



**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 monitor wetland hydrology, and to perform a Level II hydrogeologic assessment of the potential wetland mitigation at this site.
- December 2003: ISGS monitoring network was installed. Locations of monitoring stations were determined with a GPS unit by ISGS, and a topographic survey of the site was conducted by IDOT during the fall of 2003.
- Summer 2006: Tree planting was completed.

**WETLAND HYDROLOGY CALCULATION FOR 2006**

The estimated total area that satisfied wetland hydrology criteria (Environmental Laboratory 1987) for greater than 5% of the 2006 growing season is 2.3 ha (5.7 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 2006 growing season is also 2.3 ha (5.7 ac). These estimates are based on the following factors:

- According to the Midwestern Climate Center, 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 106% of normal for the monitoring period of September 2005 through August 2006. Precipitation at this station was below normal in September, October, and December 2005, and in February, May, and August 2006. Precipitation amounts were above normal for the remaining months of the 2005–2006 monitoring period.
- In 2006, water levels measured in soil-zone wells 2S, 2VS, 7S, 9S and 10S satisfied the wetland hydrology criteria for greater than 5% of the growing season. Water levels in all of these wells except 7S also satisfied the wetland hydrology criteria for greater than 12.5% of the growing season.
- Water-level records for the data-logger at Gauge C (RDS) indicated inundation for elevations below approximately 230.68 m (756.82 ft) for a duration that satisfied the wetland hydrology criteria for greater than 5% of the growing season. Additionally, data from Gauge C indicated inundation for elevations below approximately 230.66 m (756.76 ft) for a duration that satisfied the wetland hydrology criteria for greater than 12.5% of the growing season.

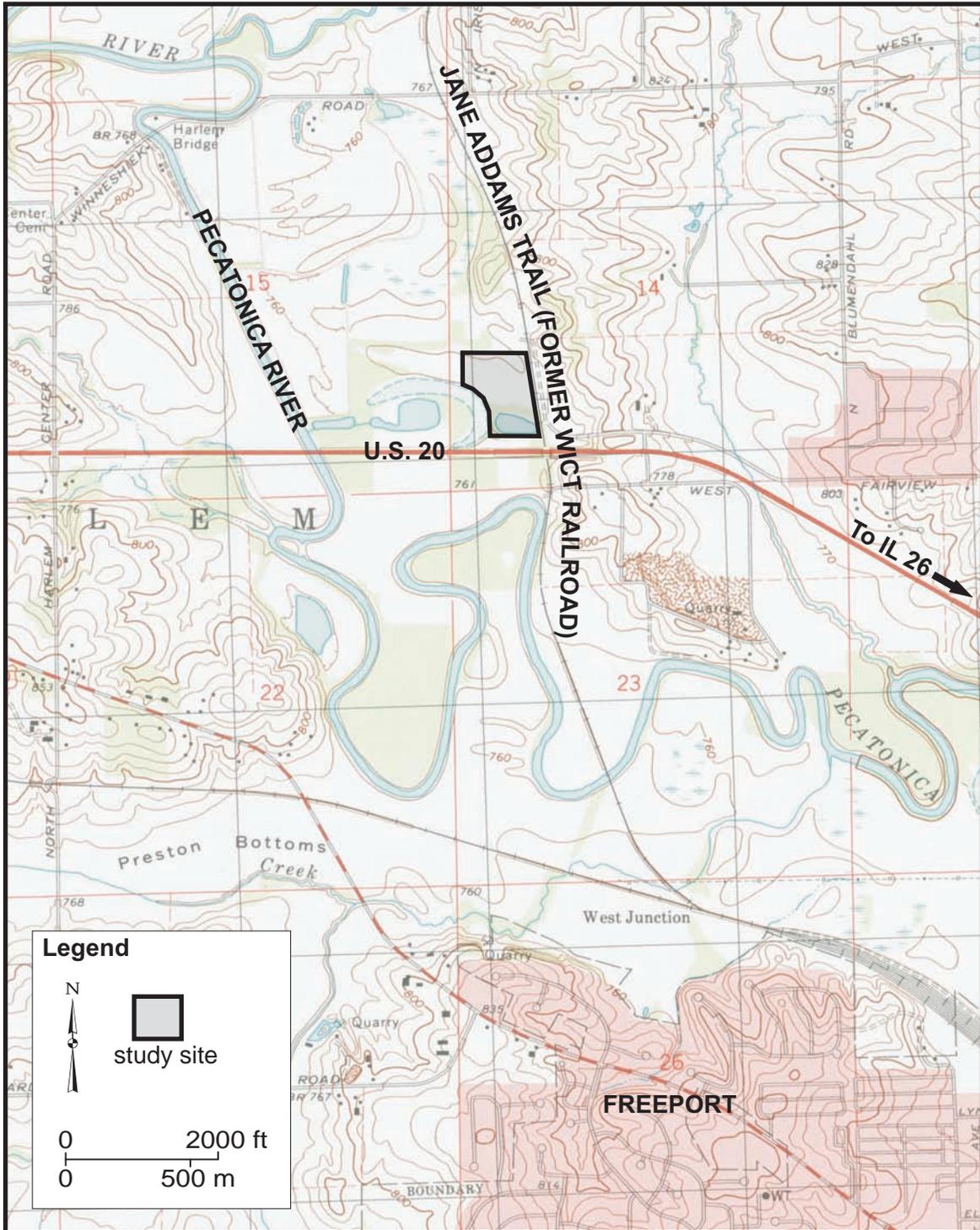
## PLANNED FUTURE ACTIVITIES

- A Level II hydrogeological characterization report is in review.
- Monitoring is expected to continue until no longer required by IDOT.

# Freeport Bypass West Wetland Compensation Site 6W (FAS 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

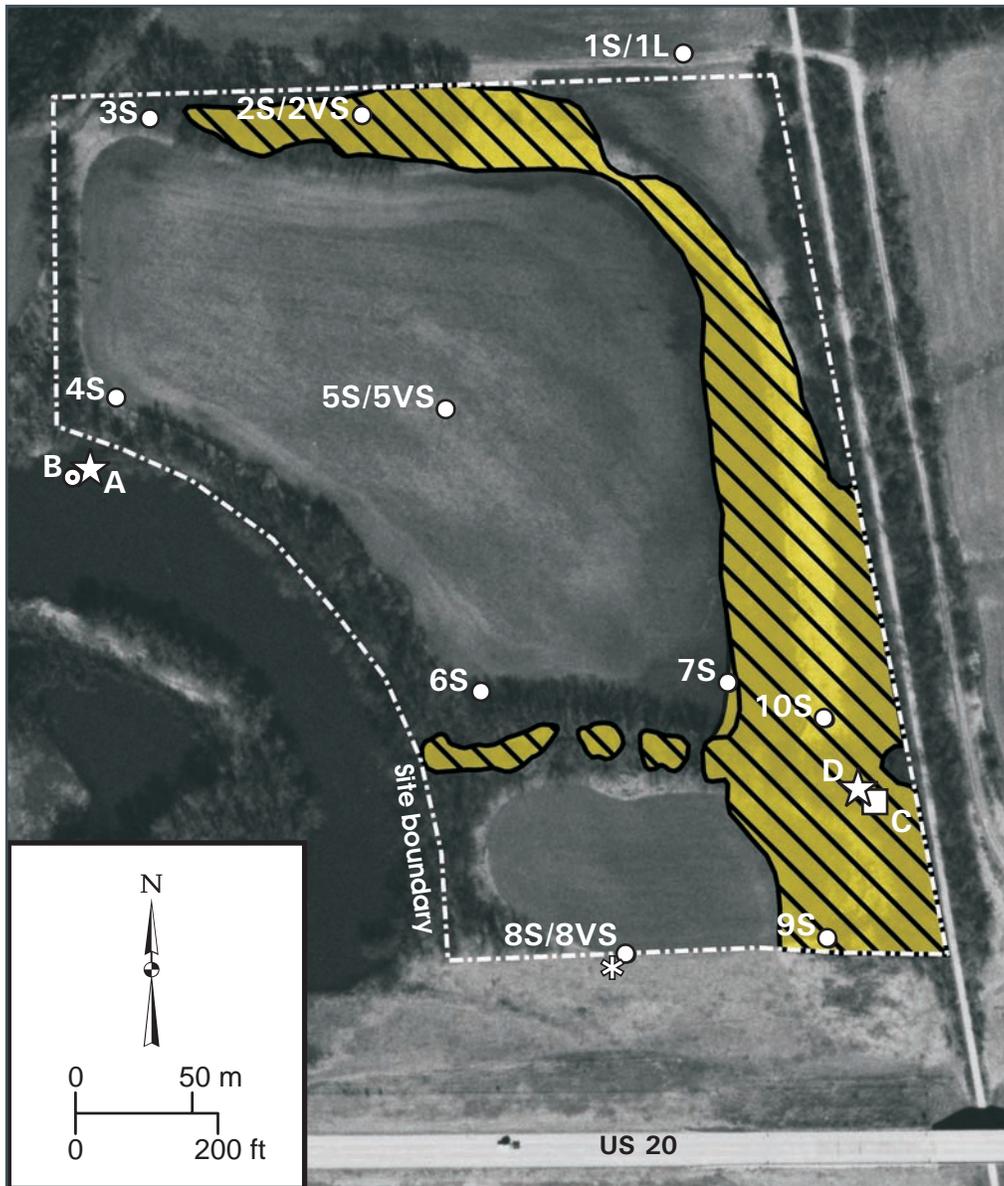


# Freeport Bypass West Wetland Compensation Site 6W (FAS 301)

## Estimated Areal Extent of 2006 Wetland Hydrology

based on data collected between September 1, 2005 and September 1, 2006

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



○ ISGS monitoring well

□ RDS data logger

☆ Staff gauge (4.0 ft)

⊙ In-Situ pressure transducer

\* Rain gauge

### 2006 Wetland Hydrology



> 5% of the growing season

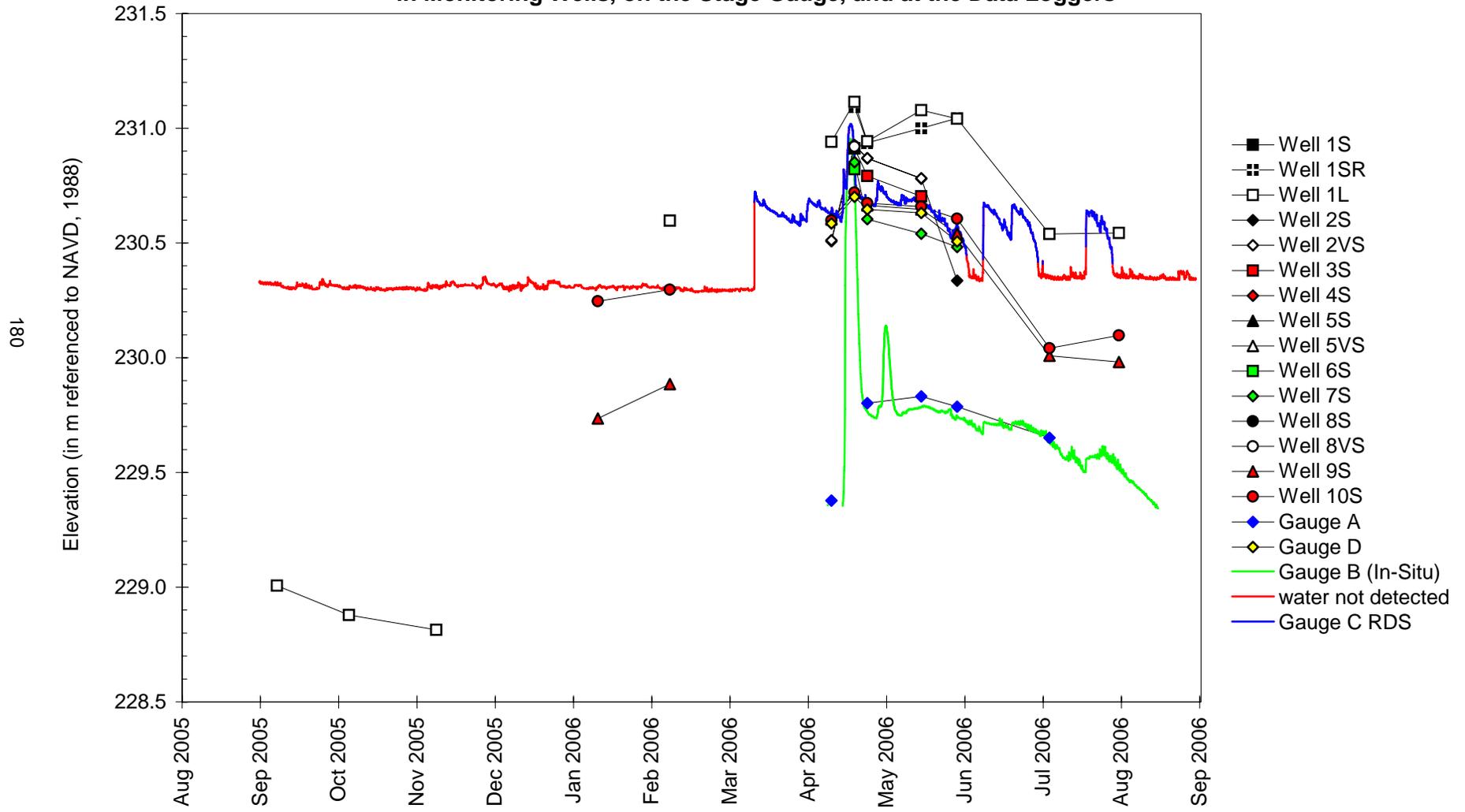


> 12.5% of the growing season

# Freeport Bypass West Potential Wetland Compensation Site 6W

## September 1, 2005 to September 1, 2006

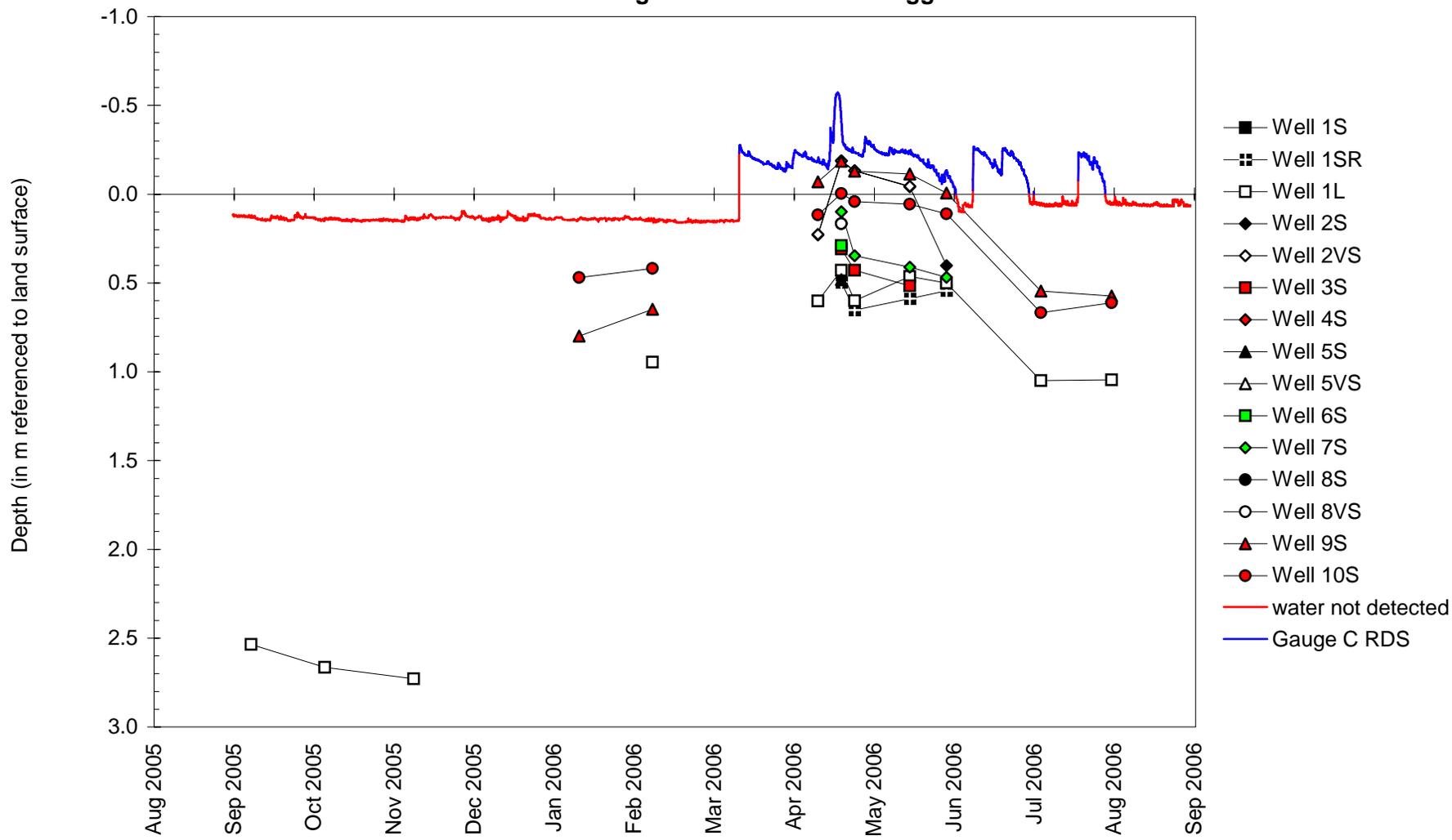
### Water-Level Elevations in Monitoring Wells, on the Stage Gauge, and at the Data Loggers



# Freeport Bypass West Potential Wetland Compensation Site 6W

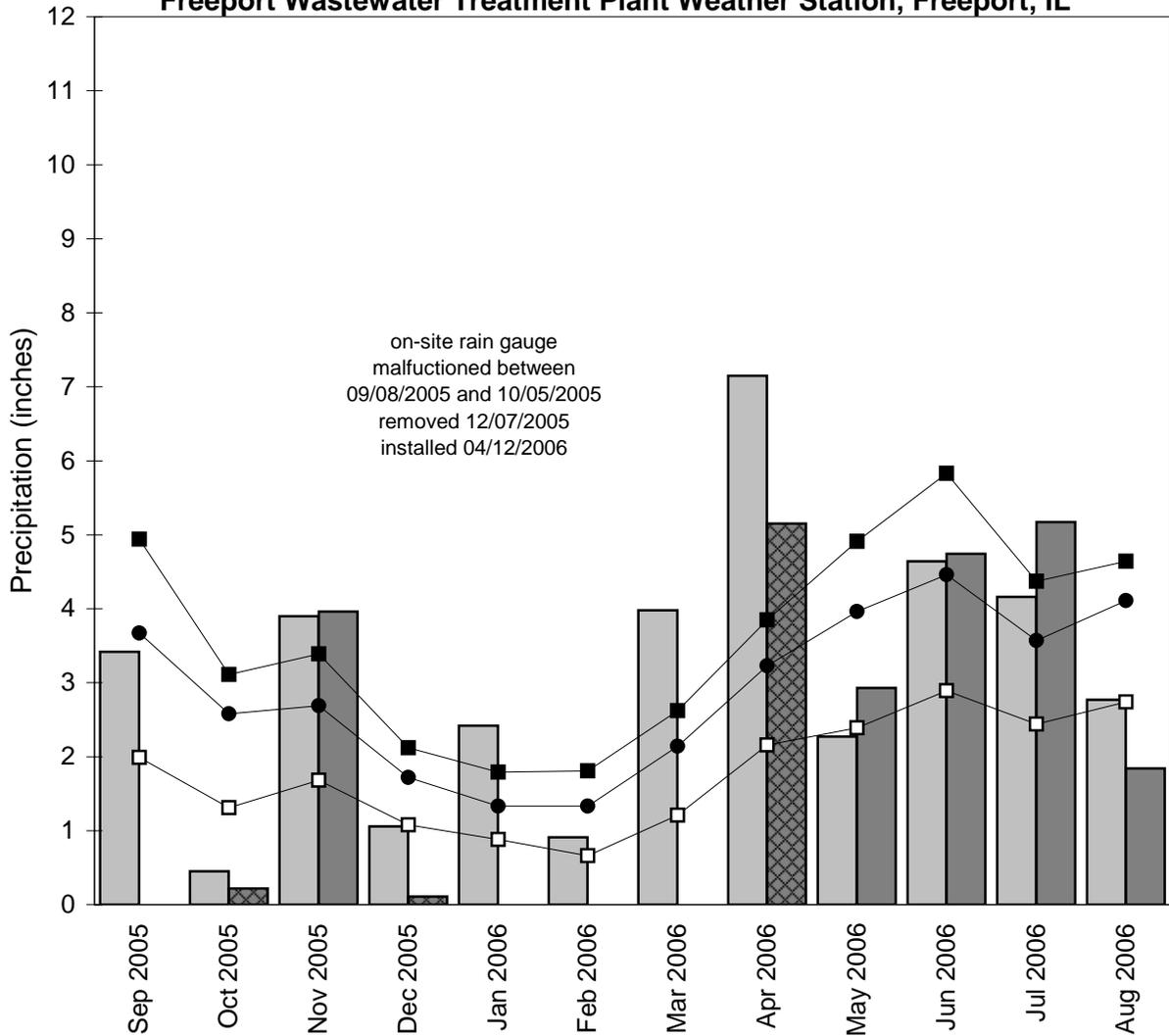
## September 1, 2005 to September 1, 2006

### Depth to Water in Monitoring Wells and the Data Loggers



**Freeport Bypass West  
Potential Wetland Compensation Site 6W  
September 2005 through August 2006**

**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 13, 2006