HANCOCK COUNTY NEAR CARTHAGE **ISGS #42**
WETLAND MITIGATION SITE
US 136
FAP 315 & FAP 10
Sequence #235
Hancock County, near Carthage, Illinois
Primary Project Manager: Steven E. Benton
Secondary Project Manager: Kathleen E. Bryant

SITE HISTORY

- March 1997: The ISGS was tasked by IDOT to monitor the site.
- August 2004: A Level II hydrogeologic characterization report was submitted to IDOT (ISGS Open-File Series 2004–13).
- July 2006: Wetland and highway construction began.
- November 2006: The ISGS was tasked by IDOT to perform post-construction monitoring.
- July 2007: Tree planting was completed.

WETLAND HYDROLOGY CALCULATION FOR 2010

The area of the site that satisfied wetland hydrology criteria (Environmental Laboratory 1987) in 2010 for more than 5% of the growing season was estimated to be 15.1 ha (37.4 ac) out of an area of 18.7 ha (46.1 ac). The area of the site that satisfied wetland hydrology criteria for more than 12.5% of the growing season was estimated to be 14.2 ha (35.0 ac). Using the 2010 Midwest Region supplement (U.S. Army Corps of Engineers 2010) to the 1987 Manual, we estimate that 15.0 ha (37.2 ac) satisfied wetland hydrology criteria for 14 or more consecutive days during the growing season. These estimates are based on the following factors:

- According to the MRCC, the median date that the growing season begins at the La Harpe, Illinois, weather station is April 9 and the season lasts 196 days; 5% of the growing season is 10 days and 12.5% of the growing season is 25 days. According to methods outlined in the 2010 Midwest Region supplement, we estimate that March 17 was the starting date of the 2010 growing season based on soil temperatures observed at the wetland mitigation site.
- Total precipitation recorded at Bentley, Illinois weather station during the monitoring period was 173% of normal and during Spring 2010 (March through May) it was 147% of normal. On-site precipitation in the spring was 151% of normal and the largest areas of jurisdictional wetland hydrology for all three criteria occurred during this period.
- In 2010, water levels measured in all of the soil-zone monitoring wells except 19SR, 20S, 21S, and 37S satisfied wetland hydrology criteria for more than 5% of the growing season. Water levels measured in all of the soil-zone monitoring wells except 7S, 11S, 19SR, 20S, 21S, 30S, 33S, and 37S satisfied wetland hydrology criteria for more than 12.5% of the growing season. Water levels measured in all of the soil-zone monitoring wells except 19SR, 20S, 21S, 30S, and 37S satisfied wetland hydrology criteria for 14 or

more consecutive days during the growing season as per the 2010 Midwest Region supplement.

- Surface-water elevations recorded at the gauge B data logger reveal that areas of the site at and below 165.68 m (543.60 ft) were inundated long enough to satisfy wetland hydrology criteria for more than 5% of the growing season, and that areas at and below 165.69 m (543.30 ft) were inundated long enough to satisfy wetland hydrology criteria for more than 12.5% of the growing season. Areas of the site at and below an elevation of 165.64 m (543.46 ft) were inundated for 14 or more consecutive days during the growing season as per the 2010 Midwest Region supplement.

- Surface-water elevations recorded at the gauge E data logger reveal that areas adjacent to the drainage ditch at and below 165.58 m (543.27 ft) were inundated long enough to satisfy wetland hydrology criteria for more than 5% of the growing season, and areas at and below 165.49 m (542.97 ft) were inundated long enough to satisfy wetland hydrology criteria for more than 12.5% of the growing season. Areas at and below 165.58 m (543.27 ft) were inundated for 14 or more consecutive days during the growing season per the 2010 Midwest Region supplement.

ADDITIONAL INFORMATION

- Evidence of flooding on the site was observed as far west as monitoring wells 11S and 16S on May 24 and again on July 12, indicating that up to 90% of the site was inundated. The U.S. Geological Survey gauge at Colmar, Illinois, recorded a flood event in May that began on May 13 and ended on May 20, and a flood event in July that began on July 8 and ended on July 10. Peak stage for the May event was 7.15 m (23.46 ft) at 1:00 on May 15 which was 1.05 m (3.46 ft) above flood stage. Peak stage for the July event was 6.49 m (21.31 ft) at 15:00 on July 8 which was 0.40 m (1.31 ft) above flood stage.

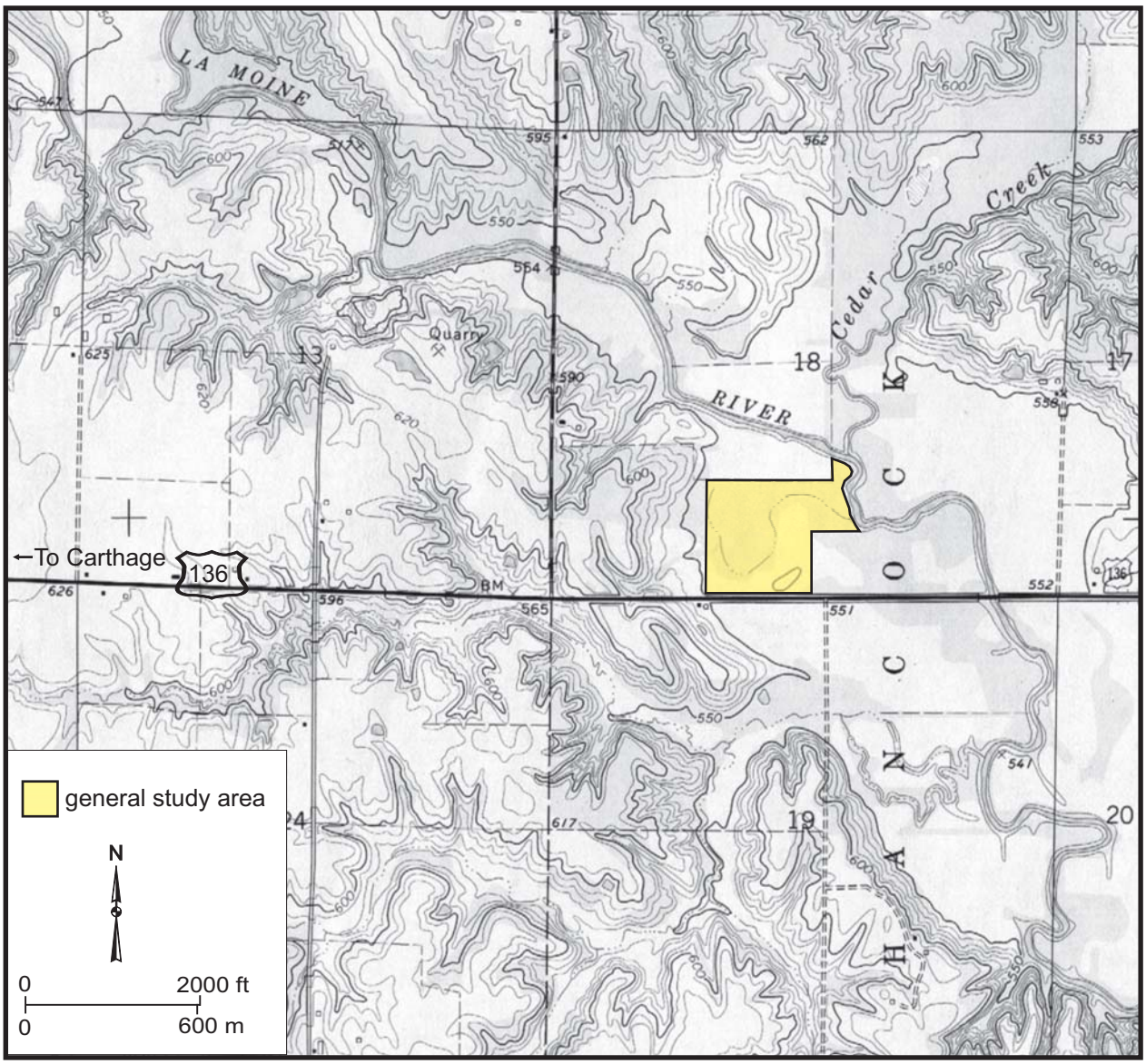
PLANNED FUTURE ACTIVITIES

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

Hancock County near Carthage
Wetland Mitigation Site
(FAP 315 and FAP 10)

General Study Area and Vicinity

from the USGS Topographic Series, Carthage East, IL, 7.5-minute Quadrangle (USGS 1974)
contour interval is 10 feet

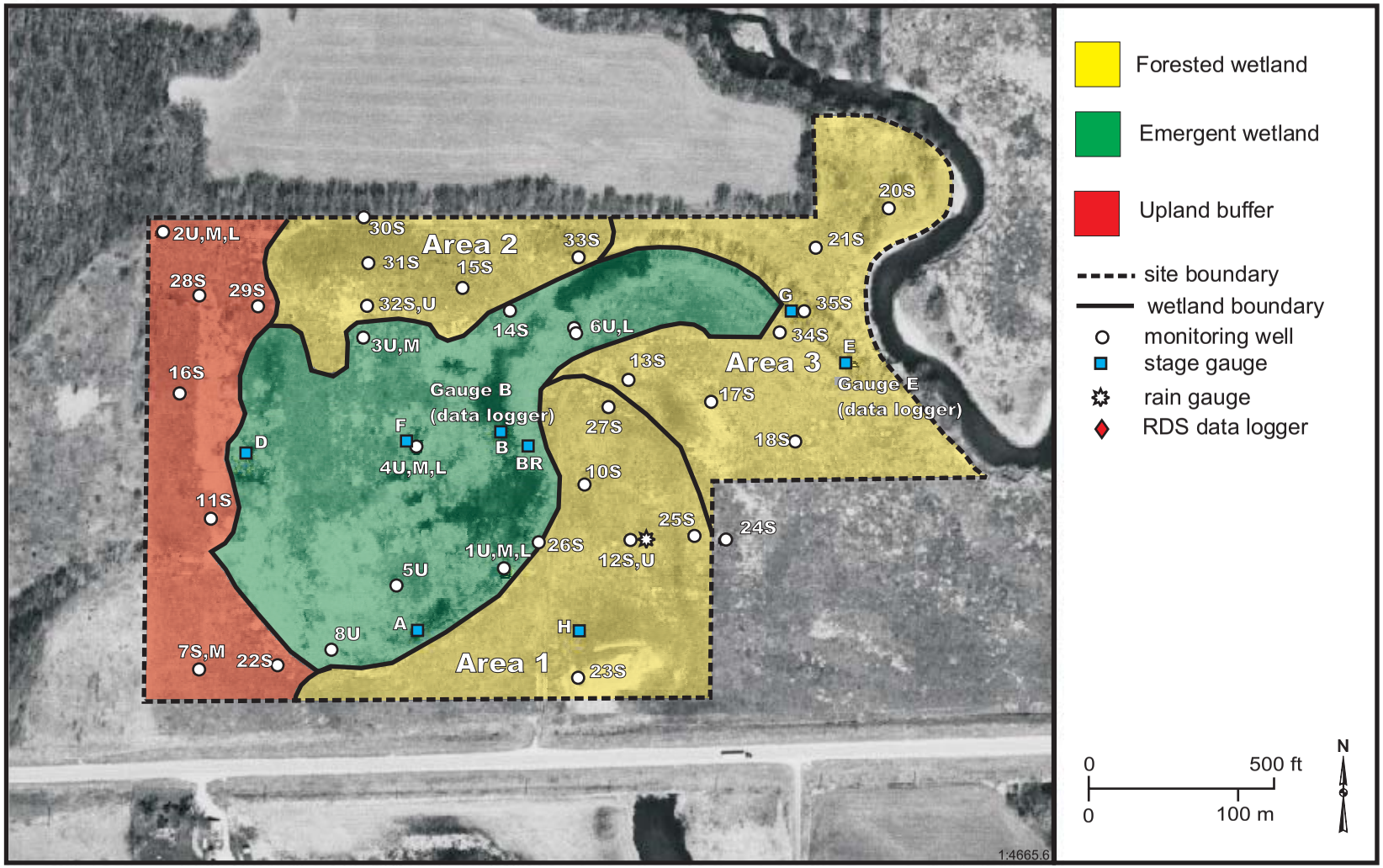


Hancock County near Carthage Wetland Mitigation Site (FAP 315 and FAP 10)

Wetland and Nonwetland Site Areas

based on IDOT as-built plans

Map based on USGS digital orthophotograph, Carthage East SE quarter quadrangle
produced from 2005 aerial photography (ISGS 2005)

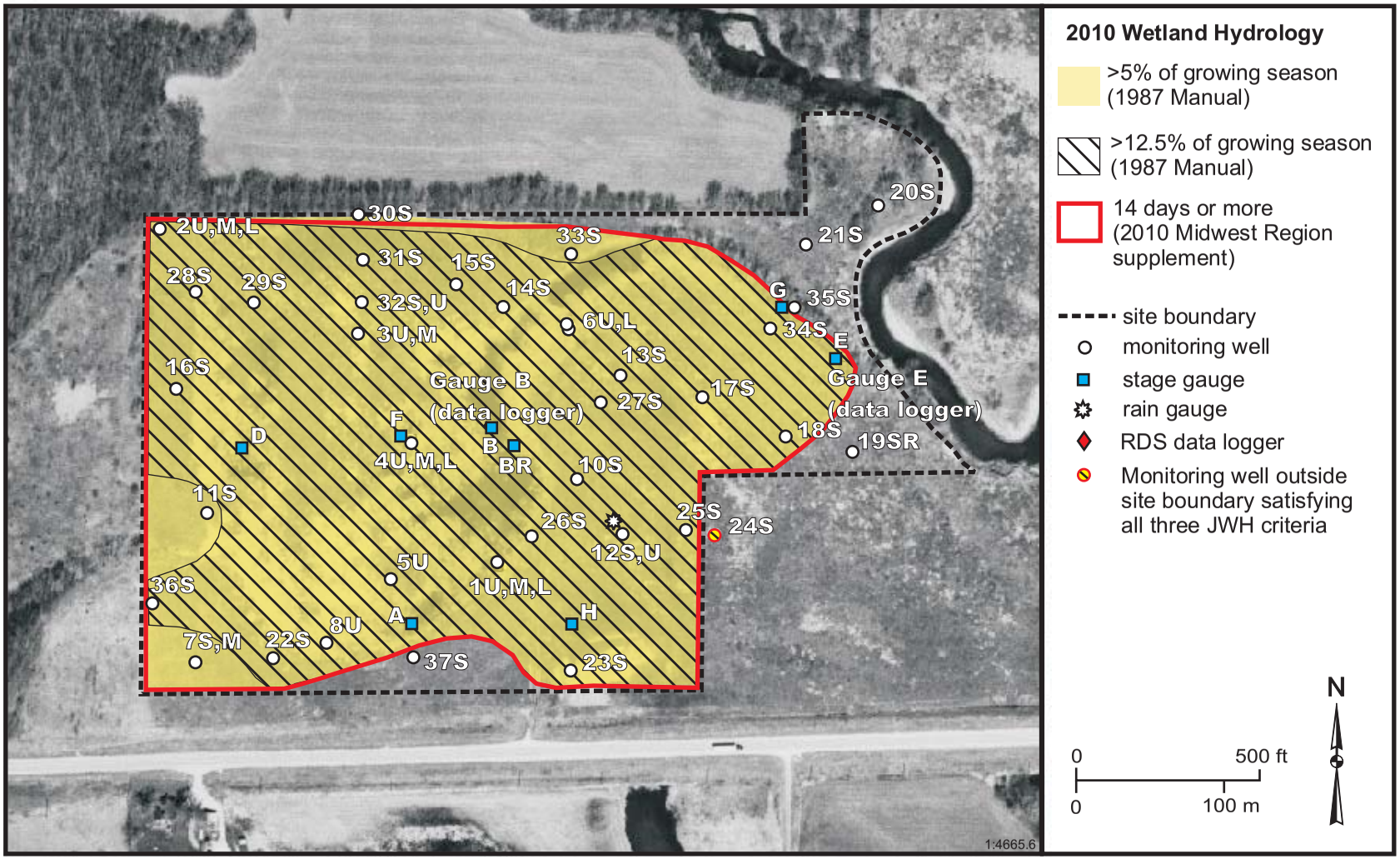


Hancock County near Carthage Wetland Mitigation Site (FAP 315 and FAP 10)

Estimated Areal Extent of 2010 Wetland Hydrology

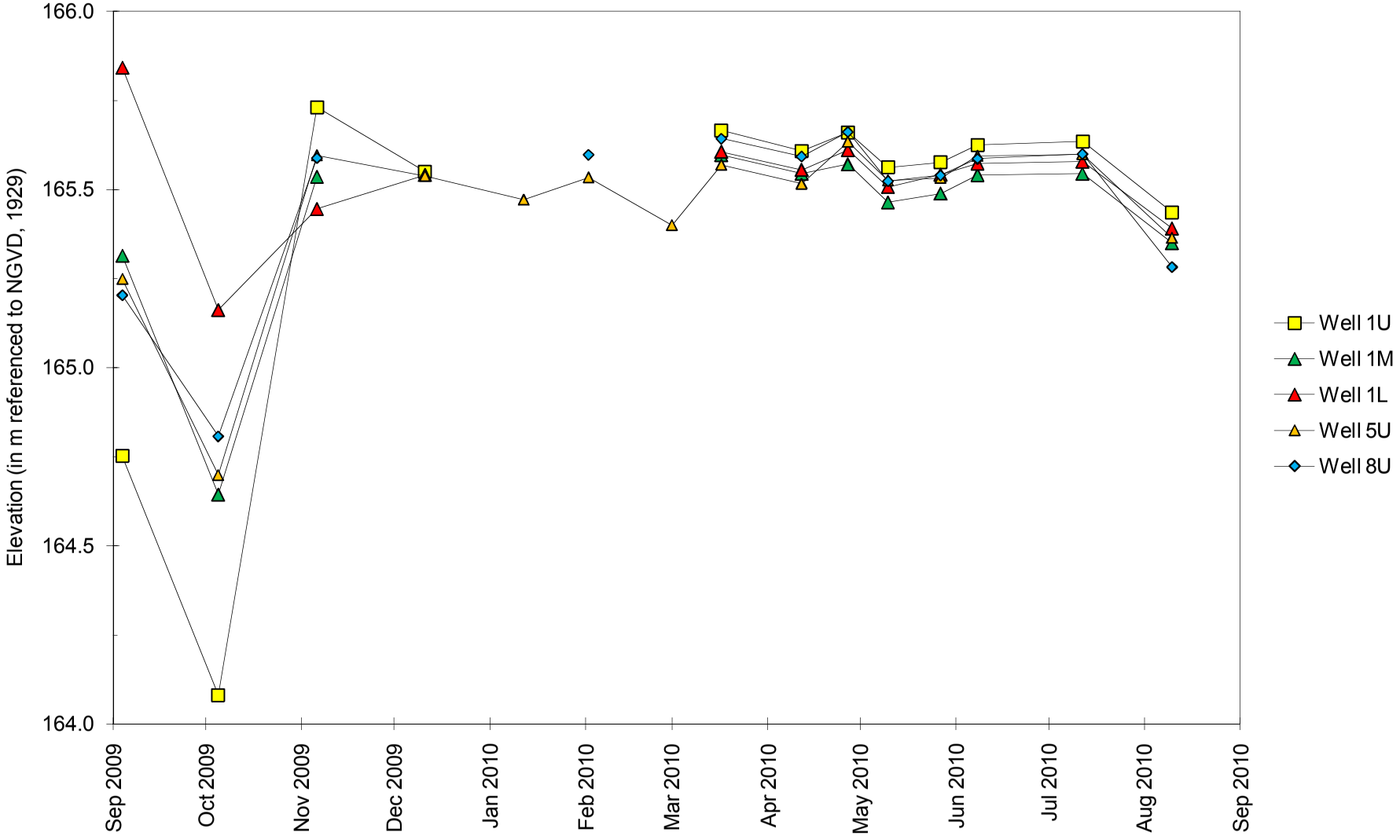
September 1, 2009 through August 31, 2010

Map based on USGS digital orthophotograph, Carthage East SE quarter quadrangle
produced from 2005 aerial photography (ISGS 2005)



Hancock County near Carthage Wetland Mitigation Site
September 1, 2009 through August 31, 2010

Water-Level Elevations in the Emergent Wetland Area



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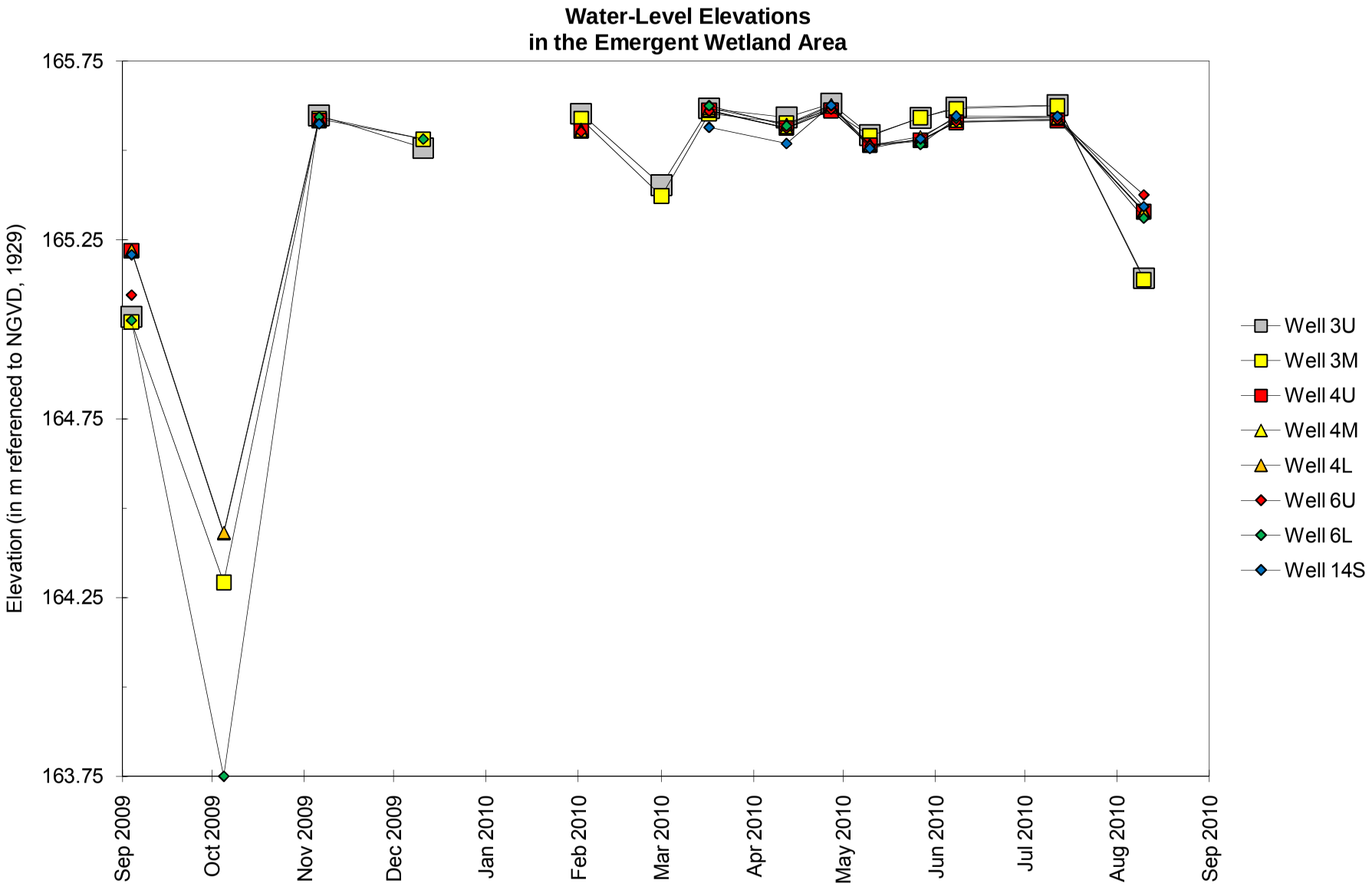

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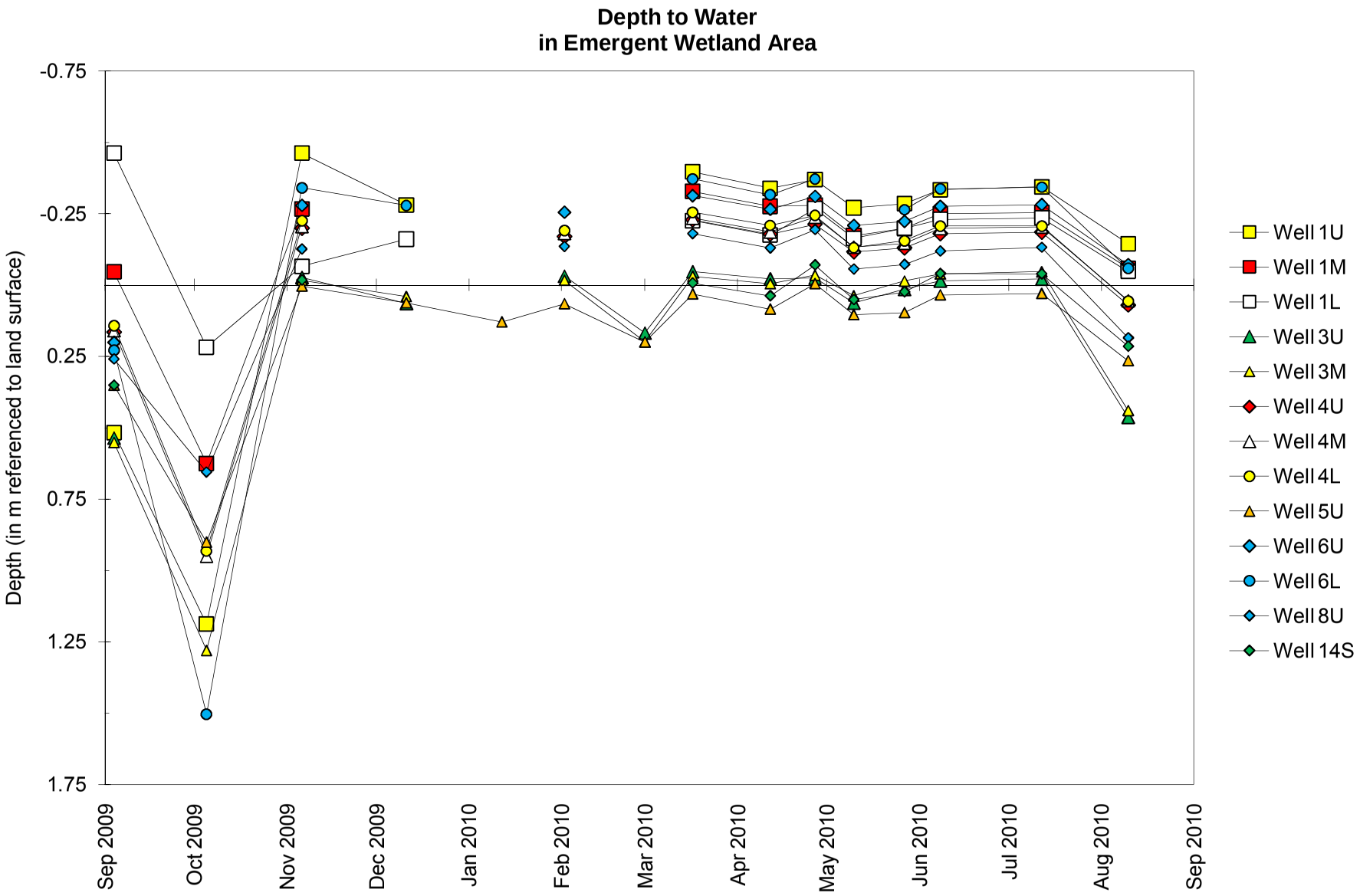

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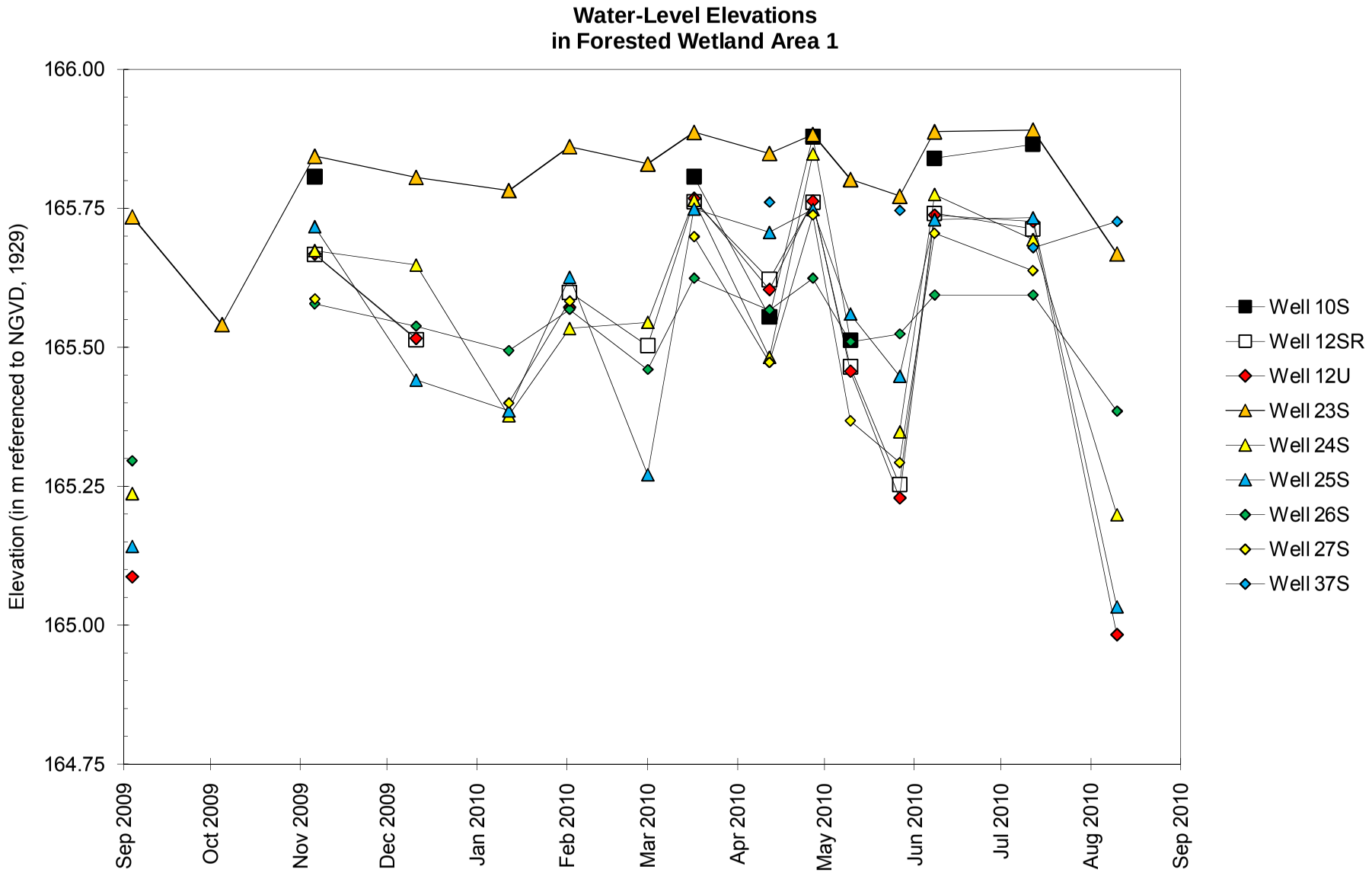

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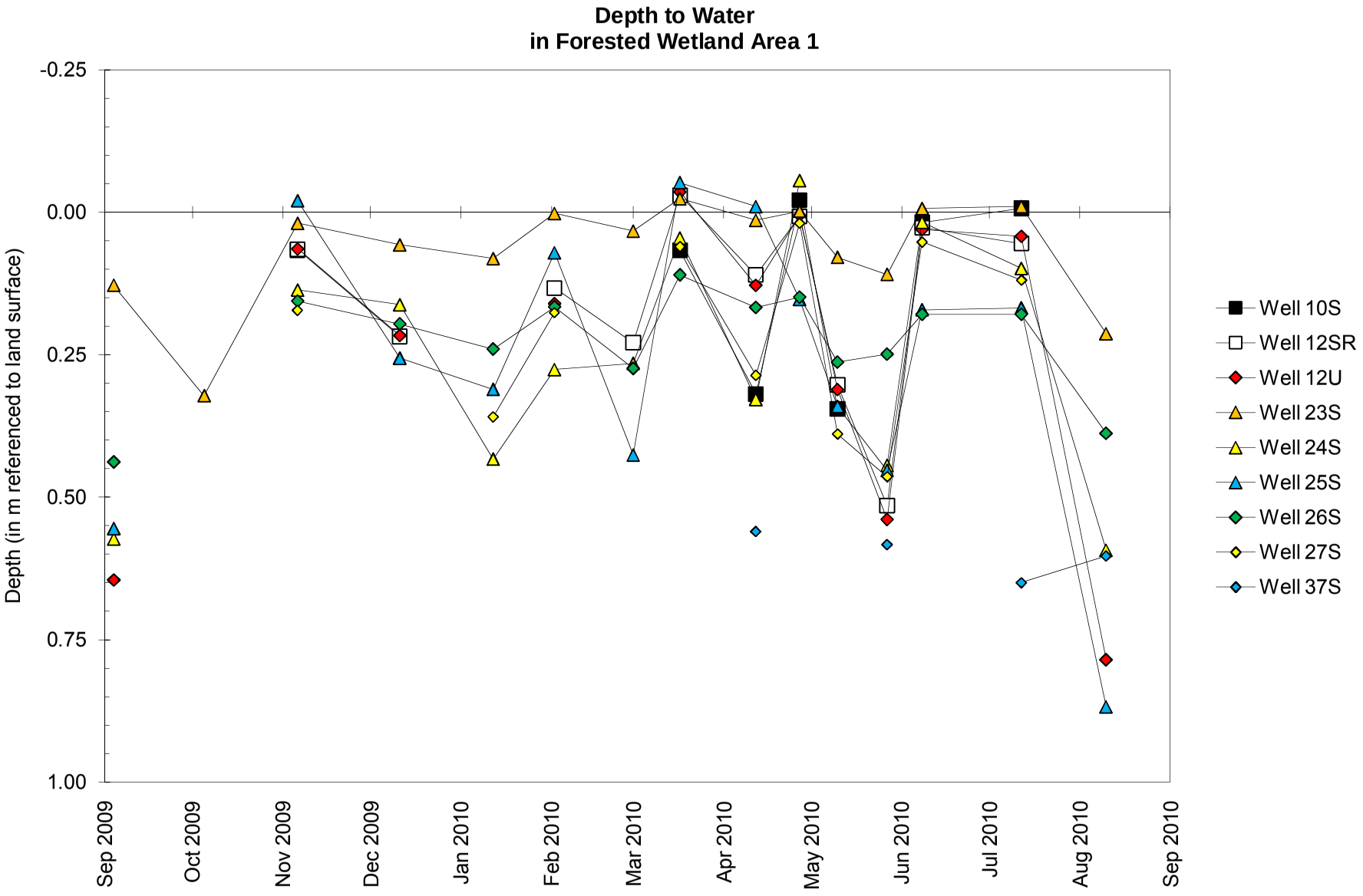

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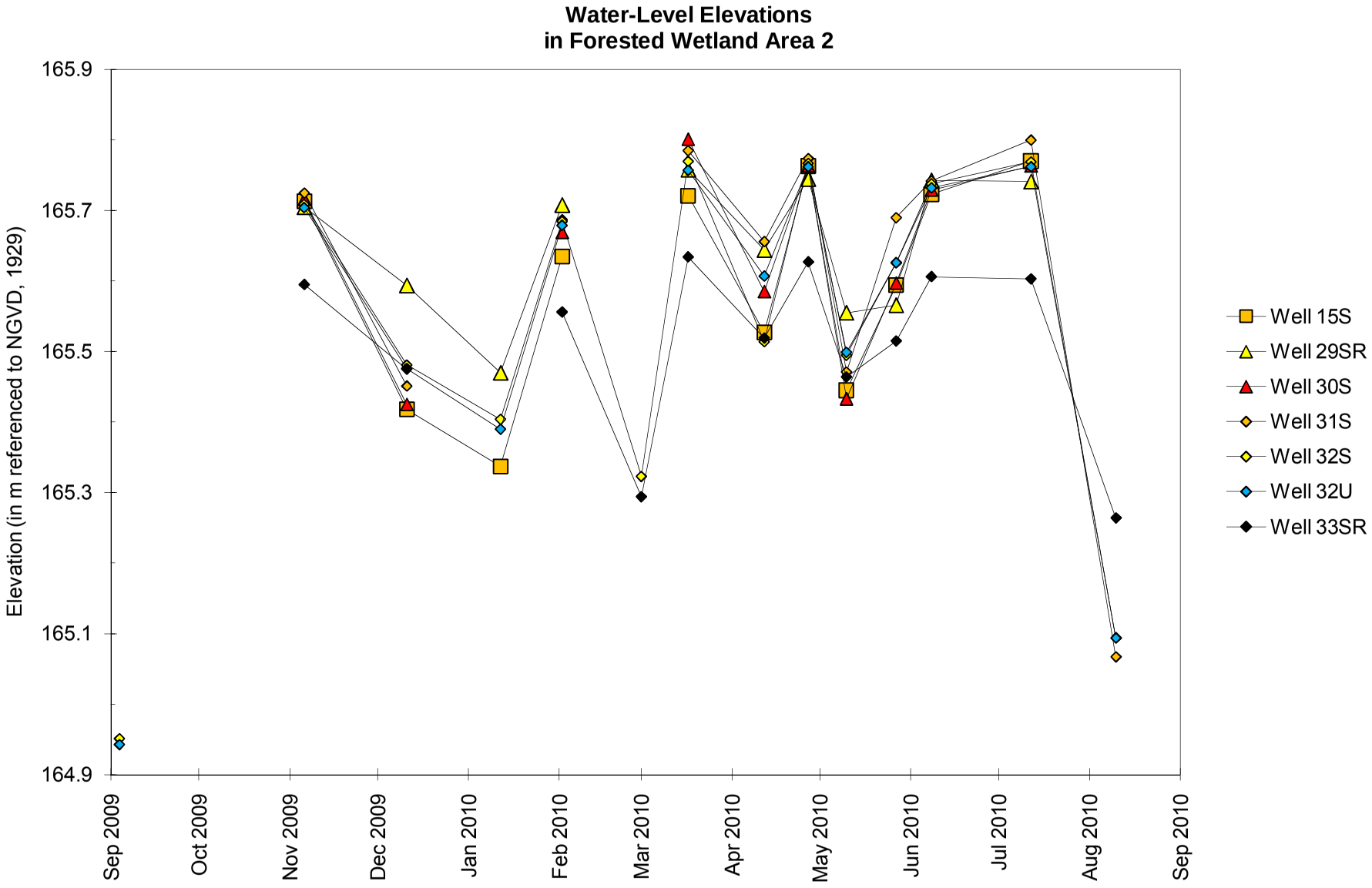

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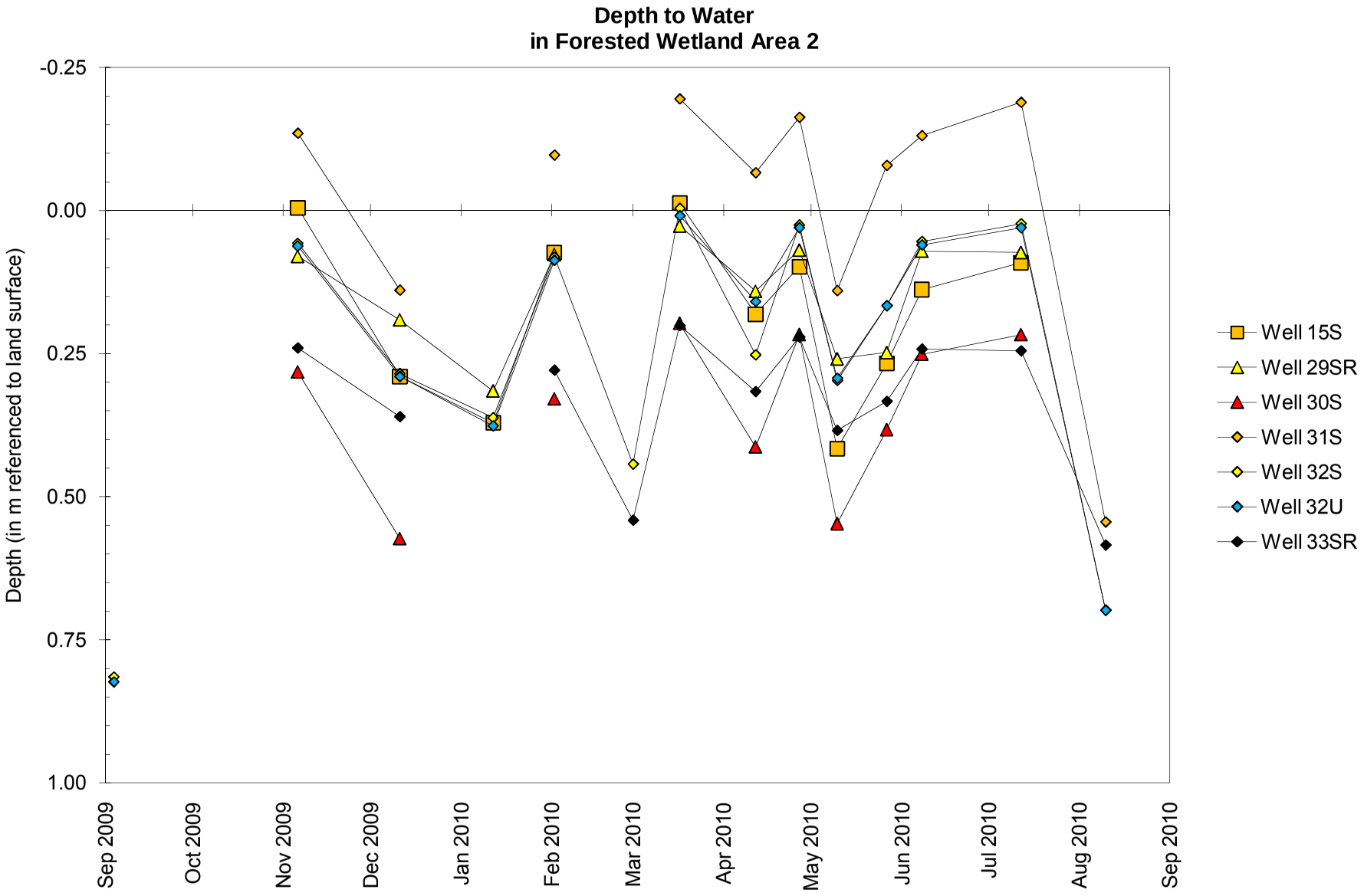

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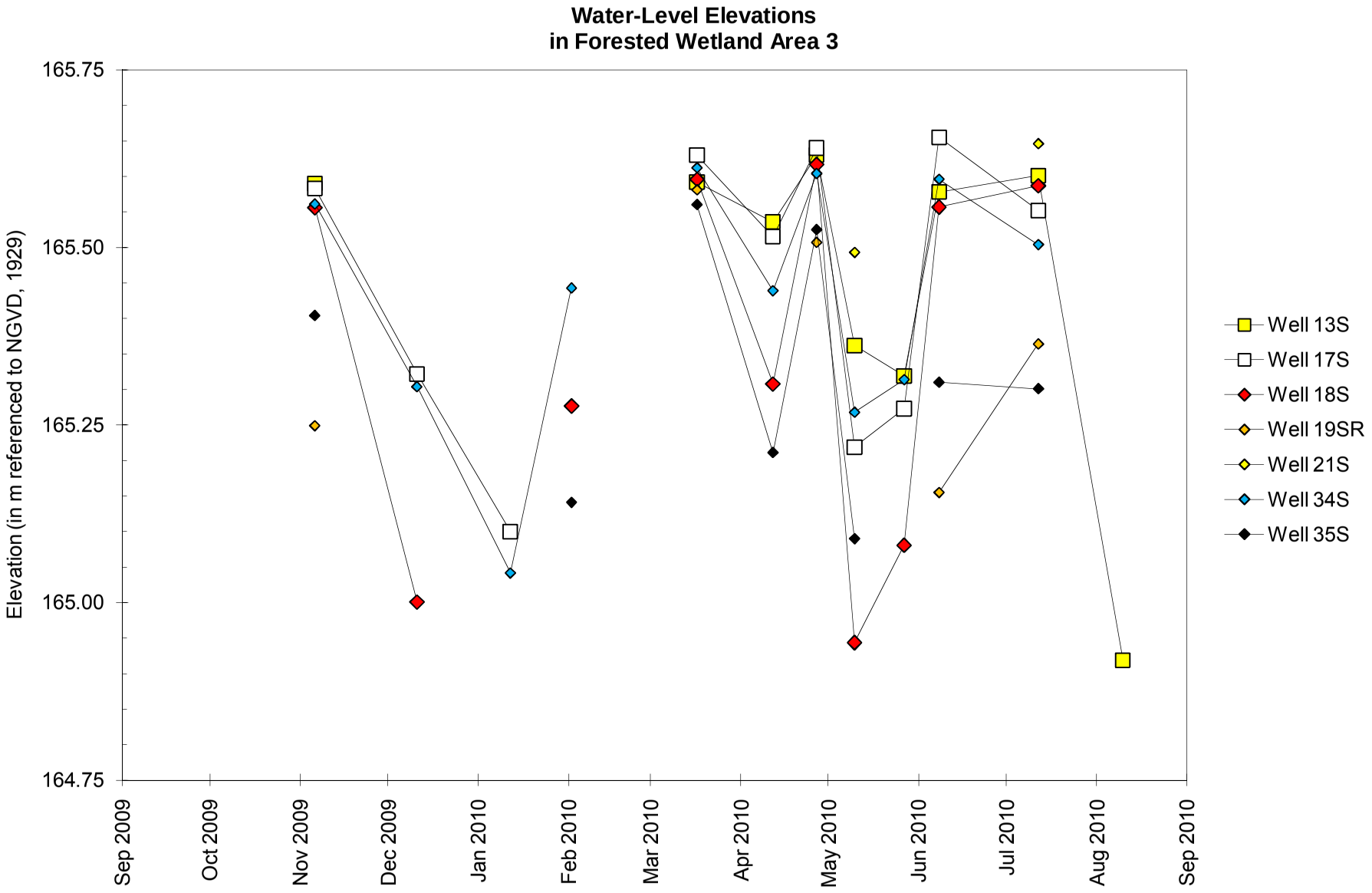

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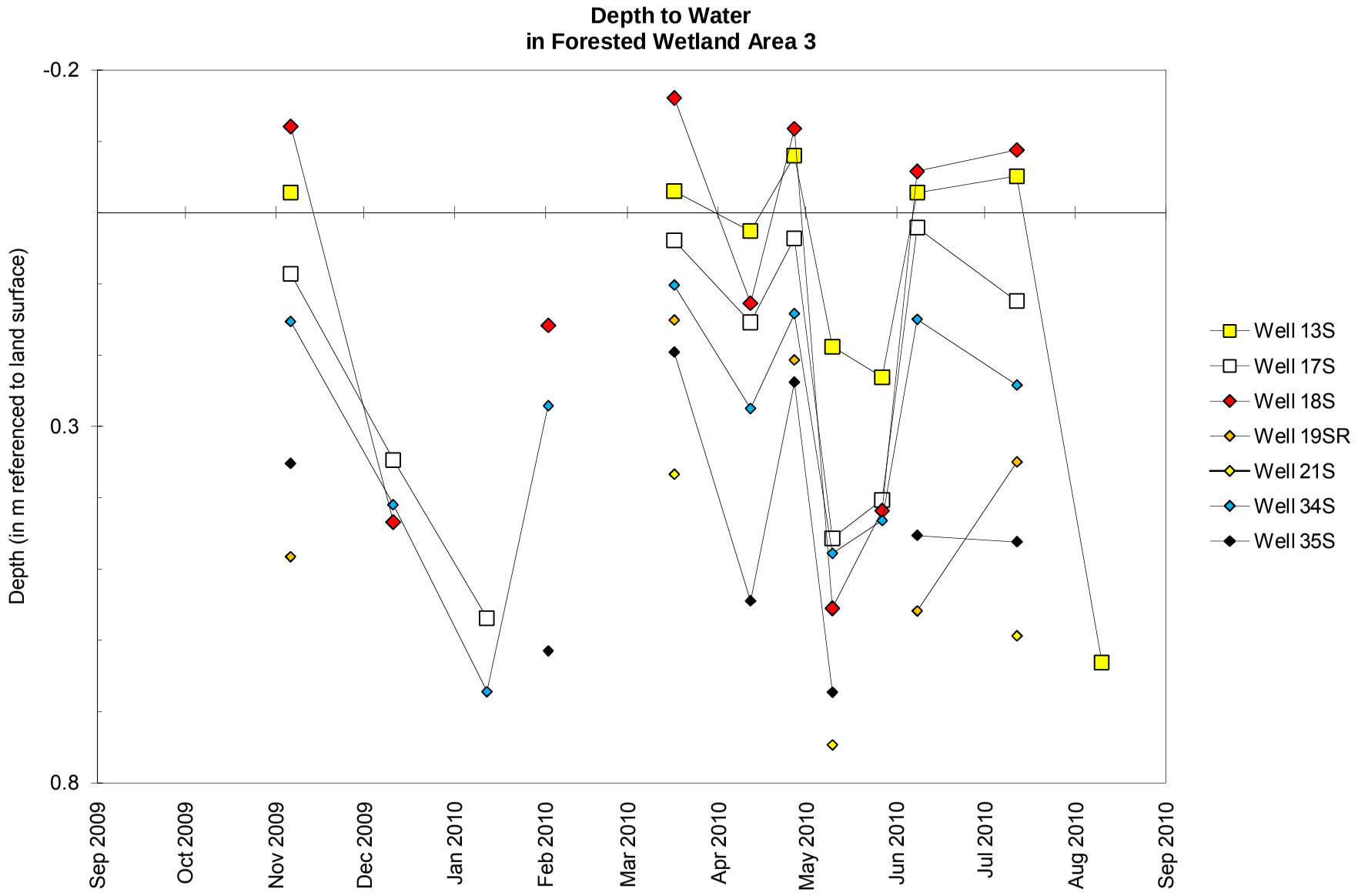

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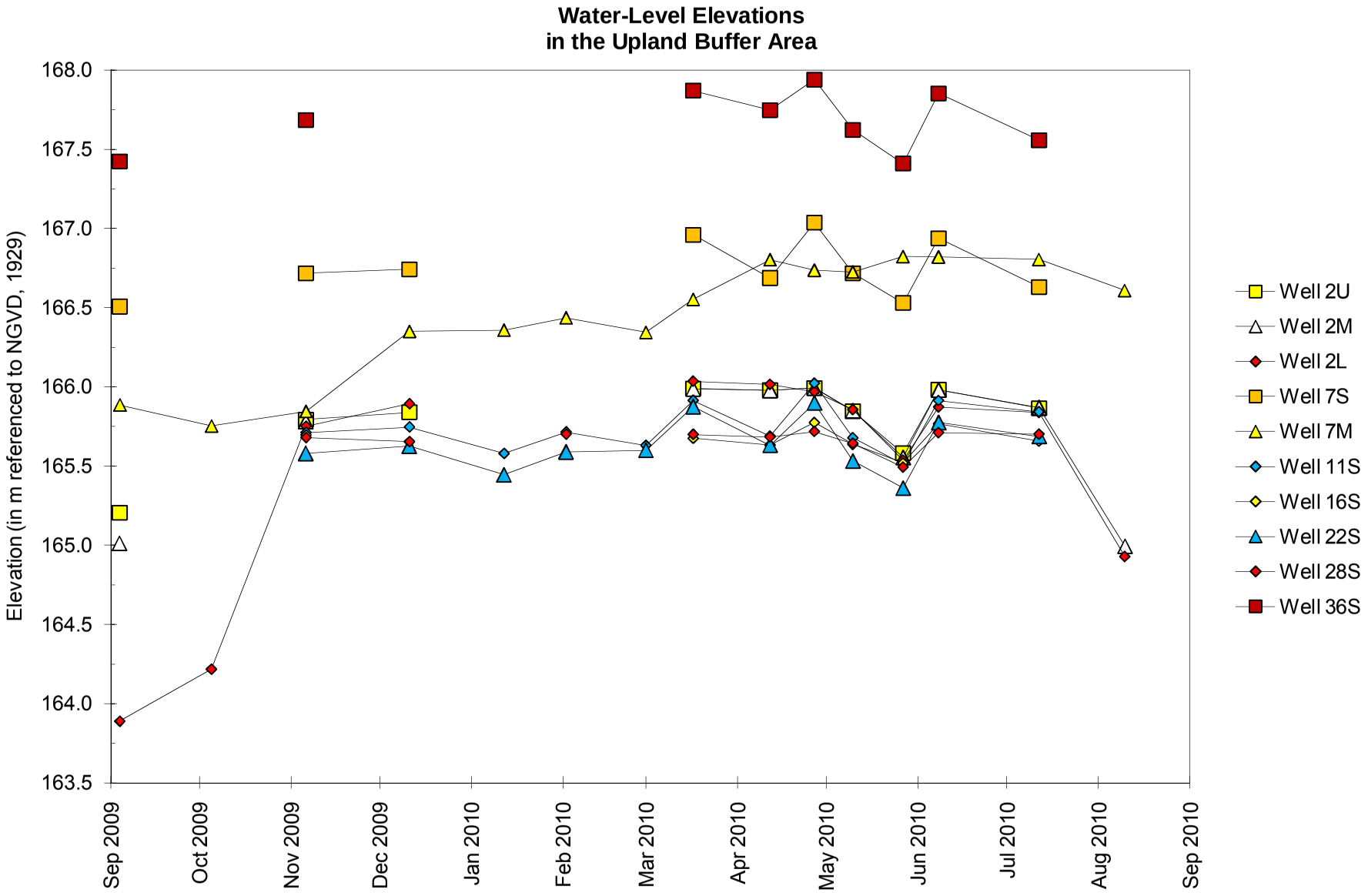

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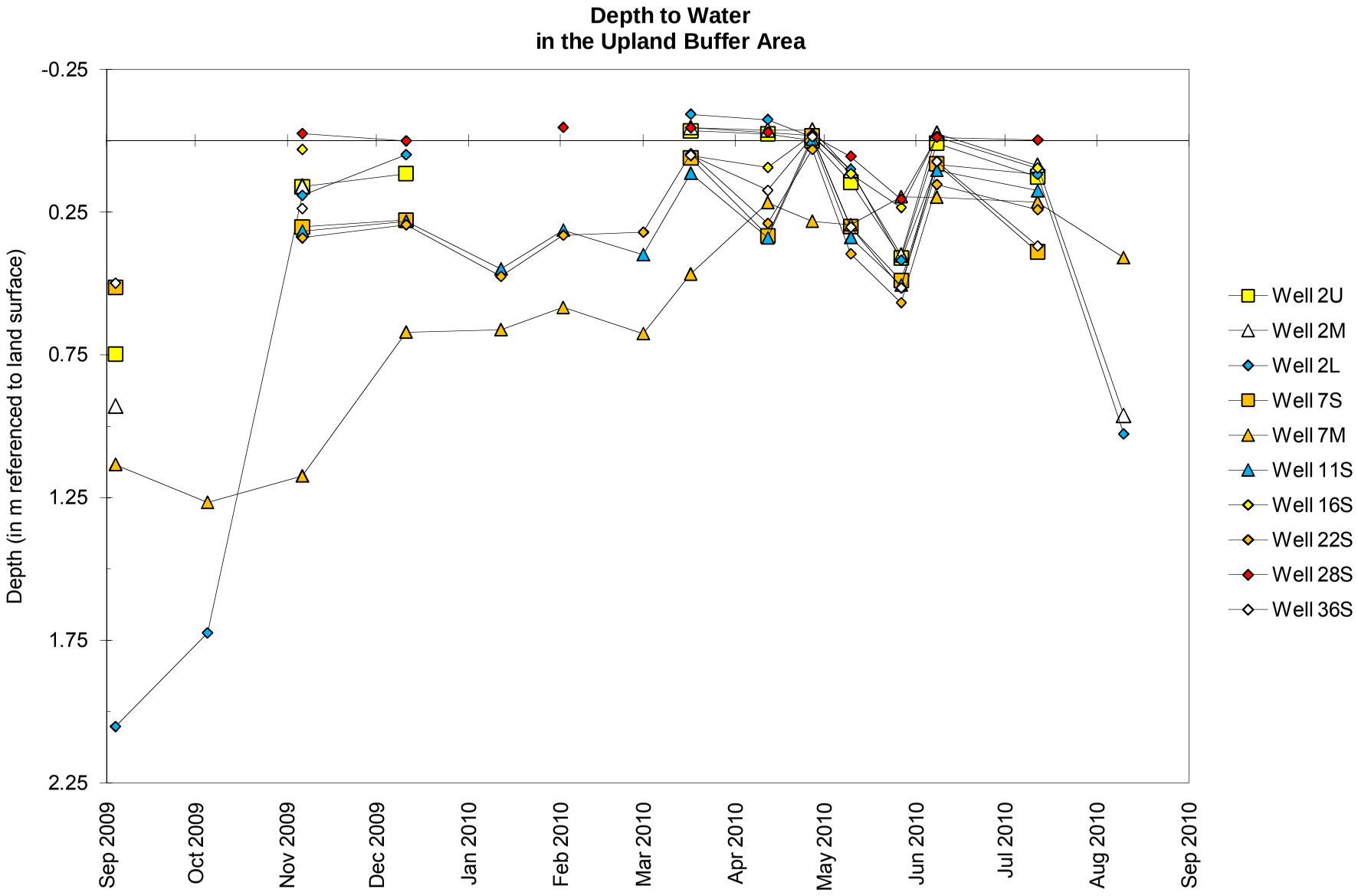

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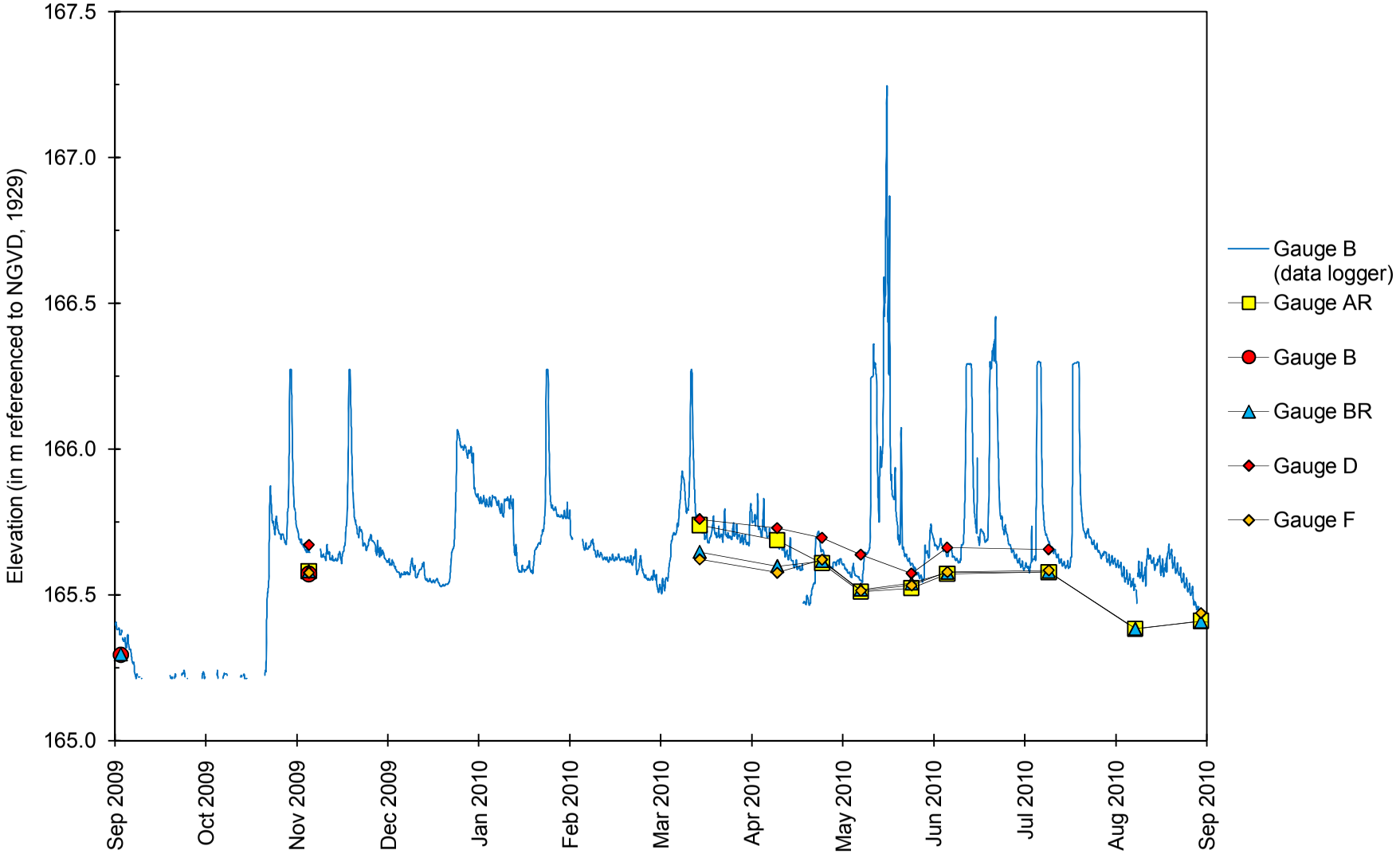
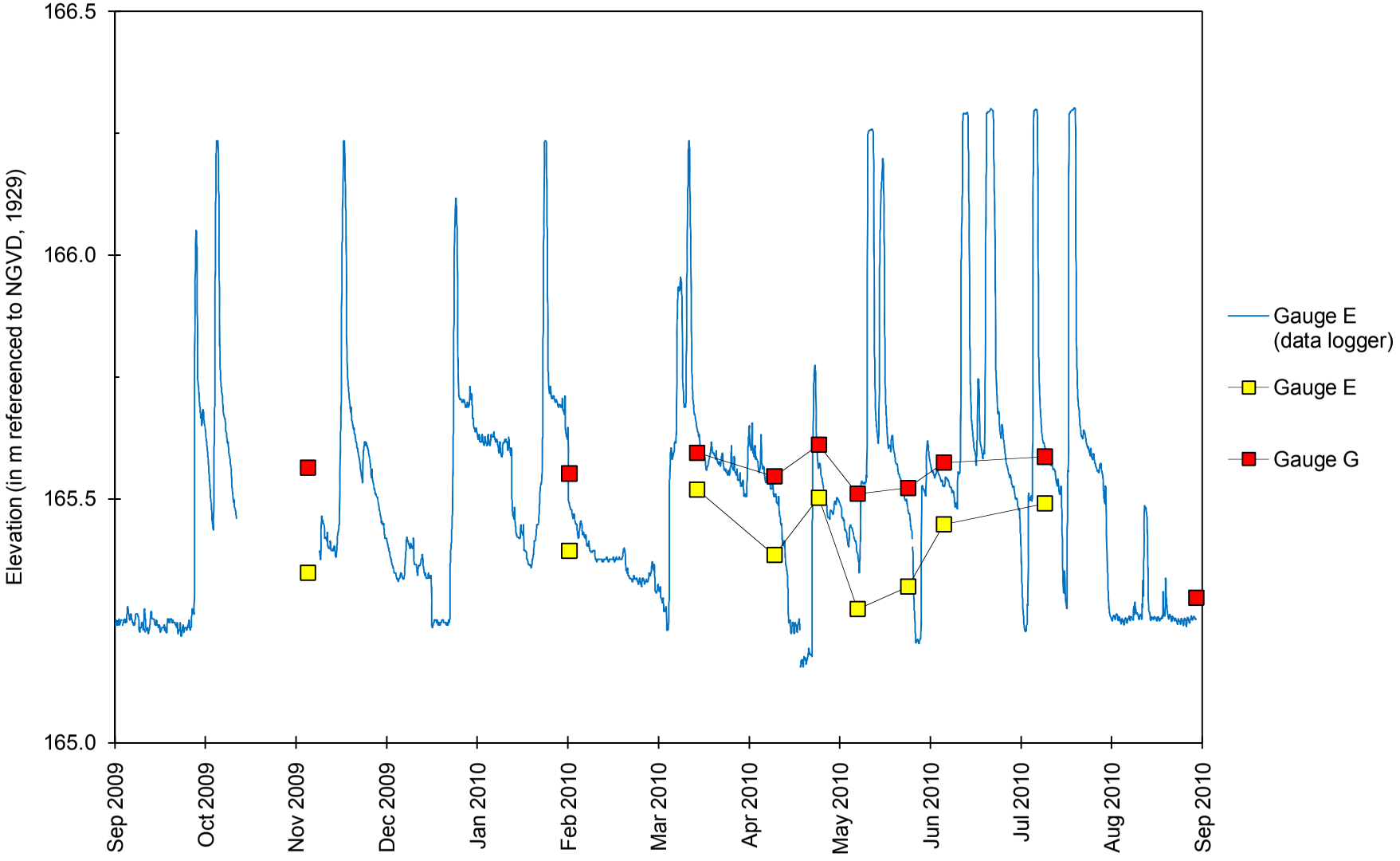
Water-Level Elevations at Stage Gauges in the Emergent Wetland Area



Hancock County near Carthage Wetland Mitigation Site

September 1, 2009 through August 31, 2010

Water-Level Elevations at Stage Gauges in the Drainage Ditch



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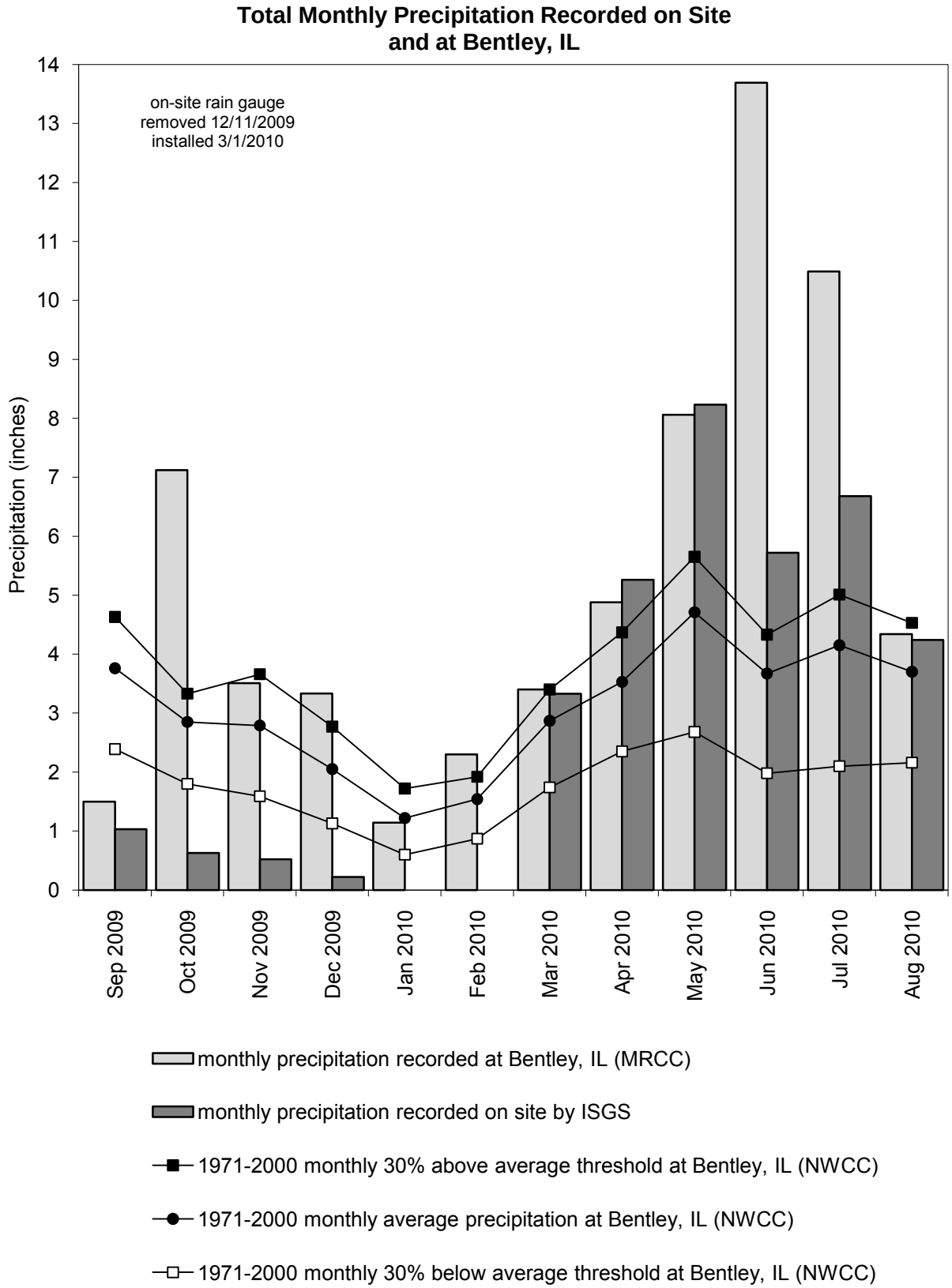

Graph last updated September 29, 2010