

NWRA (Nevada Well Construction Regulations)



What is required to be a drilling contractor in Nevada?

Tests for Contractors License in Nevada

1. Contractors License for the state of Nevada
2. Trade exam (waterwell)
3. Proper Insurance / Bonding as required

Types of contractor License

1. Municipal / Dewatering / Domestic (C-23)
required licensed driller
2. Diamond / Core (A5)
3. Pump (C-23)
4. Environmental (C-23)
5. Oil & Gas / Geothermal / Exploration (A6)



What does it take to be a licensed driller in Nevada?

Licensed Water Well Driller

Qualifications for License

- 2 years drilling experience
- 4 personnel references
- Passage of written test of 70% +
- Legal description of well on map
- Oral examination
- Continuing education credits of 8 yearly
- Demerits for non - compliance

Activities that apply to Licensed Drillers

(Must be on site at all times during all field activities including submitting a DWR well report within 30 days upon well completion)

1. Drilling Water Wells / Monitor Wells
2. Constructing Water Wells
3. Conversion of exploration holes to Monitor / Transducer
4. Abandoning Water Wells / Monitor Wells

What do we have to do before we go to work?

Owners Responsibility

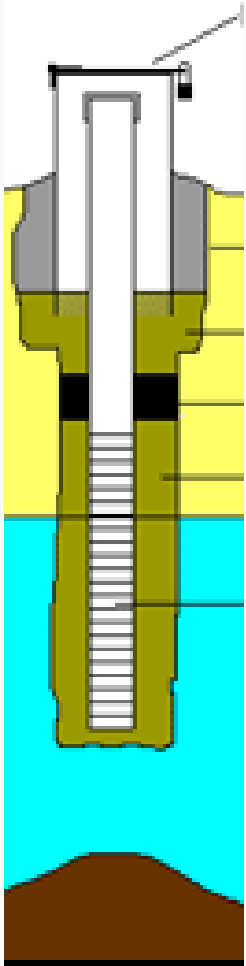
- Application for Permit to appropriate water
- Affidavit to Abandon
- Waivers if pertinent
- Discharge Permit
- Well Design

Contractor Responsibility

- Ensure paperwork is in order before proceeding
- NOI – submittal – (Must have approved and three day wait before proceeding with field activities)
- Drilling and completion of well according to the state regulations
- DWR well report – within 30 days of well completion turned into the state by licensed well driller

(If replacement well must insure existing well is abandoned before the rig is removed from the drill location)

Well Types



Municipal-

Well drilled for a city or towns water supply

Environmental –

Usually mandated by an agency for water quality

Dewatering –

Usually done in the mining industry to relocate water in order to get a mineral by over stressing the aquifer

Geothermal –

Well designed to reach an energy resource below the surface composed of very high temperatures.

Oil / Gas –

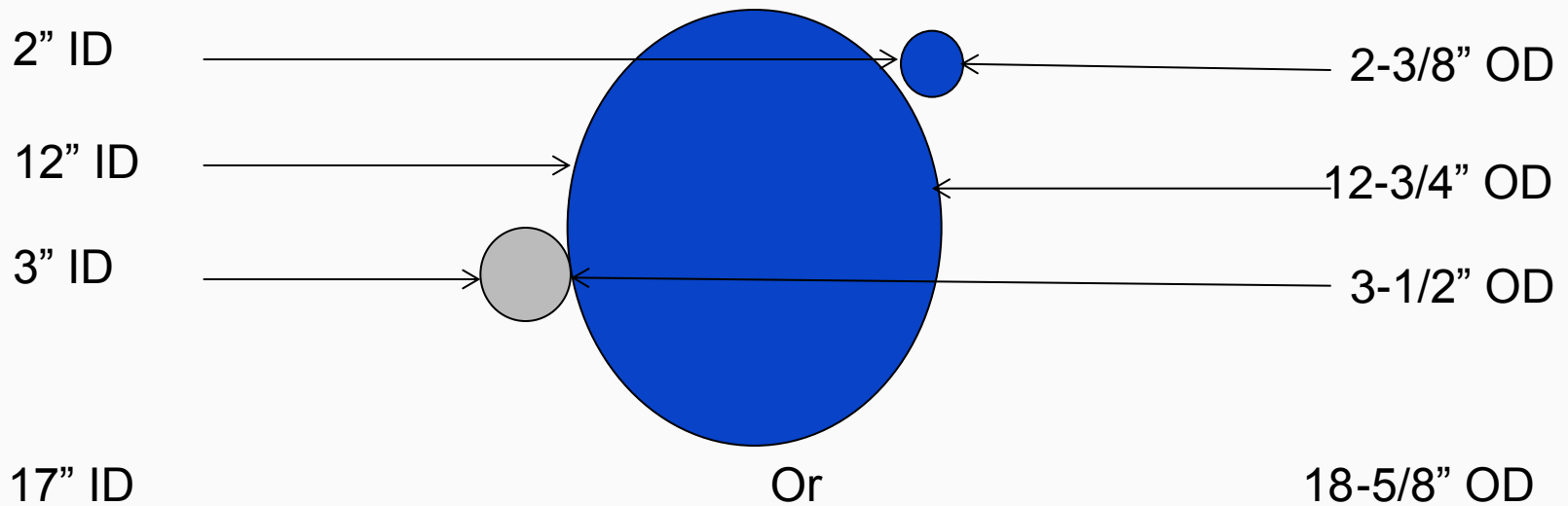
Small diameter wells drilled to reach an energy resource

Horizontal wells / drains –

Wells drilled into pit walls to relieve pressure in the wall and used for exploration / grade control.

Clarification of the regulations

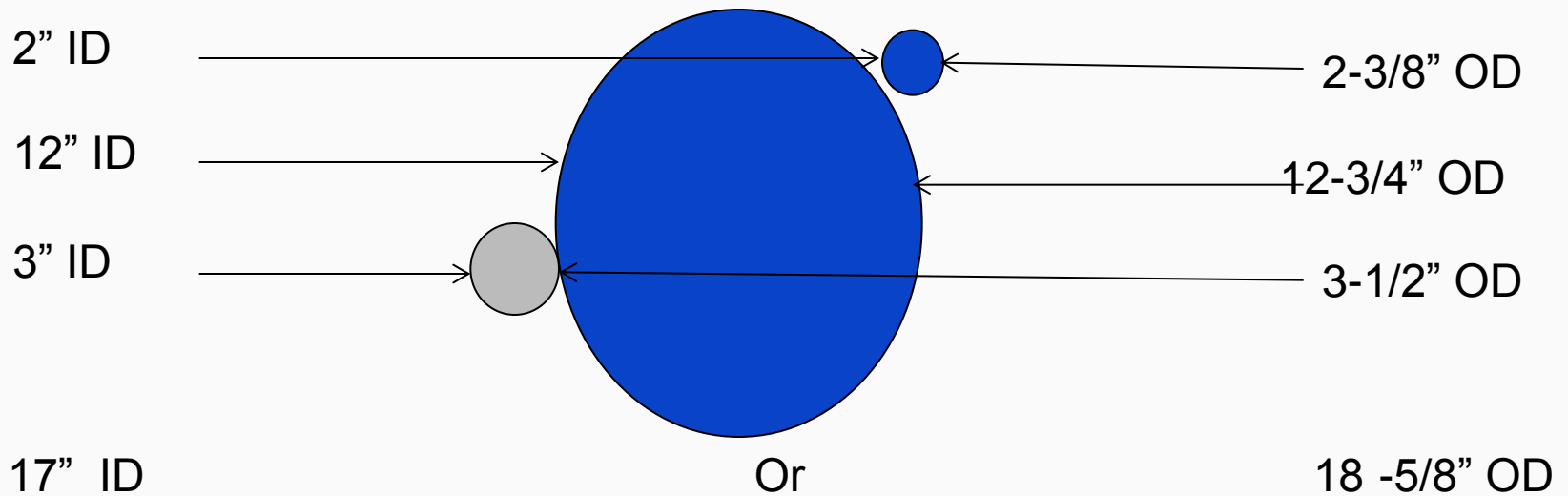
Diameter of hole required according to casing diameter
Is it just in the seal?
Total depth of the borehole?



What is the correct minimum borehole size?

Clarification of Nevada State Regulations

Diameter of hole required according to casing diameter
Is it just in the seal?
Total depth of the borehole?



Legal minimum borehole
diameter- 22-5/8"

Additional regulations to a drilling technology

Horizontal Drilling –

- NOI are needed for horizontal wells
- Waivers for horizontal wells
- Abandonment of horizontal wells
- Well design submitted and surface seal
- DWR report



Conversion of exploration wells to monitor / transducer

- Can be drilled by unlicensed driller but completed by licensed driller
- NOI has to be filled, submitted, and approved
- Waiver must be filled out and accepted.

Clarification of Nevada State Regulations

Exploration boreholes – Reverse Circulation

- Driller does not have to have be a licensed driller.
- Regulations and guidelines for borehole abandonment procedures in water well regulations.



Exploration drilling accounts for about 3.5 million feet a year of RC drilling with average depths of 1,500' and 85% angle drilling in adverse lithology.

Concerns : Lost drill strings in multiple aquifer conditions

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Clarification of Nevada State Regulations

Exploration boreholes – Reverse Circulation, Pre-collar / Coring

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Company

Is it Working?

- How does do the Nevada regulations compare with other areas?
- Would a task force work or be considered by DWR on new technology or areas compliance?