
**Drilling challenges in the direct shipping iron ores
of the Labrador Trough (Schefferville area)**

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Labrador Iron Mines Limited (LIM) is currently in the process of defining Direct Shipping Iron Ore Resources in the Western Labrador / Schefferville area of the Labrador Trough ahead of the start-up of mining at the James and Redmond deposits in the spring of 2011. The Iron Ore Company of Canada (IOC) previously mined approximately 150 Mt of Direct Shipping Iron Ore (DSO) from the area during the period 1954 to 1982. The hematite (DSO) is often very soft and friable and often

occurs as alternating layers of hard and soft mineralization. Moisture content of the ores can reach as high as 14% and porosity can be as high as 45%. LIM initiated drilling in 2006 using a diamond drill coring rig. Recovery using a coring rig in the soft iron ores proved to be very unsuccessful and the drilling process had to be re-evaluated. In 2008, LIM adopted the Reverse Circulation (RC) method of drilling the soft iron ores. This method was further refined in the 2009 and 2010 field seasons. RC Drilling uses a water and air injecting tricone drill bit and double tube drill rods to remove the drill cuttings and bring them to surface. The drill cuttings / chips then pass through a cyclone, rotary wet splitter and finally a “knife splitter” to produce a sample in three fractions: the sample itself, a witness sample and a discard sample. This method requires a sampling crew composed of one rig geologist, a senior sampler and a junior sampler to be present at the drill rig at all times. All drill chip logging is carried out simultaneously as the hole is being drilled. In addition, an extensive QA/QC program has been implemented to test sampling at all stages.