Natural Resources Ground Water Technician Training

NRD Ground Water Technician Tutorial

- Presented by:

- Water Well Standards Program
- David Miesbach/NDEE GW Section

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- NDEE = NDEQ = DHHS

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- NDEE Administers:
  - Water Well Standards
  - Underground Injection Control (UIC)
  - Agricultural chemical releases
  - Chemigation (already covered)

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- Water Well Standards and Contractors Licensing Act- passed 1986
- Purposes of the “Act”
  - Provide protection to groundwater…licensing
  - Protect health and welfare of citizens of the State.
  - Protect groundwater resources…construction standards
  - Provide data…well logs/well registration
  - Matrix for Title 178

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- Title 178-Chapters
  - NAC 10- Licensure and penalties/re-instatements/renewals, CEU's, requirements-what is a CEU, reporting CEU's
  - NAC 11- Fees for licensure
  - NAC 12- Construction, installation and decommissioning standards for wells and pumps
  - NAC 13- Board duties and descriptions of members

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- NAC 10- Licenses and discipline
  - Definitions:
  - Licensed Natural Resources Ground Water Technician:
  - means a natural resources ground water technician who has taken a training course, passed an examination based on the training course, and received a license from the Department indicating that s/he is a licensed natural resources ground water technician.

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46-1208.02. Natural resources ground water technician, defined. Natural resources ground water technician means any individual employed by a natural resources district and engaged in the inspection of chemigation systems, measuring and recording static water levels, inspection and servicing of flow meters, and water sampling practices and techniques. Natural resources ground water technician does not include

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- Sampling Event: means the collection of a single sample or a single set of samples per each site visit from a water well for the purpose of water quality analysis.
- Water Sampling Techniques means the procedure(s) and/or method(s) by which water sampling practices are conducted.
- Water Sampling Practices: means acts by which ground water samples are obtained from a water well or pumping system in which the water well seal is broken. The term generally includes any act which serves to protect the integrity of the water well or the quality of the ground water and may include preparation of the sampling point, use of sampling equipment, and certain aspects of sample collection. Water well monitoring technicians may temporarily employ sampling equipment or pumping equipment in a water well for each and every sampling event after which time the equipment must be removed. **Natural Resources Ground Water Technicians** may temporarily employ sampling equipment. Deployment of sampling equipment for longer periods of time or pumping equipment may only be carried out by a licensed pump installation contractor or supervisor and is deemed to be pump installation rather than water sampling practices.

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- Natural Resource Ground Water Technician
- CAN NOT:
  - Install permanent pumps (not even to take a sample)
  - Construct a well
  - Decommission a well
  - Supervise the work of others

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- Water Well: means any excavation that is drilled, cored, bored, washed, driven, dug, jetted, or otherwise constructed for the purpose of exploring for ground water, monitoring ground water, utilizing the geothermal properties of the ground, obtaining hydrogeologic information, or extracting water from or injecting fluid as defined in Neb. Rev. Stat. § 81-1502 into the underground water reservoir.

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When is a license required?

- A water well must be constructed, pumps and pumping equipment must be installed and repaired onsite, and water wells must be decommissioned in accordance with Title 178 NAC 10 and 12.
- A water well may only be opened or the seal may only be broken by:
- 1. A licensed contractor or supervisor or a person working directly under the supervision of a licensed contractor or supervisor;
- 2. An individual who owns a water well on land owned by him/her and used by him/her for farming, ranching, or agricultural purposes or as his/her place of abode.
- 3. A licensed water well monitoring technician or a licensed natural resources ground water technician,
- 4. A licensed operator of a public water system in the course of his/her employment or someone under his/her supervision, or
- 5. A state electrical inspector in the course of his/her employment.

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- Reinstatement
  - …after expiration…retake and pass the test
- Renewal of License
  - all licenses expire on Dec. 31 of each even-numbered year
  - Pay the fees
  - Failure to renew automatically expires without further notice

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- Qualifications for Contractor:
  - Age of Majority- 19
  - Good Moral character
  - Pass the test
  - Pay the fees for license
  - Proof of insurance- $100,000 liability
  - Comply with act

- Qualifications for NRGW Technician:
  - **NRGWT must be employed by an NRD**
  - **Take the training**
  - **Pass the test**
  - **Pay the fee for license**
  - **Comply with the Act**

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- Disciplinary Action and other sanctions:
  - …fraud in obtaining a license
  - …Violation of the act.
  - Incompetence gross negligence
  - Conduct detrimental to health or safety of persons hiring the services…
  - Practice of the trade…fraudulently
  - …Impaired by drugs or alcohol
  - Permitting the use of a license fraudulently
  - Having had a license denied, suspended, revoked in the past…
  - Unprofessional conduct…
  - Practice of the trade while under suspension…
  - Failing to file a well registration…

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- Reinstatement after Discipline- time frames
  - To qualify for reinstatement, applicant must first meet the requirements for reinstatement
  - Credential was suspended or limited may apply for reinstatement at any time.
  - Credential that was revoked may apply for reinstatement after a period of 2 year has elapsed from date of revocation.
  - Applicant must submit an application
  - Request a hearing – 30 days from receipt

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- Exams
  - Everyone but NRGWT takes NE section plus a specialty exam.
  - 70% passing grade
  - Review materials provided by the program
  - Hardship licensing used to replace a deceased license holder

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- NAC 10-CEU's Definitions-
  - Continuing Education Program-instruction or information to licensees-maintaining skills-protection of groundwater-health and general welfare of the citizens and the competent practice-Programs may be offered under the names such as-"course of study, seminar, school, clinic, lecture, short course, workshop, conference…" Experience does not count.
  - Hour of Continuing Education= 1 hour of credit toward the requirement of the Act.
  - Provider- …institution, organization, or individual that presents programs approved by the board
  - Certificate of Completion-…. means written evidence or documentation that shows attendance and completion of a continuing education program.

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- CEU requirements
  - Each licensed person under the Act must complete at least 12 hours of CEU on or before Dec. 31st of an even numbered year following the issuance of their license,
  - The licensee is responsible for:
  - 1. Maintaining documentation of attendance at continuing education programs; and
  - 2. Verifying with the Board that the continuing education program is approved by the Board
  - Hardship exemption- disabled, service in the military

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- CEU approval

- The Board will evaluate applications from licensees or providers for approval of continuing education programs
- Application must be received 65 days prior to meeting for pre-approval
- Application must be received by the board with 1 year of program for post approval
- Credential holder responsibility to maintain record of CEU course attended.

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11-003.01 Schedule of Fees

- A fee of $150 for any regular or temporary hardship, initial or renewed license issued under the Act.

- Dec. Order / Variance $100.00

11-003.02 Proration of Credentialing Fees:

- When a credential will expire within 180 days after its initial issuance date and the initial credentialing fee is $25 or more, the Department will collect $25 or one-fourth of the initial credentialing fee, whichever is greater, for the initial credential. The credential will be valid until the next subsequent renewal date.

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- 11-003.03 Administrative Fees:

1. $35 reinstatement fee in addition to the renewal fee.

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- NAC 12
  - Definitions:
    - Monitoring Well… means a cased well for the purpose of determining ground water quality.
    - Observation Well…means a cased well for the purpose of measuring water levels.
    - Recovery Well… means a water well constructed for the purpose of, or in conjunction with, the removal of contamination from an aquifer or aquifers
    - Sanitary Well Cap (seal) …means a cover fitted to the top of a well casing to seal the opening between the casing and the pump pipe…

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- NAC 12
  - Test Holes:
    - Must not be retained for more than 10 days.
    - Must be decommissioned within 10 days of drilling.

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- Groundwater monitoring, observation, and recovery wells:

1. Watertight Well Casing must be composed of nontoxic durable material compatible with water quality encountered.
2. Observation wells are constructed solely to measure the elevation of the water table or potentiometric surface and are considered non-potable wells.
3. Monitoring wells are constructed solely for extracting water for chemical testing.
4. Above Ground Protection, non-steel cased wells completed above ground must be enclosed with a steel casing embedded in the concrete pad and covered with an overlapping, vandal-resistant secured steel cap.

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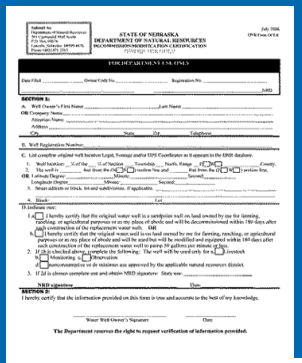
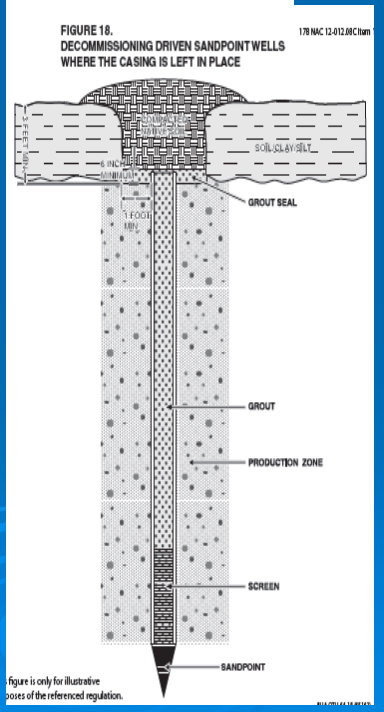
- Decommissioning of Water Wells
  - Must be reported to DNR within 60 days
  - Licensed contractor or landowner in decommissioning
  - of a sand point





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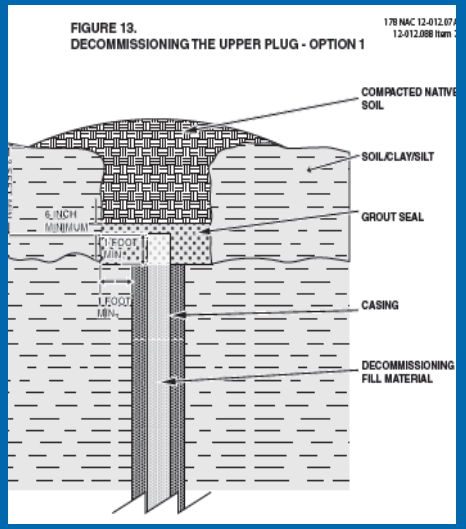
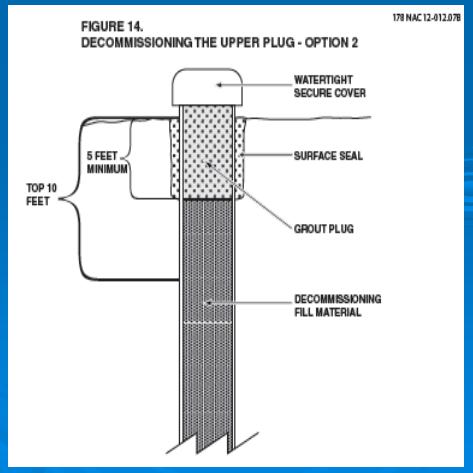
Upper Plug:

All cased water wells to be decommissioned must have an upper plug to prevent surface and near-surface contaminants from entering the well casing. If the water well records indicate that a surface seal was installed during construction, then either option below may be used. If a surface seal was not installed or it is not known if a surface seal was installed, then Option 1 must be used.

12-012.07A Option 1: Remove the top 3 feet of the well casing and grout the upper 5 feet of the remaining casing. Install a 6-inch thick grout seal above the top of the casing that extends a minimum of 1 foot past the walls of the original drilled hole and extends at least 1 foot below the top of the cut-off casing. Backfill the remainder of the hole with native soil mounded for settlement and proper drainage. (See Figure 13.)

12-012.07B Option 2: If the water well was constructed with an annular surface seal, the water well casing may be left in place. A 5-foot long plug must be placed in the casing within the top 10 feet. (See Figure 14.) A watertight secure cover must be installed on top of the casing.






FRAM
PH8A
Mobil
Mobil
5000

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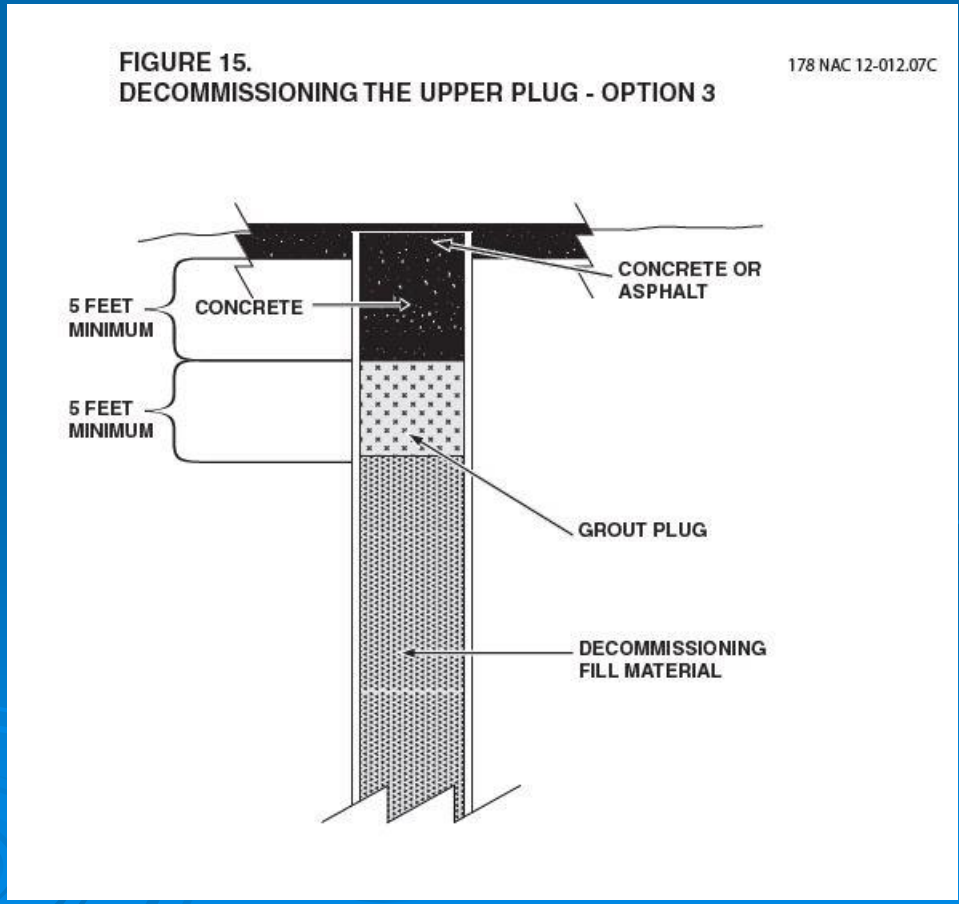
12-012.07C Option 3: If the water well is surrounded by concrete/asphalt that extends 1 foot beyond the original borehole, and the casing is to be cut off flush with the top of the concrete, then a 5 foot minimum grout plug must be placed 10 feet below the concrete pad, and a minimum of 5 feet of concrete must be installed above the grout plug and struck off level with the top of the concrete. (See Figure 15)



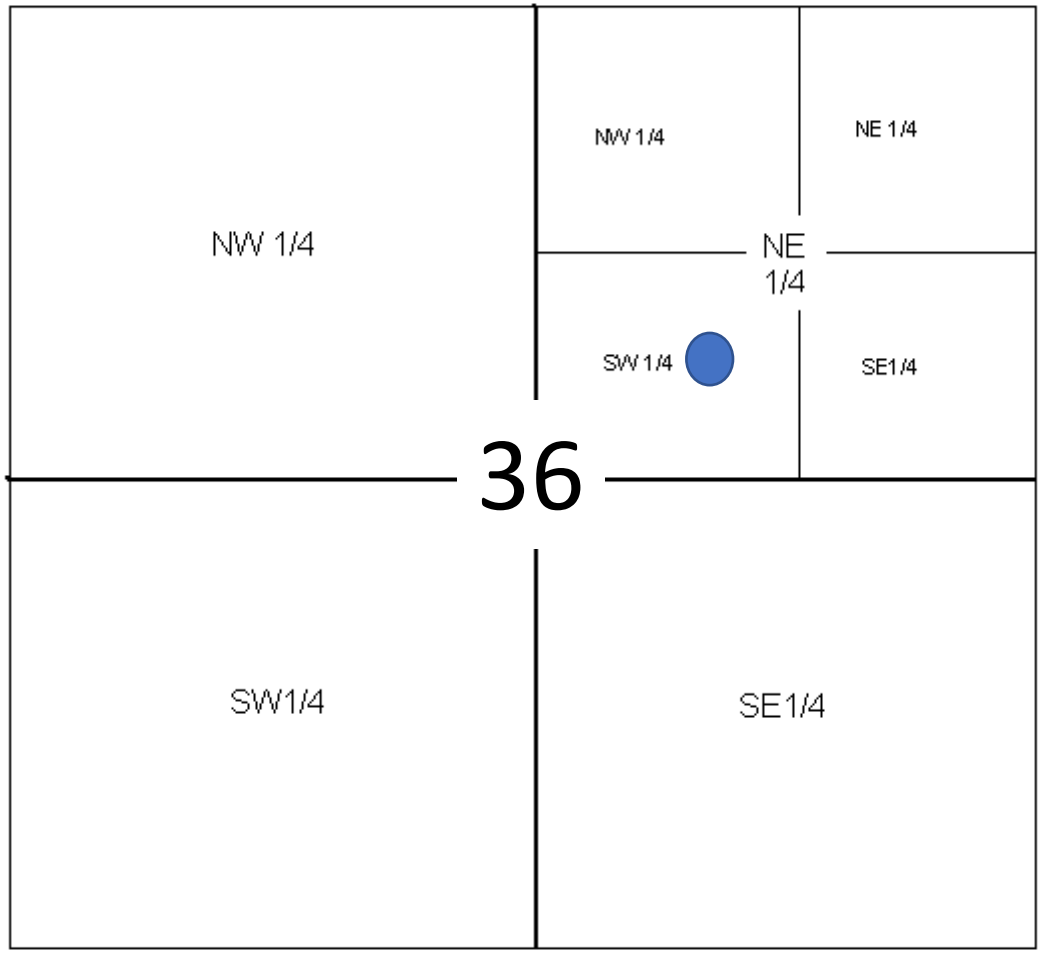
NRD Ground Water Technician Tutorial- Section ¼, ¼.

A ¼ of ¼ is 1320’ or ¼ mile

A ¼ of a section is 2460’ or ½ mile

A Section is 5280’ or 1 mile

Remember to always read smaller to larger
(SW1/4 of the NE1/4 of Section 36)



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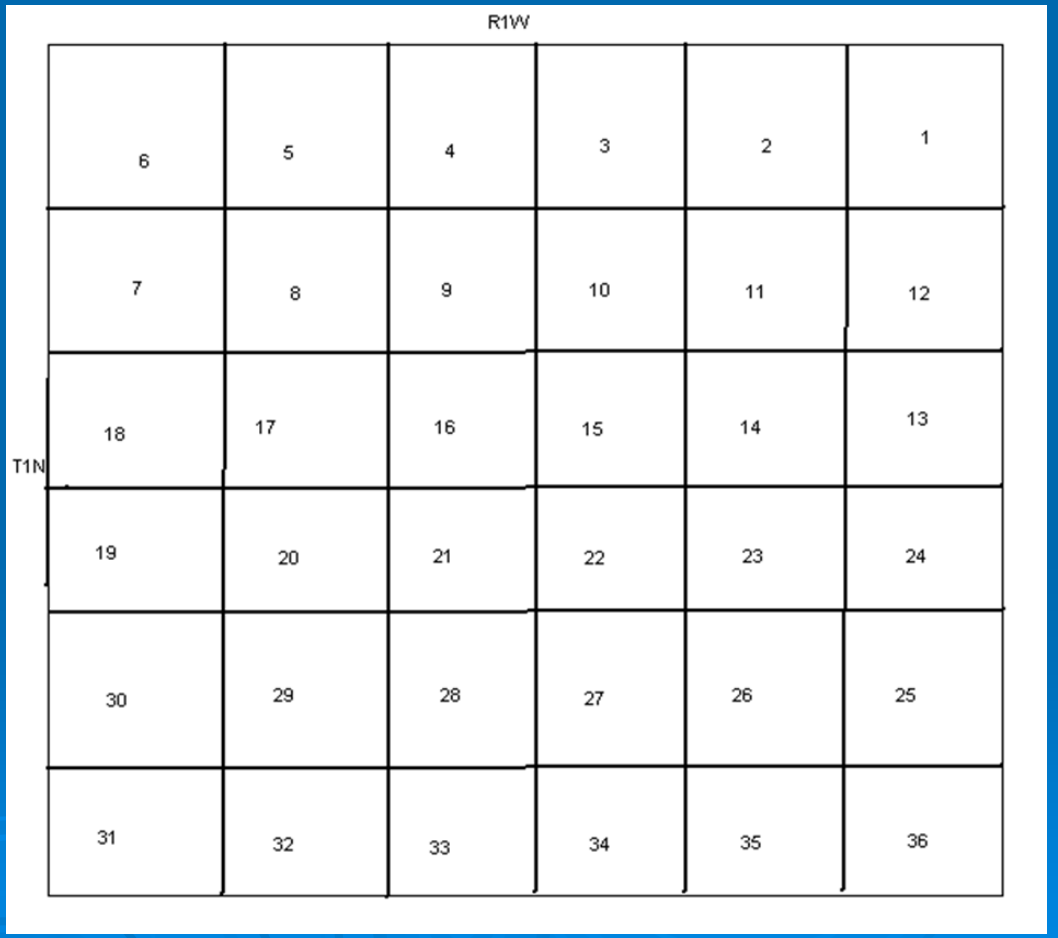
Township

Township (N-S) , Section (1-36), Range (E-W) – known as legal description

Well Location refers to Township (North),

Range (East or West), section and sub section



1854
survey marker

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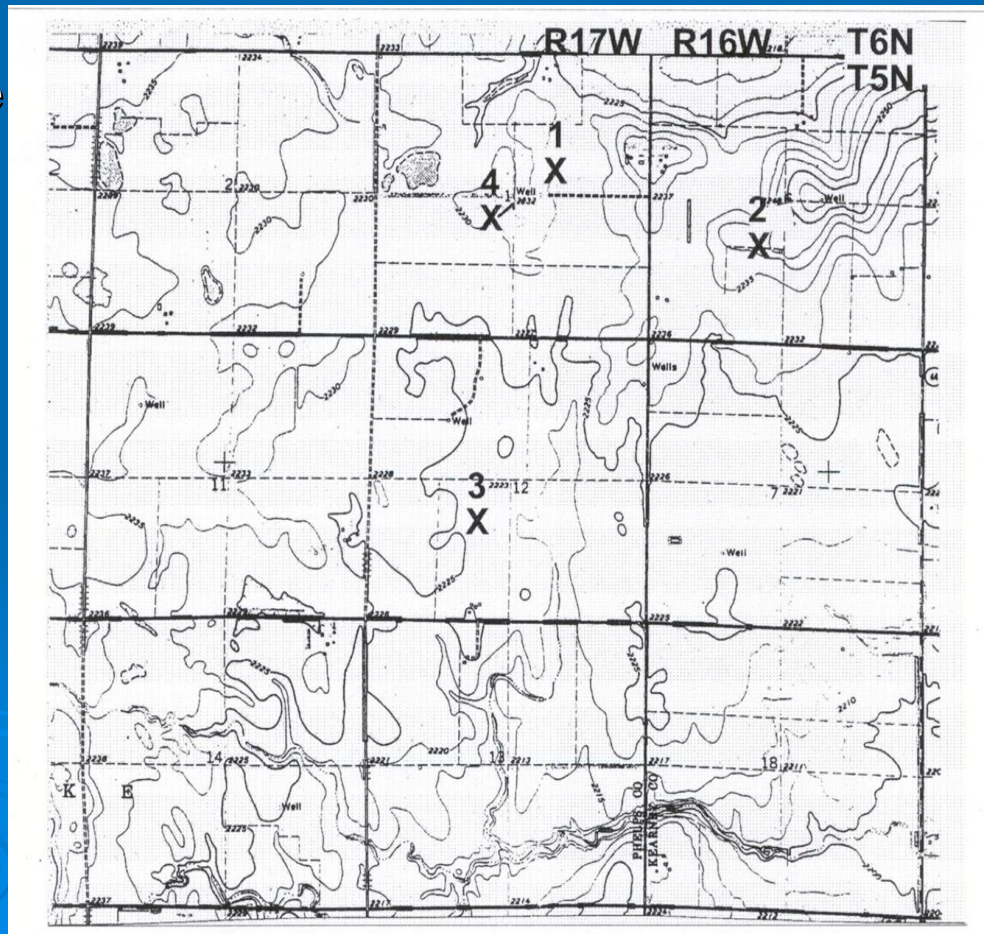
Topo Map

- The USGS took over responsibility for mapping the country in 1879 and has been the primary civilian mapping agency of the United States ever since. The best known USGS maps are the 1:24,000-scale topographic maps, also known as 7.5-minute quadrangles.
- Contour lines illustrate differences in elevations
- Based on benchmarks (BM) established from a known geodesic point
- Section =1 Square Mile
- Read from smaller to larger
- Scaled in minutes (7.5 minutes = 1:24,000)



NRD Ground Water Technician Tutorial- Legend & Notes from DNR

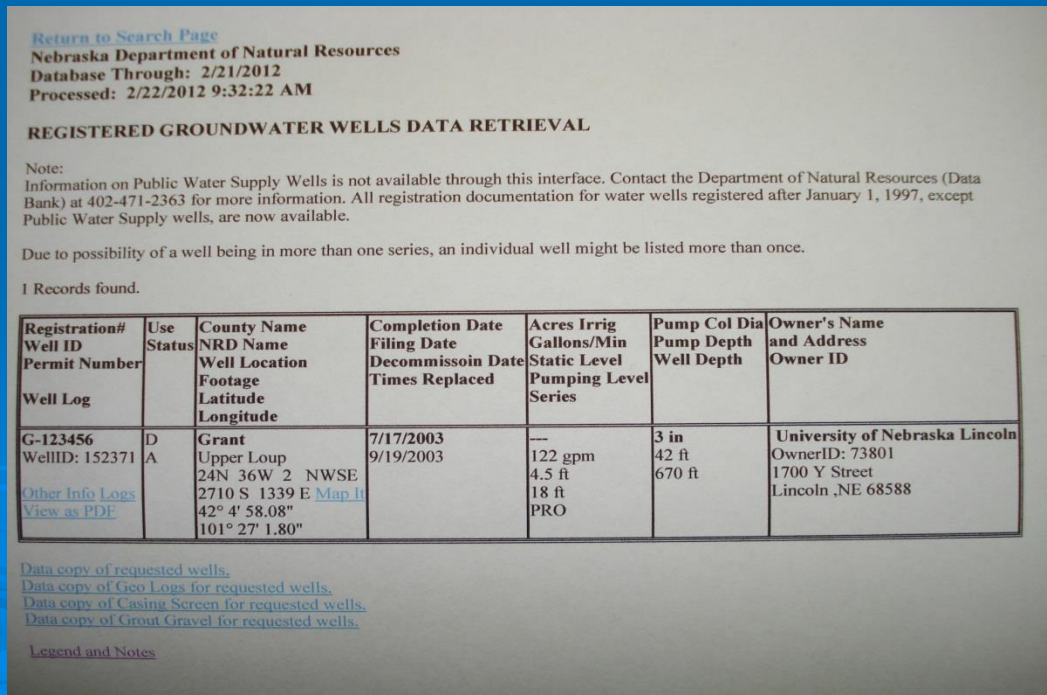
- Registered Groundwater Wells Database
- Legend and Notes:
- Use Code Water Use
- ---- ---------
- A Aquaculture
- C Commercial/Industrial
- D Domestic
- G Ground Heat Exchanger well - Closed Loop Heat Pump well
- H Heat Pump well - Open Loop Heat Pump Well
- I Irrigation
- J Injection
- L Observation (Ground Water Levels)
- O Other - Lake Supply, Fountain, Geothermal, Wildlife, Wetlands,
- Recreation, Plant & Lagoon, Sprinkler, Test, Vapor Monitoring
- P Public Water Supply with Spacing Protection
- Q Monitoring (Ground Water Quality)
- R Recovery
- S Livestock
- T Geothermal
- U Public Water Supply without Spacing Protection
- W Dewatering (Over 90 Days)

- Series Type Codes
- Car Connected to pump into a common carrier
- DEQ Part of a DEQ site plan for spill or underground storage
- Mon Monitoring Wells Part of a single site
- PRO Single Project

Registration Number (example G81537A) Prefix of well registration number ('A' or 'G') Well registration number (3-5 digits) (#81537 in above example) This number is assigned by Nebraska Department of Natural Resources.
Suffix of well registration number (A-Z, AA-ZZ) (A in above example)
Status Status of the well

A Active
I Inactive
S Suspense (Replacement well, original well not yet abandoned)

U Unregistered Abandoned
X Abandoned
Z Inactive Suspense (Pump Not installed, Replacement well original well not yet abandoned)



Return to Search Page

Nebraska Department of Natural Resources
Database Through: 2/21/2012
Processed: 2/22/2012 9:32:22 AM

REGISTERED GROUNDWATER WELLS DATA RETRIEVAL

Note:
Information on Public Water Supply Wells is not available through this interface. Contact the Department of Natural Resources (Data Bank) at 402-471-2363 for more information. All registration documentation for water wells registered after January 1, 1997, except Public Water Supply wells, are now available.

Due to possibility of a well being in more than one series, an individual well might be listed more than once.

1 Records found.

Registration# Well ID Permit Number Well Log	Use Status	County Name NRD Name Well Location Footage Latitude Longitude	Completion Date Filing Date Decommissoin Date Times Replaced	Acres Irrig Gallons/Min Static Level Pumping Level Series	Pump Col Dia Pump Depth Well Depth	Owner's Name and Address Owner ID
G-123456 WellID: 152371 Other Info Logs View as PDF	D A	Grant Upper Loup 24N 36W 2 NWSE 2710 S 1339 E Map It 42° 4' 58.08" 101° 27' 1.80"	7/17/2003 9/19/2003	--- 122 gpm 4.5 ft 18 ft PRO	3 in 42 ft 670 ft	University of Nebraska Lincoln OwnerID: 73801 1700 Y Street Lincoln ,NE 68588

Data copy of requested wells.
Data copy of Geo Logs for requested wells.
Data copy of Casing Screen for requested wells.
Data copy of Grout Gravel for requested wells.

Legend and Notes

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- UIC program (Title 122)
  - Subsurface drip irrigation (SDI)
    - Needs authorization (Class V) prior to construction
    - Must maintain 4 feet from SDI tape to GW


cams

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- Chemigation
  - Any accident should be investigated by the appropriate NRD and NDEE
  - Must have UIC Class V authorization when used with SDI
  - Operator can inject chemicals once a year for maintenance of an SDI system without a chemigation permit

Contacts - NDEE

- David Miesbach – Lincoln (402) 471-4982
- Pam Miller- Lincoln office (402) 471-0546
- Tim Sizer – North Platte office (308) 530-2303
- Bill Allen– Norfolk office (402) 922-3360
- Dan Egeland – Grand Island office (402) 649-0516


CASE
CASE
Questions?