



# New Mexico Environment Department

Keeping Within the  
Federal Air Quality Standards

Mary Uhl, Bureau Chief  
Air Quality Bureau

# Four Corners Air Quality Issues

- Historic issues with ground-level ozone pollution.
- Environmental Protection Agency (EPA) lowered federal ground-level ozone standard in March of 2008 to 0.075 parts per million (ppm).
- San Juan County is right on the cusp of violating the new ozone standard with a monitored pollutant level of 0.075 ppm.



# New Mexico House Bill 195

- House Bill 195 was passed during the 2009 legislative session.
- House Bill 195 allows the state to be more stringent than federal rule for areas that are violating or within 95% of violating a federal air quality standard.
- Allows the state to be more proactive for those areas that are violating or in jeopardy of violating a federal air quality standard.



# House Bill 195 & San Juan County

- NMED is evaluating air quality regulations/policies to implement to help areas with higher levels of ozone to attain/maintain federal air quality standards.
- San Juan County is one of these areas.
- Other areas include:
  - Doña Ana County; and
  - Western portion of Rio Arriba County.



# Recommendations

- Four Corners Air Quality Task Force Report
- The Four Corners Air Quality Task Force was a 250 member group that formed in 2005. Members include:
  - Local, state, federal, and tribal government;
  - Industry;
  - Local citizens; and
  - Environmental interest groups.
- The Four Corners Task Force Final Report was released in November of 2007.
  - Report includes mitigation options developed by the task force members.
  - Report is available at [www.4cornersair.org](http://www.4cornersair.org).



# Regulatory Possibilities

- Enhanced Stage I Vapor Recovery
- Stage II Vapor Recovery
- Idling Limitation for Vehicles
- Surface Painting and Coating
- Storage and Transfer of Petroleum Liquids
- Use of low-bleed Pneumatic Devices
- Wellsite Production Equipment Emission Controls
- Compressor Engine Emission Controls
- Drill Rig Emission Controls



# Stage I Vapor Recovery

- January 2008, EPA passed a federal rule for Gas Stations that requires Stage I Vapor Recovery for all stations that have a monthly throughput of 100,000 gallons or more.
- Existing sources have until January 2011 to comply with this new federal rule.
- Option: Enhanced Stage I regulations could require vapor recovery for stations at a lower throughput than is currently required by the federal government.
- The cost for installation of Stage I is around \$10,000-\$15,000 per gas station with little to no maintenance costs.

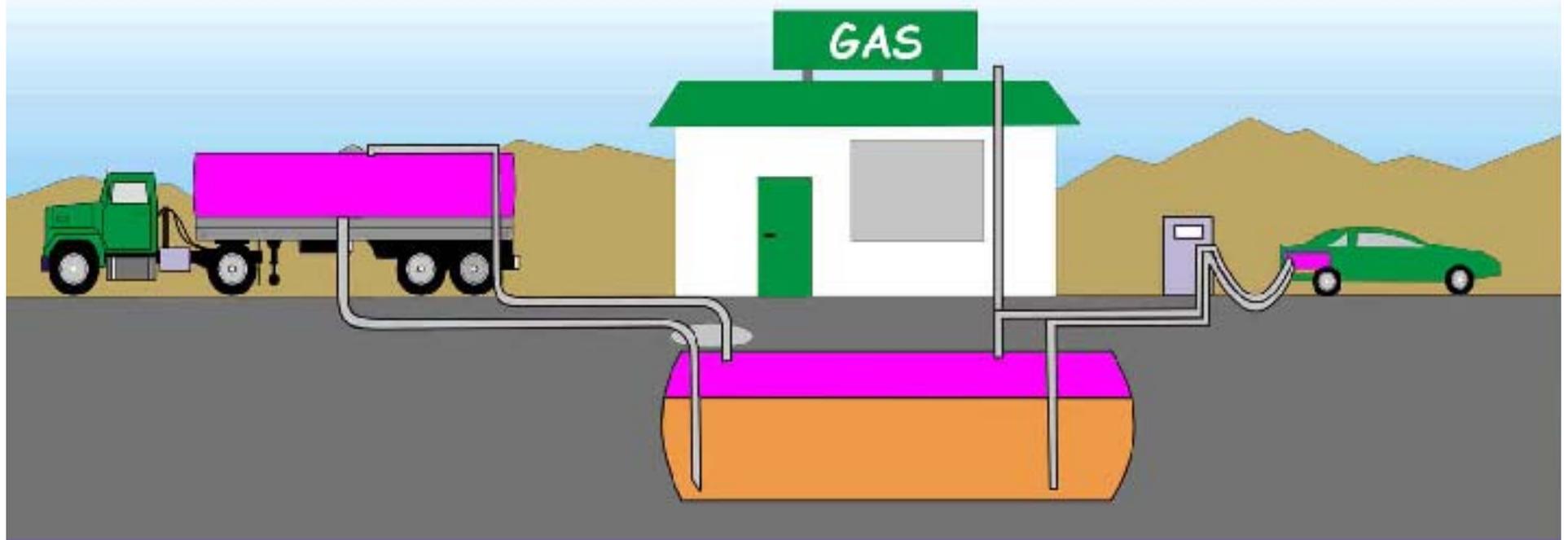


# Stage II Vapor Recovery

- Stage II vapor recovery is conducted at the pump through a device that can recover up to ~95% of VOCs as cars are fueled.
- Captured vapors sent back to the underground storage tank at the gas station.
- Stage II requires special underground plumbing to accommodate the control system.
- Stage II systems can be expensive to install and require routine maintenance and inspection to maintain integrity of vapor control equipment.



# Vapor Recovery at Service Stations



Phase I

Phase II

# Idling Limitations for Vehicles

- Idling results in:
  - Increased Emissions (nitrogen oxides (NO<sub>x</sub>), VOC and greenhouse gases)
  - Increased costs to truckers (approximately 1 gallon of fuel for every hour idling)
- Alternatives to Idling
  - Auxiliary Power Units/Generator Sets
  - Advanced Truck Stop Electrification
- Costs
  - Retrofits: \$2000
  - Electrification: \$12,500 per unit
- State has proposed a model ordinance for anti-idling.



# Advanced Truck Stop Electrification



# Surface Painting and Coating

- Federal rule restricts emissions of methylene chloride and metals contained in coatings.
- Applies to facilities that manufacture and/or coat metal parts and products.
- Option: State rule would limit total VOCs contained in various types of coatings; e.g., air dry, forced air dry, primer, clear coat, extreme performance, powder.



# Storage and Transfer of Petroleum Liquids

- Petroleum Liquids include crude oil, condensate, and finished or intermediate products manufactured or extracted at petroleum refineries.
- Option: Revise 20.2.37 NMAC – *Petroleum Processing Facilities* to require control of tank VOC emissions.
- Require external surfaces of storage tanks coated with a material to have a specified reflectivity for solar radiation to reduce volatilization.



# Wellsite Production Equipment Emission Controls

- Control flash emissions of VOCs from produced water tanks.
- Control VOC emissions from condensate and oil tanks (98%).
- Control reboiler still vent and glycol separator vapors for dehydrators.
- At sites where tanks are controlled, route truck loading vapors to tank emissions control or other vapor balancing system.



# Low-Bleed Pneumatic Devices

- Widely used in the Natural Gas Industry.
  - Liquid level controllers
  - Pressure regulators
  - Valve controllers
- Significant source of VOC emissions.
  - $\approx$  66 billion cubic feet (Bcf)/yr in the U.S.
- High-bleed  $\rightarrow$  low/no-bleed can be profitable.
  - To date, Natural Gas STAR partners have saved \$254.8 mil. (36.4 Bcf of gas).



# Pneumatic Devices

- Pneumatic Devices: Methane Recovery
  - Replacement Cost: \$700-\$3,000/device
  - Retrofit Cost:  $\approx$  \$500/device
  - Maintenance Cost: <\$500/device per year
- Pneumatic Devices: Other State Initiatives
  - Colorado and Wyoming have proposed regulations requiring high-bleed pneumatic controllers in ozone nonattainment areas be replaced or retrofitted to low-bleed.



# Area Source Compressor Engines

- Natural gas fired compressor engines
  - largest area source of NO<sub>x</sub> emissions in San Juan County.
  - $\approx$  16,000 tons/yr.
- March 2008, federal rule to control levels of NO<sub>x</sub>, carbon monoxide (CO), and VOC.
  - Only applies to new engines manufactured in 2008 or later.
  - Does not apply to new small existing engines manufactured before July 2008.



# Area Source Compressor Engines

- Option:
  - Limit of 2 g NO<sub>x</sub>/hp-hr for existing compressor engines of <300 hp.
- Challenges and concerns:
  - cost & technology concerns;
  - potential for ammonia formation; and
  - enforcement of large number of sources.



# Drill Rigs

- Oil and gas drill rig engines in San Juan County
  - NOx emissions in excess of 700 tons/yr.
- Federal rule limits NOx, VOC, and particulate matter emissions
  - Begins with engine model year 1996.
  - Becomes more stringent as model year increases.
  - Depends on engine size.
- Options:
  - Enhance the federal rule by setting a minimum standard for all drill rig engines.
  - Require natural gas drill rig engines.



# Ozone Forecasting

## ENVIROFLASH FACT SHEET

### What is EnviroFlash?

EnviroFlash is a system that sends e-mails about your daily air quality forecast. The message is the same air quality information that the local radio or television stations provide, plus suggested safety measures when levels are unhealthy. This service is provided by your state or local environmental agency and the US Environmental Protection Agency.

### Why is EnviroFlash important?

Exposure to high levels of air pollution can aggravate heart disease, asthma and other respiratory diseases. By being aware of the air quality levels, you can take precautions to protect your family.

### How does EnviroFlash work?

Air quality monitors located all over the United States take in information that is used to calculate the current Air Quality Index value. State and local environmental agencies then issue air quality forecasts based on measured air quality and weather information. The forecast is then provided to local radio and television stations, posted online and sent out through EnviroFlash.

### For additional information or to sign up, visit:

[www.enviroflash.info](http://www.enviroflash.info)

### What is the Air Quality Index?

<b>Good 0-50</b>	Air quality is considered satisfactory, and air pollution poses little or no risk.
<b>Moderate 51-100</b>	Air quality is acceptable; however, for some pollutants there may be a moderate health concern for a very small number of people who are unusually sensitive to air pollution.
<b>Unhealthy for Sensitive Groups 101-150</b>	Members of sensitive groups* may experience health effects. The general public is not likely to be affected.
<b>Unhealthy 151-200</b>	Everyone may begin to experience health effects; members of sensitive groups may experience more serious health effects.
<b>Very Unhealthy 201-300</b>	Health alert: everyone may experience more serious health effects.
<b>Hazardous 301-500</b>	Health warnings of emergency conditions. The entire population is more than likely to be affected.

\* Sensitive groups include active adults, people with heart or lung disease (including asthma), older adults and children.

•Ozone forecast by EPA, NOAA, NWS joint effort now available for San Juan County 2009 Ozone Season.

•Go to [Enviroflash.info](http://Enviroflash.info) to sign-up to receive daily forecasts, sign-up at front table or contact Mark Jones, NMED-AQB.

•Action days will occur when forecast predicts ozone at 8-hour average 76 ppb or higher. Action days will include voluntary emissions reduction efforts.

•Exploring idea of voluntary industry emissions reduction plans for ozone action days.



# Next Steps

- Work with stakeholders
- Determine best emission control options
- Move forward with regulatory development



# Questions/Comments

For More Information  
Please Contact Mark Jones at  
[Mark.Jones@state.nm.us](mailto:Mark.Jones@state.nm.us)

or

Visit Our Web Site at  
[www.nmenv.state.nm.us](http://www.nmenv.state.nm.us)

