

What tools do I need to sample?

- **Long measuring tape:** You'll need it to be long enough to reach the bottom of your well.


Or

- **Electronic water level meter.** 

- **Bailer:** A 5 ft section of 2 or 3 inch PVC pipe with a check valve on one end and a wire loop on the other allowing you to lower it down the well with rope and pull it up full of water.

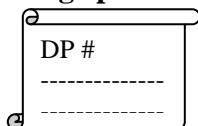
Or

- **Submersible Pump:** A portable generator or battery is required if an electrical source is not available.

- **Sample containers:** Clean plastic gallon containers or sample bottles supplied by the lab. 

- Label your containers following the sample provided on your worksheet.
- The number of containers you need will depend on the lab's requirements, contact the lab for instructions.
- Generally, you can use one container for Total Kjeldahl Nitrogen (TKN) and Nitrate (NO₃-N) and another for Total Dissolved Solids (TDS) and Chloride (Cl).
- If you are sampling for all 4 constituents you will need at least 2 containers for each well.

- **Distilled water (DI)**
- **Bucket**
- **Gloves**
- **Pen, Paper, Calculator**
- **Copy of your discharge permit**
- **Site map**
- **Cooler with Ice**



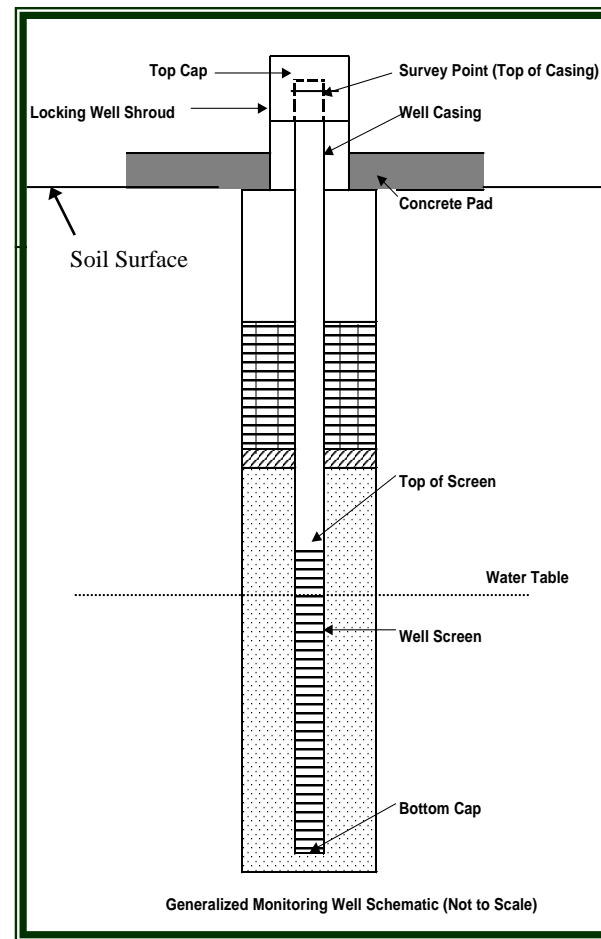
Tips for Using a Bailer

1. Before lowering the bailer into the well check to see that it is securely fastened to the rope. Secure the other end of the rope to prevent losing the bailer down the well.
2. Lower the bailer into the well in a controlled manner until it hits the water. (You will either hear it hit the water or feel the difference in the tension of the rope.)
3. Lower the bailer a few more feet and allow it to fill with water. Try to keep the bailer near the surface of the water to prevent collecting sediment.
4. Carefully pull the bailer up to the surface and empty it into a bucket.
5. Repeat the process as many times as necessary to purge and sample required volume.
6. If you are sampling alone, use the tarp to keep your rope and bailer from touching the soil.

Using two people can make the process easier. Have one person walk away from the well keeping the rope off the ground while the other empties the bailer.

7. Test the check valve periodically to prevent clogging.

How to Sample A Monitoring Well



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How do I sample?

1. Review your discharge permit and monitoring well information and note the following.



- Monitoring requirements (e.g. ground water, wastewater, or both).
- Required sampling constituents (e.g. TKN, Nitrate, TDS, Cl).
- Monitoring report due dates.
- Number and location of monitoring well(s) (note which ones are marked up gradient vs. down gradient).
- Reported depth to water and total depth for each monitoring well (from well driller).

2. Select a lab.

- See attached list of potential labs.
- Contact lab for specific procedures or requirements (e.g. sample preservation).

3. Get equipment ready.

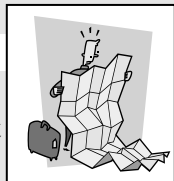
- Review equipment list and make sure everything is clean.
- Read through entire sampling instructions and call the lab or NMED with any questions.

4. Label sample containers.

- Use a permanent (waterproof) marker.
- Follow the sample label guidelines on the attached sheet.
- Make sure you include all information required by the lab.

5. Locate monitoring well(s).

- Sample up gradient well first and continue to down gradient well(s).
- Set up a clean tarp or plastic sheet around well. Use this sheet to keep your equipment and samples from touching the soil.



6. Determine depth to standing water in the well.

- Coat the bottom 2-3 ft. of the measuring tape with carpenter chalk.
- Lower the tape at least 2 ft. past the reported depth to water for that well (from **step 1.e.**).
- Hold the tape against the well casing and measure the value at the top of the casing.
- Remove tape from well and note value at the water line marked on chalked tape.
- If needed, repeat steps a-d and adjust the depth to which the tape is lowered.
- Subtract the value measured in **step d.** from that of **step c.** Record *depth to water value*.

7. Determine volume of standing water in well.

- Record total depth of well from **step 1.e.**
- The total depth of well minus the depth to water (**step 6.e.**) equals the *linear feet of water in well*. Record value.
- Measure the diameter of the well.
- Match the well diameter to the appropriate *Gallons of Water Per Linear Foot Value* using Reference Chart on worksheet.
- Multiply this value by the linear feet of water in well. Record *volume of water value*.



8. Calculate volume of water to be purged.

- Multiply the volume of water in the well (determined in **step 7.e.**) by three. Record *volume of water to be purged*.

9. Purge well to remove the standing water in the well to ensure a fresh ground water sample.

- Use a bailer or pump to remove the volume of water calculated in **step 8.a.**
- Use a bucket of known volume to measure the volume of the water removed from well.



10. Sample well.



- After purging is complete use the bailer or pump to fill sample containers.
- Record time of sampling on container label.

11. Follow sample preservation procedures provided by lab.

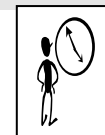
12. Place sample in cooler with ice.

13. Make sure to close and secure well casing.

14. Decontaminate equipment.

- Avoid contaminating your sample with soil or water from the previous well you sampled.
- Rinse off the tape or device you used to measure the depth to water using distilled (DI) water.
- If possible, use a different bailer and a new rope for each well. Otherwise thoroughly rinse using DI water before using again.
- If using a pump, run DI water through the pump and tubing before pumping another well.

15. Sample other wells using above procedures.



16. Send your samples to the lab.

- To ensure accurate results, the samples need to be delivered to the lab within 24 hours of when you sampled them.

17. Send a copy of the monitoring reports to NMED.

Attn: (NMED Staff contact person)
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Pollution Prevention Section
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