

FICTION

Oil can be found in pools under the ground



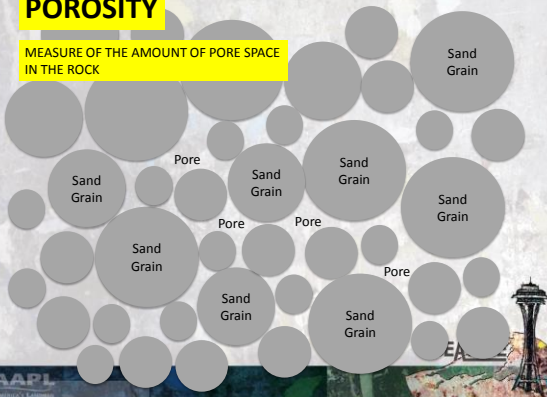
FACT

Oil is found under the ground in the pore spaces of rock

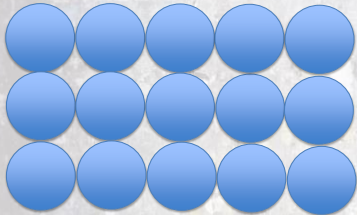


POROSITY

MEASURE OF THE AMOUNT OF PORE SPACE IN THE ROCK



CUBIC PACKING – 47% POROSITY

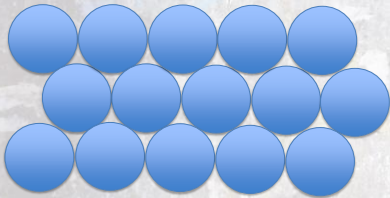


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RHOMBOHEDRAL PACKING – 28% POROSITY

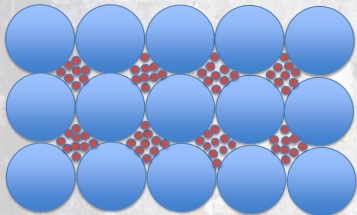


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POROSITY REDUCED BY POOR SORTING



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Permeability

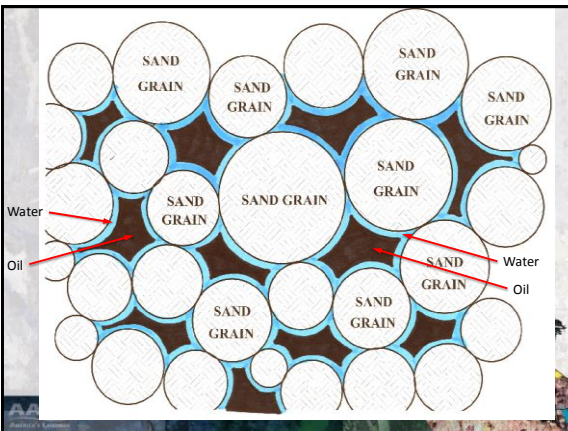
- Measure of the ability of fluids to flow through the rock.
- Measured in Darcys or Millidarcys.



Interstitial Water

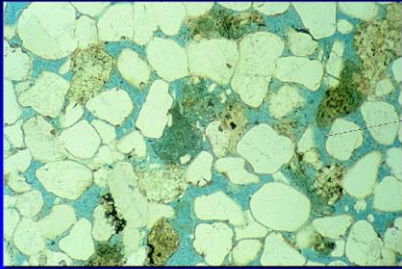
- Water bound to the rock in pore spaces.
- Oil is situated in a cushion formed by interstitial water.



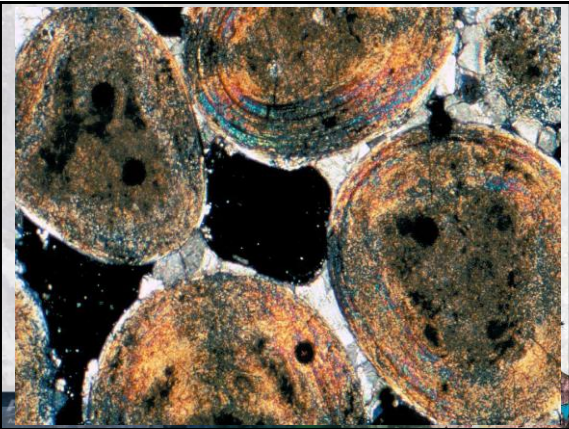


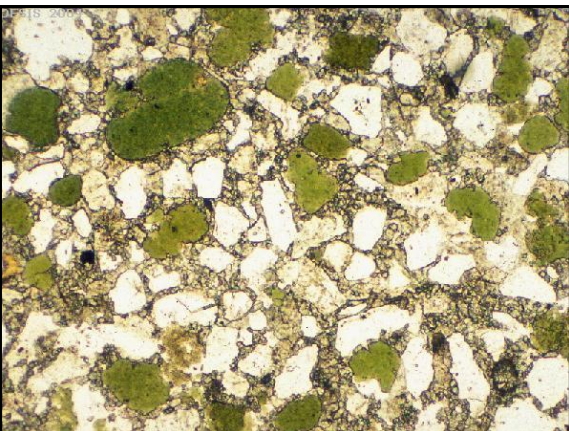
Reservoir Sandstone

Good Porosity = Lots of Space for Petroleum

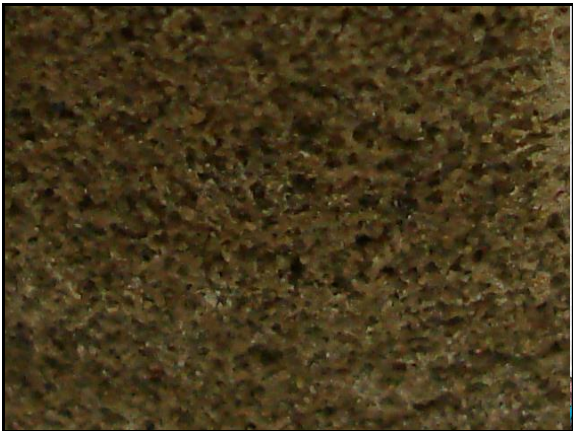


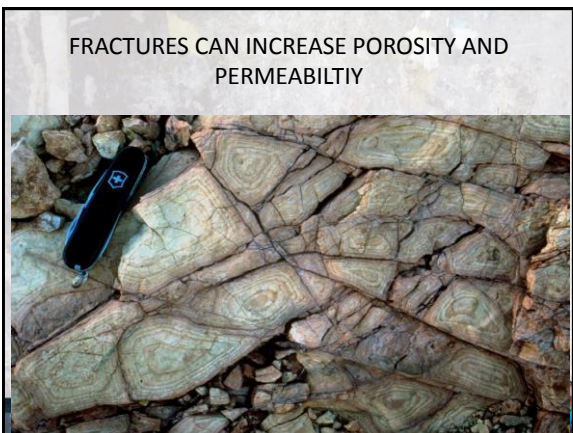
Pores
(blue)





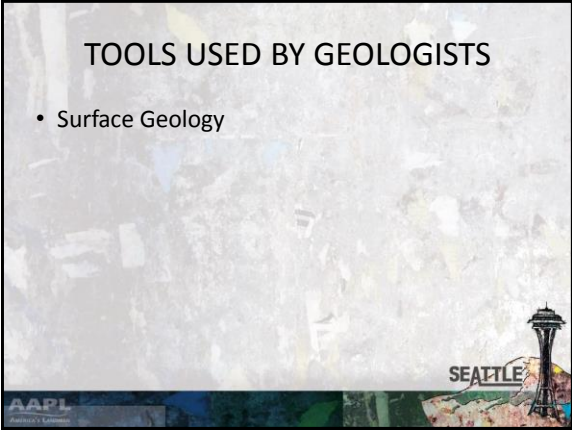






TOOLS USED BY GEOLOGISTS

- Surface Geology

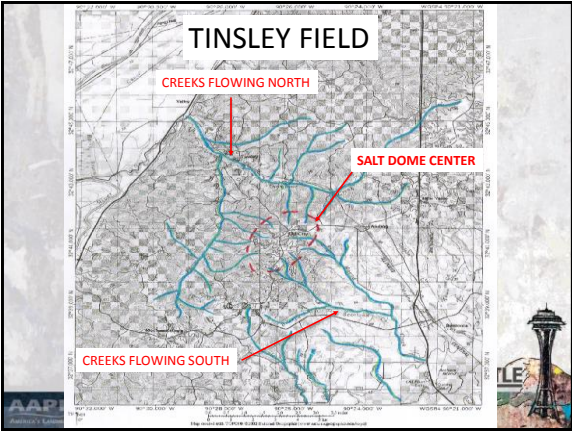


TINSLEY FIELD

CREEKS FLOWING NORTH

SALT DOME CENTER

CREEKS FLOWING SOUTH

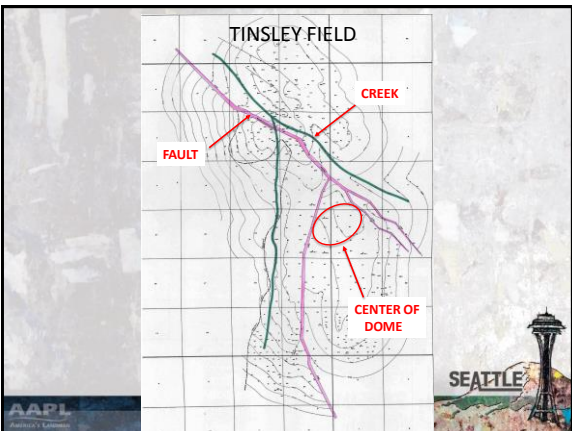


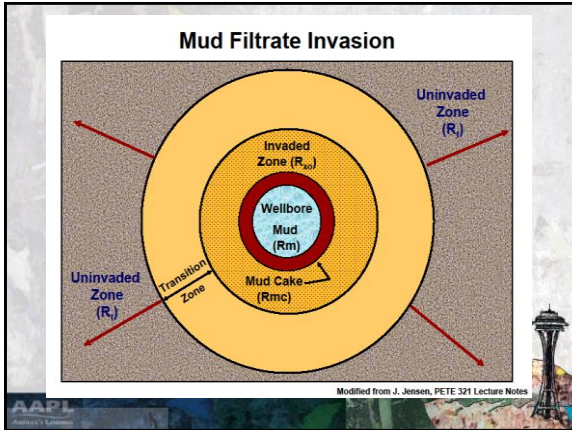
TINSLEY FIELD

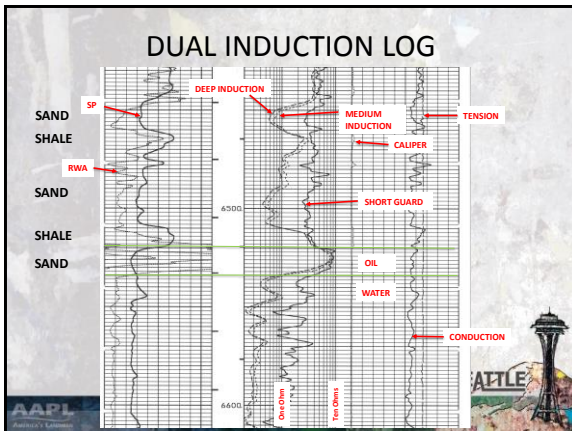
CREEK

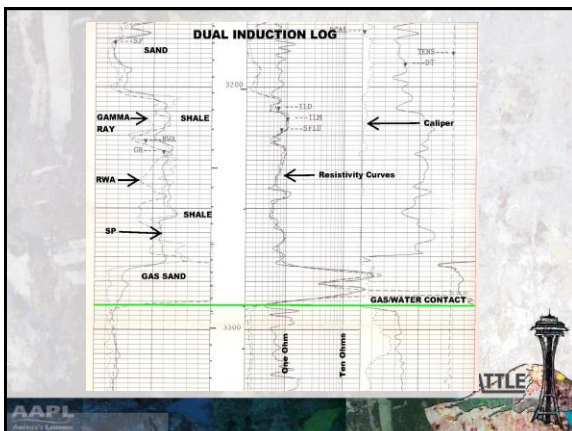
FAULT

CENTER OF DOME









DUAL INDUCTION – GAMMA RAY



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TOOLS USED BY GEOLOGISTS

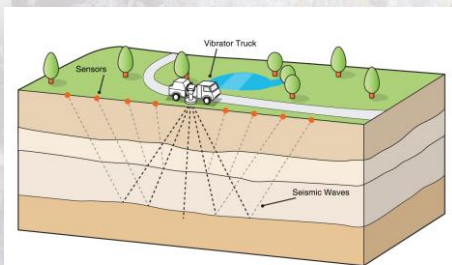
- Surface Geology
- Well Logs
- Seismic Data

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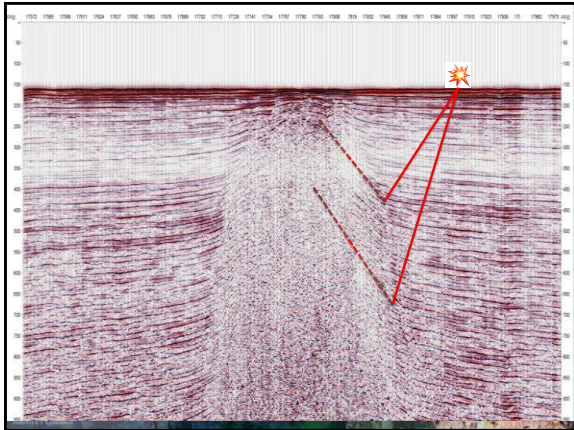


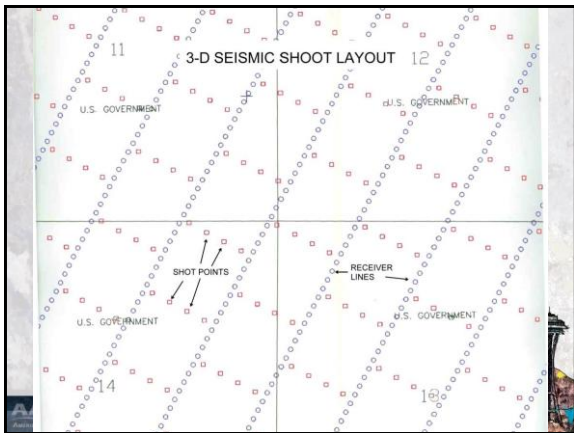
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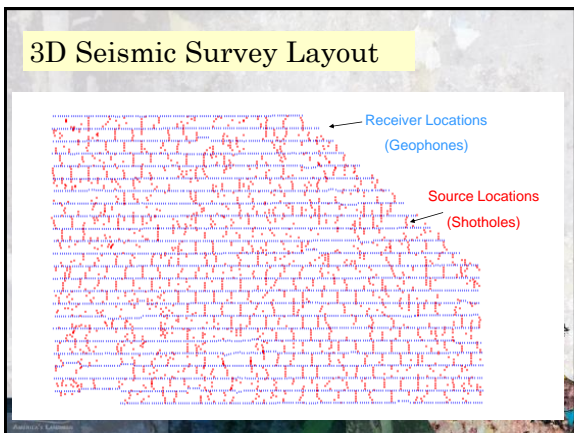
2-D SEISMIC LINE

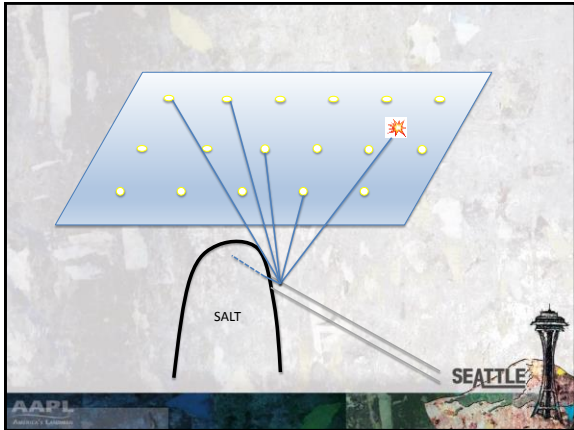


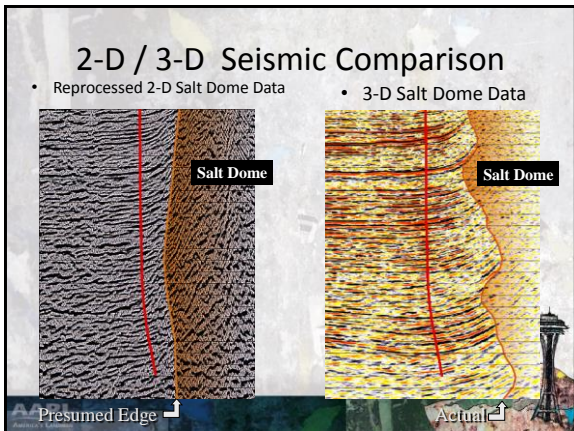
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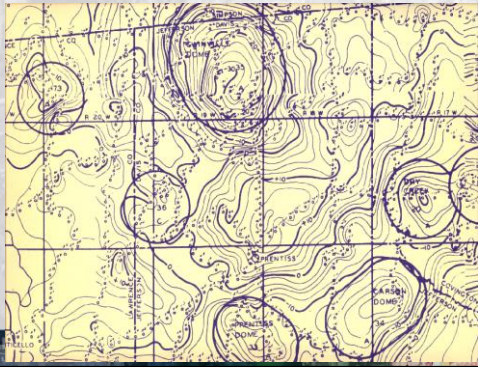


TOOLS USED BY GEOLOGISTS

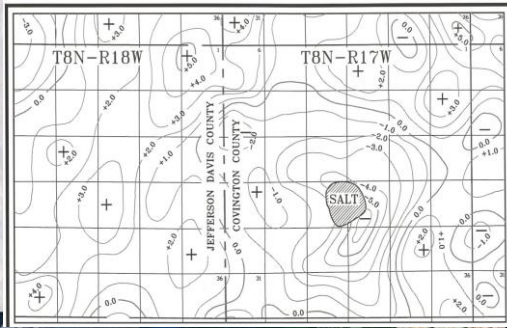
- Surface Geology
- Well Logs
- Seismic Data
- Gravity

A list of tools used by geologists. The background is a grayscale aerial view of a city. In the bottom right corner, there is a logo for "SEATTLE" and a small image of the Space Needle. In the bottom left corner, there is a logo for "AAPL".

GRAVITY MAP



GRAVITY MAP





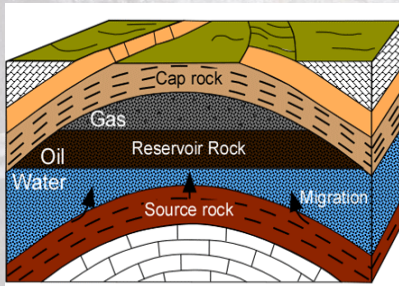
STRUCTURE MAPS

Structure maps should not be
Intimidating to anyone

A structure map is simply a topographic map of
a geological layer under the earth



ANTICLINE TRAP

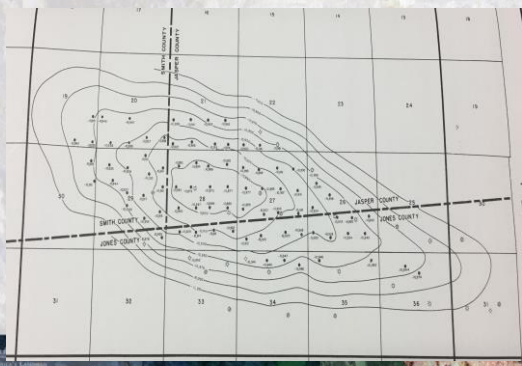


Anticline Trap

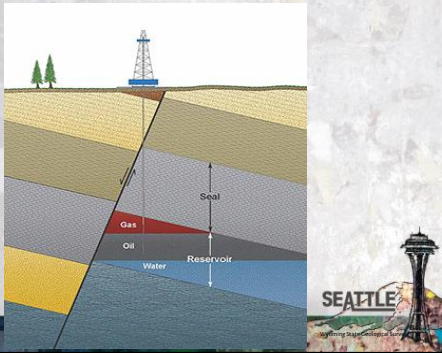
The Flood Geology of Oil, 2/1/2011, Age of Rocks



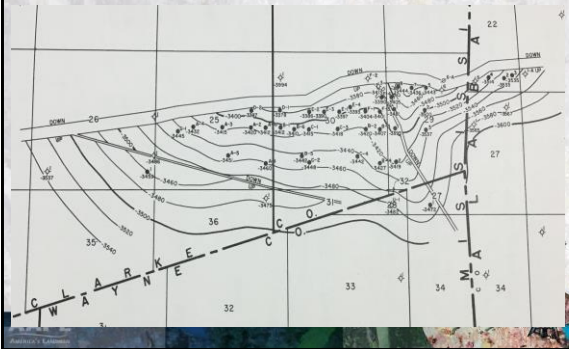
ANTICLINE TRAP



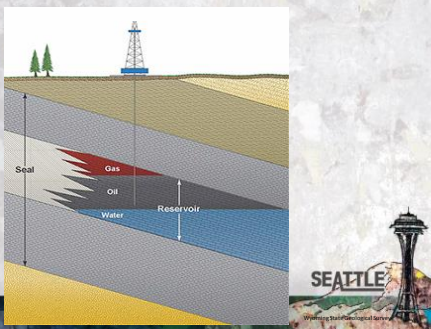
FAULT TRAP



FAULT TRAP



STRATIGRAPHIC TRAP



TYPES OF FLUID DRIVES

- GAS EXPANSION
- WATER DRIVE

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FRACTURING

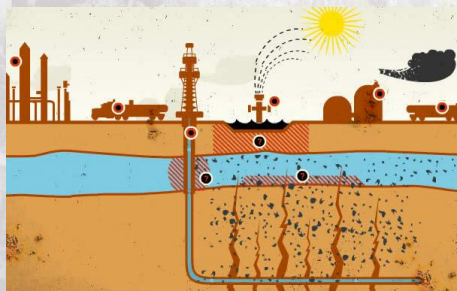
FRACTURING DOES NOT
AFFECT GROUND WATER

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Fracking Image from 8020 Vision Site

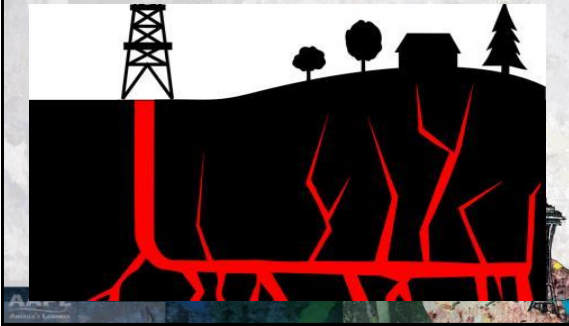


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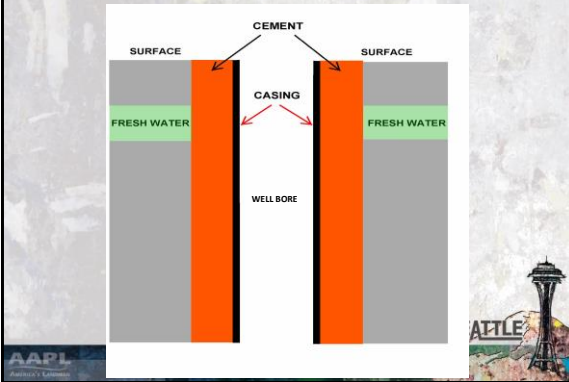


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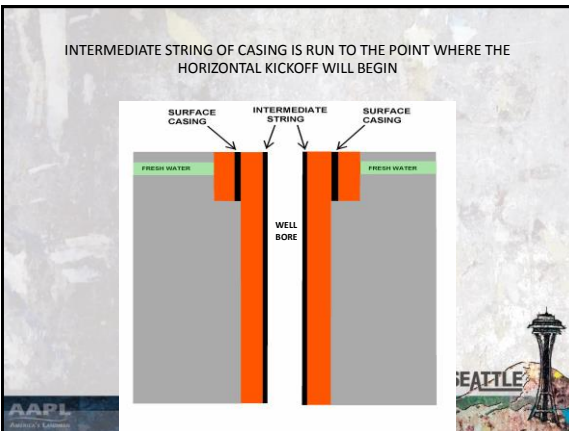
Fracking Image from Permaculture Site



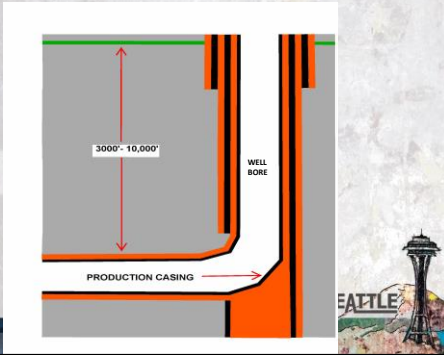
SURFACE CASING IS CEMENTED IN THROUGH THE FRESH WATER ZONES



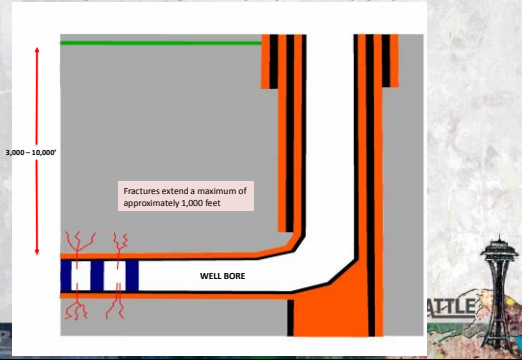
INTERMEDIATE STRING OF CASING IS RUN TO THE POINT WHERE THE HORIZONTAL KICKOFF WILL BEGIN



A HOLE IN THE CASING IS CUT. THE HORIZONTAL PORTION OF THE WELL IS DRILLED AND PRODUCTION CASING SET AND CEMENTED IN TO TOTAL DEPTH.



THE WELL IS FRACKED WITH A CONTROLLED AMOUNT OF FRACK FLUID AND SAND LIMITING THE LENGTH OF THE FRACTURES



EVOLUTION OF A SALT DOME

A JOURNEY THROUGH TIME

