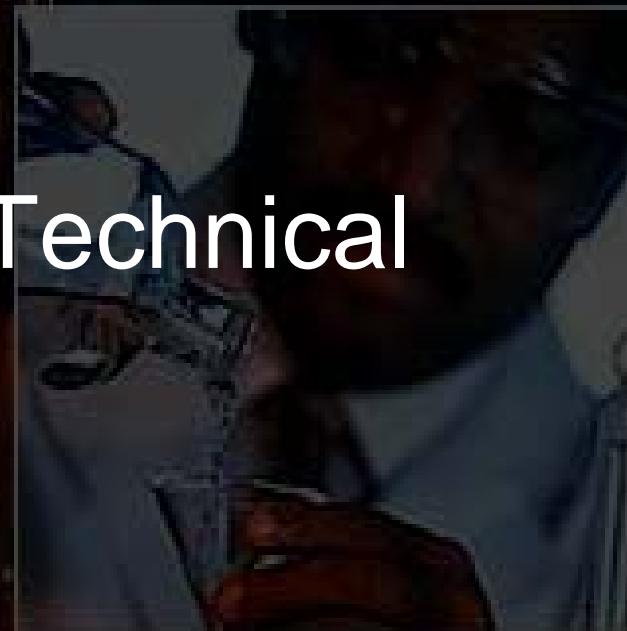


CCQTA

Canadian Crude Quality Technical Association Project Update

COQG Meeting

February 8th, 2007



Contact: president@ccqta.com or
secretary@ccqta.com

February 8, 2007

CCQTA

The Canadian Crude Quality

Active Projects List

- Heavy Oil Manual
- Iron Fouling
- NGL Contamination
- Phosphorus in Crude
- Oilsands Bitumen Processability
- TAN Phase III

New Projects

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Heavy Oil Manual Project

CCQTA Status

- Project funded by general membership
- Goal is to review methods applied to heavy oils and bitumens, identify issues associated with their application to a heavy oil matrix, and provide recommendations/upgrades to the test methods
- TAN, asphaltenes, Sample preparation and density completed
- Project manager – Bryan Fuhr 1-780-450-5032

Iron Fouling Project

Goal

- Project goal is to understand role of iron as a contaminant in condensate and crude oil
 - as an emulsion stabilizer
 - as a process foulant, i.e., in furnaces, reboilers, fuel gas filters, etc.
 - as a process contaminant, e.g., catalytic units
- Project manager - Jack Suggett - 1-780-645-2807

Iron Fouling Project

Participants

- ConocoPhillips
- Flint Hills Resources
- CITGO
- NCRA
- IOL
- Nalco
- Chevron
- Encana
- Halliburton
- NCUT



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Iron Fouling Project

Target Processes

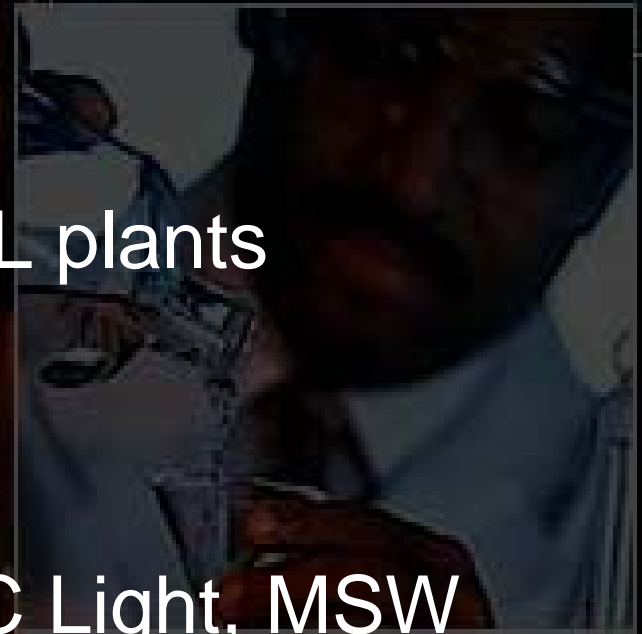
- Emulsions created during desalting
 - CITGO
 - Others
- Hydrotreater/FCCU catalyst
 - BP Toledo
 - CITGO Lemont
 - IOL Strathcona
- Process Foulant/DIB reboiler
 - Chevron Burnaby
 - IOL Strathcona



Iron Fouling Project

Target Streams

- Condensate
 - Condensate produced from NGL plants
 - CRW equalized
- Light Sweet Canadian Crude
 - Peace, Rainbow, Federated, BC Light, MSW
- Canadian Heavy
 - WCS, Lloyd blends



Iron Fouling Project

Q1/07 Activities

- Document refinery fouling and/or processing issues associated with iron
- Identify the various methods/applications where iron is used, managed, transported during crude oil production
- Identify the multiple source(s) of iron in light crude, heavy crude and condensates.
- Investigate the sources of condensate used as diluent for heavy crude oils

NGL Contamination Status

- Project is examining the nature and source of plant fouling associated with processing field butane
- Refiners employing mechanical filtration to help manage problem
- Fractionators continue to report reboiler fouling
- Work is focusing on tracking contamination back to a source
- Project manager – Bob Falkiner 1-416-441-7145

NGL Contamination Participants

- ARC
- BP
- Keyera
- Maxxam
- Pall Filters
- Provident

Alberta Envirofuels
Dow Chemical
Imperial Oil
Nova Corporation
Petro-Canada
Halliburton

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Phosphorus in Crude Status

- Project group awaiting 1st Qt. results of CAPP spec.
- Other activities include pilot plant testing of alternative gellant chemistries
- Project manager – Bruce Kennedy 1-416-986-6722

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Phosphorus in Crude Project Participants

- BJ Services
- CCS Energy
- Chevron
- Clearwater
- Enerchem
- Halliburton
- REV Fluids
- Imperial Oil
- Maxxam
- Nalco
- NewAlta
- Petro-Canada
- United Refining

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Oilsands Bitumen Processability

Project - Goal

- Project focuses on anticipated processability issues associated with refining oilsands bitumen
- Salts, solids, sulfur, nitrogen, metals identified as key area of concern/focus.
- Project manager – Bruce Randolph 1 - 918-661-5077

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Oilsands Bitumen Processability Project - Participants

- ConocoPhillips
- Marathon
- CITGO
- NCRA
- NCUT
- Suncor
- Encana



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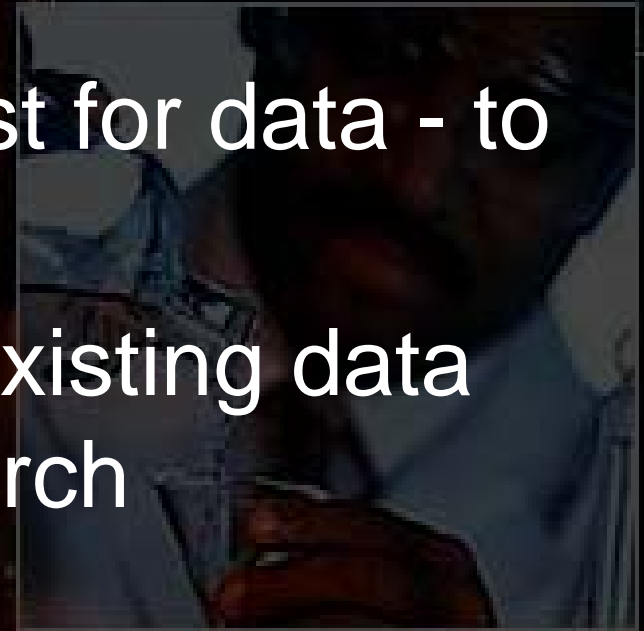
Oilsands Bitumen Processability Project – Targeted Streams

- Produced oilsands bitumen,
 - Petro-Canada - Fort Mackay
 - Encana - Christina Lake
 - Encana – Foster Creek
 - Suncor - Firebag
 - ConocoPhillips - Surmont
 - Shell – Albian Heavy Synthetic
- Others
 - WCS



Oilsands Bitumen Processability Project - Q1/07 Activities

- Prepare questionnaire/request for data - to be distributed to producers.
- Review, assess and compile existing data provided by producers, research organizations.
- Identify information gaps & Q2 follow-up activities.



TAN Project Phase III

CCQTA Goal

- Phase III goal is to validate results of Phase II by conducting corrosion testing under vacuum conditions
 - Minimize influence of (H₂S) sulfur passivation
- First step involves validating new autoclave by running high Tan SJV
- Project manager – Randy Segato 1-403-920-8994

TAN Project Phase II Project Participants

- NCUT
- Suncor
- ConocoPhillips
- NCRA
- ENCANA
- JACOS
- IOL
- ARC
- Petro-Canada

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TAN Project - Phase III

CCQTA Test Conditions

- Autoclave Testing – each sample
 - 1 week at 10 mm vacuum and 315 C
 - Test using spinning cage in liquid phase
 - Mixing velocity of 4 m/s
 - Replenishment – continuous – fully replaced every 12 hours

TAN Project - Phase III

Analysis Protocol

- Sulphur speciation of autoclave feed
- Determine metal loss on coupons
- Inspect coupons with SEM technique for sulfidic passivation and evidence of NAC
- Examine reactive species through high resolution MS and adaptation of iron powder test
 - React gas-oil with excess iron powder, filter, then extract and measure dissolved iron naphthenate compounds by MS

TAN Project - Phase III

Proposed Samples ~10 gas-oils

- Repeat Samples
 - Oilsands #1
 - Oilsands #2
 - Bitumen #1
 - High TAN SJV
- New Samples
 - Upgrader gas-oils
 - Synbit blends
 - Others
 - WCS

Next meetings

- Project meetings to be held in Calgary on March 27th & 28th.
- CCQTA AGM scheduled for mid June.
- Project meetings scheduled for Edmonton in September.
- CCQTA GM in Calgary in December