

NATURAL RESOURCES CONSERVATION SERVICE

and

NORTH CAROLINA DEPARTMENT of AGRICULTURE & CONSUMER SERVICES

OPERATION AND MAINTENANCE REQUIREMENTS

WATER WELL

CODE 642

Landowner/Operator _____
Job Location (Lat - Long) _____ County _____
SCD _____ Farm/Tract No. _____
Contract No. _____ Prepared By _____ Date _____

OPERATION AND MAINTENANCE ITEMS

A properly operated and maintained well is an asset to the farm. This well was installed to provide beneficial use of subsurface water. Estimated life span of this installation is at least 20 years. The life of this system can be assured and usually increased by developing and carrying out a systematic operation and maintenance program.

This practice will require periodic maintenance and may also require operational items to maintain satisfactory performance. Your operation and maintenance program includes:

- A Water Well Record (NC DWR Form GW-1, Version 2/22/2016 or later) must be completed by the well driller at the time of installation. This record should be filed for reference.
- If a state permit is required for withdrawals exceeding 100,000 gallons per day or any local permit is required, a copy should be filed for reference.
- Maintain a sanitary seal on top of the well casing.
Protect the well head and enclosure area from being damaged by agriculture machinery,
 - vehicles, vandalism, or livestock. Locks on the well cover and fencing around the well head are strongly recommended.
- All fences, railings, and/or warning signs shall be maintained to provide warning and/or prevent unauthorized human or livestock entry.
- Do not allow any foreign debris to accumulate or allow pesticide containers to be stored/discarded in the immediate vicinity of the well head.
- Maintain soil and vegetative covering around the well. Keep all surface water from entering or accumulating at the immediate vicinity of the well site.
- Eradicate or otherwise remove all rodents or burrowing animals. Immediately repair any damage caused by their activity.
- Check metal surfaces for rust and other damage especially sections in contact with earth and with other materials. Repair or replace any damaged sections and apply paint as a protective covering.
- The well owner is responsible for routine maintenance and operation of the well.

- Approved backflow prevention devices are required on all wells that utilize a chemical or fertilizer feed system for any purpose other than water treatment. The backflow prevention device shall be installed so as to preclude any direct pathway for any contaminant to enter an underground source of drinking water.
- All individual residential wells and irrigation wells shall be disinfected upon well completion. The well shall also be disinfected upon any well maintenance, repair, pump repair, pump installation, or testing. Disinfectants shall be placed in the well in order to provide a chlorine residual from 50 ppm (milligrams per liter) to 250 ppm for a minimum of four hours before being flushed from the well. The method of chlorination shall be one that insures that the chlorine is uniformly distributed in the well. The well shall be flushed sufficiently after disinfection to remove the disinfectant and to condition the well for use.
- These wells shall be properly labeled with an identification plate immediately upon well completion. The identification plate shall be constructed of a durable, weatherproof, rustproof, material. The identification plate shall be permanently secured to the well casing or enclosure floor around the casing where it is readily visible. The identification plate shall be permanently marked to show all items as required by NC Well Law (see checklist for required items).

PROCEDURES FOR COLLECTION OF WATER QUALITY SAMPLES

Note for all samples: A laboratory analysis is no better than the sample submitted for analysis.

The sample should represent the conditions of use as much as possible.

Bacterial Sampling

Sampling of community water supply wells is covered by requirements of the North Carolina Department of Water Resources (NC DWR) and the local county authority. For individual domestic wells, technical assistance or advice regarding the collection of bacteriological samples may be obtained from local health department, NC DWR, or from the laboratory that will examine the sample.

If no technical assistance is available, the following procedure will suffice: A sterile sample bottle, preferably one provided by the laboratory that will make the determination, must be used. Allow the water to run at least 10 minutes before collecting the sample. It is extremely important that nothing except the water to be analyzed come in contact with the inside of the bottle or the cap; the water must not be allowed to flow over an object or over the hands while the bottle is being filled. Do not rinse the sample bottle. The sample should be delivered to the laboratory as soon as possible and in no case more than 24 hours after its collection. During delivery, the sample should be kept as cool as possible (but not frozen).

Irrigation Water / Chemical (Mineral) Sampling

Irrigation water analysis can be analyzed by the NCDA&CS Agronomic Services Laboratory - Solution Analysis. Information on sample collection and analysis can be obtained from:

<http://www.ncagr.gov/agronomi/uyrsoln.htm>

In most cases, a routine mineral analysis (determination of the concentrations of the common minerals) will suffice, particularly where there is no prior knowledge of the chemical quality of the water in the area where the well is located.

The sample should be collected after the well has been pumped long enough to remove standing water and disinfectant chemicals, and to insure that water from the producing formation(s) has entered the well. Generally, this pumping time should be a minimum of 30 minutes. If the well is new, a sample taken after several hours' delivery should be more representative than the samples taken earlier. The water sample should be obtained in a chemically clean container preferably one obtained from the laboratory which has been selected to perform the analysis. The container should be rinsed several times with the water to be sampled prior to collecting the sample. The laboratory performing the analysis should issue instructions regarding the quantity of sample required. However, a minimum of one pint is required. More may be needed if more than the routine analysis is needed.

Avoid sample agitation and prolonged exposure to air. Identify each bottle by attaching an appropriate label. Submit the samples for analysis as soon as possible. (Ideally the samples should be analyzed within 24 hours after sampling.) Keeping the samples cool (preferably refrigerated) and covered from light will reduce changes in sample composition between sampling time and analysis by the lab.

Additional Operation and Maintenance Requirements Specific to this Plan: _____
