

All field trips will take place within Manitoba, a province renowned for its friendly hospitality; nevertheless, participants should come prepared for the possibility of less-than-hospitable weather. The average daily temperature for May in Winnipeg is 12°C, with record extremes of 37°C and -11°C. North-central Manitoba (Thompson) has an average daily temperature of 6.5°C in May, with record extremes of 32.6°C and -18.3°C (*Source: Environment Canada*).

Prices shown below include transportation and double-occupancy accommodation for the duration of the field trip (as specified by the departure/arrival information), field trip guidebook, snacks and bottled water, meals and incidentals as indicated, and all applicable taxes.

Post-meeting Field Trips

FT-C3

The Volcanological and Structural Evolution of the Paleoproterozoic Flin Flon Mining District: The Anatomy of a Giant VMS System

Saturday May 25 to Wednesday May 29, 2013

Leaders: Harold Gibson (MERC, Laurentian University), Bruno Lafrance (MERC, Laurentian University), Sally Pehrsson (Geological Survey of Canada), Michelle DeWolfe (Mount Royal University), Kelly Gilmore (Consultant), Renée-Luce Simard (Northern Shield Resources Inc.)

Estimated cost per person: \$1,490 (includes lunches and one dinner)

Maximum number of participants: 16

Summary: The world-class, Paleoproterozoic, Flon Flon volcanic-hosted massive sulphide (VMS) district contains the Flin Flon, Callinan and 777 VMS deposits, which along with HudBay Mineral's smelter, sustain the communities of Creighton, Saskatchewan and Flin Flon, Manitoba. The Flin Flon VMS district is situated within the southwestern Trans-Hudson Orogen, the largest Paleoproterozoic orogenic belt of Laurentia. Using spectacular, clean and polished outcrops, and underground exposures at HudBay's 777 mine, this field trip will: 1) place the Flin Flon District in the context of the tectonic and magmatic evolution of a juvenile rifted volcanic-arc volcano; 2) showcase the spectacular flow, volcanoclastic and intrusive lithofacies that comprise this largely basaltic volcanic edifice; 3) reconstruct the volcanic and structural architecture and history of the district, including a large synvolcanic subsidence structure referred to as the Flin Flon cauldron that hosts the VMS deposits, and demonstrate how subsequent deformation events have modified this primary volcanic feature and its contained ore deposits; and 4) illustrate the role of volcanism and subsidence in the formation and location of VMS deposits, and the role of deformation in their modification. This field trip will showcase the research conducted over the past decade by the Manitoba and Saskatchewan geological surveys, Natural Resources Canada (Targeted Geoscience Initiative 1 and 3 programs), the Natural Sciences, Engineering Research Council (NSERC), Laurentian and Mount Royal Universities, and HudBay Minerals. The field trip is an outgrowth of these collective efforts and presents a significant new interpretation of the volcanic and structural control of the deposits that will be useful to researchers and explorationists in VMS terranes of any era.

Departure/arrival information: Departs from the Winnipeg Convention Centre at 8:00 a.m. on Saturday May 25th, and will arrive at the Victoria Inn in Flin Flon later that afternoon. Departs

Flin Flon at 7:00 a.m. on Wednesday May 29th and will arrive at Winnipeg International Airport before 5:00 p.m.

Other information: Most of the outcrops are accessible by road, but the trip will involve some hiking (~1 km) over moderately rugged topography. The outcrop surfaces are extremely slippery when wet. Parts of the field trip surface tour take place on the mine property of HudBay Minerals Inc. (HudBay). This area is restricted to the public and entrance to the property requires the permission of HudBay, and compulsory attendance at a safety/orientation course that will be provided by HudBay. Participants must bring sturdy safety-toed boots, and a hard hat and safety glasses if possible. Participants going underground at the 777 mine require fit-testing for a respirator; they *must* be clean shaven to pass the respirator fit test, and without this test will not be allowed underground. A field trip safety and orientation meeting will be held at the Victoria Inn at 8:00 p.m. on May 25th.