



# LEAK SURVEYS INC.

WE ENSURE A CLEAN ENVIRONMENT FOR FUTURE GENERATIONS

ABLE TO PINPOINT  
LEAKS ON ANY  
COMPONENT OR PIPELINE.



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The pipeline industry in particular has needed and encouraged the development of a new gas leak detection system for many years. However, gas leaks, both large and small, have been targeted for detection not just in transmission but in industries involving chemical, paper, metal, manufacturing, utilities, microelectronics, refining, and military/aerospace applications.

The system used by LSI is a completely new technology developed by LSI to detect hydrocarbon vapors. From greenhouse gas emission compliance to safety concerns to equipment damage, these gas leaks clearly have the potential to cost companies thousands to millions of dollars in lost revenue, damage, or fines. They can cause efficiency losses, unacceptable levels of human exposure to toxic substances, fires, explosions, and other serious problems.

Our new imaging camera can visually detect leaks.. It can even pinpoint the source and flow path of the escaping gas. Current technologies such as flame ionization detectors are very sensitive, however they do not easily show where the gas is escaping from or differentiate between hydrocarbon residue from substances such as penetrating oil and actual blowing gas leaks.

Traditionally a hand-held “sniffer” gas detector, combined with soaping and bagging techniques are used to manually locate and sample each leak. This is a time-consuming process, especially since leaks can be picked up around equipment meters away from the actual source of leaks, sending plant personnel on wild goose chases. Knowing exactly what equipment is leaking, and where on the equipment and the extent of the leak obviously streamlines the documentation and repair of actual gas leaks.

This is not a simple variation on any traditional detection technology. Any clients we contacted who thought they had seen this system before quickly changed their minds when they saw the images from it. This technology is newly-developed and ready to revolutionize leak detection.

## MISSION:

Assist our customers in the petroleum industry to quickly identify and account for leaks, reduce emissions and emissions fees, create a safe work environment and save the environment; ultimately growing the bottom line

## INNOVATION:

Leak Surveys, Inc. has developed a patented pending technology/camera that uses infrared technology to identify hydrocarbon emissions (Greenhouse Gasses) in real time called “The Hawk”

## IMPLEMENTATION:

On Gathering non-regulated pipelines, DOT regulated pipelines, Barges, Chemical & Gas Plants, Tank Farms, Convenience Stores, Manufacturing Facilities and any place that has the potential for gas and chemical leaks

## CURRENT CLIENTS:

The EPA, TCEQ and LDEQ use Leak Survey’s Inc exclusively to perform their aerial leak detection surveys; other clients include Exxon, Chevron, Lyondell, BP, Valero, DCP Midstream, Enbridge, El Paso and Total France

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## WHY IS LEAK SURVEYS INC. THE CHOICE FOR YOU?

### ECONOMIC

- Increase Throughput
- Capture Lost Opportunity Cost
- Cuts labor costs incurred in complying with regulations by reducing the amount of time it takes to survey for leaks
- Save companies from environmental fines
- Quick response time
- 100% accurate with no false positives
- Price – Our pricing allows our clients to fly twice as much pipeline as our competitors and with no set-up fee

### SAFETY

- Increase Employee and Public Safety
- Images of leaks are captured on video for safety file reporting
- Repaired leaks can be filmed to provide an audit trail / proof that the leaks were repaired
- Reduces human exposure to toxic substances, explosions, and other serious problems

### ENVIRONMENTAL

- Reduce Emissions and Emissions Fees
- Strengthen Environmental Stewardship Efforts
- Creates “Green” Pipelines
- Positive Landowner Relations

### COST

This is a totally new approach to gas leak detection. LSI will gladly provide more information, footage, or pricing regarding different applications for the gas leak imaging services.

## AWARDS:



Leak Surveys, Inc. was recently awarded the 2007 Innovative Technologies Award presented by the Texas Commission on Environmental Quality



In addition LSI received the 2007 Clean Air Excellence Award presented by the U.S. Environmental Protection Agency



## GASFINDIR "HAWK" CAMERA

- Infra Red converts emissions gas into visible black and white images that appear as smoke
- Seeing the leaks visually allows you to trace it to the source.
- Helicopters are specially equipped with The Hawk technology and operate at an altitude of approximately 150 feet.
- Gas imaging can detected up to 2 miles away.
- Airs speed of 50 knots.
- Ability to survey 100 to 150 miles of pipeline per day.
- Images are captured on video and/or digital photography, marked with GPS coordinates for the safety file.
- Pipeline location preloaded into aircraft GPS system.
- Detects ethane or methane leaks by Differential Absorption.

## THE HAWK

### Imaging Performance

Field of view/min focus distance

25mm lens included

Focus near

<0.2m

Focusing

Manual

Thermal sensitivity

80 mK @ 30°C

F-number

2.3

Detector

Type

Focal Plane Array (FPA), InSb, 320x240 pixels

Spectral range

3-5µm

Time constant

16 ms/12ms, user selectable

Power Input

Voltage

6V

Power consumption

<6 W typ.

### Physical Characteristics

Weight(kg)

2.3 kg or less

Color

Black

Size in (LxHxW)

10"x5.2"x5.7" (254x132x145mm)

Interface

Tripod mounting UNC 1/4", rotation safe

Available Lenses

Field of View

25mm

50mm

100mm

Environmental

Operating temperature range

-15 °C to +50 °C

Storage temperature range

-40 °C to +70 °C

Bump

40g, MIL-STD-810F

Vibration

7.15g, MIL-STD-810F

EMC

EN 50081-2 (Generic Emission)

EN50082-2 (Generic Immunity)

Humidity

20% to 80% (non-condensing) IEC 359

Image Specifications

Image Storage

Hand-held personal video recorder, commercial, off-the-shelf

Image Out

NTSC/RS-170, S-video

Camera Control

RS-232, push button on camera

Connectors/function

C-video, PAL, NTSC, S-video and serial RS-232

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