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Warren Rogers Associates, Inc.

WRA PetroNetwork S3 (Version D) Continual Reconciliation System for CITLDS Using Multiple ATG System with Magnetostrictive Tank Probes for Tanks and Associated Pipelines

CONTINUOUS IN-TANK LEAK DETECTION METHOD (Continual Reconciliation)

Certification	Leak rate of 0.2 gph for tanks and associated pipelines with PD > 99% and PFA < 1%.
Leak Threshold	0.1 gph for single and manifolded tank systems including associated pipelines. A tank system should not be declared tight and a message printed for the operator, if the test results indicate a loss or gain that exceeds this threshold.
Applicability	Gasoline, diesel, aviation fuel, fuel oil #4. System is designed primarily for use with petroleum fuels.
Tank Capacity	Maximum of 100,000 gallons for single tanks and for up to 5 tanks manifolded together. Tank must be between 9% and 94.4% full. Contact manufacturer for tank system applications if total tank capacity exceeds 100,000 gallons.
Throughput	Monthly maximum of 2,718,013 gallons.
Waiting Time	None between delivery and data collection when difference between product in tank and product delivered is 7.4 degrees F or less.
Test Period	Data collection time ranges from 6 to 31 days. Data sampling frequency is every 1 to 15 minutes. System collects data at naturally occurring product levels upon completion of a sales transaction or set of overlapping sales transactions without interfering with normal tank operation, and at time periods when the tank system is dormant.
Temperature	Average for product is determined by a minimum of 5 thermistors.
Water Sensor	Must be used to detect water ingress in accordance with the certified performance of the Automatic Tank Gauge used.
Calibration	The Automatic Tank Gauge used must have thermistors and probe checked and, if necessary, calibrated in accordance with manufacturer's instructions. Meter calibration must be checked at outset of monitoring and recalibrated when system detects significant departure from original calibration.
Comments	Tests only the portion of tank system containing product. System reports a result of "pass" or "fail" and indicates minimum detectable leak and leak threshold for tanks and associated pipelines. Evaluated for tanks and associated pipelines for both single and manifolded tank systems with probes in each tank. For valid monthly testing, a conclusive report must be generated for each tank system every month. Constant and variable leaks were mathematically induced into tight tank records and data collected at various tank sites by previously evaluated Veeder-Root TLS-350 and OPW Fuel Management Systems EECO 1500 Automatic Tank Gauges with magnetostrictive probes. Automatic Tank Gauges used with this method must be on the NWGLDE List, employ a magnetostrictive probe, and be certified at a leak rate of 0.1 gph. The database for evaluation of the system included tank and pipeline leaks at sites with vapor recovery and blending dispensers. System is designed for use with pipelines equipped with mechanical or electronic line leak detectors to detect emergent catastrophic leaks in the pipelines. Tank systems used in this evaluation contained gasoline and diesel.

Custom tank charts are generated for each tank system.
Meter Drift analyses are performed during monitoring.

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