or igneous intrusions were seen over this 80' area.

From this area we walked North West inland approximately 150 yards. Here at an elevation of 50-75' was a vertical hole which was approximately 30' deep. This hole allowed a chance to access the depth of limestone and quality below the surface. The limestone was of excellent quality and the same for the entire depth. Sample No. 1 was taken from approximately 20' below the surface. Between the shore and this hole all outcroppings of limestone appeared excellent.

From this hole we walked approximately 50 yards further West. There was an old cave at this location which ran back into the hill for approximately 100' parallel to the shore where we had entered the deposit. Samples 2-5 were taken at 20' intervals in the cave. This rock as can be seen from the data on Table I was all excellent quality 97.7-100% and a maximum of 1.8% acid insoluble. A portion of this limestone again appears to contain some magnesium carbonate.

From here we walked a further 400 yards North West up a ravine. This ravine gave a good chance to pick samples off the cliff face, all of these samples appeared very pure and of excellent quality. The majority of this section was similar to sample 1. From here we walked North East approximately 500-600 yards and then East until we came out on the Salt Lake at the head of the Inlet.

The diagram shows the approximate area we covered. Samples were broken from the outcroppings of rock as we walked the deposit. As it would take years for the quarry to work into this area of the claim no samples were taken for analysis. The samples over the whole deposit, however, from visual inspection of chips of the rock were excellent. Walking back along the shore the limestone was pure for 100 yards before we reached the opening where we had gone in.

Over the complete deposit no dyke or igneous intrusion was seen.

Conclusions:

1. The limestone from this deposit is excellent in quality.
2. Some of the deposit contains magnesium carbonate which when calculated might be 10% $MgCO_3$ and 90% $CaCO_3$.
3. No dyke or igneous intrusion was seen.
4. The deposit is at least 30' deep and very likely much more.
5. The crystalline structure is good and should blast fairly easily (much of the rock is similar to Texada Island limestone which we now buy).
6. Harbour and mooring facilities are good.
7. Barge loading should be no problem.
8. The distance from Watson Island to the deposit is approximately 26 miles with practically no open water which would mean easy hauling.
9. The deposit is adjacent to the shore and only a 30 yard haul would be necessary.

Recommendations:

1. Explore the possibilities of buying at an equivalent price or less than other suppliers and possibly place an order as a trial shipment.
2. If possible have the government geologist inspect the deposit to verify these findings.


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JB/cv

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TABLE I

LIMEROCK SAMPLES (SURFACE) FROM THE DEPOSIT AT KUMALON INLET

<u>Sample No.</u>	<u>Loss On Ignition</u>	<u>% CaCO₃ by Calc.</u>	<u>Acid Insoluble</u>	<u>Crystalline Structure of Samples</u>
1	43.23	98.3	0.69	Color white, fine to medium size, well developed crystals.
2	43.79	99.6	0.70	Color blue, medium sized crystals, well developed and compact.
3	Retest 45.83 45.77	>100	1.20	Color grey, fine crystals not so well developed but compact, possibly some sand impregnation.
4	Retest 46.34 46.27	>100	0.79	Much as sample 3 only coarser and better developed crystals.
5	43.00	97.7	1.84	Color grey much as sample No. 3 and 4 only coarser crystalline structure.
A	Retest 44.04 44.04	>100	1.46	Color white, finely crystalline and very soft appears to contain MgCO ₃
B	Retest 44.17 44.14	>100	1.27	Color blue and white, medium sized, crystals well formed.
C	43.12	93.1	1.18	Color white, medium to coarse crystalline structure.
D	43.27	98.4	1.69	Color white and blue, mottled medium, sized well developed. Small amount of sand impregnation.
E	43.87	99.8	1.02	White finely crystalline, well developed crystals.
F	43.26	98.4	1.71	Color grey, excellently developed, large crystals.
G	42.70	97.1	2.60	Color grey, same as 'F' possibly a little more surface dirt on sample.
H	43.65	99.3	5.67	Color white, much the same structure as sample 'E'.

Sample No. 1 was taken from approximately 20' down in a vertical hole.

Samples No. 2-5 were taken from a cave which ran almost parallel to the shore and extended back into the mountain approximately 100'.

Samples A-H were surface samples taken at 10' intervals across the face which would be first mined.