

- 1.8 **Reference:** Email of July 27, 2010 from David Barrett
- Preamble:** Initial request in preparation for control center portion of the investigation
- Request:** Capture all leak detection data for the same time frame in 7 above.
- Response:** The leak detection data has been captured in graphical format from July 24 15:00 MST to July 27 11:00 MST. Attached screenshots show the magnitude of the observed imbalance over time in the MBS for all volume balance sections and all calculation windows on Line 6b.

Background and explanation of the trends:

Enbridge uses a computation pipeline model (CPM) for detecting leaks on Line 6b. The type of CPM used by Enbridge is a Real Time Transient Model. At Enbridge, this model is referred to internally as the Material Balance System or MBS.

The MBS utilizes three volume balance calculation time periods for detecting leaks. They are 5-minute, 20-minute and 2-hour calculation windows. Line 6b is divided into two separate volume balance sections for leak detection purposes. The two volume balance sections are Griffith to Marshall (GTMR) and Marshall to Sarnia (MRRW).

The attached files show trends of the magnitude of the imbalance in each section of pipe against the leak detection threshold. When the value of the imbalance exceeds the threshold, an alarm is triggered. The units of measurement for the thresholds and the imbalance is m^3 .

(See Files Griffith to Marshall 2-Hr Alarm Inbalance.jpg, Griffith to Marshall 5-Min Alarm Inbalance.jpg, Griffith to Marshall 20-Min Alarm Inbalance.jpg, Marshall to Sarnia 2-Hr Alarm Inbalance.jpg, Marshall to Sarnia 5-Min Alarm Inbalance.jpg, Marshall to Sarnia 20-Min Alarm Inbalance.jpg)