

Introduction to Nevada Well Regulations

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Topics

- Well Regulations and standards
 - Well regulation history
 - Statutory Authority
 - Process of how regulations are revised and updated
- Status of current regulations
- Proposed changes for 2014
- Discussion

Well Driller's Rules and Regulations from 1947 to present

- General Water Law
1939 Act
 - Enabled enactment
of regulations
- First regulations
1947
 - Allows for licensing
of well drillers and
submission of well
logs



The First Well Log

WELL LOG AND REPORT TO THE STATE ENGINEER OF NEVADA

Log No. 1
 Rec. June 12 1947
 Well No. _____
 Permit No. _____
Do not fill in

Owner: JOHN CAHILLAN
 Driller: HARD ROBERTS, Inc. SALT LAKE CITY, UTAH
 Address: MOUNT ROSE RD. TARRANT, NEV. Address: 1414 MAY ST. CHICAGO, ILL. Lic. No. 37
 Location of well: 1/4 Sec. 11, T. 17. N/S, R. 19. E. in _____ County
 or: B. Houser

Water will be used for: HOUSE Total depth of well: 76'
 Size of drilled hole: 6" Weight of casing per linear foot: 20'
 Thickness of casing: 3/8" Temp. of water: 50°F.
 Diameter and length of casing: 6" 72' 9"
(Casing 12" in diameter and under give inside diameter; casing 18" in diameter give outside diameter.)

If flowing well give flow in c.f.s. or g.p.m. and pressure. _____
 If nonflowing well give depth of standing water from surface: 46'
 If flowing well describe control works: _____
(Type and size of valve, etc.)
 Date of commencement of well: 6-9-47 Date of completion of well: 6-13-47
 Type of well rig: MOD. 22W. CABLE TOOL

LOG OF FORMATIONS

From (feet)	To (feet)	Thickness (feet)	Type of material
0	30	30	SAND CLAY ROCK.
30	38	8	SANDY CLAY ROCK.
38	41	3	SAND SLICIC.
41	52	12	BASALT. ROCK.
52	55	3	TALCUM GRANIT.
55	76	21	GRANIT. ROCKS

Water-bearing formation, casing perforations, etc.
6" SLOTS FOR 22'
 Check aquifers (water-bearing formation)
 from 41 to 76 ft.
 Other aquifers
PICKED UP SOME WATER AS WE WENT DOWN.
 First water at 38 feet.
 Casing perforated
 from 70 to 48 ft.
 Size of perforations
6" SLOTS
3 ways.
 Well makes 5 to 7 G.P.M.
BADLY.

- 1952 Rules and Regulations for Drilling Wells
 - Domestic well exception
 - Drilling a well in violation of the Rules and Regulation and State Law is guilty of misdemeanor and subject to \$50-\$500 fine and 6 months in jail
 - Notice of Intent to Drill Cards required
 - Self-addressed and stamped
 - No perforations within 100-feet within ¼ mile of stream
 - Provide method for measuring water level
 - Waivers

- 1957-1962 Rules & Regulations for Drilling Wells
 - License fee raised to \$25; renewal \$10
 - All wells cased to bottom and sealed at surface from contamination
 - In 1955 State Engineer appointed a Southern Nevada Well Driller's Advisory Board in Las Vegas
 - Determine qualifications of applicants for well drilling licenses
 - Disciplinary hearings
 - State Contractor's license required (1953)
 - Rules on Domestic well construction
 - Well log required; 50-foot sanitary seal required

- 1969 Rules and Regulations for Drilling Wells
- Regulations re-printed with very minor changes in wording



• 1981 Regulations for Drilling Water Wells

- First major technical changes since 1947
- Definitions
 - Specifications on materials
- Casing thickness
- 50-foot sanitary seal on ALL wells
- Detailed plugging requirements

- 1990 Regulations for Water Well and Related Drilling
 - The “Red Book”
 - Increased licensure requirements
 - Written exam
 - 100-foot sanitary seal **REQUIRED** within ¼ mile of live stream
 - Monitor wells
 - Waiver, drilling, plugging
 - Specific waivers addressed in detail

- 1998 Regulations for Water Well and Related Drilling
 - Bentonite grout standards
 - Exploratory (minerals) Boreholes defined and regulated
 - Borehole plugging requirements
 - Different types of wells defined
 - Vapor extraction
 - Cathodic protection
 - Seismic shot hole
 - Piezometers
 - Thermoplastic casing (pvc)

- 2006 Regulations for Water Well and Related Drilling
 - Appendices added
 - FAQs
 - Improved diagrams
 - Forms
 - Glossary of Terms
 - Continuing education for renewal of license (CEUs)
 - Mandated by statute (NRS 534.140)
 - Demerit system



- 2012 Regulations for Water Well and Related Drilling

- Additional options for plugging materials
 - Bentonite chips
- Treatment of certain holes as boreholes
- Conformity with Bureau of Safe Drinking Water
- Casing requirements for depths in excess of 300 feet
- Minor changes to clarify licensing requirements

• Statutory Authority

- Nevada Revised Statute Chapter 534.020, 534.110
 - “It is the intention of the legislature, by this chapter, to...provide for the administration of the provisions thereof by the State Engineer, who is hereby empowered to make such rules and regulations within the terms of this chapter...”
 - “The State Engineer shall administer this chapter and shall prescribe all necessary regulations within the terms of this chapter for its administration.”

• Process for updating regulation

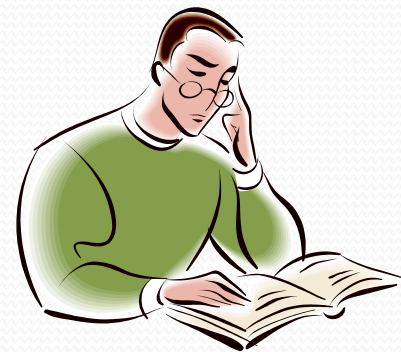
1. Division drafts regulation
2. Regulation submitted to LCB (30 days)
3. Regulation released for public review
 - a. Workshops scheduled
 - b. Hearing scheduled
4. Regulation re-submitted to LCB with any changes based on input from workshops and hearing
5. Regulation sent back to agency for final review
6. Regulation sent to Legislative Commission for adoption
7. Legislative Commission files the regulation with the Secretary of State
8. Codification

- Process for updating regulation – current status
 - Currently the regulation is at step 1
 - First draft for Internal Staff review
 - There will be many more drafts at this stage
 - Finished draft to LCB for review (step 2)
 - Goal – complete by March 1st, 2014 or sooner
 - Any significant delay and amendment to the regulation could be delayed to 2016



• Status of current regulations

- Current regulations went into effect in 2012
- Feedback from well drillers
 - No issue raised with changes adopted in 2012 but issues with other portions of the regulation
 - NOI fee – Statutory – biggest complaint
 - No regulations / No licensing / No fees (Only letter received)
 - “Just tell me what to do and I’ll do it.”



- **Why update so soon?**

- Issues/complaints with current regulations raised by well driller's, well driller's advisory board, and well supervisors fall into the following categories:
 1. Not easy to understand or implement
 2. Better concurrence with NRS
 3. Regulation ambiguity
 4. Well driller non-compliance due to Items 1-3

- Proposed changes for 2014
 - Temporary well driller licenses
 - Overuse
 - Well plugging
 - Simplification
 - Hydraulic fracturing
 - Water wells
 - OG waivers
 - Not addressed in current regulations
 - Oil Boom?

- Oil&Gas Well in North Dakota – Directional drilling & fracking



• Proposed changes for 2014

• Disinfection

- Defining and requiring disinfection of wells for human consumption (domestic and municipal)
- Common in other State regulations to require chlorination
- Cleaning of any equipment used down-hole

• Responsible Party

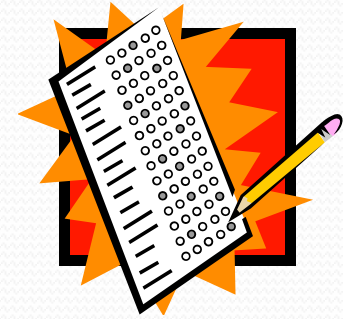
- Defining for the purposes of well abandonment responsibility
- Affidavit of Intent to Abandon

• Proposed changes for 2014

- Review use of bentonite chips in well plugging
 - Calculate volume in advance
 - Screening fines
 - Pour rate; 3 minutes per 50 lb bag
 - Hydration - critical
 - Do not pour into more than 350-feet standing water
 - Use inside perforated casing
 - Does not penetrate into annular space or out into formation
 - Limit use to 500-foot wells
 - Water ratio is crucial

• Proposed changes for 2014

- License application
 - 75% on written exam
- Continuing education units (CEUs)
 - Simplify language
 - 2 DWR required classes
 - Well drilling regulations
 - Well drilling forms
- Well Driller's Report
 - Match statutory requirements
 - Water temperature



- Proposed changes for 2014

- Notice of Intent card (NOI) fee required prior to approval to drill (\$25)

- Online convenience (coming soon)
- E-Check
- ~~Credit Cards~~
- ~~Pre pay~~



- Lost Circulation Materials (LCMs)

- Organics not allowed, paper/wood, brans, hulls, grains, starches, hays/straw, and proteins
- Non-organic that can be safely broken down and removed allowed

- Proposed changes for 2014
 - Plugging regulations (NAC 534.422)
 - Clarify that a “R” waiver required for deviation from regulation
 - Monitoring well waiver
 - Back to “old” system of M/O waiver for all wells
 - Monitor well plugging procedures
 - Simplify
 - Dewatering wells where casing is pulled
 - Bentonite chips not recommended for 4” or less diam.
 - “P” waiver needs amended to concur with statute

Industry response to regulations
current and future

Discussion



Thank You!



One last time for

Questions