Petroleum and the Environment: References


Part 2: Water in the Oil and Gas Industry

Part 1: Petroleum and the Environment: An Introduction

7 U.S. Energy Information Administration – Crude Oil Production.
10 National Oceanic and Atmospheric Administration – Climate change impacts.
11 NASA – The consequences of climate change.
13 U.S. Environmental Protection Agency – Assessment of the Potential Impacts of Hydraulic Fracturing for Oil and Gas on Drinking Water Resources.
Part 2: Water in the Oil and Gas Industry

2 U.S. Geological Survey - How much water does the typical hydraulically fractured well require?

Part 3: Induced Seismicity from Oil and Gas Operations

1 National Research Council (2013). Induced Seismicity Potential in Energy Technologies.

Part 4: Water Sources for Hydraulic Fracturing

1 U.S. Geological Survey Water Availability and Use Science Program, National Brackish Groundwater Assessment – What is Brackish?
3 Union of Concerned Scientists (2011). Freshwater Use by U.S. Power Plants. Figure 9 used with permission.

Part 5: Using Produced Water
1 U.S. Geological Survey – National Produced Waters Geochemical Database.
4 Colorado School of Mines Advanced Water Technology Center – Produced Water Beneficial Use Case Studies.
6 Railroad Commission of Texas – Injection and Disposal Wells.
8 U.S. Environmental Protection Agency – Protecting Underground Sources of Drinking Water from Underground Injection (UIC).
10 Colorado School of Mines Advanced Water Technology Center – Produced Water Beneficial Use Case Studies.
13 North Dakota Department of Health – Guidelines for the Use of Oilfield Salt Brines for Dust and Ice Control.
14 1509.226: Surface applications of brine by local governments. Ohio Revised Code, Title XV: Conservation of Natural Resources, Chapter 1509: Division of Oil and Gas Resources Management – Oil and Gas.

Part 6: Groundwater Protection in Oil and Gas Production
5 FracFocus Chemical Disclosure Registry – Chemical Use in Hydraulic Fracturing.
6 FracFocus Chemical Disclosure Registry.
8 National Ground Water Association (2013). Water Wells in Proximity to Natural Gas or Oil Development. NGWA Information Brief, updated September 2017.
13 Wyoming Department of Environmental Quality – Pavillon Investigation.

Part 7: Abandoned Wells

1 U.S. Energy Information Administration – U.S. Oil and Natural Gas Wells by Production Rate.
3 Orphan Well Association – Frequently Asked Questions.
5 Image source: https://pixnio.com/miscellaneous/abandoned-gas-well-pump
7 Ground Water Protection Council (2011). State Oil and Gas Agency Groundwater Investigations and Their Role in Advancing Regulatory Reforms – A Two-State Review: Ohio and Texas.
9 “Well near Berthoud starts spilling drilling mud 33 years after it was capped.” P. Johnson, Denver Post, October 31, 2017.
10 U.S. Environmental Protection Agency (2016). Hydraulic Fracturing for Oil and Gas: Impacts from the Hydraulic Fracturing Water Cycle on Drinking Water Resources in the United States.
Part 8: What Determines the Location of a Well?

12 Interstate Oil & Gas Compact Commission – State orphaned and abandoned well programs.
13 Oklahoma Energy Resources Board – Well Site Clean Up.
15 Texas Comptroller – Crude Oil Production Tax.
16 Oklahoma Energy Resources Board – Funding.
20 Pennsylvania Department of Environmental Protection – 2016 Oil and Gas Annual Report.
21 Oklahoma Energy Resources Board – Restoring Oklahoma’s Land.

Part 8: What Determines the Location of a Well?

5 U.S. Bureau of Land Management – Oil and Gas: Leasing.
7 U.S. Bureau of Indian Affairs – Working on Indian Lands.
10 New York Department of Environmental Conservation – High-Volume Hydraulic Fracturing in New York State.
14 U.S. Bureau of Land Management – Oil and Gas Statistics: Table 8 – Wells Spud.
16 U.S. Environmental Protection Agency – What is the National Environmental Policy Act? 
17 U.S. Bureau of Land Management – How We Manage.
21 U.S. Energy Information Administration – Crude Oil and Natural Gas Drilling Activity.
Part 9: Land Use in the Oil and Gas Industry

2 Kansas Office of Revisor of Statutes – Kansas Statutes Chapter 55: Oil and Gas, Article 1: Oil and Gas Wells; Regulatory Provisions, 55-177: Removal of structures and abutments from lands after abandoning wells; exception.
5 Penn State Public Broadcasting – Explore Shale: How much land in Pennsylvania has been affected by Marcellus Shale drilling? Based on data from FracTracker Alliance and the Pennsylvania Department of Environmental Protection.
9 Railroad Commission of Texas – Oil and Gas Well Records.

Part 10: The Pinedale Gas Field, Wyoming

5 AAPG Wiki – Pinedale field.
12 Except where otherwise referenced, information in this section comes from communications with BLM Pinedale Anticline Project Office staff, June 30, 2017.
16 U.S. Environmental Protection Agency (2016). Determinations of Attainment by the Attainment Date, Extensions of the Attainment Date, and Reclassification of Several Areas for the 2008 Ozone National Ambient Air Quality Standards. Federal
Part 11: Heavy Oil

2 Natural Resources Canada – Environmental Challenges.
3 File:Aurora – tar sands.png. Wikimedia Commons user Int23. Reproduced according to a CC BY-SA 4.0 license.
4 Natural Resources Canada – Oil Sands Extraction and Processing.
7 Society of Petroleum Engineers PetroWiki – Cold heavy oil production with sand.
12 Government of Canada – Monitoring air quality in Alberta oil sands.
14 Tar Sands, Alberta. Howl Arts Collective, Flickr. Reproduced according to a CC BY 2.0 license.
15 Canada National Energy Board – Commodity Statistics, Summary Crude Oil Export by Type.

Part 12: Oil and Gas in the U.S. Arctic

2 Alaska Department of Transportation & Public Facilities – Arctic Port Study.
9 H.R. 1 – An Act to provide for reconciliation pursuant to titles II and V of the concurrent resolution on the budget for fiscal year 2018. 115th Congress (2017-2018).
11 Alaska Oil and Gas Conservation Commission – Northstar Oil Pool Statistics.
13 Alaska Oil and Gas Conservation Commission.
18 Alaska Oil and Gas Conservation Commission – Colville River Unit, Alpine Oil Pool.
Alaska Oil and Gas Conservation Commission – Production.


21 Alyeska Pipeline Service Company – Safety & Environment: Permafrost.


23 Alyeska Pipeline Service Company – Earthquake Protection.


26 Alaska Department of Environmental Conservation – PRP Spills Database Search.


29 U.S. Bureau of Safety and Environmental Enforcement – Arctic Oil Spill Response Research.

30 Alaska Department of Environmental Conservation – 30 Years after the Exxon Valdez.


33 U.S. Energy Information Administration – Alaska North Slope Crude Oil Production.

Part 13: Offshore Oil and Gas


2 U.S. Energy Information Administration – Crude Oil Production.


4 U.S. Department of the Interior – Natural Resources Revenue Data.


7 Woods Hole Oceanographic Institution – Oil in the Ocean: FAQs.


10 U.S. Energy Information Administration – Monthly Crude Oil and Natural Gas Production, Crude Oil, Federal Offshore Gulf of Mexico.


12 DeepStar Program – About Us.


28 Gulf of Mexico Research Institute: Investigating the effect of oil spills on the environment and public health.


30 “UPDATE 2: Coast Guard, federal agencies responding to offshore oil spill.” U.S. Coast Guard, October 19, 2017.


Part 14: Spills in Oil and Natural Gas Fields

1 U.S. Pipeline and Hazardous Materials Safety Administration – Incident Statistics.


5 National Oceanic and Atmospheric Administration – How Do Oil Spills out at Sea Typically Get Cleaned Up?


9 FracFocus Chemical Disclosure Registry.


13 U.S. Environmental Protection Agency – Oil Spills Prevention and Preparedness Regulations.


18 Minnesota Pollution Control Agency – National Crude Oil Spill Research Site in Bemidji, Minnesota.


20 U.S. Geological Survey – Produced Waters Database.


U.S. Environmental Protection Agency – Blacktail Creek Spill, Marmon, ND, Region VIII.

Part 15: Transportation of Oil, Gas, and Refined Products

5 U.S. Energy Information Administration – Movements of Crude Oil and Selected Products by Rail.
7 Canada National Energy Board – Canadian Crude Oil Exports by Rail – Monthly Data.
11 File:Oil Barge at the Cape Cod Canal.jpg. Wikimedia Commons user Pvalerio. Reproduced according to a CC BY 3.0 license.
14 U.S. Energy Information Administration – Exports by Destination: Total Crude Oil and Products.
15 Natural Resources Canada – Frequently Asked Questions (FAQs) Concerning Federally-Regulated Petroleum Pipelines in Canada.
31 U.S. Pipeline and Hazardous Materials Safety Administration – Pipeline Incident 20 Year Trends: All Reported Incident 20 Year Trend.


Part 16: Oil Refining and Gas Processing

1 File:Crude Oil Distillation-en. Wikimedia Commons users Psarianos & Theresa Knott. Reproduced according to a CC BY-SA 3.0 license.


5 U.S. Environmental Protection Agency – Gasoline Standards: Gasoline Reid Vapor Pressure.


15 Sep-Pro Systems – Nitrogen Rejection Units.


20 Global CCS Institute – Projects Database: Large-scale CCS facilities.

Part 17: Non-Fuel Products of Oil and Gas

1 U.S. Energy Information Administration – How much oil is used to make plastic?


9 American Cleaning Institute – Soaps & Detergents: Chemistry (Surfactants).


Part 18: Air Quality Impacts of Oil and Gas

1 World Health Organization – Ambient (outdoor) air quality and health.
2 U.S. National Park Service – Where Does Air Pollution Come From?
3 Bernice 1 and 2 wells with moisture flare – Evanson Place – Arnegard North Dakota – 2013-07-04. Flickr user Tim Evanson. Reproduced according to a CC BY-SA 2.0 license.
4 U.S. Environmental Protection Agency – Air Emissions Sources.
5 U.S. Environmental Protection Agency – What are Hazardous Air Pollutants?
6 U.S. Environmental Protection Agency – Overview of the Clean Air Act and Air Pollution.
8 U.S. Environmental Protection Agency – New Source Performance Standards.
9 U.S. Environmental Protection Agency – Air Emissions Inventories: National Summary of VOC Emissions.
11 Texas Commission on Environmental Quality – Air Quality: Eagle Ford Shale Geological Area.
12 U.S. Environmental Protection Agency – Enforcement: Civil Cases and Settlements.
13 U.S. Environmental Protection Agency – Enforcement: Petroleum Refinery National Case Results.
14 U.S. Environmental Protection Agency – Clear Air Act Standards and Guidelines for Petroleum Refineries and Distribution Industry.
Part 19: Methane Emissions in the Oil and Gas Industry

3 National Energy Technology Laboratory (2013). Cost and Performance Baseline for Fossil Energy Plants, Volume 1: Bituminous Coal and Natural Gas to Electricity, Revision 2a, September 2013.
6 United Nations Framework Convention on Climate Change – National Reports.
7 U.S. Environmental Protection Agency – Greenhouse Gas Reporting Program (GHGRP).
Part 20: Mitigating and Regulating Methane Emissions

1. U.S. Environmental Protection Agency – Natural Gas STAR Program: Overview of the Oil and Natural Gas Industry.
2. File:Flaring extra Gas in the Bakken.JPG. Wikimedia Commons user Joshua Doubek. Reproduced according to a CC BY-SA 3.0 license.
6. U.S. Environmental Protection Agency – Controlling Air Pollution from the Oil and Natural Gas Industry: New Source Performance Standards and Permitting Requirements.
10. U.S. Environmental Protection Agency – Actions and Notices about Oil and Natural Gas Air Pollution Standards.
12. Roy Luck – Crosstex gas processing facility. Taken on May 9, 2009. Flickr. Reproduced according to a CC BY 2.0 license.
17. Pennsylvania Department of Environmental Protection – How Pennsylvania is Regulating Methane from the Oil and Gas Industry.
18. U.S. Environmental Protection Agency – EPA’s Voluntary Methane Programs for the Oil and Natural Gas Industry.
19. U.S. Environmental Protection Agency – AgSTAR: Biogas Recovery in the Agricultural Sector.

Part 21: U.S. Regulation of Oil and Gas Operations

1. Railroad Commission of Texas - Railroad Commission Milestones.
2. Interstate Oil & Gas Compact Commission – Our History.
5. Interstate Oil & Gas Compact Commission – Member States.
6. Mapchart.net.
7. Interstate Oil & Gas Compact Commission – Interstate Oil and Gas Commission Charter.
8. Interstate Oil & Gas Compact Commission – Summary of State Statutes and Regulations.
U.S. Environmental Protection Agency – Regulatory Information by Sector: Oil and Gas Extraction Sector.
15 U.S. Environmental Protection Agency – Reduced Emission Completions for Hydraulically Fractured Natural Gas Wells.
16 U.S. Environmental Protection Agency – Actions and Notices about Oil and Natural Gas Air Pollution Standards.
19 Bureau of Land Management – Oil and Gas: Regulations, Onshore Orders and Notices to Lessees.
32 U.S. Environmental Protection Agency – Clean Air Act Standards and Guidelines for Petroleum Refineries and Distribution Industry.
36 U.S. Environmental Protection Agency – Renewable Fuel Standard Program.

Part 22: Health and Safety in Oil and Gas Extraction
4 National Institute for Occupational Safety and Health (2010). NIOSH Field Effort to Assess Chemical Exposure Risks to Gas and Oil Workers. Fact Sheet, DHHS (NIOSH) Publication No. 2010-130.
7 NIOSH Research Rounds – Investigators Design Experimental Engineering Control for Silica Dust.
National Institute for Occupational Safety and Health – Silica.
9 Occupational Safety and Health Administration (2012). OSHA-NIOSH Hazard Alert: Worker Exposure to Silica During Hydraulic Fracturing.
10 Occupational Safety and Health Administration – Frequently Asked Questions: Respirable Crystalline Silica Rule.
13 Occupational Safety and Health Administration – Occupational Noise Exposure.
14 Occupational Safety and Health Administration – Occupational Safety and Health Standards: Air Contaminants. Standard Number 1910.1000.
17 NORA Oil and Gas Extraction Council, National Institute for Occupational Safety and Health.
19 Association of Energy Service Companies - Industry Resources.
20 International Association of Drilling Contractors – Health, Safety, and Environmental Case Guidelines.
21 National STEPS Network.

Part 23: Subsurface Data in the Oil and Gas Industry

4 Schlumberger – 1920s: The First Well Log.
5 AAPGWiki – Overview of Routine Core Analysis.
7 Society of Petroleum Engineers PetroWiki – Petrophysics.
9 U.S. Geological Survey Core Research Center – Frequently Asked Questions.
10 Kansas Geological Society & Library – Oil and Gas Well Data.