THE THREAT OF OIL & GAS POLLUTION

North Dakota

Methane, the primary component of gas, is an invisible, odorless greenhouse gas that is a powerful driver of climate change—87 times as powerful as carbon dioxide during the time it remains in the atmosphere.[1] The oil and gas sector is the largest source of methane in the U.S., leaking or intentionally venting large quantities of this dangerous pollutant into our air every day. In 2014, the oil and gas industry emitted over 9.8 million metric tons of methane, a number 34% higher than previous estimates.[2] The near-term climate impact of these emissions is equal to the pollution caused by more than 200 coal-fired power plants over 20 years.

Along with methane, oil and gas facilities often release other air pollutants that can harm our health, including formaldehyde, benzene, acetaldehyde, and ethyl benzene. These toxins can cause cancer, respiratory symptoms, anemia, brain damage and birth defects, eye irritation, and blood and neurological disorders.

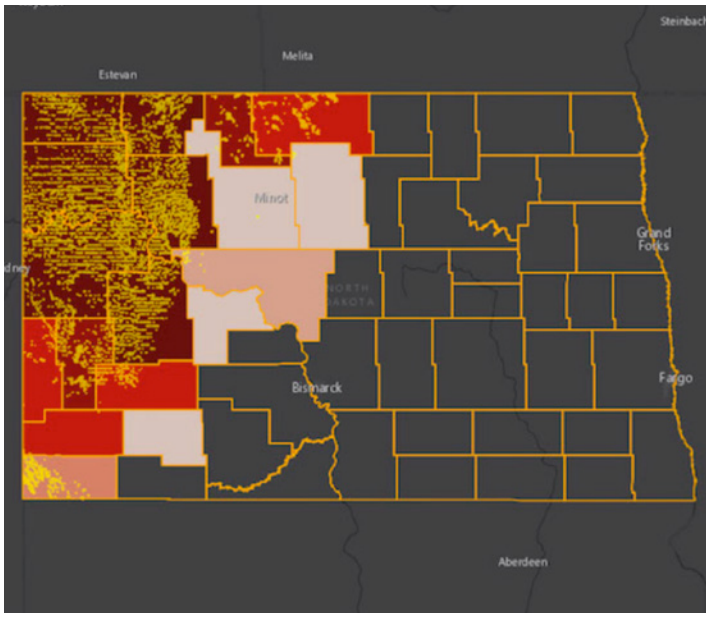
THE THREAT RADIUS

Peer-reviewed studies have documented higher levels of harmful air pollutants in and around areas with oil and gas production activity, and have shown that oil and gas facilities are the source of the excess pollution. Research indicates links between risks and/or prevalence of disease and proximity to facilities.[3] The half mile "threat radius" is a very conservative estimate of the area within which higher levels of toxic pollution are seen, and the distance within which health impacts have most clearly been correlated with the presence of oil and gas facilities.[4]

There are currently 12.4 million people living within a half mile of one of 1,193,118 active oil and gas wells, compressors, and processors in the United States. In total, 184,578 square miles are covered by the threat radius[5], which includes 11,543 schools and 639 medical facilities. Nationwide, 238 counties in 21 states face a cancer risk that exceeds EPA's one-in-a-million threshold level of concern, **including 12 counties in North Dakota.**[6]

OIL & GAS THREATENS NORTH DAKOTANS

Through flaring, North Dakota pollutes away roughly 1/5 of the natural gas it produces, which is about 20 times more than the national average.[7] All of this gas is valued at about $400 million per year[8] and could be used to



MAP: OILANDGASTHREATMAP.COM/THREAT-MAP/NORTH-DAKOTA

heat every home in North Dakota for five years.[9]

This pollution poses a health threat to nearby communities. Eleven thousand North Dakotans live within the half mile threat radius. Twelve counties exceed EPA's cancer risk level of concern and Bowman County has a county cancer risk in the highest 10%. **This means that roughly 23% of North Dakota's counties exceed EPA's cancer risk level of concern.**

THE NUMBERS[10]

TOTAL POPULATION Living in the Threat Radius (within a half mile of a facility)	**11,000**
TOTAL NUMBER of Active Oil and Gas Wells, Compressors, and Processors	**13,043**
NUMBER OF COUNTIES that Exceed EPA's Cancer Risk Level of Concern	**12** Billings, Bottineau, Burke, Divide, Dunn, Golden Valley, McKenzie, Mountrail, Renville, Slope, Stark, and Williams
NUMBER OF SCHOOLS in the Threat Radius	**63**
NUMBER OF MEDICAL FACILITIES in the Threat Radius	**0**
SQUARE MILES COVERED by the Threat Radius	**3,843**

STRONG FEDERAL STANDARDS ARE KEY

On May 12, 2016, the Environmental Protection Agency (EPA) finalized the first-ever federal standards addressing new and modified sources of methane pollution from the oil and gas sector. These standards require, among other things, that companies regularly monitor for and repair leaks.[11] The EPA expects this rule to cut 510,000 tons of methane pollution from oil and gas facilities and equipment, the emissions equivalent of 11 coal-fired power plants or taking 8.5 million cars off the road every year.[12] These standards will also significantly impact public health by curbing emissions of smog-forming volatile organic compounds (VOCs) and toxic air pollutants.

The 2016 standards were an important first step, but in 2018, nearly 90% of methane emissions will come from existing sources not covered by this rule.[13] Strong methane standards for both new *and existing* sources are key to the Administration's ability to meet its Paris climate commitments to reduce greenhouse gas emissions 26-28% below 2005 levels by 2025.[14] Therefore, the EPA must develop strong and effective standards for existing sources as soon as possible, both to meet its legal commitments and to protect public health and welfare. **Without strong standards on existing sources, millions of people — including the 11 thousand in North Dakota within the threat radius — will continue to be at risk.**

COMMON-SENSE SOLUTIONS ARE READILY AVAILABLE

Thankfully, common-sense solutions exist not only to clean-up and fix methane leaks, but to boost local economies as well. More than 500 locations in 46 states are already manufacturing the equipment and providing the services needed to reduce methane pollution, **including 11 locations in North Dakota.** These businesses are helping to grow the local economy by creating highly skilled, good-paying jobs.[15]

ENDNOTES

1 http://www.ipcc.ch/pdf/assessment-report/ar5/wg1/WG1AR5_Chapter08_FINAL.pdf
2 https://www3.epa.gov/climatechange/Downloads/ghgemissions/US-GHG-Inventory-2016-Main-Text.pdf
3 http://ehp.niehs.nih.gov/1306722/
4 http://oilandgasthreatmap.com/about/threat/
5 http://oilandgasthreatmap.com/threat-map/
6 http://oilandgasthreatmap.com/threat-map/north-dakota/
7 http://www.eia.gov/todayinenergy/detail.cfm?id=4030
8 Total Natural gas flared volume from NDIC premium services "State Production" query https://www.dmr.nd.gov/oilgas/subscriptionservice.asp, worth $389 million at $3/mcf.
9 Average gas use per household in North Dakota calculated using number of natural gas consumers by state, EIA website http://www.eia.gov/dnav/ng/NG_CONS_NUM_A_EPG0_VN4_COUNT_A.htm and natural gas consumption in North Dakota: http://www.eia.gov/dnav/ng/ng_cons_sum_dcu_SND_a.htm. Population data from U.S. Census http://quickfacts.census.gov/qfd/states/38000.html
10 http://oilandgasthreatmap.com/threat-map/north-dakota/
11 https://www.epa.gov/newsreleases/epa-releases-first-ever-standards-cut-methane-emissions-oil-and-gas-sector
12 https://www.epa.gov/newsreleases/epa-releases-first-ever-standards-cut-methane-emissions-oil-and-gas-sector
13 https://www.edf.org/sites/default/files/methane_cost_curve_report.pdf
14 https://www.whitehouse.gov/the-press-office/2015/03/31/fact-sheet-us-reports-its-2025-emissions-target-unfccc
15 https://www.edf.org/sites/default/files/us_methane_mitigation_industry_report.pdf

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APPENDIX

ND Counties	Total Population	Threatened Population	Number of Facilities	Threatened Schools	Threatened Medical Facilities	Threatened Square Miles	Other Risks
Stark County	24,199	4,613	250	5	0	89.77	Exceeds EPA level of concern for cancer risk*
Williams County	22,398	2,362	2,129	9	0	642.59	Exceeds EPA level of concern for cancer risk*
Mountrail County	7,673	1,417	2,430	2	0	611.58	Exceeds EPA level of concern for cancer risk*
McKenzie County	6,360	1,286	3,381	7	0	805.1	Exceeds EPA level of concern for cancer risk*
Dunn County	3,536	580	1,804	2	0	462.27	Exceeds EPA level of concern for cancer risk*
Renville County	2,470	515	233	5	0	74.16	Exceeds EPA level of concern for cancer risk*
Burke County	1,968	269	506	8	0	249.23	Exceeds EPA level of concern for cancer risk*
Bottineau County	6,429	208	507	5	0	149.8	Exceeds EPA level of concern for cancer risk*
Divide County	2,071	169	715	9	0	273.61	Exceeds EPA level of concern for cancer risk*
Billings County	783	141	471	5	0	241.04	Exceeds EPA level of concern for cancer risk*
Bowman County	3,151	58	461	3	0	163.21	Count cancer risk in highest 10%
McLean County	8,962	17	40	0	0	15.92	
Golden Valley County	1,680	13	78	0	0	48.54	Exceeds EPA level of concern for cancer risk*
Slope County	727	12	18	0	0	6.85	Exceeds EPA level of concern for cancer risk*
McHenry County	5,395	6	12	1	0	4.66	
Ward County	61,675	2	8	2	0	4.97	
Cass County	149,778	0	0	0	0	0	
Burleigh County	81,308	0	0	0	0	0	
Grand Forks County	66,861	0	0	0	0	0	
Morton County	27,471	0	0	0	0	0	
Stutsman County	21,100	0	0	0	0	0	
Richland County	16,321	0	0	0	0	0	
Rolette County	13,937	0	0	0	0	0	
Ramsey County	11,451	0	0	0	0	0	
Walsh County	11,119	0	0	0	0	0	
Barnes County	11,066	0	0	0	0	0	
Mercer County	8,424	0	0	0	0	0	
Traill County	8,121	0	0	0	0	0	
Pembina County	7,413	0	0	0	0	0	
Benson County	6,660	0	0	0	0	0	
Ransom County	5,457	0	0	0	0	0	
Dickey County	5,289	0	0	0	0	0	
Pierce County	4,357	0	0	0	0	0	
Wells County	4,207	0	0	0	0	0	
Sioux County	4,153	0	0	0	0	0	
LaMoure County	4,139	0	0	0	0	0	
Cavalier County	3,993	0	0	0	0	0	
Sargent County	3,829	0	0	0	0	0	
Emmons County	3,550	0	0	0	0	0	
Foster County	3,343	0	0	0	0	0	
Nelson County	3,126	0	0	0	0	0	
McIntosh County	2,809	0	0	0	0	0	

APPENDIX, CONT.

ND Counties	Total Population	Threatened Population	Number of Facilities	Threatened Schools	Threatened Medical Facilities	Threatened Square Miles	Other Risks
Hettinger County	2,477	0	0	0	0	0	
Kidder County	2,435	0	0	0	0	0	
Griggs County	2,420	0	0	0	0	0	
Grant County	2,394	0	0	0	0	0	
Eddy County	2,385	0	0	0	0	0	
Adams County	2,343	0	0	0	0	0	
Towner County	2,246	0	0	0	0	0	
Logan County	1,990	0	0	0	0	0	
Steele County	1,975	0	0	0	0	0	
Oliver County	1,846	0	0	0	0	0	
Sheridan County	1,321	0	0	0	0	0	

*County-wide average cancer risk is equal to or greater than 1 in 1 million.