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Title: Static Water Level Determination
 Number: SP006
 Release Date: 3/6/01
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DOCUMENT TYPE: Standard Operating Procedure

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TITLE: Static Water Level Determination

INSTRUMENTATION: Geotech Tuff Tape Depth Sounder

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1. Scope and Application

- 1.1. This standard operating procedure describes the process that will govern the collection of static water level data prior to each field-sampling event using the Tuff Tape depth sounder.
- 1.2. Information gathered will contribute to the overall understanding of the aquifer system and support groundwater monitoring project design with historical water level data.

2. Summary of Method

- 2.1. Check battery of depth sounder by listening for buzzer and watching for light when instrument is turned on.
- 2.2. Rinse depth sounder with distilled water and wipe dry.
- 2.3. Lower depth sounder probe into well casing until buzzer and light activate.
- 2.4. Adjust sensitivity of sounder.
- 2.5. Take measurement off tape at top of well casing in feet.
- 2.6. Subtract the height of the casing above the ground.
- 2.7. Record static water level in bound logbook (Surface Water Monitoring Logbook #21A or Groundwater Monitoring Logbook #13A).
- 2.8. Rinse probe and store.

3. Comments

- 3.1. This procedure can be followed to determine draw down during well purging and sampling.
- 3.2. To monitor draw down, use depth sounder to continuously determine water level during the time that the pump rate is varied.
- 3.3. When the water level remains constant with the pump at a set rate, the pump rate equals the rate of groundwater recharge.

4. Apparatus

- 4.1. Geotech Tuff Tape Water Level Measuring Device (depth sounder)
- 4.2. Keck Tape Guard
- 4.3. Tape measure

5. Reagents

- 5.1. Distilled Water

6. Procedure

- 6.1. Check battery on sounder by turning **On/Sensitivity** knob clockwise (listen for tone and look for red LED light).
 - 6.1.1. If battery is low, the light will be dim and the tone faint.
 - 6.1.2. Replace 9-volt battery by lifting and removing black panel on faceplate.
- 6.2. Rinse with distilled water and dry with Kimwipe.
- 6.3. Lower depth sounder probe into well slowly until buzzer and light activate.
- 6.4. Turn **On/Sensitivity** knob counter-clockwise until buzzer and light shut off.
 - 6.4.1. This sensitivity adjustment causes the sounder to be activated only by contact with the water column instead of by condensation within the well casing above the water column.



- 6.5. Without moving the tape, turn the sensitivity dial clockwise to exactly the position where the light and buzzer activate.
- 6.6. Take measurement off tape at top of well casing in feet.
- 6.7. Determine height of well casing above ground in feet with tape measure.
- 6.8. Calculate depth to water (static water level) using the following equation:
 - 6.8.1. $\text{Depth (ft)} = \text{Measurement off tape (ft)} - \text{casing above ground (ft)}$
- 6.9. Record static water level in Groundwater Monitoring Logbook #13A, following the Field Record Template for Groundwater Sampling.
- 6.10. Remove tape from well and rinse with distilled water.
- 6.11. Dry tape completely and store with the sounder turned off.

7. Maintenance

- 7.1. The tape on the Tuff Tape depth sounder can be cleaned Liquinox if necessary.
- 7.2. The sounder itself and reel can be cleaned with a water-dampened cloth if necessary.
- 7.3. The probe at the end of the tape can be cleaned with Liquinox and a soft brush to remove silt or mud if necessary.
- 7.4. If the depth sounder will be stored for more than 6 months between uses, the 9-volt battery should be removed.

8. Bibliography

- 8.1. Fisher WLT Water-Level Indicator Operating Manual. Fisher Research Laboratory, 200 W. Willmott Road, Los Banos, CA 93635.
- 8.2. Geotech Tuff Tape Water Level Measuring Device Instruction Manual (11/00).