

APPENDIX B
Standard Operating Procedures for Water Level
Measurements

Standard Operating Procedures

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25 December 2005

SOP WATER LEVEL MEASUREMENT

1.0 SCOPE

This Standard Operating Procedure (SOP) describes procedures for making liquid level measurements in wells and sumps. Down-hole liquid level soundings are collected by using electronic fluid level indicators such as Solinst or Soil Test liquid level sounders.

2.0 REQUIRED MATERIALS

The following equipment and materials will be assembled prior to entering the field and are needed to implement this SOP:

- Monitoring forms; Form SOP 802-1, Well Liquid Levels
- Soil Test or Solinst liquid level sounder
- Rags
- Pen with indelible ink
- Clipboard

Personal Protective Equipment (PPE) worn while performing this SOP consists of modified level D (add a faceshield, yellow Tyvek, and over booties to regular level D).

3.0 TASK PERFORMANCE

3.1 WATER LEVEL MONITORING USING A SOLINST OR SOIL TEST WATER LEVEL SOUNDER

Water levels in wells will be measured according to the following procedures.

1. Don the appropriate Personal Protective Equipment (PPE).
2. Check identification of the location to be sounded.
3. Turn on the sounder and push the test button to make sure the sounder is working.
4. Open the sounding port (e.g., well cap, well flange, observation plug).

5. Insert the sounder probe into the well casing or sounding tube.
6. Lower the probe until the sounder makes a steady beep for the Solinst sounder or until the gauge is at 1.0 for the Soil Test sounder. Bring the sounder probe up until it no longer indicates the presence of any liquid, it stops beeping, or until the gauge needle is at <1.0.
7. Slowly lower the probe and immediately stop when the sounder makes a steady noise or when the gauge is at 1.0, depending on the type of sounder being used. This method ensures that the liquid level is accurate.
8. Read the tape measurement and subtract the correctional factor (if any) from the liquid level reading (the correctional factor is the total footage cut from the sounder's tape). Record the tape measurement correction factor on each sounder as the correction factor varies from sounder to sounder. Record the correct liquid level in the appropriate box on Form SOP 802-1.
9. Repeat steps 6 through 8 until replicate measurements are obtained in consecutive attempts.
10. Continue to slowly lower the sounding probe or replace and use a measurement line to determine the bottom depth of the well. Record the reading. Compare the depth readings with the as-built conditions to determine the condition of the well.
11. Wind the probe up and remove it from the sounding location.
12. Close the sounding port.
13. Decontaminate the Solinst and Soil Test liquid level sounders before starting and after completing liquid level monitoring. Implement the following decontamination procedures:
 - a. Don the appropriate PPE.
 - b. Wash sounder in a solution of Liquinox® and potable water.
 - c. Double rinse sounder with potable water.
14. Discard decontamination water at the decontamination pad.
15. Dry the sounder with a rag before use; this is particularly important if the sounder is sensing liquid.
16. Repeat the procedure at the next location.

