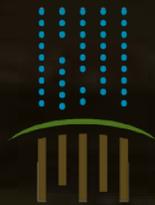




TITAN OPERATING, LLC.

TCC DRILL SITE COLLEYVILLE, TX



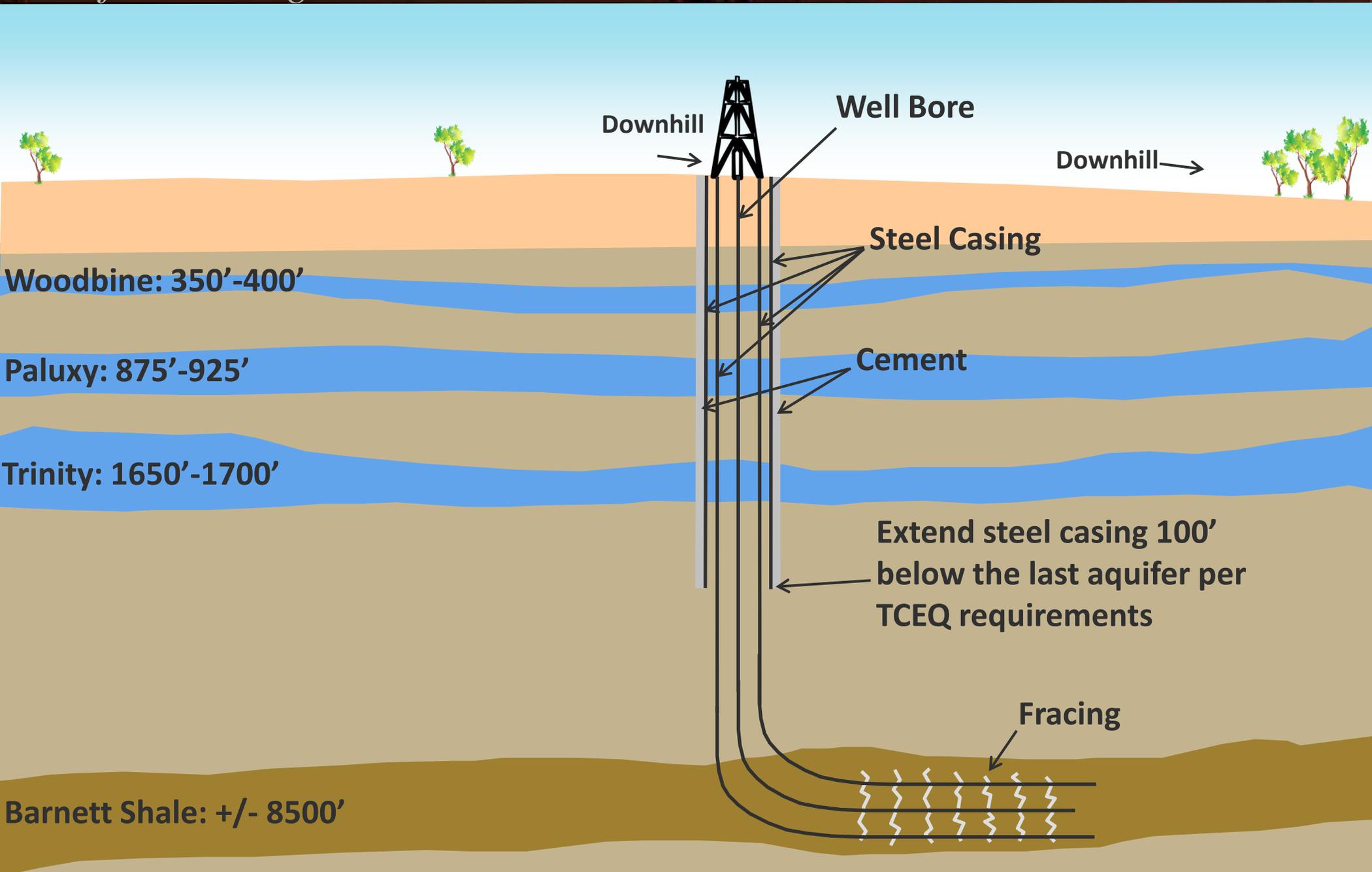
PELTON
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- **Ground Water** - For ground water, surface casing is set and cemented through the fresh water zones. This is a steel barrier that is surrounded by a concrete wall that prevents wellbore fluids from communicating with the fresh water supply.

TCC

Surface Casing



Titan's Frac Fluid Composition

- Virtually all (99.5%) of frac fluid is made up of water and sand. While there are multiple chemicals that can be used in frac fluids, the average frac job only uses a few.
- The remaining .5% is comprised of three things: (1) potassium chloride (a type of salt to keep the shale from swelling), (2) Biocide/algaecide (like people use in their pool to keep the water from turning green), and (3) Gel or guar (the stuff used in ice cream and jell-o to thicken water).

Fracturing Fluid Additives, Main Compounds and Common Uses		
Additive Type	Main Compound(s)	Common Use of Main Compound
Acid	Hydrochloric acid or muriatic acid	Swimming pool chemical and cleaner
Biocide	Glutaraldehyde	Sterilizing medical equipment
Breaker	Ammonium persulfate	Hair cosmetics, household plastics
Corrosion inhibitor	N,n-dimethyl formamide	Pharmaceuticals, plastics
Friction reducer	Mineral oil	Make-up remover, candy
Gel	Guar gum or hydroxyethyl cellulose	Thickener used in cosmetics and sauces
Iron control	Citric acid	Food additive, flavoring in food and beverages
Oxygen scavenger	Ammonium bisulfite	Cosmetics, water treatment
Proppant	Silica, quartz sand	Play sand, concrete
Scale inhibitor	Ethylene glycol	Automotive antifreeze and de-icing agent

Source for both chart and table: New York Department of Environmental Conservation



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