Evaluation of proposed move for Water Right No. 11237

Proposed: Move water right no. 11237 to a new location 2,607 ft to the southeast.

Wells within 1 mile: 445 & 11237, 10177, 6068, 811 & 8115, and two domestic wells, numbered on the above map.

The saturated thickness at the proposed well location is estimated to be 66.3 ft, based upon the GMD3 model. For saturated thickness between than 50 ft and 75 ft, the drawdown allowance is 1.5 ft.

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

$S = 0.036$, $T = 35{,}605.8\ ft^2/day$, $tp_{current} = 120$ days, $Q_{current} = 445$ gpm, $tp_{proposed} = 74$ days,

$Q_{proposed} = 3130$ gpm

Theis drawdowns were calculated as follows:

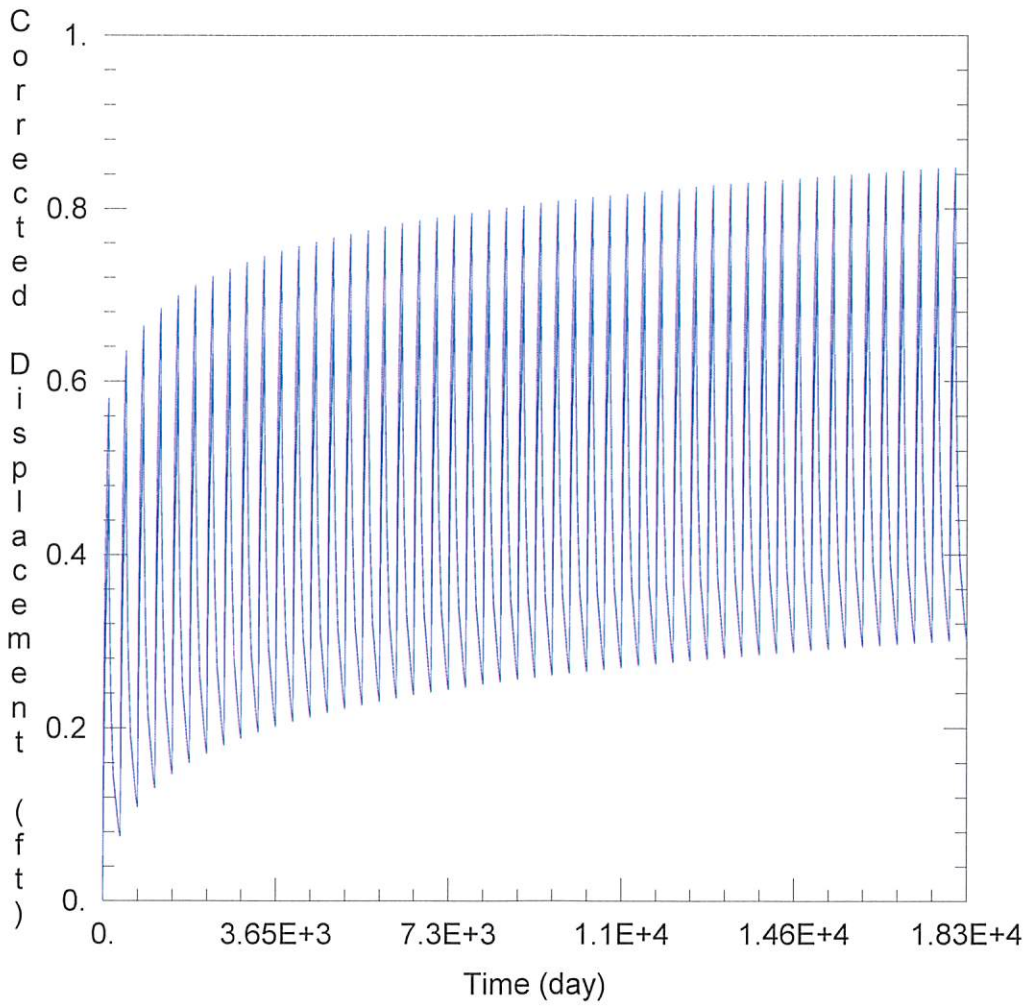
445 & 11237:	Drawdown from current location = 0.73 ft
	Drawdown from proposed location = 3.85 ft
	Net drawdown = **3.1 ft**
10177:	Drawdown from current location = 0.76 ft
	Drawdown from proposed location = 4.02 ft
	Net drawdown = **3.3 ft**

6068:	Drawdown from current location = 0.85 ft
	Drawdown from proposed location = 4.64 ft
	Net drawdown = **3.79 ft**
811 & 8115:	Drawdown from current location = 0.71 ft
	Drawdown from proposed location = 3.73 ft
	Net drawdown = **3.0 ft**
Domestic 1:	Drawdown from current location = 0.71 ft
	Drawdown from proposed location = 3.71 ft
	Net drawdown = **3.0 ft**
Domestic 2:	Drawdown from current location = 0.83 ft
	Drawdown from proposed location = 4.52 ft
	Net drawdown = **3.7 ft**

Net drawdown exceeds the drawdown allowance for the wells authorized under water right nos. 445 & 11237, 10177, 6068, 811 & 8115, and both domestic wells. Critical well analysis was not performed because projected declines exceed the remaining saturated thickness of the Ogallala Aquifer.

Conclusion:

The GMD3 model projects declines greater than the remaining 66 ft of Ogallala Aquifer, so all neighboring wells are considered critical. There is still existing water in the deeper Dakota formation, but that water is more expensive to access and pumping rates are expected to be lower. Concerned neighbors should contact GMD3 at (620) 275-7147 or the Division of Water Resources at (620) 276-2901.



WELL TEST ANALYSIS

Data Set: C:\Users\scanstation\Documents\move requests\11237\11237 current.aqt
Date: 10/08/24 Time: 11:45:22

PROJECT INFORMATION

Test Well: 11237

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
11237	-248458	226219

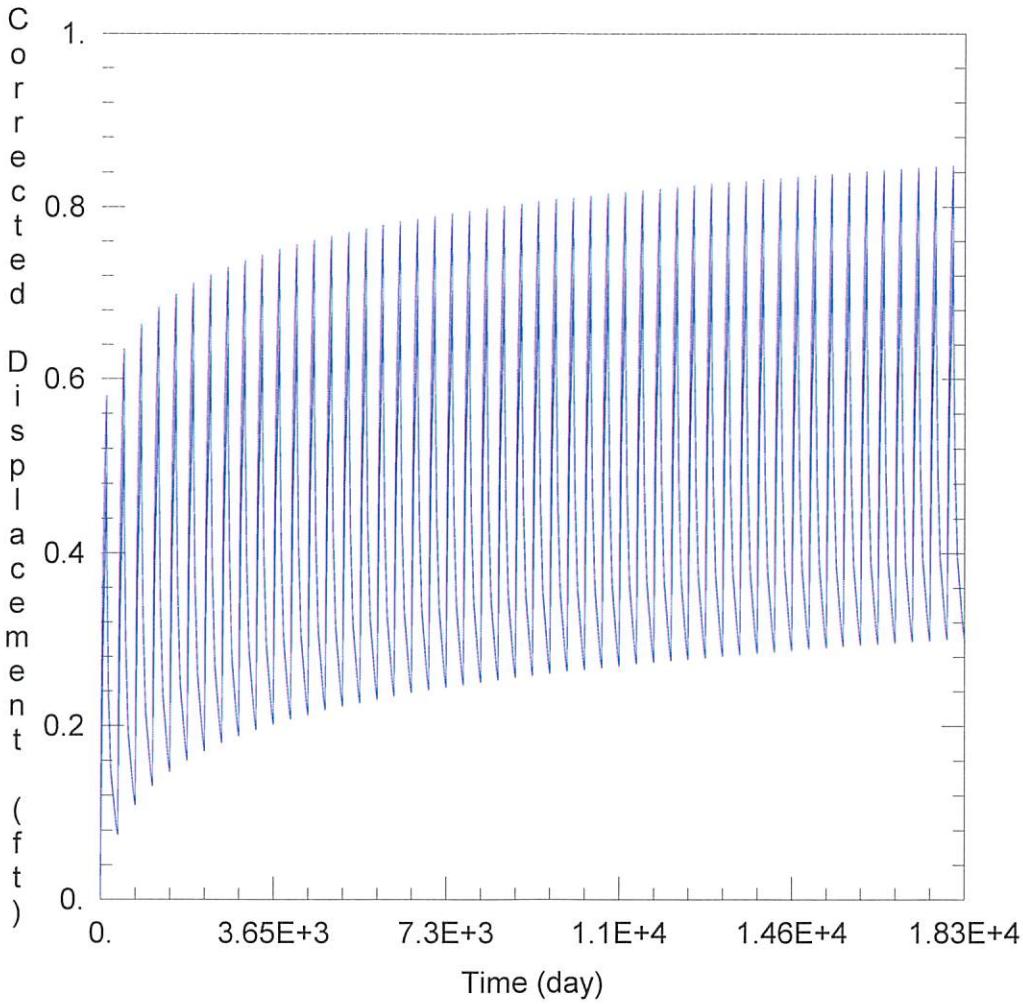
Observation Wells

Well Name	X (ft)	Y (ft)
▫	-248458	226219
▫ 445 & 11237	-251258	230297
▫ 10177	-247339	230699
▫ 6068	-244935	225349
▫ 811 & 8115	-247934	221039
▫ Domestic 1	-251981	230093
▫ Domestic 2	-250131	222815

SOLUTION

Aquifer Model: Unconfined
Solution Method: Theis

T = 3.561E+4 ft^2/day
S = 0.036
Kz/Kr = 1.
b = 66.3 ft



WELL TEST ANALYSIS

Data Set: C:\Users\scanstation\Documents\move requests\11237\11237 proposed.aqt
Date: 10/08/24 Time: 11:47:36

PROJECT INFORMATION

Test Well: 11237

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
11237	-248458	226219

Observation Wells

Well Name	X (ft)	Y (ft)
▫	-248458	226219
▫ 445 & 11237	-251258	230297
▫ 10177	-247339	230699
▫ 6068	-244935	225349
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