

**Texas Commission on Environmental Quality (TCEQ)
Fugitive Emissions and Motor Vehicle Refueling Observation Study**

On November 10, 2005 staff from the TCEQ's Chief Engineer's Office and the Office of Compliance & Enforcement (OCE) used the GasFindIR (infrared) camera to observe emissions from a variety of potential sources at a gasoline dispensing facility. Locations traditionally known to have leaks, such as manways, fill-pipes, and loose gaskets were included in the study. The gasoline dispensing facility selected for this study did not have Stage II vapor recovery. The GasFindIR camera was operated by a trained OCE technician to observe vehicle refueling in order to evaluate the effectiveness of onboard refueling vapor recovery (ORVR). The camera was aimed at the nozzle interface as each motor vehicle was being refueled in order to observe whether or not emissions were being captured by the ORVR system.

The five and a half hour field survey yielded useful data. Due to the brevity of this observation study, definitive conclusions should not be drawn regarding the effectiveness of ORVR. However, the data gathered are certainly a good foundation for the development of more comprehensive ORVR studies.

The following tables detail ORVR penetration on motor vehicles by model year. Focusing on the model years that require motor vehicle manufacturers to exclusively produce and sell ORVR equipped vehicles (in bold), the data gathered on November 10, 2005 can be further analyzed.

ORVR Penetration

Automobiles	MY1998	MY1999	MY2000 and beyond
	40%	80%	100%
Light Duty Trucks	2001	2002	2003 and beyond
	40%	80%	100%
Medium Duty Trucks	2004	2005	2006 and beyond
	40%	80%	100%

Of the thirty-five vehicles screened with the GasFindIR camera, eleven of the vehicles were 'automobile' class vehicles, model year 2000 or newer. The findings for the eleven vehicles were:

Emissions visible with the GasFindIR camera during refueling:

2004 Ford Mustang
2000 Ford Taurus

Emissions not visible with the GasFindIR camera during refueling:

2005 Honda Civic Hybrid
2004 Honda Civic
2003 Toyota Prius
2003 Honda Civic Hybrid*
2003 Mini Cooper S
2003 Toyota Matrix*
2004 Hyundai Elantra*
2001 Chevrolet Corvette
2000 Honda Accord*

Automobiles listed with an asterisk * had a small, temporary puff of emissions either when the gasoline cap was removed from the vehicle or at the very beginning of refueling. However, visible emissions were not seen with the GasFindIR camera anytime during the refueling process.