

OHIO OIL & GAS ENERGY EDUCATION PROGRAM



Industry Public Outreach Programs

Workforce Training

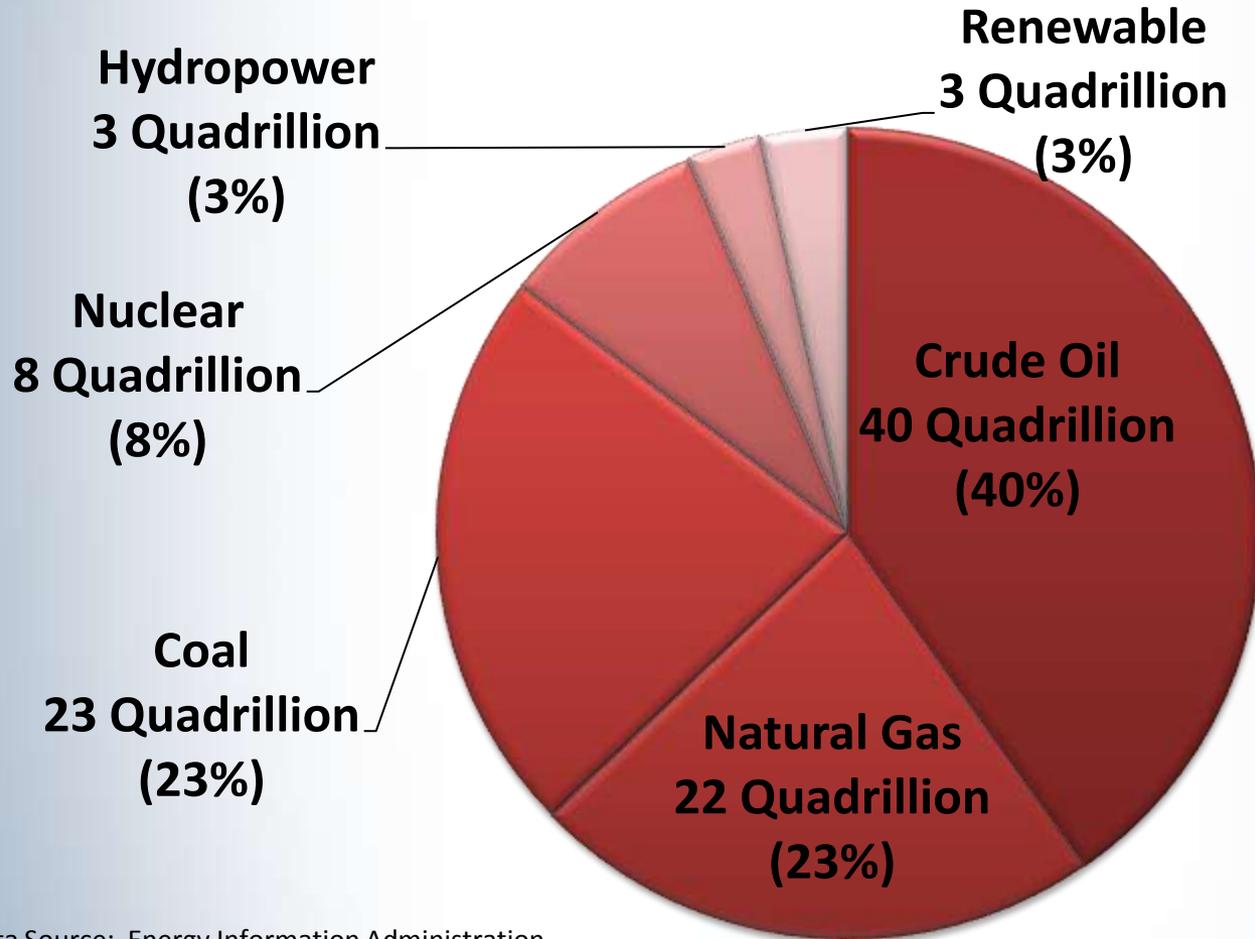
About OOGEEP

- **The Ohio Oil and Gas Energy Education Program (OOGEEP) is a non-profit education and public outreach program.**
- **OOGEEP is not a lobbying organization nor are we engaged in any legislative or political activities.**

Funding

OOGEEP is a “check-off” program funded 100% by Ohio’s ***Natural Gas and Crude Oil Producers and Royalty Owners*** through a voluntary assessment on the production of all crude and natural gas produced in Ohio.
No taxpayer dollars.

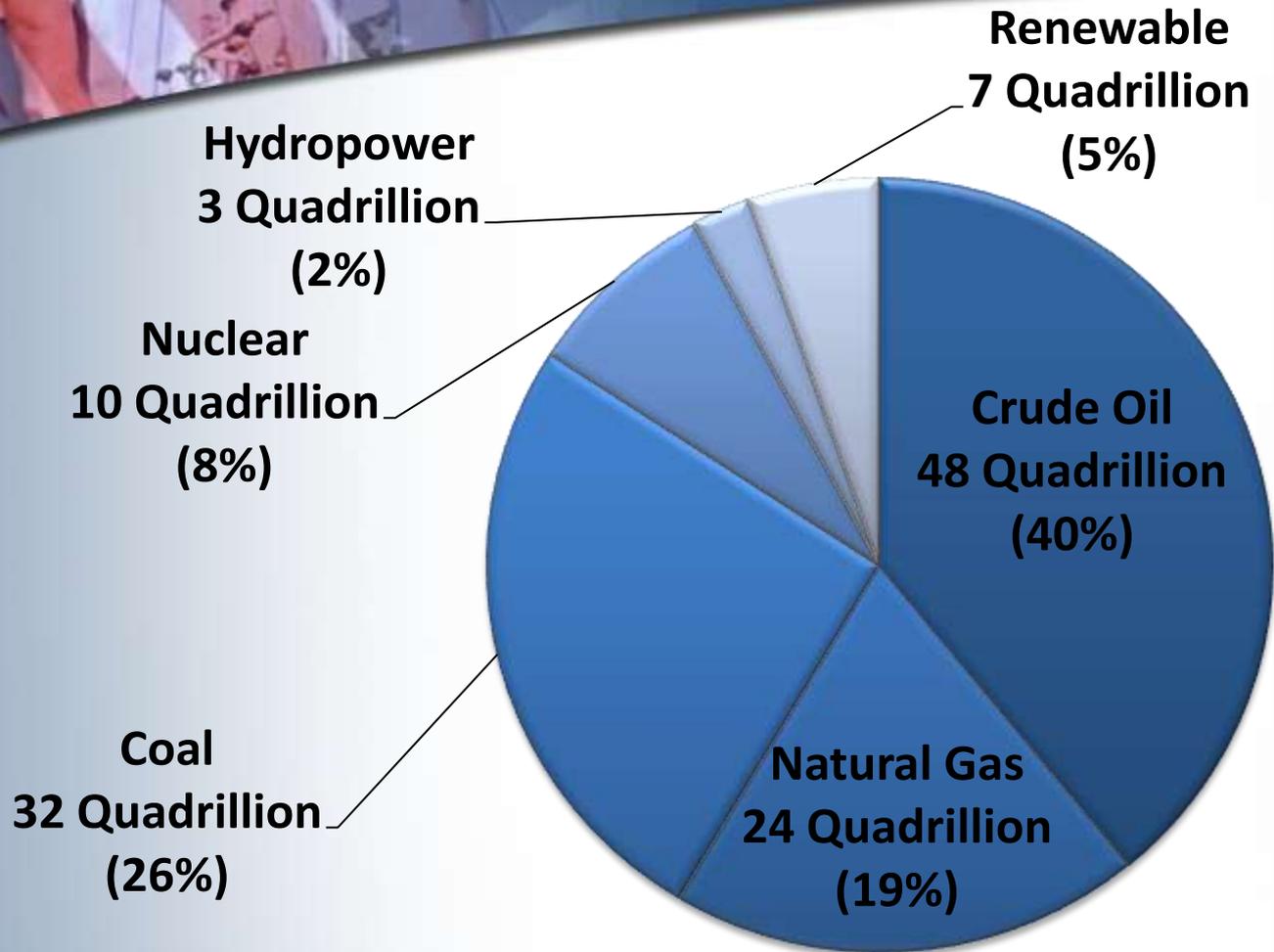
Current Energy Demands



**2009 Worldwide
Energy
Consumption
100 Quadrillion BTU**

Data Source: Energy Information Administration

Future Energy Demands



**2030 Worldwide Energy Consumption
Estimated at 124 Quadrillion BTUs
Quantity/ Percentage by Energy Source**

Additional Facts:

- ✓ The U.S. consumes 20 million barrels of crude oil per day (followed by Japan (5.4 million) and China (5.6 million).
- ✓ **The average person consumes 3 gallons per day in refined products.**
- ✓ During the energy crisis of 70's, the U.S. was 23% reliant on foreign crude. Today, we are over 60%. "Self-Help Natural Gas."
- ✓ **We have not built a crude oil refinery in the U.S. for over 40 years.**
- ✓ 100% of crude oil is refined.
- ✓ **Our demand for natural gas is expected to increase by 50% in the next 25 years even with the addition of many alternative fuels.**
- ✓ More natural gas is being used to generate electricity (20% of our electric usage is for computers).



Photo Source:
Library of Congress

Through the mid 1860's, whale oil was the burning fuel of choice.



Vanity Fair, April 20, 1861

About 1850, on advice from J. C. Booth, Philadelphia chemist, Samuel Kier began distilling crude oil to get “Carbon Oil,” or kerosene, which could be used in lamps.

(PHMC-DWMA)





Why Did The Industry Create This Program?

Ohio Oil & Gas Energy Education Program

OOGEEP


Student Safety Campaign



Get Smart Stay Smart



PLAY Smart

If you hang around the wrong places now, you'll never get anywhere.

Crude oil and natural gas well are common throughout Ohio to help supply your energy needs. But, they are the wrong places to hang around. A pumpjack can crush you in an instant. Tanks full of vapors and liquid can explode if you smoke or light matches around them. **IT'S TRESPASSING, IT'S AGAINST THE LAW, AND, IT CAN BE DANGEROUS!** So, if someone asks you to meet them there, tell them to forget it!

Oil field equipment is SERIOUS STUFF!



OOGEEP
 Ohio Oil & Gas Energy Education Program



Ohio's oil and gas industry is concerned about your safety!

For more information, or to order a safety video for your school or organization, call (740) 587-0444 or visit our web site at www.oogEEP.org

This message was produced as a public service by Ohio's crude oil and natural gas producers and royalty owners

Oil fields, teens prove deadly mix

By Frank Mashey and Rita Price
 Dispatch Staff Reporters

LOGAN, Ohio — Their secluded, quiet location belie deadly, explosive force.

Teen-agers, either oblivious to or unaware of the lurking danger, choose them as hangouts.



Morrison

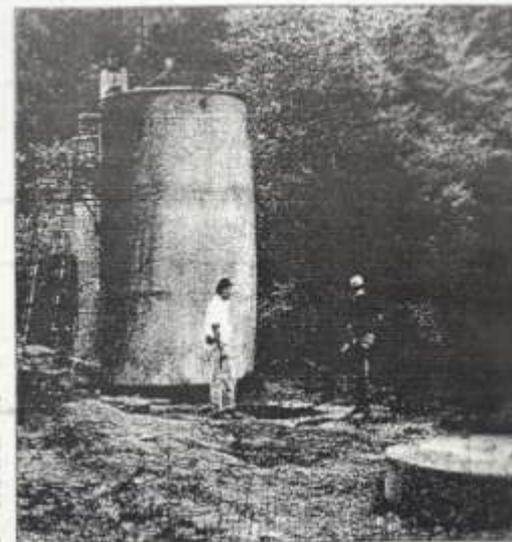
The poor choice has led to at least three deaths and one serious injury in little more than a year on Ohio oil fields, authorities say.

"It's a problem that the industry's struggling to address," Thomas E. Stewart, executive vice president of the Ohio Oil and Gas Association, said yesterday.

"We're taking ourselves, working hard, creating a fund to launch a public-awareness campaign," he said. "It's horrible that this happened first. I want to say that our message is, and will be, 'Stay away from oil-field equipment.' If your friend says, 'Meet me at the tanks,' say, 'No.'"

Family members said it was just like Paul E. Morrison, 19, to be attracted to somewhere he shouldn't be. He was killed Friday evening when an oil tank exploded in Hocking County.

"He was happy-go-lucky, hyperactive and a



Logan firefighter Duane Nakani, left, and Dan Gains, an inspector with the Ohio Department of

Natural Resources' Division, inspect the site of a deadly explosion

(destroyed)," said his mother, Gail. "But he was a good kid. He joked and smiled all the time. He always said, 'Mom, I love you.'"

Morrison had attended Logan High School and Tri-County Joint Vocational School before leaving after the 11th grade, she said.

Authorities say Morrison, of Logan, was thrown more than 100 feet when a 3-ton storage tank containing about 800 gallons of crude oil, exploded Friday, rocketing the container 200 feet from its foundation, across Skinner Road and against a stand of trees.

Also injured was his friend, Brandy Volmer,

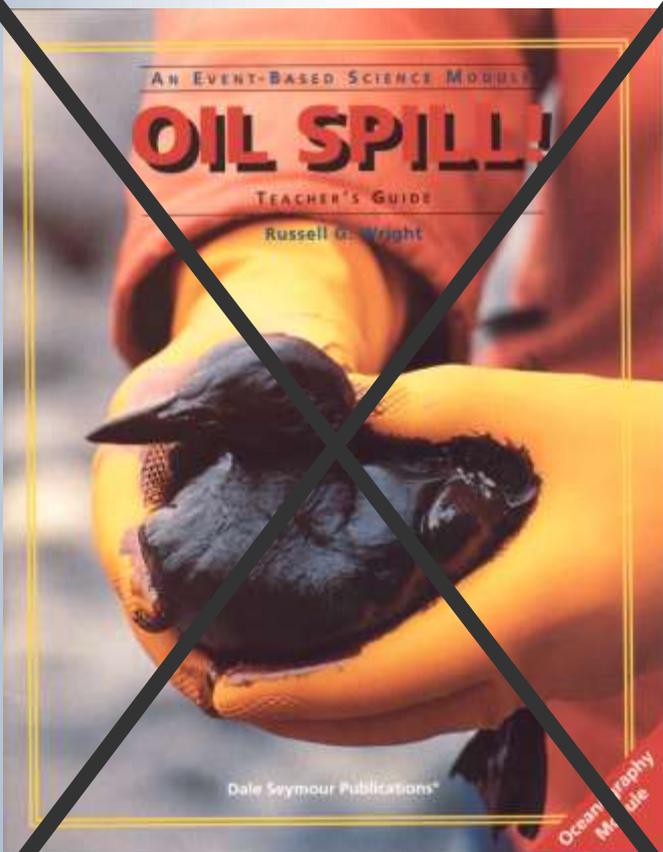
16, of Lancaster. Volmer's condition last night in Gettysburg, about 45 miles from where the explosion occurred.

"They were probably just hanging out," Mrs. Morrison said. "He probably figured he climbed up it or flicked a lighter."

"I was told Brandy doesn't ask me why they were just kids."

Pages see EXPLOSION Page

“Classrooms”



PLUS: EARTHWORKS
Oceanography
Lesson 15

Name _____
Date _____

Name _____
Date _____

4. On the deep sea floor, there are nodules. The nodules contain copper, nickel, and manganese. Below TABLE outline three uses for these nodules on the study print. Label them NC.

Turn to side B of the study print.

5. In the middle of the study print, draw an arrow from the nodules to the deep sea floor.

6. Some gold, tin, and silver are found on the map of the world. On the map of the world, draw an arrow from the nodules to the deep sea floor.

7. There are vast amounts of oil and gas. Both are used to produce energy. Below ORES write three uses for oil and gas.

8. Under same parts of the study print, draw an arrow from the nodules to the deep sea floor.

9. Use your labels on both sides of the study print. List six resources we get from the oceans.

food	Table salt	Water
seaweed	fish	Nodules

10. Which of the resources do you and your family use? For what?

Table salt we use it for food that we make

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(continued)

Teacher Workshops



Oil & Gas
Energy Education
**Science Teacher
Workshop**

OOGEEP
Ohio Oil & Gas Energy Education Program

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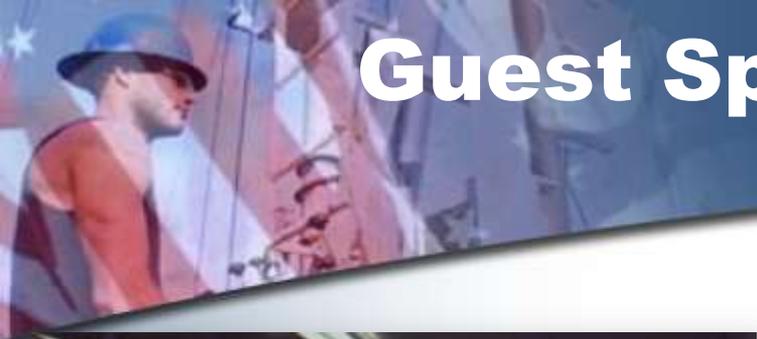
Science Fair



Scholarship



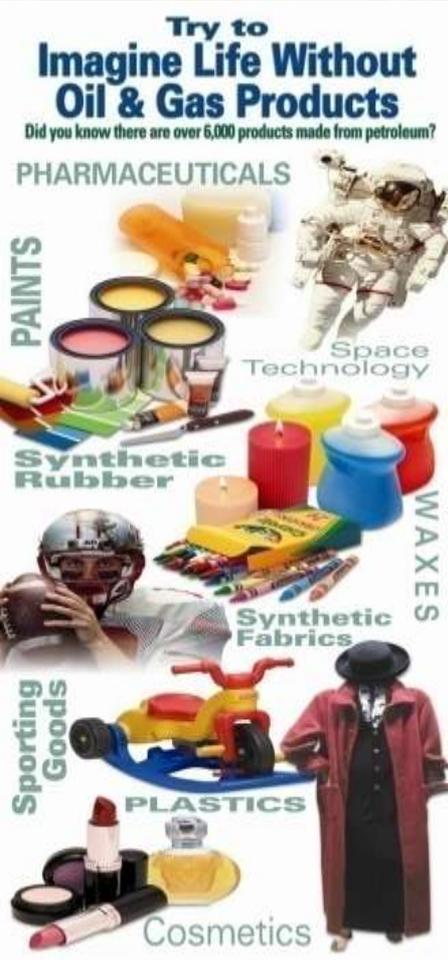
Guest Speaker Programs



- **Schools**
- **Civic Groups**
- **Environmental Groups**
- **Farmer Groups**
- **Firefighter Groups**
- **Landowner Groups**
- **Soil and Water Districts**
- **Anti-Industry Groups**
- **Hydraulic Fracturing**



Exhibits

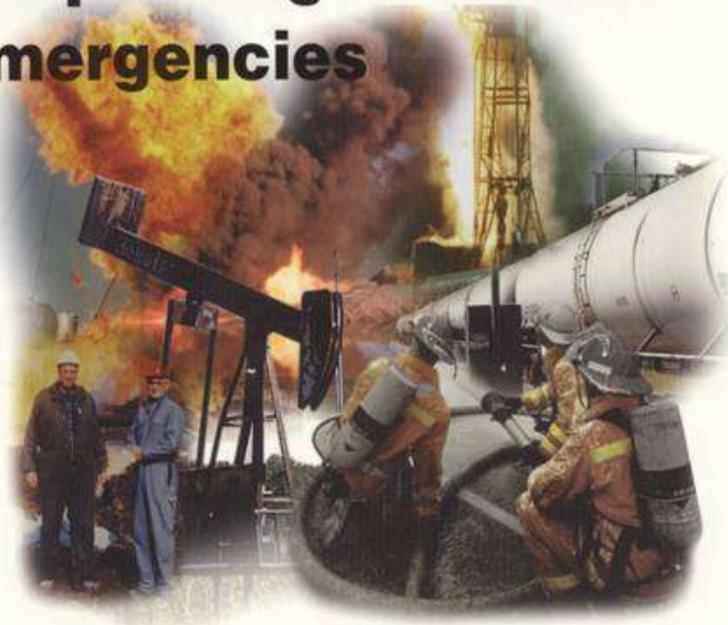


- ✓ National Science Teachers Association
- ✓ Science Education Council of Ohio
- ✓ Ohio Township Association
- ✓ Ohio County Commissioners/ Engineers Association
- ✓ Ohio Fire Chiefs Association
- ✓ Ohio Firefighters Association
- ✓ Farm Science Review
- ✓ County Fairs
- ✓ Legislative Events
- ✓ Environmental Events
- ✓ Town Hall Meetings
- ✓ **Ohio State Fair**



▼ Field Guide 1

Responding to Oilfield Emergencies



Fire Training



Industry Training

OHIO OIL & GAS ENERGY EDUCATION PROGRAM



Ohio Oil and Gas Energy Education Program's WINTER 2010 INDUSTRY TRAINING SERIES



H₂S and Emergency Response Training 2010

Conducted by FDRsafety, LLC
Petroleum Education Council (PEC) Certified Instructors

Endorsed or Promoted by:

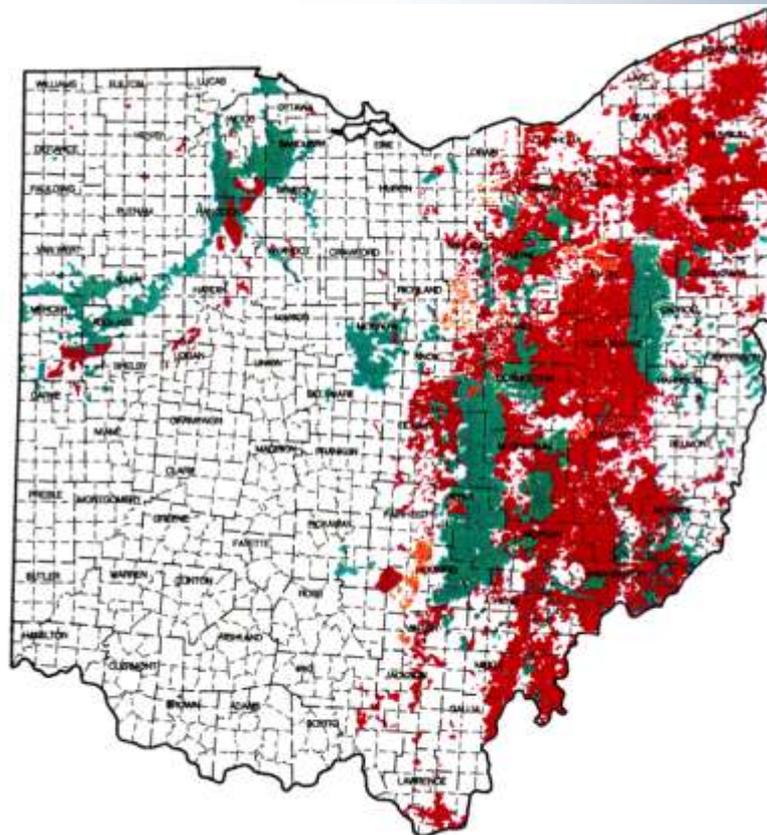
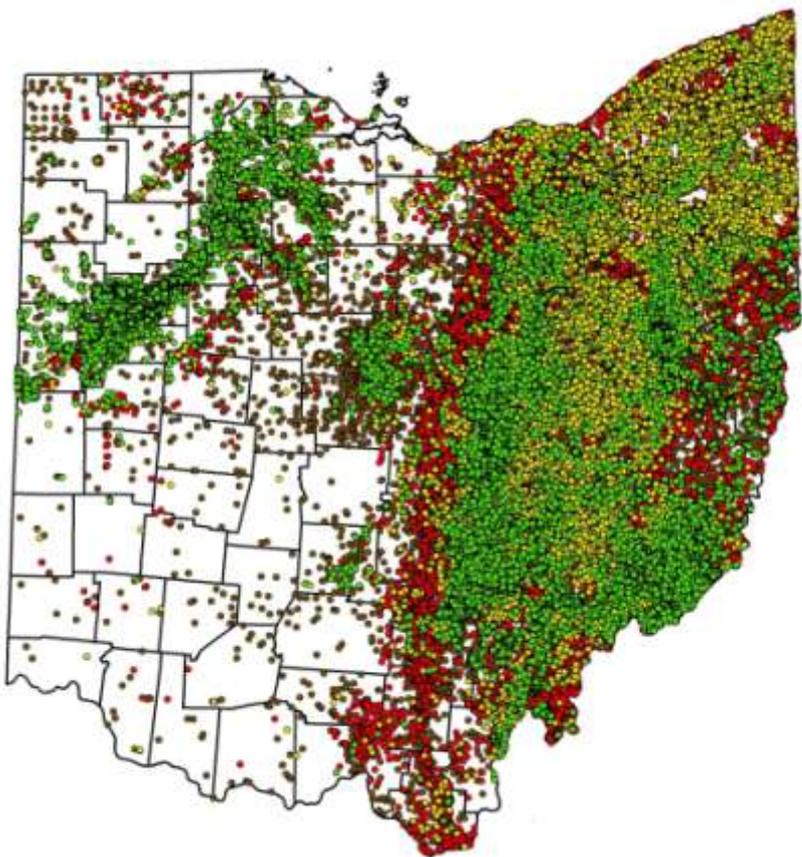
Ohio Oil and Gas Association, Southeastern Ohio Oil and Gas Association,
Society of Petroleum Engineers, Ohio Petroleum Section, and Ohio Geological Society





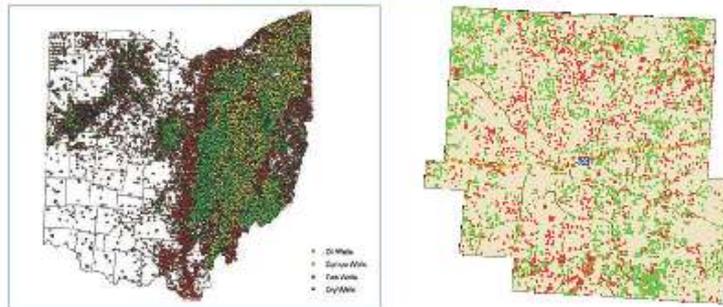
**Ohio Energy
Proud.org**

Workforce Development





Ohio Natural Gas and Crude Oil
Muskingum County



Total Number of Producing Wells: 2,832

Total Number of Wells Drilled: 10,340

Map Source: Ohio Department of Natural Resources, Division of Geological Survey

Data Source: Ohio Department of Natural Resources, Division of Mineral Resources Management

Annual Domestic Energy Production:

3,987,045,000 cubic feet of natural gas

159,283 barrels of crude oil

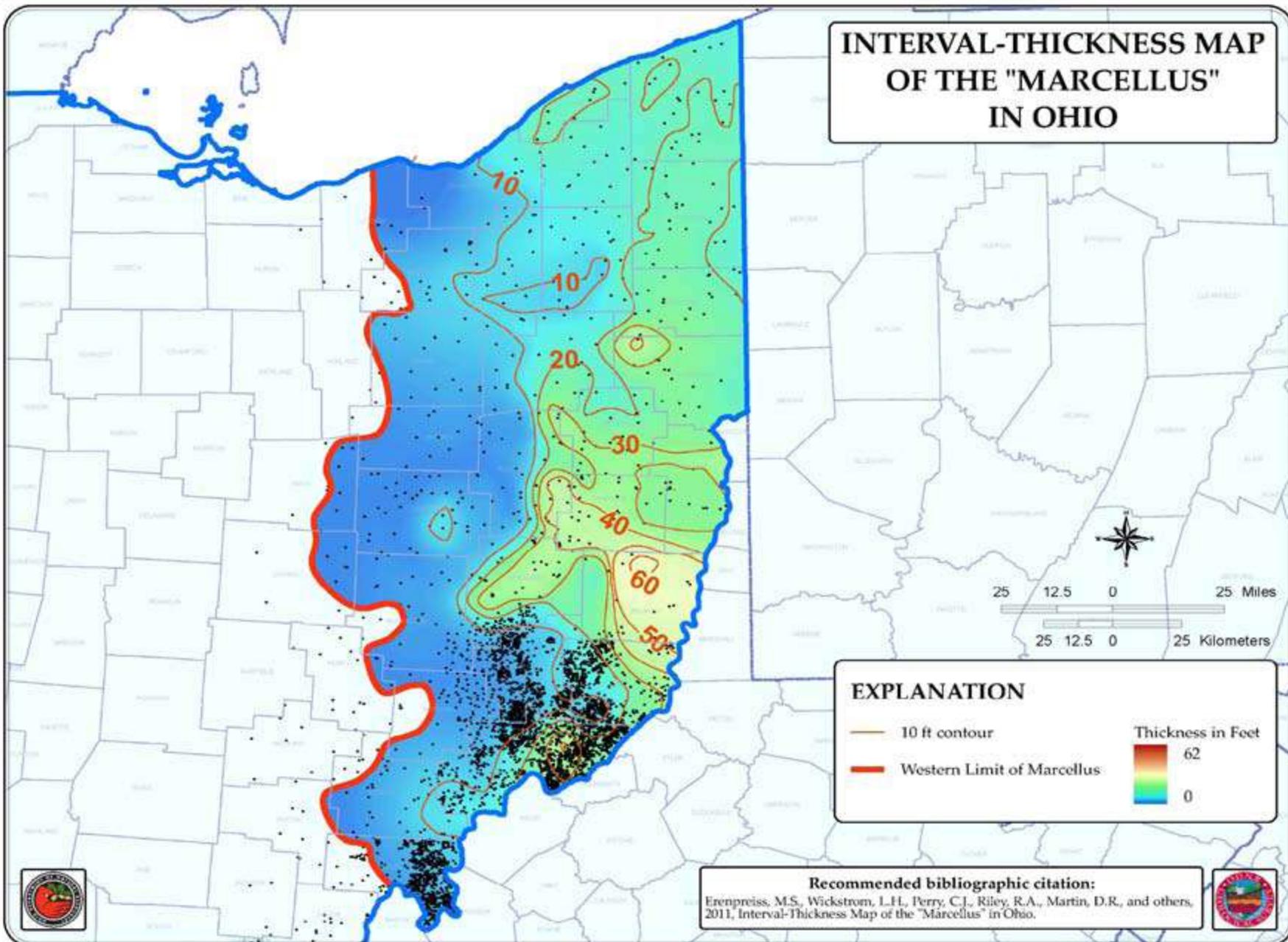
Annual Landowner Royalties: \$3,934,991.95

Muskingum County Facts

Ohio Natural Gas and Crude Oil

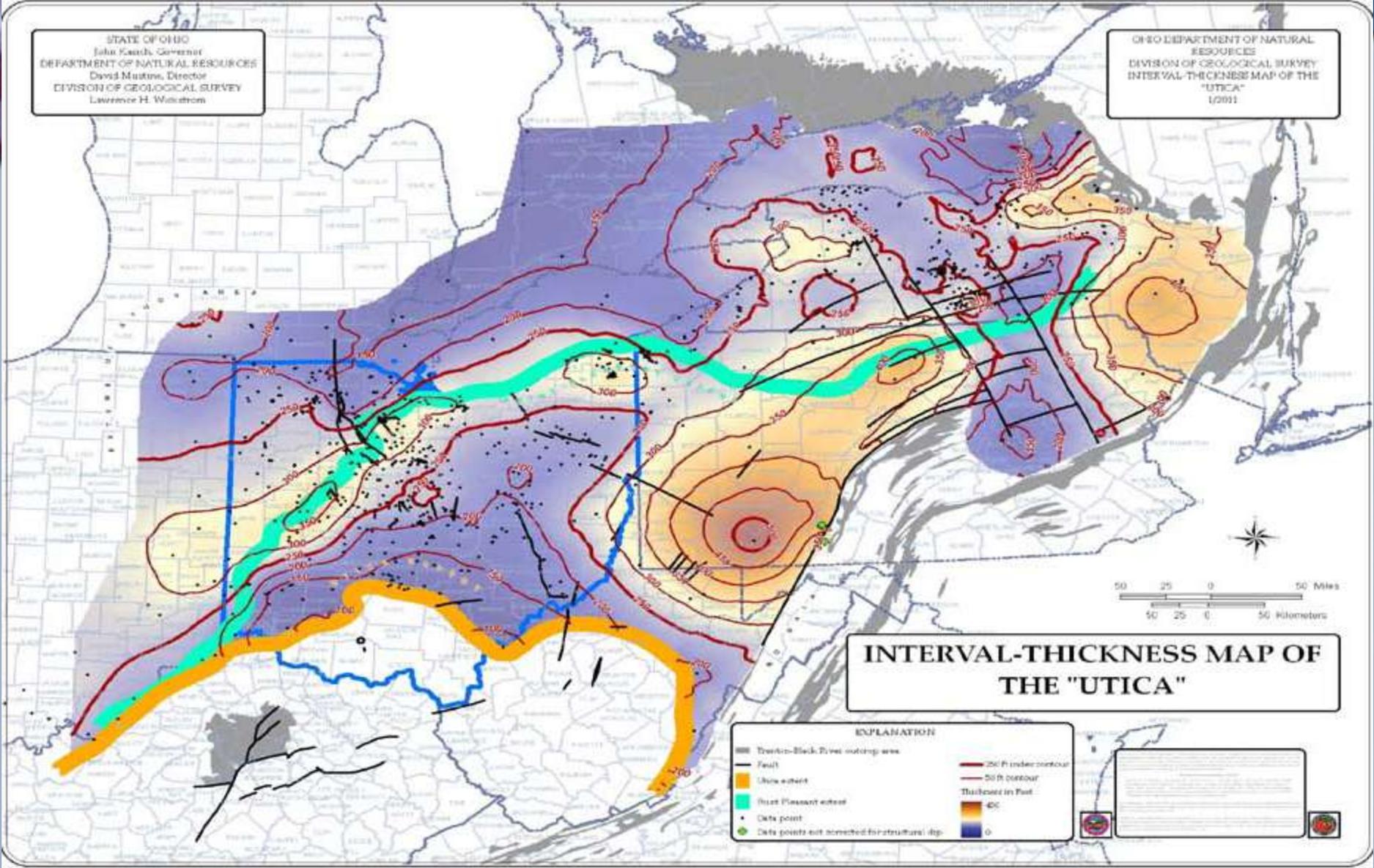


INTERVAL-THICKNESS MAP OF THE "MARCELLUS" IN OHIO



STATE OF OHIO
 John Kasich, Governor
 DEPARTMENT OF NATURAL RESOURCES
 David Mustina, Director
 DIVISION OF GEOLOGICAL SURVEY
 Lawrence H. Welton

OHIO DEPARTMENT OF NATURAL RESOURCES
 DIVISION OF GEOLOGICAL SURVEY
 INTERVAL-THICKNESS MAP OF THE "UTICA"
 1/2011



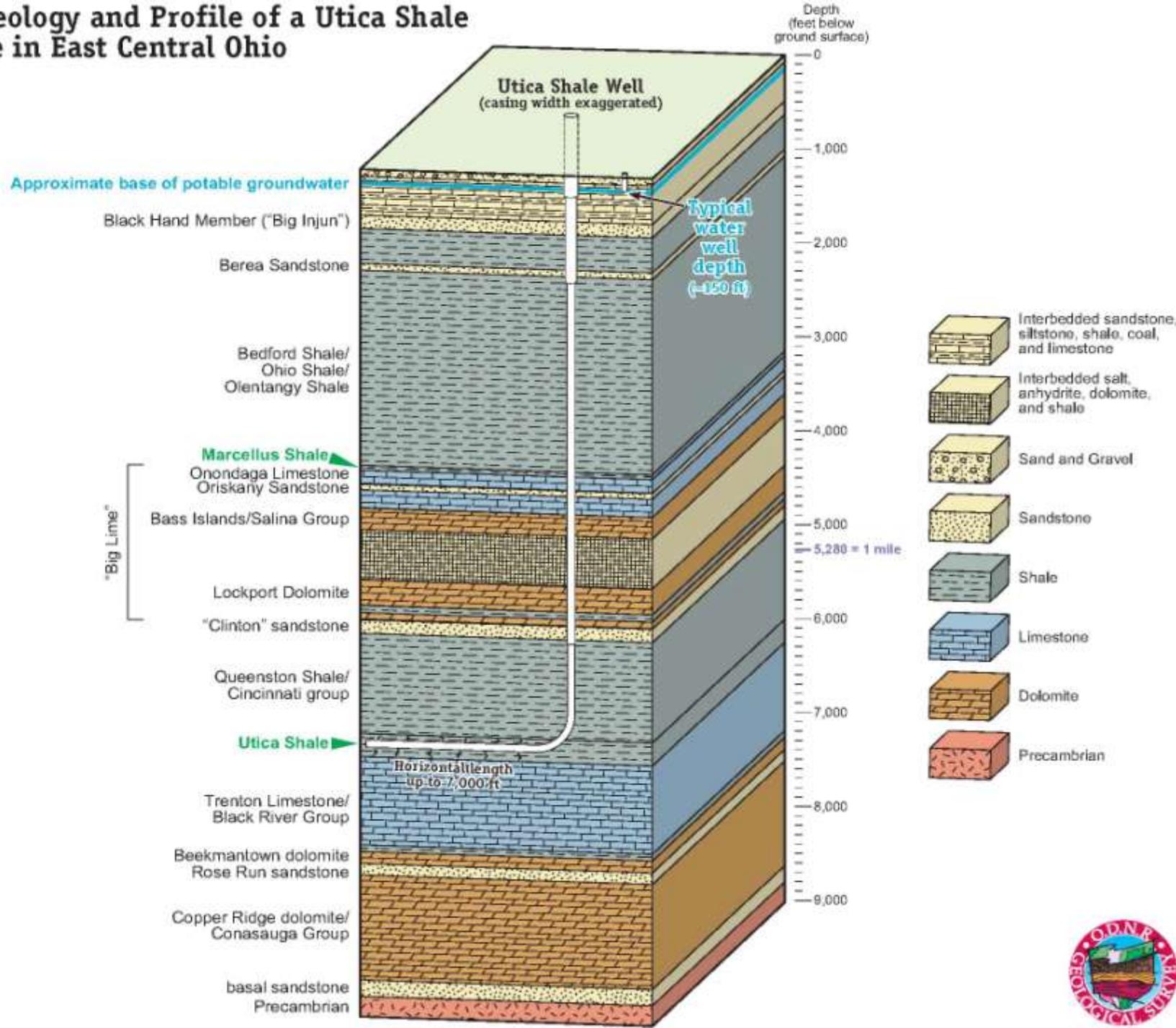
INTERVAL-THICKNESS MAP OF THE "UTICA"

EXPLANATION

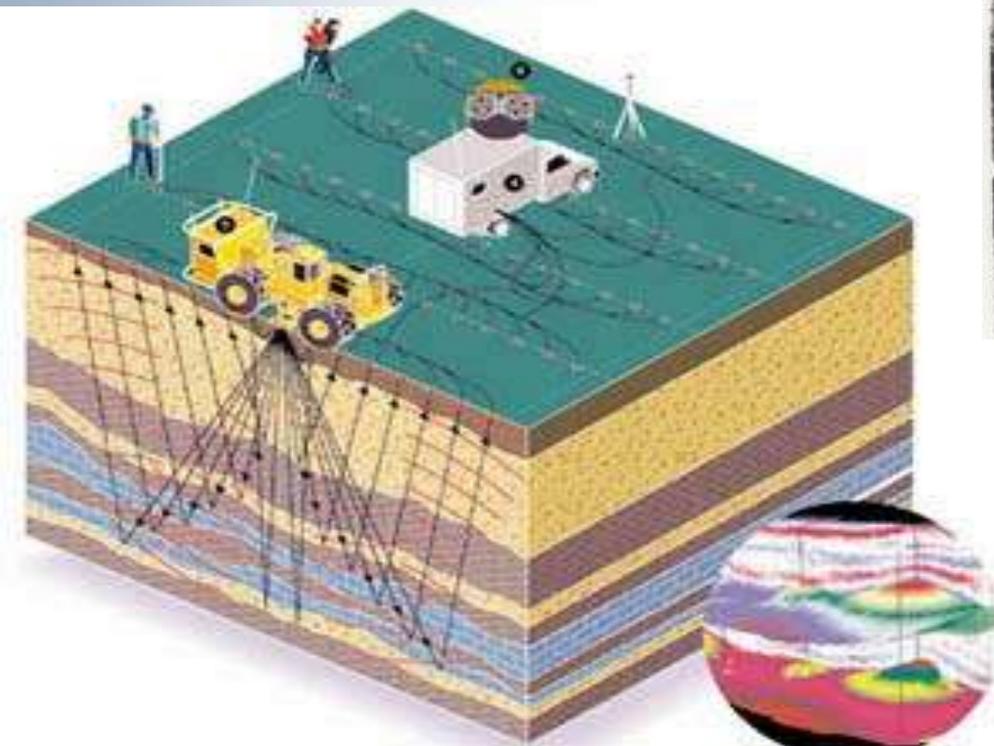
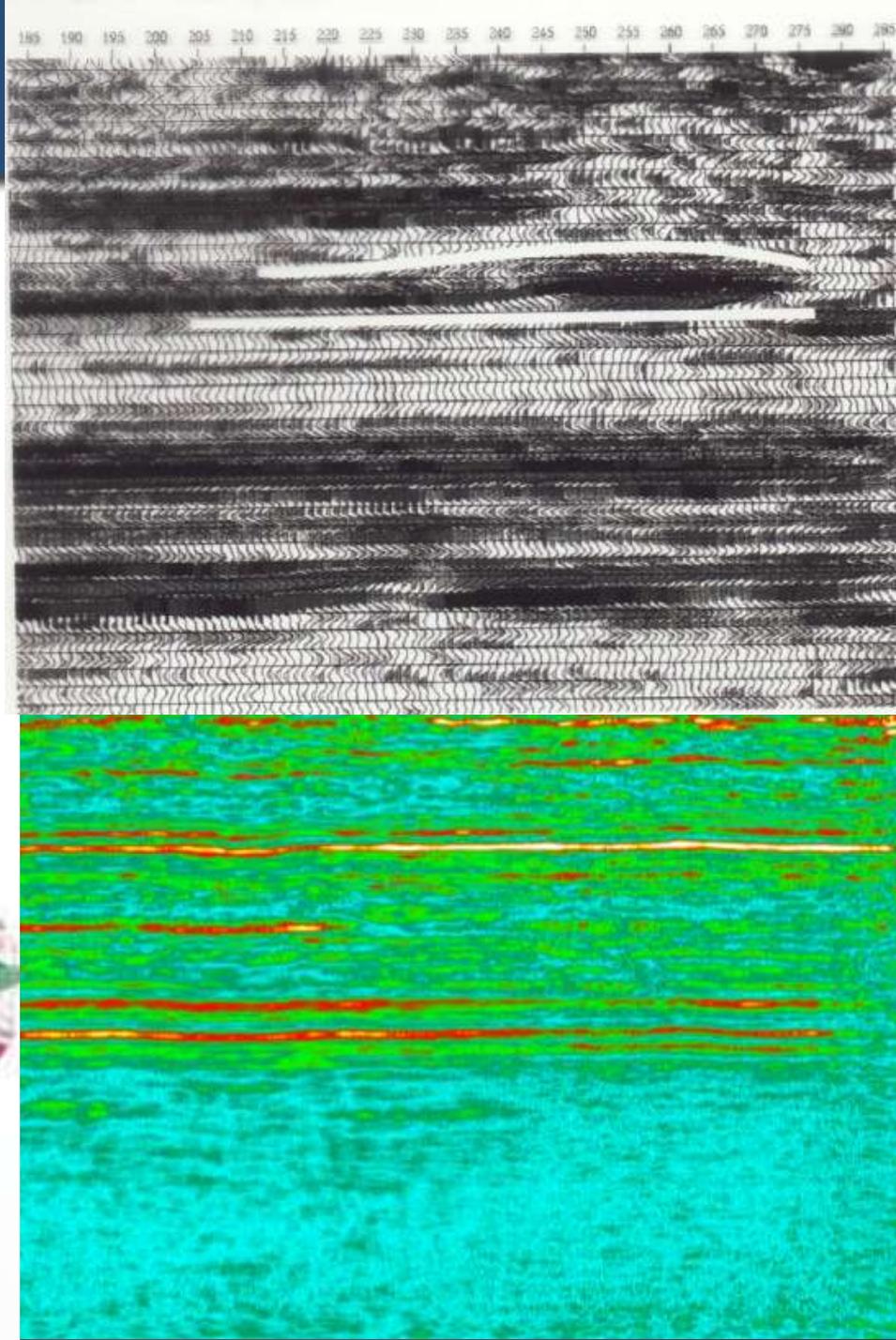
Trenton-Black River outcrop area	250 ft under contour
Fault	50 ft over contour
Ohio extent	Thickness in Feet
West Pleasant extent	0
Data point	700
Data points not screened for structural dip	

Map prepared by the Division of Geological Survey, Ohio Department of Natural Resources, Columbus, Ohio. The map is based on data from the Ohio Geological Survey and other sources. The map is not intended to be used for legal purposes. The map is a representation of the interval thickness of the Utica formation and does not show the location of any oil or gas reserves. The map is a representation of the interval thickness of the Utica formation and does not show the location of any oil or gas reserves.

Generalized Geology and Profile of a Utica Shale Well Prototype in East Central Ohio

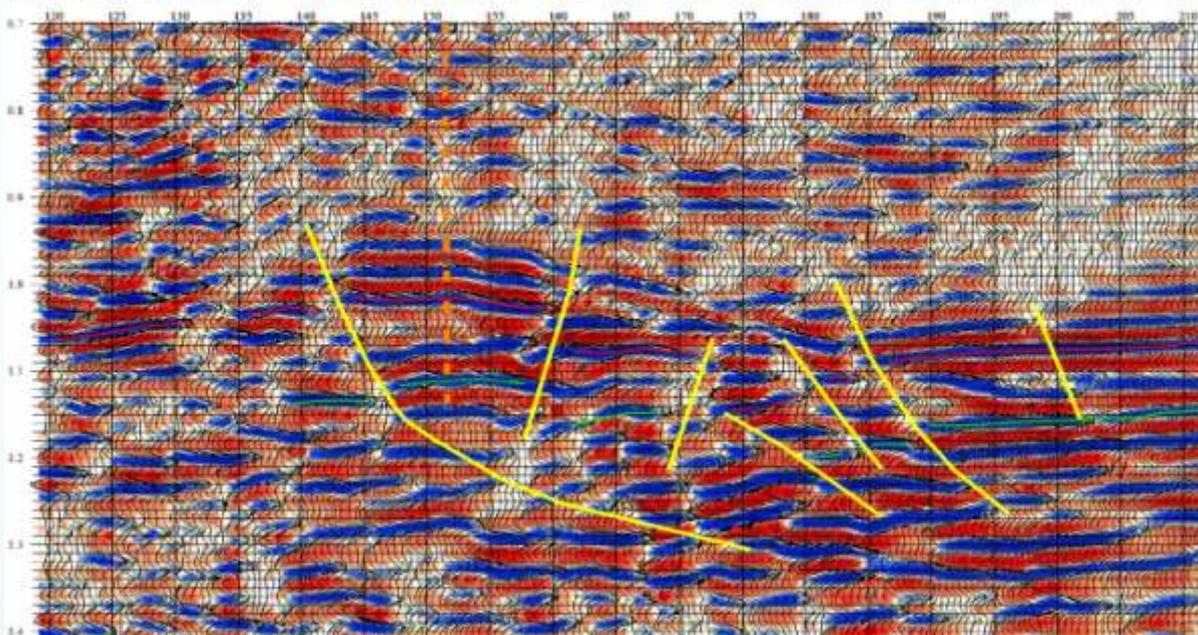
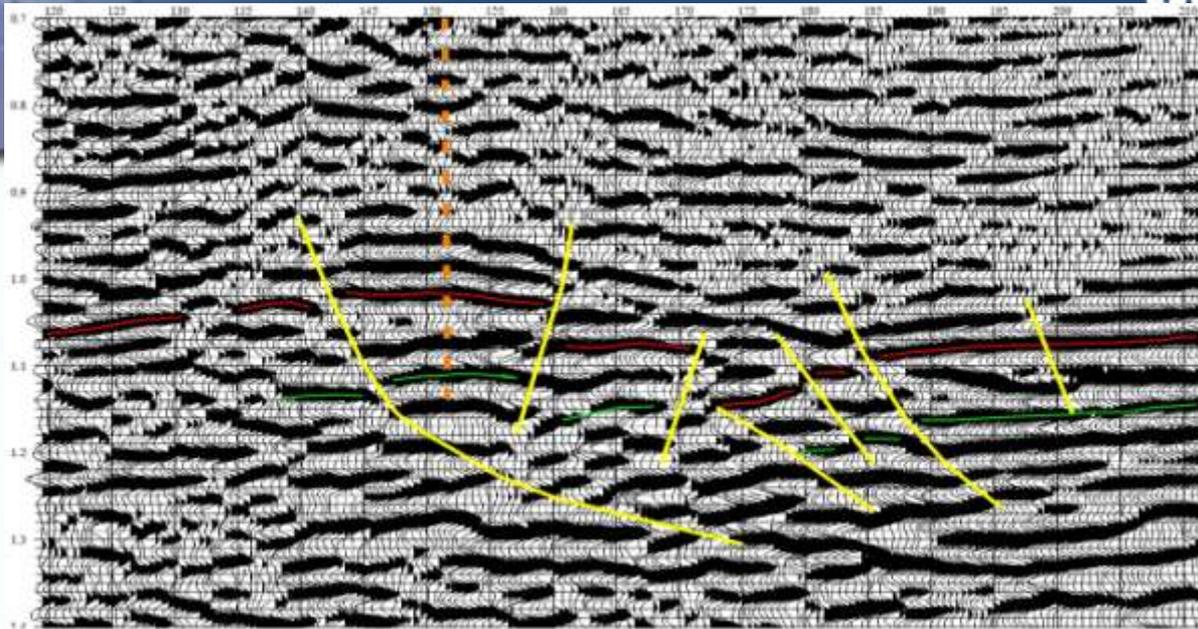






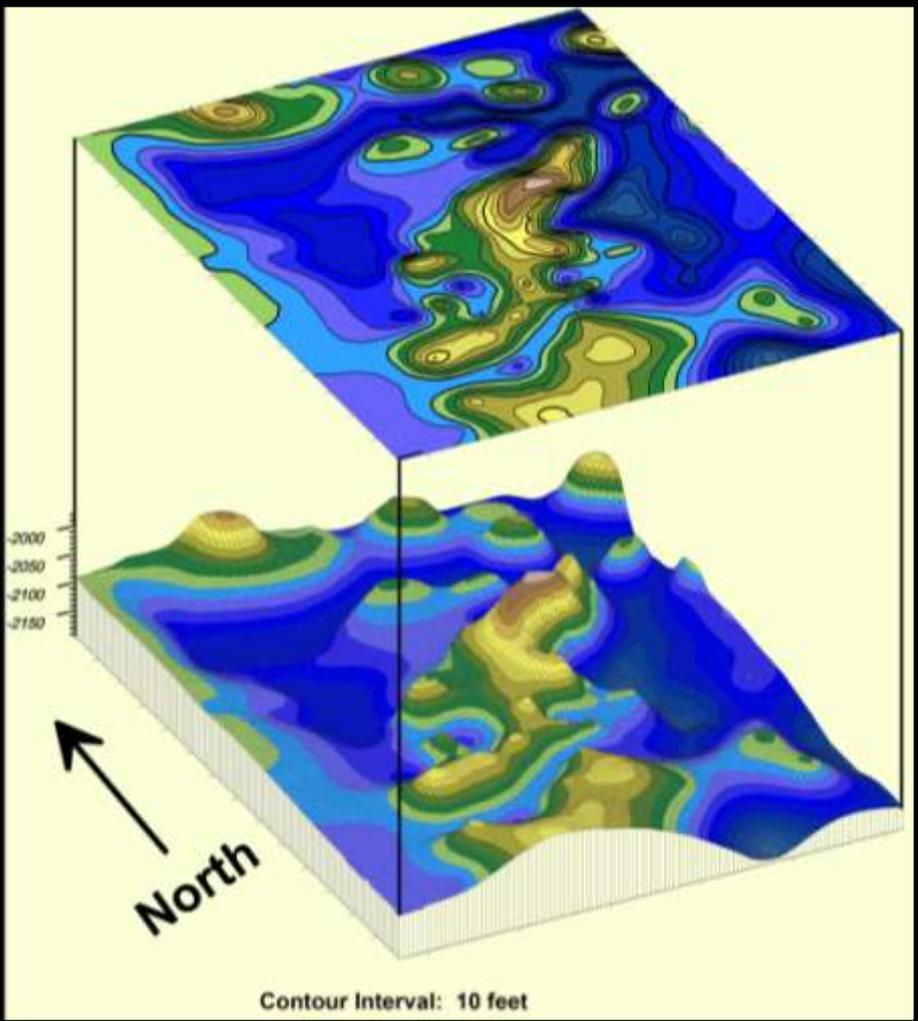
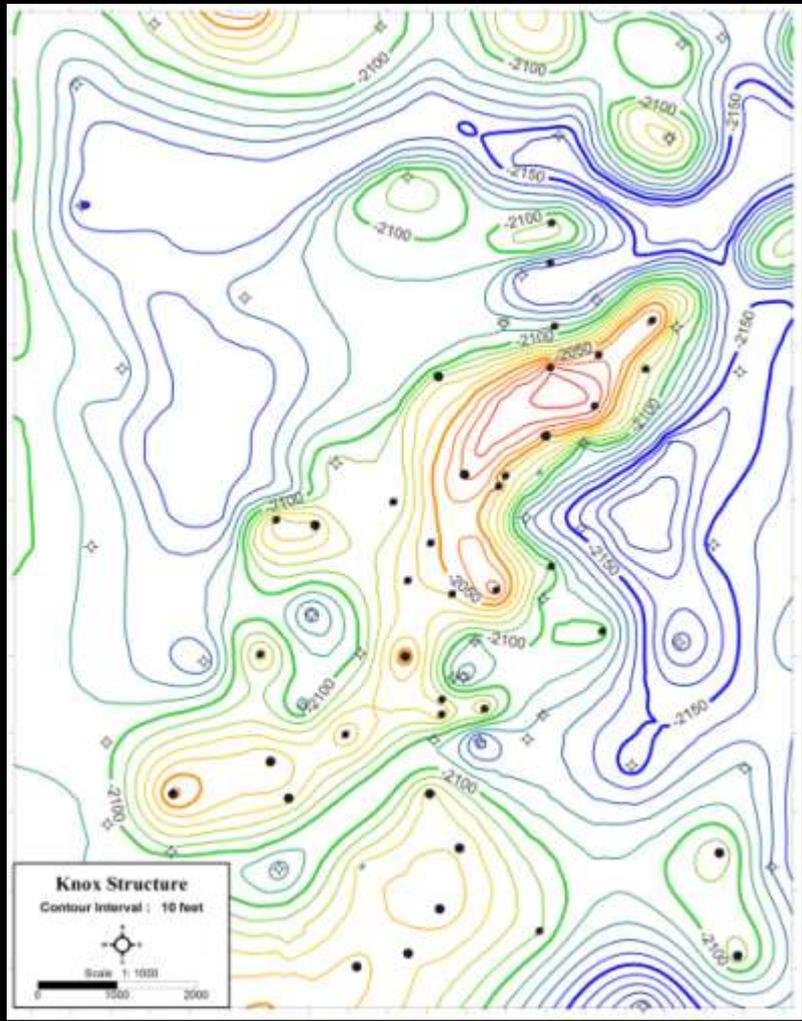


Complex Structure



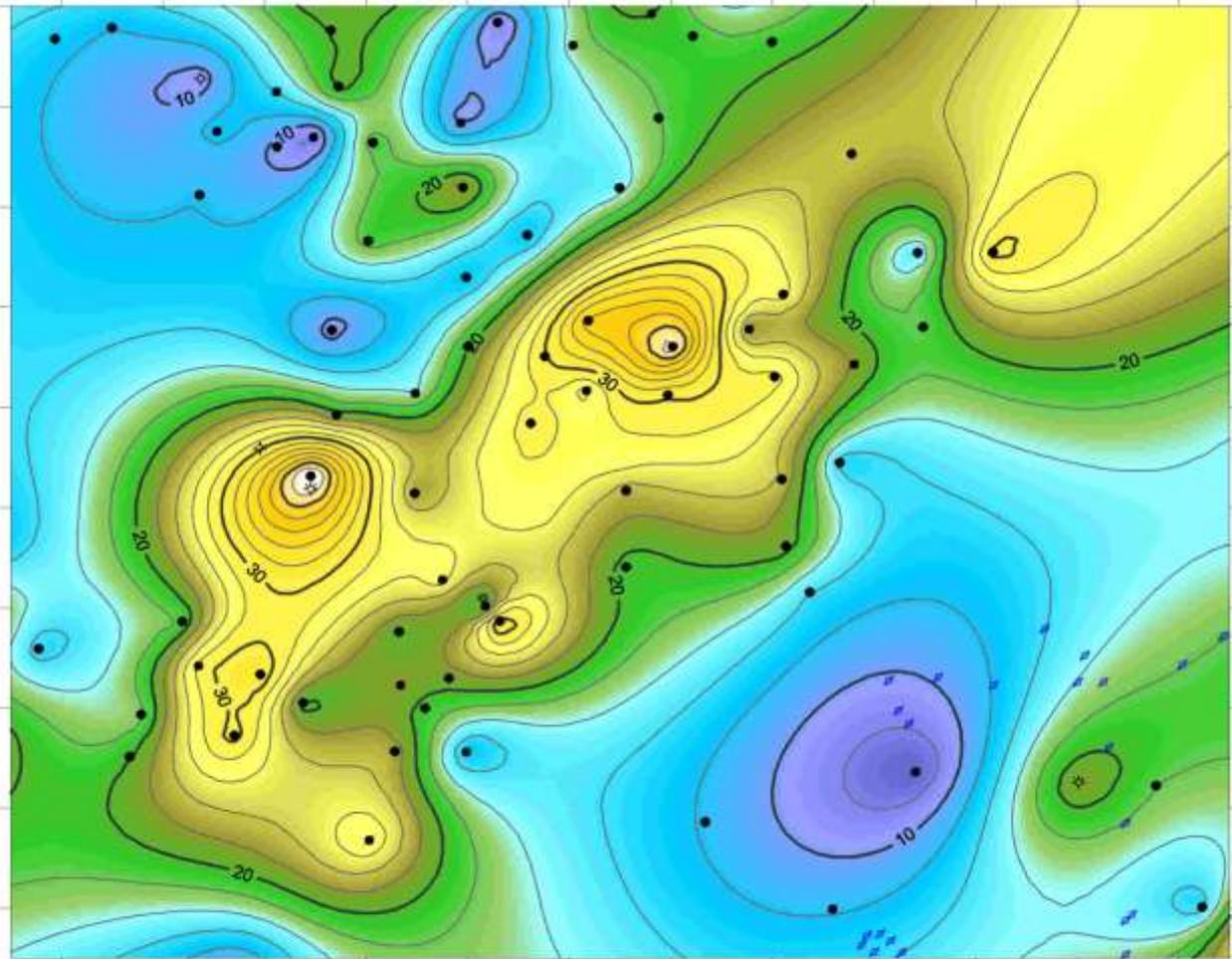


Structure Map





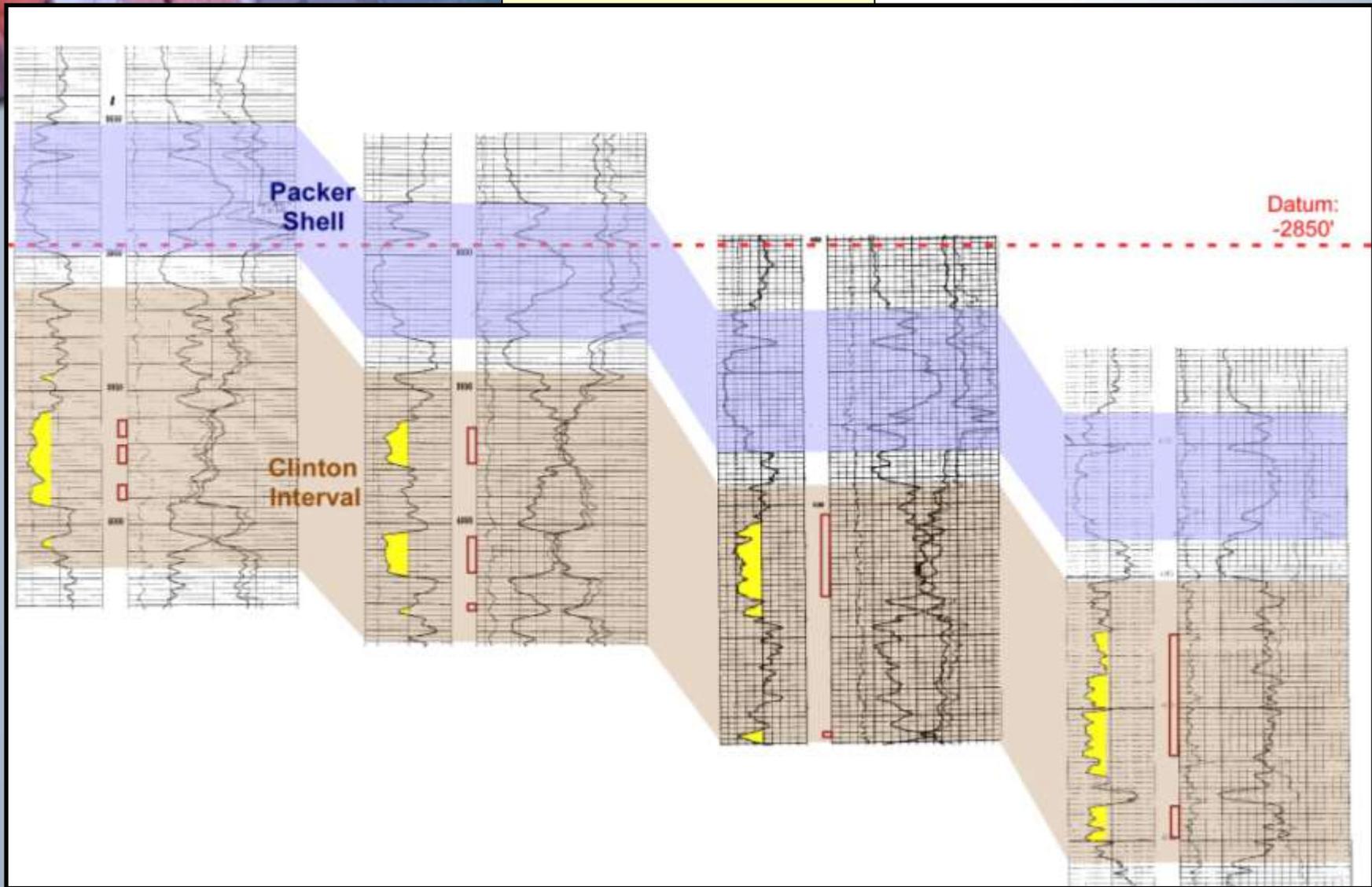
Isopach Map



**Clinton Sandstone
Net Sand Map**

Contour Interval : 2 feet

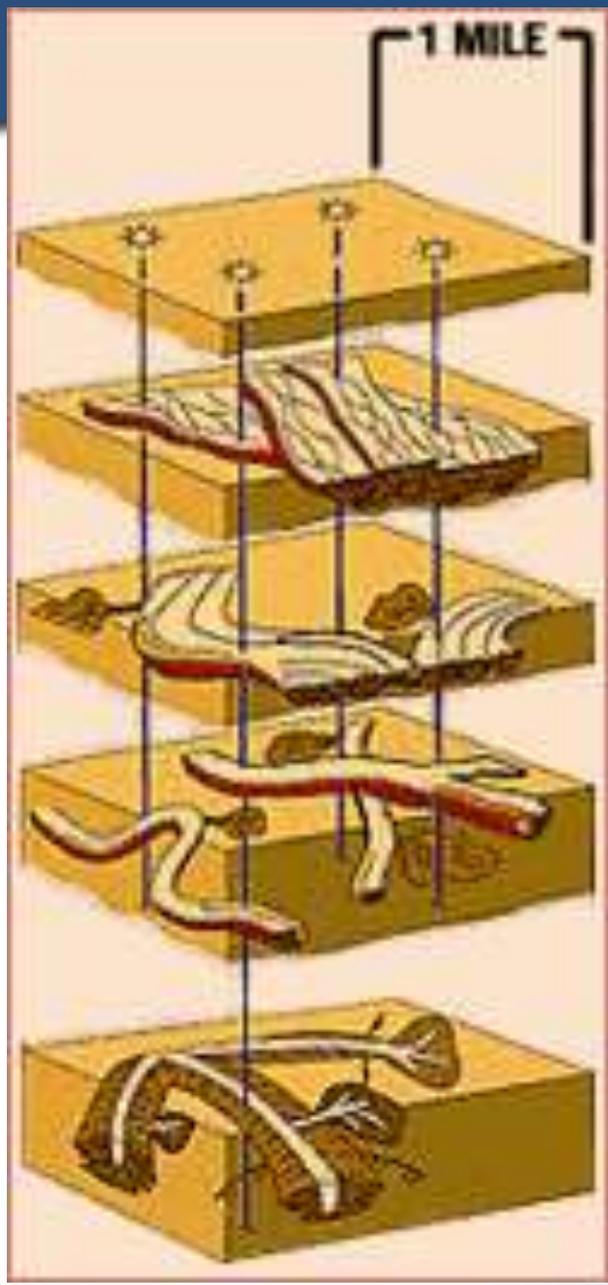
Cross Section





Why do we need to utilize so many tools to drill a well?

Finding a reservoir with an 11 inch hole is not easy!





WHERE DOES THE INDUSTRY NEED HELP IN ORDER TO DEVELOP A GREATER WORKFORCE?

- ✓ **Stop efforts to ban or place a moratorium on hydraulic fracturing**
- ✓ **Promote access to domestic resource base --- where the geology exists**
- ✓ **Avoid proposals that would punish native energy production**



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