

P.C. - John Debus
Hazardous



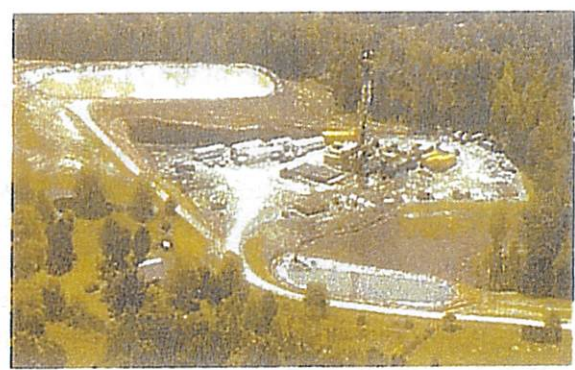
The Threat of Fracking to Florida:
Reasons Why Fracking Should Be Banned

In 2013, a Texas-based fracking company began using a new, more dangerous and intensive form of extreme extraction to drill for oil near the Florida Everglades. Although Florida has had a very small conventional drilling industry in the past, it has not had allowed the more dangerous forms of dirty fracking that use millions of gallons of water mixed with thousands of gallons of toxic chemicals. But the oil and gas industry is aiming to introduce fracking, acid fracking, and other intrusive forms of “unconventional” drilling and “well stimulation” techniques in various areas around Florida, and this poses a serious threat to public health and the environment.

What is fracking?

Fracking is short for hydraulic fracturing, the specific process of taking millions of gallons of water, mixing it with sand and tens of thousands of gallons of chemicals, including known carcinogens, and pumping it all underground at extreme pressure to break up a targeted rock formation, in hopes of releasing oil or natural gas that would otherwise remain held in the rock.

Acid fracking is the process of injecting acidic chemicals into rock formations to dissolve the rock layer, which results in channels for any oil and gas to flow. These terms are also used interchangeably with the term ‘well stimulation’ to ensure that all forms of extreme oil and gas extraction using these dangerous chemicals are covered



Why Is Fracking Dangerous?

Fracking causes thousands of accidents, leaks and spills. More than 7,500 accidents related to fracking occurred in 2013,¹ negatively impacting water quality in rivers, streams and shallow aquifers. Many communities have also had their drinking water contaminated and have needed to find new sources of drinking water for their families. Contaminated water wells with methane and other hydrocarbon gases released from fracking is putting the health, safety and property of many families across the country at high risk.

¹ Soraghan, Mike. “Spills up 18 percent in U.S. in 2013.” *E&E EnergyWire*. May 12, 2014.



Fracking produces massive volumes of toxic and radioactive waste. After a well is drilled and fracked, the liquids that come back up to the surface are a mix of fracking fluids, ancient brines and hydrocarbons, such as the carcinogen benzene. There are no good disposal options. The underground disposal of this waste has caused earthquakes across the country, including Oklahoma, Ohio, Arkansas and Texas.² Local wastewater treatment facilities are not equipped to handle the chemicals found in fracking waste, and the salts in the brines react with chlorine and other disinfectants to create harmful byproducts released into rivers. Those releases cause problems for communities downstream. Then there are landfill problems created by the solid wastes, including the solids that accumulate as sludge and scale on equipment and from efforts to treat wastewater.

Fracking pumps hazardous pollutants into the air. Fracking utilizes over 100 dangerous chemicals that are known to be endocrine disruptors or carcinogens.³ Gases — including hydrocarbon gases with benzene, toluene, ethylbenzene and xylenes — are in the mix of fluids that flows to the surface after fracking, and varying amounts of these gases are released directly into the air. Along with diesel exhaust from numerous trucks and generators packed onto a single well site, the hydrocarbon air pollution explain countless complaints from those living alongside fracking about the health problems they are experiencing, such as burning eyes, nose bleeds, and respiratory and nervous system problems.⁴ This is before considering long-term health issues from the exposures they have suffered.

² Keranen, K.M. et al. "Sharp increase in central Oklahoma seismicity since 2008 induced by massive wastewater injection." *Science*. Vol. 345, No. 6195. July 25, 2014 at 451; Ohio Department of Natural Resources. [Press release]. "Ohio announces tougher permit conditions for drilling activities near faults and areas of seismic activity." April 11, 2014; Rosenberg, Mica. "Arkansas lawsuits test fracking wastewater link to quakes." *Reuters*. August 27, 2013

³ Kassotis, Christopher D. et al. "Estrogen and androgen receptor activities of hydraulic fracturing chemicals and surface and ground water in a drilling- dense region." *Endocrinology*. Vol. 155, Iss. 3. March 2014 at 900; U.S. House of Representatives. Committee on Energy and Commerce. [Minority Staff Report]. "Chemicals Used in Hydraulic Fracturing." April 2011 at 1 and 8.

⁴ Adgate, John L. et al. "Potential public health hazards, exposures and health effects from unconventional natural gas development." *Environmental Science & Technology*. Vol 48, Iss. 15. August 5, 2014 at 8308. U.S. EPA. Office of Air and Radiation (OAR). "Regulatory impact Analysis: Final New Source Performance Standards and Amendments to the

Fracking disrupts local communities. Beyond the chemical pollution, fracking presents a broad number of other consequences for people living in areas where it is occurring, including damage to public roads, declines in property value, increased crime and an increased demand on emergency services.

When fracking comes to town, the result is increased demand for emergency services and other social services, such as schools for the children of out-of-state workers. The costs of this increased demand are borne by the community, not by the oil and gas industry.

Delivering the water, sand and chemicals needed to frack, and hauling away all the resulting waste requires thousands of heavy-duty truck trips for each new well. The result is also costly damage to public roads and bridges and a decrease in traffic safety.



Landowners are finding themselves powerless to prevent drilling and fracking on their property when they do not own the mineral rights under their land. Other landowners are being forced to 'pool' with neighbors who support drilling, meaning companies can then tunnel beneath their land from up to a mile or two away, and then fracture rock formations beneath their property.

As a result, these landowners can see declines in property values.⁵ In fact, many landowners have violated the terms of their mortgage by signing up for oil and gas leases that result in the storage of hazardous chemicals on the mortgaged property, and numerous banks have become reluctant to offer mortgages for properties located near drilling and fracking activity.⁶

Fracking destabilizes the climate.

National Emissions Standards for Hazardous Air Pollutants for the Oil and Natural Gas Industry." April 2012 at 4-15 to 4-18.

⁵Sathya and H. Allen Klaiber. "Is the shale energy boom a bust for nearby residents? Evidence from housing values in Pennsylvania." *American Journal of Agricultural Economics*. Vol. 96, Iss. 1. January 2014 at 43.

⁶ Urbina, Ian. "Rush to Drill for Natural Gas Creates Conflicts with Mortgages." *The New York Times*. October 19, 2011.



Fracking for oil and natural gas is a path to climate chaos. Cumulative emissions of greenhouse gases — primarily carbon dioxide and methane — that come from extracting and burning oil and natural gas are a primary cause of global warming.⁷ Global warming threatens to ruin entire coastal economies with sea-level rise and to cause some regional food and water systems to fail. These and other utterly fundamental disruptions to our society — and to the well-being of many millions of people — will ensue if we do not change course.⁸

What Will Happen if Fracking Is Allowed in Florida?

Florida could see considerable drilling and fracking – potentially over 1,000 new wells in the next decade or so, mostly in the Florida Panhandle and Southwest Florida but also offshore if politicians grant industry’s wishes. A big spill in Big Cypress or the Everglades, for example, would create a nightmare scenario for the ecosystem, which is vital to the state’s fisheries. Indeed, as we’ve learned from natural and man-made disasters, from hurricanes to the BP/Deepwater Horizon spill in the Gulf of Mexico, the damages can reverberate across the whole state.

Fracking exacerbates the threat of climate change and Florida is one of the areas that will be hardest hit if sea levels continue to rise. A three-foot rise in sea level – entirely likely 50 years from now – would inundate Florida’s coastal communities with devastating consequences. It would leave over 500,000 homes under sea level and erode the state’s coastal economies, which account for 80% of the state’s economic activity.

⁷ Stocker, T. F. et al. “Technical Summary.” In Stocker, T. F. et al. (2013). *Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge and New York: Cambridge University Press at 50 to 53.

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FRACKING

food&waterwatch

AND THE FOOD SYSTEM

Issue Brief • June 2012

New drilling and fracking techniques have made it possible to extract oil and natural gas from shale and other dense rock formations that were previously inaccessible. While such drilling and fracking has been a boon for the oil and gas industry in the United States, it has been a nightmare for Americans exposed to the pollution that accompanies shale development. The expansion of modern drilling and fracking across the country has caused widespread environmental and public health problems and created serious, long-term risks to underground water resources, all of which affect farming and our food.

Fracking takes place primarily in rural agricultural areas, and many farmers have leased their land to the oil and gas industry. Examples of fracking's negative impacts on agriculture and the food system are emerging. Water contamination from toxic fracking chemicals has sickened and killed livestock, and accidents and spills have contaminated cropland across the country.¹ These incidents could affect consumer confidence in the food produced in these areas. Furthermore, the large quantities of water required for fracking poses a future challenge to agriculture, and the process may contribute to global climate change, which may further strain freshwater resources.

Farmers, whose livelihoods depend on the health of the land, face especially stark choices. Many have leased their land to gas companies with the promise of gas royalty payments and minimal ecological impact.² Given the risks associated with fracking, however, there is much at stake. Organic farmers could lose their premium prices if industrial fracking fluid pollutes their crops or livestock, and farm sales could be diminished if pollution threatens livestock,

crops or farmland. In contrast to the legacy of environmental pollution that shale development leaves behind, any economic gains from drilling and fracking disappear as the flow of oil and gas declines and drilling and fracking operations move elsewhere.³

What Is Fracking?

Hydraulic fracturing, more commonly known as "fracking," is the process of injecting a mixture of water, sand and chemicals into wells at high pressure to crack dense rock formations and release oil or gas.⁴ Advances in drilling and fracking technology have made it possible to extract oil and natural gas from shale and other impermeable rock formations.⁵

Conventional natural gas drilling targets limestone and other rock formations through which gas flows readily.⁶ In contrast, unconventional natural gas development targets natural gas held in shale, tight sandstone and coalbed formations, which restrict the flow of natural gas unless they are fracked.⁷ Similarly, fracking is essential to free "tight

oil" from otherwise impermeable rock formations so it can flow into a well.⁸ The combination of advanced fracking and horizontal drilling technologies has made it feasible to extract large quantities of shale oil and shale gas.⁹

After drilling, developers inject millions of gallons of fracking fluid to crack apart the rock and prop it open so that the gas can be released.¹⁰ Depending on geology, between 25 and 75 percent of the millions of gallons of fracking fluid used for each well returns to the surface as wastewater.¹¹ A large volume of salty water containing naturally occurring contaminants is also typically produced at each well as wastewater. Combined, these wastewaters contain the toxic chemicals added to fracking fluid, as well as any radioactive materials and other pollutants leached from deep underground.¹²

Because natural gas is a relatively clean-burning fossil fuel compared to oil and coal, it has been touted as a potential bridge fuel for addressing global climate change and transitioning to a future powered by low-carbon renewable energy resources.¹³ However, recent studies have demonstrated that increased development of shale gas may actually accelerate climate change because large amounts of methane, a potent greenhouse gas that makes up 90 percent of shale gas, leak during fracking.¹⁴ On a global scale, drilling and fracking result in significant greenhouse gas emissions,¹⁵ which threaten the climate on which we depend.¹⁶

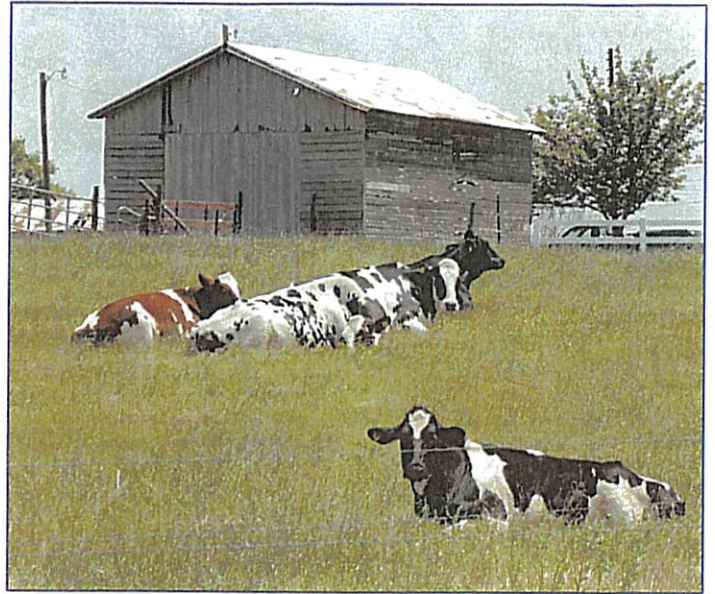
Emissions such as volatile organic compounds, benzene and toluene can be discharged during fracking and are harmful to public health.¹⁷ These compounds mix with emissions from heavy-duty truck traffic, large generators and compressors at well sites to form ground-level ozone.¹⁸ And water contamination from fracking can and has gravely impacted farmlands, putting our food sources in peril.

Effects on Agriculture

Water Contamination

There have been many documented cases of contaminated water affecting livestock. Livestock have consumed contaminated water from wells, springs and ponds, causing illness, reproductive issues and death.¹⁹ Documented incidents have occurred due to accidents, leaks and spills that result from negligence, but also as "a consequence of normal operations."²⁰ In other words, fracking is incompatible with livestock production.

Further complicating the issue, gas companies are not required to disclose the chemicals used in fracking, and there are no common procedures for isolating livestock exposed to chemicals from the food chain.²¹ The animals might be quarantined for a time or not slaughtered for human consumption, but dead animals sent to a rendering plant could be used for livestock or pet feed.²²



An overview of livestock exposure to contamination from fracking found that cows are most likely to be affected, with the most common exposure from contaminated wells and springs.²³ Cows exposed to fracking fluids have experienced difficulty breeding and higher rates of stillborn and deformed calves.²⁴ In northwestern Louisiana, 16 cows died after drinking water that was contaminated with chemicals used in fracking. Chesapeake Energy, the company involved, refused to disclose further information about the chemicals, stating the information was "proprietary."²⁵ In a Pennsylvania case, 28 beef cattle were quarantined after encountering fracking fluid leaking from a wastewater holding pond.²⁶ Of the 11 calves born from those cows the following spring, only three survived, a very low survival rate. Follow-up analysis of the dead calves was inconclusive as to whether fracking fluid was the cause of death.²⁷

In two cases, only part of a herd of beef cattle was exposed to fracking wastewater. In each case, many of the exposed cattle died, and those that survived experienced problems breeding, while the unexposed cattle experienced no unusual problems. In one herd, the exposed cattle experienced high numbers of stillborn and stunted offspring. These two cases "approach the design of a controlled experiment, and strongly implicate wastewater exposure in the death, failure to breed, and reduced growth rate of cattle."²⁸

Agricultural Production

Penn State Extension analyzed the impacts of fracking on dairies in the Marcellus Shale region of Pennsylvania, where many farmers have leased their land for fracking, compared to other parts of the state. The study found declining numbers of dairy cows in areas where fracking was common. In counties with over 10,000 dairy cows, those with over 150 Marcellus shale wells experienced a 16 per-

cent decline in total dairy cows on average between 2007 and 2010, compared to a 3 percent decline in counties with no Marcellus wells. Researchers speculate a variety of explanations, from farmers using their royalty monies to retire to farmers feeling “forced out” due to the negative effects of wells. Regardless of the reason, a decline in dairy herds yields a negative economic impact on neighboring communities.²⁹

The chemicals that hurt livestock hurt rural residents as well. Water contamination has been identified in over 1,000 cases near oil and gas drilling sites.³⁰ In the first case documented by the federal government, the U.S. Environmental Protection Agency found that well water in Sublette, Wyoming, contained several chemicals associated with fracking,³¹ including 1,500 times the level of benzene considered safe for drinking.³² Benzene exposure leads to leukemia and other illnesses.³³ Multiple residents complained of contaminated wells and mysterious illnesses across the area.³⁴

Water Use

Besides contamination, fracking poses a potential source of competition with agriculture for access to fresh water. Modern fracking requires millions of gallons of water for each well, and widespread shale development can compete with essential water needs.³⁵ In Colorado alone, fracking used 4.5 billion gallons in 2010 and is projected to use 6 billion gallons by 2015. In a recent state auction of water rights for 8 billion gallons of water, gas companies acquired 750 million gallons for fracking.³⁶ While the majority of water in the sale went to agriculture,³⁷ fracking increases pressure on water demand in a parched region.

Consumer Confidence

As the public becomes increasingly aware of the dangers of fracking, people may grow more skeptical about consuming food from areas where intensive fracking is taking



place. For example, the Park Slope Coop in Brooklyn, New York, a retail food cooperative owned by more than 16,000 members, purchases almost \$3 million of New York State-produced food products each year. “If the air is fouled and the animals are drinking water that contains poisonous fracking chemicals, then products from those animals are going to have poisons. We would have to stop buying from them. There is no doubt in my mind,” said the manager of the coop.³⁸

Fracking Hurts Rural Communities

When farmers and other rural landowners lease their land for fracking, the gains are only temporary, while the damage can be long lasting. Fracking proponents typically do not account for the long-term economic damage and the significant erosion of communities’ quality of life that can outweigh any benefits.³⁹ New oil and gas wells bring fleets of trucks that crowd and damage rural roads and carry potentially hazardous wastewater. New York estimated that if the state allowed shale gas development, each well would require between 890 and 1,350 heavy-duty truckloads.⁴⁰ Noisy drilling rigs operate 24 hours a day, seven days a week.⁴¹ Scenic vistas are replaced with a landscape of gas wells, which lowers property values and harms tourism and recreation industries like hunting and fishing. In Wise County, Texas, properties with gas wells have lost 75 percent of their assessed value.⁴² Natural gas rigs devalue not only the property where they are located, but also the value of neighboring properties.⁴³

Many of the purported economic benefits are just a mirage — energy companies based elsewhere typically do not buy drilling and fracking supplies from local businesses, and shale development jobs typically go to transient workers who move from shale play to shale play.⁴⁴

Employment, construction, housing demand and even royalty payments are significant at first, but diminish quickly as well productivity declines and drilling and fracking operations move elsewhere.⁴⁵ Almost all of the jobs associated with shale development come during the drilling and fracking stage, but it takes less than one year to prepare a well site and conduct the drilling and fracking.⁴⁶ This means that industry employees, most of whom are transient workers with shale development experience, just move from new well to new well as the number of drilled wells increases.⁴⁷

Recommendations

The rapid expansion of shale gas development and fracking in the United States has resulted in significant environmental and public health problems. Fracking has become an ongoing public health and environmental experiment. Many of these problems are inherent to the practice and cannot be avoided through regulation.

Instead of believing the false promises of the oil and gas industry, we should invest in economic development in rural communities that safeguards our food and water, and we should develop policies that allow farmers to make a fair living farming on their land, instead of making them feel forced to lease it for polluting energy production.

Endnotes

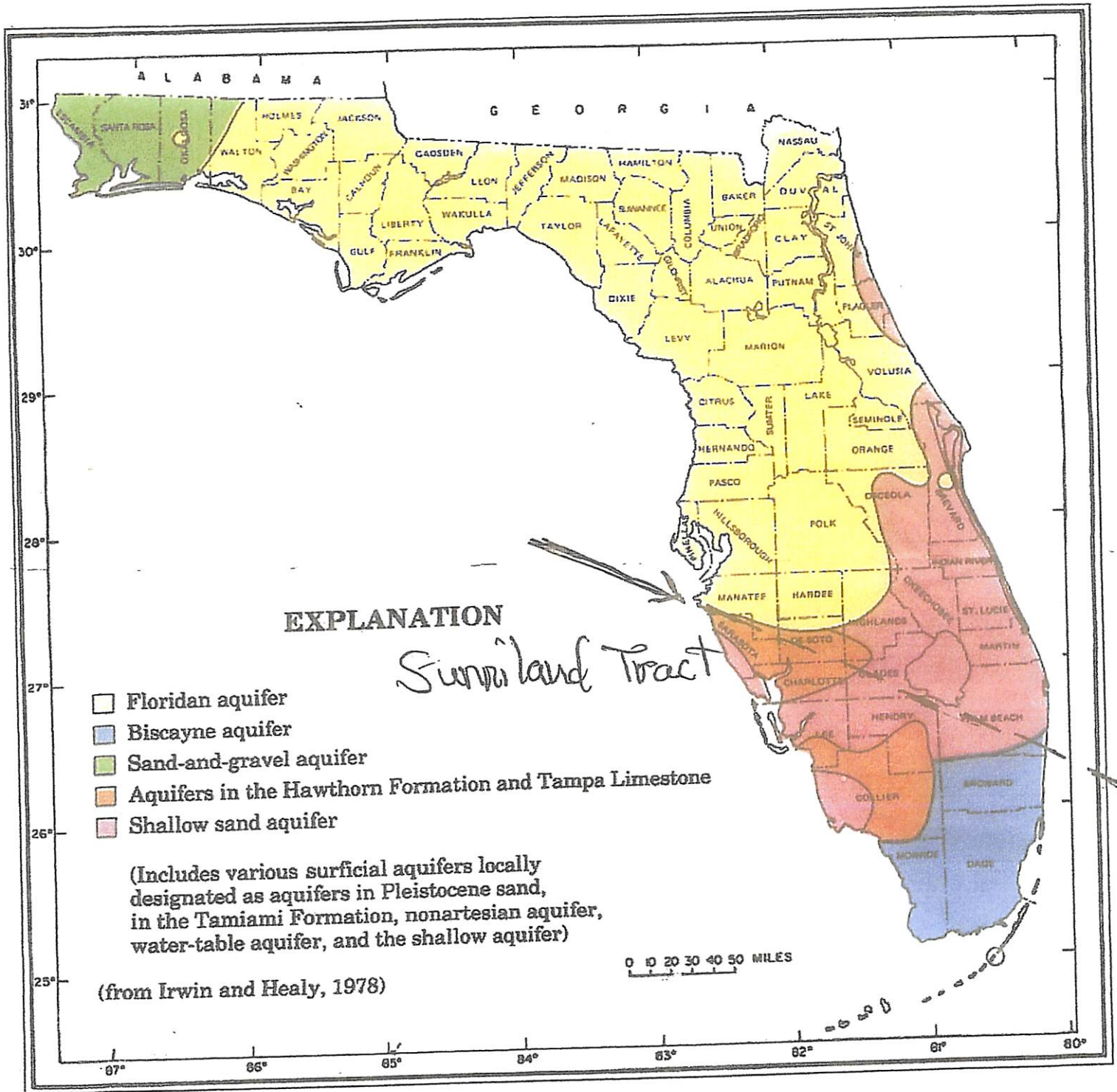
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Food & Water Watch works to ensure the food, water and fish we consume is safe, accessible and sustainable. So we can all enjoy and trust in what we eat and drink, we help people take charge of where their food comes from, keep clean, affordable, public tap water flowing freely to our homes, protect the environmental quality of oceans, force government to do its job protecting citizens, and educate about the importance of keeping shared resources under public control.



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Florida Aquifers, 1978



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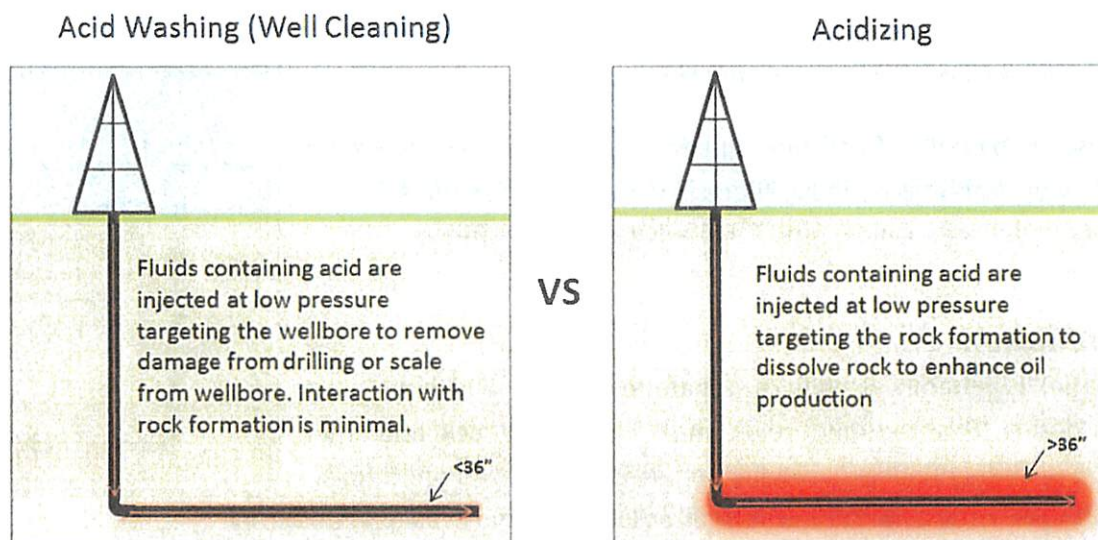
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Well Cleaning vs. Well Stimulation

Oil Well Cleaning

Like acidizing, oil well cleaning also can involve injecting acid and other fluids into the well. However, the intent of such cleaning is to remove scale and other debris built up in the well. Unlike acidizing treatments, cleaning operations target the wellbore and not to the rock formation. Cleaning operations generally target the wellbore and immediate area surrounding the wellbore.²

Cleaning operations can be distinguished from acidizing treatments by calculating the acid volume threshold³ or the volume of acid needed to penetrate a 36 inch radius from the outer wall of the wellbore (see diagram below). Treatments that fall under the acid volume threshold are cleaning operations and those that are above this threshold are considered well stimulation treatments.



High Pressure Well Stimulation

Currently in Florida, well stimulation is subject to little regulation. Bills were introduced this past session to remedy this; however, the definition of "High Pressure Well Stimulation" used in those bills (HB 1205/ 1209 and SB 1468/1582) only covered hydraulic fracturing. This definition did not encompass those well stimulation techniques that do not generate fractures but still target the rock formation. The Conservancy of Southwest Florida recommends that all types of well stimulation be regulated in the state of Florida not just hydraulic fracturing. The industry has argued that regulating all types of well stimulation is inappropriate as this would require the state to manage even routine cleaning operations. However, it is shown above that cleaning operations can easily be distinguished from well stimulation procedures.

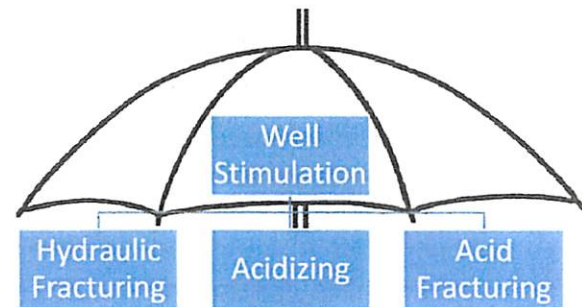
² California Department of Conservation (2014). Discussion of Calculated Acid Volume. Retrieved from: <http://www.conservation.ca.gov/index/Pages/prpsregs1.aspx>

³
$$\left(\left(\frac{\text{Size of the drill bit diameter that was used in the treated zone}}{2} \right) (\text{inches}) + 36(\text{inches}) \right)^2 - \left(\frac{\text{bit diameter}}{2} \right)^2 \times 3.1416 \times 12(\text{inches}) \times \text{treated formation porosity} / 231(\text{inches}^3/\text{gallon})$$
. From California 14 CA ADC 1761 (Effective July 2015)

Types of Oil Well Stimulation

Well Stimulation—an umbrella term

“Well stimulation” means a well intervention performed by injecting fluid into a rock formation in order to increase production at an oil or gas well by improving the flow of hydrocarbons from the formation into the wellbore. Well stimulation does not include routine well cleaning that does not affect the integrity of the well or the formation.



Hydraulic Fracturing

Hydraulic fracturing is a well stimulation treatment that relies on the pressurized injection of fluids into an oil well to fracture oil bearing rock and enhance the flow of oil or gas into the well.

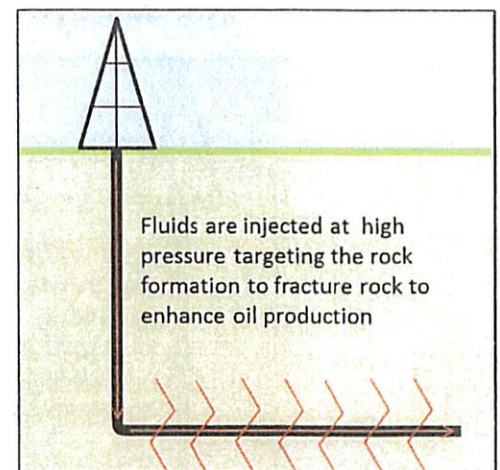
The fluids used in hydraulic fracturing contain numerous chemicals, several of which are toxic to humans. These chemicals can cause eye and skin irritation, organ damage, cancer, and other adverse health effects.

Acid Stimulation

Acid stimulation is generally used in carbonate reservoirs¹, which are common in Florida. This treatment relies on the injection of acid and other fluids into the well to enhance oil production. Acid stimulation operations rely on similar, potentially harmful, chemical additives as those used in fracturing.

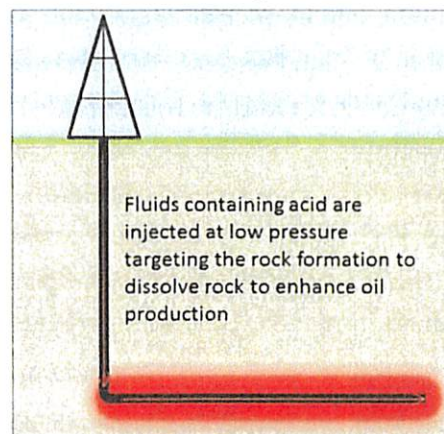
There are two types of acid stimulation: acidizing and acid fracturing. During acidizing, acid and other fluids are injected into the well at low pressure to dissolve rock. During acid fracturing, acid and other fluids are injected into the well at high pressure to generate fractures in the rock. Acid fracturing can be thought of as a hybrid of hydraulic fracturing and acidizing.

Hydraulic Fracturing

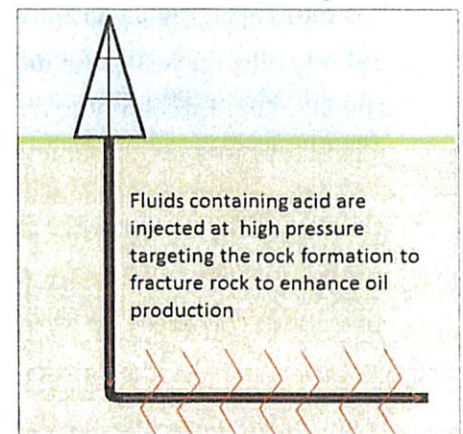


Acid Stimulation

Acidizing



Acid Fracturing



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Counties in FL	Ord/Res?	Population (2010 Census)
Alachua County, FL	Ordinance	247,336
Bay County, FL	Ordinance	168,852
Brevard County, FL	Ordinance	543,376
Broward County, FL	Resolution	1,748,066
Escambia County, FL	resolution	297,619
Flagler County, FL	resolution	95,696
Franklin County, FL	resolution	11,549
Gadsden County, FL	resolution	46,389
Gulf County, FL	resolution	15,863
Hamilton County, FL	resolution	14,799
Hillsborough County, FL	FAC-type resolution	1,229,226
Jackson County, FL	resolution	49,746
Jefferson County, FL	resolution	14,761
Lake County, FL	FAC-type resolution	297,052
Leon County, FL	resolution	275,487
Madison County, FL	Ordinance	19,224
Marion County, FL	FAC-type resolution	331,298
Martin County, FL	resolution	146,318
Miami-Dade County, FL	resolution	2,496,435
Monroe County, FL	resolution	73,090
Nassau County, FL	resolution	73,314
Orange county, FL	Resolution	1,145,956
Palm Beach County, FL	resolution	1,320,134
Pasco County, FL	FAC-type resolution	464,697
Putnam County, FL	resolution	74,364
St. Johns County, FL	resolution	190,039
St. Lucie County, FL	ordinance	277,789
Seminole County, FL	ordinance	422,718
Taylor County, FL	resolution	22,570
Union County	resolution	15,535
Volusia County, FL	ordinance	494,593
Wakulla County, FL	ordinance	30,776

Washington County, FL	FAC-type resolution	24,896
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Total Ban Resolution Population:

10,889,509

FLORIDA Population:

18,801,310

% of FL pop. represented by cities and counties who want a ban:

57.9%

Total oppose fracking resolution pop

13,235,266

% of FL pop. represented by cities and counties who oppose pro-fracking regulatory bills

70.4%

Cities in FL with Resol/Ord. Passed	County	Population (2010 Census)
Atlantic Beach	Duval	12,655
Bonita Springs	Lee	43,995
Callahan	Nassau	1,132
Cape Coral	Lee	154,305
Coconut Creek	Broward	55,001
Cooper City	Broward	28,547
Coral Springs	Broward	121,412
Dade City	Pasco	6,456
Dania Beach	Broward	296,369
Davie	Broward	91,992
Deerfield Beach	Broward	173,967
Ebro	Washington	270
Estero	Lee	18,176
Fernandina Beach	Nassau	11,487
Fort Myers Beach	Lee	6,277
Hallandale Beach	Broward	37,113
Hollywood	Broward	146,526
Jacksonville Beach	Duval	21,823
Keystone Heights	Clay	1,350
Key West	Monroe	24,649
Lake Worth	Palm Beach	34,910
Lauderhill	Broward	66,887
Lighthouse Point	Broward	10,372

Lynn Haven	Bay County	18,474
Margate	Broward	53,284
Marianna	Jackson	6,230
Mexico Beach	Bay County	1,072
Miramar	Broward	122,041
Monticello	Jefferson	10,381
North Lauderdale	Broward	41,055
Neptune Beach	Duval	7,039
Palm Coast	Flagler	still to be drafted
Panama City	Bay	35,601
Parkland	Broward	23,962
Pembroke Pines	Broward	154,019
Plantation	Broward	261,673
Pompano Beach	Broward	100,081
Punta Gorda	Charlotte	16,641
South Miami	Miami-Dade	10,741
Southwest Ranches	Broward	7,345
St. Augustine	St. Johns	12,975
St. Petersburg	Pinellas	249,688
Stuart	Martin	15,589
Sunrise	Broward	84,439
Tallahassee	Leon	181,376
Tamarac	Broward	28,637
Tampa	Hillsborough	335,709
Tarpon Springs	Pinellas	23,484
Weston	Broward	65,333
Wilton Manors	Broward	11,632
Total City w/resolution population		3,231,517

WHY YOU SHOULD SUPPORT A BAN ON FRACKING

Water

One average fracked well uses enough water to last more than seven Floridians their entire lives. Analyses of fracking wastewater have identified numerous carcinogens, neurotoxins, hormone disruptors, plastics, heavy metals, and radioactivity. There's no safe way to dispose of this stuff. Re-injecting it into the earth, for instance, has precipitated hundreds of earthquakes. Over 1,000 cases of fracking-related water contamination have been documented.

Air

Colorado has over 100,000 fracked wells, and on a summer day the air in Denver looks like that in Beijing. The methane fracking produces is 50 times as potent a greenhouse gas as carbon dioxide.

Experience

Living amidst fracking means that day and night 18-wheelers carrying millions of gallons of toxins form a brigade to and from the site that destroys roads and bridges and leaves a trail of pollution. Houses are filled with fumes so strong carbon monoxide detectors are set off, and it sounds like freight trains are passing through the neighborhood. Property values plummet and homes may become uninsurable, as a result of which anyone who would even consider buying one can't get a mortgage. Consequently, residents are often unable to leave.

Public Health & Economic Consequences

A study from the University of Pennsylvania and Columbia University that was published in July found that fracking is associated with a significant increase in hospitalizations across a range of medical specialties in two counties in Pennsylvania. These areas saw a 49% increase in cancer-related hospitalizations and over \$2,500,000 worth of additional cancer-related costs in four years' time. Translated to an area the size of Broward County, that would amount to a \$43 million increase in cancer-related expenses.

And that's just cancer. Neonatology hospitalizations increased by 54%, and the cost of such hospitalizations by \$18.3 million. Neurological hospitalizations increased by 71%, and associated costs by \$9,904,988.

These results are in line with those of an increasing number of studies demonstrating that fracking has dramatic public health and economic consequences. The rate of birth defects increases significantly within 10 miles of a single fracked well. Livestock in the vicinity of fracked wells die in large numbers. A study from Utah suggests that fracking increases infant mortality. The industry has gone to great lengths to confuse the issue, but that doesn't change the situation.

Oversight

No amount of oversight can make fracking safe. The concrete well casings frequently leak, and the likelihood of leakage increases with time. Frackers drill right through aquifers with dirty drill bits. All pipes leak. Spills are routine, and can involve millions of gallons of oil or wastewater. In 2013, North Dakota reported one spill for every six wells. Excess gas is flared right into the atmosphere, polluting the air and increasing our already out-of-control temperatures, with implications for sea level rise. Fires, blowouts, explosions, trucking accidents, and bomb trains repeatedly occur. There's no safe way to extract fracked oil and no safe way to transport it either.

Ask

That's why we urge you to sponsor and support a bill to ban fracking in Florida in 2016.

TEMPLATE ORDINANCE #

AN ORDINANCE OF THE COUNTY/CITY COUNCIL OF [NAME], FLORIDA TO PROHIBIT THE STORAGE, TREATMENT, DISCHARGE, OR DISPOSAL OF WASTEWATER FROM WELL STIMULATION; AND DEFINING CERTAIN TERMS

WHEREAS, clean water and clean air is fundamental to the health of Florida's environment and its economy;

WHEREAS, many of the chemical constituents injected during well stimulation and fracking have been documented to have adverse effects on human health and the environment; and

WHEREAS, the oil and gas industry is not required by federal or state law to publicly disclose the chemical formulas of well stimulation and fracking fluids; and

WHEREAS, the use of high-pressure well stimulation fracturing fluids and their disposal may expose groundwater, surface water, and the adjacent land, to the risk of contamination; and

WHEREAS, most municipal wastewater treatment facilities are not equipped to treat the complex toxic chemicals, that could even include radioactive substances, found in fracking wastewater

NOW, THEREFORE, BE IT ORDAINED BY THE COUNTY/CITY COMMISSION OF [NAME], FLORIDA:

[By adding/amending]

SECTION 1. SUBTITLE 5. WASTEWATER FROM HYDRAULIC FRACTURING

§ 12-3456. DEFINITIONS.

(A) IN GENERAL IN THIS SUBTITLE, THE FOLLOWING TERMS HAVE THE MEANINGS INDICATED.

(B) FLOW BACK.

“FLOW BACK” MEANS THE FLUIDS THAT RETURN TO THE SURFACE AFTER A WELL STIMULATION TECHNIQUE HAS BEEN PERFORMED AT A WELL

(C) WELL STIMULATION

“WELL STIMULATION” MEANS A WELL INTERVENTION PERFORMED BY INJECTING FLUID INTO A ROCK FORMATION IN ORDER TO INCREASE PRODUCTION AT AN OIL OR GAS WELL BY IMPROVING THE FLOW OF

HYDROCARBONS FROM THE FORMATION INTO THE WELL BORE (ALSO KNOWN COLLOQUIALLY AS "FRACKING"). THIS INCLUDES, BUT IS NOT LIMITED TO HYDRAULIC FRACTURING, ACID FRACTURING, AND ACID MATRIX STIMULATION. WELL STIMULATION DOES NOT INCLUDE ROUTINE WELL CLEANING THAT DOES NOT AFFECT THE INTEGRITY OF THE WELL OR THE FORMATION.

§ 34567. STORING, TREATING, DISPOSING, ETC., WASTEWATER PROHIBITED.

NO PERSON MAY STORE, TREAT, DISCHARGE, OR DISPOSE OF IN THE CITY OR IN OR ON ANY CITY/COUNTY-OWNED FACILITY OR PROPERTY, WHEREVER SITUATED, ANY FLOW BACK RESULTING FROM A WELL STIMULATION OR OTHER WASTEWATER RESULTING FROM A WELL STIMULATION.

SECTION 2: Control of Sanitary and Storm Sewers

§ 123-45678. Prohibited discharges into sanitary or storm sewers.

(1) DISCHARGE PROHIBITED.

NO PERSON MAY DISCHARGE OR CAUSE TO BE DISCHARGED INTO ANY SANITARY OR STORM SEWER ANY FLOW BACK OR OTHER WASTEWATER RESULTING FROM A WELL STIMULATION

Section 3: Codification: It is the intention of the [City/County] that the provisions of this Ordinance shall become and be made part of the Land Development Code; and that sections of this Ordinance may be renumbered or re-lettered and that the word "ordinance" may be changed to "section," "article," or such other appropriate word or phrase in order to accomplish such intention; and regardless of whether such inclusion in the code is accomplished, sections of this Ordinance may be renumbered or re-lettered and typographical errors which do not affect the intent may be authorized by the [City/County] Manager, or the [City/County] Manager's designee, without need or public hearing, by filing a corrected or recodified copy of same with the [City Clerk/ Clerk of Circuit Court].

SECTION 4: Severability: If any part, section, subsection, sentence, phrase, word or other portion of this Ordinance or any application thereof to any person or circumstance is declared void, unconstitutional or invalid or unconstitutional as applied for any reasons, such part, section, subsection, or other portion of the prescribed application thereof, shall be severable and the remaining provisions of this Ordinance, and it is the intent of the local government that all applications thereof not having been declared void, unconstitutional or invalid, shall remain in full force and effect. [City/County] declares that no invalid or prescribed provision or application was an inducement to the enactment of this Ordinance, and that the remaining portions of this Ordinance would have enacted this Ordinance regardless of the invalid or prescribed provision application.

Section IV: This Ordinance shall be effective upon adoption as provided by law and A certified copy of this Ordinance shall be filed with the Department of State within X days after its enactment by the Board.

DULY PASSED AND ENACTED IN [City/County], Florida, this __ day of __, 20__.

[CITY/COUNTY OF] _____

BY: _____ Mayor/ Chairmember

ATTEST:

_____ Clerk

APPROVED AS TO LEGAL FORM: _____ City/County Attorney

ORDINANCE NO. 2016-11

AN ORDINANCE OF WALTON COUNTY, FLORIDA, PROHIBITING EXTREME WELL STIMULATION FOR PURPOSES OF RESOURCE EXTRACTION ("FRACKING"); PROVIDING FOR PURPOSE, LEGISLATIVE FINDINGS, AUTHORITY, SEVERABILITY, INCLUSION IN THE CODE, AND AN EFFECTIVE DATE.

WHEREAS, clean water is fundamental to the health of Florida's environment and economy; and

WHEREAS, extreme well stimulation, such as hydraulic fracturing, acid fracturing, and cyclic steam injection (also known as "fracking"), is the process of pumping a complex mix of fluids and chemicals, including large volumes of water, under very high pressure into or below the surface of the ground to create fractures or weakness in oil- or gas-bearing geologic formations, for the purpose of producing or recovering oil or gas or to otherwise facilitate the mobility of oil and gas for extraction; and

WHEREAS, many of the chemical constituents injected during fracturing have documented adverse effects on human health and the environment; and

WHEREAS, there have been more than one thousand (1,000) documented cases of water contamination near fracking sites in the United States; and

WHEREAS, the oil and gas industry is not required by federal or state law to publicly disclose chemical formulas of well stimulation and fracturing fluids; and

WHEREAS, the use of well stimulation fracturing mixes may expose groundwater, adjacent land, and surface waters to the risk of contamination through open pit storage, truck transport on roadways, and activities during well development; and

WHEREAS, much of Florida's water supply comes from aquifers in highly-permeable limestone formations which are vulnerable to contamination from hydraulic rock-fracturing activities designed to extract hydrocarbons; and

WHEREAS, the necessity in the public interest for the provisions and prohibitions hereinafter contained and enacted is declared as a matter of legislative determination and public policy, and it is further declared that the provisions and prohibitions hereinafter contained and enacted are in pursuance of and for the purpose of securing and promoting the health, safety, welfare and quality of life of the people of this county.

BE IT ORDAINED BY THE BOARD OF COUNTY COMMISSIONERS OF WALTON COUNTY, FLORIDA, THAT CHAPTER 9, ARTICLE 6, OF THE WALTON COUNTY CODE OF ORDINANCES, IS HEREBY CREATED TO READ AS FOLLOWS:

SECTION 1.

No person shall cause, suffer, permit, or allow the use of any form of extreme well stimulation, including, but not limited to, hydraulic fracturing, acid fracturing, and cyclic steam injection for oil, gas, or similar resource extraction.

SECTION 2.

A violation of this section shall constitute a criminal offense and shall be punishable as provided in *Florida Statutes* §125.69.

SECTION 3. SEVERABILITY

If any portion of this Ordinance is determined by any Court to be invalid, the invalid portion shall be stricken, and such striking shall not affect the validity of the remainder of this Ordinance. If any Court determines that this Ordinance, or any portion hereof, cannot be legally applied to any individual(s), group(s), entity(ies), property(ies), or circumstance(s), such determination shall not affect the applicability hereof to any other individual, group, entity, property, or circumstance.

SECTION 4. EFFECTIVE DATE

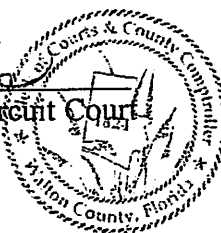
This Ordinance shall become effective immediately upon adoption by the Walton County Board of County Commissioners, as provided by law.

PASSED AND DULY ADOPTED in regular session, by the Board of County Commissioners of Walton County, Florida, this 22nd day of March, 2016.

BOARD OF COUNTY COMMISSIONERS
OF WALTON COUNTY, FLORIDA

Attest:

Alex Alford
Alex Alford, Clerk of Circuit Court
and County Comptroller



Sara Comander
Sara Comander, Chair

CERTIFIED A TRUE COPY
March 22nd 2016
ALEX ALFORD
CLERK OF COURSES &
COUNTY COMPTROLLER
WALTON COUNTY, FLORIDA
BY: *Alex Alford*
DEPUTY CLERK

RESOLUTION NO. 2016-_____

A RESOLUTION OF THE BOARD OF COUNTY COMMISSIONERS OF NASSAU COUNTY, FLORIDA, EXPRESSING CONCERN REGARDING HYDRAULIC FRACTURING AND ACID FRACTURING AND WELL STIMULATION TREATMENTS PERFORMED FOR THE PURPOSES OF EXPLORATION OR PRODUCTION OF OIL OR NATURAL GAS IN THE STATE OF FLORIDA; SUPPORTING HOME RULE AS TO THE FINAL DETERMINATION TO ALLOW "FRACKING"; AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, the Board of County Commissioners of Nassau County, Florida, is dedicated to protecting and improving our most precious natural resources; and

WHEREAS, Florida's water supply comes from highly permeable limestone formations which are vulnerable to contamination from hydraulic and acid rock-fracturing activities designed to extract hydrocarbons; and

WHEREAS, Nassau County gets all of its water from groundwater sources, including the Floridan Aquifer; and

WHEREAS, hydraulic and acid fracturing or well stimulation is the process of injecting liquid at high pressure into subterranean rocks boreholes, etc., so as to force open existing fissures and extract oil or gas; and

WHEREAS, the high-pressure injection used to fracture may result in fracturing rock formations beyond the extraction site, potentially allowing harmful chemicals to migrate into the aquifer; and

WHEREAS, hydraulic fracturing may harm wildlife, including species that are protected under federal and state endangered species laws; and

WHEREAS, hydraulic or acid fracturing or well stimulation treatments may pose potential risks for contaminating the Floridan Aquifer, the source of drinking water for nearly 10 million Floridians; and

WHEREAS, acid fracturing or well stimulation treatments may involve the use of hundreds of chemicals, some of which are known to be carcinogenic or could otherwise be harmful to human health; and

WHEREAS, exposure to the chemicals used in acid fracturing or well stimulation treatments may pose a widespread and significant risk to public health and safety and the environment; and

WHEREAS, hydraulic and acid fracturing or well stimulation treatments may involve the use of substantial amounts of freshwater at a time when many Florida local governments are struggling with the impacts that water scarcity may have in the state in the near future; and

WHEREAS, the wise stewardship of our natural resources involves protection of Florida's water supplies and water resources for generations to come; and

WHEREAS, the protection of Florida's water supplies and resources is better accomplished by prevention of contamination and environmental degradation, rather than attempting to clean up contamination and restore degraded environments after the fact; and

WHEREAS, the protection of our natural resources should be a local decision by the Board of County Commissioners of Nassau County, Florida, for the health, safety and general welfare of its citizens.

NOW, THEREFORE, BE IT RESOLVED by the Board of County Commissioners of Nassau County, Florida, as follows:

1. The Board of County Commissioners supports the Home Rule Authority of Counties wherein counties can decide, based on investigation and evidence, what is in the best interest of the citizens of their respective counties.
2. The Board of County Commissioners of Nassau County, Florida authorizes the Chairman to send a letter to the President of the Florida Senate, Speaker of the House, Senator Aaron Bean and Representative Janet Adkins and the Governor of the State of Florida showing its support for a local government regulation as to hydraulic fracturing, acid fracturing and well stimulation treatments performed for the purpose of exploration and production of oil and natural gas in the State of Florida and allowing counties to independently determine what is in the best interest of the citizens they serve.
3. This resolution shall take effect immediately upon adoption by the Board of County Commissioners.

DULY ADOPTED this _____ day of _____, 2016.

**BOARD OF COUNTY COMMISSIONERS
NASSAU COUNTY, FLORIDA**

DANIEL B. LEEPER
Its: Vice Chairman

ATTEST AS TO CHAIRMAN'S SIGNATURE:

JOHN A. CRAWFORD
Its: Ex-Officio Clerk

Approved as to form by the Nassau County Attorney:

MICHAEL S. MULLIN