



COQA Update

October 28, 2010
Houston





Active Projects



- Condensate Quality
- Oilsands Bitumen Processability
- Phosphorus in Crude Oil



- Tan Phase IV
- H₂S in Crude
- Heavy Oil Compatibility



- Fluorocarbons in Crude



Project Proposals



- On-line Contaminant Monitoring
- Crude Quality Tutorial





ACTIVE PROJECTS



Condensate Quality Project



- This project is focused on understanding contamination sources in condensate streams



- Completed work on modifying ASTM 4807 for filterable solids testing of CRW feeder stream testing.
- Developing procedure to quantify role of wax and asphaltene on Total Particulate in condensate.
- Considering the development of quick/on-line procedure for benzene measurement in condensate.



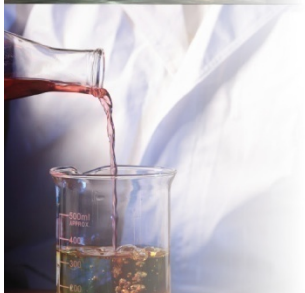


Condensate Quality Project Participants



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

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



Oilsands Bitumen Processability

This project examines the potential refinery operability issues associated with processing dilbits/synbits. Phase II work will include:

1. Coking and fouling studies on three commercial dilbits.
2. Coking and fouling studies on a dilbit and synbit manufactured from the same bitumen.
3. Conductivity testing of bitumen blended with synthetic and three different condensate types.

Oilsands Bitumen Processability

This project examines the potential refinery operability issues associated with processing dilbits/synbits. Phase II work will include:

4. Compatibility testing (BakerPetrolite method) of 2 dilbits & 2 Canadian heavies blended with light crudes processed in the US.
5. Desaltability Testing of blends used in 4.



Oilsands Bitumen Processability

Phase II - Project Participants – September 2010



- ConocoPhillips
- NCRA
- Marathon
- BakerPetrolite
- Nalco
- CanmetENERGY

Devon Canada

Suncor

Total

Champion

Cameron

AITF





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) gellant chemistries combined with the imposition of a spec in Canadian crude.
 - Now have evidence that phosphorus is present in heavy oil.
 - Recent evidence from feeder stream testing suggests that mitigation efforts are not working. Volatile P in light crude has returned to 2007 levels.



Phosphorus in Crude Oil Participants



- BP
- Chevron Canada
- ConocoPhillips
- Enerchem
- Imperial Oil Limited
- Maxxam Analytics
- Total
- Tesoro
- CCS Energy
- Gibsons
- Flint Hills
- Halliburton
- Suncor
- New Alta
- BJ Services
- Citgo



TAN Project – Phase IV

- Naphthenic acid corrosion testing of VGO samples using a small volume autoclave
 - Crudes include Canadian heavies, dilbits, SJV, Brazilian high TAN.
 - Lower residence times & higher shear rates.
- Testing will also include:
 - Decarboxylation product analysis.
 - Coupon surface analysis (SEM & Pitting Analysis).
 - Sulfur speciation and Naphthenic acid speciation.





Tan Phase IV

Project Participants



- BP
- ConocoPhillips
- NCRA
- Petrobras
- Shell
- Cenovus
- CanmetENERGY
- Chevron
- Imperial Oil
- Suncor
- Statoil
- Total
- Flint Hills
- AITF



H₂S In Crude Measurement



- Project seeks to standardize sampling and testing methods for the measurement of H₂S in crude oil
- Present work focusing on method development.
- Stanhope-Seta to provide modified IP 570 instrument for local testing (Alberta).
- Various Canadian and US samples to be tested to validate instrumentation.
- Participants list yet to be determined.





Heavy Oil Compatibility

- This project proposes to quantify the impact of instability/incompatibility on crude transportation, desalting and refinery processing.
 - Phase 1 involves a review of test methods to determine “best” method for project needs.
 - Initial sample selection designed cover a wide range of key variables.
 - e.g. asphaltene content, aromaticity, paraffin content, conductivity



Heavy Oil Compatibility Project Participants



- Cameron
- Chevron

CanmetENERGY
ConocoPhillips



- MEG Energy
- Pembina Pipeline
- Cenovus

Petrobras
Shell





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.
 - Preliminary results suggest that fluorocarbon use in production additives is tolerable to refiners.
 - Participation is open to all interested CCQTA members.



PROJECT PROPOSALS

On-line Contaminant Monitoring

- This project proposes to employ existing instrumentation to undertake at-line/on-line monitoring of crude oil contamination
 - Preliminary results with MWD XRF look promising.
 - LIBS technology is also being assessed.
 - A refinery site has expressed interest in conducting at-line testing with selected equipment.

Crude Quality Tutorial

- This project proposes to develop crude quality presentation material ranging from ½ hour presentations to 1 day tutorials.
- Intended to cover all facets of crude oil quality.
 - Production, pipeline transport, refinery operation, waste handling, lab testing, etc.
- To be used for training purposes or as reference material by CCQTA members.
- Project intended to be funded by the CCQTA membership.

CCQTA/COQA Joint Meeting



- Date

- Scheduled for week of June 18th 2012

- Location

- Kananaskis Resort – located 90 km west of Calgary

- Contact

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