ADA TECHNOLOGIES, INC

November 2, 1998

The Marley Pump Company
9650 Alden Road
Lenexa, KS 66215

Subject: Marley Pump Company
Ultrasonic Network Card for the ProLink System

Introduction

The Marley Pump Company manufactures leak detection systems for underground storage tanks. These systems have been certified by third parties in the past to verify that they meet performance specifications established by the Environmental Protection Agency. Marley has recently integrated it's ST series UST leak detection system into a new data management product called "ProLink". ProLink is a hardware/software system (similar to a computer network) that gathers information from a number of sensors (not limited to leak detection sensors) and reports the information to the user. The ProLink System consists of a variable number of discrete "nodes" linked together over a common network interface. Each discrete node performs its own tasks and processes its own information and "publishes" this information onto the network for use by other nodes or network management tools. The previously-certified UST leak detection probes can now be interfaced to such nodes. ProLink interfaces (via the "Ultrasonic Network Card") to the leak detection sensor, processes the data, performs leak detection, and issues the test results onto the network where they may be retrieved by another node or a network management tool such as a personal computer. Under this system, the leak detection is performed independent of the other network members, but also "publishes" this information on the network. The leak detection probes, data acquisition, and data processing equipment used with ProLink is identical to equipment that has been certified in the past. Whereas the previously-certified leak detection systems were stand-alone (each probe had dedicated data processing and reporting hardware), the leak detection probes can now be integrated into the multi-tasking acquisition/reporting ProLink System.

ADA Technologies, Inc. was commissioned by Marley Pump Company to evaluate the Ultrasonic Network Card for the ST series probe. This was done by evaluating the electronics of the original and re-packaged systems (by inspecting wiring diagrams and by inspecting circuit boards). There are several Marley products that operate using the ST probe technology. These products are shown in the following table.

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Marley Pump Company Products

ATG Automatic Tank Gauging Monitor
Sonic Technology (ST) 1400-1800 Series Tank monitoring System
LLM Series Liquid Level Monitor
FMS Fuel management Monitor

Electronics Evaluation

Schematic wiring diagrams were reviewed to verify that the data acquisition and data processing functions of the ST leak detection system were not altered in functionality as a result of integrating the ST product into the ProLink system. The following diagrams were reviewed:

BRE122-115	4 Channel Analog Board
BRE122-143	4MB CPU Board
BRE120-189	ProLink ST Node
BRE022-001	ST Node - CPU PLD
BRE022-002	ST Node - Analog PLD

In addition, circuit boards were inspected to confirm assembly per the diagrams noted above.

Summary

Based on our inspection of wiring diagrams and circuit boards of the original ST leak detection system and the ST/ProLink system, we conclude that the measurement, data acquisition and data reporting functions are identical to the system that was previously certified. This being the case, the test results and application limitations as reported in the previous third party certification are valid for the ST/ProLink system.

Richard Schlager

Richard J. Schlager
Vice President, Operations

Report No. R437896F01

EVALUATION OF THE MARLEY PUMP COMPANY ST SERIES, FMS, ATG, AND LLM SERIES AUTOMATIC PRODUCT LEVEL MONITORING SYSTEMS

VOLUME I

Prepared for

The Marley Pump Company
5800 Foxridge Drive
Mission, KS 66202

Prepared by

ADA Technologies, Inc.
304 Inverness Way South, Suite 365
Englewood, CO 80112

February 5, 1996

PORTIONS OF THIS DOCUMENT WERE PRODUCED IN CONJUNCTION WITH INFORMATION PROVIDED BY THE MARLEY PUMP COMPANY

EXECUTIVE SUMMARY

The Marley Pump Company ST Series, FMS, ATG, and LLM Series Tank Monitoring Systems were evaluated for performance using the Environmental Protection Agency protocol "Standard Test Procedures for Evaluating Leak Detection Methods: Automatic Tank Gauging Systems", Final Report, U.S. Environmental Protection Agency Office of Underground Storage Tanks, EPA/530/UST-90/006, March, 1990. The Alternative Evaluation Procedure, Section 6.5 of the EPA protocol was used for the current evaluation for large tanks. The Marley Pump Company system meets EPA requirements for tanks up to 73,530 gallons in capacity. The evaluation also met the requirements for manifolded tank certification of tanks up to 73,530 gallons in capacity. The manifolded tanks were evaluated using the "Evaluation Protocol for Continuous In-Tank Leak Detection Systems: Manifolded Tanks with a Siphon", pgs. 63-64, MRI Project No. 3453-M(03), April 7, 1995. The systems were found to meet all performance parameters required for both protocols as shown on Table I.

Table I. Marley ATGS Evaluation Results

Performance Parameter	EPA Requirement	The Marley Pump Company Results
Manifolded Tank Criteria		
Minimum Detectable Leak Rate	0.2 gph	0.106 gph
Method Threshold	NA	0.09 gph
Probability of Detecting a 0.2 gph Leak [P(D)]	> 95%	99.9%
Probability of False Alarm	< 5%	2.53%
ATGS Criteria - Single and Manifolded Tanks		
Minimum Detectable Leak Rate	0.2 gph	0.124 gph
Method Threshold	NA	0.09 gph
Probability of Detecting a 0.2 gph Leak [P(D)]	> 95%	99.9 %
Probability of False Alarm	< 5%	2.98 %
Minimum Detectable Water Level*	NA	0.112 inch
Minimum Water Level Change*	< 0.125 inch	0.011 inch

*Water Sensor Previously Certified.

The Alternative Evaluation Procedure outlined in Section 6.5 of the EPA ATGS Protocol consists of installing the ATGS in a minimum of 10 tanks at 5 sites (suggested). The tests are then allowed to run for a minimum of two weeks. This large set of tests on tight tanks is supplemented with a limited number (10 suggested) of tests under controlled leaking conditions. The alternative approach provides test data under a variety of actual conditions while still proving the ability to detect leaking tanks. Table II outlines the requirements of the alternative approach, and the procedure used by the Marley Pump Company.

Table II. Summary of Alternative Evaluation Requirements

Parameter	Alternative Protocol	Marley Pump Company Procedure
Number of Tests		
- Tight Tanks	100	548
- Leaking Tanks	10	34
Number of Sites	5	6
Number of Tanks	10	15
Tank Size Range		
- Tight Tanks	None Listed	7,734 to 50,761 gallons
- Leaking Tanks	None Listed	12,000 and 49,019 gallons
Testing Time Period	14 days	14 days minimum

The results of the evaluation were analyzed statistically using the procedures found in "Standard Test Procedures for Evaluating Leak Detection Methods: Automatic Tank Gauging Systems", Section 7.4, "Outline of Calculations for Alternative Approach". In this approach, the tight tanks and the leaking tanks were evaluated separately, and the variances compared to determine if the ability to detect a leak in a large tank was significantly different than the ability to detect a tight tank.

Five of the fifteen tanks tested were manifolded, which was a number sufficient to certify these tanks under the MRI manifolded tank protocol, which requires that 25-75% of the tanks in a certification be manifolded. The evaluation approach was similar to the large tank evaluation described above in that the data from the tests on manifolded tanks were evaluated separate from the single tank tests. The variances were compared using an F-test to determine if there was a significant difference between the two data sets. Since there was no significant difference between variances, the overall evaluation applies to manifolded tanks as well as to single tanks. The Marley Pump Company procedure for manifolded tanks involves testing each tank individually, which is why the variances were similar.

The maximum tank size for the alternative approach was calculated by listing all the tests in order of tank size from smallest to largest. The tank size at the 80th percentile of this set was then multiplied by 1.5. In this case, the 80th percentile fell upon the Hill AFB tank (49,019 gallons), which gave a maximum tank size of 73,530 gallons for this evaluation.

The maximum allowable temperature difference was determined by calculating the standard deviation of all the temperature differentials, then multiplying by 1.5. In this case, the standard deviation was 7.3°F, giving a maximum allowable temperature difference of +/- 11°F. This number can be used both for single and for manifolded tanks.

The average waiting time was calculated for each delivery using the waiting period between delivery time and the first test in a set. This is the same approach used in standard tank testing procedures. These waiting periods were ordered from smallest to largest, and the 20th percentile (9.1 hours) was then used as the minimum waiting period. This waiting period can be used both for single and for manifolded tanks.

The Marley Pump Company products covered by this evaluation are the following:

- ATG Automatic Tank Gauging Monitor
- Sonic Technology (ST) 1400-1800 Series Tank Monitoring System
- LLM Series Liquid Level Monitor
- FMS Fuel Management Monitor

A summary of the test conditions used during the evaluation is given in Table III.

Table III. Evaluation Test Conditions

Parameter	Value
ATGS Criteria - Single and Manifolded Tanks	
Number of Tests	
- Tight Tanks	548
- Leaking Tanks	34
F-Statistic for Variances	1.48 - 1.565
Ratio of Variances	0.6015 - No significant difference between leaking and tight tests.
Tank Size Range	
- Tight Tanks	7,734 to 50,761 gallons
- Leaking Tanks	12,000 and 49,019 gallons
Maximum Allowable Tank (80th percentile X 1.5)	73,530 gallons
Product Temperature Differential Range	-19.6 to +13.8 °F
Maximum Temperature Differential	+/- 11 °F
Waiting Time Before Testing (20th percentile)	9.1 hours
Average Test Duration	4.6 hours
Manifolded Tank Criteria	
Number of Tests	
- Single Tanks	473
- Manifolded Tanks	109
F-Statistic for Variances	1.24 to 1.366
Ratio of Variances	0.6914 - No significant difference between single and manifolded tests.

RESULTS OF EVALUATION

Results of U.S. EPA Standard Evaluation

Automatic Tank Gauging System (ATGS)

This form tells whether the automatic tank gauging system (ATGS) described below complies with the performance requirements of the federal underground storage tank regulation. The evaluation was conducted by the equipment manufacturer or a consultant to the manufacturer according to the U.S. EPA's "Standard Test Procedure for Evaluating Leak Detection Methods: Automatic Tank Gauging Systems." The full evaluation report also includes a form describing the method and a form summarizing the test data.

Tank owners using this leak detection system 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: Sonic Technology (ST) 1400-1800 Series Tank Monitoring System
FMS - Fuel Management Monitor
ATG - Automatic Tank Gauging Monitor
LLM Series - Liquid Level Monitor

Vendor: The Marley Pump Company
5800 Foxridge Drive
Mission, Kansas 66202
Phone: (913) 831-5700

Evaluation Results

This ATGS, which declares a tank to be leaking when the measured leak rate exceeds the threshold of 0.1 gallon per hour, has a probability of false alarms [P(FA)] of 2.98%.

The corresponding probability of detection [P(D)] of a 0.20 gallon per hour leak is 99.9%.

The minimum water level (threshold) in the tank that the ATGS can detect is 0.112 inches.

The minimum change in water level that can be detected by the ATGS is 0.011 inches (provided that the water level is above the threshold).

Therefore, this ATGS meets the **federal** performance standards established by the U.S. Environmental Protection Agency (0.20 gallon per hour at P(D) of 95% and P(FA) of 5%), and this ATGS meets the **federal** performance standard of measuring water in the bottom of the tank to the nearest 1/8 inch.

Test Conditions During Evaluation

The evaluation testing was conducted in 15 different steel tanks at 6 different sites. The tank sizes were: 2 @ 7734, 6 @ 12000, 40017, 40241, 49019, and 4 @ 50761 gallons. The corresponding tank dimensions were: 2 @ 92, 6 @ 96, 121, and 6 @ 144 inches in diameter.

The temperature difference between product added to fill the tank and product already in the tank ranged from -19.6 to 13.8°F, with a standard deviation of 7.3°F, giving a maximum allowable temperature difference of +/-11°F.

The tests were conducted with varying tank product levels. All of the tanks were in operation at the time of the testing, except when two tanks were used for induced leak measurements.

The products used in this evaluation were: unleaded regular, unleaded premium, jet fuel, and #2 diesel fuel.

Limitations on the Results

The performance estimates above are only valid when:

- The method has not been substantially changed.
- The vendor's instructions for installing and operating the ATGS are followed.
- The tank contains a product identified on the method description form.
- The tank is no larger than 73,530 gallons.
- The tank has at least 15 inches of product.
- The waiting time after adding any substantial amount of product to the tank is at least 9.1 hours.
- The temperature of the added product does not differ more than 11 degrees Fahrenheit from that already in the tank.
- This method can be used if the groundwater level is above the bottom of the tank.
- Other limitations specified by the vendor or determined during testing: If groundwater is present above the bottom of the tank, then the difference between the product level and groundwater level must be at least 2.75 feet to obtain results.

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

Certification of Results

I certify that the ATGS was installed and operated according to the vendor's instructions and that the results presented on this form are those obtained during the evaluation. I also certify that the evaluation was performed according to the alternative EPA test procedure for ATGS.

Richard J. Schlager

(Name)

Richard J. Schlager

(Signature)

2/21/96

(Date)

Organization Performing Evaluation:

ADA Technologies, Inc.
304 Inverness Way South, Suite 365
Englewood, CO 80112
(303) 792-5615

Results of U.S. EPA Standard Evaluation

Automatic Tank Gauging System (ATGS)
Manifolded Tanks

This form tells whether the automatic tank gauging system (ATGS) for manifolded tanks described below complies with the performance requirements of the federal underground storage tank regulation. The evaluation was conducted by the equipment manufacturer or a consultant to the manufacturer according to the U.S. EPA's "Standard Test Procedure for Evaluating Leak Detection Methods: Automatic Tank Gauging Systems", in conjunction with the MRI Evaluation Protocol for Continuous In-Tank Leak Detection Systems: Manifolded Tanks with a Siphon." The full evaluation report also includes a form describing the method and a form summarizing the test data.

Tank owners using this leak detection system 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: Sonic Technology (ST) 1400-1800 Series Tank Monitoring System
FMS - Fuel Management Monitor
ATG - Automatic Tank Gauging Monitor
LLM Series - Liquid Level Monitor

Vendor: The Marley Pump Company Phone: (913) 831-5700
5800 Foxridge Drive
Mission, Kansas 66202

Evaluation Results

This ATGS, which declares a tank to be leaking when the measured leak rate exceeds the threshold of 0.1 gallon per hour, has a probability of false alarms [P(FA)] of 2.98%.

The corresponding probability of detection [P(D)] of a 0.20 gallon per hour leak is 99.9%.

The minimum water level (threshold) in the tank that the ATGS can detect is 0.112 inches.

The minimum change in water level that can be detected by the ATGS is 0.011 inches (provided that the water level is above the threshold).

Therefore, this ATGS meets the **federal** performance standards established by the U.S. Environmental Protection Agency (0.20 gallon per hour at P(D) of 95% and P(FA) of 5%), and this ATGS meets the **federal** performance standard of measuring water in the bottom of the tank to the nearest 1/8 inch.

Test Conditions During Evaluation

The evaluation testing was conducted in 15 different steel tanks at 6 different sites. The tank sizes were: 2 @ 7734, 6 @ 12000, 40017, 40241, 49019, and 4 @ 50761 gallons. The corresponding tank dimensions were: 2 @ 92, 6 @ 96, 121, and 6 @ 144 inches in diameter. The manifolded tanks were 2 @ 7734 and 3 @ 12000 gallons.

The temperature difference between product added to fill the tank and product already in the tank ranged from -19.6 to 13.8°F, with a standard deviation of 7.3°F, giving a maximum allowable temperature difference of +/-11°F.

The tests were conducted with varying tank product levels. All of the tanks were in operation at the time of the testing, except when two tanks were used for induced leak measurements.

The products used in this evaluation were: unleaded regular, unleaded premium, jet fuel, and #2 diesel fuel.

Limitations on the Results

The performance estimates above are only valid when:

- The method has not been substantially changed.
- The vendor's instructions for installing and operating the ATGS are followed.
- The tank contains a product identified on the method description form.
- The individual tank is no larger than 73,530 gallons.
- The tank has at least 15 inches of product.
- The waiting time after adding any substantial amount of product to the tank is at least 9.1 hours.
- The temperature of the added product does not differ more than 11 degrees Fahrenheit from that already in the tank.
- This method can be used if the groundwater level is above the bottom of the tank.
- Other limitations specified by the vendor or determined during testing: If groundwater is present above the bottom of the tank, then the difference between the product level and groundwater level must be at least 2.75 feet to obtain results.

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

Certification of Results

I certify that the ATGS was installed and operated according to the vendor's instructions and that the results presented on this form are those obtained during the evaluation. I also certify that the evaluation was performed according to the alternative EPA test procedure for ATGS in conjunction with the "MRI Evaluation Protocol for Continuous In-Tank Leak Detection Systems: Manifolded Tanks with a Siphon."

Richard J. Schlager

(Name)

Richard J. Schlager

(Signature)

2/21/96

(Date)

Organization Performing Evaluation:

ADA Technologies, Inc.
304 Inverness Way South, Suite 365
Englewood, CO 80112
(303) 792-5615

DESCRIPTION - AUTOMATIC TANK GAUGING SYSTEM

PORTIONS OF THIS DOCUMENT WERE PRODUCED IN CONJUNCTION WITH INFORMATION PROVIDED BY THE MARLEY PUMP COMPANY

Automatic Tank Gauging System (ATGS)

This section describes briefly the important aspects of the automatic tank gauging system (ATGS). It is not intended to provide a thorough description of the principles behind the system or how the equipment works.

ATGS Name and Version

The Marley Pump Company ST Series, FMS, ATG, and LLM Series Tank Monitoring Systems

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Product

> Product Type

For what products can this ATGS be used?

- gasoline
- diesel
- aviation fuel
- fuel oil #4
- fuel oil #6
- solvents
- other: Any liquid that is compatible with probe and can be characterized for ultrasonics.

> Product Level

What product level is required to conduct a test?

- From 15 inches of product to 95% full.

Does the ATGS measure inflow of water as well as loss of product (gallon per hour)?

- Yes

Does the ATGS detect the presence of water in the bottom of the tank?

- Yes

Is a method used to add or withdraw product to maintain a constant level of product?

- No

Level Measurement

What technique is used to measure changes in product volume?

- Ultrasonics

Temperature Measurement

If product temperature is measured during a test, how many temperature sensors are used?

- 5 or more sensors

If product temperature is measured during a test, what type of temperature sensor is used?

- Temperature is derived from the change in the speed of sound over known distances for each temperature reference point.

Data Acquisition

How are the test data acquired and recorded?

- By computer

Procedure Information

> Waiting Times

What is the minimum waiting period between adding a large volume of product (i.e., a delivery) and the beginning of a test (i.e., filling from 50% to 90-95% capacity)?

- 9.1 hours

> Test Duration

What is the minimum time for collecting data?

- 2 hours

> Total Time

What is the total time needed to test with this ATGS after a delivery?
(waiting time plus testing time)

- 11.1 hours

What is the sampling frequency for the level and temperature measurements?

- More than once per second.

> Identifying and Correcting for Interfering Factors

How does the ATGS determine the presence and level of the groundwater above the bottom of the tank?

- Presence of water in the tank

How does the ATGS correct for the interference due to the presence of groundwater above the bottom of the tank?

- The system tests for water incursion and changes in water level in the tank.

How does the ATGS determine when tank deformation has stopped following delivery of product?

- Wait a specified period of time before beginning a test.

Are the temperature and level sensors calibrated before each test?

- No

If not, how frequently are the sensors calibrated?

- Never

> Interpreting Test Results

How are level changes converted to volume changes (i.e., how is height-to-volume conversion factor determined)?

- From the theoretical ratio calculated from tank geometry.

How is the coefficient of thermal expansion (Ce) of the product determined?

- From the average value for the type of product.

How is the leak rate (gallon per hour) calculated?

- From all the data collected during a statistically validated test.

What threshold value for product volume change (gallon per hour) is used to declare that a tank is leaking?

- 0.1 gallon per hour.

Under what conditions are test results considered inconclusive?

- The monitor determines the validity of a test.

Exceptions

Are there any conditions under which a test should not be conducted?

- Any acts of God, for example an earthquake.

What are acceptable deviations from the standard testing procedure?

- None

What elements of the test procedure are determined by personnel on-site?

- None. The system operates automatically.

Description

Automatic Tank Gauging System (ATGS)
Manifolded Tanks

This section describes briefly the important aspects of the automatic tank gauging system (ATGS) which can be used in manifolded tanks. It is not intended to provide a thorough description of the principles behind the system or how the equipment works.

ATGS Name and Version

The Marley Pump Company ST Series, FMS, ATG, and LLM Series Tank Monitoring Systems

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Product

> Product Type

For what products can this ATGS be used?

- gasoline
- diesel
- aviation fuel
- fuel oil #4
- fuel oil #6
- solvents
- other: Any liquid that is compatible with probe and can be characterized for ultrasonics.

> Product Level

What product level is required to conduct a test?

- From 15 inches of product to 95% full.

Does the ATGS measure inflow of water as well as loss of product (gallon per hour)?

- Yes

Does the ATGS detect the presence of water in the bottom of the tank?

- Yes

Is a method used to add or withdraw product to maintain a constant level of product?

- No

Level Measurement

What technique is used to measure changes in product volume?

- Ultrasonics

Temperature Measurement

If product temperature is measured during a test, how many temperature sensors are used?

- 5 or more sensors

If product temperature is measured during a test, what type of temperature sensor is used?

- Temperature is derived from the change in the speed of sound over known distances for each temperature reference point.

Data Acquisition

How are the test data acquired and recorded?

- By computer

Procedure Information

> Waiting Times

What is the minimum waiting period between adding a large volume of product (i.e., a delivery) and the beginning of a test (i.e., filling from 50% to 90-95% capacity)?

- 9.1 hours

> Test Duration

What is the minimum time for collecting data?

- 2 hours

> Total Time

What is the total time needed to test with this ATGS after a delivery? *(waiting time plus testing time)*

- 11.1 hours

What is the sampling frequency for the level and temperature measurements?

- More than once per second.

> Identifying and Correcting for Interfering Factors

How does the ATGS determine the presence and level of the groundwater above the bottom of the tank?

- Presence of water in the tank

How does the ATGS correct for the interference due to the presence of groundwater above the bottom of the tank?

- The system tests for water incursion and changes in water level in the tank.

How does the ATGS determine when tank deformation has stopped following delivery of product?

- Wait a specified period of time before beginning a test.

Are the temperature and level sensors calibrated before each test?

- No

If not, how frequently are the sensors calibrated?

- Never

> Interpreting Test Results

How are level changes converted to volume changes (i.e., how is height-to-volume conversion factor determined)?

- From the theoretical ratio calculated from tank geometry.

How is the coefficient of thermal expansion (Ce) of the product determined?

- From the average value for the type of product.

How is the leak rate (gallon per hour) calculated?

- From all the data collected during a statistically validated test.

What threshold value for product volume change (gallon per hour) is used to declare that a tank is leaking?

- 0.1 gallon per hour.

Under what conditions are test results considered inconclusive?

- The monitor determines the validity of a test.

Exceptions

Are there any conditions under which a test should not be conducted?

- Any acts of God, for example an earthquake.

What are acceptable deviations from the standard testing procedure?

- None

What elements of the test procedure are determined by personnel on-site?

- None. The system operates automatically.

DETERMINING LEAK RATES IN THE PRESENCE OF HIGH GROUNDWATER

R437896F01

PROCEDURE FOR DETERMINING LEAK RATES IN THE PRESENCE OF HIGH GROUNDWATER

The Marley Pump Company leak detection systems incorporate a tank water level sensor which is an integral part of the tank leak detection system. This water detector was previously evaluated, certified, and reported*. The sensor was shown to be capable of detecting a water level change of 0.011 inch, well below the EPA requirement of 0.125 inch.

The equipment used in the Marley system includes a printer which reports the results of leak rate determinations. The printed report includes the measurement of water level changes occurring in the tank during the tank tightness test. Any water incursions or water leaks from the underground storage tank are measured and documented by the Marley equipment.

Since both a water and product level are measured by the Marley system, product level changes as influenced by the presence of water entering or leaving the tank are accounted for, except in the rare case where the hydrostatic pressure caused by the level of groundwater equals the hydrostatic pressure caused by the level of the product contained within the tank. In this case, a no-leak condition would be reported if in fact there was a hole in the tank. In order to account for this condition and to assure valid testing using the Marley System in the presence of groundwater, tank leak rate measurements should only be made when the difference between the height of the product and the groundwater level is at least 2.75 feet. If this criteria is not met, then the test should be postponed until the product level in the tank has changed to meet the requirement.

The following is the Standard Operating Procedure followed by the field test crew.

1. Determine the presence of groundwater at the site using at least one of the following: 1) an observation well, 2) information from the site operator, 3) information from the USGS, and 4) from determining if water is present in the test tank.

2. If the groundwater level is above the bottom of the tank, then the operator must verify that the level of the product has at least a 2.75-foot differential from the level of groundwater. If the differential is not at least 2.75-feet, then the leak detection test should be postponed until the requirement differential is achieved.

3. The leak detection system is operated per Standard Operating Procedure.

* From "Evaluation of the Level Tech, Inc. LT1 Automatic Product Level Monitor", Report R27790F01, ADA Technologies, Inc., Englewood, CO, November 19, 1990.