

**BEFORE THE DIVISION OF WATER RESOURCES
KANSAS DEPARTMENT OF AGRICULTURE**

**In the Matter of the Review of the
Intensive Groundwater Use Control Area
in McPherson County, Kansas**

Pursuant to K.S.A. 82a-1036 and K.A.R. 5-20-2

The Chief Engineer, Division of Water Resources, Kansas Department of Agriculture (“Chief Engineer”), after having given due consideration to all evidence, testimony, and other information presented at a hearing in Hutchinson, Kansas on October 4, 2016 and received before the hearing record was closed on December 2, 2016, regarding the review of an existing intensive groundwater use control area in McPherson County, Kansas (“McPherson IGUCA”), makes the following findings and conclusions:

I. Background Findings Regarding the McPherson IGUCA

1. On March 17, 1978, the Chief Engineer, at the request of the Equus Beds Groundwater Management District No. 2 (“GMD2”), ordered that applications to appropriate water for beneficial uses, other than domestic use, received on or after March 20, 1978, would be assigned priority dates but would not be acted upon until sufficient information was available to determine the amount of groundwater available for appropriation within a 56 square mile area described as follows:
 - an area in the vicinity of McPherson, Kansas, bounded on the north by the north line of Township 19 South, Range 3 West and Township 19 South, Range 4 West, and bounded on the south by a line two miles south of the south line of Township 19 South, Range 3 West and Township 19 South, Range 4 West, and on the east and west by the boundaries of GMD2. (“Moratorium.”)
2. On February 13, 1979, the Board of Directors of GMD2 (“Board”) recommended that the Chief Engineer initiate proceedings for the designation of an intensive groundwater use control area (“IGUCA”) within the boundaries of the Moratorium area.
3. On September 18, 1979, the Chief Engineer held a public hearing in the McPherson County 4-H Building, McPherson, Kansas, to consider the possible designation of an IGUCA in McPherson County, Kansas. Oral and written evidence were received for consideration at the hearing.
4. Based upon the evidence and Board recommendations received, it was the decision and order of the Chief Engineer to establish an IGUCA in McPherson County, Kansas, within the boundaries set forth below, and the following corrective control provisions have been and are in full force and effect within the area described since March 28, 1980:

- a. The boundaries of the IGUCA are the north line of Township 19 South, Range 3 West and Township 19 South, Range 4 West, and extending to a line two miles south of the south line of Township 19 South, Range 3 West and Township 19 South, Range 4 West, as enclosed by the boundaries of GMD2.¹
 - b. The IGUCA is closed to further groundwater appropriation, except for domestic use, any use authorized by a temporary permit granted under the authority of K.S.A. 82a-727, or any use authorized by a short-term permit approved by the Chief Engineer for a period not to exceed one year.
 - c. All applications to appropriate water filed on or after March 20, 1978 and prior to March 28, 1980 were dismissed.
 - d. Effective June 1, 1980, flow meters shall be installed and maintained on all water wells in the IGUCA, except on wells used solely for domestic use and wells authorized by temporary permits. These meters shall meet or exceed specifications required by the Chief Engineer.
 - e. Each water right holder in the IGUCA shall file water use reports no later than February 1 of the year following the usage, and in addition to the information normally required in water use reports, they shall also report the depth to static water level in each well in the IGUCA.
 - f. The Board shall annually review all water use, static water level, and other hydrologic information in the IGUCA and may annually, no later than April 1, request a rehearing before the Chief Engineer on any matter related to this IGUCA.
 - g. In all other respects not inconsistent with this order, the Chief Engineer shall continue to administer water rights in accordance with the Kansas Water Appropriation Act and the rules, regulations, and policies in effect in GMD2.
 - h. The Chief Engineer specifically retains jurisdiction and authority to make any changes to any provisions of this IGUCA order which he deems to be in the public interest.
5. On September 29, 2011, it was the decision and order of the Chief Engineer to amend the March 28, 1980 IGUCA designation order to open the IGUCA to groundwater appropriation for any use authorized by a one-time drought term permit approved by the Chief Engineer for a period not to exceed two years for drought term permit applications filed on or before December 31, 2011.
 6. On October 14, 2013, it was the decision and order of the Chief Engineer to amend the March 28, 1980 IGUCA designation order to open the IGUCA to groundwater appropriation for any use authorized by a Multi-Year Flex Account (“MYFA”) Term Permit approved by the Chief Engineer for a period not to exceed five years.

¹Upon the March 28, 1980 establishment of the McPherson IGUCA, the east and west boundaries of the IGUCA were defined by the boundaries of GMD2 between the north and south lines described in Paragraph 4a. As of the July 7, 2017 GMD2 boundary expansion described in Paragraph 7, which expanded the boundaries of GMD2 but did not expand the boundaries of the McPherson IGUCA, the IGUCA boundary description given in Paragraph 4a is no longer valid. Paragraph 8 provides a valid alternative description, based on Public Land Survey System subdivisions, of the lands contained within the McPherson IGUCA as established March 28, 1980.

7. On July 7, 2017, the Chief Engineer approved the petition of the Board for the expansion of the boundaries of GMD2. This boundary expansion included areas within McPherson County, Kansas which are adjacent to the McPherson IGUCA on the east with respect to the IGUCA boundaries established in the March 28, 1980 designation order. The GMD2 boundary expansion did not expand the IGUCA boundaries, but because the March 28, 1980 order uses the former GMD2 boundaries to describe the east and west boundaries of the IGUCA, the IGUCA boundary description given in the March 28, 1980 order is invalid as of July 7, 2017.
8. The lands contained within the boundaries of the McPherson IGUCA, as established by the March 28, 1980 IGUCA designation order, can be described using Public Land Survey System subdivisions as follows:
 - an area of approximately 56 square miles in McPherson County, Kansas, generally located in the vicinity of McPherson, Kansas, which include the following described tracts of land: Sections 4 through 9, 15 through 22, and 27 through 34, Township 19 South, Range 3 West; Sections 3 through 10, Township 20 South, Range 3 West; Sections 1 through 4, 9 through 15, 22 through 27, and 34 through 36, Township 19 South, Range 4 West; and Sections 1 through 3 and 10 through 12, Township 20 South, Range 4 West.

II. Procedural Background of Review Hearing

9. K.S.A. 82a-1036 through K.S.A. 82a-1038 provides for the designation of IGUCAs under specific circumstances and states that such IGUCAs shall be in full force and effect from the date of entry in the records of the Chief Engineer's Office.
10. K.A.R. 5-20-2 provides for periodic formal review of IGUCA orders by the Chief Engineer.
11. K.A.R. 5-20-2 further provides that written notice of the public review hearing shall be given to each water right holder in the affected area, as well as published in one or more newspapers of general circulation within the affected area at least 30 days before the date set for the hearing; requires that documentary and oral evidence shall be taken and a full and complete record of the hearing shall be kept; and requires review of the following:
 - a. Whether one or more of the circumstances specified in K.S.A. 82a-1036, and amendments thereto, exist; and
 - b. Whether the public interest requires that the IGUCA designation be continued. The state shall have the burden of proving the need for continuance of the IGUCA designation.
12. Upon completion of the required review, K.A.R. 5-20-2(f) provides that, based on the review, one of the following actions shall be taken by the Chief Engineer:
 - a. Continue the IGUCA with its original or current corrective control provisions;
 - b. Reduce the restrictions imposed by one or more corrective control provisions within the scope and goals specified in the original IGUCA order;
 - c. Reduce the IGUCA boundaries;

- d. Increase any allocations within the IGUCA;
 - e. Address any other issues that have been identified in the review; or
 - f. Revoke the IGUCA order and, if necessary, implement alternative measures to address water issues in the affected area.
13. By letter dated May 2, 2011, Tim Boese, Manager of GMD2, informed the Chief Engineer of the Board's decision for the Board and GMD2 staff to be fully involved in the review of the McPherson IGUCA and to participate with staff of the Division of Water Resources, Kansas Department of Agriculture ("DWR") to the greatest extent possible in such review.
14. Pursuant to K.A.R. 5-20-2(d), DWR provided timely written notice of a public review hearing to each water right holder in the McPherson IGUCA, and notice of the public review hearing was published in the McPherson Sentinel on September 3, 2016. Notice was also provided by the Kansas Department of Agriculture ("KDA") by a news release dated September 9, 2016. Notice was also published in Volume 38, No. 2 of GMD2 Groundwater News, a newsletter of GMD2.

III. Summary of Findings from Review Hearing

15. Pursuant to K.A.R. 5-20-2, a public review hearing was held on October 4, 2016 at the Kansas Department of Transportation conference room, 1220 W 4th Ave, Hutchinson, Kansas, to review the McPherson IGUCA designation order.
16. At the public review hearing, the Chief Engineer took administrative notice of the following materials to be included in the hearing record:
- a. The March 28, 1980 McPherson IGUCA designation order and all documents referenced therein;
 - b. The October 14, 2013 McPherson IGUCA amendment order and all documents referenced therein;
 - c. The May 1, 1995 GMD2 management program;
 - d. A template of the written notice provided by DWR to water right holders in the McPherson IGUCA;
 - e. An affidavit of publication for the September 3, 2016 notice published in the McPherson Sentinel; and
 - f. GMD2 Groundwater News Volume 38, No. 2.
17. No written comments or documentary testimony were provided to the Chief Engineer prior to the October 4, 2016 public review hearing.
18. Ginger Pugh, Engineering Associate, testified on behalf of DWR. She presented the evidence and analyses relied upon by DWR in their review and evaluation of the performance of the McPherson IGUCA, which had been prepared by a team of DWR staff with assistance from GMD2 and Kansas Geological Survey ("KGS") staff. Ms. Pugh also presented recommendations developed by DWR regarding the IGUCA designation and corrective control provisions. The DWR Review was prepared in the form of an October 2016 report entitled "McPherson IGUCA Review" ("Review Report"). The Review Report

was prepared independently from and without counsel or direction from the Chief Engineer.

19. Ms. Pugh submitted the following materials for inclusion in the hearing record:
 - a. The October 2016 Review Report;
 - b. The March 28, 1980 McPherson IGUCA designation order;
 - c. The October 14, 2013 McPherson IGUCA amendment order;
 - d. "A Model Study of the McPherson Moratorium Area in Groundwater Management District #2" by Carl D. McElwee et al., April 1979;
 - e. KGS Open File Report 2004-4: "Geochemical Identification of Sources of Salinity in Ground Waters of the High Plains Aquifer West of the Johnson Oil Field in Central McPherson County, Kansas" by Donald O. Whittemore, 2004;
 - f. "Fate and identification of oil-brine contamination in different hydrogeologic settings" by Donald O. Whittemore, as published in *Applied Geochemistry* Volume 22, Issue 10, October 2007; and
 - g. A template of the written notice provided by DWR to water right holders in the McPherson IGUCA.
20. The Chief Engineer admitted the materials submitted by Ms. Pugh, as well as Ms. Pugh's statement, into the hearing record.
21. The Review Report discusses groundwater level changes within the existing boundaries of the McPherson IGUCA in Section IV, Part A; Section V, Parts (1), (2), and (3); and Section VII, Parts A and C. The Review Report examines annual groundwater level measurements which had been collected by DWR, KGS, and GMD2 at the 26 monitoring well locations depicted in Figure 2. Whenever possible, the Review Report considers only those water level measurements which were collected during the winter months (December, January, or February), also called static water level measurements, for consistency in year-to-year comparisons. The entire selected data record from each monitoring well, from the earliest measurements to the most recent measurements collected no later than February 2015, is shown in Figure 21. Only five of the monitoring wells had been measured annually since before the establishment of the IGUCA. From north to south, these were MP28, MP32, MP14, MP37, and MP53. Figure 3 provides two maps, one for the pre-IGUCA period (1972-1980) and one for the post-IGUCA period (1980-2015), which depict average annual groundwater level change within the IGUCA in inches per year for each period, as interpolated from the selected data records of the five wells listed above. Figure 3 shows significantly higher groundwater decline rates in the pre-IGUCA period than in the post-IGUCA period. The Review Report determined an average decline rate of 0.856 feet per year for the pre-IGUCA period and of 0.25 feet per year for the post-IGUCA period. The Review Report notes that the groundwater decline rate was greater in the southern portion of the IGUCA during both the pre- and post-IGUCA periods. The overall conclusion of the Review Report with regards to groundwater levels is that they continued to decline during the post-IGUCA period, but at a lesser rate than during the pre-IGUCA period.
22. The Review Report discusses precipitation within the McPherson IGUCA in Section IV, Part B. Precipitation data was obtained from the records of the National Climatic Data

Center for the McPherson weather station, located directly east of the McPherson IGUCA. An analysis of 43 years (1971-2014) of precipitation data, presented in Figure 4, demonstrates that while precipitation values varied annually, there is no discernible trend in average precipitation between the pre-IGUCA (1971-1980) and post-IGUCA (1980-2014) periods.

23. The Review Report describes groundwater rights within the existing boundaries of the McPherson IGUCA in the Executive Summary; Section IV, Part C; and Section V, Part (7). Pursuant to the March 28, 1980 IGUCA designation order, there have been no new groundwater appropriations in the IGUCA since March 20, 1978. As of March 9, 2016, there were 75 active groundwater rights in the IGUCA. These groundwater rights represented a total quantity of 22,737.38 acre-feet authorized for annual diversion, as reported in Table 1. The following table describes the distribution of groundwater rights within the IGUCA between different beneficial uses of water.

Use Made of Water	Water Right Count	% of Rights	Authorized Quantity (AF)	% of Quantity
Irrigation	58	77%	8,020	35%
Industrial	8	11%	7,564.85	33%
Municipal	4	5%	4,603.33	20%
Contamination Remediation	1	1%	2,420	11%
Recreation	2	3%	116	0.5%
Stock Water	1	1%	12.28	0.1%
Domestic	1	1%	0.92	0.004%
Total	75		22,737.38	

The contamination remediation water right was owned by the CHS Refinery in McPherson, Kansas and was used in their efforts to mitigate the effects of groundwater pumping on the westward migration of an oil production brine (chloride) plume located within the IGUCA. As of March 9, 2016, there was more groundwater development in the western half of the IGUCA than in the eastern half, as shown in Figure 5.

24. The Review Report discusses groundwater use within the existing boundaries of the McPherson IGUCA in Section IV, Part D; Section V, Parts (2), (4), and (7); and Section VII, Part B. Groundwater use records were obtained from GMD2 annual review reports for the pre-IGUCA period (1974-1980) and from the DWR Water Right Information System database for the post-IGUCA period (1981-2014). Because the March 28, 1980 IGUCA designation order mandates both the installation of flow meters and annual water use reporting, the Review Report considers water use records from the post-IGUCA period more accurate than those from the pre-IGUCA period. Figure 6 depicts all 40 years (1974-2014) of water use data for all points of groundwater diversion in the IGUCA and shows an overall trend of increasing groundwater use. Table 2 reports decadal averages of annual groundwater use within the IGUCA for the same period and also shows increasing

groundwater use, particularly in more recent decades. The following table shows decadal average annual reported groundwater use and changes from the 1970s to 2014.

	1970s Average Use (AF)	1980s Average Use (AF)	1990s Average Use (AF)	2000s Average Use (AF)	2010-2014 Average Use (AF)
Total Use	11,089.67	10,359.48	10,988.36	12,361.36	12,926.34
% Increase from Previous Decade		-7%	6%	12%	5%

The overall conclusion of the Review Report with regards to groundwater use is that it continued to increase during the post-IGUCA period without ever reaching the total quantity authorized for annual diversion (22,737.38 acre-feet as of March 9, 2016).

25. The Review Report discusses the GMD2 annual review reports in Section IV, Part F, and information from these reports is included in Section VII, Part B. Pursuant to the March 28, 1980 McPherson IGUCA designation order, the Board shall annually review all water use, water level, and other hydrologic information in the IGUCA. GMD2 submitted annual review reports to the Chief Engineer until 2002, when they ceased doing so, citing budget constraints. Each report contained an attached letter informing the Chief Engineer that the Board approved the report and the current corrective control provisions of the IGUCA and did not recommend any changes to the management of the IGUCA.

26. The Review Report discusses groundwater recharge within the McPherson IGUCA in Section V, Part (4) and Section VII, Part D. In 1991, the United States Geological Survey estimated that the average annual groundwater recharge within the IGUCA had been 2.77 inches per year from 1951-1980. The Review Report determined that this is equivalent to 8,355.12 acre-feet of recharge per year. This is less than the total quantity authorized for annual diversion (22,737.38 acre-feet as of March 9, 2016), the 2000-2009 average annual groundwater use (12,361.36 acre-feet), and the 2010-2014 average annual groundwater use (12,926.34 acre-feet). The Review Report concludes that groundwater use remained greater than recharge following the establishment of the IGUCA, and that safe yield was not being achieved within the IGUCA.

27. The Review Report also discusses groundwater levels, groundwater rights, and groundwater use outside the existing boundaries of the McPherson IGUCA in Section V, Part (8). After noting concerns expressed by parties within DWR and GMD2 regarding groundwater level declines in areas adjacent to the IGUCA on the south, the Review Report examines annual water level measurements from 28 monitoring wells in this region. In order to compare water level data from wells located nearer to the southern boundary of the IGUCA to data from wells located further south, the region was divided into two distinct analysis areas, Tier 1 and Tier 2, both located within the boundaries of GMD2. Tier 1 includes 33 Sections within Township 20 South, Range 3 West and Township 20 South, Range 4 West, directly south of the southern boundary of the IGUCA. Water level measurements from 13 monitoring wells within Tier 1 are considered in the Review Report. Tier 2 includes 97 Sections within Township 21 South, Range 3 West; Township 22 South, Range 3 West; Township 21 South, Range 4 West; and Township 22 South, Range 4 West,

directly south of Tier 1. Water level measurements from 15 monitoring wells within Tier 2 are considered in the Review Report. As with the examination of groundwater levels within the IGUCA boundaries, only static water level measurements from the Tier 1 and Tier 2 monitoring wells were selected whenever possible. Figure 8 and Figure 13 show the entire selected records from each monitoring well in Tier 1 and Tier 2, respectively.

28. The Review Report provides maps of water level change in a region containing the McPherson IGUCA, Tier 1 and Tier 2 in Figure 32 and Figure 33, as interpolated from the selected data records of those monitoring wells within and near the IGUCA, Tier 1 and Tier 2 which had been measured annually since 1972. Figure 32 depicts water level change over the entire selected record (1972-2015), while Figure 33 depicts water level change over the post-IGUCA period (1980-2015). The Review Report determined average annual groundwater decline rates over the entire selected period of approximately 0.40 feet per year in Tier 1 and 0.38 feet per year in Tier 2. All monitoring wells within Tier 1 showed continued groundwater level declines. Groundwater level changes were less consistent among the monitoring wells within Tier 2, with some monitoring wells showing continued declines and others exhibiting long-term stability with annual variations.
29. The Review Report provides a map of active points of groundwater diversion within Tier 1 and Tier 2 in Figure 19. As of October 1, 2015, there were 63 active groundwater rights within Tier 1 and 242 active groundwater rights within Tier 2. The majority of groundwater rights in both regions were for irrigation use, which accounted for 97% of the rights (61 rights) within Tier 1 and 95% of the rights (231 rights) within Tier 2. Figure 20 depicts groundwater use data within Tier 1 and Tier 2 and shows an overall trend of increasing groundwater use similar to that observed within the McPherson IGUCA boundaries.
30. The Review Report provides the recommendations of DWR concerning the provisions of K.A.R. 5-20-2 (f), (g), and (h) regarding the potential actions of the Chief Engineer following the review hearing.
 - a. *Continue the IGUCA with its original or current corrective control provisions.* Yes, because while the groundwater level decline rate had decreased since the pre-IGUCA period, groundwater level declines had persisted. The Review Report asserts that the corrective control provisions of the McPherson IGUCA order remain essential to protect the public interest in the area.
 - b. *Reduce the restrictions imposed by one or more corrective control provisions within the scope and goals specified in the original IGUCA order.* No, because the restrictions imposed by the corrective control provisions of the McPherson IGUCA order, particularly the closure of the area to further groundwater appropriation, prevent further groundwater development, which could lead to increased groundwater level declines.
 - c. *Reduce the IGUCA boundaries.* No, because the selected measurement records of all monitoring wells considered within the McPherson IGUCA continued to show groundwater level declines through the most recent collected measurements.
 - d. *Increase any allocations within the IGUCA.* No, because there are no allocations written into the McPherson IGUCA order. As groundwater use remained greater

than recharge in the post-IGUCA period, reductions in groundwater use are necessary to achieve safe yield.

- e. *Address any other issues that have been identified in the review.* The Review Report does not identify any other issues to address.
 - f. *Revoke the IGUCA order and implement alternative measures, if necessary, to address the water issues in the affected areas.* No, because the McPherson IGUCA order has effectively prevented further groundwater development within the area.
 - g. *Increase the restrictions imposed by the current corrective control provisions or add corrective control provisions.* Yes, because groundwater use remained greater than recharge within the McPherson IGUCA following its establishment, and groundwater levels continue to decline. If achieving safe yield within the IGUCA is the goal, additional restrictions on groundwater use are necessary.
 - h. *Increase the boundaries of the IGUCA.* Yes. Because groundwater level declines and increasing groundwater use were observed within Tier 1 and Tier 2, directly south of the McPherson IGUCA, the Review Report recommends that consideration be given to expanding the IGUCA boundaries to include these areas.
31. Mr. Boese testified on behalf of GMD2. He reported that the Board had reviewed and accepted the Review Report. Mr. Boese stated that GMD2 agreed with the conclusion that the McPherson IGUCA remained necessary to protect the public interest and with the recommendation that the IGUCA be continued with its existing corrective control provisions. He also reported that the Board and GMD2 staff intended to review the additional recommendations of the Review Report and would provide their written recommendations to the Chief Engineer following the review hearing.
32. With regards to the recommendation of the Review Report that the IGUCA boundaries be expanded to include areas to the south, Mr. Boese noted that those areas partially overlap a region under an August 10, 2016 order suspending the processing of new appropriation applications (“Suspension Order”) issued by the Chief Engineer. The suspension had been issued to prevent further groundwater development in the region pending the completion of a sustainability model study being conducted by GMD2 and KGS to determine whether any changes needed to be made to K.A.R. 5-22-7, the GMD2 safe yield regulation. The Chief Engineer took administrative notice of the August 10, 2016 Suspension Order and admitted Mr. Boese’s statement into the hearing record.
33. Tim Meier, General Manager of the Board of Public Utilities of McPherson, Kansas (“McPherson BPU”), testified on behalf of McPherson BPU. He reported that, on average, groundwater level declines of about 11 feet had been observed since 2000 in 12 water supply wells owned by McPherson BPU within the McPherson IGUCA. Mr. Meier also reported that, due to those groundwater level declines, McPherson BPU recommended that the McPherson IGUCA designation continue and that additional corrective control provisions be introduced to prevent further declines.
34. Mr. Meier submitted a report containing water level measurements from the McPherson BPU wells, along with legal descriptions and a map of those wells, to be included in the

hearing record. The Chief Engineer admitted the materials submitted by Mr. Meier into the hearing record.

35. Following the October 4, 2016 public review hearing, the Chief Engineer left the hearing record open through November 2, 2016 to receive written comments or documentary testimony.
36. On November 2, 2016, the Chief Engineer, at the request of the Board, extended the deadline to submit written comments or documentary testimony to be included in the hearing record to December 2, 2016.
37. By letter dated December 1, 2016, Mr. Boese provided to the Chief Engineer the recommendation of GMD2 concerning the proposed boundary expansion for the McPherson IGUCA. It was the recommendation of the Board that the IGUCA boundaries not be expanded until the issue could be reevaluated upon the completion of the KGS sustainability model study, the completion of any necessary modifications to the safe yield regulation of GMD2, and the expiration of the Suspension Order.
38. There being nothing further to be brought before the Chief Engineer regarding the review of the McPherson IGUCA designation, the hearing record was declared closed on December 2, 2016.

IV. Conclusions

1. Based on the findings contained herein, the Chief Engineer concludes that one or more of the circumstances specified in K.S.A. 82a-1036, and amendments thereto, exist in the McPherson IGUCA. Specifically, groundwater levels within the IGUCA are declining and that the rate of withdrawal of groundwater in the IGUCA exceeds the rate of recharge in the area.
2. The Chief Engineer concludes that the public interest requires that the McPherson IGUCA be continued with its current corrective control provisions, which prevent further groundwater development and increased groundwater level declines. In addition, the March 28, 1980 IGUCA designation order provides that the Board may annually request a hearing before the Chief Engineer on any matter related to the IGUCA, allowing any potential expansions of the IGUCA boundaries or corrective control provisions which may be deemed necessary in the future to be addressed.
3. The Chief Engineer finds that the description of the McPherson IGUCA boundaries given in the March 28, 1980 designation order is no longer valid considering the July 7, 2017 GMD2 boundary expansion. The Chief Engineer also finds that two requirements of the existing corrective control provisions of the IGUCA order are not being observed and are unnecessary. Therefore, the Chief Engineer concludes that the March 28, 1980 IGUCA order should be amended as follows:
 - a. The McPherson IGUCA order, Paragraph 1, describes the boundaries of the IGUCA. Considering the July 7, 2017 GMD2 boundary expansion, the IGUCA

boundary description in Paragraph 1 of the IGUCA order should be replaced with the following IGUCA boundary description:

an area of approximately 56 square miles in McPherson County, Kansas, generally located in the vicinity of McPherson, Kansas, which include the following described tracts of land: Sections 4 through 9, 15 through 22, and 27 through 34, Township 19 South, Range 3 West; Sections 3 through 10, Township 20 South, Range 3 West; Sections 1 through 4, 9 through 15, 22 through 27, and 34 through 36, Township 19 South, Range 4 West; and Sections 1 through 3 and 10 through 12, Township 20 South, Range 4 West.

- b. The McPherson IGUCA order, Paragraph 4, requires that annual water use reports be submitted by February 1 of the year following the usage. The Chief Engineer concludes that the requirement, pursuant to K.S.A. 82a-732, that annual water use reports be submitted by March 1 of the year following the usage is sufficient for the collection of water use information from the IGUCA. Therefore, Paragraph 4 of the IGUCA order should be amended to remove the February 1 deadline for water use reporting.
 - c. The McPherson IGUCA order, Paragraph 7, requires that the Board annually review all water use, static water level, and other hydrologic information in the IGUCA and provides that the Board may annually, no later than April 1, request a rehearing before the Chief Engineer on any matter related to the IGUCA. The Chief Engineer finds that the provision of K.A.R. 5-20-2 for periodic formal reviews of IGUCA orders is sufficient for the review of hydrologic information from the IGUCA. Therefore, Paragraph 7 of the IGUCA order should be amended to remove the requirement for annual GMD2 reviews.
4. The Review Report recommended that the Chief Engineer consider expanding the corrective control provisions of the McPherson IGUCA order to further restrict groundwater use and consider expanding the boundaries of the IGUCA to include areas to the south of the IGUCA. GMD2 gave no recommendation regarding expanded corrective control provisions. With respect to the proposed IGUCA boundary expansion, GMD2 recommended that the IGUCA boundaries not be expanded until the issue could be reevaluated upon the completion of the KGS sustainability model study, the completion of any necessary modifications to the safe yield regulation of GMD2, and the expiration of the Suspension Order. After giving due consideration to these recommendations, the Chief Engineer concludes that the public interest is best served by continuing the McPherson IGUCA designation with the amendments to its corrective control provisions described in Paragraph 3. The expansion of the corrective control provisions and boundaries of the IGUCA should be reconsidered in a future IGUCA review, at which time additional information derived from the ongoing sustainability modeling study may be available for consideration. In addition, the delay in consideration of these matters will provide an opportunity for GMD2 to determine whether any potential boundary expansion and/or additional corrective control provisions to protect the public interest would be best accomplished by initiating an IGUCA proceeding, developing additional rules and regulations, and/or initiating proceedings to develop a Local Enhanced Management Area, now allowed pursuant to K.S.A. 82a-1041 as an alternative to an IGUCA.

SUBMITTED THIS 26th DAY OF FEBRUARY 2020.

David W. Barfield

David W. Barfield, P.E.
Chief Engineer, Division of Water Resources
Kansas Department of Agriculture

