

mt. Milligan  
885724

AUG 16 1990 -3 WRS

**MONTH END REPORT  
JULY 1990  
SURFICIAL GEOLOGY UNIT**

LOG NO:	0802 TS
ACTION:	WRS → Tony Files TGS → Note separate eq. Mt. Milligan
FILE NO:	444-20/Surficial Geology (1990!)

Submitted by: PETER T. BOBROWSKY

**DRIFT PROSPECTING/PLACER GEOLOGY**

Program Objectives:

Thick surficial sediments blanket large portions of B.C. and hamper or prohibit exploration activities. In this program, investigations of the regional Quaternary geology in areas of high mineral potential and detailed studies of selected occurrences (Mt. Milligan and Johnny Mtn. in 1990) will help to develop exploration models for drift covered regions. The models will lead to a better understanding of how buried mineral deposits can be located in areas generally avoided by industry because of thick or geologically misunderstood drift cover. Detailed stratigraphic and sedimentologic studies and the development of a placer geology data base will aid in the identification of promising geologic settings from new buried placer deposits. Work in placer geology is scheduled for the Cariboo district for 1990.

Planned Outputs:

1. Publication on drift exploration case studies in Exploration in British Columbia 1990
2. Publication on placer geology results in Geological Fieldwork 1990
3. Three Open File Maps on surficial geology (2 for drift projects, 1 for placer project)
4. Two poster displays for Roundup in January 1991 (1 on drift project, 1 on placer project)
5. Workshop on placer geology for miners to be held in Wells, BC

Target Dates:

1. All papers to be completed by end of October 1990
2. All three Open File maps to be completed for Roundup
3. Poster displays to be completed by Roundup
4. Workshop on placer to be held in late July (now complete)

Significant Findings:

Ground-truthing and detailed sedimentological and stratigraphic mapping at Mt. Milligan confirm a glacial advance from the SW to the NE, with only minor changes in flow direction at the local scale. Regional mapping indicates a complex deglaciation pattern with blocked drainage resulting in glaciolacustrine ponding and sedimentation along low valleys such as the Nation River and Rainbow Creek (max. elevations of 850 and 1025m, respectively). An earlier glaciation is suggested by the presence of diamicton (till?) under basalt east of the Mt. Milligan property.

Mt. Milligan File

Budget Tracking:

Progress to Date:

1. Airphoto interpretation and archival information search completed for both Mt. Milligan project, and Johnny Mtn. project. Field work for Mt. Milligan completed 25 July, including joint research efforts with Geochemistry Unit from July 12 - 18. Johnny Mtn. project to start 07 August.
2. Airphoto interpretation for placer project started 09 July, and field work started 22 July.
3. Placer symposium at Wells, BC successfully held from July 27-28.

**SURFICIAL MAPPING**

Program Objectives:

Continued urban expansion, development in rural areas and exploration in isolated regions require a surficial geology data base for proper land management, sand and gravel extraction and ancillary objectives such as hazards and mineral exploration. BC presently has no organized surficial geology mapping program and subsurface data of Quaternary deposits are lacking for most of the province. This long term program is designed to provide basic surface and

subsurface Quaternary data through a long term program involving field studies in priority areas, compilation of existing unpublished maps and archival data now housed in numerous government and industry offices, as well as production of applied derivative maps. Field work for 1990 is scheduled for the Peace River region.

Planned Outputs:

1. Publication on Peace River project in Geological Fieldwork 1990
2. Open File surficial geology map of Peace River district
3. Centralized collation of various surficial maps for BC

Target Dates:

1. Geological Fieldwork paper completed by October
2. Open File map completed by spring of 1992
3. All provincial surficial maps in SGU by fall of 1992

Significant Findings:

Numerous river cuts were located along the Peace River and its major tributaries (Halfway and Pine Rivers). Several of these sections were examined in detail, with datable bone recovered from one locality; no obvious two till sections were examined. Wood fragments were also located below landslide basal contacts, thereby allowing dating of slope failure occurrences in the area.

Budget Tracking:

Progress to Date:

1. Bibliographic literature search for the Peace District now complete.
2. Fieldwork in Peace River completed from 19 June to 30 June, second visit with Dr. A. Roberts of Simon Fraser University planned for early August.
3. Field studies with Dr. N. Catto (surficial mapping Geoscience Grant holder) completed. Catto completed work in mid July.
4. All Ministry of Environment terrain maps now assembled and catalogued in SGU, GSC maps now ordered, several arrived and awaiting arrival; catalogued maps now placed on AUTOCAD

## **GEOLOGICAL HAZARDS**

Program Objectives:

The aim of this program is to coordinate information related to geological hazards (e.g., mass movements, earthquakes, volcanic eruptions, etc.) which impact directly on the residents of British Columbia. Projects include the development of public information circulars, archival data compilation, coordination of a workshop on geologic hazards, and research on neotectonics and earthquake sensitivity mapping. The results will answer public concerns regarding types of hazards present in B.C., and the probability of future occurrences of hazards. Results will also contribute to our scientific data base.

Planned Outputs:

1. Information circulars on various geological hazards
2. Provincial workshop on geological hazards, and publication of proceedings as Open File
3. Microzonation map for Saanich Peninsula (long term)
4. Paper in Geological Fieldwork 1990 on neotectonics
5. Annotated bibliography on geologic hazard studies in BC

Target Dates:

1. Two information circulars completed by 01 September 1990
2. Workshop on hazards to be held in October/November, with Open File publication complete by 31 March 1991
3. Microzonation mapping procedure assessed by fall of 1991, map publication by 1995
4. Neotectonics paper by 31 October 1990
5. Annotated bibliography as paper by 1992

### Significant Findings:

Intertidal and bog environments near SE of Tofino contain a unique record of organic muds conspicuously interbedded with bed of allochthonous fine sands (tsunami deposits?). A similar but more spectacular record is evident near Port Alberni, where several allochthonous sands are evident. The uppermost sand at both locations is thus far assumed to represent the tsunami associated with the 1964 Alaska earthquake. This Alaska assumption and the date of the previous events has yet to be confirmed.

### Budget Tracking:

#### Progress to Date:

1. Draft of text and figures now complete for first information circular (earthquakes), editing near completion, work now started on second circular on volcanic eruptions.
2. First announcement circular on workshop completed and mailed, responses have started.
3. Literature review and collation on microzonation techniques in progress.
4. Fieldwork on neotectonics of Vancouver Island completed for July, minor field trips for Aug/Sept.

### **MISCELLANEOUS**

- > Bobrowsky on holiday 16 July - 20 July
- > Levson on holiday 30 June - 09 July
- > Kerr on holiday 26 July - 30 July
- > Tim Giles started employment as geological assistant on 01 July
- > Giles on holiday 20 July - 24 July
- > several sand and gravel referrals and public queries addressed by all geologists