

De Wijk Periodic Monitoring Report

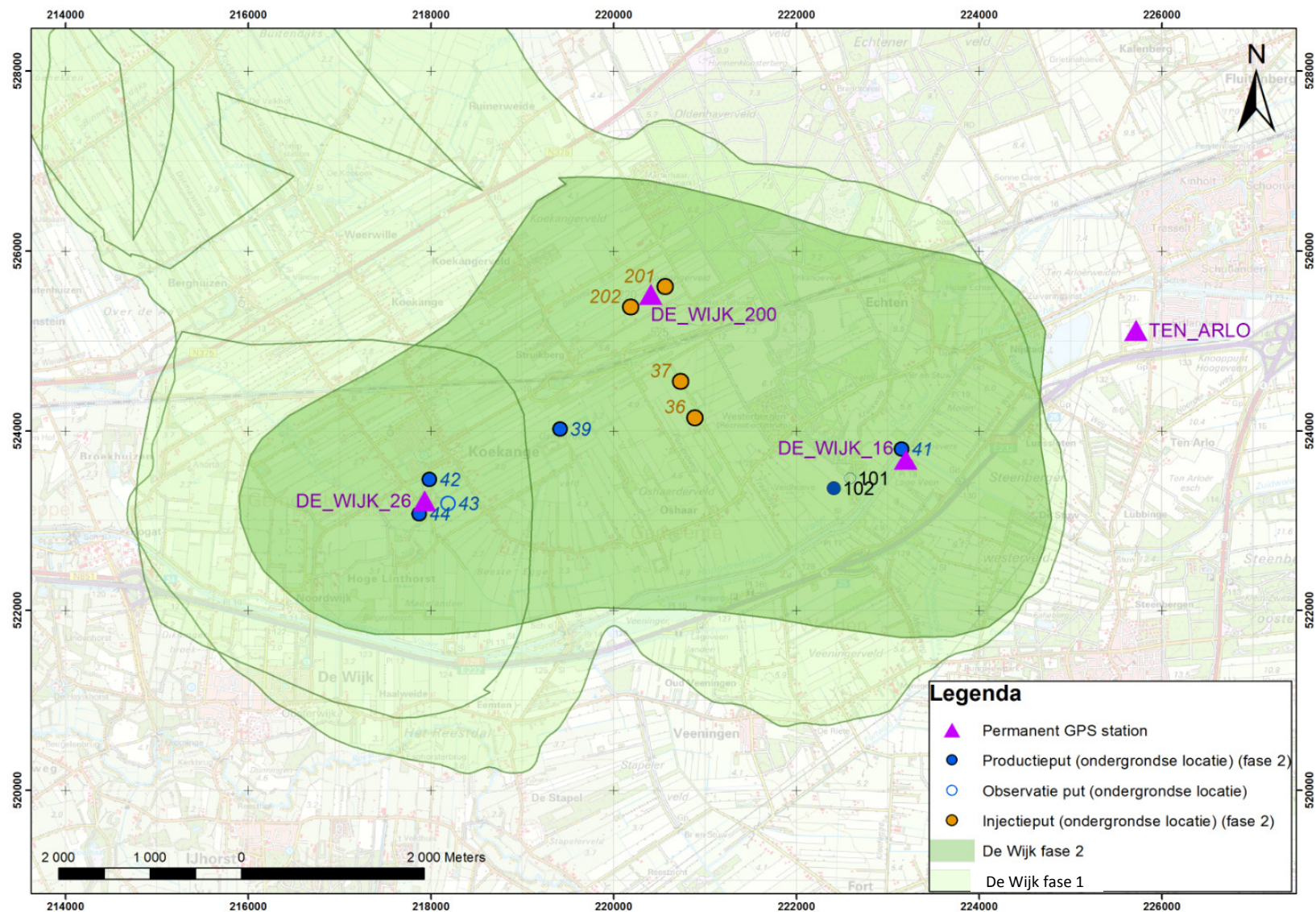
De Wijk Meet & Regel Protocol Month: January 2018

Contents

1. Phase 2 Producers: Gas rate and THP data (5 producers)
2. Phase 2 Injectors: Injection rate and THP data (4 injectors)
3. De Wijk Ph2: Voidage Replacement Ratio (Total field)
4. Wells Cumulative Production/N2% bubble plots
5. Subsidence vs. Time plot (4 GPS stations)
6. Subsidence Control Measures

De Wijk: Production and Subsidence Monitoring

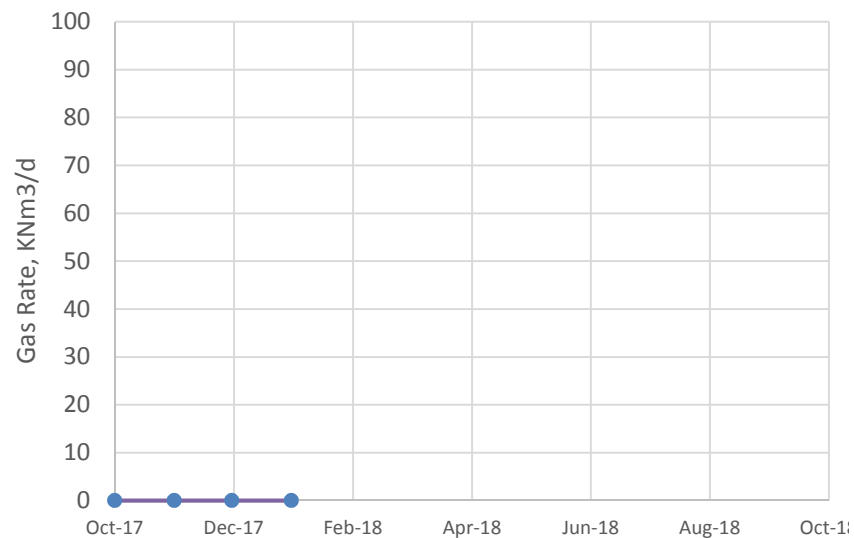
De Wijk Map



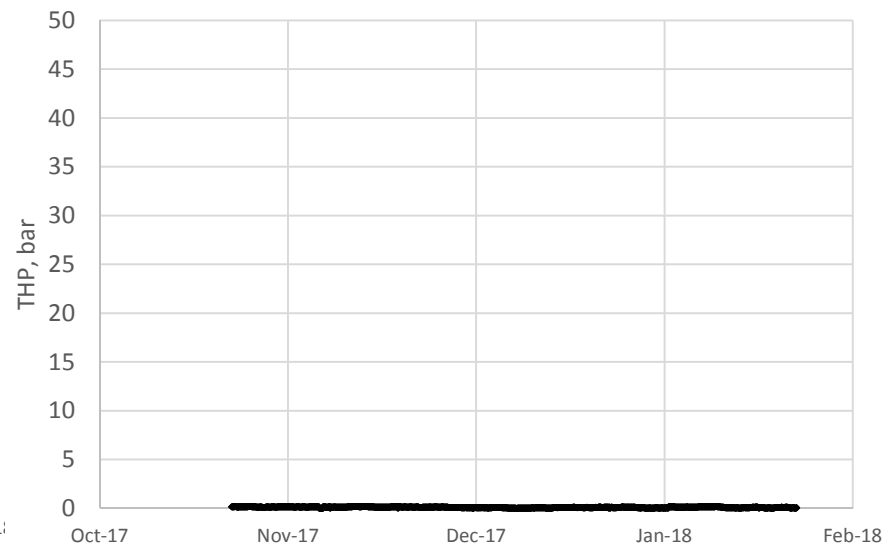
De Wijk: Production and Subsidence Monitoring

De Wijk Phase 2 Producers (East)

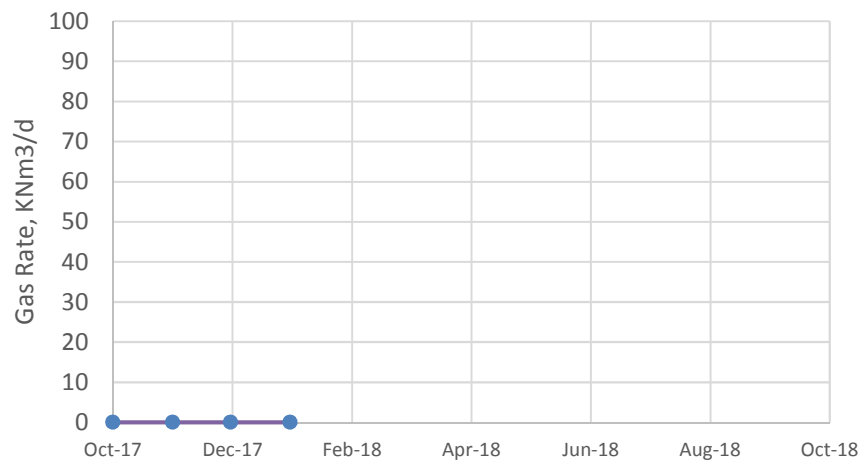
WYK-41, Production Rate



WYK-41 THP



WYK-102, Production Rate



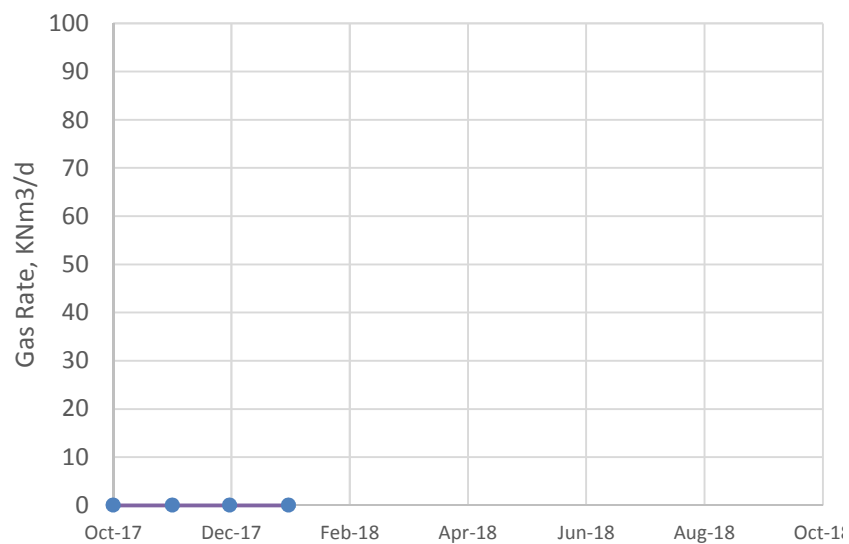
WYK-102 THP



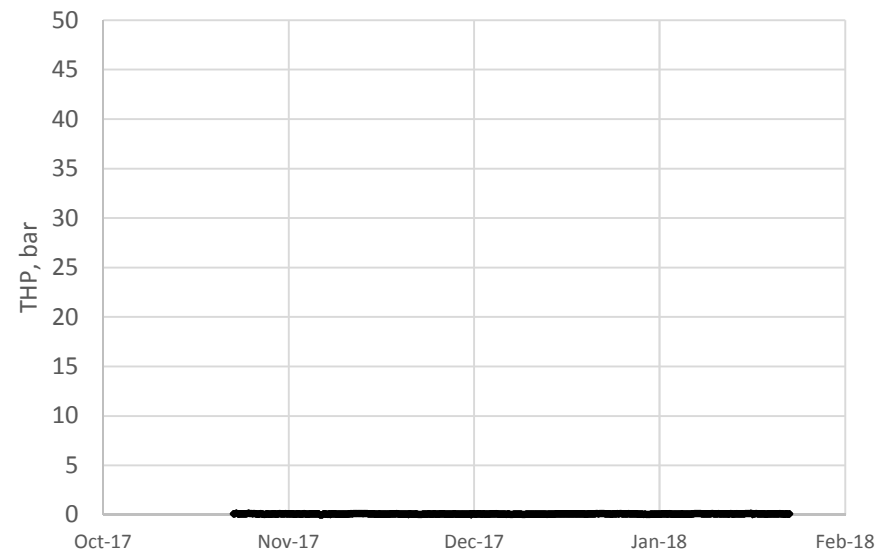
De Wijk: Production and Subsidence Monitoring

De Wijk Phase 2 Producers (West)

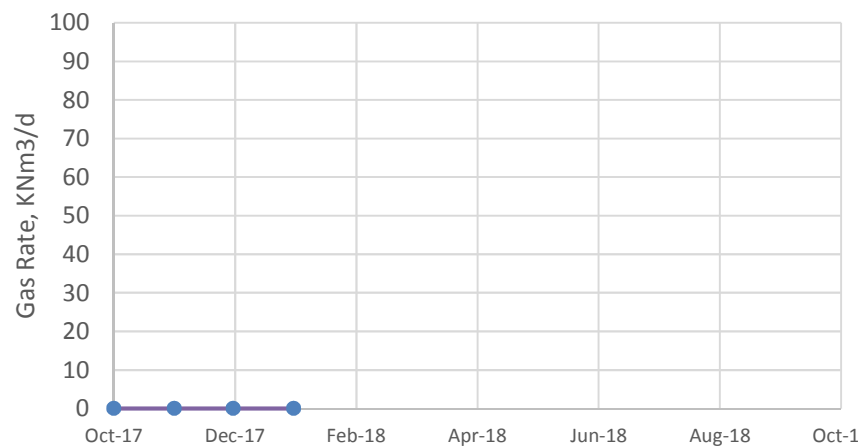
WYK-42, Production Rate



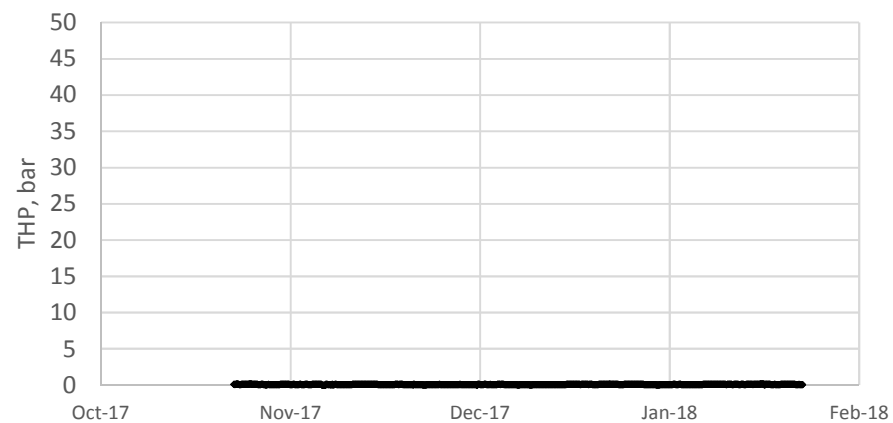
WYK-42 THP



WYK-44, Production Rate

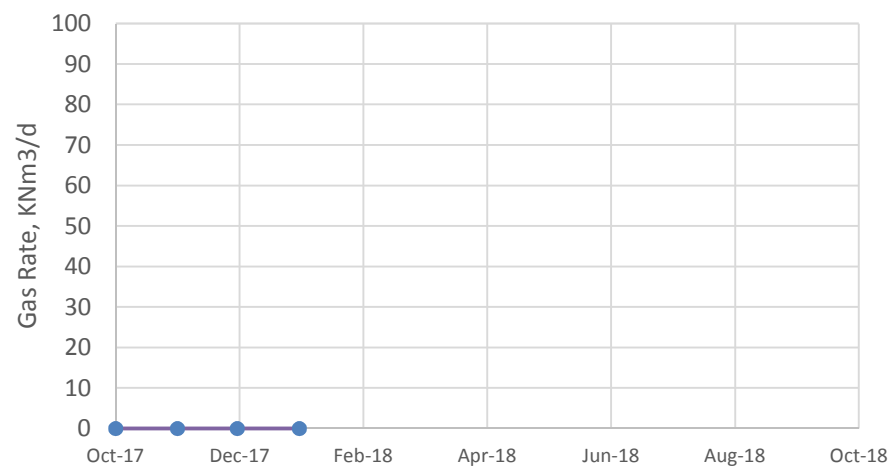


WYK-44 THP

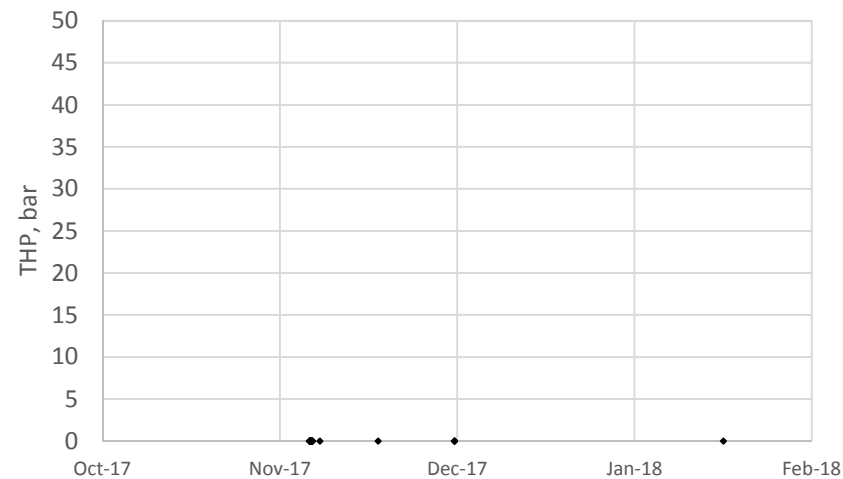


De Wijk Phase 2 Producers (West)

WYK-39, Production Rate

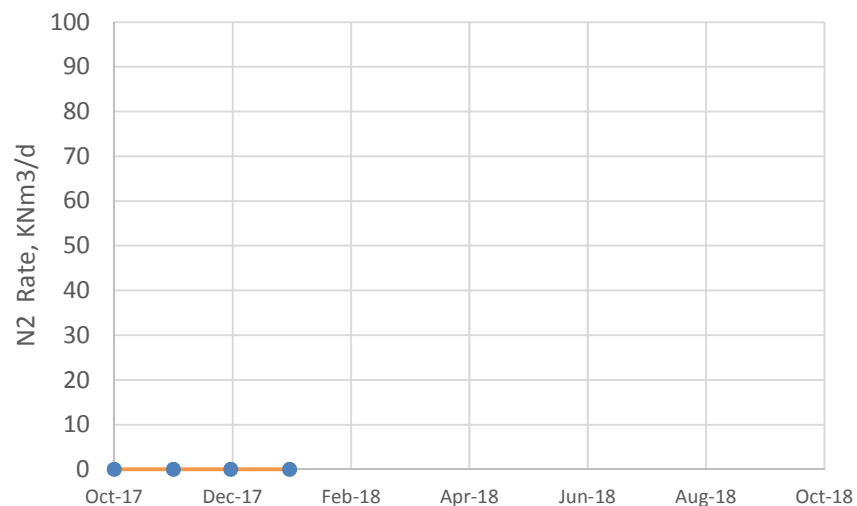


WYK-39 THP

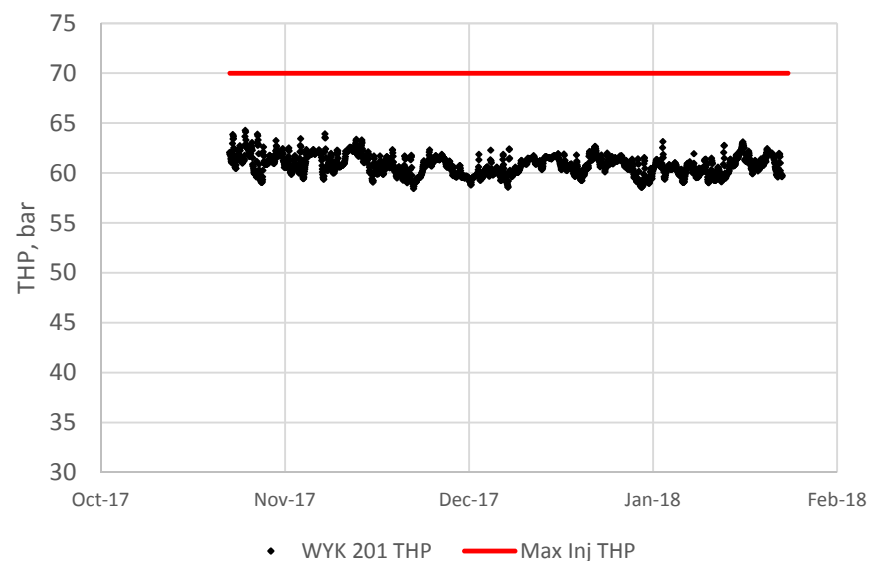


De Wijk Phase 2 Injectors

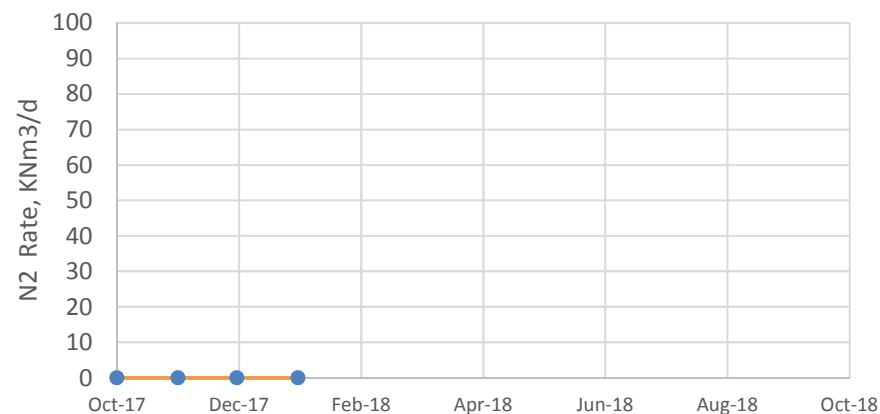
WYK-201



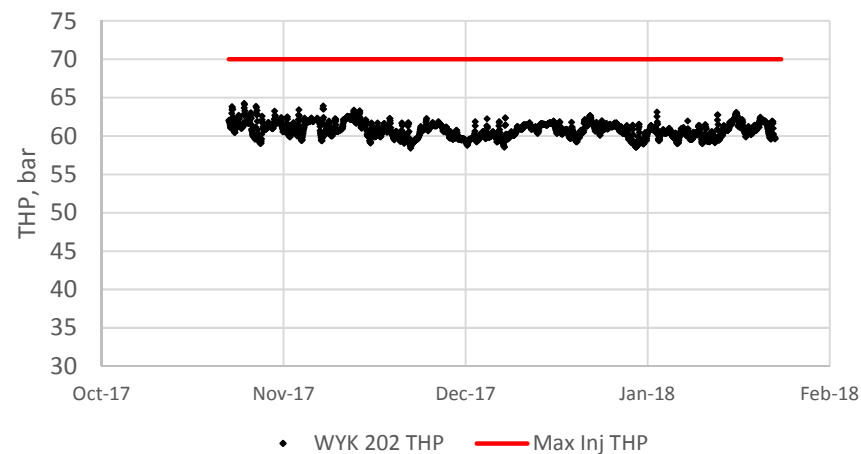
WYK-201 THP



WYK-202

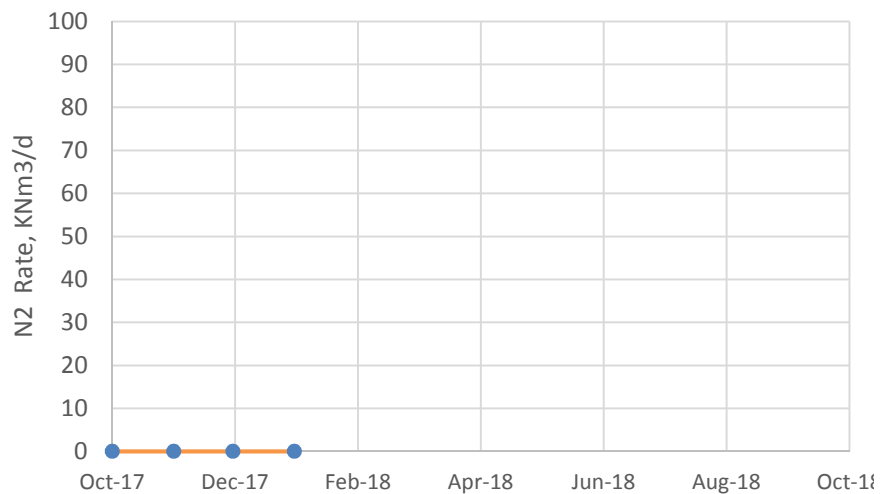


WYK-202 THP

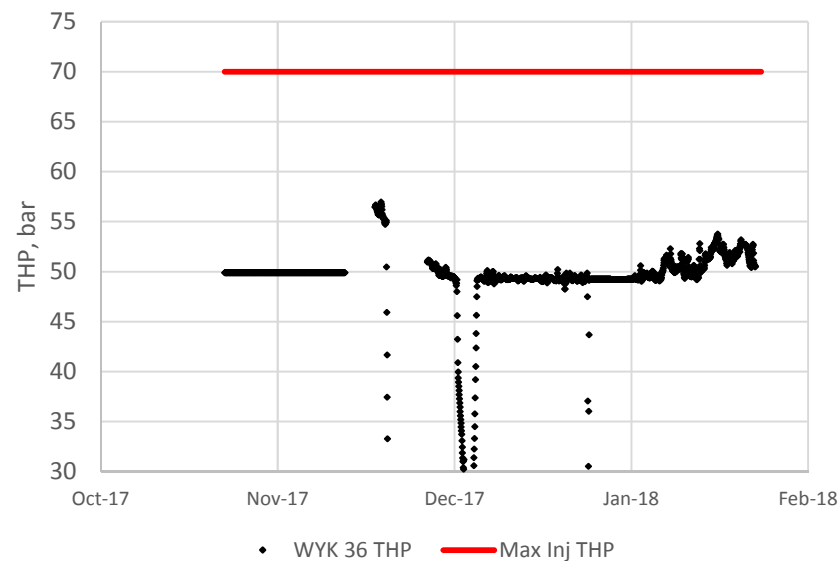


De Wijk Phase 2 Injectors

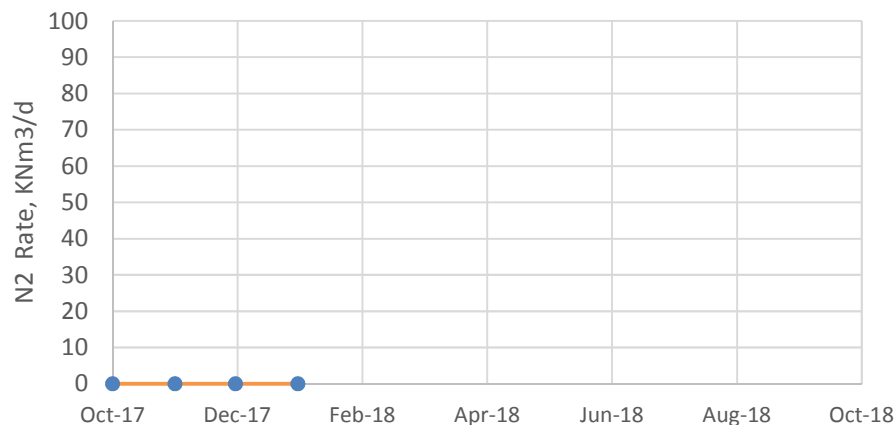
WYK-36



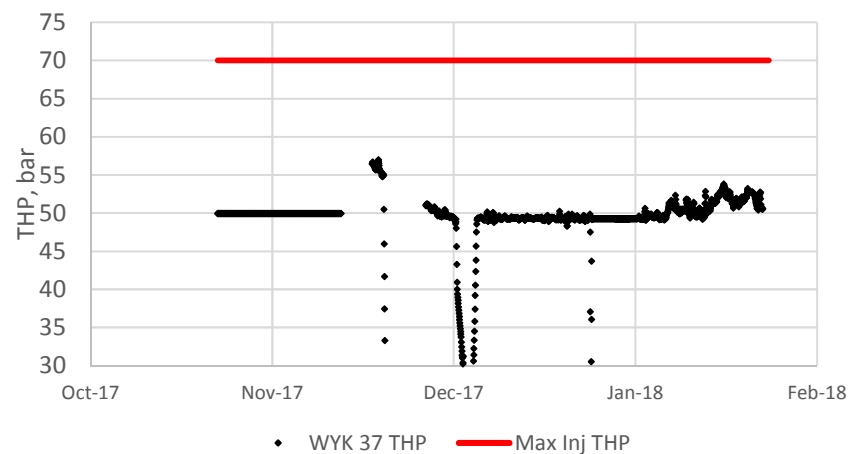
WYK-36 THP



WYK-37

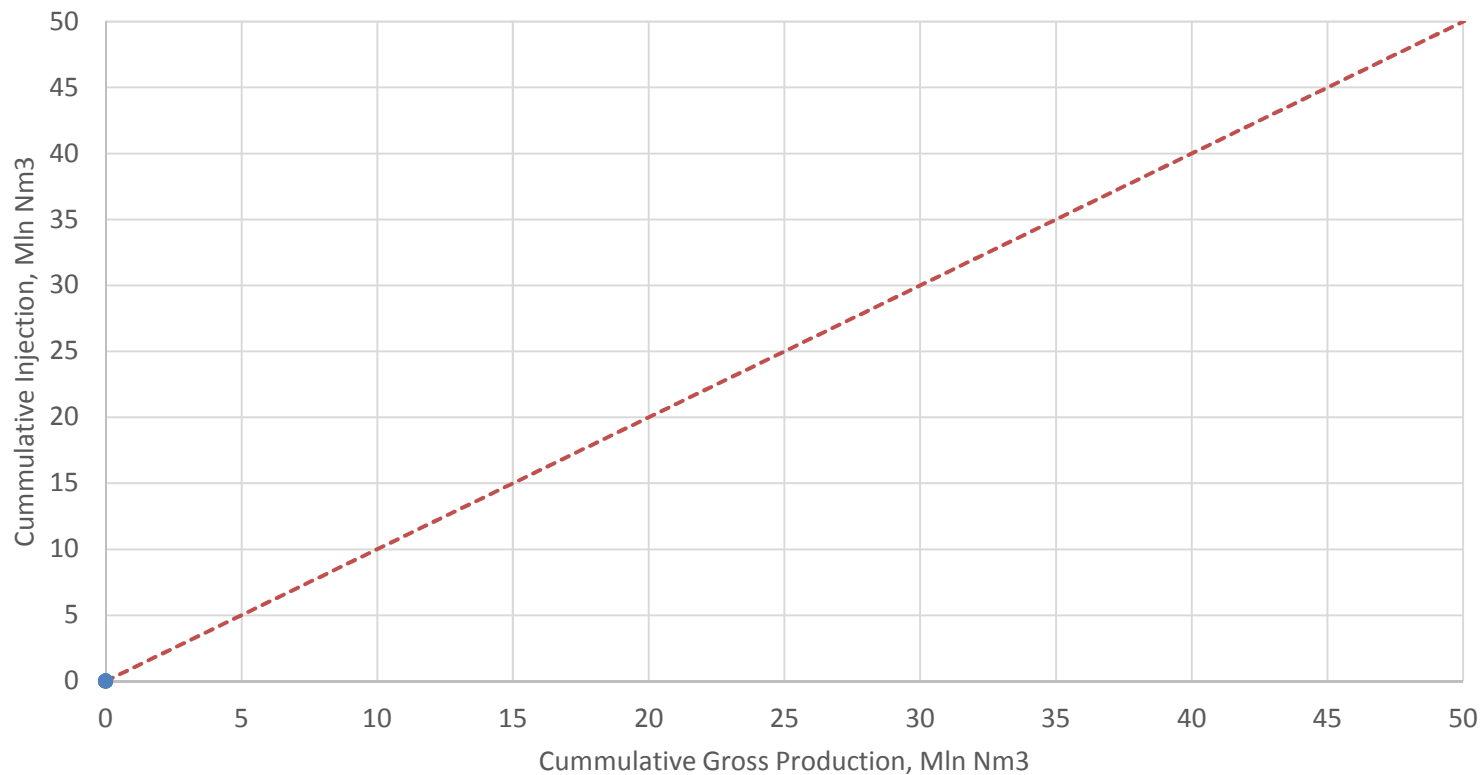


WYK-37 THP



De Wijk Phase 2

De Wijk Ph2 (Voidage Replacement Ratio Plot)

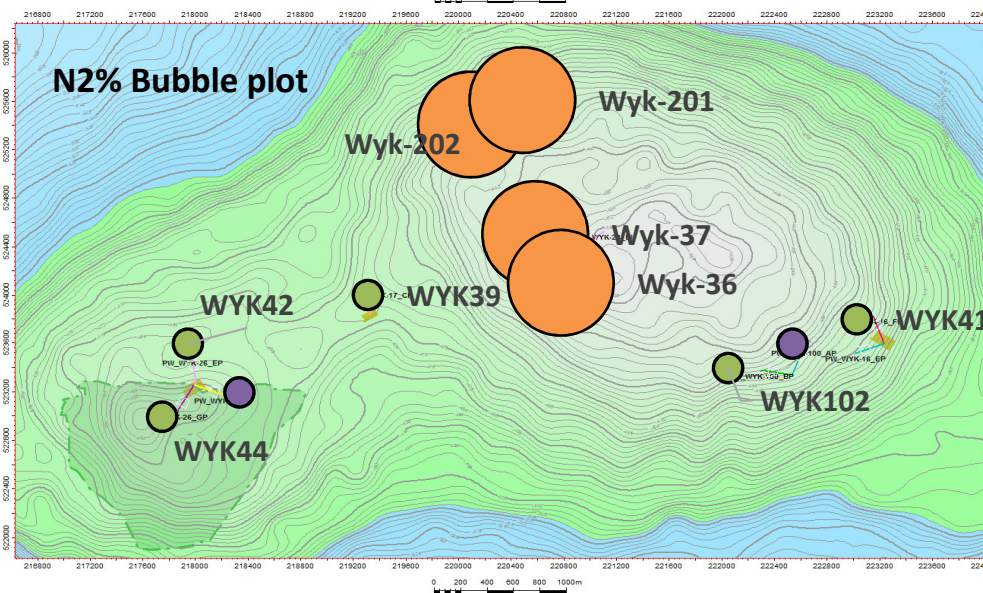
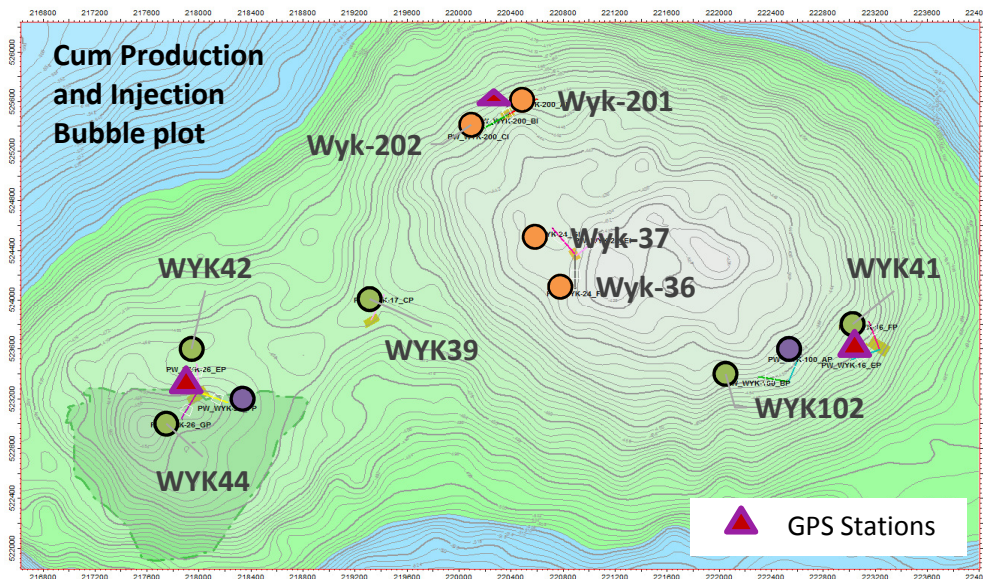


De Wijk Phase 2

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.

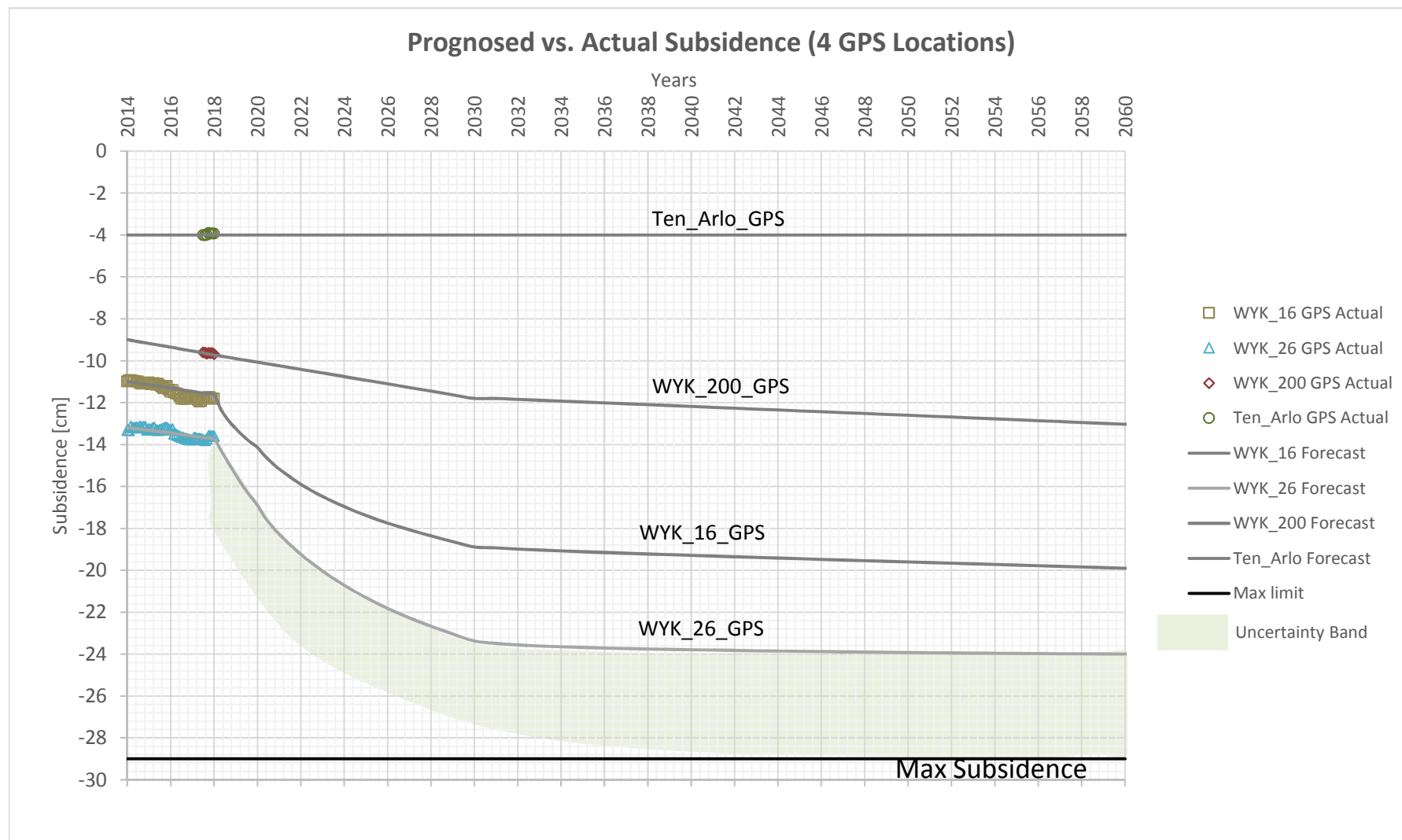
Plot 2: Bubble plot for N2% in producers and injectors. The size of the circle represents the N2 percentage for that well. The larger the area of the circle, the higher the N2 percentage of that producer. The injectors circle size corresponds to 100% N2.



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

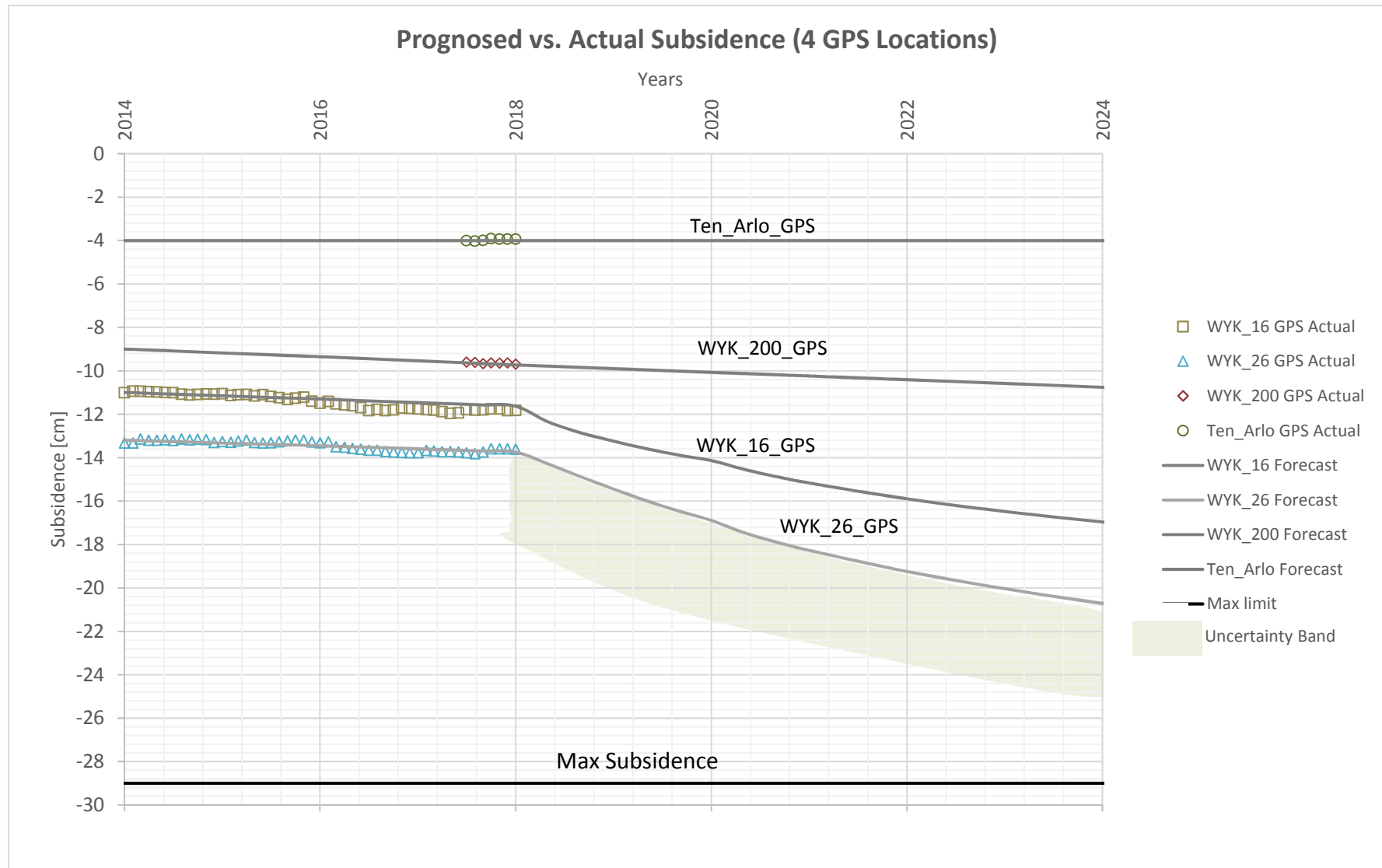
De Wijk: Production and Subsidence Monitoring

GPS stations: Total subsidence Prognosed vs. Actual



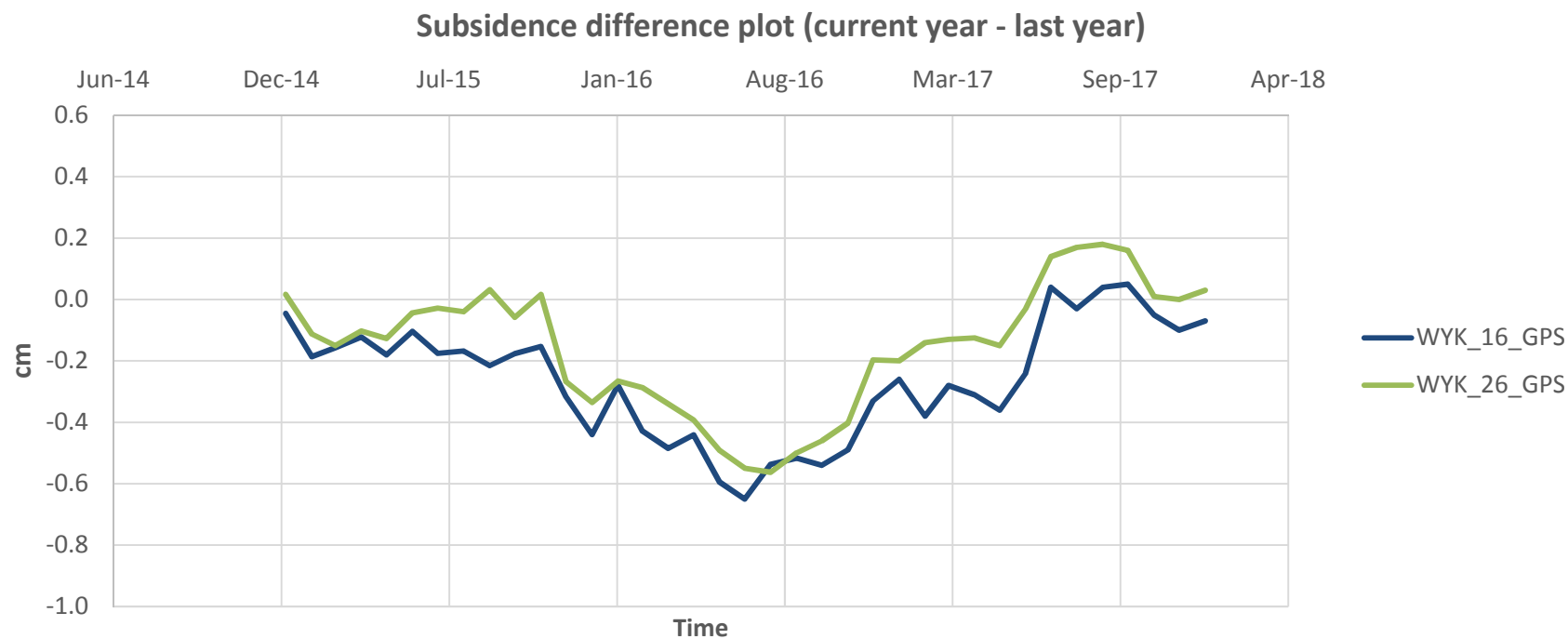
De Wijk: Production and Subsidence Monitoring

GPS stations: Total subsidence Prognosed vs. Actual



Subsidence difference plot for 4 GPS stations

↑ + Uplift
↓ - Subsidence



Subsidence Control Measures

Jan-18

GPS Station	Historical Subsidence (1974 - 2014), [cm]	Measured Subsidence (2014 - 2017)	Between 1974	Jan-18	Max Allowed Subsidence [cm]	Control Measures
			Actual/Expected Subsidence, [cm]	Prognosed Subsidence, [cm]		
GPS: De_Wijk_16	-11	-0.8	-11.8	-11.6	-29	Continue Monitoring
GPS: De_Wijk_26	-13.2	-0.5	-13.7	-13.7		Continue Monitoring
GPS: De_Wijk_200	-9		-9.7	-9.7		Continue Monitoring
GPS: Ten_Arlo	-4		-3.9	-4.0		Continue Monitoring

Injector	Max THP (3 months), bar
WYK-201	64.3
WYK-202	64.3
WYK-36	57.0
WYK-37	57.0

Remarks and Analysis of data in this report

Pore Collapse Risk Analysis

1. Sudden increase in subsidence rate
2. Sudden change in the well production performance (rate or pressure)

Pore collapse risk (Low-High):

