

Memo

Date 9 March 2016
To James Duggleby
From Carolina Sardella
Ref 2200566A-RES-MEM-002 RevB
Subject Gloucester Gas Project - FY16 Monitoring Update - February 2016

This memo presents updated hydrographs for all Gloucester Gas Project groundwater monitoring bores and hydrograph and salinity traces (measured as electrical conductivity (EC)) for surface water monitoring sites to February 2016.

For this monitoring period:

- The datalogger at TCMB02, which failed between June and October 2015, has been assessed and groundwater level data could not be recovered for that period.
- The datalogger at WKMB01 failed on 10 December 2015 and groundwater level data could not be recovered. A new datalogger was reinstated on 20 January 2016.
- The dataloggers at FKMB01A and WRMB01B failed in October 2015 and need to be replaced.
- The datalogger at BMB02 failed to connect and groundwater level data retrieval is being attempted. A new datalogger was reinstated on 2 February 2016.
- The EC sensor at WKS02 failed on 17 November 2015 and has been replaced on 6 January 2016.
- The stream gauge station of the low level datalogger TSW01 has been damaged during the flooding event in the first week of January 2016. A new stream gauge station and low level logger should be reinstalled.
- Water quality sampling took place in June 2015. Drops in water levels at S4MB, S5MB, WKMB and WRMB locations are in response to sampling.

Figures 1 - 8: Groundwater hydrographs for Stage 1 and 2 nested monitoring bore sites.

Figures 9 and 10: Water levels and electrical conductivity for all surface water monitoring sites.

Figure 11: Groundwater levels at the PL03 Vibrating Wire Piezometer and WKMB05.

Figure 12: Groundwater levels at NS729R.

Figures A.1 – A.22: Individual Stage 1 and 2 groundwater monitoring bore hydrographs.

Figures A.23 – A.30: Individual surface water level and electrical conductivity hydrographs.

Figure A.31: Individual PL03 Vibrating Wire Piezometer hydrographs.

Figures A.32 – A.34: Individual hydrographs from WKMB05 sensors.

Figure A.35: Individual hydrograph for NS725R

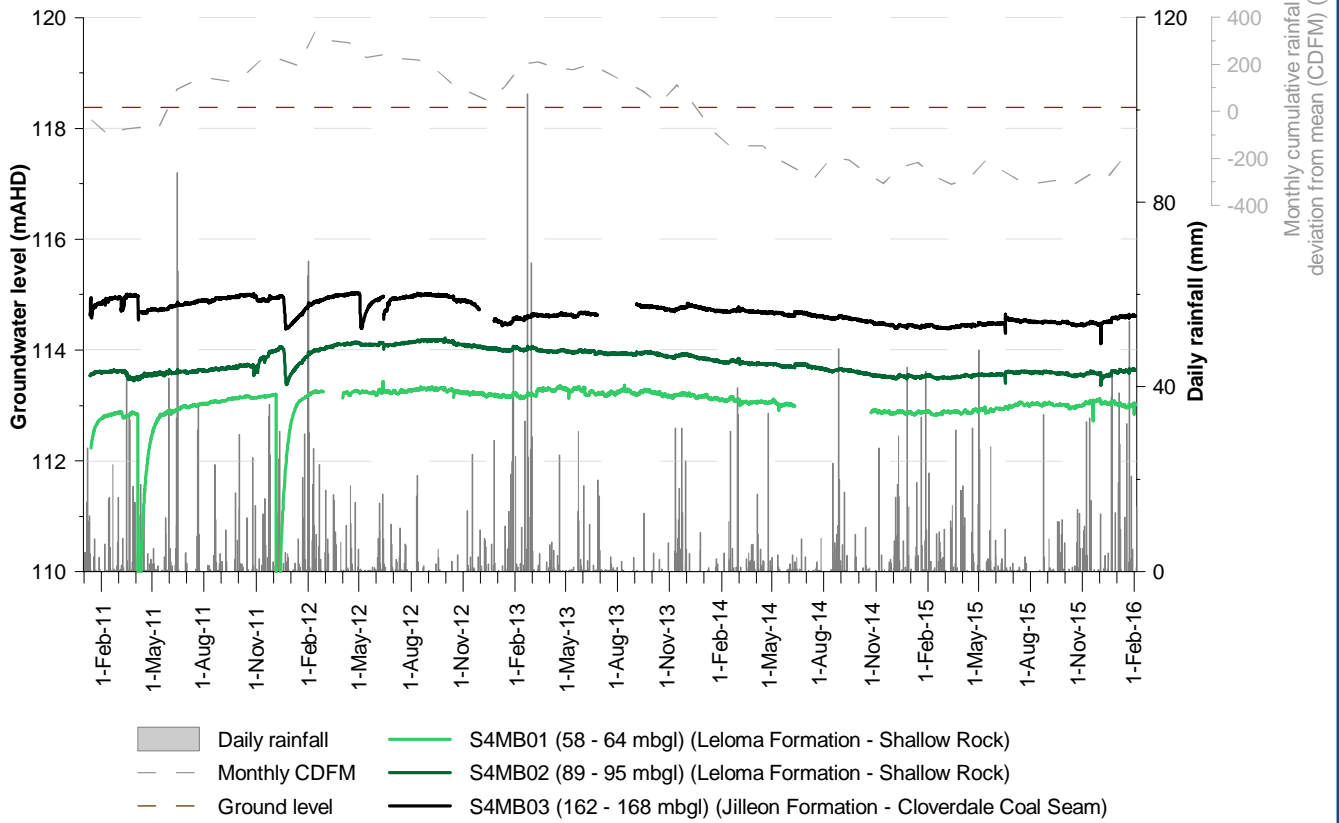
Groundwater and surface water monitoring is undertaken on a four-monthly basis. The next monitoring round will take place in June 2016.

Yours sincerely



Carolina Sardella
Hydrogeologist

S4MB



S5MB

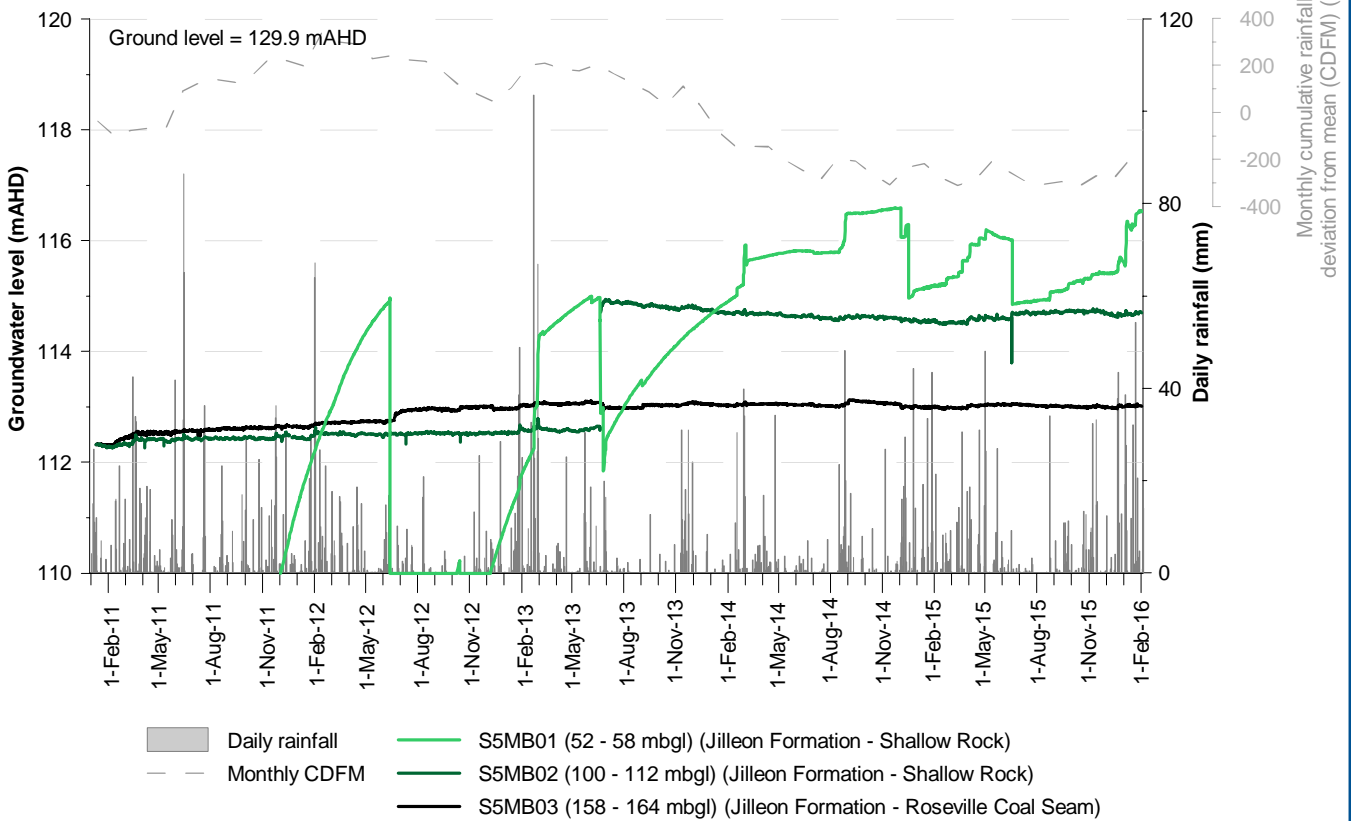


Figure 1: S4MB and S5MB monitoring bores

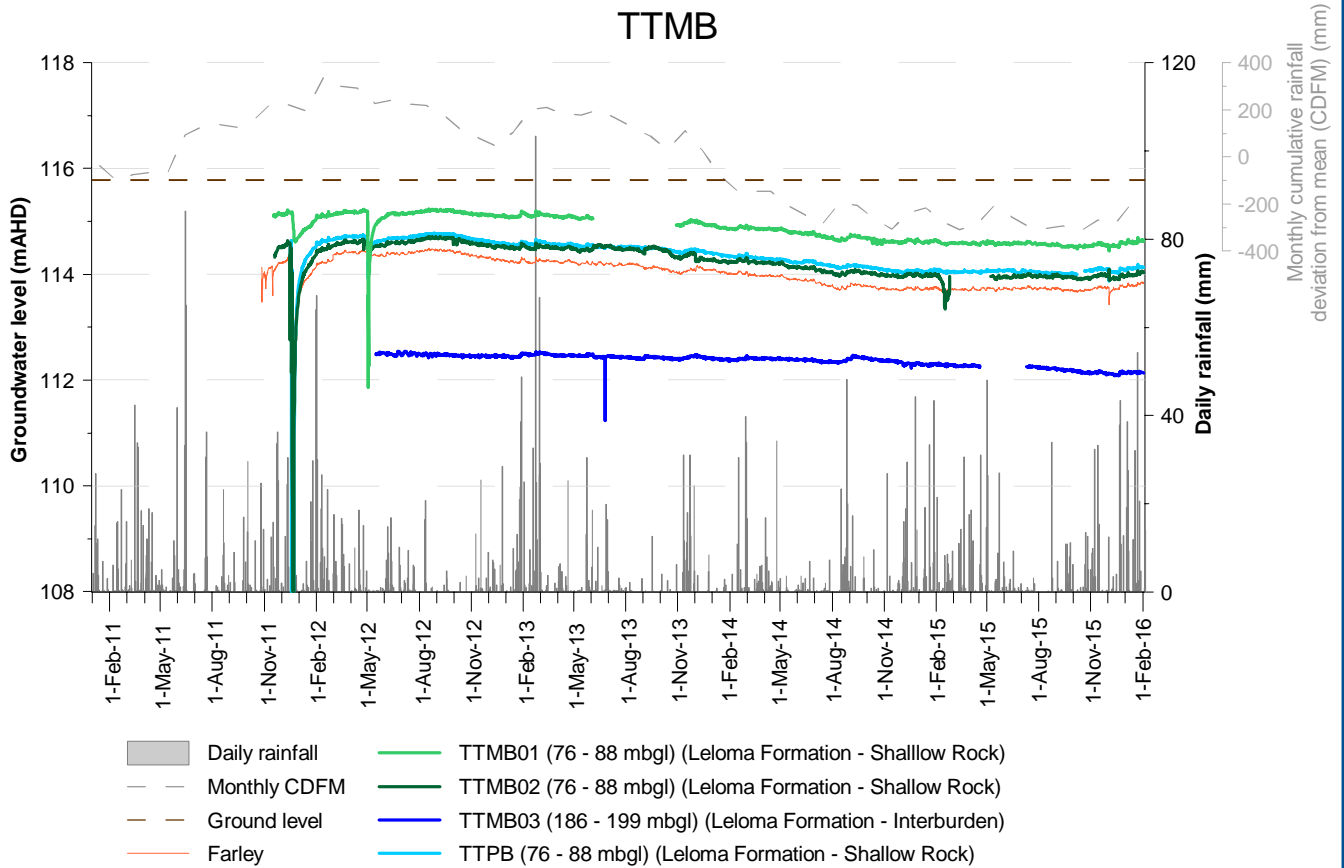
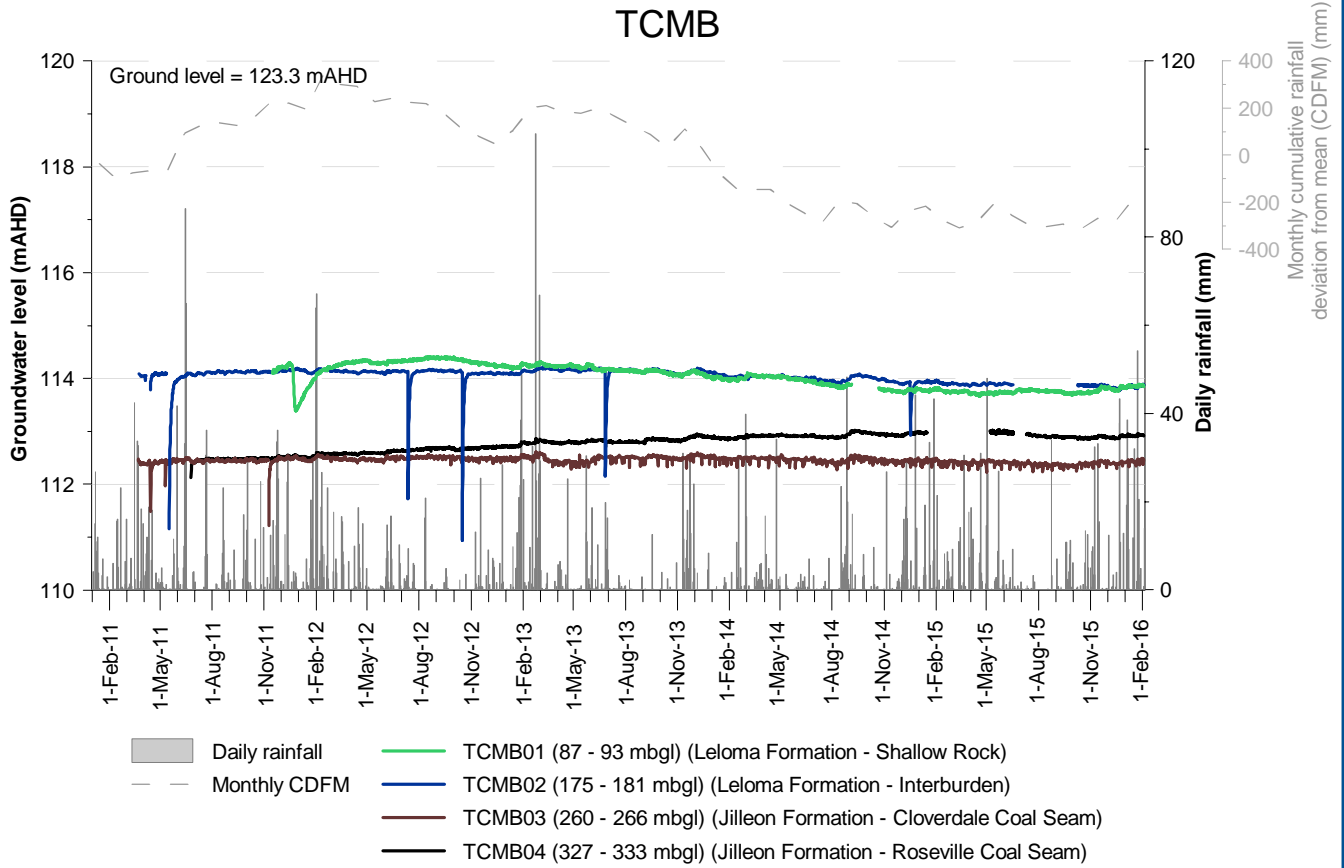


Figure 2: TCMB and TTMB monitoring bores

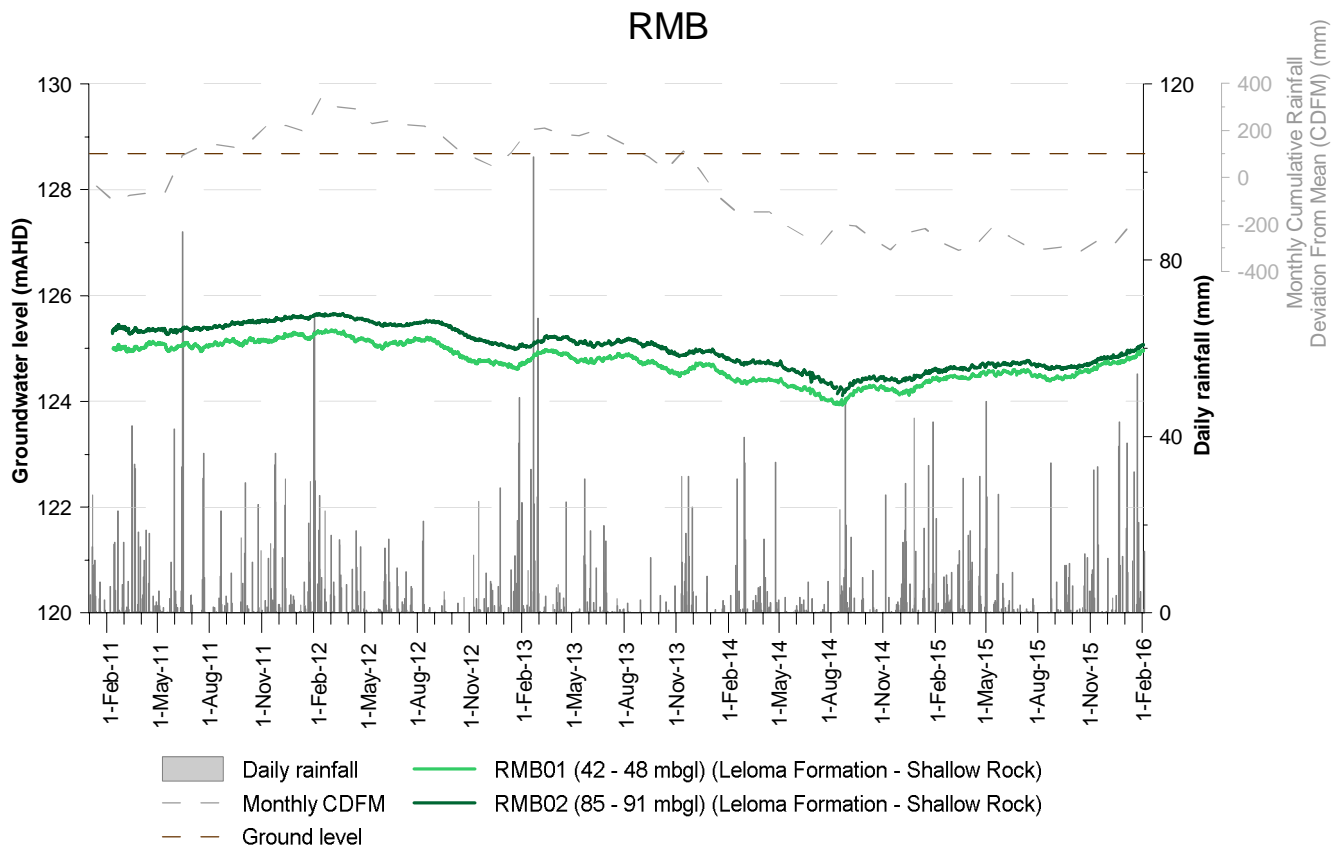
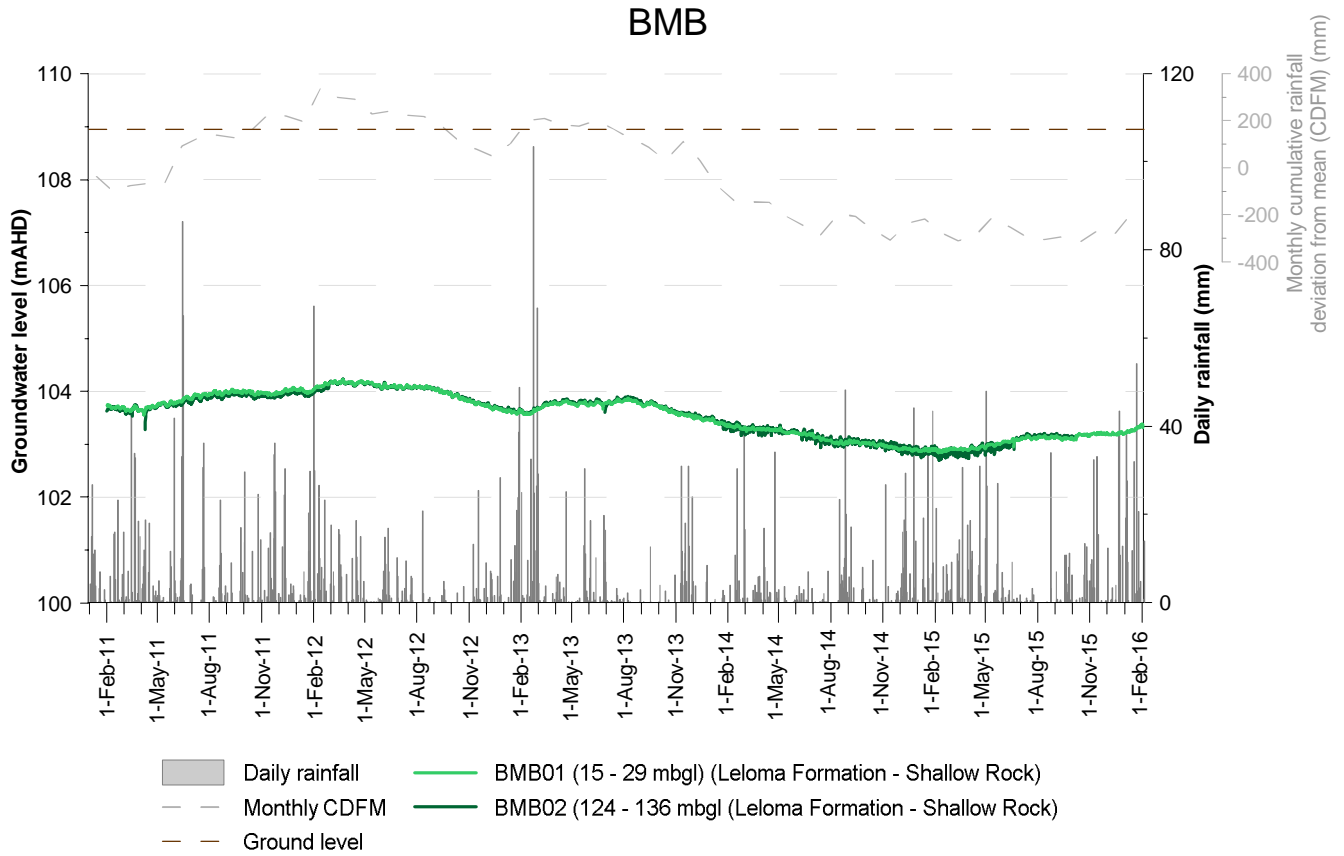


Figure 3: BMB and RMB monitoring bores

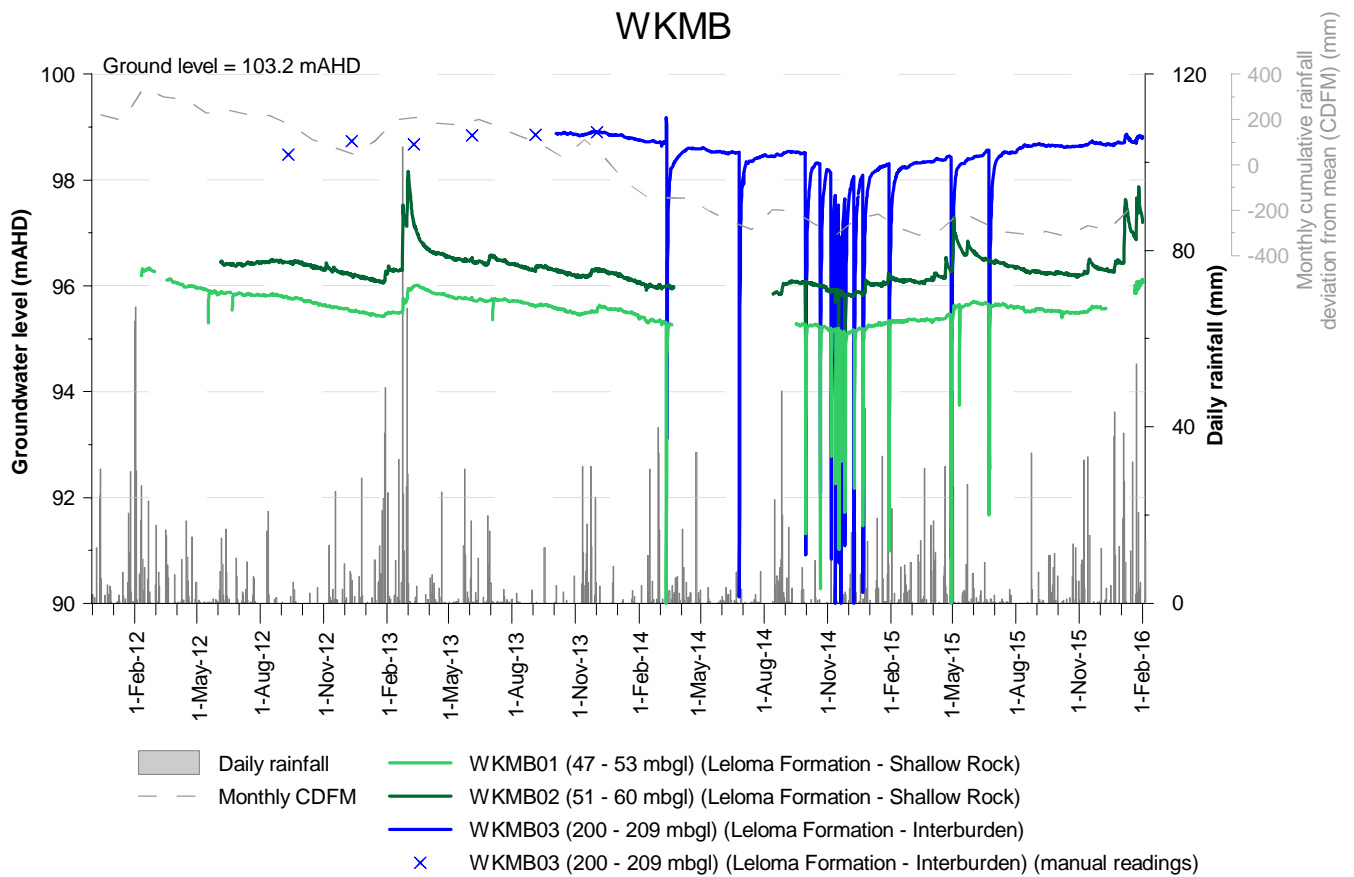
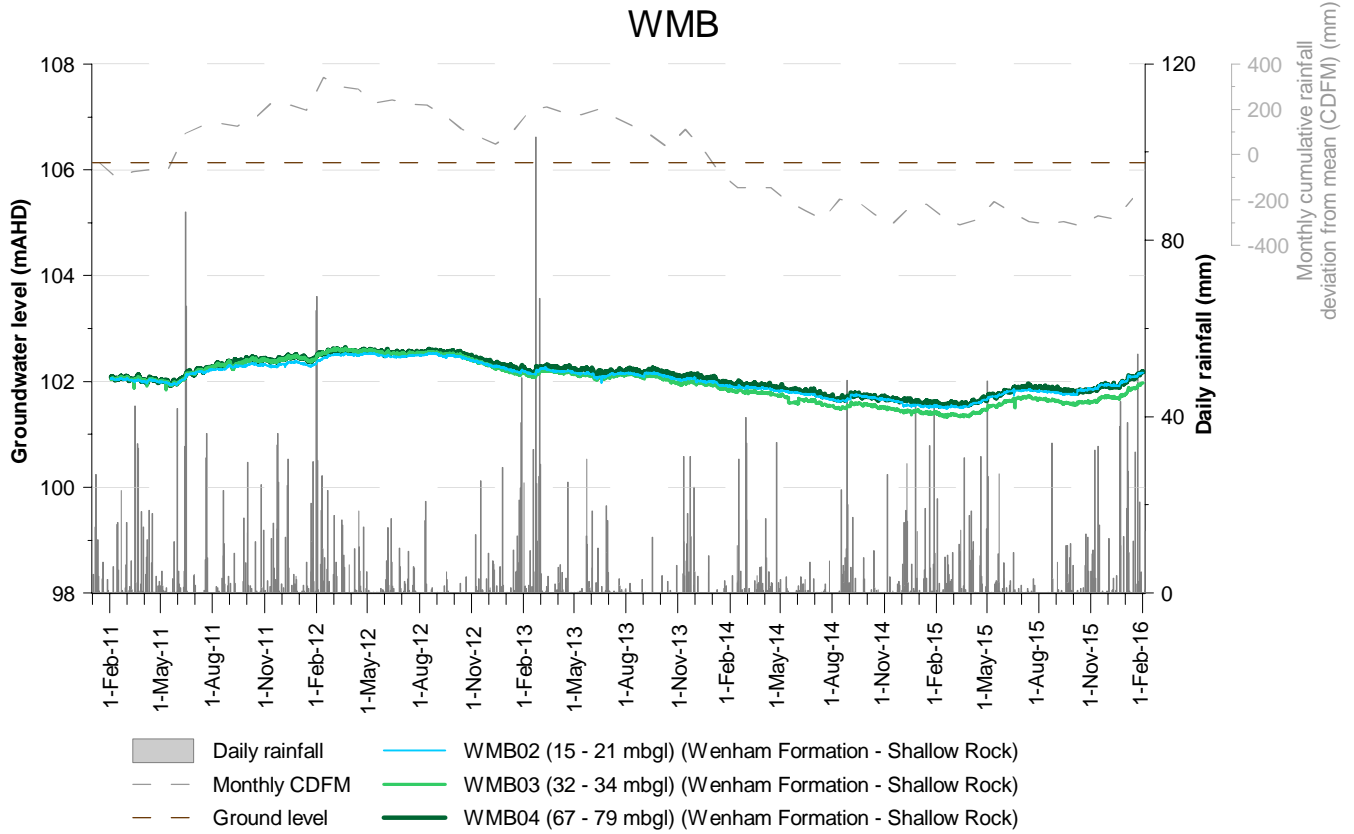


Figure 4: WMB and WKMB monitoring bores

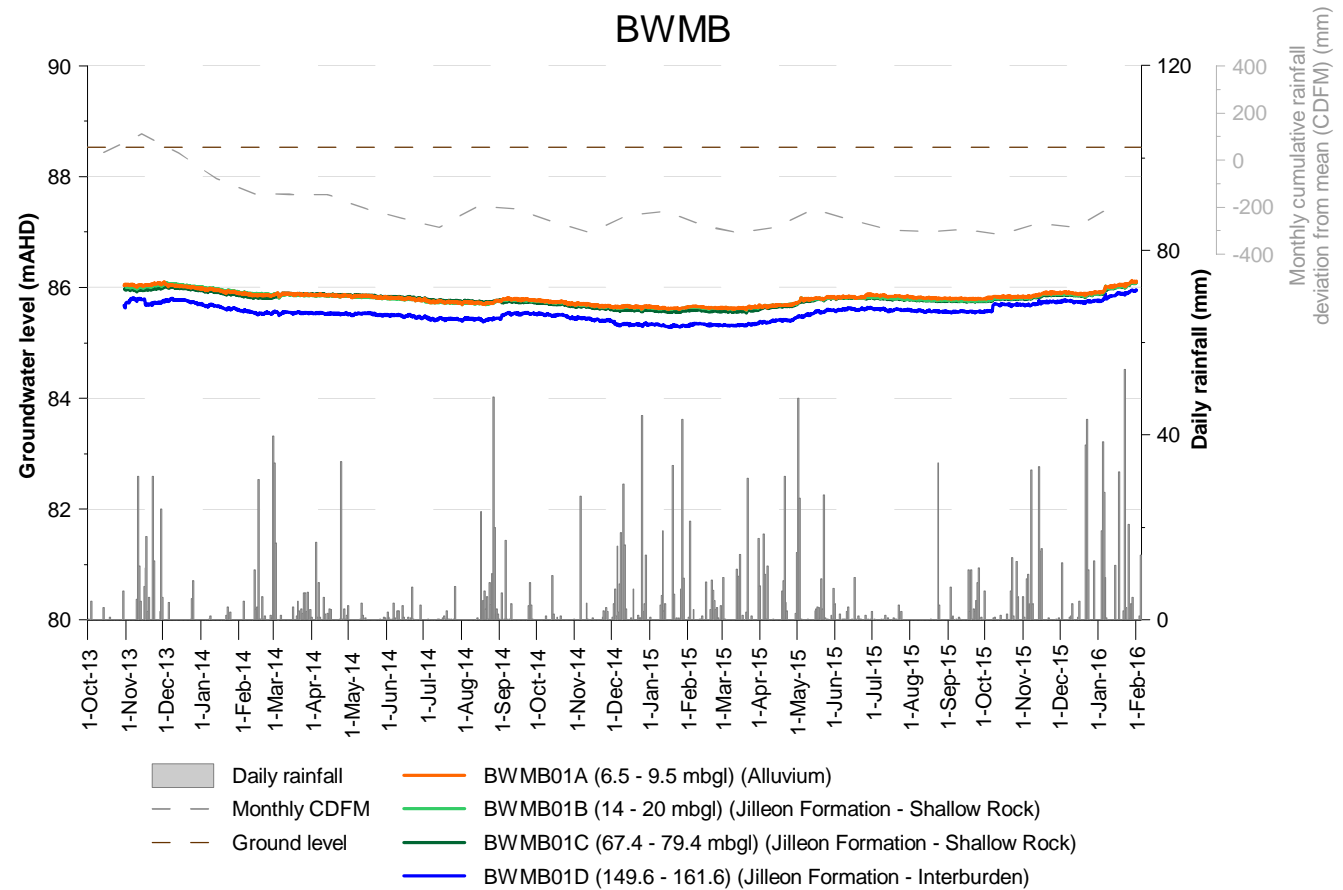
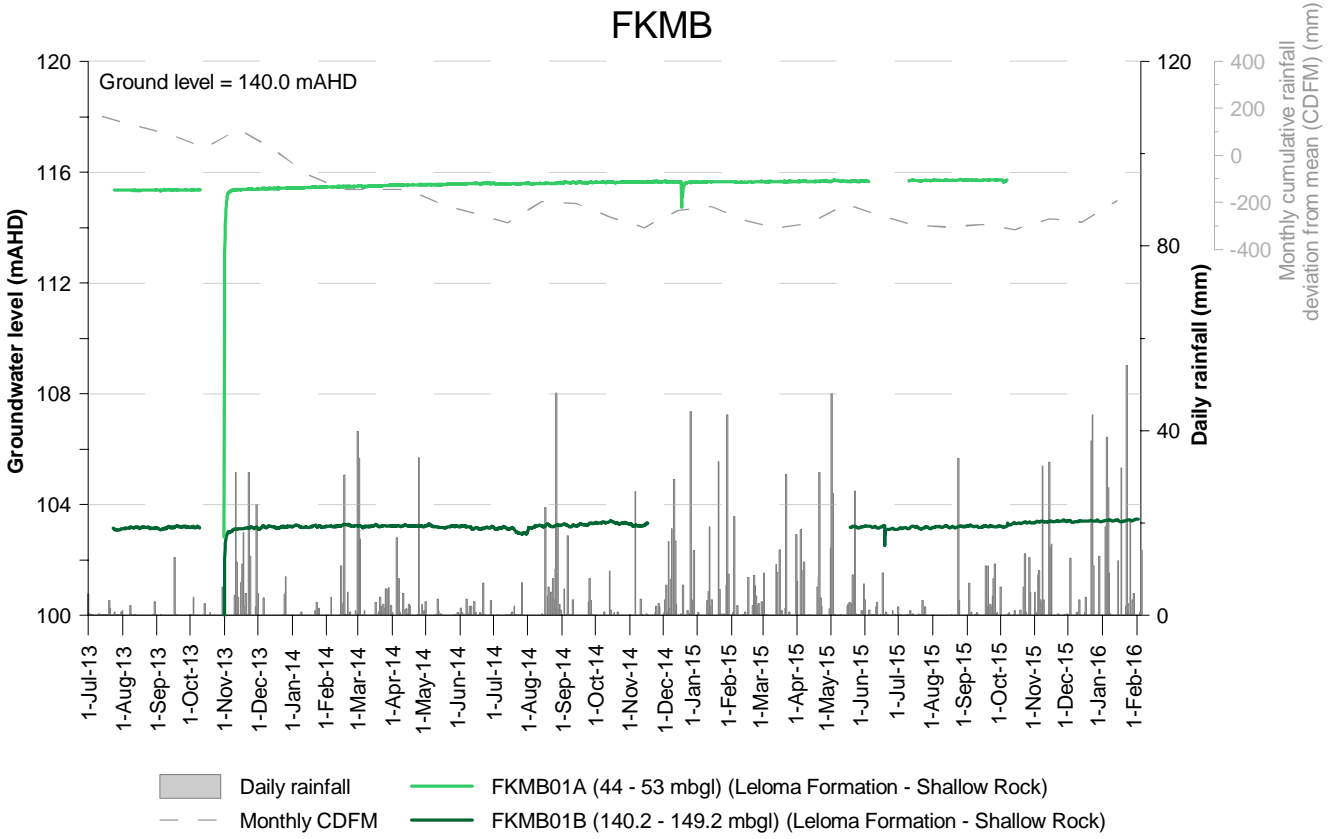
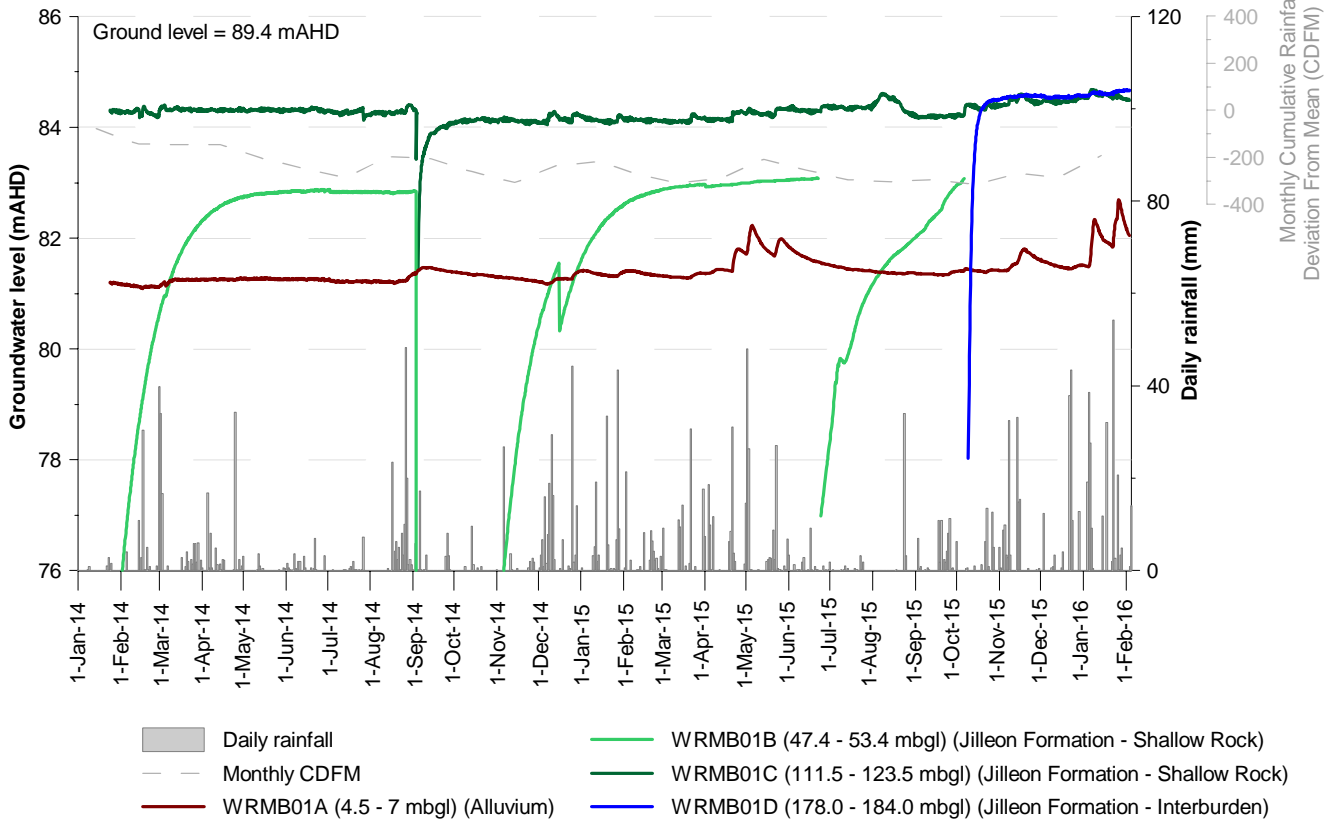


Figure 5: FKMB and BWMB monitoring bores

WRMB



WKMB06

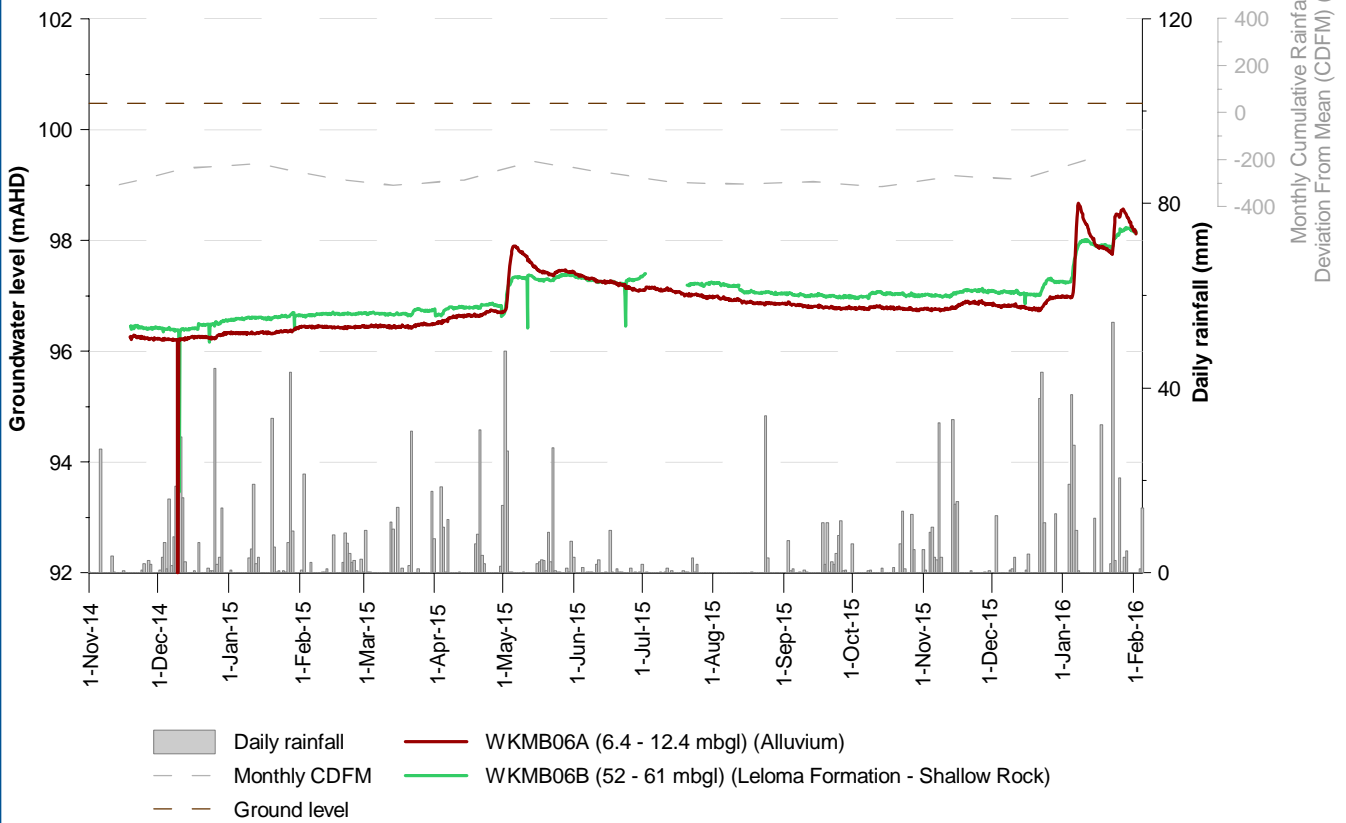


Figure 6: WRMB and WKMB06 monitoring bores

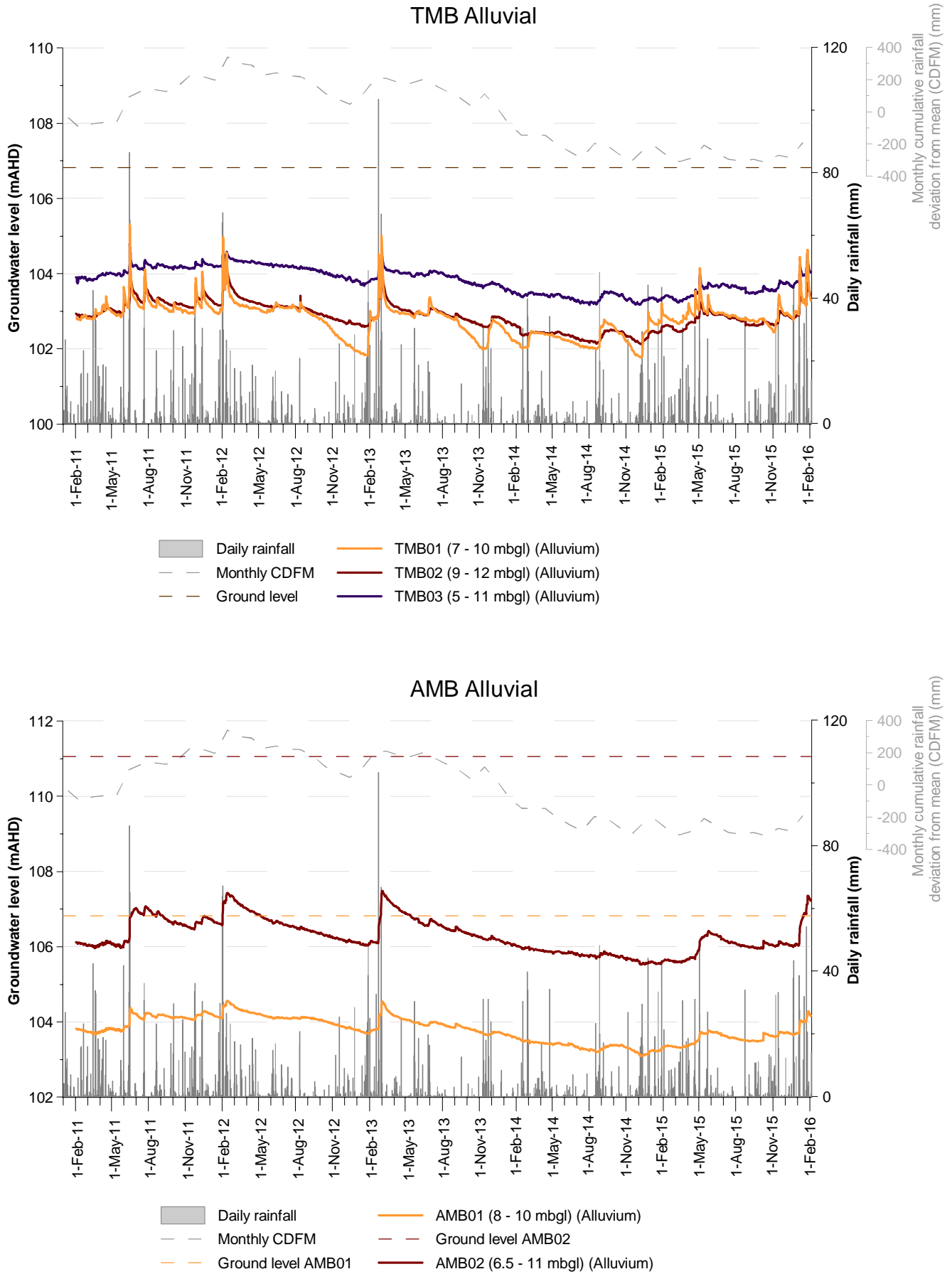


Figure 7: TMB and AMB Alluvial monitoring bores

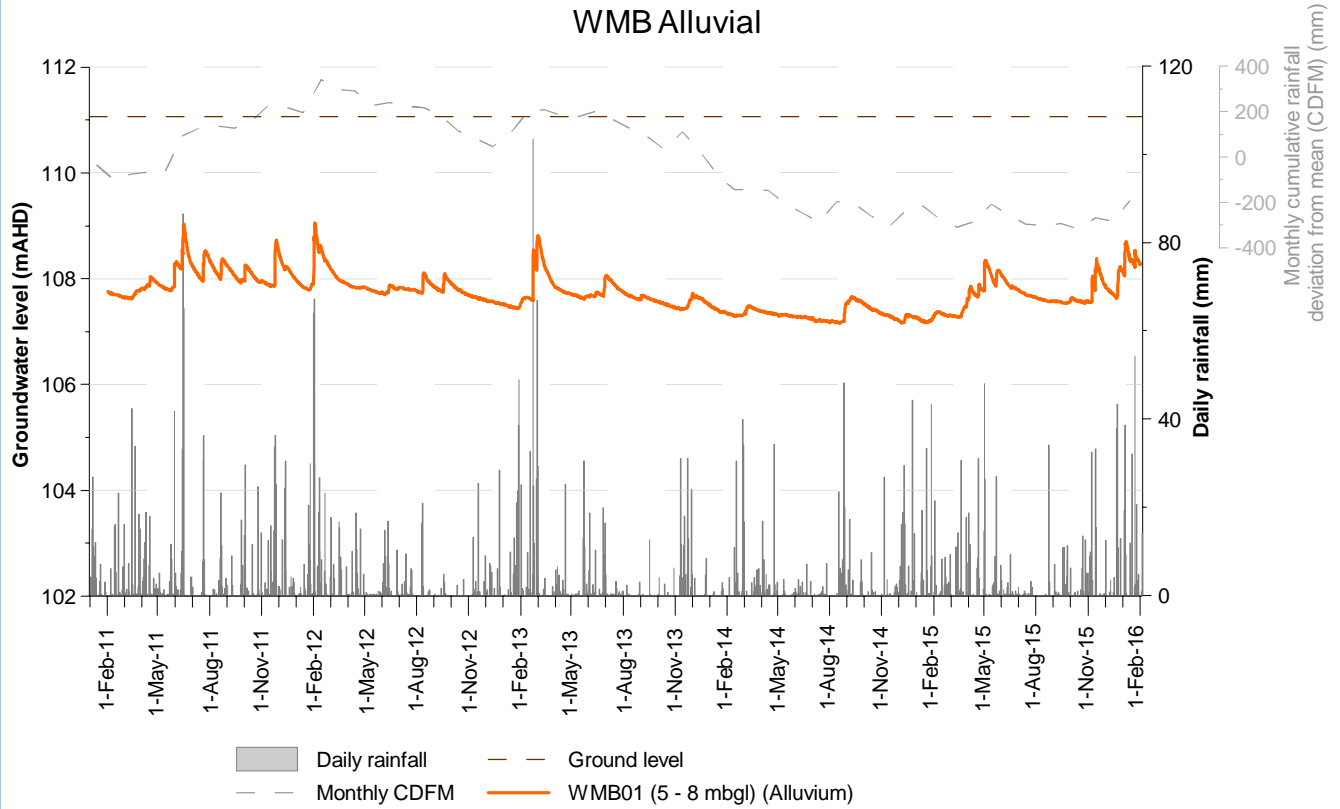


Figure 8: WMB Alluvial monitoring bore

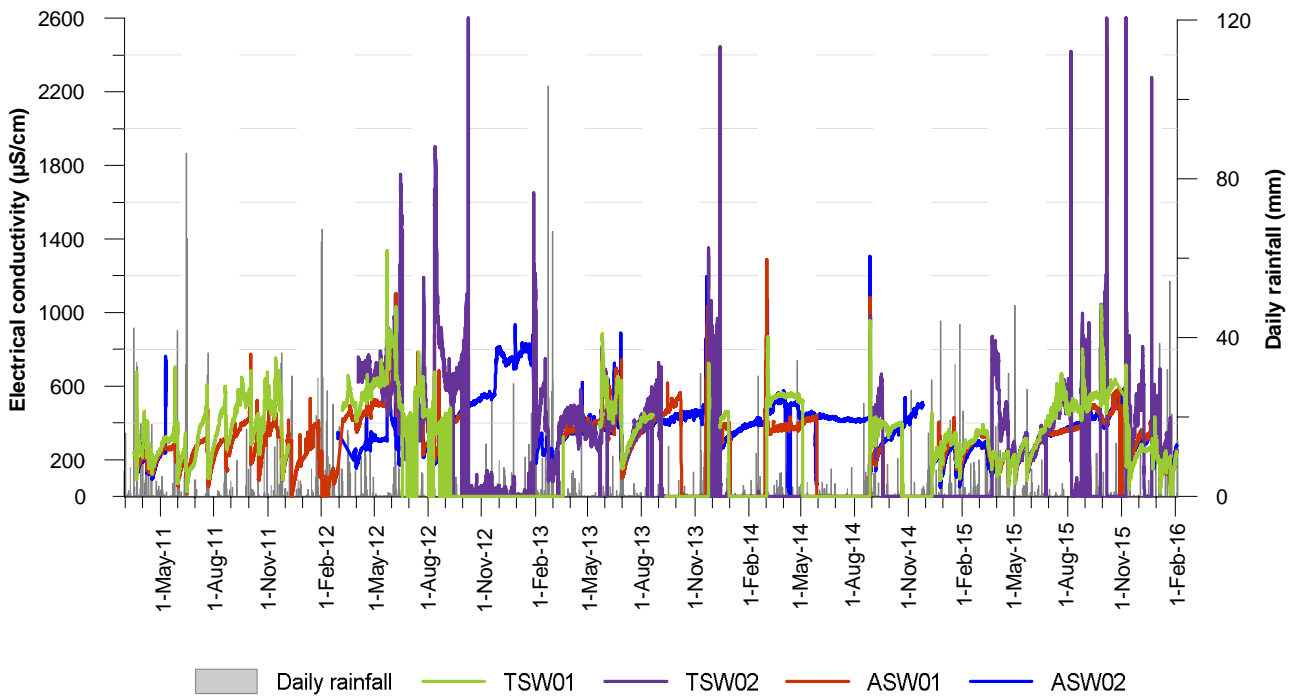
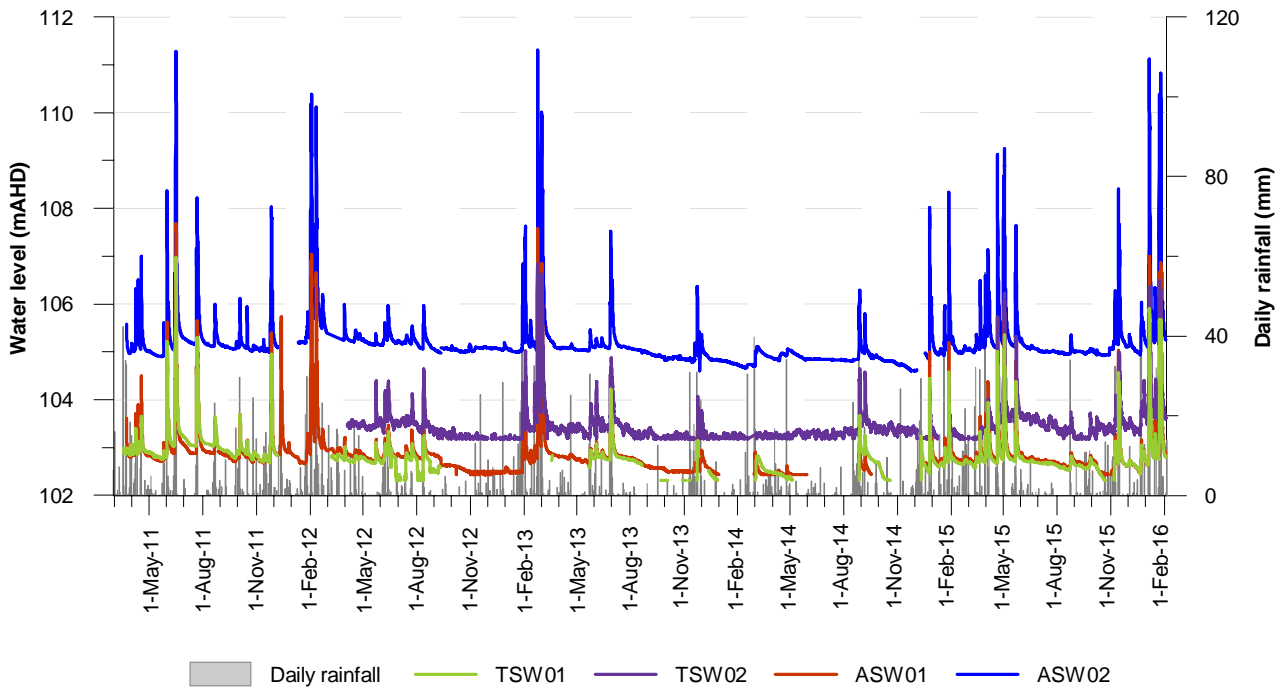


Figure 9: TSW01, TSW02, ASW01 and ASW02 surface water levels and electrical conductivity

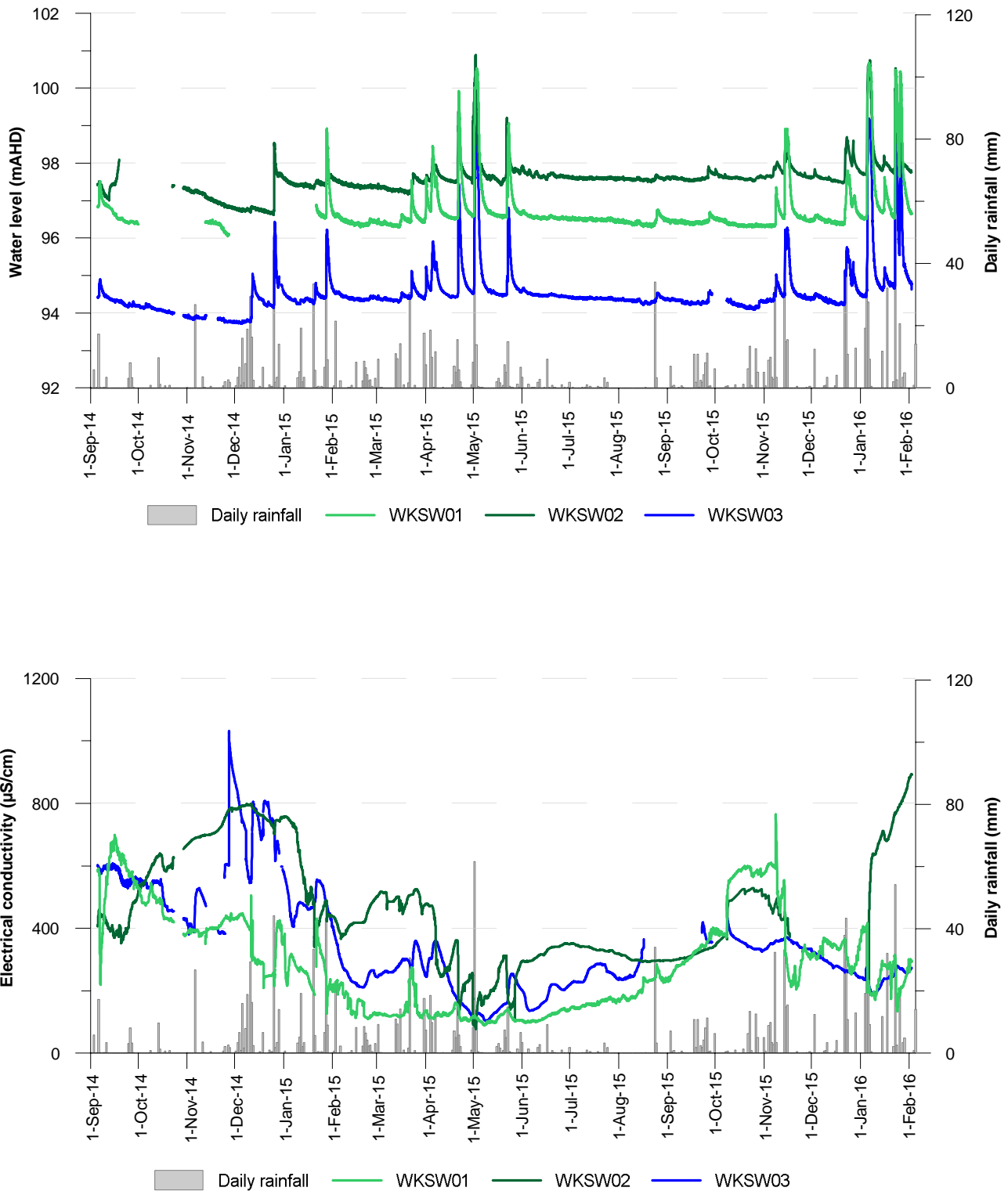


Figure 10: WKS01, WKS02 and WKS03 surface water levels and electrical conductivity

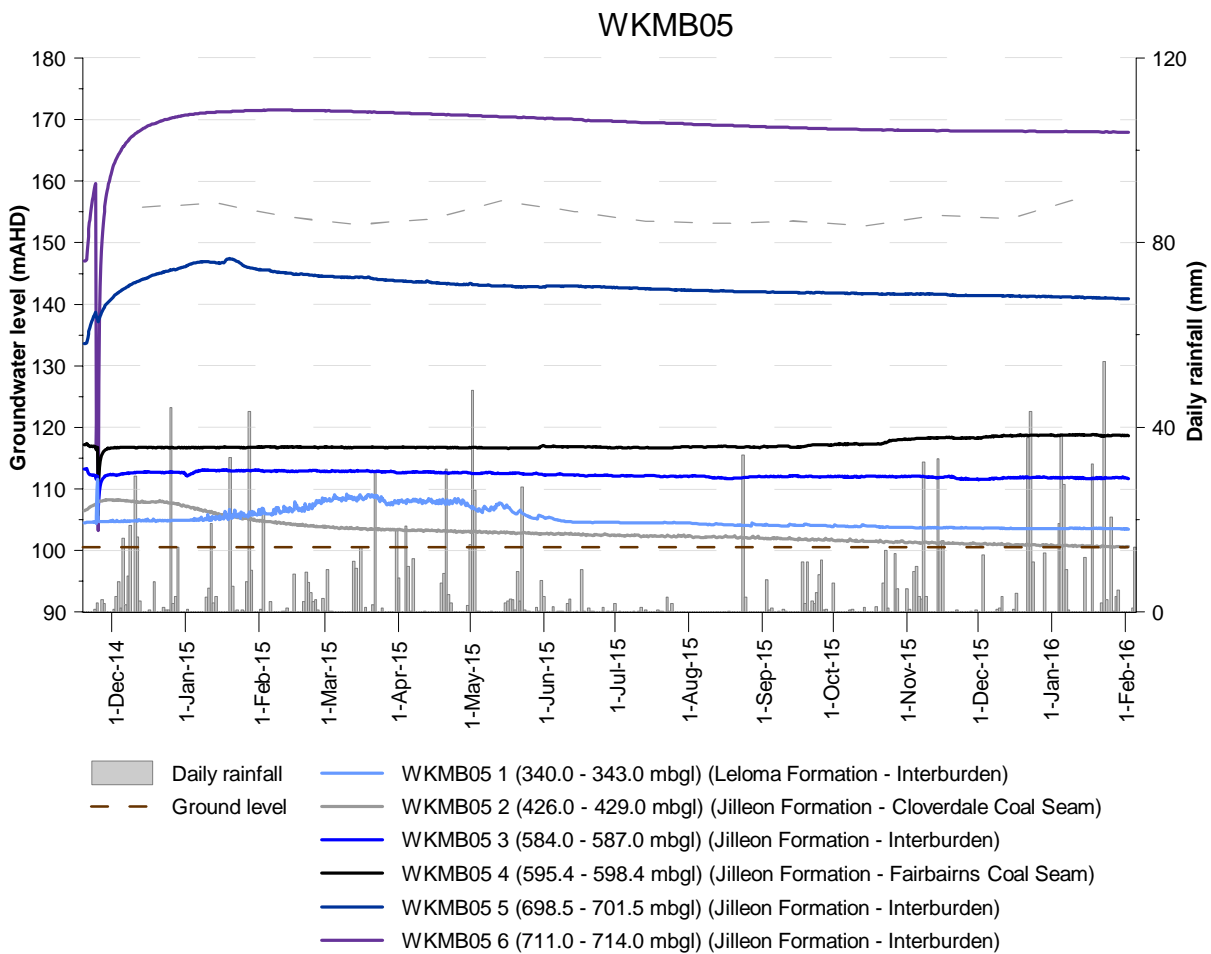
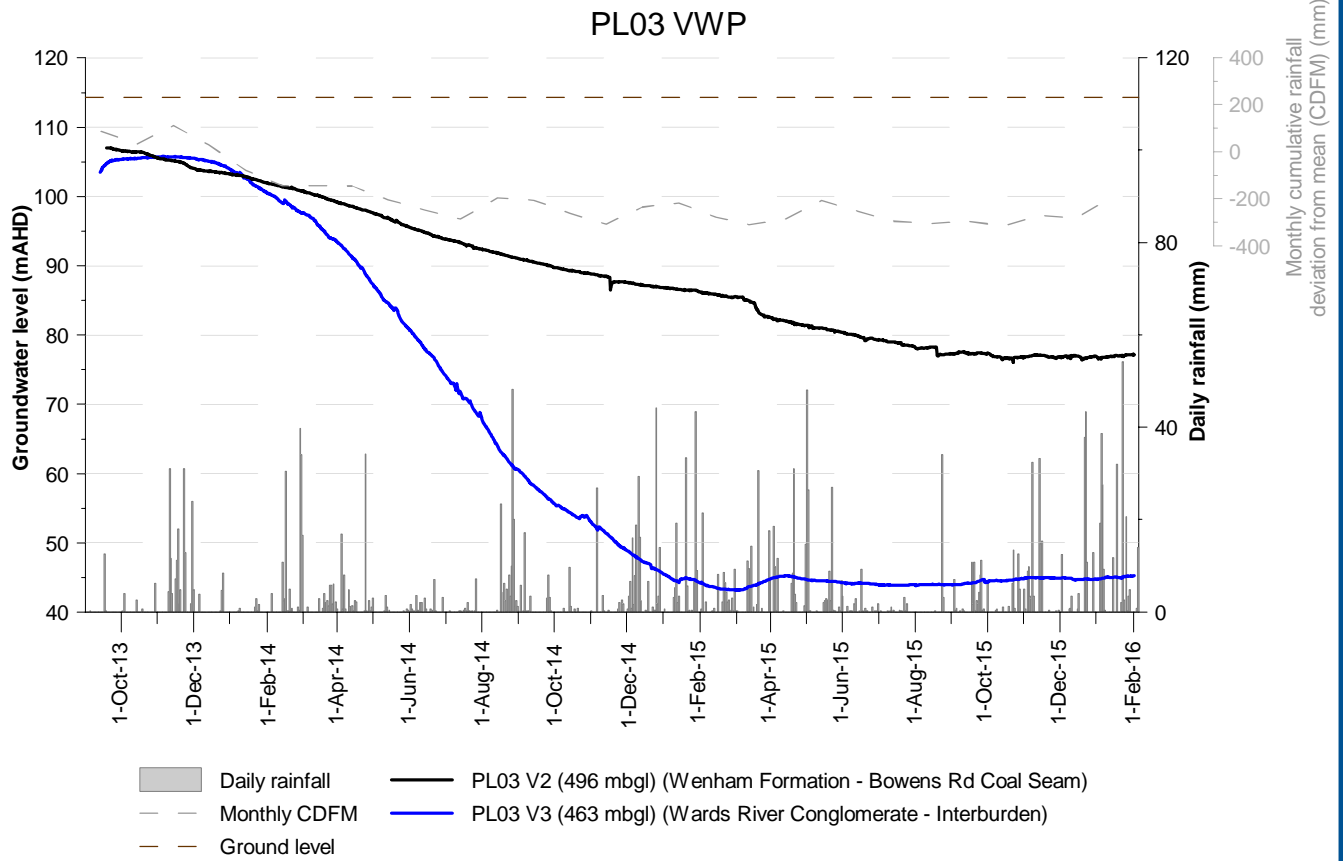


Figure 11: PL03 vibrating wire piezometer and WKMB05 multizone monitoring well

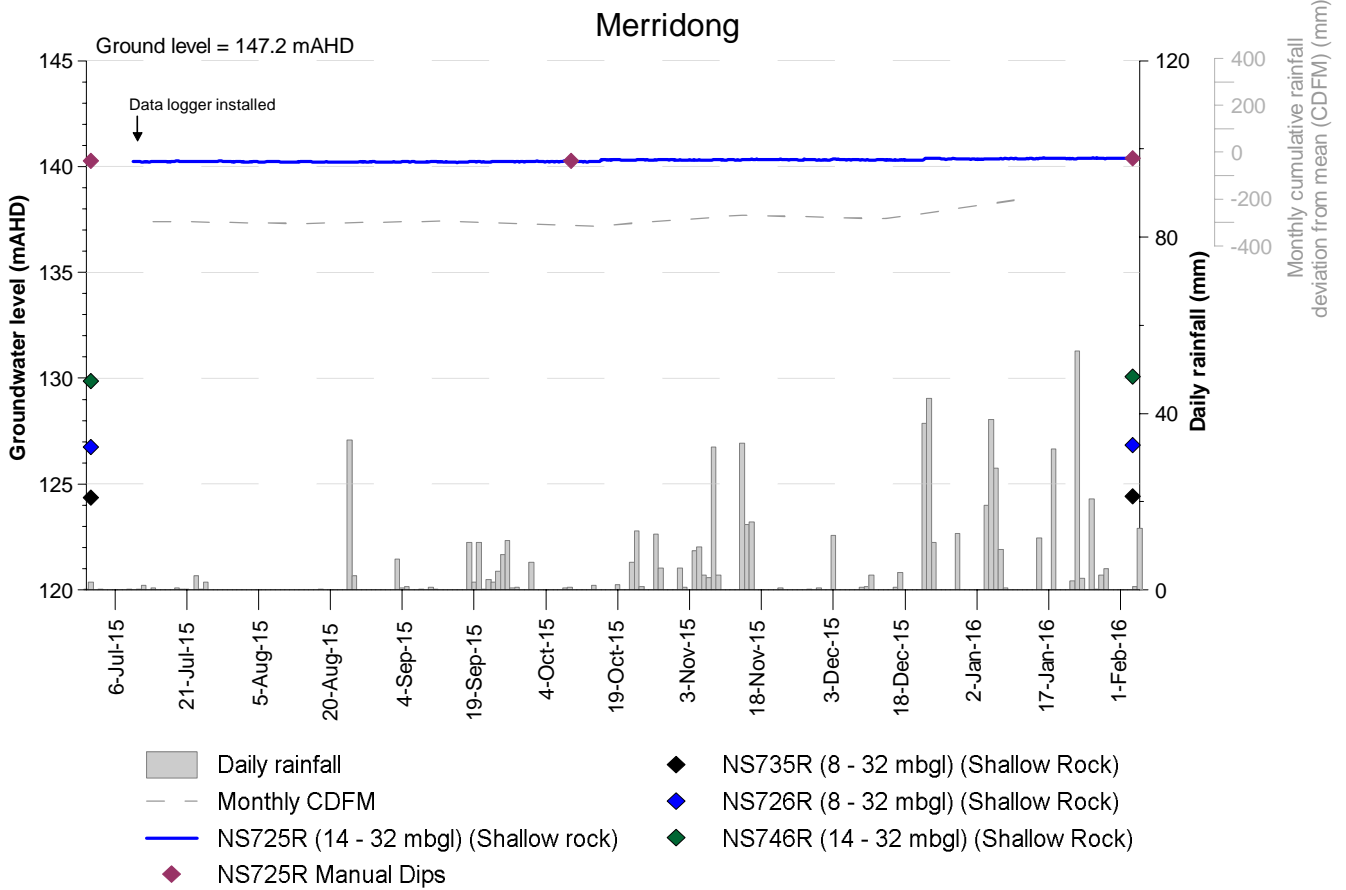


Figure 12: Merridong monitoring bores

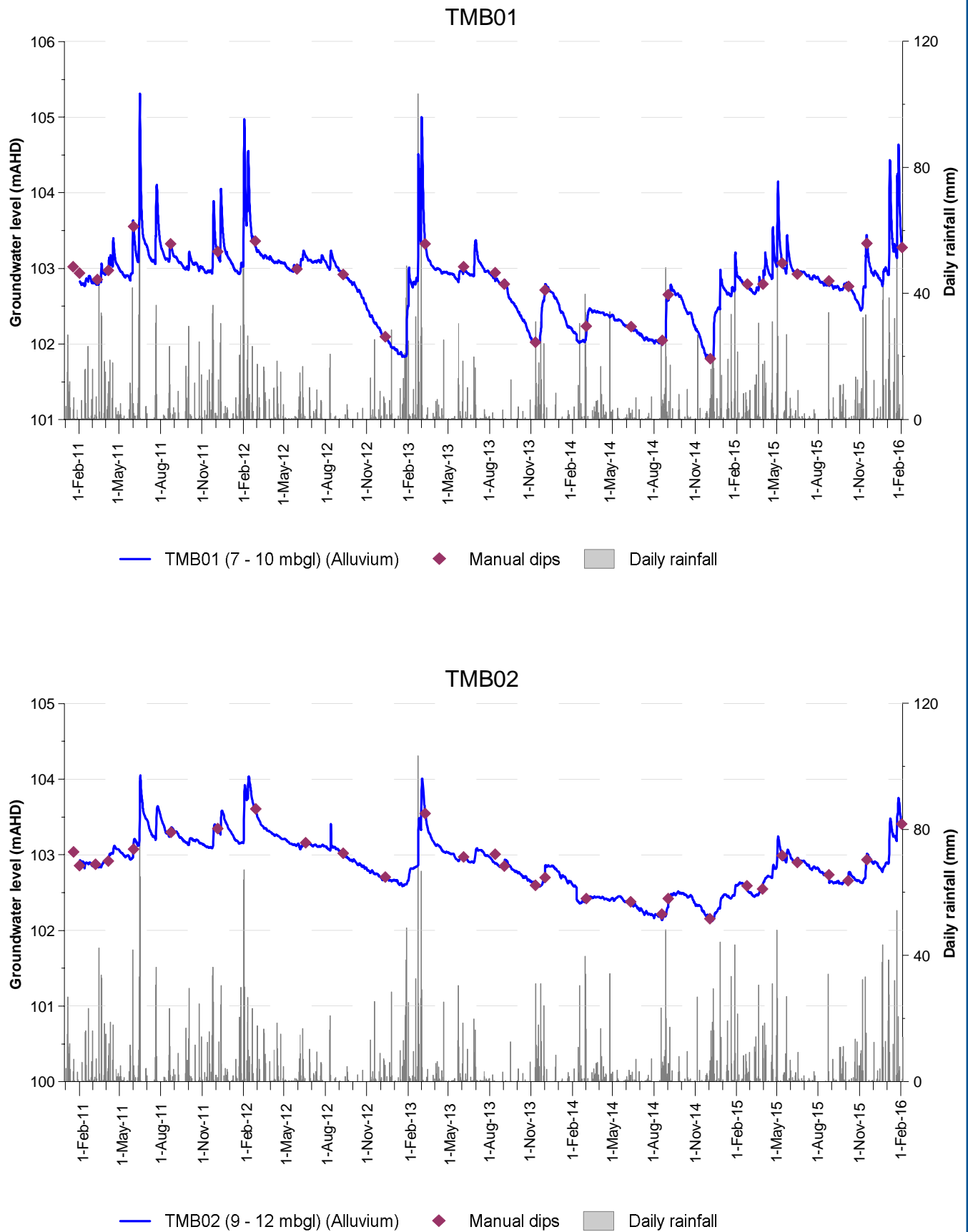


Figure A.1: TMB01 and TMB02 monitoring bores

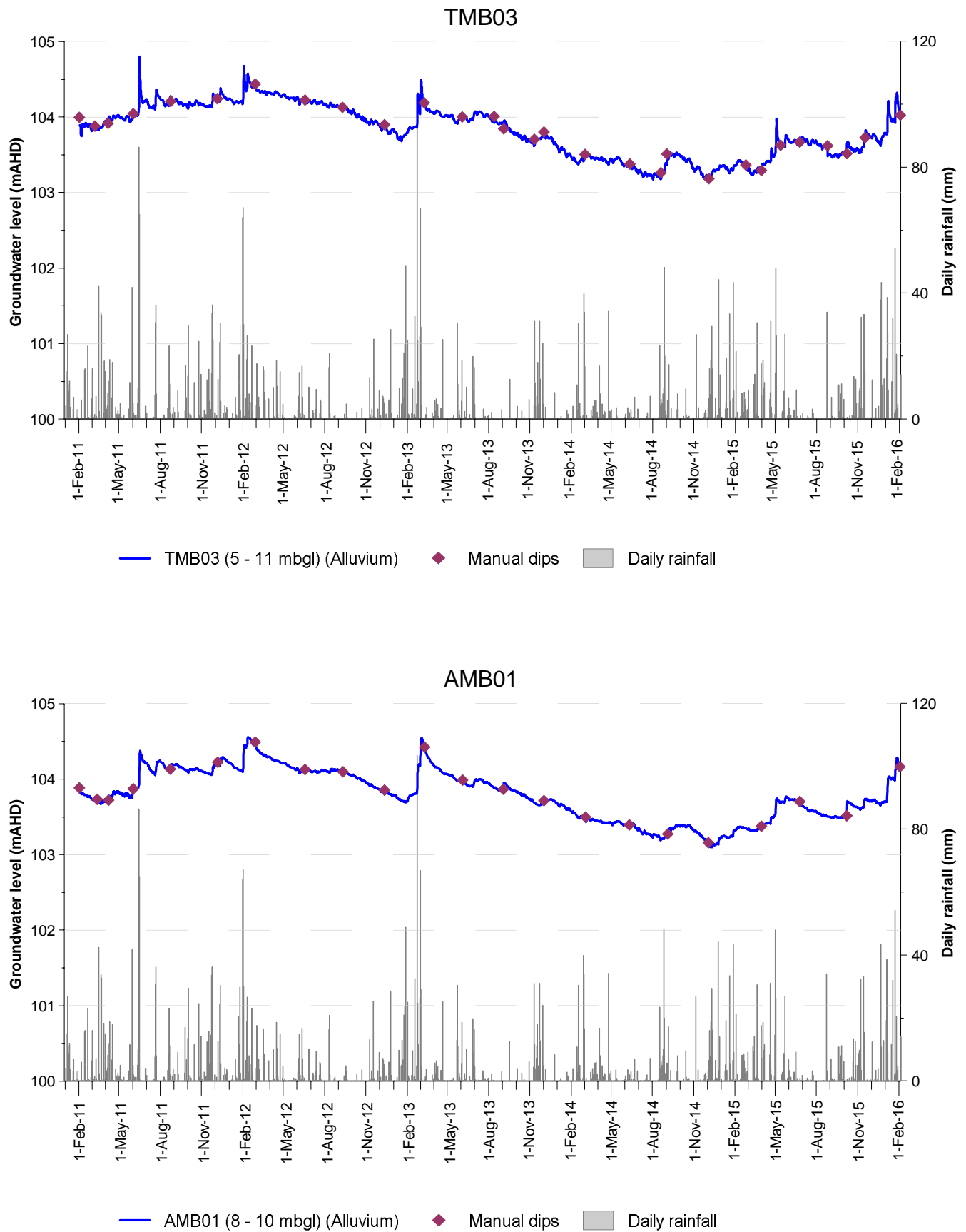


Figure A.2: TMB03 and AMB01 monitoring bores

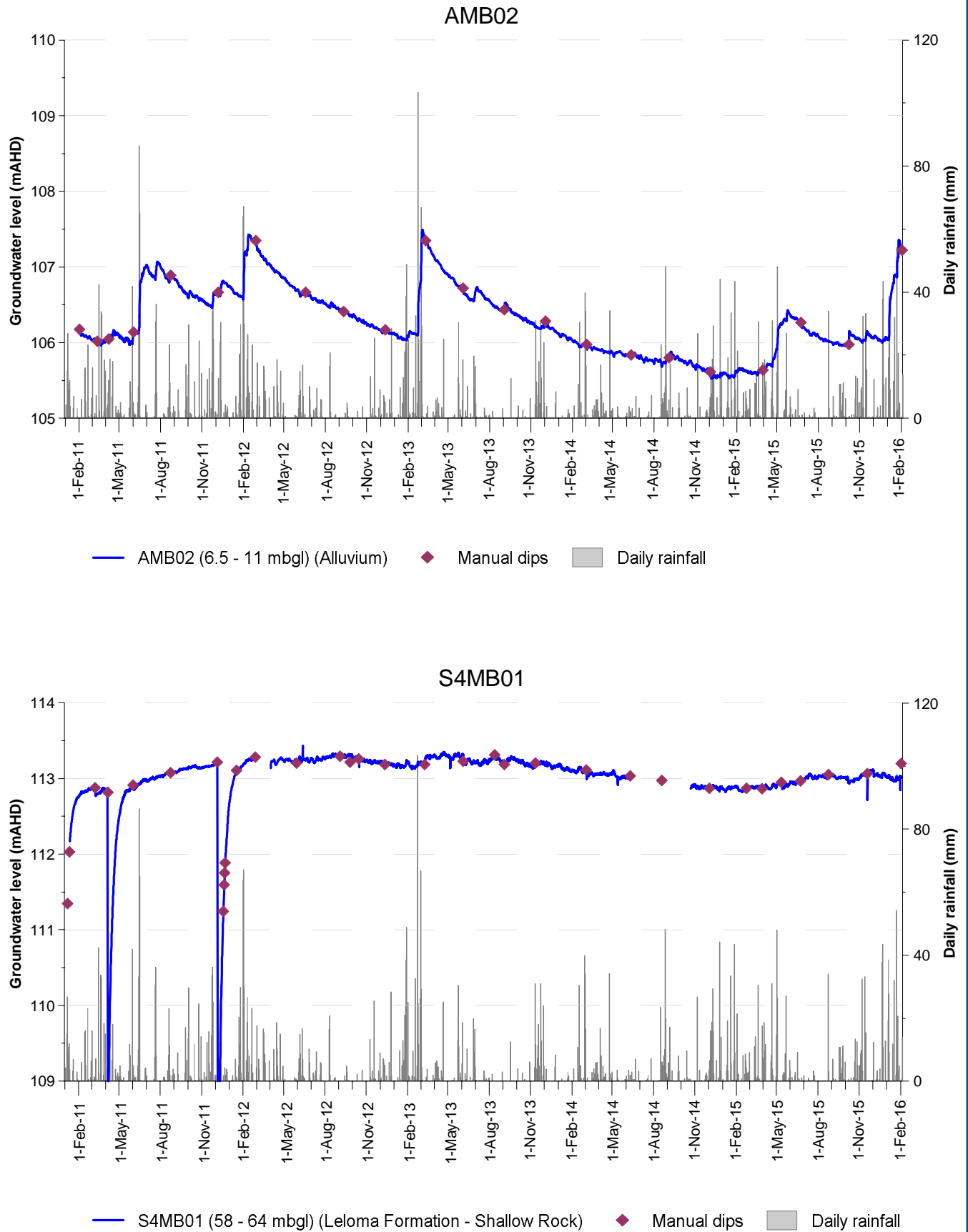


Figure A.3: AMB02 and S4MB01 monitoring bores

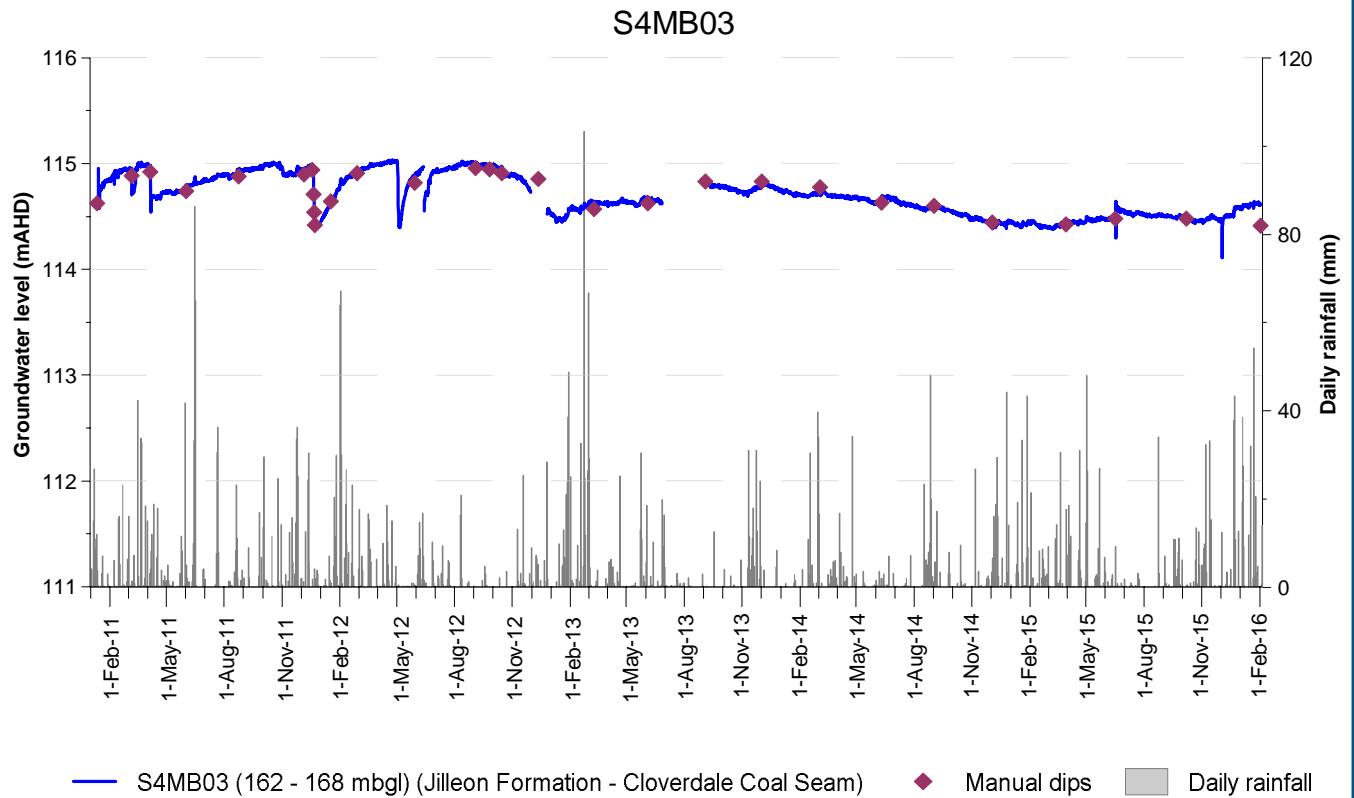
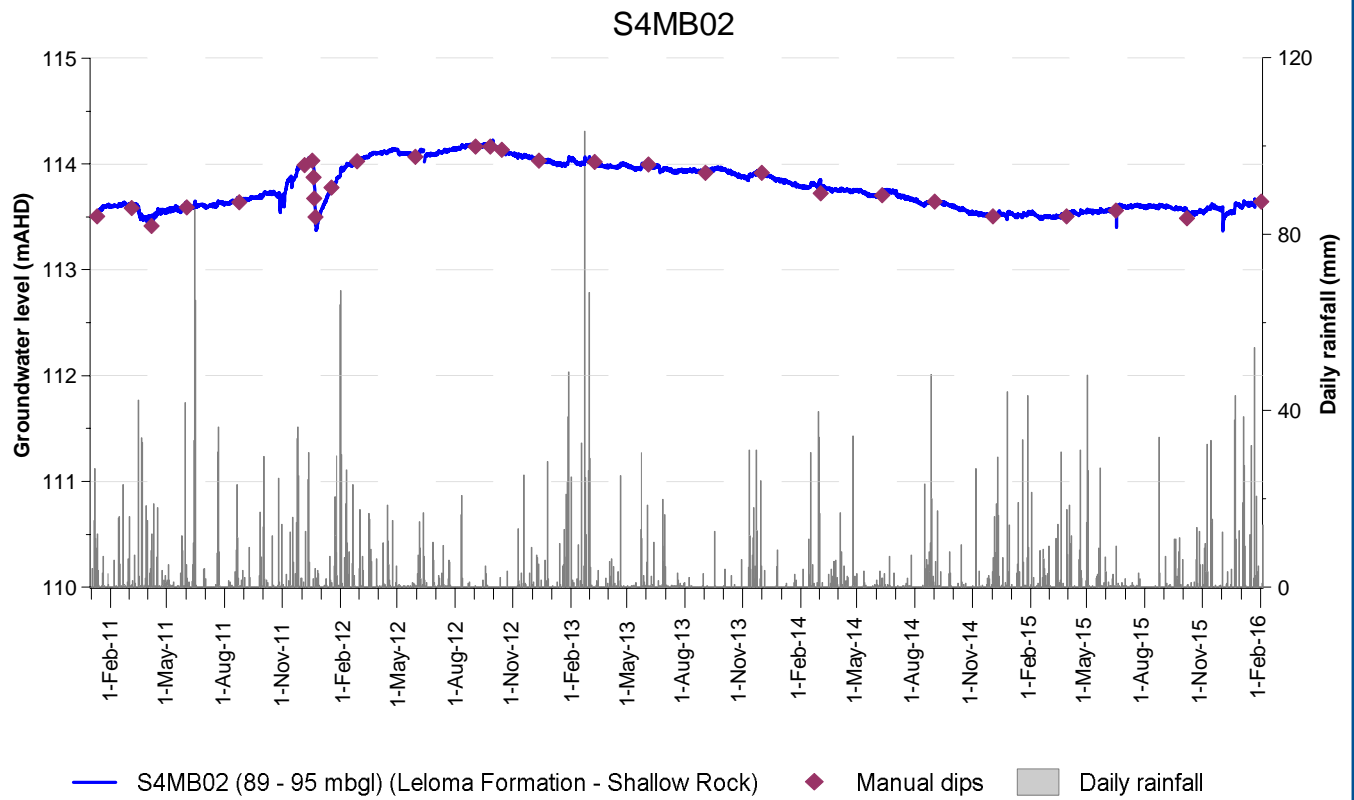


Figure A.4: S4MB02 and S4MB03 monitoring bores

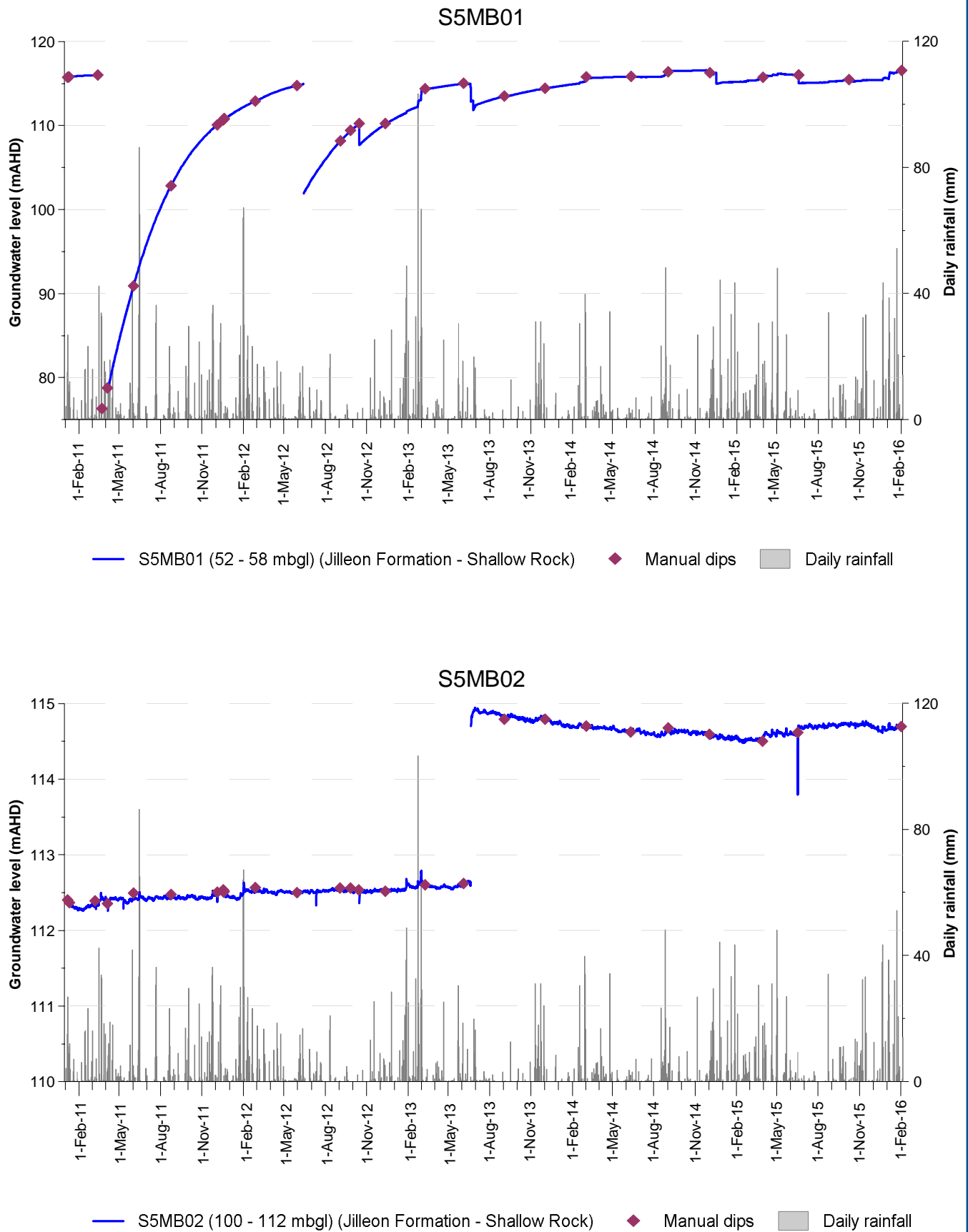


Figure A.5: S5MB01 and S5MB02 monitoring bores

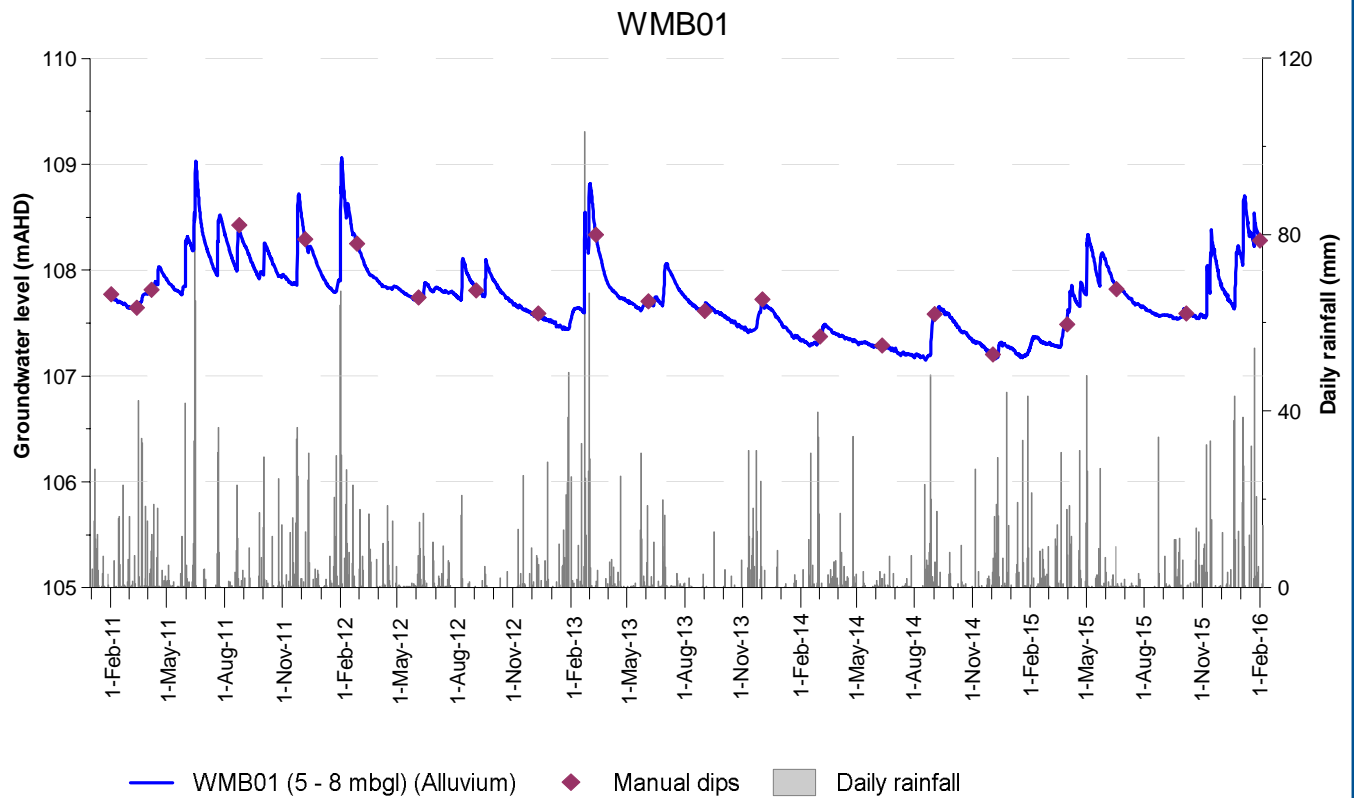
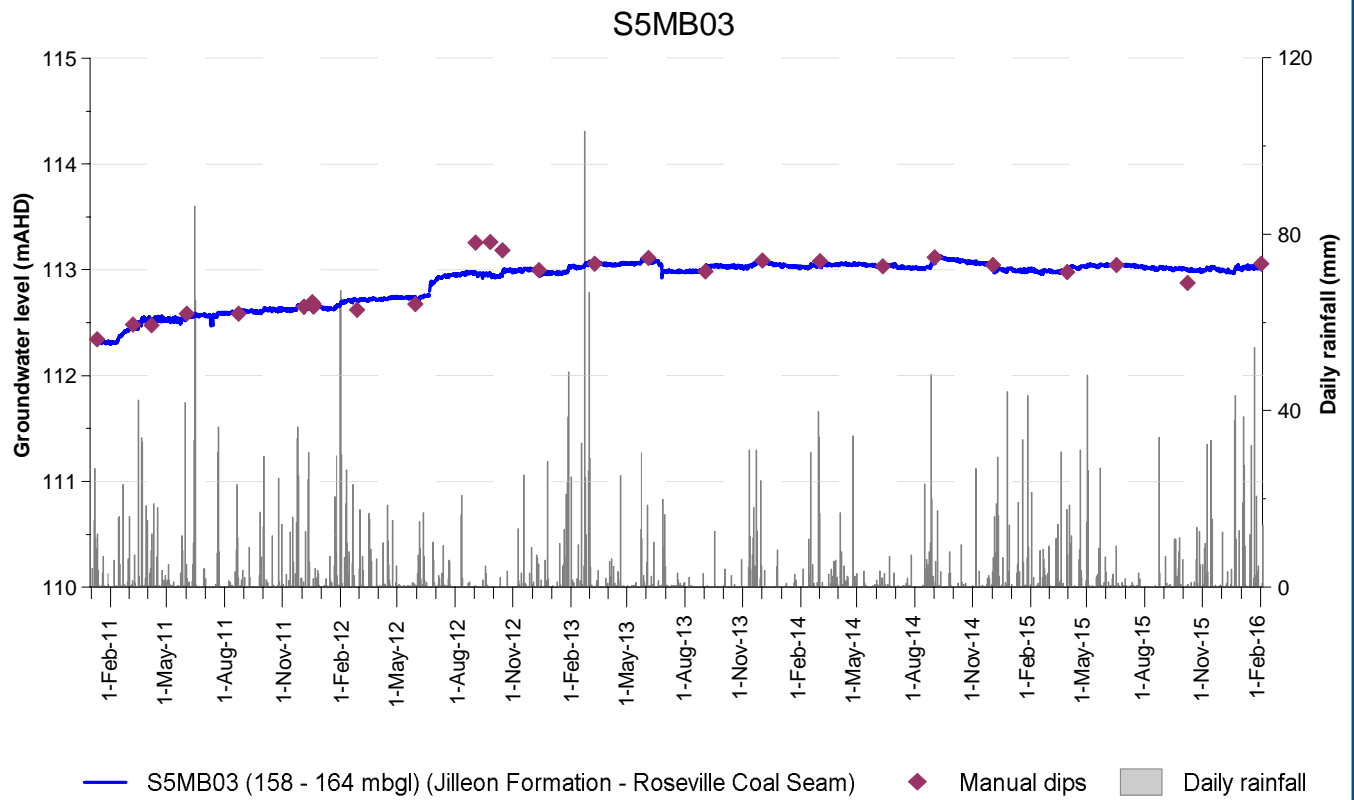


Figure A.6: S5MB03 and WMB01 monitoring bores

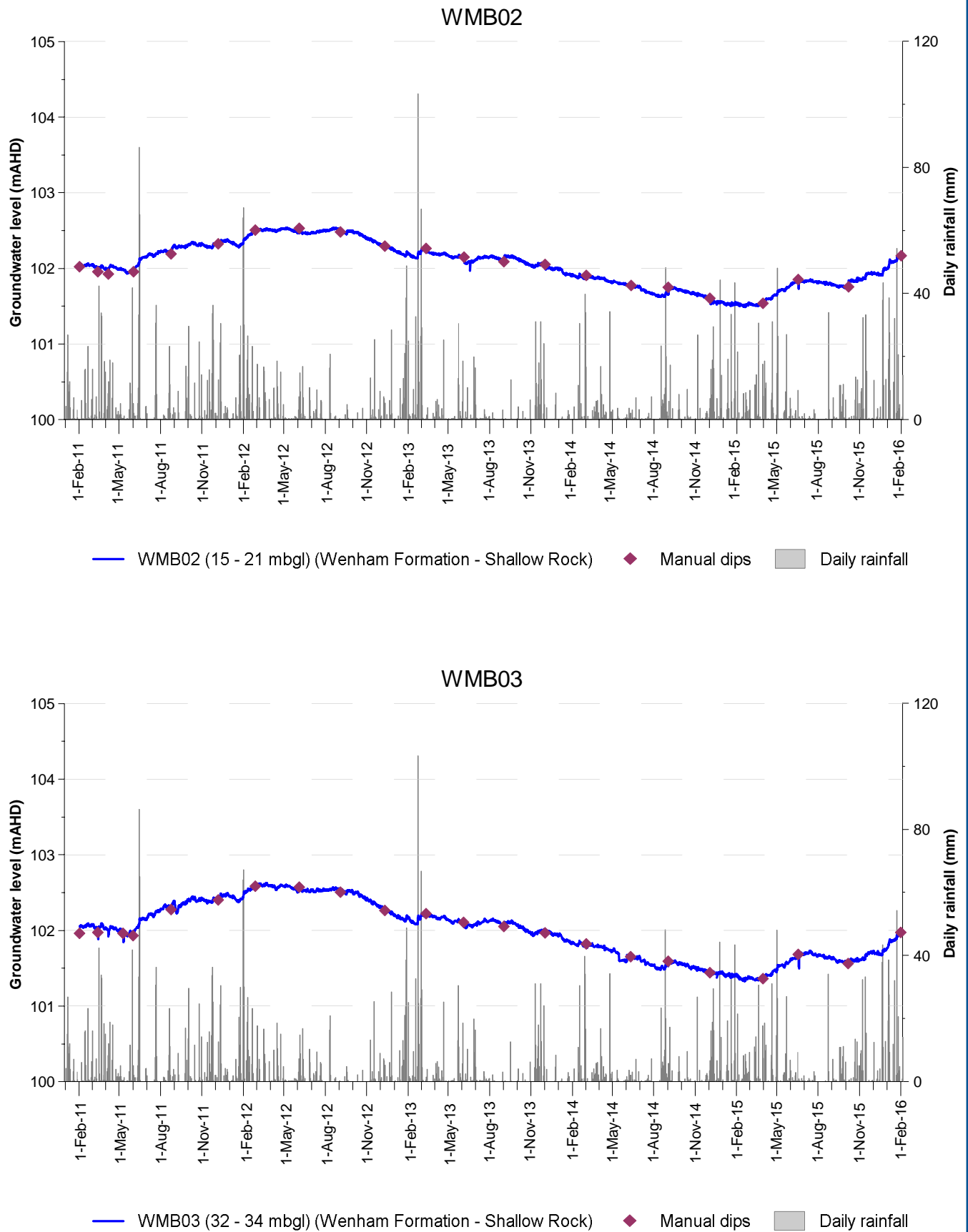


Figure A.7: WMB02 and WMB03 monitoring bores

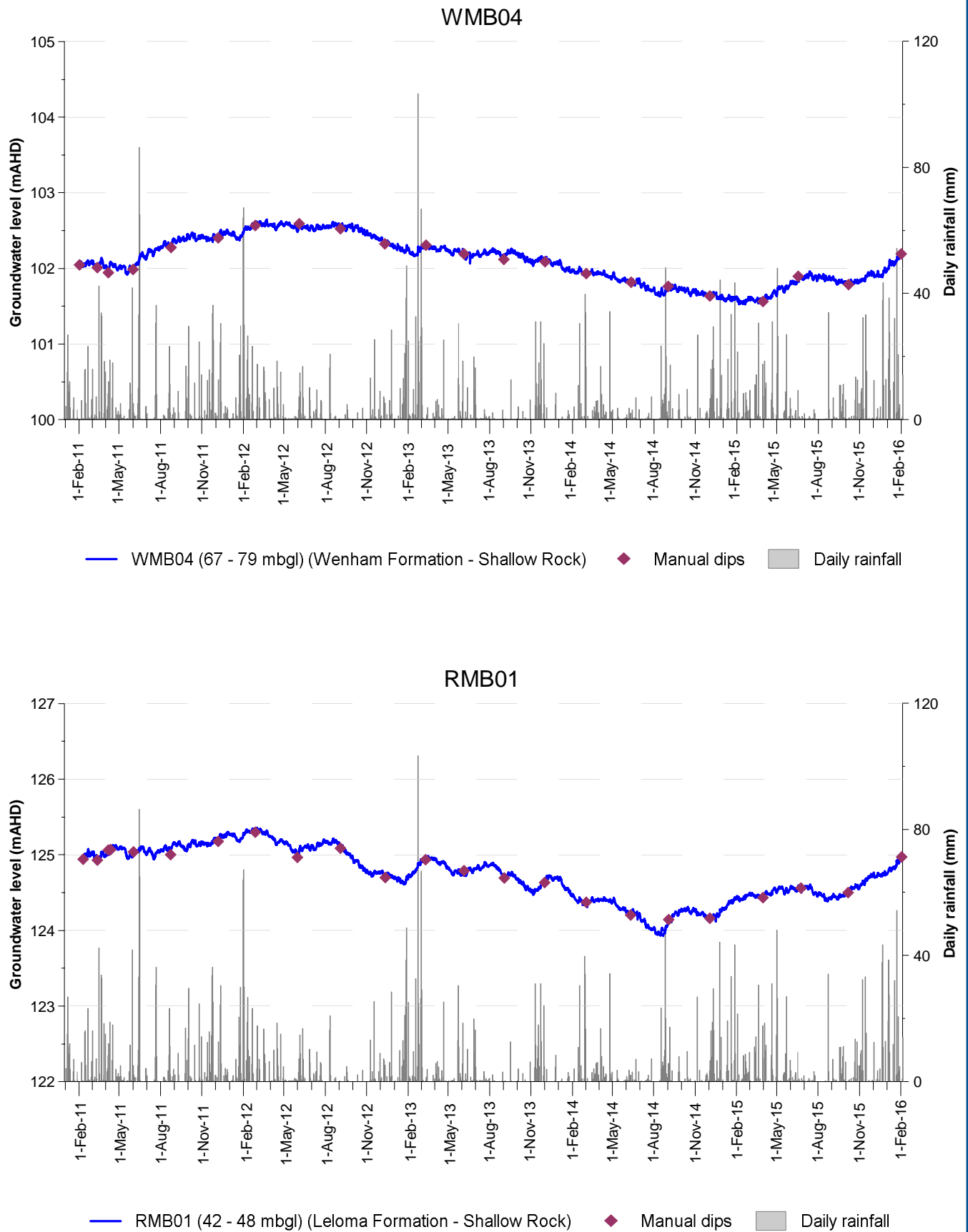


Figure A.8: WMB04 and RMB01 monitoring bores

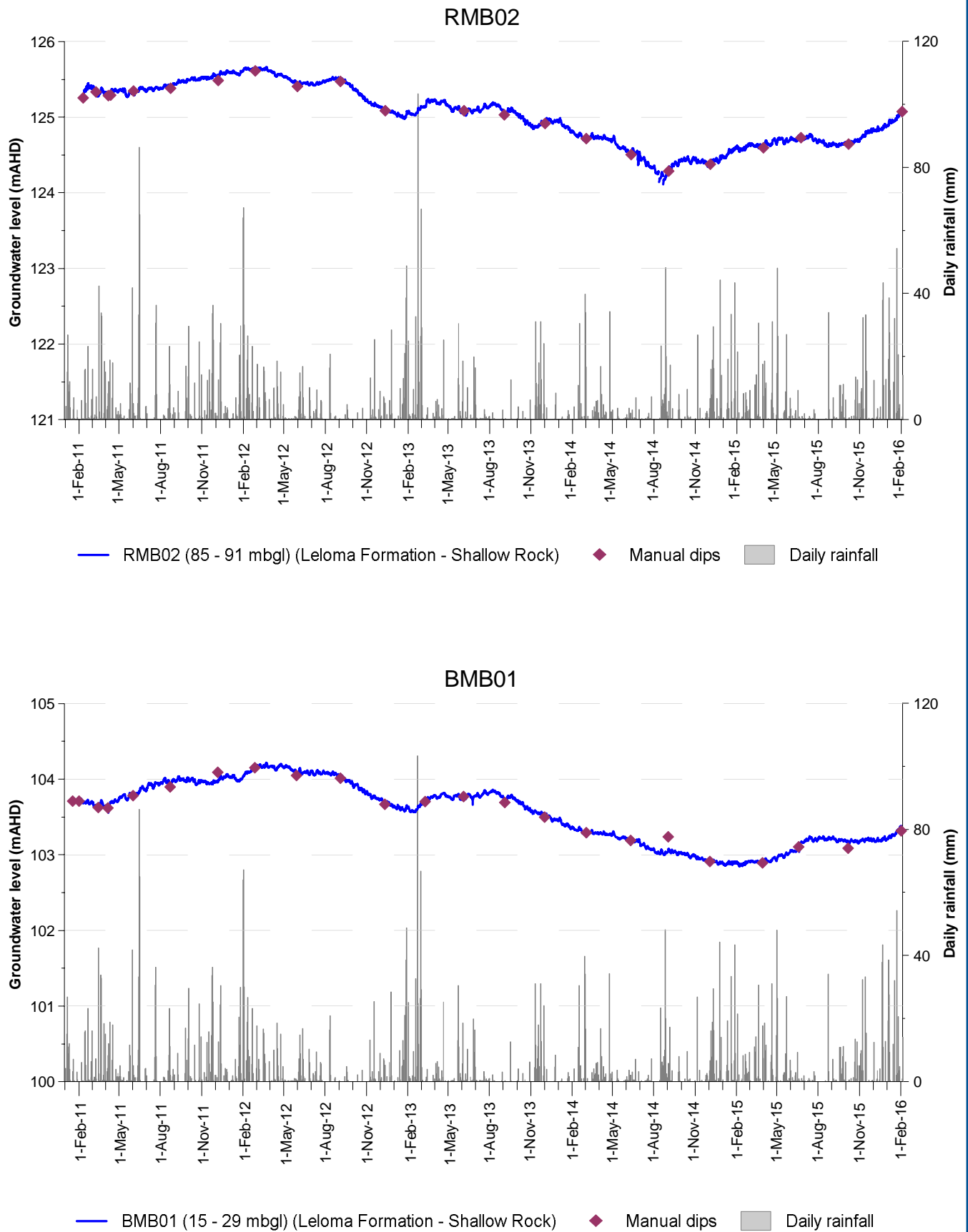


Figure A.9: RMB02 and BMB01 monitoring bores

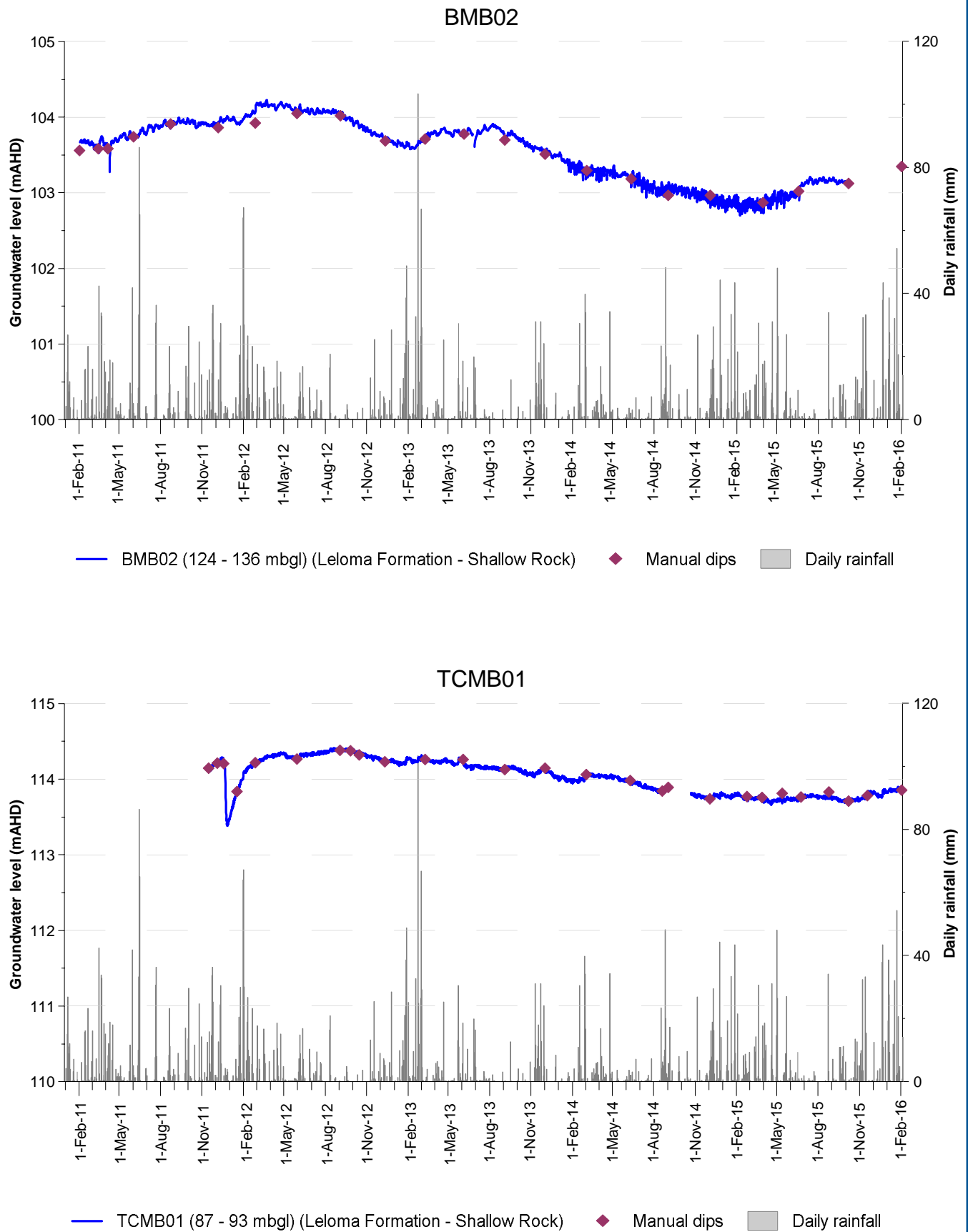


Figure A.10: BMB02 and TCMB01 monitoring bores

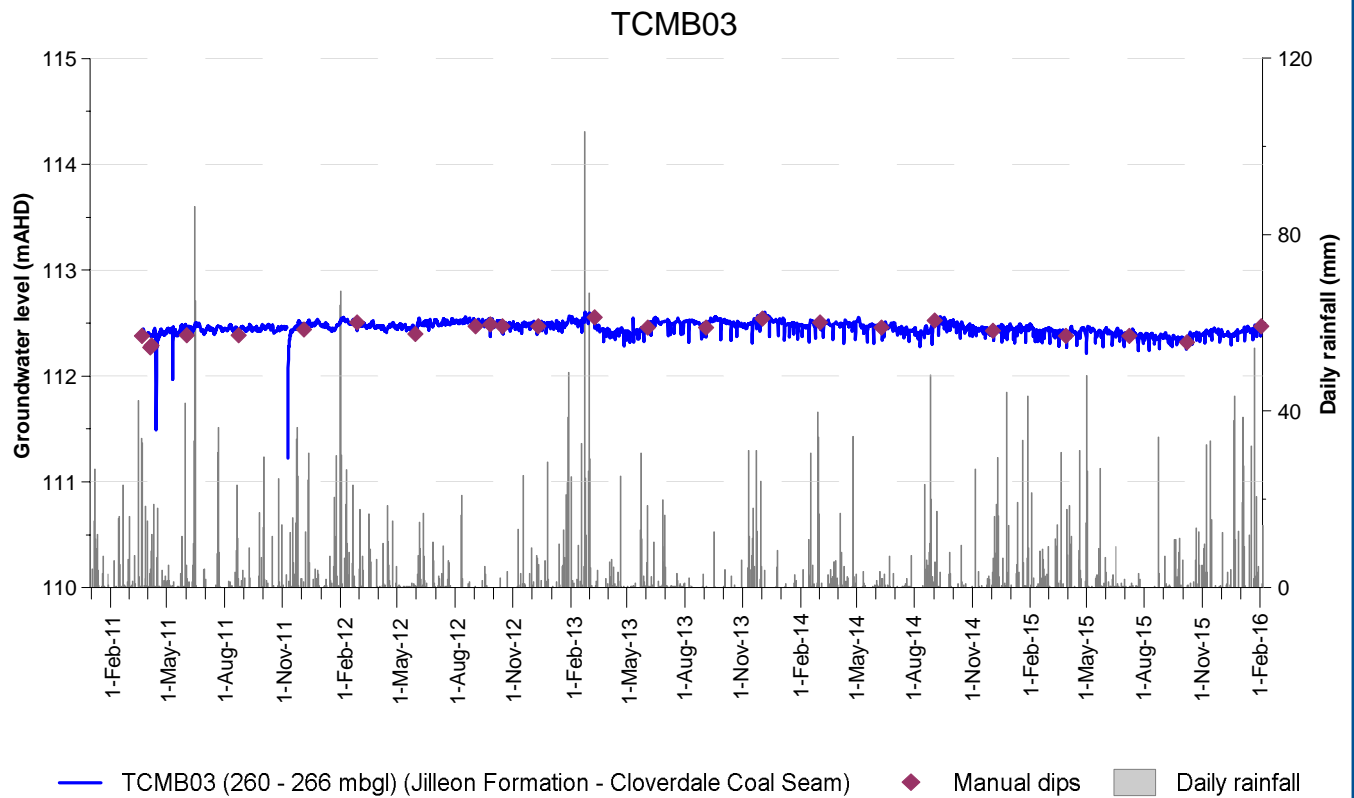
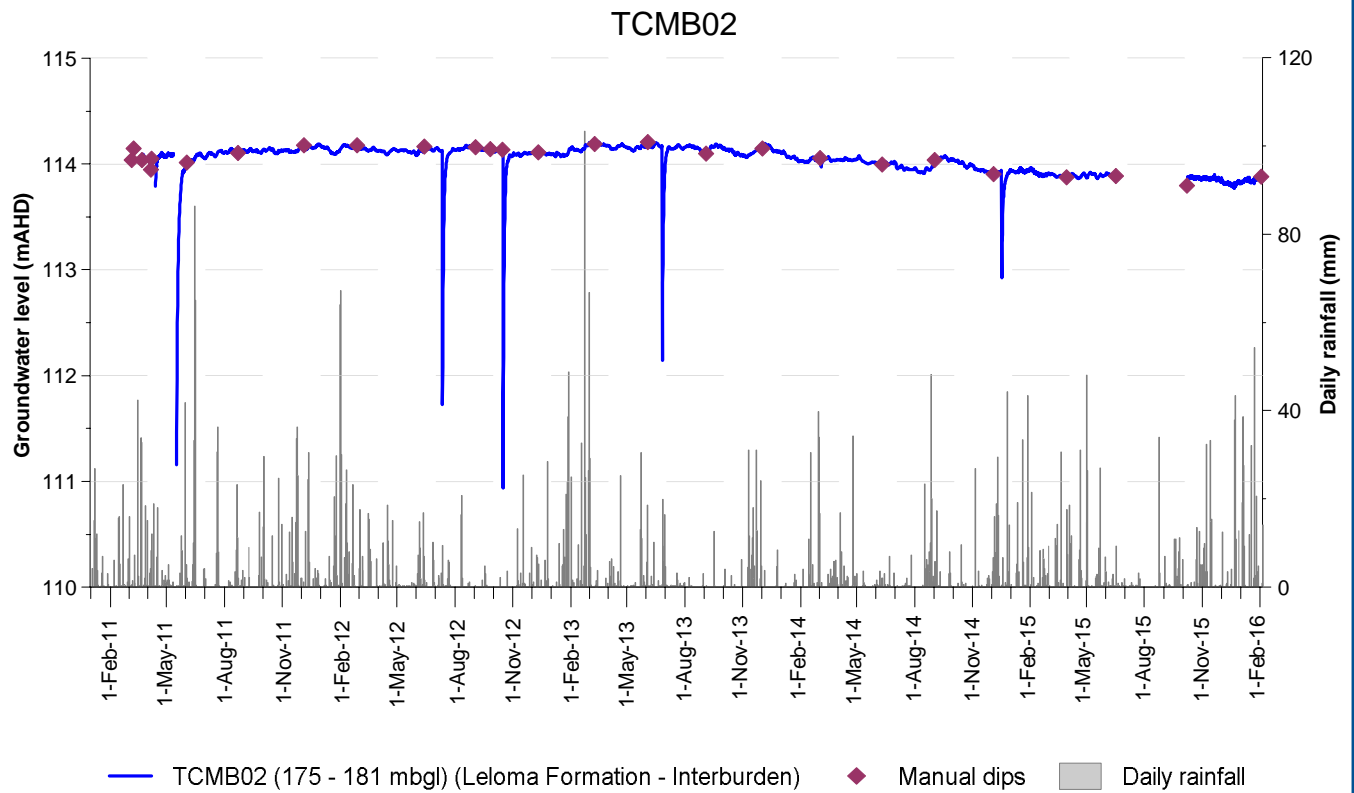


Figure A.11: TCMB02 and TCMB03 monitoring bores

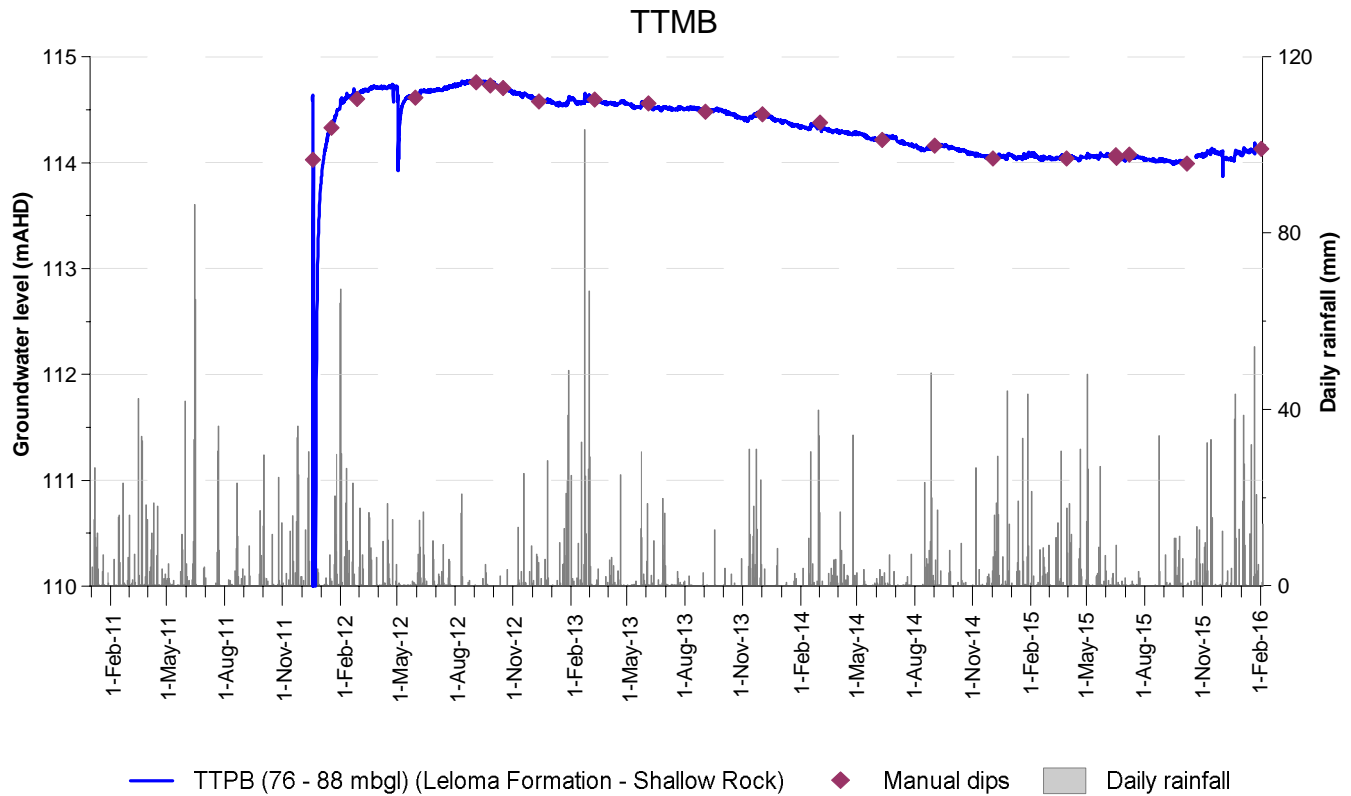
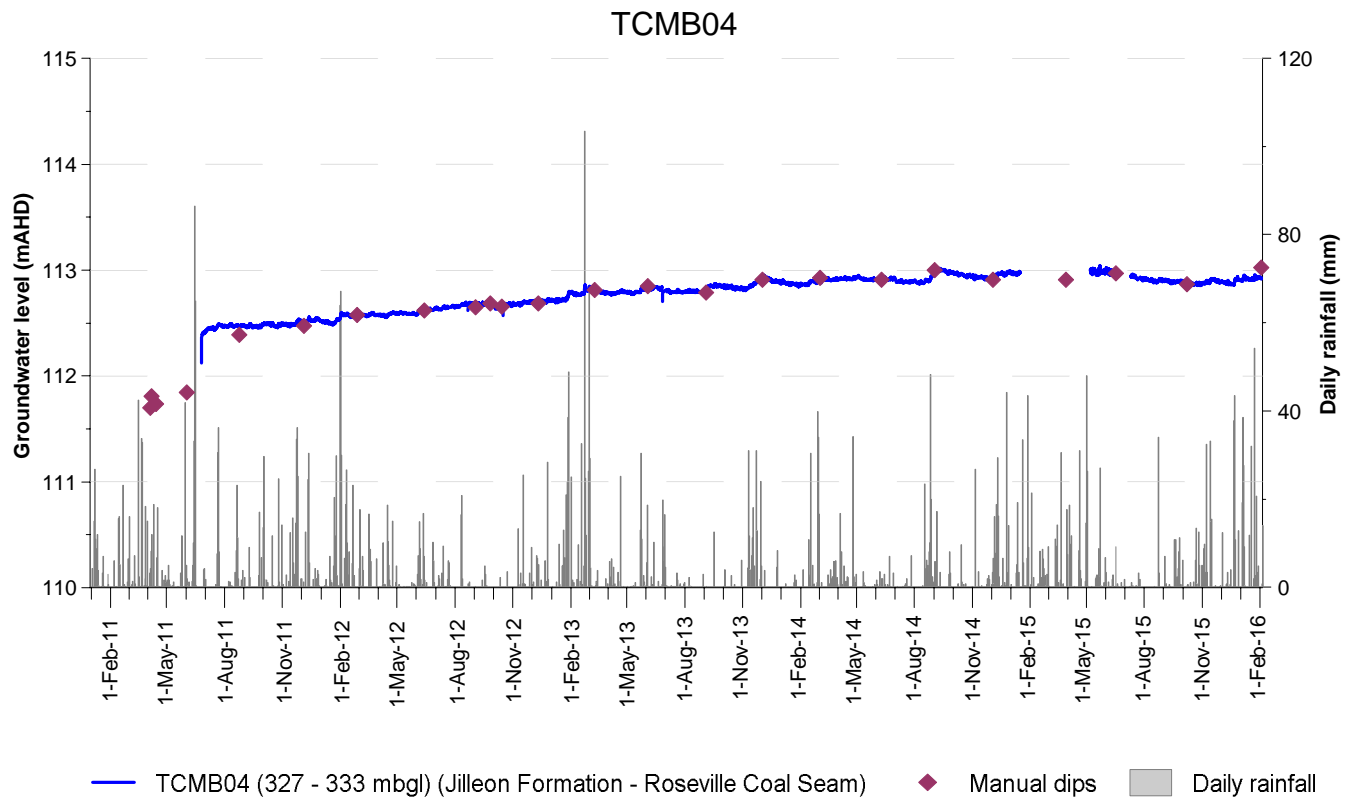


Figure A.12: TCMB04 and TTMB monitoring bores

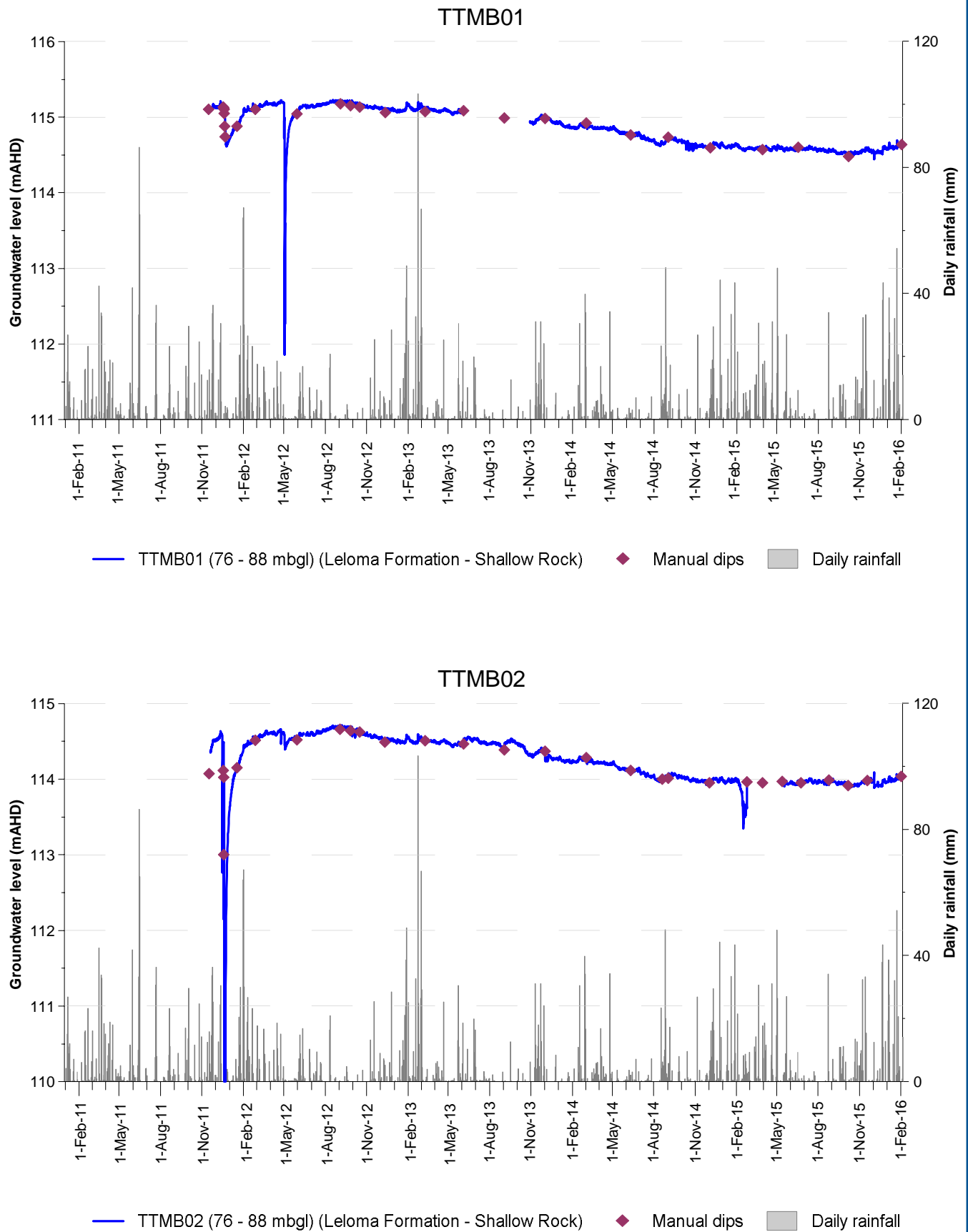


Figure A.13: TTMB01 and TTMB02 monitoring bores

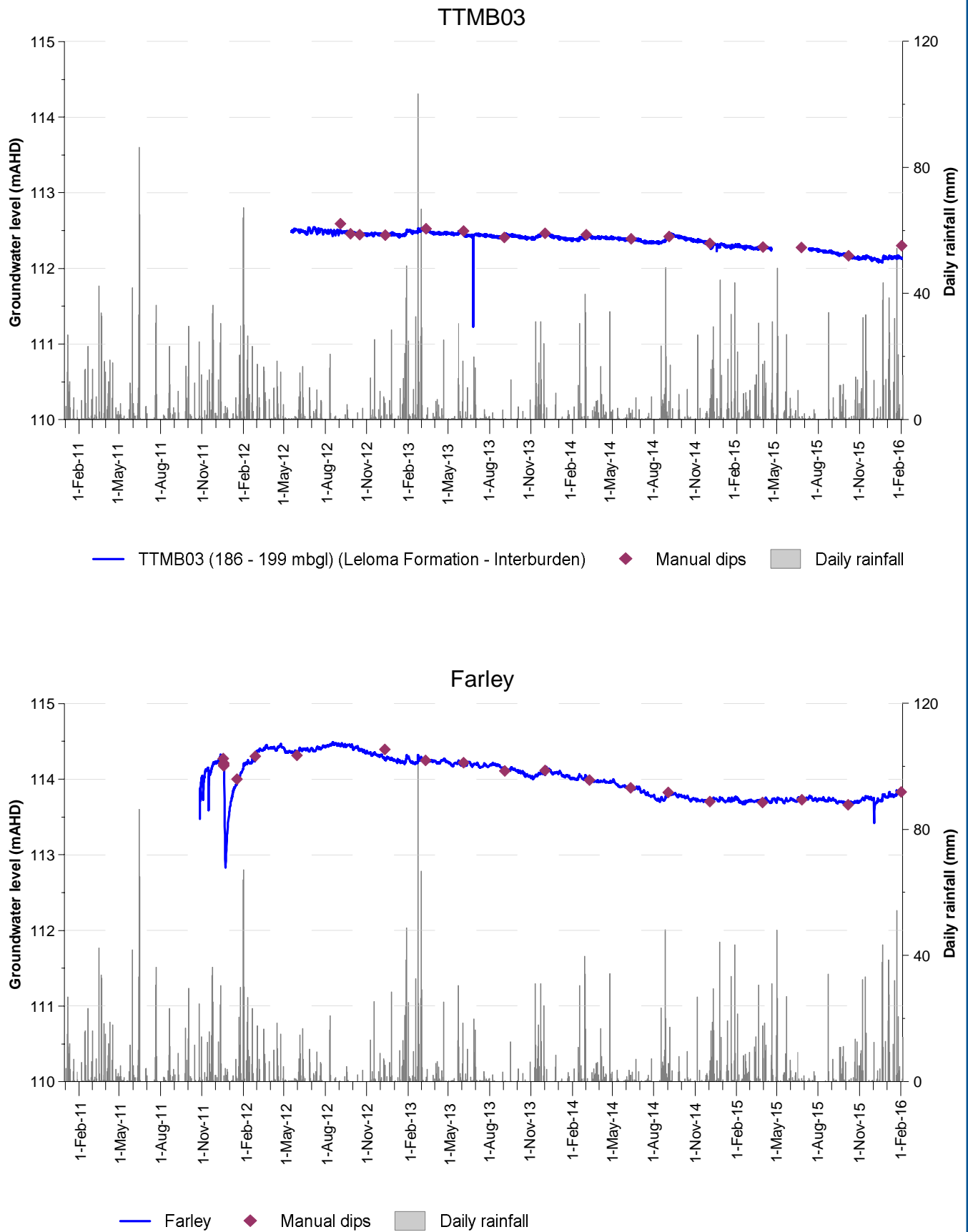


Figure A.14: TTMB03 and Farley monitoring bores

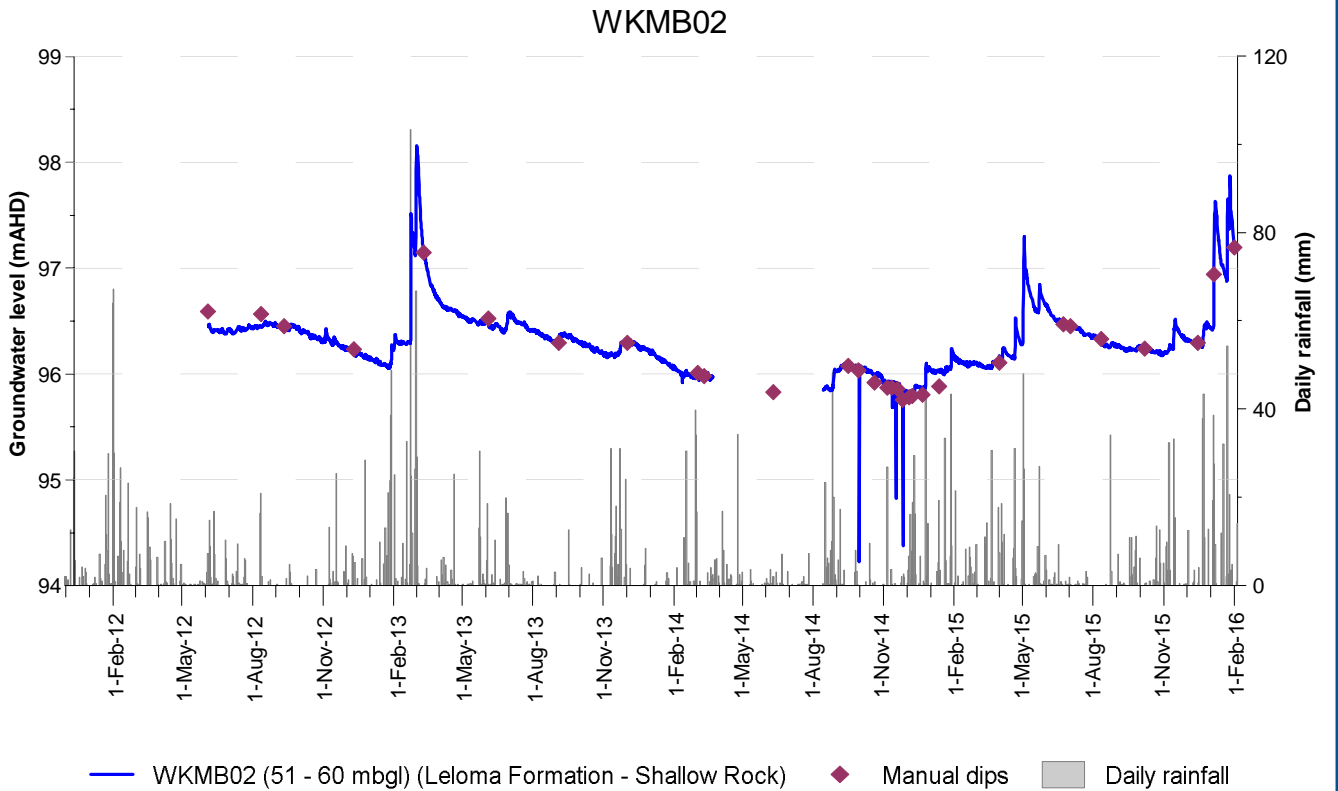
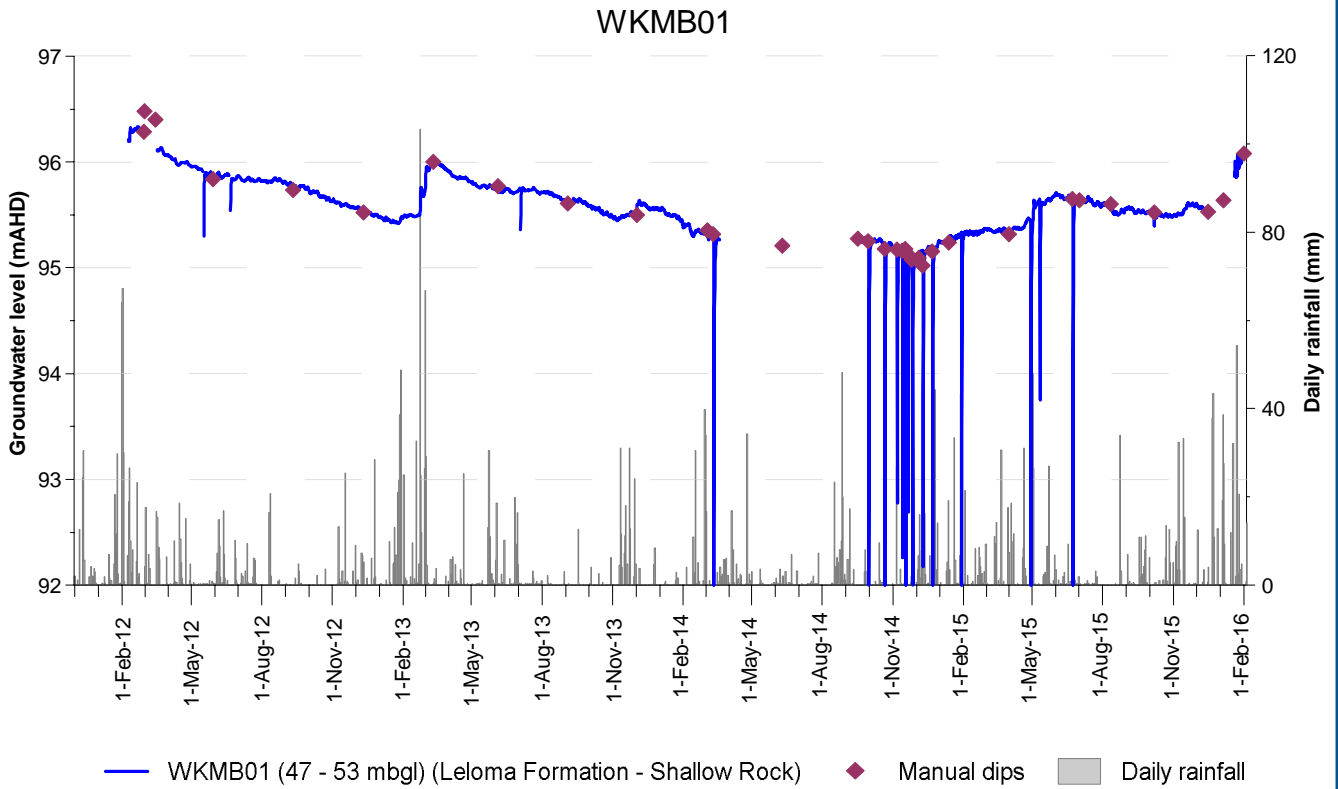


Figure A.15: WKMB01 and WKMB02 monitoring bores

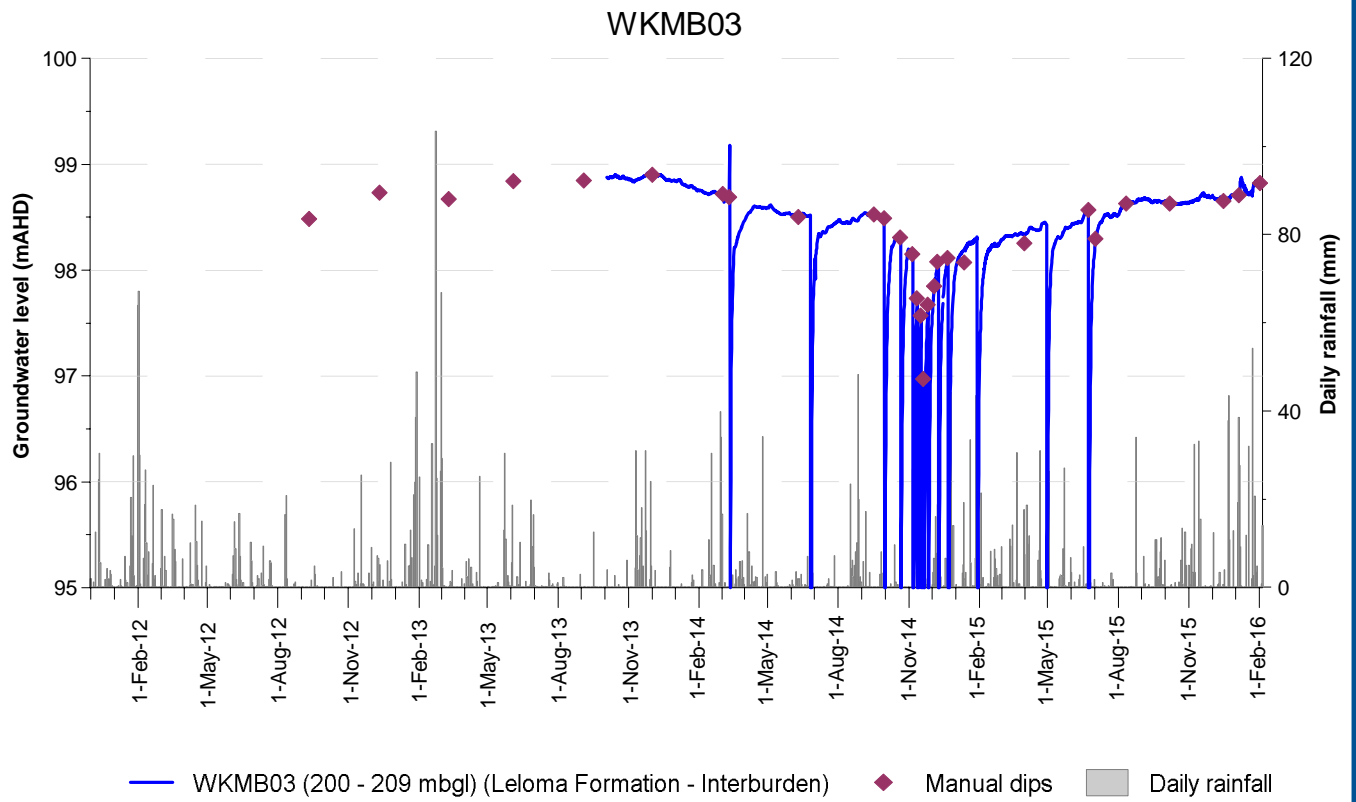


Figure A.16: WKMB03 monitoring bore

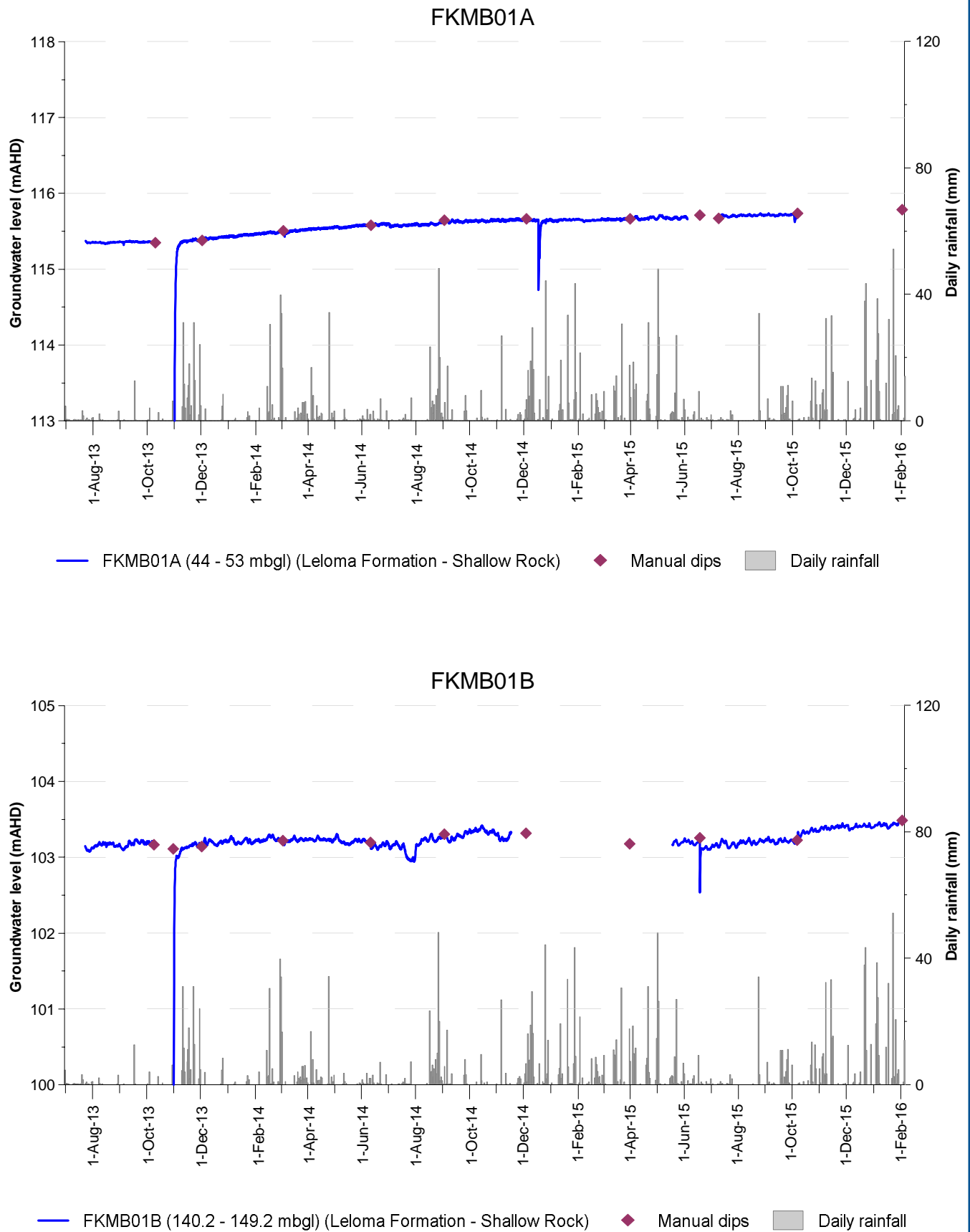


Figure A.17: FKMB01A and FKMB01B monitoring bores

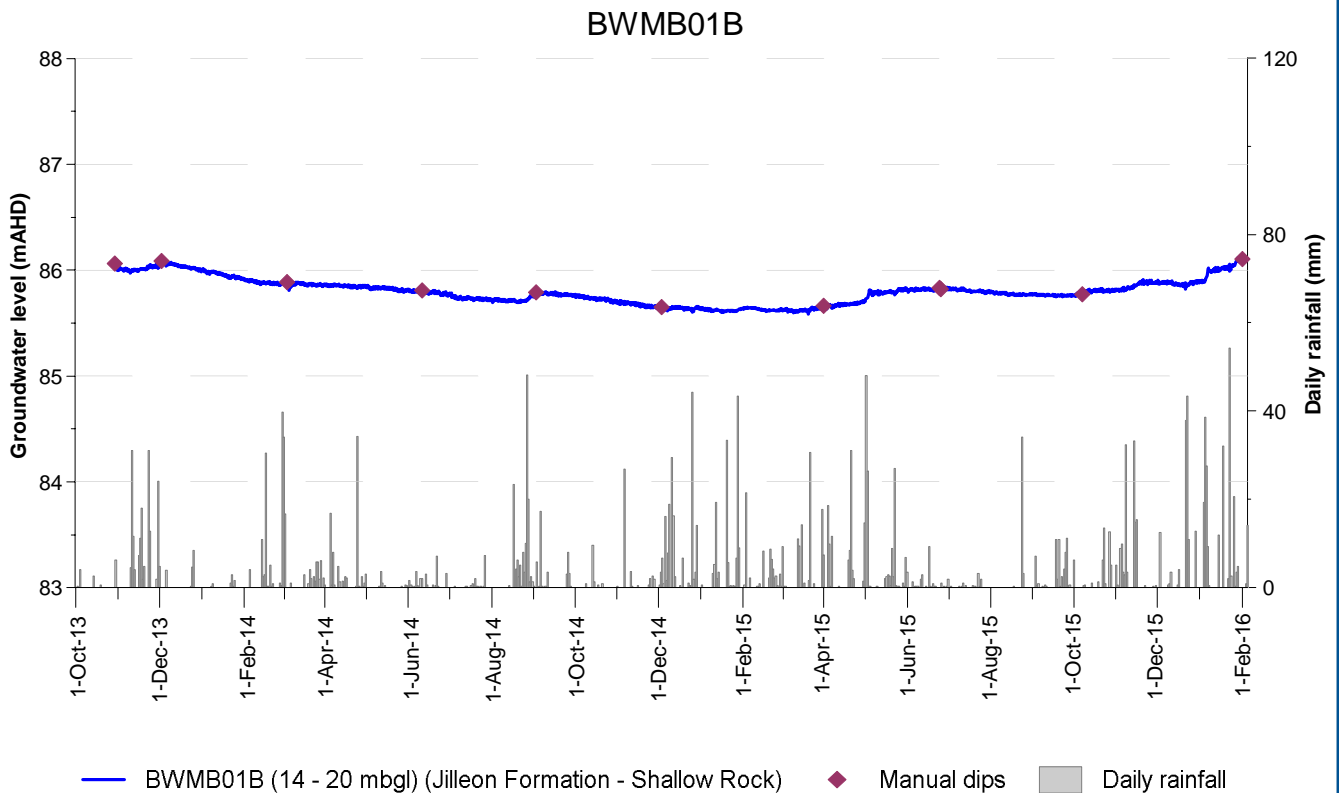
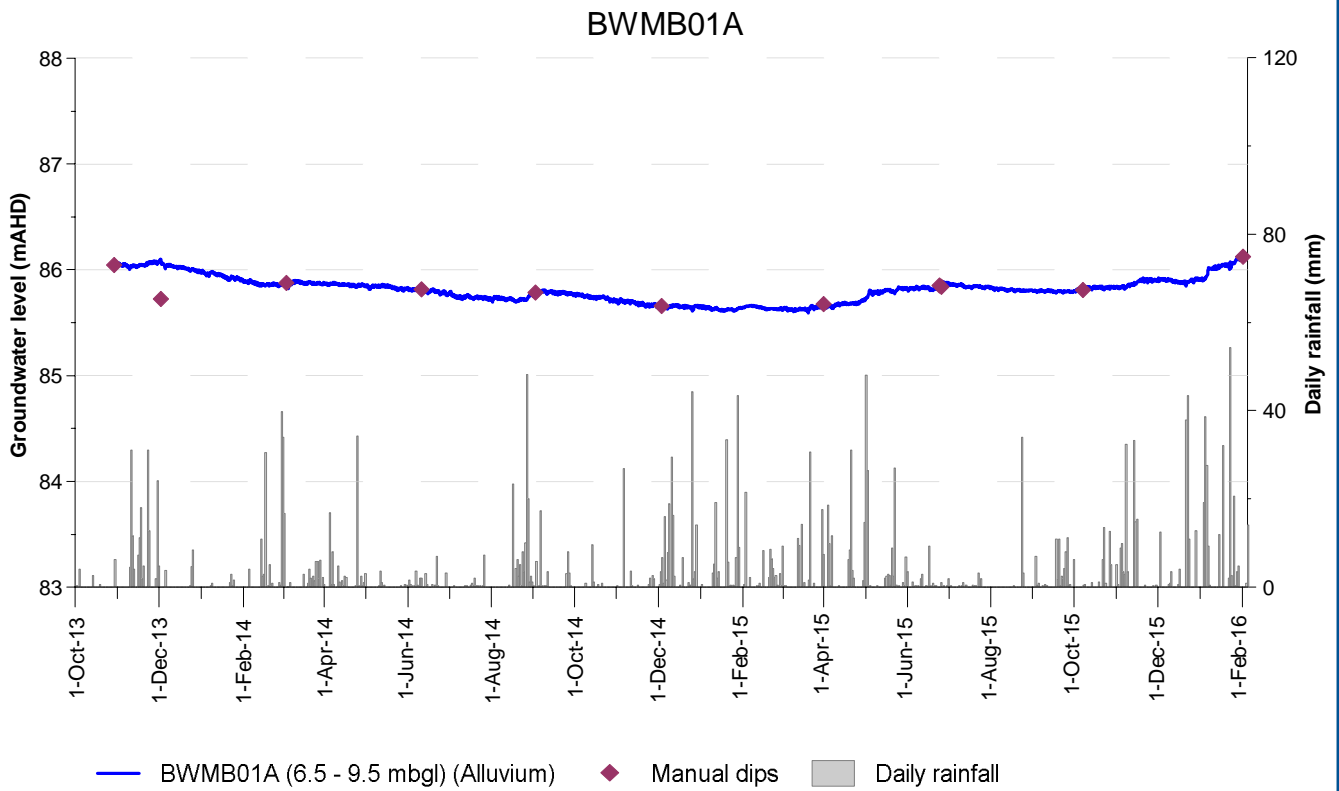


Figure A.18: BWMB01A and BWMB01B monitoring bores

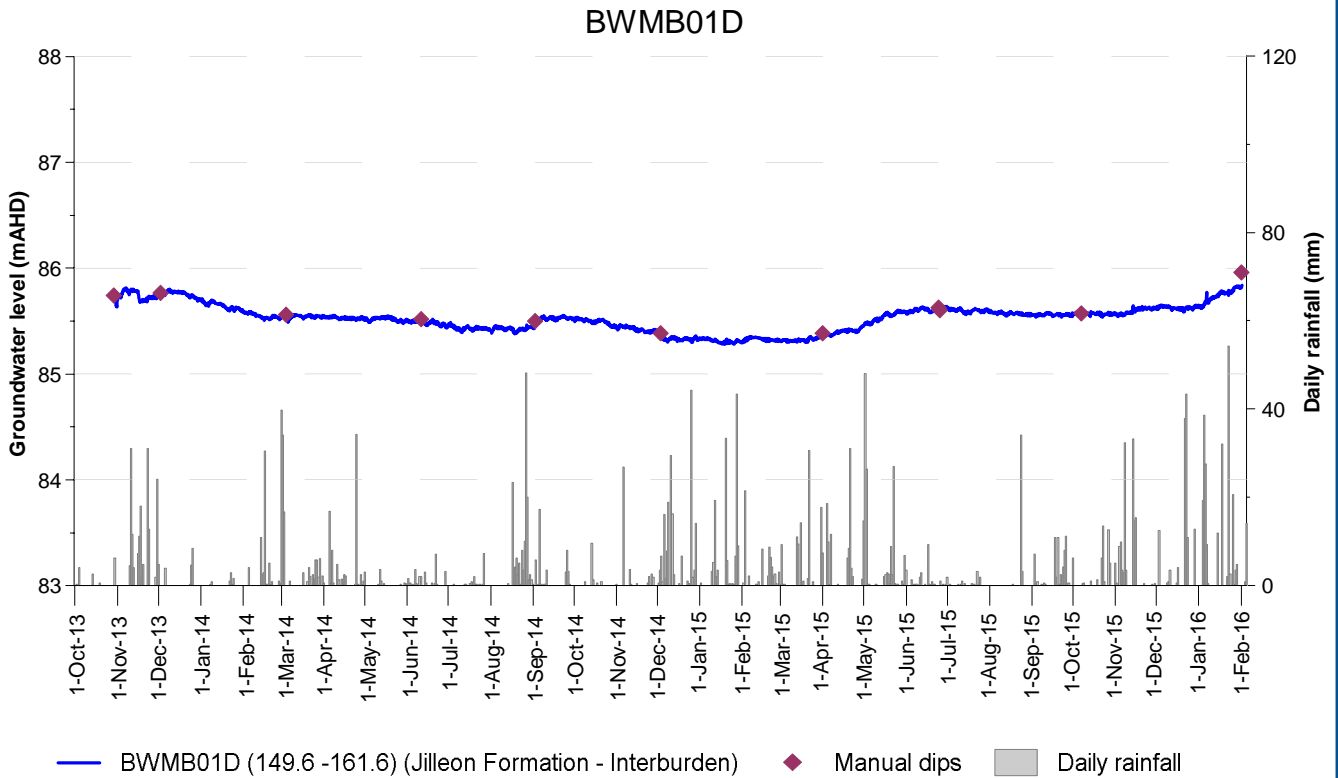
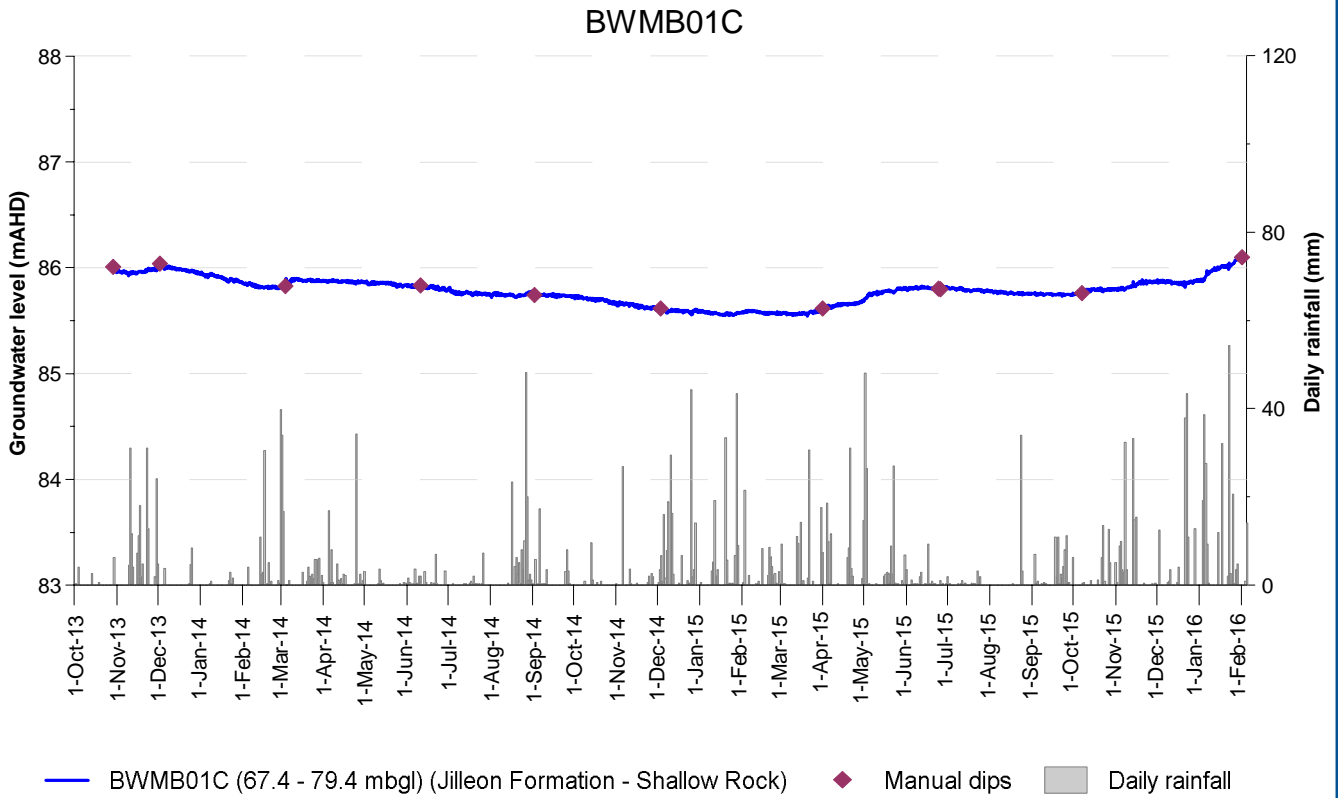


Figure A.19: BWMB01C and BWMB01D monitoring bores

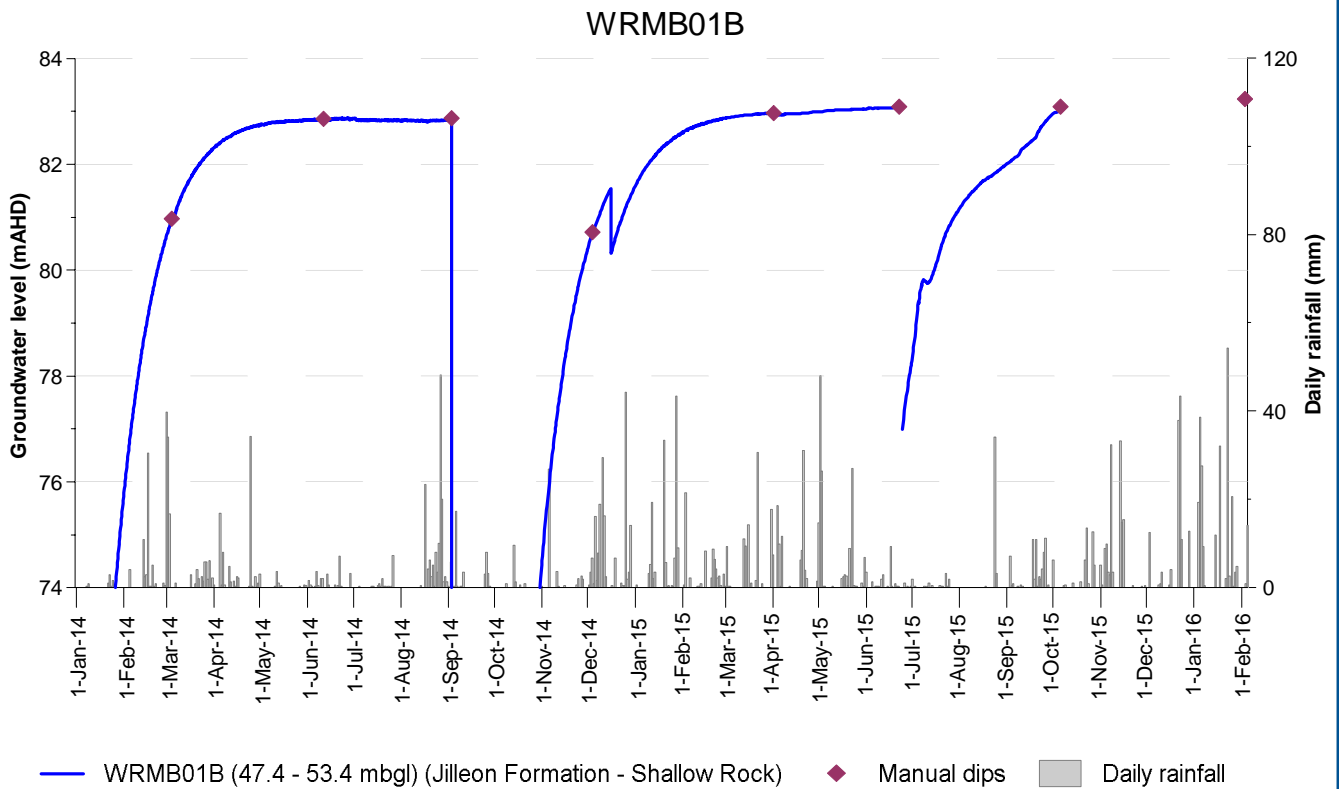
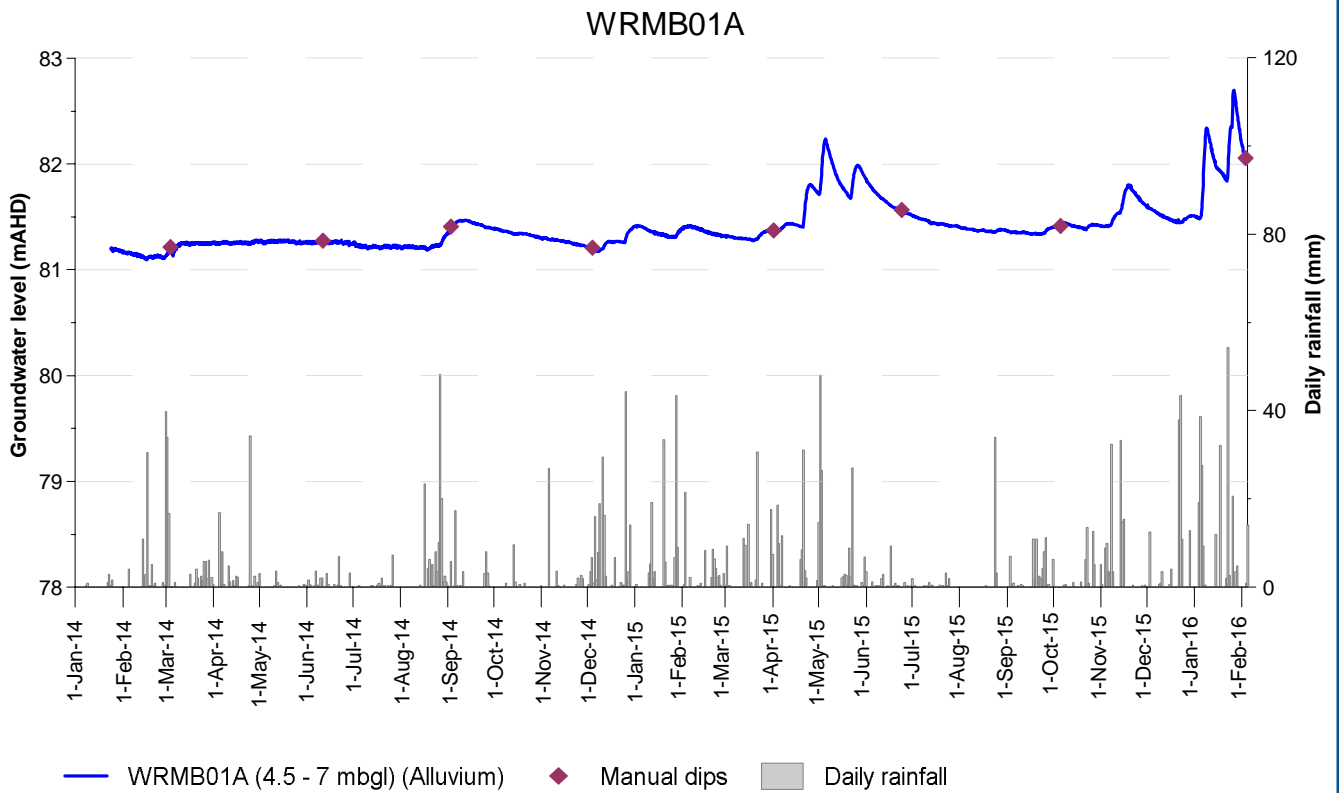


Figure A.20: WRMB01A and WRMB01B monitoring bores

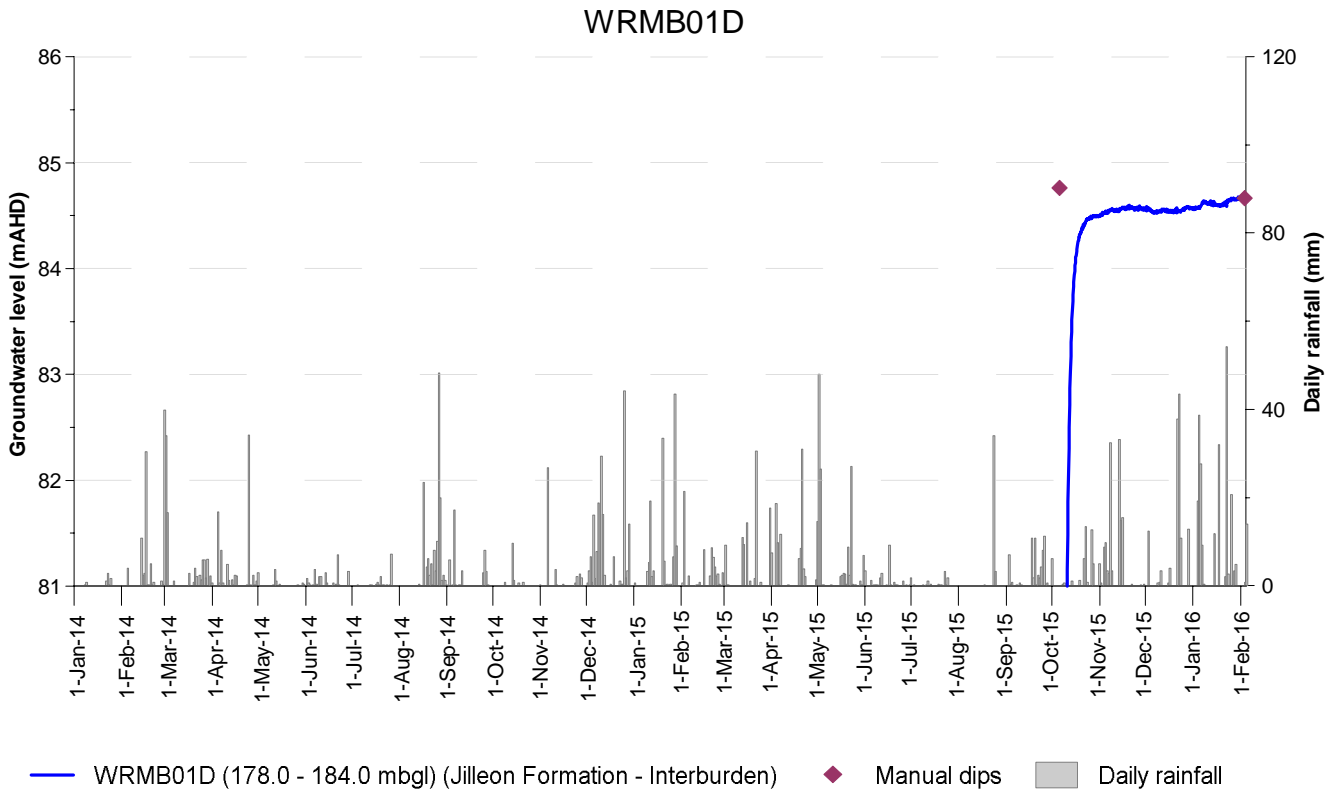
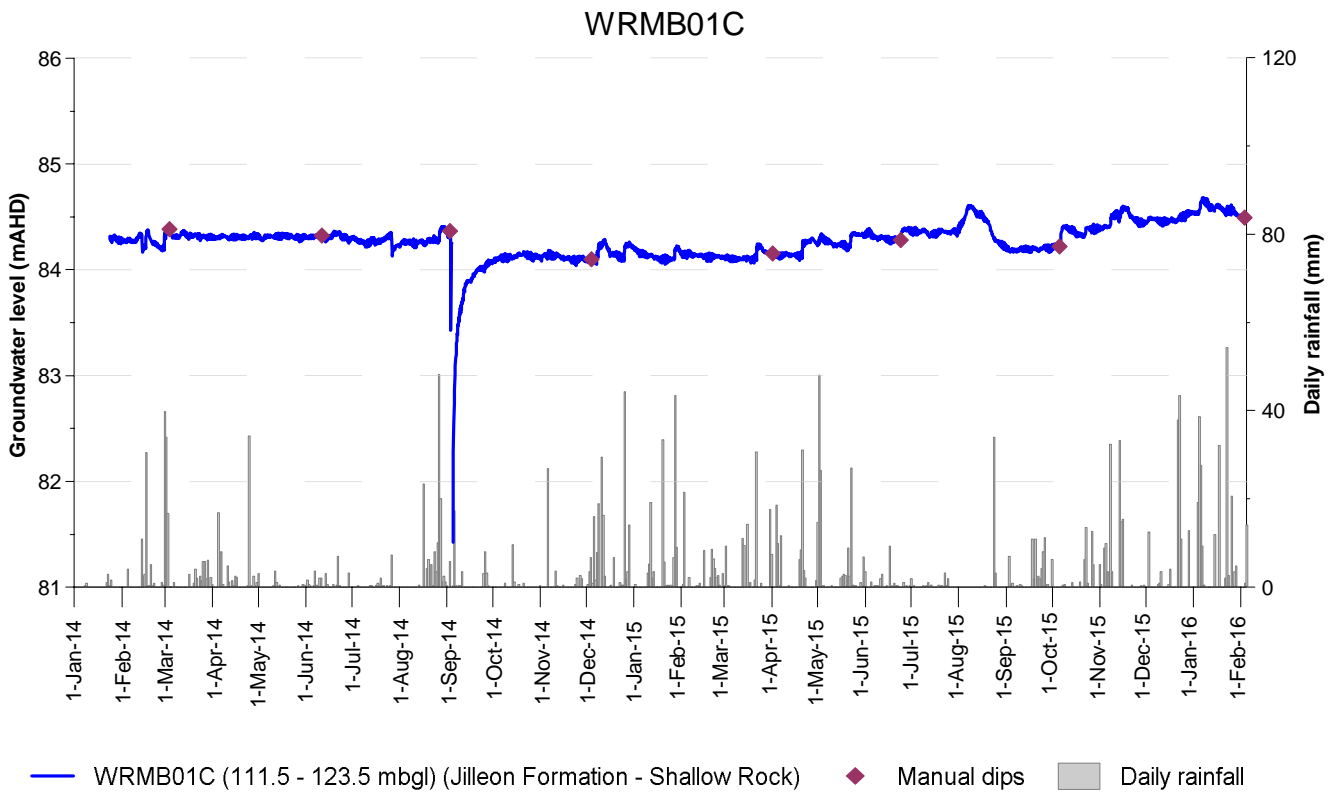


Figure A.21: WRMB01C and WRMB01D monitoring bores

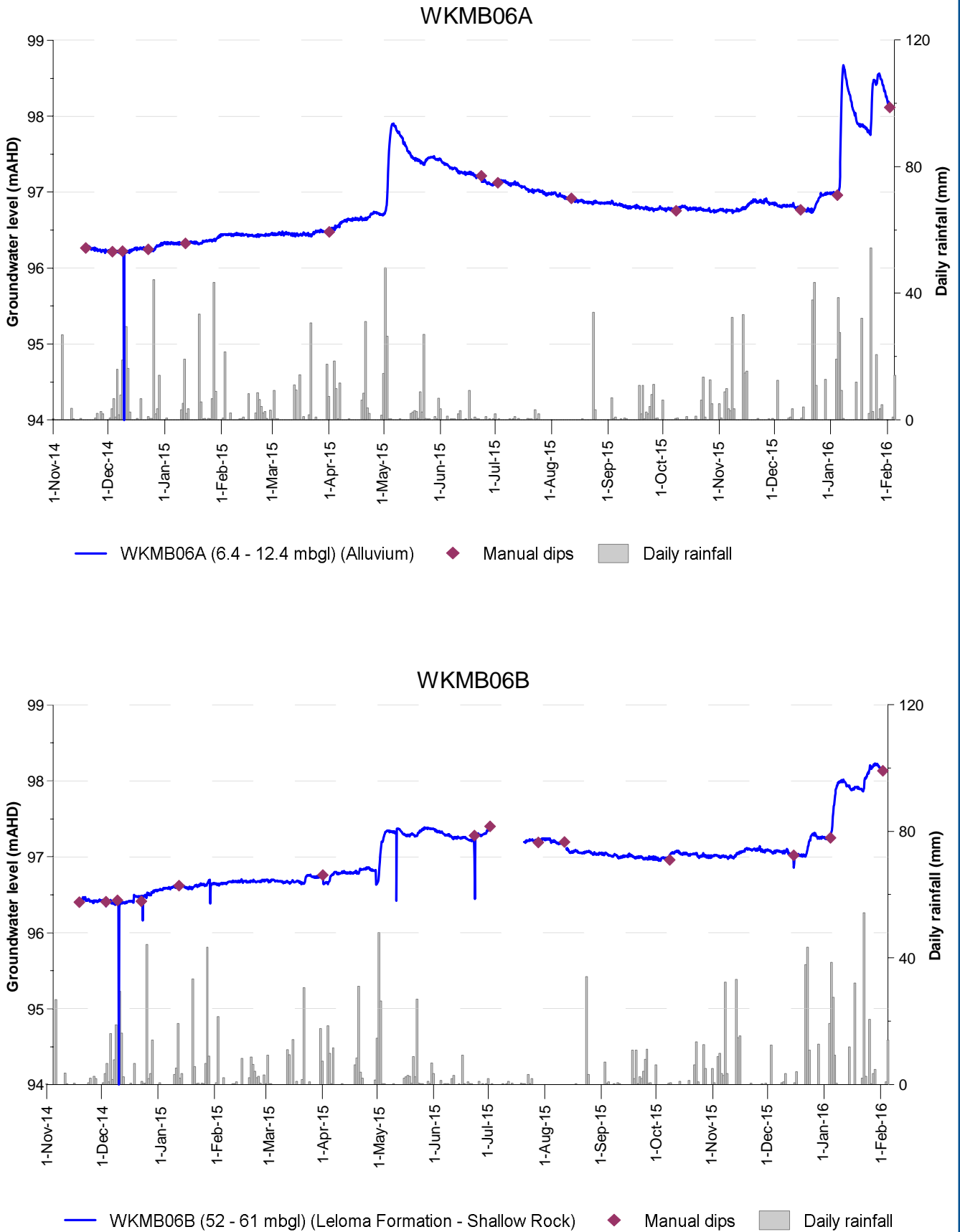


Figure A.22: WKMB06A and WKMB06B monitoring bores

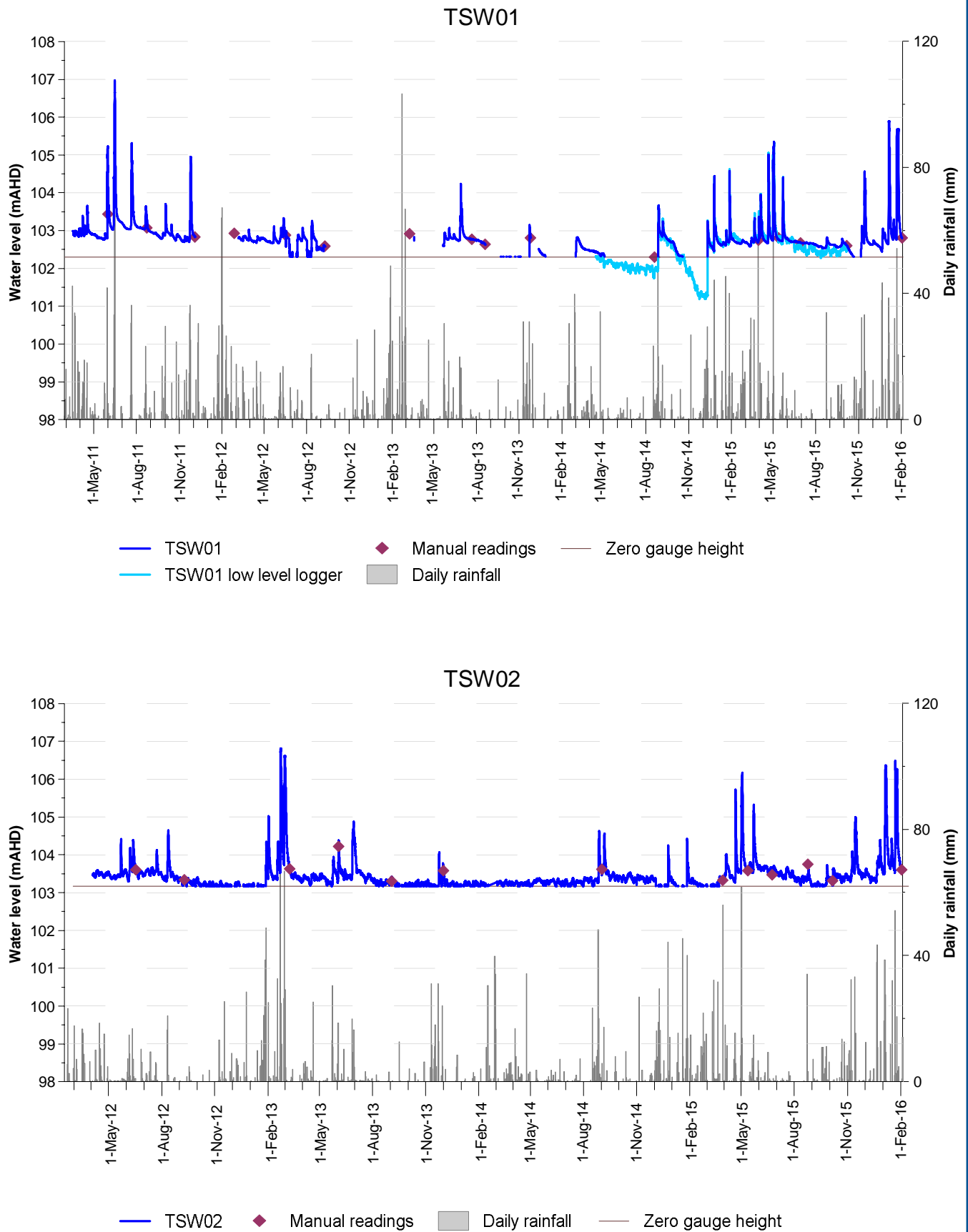


Figure A.23: TSW01 and TSW02 stream levels

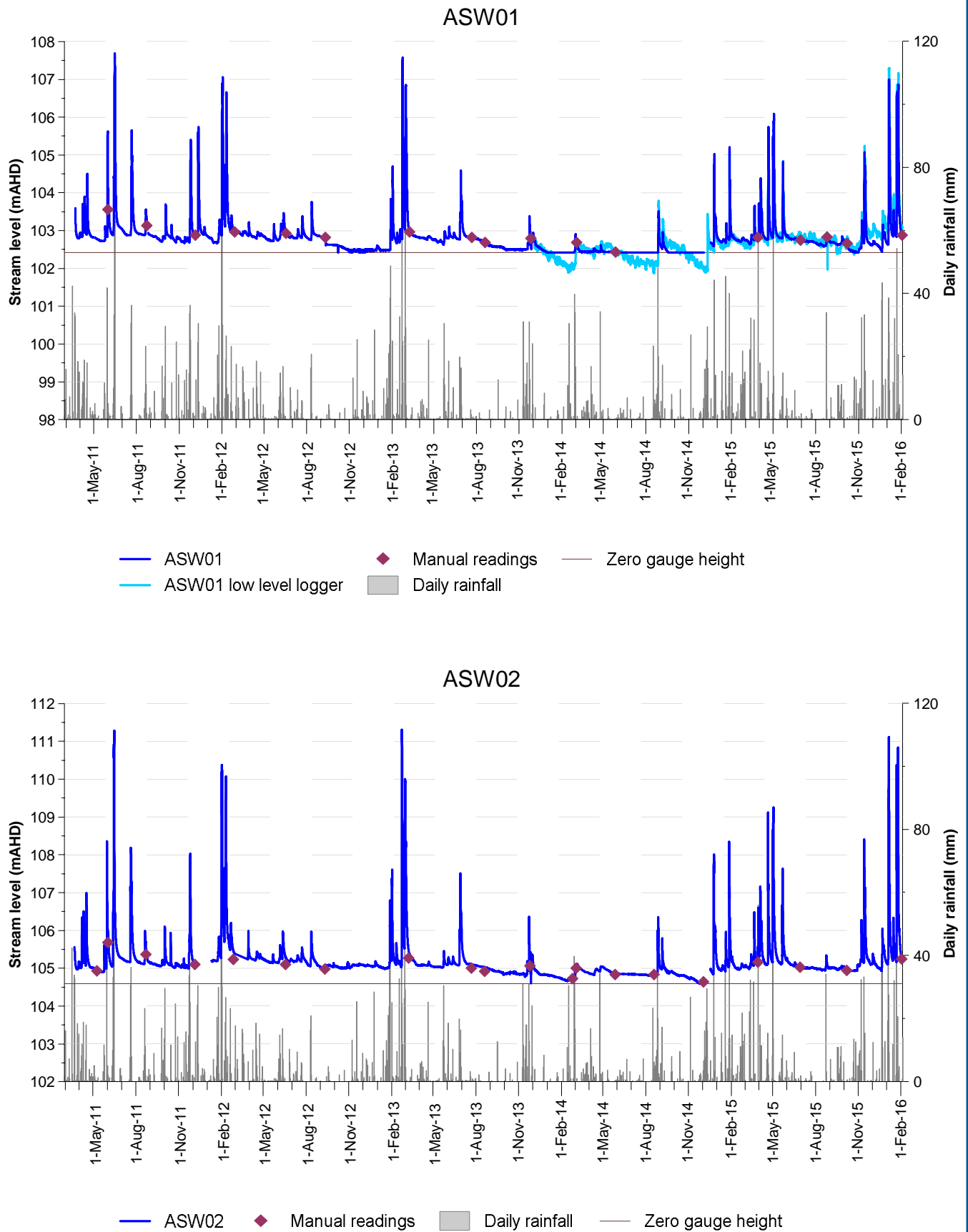
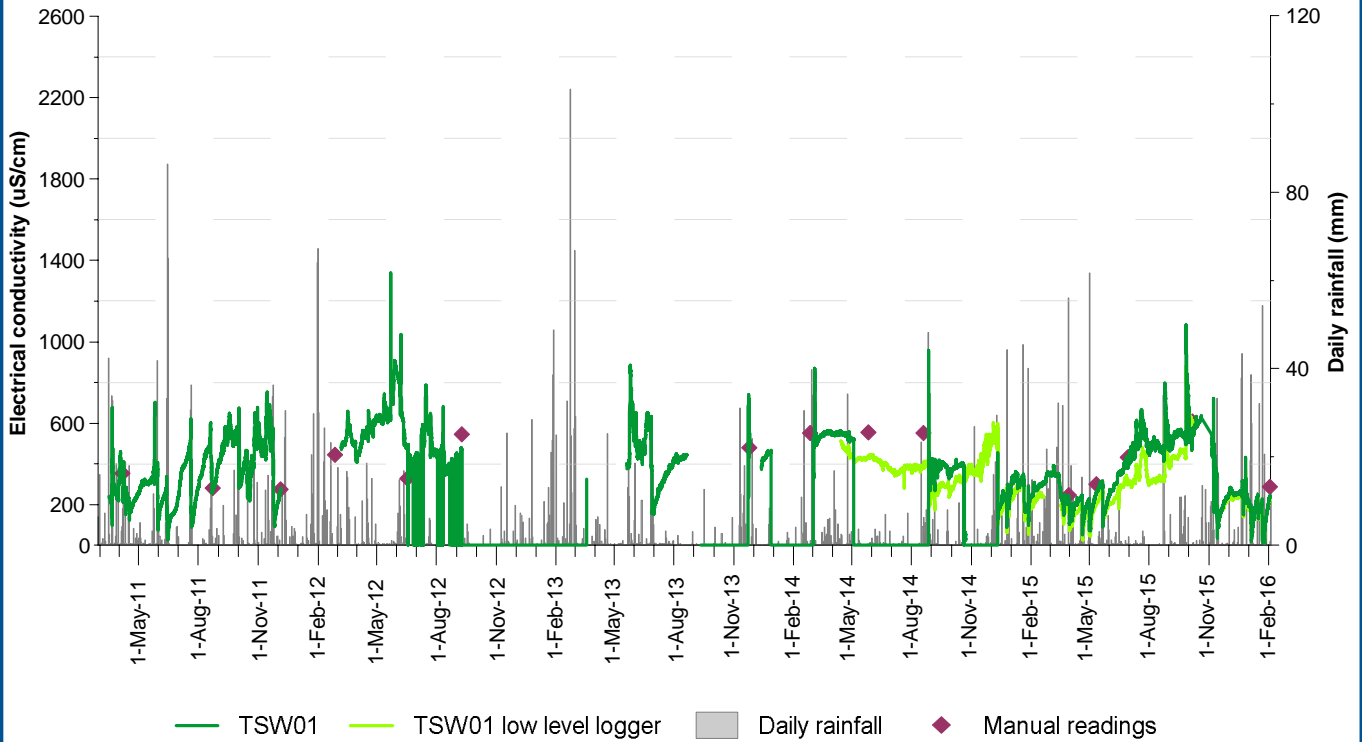


Figure A.24: ASW01 and ASW02 stream levels

TSW01



TSW02

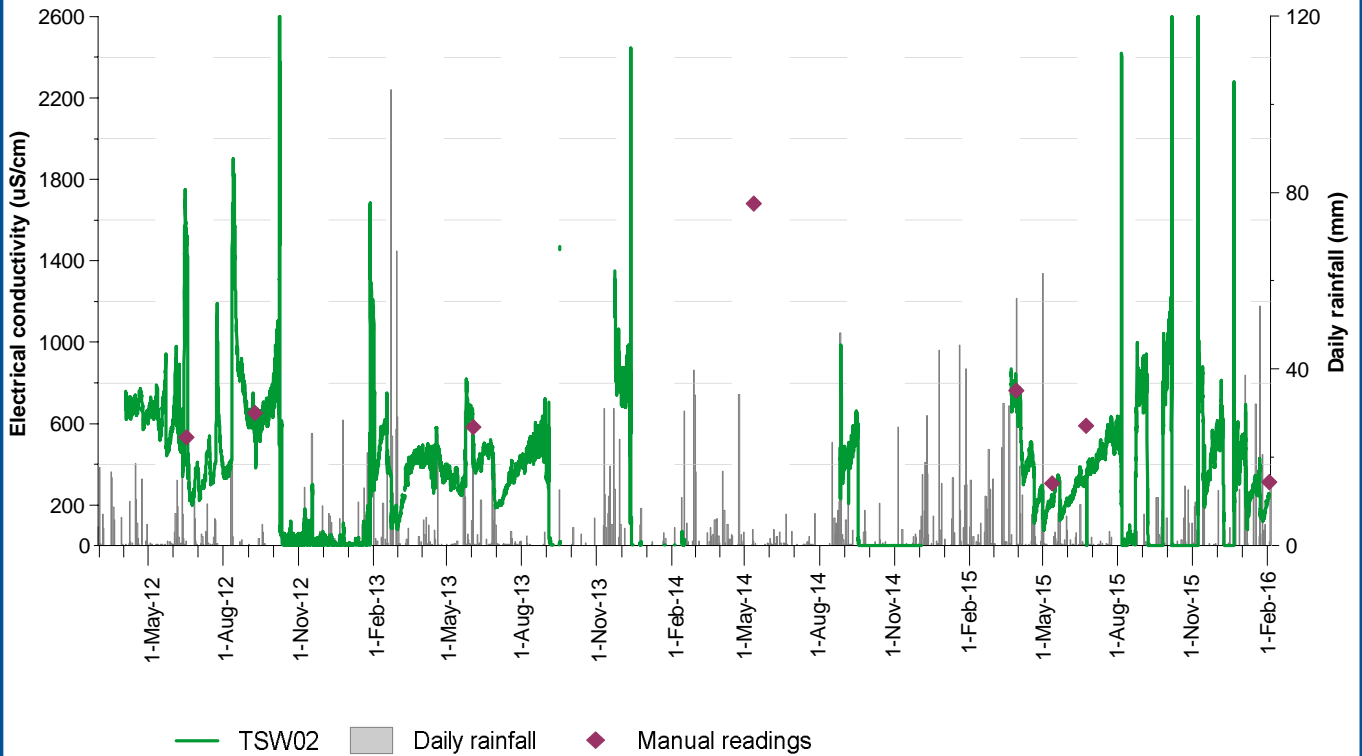
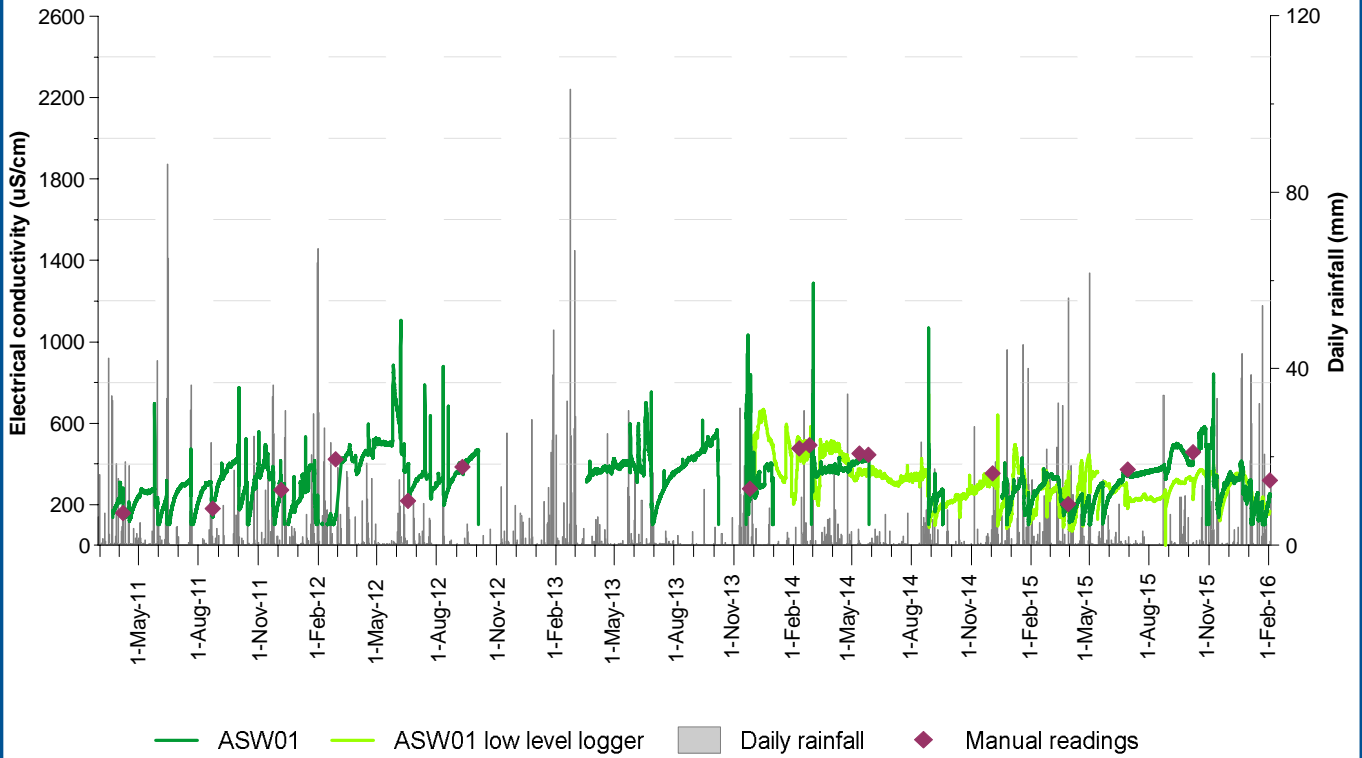


Figure A.25: TSW01 and TSW02 electrical conductivity

ASW01



ASW02

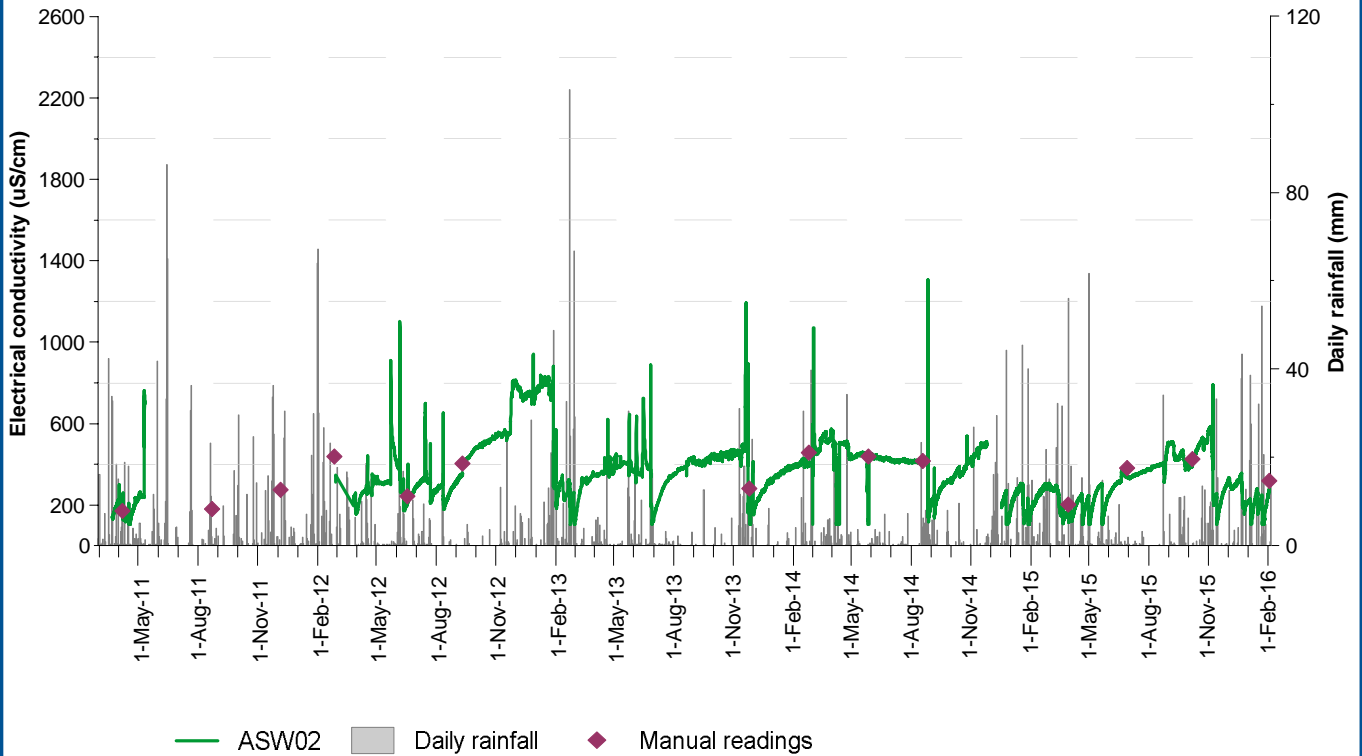


Figure A.26: ASW01 and ASW02 electrical conductivity

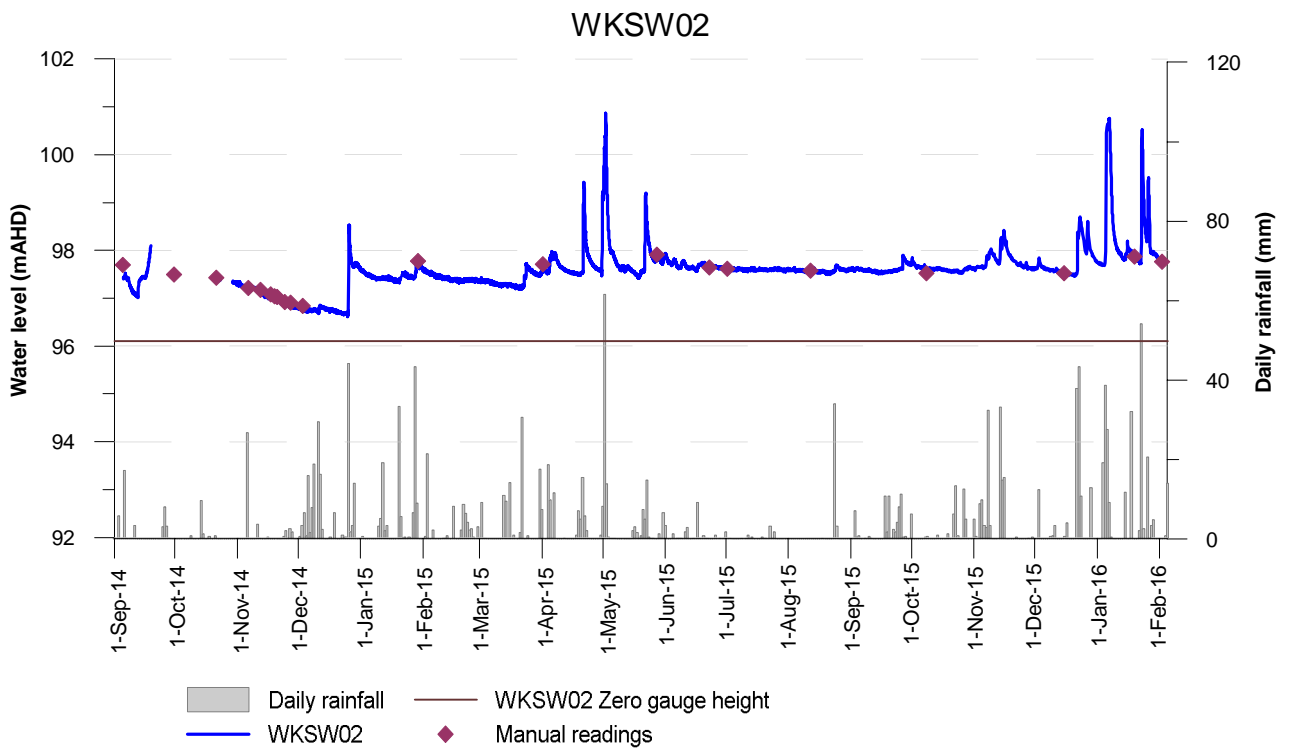
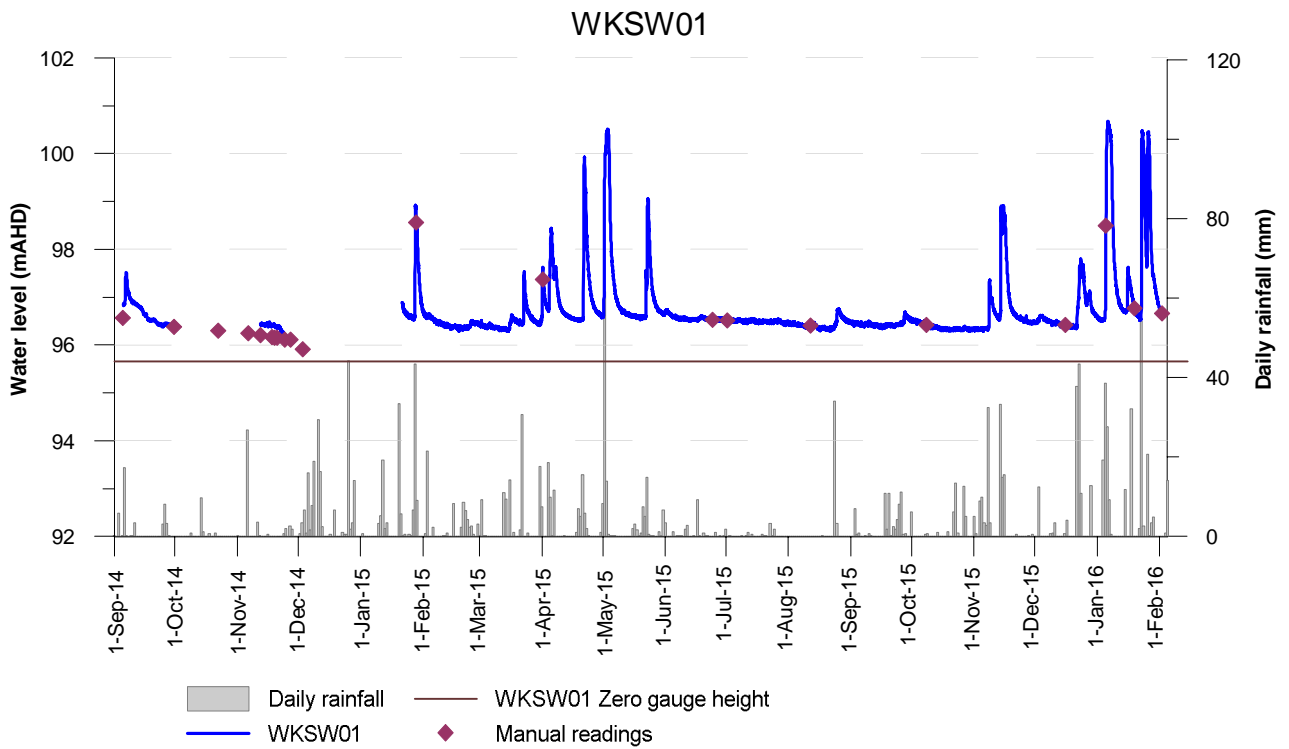


Figure A.27: WKSW01 and WKSW02 stream levels

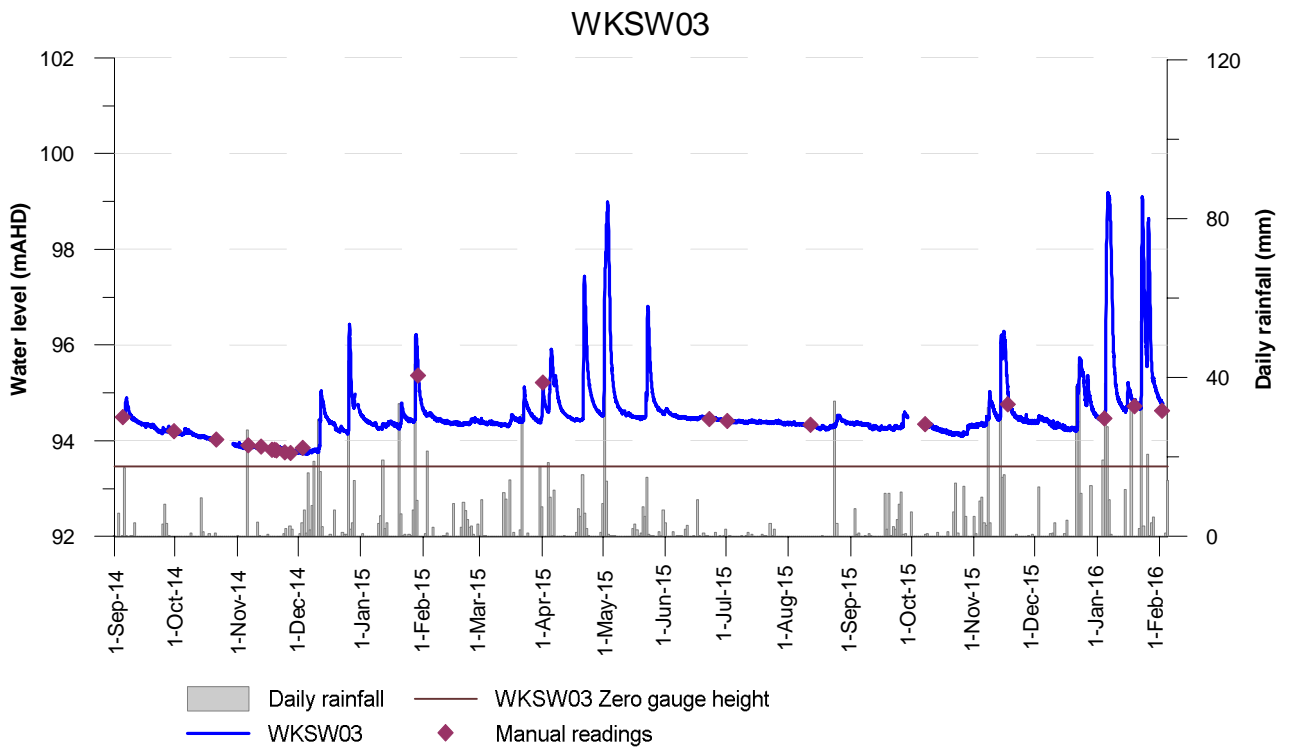


Figure A.28: WKS03 stream levels

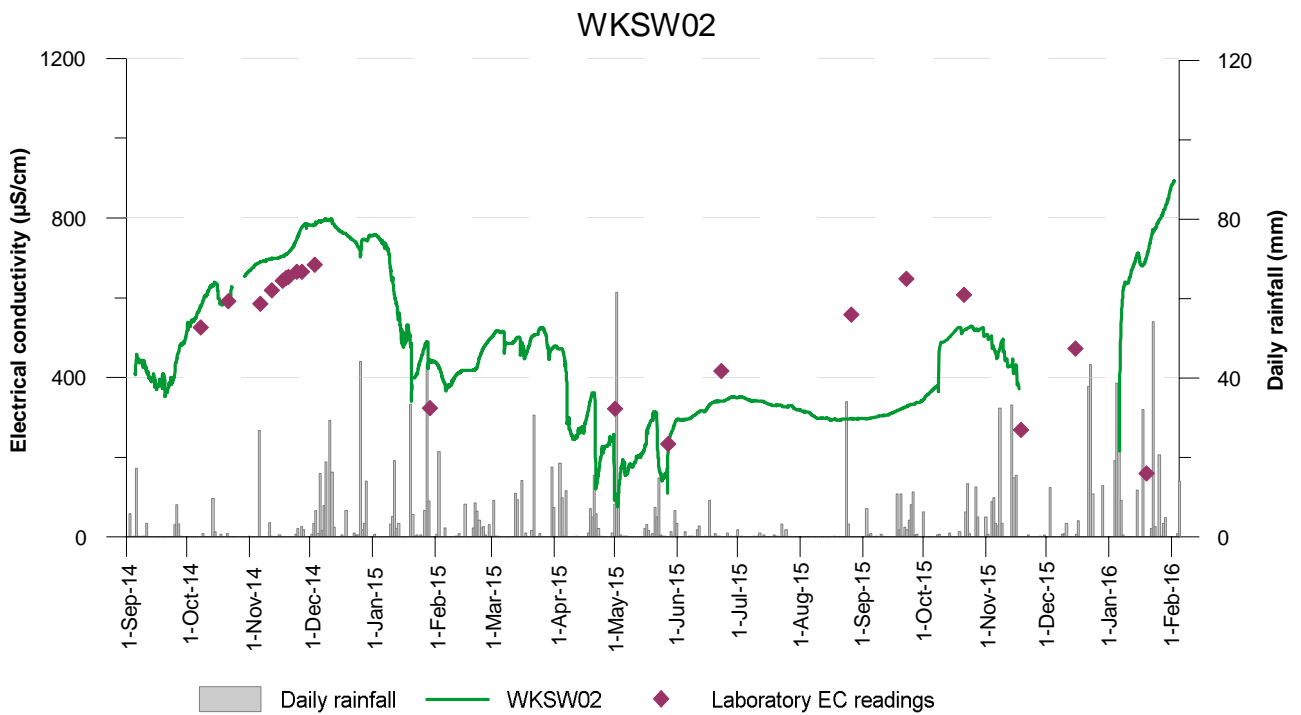
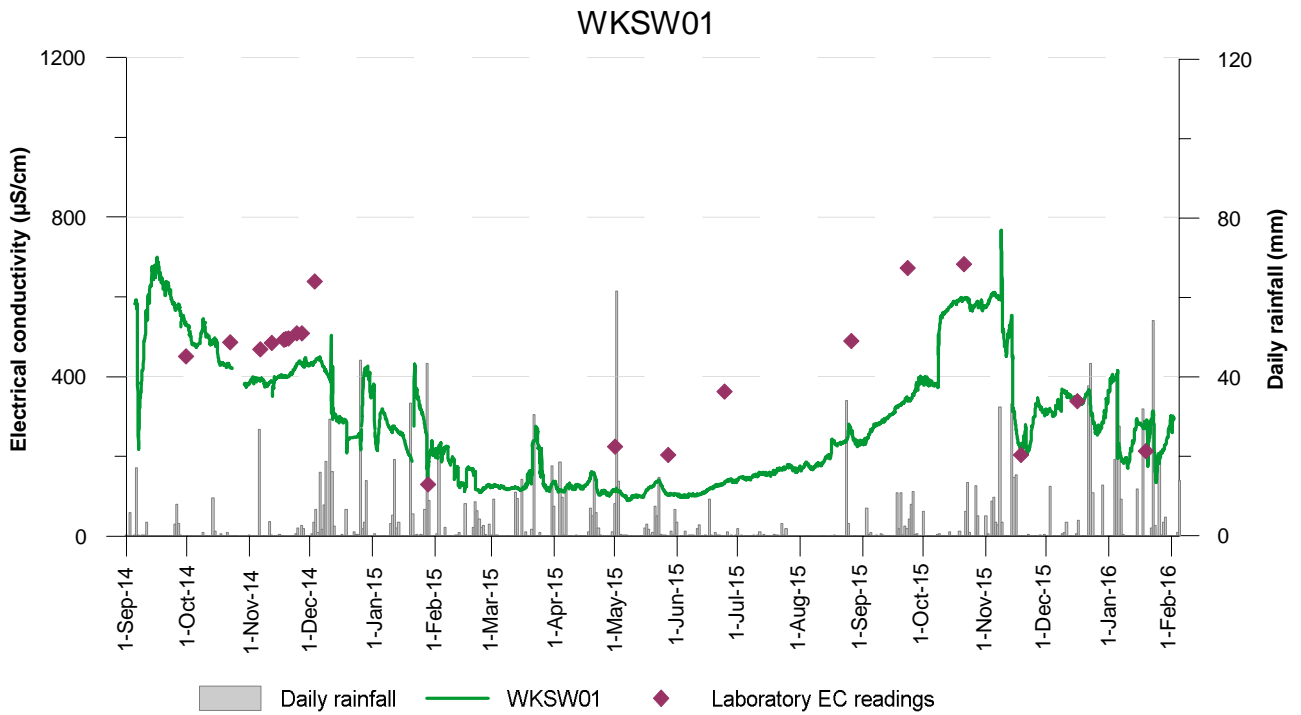


Figure A.29: WKS01 and WKS02 electrical conductivity

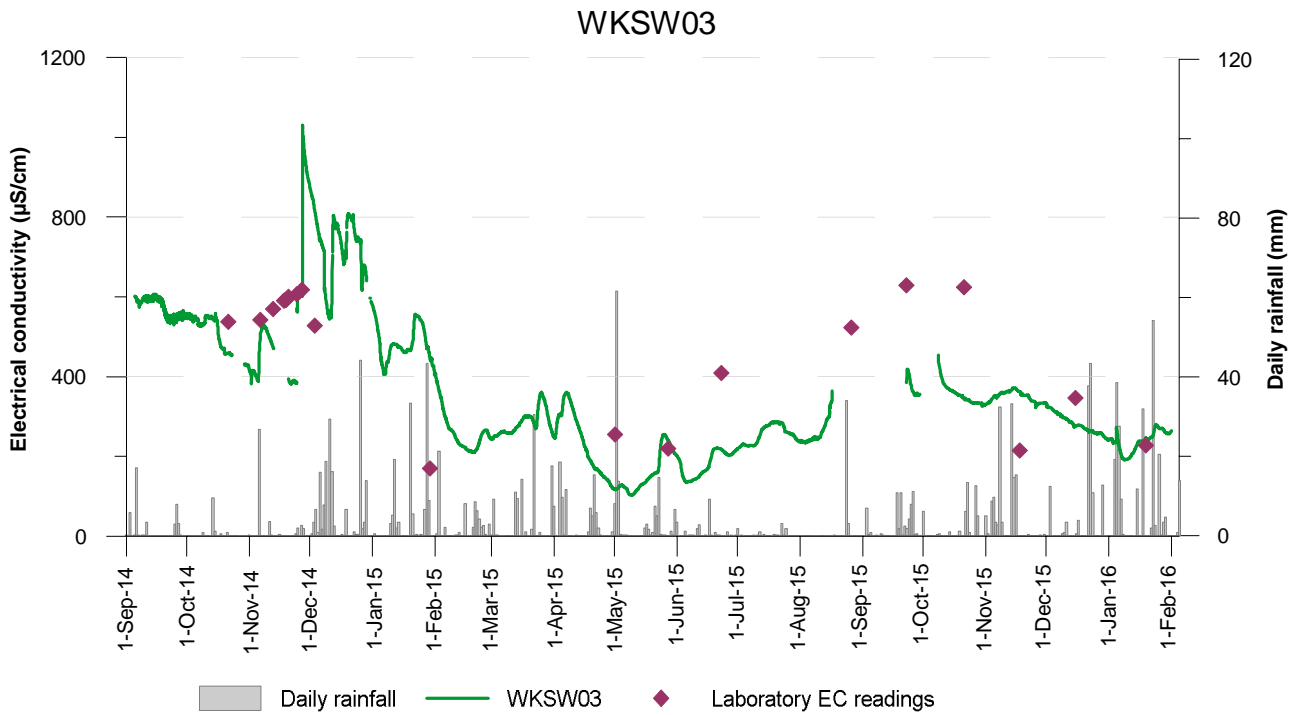


Figure A.30: WKSW03 electrical conductivity

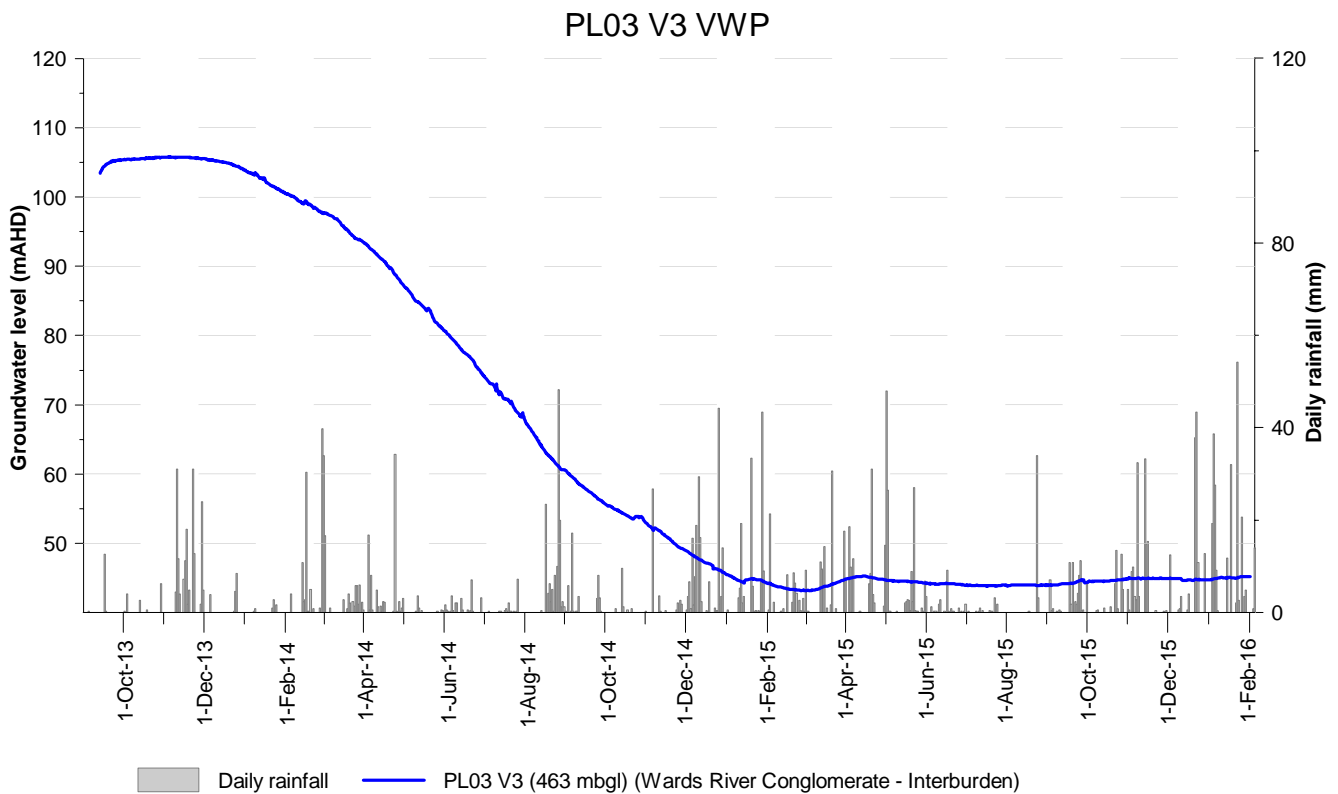
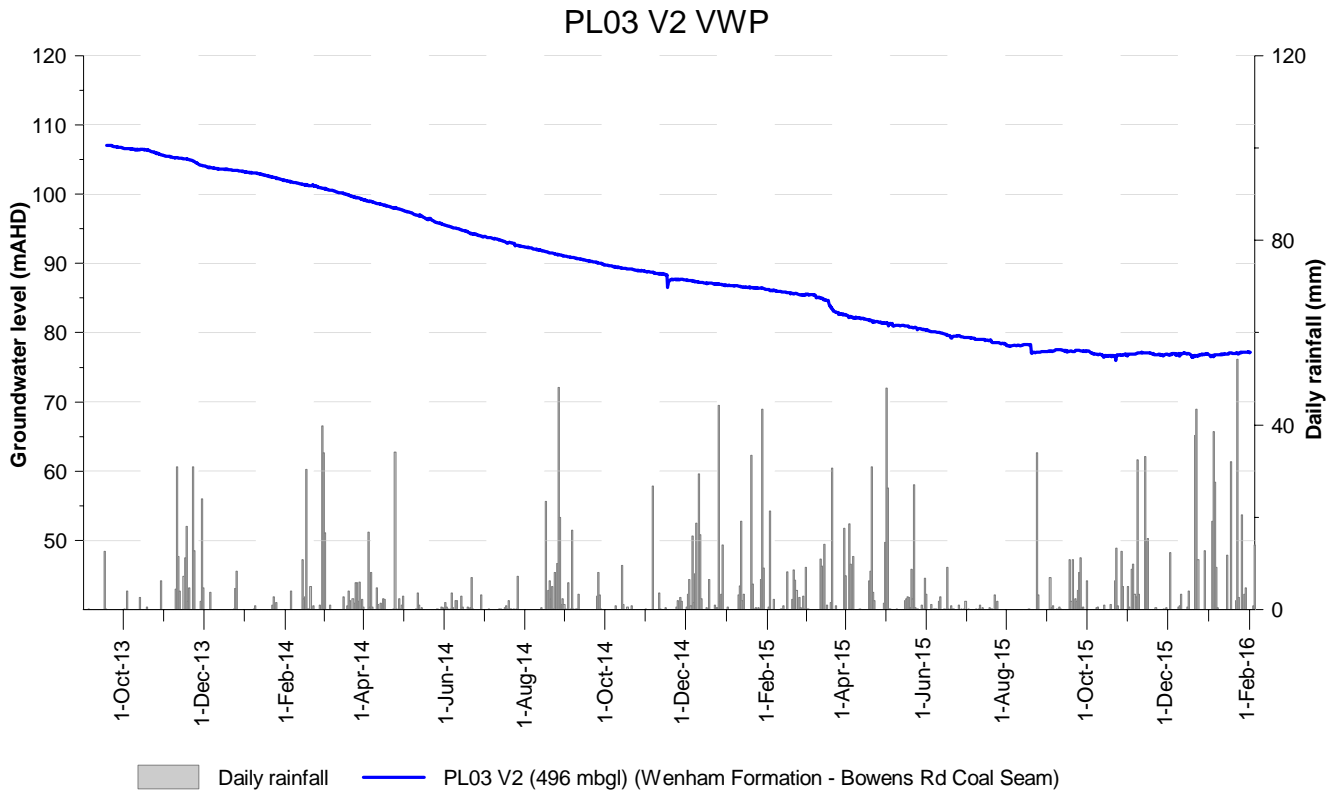


Figure A.31: PL03 VWP

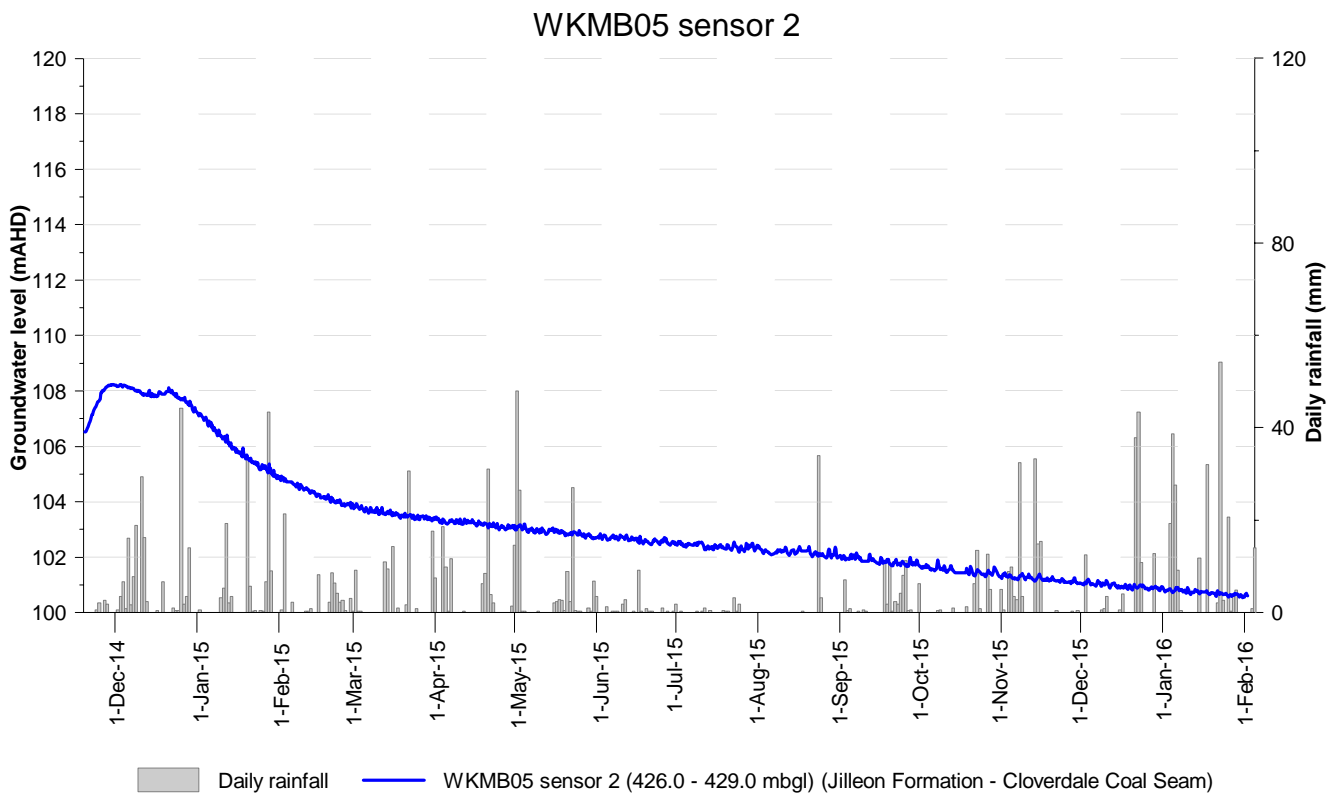
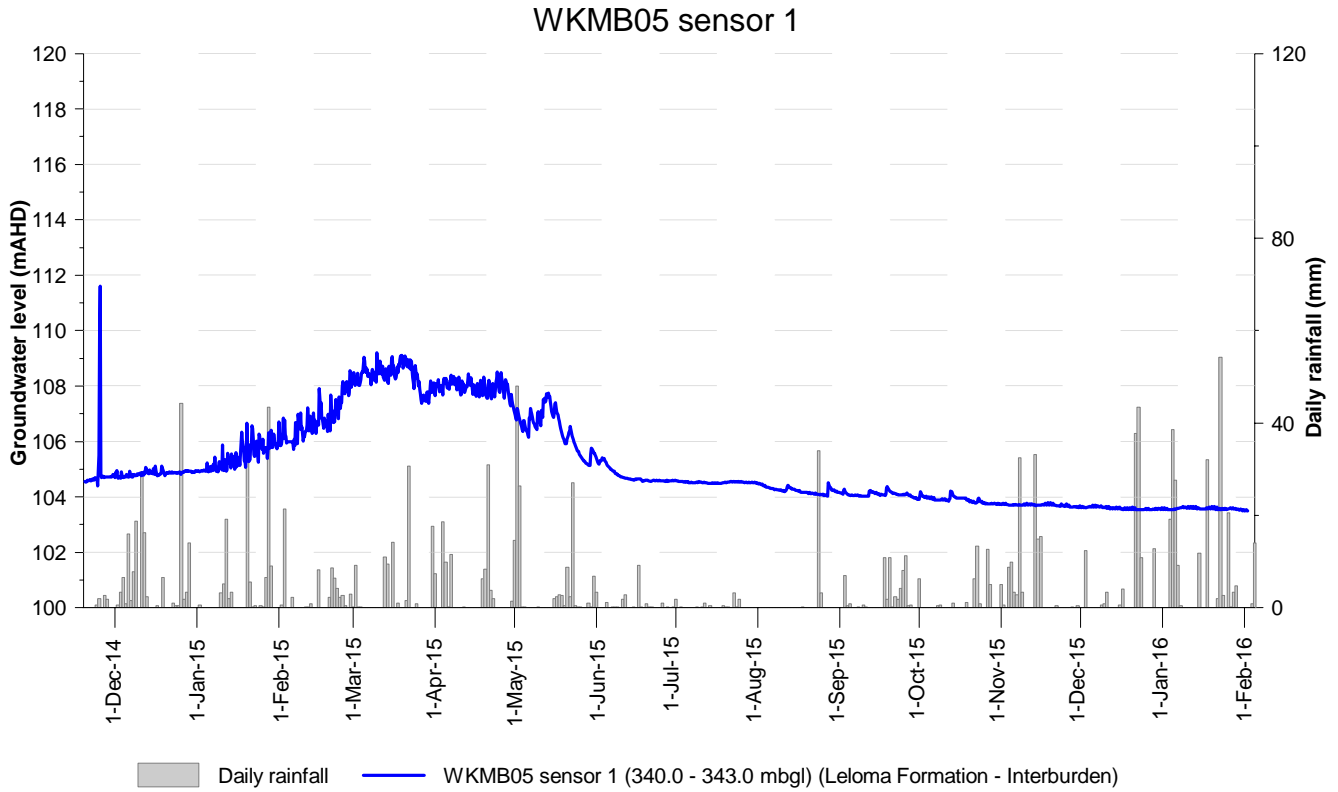
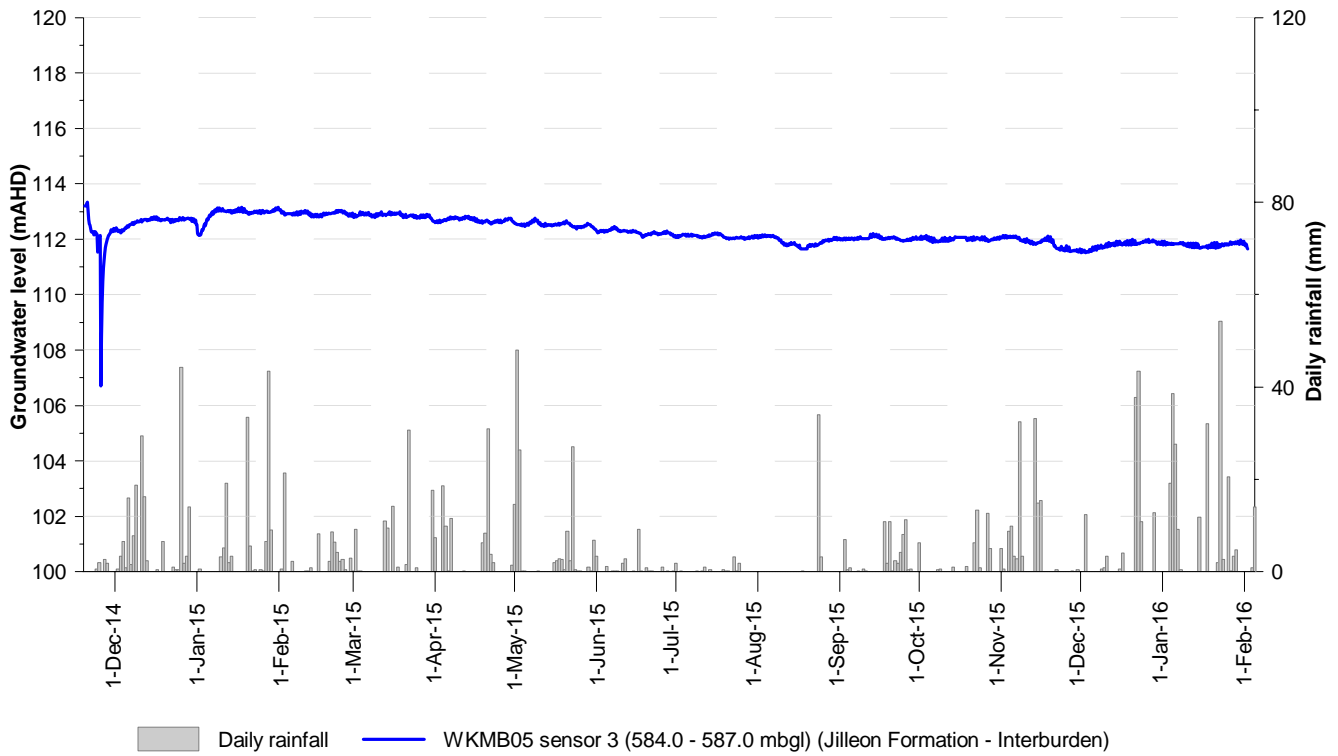


Figure A.32: WKMB05 sensors 1 and 2

WKMB05 sensor 3



WKMB05 sensor 4

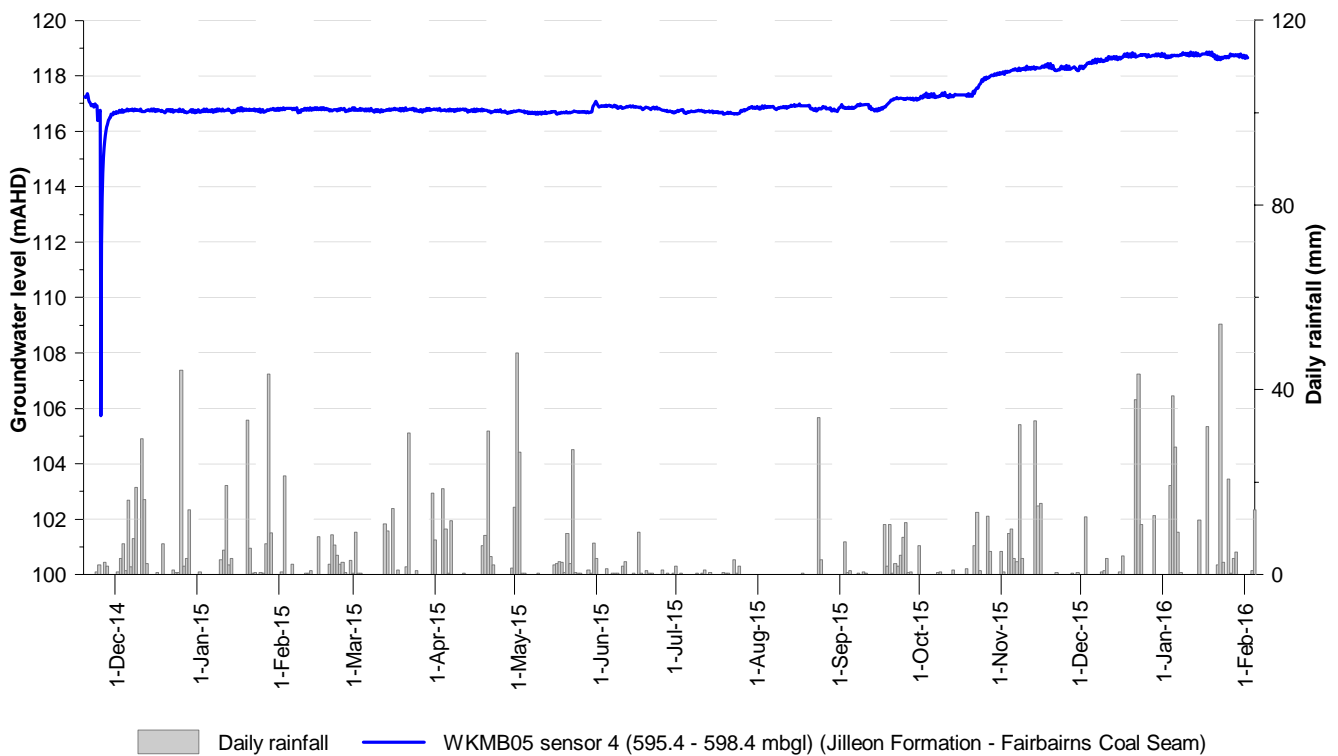
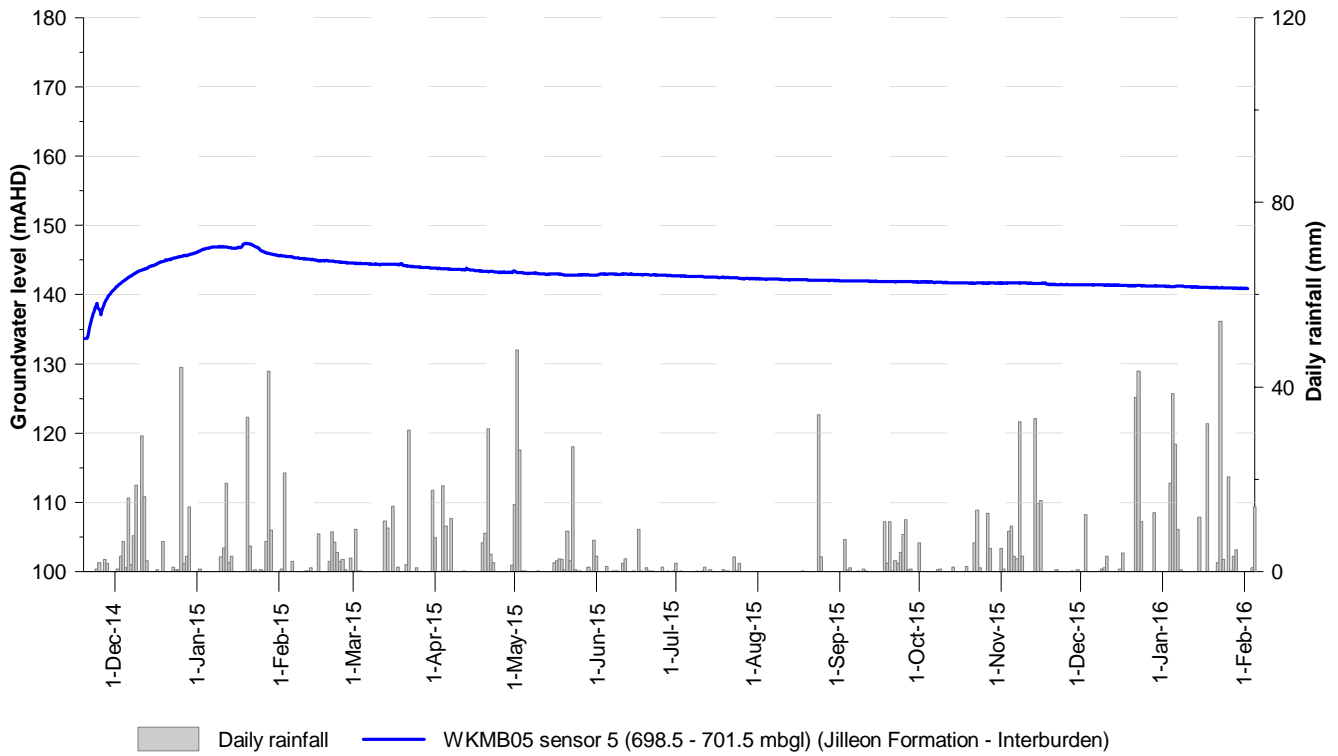


Figure A.33: WKMB05 sensors 3 and 4

WKMB05 sensor 5



WKMB05 sensor 6

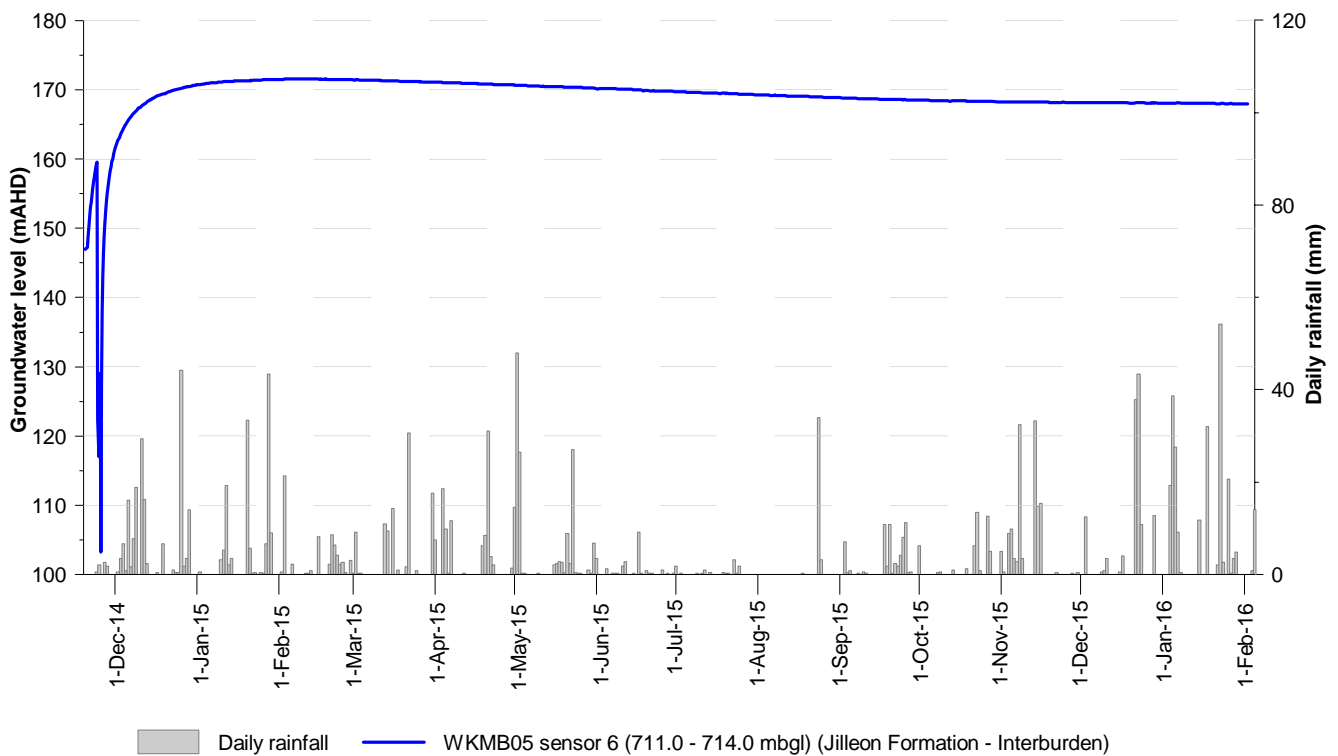


Figure A.34: WKMB05 sensors 5 and 6

NS725R

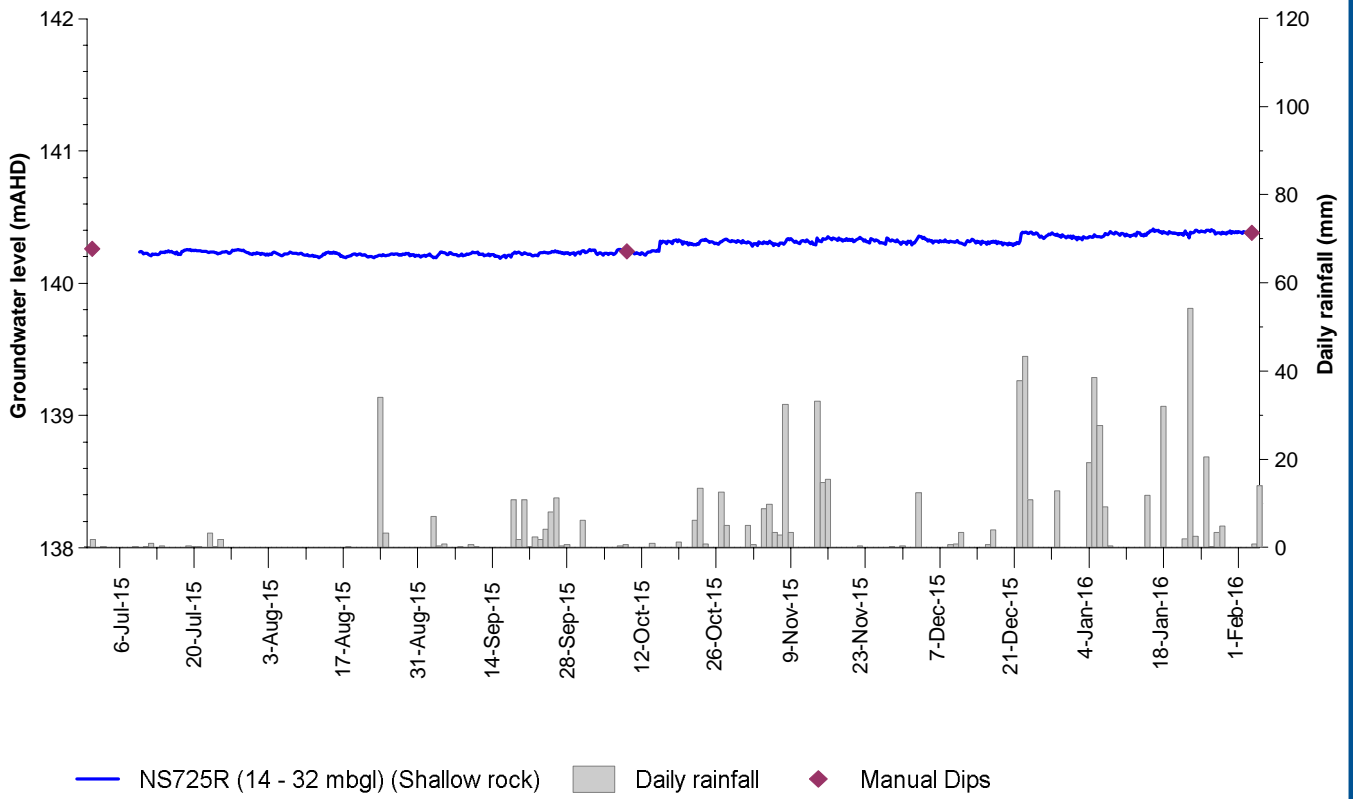


Figure A.35: NS725R monitoring bore