

**FREEPORT BYPASS WEST
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 2008

The estimated total area that satisfied wetland hydrology criteria (Environmental Laboratory 1987) for greater than 5% of the 2008 growing season is 9.6 ha (23.6 ac) out of a total site area of 9.6 ha (23.6 ac). The estimated total area that satisfied wetland hydrology criteria for greater than 12.5% of the 2008 growing season is 9.5 ha (23.3 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 105% of normal for the monitoring period of September 2007 through August 2008. Precipitation at this station was below normal in September, October, and November 2007, and in March, June, and August 2008. Precipitation amounts were normal or above normal for the remaining months of the 2007-2008 monitoring period. Significant on-site rainfall recorded by the ISGS in April, coupled with spring flooding along the Pecatonica River, resulted in elevated water levels that were sustained across almost all of the site for greater than 12.5% of the growing season. Heavy regional rainfall in late May and early June 2008 again caused the Pecatonica River to flood the site, resulting in the entire site satisfying the wetland hydrology criteria for greater than 5% of the 2008 growing season.
- In 2008, water levels measured in all soil-zone (S and VS) wells satisfied the wetland hydrology criteria for greater than 12.5% of the growing season.

- Water-level records for the Pecatonica River, as measured by the USACE river gauge in Freeport, indicated on-site inundation at elevations below approximately 232.09 m (761.45 ft)* and 231.47 m (759.42 ft)* for durations that satisfied the wetland hydrology criteria for greater than 5% and 12.5% of the growing season, respectively. *A correction factor of +1.17 m (3.84 ft), as determined in the Level II Hydrogeologic Characterization Report previously prepared for this site (Plankell and Weaver-Miner 2007), was added to the USACE river gauge elevations.

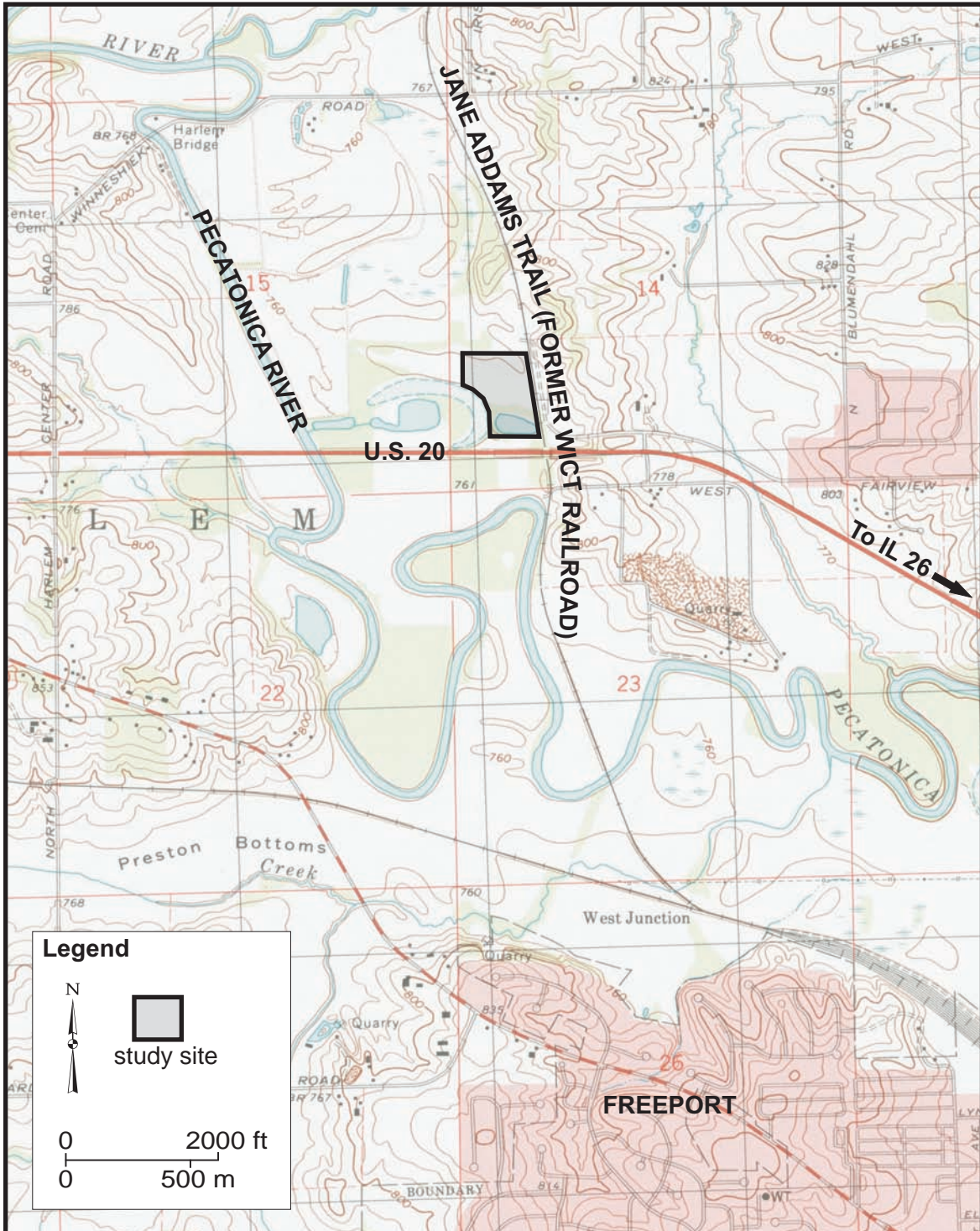
PLANNED FUTURE ACTIVITIES

- On-site data loggers will be upgraded in 2009 to more closely monitor on-site water level fluctuations.
- Monitoring is expected to continue until no longer required by IDOT.

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General Study Area and Vicinity

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

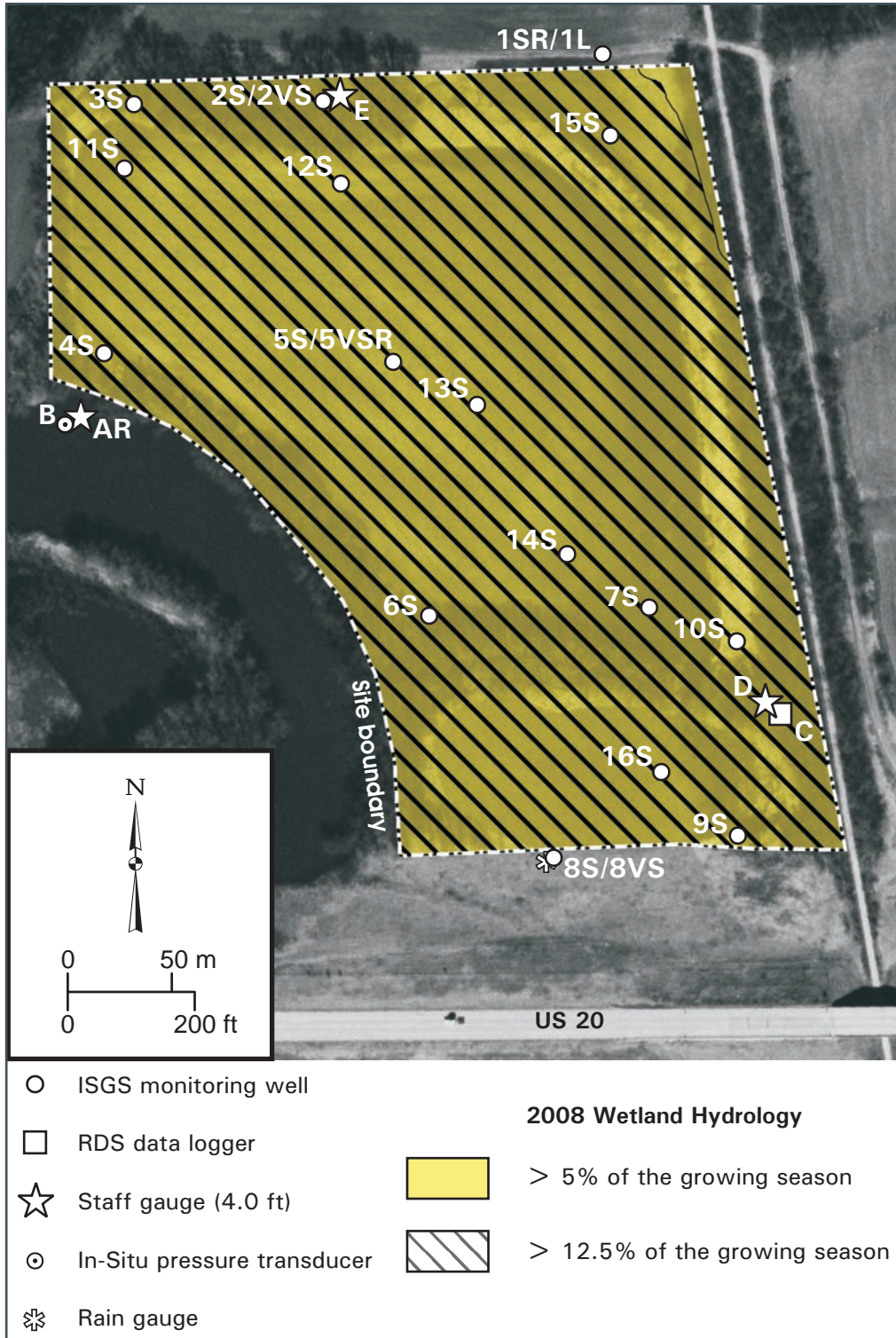


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Estimated Areal Extent of 2008 Wetland Hydrology

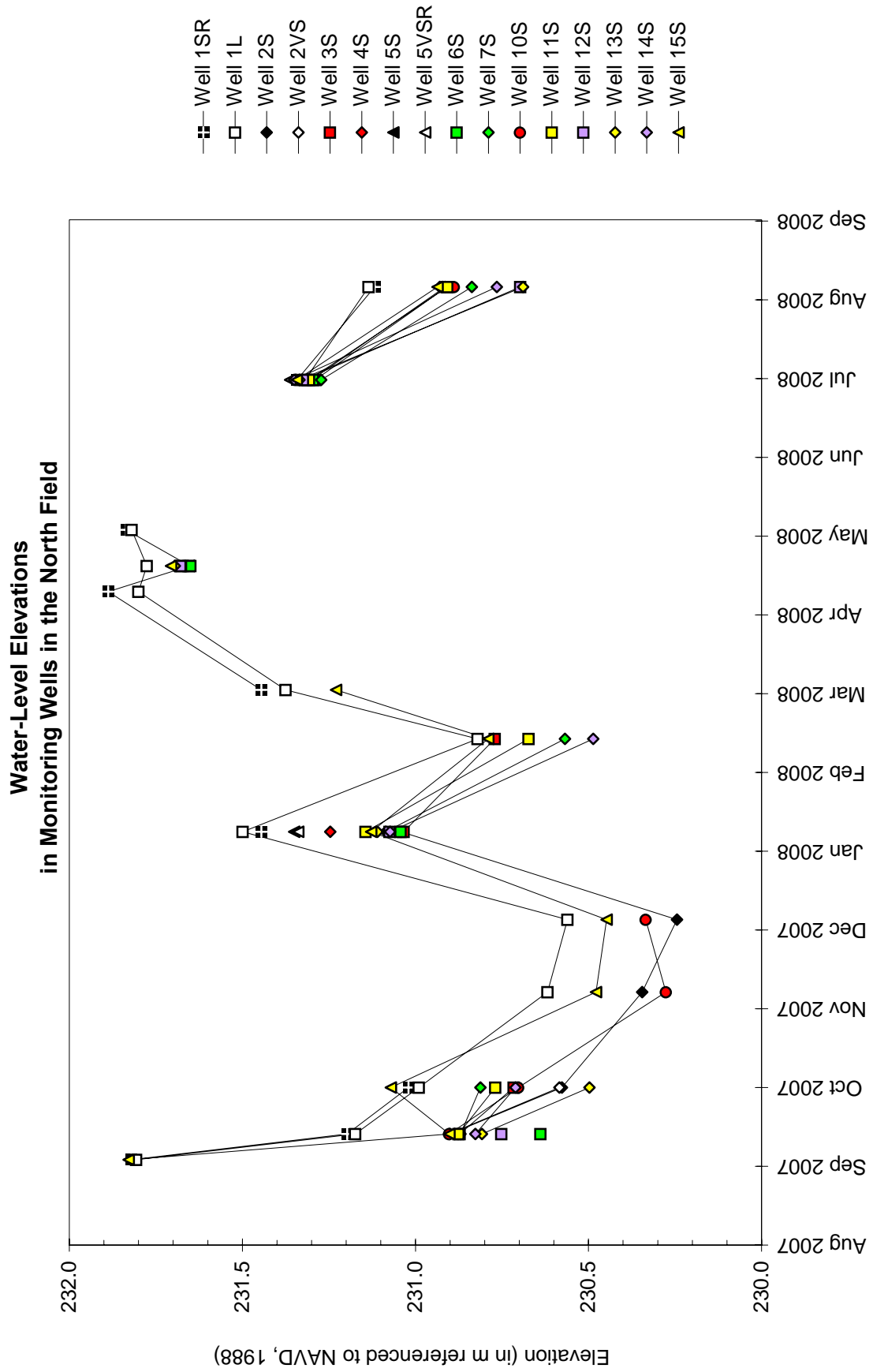
based on data collected between September 1, 2007 and September 1, 2008

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



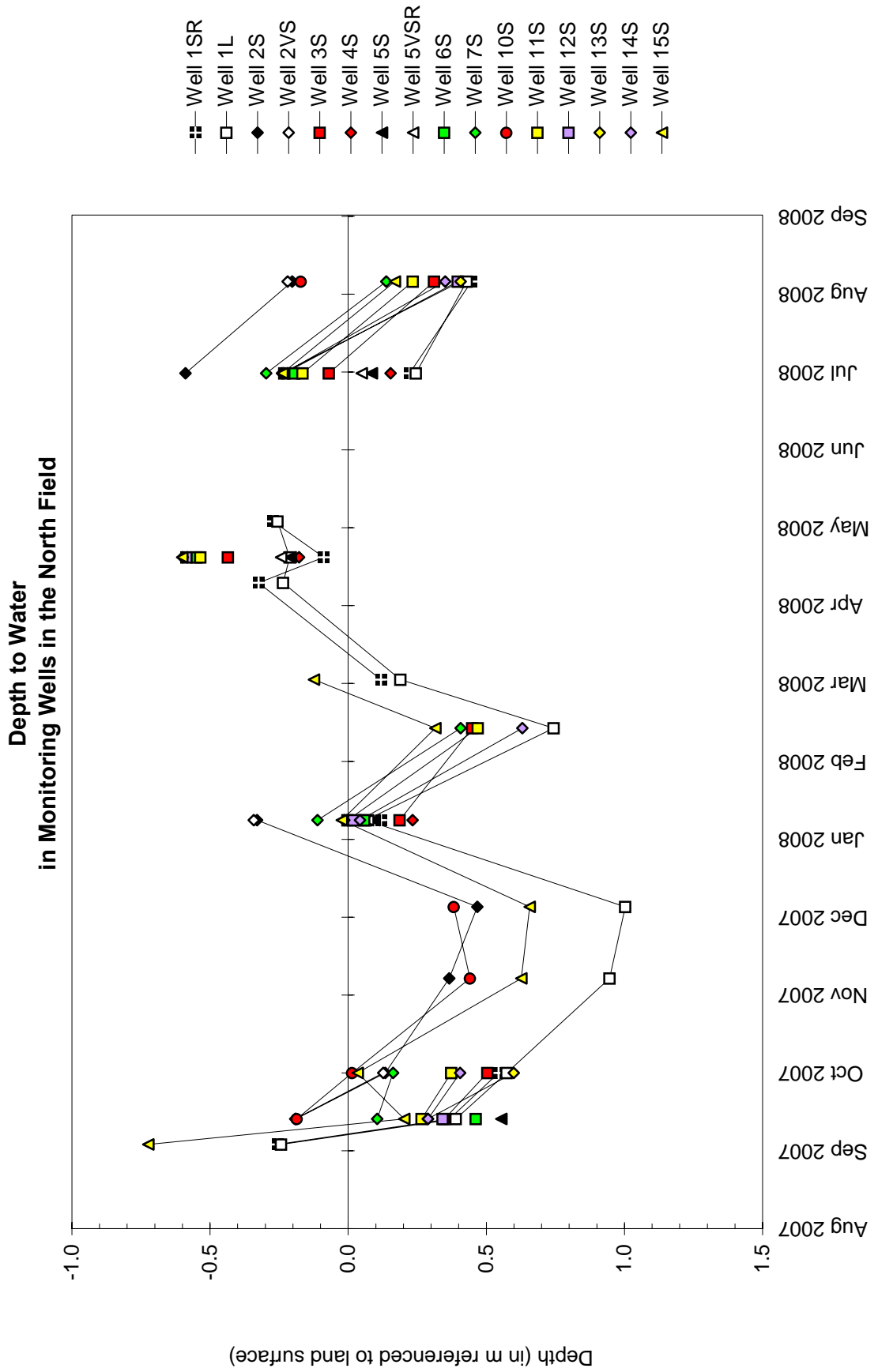
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September 1, 2007 to September 1, 2008



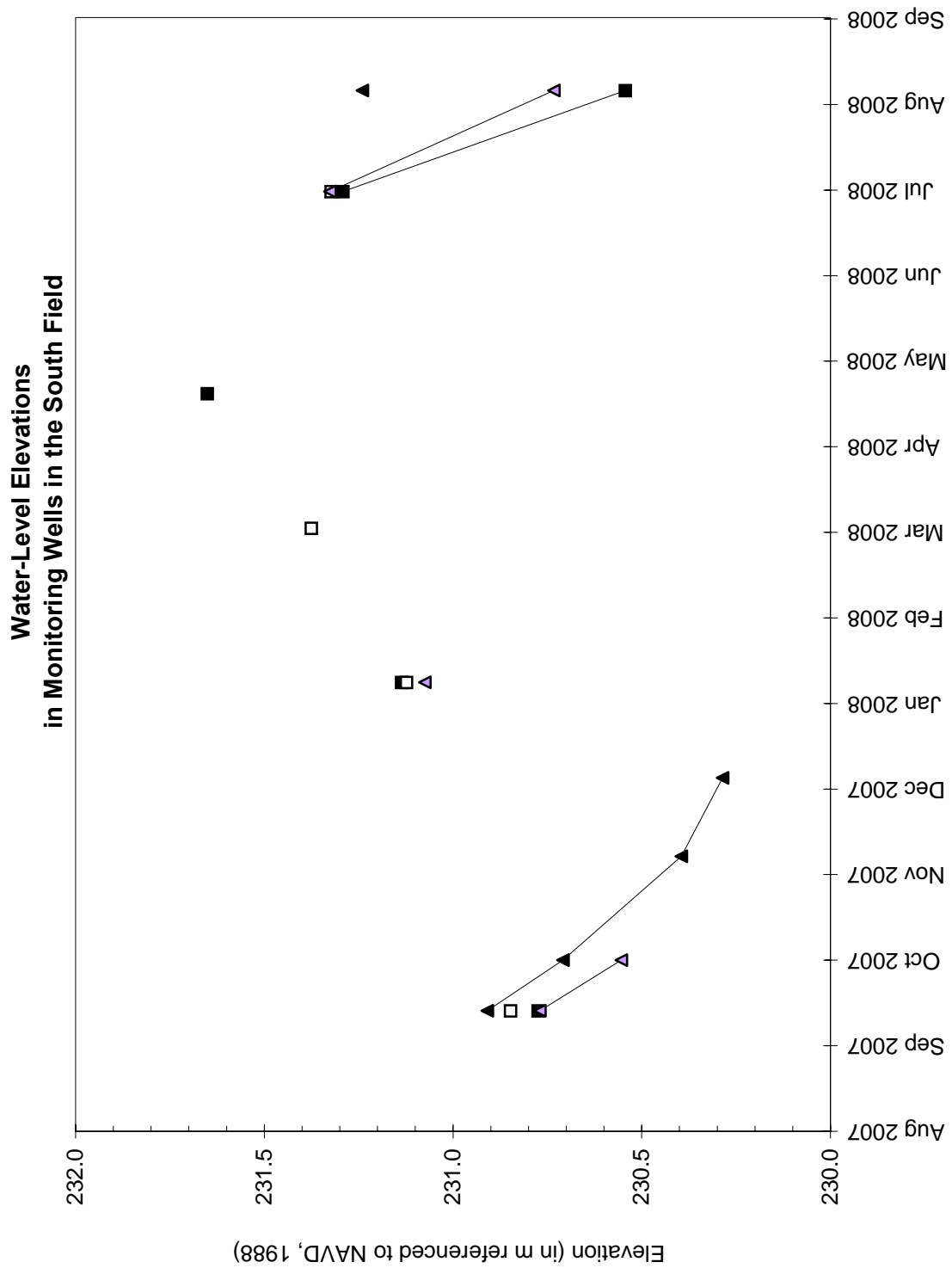
Freeport Bypass West Wetland Compensation Site 6W

September 1, 2007 to September 1, 2008



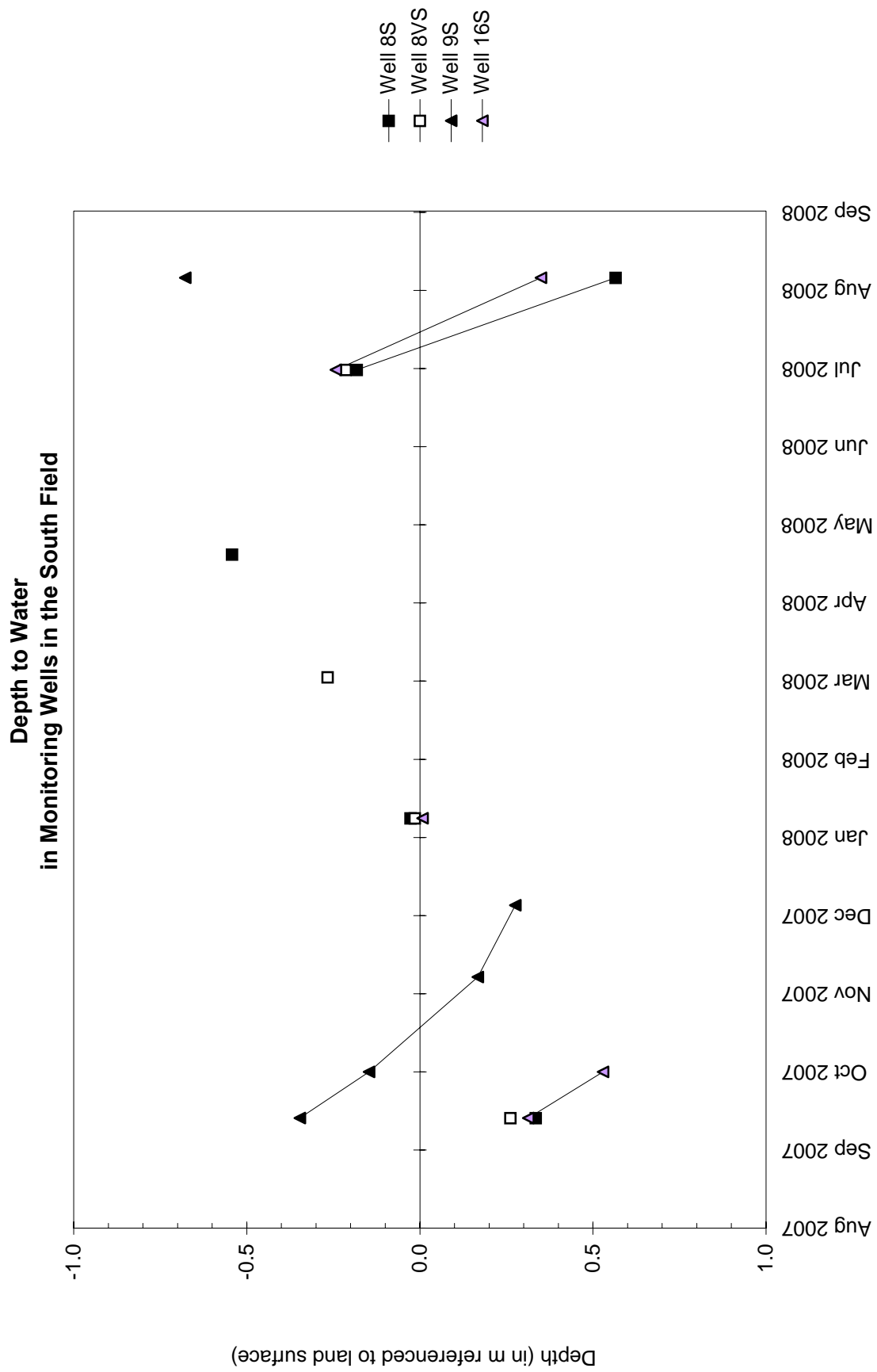
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September 1, 2007 to September 1, 2008



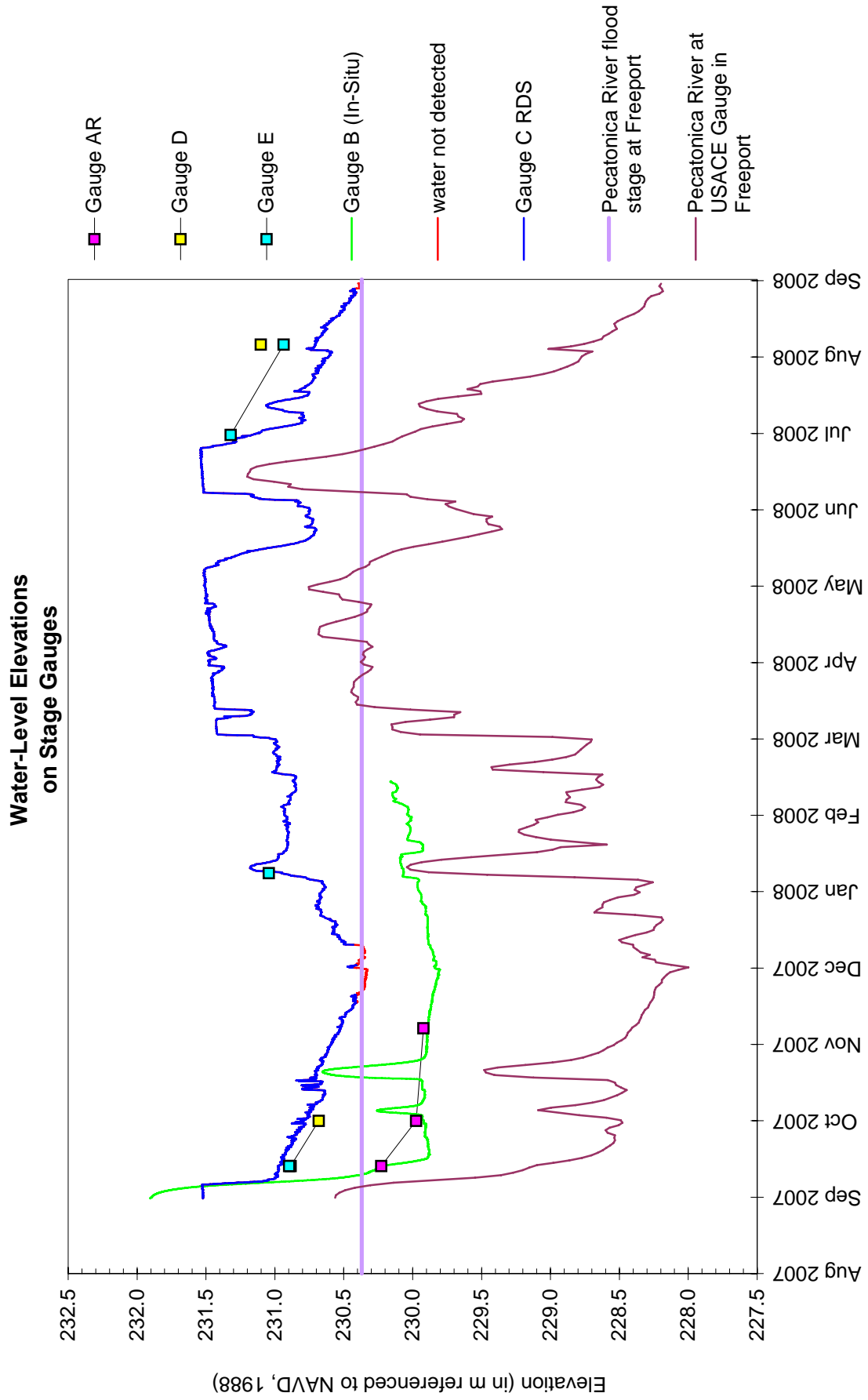
Freeport Bypass West Wetland Compensation Site 6W

September 1, 2007 to September 1, 2008



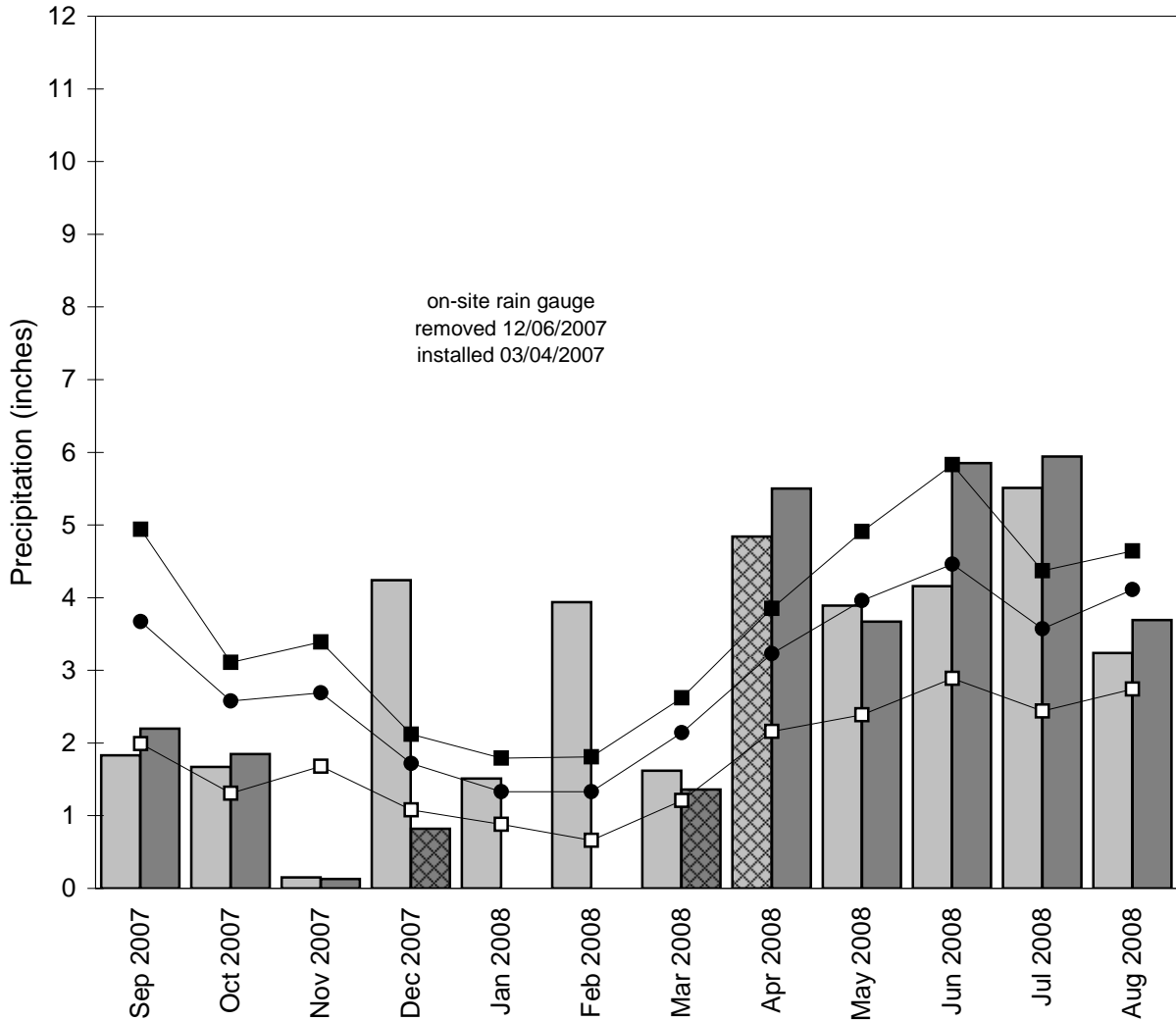
Freeport Bypass West Wetland Compensation Site 6W

September 1, 2007 to September 1, 2008



Freeport Bypass West Wetland Compensation Site 6W September 2007 through August 2008

**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)
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- 1971-2000 monthly 30% below average threshold (National Water and Climate Center)
- data incomplete

Graph last updated October 7, 2008