

# Recent Downward Trend in Piney Point Aquifer Water Levels

James City, New Kent, and York counties

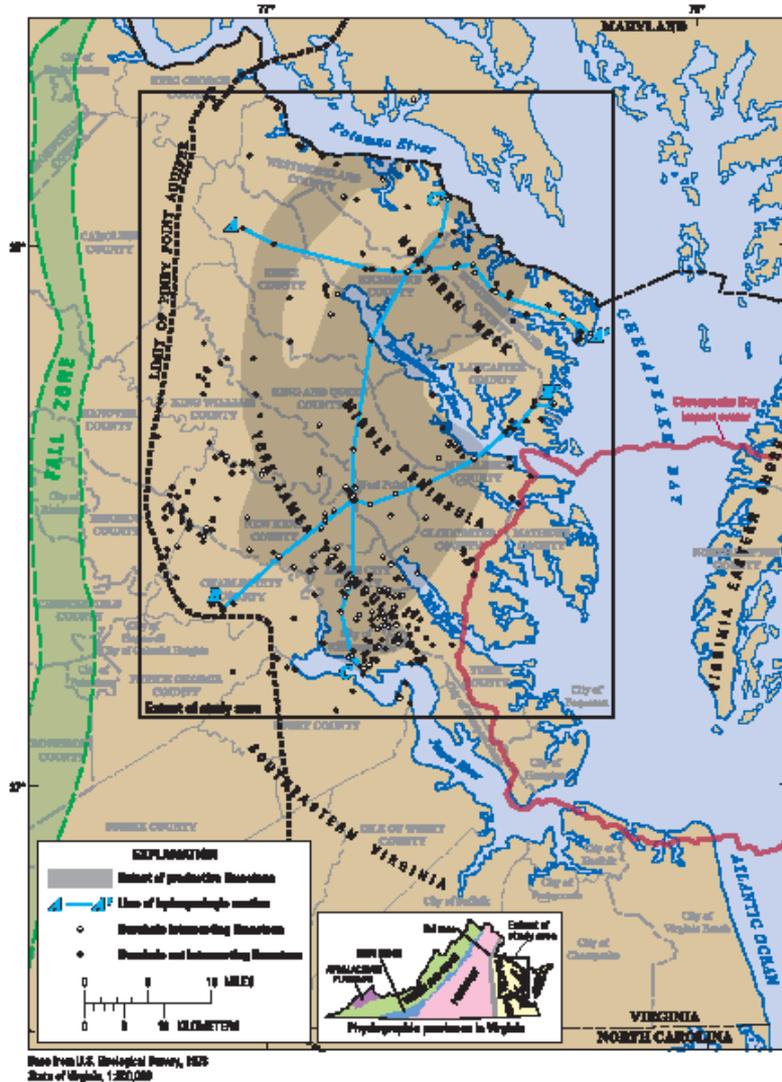
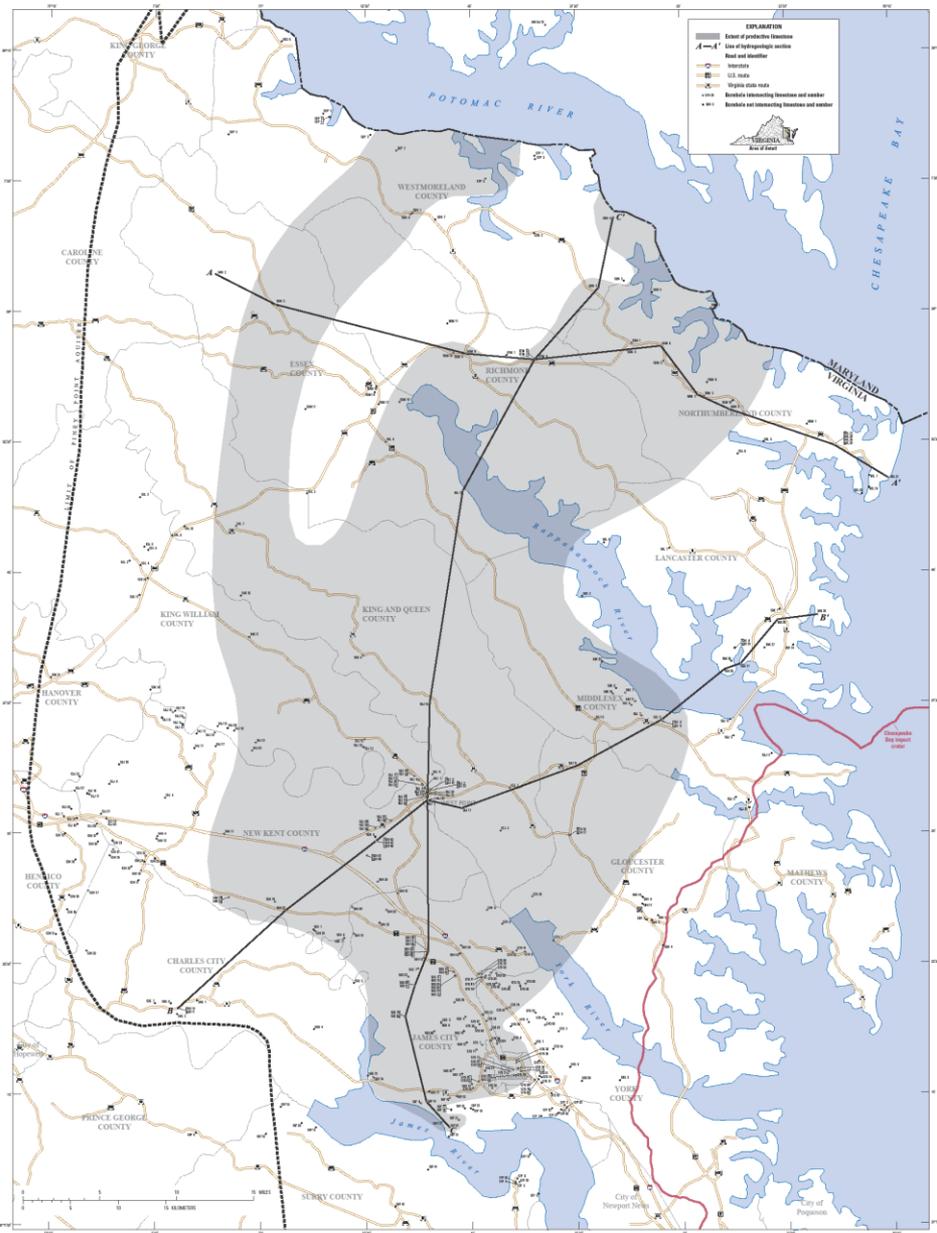


Figure 1. Locations of boreholes, lines of hydrogeologic sections, and extent of the Piney Point aquifer and productive limestone in Virginia. (Hydrogeologic sections are shown on plate 2.)

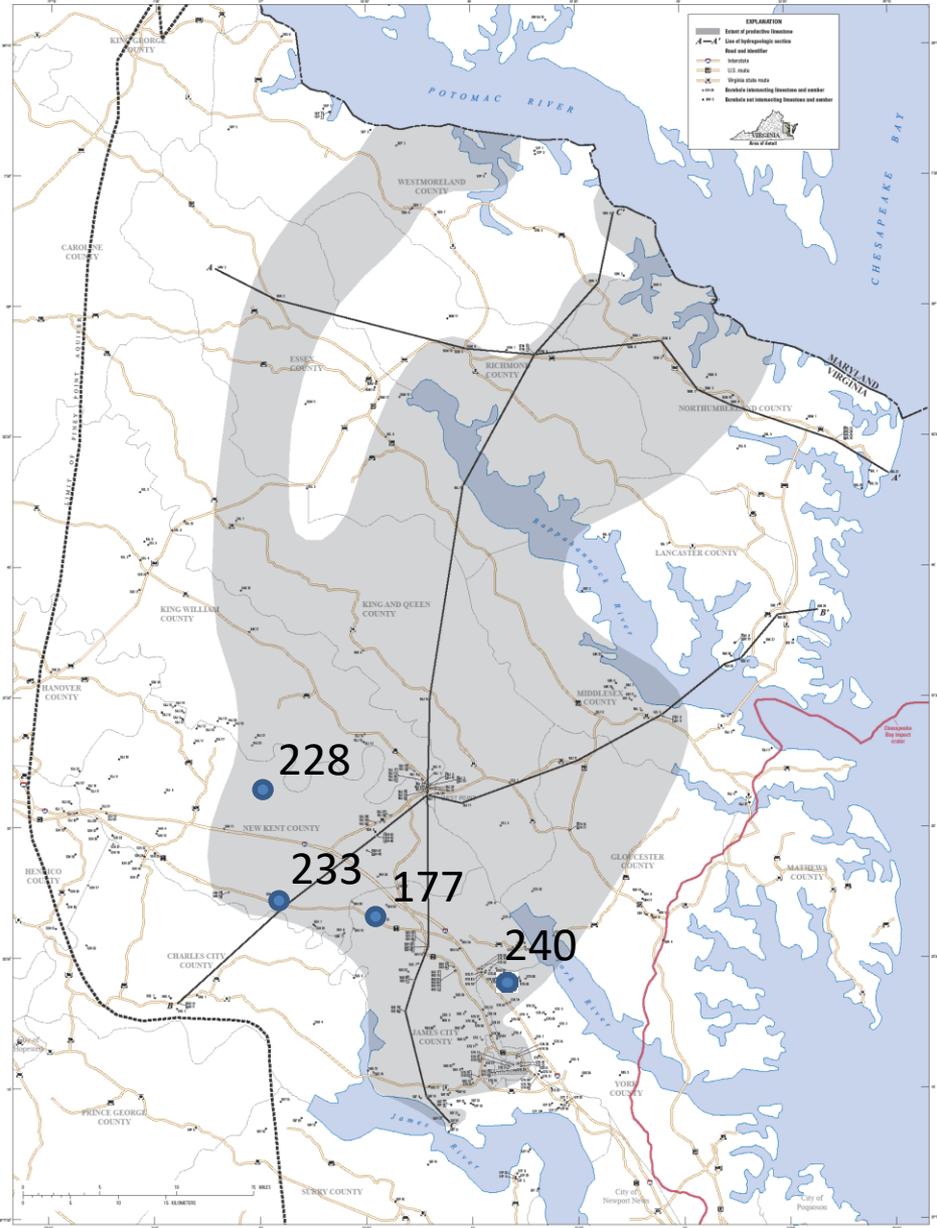
Extent of Productive Limestone in the Piney Point Aquifer in Virginia shaded in gray. (from USGS Scientific Investigations Report 20175041 by E. Randolph McFarland).



Extent of Productive Limestone in the Piney Point Aquifer in Virginia shaded in gray (from USGS Scientific Investigations Report 2017-5041 by E. Randolph McFarland).

Locations of Boreholes and Extent of Productive Limestone in the Piney Point Aquifer in Virginia

By  
E. Randolph McFarland  
2017



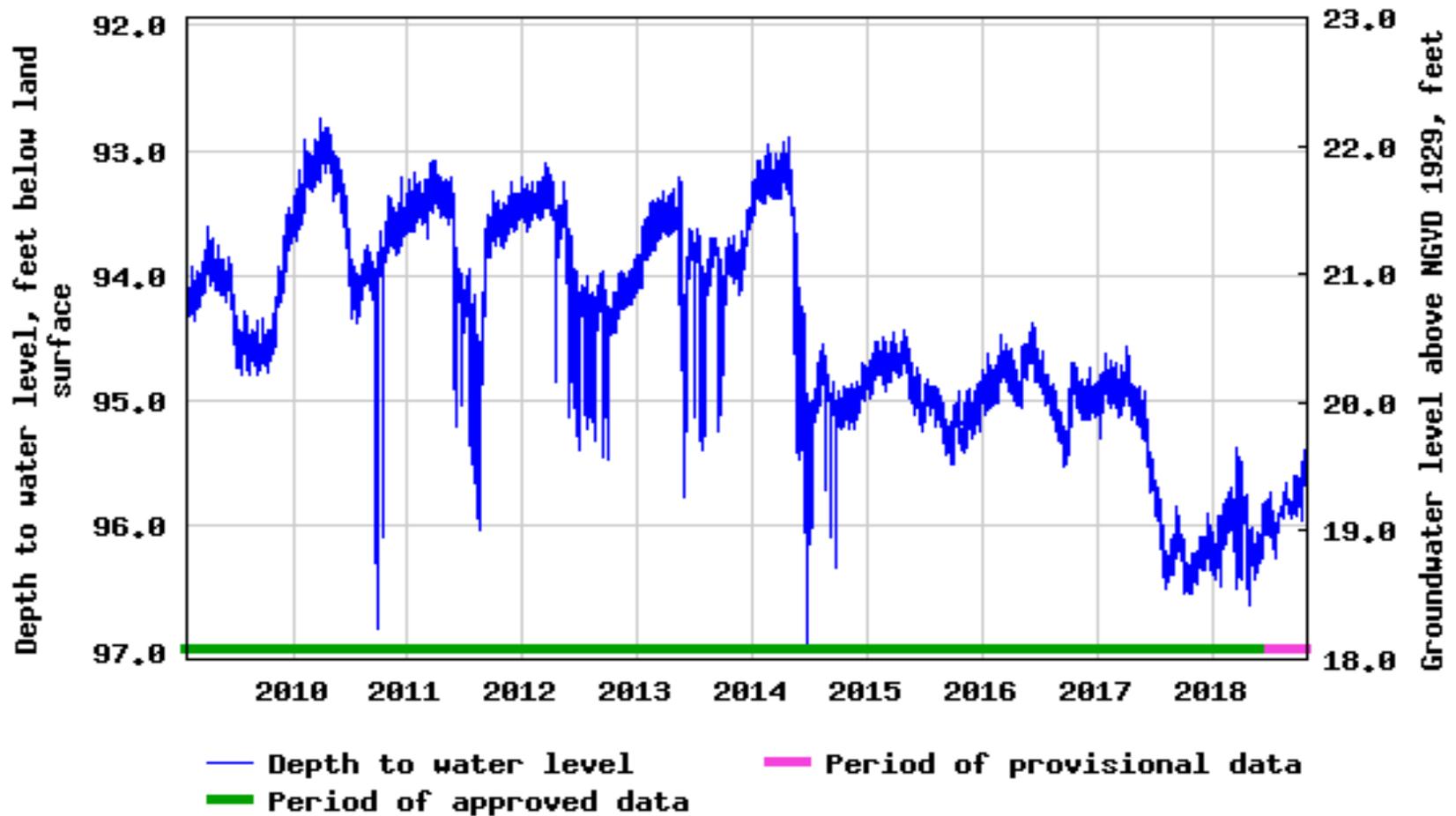
Three monitoring wells DEQ maintains in the Piney Point aquifer designated by blue circles and corresponding SOW numbers (SOW 228 and 233 in New Kent County, SOW 177 in James City County, SOW 240 in York County).

Locations of Boreholes and Extent of Productive Limestone in the Piney Point Aquifer in Virginia

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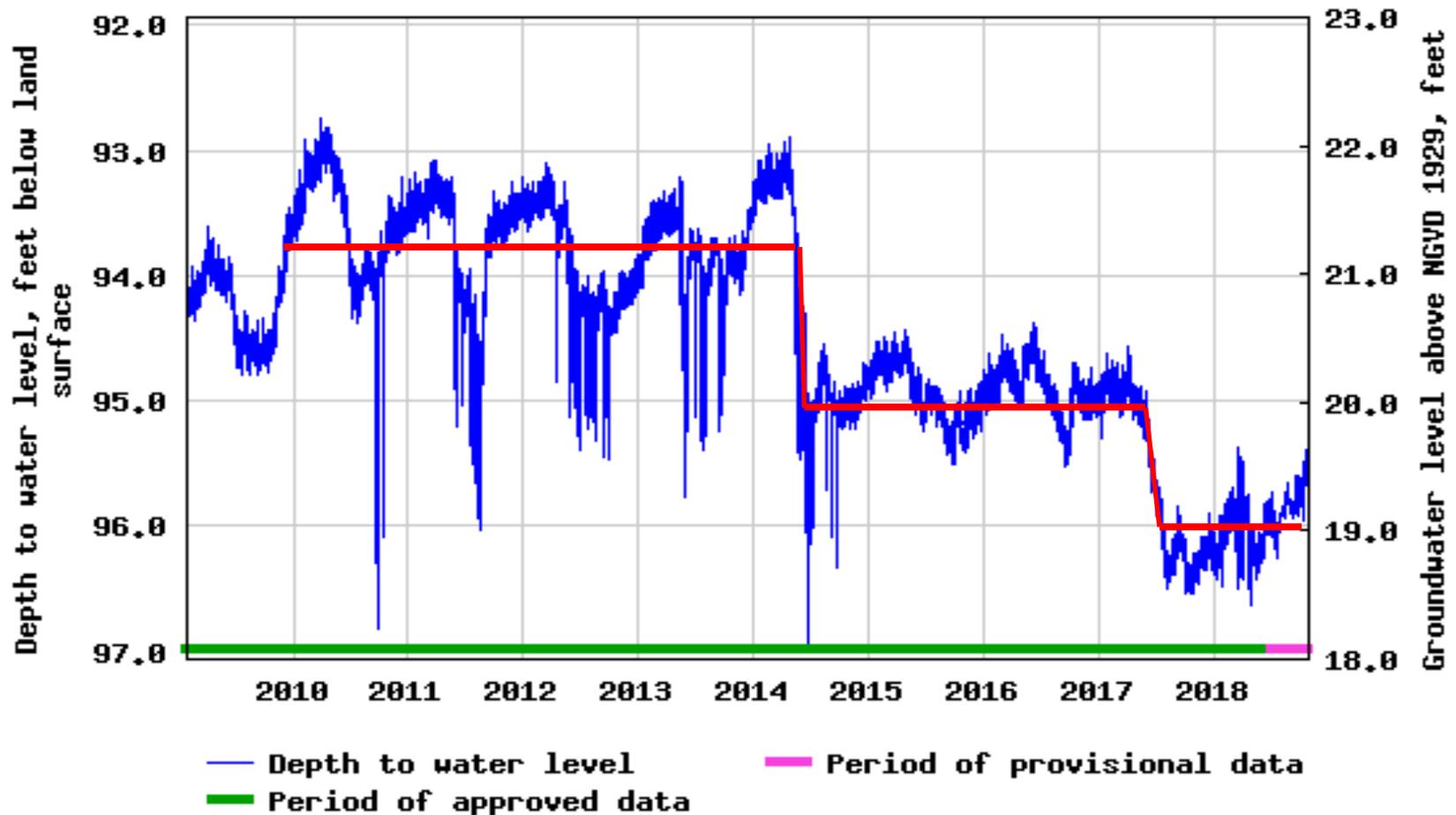
USGS 373054076584501 55J 20 SOW 228



Real-Time, water level measured every 15 minutes. Aquifer top 165 feet bls, approximately 69 feet below current level.



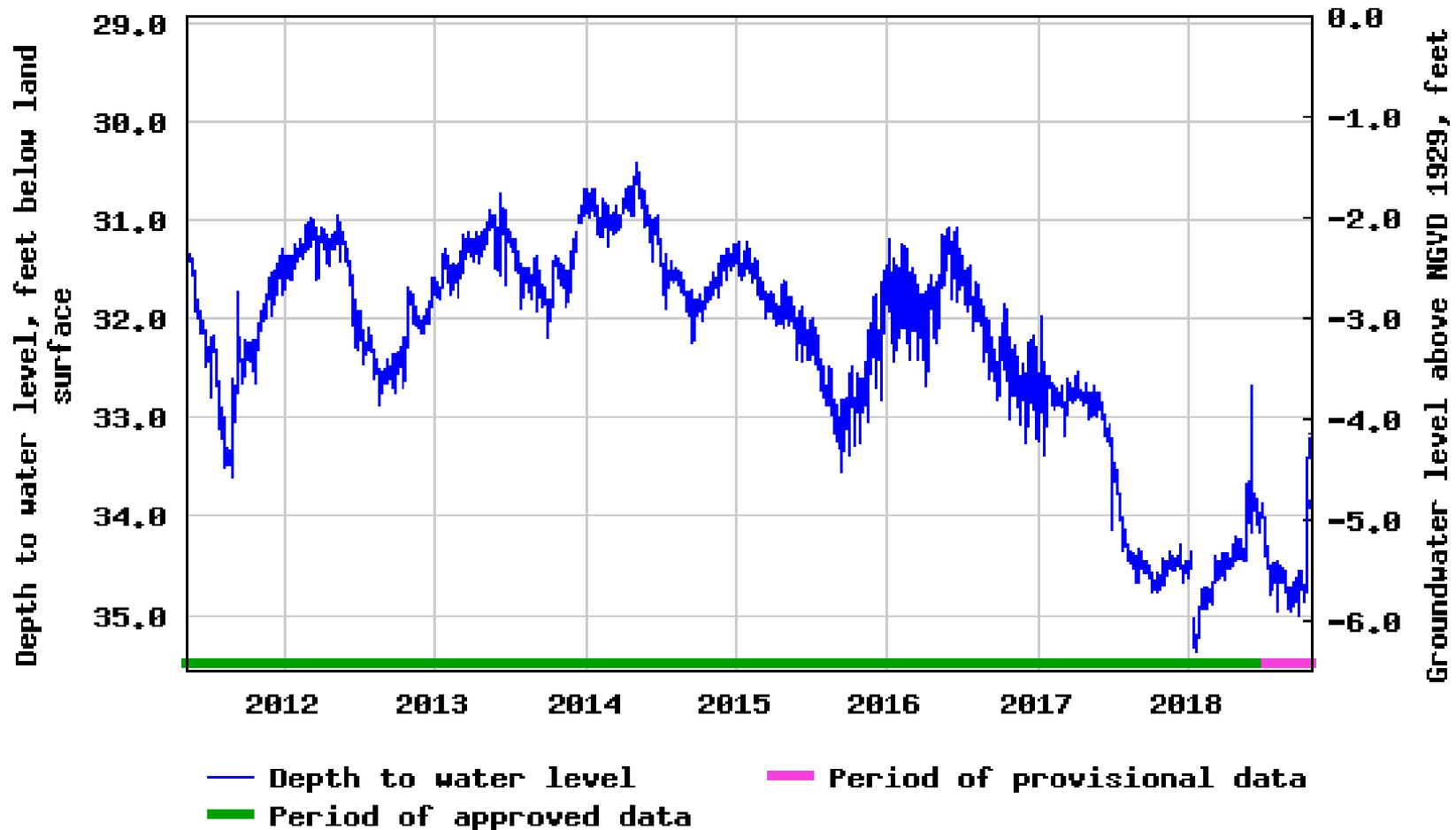
USGS 373054076584501 55J 20 SOW 228



Level trend from 2009 through mid 2014 and a stepped decline since then (declines approximately 1 to 1.5 feet).



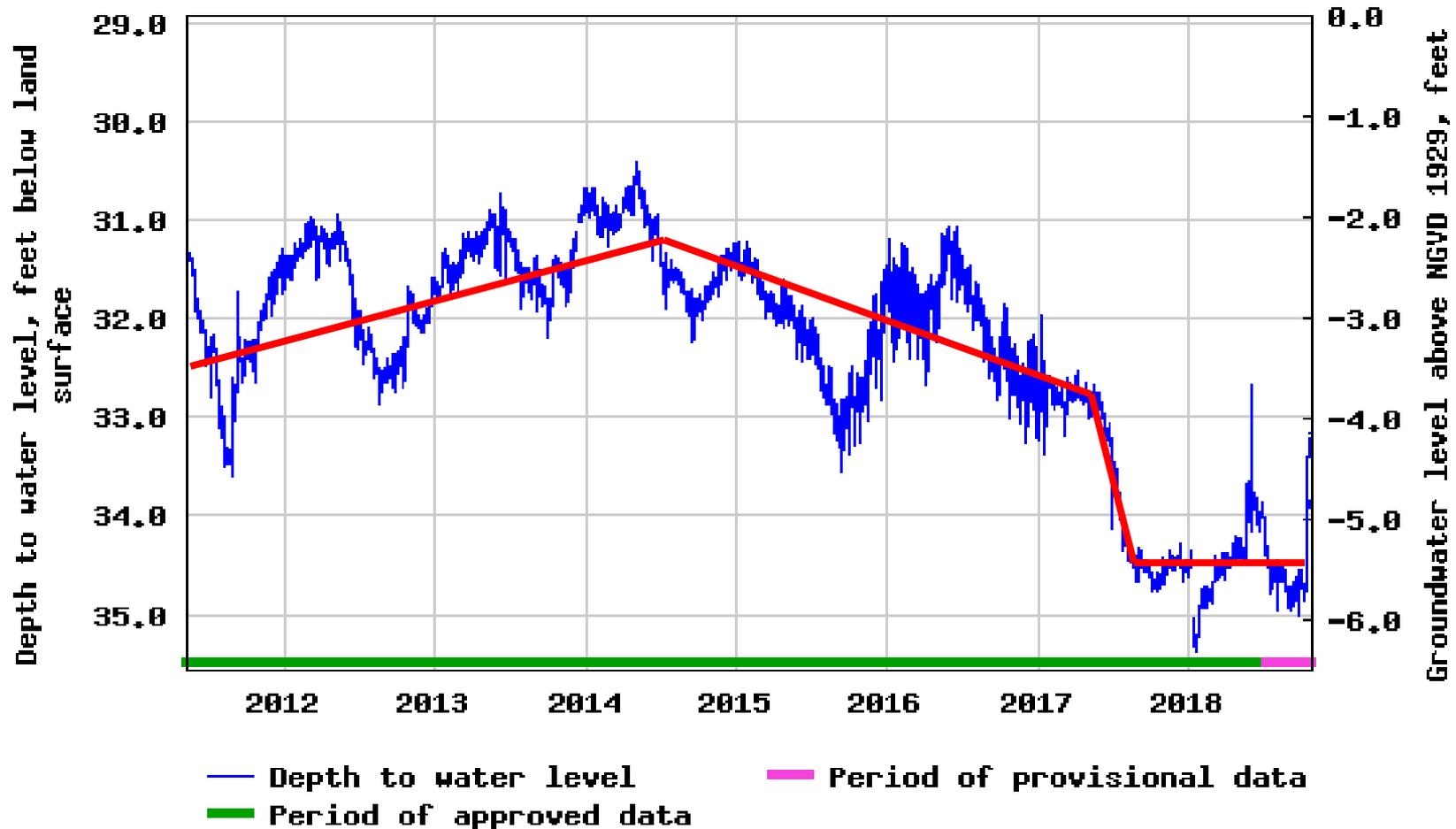
### USGS 372535076581305 55H 27 SOW 233E



Real-Time, water level measured every 15 minutes.  
Aquifer top 80 feet bls, approximately 45 feet  
below current level.

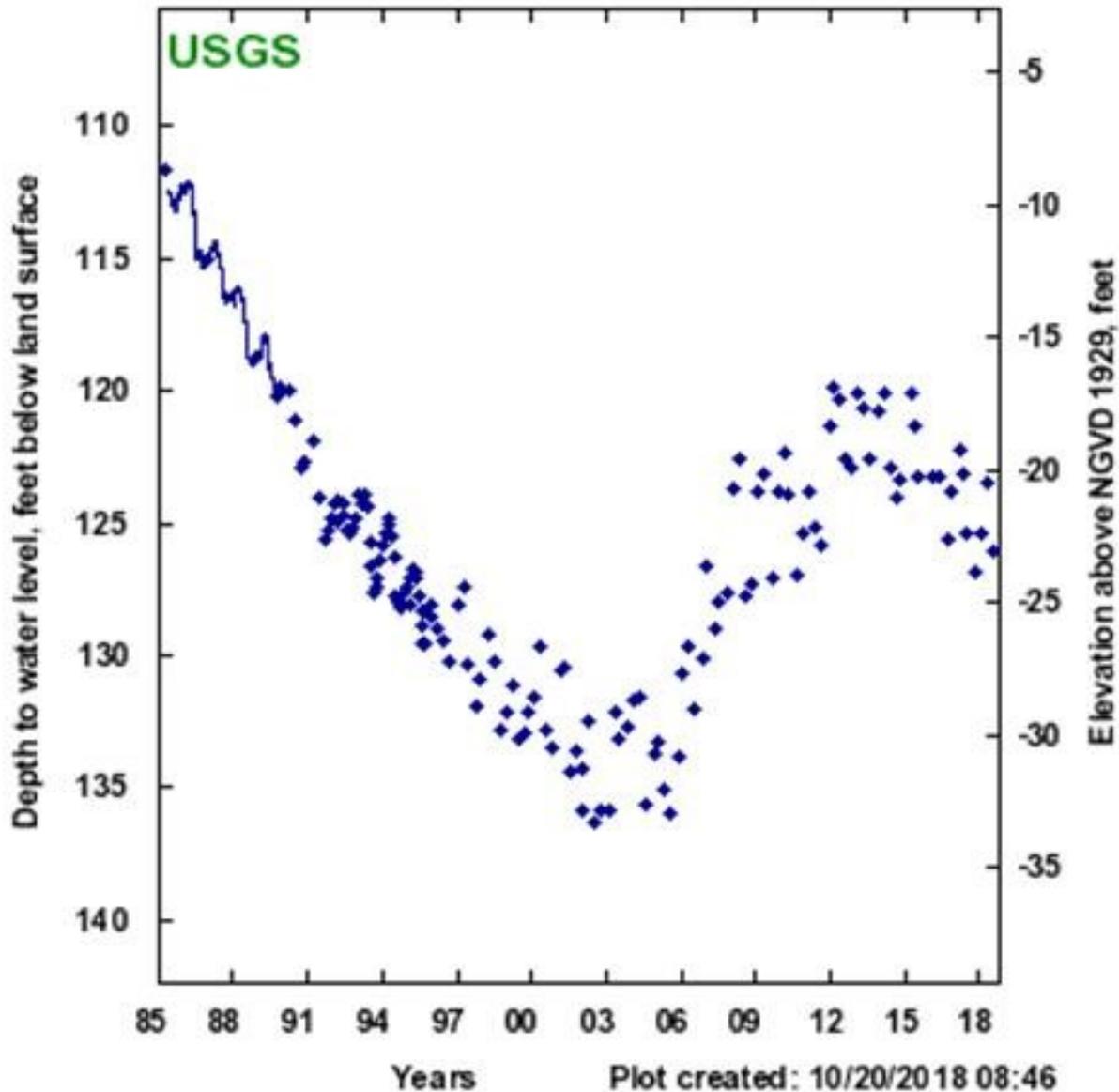


### USGS 372535076581305 55H 27 SOW 233E



Upward trend from 2011 through mid 2014 and declining trend since then (declines of 1 to 1.5 feet).

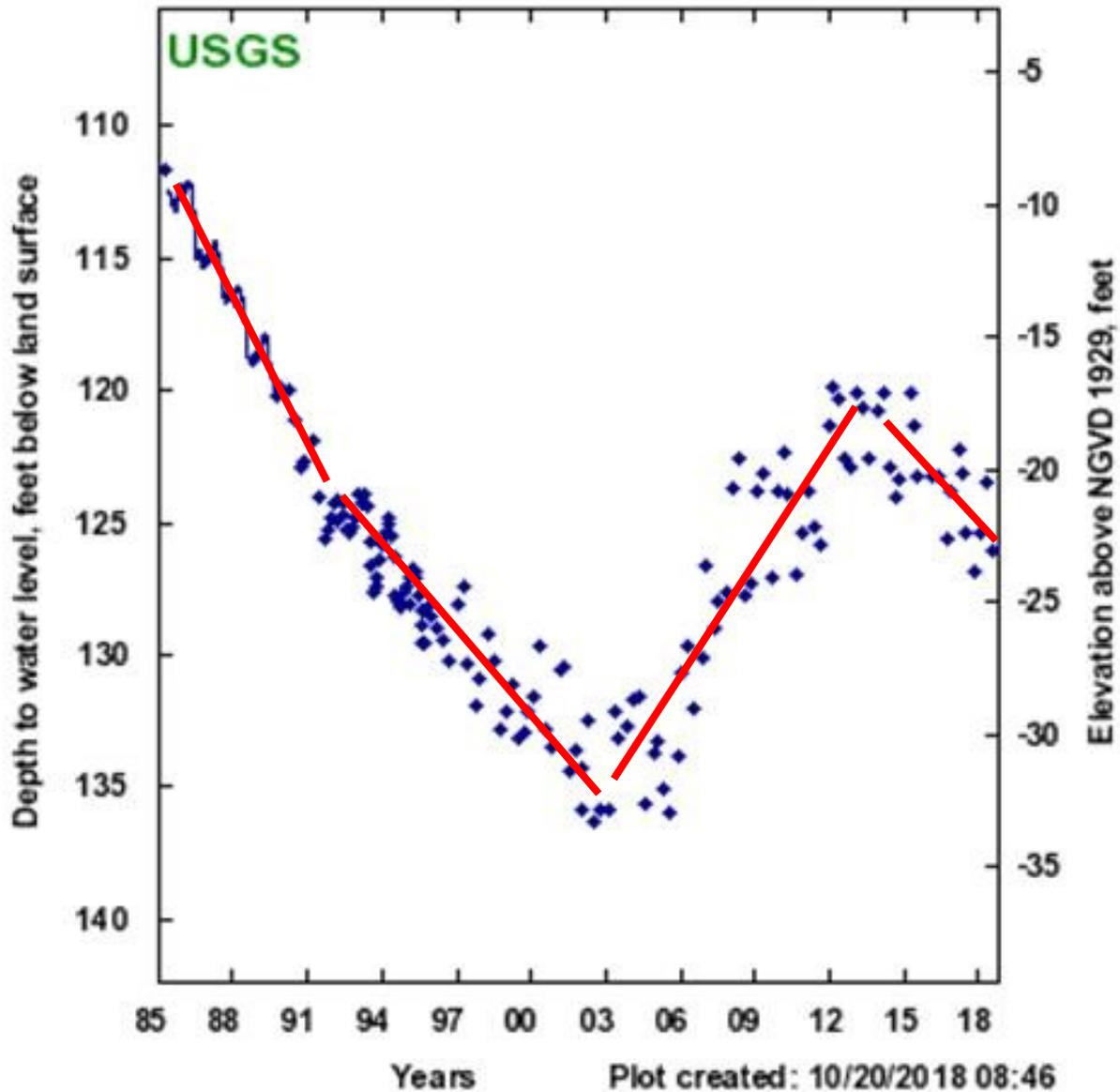
372506076511705 - 56H 29 SOW 177E



Diascund SOW, James City  
County – Piney Point  
Aquifer

Periodic, water level measured every 3 months (Aquifer top 164' feet  
bls, approximately 39 feet below current level).

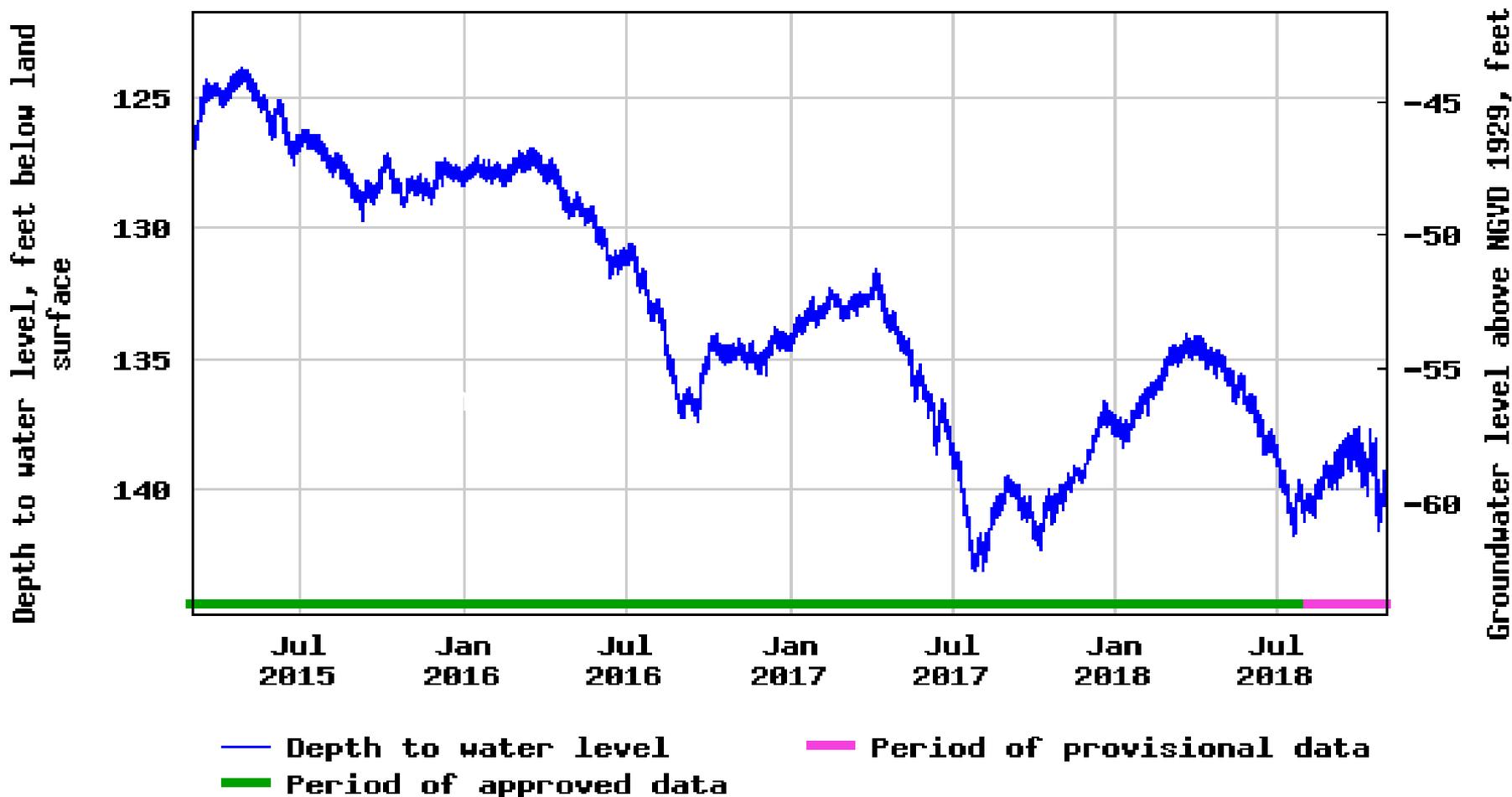
372506076511705 - 56H 29 SOW 177E



Diascund SOW, James City County – Piney Point

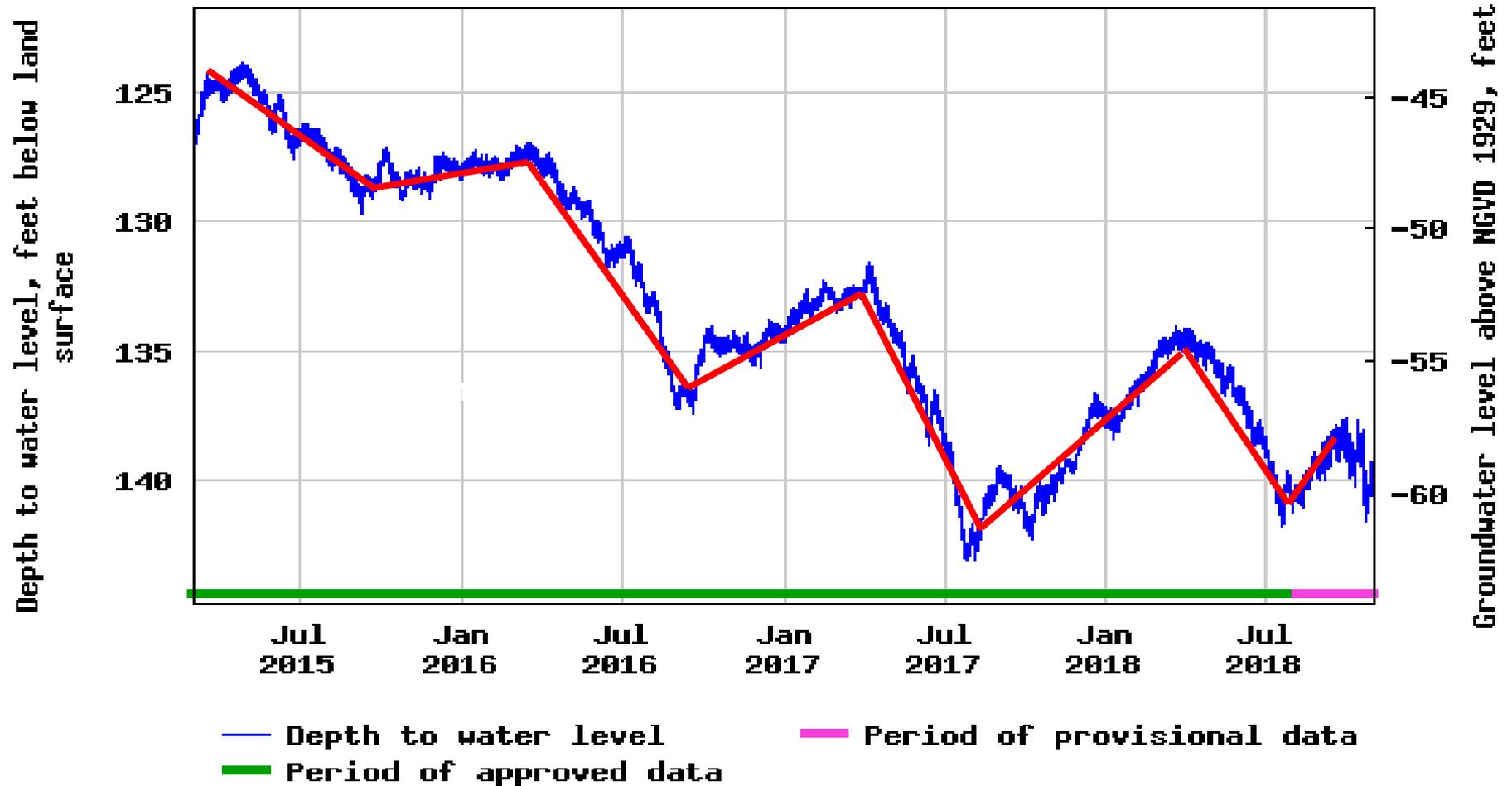
Declining trend 1985 to 2003,  
Increasing trend 2003 to 2013,  
Declining trend since then.

USGS 372156076431702 57G129 SOW 240A



Real-Time, water level measured every 15 minutes (Aquifer top 228 feet bls, approximately 88 feet below current level).

USGS 372156076431702 57G129 SOW 240A



Summer decline and Winter/Spring recovery from 2014 to present.

USGS 372156076431702 57G129 SOW 240A



But an overall downward trend from 2014 to present. Approximately 10 feet over 3 years (Jul 2015 to Jul 2018).

Declining water levels in the Piney Point aquifer since 2013 – 2014  
in the James City/New Kent/York county areas.

Water levels decreasing at 1 to 3 feet (episodically to annually).

Potential Contributors to these declines:

Recovery of housing construction = more residential wells?

Decrease in Winter/Spring water level recovery?

Drier/Drought periods causing episodic declines?

Increase in center pivot irrigation systems?

Unpermitted/unknown large withdrawal or withdrawals?

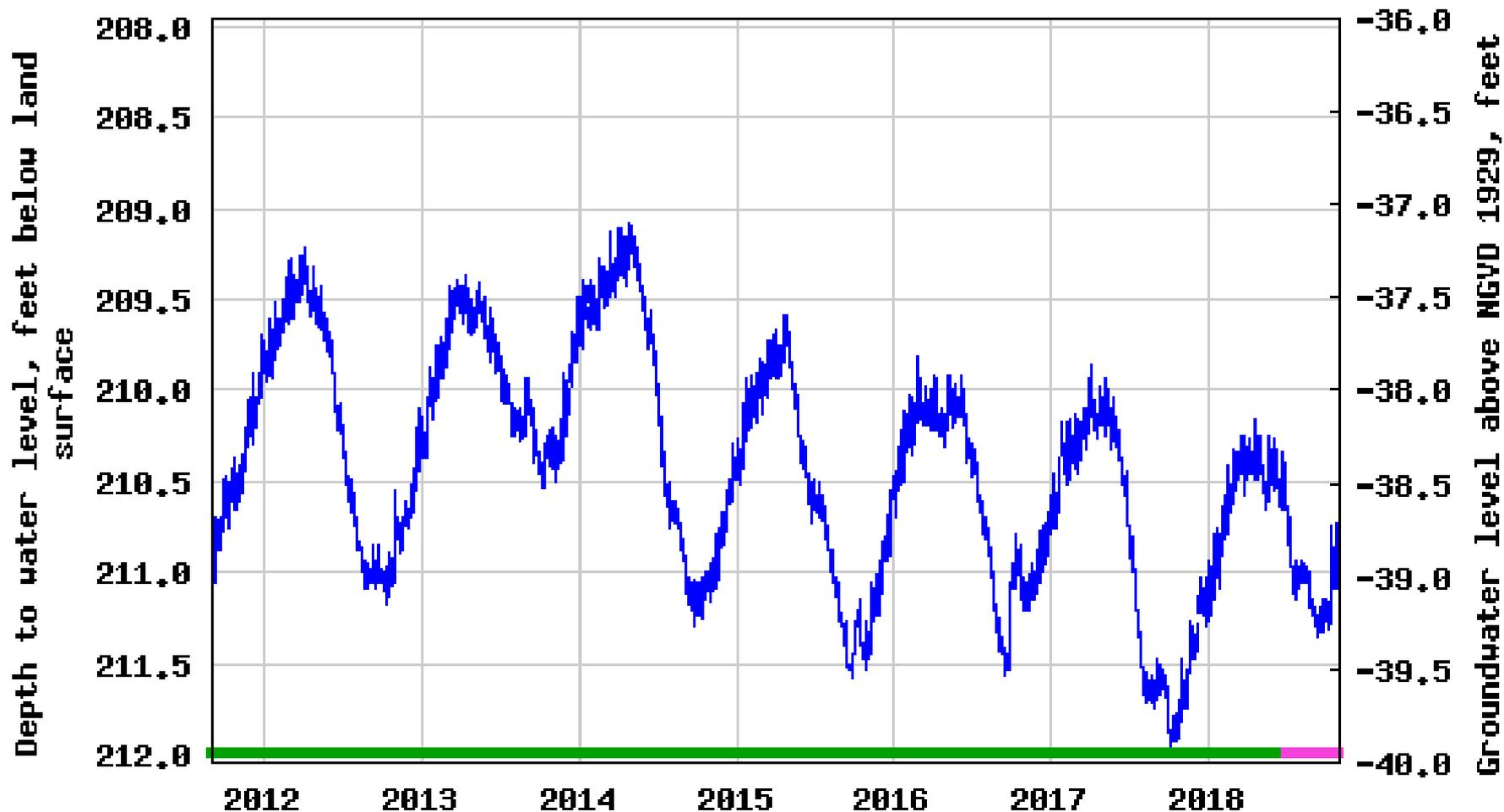


# Potomac Aquifer Slides

# Trends in Potomac Aquifer Water Levels

New Kent and James City Counties

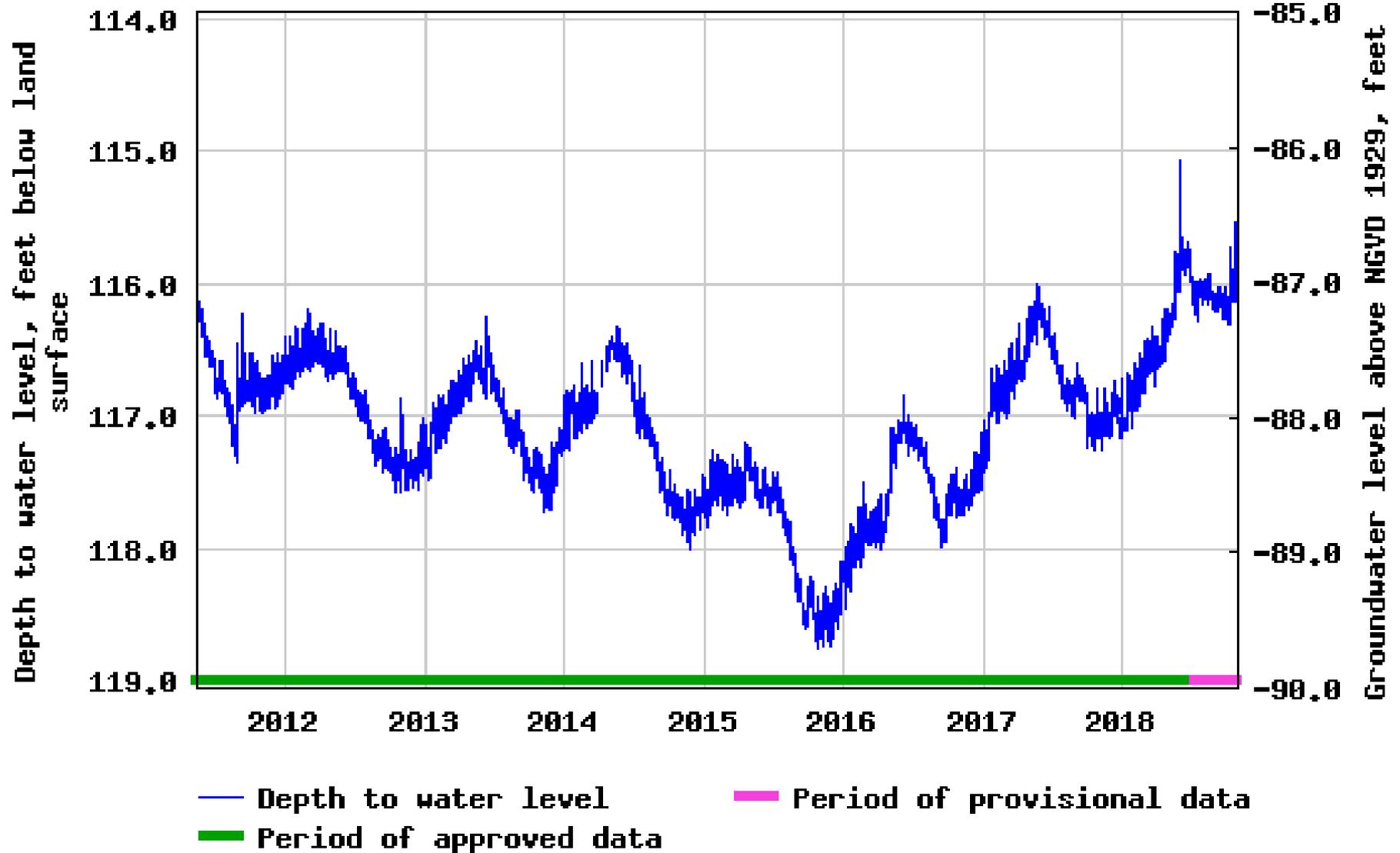
USGS 373316077125202 53J 24 SOW 234A



— Depth to water level  
 — Period of approved data

— Period of provisional data

### USGS 372535076581301 55H 23 SOW 233A





USGS 372506076511701 56H 25 SOW 177A

