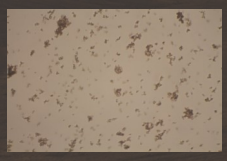
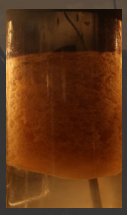
Organic Deposits and Separation Tests

Scaled Solutions offers a range of flow assurance services which include test protocols to investigate and prevent the formation of asphaltenes, waxes and naphthenates deposits and separation issues (emulsions, foams *etc.*)



How our services can help you



Our testing can be carried out using live crude samples, "re-livened" dead crude (Restored and re-equilibrated to reservoir conditions) or dead crude samples, as appropriate.

Main Services

Laboratory testing :

- Asphaltene Dispersancy/Dissolver Testing
- Dynamic Asphaltene Inhibitor Testing (DAIT)
- Dynamic Naphthenate Flow Rig & Static Naphthenate Bottle Tests
- Wax Appearance Temperature at HP/LP
- Wax Deposition Flow Loop Testing
- Gel Strength/ Pipeline Restart Tests
- Qualification of Inhibitors/ demulsifiers
- Refinery/separation testing for heat exchangers, desalters *etc*.
- Field Risk Assessment

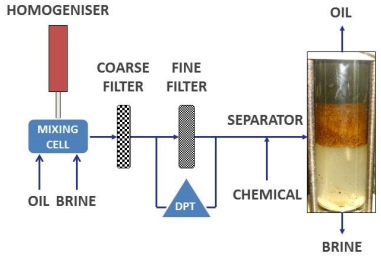
Supportive techniques:

- Asphaltene/ Wax Precipitation Modelling
- Water-in-Oil Analysis
- Oil-in-Water Analysis
- SEM/EDX Analysis



Dynamic Asphaltene, Naphthenate or Wax Flow Rigs

- Specifically developed test rigs; designed and manufactured in-house
- Field representative shear, temperature, pressure, pH
- Deposition on steel under flowing conditions, using dead crude
- Investigate precipitation and deposition simultaneously
- Qualification of Inhibitors including performance, stability and compatibility testing
- Investigate the effect of mixing incompatible fluid streams (e.g. asphaltenic crude + condensate or shale oil)



Naphthenate Separator Flow Rig Schematic

Scaled Solutions

Key Papers

- Andrew R. Farrell, Samantha Wilson, Amarpreet Kaur, Robert Stalker, Gordon M. Graham (Scaled Solutions Ltd.), Dalia S. Abdallah, Sameer Punnapala (ADNOC Onshore) and Hideharu Yonebayashi (INPEX Corporation); 'Laboratory Qualification of Asphaltenes Inhibitors for Squeeze Application– Best Practices and Case Study'. Presented at the 20th PetroPhase Conference, Kanazawa, Japan, June 2019
- Andrew Farrell, Benjamin Martin, Dario M. Frigo, Gordon M. Graham (Scaled Solutions Limited); "Asphaltenes Risk Assessment and Mitigation - Designing Appropriate Laboratory Test Protocols"; SPE- 193560
- Andrew R. Farrell, Benjamin W. J. Martin, Dario M. Frigo, Robert Stalker and Gordon M. Graham (Scaled Solutions Ltd.); "Dynamic Asphaltenes Inhibitor Testing – Designing an Appropriate Laboratory Test Protocol", NACE Paper No. MECCOCT18-12635, presented at the NACE 17th Middle East Corrosion Conference & Exhibition, Bahrain, Sept 2018.
- Benjamin Martin, Andrew Farrell, David Nichols, Sarah Dyer, Gordon M. Graham (Scaled Solutions Ltd.); "A Comparison of Wax Inhibitor Performance under Static and Dynamic Conditions" 30th Tekna Oilfield Chemistry Symposium, Geilo, Norway, March 2019
- K.B Melvin and C Cummine (Talisman Energy); J Youles (BG Group), H Williams, GM Graham and S Dyer (Scaled Solutions Ltd); Optimising Calcium Naphthenate Control in the Blake Field– SPE 114123
- F.F. Rosário and M.C.M. Bezerra, (Petrobras), D.A. Nichols, S.E. Gorringe, H.L. Williams and G.M. Graham (Scaled Solutions Ltd.); 'Calcium Naphthenates in Complex Production Systems—Evaluation and Chemical Inhibition Challenges'– SPE 169756

Truly Independent Laboratory

At Scaled Solutions, our mission is to be recognised worldwide through our independent specialised laboratories as the leading supplier of bespoke equipment, training, consultancy and provider of solutions to challenges in Production Chemistry, Corrosion and Formation Damage.

We aim to exceed our customers' expectations and improve our service to our customers on a continual basis through our key values: team work & communication, openness & transparency, continual improvement and trust.

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