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Department of Mines and Resources
Surveys and Engineering Branch

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Dominion Observatory

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SEISMIC RESEARCH PROGRAM
ROCK BURST PROBLEM
LAKE SHORE MINES

Intensive Seismic Program
Report No. 2
May, 1945

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Ernest A. Hodgson

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POUR LA CONSULTATION SUR PLACE**

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OTTAWA

INTENSIVE SEISMIC PROGRAM
LAKE SHORE MINES, KIRKLAND LAKE
4702E - 4802E

Nos. 31 - 61 : May 1 - June 1, 1945

The program as outlined in the previous report on this special investigation was carried through the month without appreciable interruption. The A-side of the recorder gave some trouble due to a shorted condenser which reduced the efficiency for several days and resulted in a complete loss of coverage throughout one entire run (Plate 55); but the B-side showed that no high seismic activity was missed. There was some slight loss due to carbonized stylus tips, but only on one channel. Heavy rains made it necessary to run the pumps in off-shift time for two days, reducing the efficiency for those days during the P.M. recording mostly.

In spite of the fact that there was so little loss of coverage during the month there was at no time a record of serious activity. Recording was normal or sub-normal throughout.

N O T E S
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- (1) Curious interference in P.M. recording, Plate 37, May 7. Origin unknown.
- (2) Activity up after a small blast (42 sticks, 9 holes, 4802E3-1), Plate 41, May 11. P.M. recording only.
- (3) Series of rock runs throughout the recording, Plate 43, May 13-14. Occur at intervals of a little less than 4 min. Must be due to some man-made disturbance. Have not been seen in this regular fashion before nor since but individual rock runs, identified by listening, resemble these short disturbances. Evidently, not seismic.
- (4) Carboned stylus on B-side cut off some A.M. recording, Plate 45, May 16, also in P.M. recording, Plate 51, May 21.

- (5) Trouble began developing on 3A channel on Plate 52, May 22: it became acute on Plate 55, May 25-26 when it was corrected by replacing a shorted condenser.
- (6) E.A.H. took over on May 27 after which full time listening was possible on this program.
- (7) Heavy rain on May 27 made it necessary to run the pumps continuously. This is the disturbance shown in the P.M. recording, Plate 58, May 28. Note that although the pump is approximately the same distance from all the holes in the program and the geophones were tested for sensitivity before being put in service, the hole-geophone response varies greatly. This is due largely to the fact that there is a more intimate connection from the holes of high pick-up to the block of ground where the pump is situated. This is an important point which has not received the attention it should have in the selection of holes on the regular program. The matter is being discussed in Report No. 14.
- (8) P.M. recording omitted on Plate 59, May 29 due to Hodgson having inadvertently left the switches open the day before. He turned the sets on at 4 a.m. May 30. This recording missed would, however, have been like that on Plate 58, so disturbed by the pump as to be of no value.

Dominion Observatory,
Ottawa, Ontario,
June 30, 1945.

E. A. H.

