

DRILLING SITE EVALUATION OUTLINE

This outline was developed to aid the local health department sanitarian in conducting an evaluation during the construction of a water well. These are typically called Random Construction Inspections (RCI). Also attached is a checklist the sanitarian can use while conducting an RCI.

1. Permits

- a. Was a permit issued for the site?
- b. Were there any restrictions or conditions listed on the permit?
- c. Did the drilling contractor see the permit and is he aware of the permit conditions?

2. Registration

- a. Is the drilling contractor registered?
 1. Check MDEQ directory.
 2. Contractor's registration card - in possession.
- b. Is the drilling rig registered?
 1. Check for current decals on both sides of rig.
 2. Check for contractor's registration number (or name) on both sides of rig.
 3. Rig registration card - should be present in rig.

3. Drilling Site Location

- a. Is the well location adequately isolated from sources of contamination and does location comply with permit conditions?
- b. Will the well be accessible for maintenance?
- c. Is the drilling site isolated from utility lines (buried and overhead)? Was MISS DIG contacted prior to drilling?

4. Drilling Method

- a. What type of drilling method is being used? (cable tool, rotary, auger, hollow rod, jetting, driving)

5. Well Records

- a. Is driller routinely checking cuttings samples?
- b. Is driller recording geologic information? (check cuttings around site or in mud tank)
- c. Record date, location, owner's name, contractor's name to check on well record submittal.

6. Well Construction Details

a. Grouting

1. What depth of grouting is required on this site?
2. What type of grouting material will be used? (neat cement - bentonite)
3. What water-to-grout ratio will the contractor use? (Is proper grout density achieved? check with mud scale,)
4. What grouting method will be used?
5. Is the proposed grouting method consistent with the grouting material, drilling method, borehole size, etc.?
6. Does the contractor have necessary grouting equipment (mixer, pump, grout pipe, hoses) and materials at the drilling site?
7. Does grout material appear at surface when pumping grout through tremie pipe or down casing?

8. Is grout placed around casing as it is being driven (cable tool, jetting, hollow rod)?

b. Well Casing

1. Is approved material being used as well casing? (steel or PVC plastic)
2. Check casing markings - (ASTM spec., weight/ft., wall thickness, manufacturer or supplier's name).
3. Are proper installation methods being used?

c. Well Screen

1. What type of screen is being used?
2. How is the screen installed?
3. What types of fittings will be used? (k-packer, washdown fittings, etc.)
4. What slot size will be used?

d. Drilling Water

1. Was drilling water obtained from an approved source?
2. Is drilling water chlorinated? (check chlorine residual)

e. Well Development

1. Which development method will be used (air, surge block, baler, plunger, water jetting, overpumping)?
2. Is final well capacity adequate for the intended use?
3. Is water free of sand and turbidity upon completion of development?

f. Well Disinfection

1. What disinfection method is used?
2. What type of disinfectant is used? (liquid bleach, granular chlorine, pelletized chlorine)
3. Check final chlorine residual.

7. Pump and Pressure Tank Installation

- a. What type of pumping equipment is proposed? (submersible, jet pump, rod pump, hand pump)
- b. How will the casing be terminated? (pitless adapter, well house, basement offset)
- c. Is proposed pump size adequate to meet needs of facility?
- d. Does proposed pressure tank have adequate drawdown?
- e. Is plastic piping material approved for potable water usage and is pressure rating adequate?

8. Sanitary Procedures

- a. Is the contractor using procedures that will reduce the introduction of bacteria or other undesirable substances into the water supply? (Removing excess pipe dope, using clean well screen and drop pipe, elevating pipes off of ground surface, using clean rags and gloves, disinfecting gravel pack material, etc.)

9. Abandoned Wells

- a. Is there an abandoned well on the site that should be properly plugged?

RANDOM CONSTRUCTION INSPECTION CHECKLIST

Owner _____ Site Address _____

Permit Number _____

A. PERMITS

- 1. Was permit issued? YES NO
- 2. Were there any permit restrictions or conditions? YES NO
- 3. Is the water well drilling contractor aware of the permit conditions? YES NO

B. CONTRACTOR REGISTRATION

- 1. Is the water well drilling contractor registered? YES NO
- 2. Is the drilling rig properly registered and identified with DEQ decals, registration number, business name, and address on both sides of the rig, in letters at least 2 inches high? YES NO

C. DRILLING SITE LOCATION

- 1. Is the water well location adequately isolated from sources of contamination. YES NO
- 2. Does the location comply with permit conditions? YES NO
- 3. Will the water well be accessible for maintenance? YES NO
- 4. Is the water well in a nonflooding location? YES NO

D. DRILLING METHOD

- 1. What type of drilling method is being used?

Rotary _____ Cable Tool _____ Auger _____ Hollow Rod _____ Jetting _____ Driving _____
Combination _____ Other _____

E. WATER WELL RECORDS

- 1. Is the water well driller routinely checking cuttings samples and recording geologic information? YES NO

F. WATER WELL CONSTRUCTION DETAILS

1. **Well Type:** Sand or Gravel (unconsolidated) _____ Bedrock (consolidated) _____

2. Grouting:

a. Type _____ Manufacturer _____ Product Name _____

b. Is the mud scale used to weigh grout? YES NO

c. What grouting method will be used?

Grout pipe in annulus _____ Grout pipe inside casing _____ Displacement method _____
Other _____

d. Does the water well drilling contractor have necessary grouting equipment (mixer, pump, grout pipe, hoses) and materials at the drilling site? YES NO

e. Did grout appear at the wellhead after pumping? YES NO

Weight of grout at surface: _____ lbs./gal Weight of grout before pumping: _____ lbs./gal.

f. If the water well casing is driven (cable tool, jetting, hollow rod), is dry granular bentonite placed around the casing during driving? YES NO

3. Water Well Casing

a. Type of well casing: PVC ___ Galvanized steel ___ Black steel ___ Other _____

b. Casing material approved? YES NO

4. Water Well Screen

a. Type of screen: PVC ___ Stainless steel ___ Other _____

b. Installation method: telescoped _____ attached to casing _____

c. Filter-pack installed? YES NO

d. Filter-pack chlorinated? YES NO

5. Drilling Water

a. Source approved? YES NO

b. Drilling water chlorinated to at least 10 ppm residual? YES NO

6. Water Well Development

a. Development method used: air _____ surge block _____ bailer _____
plunger _____ water jetting _____ overpumping _____

b. Approximate water well capacity (use 5 gallon pail): _____ gallons per minute

c. Water free of sand or other turbidity upon completion of the development? YES NO
(Check with clean white pail or clear jar)

7. Water Well Disinfection

a. Water well disinfected upon completion? YES NO

b. Method and amount of disinfectant adequate? YES NO

c. Final chlorine residual in well _____ ppm (Check w /chlorine test strips)

8. **Approved temporary cap?** YES NO

Comments: _____

Evaluated by _____ Date: _____ Reinspection Date: _____