

Cedar Run 4: 3 Replicates (location) of 50cm depth water level readings with corresponding precipitation events

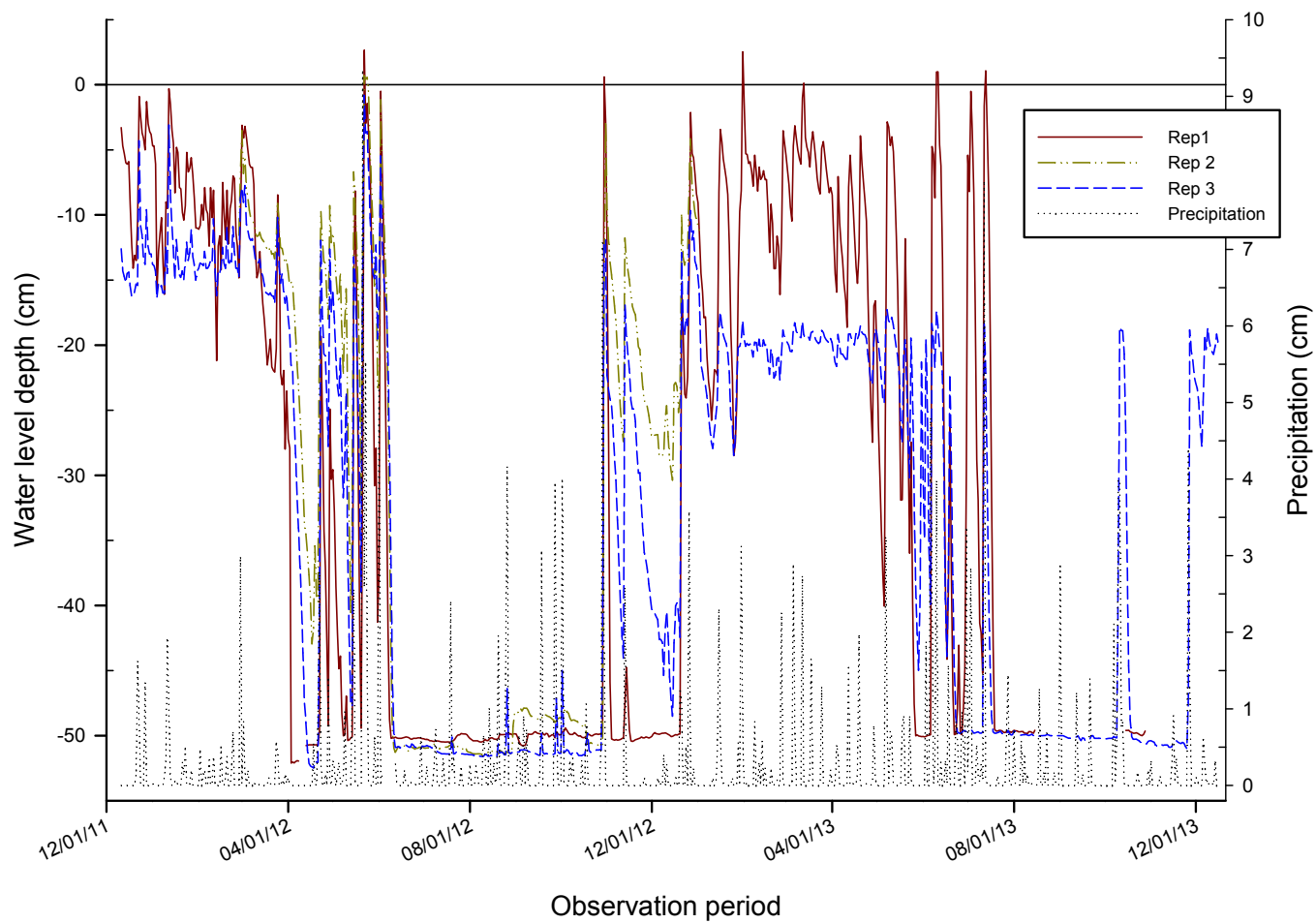


Figure 1. Water levels in natural forested wetlands at Cedar Run 4. Data shown for three replicate wells (standard USCOE design) over a two year monitoring period. Water levels show a wide range of seasonal fluctuation with more spatial variability in 2013 than 2012.

Cedar Run 4: Waterlevel measurements by depth

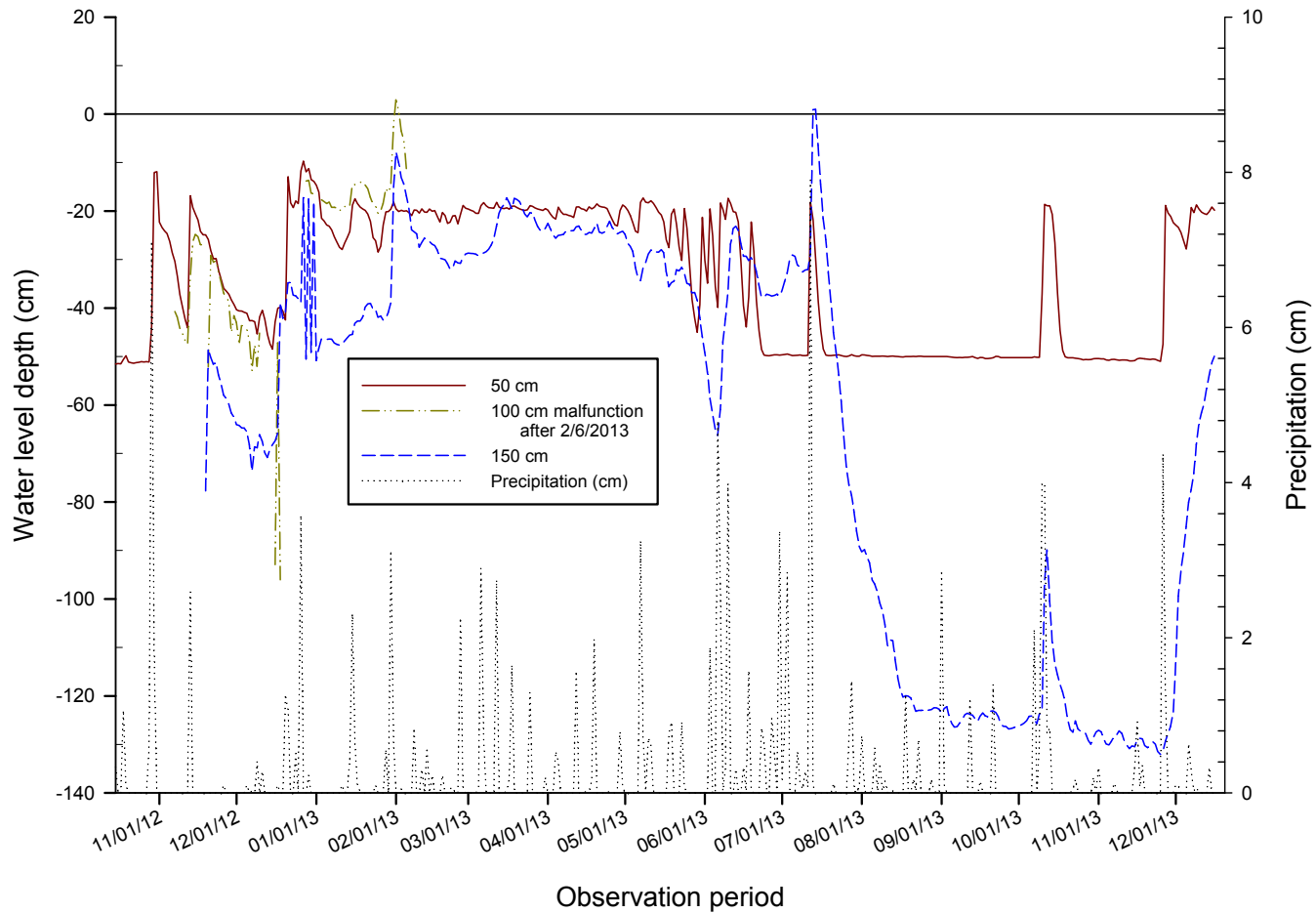


Figure 2. Relative water levels at Cedar Run 4 well cluster for standard USCOE well (-50 cm) and piezometers installed at -100 cm and -150 cm. Water levels over the summer of 2013 indicated seasonal “perching” over a restrictive subsoil, but the overall decline in measured head with depth indicates limited groundwater discharge at this site. This analysis was complicated by the loss of the -100 cm piezometer, however.

Bull Run: 3 Replicates (location) of 50cm depth water level readings with corresponding precipitation events

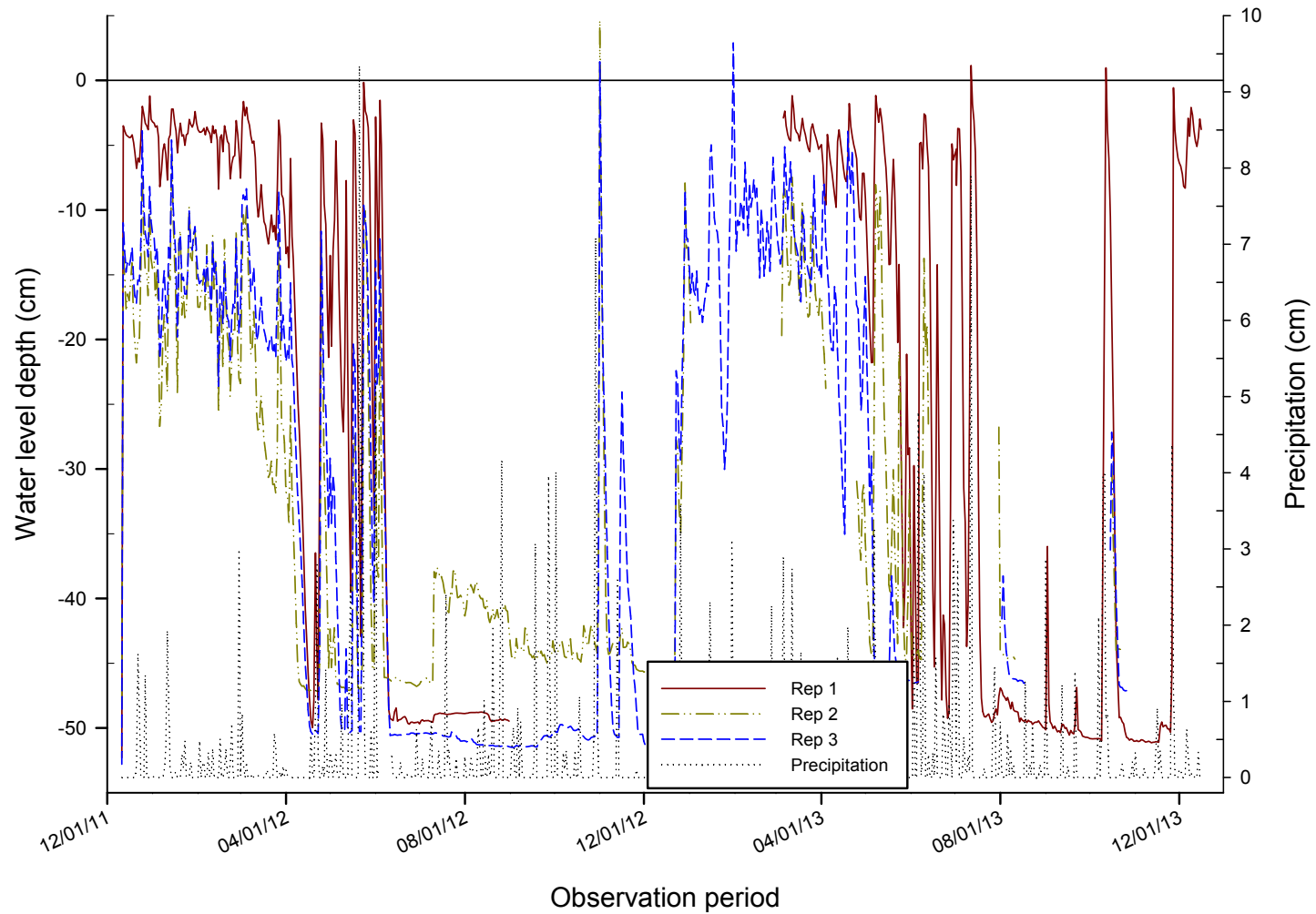


Figure 3. Water levels in natural forested wetlands at Bull Run. Data shown for three replicate wells (standard USCOE design) over a two year monitoring period. Water levels show a wide range of both spatial and seasonal fluctuations in both years.

Bull Run: Waterlevel measurements by depth

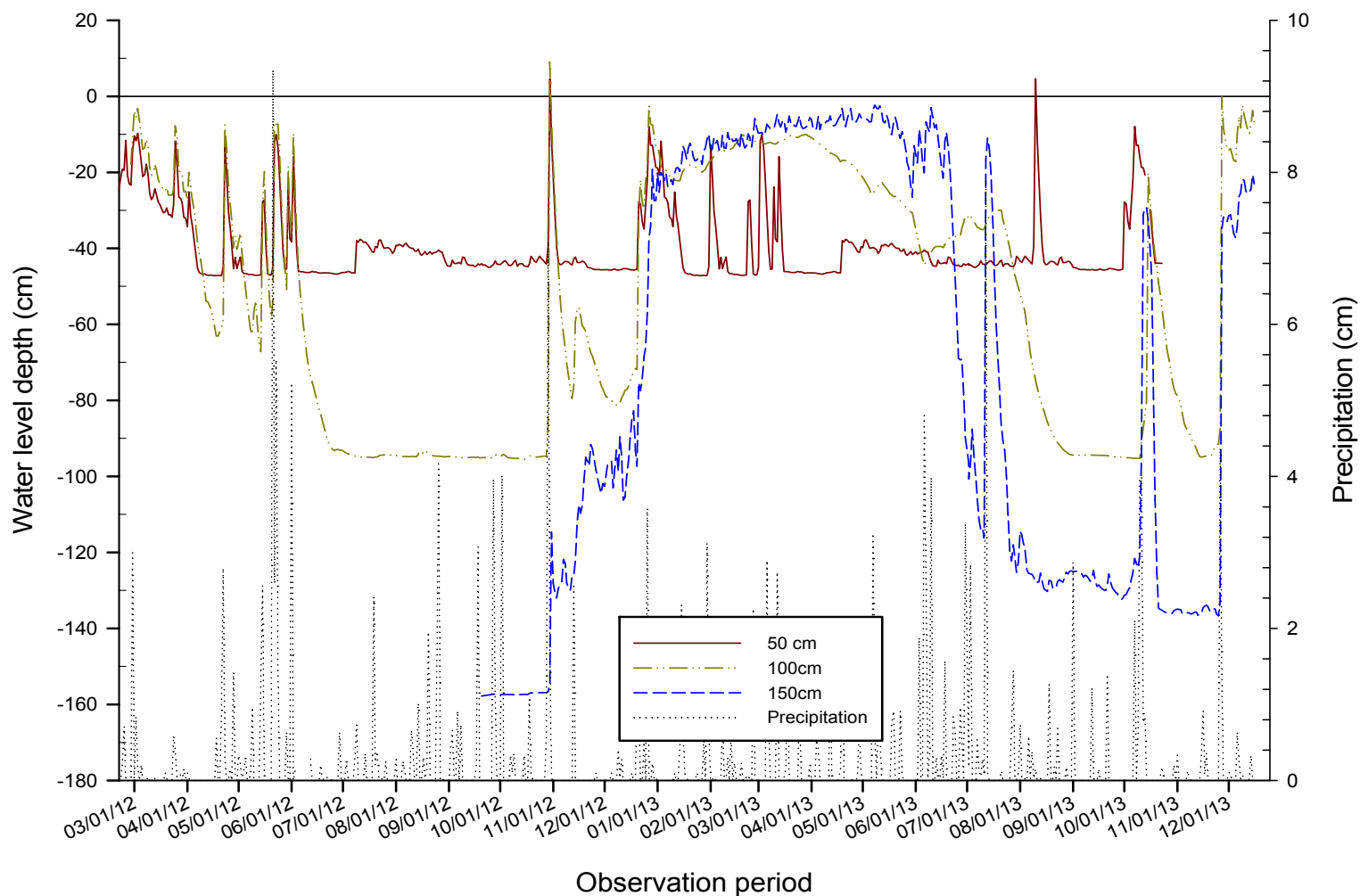


Figure 4. Relative water levels at Bull Run well cluster for standard USCOE well (-50 cm) and piezometers installed at -100 cm and -150 cm. Fluctuating surface water levels (-50 cm well) over the summer of 2012 and 2013 indicated periodic “perching” over a restrictive subsoil. The significant increase in measured head with depth in 2013 indicates significant periods of groundwater discharge at this site. The deeper piezometer here was not installed until September 2012.

Camp Snyder: 3 Replicates (location) of 50cm depth water level readings with corresponding precipitation events

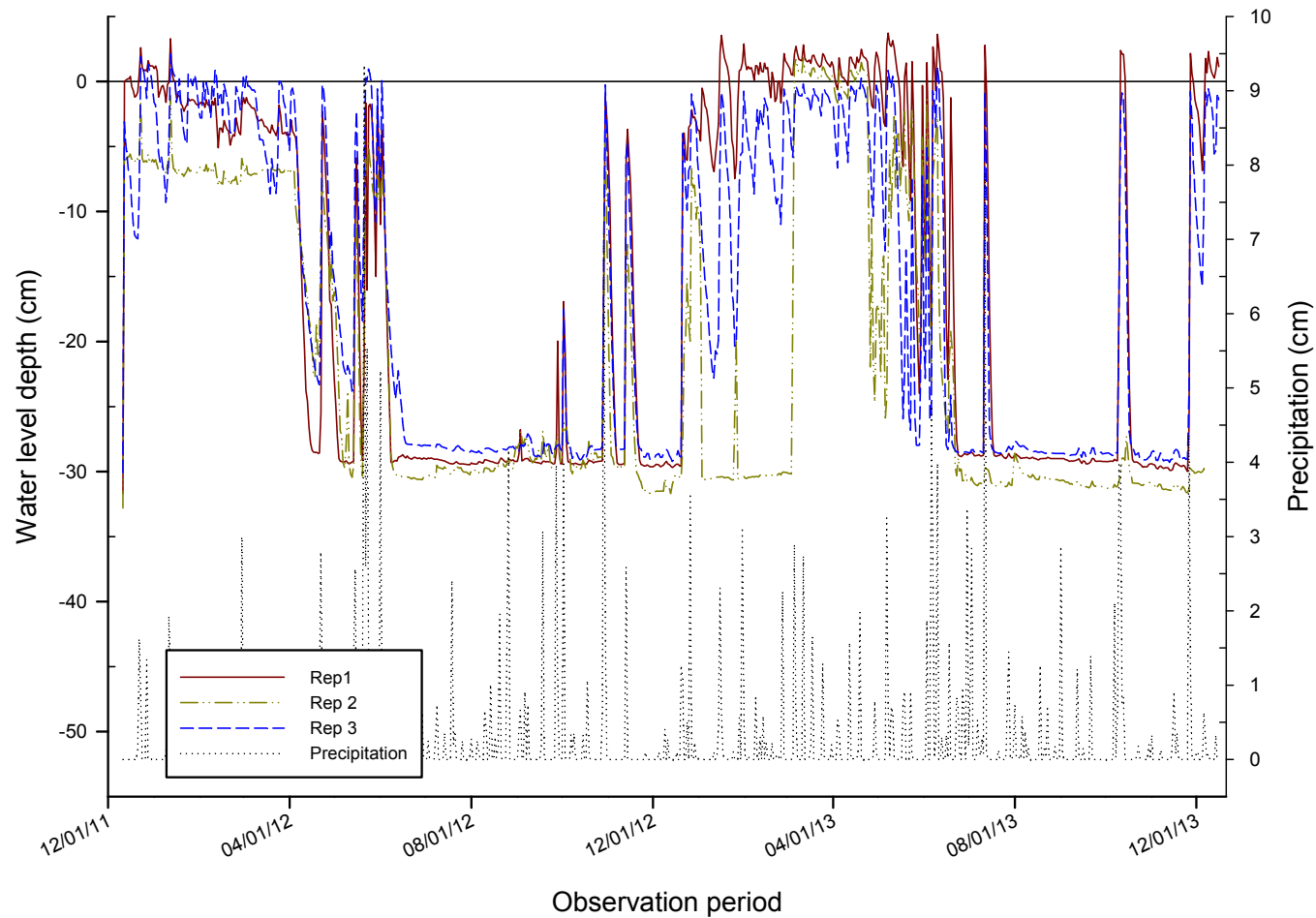


Figure 5. Water levels in natural forested wetlands at Camp Snyder. Data shown for three replicate wells (standard USCOE design) over a two year monitoring period. Water levels showed much less spatial variability than other sites and water levels never dropped below -30 cm due to “perching” on the relatively impermeable Btg horizon.

Camp Snyder: Waterlevel recorded at different depth

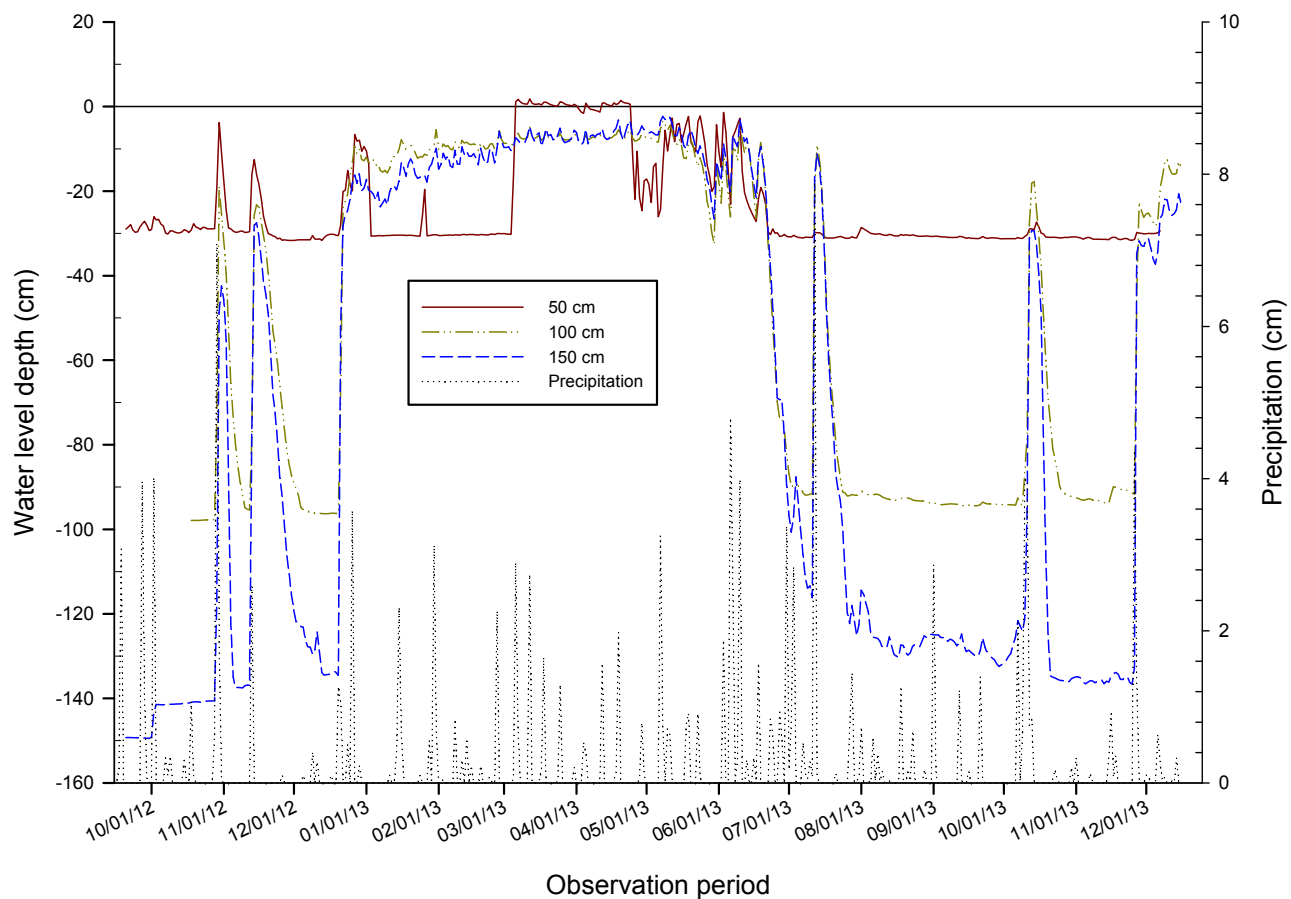


Figure 6. Relative water levels at Camp Snyder well cluster for standard USCOE well (-50 cm) and piezometers installed at -100 cm and -150 cm. Fluctuating and relatively shallow surface water levels (-50 cm well) over the summer of 2013 indicated periodic “perching” over a restrictive subsoil. The significant increase in measured head with depth in the summer of 2013 indicates significant periods of groundwater discharge at this site.