



Two Topics for Consideration

(Some Parting Thoughts from an Old Guy)

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Topics for Discussion

- Bottlenecks in the oil and gas process
- Finding your Comfort Zone



Bottlenecks in the Oil and Gas Process

- The upstream oil and gas process involves many steps in a sequential process
- Different aspects have their own flow paths, each of which may contain many steps
 - Getting access to land
 - Finding promising formations for drilling
 - Permitting
 - Providing qualified workers
 - Scheduling equipment and materials (delays cost money)
 - Managing/transporting products and byproducts
 - Financing
- In every process flow path, one or more step will not be able to keep up with the process flow to that point
- This becomes the bottleneck in the process



Examples of Bottlenecks

- Getting access to land
 - Competition with other producers
 - Opposition from opponents and local governments
- Finding promising formations for drilling
 - Ability to get seismic, exploratory drilling equipment to sites
 - Delays in interpreting data
- Permitting
 - State and federal agencies may have backlogs
 - Opponents slow down permitting process
- Providing qualified workers
 - Certain jobs require specialized skills
 - Competition with other producers or other regions
 - Shortage of local group of skilled workers
 - Shortage of places for those workers to live

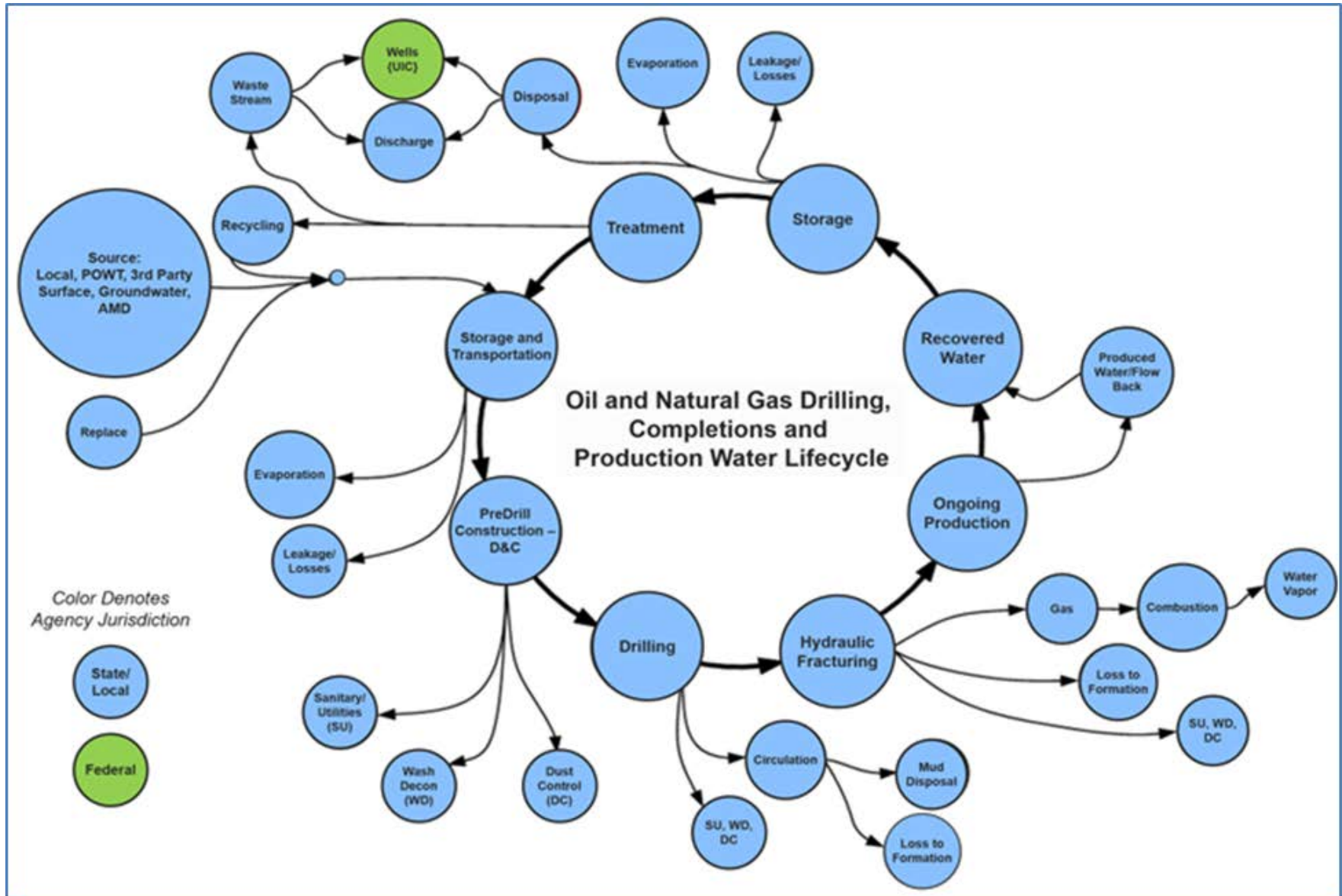
Examples of Bottlenecks (2)

- Scheduling equipment and materials
 - Limited number of drilling rigs and frac sets (high daily rental costs)
 - Localized shortages of frac sand
 - Shortages of oil field pipe or price increases due to import sanctions
 - Shortages of chemicals used in drilling and frac fluids
 - Ability to find dependable water sources
- Managing/transporting products and byproducts
 - Limitations in pipeline capacity and availability to move product from field to market
 - Ability to manage produced water (dispose, transport, reuse) in local area
 - When treating produced water, need capacity for treatment byproducts (sludge, salt)

Examples of Bottlenecks (3)

- Availability of infrastructure
 - Water
 - Roads
 - Electricity
 - Housing and food for employees
 - Storage for supplies
 - Pipelines for movement of oil and gas
 - Service companies to support the industry
- Financing
 - E&P companies need access to large amounts of money at low interest rates
 - New book by Bethany McLean suggests that companies may be over extended

Flowchart for Water Life Cycle



Source: Energy Water Initiative

The Comfort Zone

- People and companies cannot do everything equally well
- Try to determine those things that you do well and look for other sources to help with things you do less well
- Concept is explained in my fishing book “Fishing in the Comfort Zone”

Fishing in the Comfort Zone

Choosing Fishing Techniques, Tackle, and Locations to Make Your Fishing Experience More Enjoyable with an Emphasis on Light Tackle Fishing from Kayaks and Other Small Boats



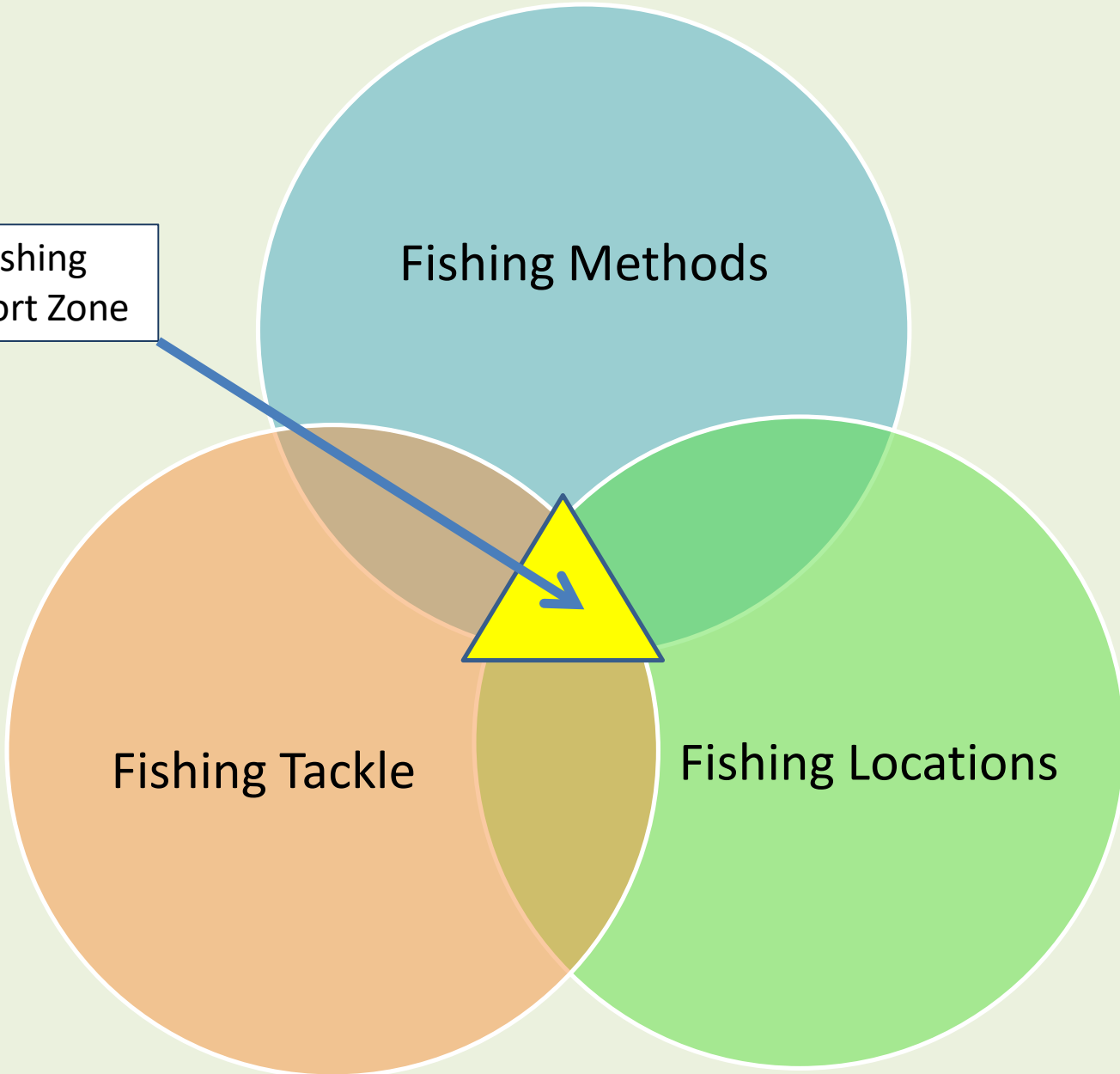
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The Fishing
Comfort Zone

Fishing Methods

Fishing Tackle

Fishing Locations



The Oil and Gas Comfort Zone

Technical/business capabilities

Financial resources

Location of oil and gas fields

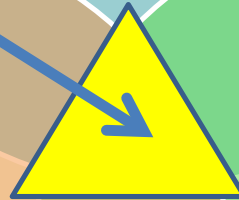


The Oil and Gas
Environmental
Comfort Zone

Environmental
media (air, water,
waste); also health,
safety, cultural
resources, etc.

Capabilities of
your work force
resources

Geographic
locations



How Is Fishing Like the Oil and Gas Business?

- You can find your Comfort Zone in both cases
- In both cases you are using strategy and technology to find and capture a natural resource
- You get better at finding oil and gas and managing the oil and gas process the more you do it – the same for fishing
- Just when you think you really understand oil and gas, something changes and you have a problem
 - Fishing is just like that. You can have 5 good catching days in a row followed by 2 lousy days.
- Success in both cases can be enjoyable and rewarding
- In both cases, water plays a large role
- My favorite lures are made of soft plastic and my fishing kayaks are made from polypropylene – most likely derived from petroleum