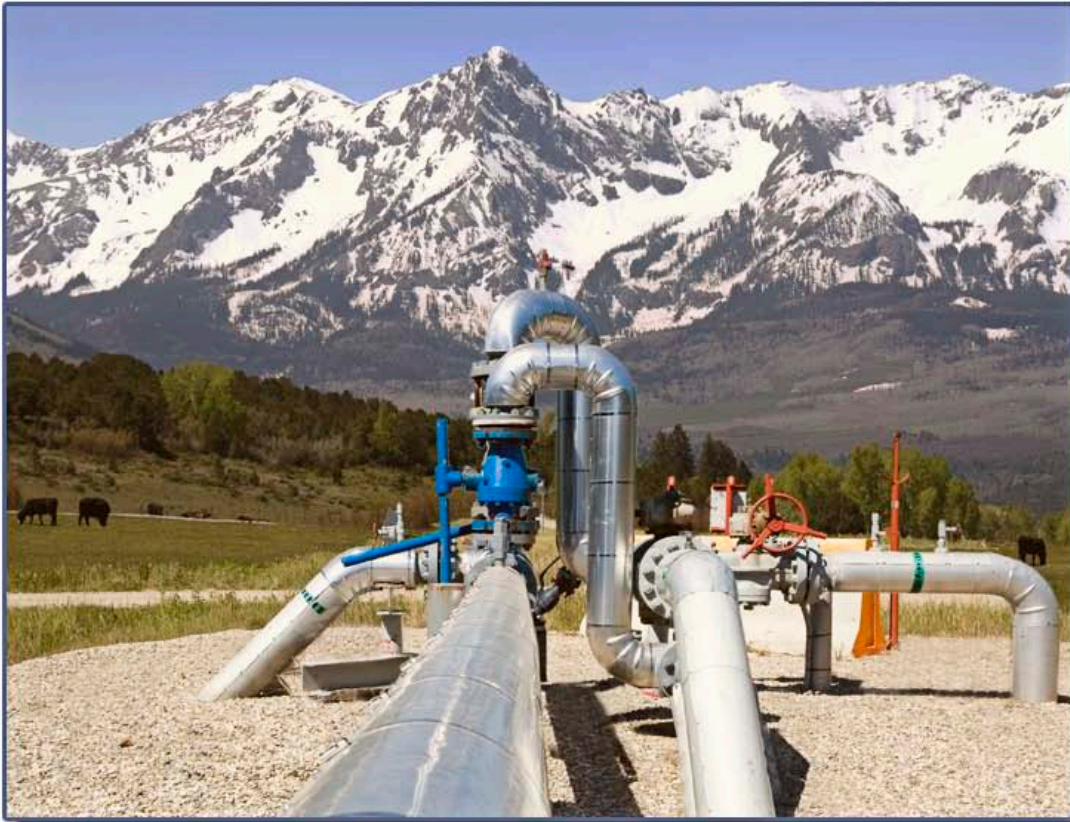


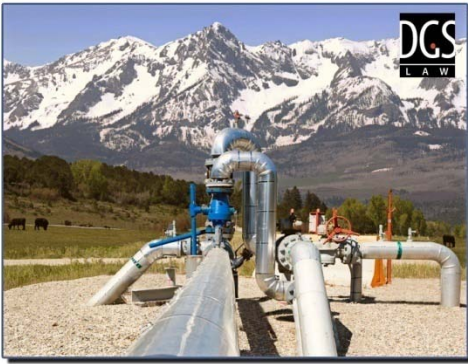
Recent Developments Affecting CAA Permitting and Compliance for Non-Road Engines

Presented by John Jacus

October 21, 2010

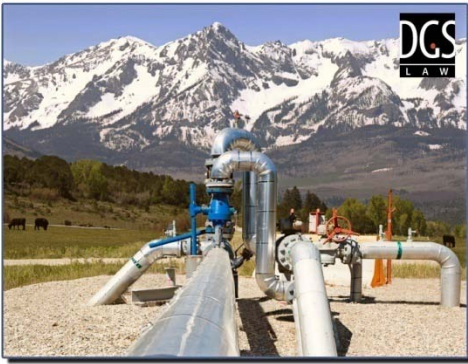


Experience
Operating at AltitudeSM
in Colorado and the West.



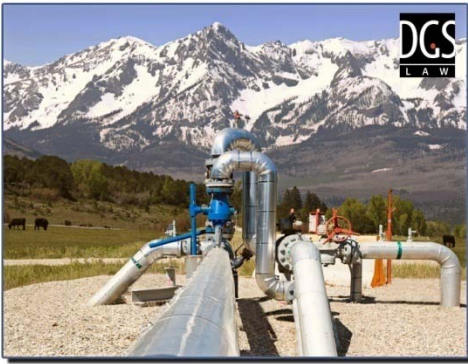
Summary of Issues Covered

- Brief Review of Major Engine Regulations
- Area Source RICE MACT Final Rule
- NAAQS Developments Affecting Permitting
- Voluntary JPAD Drill Rig Engine Permitting
- Other Discrete Issues



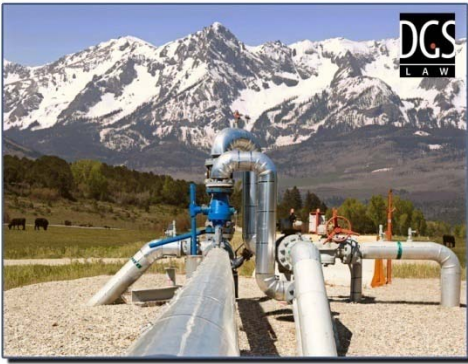
Summary of Regulations for Non-Road IC Engines

- **New Source Performance Standards**
 - Technology Forcing
 - 40 CFR Pt. 60, Subpts. JJJJ (gas-fired), IIII (diesel)
 - New or “Reconstructed” Sources Affected
- **NESHAP Program MACT Standards**
 - 40 CFR Pt. 63, Subpt. ZZZZ (Major Sources)
- **State-Only Standards (State-wide RICE)**



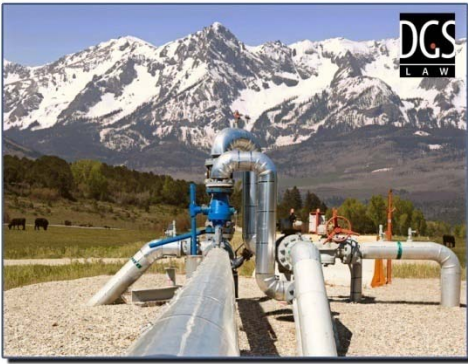
Quad J NSPS and Colorado State-wide RICE Standards

- Colorado has not Adopted Quad J
- Adopted State-wide RICE Standards in 2008
- If Covered by Quad J, Exempt from State-wide RICE
- If not Covered by Quad J, Probably Covered by State-wide RICE (see chart)
- July 1, 2009, 2010 Deadlines



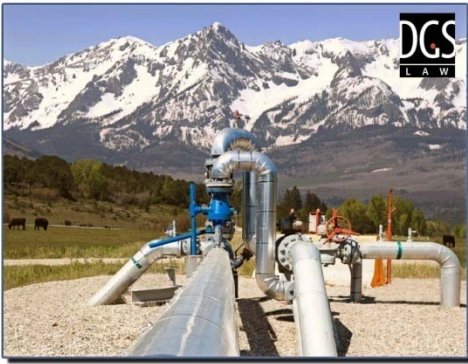
Area Source RICE MACT Final Rule – Subpt. ZZZZ

- Emission Standards for HAPs for Existing SI RICE Rated \leq 500 HP at Major Sources of HAPs and Existing SI RICE of any HP at Area Sources
- Done to meet CAA 112 requirement to address HAP Emissions from Certain Sources - Implemented via the Integrated Urban Air Toxics Strategy (64 Fed Reg 38715, 1999)
- Supplements NESHAP for RICE > 500 hp Adopted in 2004 (69 Fed Reg 33474)



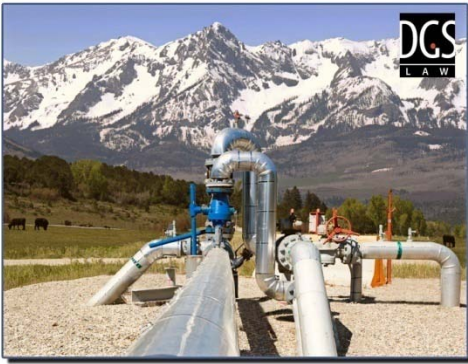
Area Source RICE MACT Final Rule (cont.)

- Existing SI RICE \leq 500 hp at Major Sources
- Existing SI RICE at Area Sources
 - Under CAA 112(d)(5), EPA may elect to regulate Area Sources Using GACT or Management Practices
 - GACT = methods, practices and techniques that are commercially available, appropriate considering operator technical capabilities



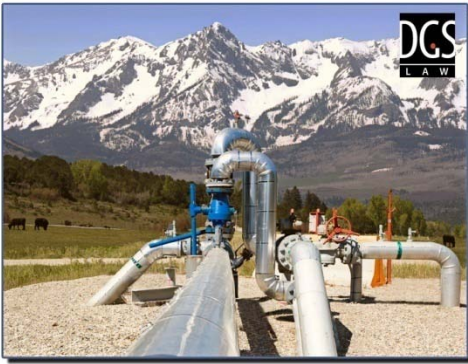
Area Source RICE MACT Final Rule (cont.)

- Subcategories of Existing Stationary SI RICE ≤ 500 hp at Major Sources
 - Non-emergency 2SLB SI RICE 100-500 hp
 - Non-emergency 4SLB SI RICE 100-500 hp
 - Non-emergency 4SRB SI RICE 100-500 hp
 - Non-emergency landfill/digester gas SI RICE
 - Non-emergency SI RICE < 100 hp; and
 - Emergency Stationary SI RICE



Subcategories of Affected SI RICE at Area Sources

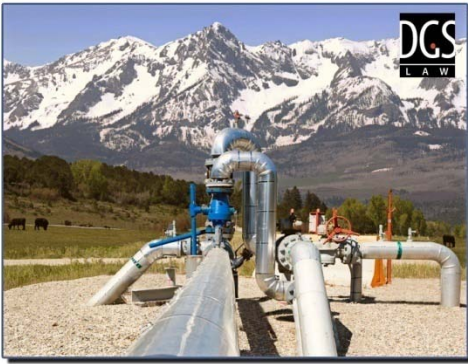
- Non-emergency 2SLB SI RICE
- Non-emergency 4SLB SI RICE:
 - < 500 hp
 - > 500 hp, operate > 24 hr/yr.
 - > 500 hp, operate 24 hr/yr. or less
- Non-emergency 4SRB SI RICE:
 - < 500 hp, operate > 24 hr/yr.
 - > 500 hp, operate 24 hr/yr. or less
- Non-emergency Landfill and Digester Gas SI RICE
- Emergency Stationary SI RICE



Standards for Existing SI RICE \leq 500 HP at Major Sources

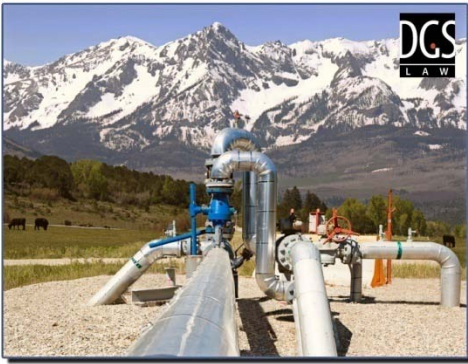
- Emission Standards
 - Non-emerg. 2SLB 100-500 hp...225 ppmvd CO @ 15% O₂
 - Non-emerg. 4SLB 100-500 hp....47 ppmvd CO @ 15% O₂
 - Non-emerg. 4SRB 100-500 hp...10.3 ppmvd CH₂O @ 15% O₂
 - Landfill etc. non-emerg. 100-500...177 ppmvd CO @ 15% O₂
- Work Practice Standards for Existing Emergency SI
RICE \leq 500 hp and Existing Non-emerg. SI RICE < 100
hp at Major Sources





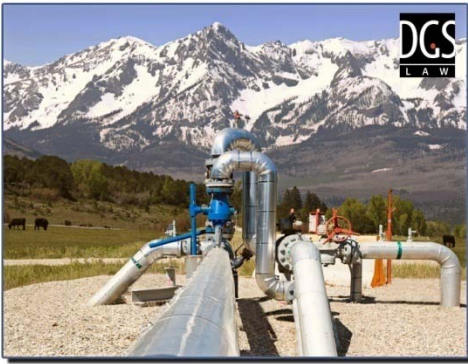
Existing SI RICE \leq 500 HP at Major Sources - Work Practice Standards (cont.)

- Existing Emergency SI RICE \leq 500 hp at Major Sources
 - Change oil/filter ea. 500 hrs. or annually*
 - Inspect Plugs ea. 1000 hrs. or annually
 - Inspect hoses/belts ea. 500 hrs. or annually
 - Replace as needed



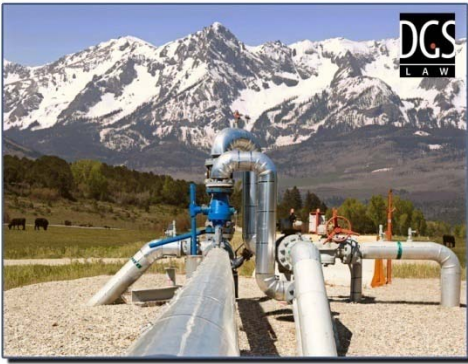
Existing SI RICE < 500 HP at Major Sources - Work Practice Standards (cont.)

- For Existing Non-emerg. SI RICE < 100 hp at Major Sources *not* 2SLB
 - Change oil/filter ea. 1440 hrs. or annually*
 - Inspect Plugs ea. 1440 hrs. or annually
 - Inspect hoses/belts ea. 1440 hrs. or annually
 - Replace as needed



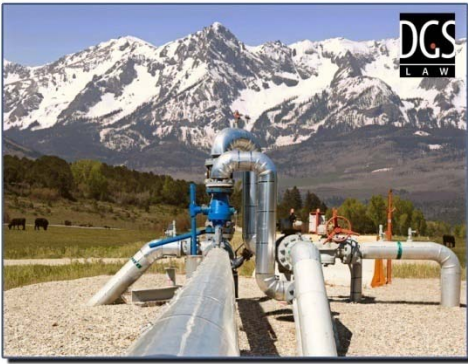
Existing SI RICE < 500 HP at Major Sources - Work Practice Standards (cont.)

- For Existing Non-emerg. 2SLB SI RICE < 100 hp at Major Sources
 - Change oil/filter ea. 4320 hrs. or annually*
 - Inspect Plugs ea. 4320 hrs. or annually
 - Inspect hoses/belts ea. 4320 hrs. or annually
 - Replace as needed



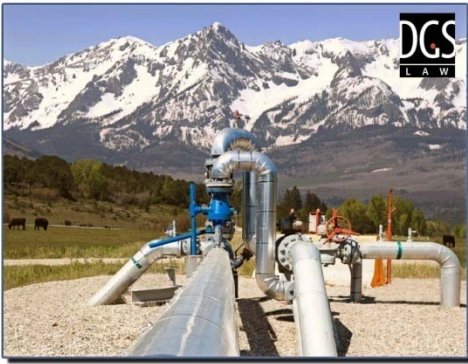
Standards for Existing SI RICE at Area Sources

- Numerical Emission Standards for Non-emerg. 4SLB and 4SRB > 500 hp
 - 4SLB, operates > 24 hrs./yr...47 ppm CO or 93% reduction
 - 4SRB, operates > 24 hrs./yr...2.7 ppm CH₂O or 76% reduction
- Management Practices Required for All Other Affected Engines at Area Sources



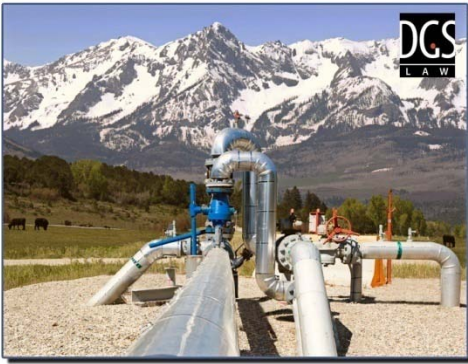
Mgmt. Practices for Other Existing Area Source SI RICE at Area Sources

- Non-emerg. 4SLB \leq 500 hp
- Non-emerg. 4SLB $>$ 500 hp @ \leq 24 hrs./yr.
- Non-emerg. 4SRB \leq 500 hp
- Non-emerg. 4SRB $>$ 500 hp @ \leq 24 hrs./yr
- Non-emerg. 2SLB
- Non-emerg. Landfill/digester gas
- Emergency SI RICE



Mgmt. Practices for Other Existing Area Source SI RICE at Area Sources (cont.)

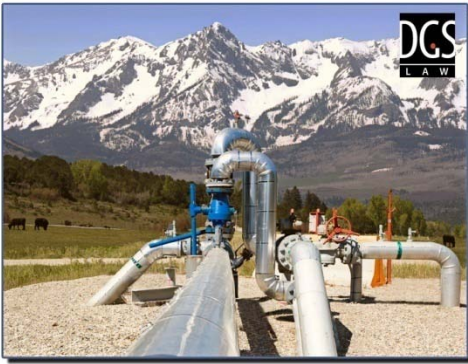
- Non-emerg. 4SLB and 4SRB \leq 500 hp and Landfill etc. Non-emerg. SI RICE
 - Change oil/filter ea. 1440 hrs. or annually*
 - Inspect Plugs ea. 1440 hrs. or annually
 - Inspect hoses/belts ea. 1440 hrs. or annually
 - Replace as needed



Mgmt. Practices for Other Existing Area Source SI RICE at Area Sources (cont.)

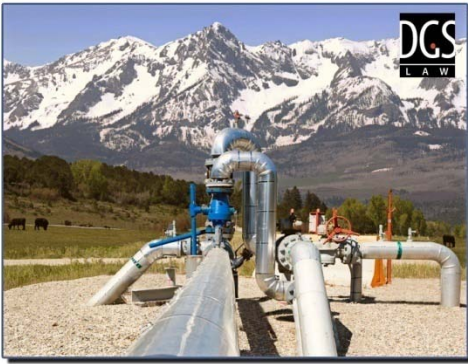
- Existing 2SLB SI RICE
 - Change oil/filter ea. 4320 hrs. or annually*
 - Inspect Plugs ea. 4320 hrs. or annually
 - Inspect hoses/belts ea. 4320 hrs. or annually
 - Replace as needed





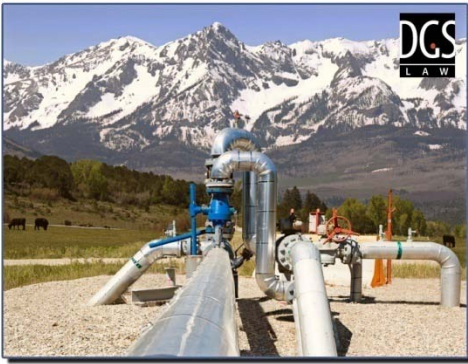
Mgmt. Practices for Other Existing Area Source SI RICE at Area Sources (cont.)

- Emergency SI RICE and Non-emerg. 4SLB and 4SRB > 500 hp @ \leq 24 hrs./yr.
 - Change oil/filter ea. 500 hrs. or annually*
 - Inspect Plugs ea. 1000 hrs. or annually
 - Inspect hoses/belts ea. 500 hrs. or annually
 - Replace as needed



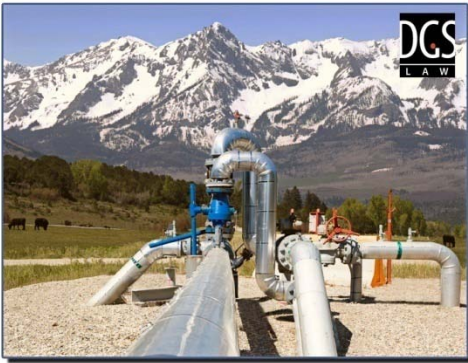
Operating Limitations for Non-Emerg. 4SLB and 4SRB > 500 HP @ >24 hrs./yr.

- Catalyst Maintenance
 - Pressure drop from initial test \leq 2 inches
 - Oxycat inlet temp. of 450 – 1,350 F
 - NSCR inlet temp. of 750 – 1,250 F
- Operate and Maintain per Manufacturers' Specifications
- Demonstrating Compliance – Maintenance Plans for All; Initial Tests for Non.emerg. 100 – 500 hp SI RICE at Major Sources and > 500 hp at Area Sources @ > 24 days/yr; Annual* testing for those at Area Sources
- Continuous inlet temp. and monthly pressure drop



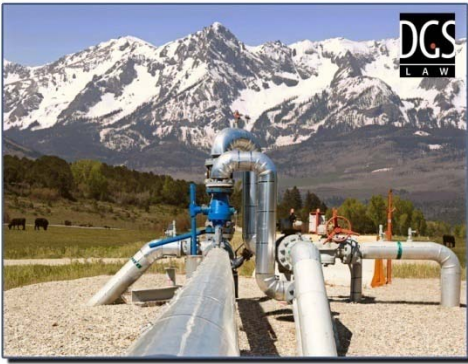
RICE MACT Final Rule – Records, Reporting and SSM

- Reporting and Recordkeeping
 - Emergency engine hours metered
 - Records to Show Work and Management Practices are Being Met
 - Certain NESHAP General Notifications Required; Some file semi-annual reports
- Startup, Shutdown & Malfunction Defense Narrowed



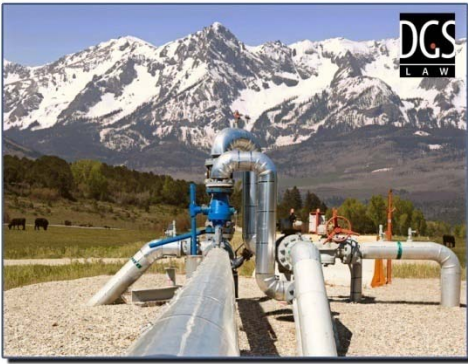
Formaldehyde Test Method, CO Parametric

- Method 323 for CH₂O Testing Retained
 - Region 8 Opposed Method
 - API Support and Reanalysis
 - Final Rule Promulgates Method 323
- EPA Also Reaffirms CO Parametric



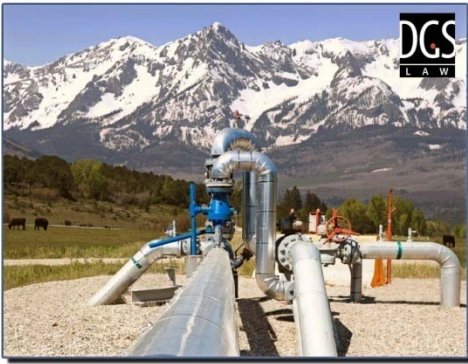
NAAQS Developments Affecting Permitting

- 1-hr. NO₂ NAAQS
- 1-hr. SO₂ NAAQS
- PM 2.5 NAAQS – PM 10 Surrogacy
- Recent Guidance Addressing These from EPA, CDPHE
- Permitting Backlogs to Lengthen Over Modeling Disputes, Non-compliance



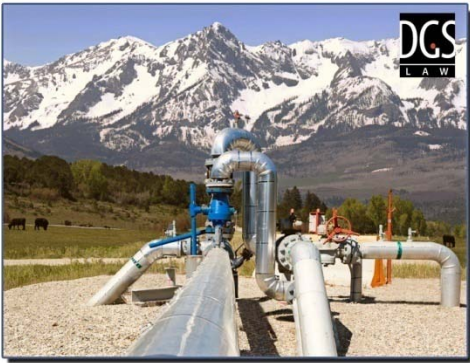
Drill Rig Engine Permitting in the JPAD

- Problem of Permitting Drill Rigs
- Mobile vs. Stationary
- Five Operators Permitted approx. 50 Rigs
- Terms Apply Wherever the Rigs are Operating in JPAD
- Other States, EPA Looking at This for Future Regulations?



Other Discrete Engine Issues Worth Mentioning

- Reconstruction
 - “Replacement” v. Operation & Maintenance
- Test Protocol Set Points, Variability in Engine Models, Panels
- Source Aggregation
 - BP Florida River
 - Summit Petroleum
 - MSC White Paper



Questions?

Contact:

John Jacus, DGS

john.jacus@dgsllaw.com

303-892-7305