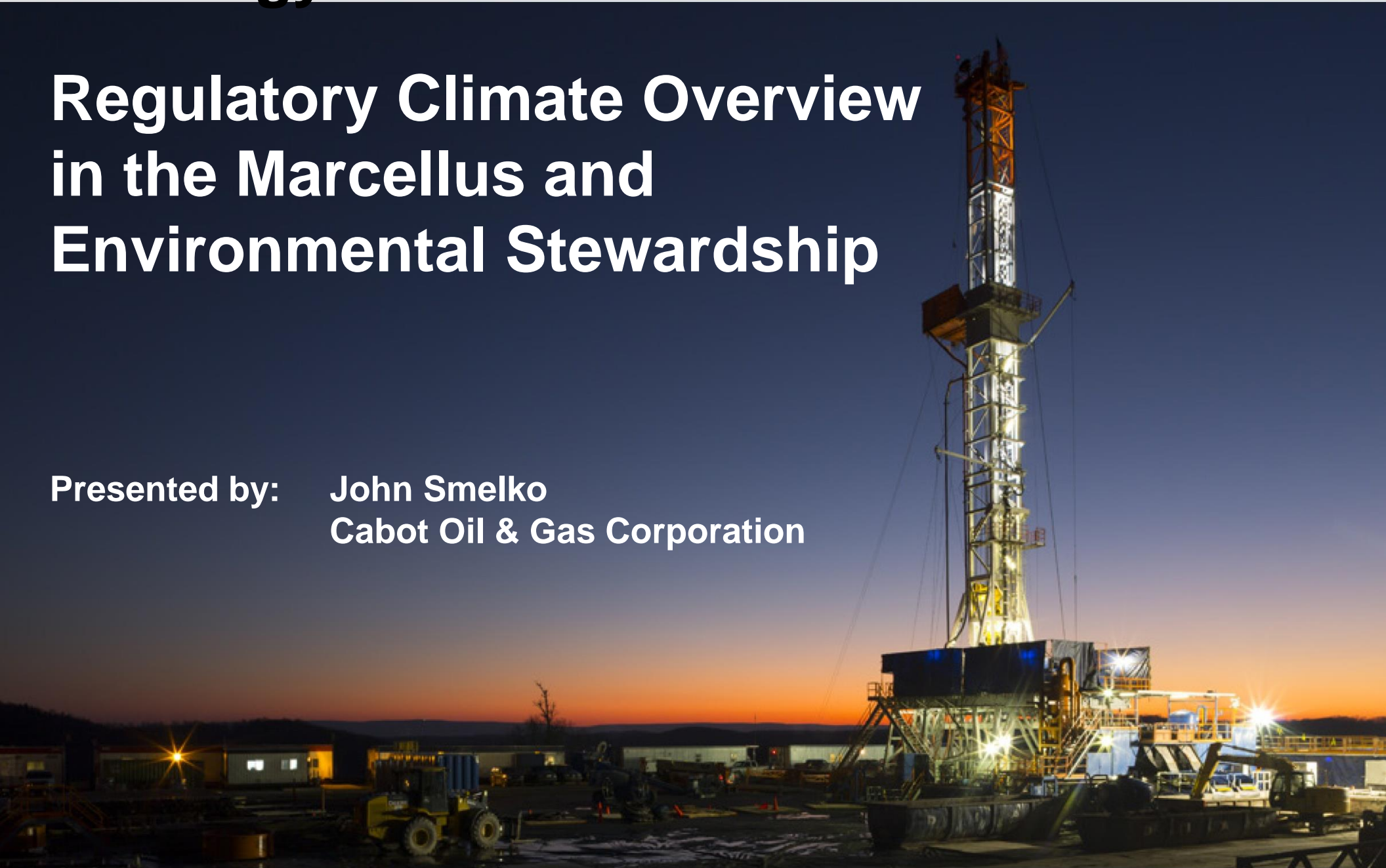


Regulatory Climate Overview in the Marcellus and Environmental Stewardship

Presented by: John Smelko
Cabot Oil & Gas Corporation





About Cabot

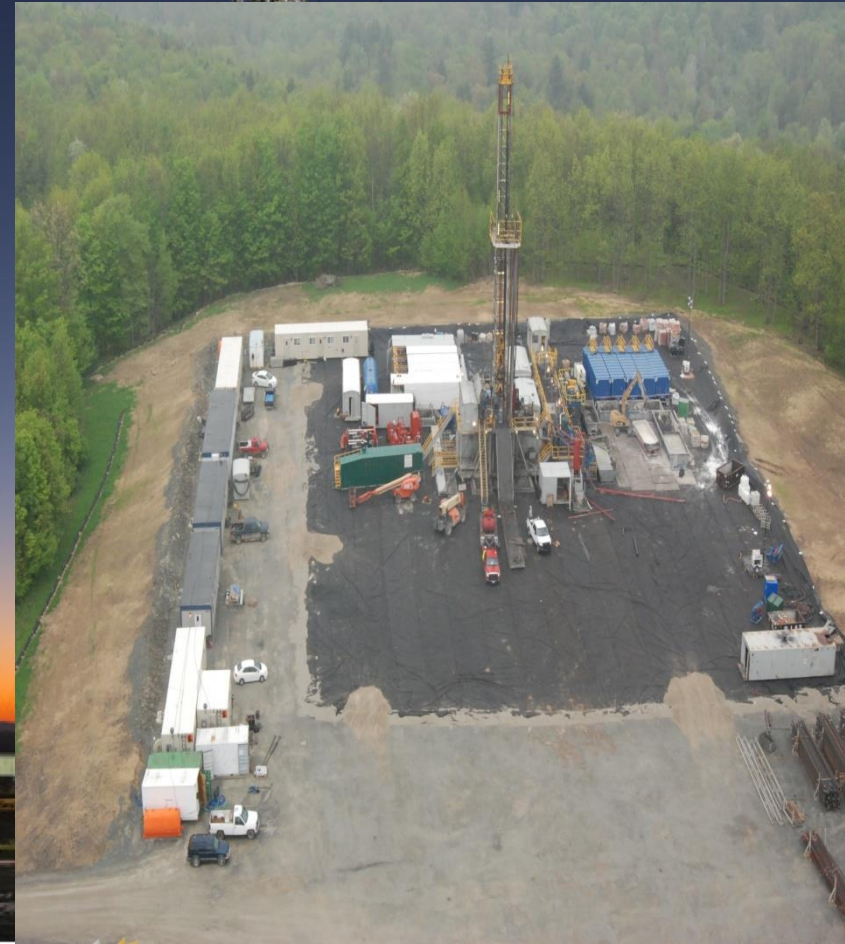
- Cabot Oil & Gas Corporation is an independent natural gas producer operating in the continental United States
- Growth Areas are in the Marcellus and Eagle Ford
- Current Production
 - >1.8 BCF per day natural gas
 - ~14,000 bbls per day
- Anticipate 25+ years of inventory in Marcellus
 - >3,000 wells



Regulatory Evolution in PA

- Regulatory Climate is in Flux with Many Changes in Recent Past in PA

- Oil and Gas Regulations
 - Act 13 – Impact Fee
 - New Proposed O&G Regulations in 2016
- Act 9 – Emergency Response Planning
- Chapter 102/E&S Control – Project Design, Site Inspection and Maintenance/Repair
- Changing Interpretations



Other Regulatory Considerations

- Water Management – SRBC and PADEP
- Pipeline Permitting – USACE / State
 - Jurisdiction Over Navigable Waterways
 - Single and Complete Project Determinations
- Waste Disposal and Recycling
- Air Quality – EPA and State Regulations
 - Emissions Inventories
 - GHG and Quad O
 - Methane Reduction Strategy
- Remediation of Environmental Releases





Front End Planning/Permitting

- Regulatory and Environmental Considerations to Minimize Environmental Footprint Include:

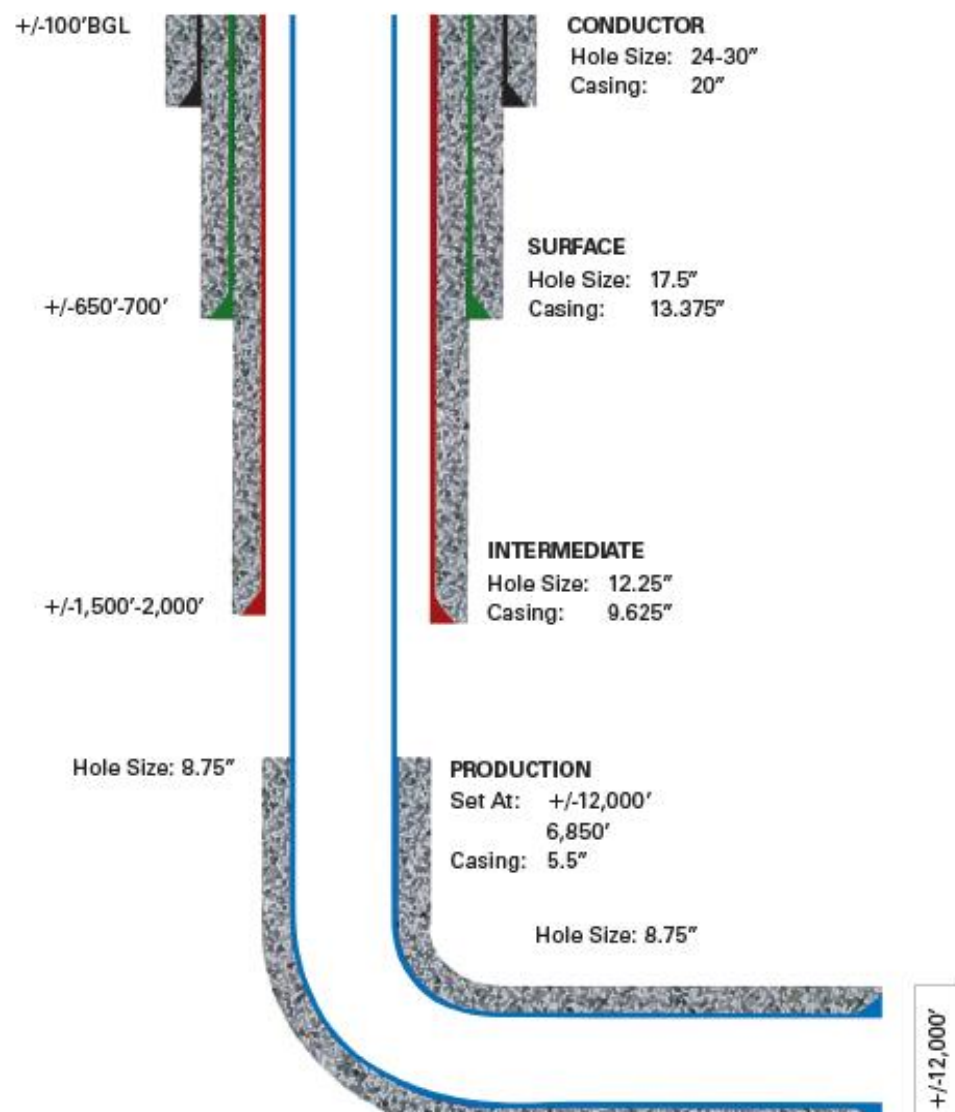
- Staking (Lat/Long)
- Field Review
- Aquatic Resources and Set-backs
- Pre-Drill Sampling
- Engineering/Design Controls – Mechanical Integrity, Closed-loop Systems, Secondary Containment, etc.



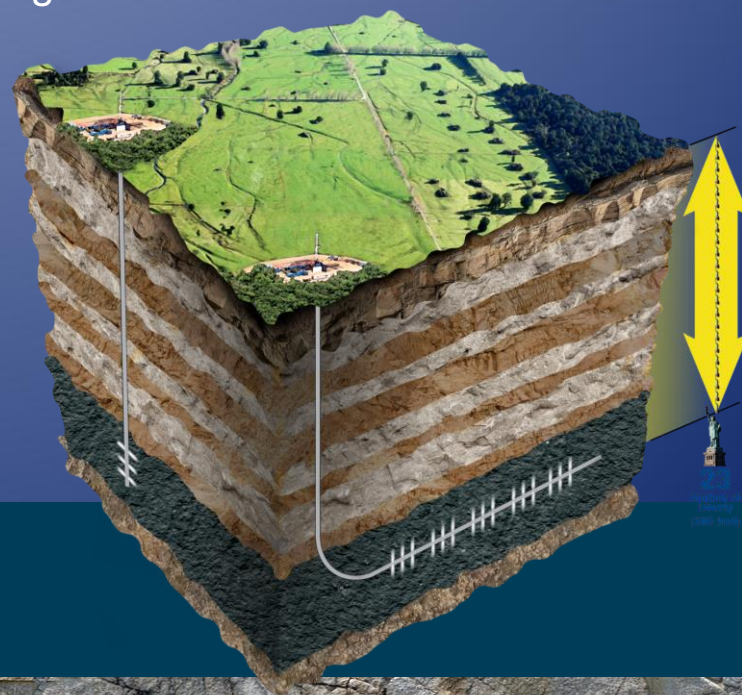


Environmental Stewardship

Typical Cabot Marcellus Well

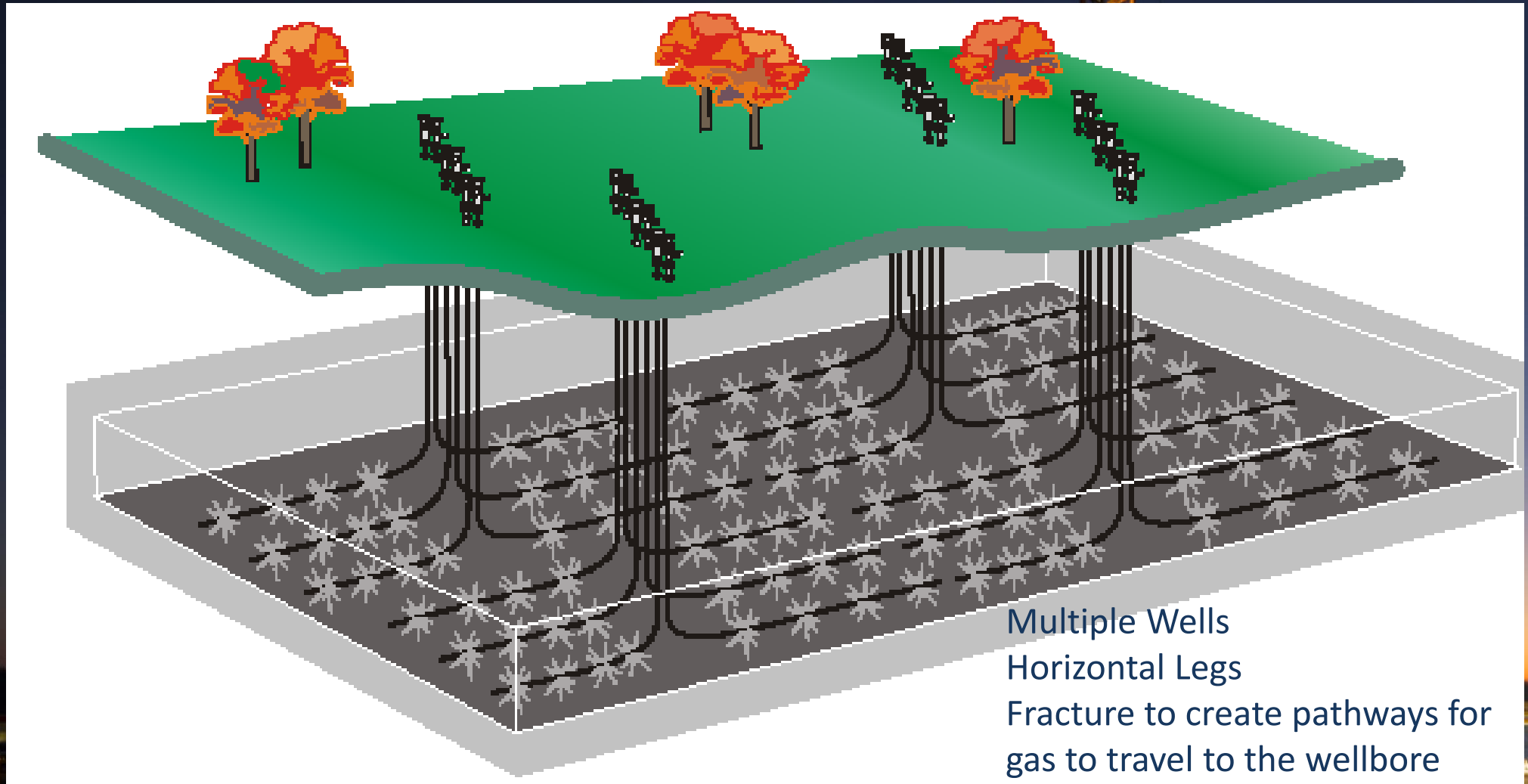


- Wellbore designed to protect groundwater
 - Three string design
- Containment on all locations
- Closed loop system
- Reclamation of locations
- Beneficial reuse
 - Line recycling
 - Water recycling
 - Drill cutting evaluation





Environmental Stewardship





Front End Planning/Permitting

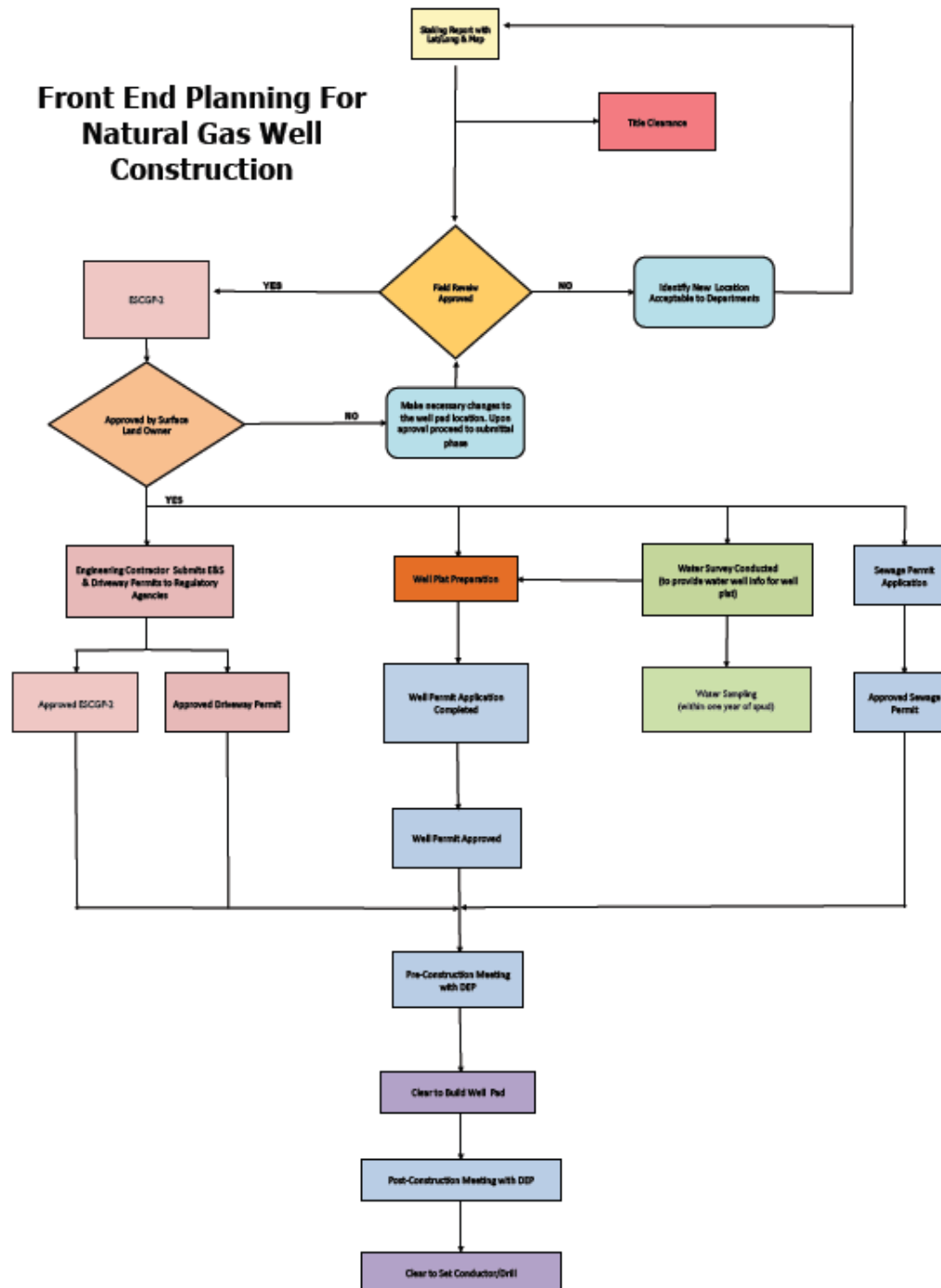
- Well Pad Design / ESCGP-2
 - Minimize Footprint
 - E&S Controls – Inspection and Maintenance
 - Well Pad Reclamation
 - Public Notifications
 - Pre-Construction Meeting with PADEP
 - Driveway Permit
 - Sewage Permit
- Well Permit
 - Plat Preparation
 - Public Notifications
- Water Use Approvals
- **CLEAR to PROCEED**





Regulatory Framework

Front End Planning For Natural Gas Well Construction





Air Quality and Methane Emissions Reduction

- Regulatory Changes
- Green Completions
- Pipeline Infrastructure and Flowback to Sales
- Use of Natural Gas in Operations – Reduce Diesel Consumption
- Exemption 38 and LDAR
- Natural Gas Star Program





Notable Environmental Studies

- PA Air Quality Study in 2010
 - Conclusions of No Impact
- EPA Hydraulic Fracturing Study
 - Final Report Scheduled for 2016





Path to Energy Independence

- Balance with the Stakeholder Community

- Industry
- Regulatory
- Public

- Achieving Environmental Stewardship through Science and Facts

