National Work Group on Leak Detection Evaluations (NWGLDE) Meeting
Memphis, Tennessee, March 22-24, 2006

WEDNESDAY, March 22, 2006

Welcome and introduction of visitors. A complete list of meeting attendees for the sessions is included at the end of these minutes.

TEAM UPDATES

ATG TEAM – Mike Kadri, Acting

- Team had one review of fuel probe comparisons, two controllers using the same probe. It involved two versions of software with data from the same probe. This resulted in a revised listing under Incon and an additional listing under Franklin Fueling Systems.
- No Volumetric submittals.
- Southwest Environmental Services, Inc. out of Scottsdale, AZ submitted a Third-Party evaluation with their name on it for a Sound Products Test. Discussion followed on how to manage listings for vendors who purchase rights to manufacture previously evaluated methods. What documentation needs to be sent to the workgroup? Is a proof of sale necessary?

CITLDS TEAM – Shaheer Muhanna

- Caldwell Systems Corp's Tank Manager Monitoring Systems with CITLDS was recently listed as a qualitative method. A report from Caldwell states a threshold of 0.15 gal/hr. A threshold level will not work for a qualitative method. This issue will be discussed later in the meeting.
- Still under review is the Incon New Model T5 Series SCALD. A full report has been received comparing the performance of the Original Incon T1 Series SCALD to the new T5 model. Helen Robbins has this review.

NVTTT TEAM – John Kneece

- No new non-volumetric tests have been submitted.

PIPELINE TEAM – John Kneece

- Review is continuing for Franklin Fueling Systems 3000 Series to 5000 series.
- The request is to increase capacities on the flexible piping. Requesting only 3 gal/hr on pipelines consisting of both, rigid and flexible segments.
- Discussion of Hansa of Germany and Hansa of America listings.

SIR TEAM – Jon Reeder

- Team received submittal from Redone. Redone, an Australian system, originally submitted data in 2003. All this data was from manifolded tanks. Protocol states

only seventy-five percent of data can come from manifolded tanks. Now, three years later Ken Wilcox gave them data from single tanks. The system is only going to be used in Australia. This is the first new SIR review in eight years. Redone was very pleased with the high quality data generated by Ken Wilcox and scrambled by Jairus Flora.

INTERSTITIAL MONITORING METHODS TEAM – Tim Smith

- Advanced Fuel Filtration Systems wanted to change the name to OPW. The new system was demonstrated in California. It looked much different than the original system Third-Party evaluated. It was recommended that the system be sent back to Ken Wilcox for recertification. Scott Bacon will be the lead on this.
- Ameron International Brine Monitoring, Phase One completed. Ameron has done all we have asked. The listing has been drafted. The piping has an UL Listing but this listing is not for pressurized secondary space. The listing is for standard brine open at one end.
- Armstrong Monitoring has changed name to Sequence Controls Inc.
- Shaheer Muhanna completed the Franklin Fuels Secondary Containment Method review and listing in December.
- PID Analyzers added models 1 & 2, vapor-monitoring devices. They are one of three companies interested in vapor monitoring of diesel fuels. The issue here being the low volatility of diesel. Ken Wilcox is working on protocol for diesel sensor.
- RT Putone Fueling Solutions, now Rietschle Thomas, will remain under review. The company is evaluating their equipment using the European Protocol Part I – Interstitial Monitoring. Tim Smith will send another letter for an update from the company.
- The status with Spring Patents Inc. is unknown. The Third-Party Evaluation used stainless steel, not commonly found in the field. Neither Mike Kadri nor Jon Reeder has received any updated information. Scott Bacon will forward Mike and Jon what he received as a submission for release detection in California.
- VeederRoot wants to re-list two pieces of equipment, a position sensitive sensor and a micro sensor for E85 Fuel. These sensors are for interstitial monitoring of double walled FRP Tanks. There are questions on the calculations for standard deviation. The evaluation used large sample statistics on small sample sets. These calculations are being redone.
- Xerxes has requested to identify their equipment as a continuous Interstitial Detector Method in addition to an Interstitial Tank Tightness Test Method.

ABOVEGROUND STORAGE TANK METHODS TEAM – Mike Kadri

- The protocol "Alternative Test Procedures for Evaluating Leak Detection Methods: Mass-Based Leak Detection Systems for Aboveground Storage Tanks," Ken Wilcox Associates, October 20, 2004, was revised and accepted by the Workgroup.
- Vista's Third-Party Evaluation was done under a previous protocol. Vista has not submitted an evaluation using the accepted protocol.

- Ken Wilcox e-mailed Lamar Bradley and Mike Kadri the draft protocol "Proposed Alternative Test Procedure for Evaluating Leak Detection Methods with Historical Tank Test Data." This protocol formally outlines the use of field data. One issue is that there is no indication the tanks are tight, they are just assumed tight. Taking 80% and using as a multiplier (last paragraph) is an issue. There are no serious objections as long as a minimum of 6 tests of simulated leaks is completed.
- States with ASTs are glad to see listings from the Workgroup.
- API has announced they are starting a workgroup on Aboveground Leak Detection Methods.

SECONDARY CONTAINMENT TESTING METHODS TEAM – Scott Bacon

- VeederRoot is continuing to work with Ken Wilcox on developing the protocol for the Hydrostatic Testing of Secondary Containment Sumps. The protocol is for a liquid measurement.

LIST ADMINISTRATION TEAM – Curt Johnson

- The List was completed on time
- The List is now over 400 pages.
- The website has been moved to a new server without interruption.
- The website has a new search engine.
- Jon Reeder has added a new item to the website, a Library. All the FAQ articles the Workgroup has published in LUSTLINE will be kept in this section.
- Jon Reeder has put all the protocols he had on the website. He created PDF files and zipped them for downloads. This includes all of EPA's protocols, CITLDS, SIR and Probe Comparison. Jon will post additional protocols that Scott Bacon is forwarding to him.

PROTOCOLS UNDER REVIEW

- All the protocols under review have been discussed in the above Team Summaries.

REVIEW OF TEAM ASSIGNMENTS

Mike Kadri will be the Chair of the ATG and VTT Teams with John Cernero's leaving the Workgroup.

John Kneece will handle pipelines by himself until the new member is on board.

ATG – Mike Kadri (Chair), Jon Reeder, Lamar Bradley
CITLDS – Shaheer Muhanna (Chair), Helen Robbins
NVTT – John Kneece (Chair), Scott Bacon
IM & Out of Tank – Tim Smith (Chair), Scott Bacon, Helen Robbins

Because of the high workload the Interstitial Monitoring Methods team will continue to get assistance from Lamar Bradley, Shaheer Muhanna, and Jon Reeder
PIPELINE – John Kneece (Chair)
SIR – Jon Reeder (Chair), Lamar Bradley
AST – Mike Kadri (Chair), Jon Reeder
SECONDARY CONTAINMENT – Scott Bacon (Chair), Shaheer Muhanna, Tim Smith
ADMINISTRATION – Curt Johnson (Chair), Tim Smith, Jon Reeder, Scott Bacon

END OF WEDNESDAY MEETING

THURSDAY, March 23, 2006

VENDOR PRESENTATIONS

Keith Anderson – Ameron International

Mr. Anderson focused on the Pressurized Brine Interstitial Liquid Level Monitoring Equipment. Ameron prefers the reliability of hydrostatic monitoring. It is a more absolute measure of system integrity than vacuum monitoring. With hydrostatic, any amount of loss of interstitial liquid will alarm. It also takes away the effects of temperature and pressure. Ameron offers it in both open and closed systems. The monitoring system does not monitor pressure; it monitors fluid in the containment system including the reservoir. The monitoring system detects leaks at any rate with no minimum threshold. Ameron uses only components common to standard systems, no new hardware. The Pressurized Brine Interstitial Liquid Level Monitoring Equipment is tested and listed on Ameron Dualoy 3000/LCX Piping.

Sam Gordji – University of Mississippi

Dr. Gordji presented comments on the 1/7/2000 Revision of the CITLDS Protocol. His presentation covered what he believes to be a problem with the equation on page 39 of the protocol.

Ken Wilcox – KWA Associates

The first presentation of Dr. Wilcox, of KWA, addressed Aboveground Storage Tank Protocols for Small Tanks, up to 30 feet in diameter and 250,000 gallon capacity. KWA addressed the five Leak Testing methods to be evaluated. The first being Gas Pressure Decay followed by Gas Pressure Film Bubble Leak Testing, Gas Tracer Detection, Liquid Level Decay and Liquid Mass Decay. KWA is developing the theoretical framework for the test protocols. The American Petroleum Institute has commissioned

this work. KWA will develop field test protocols and conduct field tests with a goal of a book of five test methods.

The second presentation by Dr. Wilcox of KWA covered the proposed amendment to the accepted protocol for AST Evaluations using Field Data. This amendment is designed for tanks 1,000,000 gallons or larger. The basic features include the use of existing test data from actual tank tests (30-50 tests) and leak simulators (6) also being required. The workgroup is going to discuss this and get back with KWA.

Dr. Jack Driscoll – PID Analyzers LLC

Presentation was on the use of PID analyzers and how to differentiate between gasoline and diesel fuel using 9.5, 10.6 and 11.2 eV lamps. Dr. Driscoll discussed Models 102 and 102+. The structure of the Hydrocarbons is used to distinguish gas from diesel. The 11.2 eV lamp readings of the total gasoline/diesel mix can be compared to the 9.5 eV reading of gasoline with the difference giving the diesel percentage or reading. In summary, to detect gasoline and diesel, the 10.6 eV and 11.2 eV lamps are necessary. To detect just gasoline, just the 9.5 eV lamp is needed. Dr. Driscoll was anticipating 6 to 8 weeks further field tests to determine the quantity of diesel released and the time it takes the diesel to reach the PID.

End of Presentations

OPEN DISCUSSION – GENERAL QUESTIONS

Anton Rozsypal of the Texas UST Program started a discussion of whether or not the original Tracer method was modified with or without recertification. Texas specifies the regulated community use release detection methods with applicable protocols certified as monthly monitoring. Ken Wilcox Associates certified the original Tracer method 10/4/90. Someone else did the Third-Party for Tracer as a monthly monitoring method. Did they retest Tracer or use the KWA test data? One response was that a tightness test could be used as monthly monitoring. Tracer is listed as an Out of Tank Test and a Tightness Test. The only difference to the workgroup is the use of a surrogate tracer to determine the test time. There have been no technological changes, just procedural. In Texas, Tracer is being used for monthly monitoring under the 2003 revision as a Vapor Phase Out of Tank Test.

Scott Bacon volunteered to work with Shaheer Muhanna to review the equation of concern in Sam Gordji's presentation.

In discussing the draft protocols for aboveground storage tanks, concerns were brought up about using historical data with 1) all data being field data and 2) field data for non-leakers and new evaluations with simulated leaks. The workgroup would like to have one of the simulated leaks in a large tank. The protocol will still have to meet our criteria for tank size, tank type and tank age. It comes down to the statistical analysis of the data,

was the tank tight? Mike Kadri will continue to be the workgroup lead on this. Ken Wilcox will review the data sets. The workgroup will get a chance to review all the data with the application. Comparing historical and generated data with field-testing is simply comparing variances, what values are used to compare non-leakers and leakers?

The quantity of product leaked into the environment before the PID can detect a release is a concern. The current protocol does not address using the PID for the detection of diesel. It has to be proved that the diesel can be detected, that the diesel can be sampled in the environment. There is a concept currently of gasoline/diesel percentages. The protocol referred to today only references the 10.2 lamp. There is no documentation for the 11.7 lamp. Field analysis must be done to compare the PID in the field with lab results.

Next LUSTLINE Article

Curt will finish Part 2 of John Cernero's article for the next LUSTLINE.

OLD BUSINESS

Double walled Brine Tank Tests
Xerxes gave us five documents identifying the methods they reevaluated and wanted to be labeled as continuous. The workgroup is looking at two options, (1) require a new protocol to be written and require Third-Party Evaluation to determine is a system is continuous, and (2) accept Third-Party Tester validation that the method is continuous and was continuous when tested under original protocol. The workgroup is defining Continuous Monitoring as continuous detection that has instant notification of release. The protocols that possibly meet this definition are the European Standard Part 2 and the Ameron Protocol. It was suggested the group look at the 3 methods in this class as a whole to be certified as continuous. They are all now being used in the field as interstitial monitoring methods on operating UST systems.

NEXT MEETING

It was decided the next meeting would be held in Dearborn, Michigan.

END OF THURSDAY MEETING

NEW BUSINESS

Regional Training Programs

Mike Kadri reported that the Region 10 Inspector Training Workshop was successful. Thank you Jon Reeder for putting the slide show together for both the Region 6 and Region 10 Training. John Cernero has already requested members to attend and speak at the 2007 Inspector Workshop in Region 6.

Minimal Detectable Leak Rate

The determination of the Minimal Detectable Leak Rate (MDL) and comparison to the threshold was discussed. Shaheer presented that two times the MDL will equal the performance standard, the threshold. When the MDL is observed, outliers will be found. The MDL can only be fixed when you set the 95/5 probabilities. MDL is defined as twice the threshold. The MDL only relates to the data you have collected. The standard is the release or release detection volume found with 95/5. As long as the MDL supported by data and method does not exceed standards to find leaks at standard with 95/5. There is the threshold.

The Protocol states that the vendor will provide the method threshold to the Third-Party Evaluator. This is different than the threshold calculated from the data set. Some states have regulations that require the MDL and the threshold to be calculated from the data. It was suggested that the workgroup add to the listings that the threshold listed is for the Third-Party Testing. However, for each data set a MDL and threshold must be determined and reported. With this, some companies are going to have a large number of inconclusives. A step in the Protocol is missing. The MDL determines the threshold for the particular set a data.

Different approaches to resolving this were discussed including a statement for clarification such as that found in the Total SIR Version 1.0, Revision Date July 20, 2004 listing that the threshold used to determine a leak is 50% Method and 50% threshold from dataset. It was also suggested that a tank gauge could be required and a threshold set to say 0.1 gal/hr and the Third-Party Tester analyzed the data set and then finds if the system can detect a release. A “zero” leak rate may be impossible without false alarm or inabilities to find a leak that small.

Two motions were entertained, one to eliminate the threshold declared by the vendor in our listings for SIR and all others, as long as the threshold used in the evaluation is included in the Third-Party test results. The second motion being to set a threshold of 0.1 gal/hr and say that cannot be exceeded. It was decided that more time was needed to review the protocols and see what data the vendors provide. The workgroup will see what’s available as far as vendor-calculated thresholds. Scott will start doing some homework on this for SIR, ATG, and VTT, reviewing the summary sheets and maybe reports. When reviewing INCON, KWA should be asked if the leak rate was calculated from the data received and if it is different from that the vendor provided.

Note Taker for Next Meeting
Tim Smith

Ownership Changes
Since January 2003, 35 % of companies on the list have changed names or been bought out. What is the workgroup's obligation to research these new companies and possibly the agreements they have concerning the methods and equipment covered in the listings? Scott put forth a motion to add something to the document submittal list that establishes ownership rights to the system listed or being listed. The workgroup would like change of ownership documentation to come from both the sellers and buyers.

Compatibility issue of long-term exposure
The workgroup is not certain of the compatibility of sensors and ATG probes with the Ethanol 85 (E85) fuel. E85 is not included in the protocol. It was thought that the probes would be able to detect 15% gasoline every time. This disclaimer could be added to our listing, "Our equipment was not evaluated for long-term material compatibility with the product stored."

Vacancy
It was motioned and voted on unanimously to amend the membership requirements to allow up to nine state members on the workgroup. The workgroup would have one member from OUST representing EPA and the second position formerly reserved for an EPA representative can now be held by a state representative. Curt will resend the email requesting applicants and noting the above change.

OLD BUSINESS (continued)

File Retention
Beth Dehaas has sent Curt all the reports she had. Jon Reeder is trying to locate all the protocols to put on the website. He has the early ones from Curt and Tony. Beth sent the ATG and Non-volumetric and VTT ones. Scott will resend his email to everyone of what he has access. The workgroup continues to discuss getting all the files scanned. Curt may be able to get his files scanned. Scott at this time has the largest collection of files. Curt will get John Cernero's files. John will get the pipeline file currently being reviewed.

Upper and lower limits to Large Line Leak Detection Methods
John Kneece proposed adding limits to the large pipeline leak detection methods. He has the limits for some.

Straw Man Letter

Curt has sent the Straw Man letter to Hansa Germany. As previously decided, the Straw Man Letter will be sent out to all the vendors.

Next Meeting Details
The fall Work Group Meeting will be held in Dearborn, Michigan. Mike Kadri is making the conference and hotel reservations. Tim Smith will take minutes at the meeting.

Team Meetings and Adjournment

Meeting Attendees – Wednesday March 22, 2006

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Tim Smith	USEPA-HQ	703-603-7158	smith.timr@epa.gov
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