

**STANDARD OPERATING PROCEDURE NO. 6.0**  
**WATER ELEVATION MEASUREMENTS**

**Powertech**  
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**R Squared Inc**



## **1.0 PURPOSE AND SCOPE**

The purpose of this document is to define the standard operating procedure (SOP) for measuring water elevations in monitoring wells for Powertech Inc environmental monitoring. This procedure describes equipment and field procedures necessary to collect water elevation measurements. The well locations and frequency of measurement are specified in Powertech Inc discharge permit matrices. SOP No. 10.0 describes decontamination procedures that are applicable to this SOP.

## **2.0 RESPONSIBILITIES AND QUALIFICATIONS**

The Principal Geologist has the overall responsibility for implementing this SOP. He/she will be responsible for assigning appropriate environmental staff to implement this SOP and for ensuring that all personnel follow procedures accurately.

All personnel performing these procedures are required to have the appropriate health and safety training. In addition, all personnel are required to have a complete understanding of the procedures described within this SOP and to receive specific training regarding these procedures, if necessary.

All environmental and assay laboratory staff are responsible for documenting deviations from this SOP and reporting them to the Geologist.

## **3.0 RELATED STANDARD OPERATING PROCEDURES**

The procedures set forth in this SOP are intended for use with the following SOPs:

SOP	5.0	Monitoring Well Installations
SOP	10.0	Equipment decontamination
SOP	11.0	Sample Management
SOP	15.0	Well Developments
SOP	26.0	Monitor Well Groundwater Sampling



#### **4.0 EQUIPMENT LIST**

The equipment necessary that may be used to measure water levels includes:

- Electric water level indicator capable of producing measurements to a precision of 0.01 feet
- 5-gallon buckets or equivalent for decontamination
- Brushes for decontamination
- Field data sheets
- Field notebook
- Chemical-free paper towels or Kimwipes
- Alconox soap
- Potable water
- Garden-type sprayer filled with deionized or distilled water
- Appropriate health and safety equipment

#### **5.0 PROCEDURES**

##### **5.1 DISCUSSION**

Generally, water elevation measurements are used to construct potentiometric surface maps. Therefore, water level measurements at a given site should be collected within a 24-hour period. The device used to measure water levels should be adequate to attain an accuracy of 0.01 feet. Water levels should be allowed to stabilize for a minimum of 48 hours after well construction and development before measurements are taken.

##### **5.2 MEASUREMENT PROCEDURE**

This section gives the steps to follow when measuring water levels. Note that appropriate health and safety equipment should be worn during well opening, well measurement, and decontamination.

Before any measurement is taken, the water level probe shall be decontaminated. Decontamination procedures are discussed in SOP No. 10.0.

Make sure the monitoring well is labeled and the location ID is visible on the protective casing.

After opening the well cover, measure the depth of the static water level and the total depth of the well using an electric water level indicator. The measuring point for all the wells shall be the top of PVC or steel well casing. The measuring point will be marked by a notch or other mark in the PVC or steel casing. If no mark is present, measure from the top of the north side of the casing.



The static water level and the depth of the well shall be measured with the indicator, written down on the field data sheet or field notebook, and immediately rechecked before the indicator is removed from the well.

Care should be taken to verify the readings during each water level measurement period. Note any significant changes in water level, by comparing the most recent measurement with past measurements, if appropriate.

The water level depth below the measuring point (in feet) will be subtracted from the measuring point elevation to determine the elevation of the static water level. If measuring point elevations are available at the time of water level measurement, the calculated water elevation should be checked in the field to see that it is reasonable and the subtraction was performed correctly. If there is a discrepancy, the well should be measured again.

All columns of field data sheets shall be completed, including time of measurement. If items on the sheet do not apply to a specific location, the item will be labeled as not applicable (NA). A field data sheet for water elevation measurement is shown as Figure 1. Section 5.5 describes the documentation required.

### **5.3 DECONTAMINATION**

The water level indicator must be decontaminated before using between wells and at the conclusion of measurements. The probe will be decontaminated according to the procedure for decontamination of sampling equipment described in SOP No. 10.0. Probe decontamination can be completed at the wells.

### **6.0 DOCUMENTATION**

Documentation of observations and data acquired in the field will provide information on the activities concluded and also provide a permanent record of field activities. The observations and data will be recorded with waterproof ink in a permanently bound weatherproof field logbook with consecutively numbered pages, and on field data sheets.

#### **6.1 FIELD DATA SHEET FOR WATER LEVEL MEASUREMENTS**

A field sampling data sheet for groundwater samples (Figure 1) will be completed at each sampling location. The data sheet will be completely filled in. If items on the sheet do not apply to a specific location, the item will be labeled as not applicable (NA). The information on the Powertech database Water level Form.

**Note: BE SURE TO DECONTAMINATE THE PROBE BETWEEN WELLS**

