



MULTI-UNIT WELLS

ONRR Reporter Training





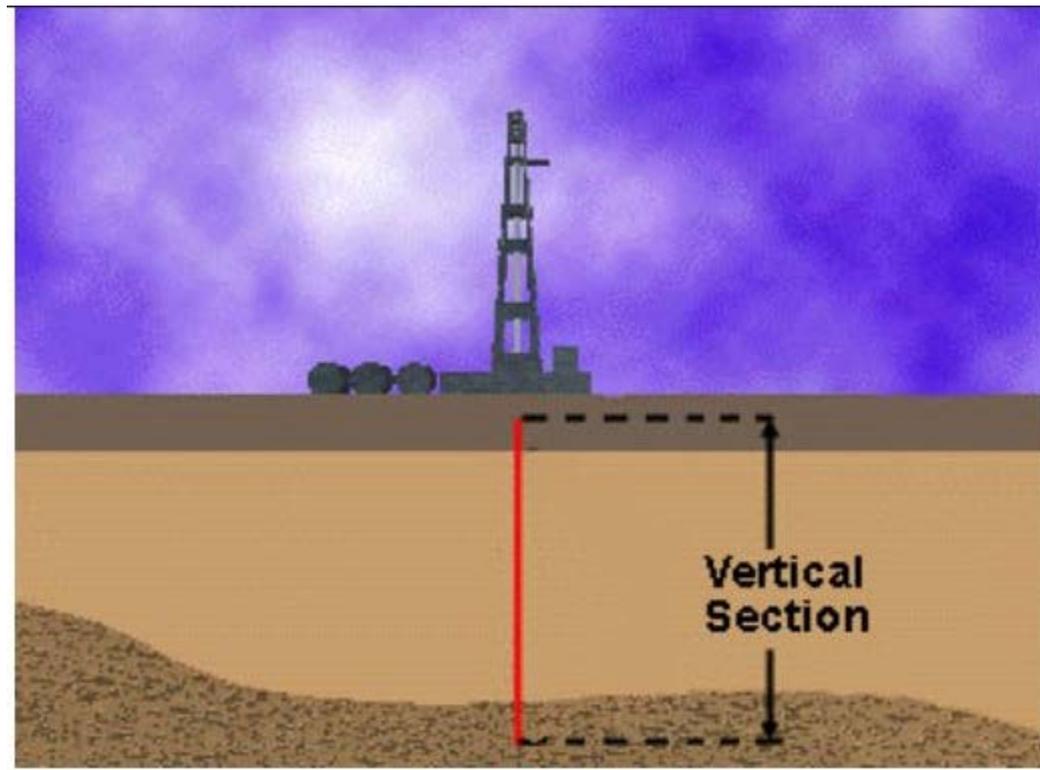
What are we going to cover?

- Understand the difference between a vertical well, a horizontal well, and a multi-unit well
- Take a high level look at spacing orders
- Look at the traditional way of reporting OGORs and ONRR-2014s
- Look at the multi-unit well allocation method of reporting OGORs and ONRR-2014s
- Scenarios
- Follow-up questions



Vertical Well

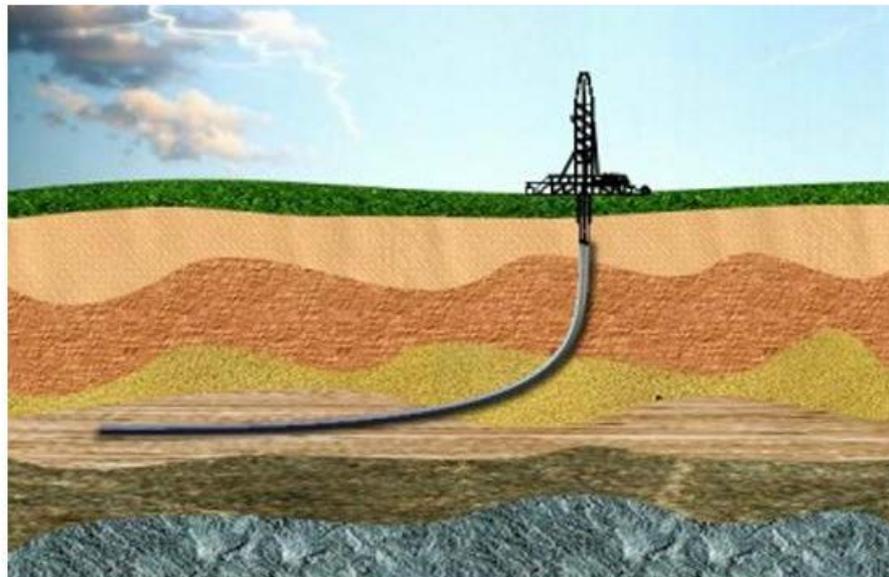
- Vertical well – a borehole that is aimed directly beneath a target (aimed straight down at a reservoir)





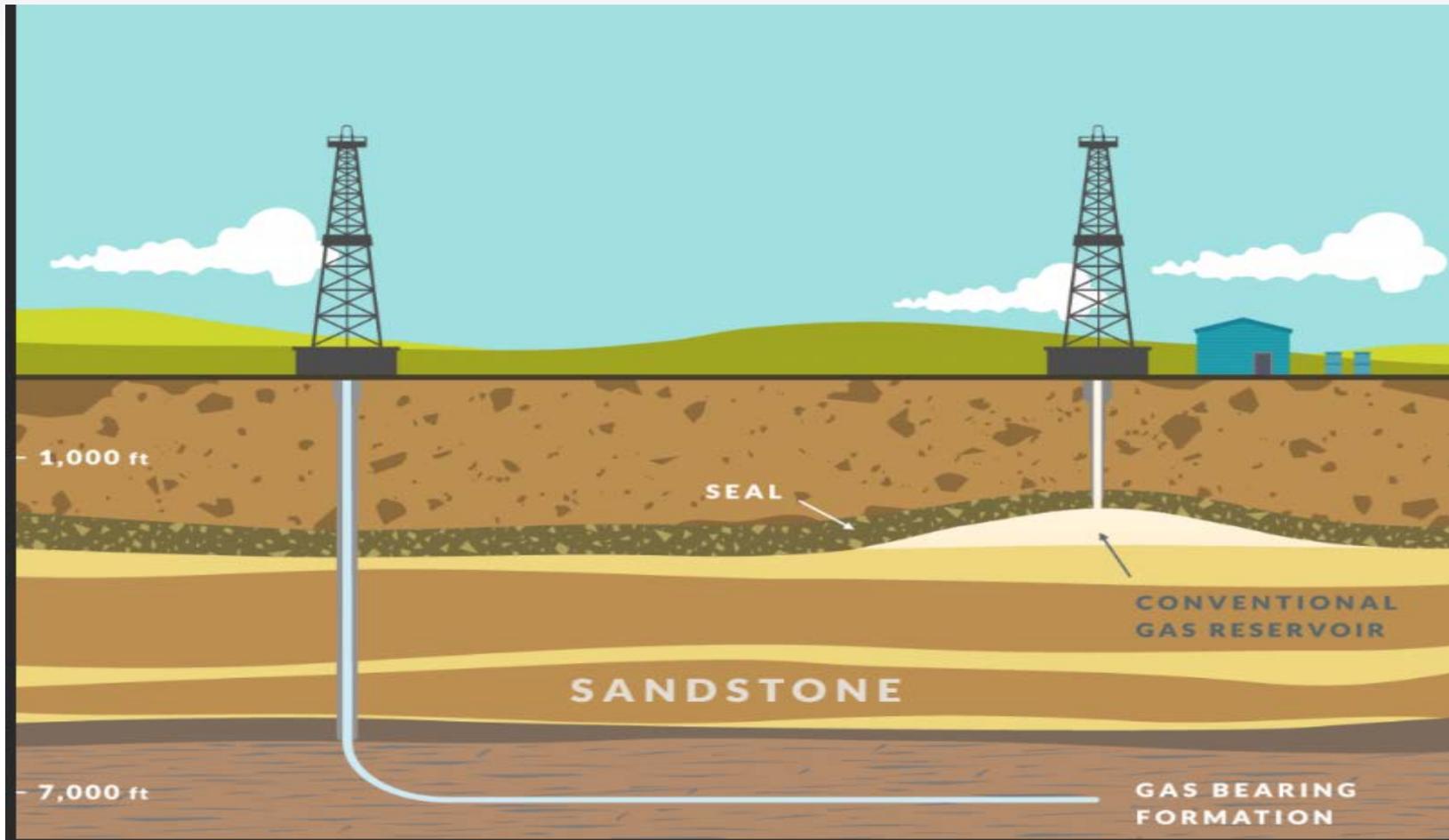
Horizontal Well

- Horizontal well – an oil or gas well drilled at an angle of at least eighty degrees from a vertical wellbore. The horizontal well is a type of directional drilling technique. The well will run parallel through the producing formation rather than perpendicular.





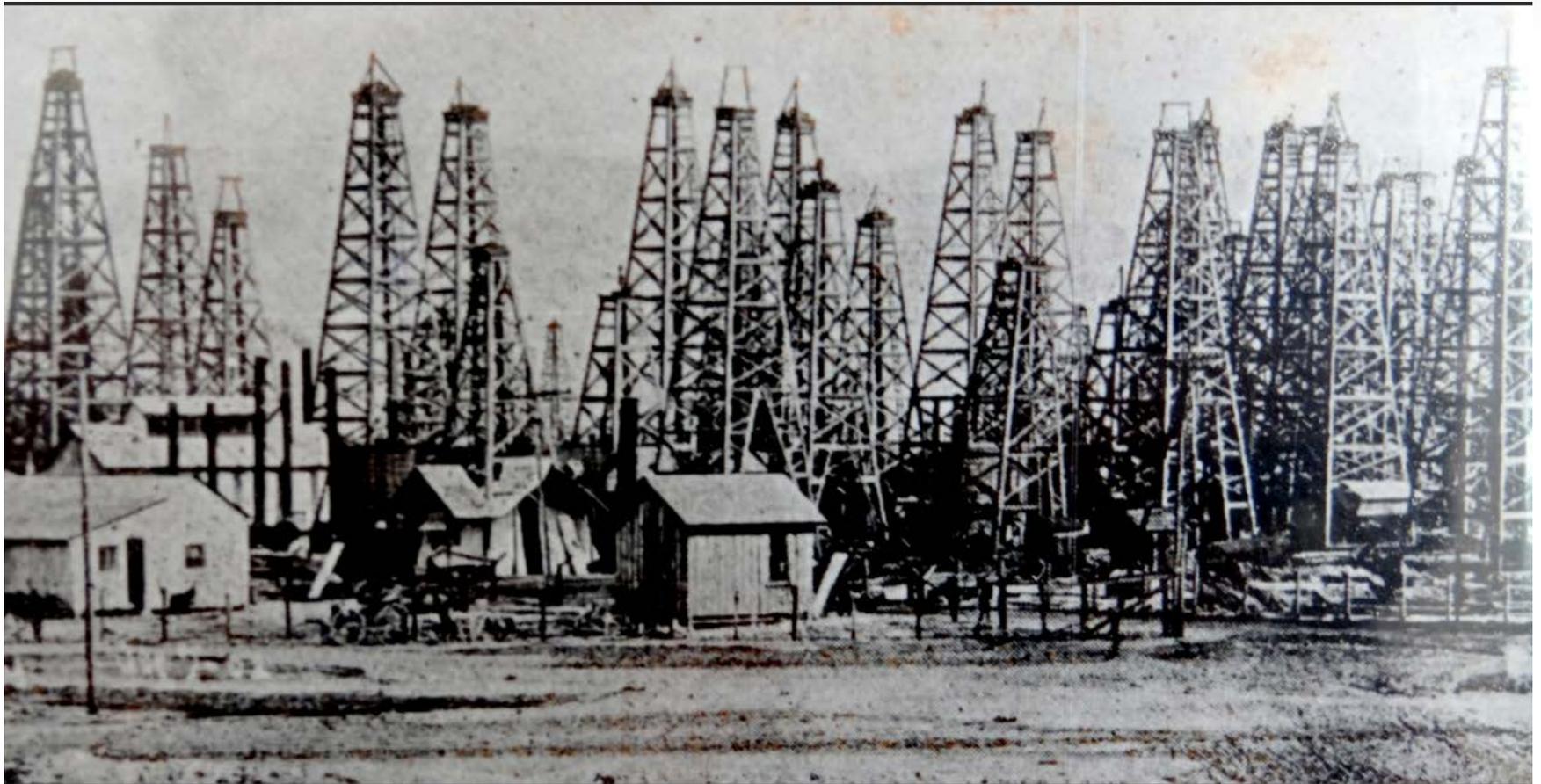
Vertical and Horizontal Well Simulation Comparison





Oklahoma Historical Photo

Understanding Spacing in Oklahoma





Spacing Order Defined

- Drilling and spacing order is issued by the State Office of the Oklahoma Corporation Commission and establishes a geographical area in which only one oil and/or gas well can be initially drilled and produced from the geological formation listed in the order. The spacing unit communitizes all the royalty interest owners for the purpose of sharing.
- One well can be drilled and completed - the order will specify the permitted location where the unit well may be drilled.





Standard Sizes of Drilling and Spacing Units

- ✓ A **vertical** well can be located no closer to the unit boundaries for the specified feet for each of the square or rectangular units listed below:

<u>Square Units:</u>		<u>Rectangular Units:</u>	
640 acres	1,320 feet	320 acres	660 feet
160 acres	660 feet	80 acres	330 feet
40 acres	330 feet	20 acres	165 feet
10 acres	165 feet		

- ✓ A **horizontally** drilled well has different footage setback requirements. For a horizontal 640 spacing unit, the legal well location may be 660 feet from the boundary.
- ✓ **Horizontal** wells are sometimes identified with an “H” in the well name.
 - Example: Miller #1H-3 or Miller #1-3H



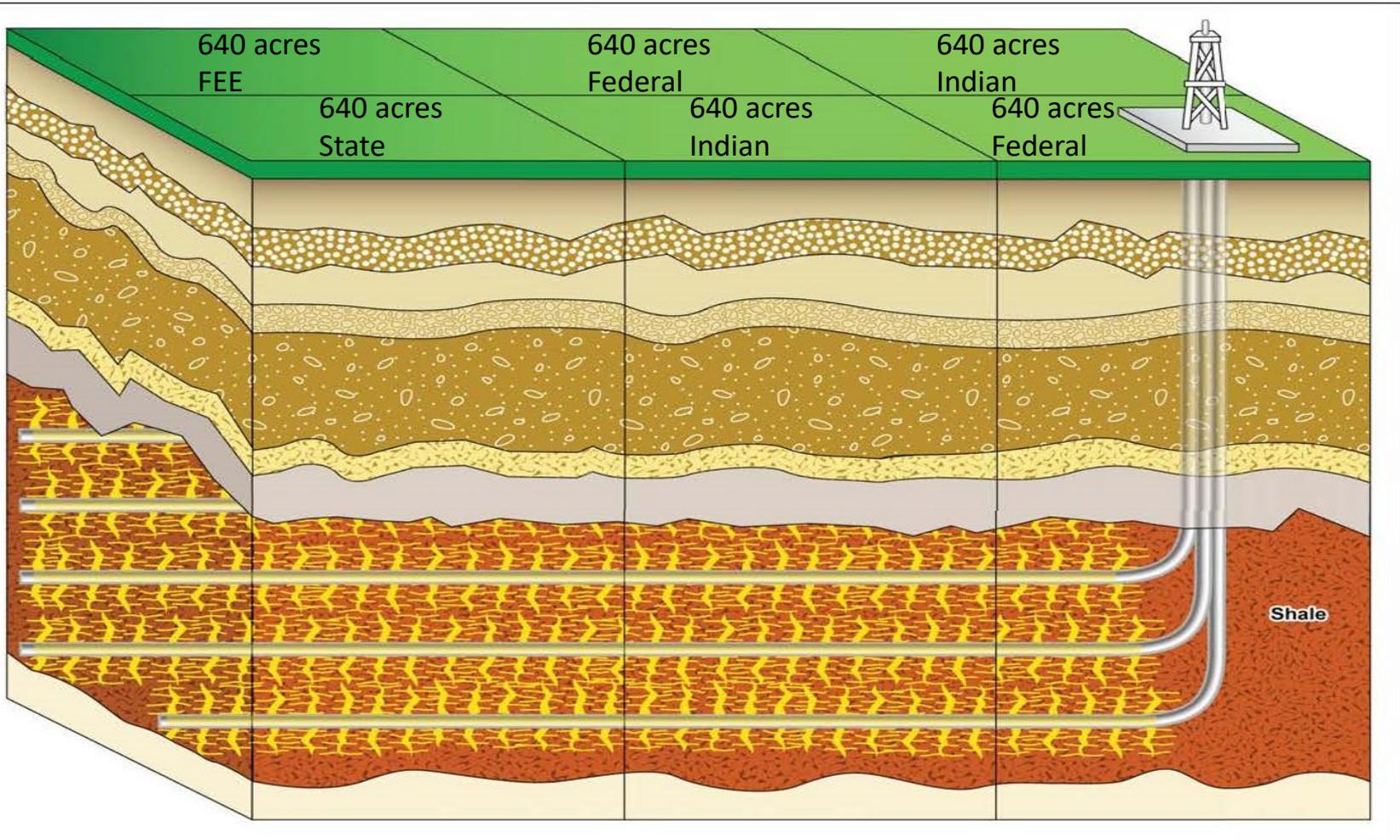
What is a Multi-unit Well?

- A horizontal well in a shale reservoir where the completion interval of the well is located in more than one spacing unit formed for the same shale reservoir - the well is producing from the reservoir in two or more such spacing units
- In short, a multi-unit horizontal well is a well that extends through and produces from more than one spacing unit





What is a Multi-unit Well?





Reporting to ONRR: Traditional

- Reference data analyst will build the lease or agreement in ONRR's financial system using allocation schedule from the Decision Letter (contract), which should match the Serial Register Page allocation schedule (LR2000)
- Production (OGOR) report reflects 100 percent of the production to the agreement
- Royalty (ONRR-2014) report is based on allocation schedule to the lease(s)





Reporting to ONRR: Multi-unit Well Allocation Method

- Reference data analyst will build the lease or agreement in ONRR's financial system using allocation schedule from the Decision Letter (contract) which should match the Serial Register Page allocation schedule (LR2000)
- Production (OGOR) report is based on well allocation method described in the Communitization Agreement
- Royalty (ONRR-2014) report is based on well allocation method and allocation schedule described in the Communitization Agreement





Multi-unit Well Scenarios

1. Downhole-commingled production
 - CAs stacked on top of each other but different formations

2. CAs with multi-unit horizontal wells
 - Two CAs that are “neighbors” to each other where the surface hole location of the well is in one CA but the bottom hole location is in another. Perforations exist in both CAs.
 - A CA neighbors fee land with a well that crosses out of the CA with Federal/Indian mineral interest and into fee land



Questions?

