

De Wijk Periodic Monitoring Report

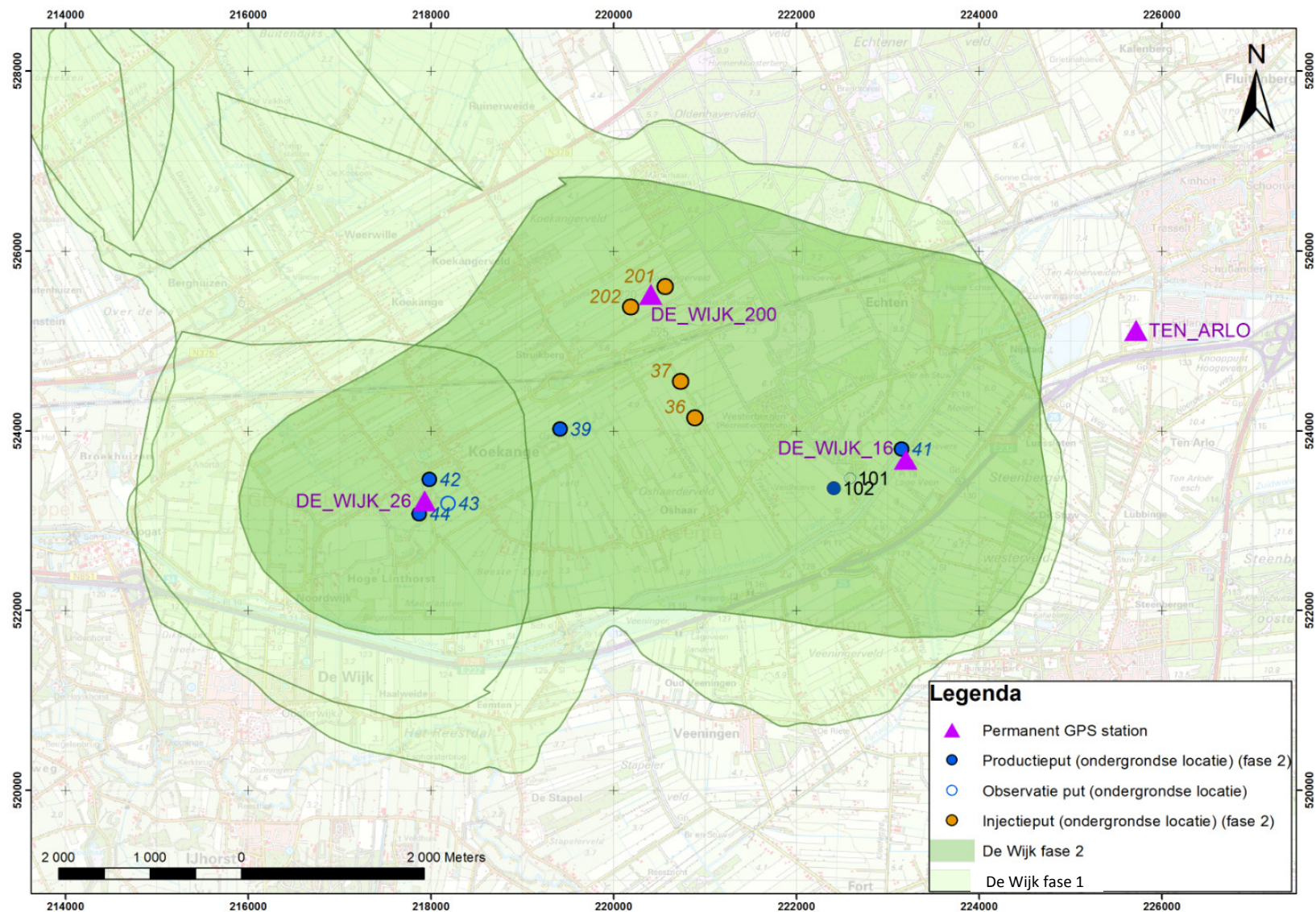
**De Wijk Meet & Regel Protocol
Month: February 2018**

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2. Phase 2 Injectors: Injection rate and THP data (4 injectors)
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5. Subsidence vs. Time plot (4 GPS stations)
6. Subsidence Control Measures

De Wijk: Production and Subsidence Monitoring

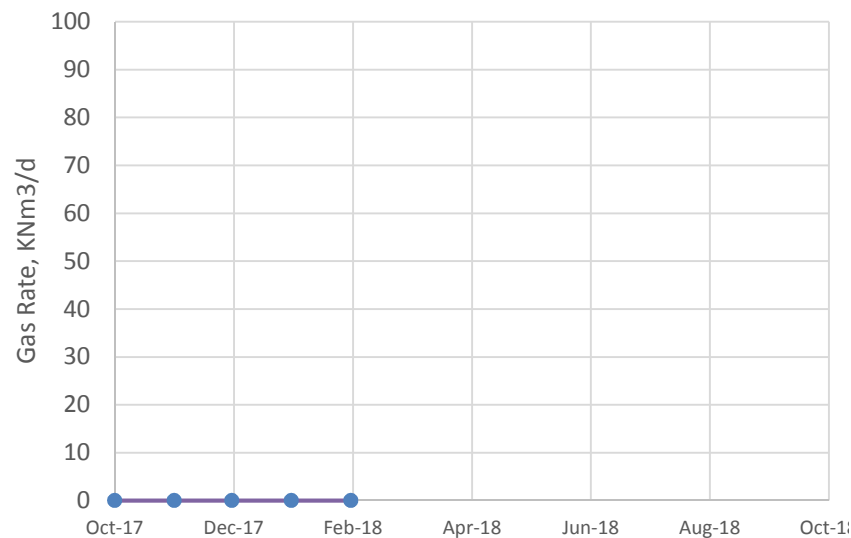
De Wijk Map



De Wijk: Production and Subsidence Monitoring

De Wijk Phase 2 Producers (East)

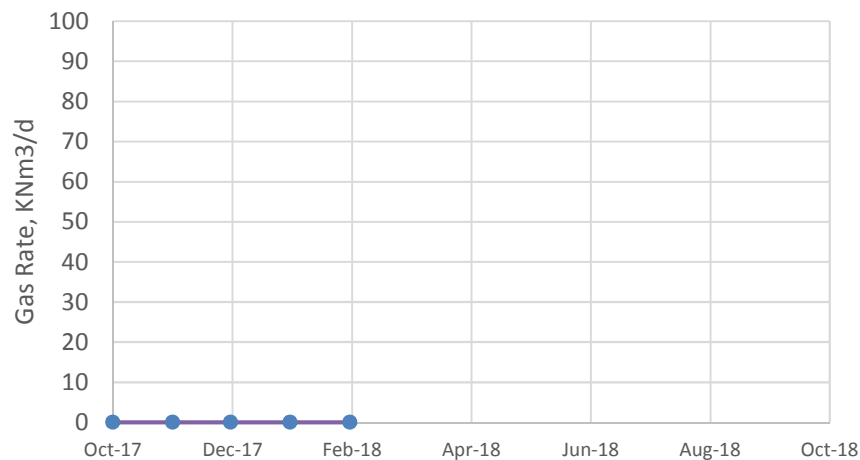
WYK-41, Production Rate



WYK-41 THP



WYK-102, Production Rate



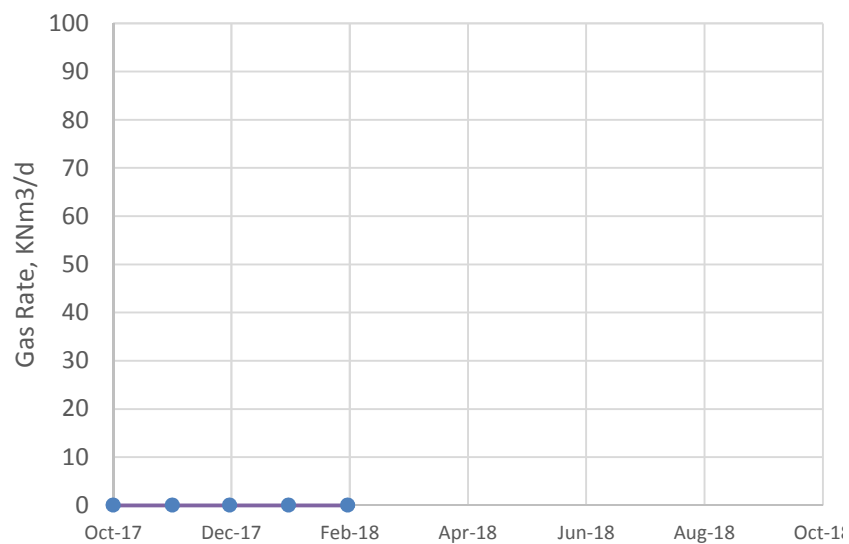
WYK-102 THP



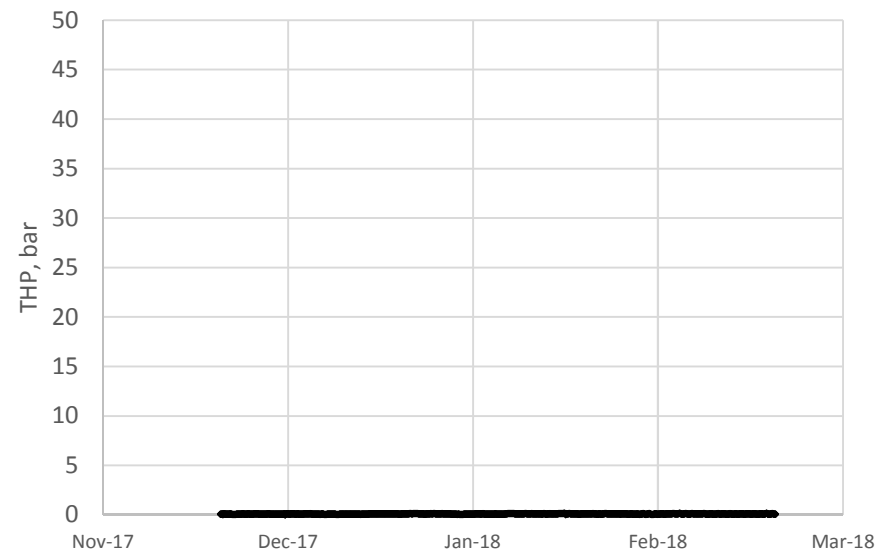
De Wijk: Production and Subsidence Monitoring

De Wijk Phase 2 Producers (West)

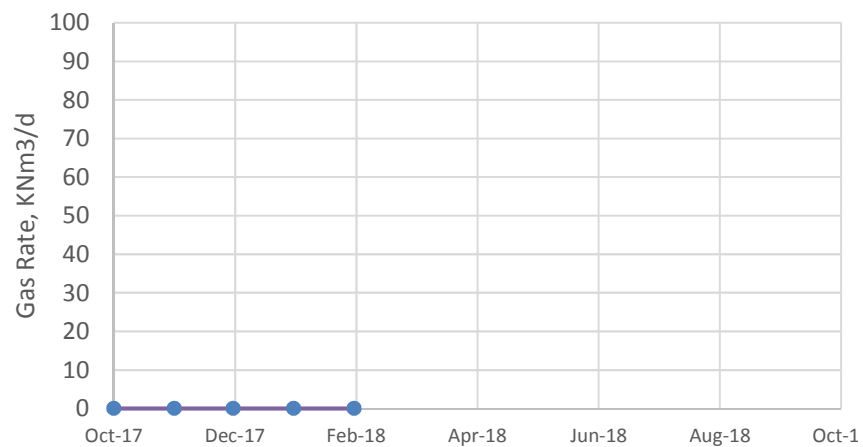
WYK-42, Production Rate



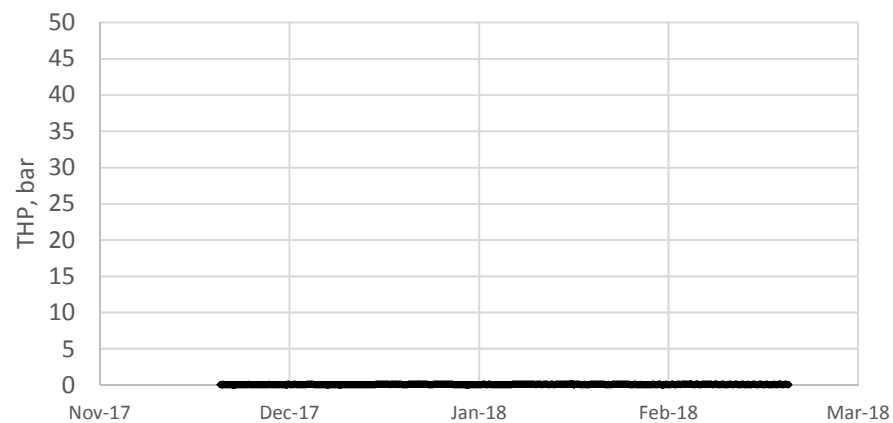
WYK-42 THP



WYK-44, Production Rate

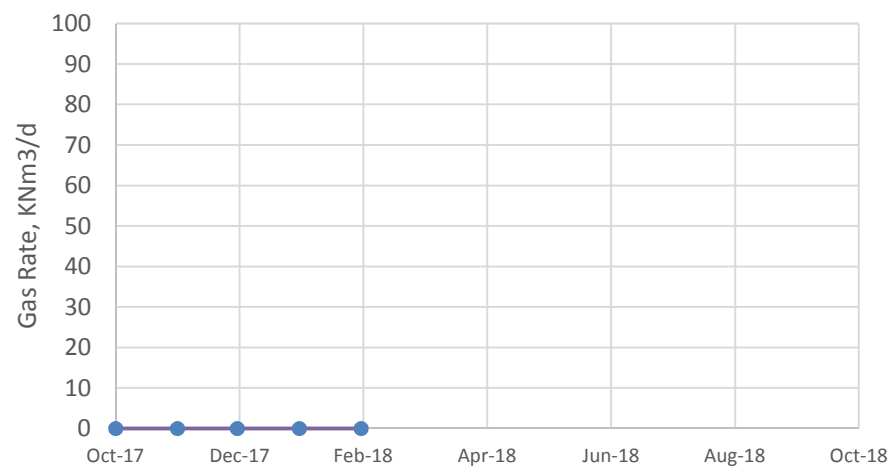


WYK-44 THP



De Wijk Phase 2 Producers (West)

WYK-39, Production Rate

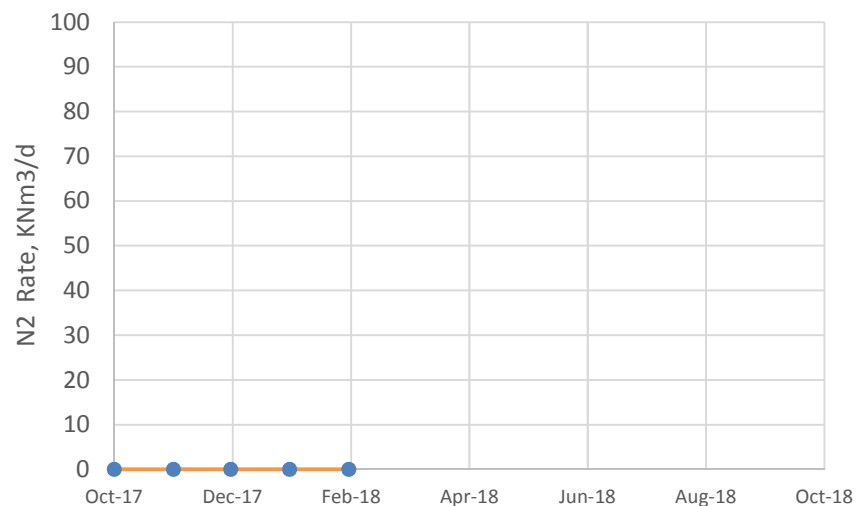


WYK-39 THP

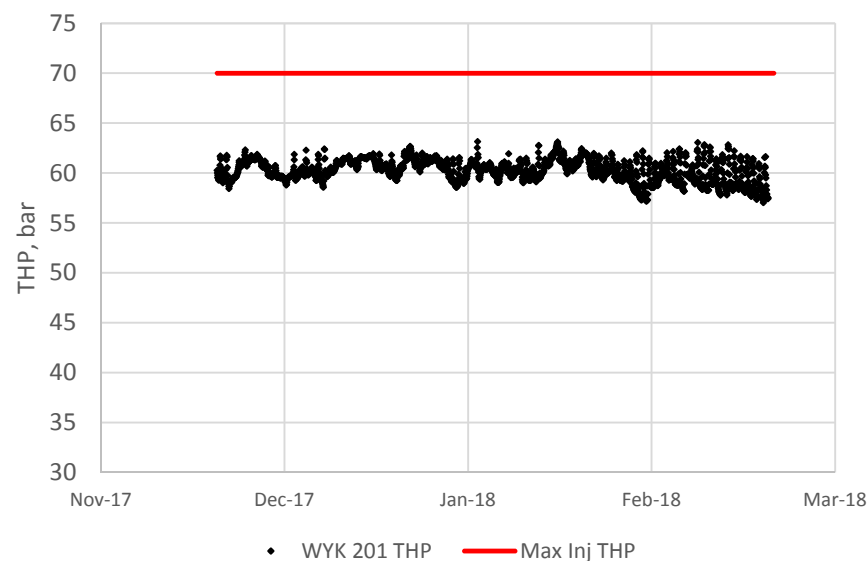


De Wijk Phase 2 Injectors

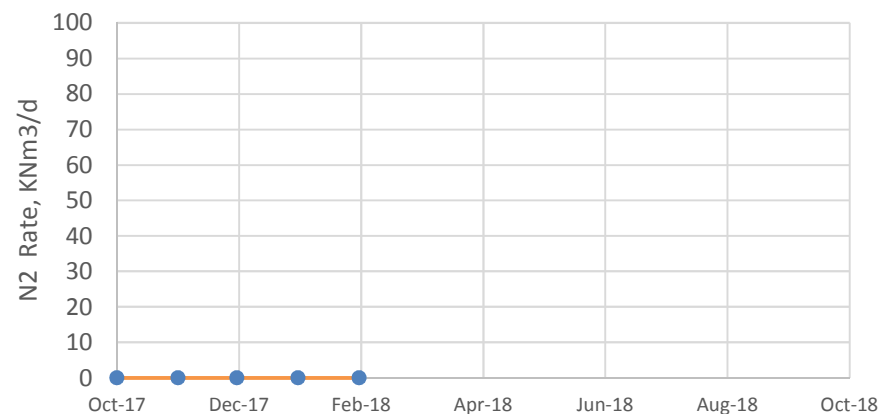
WYK-201



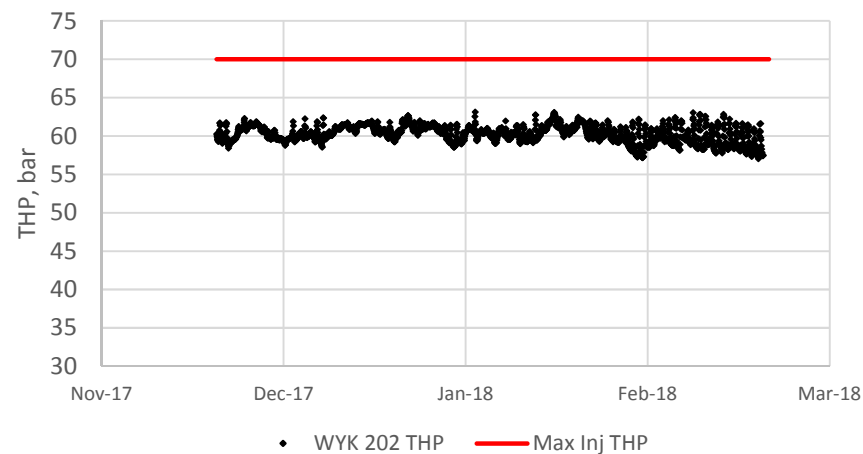
WYK-201 THP



WYK-202

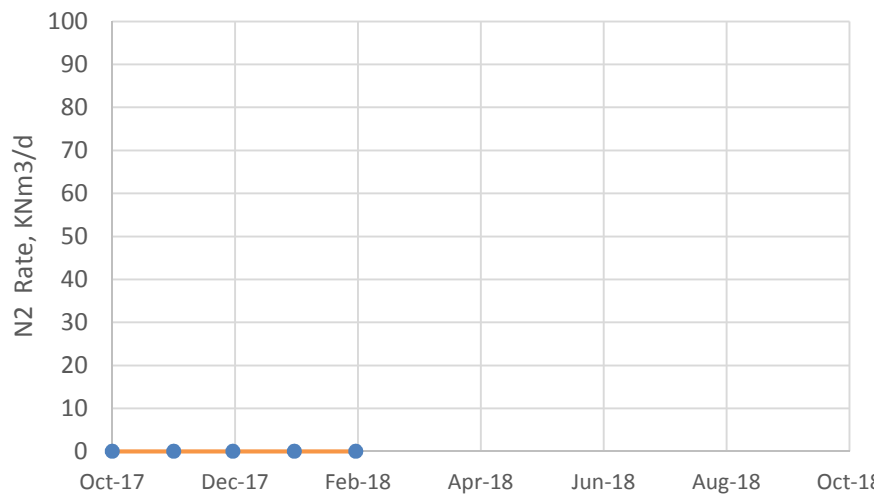


WYK-202 THP

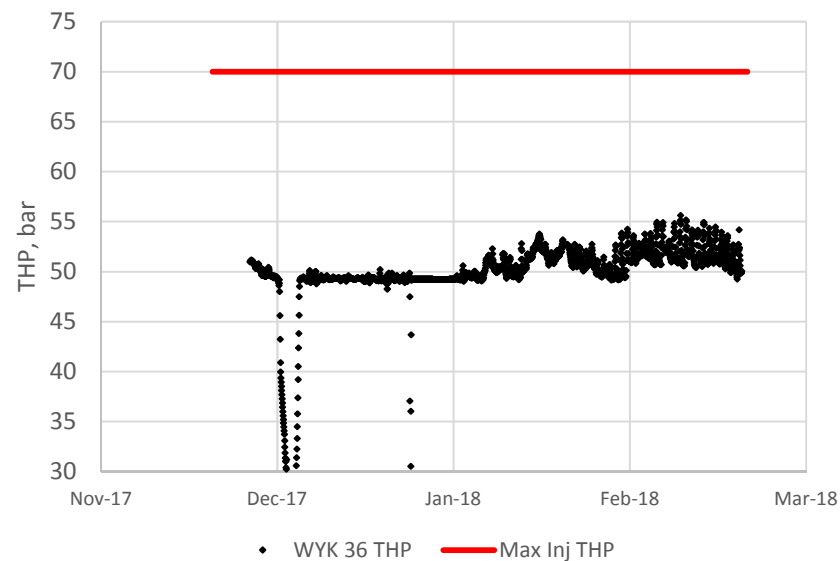


De Wijk Phase 2 Injectors

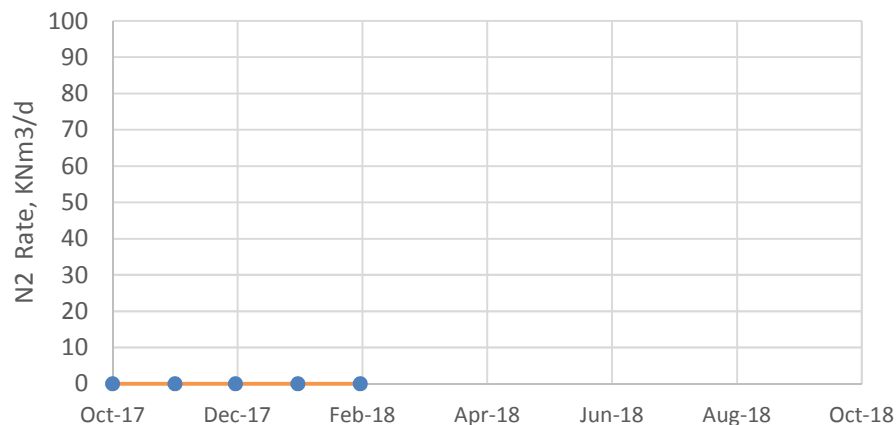
WYK-36



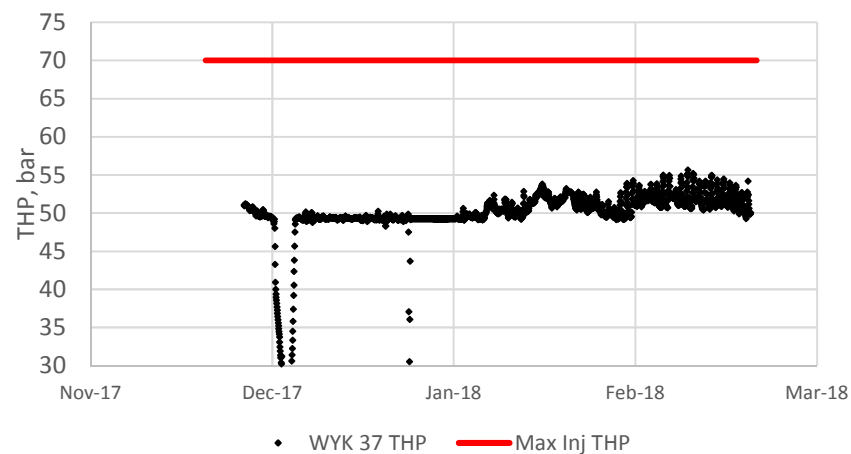
WYK-36 THP



WYK-37

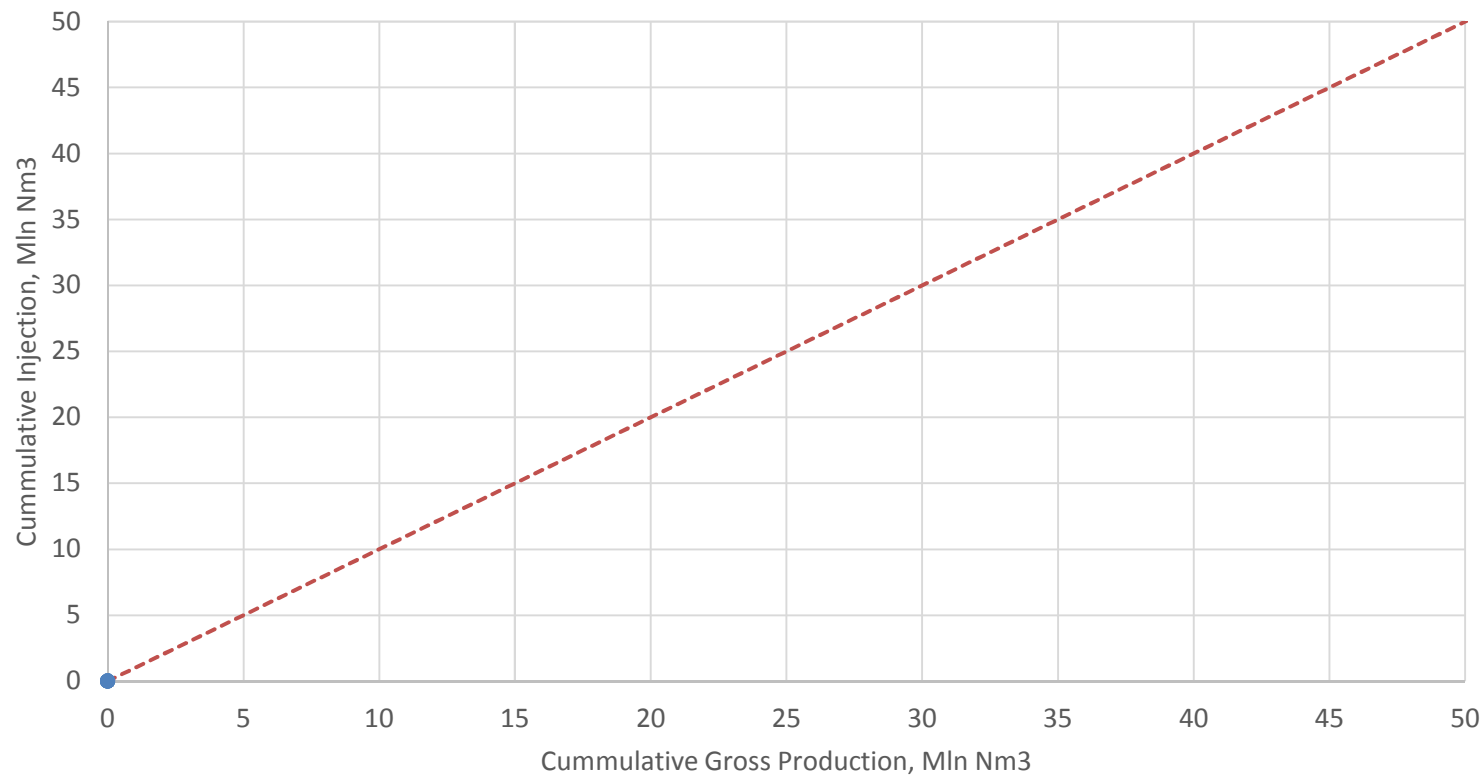


WYK-37 THP



De Wijk Phase 2

De Wijk Ph2 (Voidage Replacement Ratio Plot)

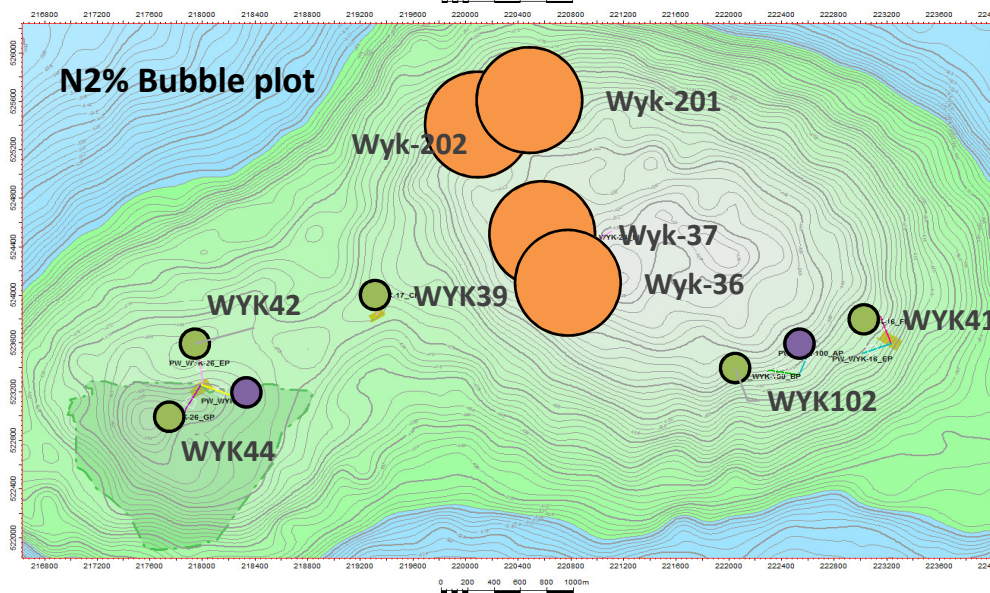
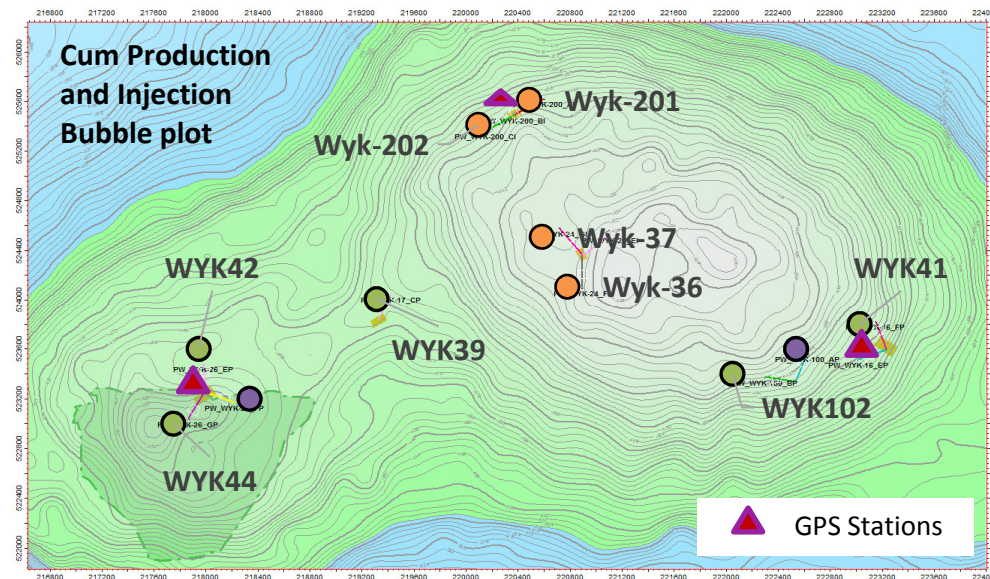


De Wijk Phase 2

Plot 1: Bubble plot for Cumulative production and Injection for the producers and Injectors.

The size of the bubble represents the cumulative volumes for that well. The larger the area of the circle, the more production/injection from that well.

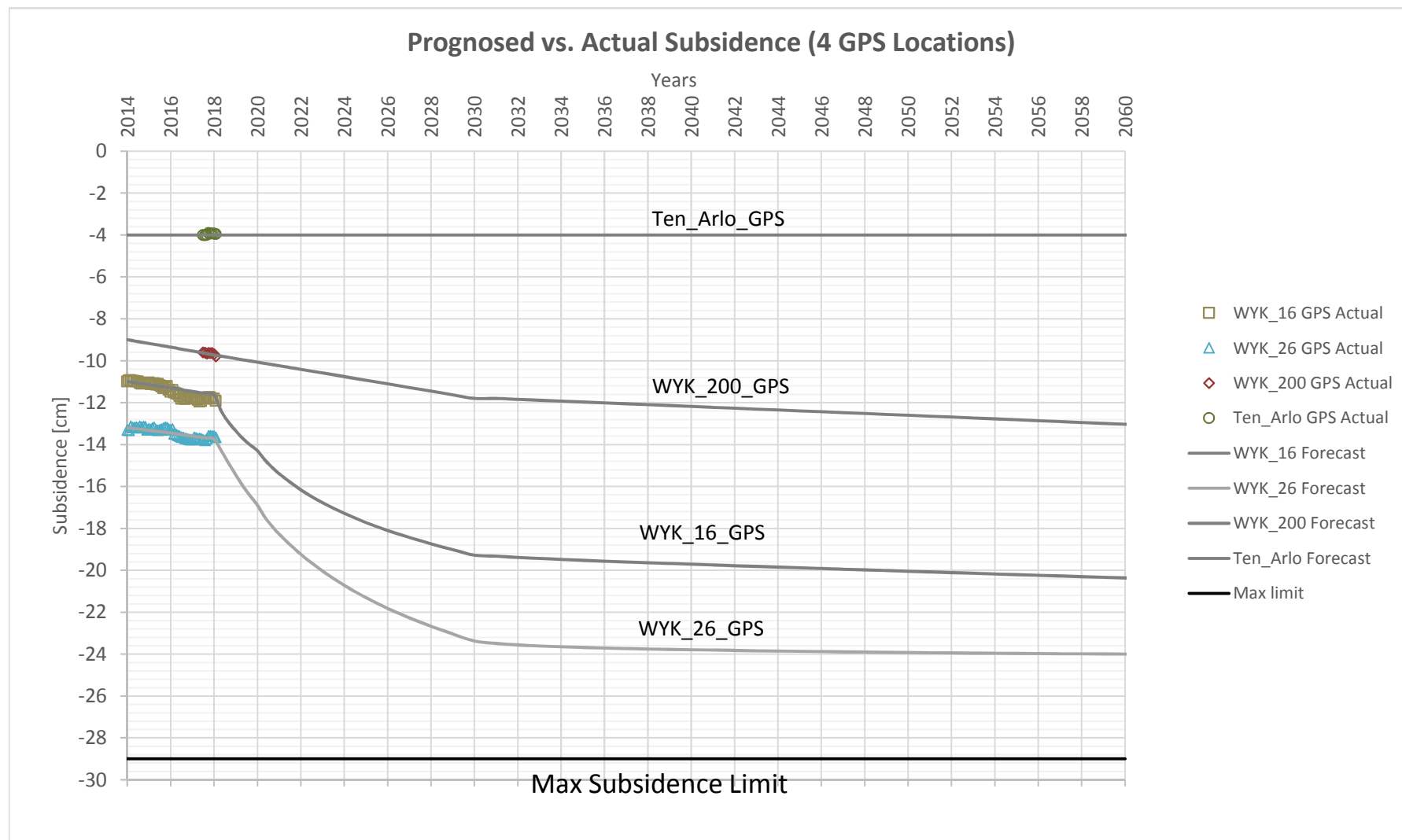
Plot 2: Bubble plot for N2% in producers and injectors. The size of the circle represents the N2 percentage for that well. The larger the area of the circle, the higher the N2 percentage of that producer. The injectors circle size corresponds to 100% N2.



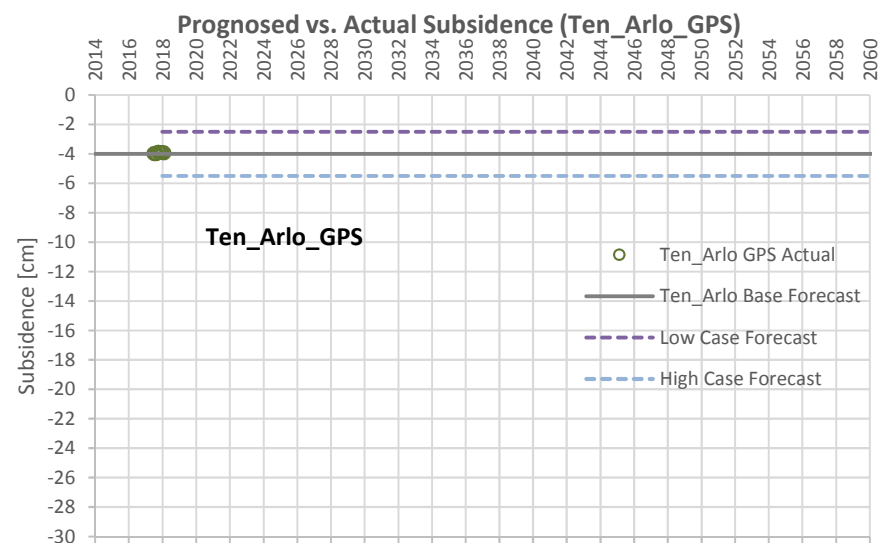
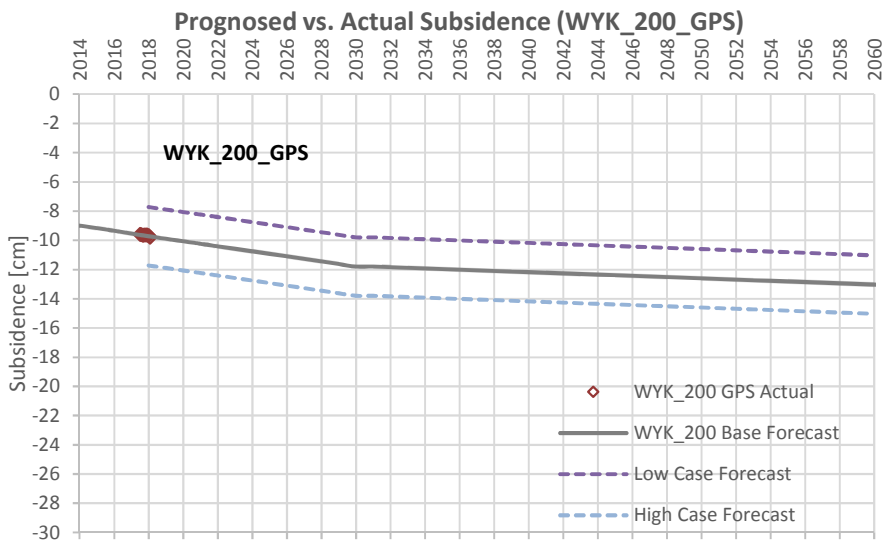
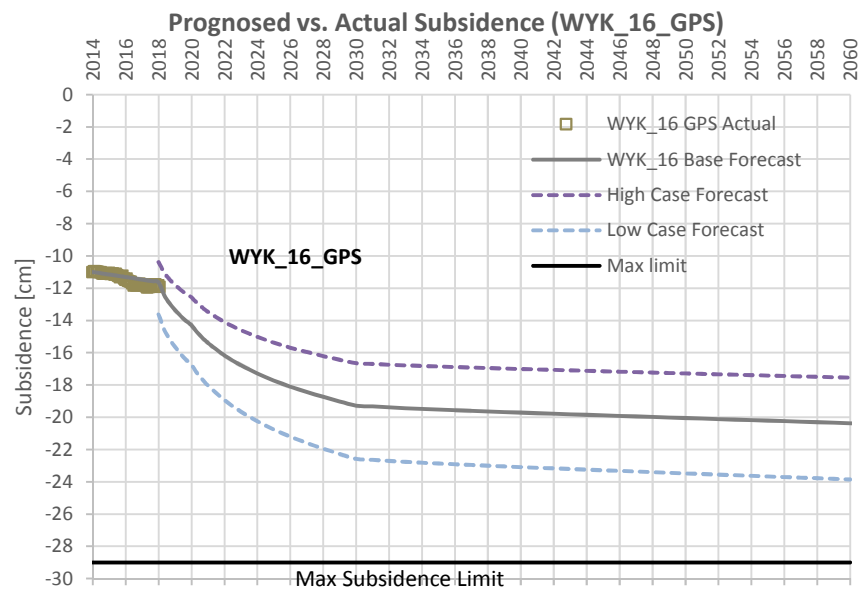
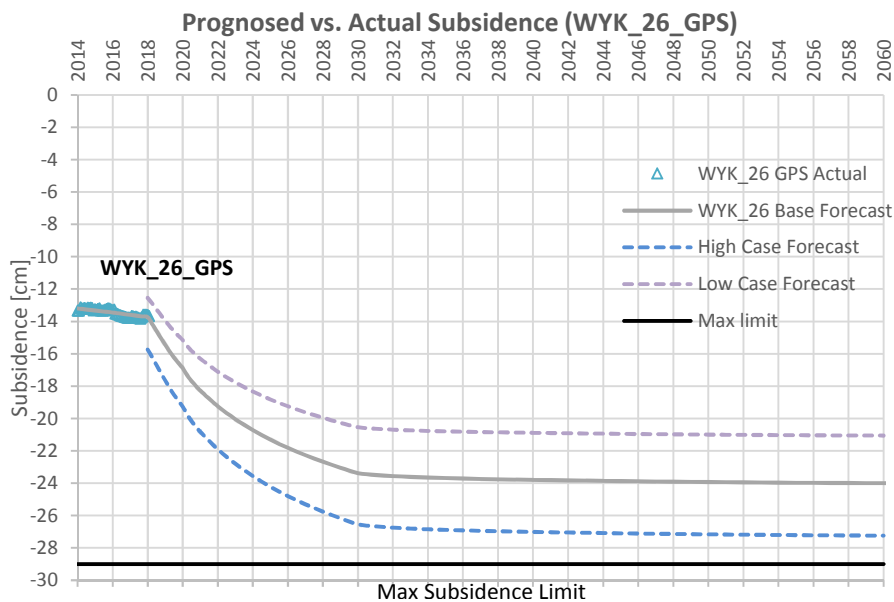
Well	Status	Cum Prd/Inj, Mln Nm3	N2%
WYK39	Producer	0.0	9.0
WYK41	Producer	0.0	9.0
WYK42	Producer	0.0	9.0
WYK44	Producer	0.0	9.0
WYK102	Producer	0.0	9.0
WYK101	Obs well	0.0	9.0
WYK-43	Obs well	0.0	9.0
Wyk-202	Injector	0.0	100.0
wyk-201	Injector	0.0	100.0
Wyk-36	Injector	0.0	100.0
Wyk-37	Injector	0.0	100.0

De Wijk: Production and Subsidence Monitoring

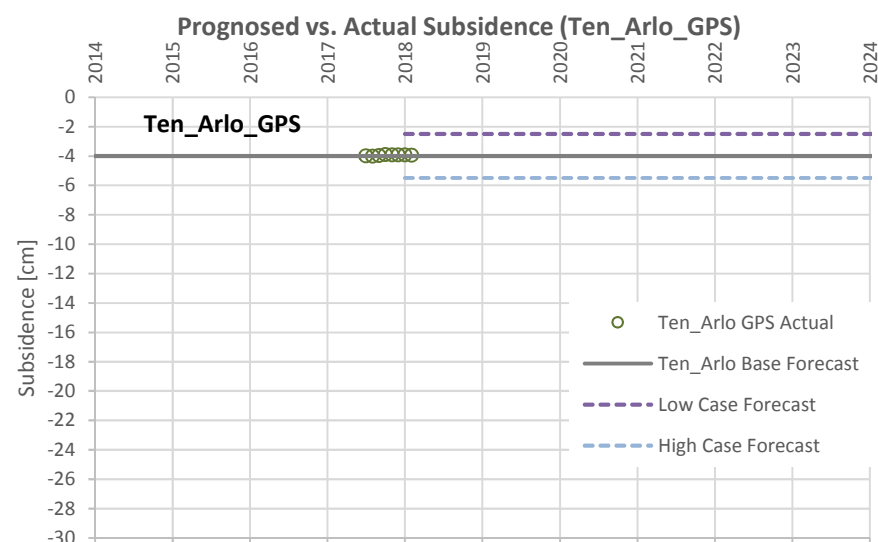
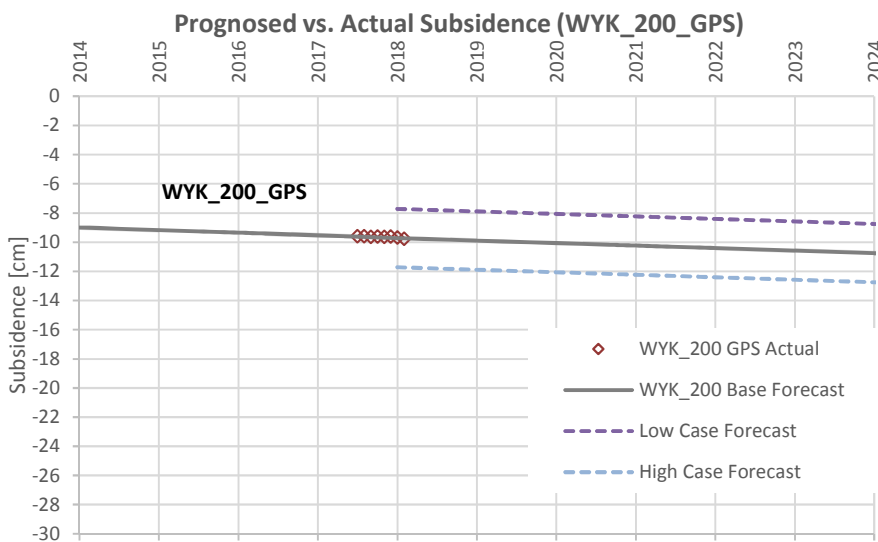
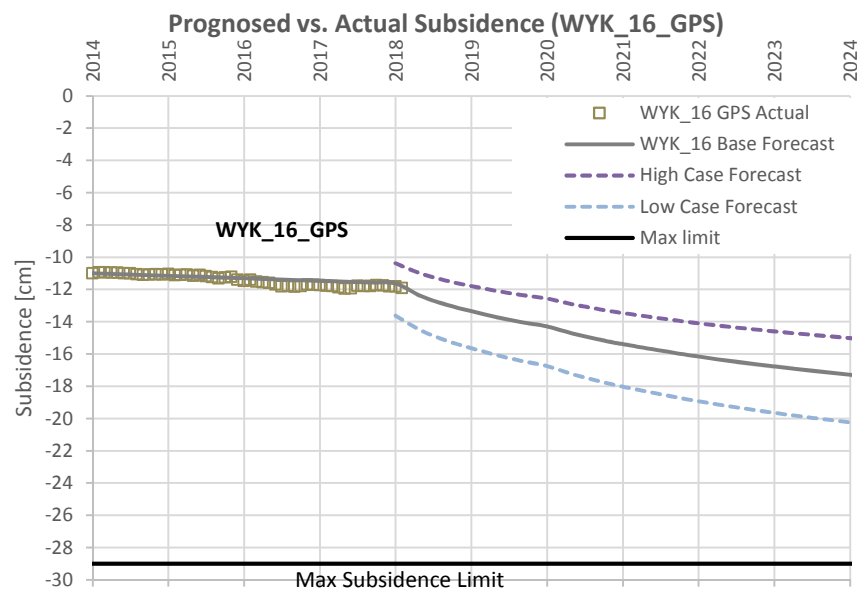
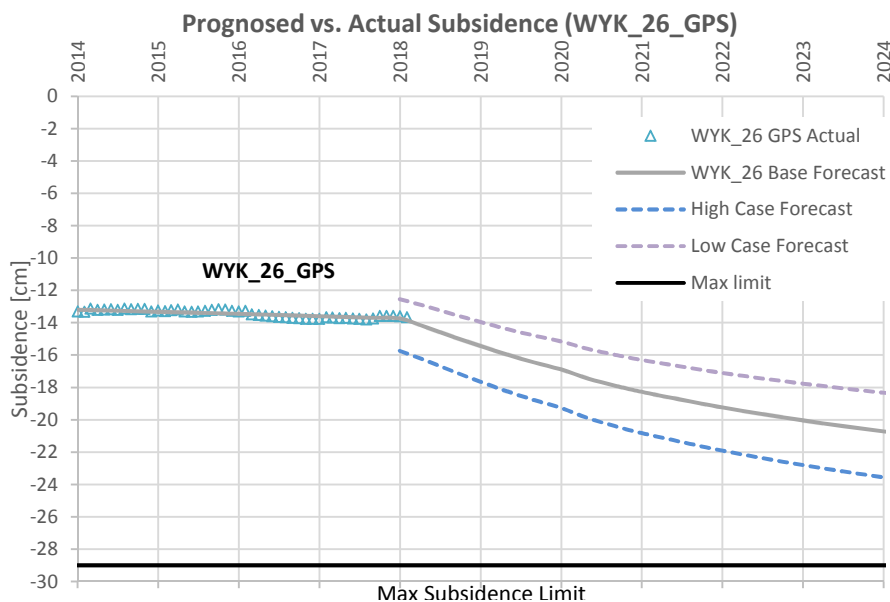
GPS stations: Total subsidence Prognosed vs. Actual



GPS stations: Total subsidence Prognosed Bandwidth vs. Actual

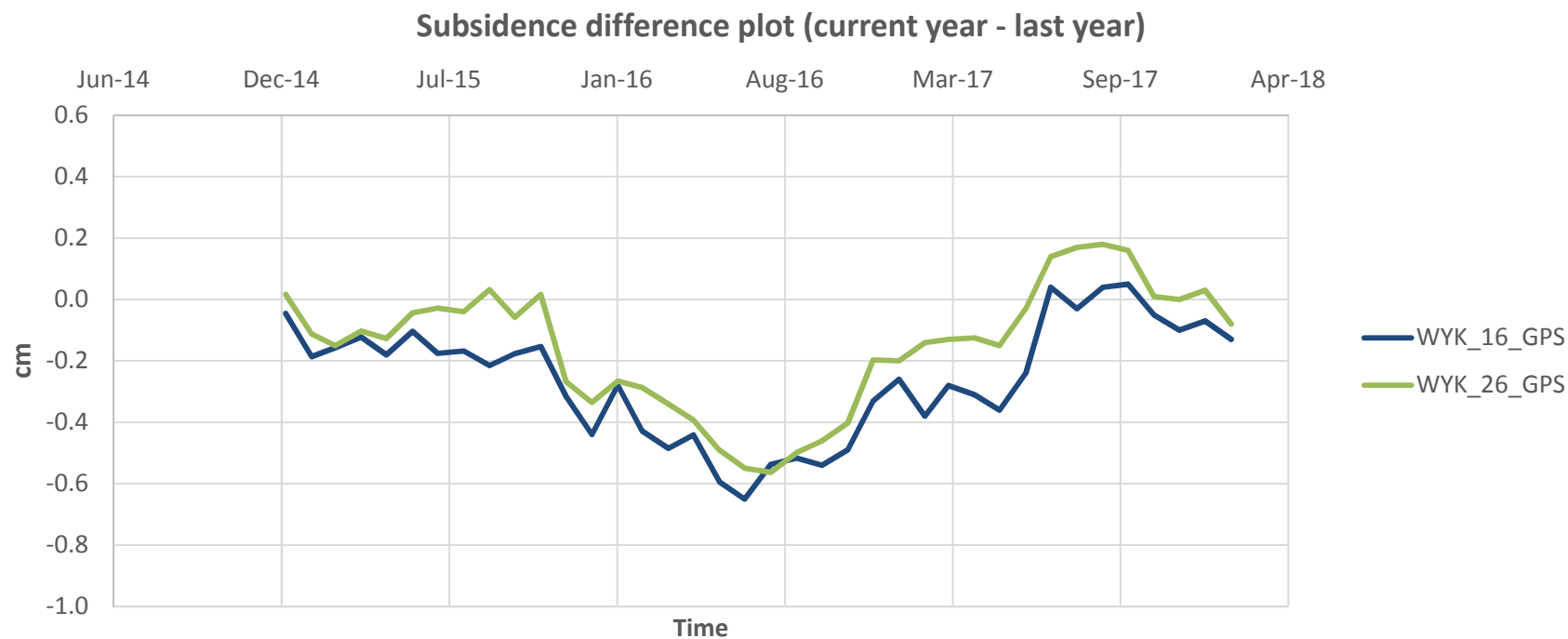


GPS stations: Total subsidence Prognosed Bandwidth vs. Actual



Subsidence difference plot for 4 GPS stations

↑ + Uplift
↓ - Subsidence



Subsidence Control Measures

Feb-18

GPS Station	Historical Subsidence (1974 - 2014), [cm]	Measured Subsidence (2014 - present)	Between 1974	Feb-18	Control Measures
			Actual Subsidence, [cm]	Prognosed Subsidence, [cm]	
GPS: De_Wijk_16	-11	-0.9	-11.9	-11.6	Continue Monitoring
GPS: De_Wijk_26	-13.2	-0.6	-13.8	-13.7	Continue Monitoring
GPS: De_Wijk_200	-9	-0.8	-9.8	-9.7	Continue Monitoring
GPS: Ten_Arlo	-4	0.0	-4.0	-4.0	Continue Monitoring

Injector	Max THP (3 months), bar
WYK-201	63.2
WYK-202	63.2
WYK-36	55.6
WYK-37	55.6

Remarks and Analysis of data in this report:

- **7th March 2018 : Injection started in WYK-201 & 202.**
- *Pages 12, 13, 15 have changed: In consultation with SodM the bandwidth of the prognosis has been updated. Based on 40% uncertainty in the prognosis, stated in the winningsplan and approved by the minister in the Instemmingsbesluit, it now reflects the prognosis for the specific location of each gps-stations. A separate plot for each station has been added for clarity. The layout of this comments page has also been updated in consultation with SodM*

Pore Collapse Risk Analysis:

1. No sudden change in subsidence rate
2. No sudden change in wells production performance (rate or pressure)

Current assessment:

No Pore collapse in the field

