



Next comes the problem of validation or re-calibration of the instrument during on-line duty. In this application, the Blank water is available and can be re-introduced to the instrument as a means to check drift over time. Simple valving arrangement or manual pour-through methods are used to accomplish the Blank check. In this case, an "Auto Blank" system can be designed and reliably implemented.

Now, consider the case of produced water continuous monitoring.

In produced water continuous monitoring, there is no blank water available since Blank is defined as the matrix water void of the target analytes. Therefore, there is no way to Auto Blank. Note that Auto Zero is usually seen stated in light scatter technology based instruments. In these instruments, the Auto Zero means a condition of no light, not a condition of introducing Blank produced water to the instrument because Blank produced water does not exist.

Is it possible to have one calibration for a bench top instrument to cover all produced water applications?

There are some companies selling instruments that claim one calibration for the whole of the Gulf of Mexico produced water applications. Do you believe that? Actually, it is true, it can be done!! In fact, Turner Designs also describes one calibration for all applications as an alternate to specific calibration. How can that be when we have spent so much time on the importance of calibration of each instrument? The fact is that it is possible to design a calibration that will cover all applications but with a "relative" number. In all cases, the relative number would have to be correlated against some other known method such as 1664. In other words, a correlation curve would have to be developed anyway. To develop a single calibration, one must only find surrogate oil that would render enough range in the instrument to cover all the possibilities of real calibrations. Then, for each platform, a look up chart could be generated by 1664 analysis. This is the same issue with calibrating with specific samples. The bottom line is that it is up to the customer as to which method to use. All known produced water bench top analyzers can provide single calibrations. Therefore, this is not a unique feature. Once again, it boils down to choosing the easiest to use instrument with the highest degree of accuracy and repeatability.



About UV Fluorescence Technology

UV Fluorescence measures the concentration of oil in water by aromatic content. This is a time proven means to monitor and in most cases, quantitate hydrocarbon concentration. The change in UVF response is linear with increase in oil content for most applications in all but very special cases. UVF has been successfully applied to produced water, cooling water, drinking water, process water, industrial wastewater and bilge and ballast water and most conceivable applications where oil or fuel is in contact with water.

For more about the technology, please visit our web site at www.oilinwatermonitors.com.

About Turner Designs Hydrocarbon Instruments, Inc.

Turner Designs Hydrocarbon Instruments, Inc. (TDHI) was formed in February 2002 from the Hydrocarbon Business Group within Turner Designs, Inc. Instruments are manufactured at Turner Designs, Inc. under ISO 9001 certification and distributed through TDHI. TDHI provides world-wide sales and service support with distributors in 20 countries.

Contact Information

We welcome your comments and suggestions

Mark Fletcher, Ph.D. Chem. E, Applications and Field Service Manager
E-Mail: mfletcher@turnerdesigns.com
Phone: 559 253-1414 x102

Gary Bartman, President
E-Mail: gbartman@turnerdesigns.com
Phone: 559 253-1414 x101

Current Regulation of Produced Water Discharges by Region 6 of the Environmental Protection Agency

Offshore: oil and grease limited to 29 mg/l avg. and 42 mg/l max.
chronic toxicity

State Water Quality Standards also apply in State waters (0 to 3 miles from shore)

Coastal: Defined as wellhead located in water, typically bays - no discharge except from several less saline formations (TDS < 3,000 ppm)

Onshore: Wellhead located on land - no discharge

Agriculture and Wildlife Use Subcategory: West of the 98th meridian - Discharge can be allowed if the Aproduced water is of good enough quality to be used for wildlife or livestock watering or other agricultural uses and that produced water is actually put to such use@.

Oil and Grease limited to 35 mg/l

Pecos River Tax Credits

The New Mexico Legislature passed tax credits for produced water discharges to the Pecos River

These discharges could be authorized under the Agriculture and Wildlife Use Subcategory if they meet the quality and use requirements of Guidelines.

State Water Quality Standards will also have to be met.

Coal Bed Methane Discharges

No Effluent Limitations Guidelines have been established.

Could use Agriculture and Wildlife Subcategory requirements based on Best Professional Judgement.

In New Mexico

- no discharge in the San Juan Basin
- issue not raised in the Raton Basin (yet)
- could allow a discharge under the Ag and Wildlife Use Subcategory if a discharge meets those requirements and Water Quality Standards