Crude Quality Inc.
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What is CrudeMonitor?

This site was established, and is maintained, in the interest of communicating data and information pertaining to the quality of western Canadian crudes as well as quality issues faced by the industry at large. We are committed to providing information that is current and dependable, and relevant to existing and anticipated industry needs.
• North
  – In Progress New Features
  – New Crudes and Condensates
  – Condensate Plans

• South
  – Program Review
  – CME Adoption
  – Future Plans
Western Canadian Select

What is Western Canadian Select?
Western Canadian Select is a Hardisty based blend of conventional and oilsands production managed by Canadian Natural Resources, EnCana Energy, Suncor Energy, and Taltonte Energy. Argus has launched a daily volume-weighted average price index for Western Canadian Select (WCS) and will publish this index in the daily Argus Crude and Argus Americas Crude publications.

Most Recent Sample Comments
WCS-185, May 1, 2018
The May 1st sample of Western Canadian Select was consistent with historical data. Typical milled and distributed distillation results are included.

Choose a property:
- Density (kg/m$^3$)
- Sulphur (wt%)
In Progress New Features

Haverly Export
• New tool to integrate CrudeMonitor data with Haverly software
• Flash assay update

Export Western Canadian Select Data

External Connections
• Investigating methods for direct access to CrudeMonitor data set
In Progress New Features

Reworked HTSD Page
- Historical data lookup
- Improved plotting and calculators
- Simplified user interface

Site Survey
- Userbase research
- Canadian producers fund the program & want to know how its being used, by whom
- Quick one time ask, optional
Quick Reference Guide

• Updated data and crudes on yearly basis

### Light Ends Summary

<table>
<thead>
<tr>
<th>Property (vol%)</th>
<th>Most Recent Sample</th>
<th>6 Month Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>C3-</td>
<td>0.09</td>
<td>0.07</td>
</tr>
<tr>
<td>Butanes</td>
<td>1.99</td>
<td>1.87</td>
</tr>
<tr>
<td>Pentanes</td>
<td>6.88</td>
<td>7.49</td>
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<tr>
<td>Hexanes</td>
<td>5.05</td>
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<tr>
<td>Heptanes</td>
<td>3.44</td>
<td>3.21</td>
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<tr>
<td>Octanes</td>
<td>2.50</td>
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<td>Nonanes</td>
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<td>1.54</td>
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<tr>
<td>Decanes</td>
<td>0.87</td>
<td>0.84</td>
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</tbody>
</table>

### Light Ends Mass%

• New toggle to switch between volume% and mass%
In Progress New Features

• Numerous user interface tweaks
  – MSDS sheets
  – Additional plotting updates: crude comparison, distillation chart features, full screen charts
  – Use of space, more data with less scrolling

• Bug fixes

• We are always open to new ideas to serve industry better
New Crudes and Condensates

Currently Public

Cochin Condensate

What is Cochin Condensate?
Cochin condensate is a pentanes plus stream originating in the US Midwest and transported to the Ft. Saskatchewan, AB area on the Kinder Morgan Cochin system. It is delivered to condensate facilities in the Ft. Sask area on a continuous, rateable basis.

Western Canada Dilbit

What is Western Canada Dilbit?
Western Canada Dilbit is a blend comprised of Sunrise Dilbit Blend (SDB), Hangingstone Dilbit Blend (HDB), and Leismer Corner Blend (LCB). These streams are produced using SAGD technology from the Athabasca region and transported to Enbridge’s Edmonton Terminal where they are blended. WDB is not part of the Enbridge Pooling Program, however samples are taken at Superior, WI.

Near Future Release

Fort Hills Dilbit

What is Fort Hills Dilbit?
Fort Hills is a joint shovel and truck mining operation between Suncor, Total, and Teck where paraffinic froth treatment (PFT) is utilized to produce marketable diluted bitumen. Fort Hills Dilbit is a heavy, high sulphur, low MCR stream shipped on the Wood Buffalo Pipeline to Enbridge’s Cheekamah Terminal and on to further markets.

Mixed Sweet Blend (Superior)

What is Mixed Sweet Blend (Superior)?
Mixed Sweet Blend (Superior) is the Western Canadian benchmark light sweet crude. These MSW(S) samples are taken after final pooling ex-Superior and include significant contributions from production downstream of Edmonton.
Future Condensate Framework
Program Review

- Operating for 16 months
- Multiple batch samples per month of DSW and WTI at Cushing
- Historical monthly average data from 2012 to 2016 inclusive
- Prior crudemonitor.ca template used to provide distinction from active Canadian site and to provide familiarity to users
CME Adoption

• CrudeMonitor data vital in CME adoption of proposed specifications starting January 2019
  – MCRT, TAN, Nickel, Vanadium, Light Ends, 50% Point, Vacuum Residue
Future Plans

• Develop and implement monitoring program for 2019+
• Expand variety of crudes tested
  – Shipper driven, pipeline oversight model
• Increase site traffic
  – Media, industry communications, word of mouth
  – Adapt to benefiting US producer (netback retention) and domestic/international refiners (quality, consistency)
• Upgrade website
  – Moving to crudemonitor.ca duplicate will reveal significant light ends compositional data
Crude Quality Inc.
SPECIALIZING IN CRUDE OIL QUALITY ISSUES.

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