

## Oil/Crude Analysis



- **API Gravity, Specific Gravity, Density**

**Methods:**

ASTM D 287, ASTM D4052(Densitometer)

- **BS&W in Crude**

**Components:**

Bottom Sediment & Water in Crude by Centrifuge Method

**Methods:**

ASTM D 4007

- **HOST Test Method (LBNL), TVP Heavy Crude**

*"Test Method for Vapor Pressure of Reactive Organic Compounds in Heavy Crude Oil Using Gas Chromatography", as approved by ARB and US EPA, shall be used to determine the TVP of crude oil.*

**Components:**

TVP, API Gravity

**Methods:**

Lawrence Berkeley National Laboratory,  
ASTM Method D 287-92 (2000), ASTM D4052

- **Vapor Pressure of Crude Oil: VPCR<sub>x</sub> (Expansion Method) / RVP Equivalent**

**Components:**

Vapor Pressure, Reid Vapor Pressure Equivalent

**Methods:**

ASTM D 6377 / Air Resources Board SOP No. MLD 125

- **Organic Chloride**

*Determination of organic chlorides in petroleum products (includes distillation-0-400F or 0-600F)*

**Method:**

ASTM D4929

- **Distillation of Petroleum Products**

Distillation/ Initial Boiling Point

**Method:**

ASTM D86-04b

- **Viscosity**

**Components:**

Dynamic, Kinematic

**Method:**

ASTM D7042(Viscometer)

## GHG

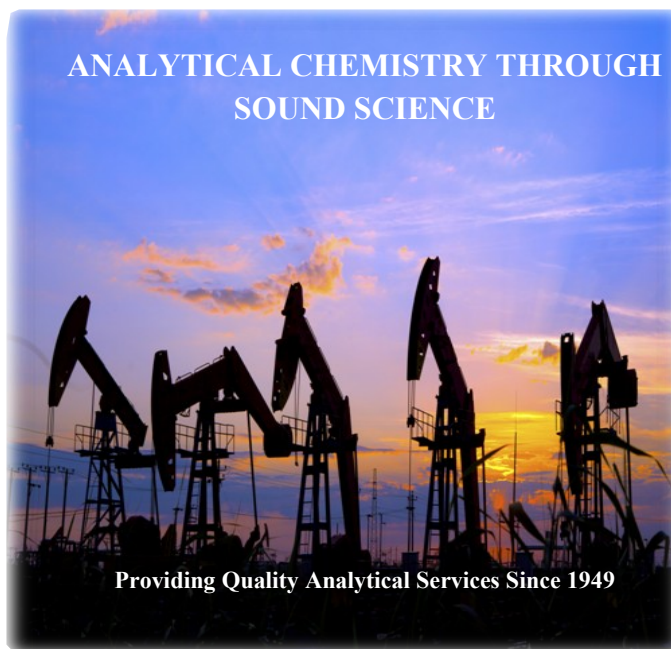
Flash Emissions of Greenhouse Gases and Other Compounds from Crude Oil and Natural Gas Separator and Tank Systems, Gas Oil Ratio (GOR), Gas Water Ratio (GWR)

## SB4 Analyses

Well Stimulation Treatment Testing



## ANALYTICAL CHEMISTRY THROUGH SOUND SCIENCE



Providing Quality Analytical Services Since 1949



## OILFIELD WATER / GAS / VAPOR AND PETROLEUM TESTING



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## To Our Valued Clients,

For more than 60 years, BC Laboratories (BCL) has been providing quality analytical testing services to the environmental, regulatory and energy industries. We are proud of our legacy and continuing leadership in furnishing quality and superior service. As the needs of our clients have evolved, our services have changed to meet those needs.

- SB 4 Well Stimulation Testing
- Flash Emissions GHG, GOR, GWR
- HOST Testing (LBNL) TVP Crude Oil
- Gas/Vapor Testing
- Oilfield Water Testing
- Sampling/Field Service/Courier

**BC offers a trained and qualified field service staff to assist you in sampling and field testing.**

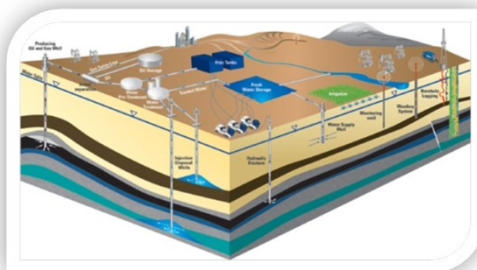
**Field Service Technicians possess the following certifications:**

- |            |   |
|------------|---|
| • Passport | Petroleum Safety Orientation                      |
| • CSET     | Confined Space Entry Training                     |
| • HAZWOPER | Hazardous Waste Operations and Emergency Response |
| • BESGI    | Basic Employee Safety for General Industry        |
| • MSHA     | Mining Safety & Health                            |

### Field Analysis:

Conductivity  
pH  
Dissolved Oxygen  
Dew Point  
Hydrogen Sulfide by Detector Tube  
Water Vapor by Detector Tube  
Temperature

## Oil Field Water Analysis



### • Geochemical Analysis

#### Components:

alkalinity, bicarbonate, carbonate, hydroxide, calcium, magnesium, sodium, potassium, iron, chloride, sulfate, hydrogen sulfide, total sulfide, boron, barium, silica, strontium, pH, Specific Gravity, EC, resistivity, TDS, hardness, Chloride as NaCl (Salinity), EC as NaCl (Salinity), Corrosive Indices: Langelier, Stiff and Davis

#### Methods:

Various

### • SB 4 Water Test Package

#### Components:

Wet Chem., Metals T22, Trace Elements, Cations/Anions, Radionuclides, Organics, Field pH, EC, Temp.

### • Preliminary Sump Closure Testing, BLM, RWQCB

#### Components:

Inorganic Toxic Substances - CAM 17 Metals, TTLC and STLCs if necessary, pH, Fluoride, Flashpoint, Reactivity, Aquatic Bioassay

*\*Inorganic Toxic Substances - CAM 17 Metals Only*

### • Sump Closure, BLM, RWCQB

#### Components:

Total Petroleum Hydrocarbons, General Minerals (Boron, Conductivity, Chloride, pH, Sodium), Sulfate Benzene, Toluene, Ethylbenzene, Xylenes

### • Clean Produce Water, SJVUAPCD Rule 4402 Crude Oil Production Sumps

*Clean produce water containing less than 35 mg/L of VOCs by EPA Test Method 1664A and/or if necessary, EPA 8260 if greater than 35 mg/L.*

#### Components:

VOCs by EPA 1664-SGT HEM EPA 8260, if necessary

### • Water Compatibility Test

## Gas / Vapor Analysis



### • Gas Composition

#### Components:

methane, ethane, propane, Isobutane, n-butane, Isopentane, n-pentane, hexanes+, oxygen, nitrogen, hydrogen, carbon monoxide, carbon dioxide, hydrogen sulfide

### • Physical Properties:

Gross/Net Heating Value (Btu), Relative Density, Specific Gravity, Specific Volume, Relative Liquid Density, Compressibility 'Z' Factor, Molecular wt. average, F Factors

#### Methods:

ASTM D1945, ASTM D3588, GPA 2145, GPA 2261, ASTM D6228

### • Extended Gas Composition

#### Components:

Gas Composition with hydrocarbons through C10+

#### Methods:

ASTM D1945, ASTM D3588, GPA 2145, GPA 2261, ASTM D6228

### • Hydrocarbon Analysis (Low Level)

#### Components:

methane, ethane, propane, n-butane, n-pentane, n-hexanes,

#### Methods:

EPA 18M

### • Fixed Gases

#### Components:

oxygen, nitrogen, hydrogen, carbon monoxide, carbon dioxide, methane

#### Methods:

ASTM D1945

### • Sulfur/Sulfur Speciation (Sulfur Compounds)

#### Components:

hydrogen sulfide, carbonyl sulfide, methyl mercaptan, ethyl mercaptan, dimethyl sulfide, carbon disulfide,

#### Methods:

ASTM D6228

### • Total Sulfur/H<sub>2</sub>S

ASTM D3246