

Journeyman Well Driller – General Licensing Exam

Study Outline

Terms-to-know/Vocabulary

- Confined/unconfined aquifers
- Static water level
- Saturated zone
- Potentiometric surface
- Specific capacity
- Devices used to measure water levels
- Cone of depression
- Pumping water level
- Drawdown
- Recovery
- Maximum Yield
- Hydrologic Cycle
- A spring
- Properly developing a water well
- Water mining
- Groundwater recharge
- Annular velocity
- pH
- Types of wells
- Fishing
- Plume
- Universal solvent
- Drilling methods and equipment commonly associated with them
- Storage capacity
- Quicksand
- Principal types of earth augers
- Continuous flow return method
- Methods to install a well screen
- Controls of groundwater quality
- Sources of water in rock
- Lost Circulation Problem
- Domestic well yield test
- Artificial gravel-packing
- Turbidity
- Removal of air rotary drilling cuttings

- Formation permeability
- Location between contaminant and well
- Water logged
- Types of filters
- Discharge during a pump test
- Limits of horizontal/vertical length of suction pipe
- Rotary table rigs
- Potable water
- Effects of location/altitude of well pump
- Air gaps
- Purpose of a water system
- Porosity
- Barite
- Measuring tools of water levels

Calculations/Conversions

- Maximum yield
- Volume of a well's annular space
- Yield = Gallons per minute
- Air measurements (volume & pressure)
- Amount of air pressure needed to lift water in a well
- Parts per million (ppm) to grains per gallon (gpg)

State Regulations

- Well construction permit
- Well permit
- Abandonment
- Hydrogeologic Areas 1-5
- Grouting
- Abandoned well report
- Well screen
- Emergency well permit
- Casing
- Well completion report
- Location of potable water well
- Siting a well
- Chlorination time for contaminated water
- Change of employment
- Well log information
- Licenses

Troubleshooting

- Causes of water level drop in a pipe

Electrical

- Submersible pump installation
- Voltage
- Ampacity
- Phase
- Frequency

Chemistry

- Causes of hardness in water
- Reverse osmosis treatment
- Disinfectants
- Ion-exchange process
- Activated carbon filters
- Qualifications for selecting water treatment equipment
- Total dissolved solids (TDS)
- Oxidizing filters
- Regeneration
- Hydrogen sulfide
- Aeration
- Iron and Manganese
- Indicators of corrosive water
- Free chlorine residuals

Safety

- Entering a hazardous waste site
- Eye wear
- Clothing
- Respirators
- Affects from exposure to vapors and gases
- Hearing protection by MOSHA
- Acetylene torches
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