Monitored Resource: Quarry Island Fen

Purpose: The purpose of this monitoring program was to establish a piezometer nest at the Quarry Island Fen in order to measure long term trends in groundwater levels within the fen.

Monitoring Description:

The best location for the piezometer nest was coordinated with DNR staff, who made a site visit in September 2006 to identify the most suitable location. Following receipt of the installation permit, the piezometer nest was installed in December 2006.

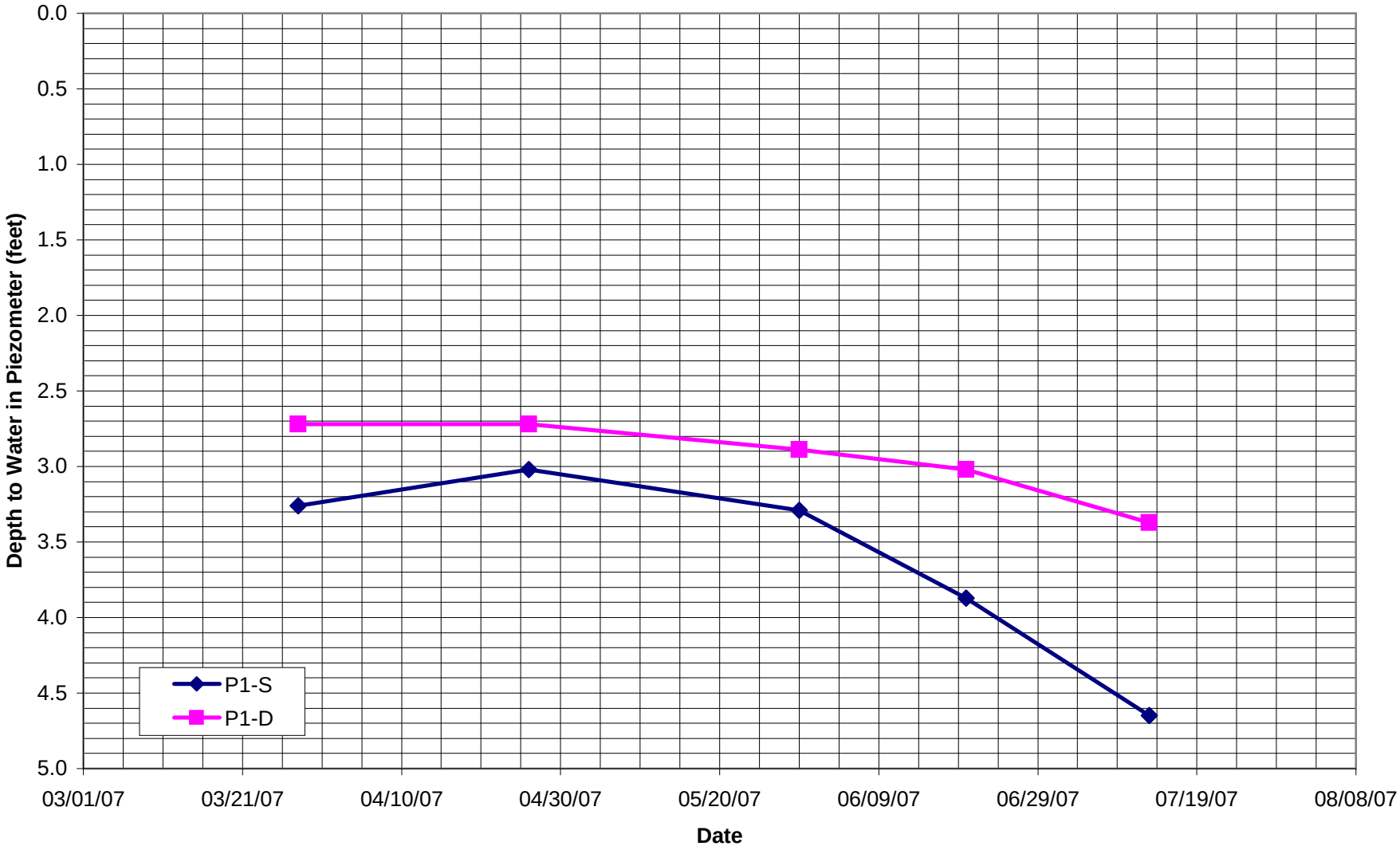
The nest consists of a shallow piezometer (P1-S) screened in the peat layer within the fen and a deeper piezometer (P1-D) screened in the sand layer underlying the peat. The two piezometers were designed to be indicative of the vertical groundwater gradient within the fen.

At the time that Dakota County began to measure water levels in the piezometers (February 2007), the water within the piezometers was frozen. By March 2007, however, the water had thawed and monthly measurements were started.

Dakota County is in the process of working with the DNR to have the location and elevation of the piezometers surveyed in, in order to know true elevations of water levels in each layer.

Monitoring Results Summary:

- Water level data from March 2007 to July 2007 shows a downward trend in water levels, with a slightly greater drop in the shallow piezometer. Not enough data has been collected at this point to draw any conclusions, however. Data shown may represent a seasonal fluctuation or short-term impacts from dryer months. Only longer term monitoring will reveal true trends in water levels.
- Data collection efforts should continue a minimum of 3-4 years before conclusions on aquifer trends can be made.


Quarry Island Fen Piezometer Monitoring
Depth to Water in Piezometer (feet)
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
5.0
03/01/07
03/21/07
04/10/07
04/30/07
05/20/07
06/09/07
06/29/07
07/19/07
08/08/07
Date
P1-S
P1-D