Planning, Zoning and Drilling in West Broward

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BROWARD COUNTY
Planning for oil and gas

- State Permitting
- Broward County Conservation Area
- Kanter Application
- Local Land Use
- Local Zoning
- Experience in other states

Big Cypress Preserve
1,370 Permit Applications for Oil & Gas Wells

- 1943 Humble Oil Company (Big Cypress Preserve)
- 160+ wells produce oil in Florida
  - Panhandle - Escambia & Santa Rosa
  - Southwest - Collier, Henry, & Lee
- Most permits are not active

Source: FDEP
Florida Regulations

- “Oil and Gas Program” Ch. 377 F.S. and Rule 62C-25 thru 30 F.A.C.
- State has permitting authority:
  - Conserve oil and gas resources,
  - Protect related rights to oil and gas,
  - Maintain human health and safety, and
  - Protect the environment.
- Criteria to issue permit:
  - Whether impacts are minimized.
  - Ownership of surface and mineral rights.
  - Potential to strike oil.
- Pollution is prohibited, spills must be reported, and that the driller is liable for damages.
Broward County: The big picture
Broward County: The big picture

Permitted Oil and Gas Wells

- Denied
- Dry hole
- Injection
- Never drilled
- Not Issued
- Producer
- Saltwater Disposal
Private Ownership and Mineral Rights

- Private land ownership
  - Kanter LLC owns 20,000 acres fee simple in Broward
- Private Mineral Rights
  - D.R. Horton, home builder, has mineral rights under 10,000 lots in Florida

Source: Broward County
Kanter 23-1 Well

- 2015 - Application for Drilling Permit
- 5 acre site in Water Conservation Area 3B
- Adjacent to the L-67A levee
- Access from U.S. 27 and U.S. 41
- Kanter proposes that pilot hole depth be 11,800 feet
- May drill horizontally
- Exploratory well only
- Hydraulic fracking is not specifically proposed
Water Conservation Areas

- 1993 SFWMD Resolution
- 2015 Broward County & many municipal partners oppose drilling
## Land Use and Zoning

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Broward County Land Use Plan: Conservation - Reserve Water Supply Areas

- Utilities, transportation and communications facilities, specifically excluding hazardous liquid pipelines and electrical power plants, which do not impair the natural environment or disturb the natural ecosystem of the area and which are not in conflict with applicable water management and wildlife protection policies of local, state and federal agencies.

- Requires authorization by the SFWMD

- Oil drilling is NOT a permissible use
Unincorporated Area Future Land Use: Conservation

- Permitted uses identified in the Broward County Land Use Plan
- Oil drilling is NOT a permissible use
POLICY 2.24.3 Designate and protect Broward County west of Levees 33, 35A, 36, L-37 and L-35 for Conservation Use in order to promote groundwater recharge and prevent salt water intrusion.

NEW POLICY 2.9.3 Broward County continues to oppose the use of hydraulic fracturing, acid fracturing, and any form of extreme well stimulation for the purposes of resource extraction.
Zoning – CON-1: Conservation District-Water Supply Areas

- **Zoning: Sec. 39-401. - Purpose and intent** to provide protection to the reserve water supply area...

- **Sec. 39-402. - Permitted uses.**
  
  Utilities, transportation and communication facilities, specifically excluding hazardous liquid pipelines, which do not impair the natural environment or disturb the natural ecosystem of the area and which are not in conflict with applicable water management and wildlife protection policies of local, state and federal agencies.

- Oil drilling is NOT a permissible use

- Contrast to Collier County where permitted use, when FDEP permit issued
Permits & Licenses

- FDEP Oil and Gas Permit
- Army Corps of Engineers permit
- Broward County Environmental Resource License (ERL)
- Surface Water License
- Hazardous Material Management Facility
- Consumptive Use Permit for proposed water supply on-site
- Building Permit for temporary on-site housing
- Additional permits required to extract oil
To move forward...

- State has not preempted local regulatory, land use, or zoning authority

- Kanter project would need Broward County Commission approval:
  - Land Use Plan Amendments (2)
    - Impacts on Environment (water supply, wetlands, surface water, etc.)
    - Compatibility with surrounding land uses
  - Rezoning

- FDEP complete permit review

- Obtain Broward County permits & licenses
Emotions run high
Recent cases outside Florida - Preemption of local zoning

- **Ohio Supreme Court** ruled that the state has “exclusive authority” and that cities and counties can neither ban nor regulate fracking through zoning laws or other restrictions.

- **Pennsylvania Supreme Court** struck down Act 13 law preventing local governments from passing zoning ordinances prohibiting natural gas drilling.

- **Texas** cases have argued that local restrictions amount to regulatory taking.
Take aways...

- Land in Western Broward has private mineral rights
- Kanter, LLC has applied for State Permit Oil & Gas Permit to explore
- Land Use and Zoning do not permit drilling
- Broward NEXT will strengthen policies
- State and National context – economics and environment
A Brief Overview of Extreme Well Stimulation

Jason Liechty
Environmental Planning and Community Resilience Division
September 8, 2016
Texas oil company used acid in Florida wildlife sanctuary soil, denies fracking

Craig Pittman, Times Staff Writer

Thursday, April 24, 2014 5:57pm

The Texas oil company fined $25,000 for violating its state permit while drilling a well amid a wildlife sanctuary was not doing any hydraulic fracturing, also known as "fracking," according to Dan A. Hughes Co. spokesman David Blackmon.

Instead of using water mixed with chemicals to create fractures, as is common in fracking, it was using acid, Blackmon said, adding that company officials don’t see anything wrong with what they did.

"We were never sure," he said. "We have never really been told what the objection was."

Department of Environmental Protection spokeswoman Dee Ann Miller said the company got in trouble because it had done one
Figure 28. The rocks that comprise the top of the Biscayne aquifer vary in character. They are mostly limestone, but sand marks the top of the aquifer to the northeast.

EXPLANATION

Rock types comprising top of Biscayne aquifer

- Pamlico Sand
- Miami Oolite
- Fort Thompson Formation
- Caloosahtchee Marl
- Dollar-Bay Shoal-Reef Dolomite Play

Scale 1:2,000,000


Modified from Klein and Hull, 1978

image credits: USGS and Conservancy of Southwest Florida
Everglades sawgrass prairie
Extreme Well Stimulation

• Recovery of oil and gas using unconventional techniques involving the injection of fluids underground to fracture rock formations and release oil and gas deposits trapped within

• Fluids typically consist of water, sand, and chemicals

• Registries of chemicals do exist, but companies often claim “trade secrets” and keep chemical compositions private
Extreme Well Stimulation Techniques

- Hydraulic fracturing
- Matrix acidization
- Acid fracturing
- Steam injection
- Carbon dioxide flooding
- Dry/waterless fracking
**WELL CLEANING**

**Acid Cleaning**
- Acid dissolves buildup on well casing
- Acid mixture stays within or very near wellbore (within 36 inches)

**OIL WELL STIMULATIONS**

**Acid Stimulation**
- Acid mixture dissolves 36 inches or more of rock to increase oil flow

**Acid/Hydraulic Fracturing**
- Acids and/or other fluids injected under high pressure to fracture rock to increase oil flow

*Image credit: Conservancy of Southwest Florida*
Concerns

• Chemical contamination
  • Surface spills
  • Poor well construction
  • Underground migration
  • Poor disposal

• Amount of water used

• Disposal of fracking water
POTENTIAL PATHWAYS FOR CONTAMINATION

1. Surface spills
2. Poor well construction
3. Migration through underground pathways
4. Improper disposal of flowback

*Underground Source of Drinking Water

image credit: Conservancy of Southwest Florida
Collier-Hogan well profile
Well Stimulation Water Usage

- A fracking well can use up to 10 million gallons of water
- Equivalent to 1,000 average-size swimming pools
- Negates the water saved in a year by over 630 efficient toilets enabled by the County’s Conservation Pay$ program
Thank you.

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Background on Fracking
(in the Everglades and in general)

Dr. Christopher McVoy

September 8, 2016
Hydraulic fracturing - Also referred to as hydrofracking, hydrofracturing, and fracking

1. Water Acquisition
2. Chemical Mixing
3. Well Injection
4. Flowback and Produced Water (Wastewaters)
5. Wastewater Treatment and Waste Disposal

High pressure injection of
- Water
- Chemicals ("trade secret")
- Fine sand

Intentionally fracturing the rock

Source: U.S. EPA
Potential environmental issues related to hydraulic fracturing:
- water use
- chemicals spills at the surface
- induced earthquakes from fracking
- groundwater contamination
- air pollution
- noise
- night sky light pollution
- impacts of sand mining
- forest fragmentation
- surface water quality degradation from waste fluids
- induced earthquakes from deep disposal injection of waste fluids

Potential societal issues related to hydraulic fracturing:
- Health
- Property values
- Insurance (induced earthquakes)
- Climate Change!!
• Marcellus Shale, Pennsylvania       4.5 million gallons
• Wattenburg Sandstone, Colorado    2.7 million gallons
• Barnett Shale, Texas              2.8 million gallons
• Eagle Ford Shale, Texas           4.3 million gallons
• Haynesville Shale, Texas          5.7 million gallons
• Bakken Formation, North Dakota    1.5 million gallons
• Horn River Shale, British Columbia 15.8 million gallons
- Up to 3 M gals per fracking treatment
- Even @ 0.5% => 15,000 gals chemicals in wastewater

- Chemicals proprietary and unknown ("Halliburton Exemption")
- 2005 exemption from Clean Water Act and Safe Drinking Water Act
2016 One-Year Seismic Hazard Forecast for the Central and Eastern United States from Induced and Natural Earthquakes
Everglades:

- Don’t have the water
- Don’t have place to put the produce water
- Can’t support the industrial and trucking footprint
- How to get the gas/oil off the site?
- Patterned; extreme sensitive to even minor disturbances
- Sensitivity to WQ – 10 ppb for a nutrient!
Ridge & Slough Landscape

Pattern
(plan view)

Microtopography
(x-section)
But wait, didn’t we all get the memo that we’re supposed to keep fossil fuels *in the ground*, out of the atmosphere?
Desperately wringing out the toothpaste tube!
For more than half a century, millions of barrels of brine have been produced with oil from the East Poplar oil field and surrounding area. The brine, which contains 37,900 to 210,000 milligrams per liter (mg/L) dissolved solids, was placed in pits and ponds or injected into subsurface geologic units through disposal wells. Handling and disposal of the brine has resulted in contamination of not only the shallow aquifers in the East Poplar oil field, but also the Poplar River (Thamke and Craigg, 1997). The shallow aquifers primarily consist of unconsolidated sands and gravel that are as much as 45 feet (ft) thick and are overlain by unsaturated clay, silt, and sand that are as much as 100 ft thick. The shallow aquifers are underlain by 700 to 1,000 ft of impermeable Upper Cretaceous Bearpaw Shale (Bearpaw Shale).

The shallow aquifers are the only available source of potable groundwater in the area, and had provided water for

Abstract

The extent of brine contamination in the shallow aquifers in and near the East Poplar oil field is as much as 17.9 square miles and appears to be present throughout the entire saturated zone in contaminated areas. The brine contamination affects 15–37 billion gallons of groundwater. Brine contamination in the shallow aquifers east of the Poplar River generally moves to the southwest toward the river and then southward in the Poplar River valley. The likely source of brine contamination

Fracking: A View From Tallahassee

State Representative
Evan Jenne (D-99)
Minority Caucus Policy Chair
2013: Minimal Opposition in the House

- HB 743 - Fracturing Chemical Usage Disclosure Act
- HB 745 - Public Records/Fracturing Chemical Usage Disclosure Act
First Failure of the Original Plan

❖ HB 743

❖ House Floor Vote - 92 members in favor, 19 opposed (83%)
  ❖ Broward Delegation - 8 members in favor, 1 opposed (88%)

❖ Senate Floor Vote - Did not occur (DNO)
The Death of the Companion Bill

- HB 745
- House Floor Vote - DNO
- Senate Floor Vote - DNO
Identifying the Culprit: Florida’s Constitution

- Florida’s Constitution, Article I, Section 24(c) specifically states that:
  - “The legislature, however, may provide by general law passed by a two-thirds vote of each house for the exemption of records from the requirements of subsection (a) and the exemption of meetings from the requirements of subsection (b), provided that such law shall state with specificity the public necessity justifying the exemption and shall be no broader than necessary to accomplish the stated purpose of the law.”
2014: Growing Opposition

- HB 71 - Fracturing Chemical Use Disclosure Act
- HB 157 - Public Records/Fracturing Chemical Use Disclosure Act
Second Failure of the Original Plan

❖ HB 71
❖ House Floor Vote - DNO
❖ Bill died without a vote in the Agriculture & Natural Resource Appropriations Subcommittee
Second Failure of the Original Plan

- HB 157
- House Floor Vote - DNO
- Bill died without a vote in the Government Operations Subcommittee
2015: The Push Back Begins

- HB 1205 - Regulation of Oil & Gas Resources
- HB 1209 - Public Records/High Pressure Well Stimulation
- HB 169 - Well Stimulation Treatments
Final Failure of the Original Plan

- HB 1205
  - House Floor Vote - 82 members in favor, 34 opposed (71%)
    - Broward Delegation - 2 members in favor, 7 opposed (22%)
  - Senate Floor Vote - DNO
The Final Death of the Companion Bill

- HB 1209
- House Floor Vote - DNO
- Senate Floor Vote - DNO
2016: A New Legislative Plan

- HB 191 - Regulation of Oil & Gas Resources
- HB 19 - Well Stimulation Treatments
- HJR 453 - Well Stimulation
Failure of the New Plan

❖ HB 191
❖ House Floor Vote - 73 members in favor, 45 opposed (62%)
❖ Broward Delegation - 1 member in favor, 9 opposed (10%)
❖ Senate Floor Vote - DNO
Local Movements Impacting Legislation

❖ As of today, 29 of Florida’s 67 counties have a fracking ban
❖ Alachua, Bay, Brevard, Broward, Escambia, Flagler, Franklin, Gadsden, Gulf, Hamilton, Jefferson, Leon, Madison, Marion, Martin, Miami-Dade, Monroe, Nassau, Orange, Palm Beach, Pasco, St. Johns, St. Lucie, Suwannee, Taylor, Union, Volusia, Wakulla & Walton Counties
❖ These counties represent 11,506,255 citizens (56.8%)
❖ They also represent 31,870 square miles (48.5%)
Questions & End Notes

❖ For details on the legislative voting record please visit:
  ❖ www.myfloridahouse.gov/Sections/Bills/bills.aspx

❖ For details on counties & municipalities with bans & resolutions against fracking please visit:
  ❖ www.foodandwaterwatch.org/insight/local-resolutions-against-fracking