



Ms. Angela Love
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Re: Geological Survey of Canada – Southern Mackenzie Surficial Activity – Proposed Geological Fieldwork

Dear Ms. Love,

We are writing to provide an update of research conducted last summer and to begin discussions about proposals for 2018 fieldwork. This research, conducted by the Geological Survey of Canada, is funded by the Geo-Mapping for Energy and Minerals Program, which aims to fill gaps in public knowledge about the geology of northern Canada. The Southern Mackenzie Surficial activity completed its first field season in July and August 2017, based out of Hay River. A Report of Activities, which details the scope and focus of our research, the fieldwork, conducted and how samples were collected can be found on our website:

http://ftp.maps.canada.ca/pub/nrcan_rncan/publications/ess_sst/306/306090/of_8322.pdf.

Nature of the Study

The southern Mackenzie field area was selected for study because there are currently no surficial geology maps at useful scales for this region. Surficial geology is the study of materials that lay on top of bedrock, and are typically those materials deposited by past glaciers, rivers and organic deposits. Analysis of the geochemical and mineral content of surficial samples provide natural background measurements useful for environmental assessments, and are used to identify indicator minerals which can then potentially be traced back to source locations, identifying new mineral potential. Our proposed mapping and geoscience work will lead to new publically available surficial geology maps and information that can be used to inform decision-making of land-use planning by communities, governments, and industry.



Location of the Study

The area of interest is located around the headwaters of the Mackenzie River, south and west of Great Slave Lake, and includes large sections of the Northwest Territories' five all-season highways (please see attached map). While we propose to remain in the same general area in 2018, we will be looking to follow up with additional sampling around selected sites visited last year based on laboratory results we should be getting in the coming months, and would expand last year's reconnaissance survey of areas north and east of Fort Providence.



Scientists collecting samples beside the highway.



Typical field sampling methods and equipment.

2018 Field Proposal

The methodology remains unchanged from the 2017 field season. An 8 person team of geologists, students, and support staff would continue to study the area south and west of Great Slave Lake, over a proposed 6 week period starting in late June and ending in early August. Small crews of 2-3 people would collect 10 kg and 3 kg bags of soil and sediment samples. Holes dug by hand shovel would be filled in, with turf replaced on top. The scientists would also make observations of the land and nature of the terrain around them, and take small rock samples. The field party would be transported to and from the sample sites by pickup truck, boat, or helicopter. Note that pickup trucks would only be used on existing roads and trails, boats and operators would be contracted from local First Nations, and that a helicopter (Jet Ranger) would be used to set out crews in remote areas, pick them up, and ferry them between sampling sites.

The work would involve a rotation of geologists with up to 8 in the field at one time. The field crew plans to be lodged at commercial accommodations, or rent dwellings in Fort Providence and Hay River. Efforts would be made through all aspects of the fieldwork to minimize impact on wildlife by keeping a safe distance, including minimum flight elevation guidelines, and to not disturb community members working and living on the land.

Multi-year licenses and permits were issued in 2017 and remain valid.



Sharing Results

Results of all Geological Survey of Canada studies are available for download free of charge at <https://geoscan.nrcan.gc.ca>. Preliminary results are available through the annual Report of Activities (<https://geoscan.nrcan.gc.ca/starweb/geoscan/servlet.starweb?path=geoscan/download.web&search1=R=306090>). Typically, this report would show basic summary information, such as where samples were taken. Though the analysis of samples and conclusions of the study take time to formulate, we will keep you updated and provide copies of all publications as they become available. However, it will take several years before final conclusions of the project and maps are likely complete.

If you have any question or comments, please do not hesitate to contact Abigail Alty, Engagement Officer by telephone at (613) 947-2897 or by email at: Abigail.Alt2@canada.ca. We encourage the distribution of this letter to any interested parties.

Sincerely,

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cc:

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