



29 Palms Laboratory
47-250 Dillon Road
Coachella, Ca 92236
Phone: 760-398-6767
Fax: 760-398-0046

Title: Pressure Transducer Maintenance
Number: SP011
Release Date: 02-20-2004
Revision Date:
Version: 1.0

DOCUMENT TYPE: Standard Operating Procedure

TITLE: Pressure Transducer Maintenance and Download

INSTRUMENTATION: In-Situ Mini-Troll Pressure Transducer

PREPARED BY: Alison Millar-Camp, Environmental Scientist _____

REVISED BY: _____

REVIEWED BY: Jan Kilduff, Ph.D., Quality Assurance Officer _____

APPROVED BY: Marshall K. Cheung, Ph.D., Laboratory Director _____

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Document No.:	SP 011
Copy provided to:	Jan Kilduff, Ph.D.
Title:	Laboratory Director 29 Palms Laboratory 47-250 Dillon Road Coachella, CA 92236
Copy provided by:	Alison Millar-Camp
Title:	Environmental Scientist
Date:	August 3, 2004



1. Scope and Application

- 1.1. This standard operating procedure describes the process that will govern the collection of data from the three installed In-situ Mini-troll Pressure transducers before any groundwater sampling event, or sooner between events
- 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. Measure and record water level with Water Level meter according to SP006
- 2.2. Connect Communication cable to Laptop and Transducer cable
- 2.3. Open In-situ software
- 2.4. Connect software to probe.
- 2.5. Extract data
- 2.6. Stop recording
- 2.7. Delete old data
- 2.8. Set up new datalogging session
- 2.9. Start manual recording
- 2.10. Close software
- 2.11. Disconnect communication cable
- 2.12. Transfer/Convert data from .BIN file to Excel file
- 2.13. Make a CD of files for archival storage in GIS Office
- 2.14. Graph data to visually represent water levels

3. Comments

- 3.1. This procedure can be done before or after purging the well, or anytime between sampling events.
- 3.2. Not all Teflon cables attached to the Transducer are secured well, so while working with or around cable, hold one hand securely on it.

4. Apparatus

- 4.1. Laptop computer with a serial port and Win-Situ software installed
- 4.2. Geotech Tuff Tape Water Level Measuring Device (depth sounder)
- 4.3. Communication cable
- 4.4. Sampling Logbook to record level from Depth sounder and location of downloaded data
- 4.5.

5. Reagents

- 5.1. Distilled Water to Rinse Probe

6. Procedure

- 6.1. Measure water level with depth sounder according to SP006.
- 6.2. Turn computer on
- 6.3. Plug male serial end of Communication cable to laptop.
- 6.4. Unscrew cap from top of Teflon cable in Well casing
- 6.5. Screw top of Teflon cable to proper end of the communication cable



- 6.6. Open In-situ software on laptop (not data manager)
- 6.7. On left side of screen in the Table of Contents (TOC), click on *Com-1 9600*
 - 6.7.1. If not showing, then in larger screen select the find button
- 6.8. On TOC screen, click on *11745: minitroll Pro* to show Parameters
- 6.9. Double-click on *Test MW#*
 - 6.9.1. This will open Test MW# Window
- 6.10. Click "*Extract*" button in new window on Right side of screen.
- 6.11. While downloading the data or blocks, battery life of transducer
- 6.12. After data has been downloaded, a new window opens "Extract Data-Launch Data Manager" which shows where the data is being stored with the pathway shown.
- 6.13. Click *View* to look at the file and check the logging dates.
- 6.14. Write down where data is stored
- 6.15. Close window
- 6.16. Click *Stop* test
- 6.17. *Delete* test
- 6.18. Then create a new test by clicking "*Add*" to open Test Wizard
- 6.19. Name new test by Well name, ie MW3
- 6.20. Confirm that both Temperature and Depth have been selected.
- 6.21. Click *Next*
- 6.22. Make sure *Linear* is selected
- 6.23. Click Next
- 6.24. Change **Seconds** to equal 0
- 6.25. Change **Minutes** to equal 20
- 6.26. Should now read Day=0, Hour=0, **Min=20**, **Sec=0**, Tenths=0
- 6.27. Click *Next*
- 6.28. Select *Manual Start*
- 6.29. Click *Finish*
 - 6.29.1. Wizard will close
- 6.30. **Start** recording
- 6.31. Start window will open, Press *OK*
- 6.32. In Test window box, 'Stopped on' line will say "Running"
 - 6.32.1. Do Not Stop or Extract until next time you download data. It is recording
- 6.33. *Close* window
- 6.34. Close program
- 6.35. Remove cable from Teflon Transducer cable and laptop.
- 6.36.
- 6.37. 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.
- 6.38. Without moving the tape, turn the sensitivity dial clockwise to exactly the position where the light and buzzer activate.
- 6.39. Take measurement off tape at top of well casing in feet.
- 6.40. Determine height of well casing above ground in feet with tape measure.
- 6.41. Calculate depth to water (static water level) using the following equation:
 - 6.41.1. $\text{Depth (ft)} = \text{Measurement off tape (ft)} - \text{casing above ground (ft)}$



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- 6.42. Record static water level in Groundwater Monitoring Logbook #13A, following the Field Record Template for Groundwater Sampling.
- 6.43. Remove tape from well and rinse with distilled water.
- 6.44. 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).