Direct Inspection & Maintenance Program

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Chevron/Unocal

Direct Inspection and Maintenance (DI&M)

- Program to identify and quantify leaks found at natural gas gathering and processing facilities
- Once leaks are identified, opportunity exists for repairing the leaks, thereby reducing gas losses and providing extra revenue
- Program utilizes conventional leak detection methods (sniffing, soaping and ultrasonics)
- Program also utilizes the latest optical remote sensing tools (Leak Surveys Inc. camera) which is quicker than conventional methods
- The DI&M surveys are conducted under the guidance of Kansas State University's National Gas Machinery Laboratory and Innovative Environmental Solutions, Inc.
- A report outlining the leaks, revenue lost and cost of repair is the final deliverable

Chunchula, Alabama Gas Processing Plant

Located approximately 20 mi north of Mobile, AL

Plant started operation in 1978

Plant processes approximately 37.5 MMCF/Day

Produces propane, butane and condensate

Chunchula, AL Gas Processing Plant

Propane – 25,000 gal/day

Butane – 17,000 gal/day

17,000 components (flanges, valves and fittings)

The team also surveyed the N.E. Compressor Station and selected wellhead sites

The LSI camera was also used offshore – Mobile Blk. 916

The DI&M Project at Chunchula

- The project (surveys) was conducted April 4 – 9,2005
- Mr. Jeff Panek headed up the team of 4 (combination of IES and Clearstone Engineering)
- The team was equipped with soaping solution, sniffers and a high-flow sampler (quantification)
- The team tagged and inventoried leaking components
- Leaks were then quantified with the high-flow sampler
- The final report gives detailed information on each leaking component, along with product loss, money lost and repair cost estimates

Jeff Panek Tagging and Sniffing

Dave Picard Conducting Inventory

Using the High-Flow Sampler

They Checked High

They Checked Low

Verification With LSI Camera & Sniffer

What We Found

- Only 224 (or 1.3%) of the components surveyed were determined to be leaking
- A survey of this nature is very work intensive
- No leaks were found on components that are part of the Plant's LDAR program
- The LSI camera works and is a very quick way to determine component leakage
- We were losing a lot of money through component leakage (especially at today's price for natural gas)

Mobile Blk. 916

Roger and David Furry (LSI) Take a Ride

Riding High

David Guidry (Lead Mechanic) Points Out Possible “Leaker”

David Furry Checking Compressor Cylinder

Roger the “Sniffer”

What We Found Offshore Mobile

- Did not find very many leakers, possibly due to the numerous H2S monitors located throughout the platform
- The LSI camera is great for a general, quick survey of components
- The seas get pretty rough around the western tip of Ft. Morgan Peninsula (south of Mobile Bay) Just ask Roger!