

**s****I**mmmons

EPA Third Party Certification

# Results of U.S. EPA Standard Evaluation Statistical Inventory Reconciliation Method

This form tells whether the statistical inventory reconciliation (SIR) method described below complies with requirements of the federal underground storage tank regulation. The evaluation was conducted by the vendor of the SIR method or a consultant to the vendor according to the U.S. EPA's "Standard Test Procedure for Evaluating Leak Detection Methods: Statistical Inventory Reconciliation Methods." The full evaluation report also includes a form describing the method and a form summarizing the test data.

Tank owners using this leak detection method should keep this form on file to prove compliance with the federal regulations. Tank owners should check with State and local agencies to make sure this form satisfies their requirements.

## Method Description

Name SIR 5.7  
 Version 5.7. L. M.  
 Vendor Computerized Environmental Measurement Systems  
10251 Panther Ridge Suite 105  
 (street address)  
Dallas TX 75243 (214) 231-2254  
 (city) (state) (zip) (phone)

## Evaluation Results

If applicable, vendor's threshold = \_\_\_\_\_ gallon per hour  
 or vendor's criterion: statistically significant continuous loss at the 1% level

This statistical inventory reconciliation method reports results on the following basis (check one):

- quantitative results (leak rate reported)
- qualitative results (pass, fail, inconclusive)

The test results are:

		<b>Reported Results</b>				
		<b>Tight</b>	<b>Leak</b>	<b>Inconclusive</b>	<b>Total Analyzed</b>	<b>Not Analyzed</b>
Actual	Tight	17	0	0	17	0
	Induced Leak	0	24	0	24	0
	Total	17	24	0	41	0

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## Evaluation Results (continued)

The proportions of inventory records reported inconclusive are:

0 % among tight tanks  
0 % among leaking tanks  
0 % among all tanks

The probability of false alarms, P(FA), based on the vendor's threshold, is 1 %. For qualitative methods, a 95% confidence interval for P(FA) is from NA to NA %.

The probability of detection, P(D), is 99 %. This is valid for a leak rate of (check one):

- 0.10 gallon per hour  
 0.20 gallon per hour

For qualitative methods, a 95% confidence interval for P(D) is from NA to NA %.

Based on these results, the method  does  does not meet the **federal** performance standards established by the U.S. Environmental Protection Agency of 0.10 gallon per hour (or 0.20 gallon per hour) at P(D) of 95% and P(FA) of 5%.

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## Test Conditions During Evaluation

The data evaluation set included data from tanks of the following sizes

Tank Size (gallons)	< 5,000	5,000-10,000	110,000-15,000	>15,000	Total # of Records
Number of Records	0	9	6	26	41

The tanks had various monthly throughputs.

Percentile of records	25	50 (median)	75	
Monthly throughput (gallons)	17,912	40,165	61,534	

The data included 12 records during hot weather months.  
19 records during mild weather months.  
10 records during cold weather months.

Size of tank system

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## Limitations on the Results

The performance estimates above are only valid when:

- The method has not been substantially changed.
- The vendor's instructions for using the method are followed.
- The tank is no larger than 45,000 gallons.
- The data records cover 26 days or more.

\*\* • The method is based on a single (non-manifolded) tank.

• Other limitations specified by the vendor or determined during testing:

\*\* SIR 5.7 has been tested on manifolded tank systems of 2, 3 and 4 tanks.

The performance on these manifolded systems exceeded the federal performance standards.

**> Safety disclaimer: This test procedure only addresses the issue of the method's ability to detect leaks. It does not test data recording equipment for safety hazards.**

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## Certification of Results

I certify that the statistical inventory reconciliation method was applied according to the vendor's instructions. I also certify that the evaluation was performed according to the standard EPA test procedure for statistical inventory reconciliation and that the results presented above are those obtained during the evaluation.

Sam S. Gordji, Ph. D.

(printed name)



(signature)

October 28, 1995

(date)

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