MILAN BELTWAY, GREEN ROCK WETLAND MITIGATION SITE **ISGS #44**
FAU 5822
Sequence #67
Henry County, near Green Rock, Illinois
Primary Project Manager: Steven E. Benton
Secondary Project Manager: Jessica Ackerman

SITE HISTORY

- December 2005: IDOT tasked the ISGS to conduct five-year performance monitoring of the Green Rock wetland mitigation site.

- March 2006: The monitoring network was installed by ISGS on Phase I of the site.

- November 2007: The monitoring network was installed by ISGS on Phase II of the site.

- April 2011: Monitoring of Phase I of the site was completed.

WETLAND HYDROLOGY CALCULATION FOR 2011

Monitoring of Phase I is complete, therefore, no estimate of the area of jurisdictional wetland hydrology was made in 2011. In 2011, 4.0 ha (9.8 ac), out of a total area of 4.3 ha (10.7 ac) in Phase II, satisfied wetland hydrology criteria (Environmental Laboratory 1987) for greater than 5% of the growing season and for greater than 12.5% of the growing season. Using the 2010 Midwest Region Supplement (U.S. Army Corps of Engineers 2010) to the 1987 Manual, we estimate that 4.0 ha (9.8 ac) of Phase II satisfied wetland hydrology criteria for 14 or more consecutive days during the growing season. These estimates are based on the following factors:

- The median date that the growing season begins at the nearby Quad City International Airport weather station in Moline, Illinois, is April 13 and the season lasts 196 days (MRCC 2011); 5% of the growing season is 10 days and 12.5% of the growing season is 25 days, according to the 1987 Manual. According to methods outlined in the 2010 Midwest Region Supplement, we estimate that March 15 was the starting date of the 2011 growing season based on soil temperatures measured at the mitigation site.

- Total precipitation during the monitoring period as recorded at the Quad City International Airport weather station in Moline, Illinois, was 90% of normal and total precipitation in Spring 2011 (March through May) was 106% of normal.

- In 2011, water levels measured in all of the soil-zone monitoring wells in Phase II satisfied wetland hydrology criteria for greater than 5% and greater than 12.5% of the growing season, according to the 1987 Manual. Water levels measured in all of the soil-zone monitoring wells in Phase II satisfied wetland hydrology criteria for 14 or more consecutive days during the growing season as per the 2010 Midwest Region Supplement.

- Rock River stage data recorded at Moline, Illinois, and surface-water data recorded by an on-site data logger (Sluice SW), reveal that the site was flooded six times during the monitoring period, with three of these floods (April 19 through May 2, May 26 through

June 4, and June 10 through 13) occurring during the 2011 growing season. Using depth to groundwater in monitoring well 18U as a proxy record of on-site inundation in Phase II, the longest period of inundation resulted from the floods that occurred in May and June. The data reveal that the portions of Phase II at and below an elevation of 173.10 m (567.94 ft) were inundated long enough to satisfy wetland hydrology criteria at 5% of the growing season, and that portions at and below an elevation of 173.00 m (567.61 ft) were inundated long enough to satisfy wetland hydrology criteria at 12.5% of the growing season, according to the 1987 Manual. Portions of Phase II at and below an elevation of 173.02 m (567.68 ft) satisfied wetland hydrology criteria for 14 or more consecutive days during the growing season as per the 2010 Midwest Region Supplement.

ADDITIONAL INFORMATION

- Four monitoring wells in Phase I (8S, 9S, 10S, and 15S) were retained in order to determine if wetland hydrology occurs up to the boundary between Phase I and Phase II.

- The ISGS has now completed 4 years of post-construction monitoring of Phase II.

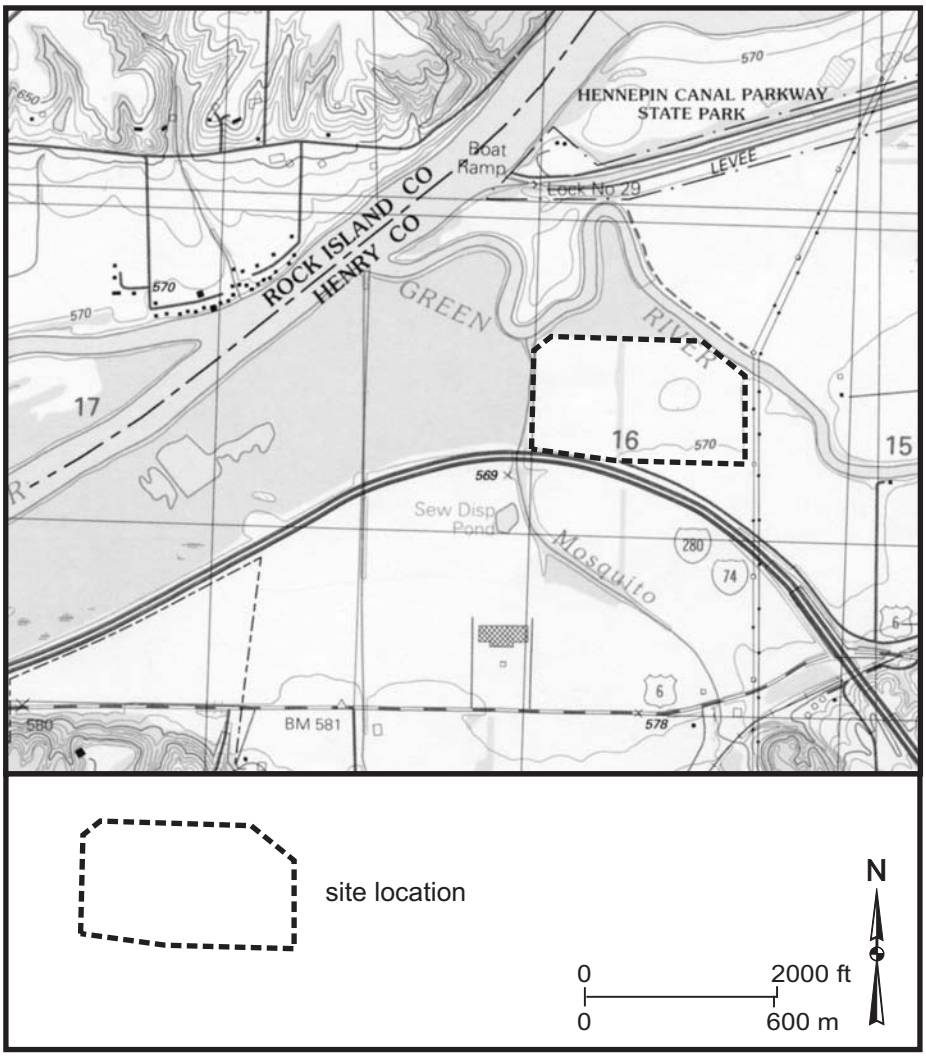
PLANNED FUTURE ACTIVITIES

- Monitoring of the site will continue until no longer required by IDOT.

Milan Beltway, Green Rock Wetland Mitigation Site (FAU 5822)

General Study Area and Vicinity

from the USGS Topographic Series, Coal Valley, IL (W) (USGS 1991) and
Green Rock, IL (E) (USGS 1992) 7.5-minute Quadrangles
contour interval is 10 feet



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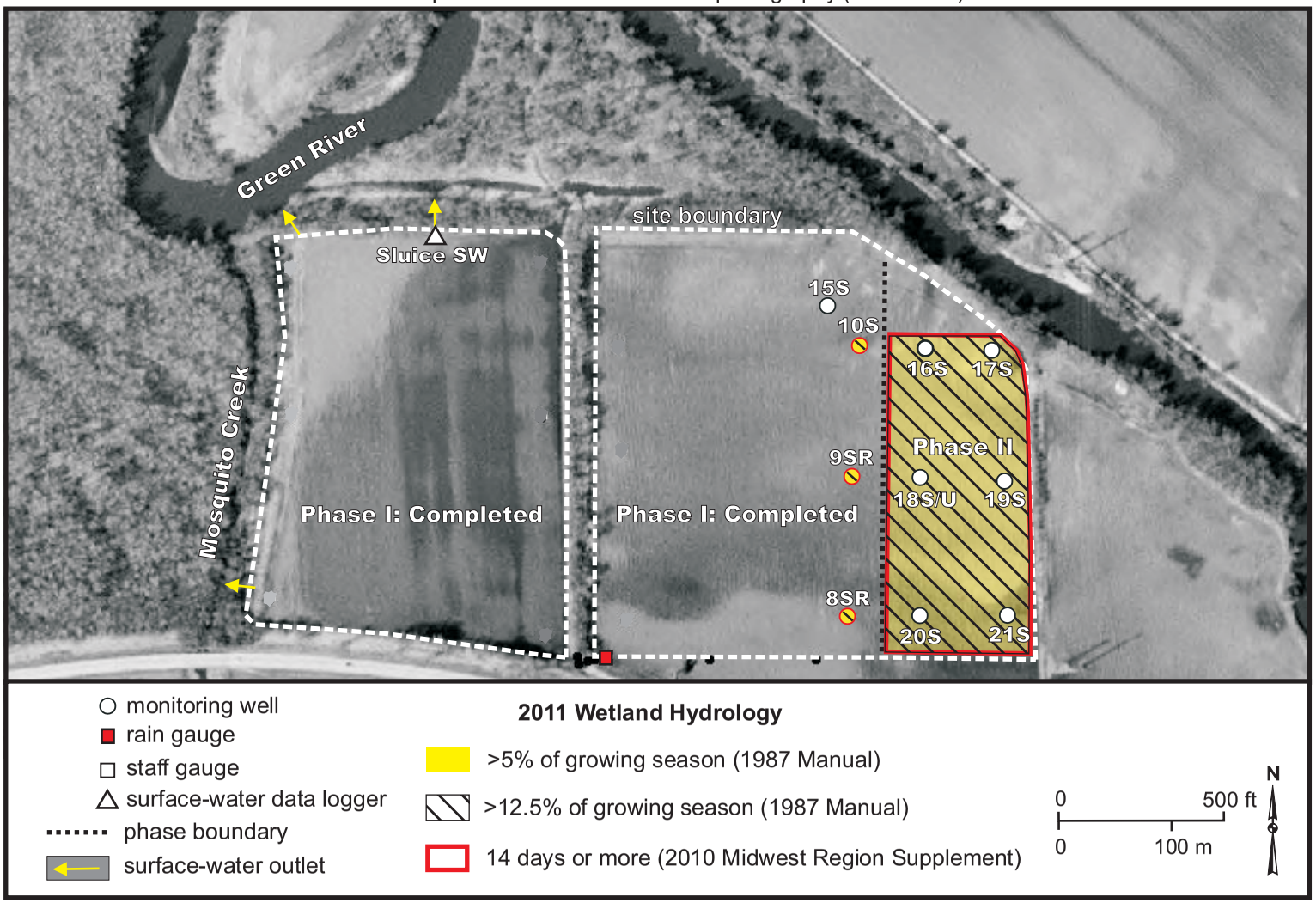
Estimated Areal Extent of 2011 Wetland Hydrology

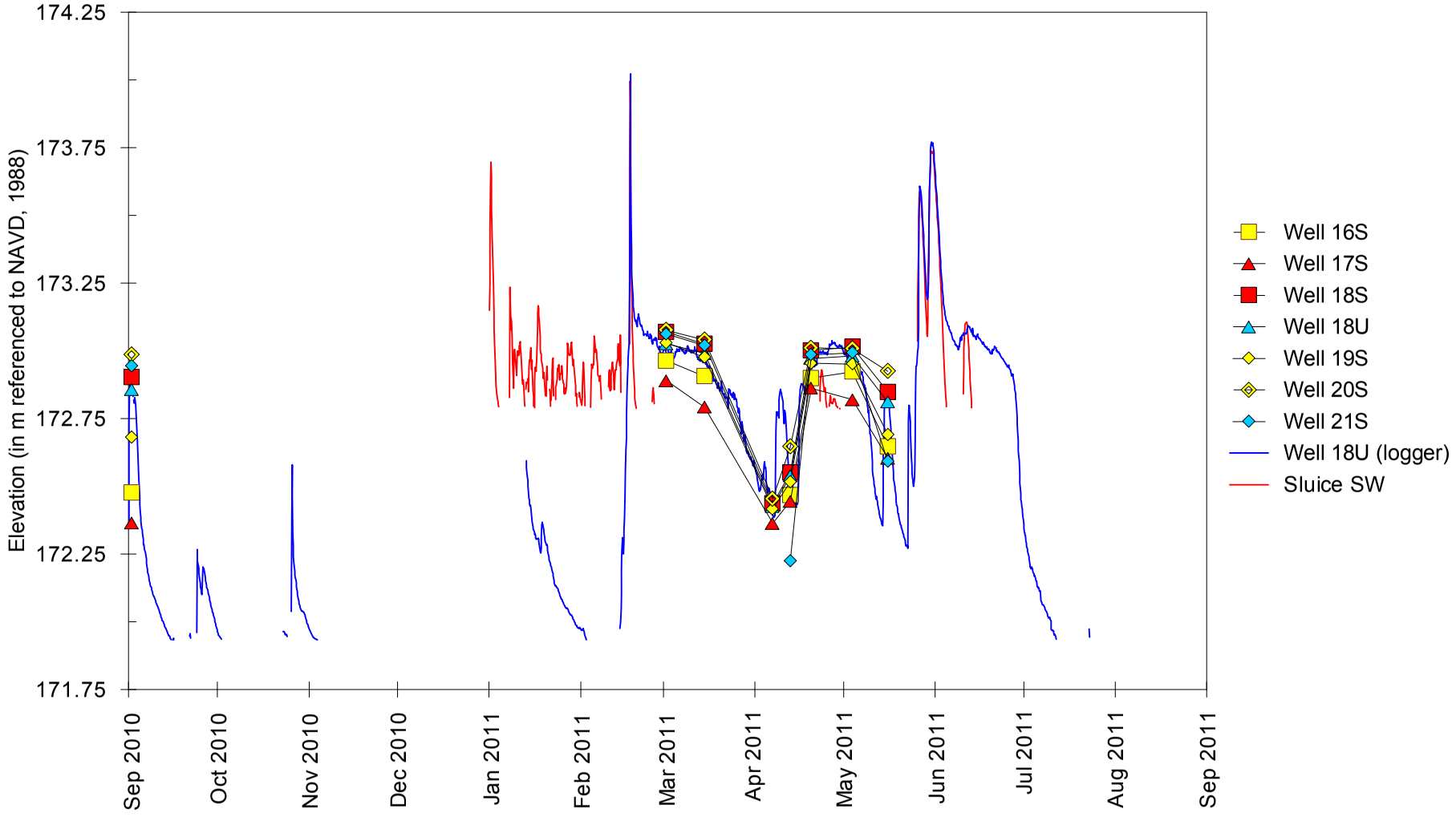
Based on data collected September 1, 2010 through August 31, 2011

Map based on USGS digital orthophotograph, Coal Valley NE quarter quadrangle
produced from 4/14/98 aerial photography (ISGS 2006)

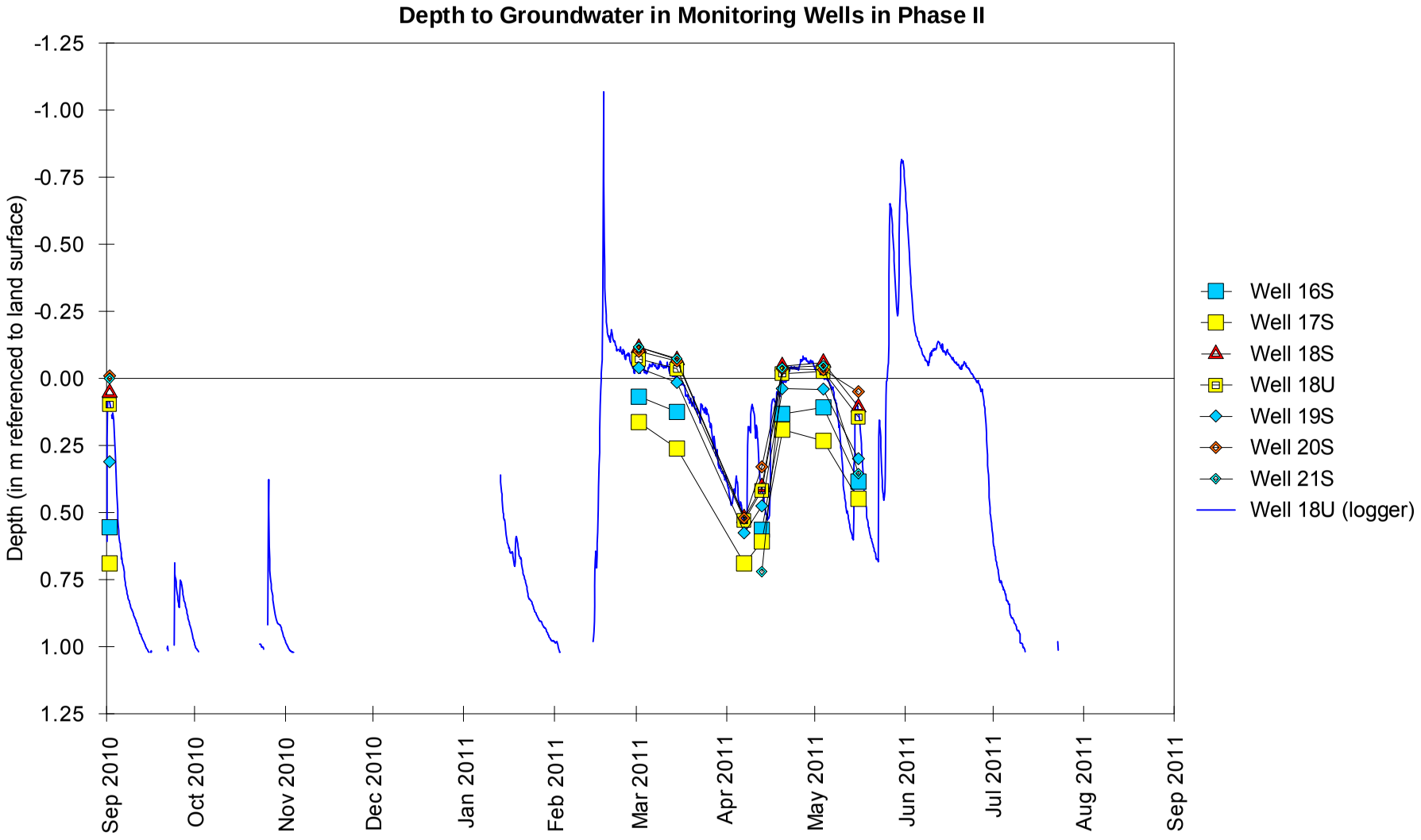


Milan Beltway, Green Rock Wetland Mitigation Site
September 1, 2010 through August 31, 2011

Water-Level Elevations in Monitoring Wells and at Surface-Water Gauges in Phase II



Milan Beltway, Green Rock Wetland Mitigation Site
September 1, 2010 through August 31, 2011



Milan Beltway, Green Rock Wetland Mitigation Site
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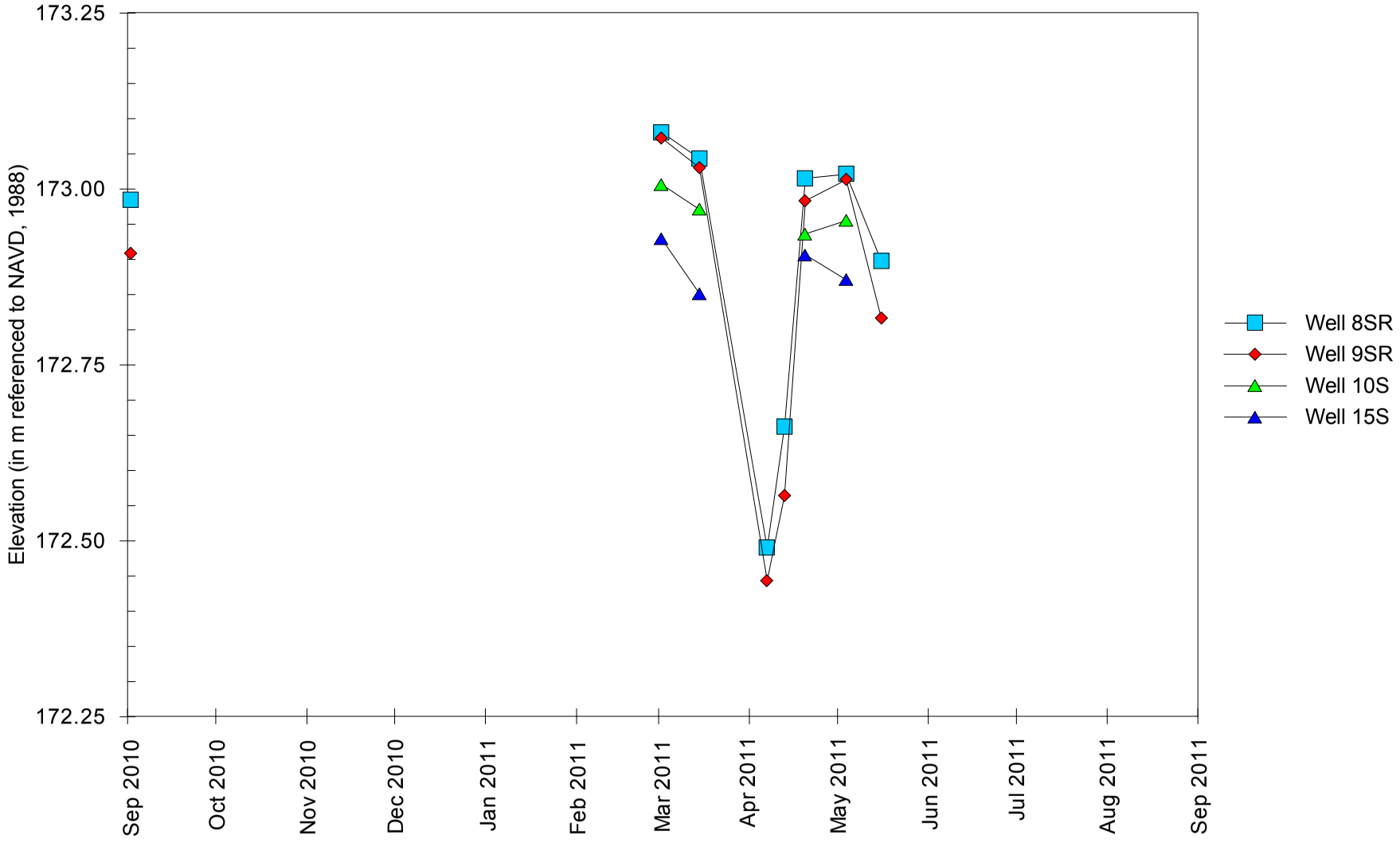
Water-Level Elevations in Monitoring Wells Adjacent to Phase II



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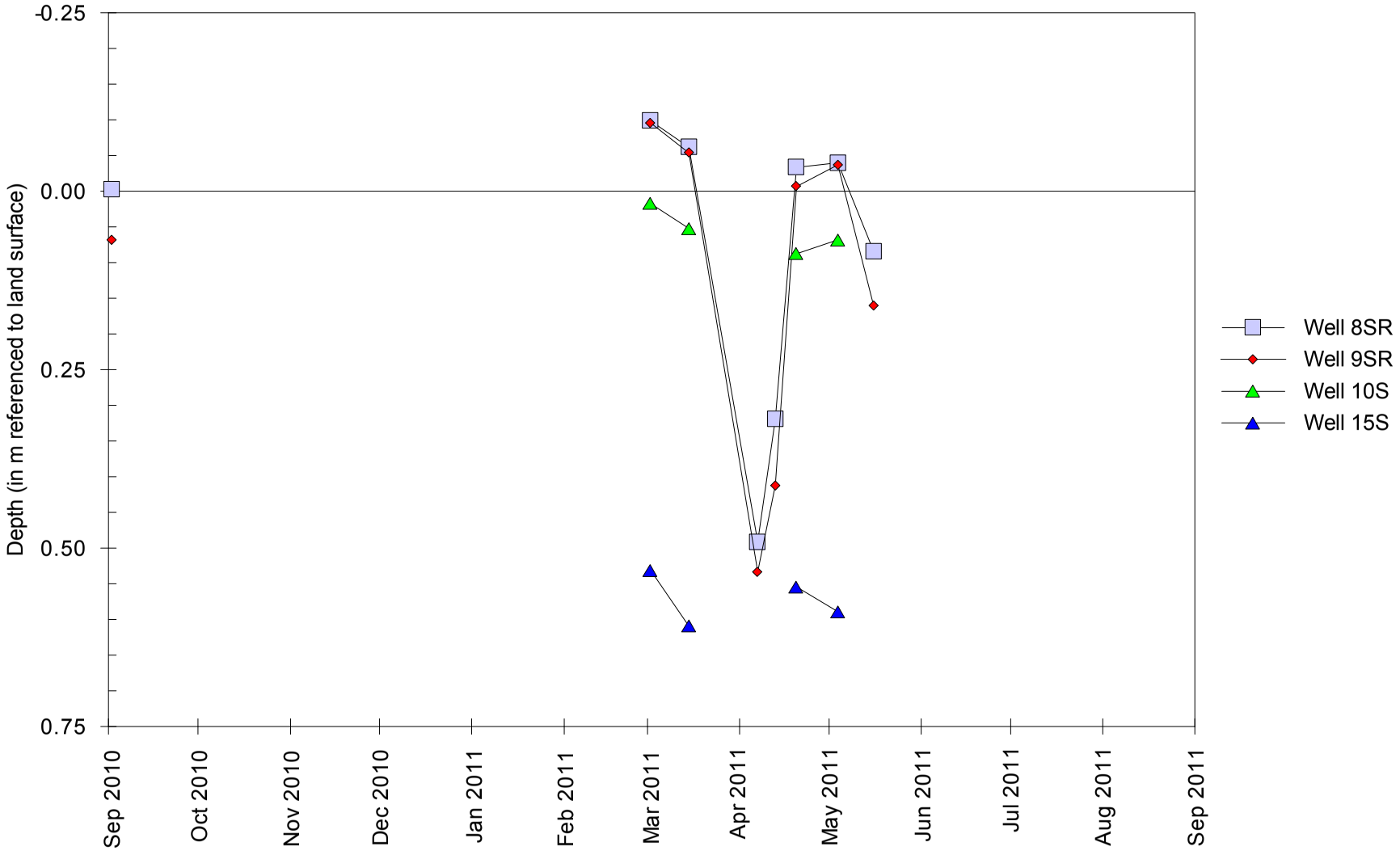
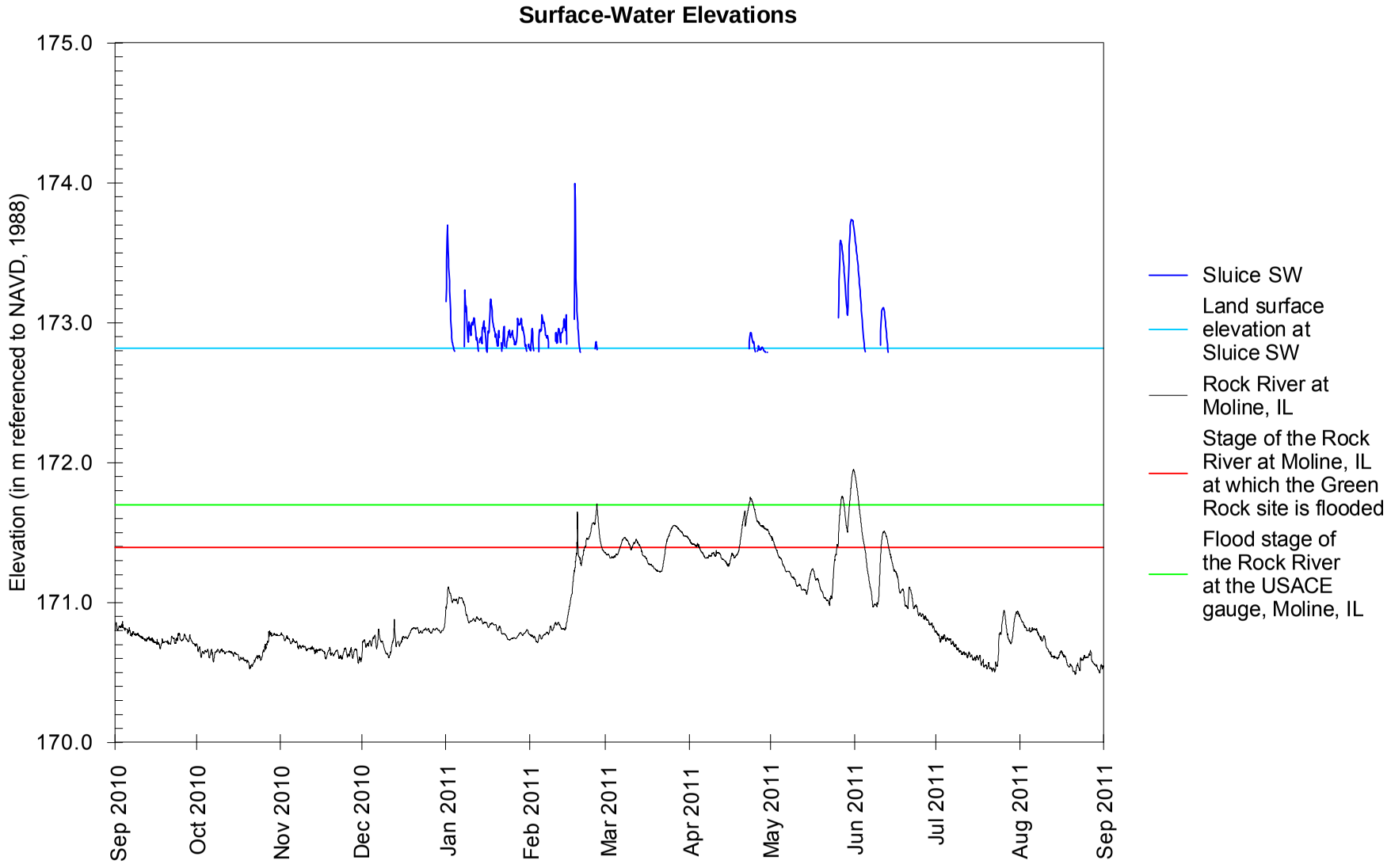
Depth to Groundwater in Monitoring Wells Adjacent to Phase II

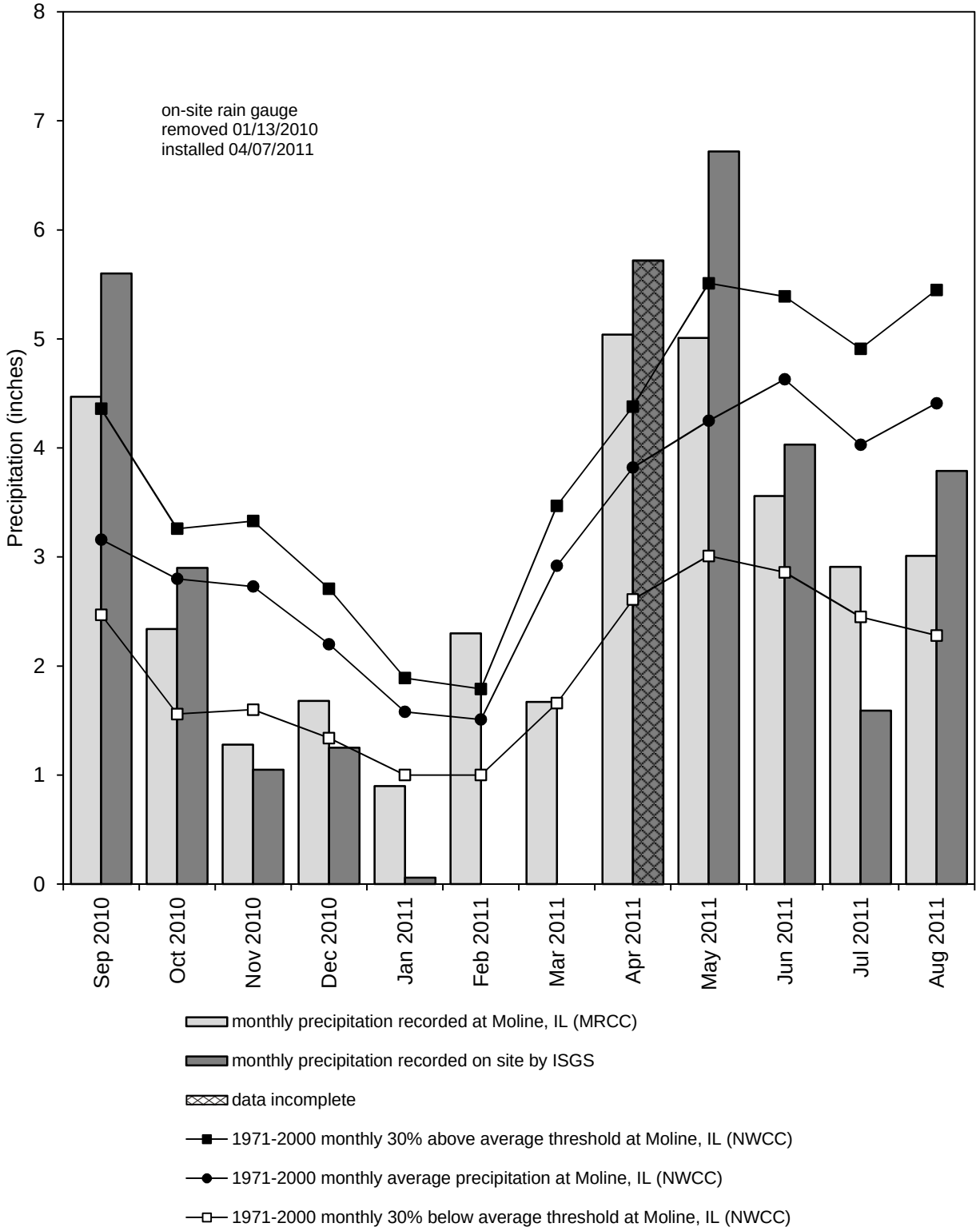


Milan Beltway, Green Rock Wetland Mitigation Site
September 1, 2010 through August 31, 2011



Milan Beltway, Green Rock Wetland Mitigation Site
September 2010 through August 2011

Total Monthly Precipitation Recorded on Site and at the Quad City International Airport, Moline, IL



Graph last updated 10/31/2011