



COQA Update

June 10, 2010
Denver





CCQTA Background

The Canadian Crude Quality Technical Association membership consists of companies from multiple segments of the Canadian oil industry. The Association is established with the following educational and scientific objectives:

- To facilitate communications among industry stakeholders
- To provide a forum for the presentation and consideration of proposals for industry projects related to any aspect of crude oil quality.
- To improve industry knowledge and awareness of crude oil quality through the cooperative exchange of technical information among industry sectors.





CCQTA Background

- CCQTA does not typically fund projects, but acts as a facilitator for projects
 - Provides meeting venues, phone and web-conferencing support, and third party accounting to project groups
- CCQTA currently has 58 member companies



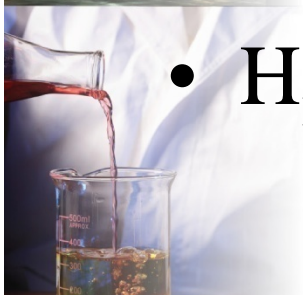
Active Projects



- Condensate Quality
- Iron Fouling
- Oilsands Bitumen Processability



- Phosphorus in Crude Oil
- Fluorocarbons in Crude
- Tan Phase IV



- H₂S in Crude



Project Proposals



- On-line Contaminant Monitoring
- Heavy Oil Compatibility





ACTIVE PROJECTS



Condensate Quality Project

- This project is focused on understanding potential contamination sources in condensate streams
 - Completing work on the use of ASTM 4807 for CRW feeder stream testing.
 - Developing procedure to quantify role of wax and asphaltene on TSS in condensate.
 - Development of quick/on-line procedure for benzene measurement in condensate.
 - Potential review/upgrade of olefins specification in condensate

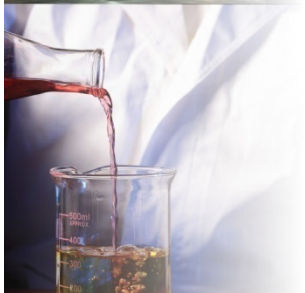


Condensate Quality Project Participants



- ARC- in kind
- Keyera
- Provident
- Devon
- Cenovus
- Maxxam – in kind

- Shell Canada
- Imperial Oil
- Shell US Pipelines
- ConocoPhillips
- Pall – in kind
- Suncor





Iron Fouling Project



- This project is conducting an investigation of the role of iron in Canadian crude oils and condensates as an emulsion stabilizer, a process foulant and a process contaminant



- Planning to test FWKO (pre & post acidizing) and desalter (good & bad) interfaces emulsion samples



- Completing Project final Report

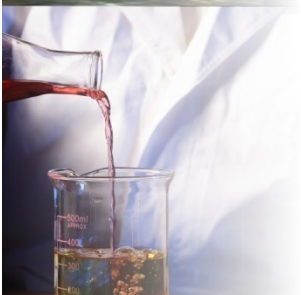


Iron Fouling Project Participants



- BP
- ConocoPhillips
- Flint Hills Resources
- CITGO
- NCUT
- Imperial Oil Limited
- Maxxam – in kind

Nalco
NCRA
Chevron Canada
Cenovus
Grace Davison
Suncor
ARC – in kind



Oilsands Bitumen Processability

- This project examines the potential refinery operability issues associated with processing dilbits/synbits
 - Phase I Report completed
 - NATCO to complete conductivity testing on Phase I samples
 - Phase II work schedule developed
 - Focused on “back end” issues (e.g. coking, fouling, cracking studies)



Oilsands Bitumen Processability

Phase I - Project Participants

- 
- BP
 - ConocoPhillips
 - NCRA
 - CITGO
 - Shell
 - MEG Energy



Work in kind

- 
- Maxxam
 - BakerPetrolite

Cenovus
NCUT
Suncor
Marathon
Devon
Total

Champion
ARC



Phosphorus in Crude Oil

- Project focused on eliminating refinery fouling associated with the presence of volatile phosphorus in crude.
 - Monitoring the effects of alternate (new) chemistries combined with the imposition of a spec in Canadian crude
 - Investigating the “possible migration” of the phosphorus issue to other streams (e.g. Condensate, Heavy Oil)
 - Phosphorus fouling confirmed at CITGO-Lemont, and phosphorus contamination reported at Tesoro-Anacortes and BP-Cherry Point

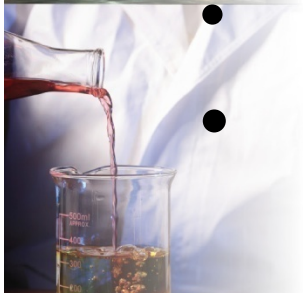


Phosphorus in Crude Oil Participants



- BP
- Chevron Canada
- Clearwater Inc.
- Enerchem
- Imperial Oil Limited
- New Alta
- Total
- TESORO

CCS Energy
Gibsons
ConocoPhillips
Halliburton
Maxxam Analytics
Suncor
BJ Services
CITGO





Fluorocarbons in Crude Oil



- The project is examining the potential refinery impact of fluorocarbon foaming agent usage in well stimulation/fracturing



- Awaiting results of Refinery Impact Study completed by 3M.
- Participation is open to all interested CCQTA members





TAN Project – Phase IV



- Project scope has been finalized.
- Key upgrades from Phase III
 - Smaller autoclave - lower residence time – minimize decarboxylation
 - Higher shear rates – more NAP affects, less sulfur passivation
 - Planned sulfur & NAP speciation
 - Project may assess the impact of blending on corrosion



Tan Phase IV

Project Participants – to Date

- BP
- ConocoPhillips
- NCRA
- Petrobras
- Shell
- Chevron
- NCUT
- Suncor
- Statoil
- Total



H₂S In Crude Measurement

- Project seeks to standardize sampling and testing methods for the measurement of H₂S in crude
 - Determining appropriate sampling protocol
 - Evaluating/upgrading IP 570 test method
 - Samples sent to equipment manufacturer to address matrix effects of crude
 - Project group to generate reference material to assist in predicting H₂S levels in tanks, vessels, collection systems, etc. from total H₂S in crude measurement
 - Participants list yet to be determined.



PROJECT PROPOSALS

On-line Contaminant Monitoring

- This project proposes to employ existing instrumentation to undertake at-line/on-line monitoring of crude oil contamination
 - Samples have been provided to equipment manufacturers to assess method capabilities
 - Currently LIBS, ESR and MWD XRF are being evaluated as potential technologies
 - An interested refinery site has been identified

Heavy Oil Compatibility

- This project proposes to quantify the impact of instability/incompatibility on crude transportation, desalting and refinery processing.
 - Survey requesting feedback on key areas of investigation distributed to interested parties
 - Test method Evaluation/Improvement identified as key area of interest!
 - Based on responses, project is expected to be launched in June 2010





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