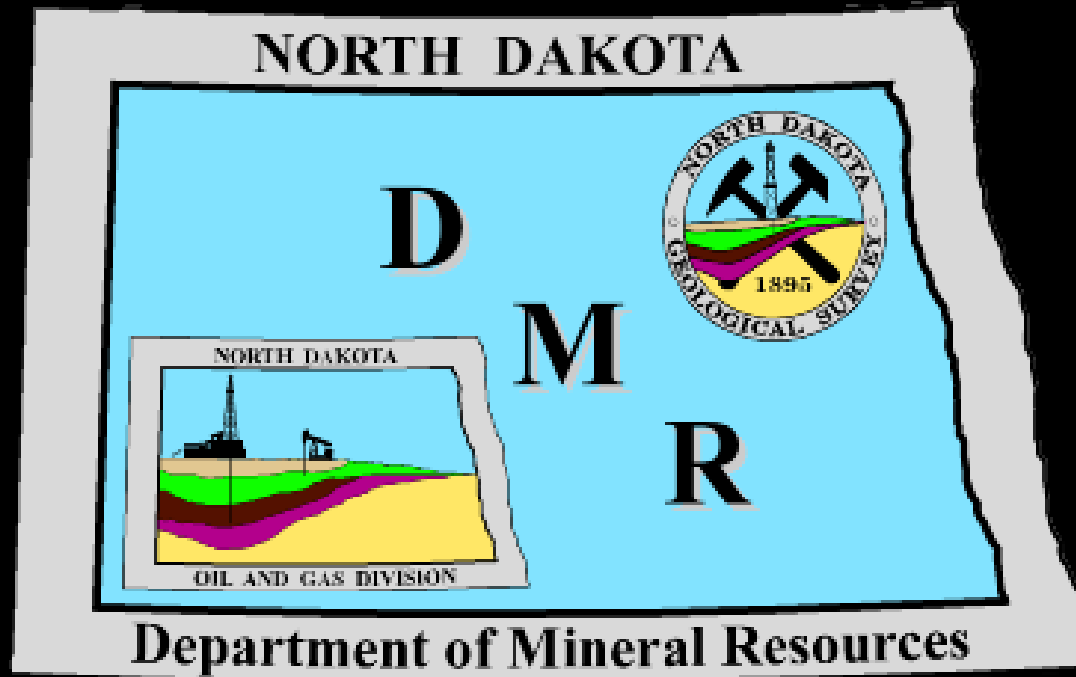


# North Dakota Department of Mineral Resources



<http://www.oilgas.nd.gov>

<http://www.state.nd.us/ndgs>

***600 East Boulevard Ave. - Dept 405***

***Bismarck, ND 58505-0840***

***(701) 328-8020      (701) 328-8000***



# North Dakota Update

- Spotlight on the Bakken: Media Coverage
  - National Geographic
  - New York Times
  - The Globe and Mail (Canada)
  - BBC
  - Al-Jazeera America
  - Daily: California, Florida, New York, Washington, D.C., Colorado, Alaska.
  - Inquiries from Australia, France, Germany, Japan, United Kingdom, Poland, Austria.

## A large, dense collage of various traffic signs and road safety equipment. The items include: regulatory signs like 'STOP', 'SPEED LIMIT 20', 'SCHOOL', 'NO SMOKING', 'ONE WAY', and 'PRIVATE ROAD NO THRU TRAFFIC'; warning signs such as 'ROAD WORK AHEAD', 'CAUTION', 'RAILROAD CROSSING', 'DEAD END', 'SLIP WHEN WET', and 'PEORIA POPULATION 6000'; and construction signs like 'ROAD CLOSED', 'ROAD WORK AHEAD', and 'MEN WORKING'. There are also directional signs for 'NEW YORK' and 'N MAIN ST', and a 'DO NOT ENTER' sign. Safety equipment includes a red traffic cone, an orange traffic barrel, a tripod-mounted sign, a portable sign, a traffic light, and a traffic sign post. The collage is set against a white background with a faint grid pattern.

# What's Ahead

- Harvest phase well density and Enhanced Oil Recovery
- Waste management and minimization
  - Produced and flow-back water
  - Drill cuttings
  - Filter socks
  - TENORM
  - Illegal dumping
- Spill reclamation
- Pipeline and PA well reclamation
- Flaring reduction
- Pipeline / Transportation Regulation
  - DMR > gathering > oil conditioning
  - PSC > transmission pipelines > rail
  - Operators > right of way

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## Phase 3 “Harvest” 6 – 28 or more wells per spacing unit

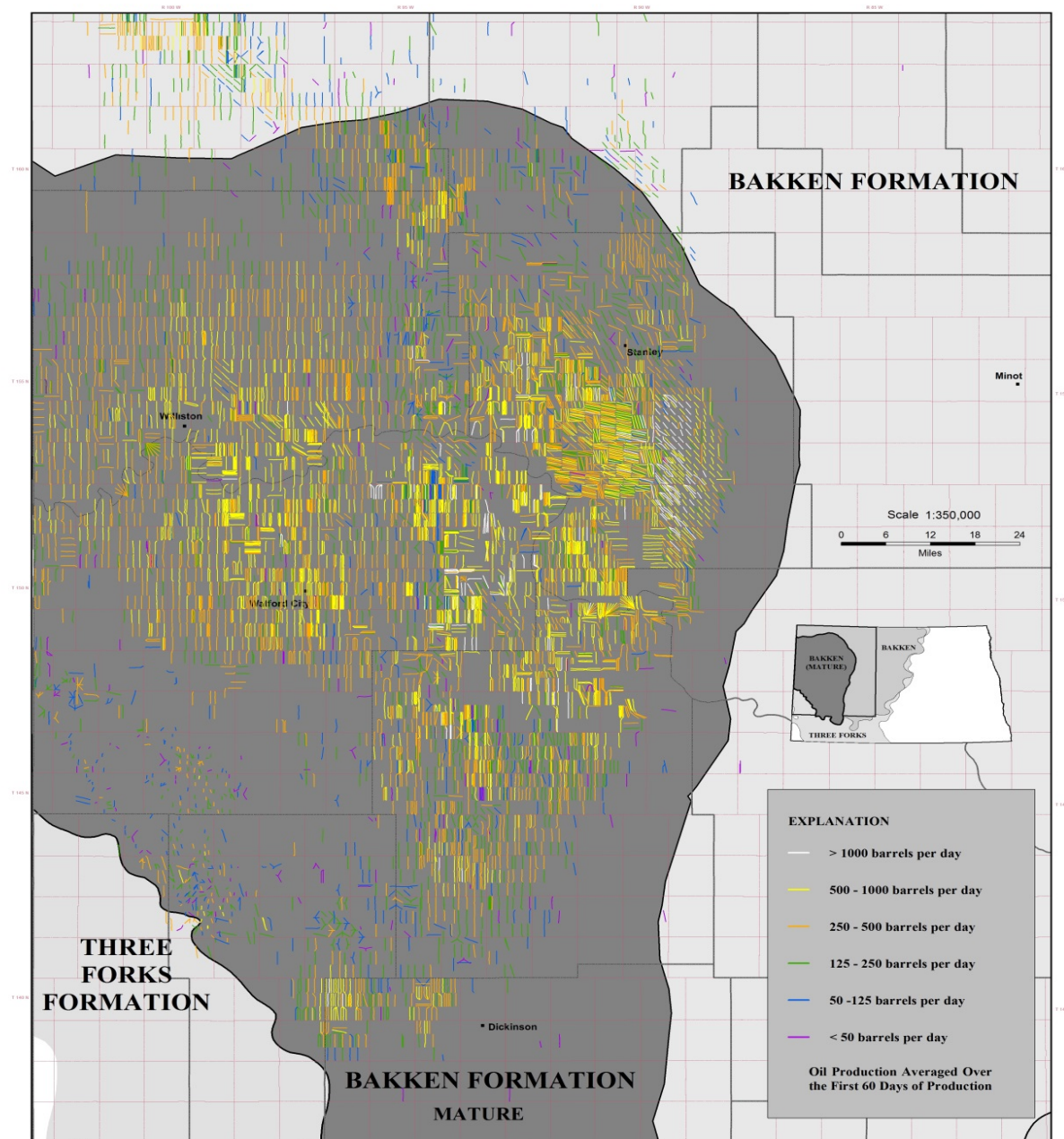


Vern Whitten Photography      6 wells producing - drilling 7-12 - and 13-18 coming soon



# First 60 Day Average Bakken Horizontal Production by Well

July 2014

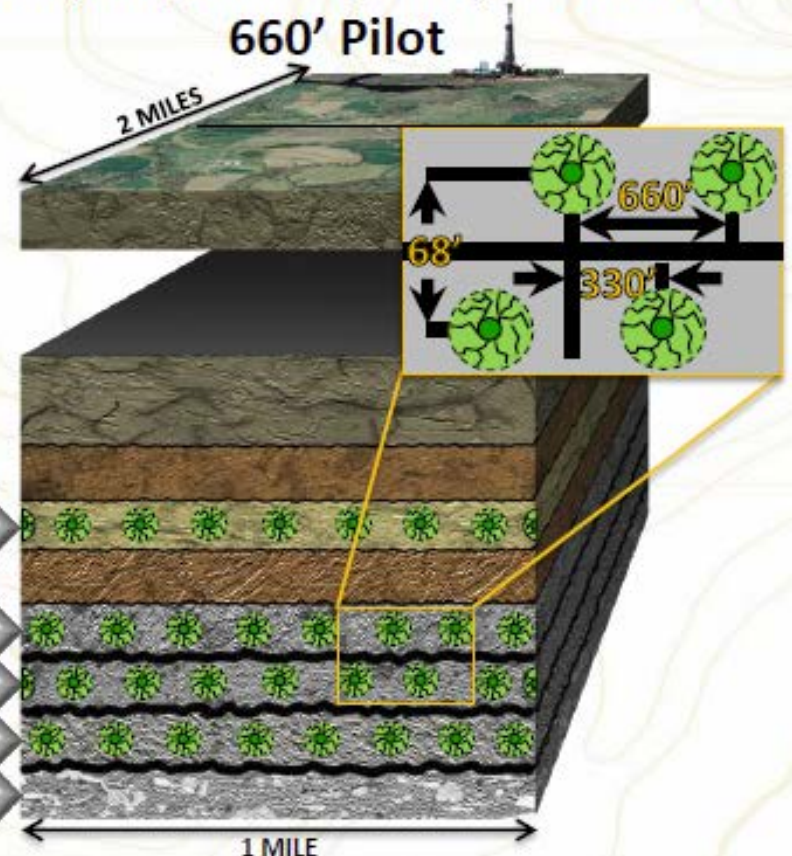
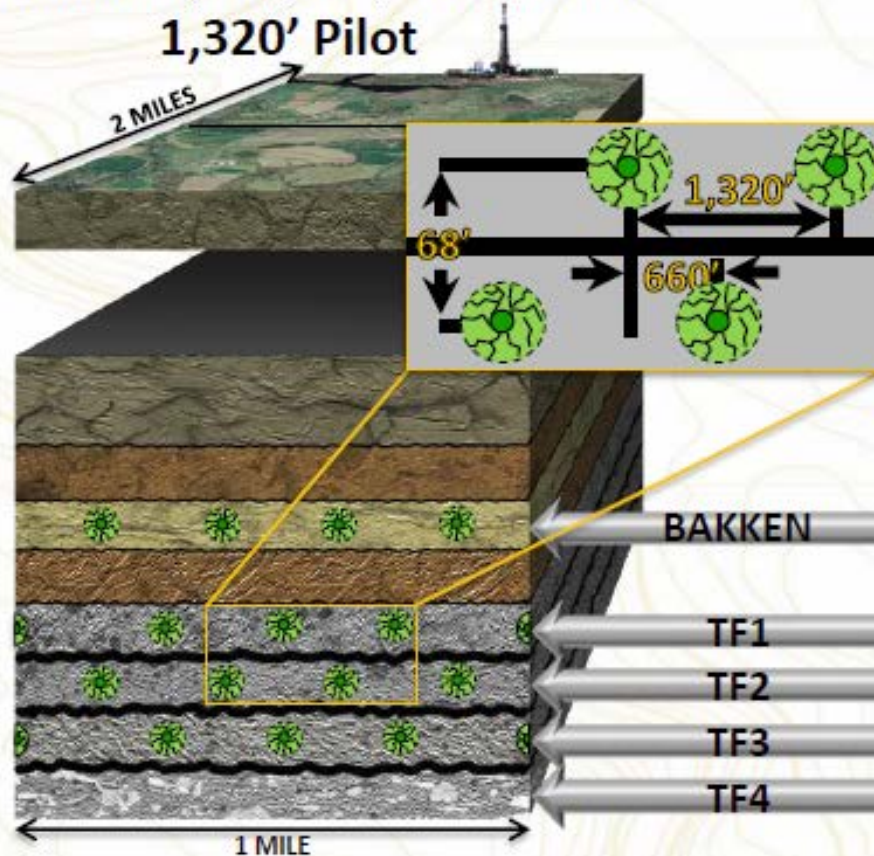


# Well density is the big question

## 1,320' & 660' Pilot Density Projects: 2013-14

*Hawkinson, Tangsrud, and Rollefstad*

*Wahpeton, Lawrence, Mack, and Hartman*



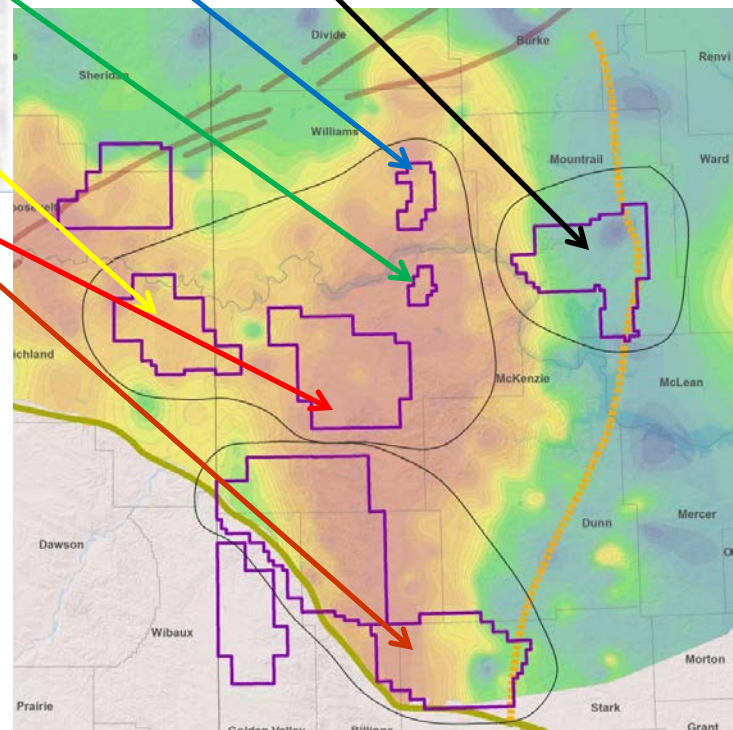
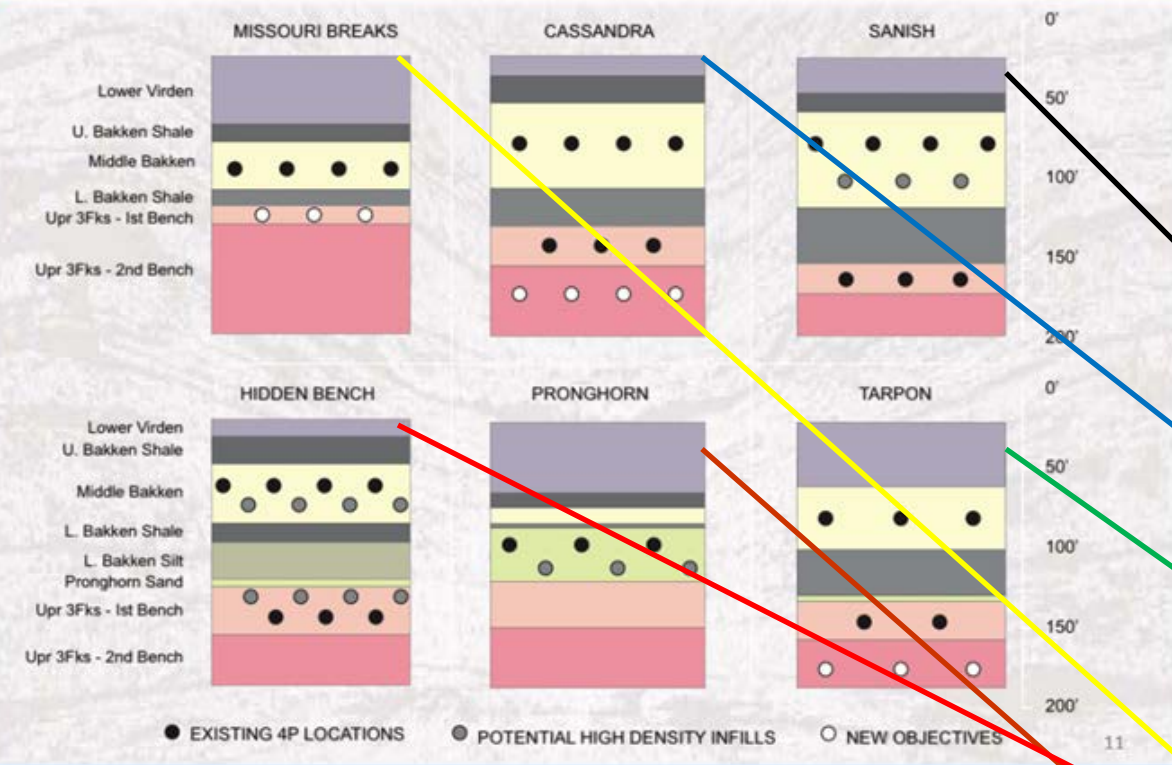
- 3 project areas
- 1,320 ft. same-zone spacing
- 34 new wells (gross)

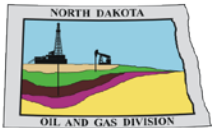
- 4 project areas
- 660 ft. same-zone spacing
- 31 new wells (gross)

Source: Continental Resources

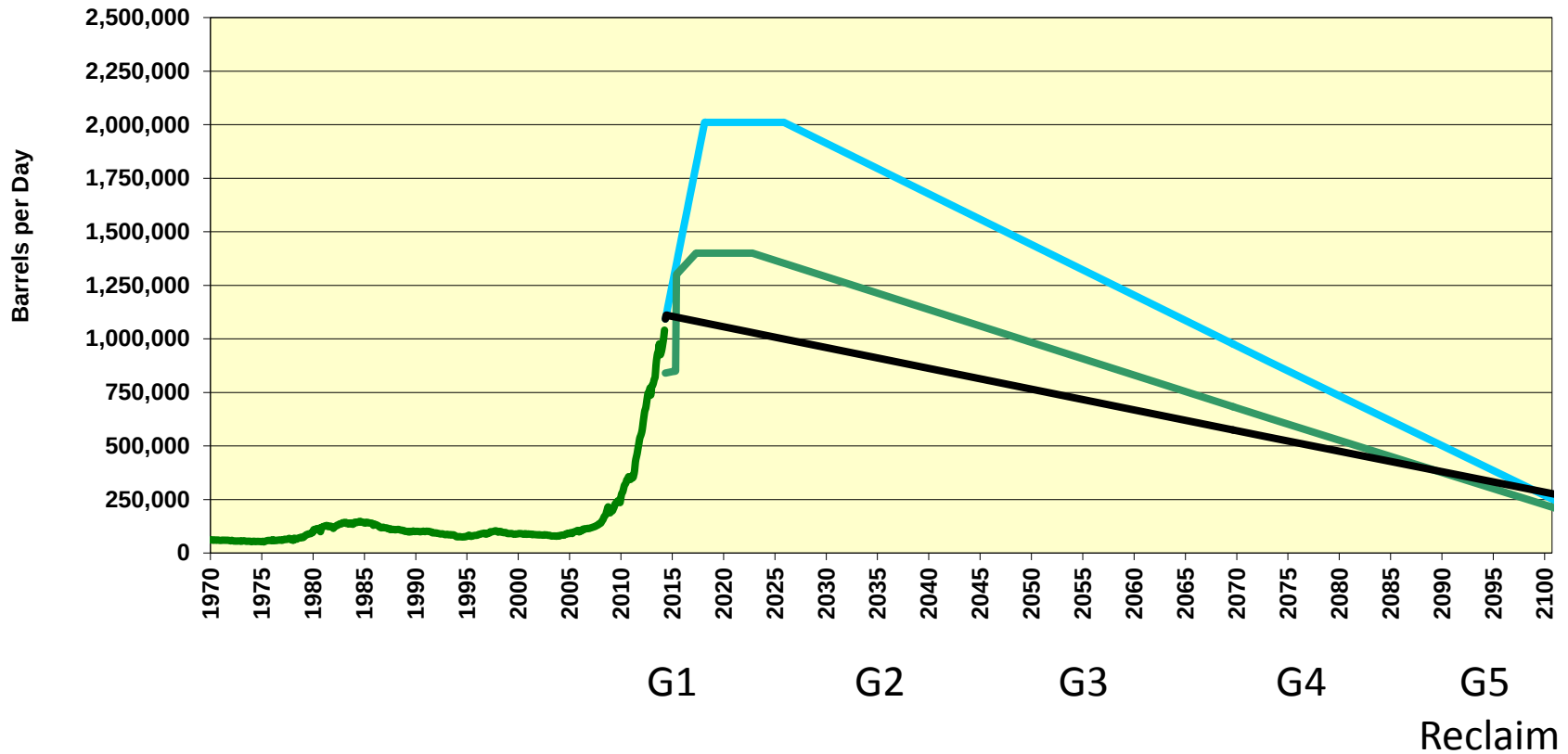


# Williston Basin Primary and Prospective Drilling Plan by Area





## North Dakota Oil Production



**EOR? +++**

History

Current ND Revenue Estimate

Peak Production Estimate

Current Production Limited-No Drilling

# What's Ahead

- Harvest phase well density and Enhanced Oil Recovery
- Waste management and minimization
  - Produced and flow-back water (1.4 BW : 1 BO)
  - Drill cuttings (25 semi-loads per Bakken well)
  - Filter socks (classification-storage-disposal)
  - TENORM (handling and disposal)
  - Illegal dumping (waste hauler tracking & reclamation)
- Spill reclamation
- Pipeline and PA well reclamation
- Flaring reduction
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  - Operators > right of way



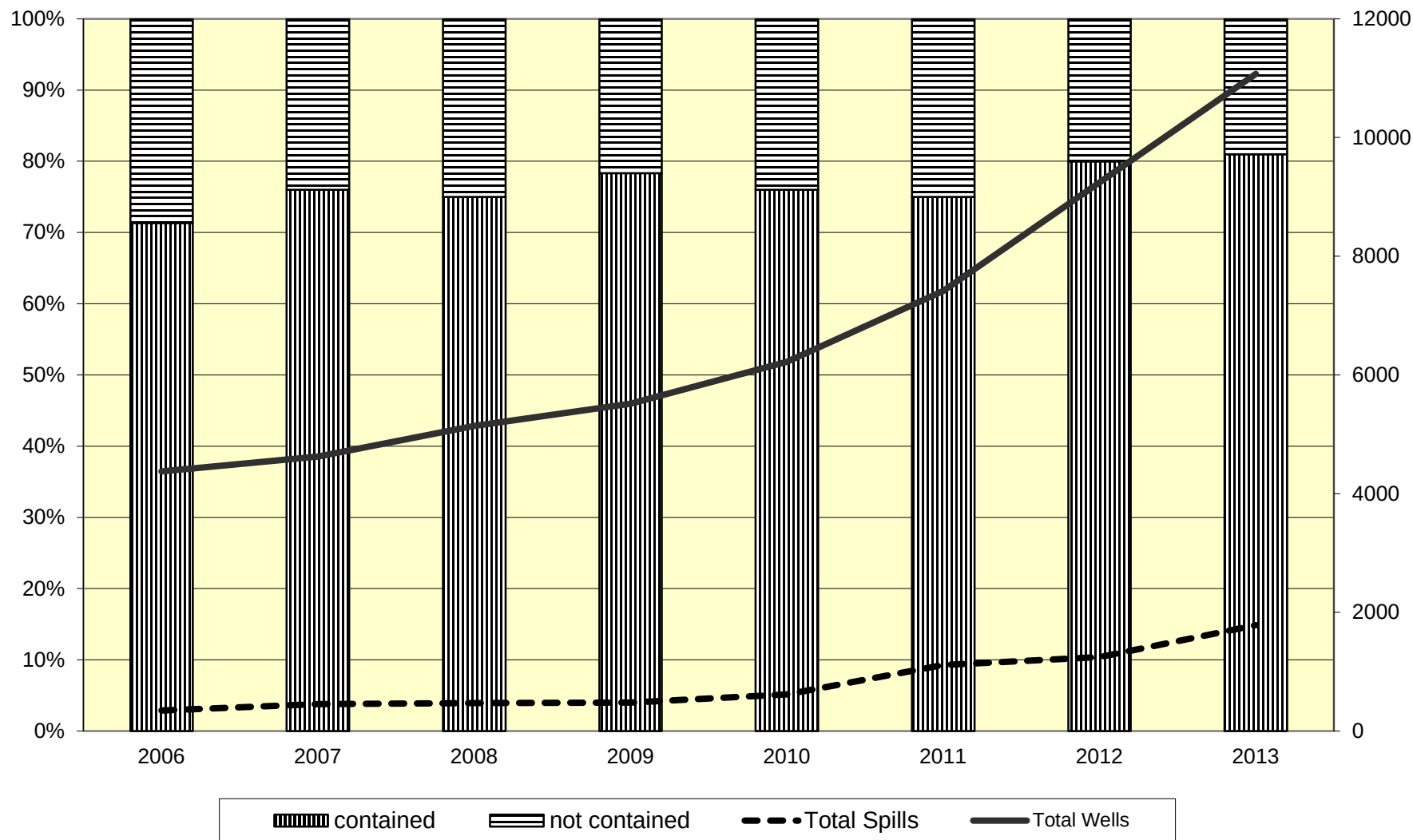
# What's Ahead

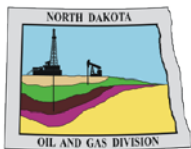
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## Surface Spills

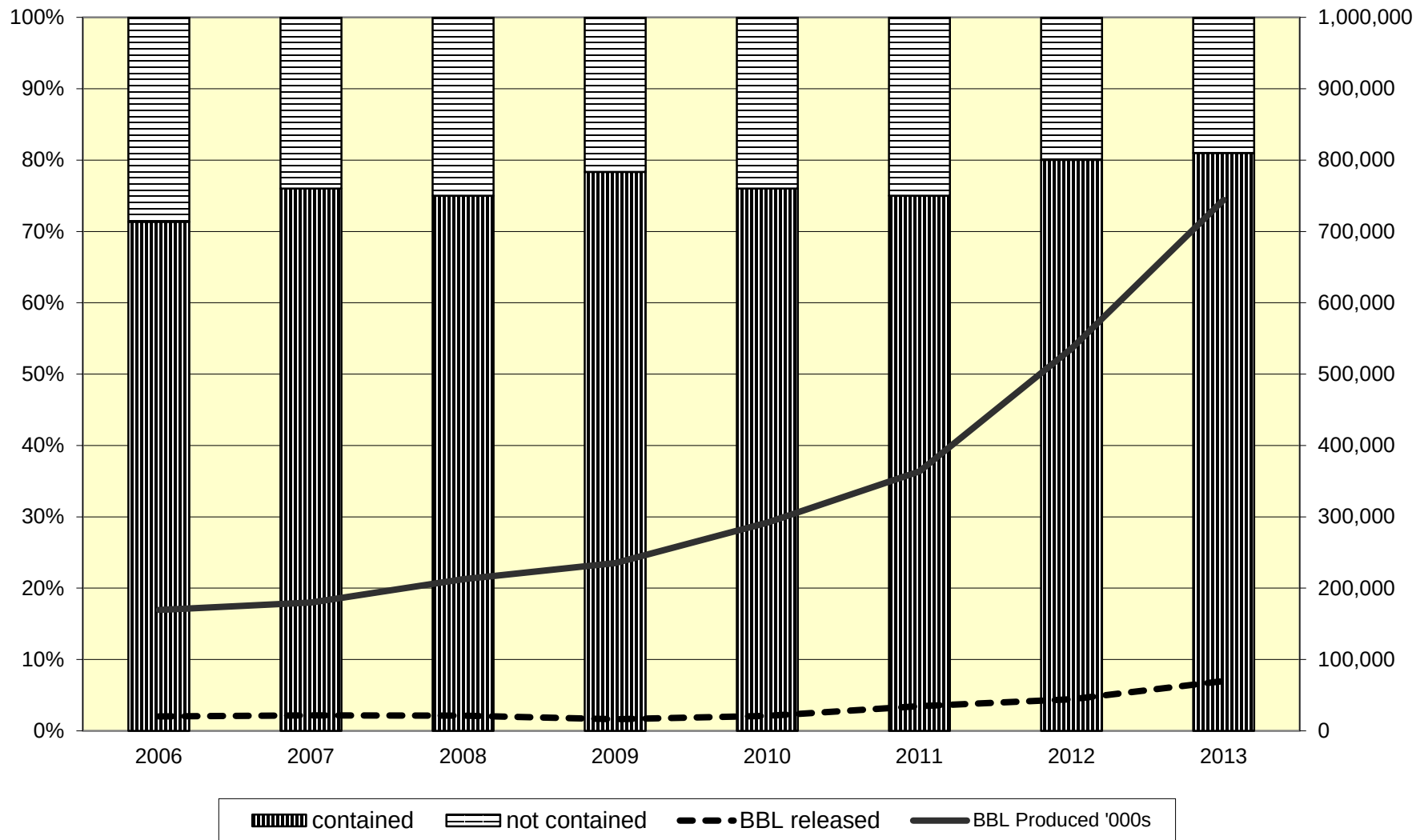
The Oil and Gas Division regulates spill containment through diking and site construction rules.





## Surface Spills

The Oil and Gas Division regulates spill containment through diking and site construction rules.





## **Remediation Philosophy**

***Goal: Return the site to a state consistent with original land-use.***

- Based on practical, accurate, and reproducible procedures.
- Use of select analyses, measurement of key indicators, recommended treatment, and a follow-up program.
- Remediation process is continually being evaluated and improved.
- Depending on various factors, plan on 3-4 year remediation duration.

***“Remediation requires patience.”***

# What's Ahead

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## Report a Gathering Line Incident

\* If the incident involves a spill or release of product and you are the responsible party or representative, please use the Oil and Gas Division's [spill report](#) , this form is only for public submissions.

### Reporting Party Information

Reporting Party First Name

Reporting Party Last Name

Street Address of Reporting Party

City

State

--Select State--

Zipcode

Email

Phone

### Incident Details

Incident Discovery Date

9/16/2014

IncType

--Select Incident Type--

Description of Incident and Current Conditions

Pipeline Operator (if known)

Was Pipeline Operator Notified?

☐ Yes

☐ No

Please upload a photo of the pipeline incident (This is required, 4 Meg maximum file size)

Upload Pipeline Incident Photo

(4 meg max file size):

Select files...

### Incident Location

County

--Select County--

Latitude (if known)

0.00

Longitude (if known)

0.00

Township

-- Select Township --

Range

-- Select Range --

Section

-- Select Section --

Quarter

Select Quarter

Quarter Quarter

Select QQuarter

Other Location Description

Submit

If you have trouble submitting the form or image.

Please complete the form, print and include a photograph of the incident and mail to :

NDIC Oil and Gas Division  
Attn : Gathering Line Incident  
600 East Boulevard Ave Dept 405  
Bismarck, ND 58505-0840



MORGAN DRAW

T144N R102W





8070

9078

8234

10935

MORGAN DRAW

9803

13228

T144N R102W

9515

13309

9766



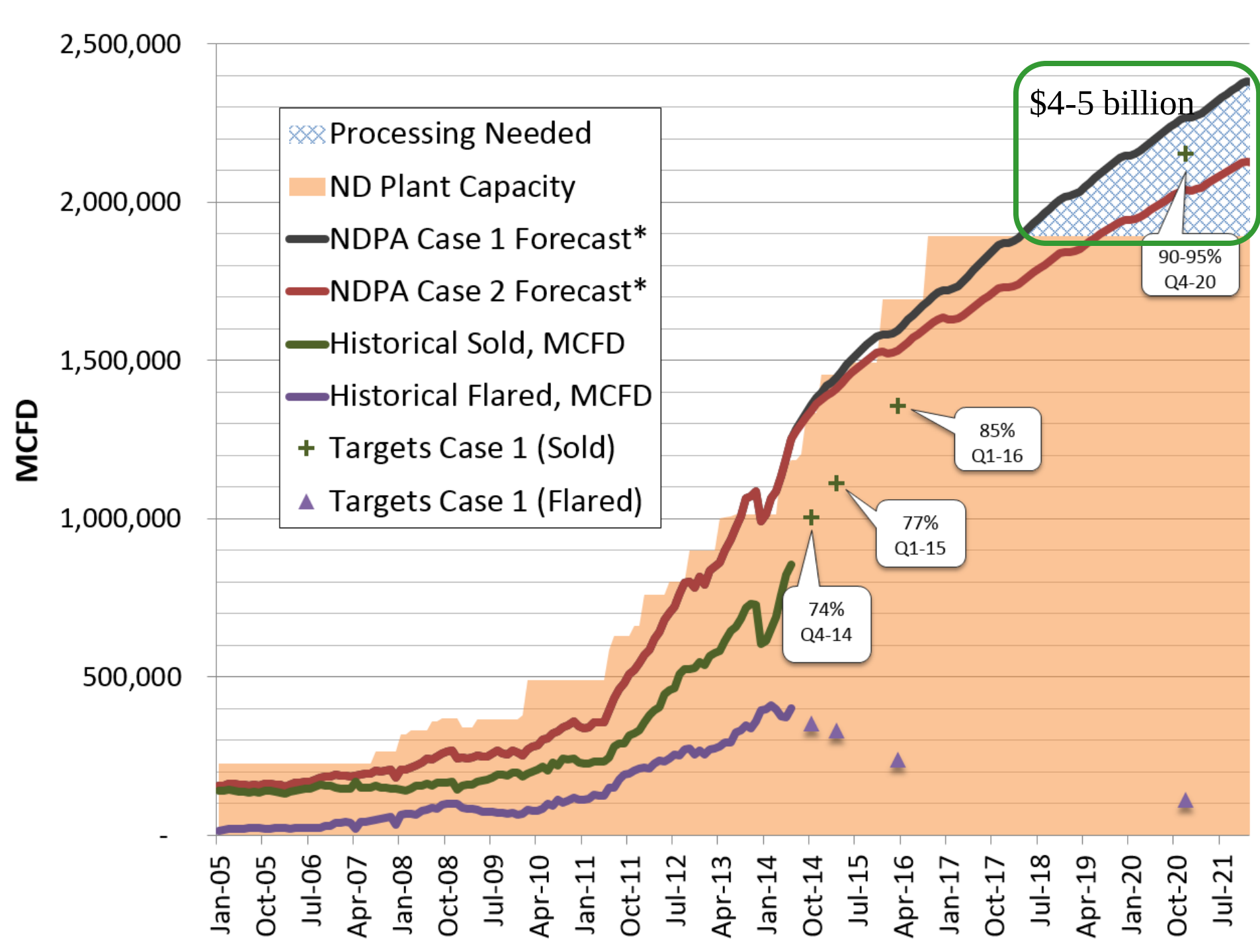


MORGAN DRAW

T144N R102W

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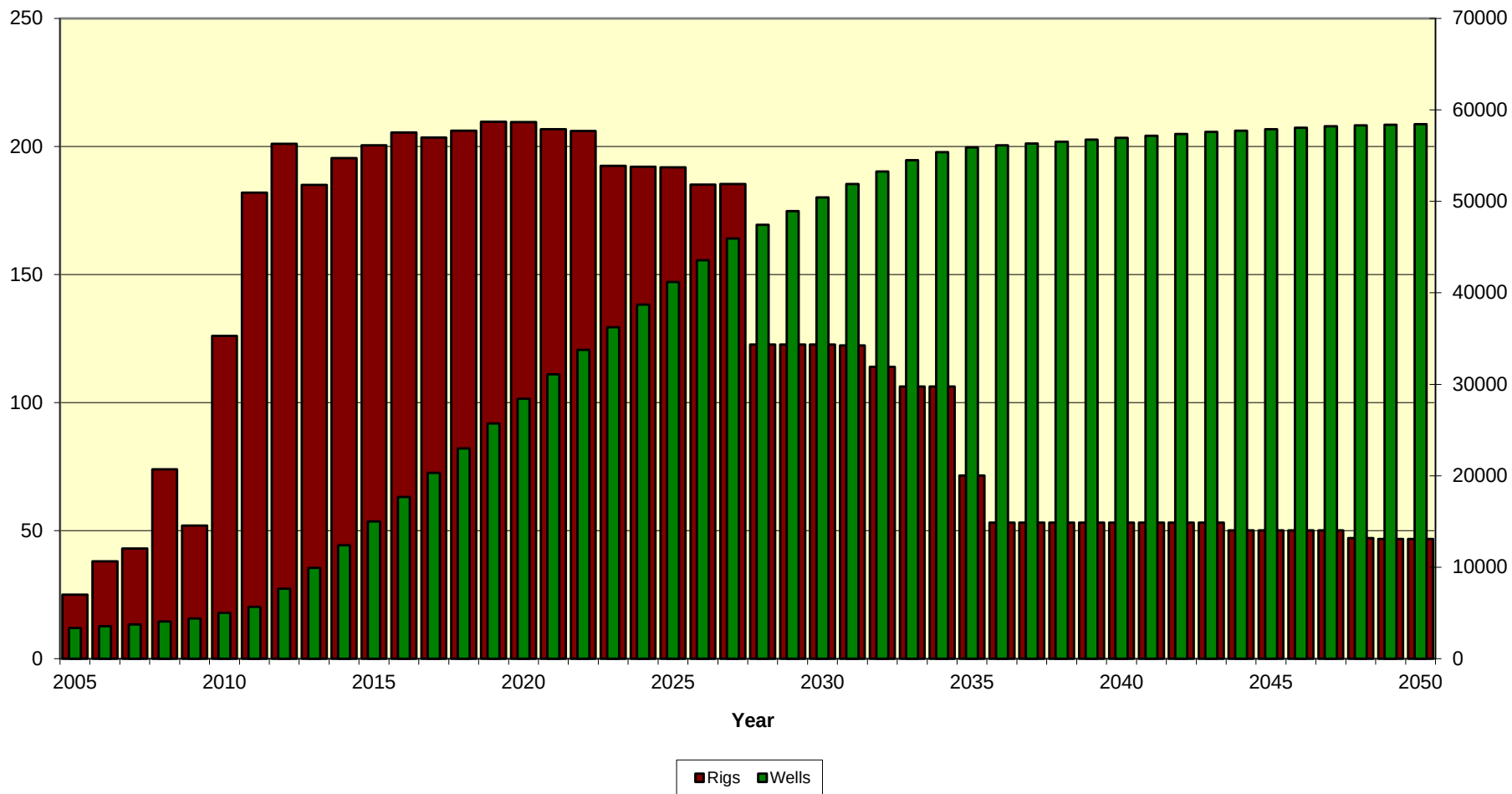




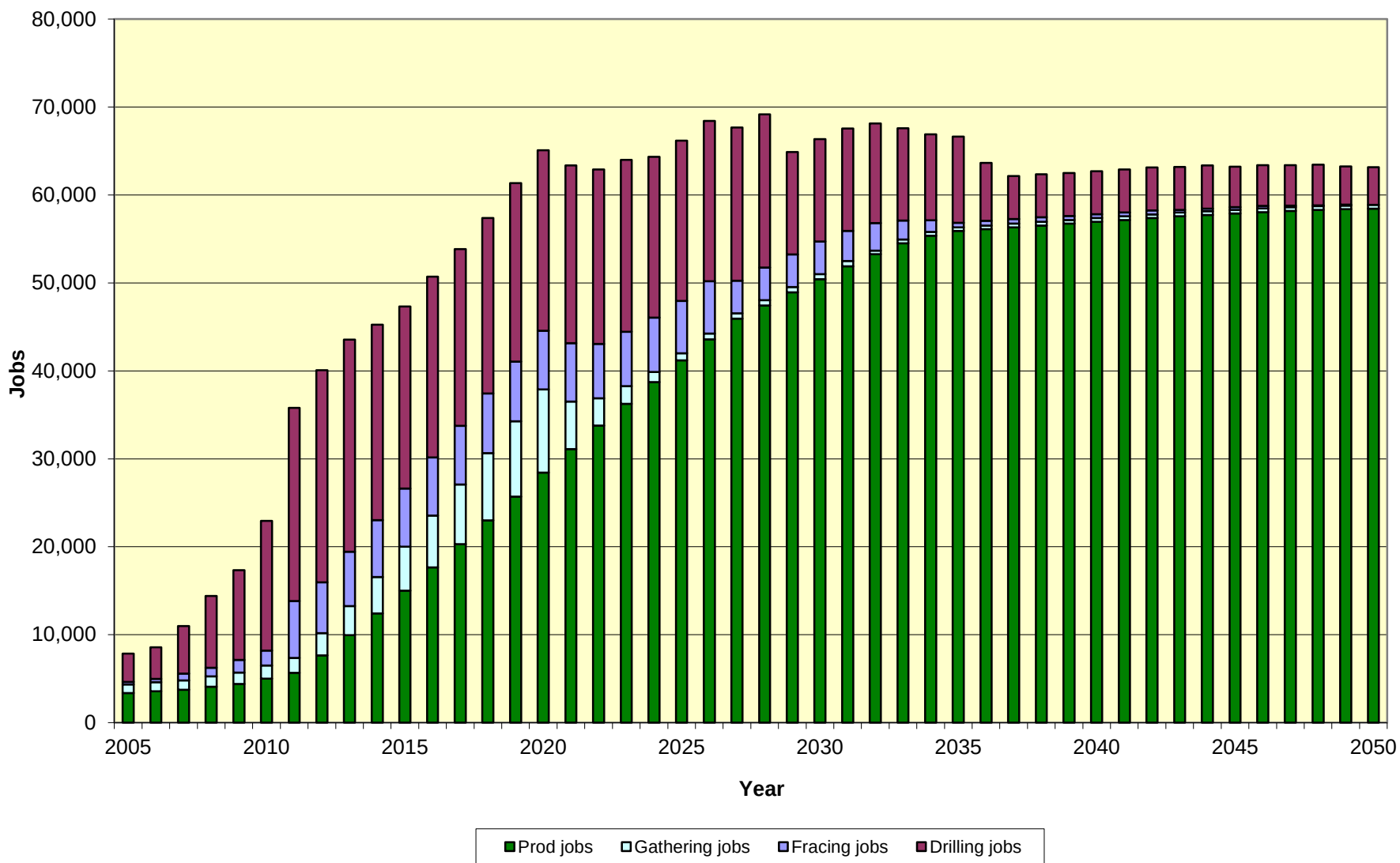
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## North Dakota Rigs and Wells



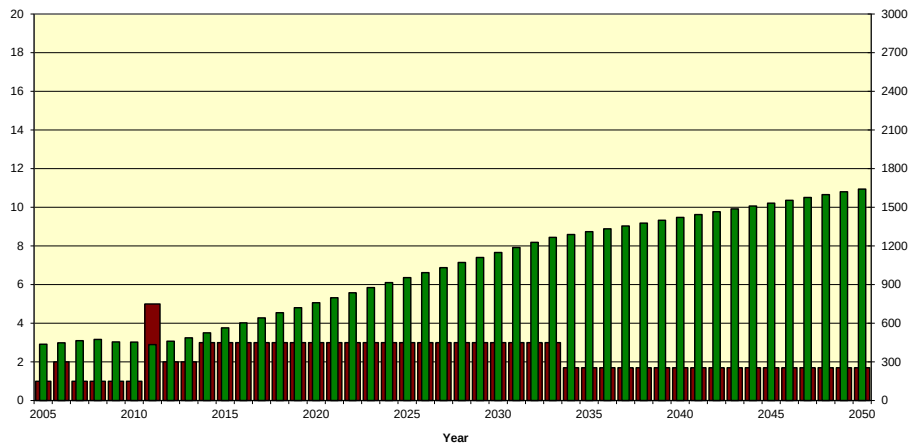
## North Dakota Oil Industry Jobs



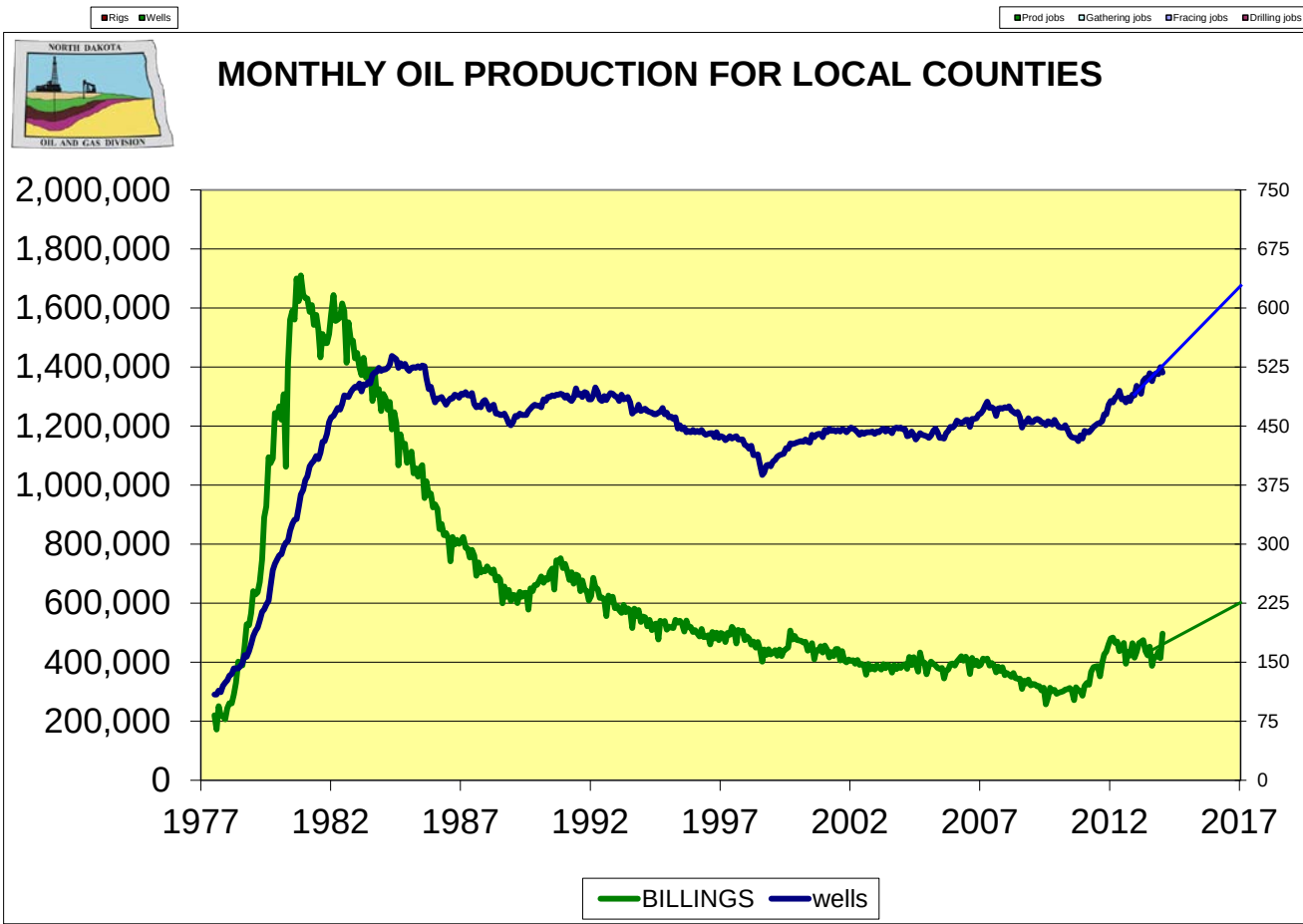
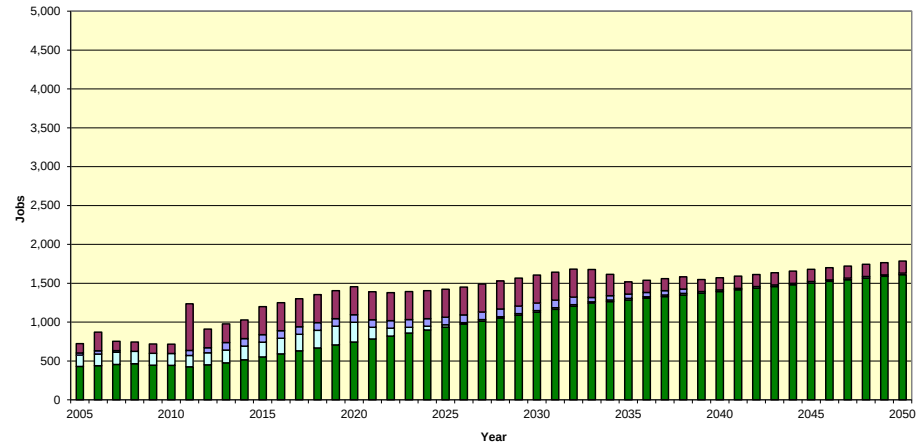


# County by County Outlook

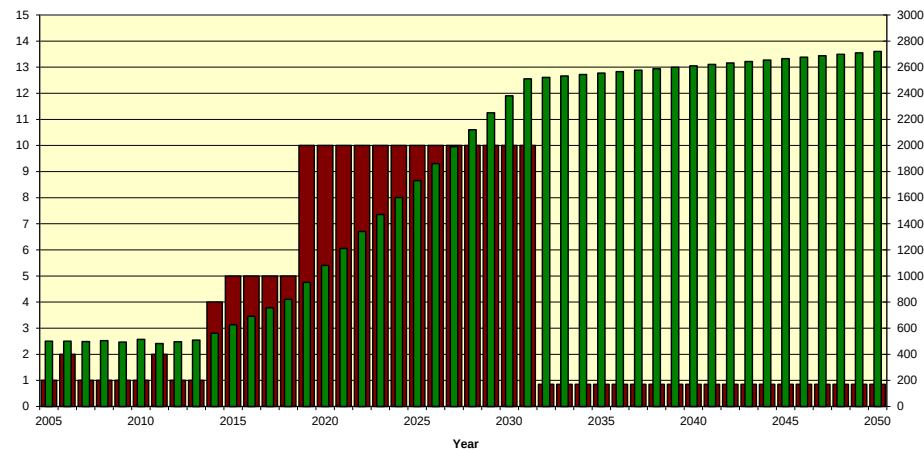
Billings Rigs and Wells



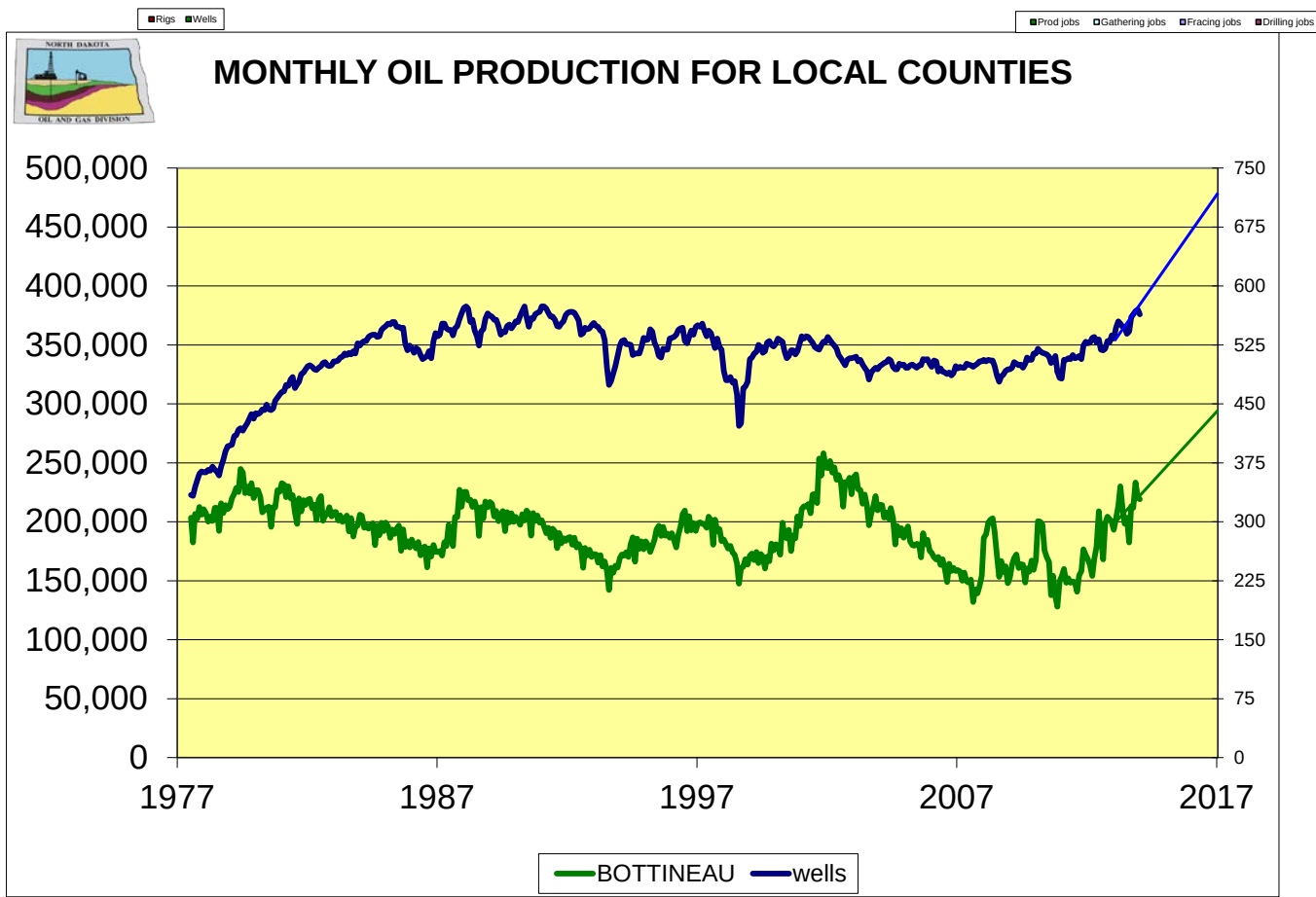
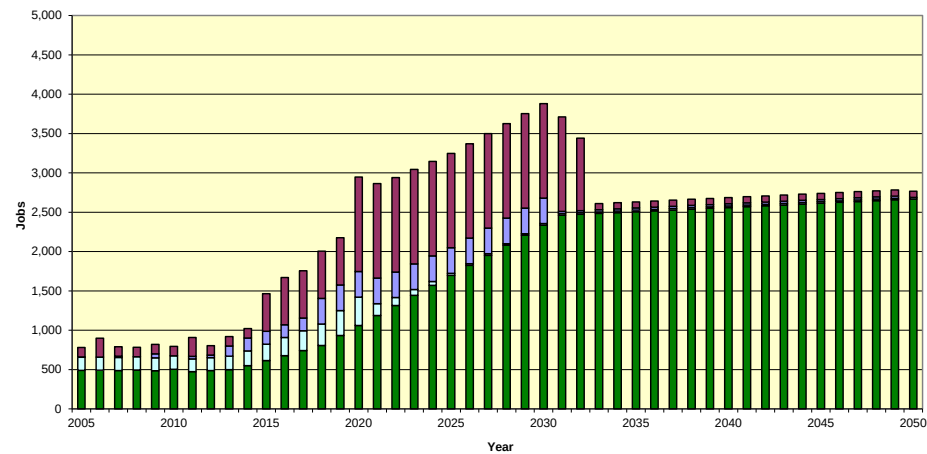
Billings Oil Industry Jobs



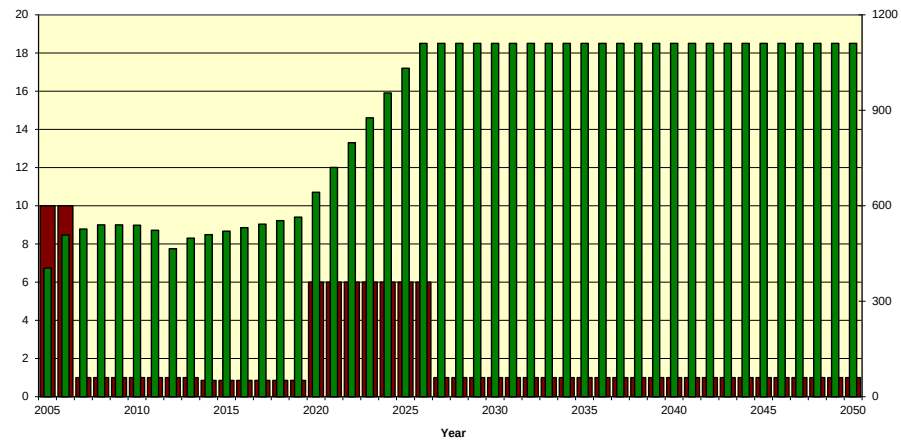
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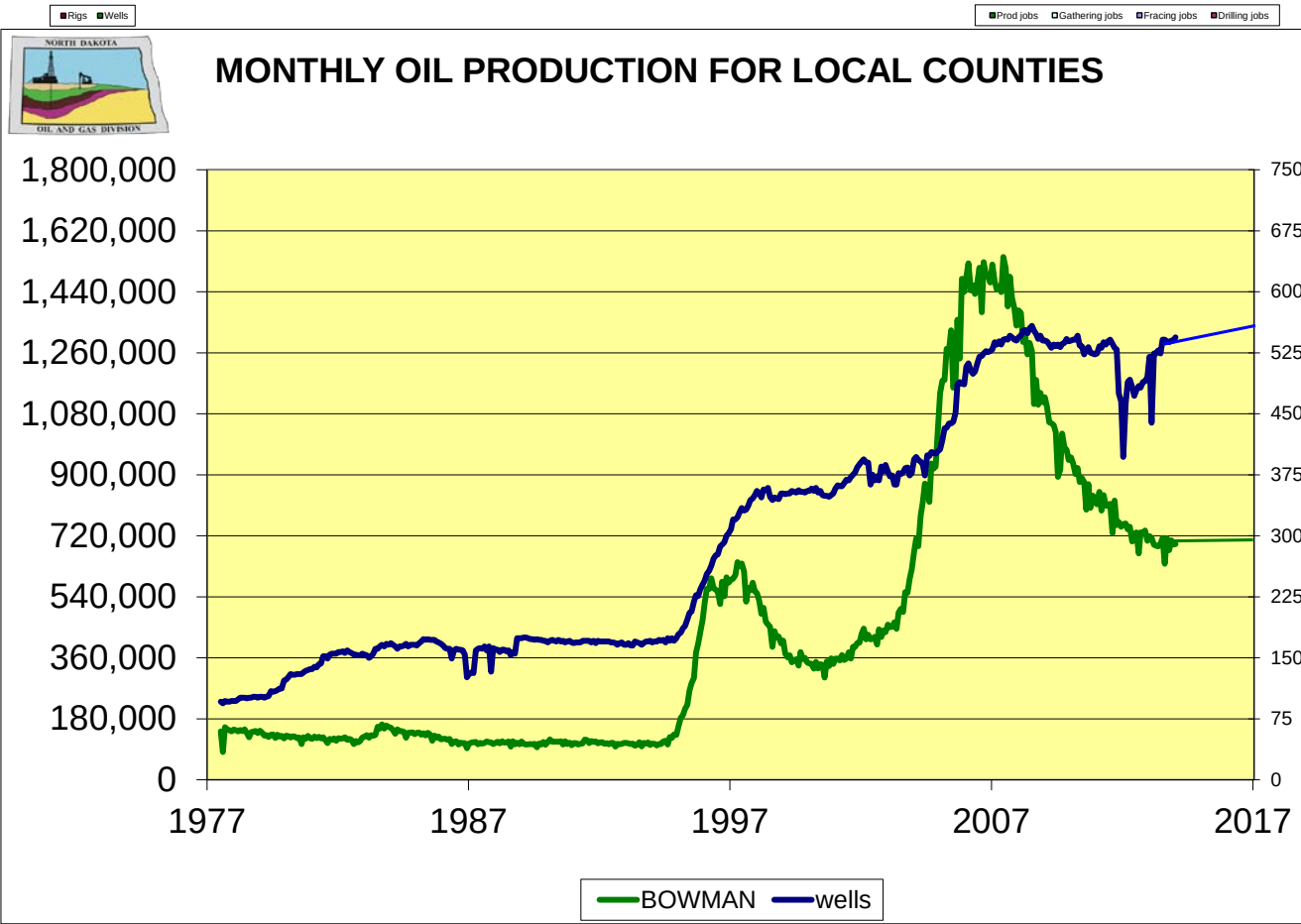
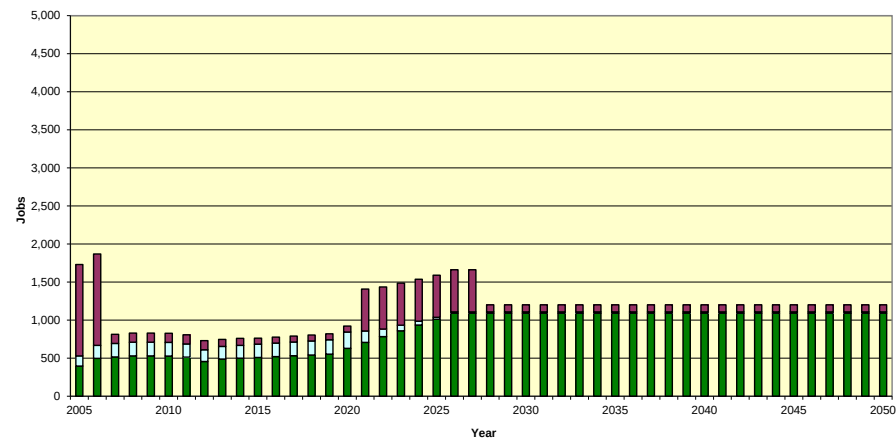
### Bottineau Oil Industry Jobs



Bowman Rigs and Wells

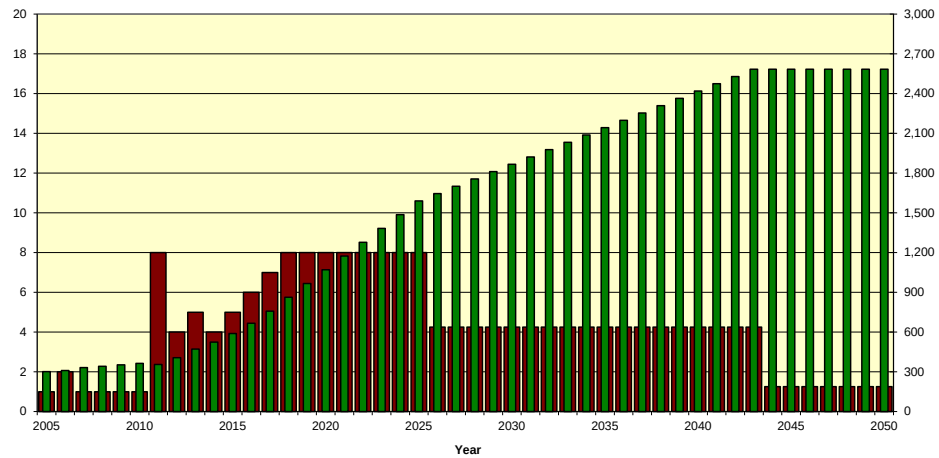


Bowman Oil Industry Jobs

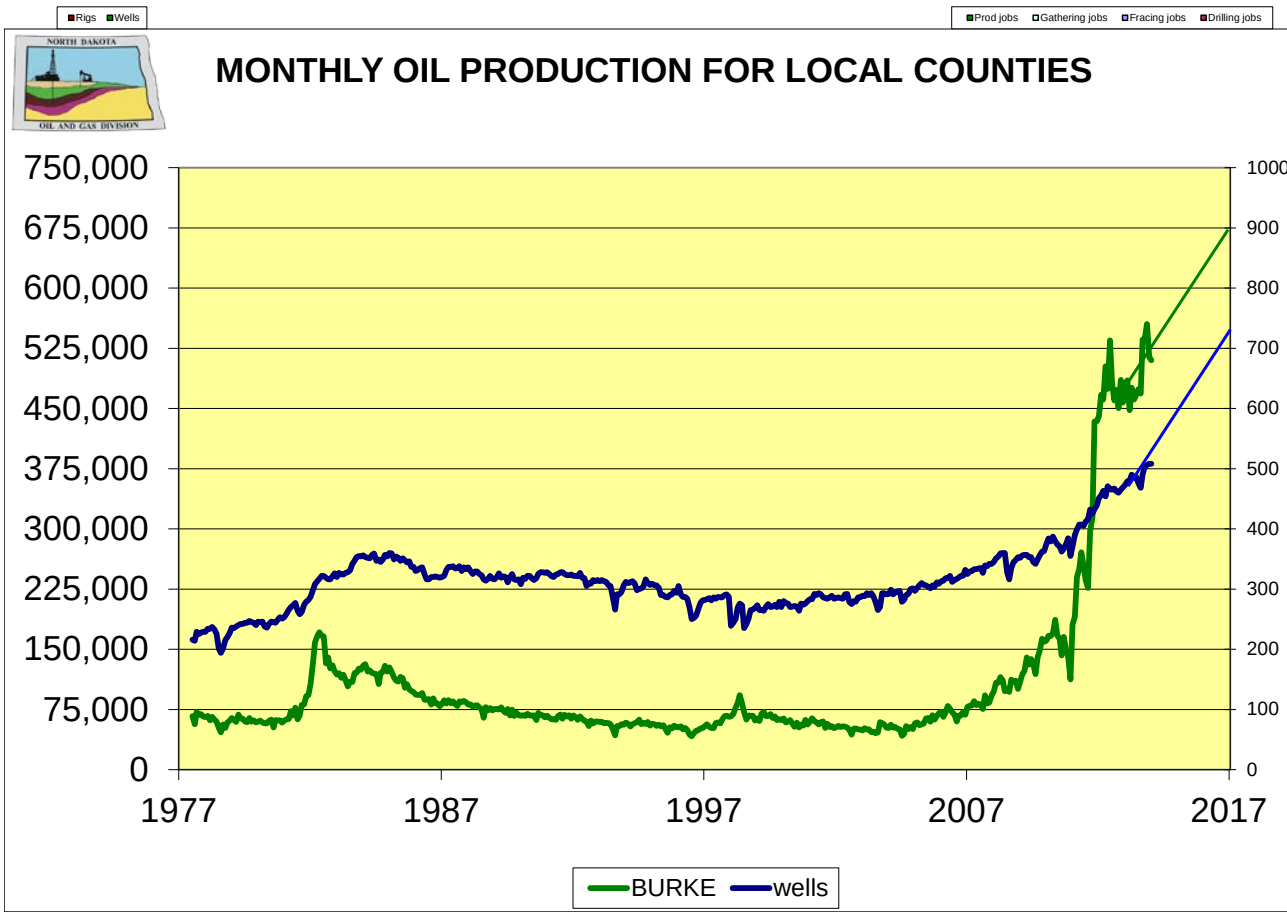
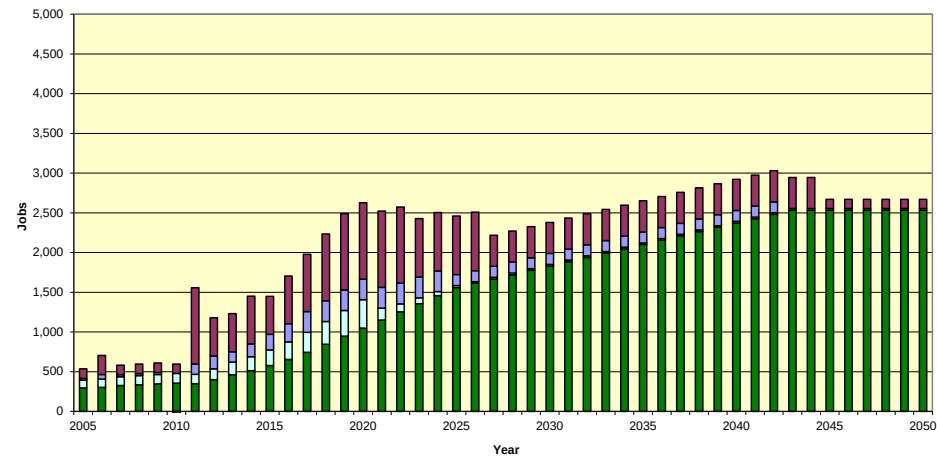




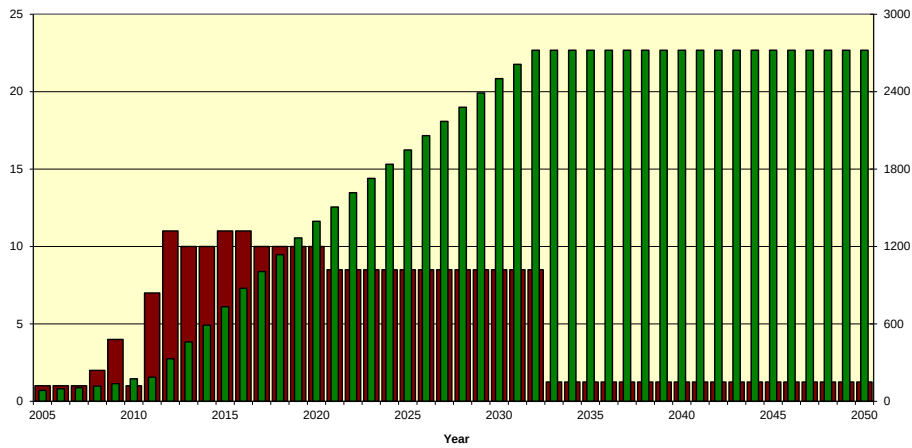
Burke Rigs and Wells



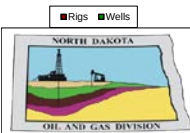
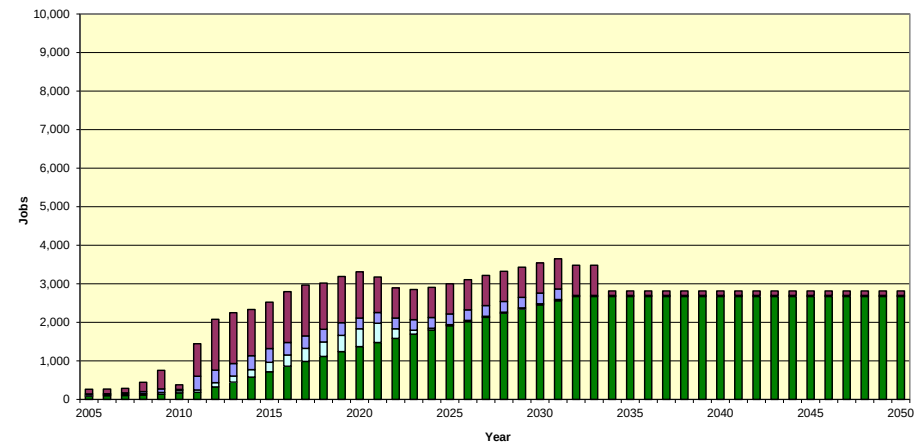
Burke Oil Industry Jobs



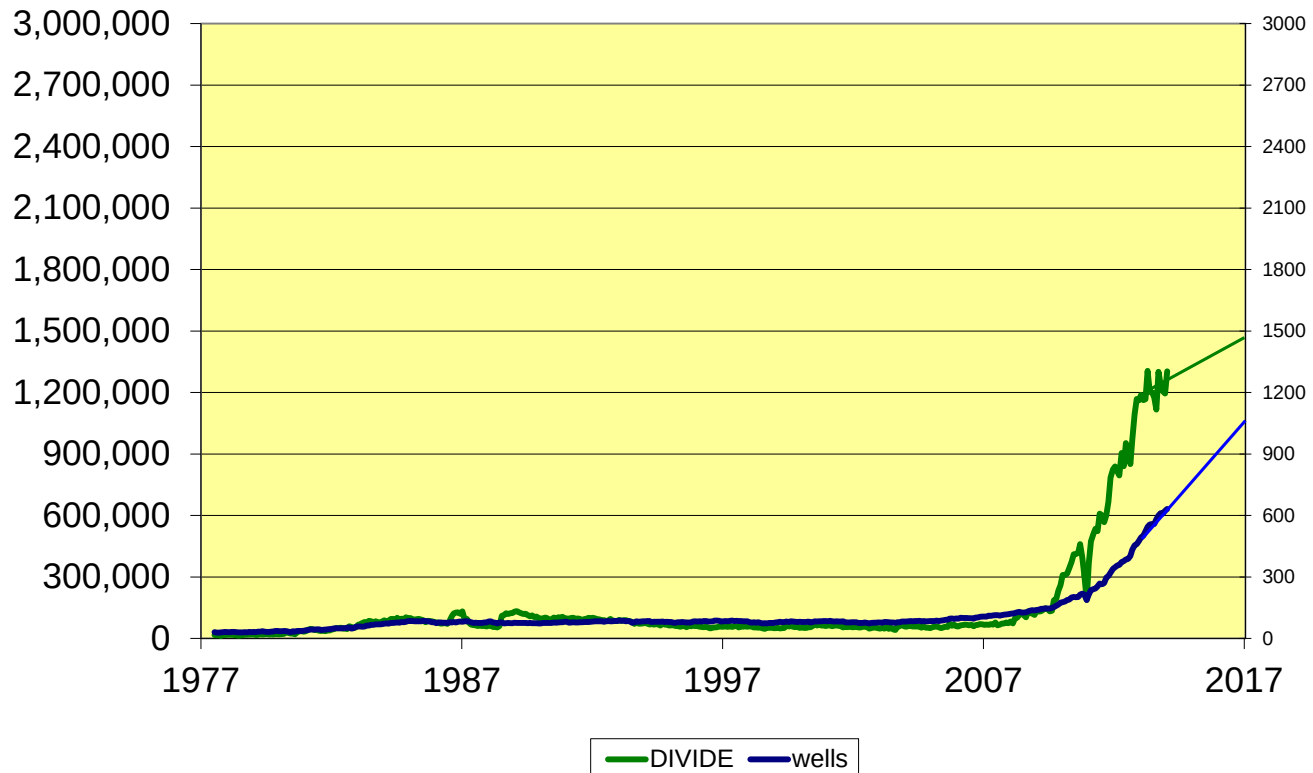
Divide Rigs and Wells



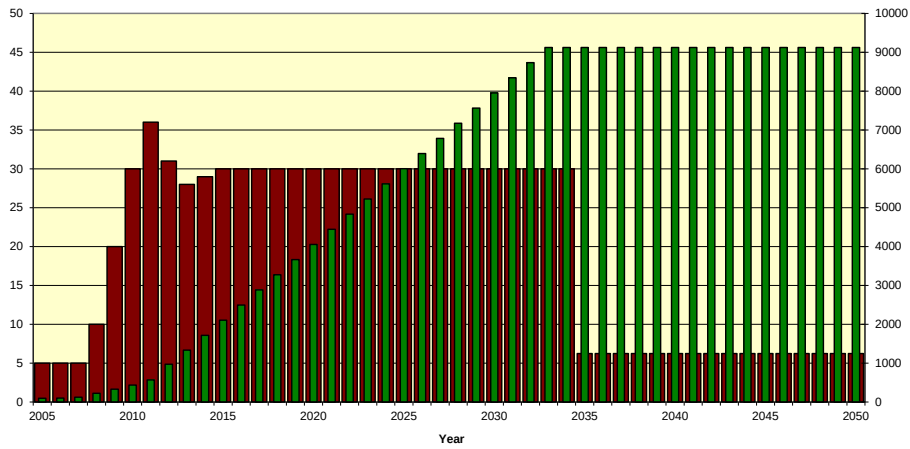
Divide Oil Industry Jobs



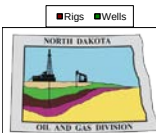
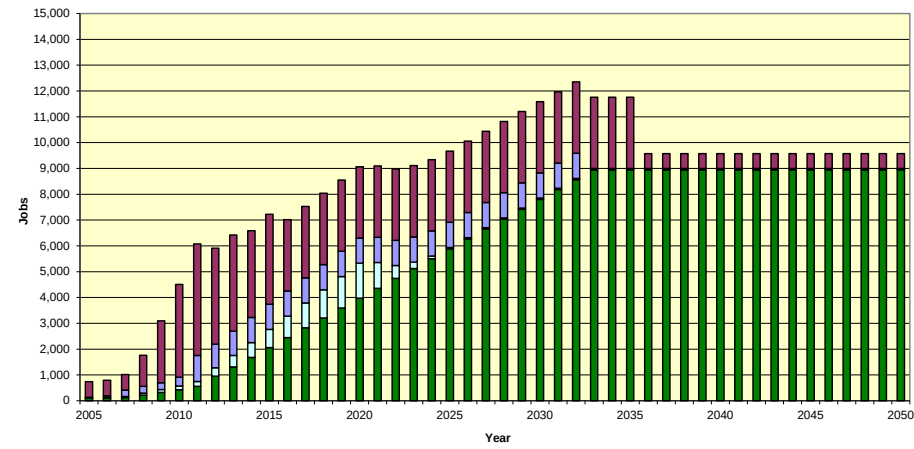
## MONTHLY OIL PRODUCTION FOR LOCAL COUNTIES



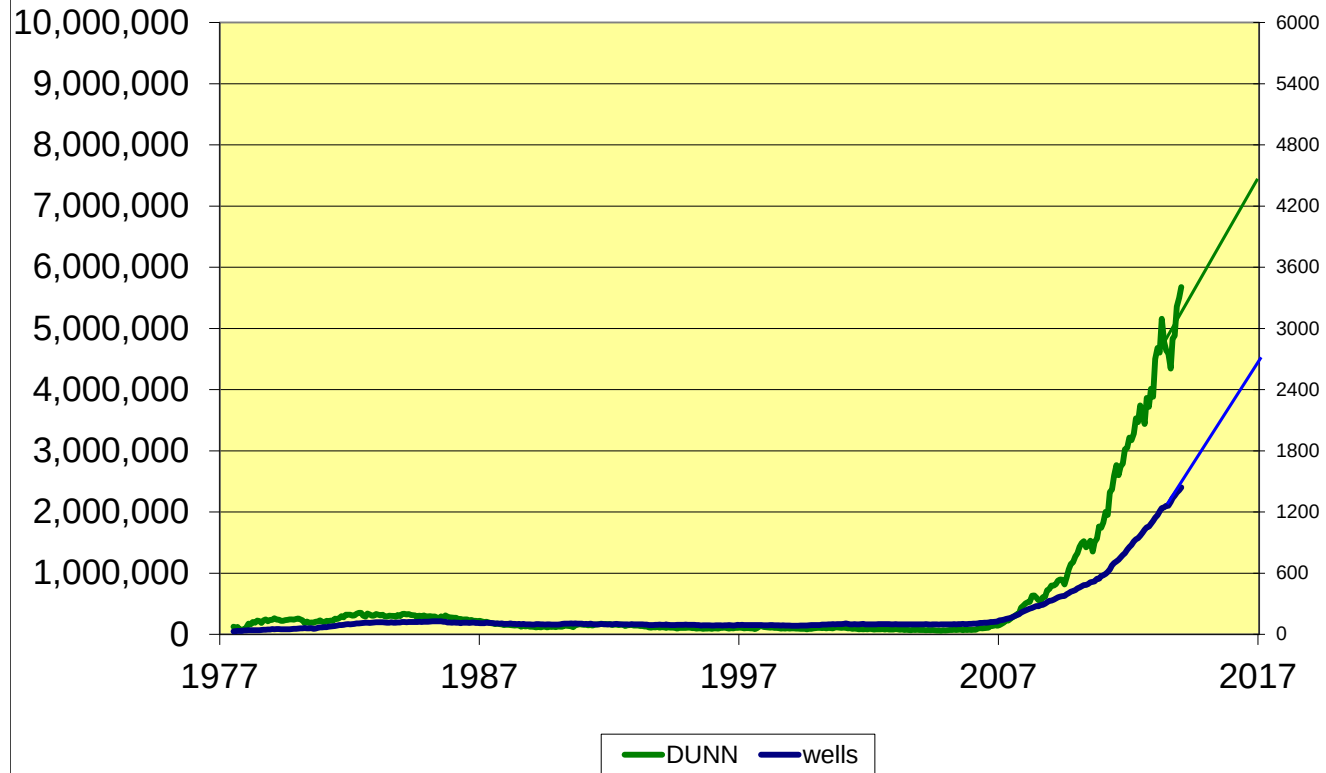
Dunn Rigs and Wells



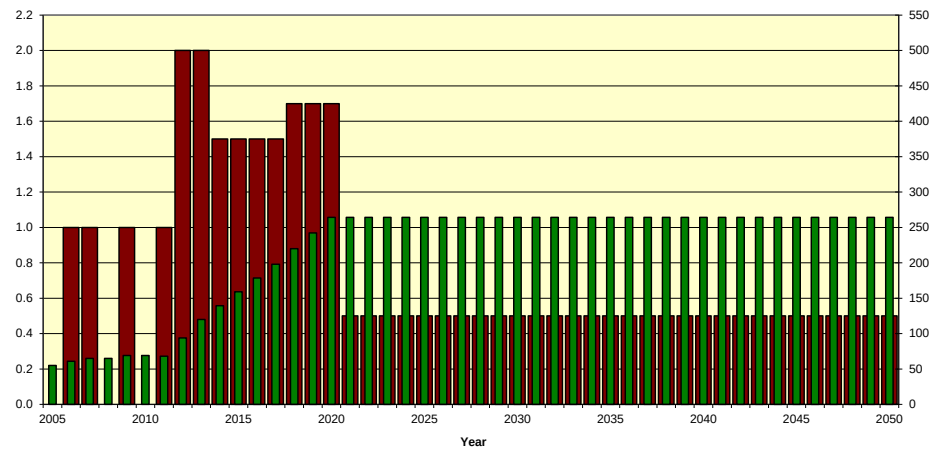
Dunn Oil Industry Jobs



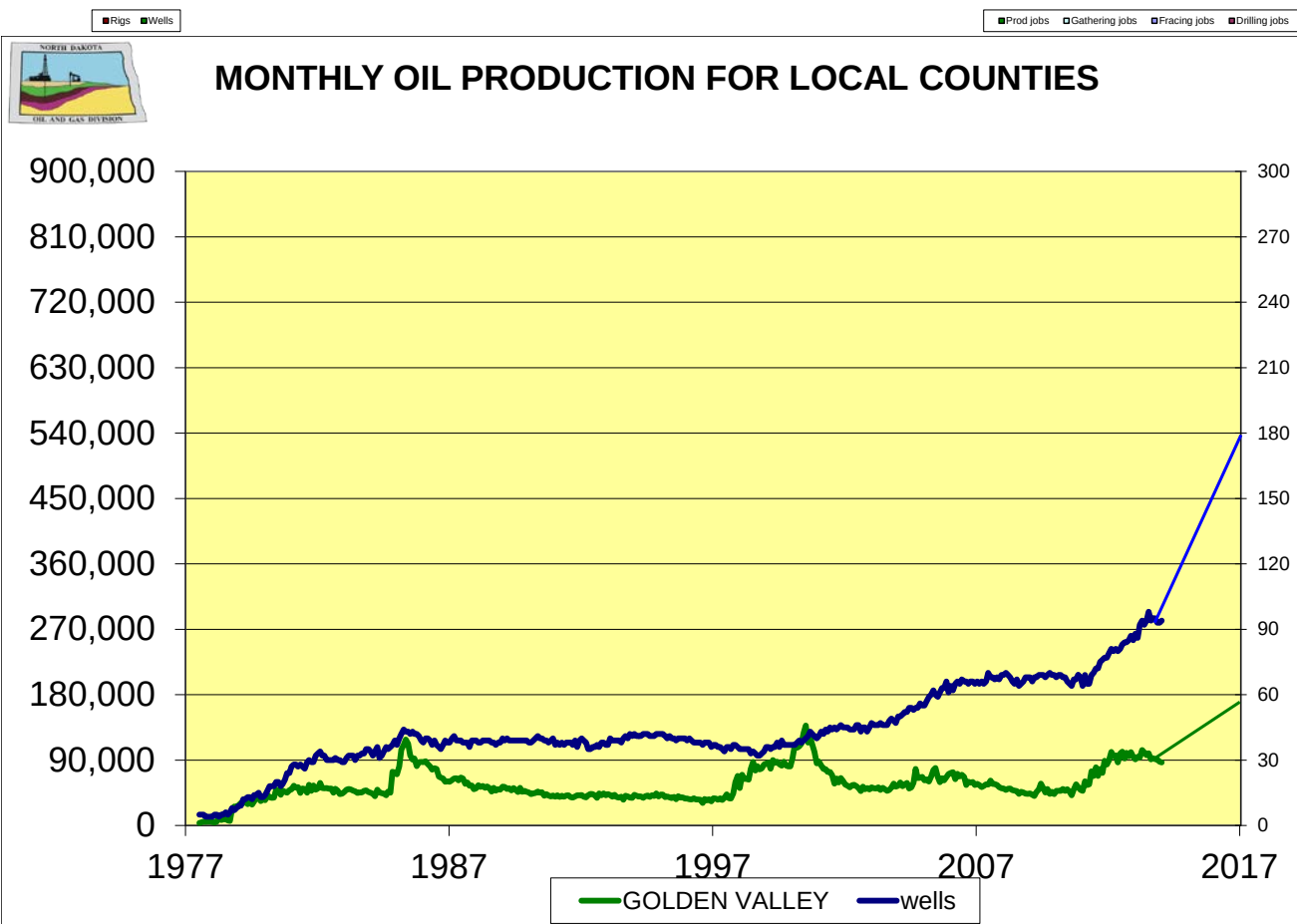
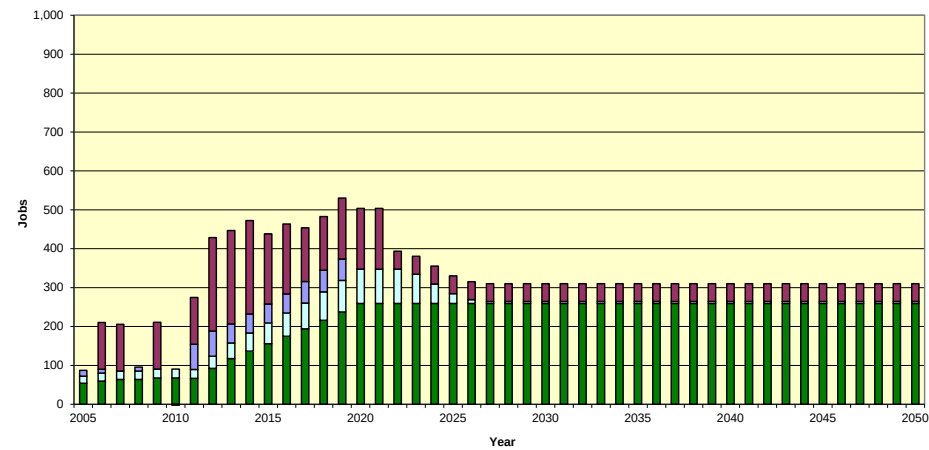
## MONTHLY OIL PRODUCTION FOR LOCAL COUNTIES



Golden Valley Rigs and Wells (includes Red River)

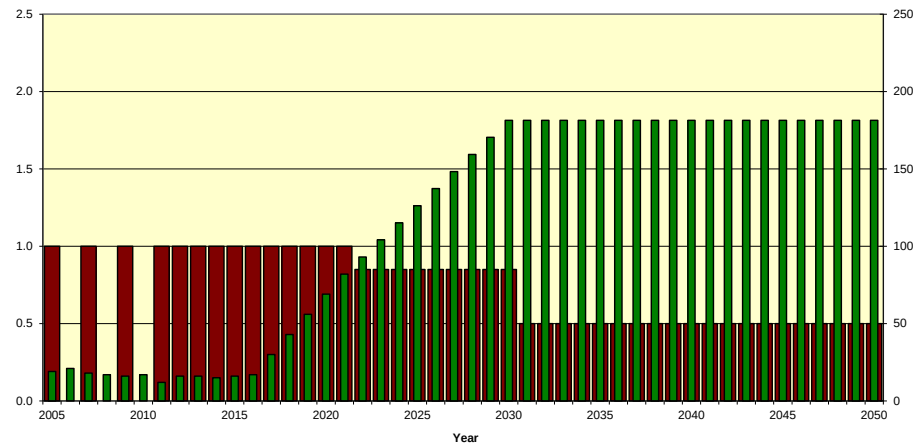


Golden Valley Oil Industry Jobs

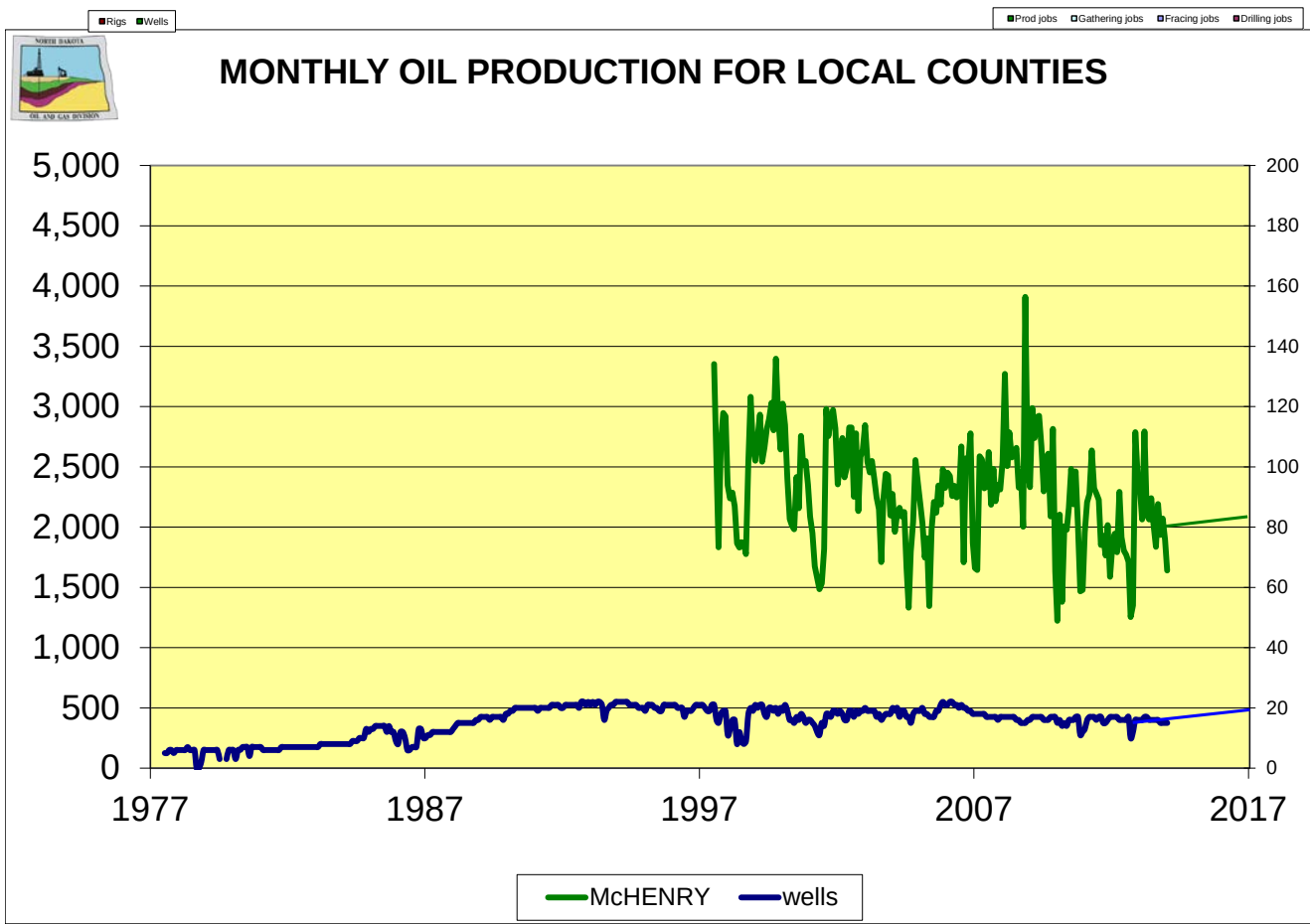
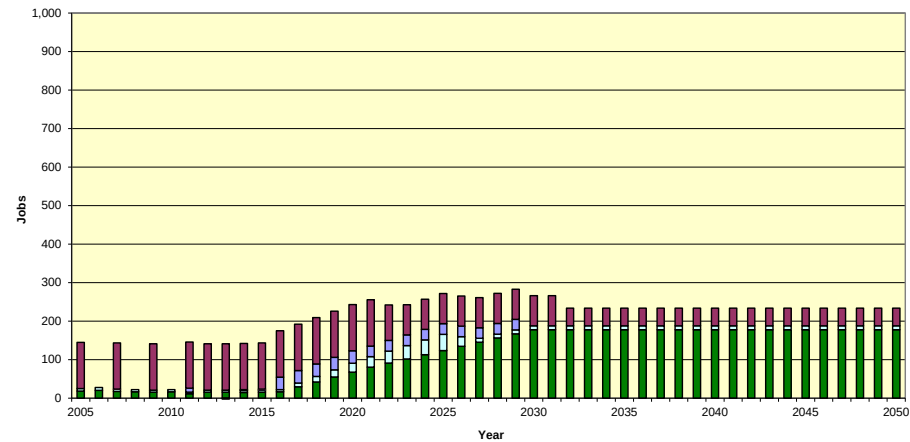




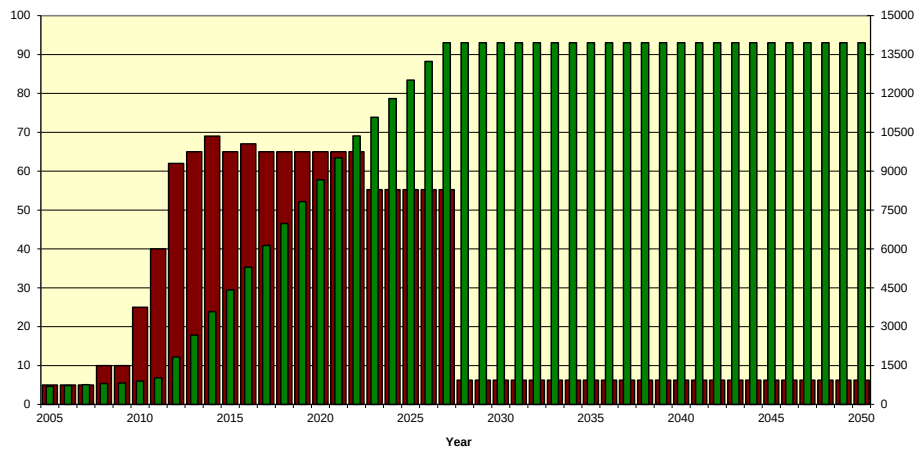
McHenry Rigs and Wells



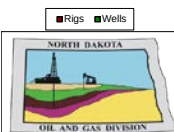
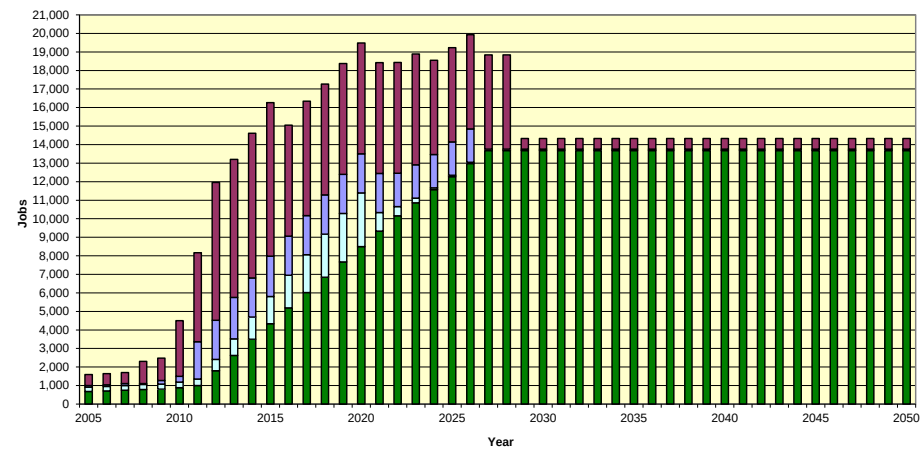
McHenry Oil Industry Jobs



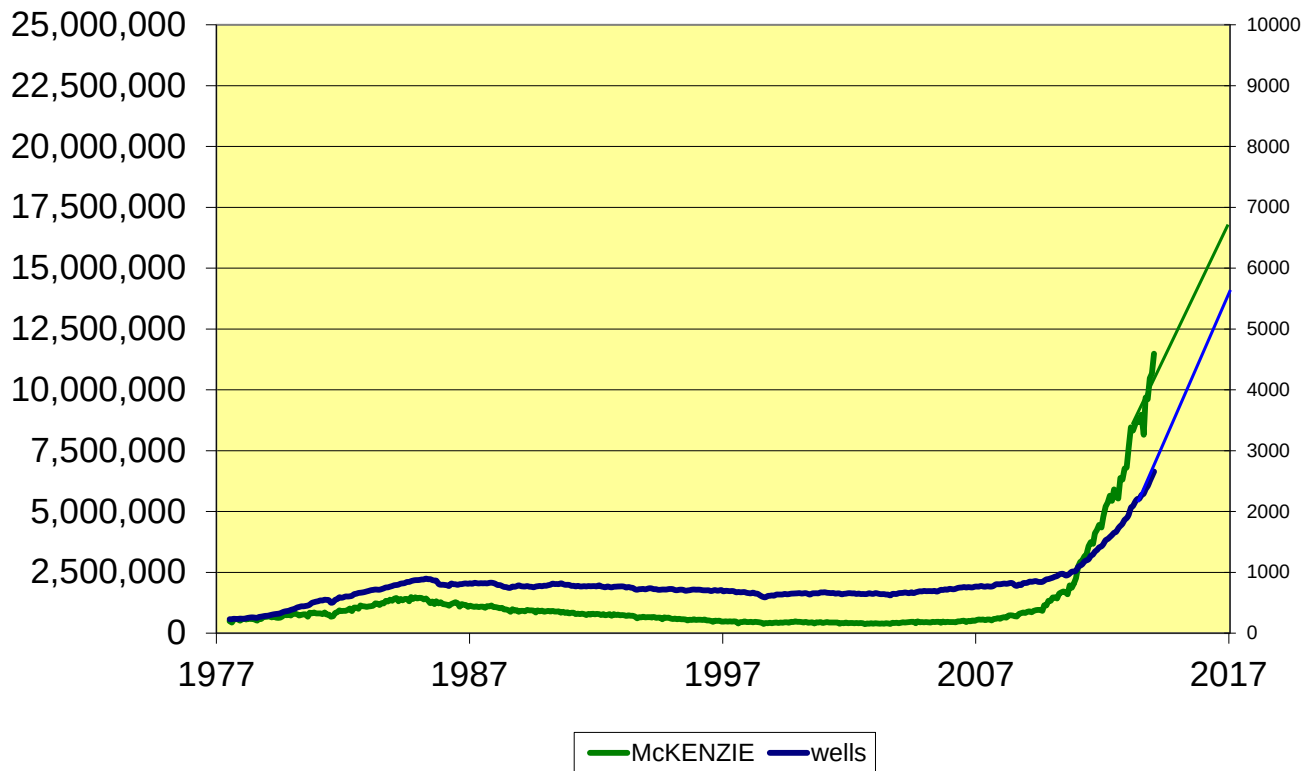
McKenzie Rigs and Wells



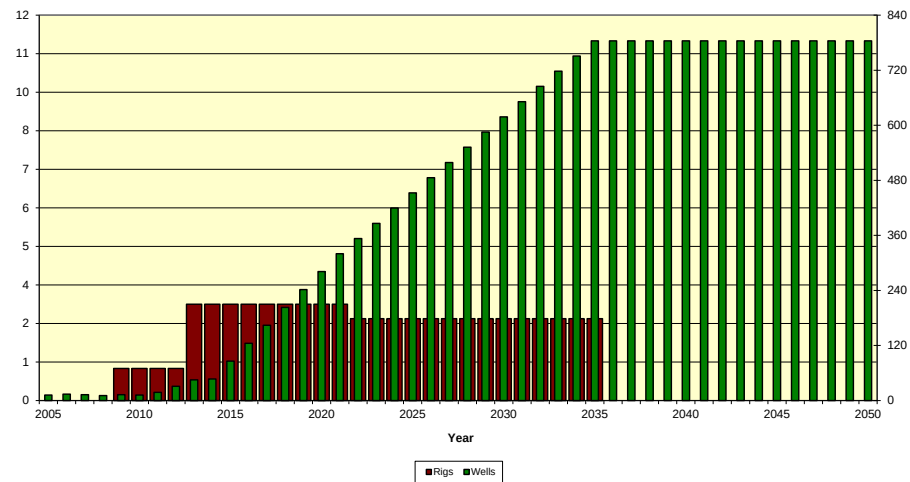
McKenzie Oil Industry Jobs



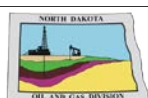
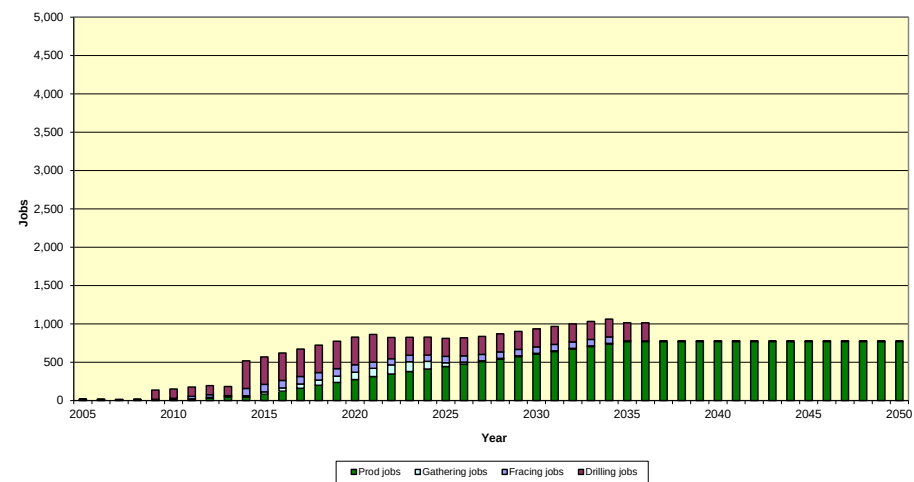
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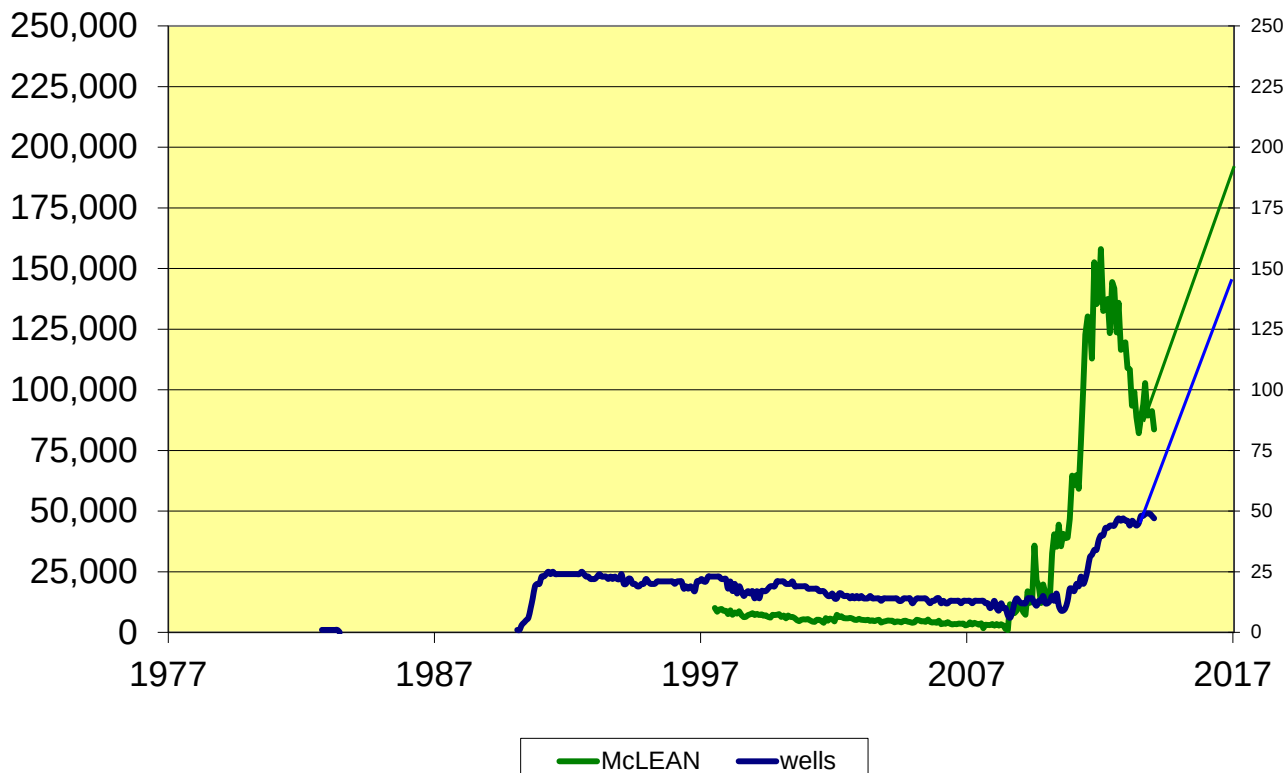
McLean Rigs and Wells



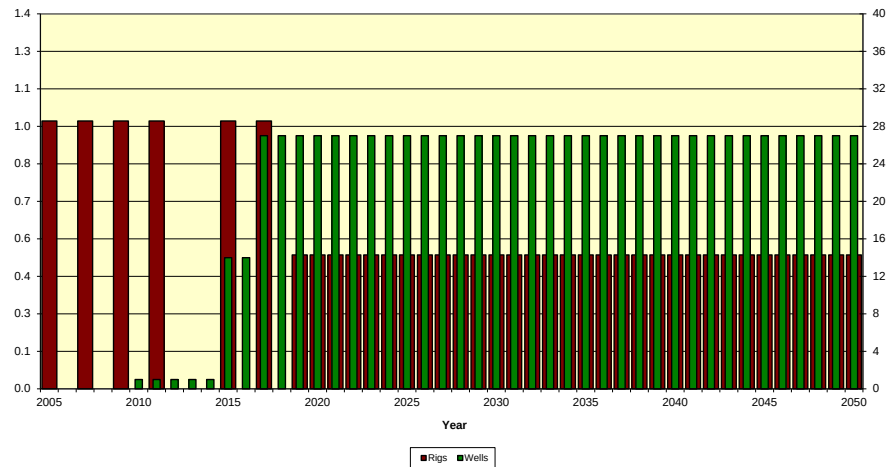
McLean Oil Industry Jobs



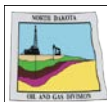
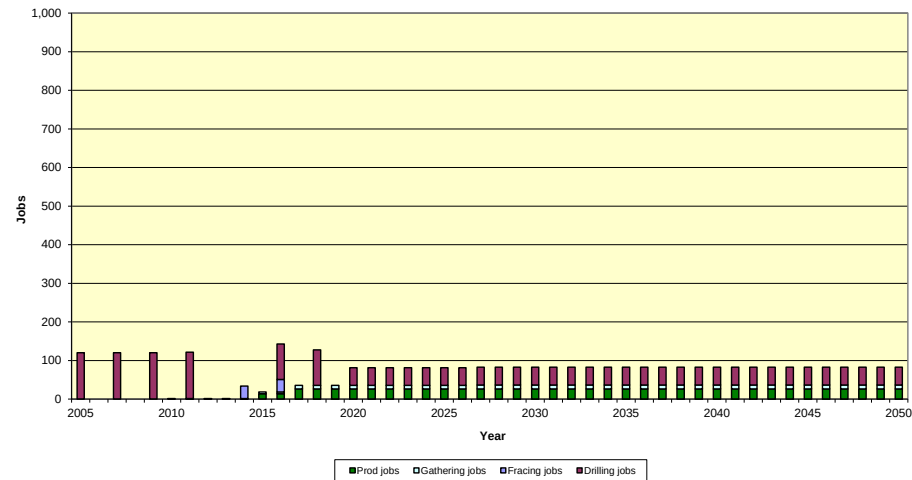
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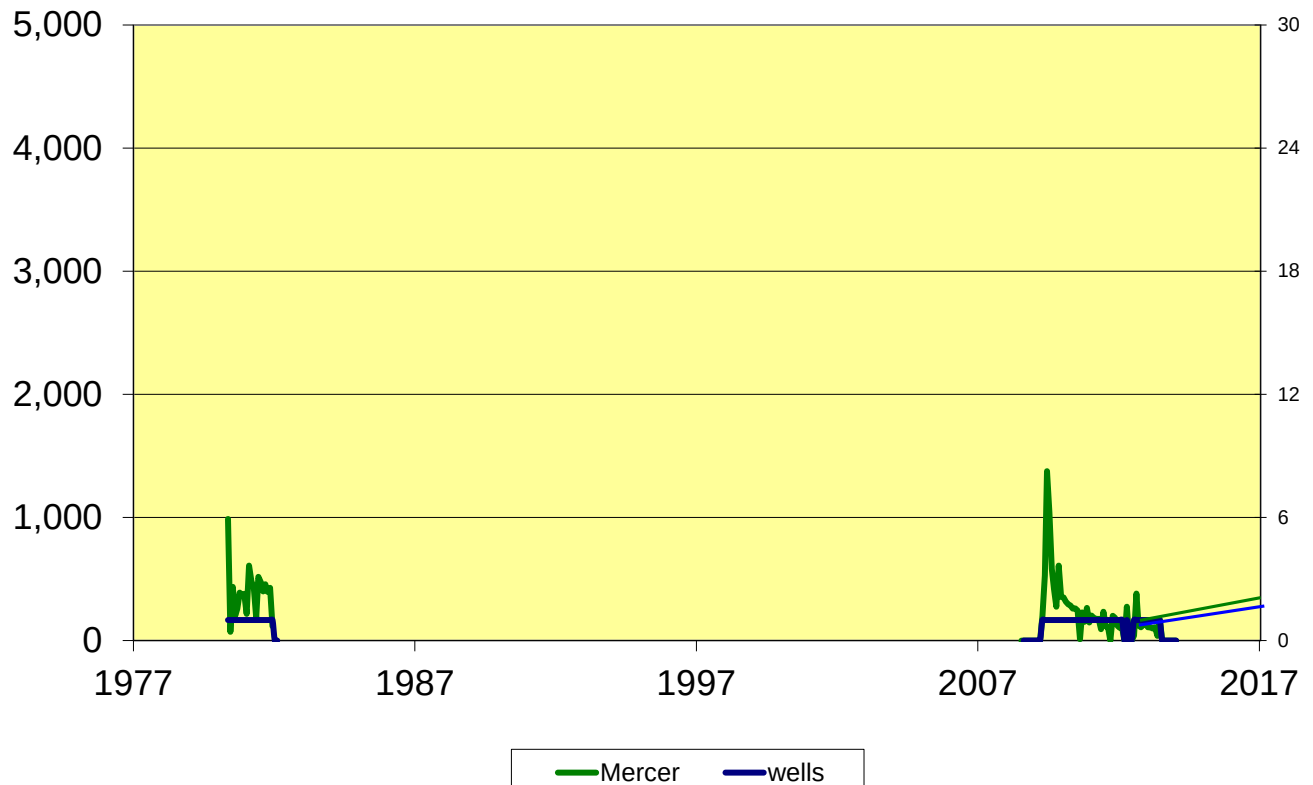
Mercer Rigs and Wells



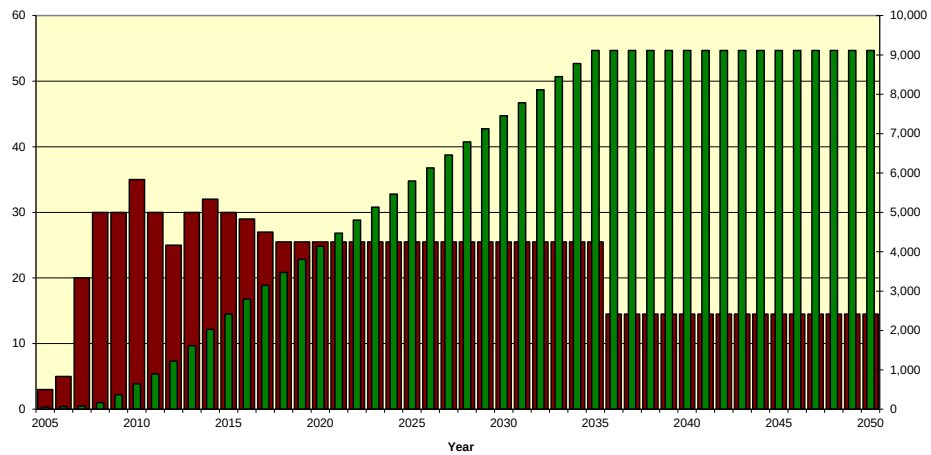
Mercer Oil Industry Jobs



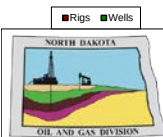
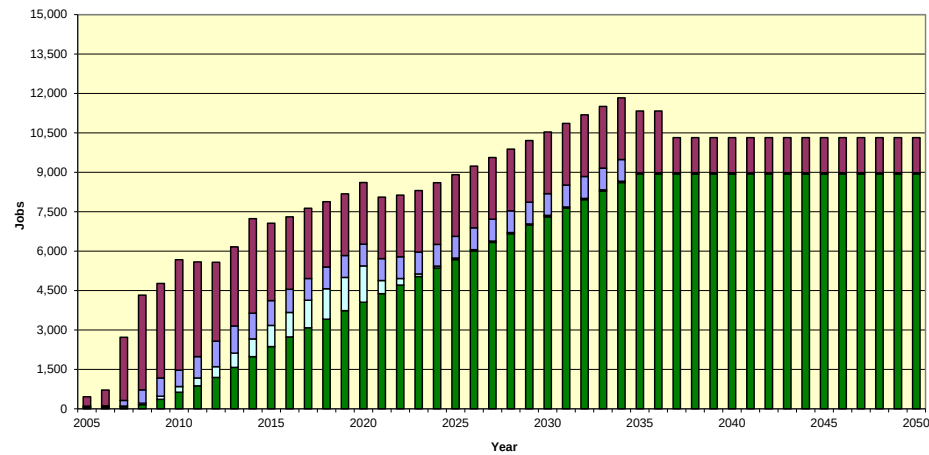
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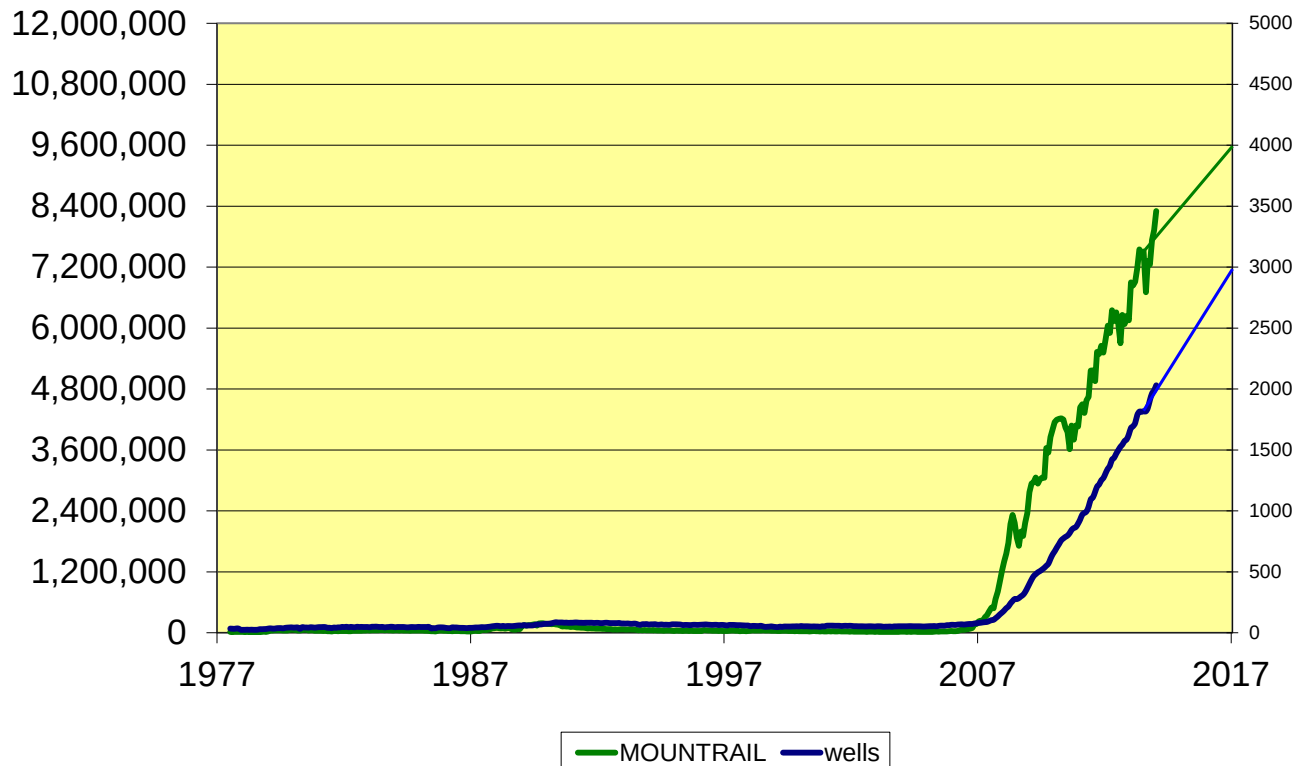
Mountrail Rigs and Wells



Mountrail Oil Industry Jobs

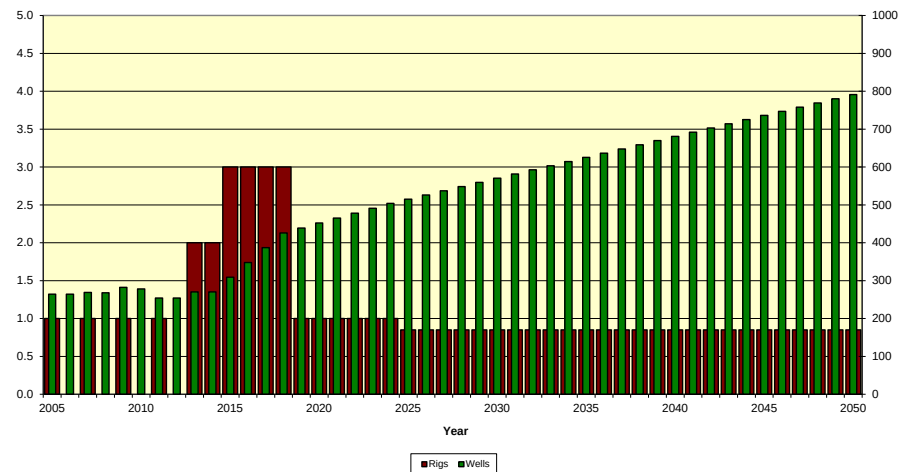


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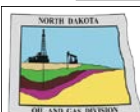
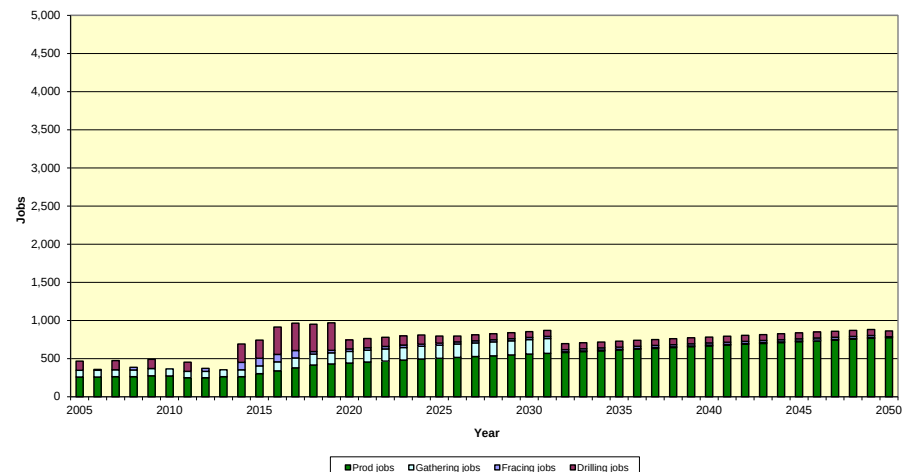




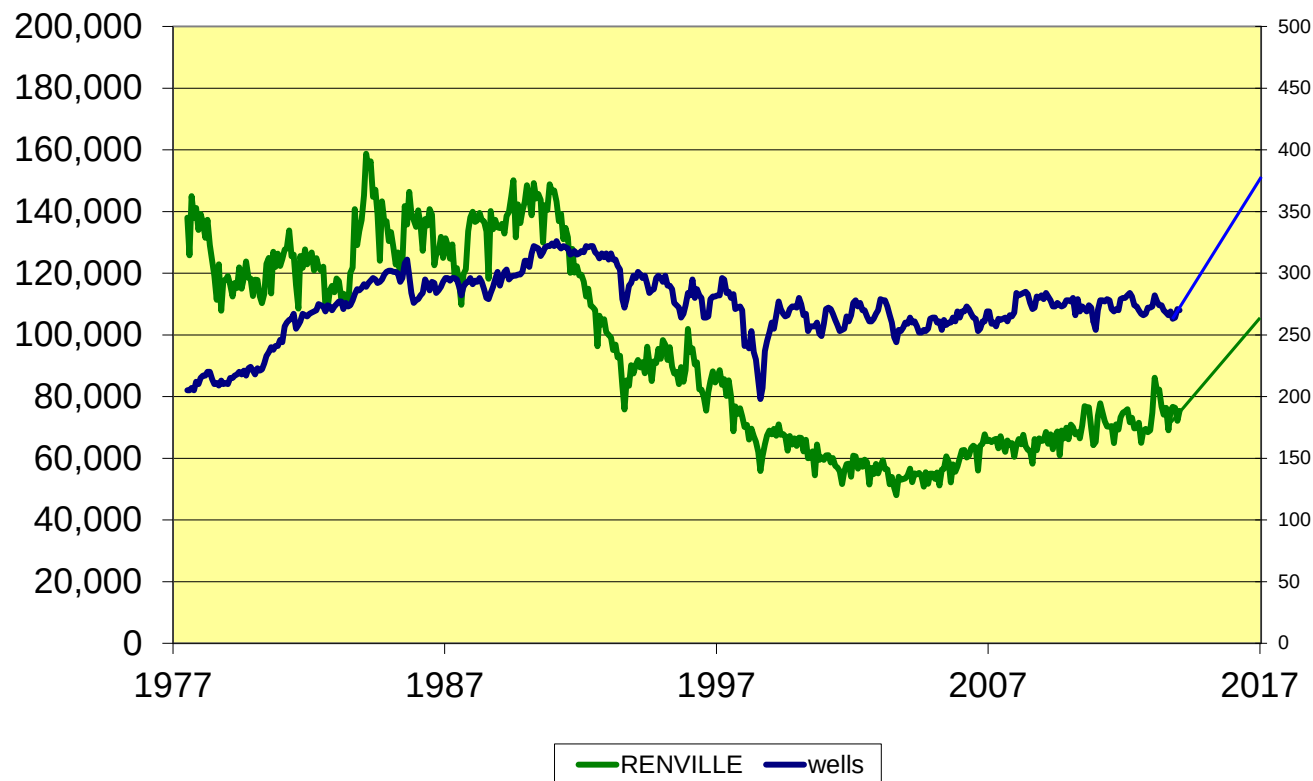
Renville Rigs and Wells



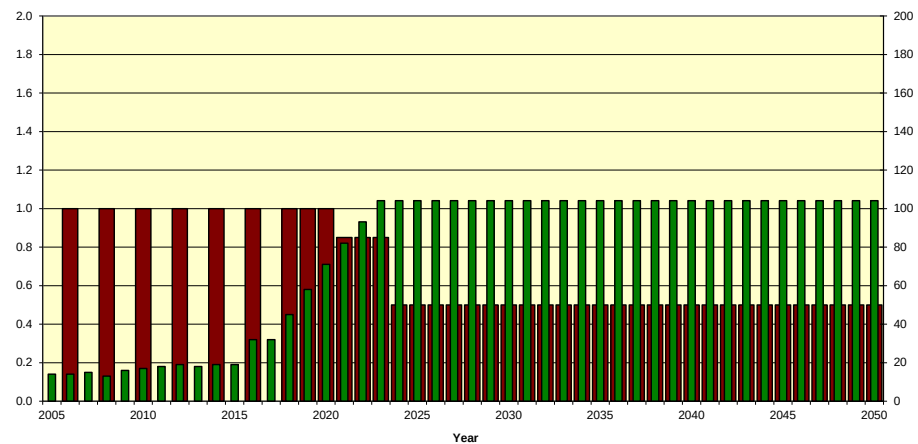
Renville Oil Industry Jobs



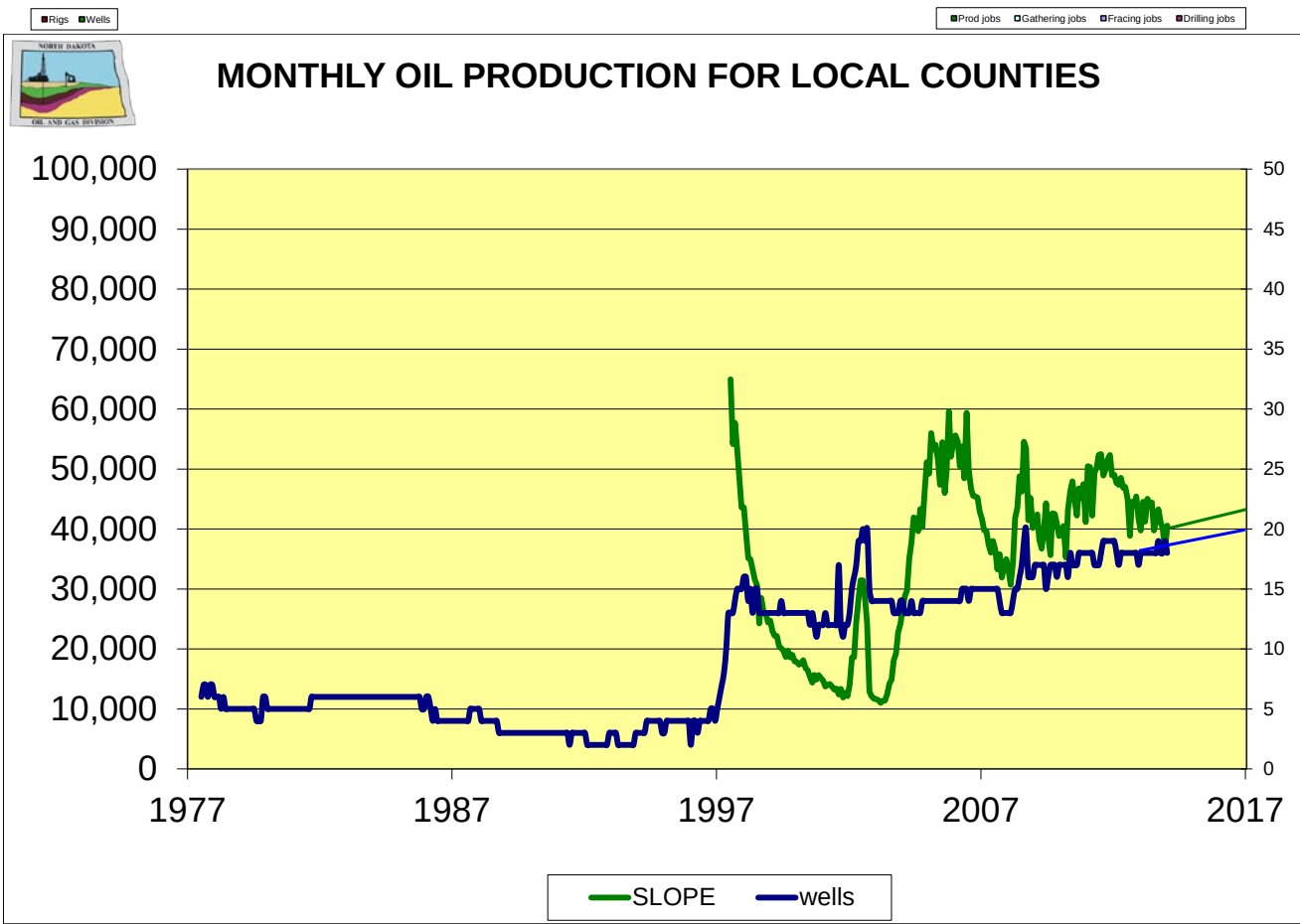
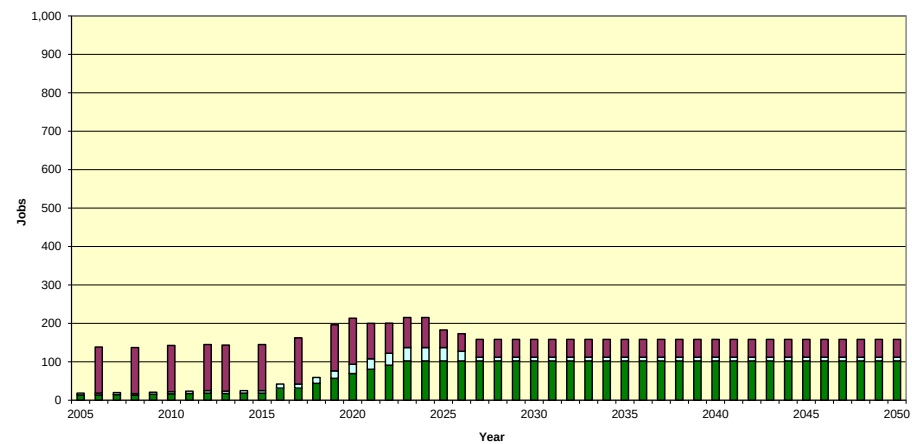
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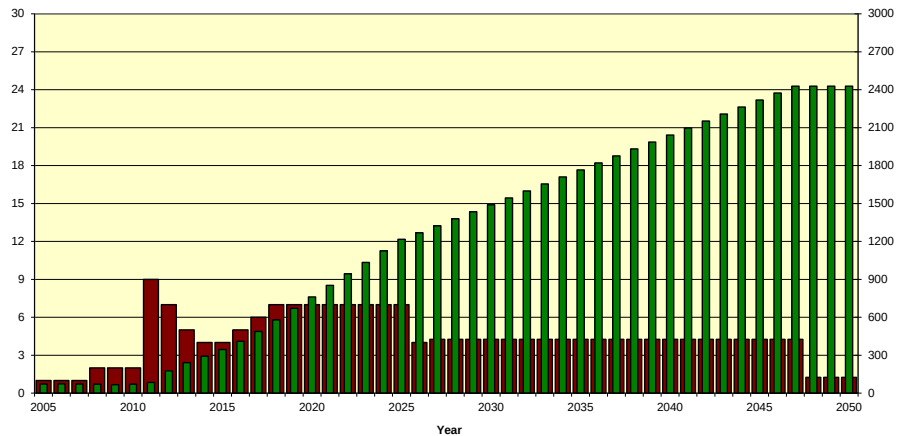
Slope non-Tyler Rigs and Wells



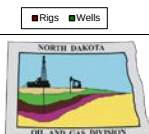
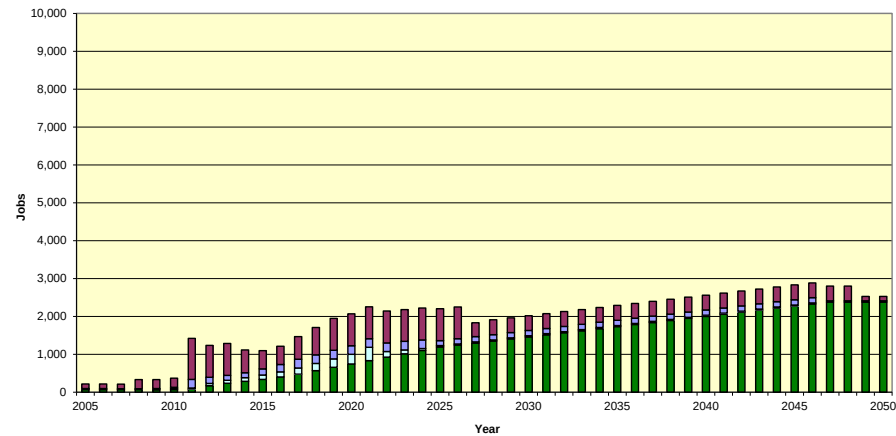
Slope non-Tyler Oil Industry Jobs



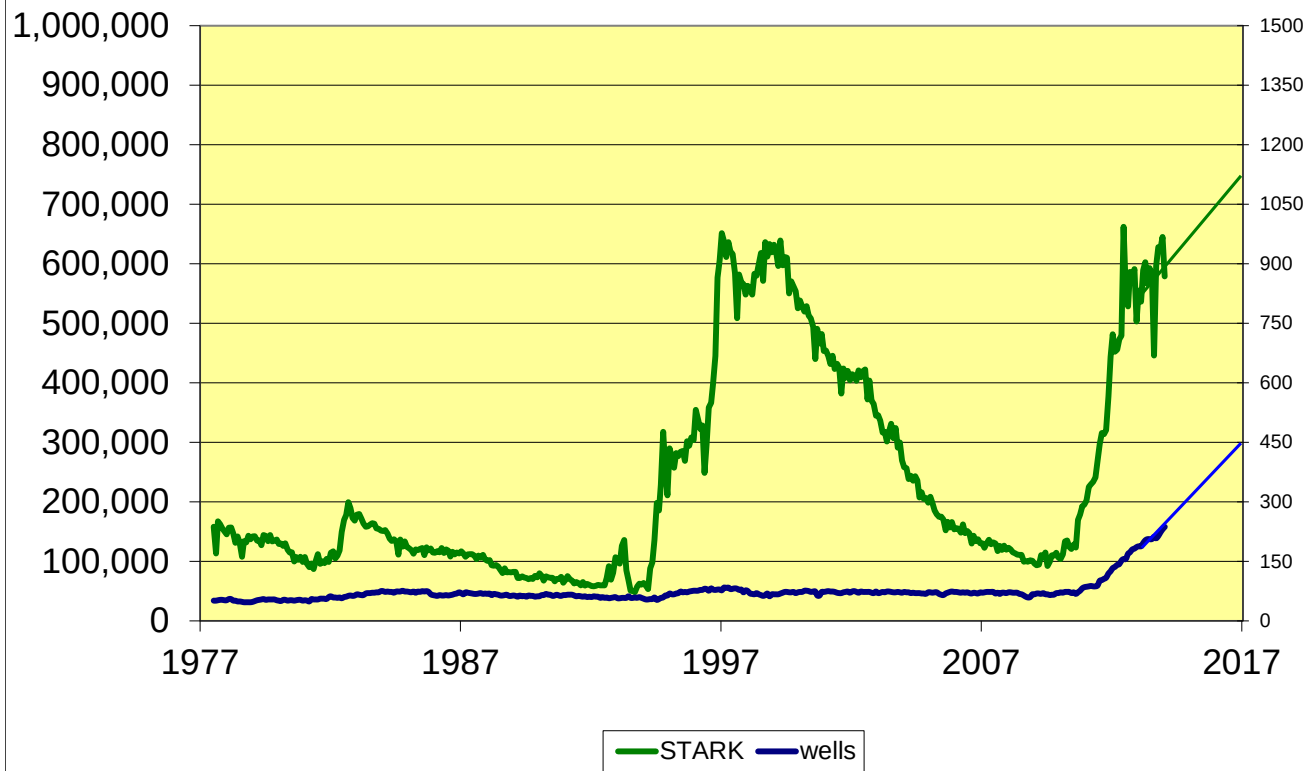
Stark Rigs and Wells



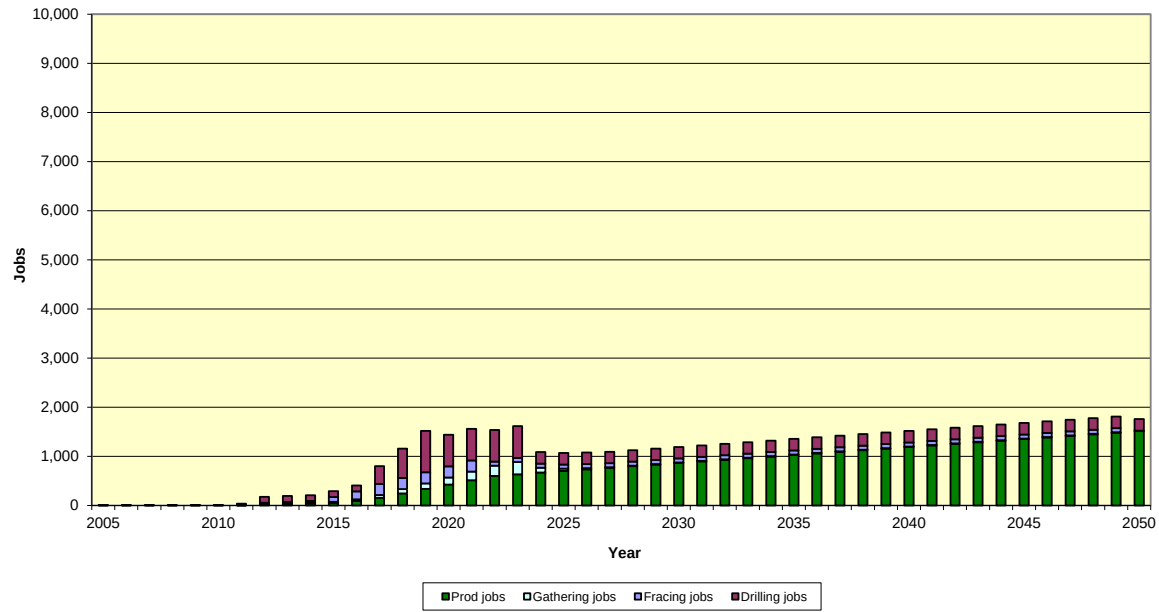
Stark Oil Industry Jobs



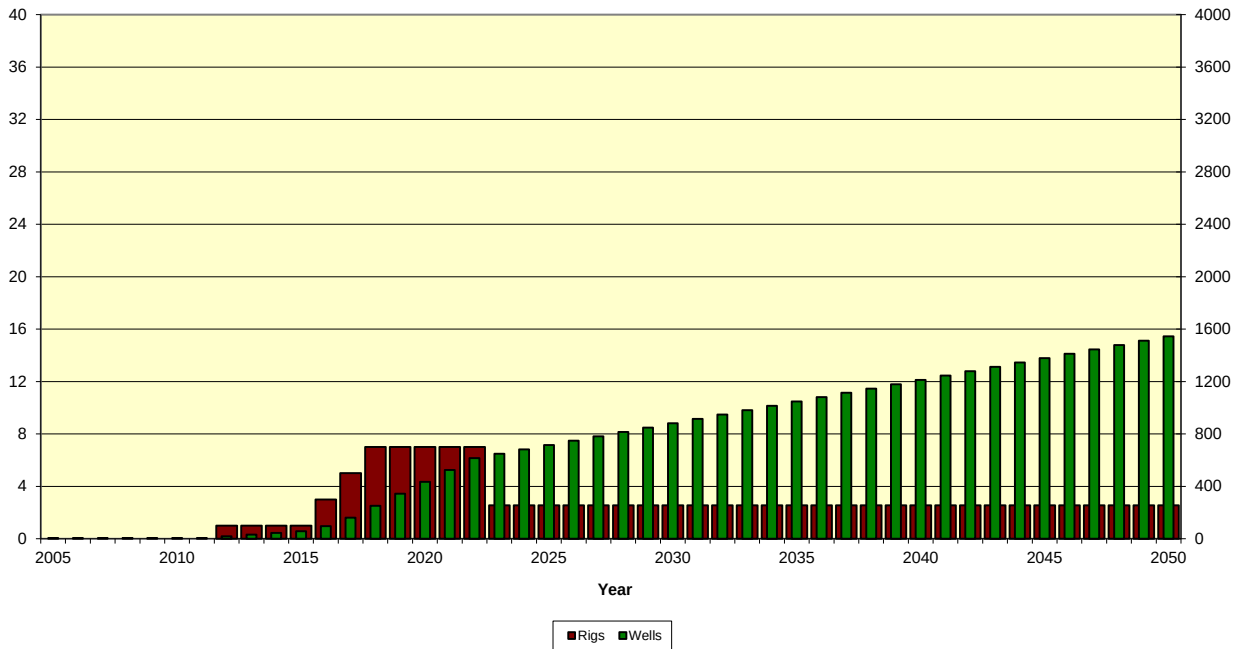
## MONTHLY OIL PRODUCTION FOR LOCAL COUNTIES



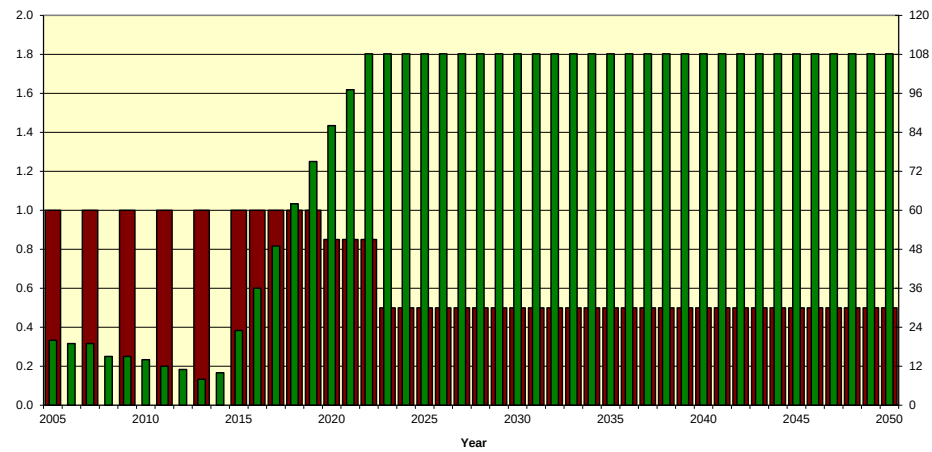
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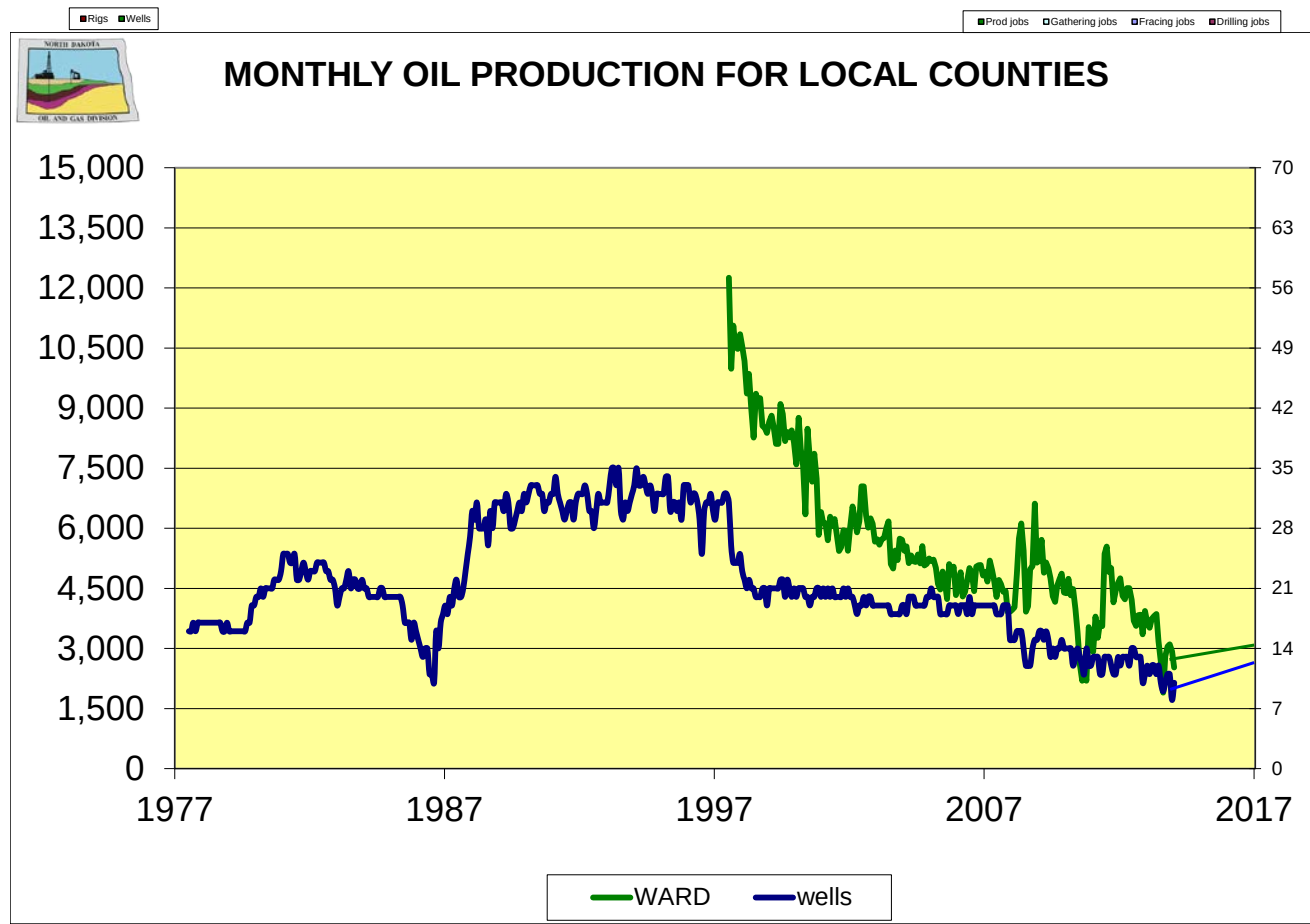
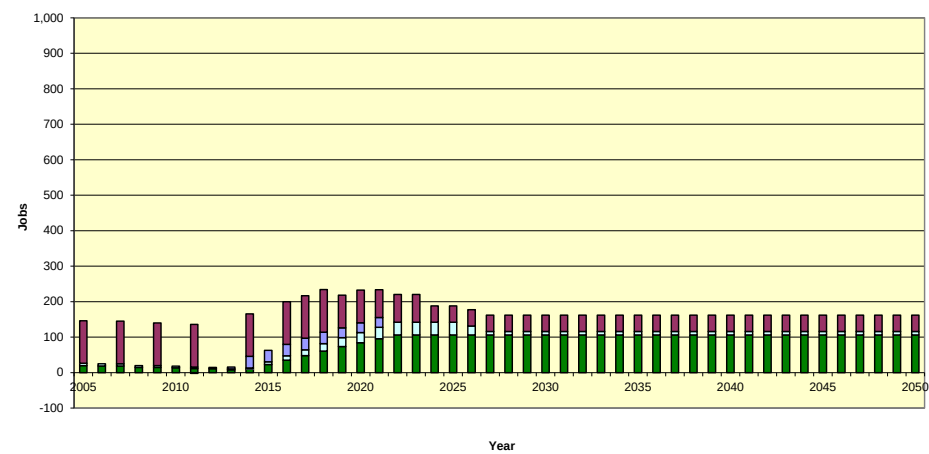
Tyler Rigs and Wells



Ward Rigs and Jobs

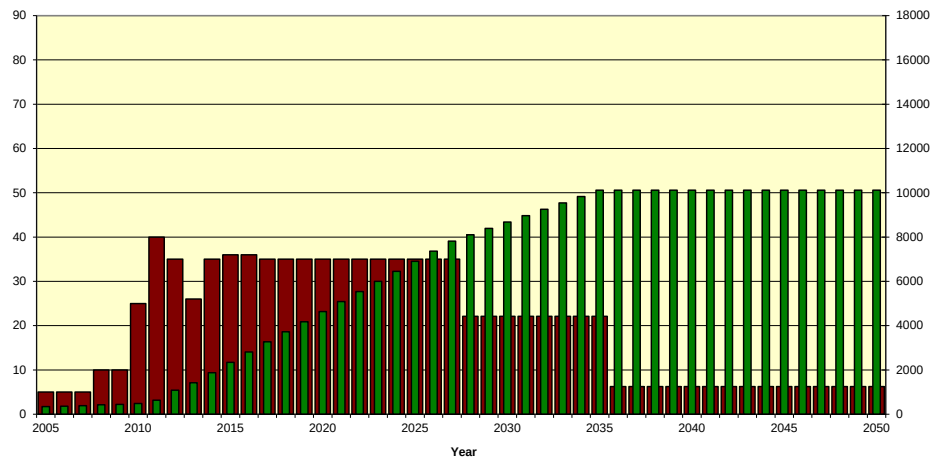


Ward Oil Industry Jobs





Williams Rigs and Wells



Williams Oil Industry Jobs

