



## UVF-TRILOGY Test Procedures using **HEXANE SOLVENT** Extraction

©2018 Sitelab Corporation

Visit: [www.sitelabcorp.com](http://www.sitelabcorp.com) Call Toll Free 877-SITELAB or Dial (USA) 978-363-2299 UVF-TRILOGY WATER-SOP1-V1

### Equipment Required

-  UVF-TRILOGY analyzer, glass cuvette, solvent dispenser bottle and tissue wipes.
-  UV Module used with analyzer. Be sure the proper module is installed. Select: TPH OIL, GRO, EDRO or PAHs.
-  Sample Extraction Vials - Water Product No. EXTR-72-40ML Use for sample analysis. Solvent not included. Use HPLC grade hexane.
-  Rinse cuvette with solvent prior to use and place onto tissue wipes. Use a waste cup to collect solvent.  
**WARNING!** Hexane is highly flammable. Dispose solvent waste properly.

### Set up Analyzer



Choose **"UV"** when prompted to select and confirm the module being used

Turn the instrument on using the switch in the back. Open the lid and insert the module into position. Press "Calibrate" and then press "Use Stored Calibration." Choose the test you want and press "Select." The screen will display a green "measure fluorescence" button with test name shown below it. Analyzer is ready for analysis.

### 1. Extract Samples in Solvent





Collect water sample in a clean glass jar, bottle or use a 40 mL sample extraction vial. Avoid using plastic containers. Shake water sample first and then quickly pour 15 mL of water into a sample extraction vial (vials have 5 mL graduations). Fill the solvent dispenser bottle with hexane solvent. Squirt 15 mL of hexane into the vial until it reaches the 30 mL line. This creates a 1-to-1 or 1X Extract. Hexane is a non-polar solvent, it floats on top of water. Tighten the cap and shake sample extract for several minutes to ensure the solvent dissolves all the hydrocarbons from the water. Next, let Extract sit for a few moments, allowing the solvent and water to separate.

### 2. Add to Cuvette



Pour Extract into Cuvette

Avoid Water from Bottom of Vial!

Extracts should be clear after settling. Carefully pour into cuvette, about half full.

Extracts yellow or brown in color or have particulates or solids floating in the solvent should be filtered and diluted for analysis. See Sitelab test procedures for "Dirty/Oily" water applications.

### 3. Test Samples, Record Results




TPH OIL Test Example:  
Reading 1 = "14.2 ppm"  
Reading 2 = "13.8 ppm"  
Reading 3 = "14.1 ppm"

Report Concentration as 14 ppm (mg/L)

Carefully place cuvette with Extract into the UV Module and close the lid. Make sure the outside glass of the cuvette is clean before doing so; use a tissue wipe to remove any liquids or fingerprints. Avoid spills when handling the cuvette. Use gloves for protection.

Press the green "Measure Fluorescence" button and wait a few seconds for the concentration to be displayed. Readings are shown in PPM or PPB units. Test samples several times to check for drift. Readings should be stable/close with each measurement.

Press "Mode" to switch and test sample in raw fluorescence units (RFU), if needed. Avoid readings near zero or above the maximum upper limit of the calibration. These detection limits vary depending on module and calibration kit selected.

### Quality Control Tests



Prepare and Test a 2X Extract

Multiply Reading by 2 to Calculate Result

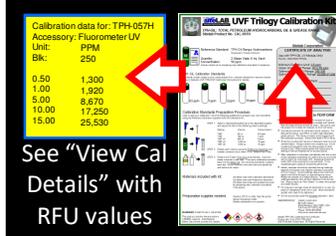
**Check for Quenching**

Quenching can occur when the detector is swamped by too many hydrocarbons, producing low or negative concentrations. Retest the sample using 20 mL of hexane with 10 mL of water. This dilution creates 2X Extract. Readings should be linear and close to the 1X Extract results.



**Test Without Solvent**

Really clean water may contain hydrocarbons soluble enough in water without the need for solvent. Simply fill the cuvette with water and analyze. Results should be close to sample readings using solvent extraction.



See "View Cal Details" with RFU values

**Test a Solvent Blank**

Confirm your solvent is clean. Readings should be zero ppm (or close to zero).

**Test Calibration Standards**

Readings should be close. Calibration Kits include a Certificate of Analysis with more details & instructions.