



**FREEPORT BYPASS WEST
POTENTIAL WETLAND COMPENSATION SITE 6W**

ISGS #72

FAP 301

Sequence #10487

Stephenson County, near Freeport, Illinois

Primary Project Manager: Eric T. Plankell

Secondary Project Manager: not assigned

SITE HISTORY

- Fall 2003: ISGS was tasked by IDOT to perform a Level II hydrogeologic assessment of the potential wetland mitigation at this site.
- December 2003: ISGS monitoring network was installed.
- Summer 2006: Tree planting was completed and a berm was installed at the western end of the central drainage ditch.
- February 2007: ISGS submitted a Level II hydrogeologic characterization report to IDOT (ISGS Open-File Series 2007-01).

WETLAND HYDROLOGY CALCULATION FOR 2007

The estimated total area that satisfied wetland hydrology criteria (Environmental Laboratory 1987) for greater than 5% of the 2007 growing season is 9.4 ha (23.3 ac) out of a total site area of 9.6 ha (23.6 ac). The area that satisfied wetland hydrology criteria for greater than 12.5% of the 2007 growing season is 5.2 ha (12.8 ac). These estimates are based on the following factors:

- According to the MRCC, the median date that the growing season begins in Freeport, Illinois is April 13, and the season lasts 183 days; 5% of the growing season is 9 days, and 12.5% of the growing season is 23 days.
- Total precipitation at the nearby Wastewater Treatment Plant weather station in Freeport, Illinois was approximately 124% of normal for the monitoring period of September 2006 through August 2007. Precipitation at this station was below normal in January, May, and June 2007. Precipitation amounts were near or above normal for the remaining months of the 2006-2007 monitoring period. Melting snow and above-average precipitation in March and April 2007 caused the Pecatonica River to flood the site immediately prior to the beginning of the growing season. Heavy rains in August 2007 again caused the Pecatonica River to flood the site, resulting in nearly the entire site satisfying the wetland hydrology criteria for greater than 5% of the 2007 growing season.
- In 2007, water levels measured in all soil-zone (S and VS) wells satisfied the wetland hydrology criteria for greater than 5% of the growing season. Water levels in wells 2S, 2VS, 3S, 7S, 8VS, 9S, 10S, 11S, 12S, 13S, 14S, 15S, and 16S also satisfied the wetland hydrology criteria for greater than 12.5% of the growing season.
- Water-level records for the data logger at gauge B (In-Situ) indicated inundation at elevations below approximately 231.739 m (760.30 ft) for a duration that satisfied the wetland hydrology criteria for greater than 5% of the growing season. Additionally, data

from gauge C (RDS) indicated inundation at elevations below approximately 231.146 m (758.35 ft) for a duration that satisfied the wetland hydrology criteria for greater than 12.5% of the growing season.

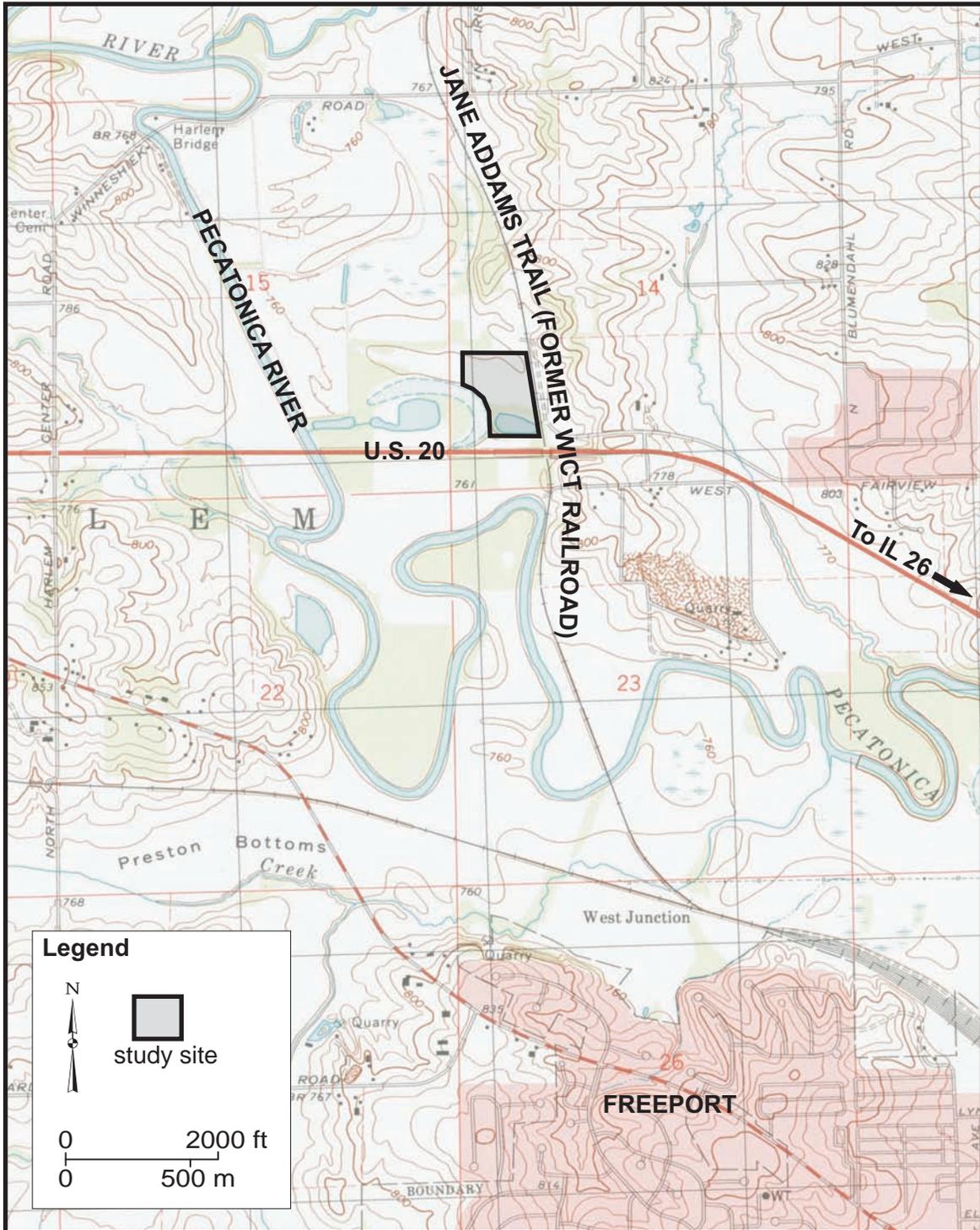
PLANNED FUTURE ACTIVITIES

- Monitoring is expected to continue until no longer required by IDOT.

Freeport Bypass West Wetland Compensation Site 6W (FAP 301)

General Study Area and Vicinity

from the USGS Topographic Series, Freeport West, IL 7.5-minute Quadrangle (USGS 1998)
contour interval is 10 feet

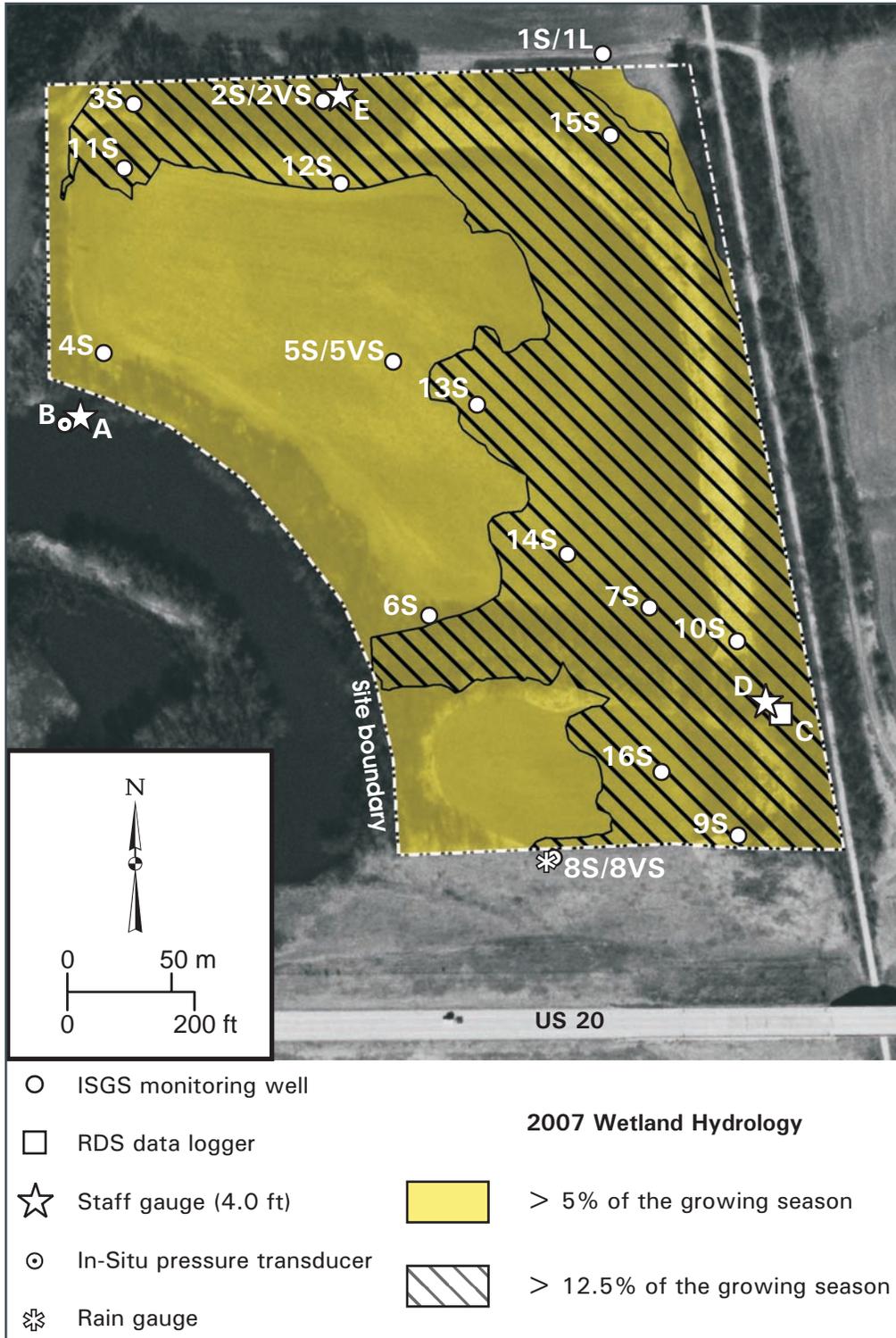


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Estimated Areal Extent of 2007 Wetland Hydrology

based on data collected between September 1, 2006 and September 14, 2007

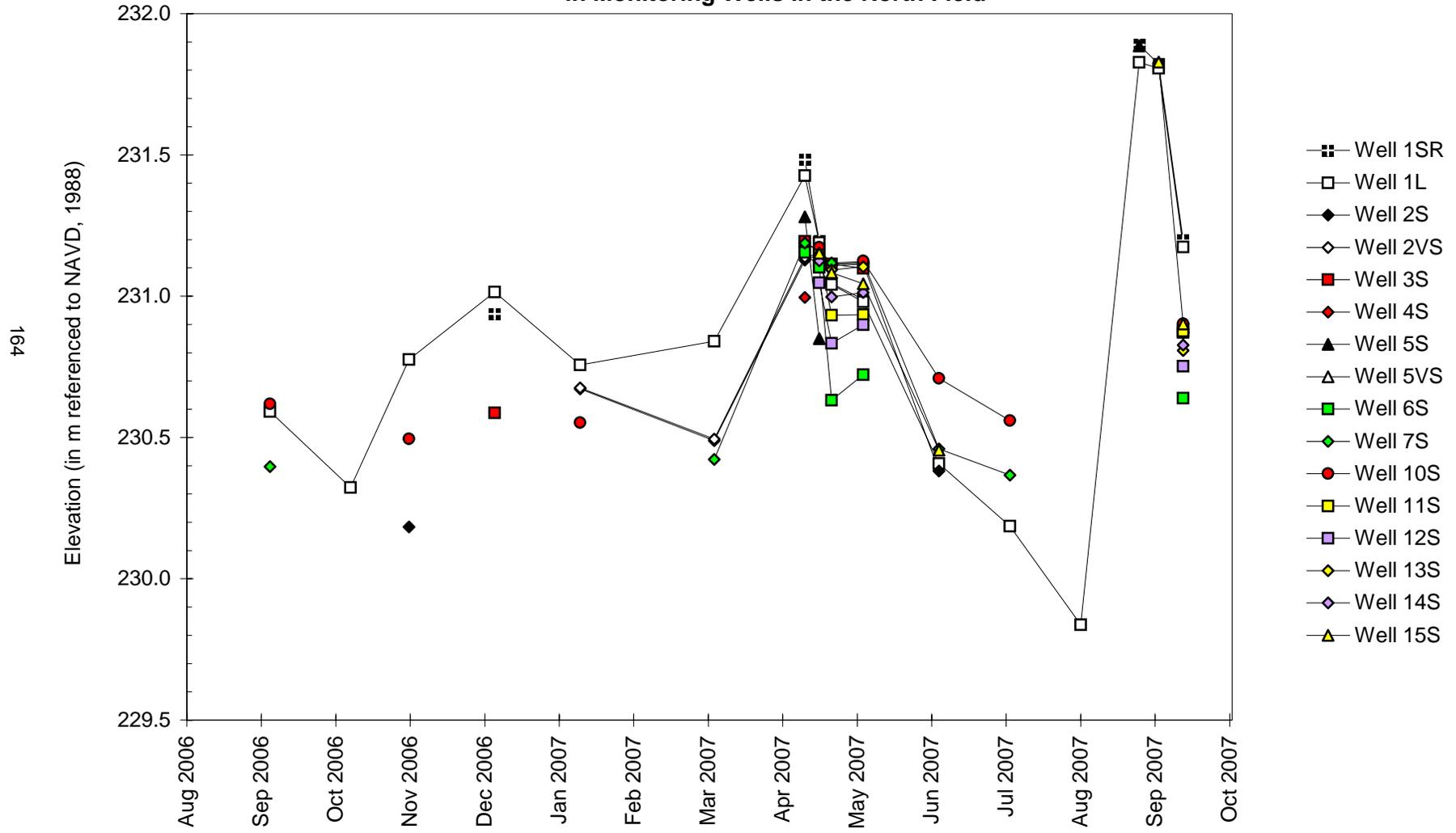
Map based on USGS digital orthophotograph, Freeport West, NE quarter quadrangle (ISGS 2005)



Freeport Bypass West Potential Wetland Compensation Site 6W

September 1, 2006 to September 14, 2007

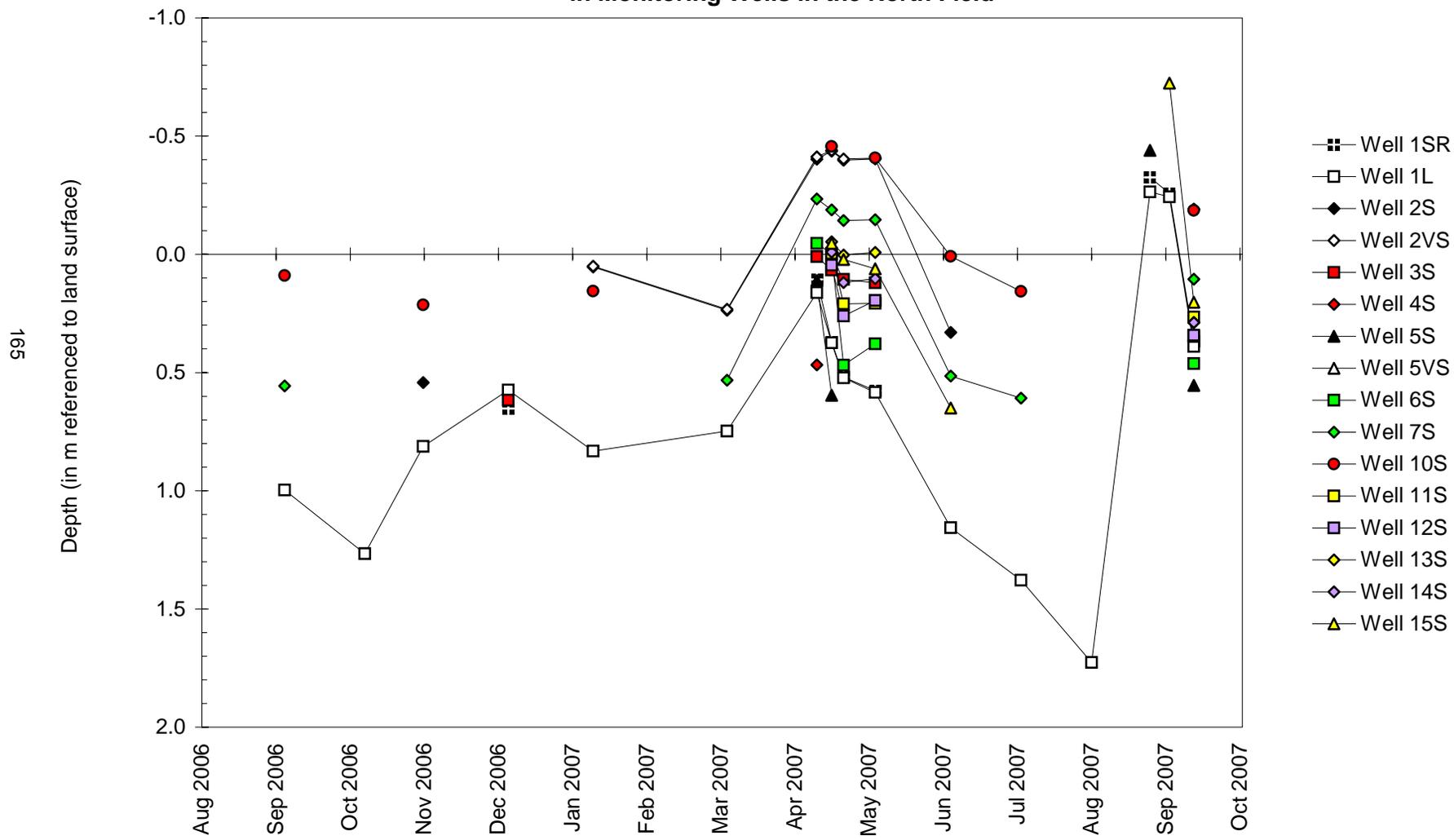
Water-Level Elevations in Monitoring Wells in the North Field



Freeport Bypass West Potential Wetland Compensation Site 6W

September 1, 2006 to September 14, 2007

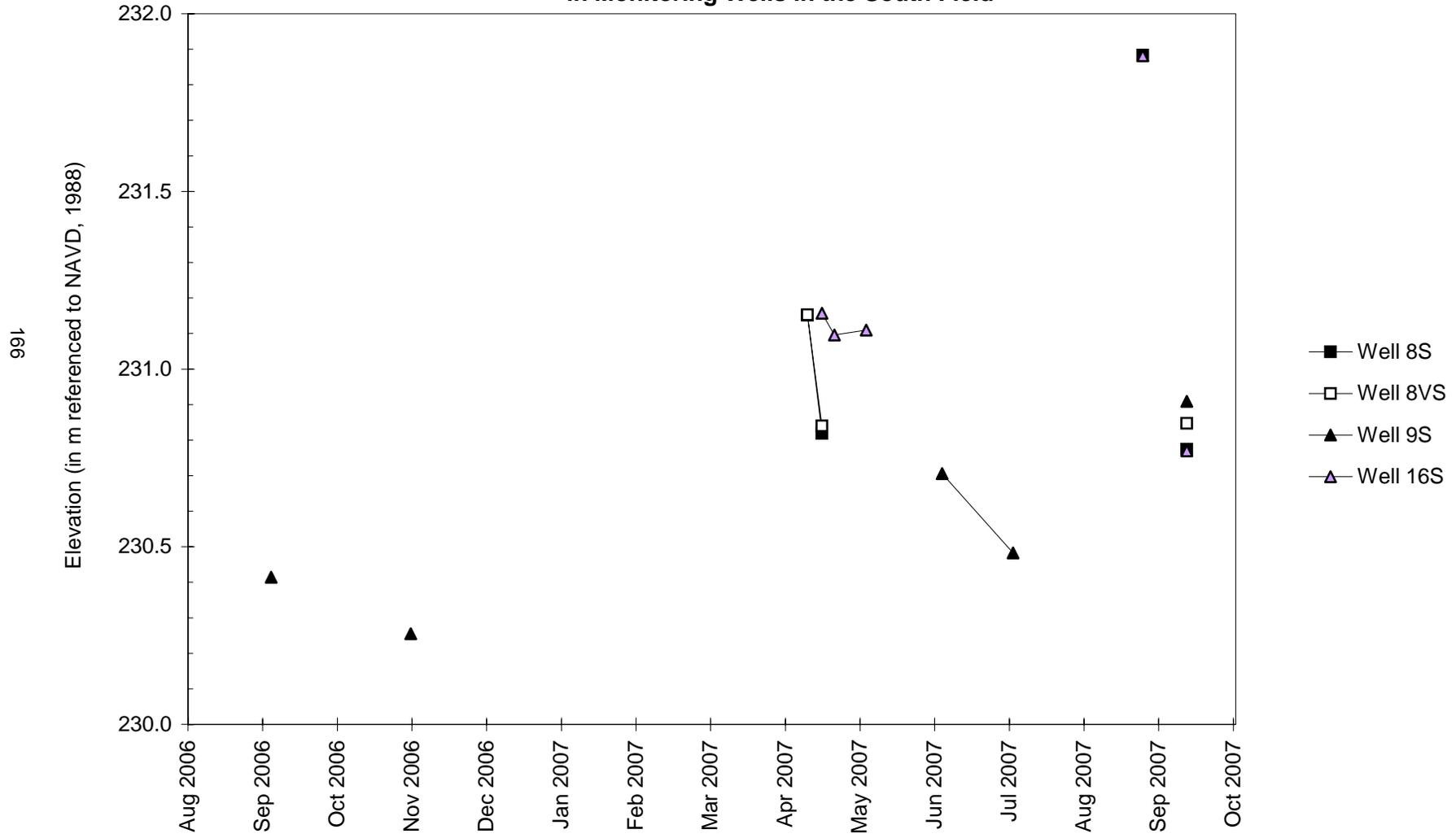
**Depth to Water
in Monitoring Wells in the North Field**



Freeport Bypass West Potential Wetland Compensation Site 6W

September 1, 2006 to September 14, 2007

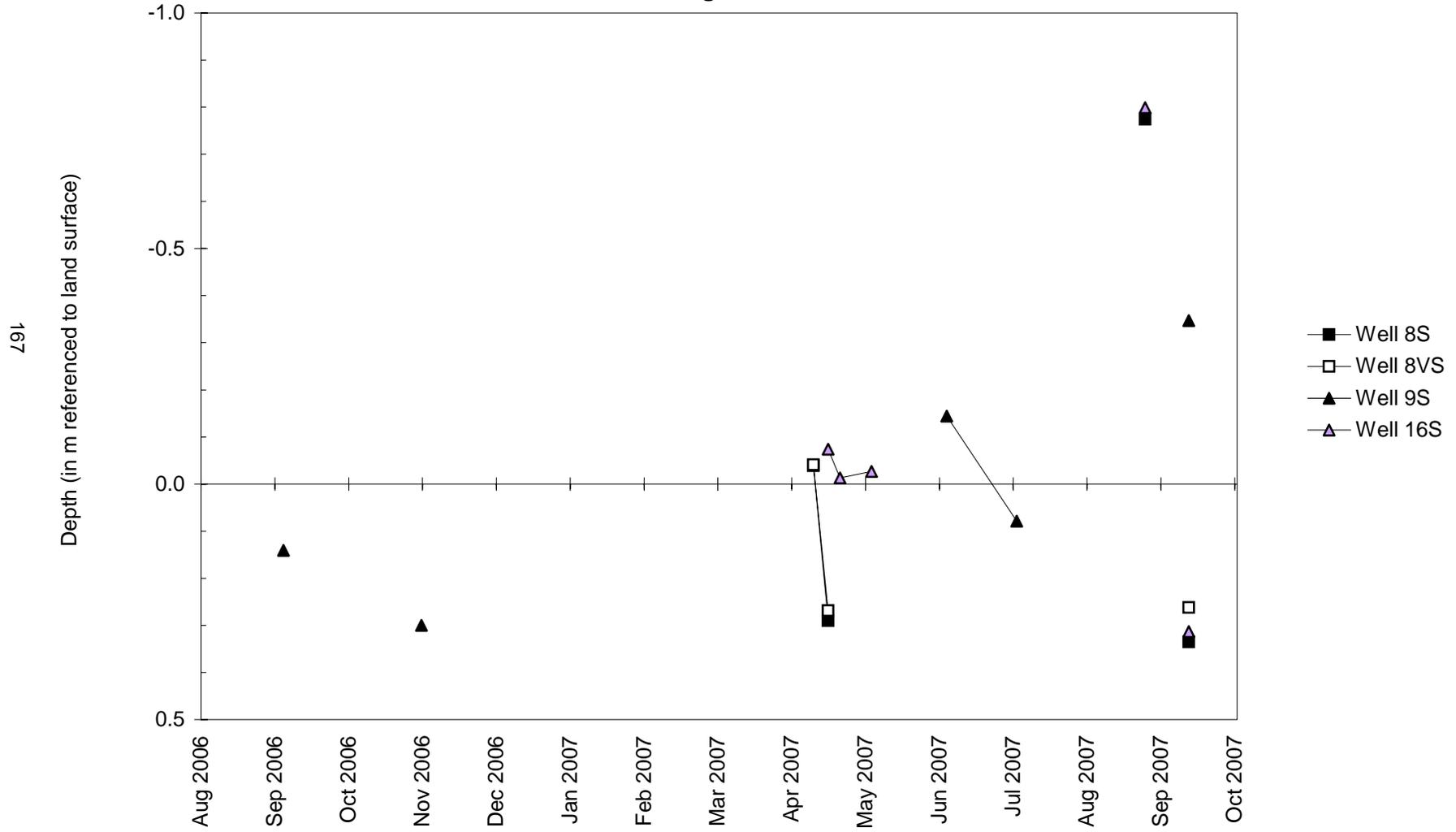
Water-Level Elevations in Monitoring Wells in the South Field



Freeport Bypass West Potential Wetland Compensation Site 6W

September 1, 2006 to September 14, 2007

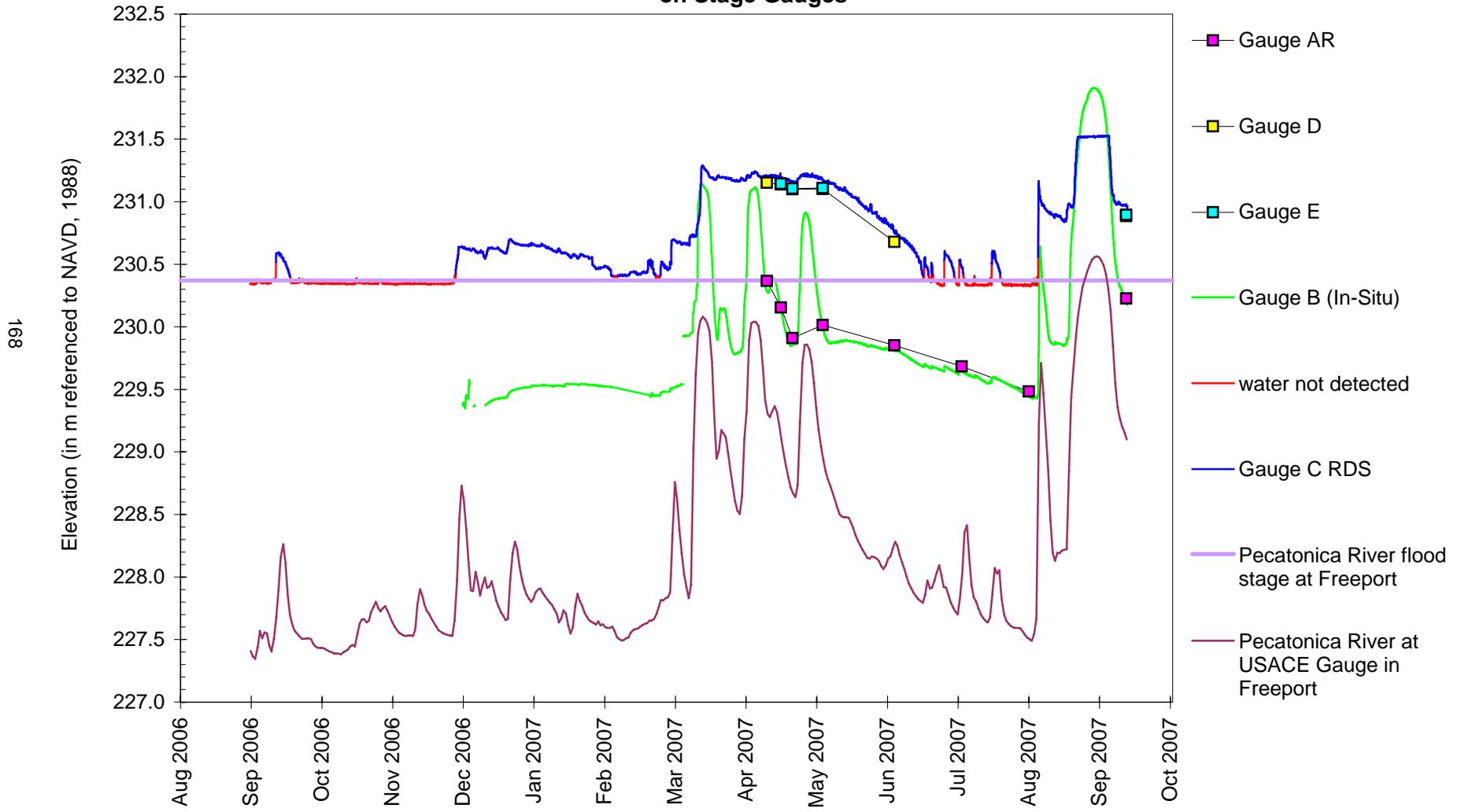
Depth to Water in Monitoring Wells in the South Field



Freeport Bypass West Potential Wetland Compensation Site 6W

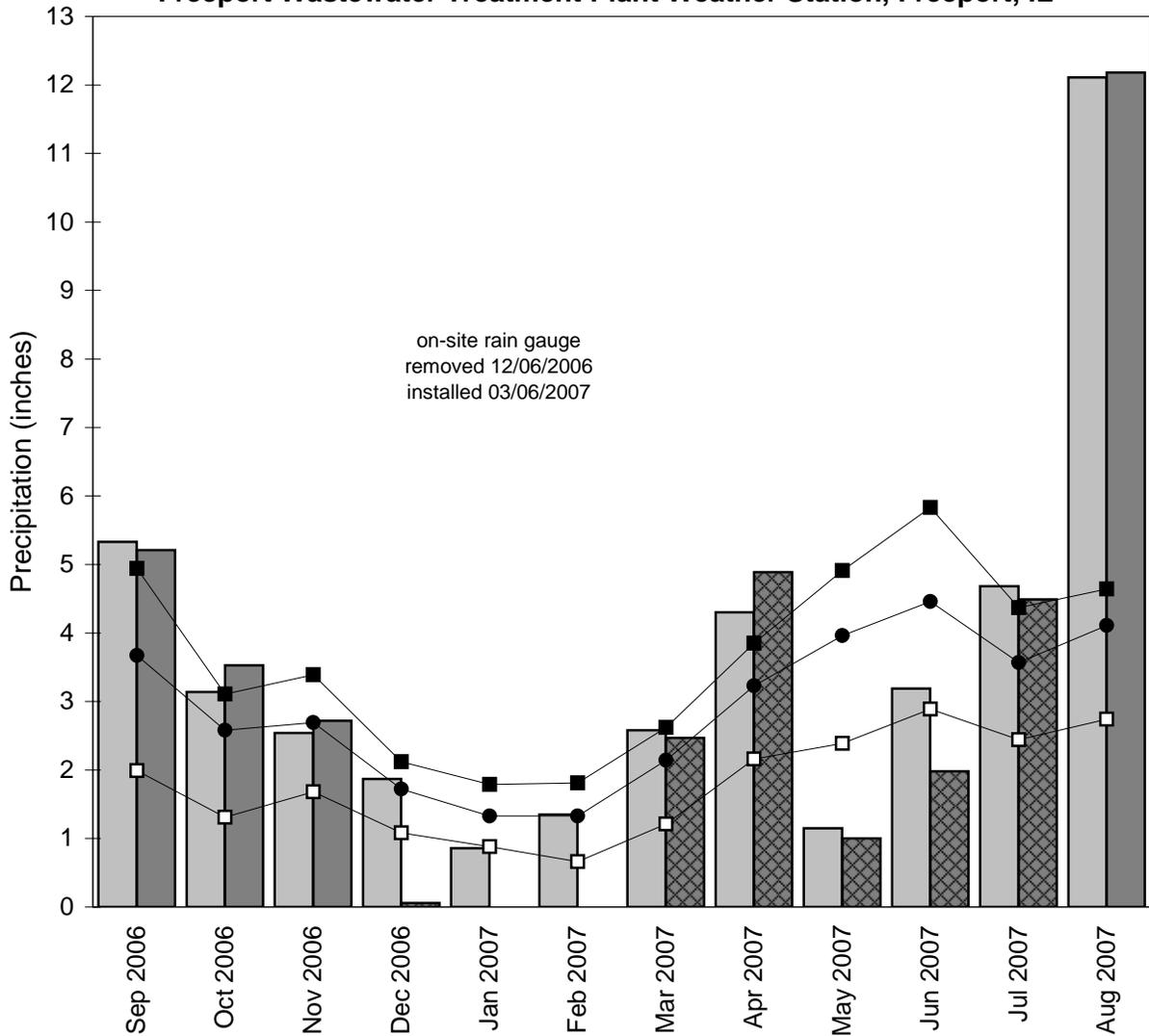
September 1, 2006 to September 14, 2007

Water-Level Elevations on Stage Gauges



**Freeport Bypass West
Potential Wetland Compensation Site 6W
September 2006 through August 2007**

**Total Monthly Precipitation Recorded On Site and at the
Freeport Wastewater Treatment Plant Weather Station, Freeport, IL**



- ▒ monthly precipitation recorded at weather station (Midwestern Regional Climate Center)
- monthly precipitation recorded on site by ISGS
- 1971-2000 monthly 30% above average threshold (National Water and Climate Center)
- 1971-2000 monthly average precipitation (National Water and Climate Center)
- 1971-2000 monthly 30% below average threshold (National Water and Climate Center)
- ▒ data incomplete

Graph last updated October 9, 2007