

# 2006 Base Case Inventory Update and 2010 Base Case Inventory

April 10, 2008, Oil & Gas and VOC Stationary Sources  
Stakeholder Meeting - Dale Wells APCD  
Technical Services

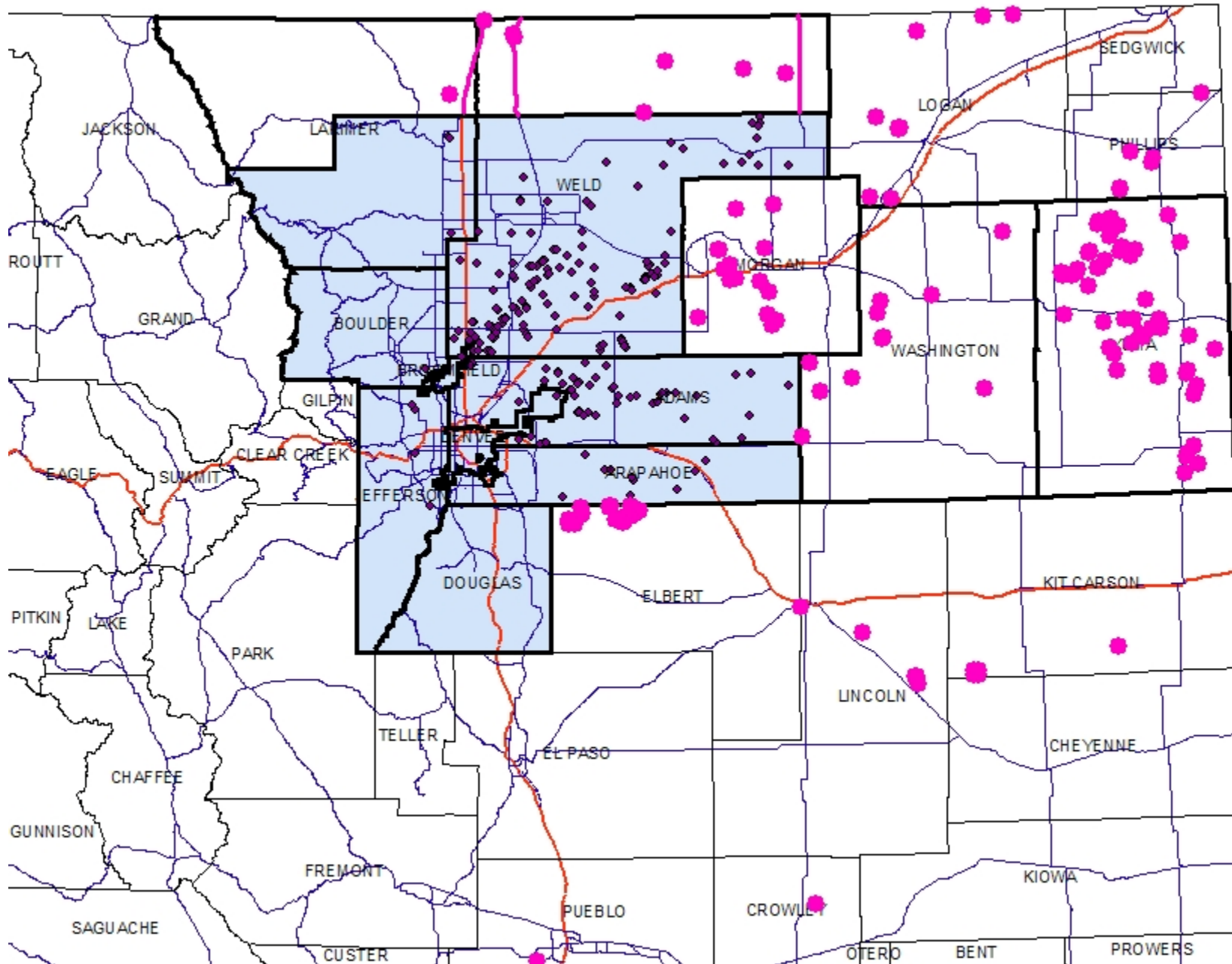


# Outline

- Inventory Area
- Source of Inventory Data
- Overall summary of the 2006 EI
- Projection To 2010 O&G Sources
- Existing O&G Controls
- Projection To 2010 – Other Source Categories
- Overall summary of the 2010 EI
- 2006 and 2010 Emission Summary

# Inventory Area – Nonattainment Area

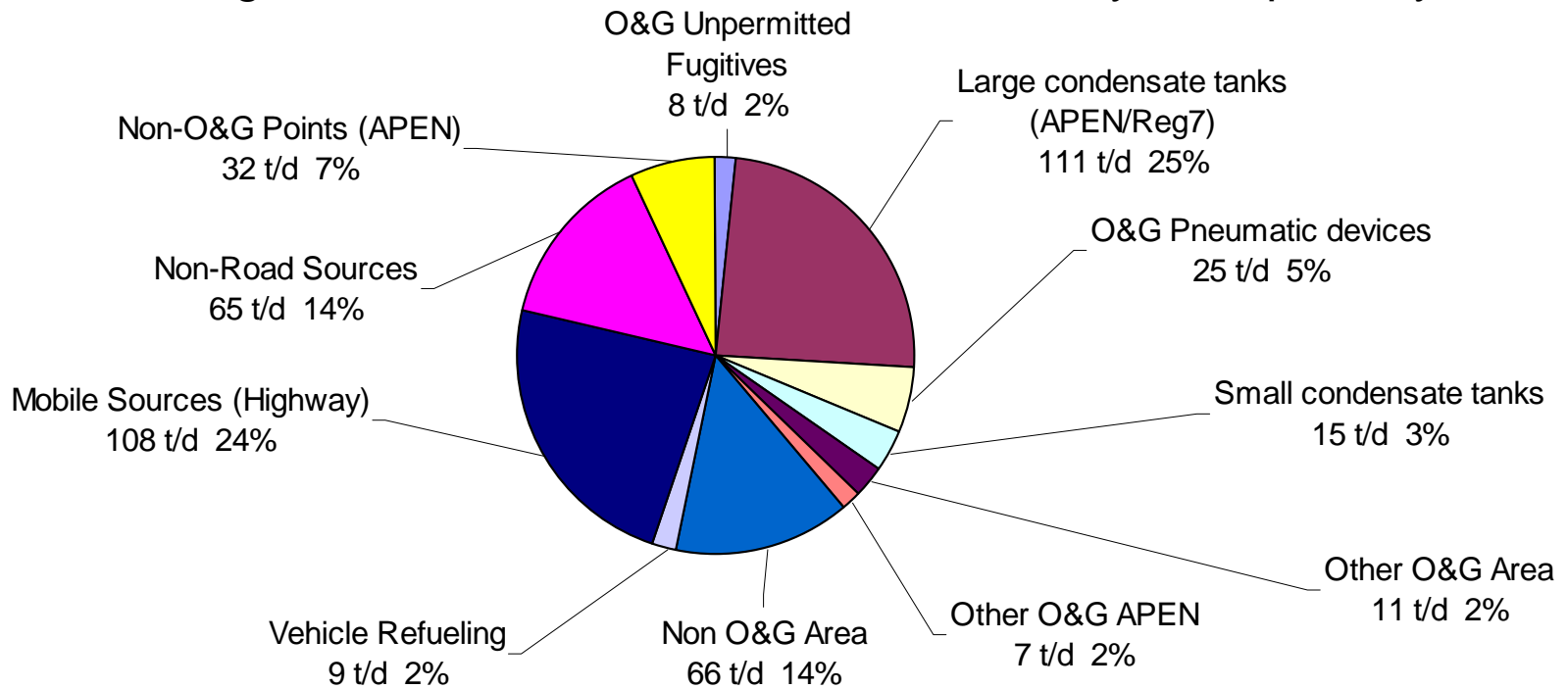
(Based on Oil Production – 98.9% of Weld and 73.1 % of Larimer is in NAA)



# Inventory Sources

- Point Source Data  
Stationary Sources Program Permit System (APENS)
- Highway Vehicles  
CONCEPT Model, SMOKE Model, Vehicle Miles Traveled And EPA Mobile62 Model
- Non-Road Engines  
EPA NonRoad Model – Oil and Gas Engines Removed
- Area Sources  
EPA National Emissions Inventory  
DIA emissions from **Airport Emissions Inventory**  
**Denver International Airport**, Ricondo & Associates, Inc. June 29, 2005
- Oil and Gas Sources  
**DEVELOPMENT OF BASELINE 2006 and 2010 EMISSIONS FROM OIL AND GAS ACTIVITY IN THE DENVER-JULESBURG BASIN (IPAMS)**, ENVIRON International Corporation

# Non-Biogenic 2006 Nonattainment Area Inventory Tons per Day



# IPAMS Projection To 2010 O&G Sources

<b>Source Type</b>	<b>projection method</b>	<b>Projection Code</b>
O&G Unpermitted Fugitives	w	<b>well count</b>
Large condensate tanks (APEN/Reg7)	op	<b>oil production</b>
O&G Pneumatic devices	w	
Small condensate tanks	op	
Drill rigs	s	<b>spud count (new wells)</b>
Exempt engines	w	
Heaters	w	
Truck loading of condensate liquid	op	
Pneumatic pumps	w	
Venting - initial completions	s	
Venting - recompletions	s	
Venting - blowdowns	gp	<b>gas production</b>
Workover rigs	w	
APEN Permitted Fugitives	op	
Compressor Engines (APEN)	gp	
Glycol Dehydrator (APEN)	op	

## 2010 Projection Factors

<b>Projection Parameter</b>	<b>WELD</b>	<b>ALL_OTHER</b>
oil production	1.302	0.730
well count	1.288	0.970
spud count	1.413	0.452
gas production	1.216	0.732

# 2010 Baseline O&G Controls

Control	Control Factor	Rule Effectiveness	Controlled Emissions (Percent of Uncontrolled)		RE 2010 emissions Increase
			wihtout RE	with RE	
Apply 90% control to any glycol dehydrator emitting more than 15 tpy VOC.	90%	83%	10%	25%	15%
Apply 95% control to any tank emitting more than 20 tpy VOC.	95%	100%	5%	5%	0%
Apply 75% control to total VOC emissions in the front range early action compact area (EAC) from large Condensate Tanks	75%	83%	25%	38%	13%

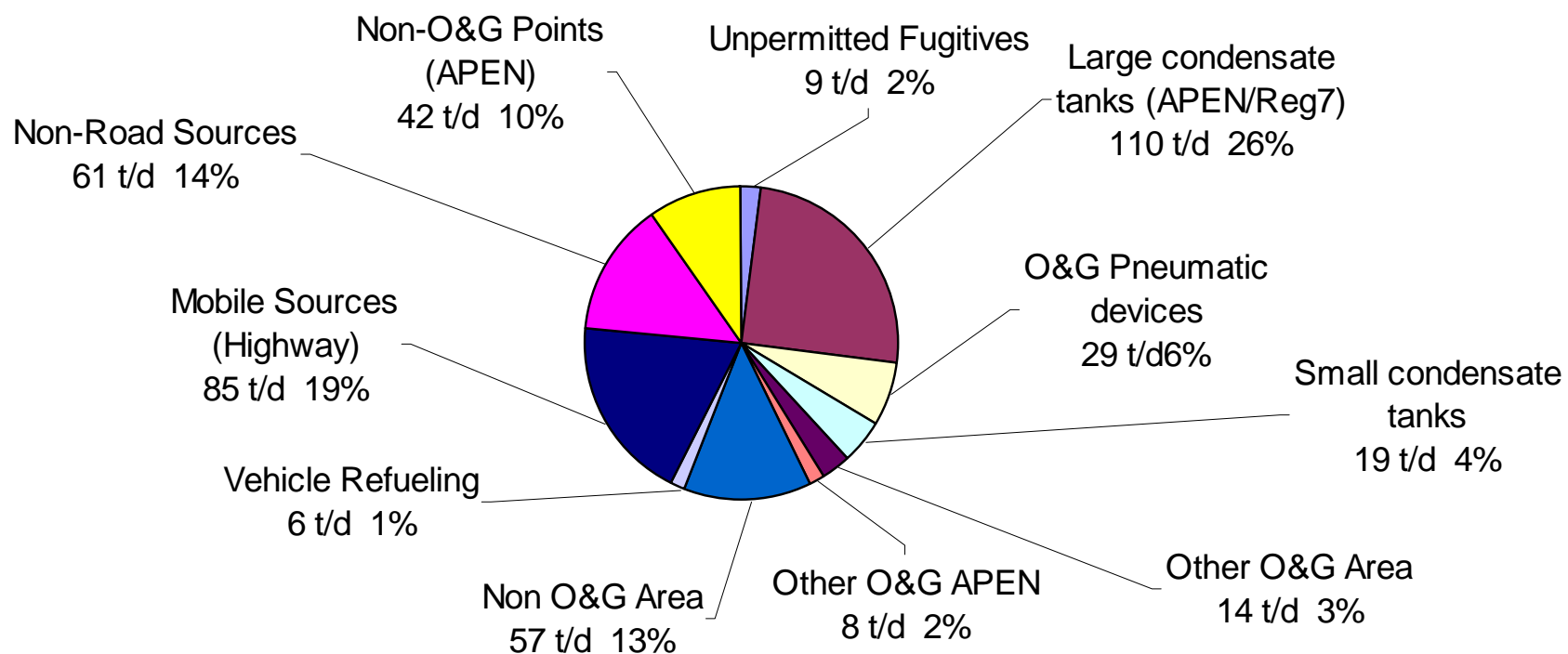
The increase in Condensate Tank Emissions in 2010 due to rule effectiveness is 37 tons per day.

# Projection To 2010 – Other Sources

- Highway mobile source emissions were projected to 2010 using the VMT growth from DRCOG, Northern Front Range MPO and non-MPO VMT and the overall average emission reduction based on Mobile62 emission factor changes from 2006 to 2010.
- EPA final locomotive Tier 3 and Tier 4 standards were included in the 2010 area source estimates
- Consumer solvent emission reductions based on the per person reductions listed in the EPA May 30, 2007, Emission Reduction Credit Memo were applied to the projected 2010 non O&G area source inventory.
- Non oil and gas point source emissions were grown to 2010 by the EPA EGAS economic model, and by adding sources for which permits have been issued.



# Non-Biogenic 2010 Nonattainment Area Inventory Tons per Day



# 2006 and 2010 Emission Summary

<b>Non-Biogenic 2006 and 2010 Nonattainment Area Inventory Tons per Day</b>					
	<b>2006</b>	<b>2010</b>			
<b>O&amp;G Unpermitted Fugitives</b>	<b>8.2</b>	<b>9.5</b>			
<b>Large condensate tanks (APEN/Reg7)</b>	<b>111.3</b>	<b>110.4</b>			
<b>O&amp;G Pneumatic devices</b>	<b>24.8</b>	<b>28.6</b>			
<b>Small condensate tanks</b>	<b>15.1</b>	<b>19.2</b>			
<b>Other O&amp;G Area</b>	<b>11.0</b>	<b>14.0</b>			
<b>Other O&amp;G APEN</b>	<b>7.3</b>	<b>7.8</b>			
			<b>O&amp;G % Total (2010)</b>		
<b>O&amp;G Subtotal</b>	<b>177.8</b>	<b>189.3</b>	<b>43%</b>		
<b>Non O&amp;G Area</b>	<b>66.3</b>	<b>57.4</b>			
<b>Vehicle Refueling</b>	<b>9.2</b>	<b>6</b>			
<b>Mobile Sources (Highway)</b>	<b>108.5</b>	<b>84.7</b>			
<b>Non-Road Sources</b>	<b>65.3</b>	<b>61.3</b>			
<b>Non-O&amp;G Points (APEN)</b>	<b>32.4</b>	<b>42.4</b>	<b>reduction from 2006</b>		
<b>TOTAL</b>	<b>459.5</b>	<b>441.2</b>	<b>4%</b>		