# Geological Questions and Answers about Seven Days Work

Q. What is Seven Days Work?

A. Seven Days Work is a spectacular sea cliff of volcanic rocks about 50 meters high, between Whale Cove and Ashburton Head in northern Grand Manan. The name derives from the local story that seven prominent layers in the cliff face each took a day to be made (in fact there are about a dozen layers visible). The cliff parallels the Red Point Fault, which is not far off-shore.

Q. How do we get there?

A. You can walk north along the western side of Whale Cove along the boulder beach until you reach the cliff face, but it is somewhat easier to start at Eel Brook Beach at the northern end of the cliffs. To get there, drive up Whistle Road and park on the eastern side at an old entrance road (blocked by boulders) into the closed dump. Just north of the dump is a trail head (an old jeep road) that heads northeasterly into the woods. It is only about a km or so to the shoreline, where there is a short but steep drop down to Eel Brook Beach, which separates Ashburton Head to the north from Seven Days Work to the south. Watch for falling rocks!

Q. How did the layers in the cliff form?

A. The layers in the cliff are lava flows like those today in Hawaii and Iceland. They poured out of fissures in the hardened crust on top of a giant lava lake that filled the Bay of Fundy, 201 million years ago. “Tongues” of lava edges can be seen in the cliff face. This type of lava is called pahoehoe, a Polynesian name from Hawaii. Pahoehoe is very fluid and can flow long distances encased in its glassy rind, sort of like a thick-skinned rubber tube.

Q. Is this the only place where these thin lava flows make up the rocks of Grand Manan?

A. Seven Days Work is the middle member of 240 meters of Dark Harbour Basalt, which covers the island west of the Red Point Fault. Beneath the Seven Days Work member is the Southwest Head member, which is formed of 110 meters of columnar lava that is also present on the western end of Whale Cove Beach. The Seven Days Work member can also be seen around Seal Cove to Deep Cove, along the shore southwest of Long Eddy, and at Bradford Cove. Another thick basalt member overlies the Seven Days Work member at Ashburton Head, north of Eel Brook Beach.

Q. What are the long white finger-shaped objects at the bottom of some layers?

A. Gases in the lava formed bubbles as well as finger-like cylinders called pipe amygdules when filled by minerals, as are most of these. The gas pipes were rising from the base of the lava when it hardened. They are filled by white calcite and zeolite minerals such as scolecite and heulandite. This is a very popular area for mineral collectors, as you can also see from specimens in the Grand Manan Museum.

Q. What minerals can be found here?

A. Perhaps the most interesting minerals belong to the zeolite group, which are alkali-alumino-silicates that have water molecules trapped in their crystal structures. Zeolites that you can find at Seven Days Work include mesolite (scolecite), heulandite, stilbite, and chabazite. White to pale pink needle-like crystals of mesolite occur in masses that radiate in fans and cone-like forms. Mesolite is difficult to distinguish from its close relative scolecite, but scolecite (the calcium end member) is generally rare.

Seven Days Work minerals also include many forms of quartz and chalcedony, including amethyst, white banded agate, gray, blue, and striped agate, aventurine, bloodstone, onyx, and many colors of jasper. Lava pockets and veins may show interior zones of agate and amethyst surrounded by green aventurine, with rims of dark green celadonite.

Mineral collectors should be wary of frequent rock falls from the unstable cliffs. This also means that each time you come back there will be new samples to examine and take home. It is all right to pick up pieces that are loose along the beaches, but get permission before breaking them out of the solid ledges.

Q. What other features can we see at Eel Brook Beach?

A. On the northern end of the beach is the first cliff of Ashburton Head, which is made of the thick lava flow that overlies Seven Days Work. It was brought down to the same level here along a fault that is exposed in a ledge above the beach. The Ashburton Head basalt member is twisted and broken from this tectonic activity.

As you walk around the beach you may see round black stones that are full of small holes. These are also volcanic but are not derived from the local lavas. Instead they are ballast stones that spilled from the Lord Ashburton, a ship that was wrecked here in a winter storm in 1857 with the loss of 21 sea men. The head is named after this ship.

The ballast stones are thought to be from France, from where the ship sailed toward Saint John, NB. They almost made it but were blown back in the storm onto the rocks at Ashburton Head. Eight survivors were badly injured with frozen limbs. James Lawsen was one who returned to live on Grand Manan, becoming a cobbler and living a long and respected life in North Head.

For more about Grand Manan geology see:
http://earth2geologists.net/grandmanangeology

J. Gregory McHone, PhD
Geologist, North Head, Grand Manan, NB
greg@earth2geologists.net
http://earth2geologists.net