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MEMORANDUM

February 11, 1977

State of Washington
Department of Ecology

To: Dick Cunningham

From: Darrel Anderson

Subject: Sumas River, Swift Creek, Drainage Asbestos Fibre Source Investigation

Historically the Swift Creek drainage has been plagued by landslide problems. The reactivation of the ancient landslide occurred at least 35 years ago by erosion of ancient slide debris by Swift Creek. At present the landslide encompasses approximately 225 acres (not all presently active), extending from an elevation of 1,000 feet up to an elevation of approximately 2,600 feet.

According to Converse Davis Dixon Associates, Inc., geo-technical consultants, contracted by the Soil Conservation Service (SCS), on Swift Creek drainage, their analysis of the landslide debris indicate serpentinite, till, and conglomerate boulders, in a sheared, weak matrix of clay, glacial till, weathered serpentinite, rock flour, and fault gouge (pp 10-11, Phase I). The presence of serpentinite explains the source of asbestos fibres in the water. Although there are various forms of serpentinite, the basic structure shows fibreous structure and silky luster. This can be confirmed by water samples taken at the Sumas River water monitoring station by D.O.E., downstream from Sumas. Under the microscope the fibre structures can be seen on filter paper. Since its presence can only be identified by the filtering method one can only guess as to the amount of serpentinite entering the Sumas River drainage. According to the SCS, the rate of erosion will increase as more of the slide becomes active.

The SCS is responsible for the abatement program on Swift Creek. In the Geotechnical Report practical engineering solutions are discussed pertaining to the sediment transportation and deposition problem within economic reality. These are landslide control structures, sedimentation basins and channel restoration. Per my conversation with the SCS office in Bellingham, Washington, no decision has been made on which abatement program is most feasible.

DLA:ee

REFERENCES

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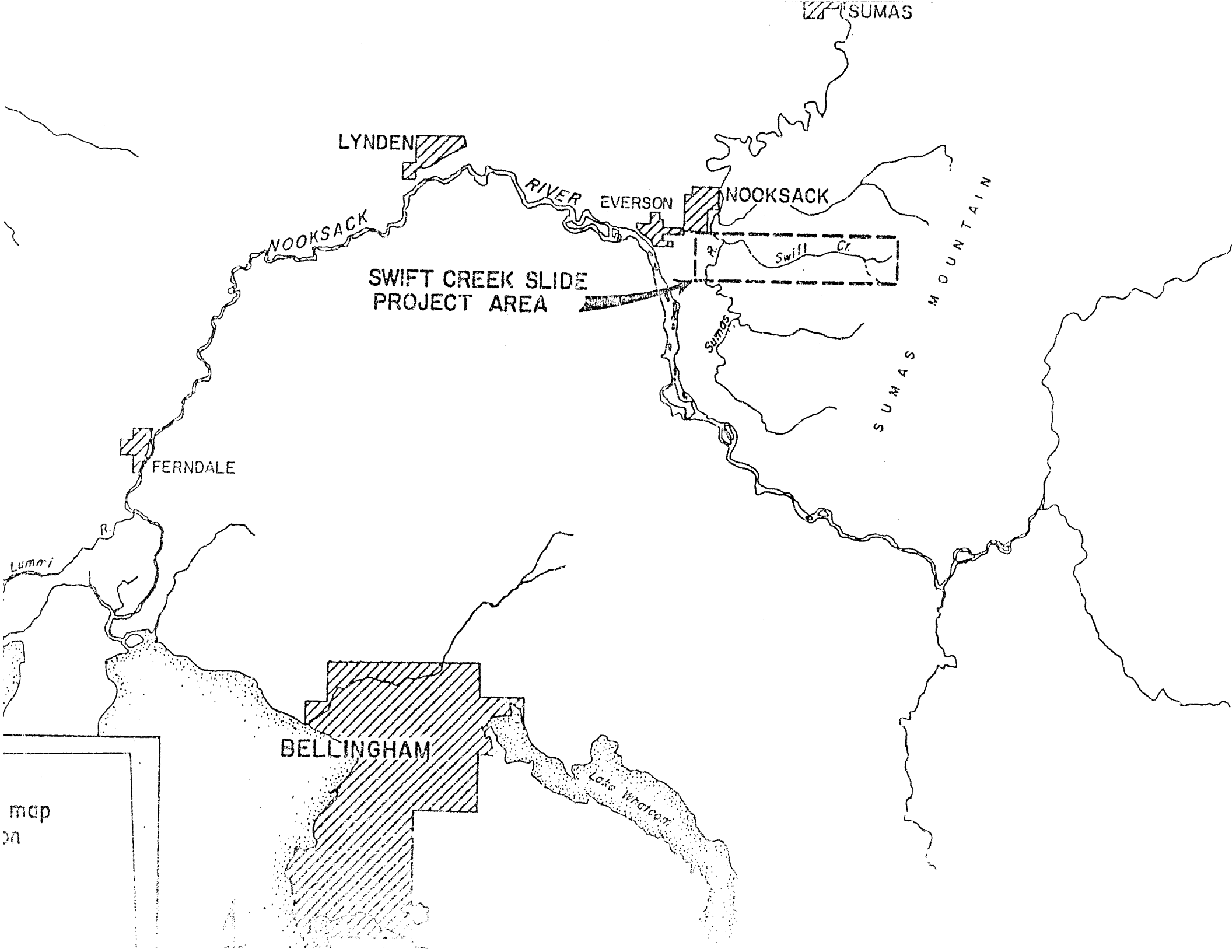
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