

Air and Noise Considerations For Unconventional Oil & Gas

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On behalf of the industry group

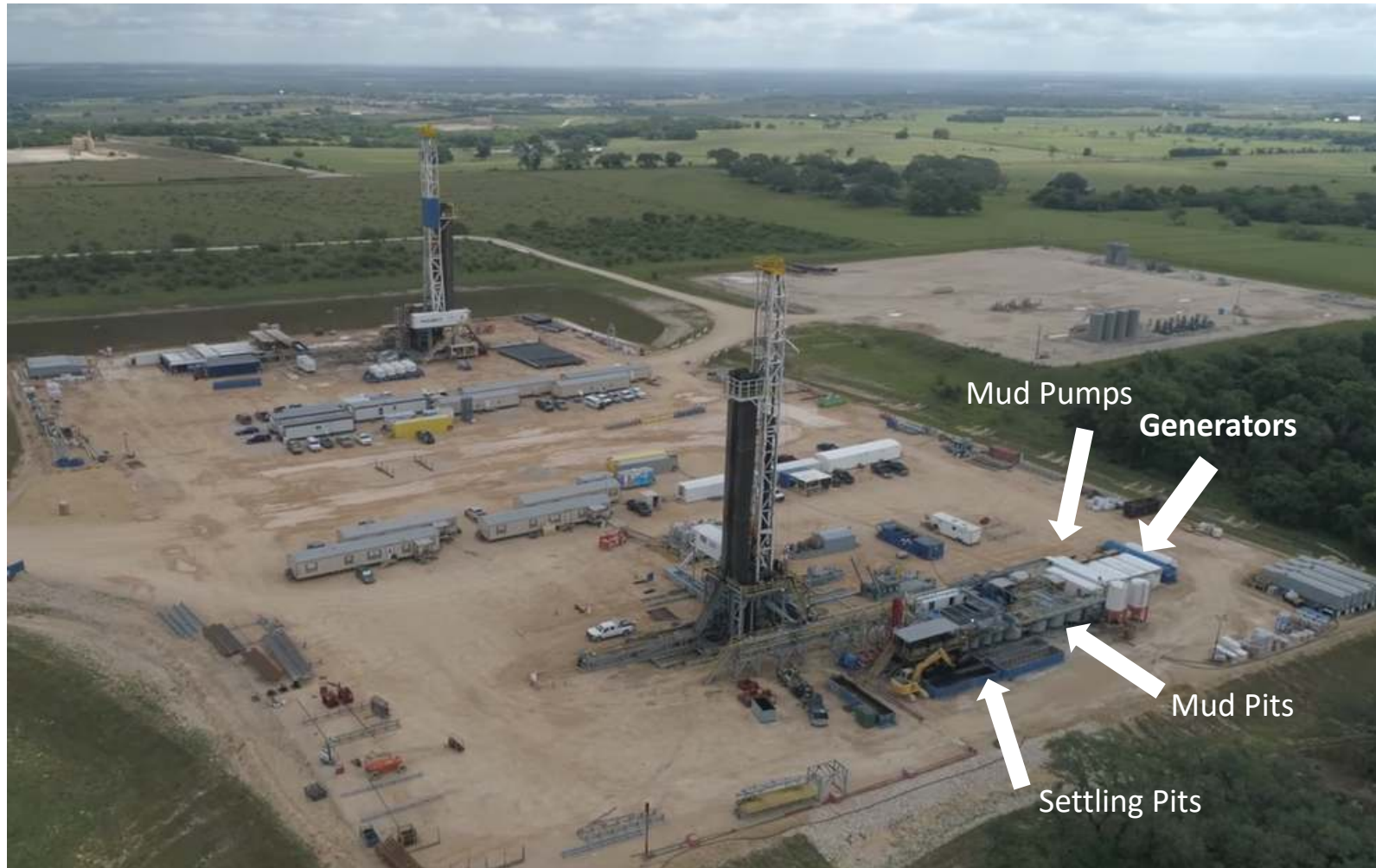
Outline

- Phases of Unconventional Oil & Gas Development
- Equipment and Emissions Potential
- Differences in Basins and Trends that Impact Air and Noise

Phases of Unconventional Development

- Site Preparation (~7-30 days)
- Drilling (~30-90 days)
- Completions (~10-30 days)
 - Hydraulic Fracturing typically occurs for 3-5 days per well
- Production (30+ years)
- Post-Production

Typical Drilling Equipment



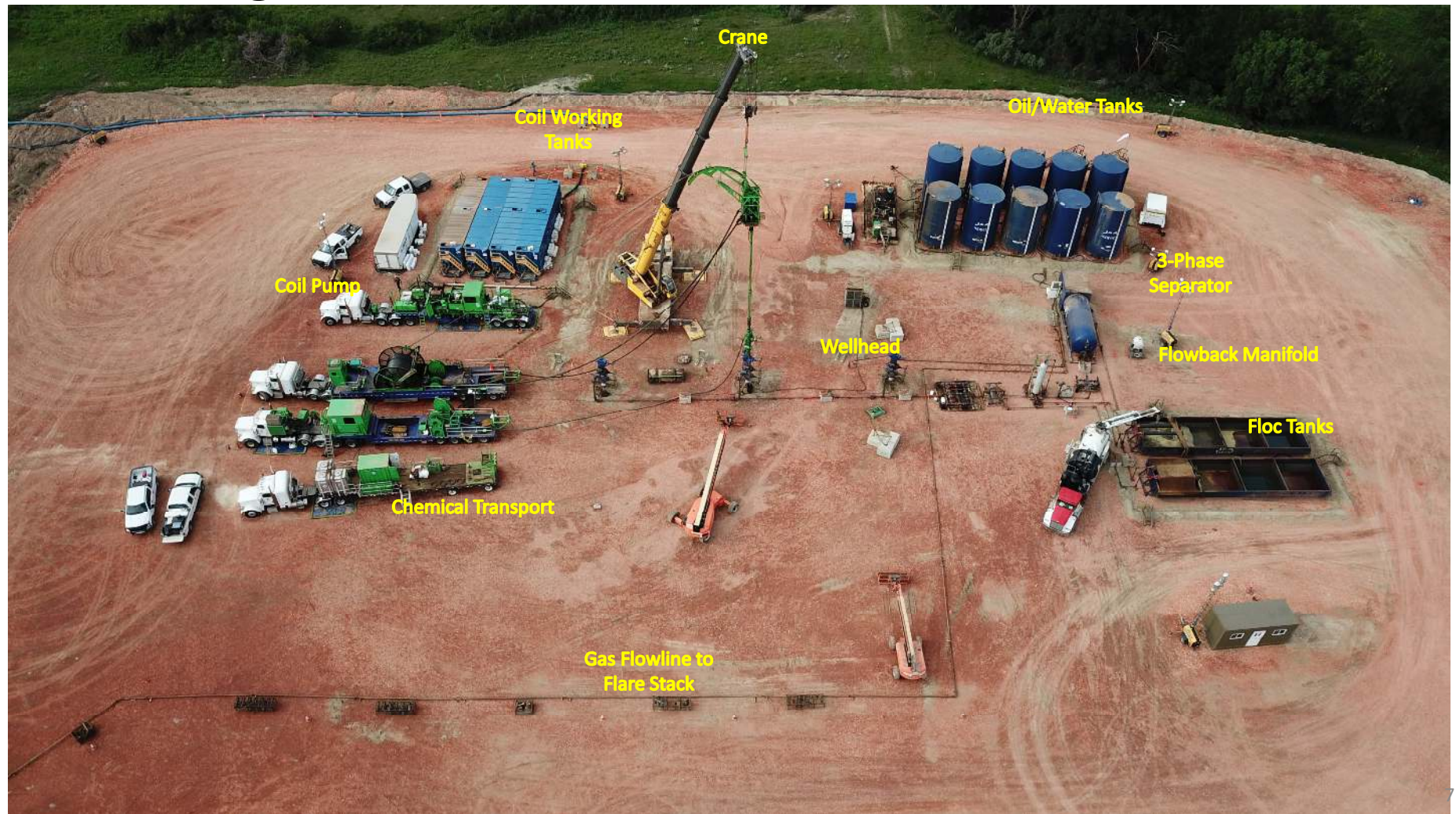
Typical Hydraulic Fracturing Setup



Twin Hydraulic Fracturing Operation



Coil Tubing/Flowback



Dry Gas Production Facility



Dry Gas Compression Facility



Oil Production Facility



Tank Battery



Differences and Trends that Impact Emissions

- Continual Improvement in Technology
- Production Equipment for Oil, Wet Gas, Dry Gas
- Centralization of Operations
- Emissions and Noise Controls



Remediated wellsite in Pennsylvania