



1201 Oak Ridge Dr., Suite 250
Ft. Collins, CO 80525

May 28, 2010

Larry Martin
Hydrogeologist
970-225-3515

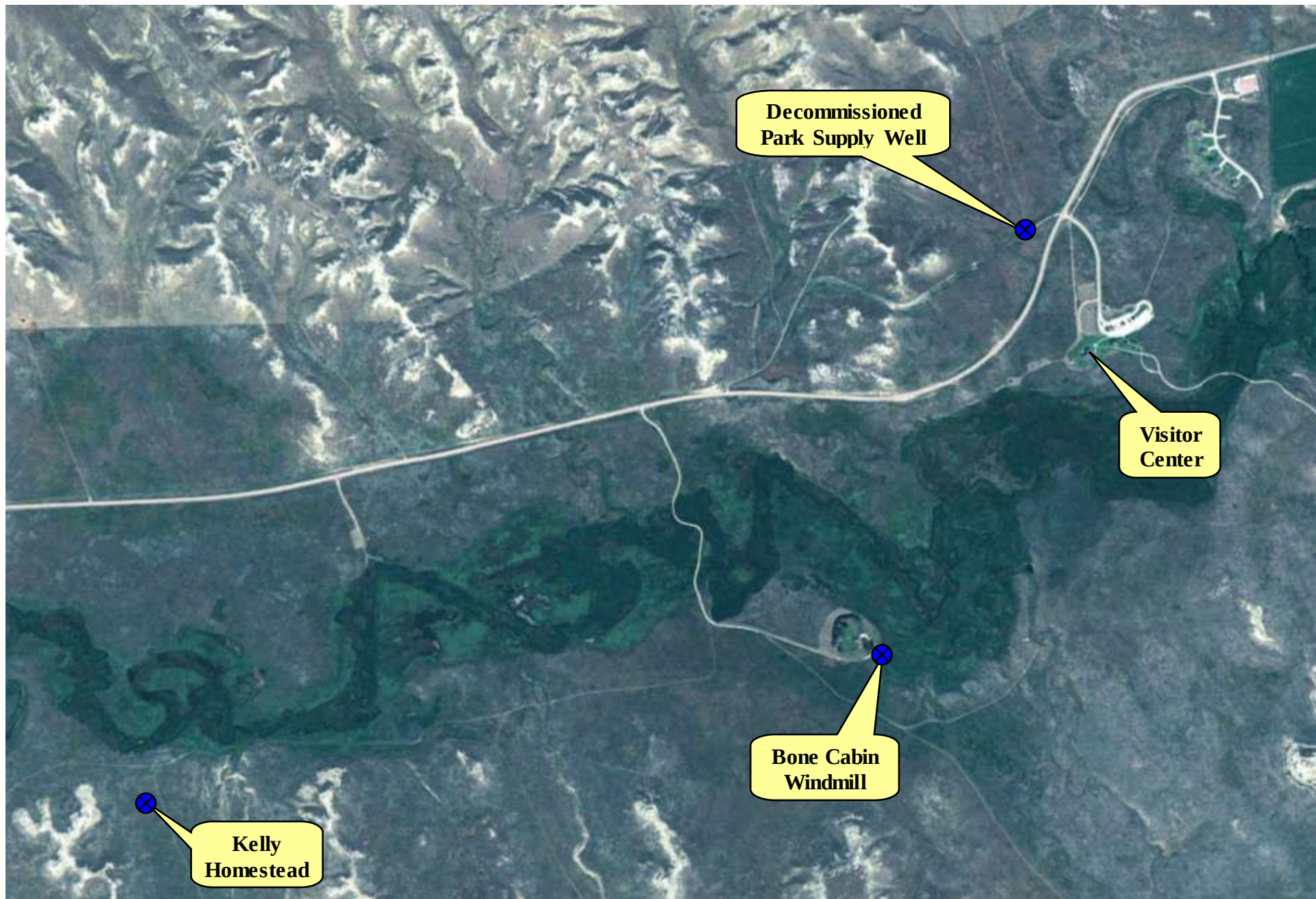
Summary of Groundwater Level Monitoring 2006-2010, Agate Fossil Beds National Monument

Dataloggers were installed in three wells at Agate Fossil Beds National Monument in October 2006. These dataloggers record pressure and temperature at half-hour intervals. The pressure readings are converted to depth to water. The monitoring wells are; the former water-supply well for the park, the windmill well at the Bone Cabin, and a well at the Kelly Homestead.

The wells all show the same annual pattern of water table fluctuation. The water table is highest in mid-May after infiltration of snowmelt and spring rains and prior to the start of growing season when plants begin to consume water by evapotranspiration. The water table reaches its lowest elevation around the end of August at the end of the growing season.

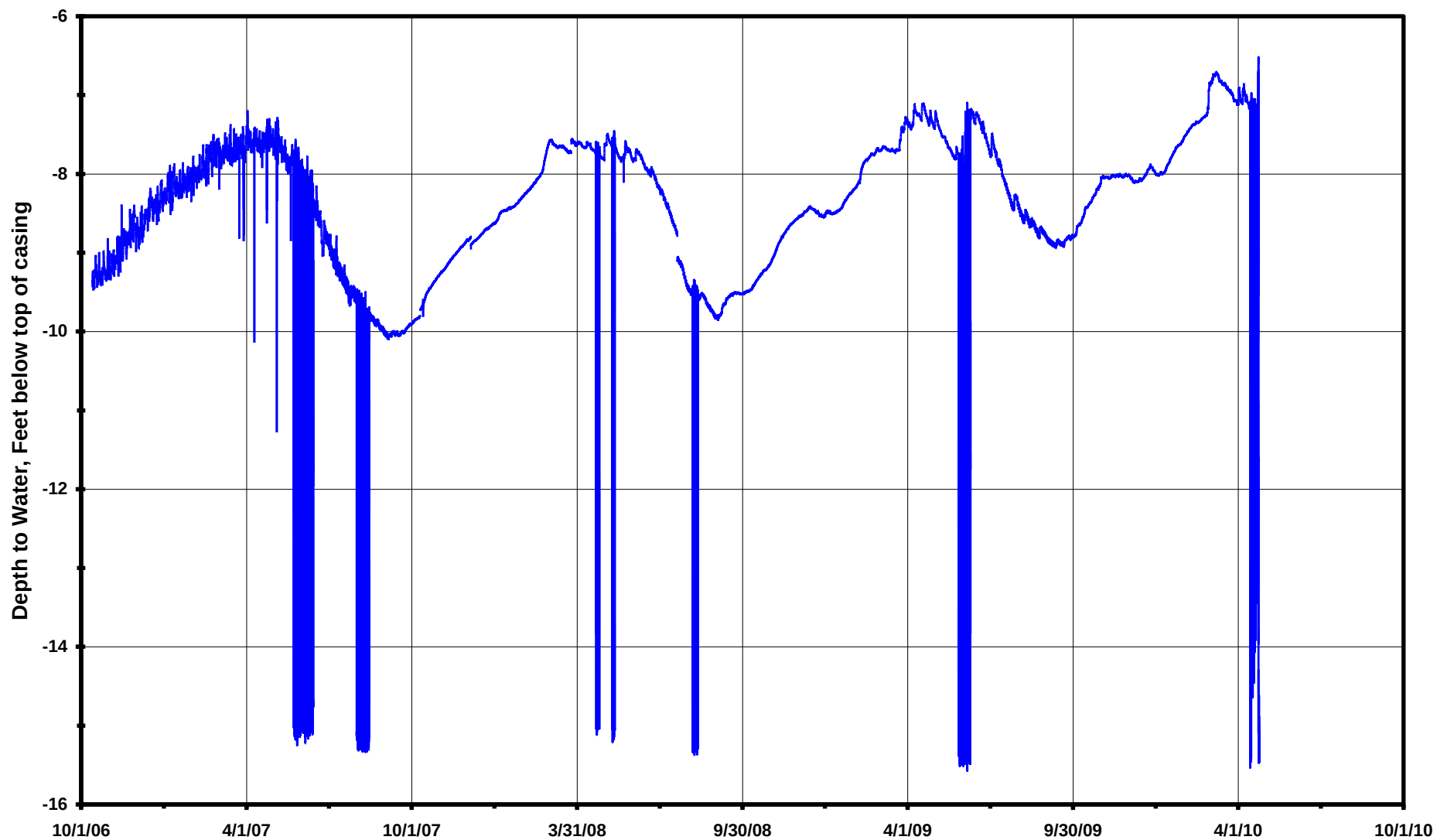
The hydrograph for the Bone Cabin Windmill is affected by pumping of the well. When the well is pumped, the water level is drawn down to about 15 feet below the top of the well casing. The other two wells are not pumped.

Water levels in all of the wells are higher in the Winter 2009 and Spring 2010 than they have been in the past. This is directly related to wetter than normal conditions. The Palmer Hydrologic Drought Index (PHDI) is a good indicator of wet or dry conditions. When the index is a positive number, it indicates wetter than normal conditions. Negative numbers indicate drought conditions. A graph of the PHDI for the Nebraska Panhandle is attached to this report, showing the strong positive trend since May 2009.

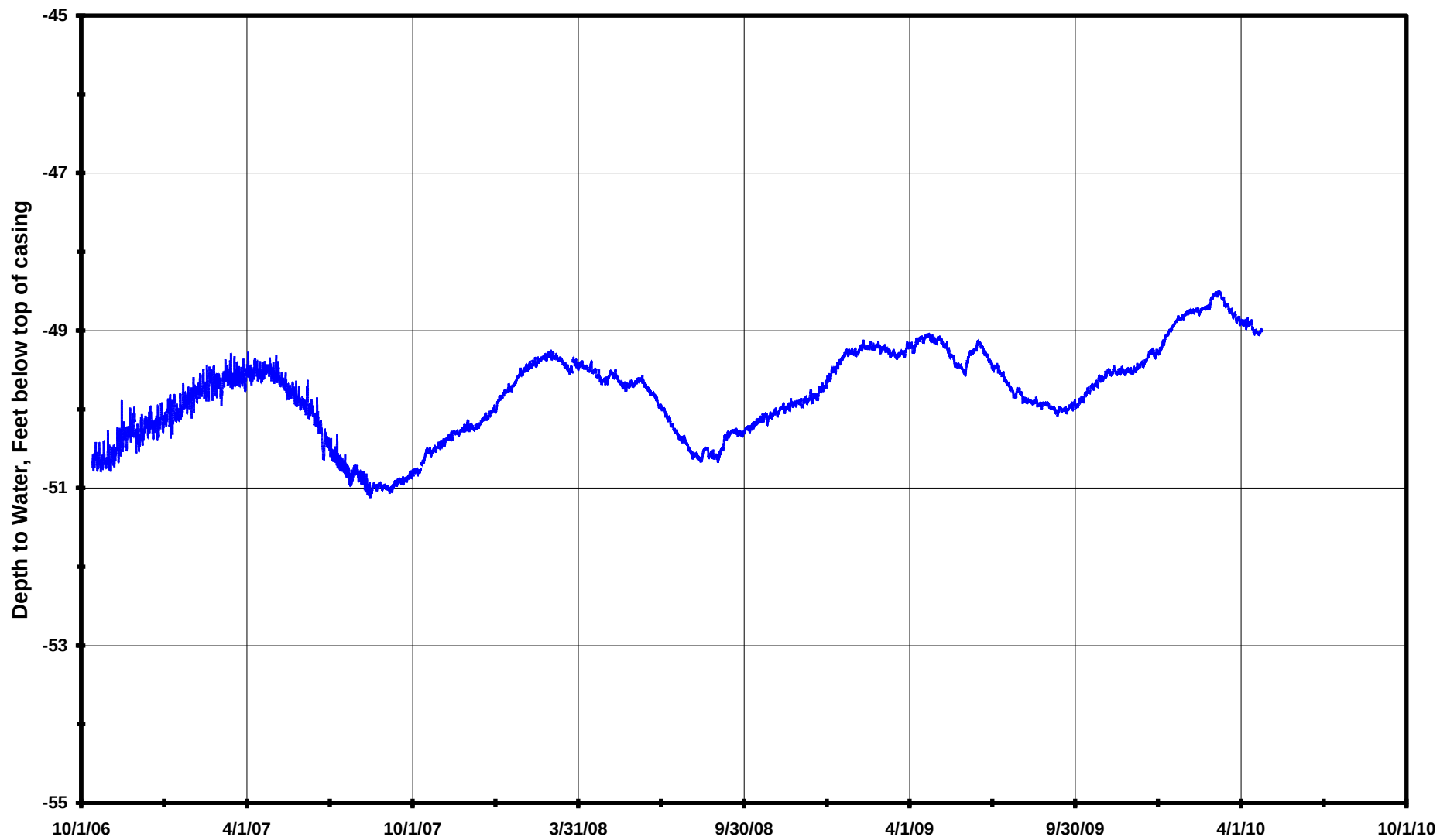


Locations of groundwater monitoring wells at Agate Fossil Beds National Monument

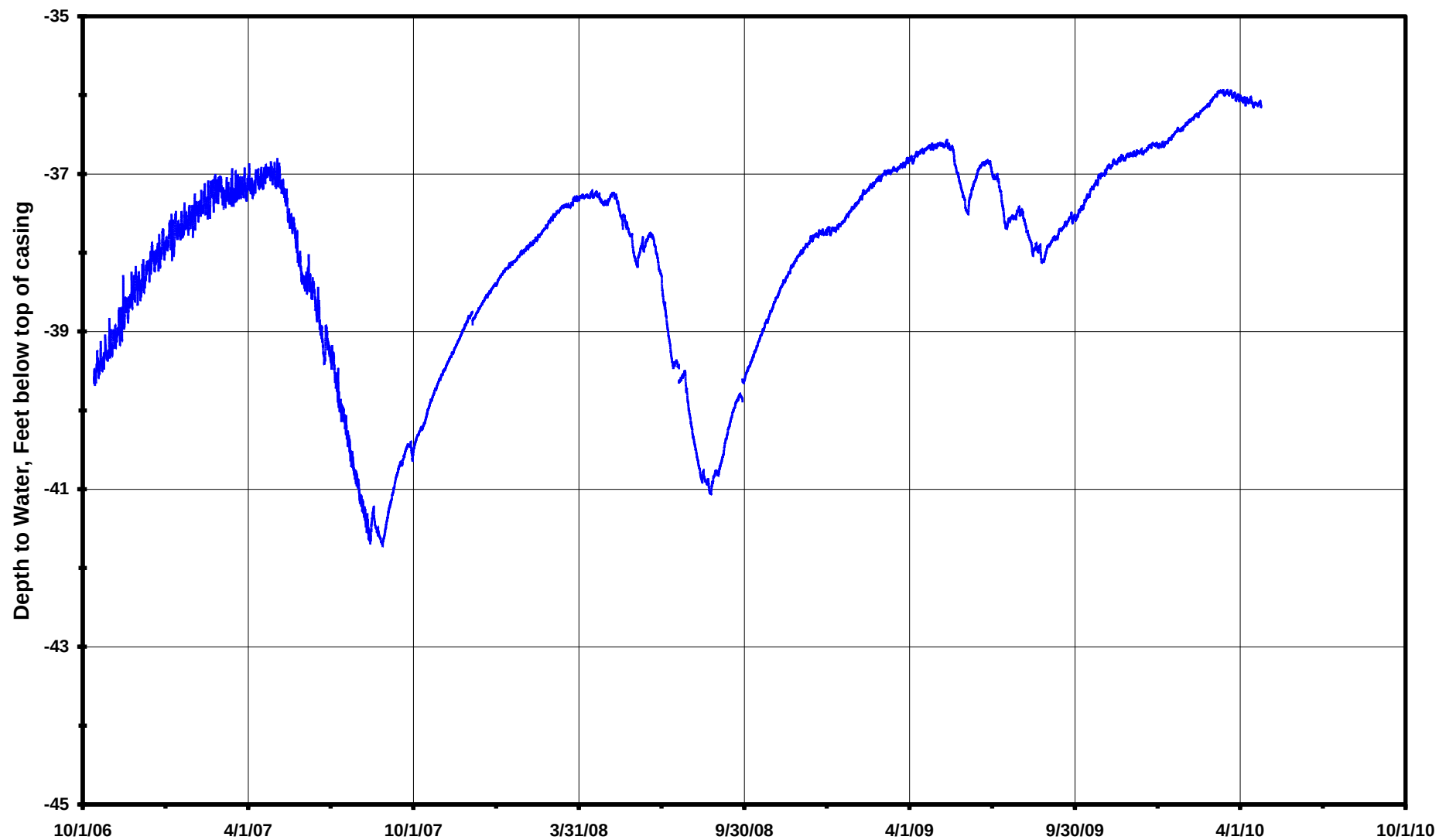
Bone Cabin Windmill Well
Agate Fossil Beds National Monument



Kelly Homestead Well
Agate Fossil Beds National Monument



**Decommissioned Park Supply Well
Agate Fossil Beds National Monument**



Palmer Hydrologic Drought Index
Panhandle area of Nebraska

