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TEXACO'S NEW WATER QUALITY MONITORING INSTRUMENTS

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ABSTRACT

Texaco's Exploration and Production Technology Department has developed a suite of fiber-optic instruments for monitoring the oil content of produced water. These include :

- The *Environmental Oil Alert System II (EOA-II)* which is a fluorescence instrument for on-line determinations of oil-in-water. Because of its unique blend of instrumental and chemical technologies, the *EOA-II* is capable of monitoring any produced water stream regardless of oil gravity, salinity or temperature. A special non-fouling water sampler allows the system to operate for long periods without maintenance. The *EOA-II* has been installed on four offshore platforms in the Gulf of Mexico and two off the coast of California. At the Kern River Field in Bakersfield, California, the *EOA-II* is used to maintain low free oil concentrations by automatically regulating water clarifier polymers.

- The *Star Scan Oil-in-Water Analyzer* which is a benchtop absorption instrument for determining the oil content of individual water samples. Analysis is performed by inserting a fiber optic probe into a water sample that has been treated with a unique water-based reagent. No organic solvents are required. Both free oil and water soluble organics can be measured. The *Star Scan Oil-in-Water Analyzer* is an ideal replacement for conventional infrared instruments that will soon be obsolete due to the pending ban on freon production. And,

- The *SpectrAlert Emulsion Detector* which is an on-line device that monitors gathering lines for the presence of reverse emulsions. One instrument simultaneously monitors eight gathering lines. Total oil content can be as high as 30%. The *SpectrAlert Emulsion Detector* is installed upstream of the primary skim tanks at the Kern River Field to provide early warning of system upsets. *SpectrAlert* output is used by the field's PLC system to automatically control the injection of reverse emulsion breakers.

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