

August 27, 2020

The Environmental Partnership

**IOGCC – Energy, Resources,
Research, and Technology
Committee**



The Environmental Partnership

Mission

Continuously improve the industry's environmental performance by taking action, learning about best practices and technologies, and fostering collaboration in order to responsibly develop our nation's essential oil and natural gas resources.



Three Program Principles

Take Action

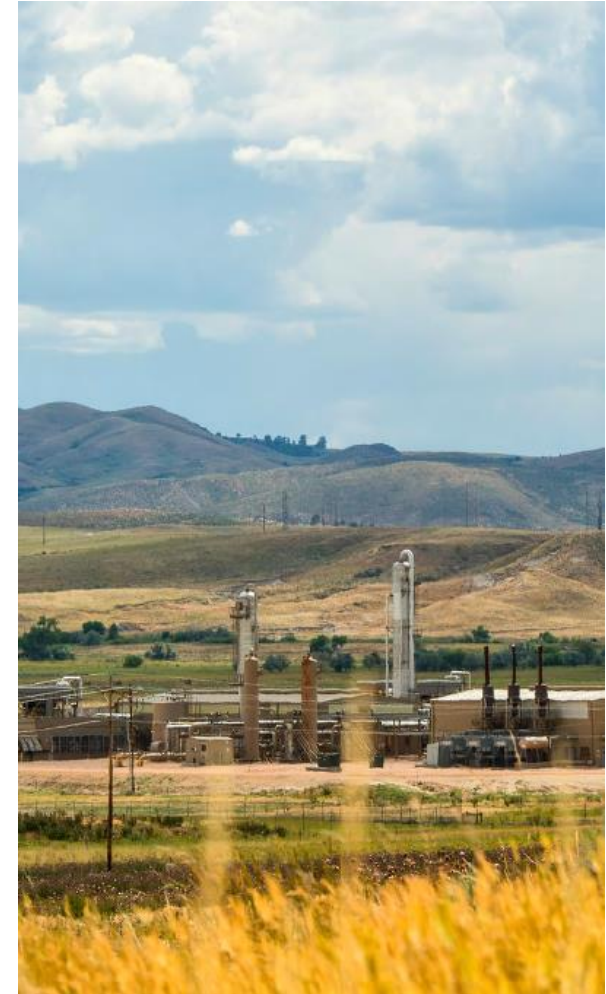
- Companies implement environmental performance programs that are cost-effective, commercially proven, and achieve significant emissions reductions

Learn

- Host industry workshops to foster operator-to-operator information sharing about best practices and new technologies

Collaborate

- Host conferences to promote dialogue with stakeholder groups to share information on new academic research, program learnings, and new technological developments



Continued Focus on Recruitment



84 Participating Companies Currently

1. Aera Energy
2. Aethon Energy
3. Alta Resources
4. American Petroleum Partners
5. Antero Resources
6. Apache
7. Ascent Resources
8. BHP
9. BP
10. Cabot Oil and Gas
11. Caerus Operating LLC
12. California Resources Corporation
13. Callon Petroleum
14. Chesapeake
15. Chevron
16. Cimarex
17. Comstock Resources
18. Concho Resources
19. ConocoPhillips
20. Continental Resources
21. Crestwood Midstream
22. CrownQuest
23. Denbury Resources
24. Devon
25. Diamondback Energy
26. EagleClaw Midstream
27. Enbridge
28. Enerplus
29. EnerVest
30. EOG Resources
31. EQT
32. Equinor
33. Equitrans Midstream
34. Extraction Oil & Gas
35. ExxonMobil
36. Fieldwood Energy
37. Flywheel Energy
38. Gulfport Energy
39. Hess
40. HighPoint Resources
41. Hunt Oil Company
42. Indigo Resources
43. Intensity Midstream
44. JKLM Energy
45. Lime Rock Resources
46. Marathon Oil
47. Murphy Oil
48. Noble Energy
49. Oasis Petroleum
50. Occidental Petroleum
51. Olympus Energy
52. Ovintiv
53. Parsley Energy
54. PDC Energy
55. Penn General Energy
56. PennEnergy Resources
57. Pioneer Natural Resources
58. QEP Resources
59. Range Resources
60. Red Bluff Resources
61. Repsol
62. Rio Oil and Gas
63. Riviera Resources
64. Rockcliff Energy
65. Sable Permian Resources
66. Seneca Resources
67. Sequitur Energy
68. Shell
69. SM Energy
70. Southwestern
71. Steward Energy
72. Summit Discovery Resources
73. Surge Energy
74. Tallgrass Energy
75. TC Energy
76. Total
77. Trinity Operating
78. Ultra Petroleum
79. Warwick Energy
80. Western Midstream
81. Whiting Petroleum
82. Williams Energy
83. WPX Energy
84. XTO Energy

The Environmental Partnership

Taking Action



Emission Sources of Interest

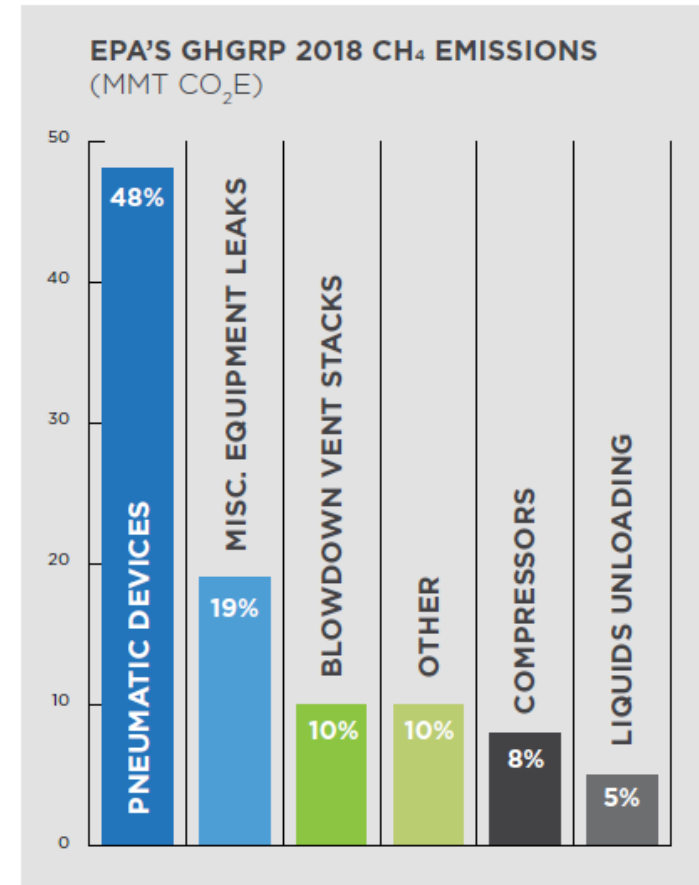
Initial focus is the further reduction of air emissions, both methane and volatile organic compounds, from oil and natural gas sector.

Focus on highest emitting sources:

- Equipment Leaks
- High-Bleed Pneumatic Controllers
- Liquids Unloading

New for 2020!

- Compressor Leaks
- Pipeline Blowdowns



Converted from MT CH₄ using IPCC-AR5 GWP of 28.

Source: https://www.ipcc.ch/site/assets/uploads/2018/02/SYR_AR5_FINAL_full.pdf p. 87

Environmental Performance Programs

To address top-emitting sources in the production segment, participating companies are implementing the following Environmental Performance Programs in a manner that best suits their unique operations:

1. Detection and timely repair of leaking equipment using optical gas imaging cameras, portable analyzers, or equivalent technology
2. Replacement or retrofitting of high-bleed pneumatic controllers with lower-emitting or zero-bleed controllers
3. Implementation of a best practice to minimize emissions by monitoring manual liquids unloading events

New Midstream Program for Compressors

To address emissions from compressors, companies will implement one of the following emission reduction practices:

- Convert centrifugal compressor wet seals to dry seals
- Convert centrifugal compressor gas start to air or electric startup
- Replace reciprocating compressor rod packing every 26,000 hours of operation, every 36 months, or use a condition-based determination
- Install low-e rod packing on reciprocating compressors
- Route wet seal degassing or rod packing vent to a capture system for beneficial use, flare, or control device to achieve at least a 95% reduction in emissions
- Install new reciprocating or centrifugal compressor utilizing one or more of the approved emission reduction methods

New Midstream Program for Pipeline Blowdowns

To address emissions from pipeline blowdowns, companies will implement one of the following emission reduction practices:

- Route gas to a compressor or capture system for beneficial use
- Route gas to a flare
- Route gas to a low-pressure system
- Reduce pipeline pressure to the extent possible before blowdown
- Utilize hot tapping
- Other technology or practice to reduce emissions.

Reporting Requirements

- Participating companies agree to annual reporting to track progress.
- The Partnership's programs are purposefully designed to evolve in response to new information that will come from its implementation.
- An annual report will be developed to document The Partnership's efforts and will be made available to the public. All data reported publicly will be a result of aggregating all individual companies' data.
- Annual reporting due in spring of each year.

2019 - Leak Detection and Repair Program



MORE THAN
184,000
SURVEYS CONDUCTED

MORE THAN
116 MILLION
COMPONENT INSPECTIONS
PERFORMED

2019 - Controller and Liquids Unloading Programs

MORE THAN

3,300

HIGH-BLEED PNEUMATIC CONTROLLERS REPLACED, RETROFITTED, OR REMOVED FROM SERVICE

MORE THAN

10,500

ADDITIONAL GAS DRIVEN CONTROLLERS REPLACED OR REMOVED FROM SERVICE

MORE THAN

2,800

ZERO-EMISSION PNEUMATIC CONTROLLERS INSTALLED AT NEW SITES

EMISSIONS MINIMIZED BY MONITORING MORE THAN

44,000

MANUAL LIQUIDS UNLOADING EVENTS

43

Participating Companies

NO LONGER HAVE HIGH-BLEED PNEUMATIC CONTROLLERS IN THEIR OPERATIONS

The Environmental Partnership

Learning



Industry-Focused Workshops

- As part of the program’s “Learning” principle, The Partnership provides opportunities for companies to come together to share operational knowledge and best practices.
- The Partnership hosted two workshops in 2018:
 - Canonsburg, PA for Appalachian operators (July 26th)
 - Odessa, TX for Permian Basin operators (April 4th)
- The Partnership hosted three workshops in 2019:
 - Midland, TX (April 9th)
 - Oklahoma City, OK (April 11th)
 - Dickinson, ND (July 25th)
- The Partnership has transitioned to webinars and online learnings in 2020 since hosting a workshop in Midland, TX in March



The Environmental Partnership

Collaborating



2019 Annual Conference – “The Field of the Future”

- Each year, The Partnership hosts an annual conference to foster collaboration between industry operators and the organizations developing, testing, and implementing cutting-edge technology and techniques that are further reducing our environmental footprint.
- The 2019 Annual Conference was held in Houston, Texas and we will return to Houston for the 2020 Annual Conference.

Annual Conference Presenters



Program Collaboration – CSU Energy Institute

- As part of the program’s goal to advance the development of new technologies, funding was approved to support a study at Colorado State University’s METEC site.
- METEC is a testing site that models natural gas facilities for researchers to test low-cost methane sensing technologies.
- Funding allowed participating companies to send their optical gas imaging camera operators to the site and advance the use of new detection technologies in the field.



2020 Annual Report

- The Environmental Partnership's Second Annual Report was released July 15, 2020.
- Please visit www.TheEnvironmentalPartnership.org and click on "Annual Report" to find out more!

For additional information, please contact:

Matthew Todd, Director

ToddM@TheEnvironmentalPartnership.org

Cole Ramsey, Program Coordinator

RamseyC@TheEnvironmentalPartnership.org

