Evaluation of proposed move for Water Right No 9549

Proposed: Move water right no. 9549 a distance of 1,807 ft to the north.



Wells within 1 mile: 3353, 3435 & 8425, and a domestic well.

The saturated thickness at the proposed well location is estimated to be 224 ft, based upon measurements from a monitoring well in section 21-29-39 and the driller's log at the proposed well location. For saturated thickness greater than 200 ft, the drawdown allowance is 4.0 ft.

50 year Theis Analysis: The following values were used to run the analysis:

S = 0.1761, T = 10,971 ft²/day, $tp_{current} = 99$ days (based upon average use and observed rate), $Q_{current} = 526$ gpm (based upon 2018 field inspection), $tp_{proposed} = 68$ days, $Q_{proposed} = 1070$ gpm

Theis drawdowns were calculated as follows:

3353:

Drawdown from current location = 1.27 ft

Drawdown from proposed location = 1.41 ft

Net drawdown = 0.1 ft

3435 & 8425:

Drawdown from current location = 1.11 ft

Drawdown from proposed location = 1.61 ft

Net drawdown = 0.5 ft

Domestic:

Drawdown from current location = 1.45 ft

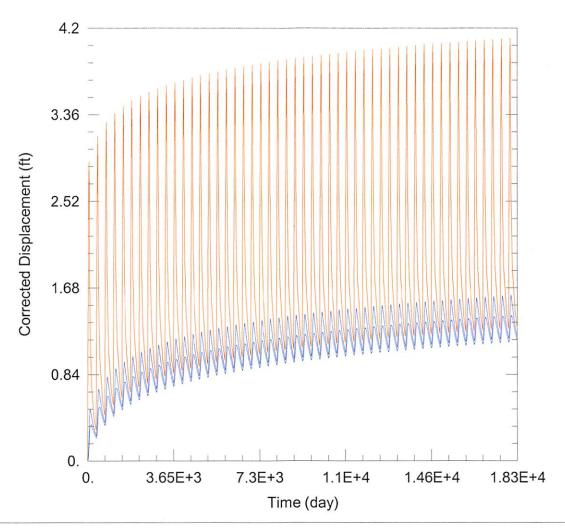
Drawdown from proposed location = 4.10 ft

Net drawdown = 2.7 ft

Net drawdown does not exceed the drawdown allowance of 4.0 ft for any well located within 1 mile of the proposed point of diversion, so no further analysis is necessary.

Conclusion:

The proposed change is unlikely to have more than a negligible effect on neighboring wells, based upon the aquifer characteristics shown in the GMD3 model and local aquifer saturated thickness. GMD3 staff recommends approval of this application.



WELL TEST ANALYSIS

Data Set: C:\Users\trevora\Documents\2019_moves\9549\9549 Proposed.aqt

Date: 11/15/19 Time: 15:36:43

PROJECT INFORMATION

Company: GMD 3 Project: 9549

Location: Stanton County

Test Well: 9549

WELL DATA

	Pumping Wells		Obse	ervation Wells	
Well Name	X (ft)	Y (ft)	Well Name	X (ft)	Y (ft)
9549	-223818	229228		-223818	229228
			3353	-226573	225023
			3435 & 8425	-219706	228336
			 Domestic 	-224321	230339

SOLUTION

Aquifer Model: Unconfined

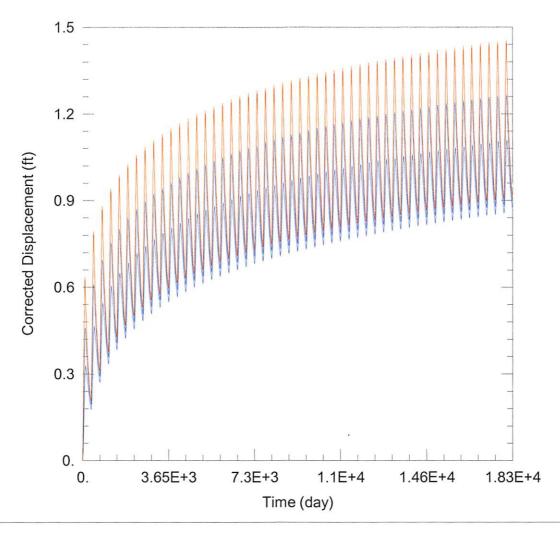
 $T = 1.097E+4 \text{ ft}^2/\text{day}$

Kz/Kr = 1.

Solution Method: Theis

S = 0.1761

b = 224. ft



WELL TEST ANALYSIS

Data Set: C:\Users\trevora\Documents\2019_moves\9549\9549 Current.aqt

Date: 11/15/19

Time: 15:37:14

PROJECT INFORMATION

Company: GMD 3 Project: 9549

Location: Stanton County

Test Well: 9549

WELL DATA

Pumping Wells					
Well Name	X (ft)	Y (ft)			
9549	-223962	227426			

Observation Wells					
Well Name	X (ft)	Y (ft)			
0	-223962	227426			
3353	-226573	225023			
 3435 & 8425 	-219706	228336			
 Domestic 	-224321	230339			

SOLUTION

Aquifer Model: Unconfined

 $= 1.097E+4 \text{ ft}^2/\text{day}$

Kz/Kr = 1.

Solution Method: Theis

S = 0.1761= 224. ft