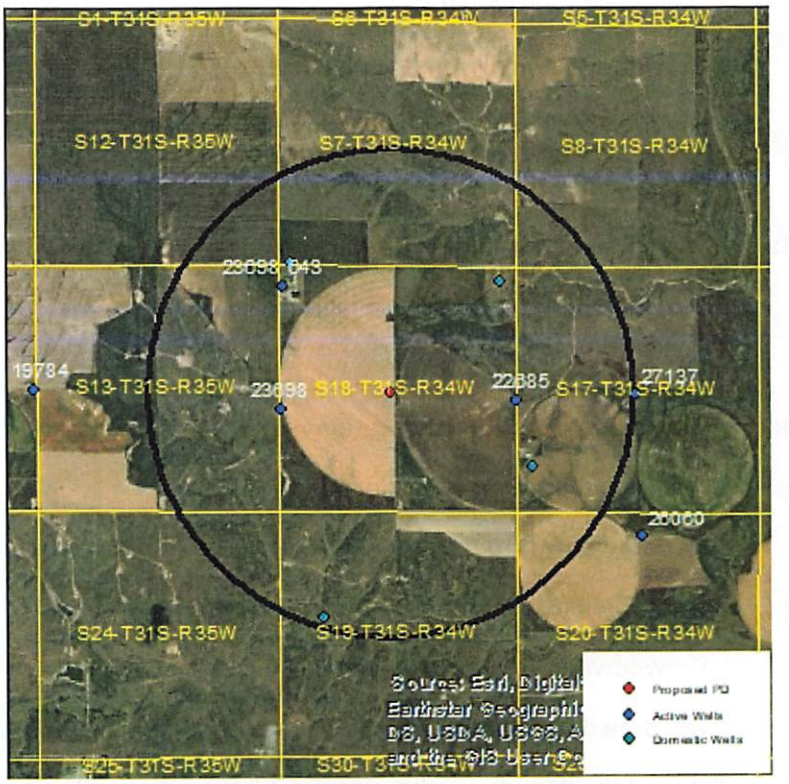
Evaluation of proposed move for Water Right Nos. 643 and 23698

Proposed: Move water right nos. 643 and 23698 ID1 to the well location currently authorized under water right number 23698 ID5, 2,633 ft to the south. Move water right 23698 ID5 to a new well location, 2,402 ft to the northeast.



Wells within 1 mile: 22685, a domestic well in section 7-31-34, a domestic well in section 18-31-34, a domestic well in section 17-31-34, and a domestic well in section 19-31-34.

The saturated thickness at the proposed well location is estimated to be 187 ft, based upon the GMD3 model. For saturated thickness between 150 ft and 200 ft, the drawdown allowance is 3.5 ft.

50 year Theis Analysis: The water rights to be moved have overlapping authority, and for purposes of this evaluation, it was assumed they would be pumped evenly. The following values were used to run the analysis:

S = 0.268, T = 13,279 ft^2/day,

643 & 23698: $tp_{current}$ = 49 days (based on average use and reported rate), $Q_{current}$ = 300 gpm (last reported rate), $tp_{proposed}$ = 0 days, $Q_{proposed}$ = 0 gpm

23698: $tp_{current}$ = 84 days (based on average use and observed rate), $Q_{current}$ = 1084 gpm (2012 inspection), $tp_{proposed}$ = 64 days, $Q_{proposed}$ = 1084 gpm

New Well Location: $tp_{proposed}$ = 53 days, $Q_{proposed}$ = 1316 gpm

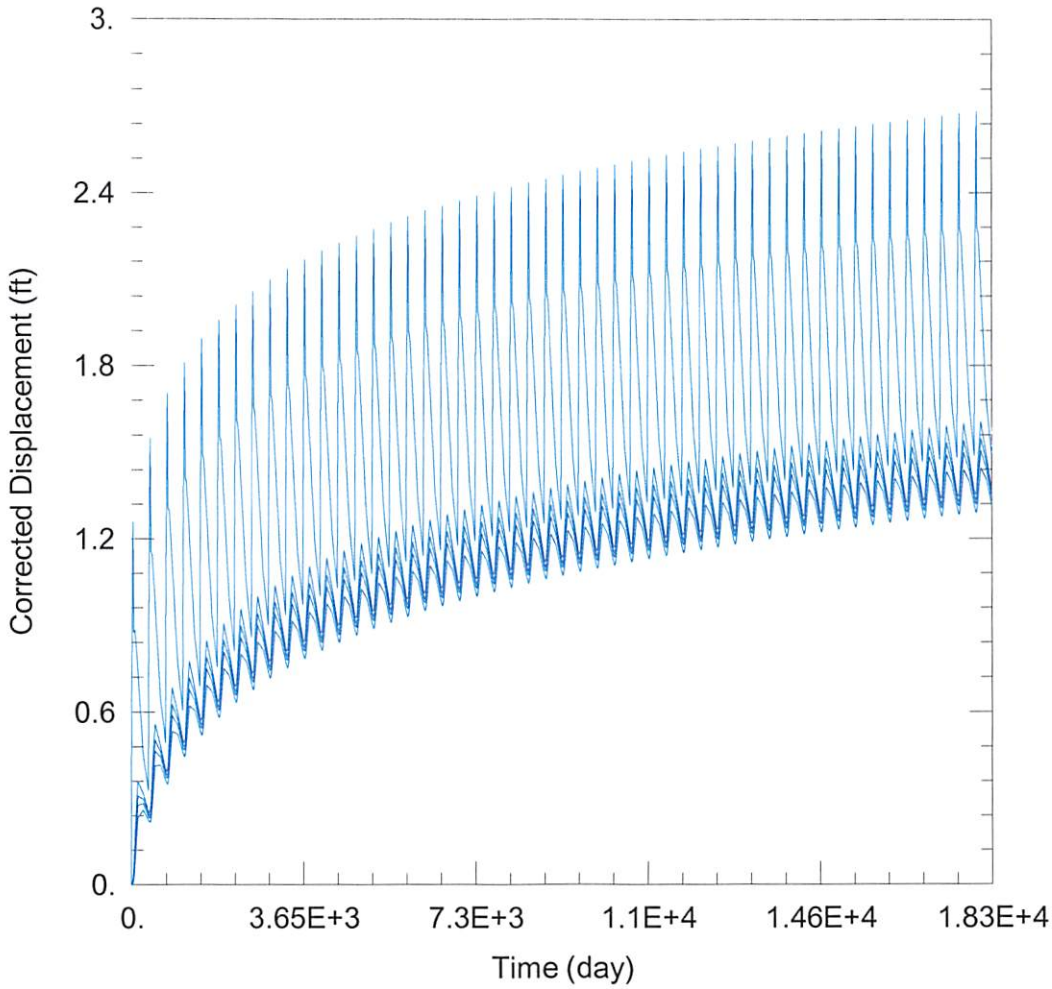
Theis drawdowns were calculated as follows:

22685:	Drawdown from current location = 1.55 ft
	Drawdown from proposed location = 2.55 ft
	Net drawdown = **1.0 ft**
Domestic 7-31-34:	Drawdown from current location = 2.68 ft
	Drawdown from proposed location = 2.77 ft
	Net drawdown = **0.1 ft**
Domestic 18-31-34:	Drawdown from current location = 1.51 ft
	Drawdown from proposed location = 2.31 ft
	Net drawdown = **0.8 ft**
Domestic 17-31-34:	Drawdown from current location = 1.45 ft
	Drawdown from proposed location = 2.27 ft
	Net drawdown = **0.8 ft**
Domestic 19-31-34:	Drawdown from current location = 1.61 ft
	Drawdown from proposed location = 2.13 ft
	Net drawdown = **0.5 ft**

Net drawdown does not exceed the drawdown allowance of 3.5 ft for any well within 1 mile of the proposed location. Therefore, critical well analysis is not necessary.

Conclusion:

The proposed move is likely to create minimal effects on neighboring wells and appears unlikely to cause impairment. Any 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\trevora\Documents\2022_moves\643_23698\643 & 23698 Current.aqt
Date: 06/02/22 Time: 14:50:53

PROJECT INFORMATION

Company: GMD 3
Project: 643 & 23698
Location: Seward County

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
23698 & 643	-78000	175701
23698I	-78037	173068

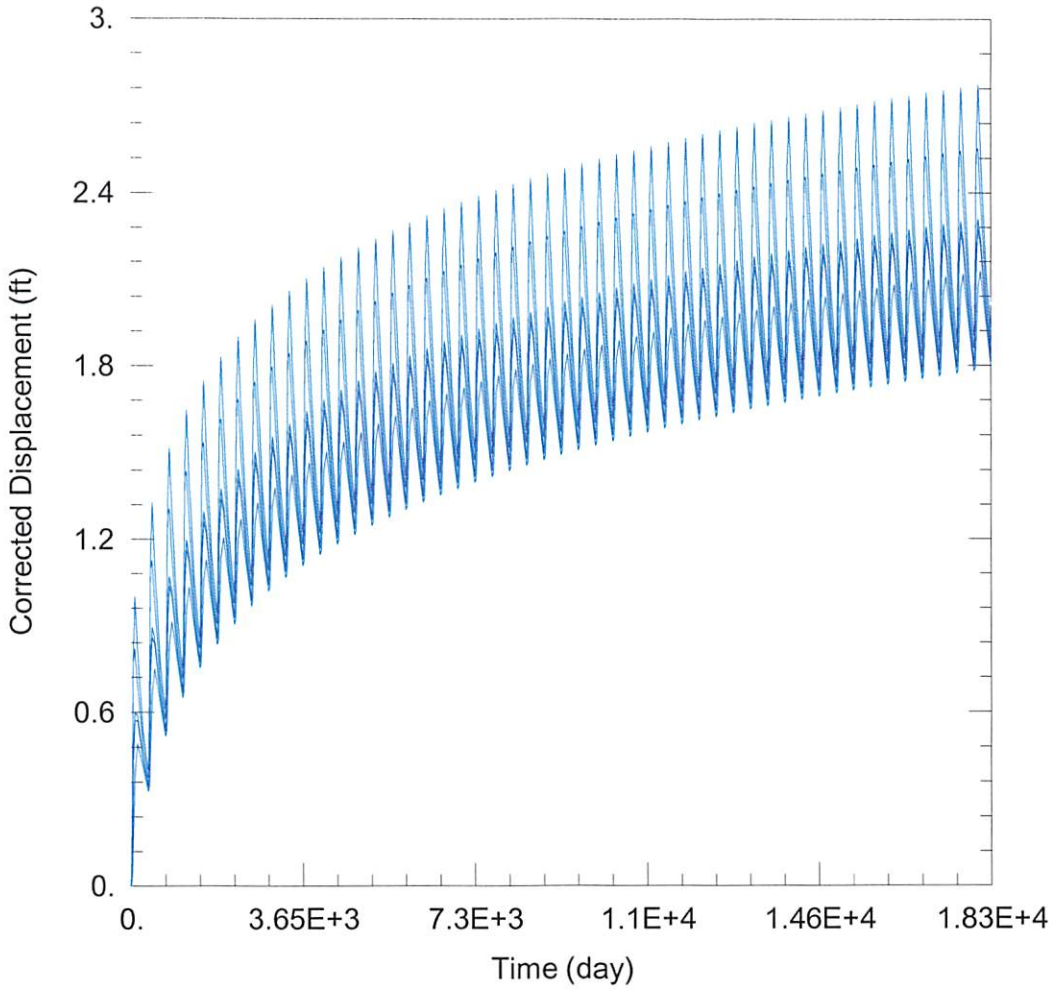
Observation Wells

Well Name	X (ft)	Y (ft)
▫	-78000	175701
▫	-78037	173068
▫ 22685	-72920	173232
▫ Domestic 7-31-34	-77812	176228
▫ Domestic 18-31-34	-73246	175775
▫ Domestic 17-31-34	-72581	171795
▫ Domestic 19-31-34	-77113	168528

SOLUTION

Aquifer Model: Unconfined
Solution Method: Theis

T = 1.328E+4 ft^2/day
S = 0.268
Kz/Kr = 1.
b = 187. ft



WELL TEST ANALYSIS

Data Set: C:\Users\trevora\Documents\2022_moves\643_23698\643 & 23698 Proposed.aqt
Date: 06/02/22 Time: 14:50:46

PROJECT INFORMATION

Company: GMD 3
Project: 643 & 23698
Location: Seward County

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
Proposed PD	-75658	173400
23698	-78037	173068

Observation Wells

Well Name	X (ft)	Y (ft)
▫	-75658	173400
▫	-78037	173068
▫ 22685	-72920	173232
▫ Domestic 7-31-34	-77812	176228
▫ Domestic 18-31-34	-73246	175775
▫ Domestic 17-31-34	-72581	171795
▫ Domestic 19-31-34	-77113	168528

SOLUTION

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Solution Method: Theis

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