
**Northwest Kansas Groundwater Management
District
No. 4**

Revised Management Program

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Approved By: _____

Date: _____

David Baalman
9/19/2016

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I. INTRODUCTION

Northwest Kansas Groundwater Management District No. 4 has been organized to locally manage the groundwater resources within its specified boundaries. This management program is designed to establish the rights of local landowners and water users to determine their destiny regarding the use of groundwater within the district boundaries and within the basic laws and policies of the State of Kansas.

The initial spark which fostered Northwest Kansas Groundwater Management District No. 4 came from a group of concerned citizens in the area who recognized the imminent problems related to a dwindling groundwater supply and increasing rate of development. A series of informational meetings were held in the area to sense the will of the people relative to the formation of a groundwater management district and ultimately a steering committee was formed to execute the formal organization of a district. Under the authority of the Kansas Groundwater Management District Act, the following persons made up that steering committee:

Al Lowenthal, Chairman _____	Colby, Kansas
Marne Karlin, Secretary/Treasurer _____	Grinnell, Kansas
Garry Seymour _____	Bird City, Kansas
John Scott _____	Brewster, Kansas
Norman Mills _____	Studley, Kansas
Eugene Hall _____	Kanorado, Kansas
Willis Hockersmith _____	Oakley, Kansas

The steering committee filed the declaration of intent and a map of the proposed district boundaries with the Chief Engineer for the State of Kansas on December 19, 1974. After many deliberations between steering committee members, state representatives for the Division of Water Resources and area constituents, the final description of the district boundaries was certified by the Chief Engineer.

A petition outlining the purpose of the district and all other required information was circulated in a timely fashion by the steering committee and was submitted to the Secretary of State on November 13, 1975. Upon the petition approval, the steering committee called for and held an election to determine whether or not the district should be organized. Results of the election were 668 votes in favor and 372 votes against district formation, representing 64% in favor of formation.

A certificate of incorporation was issued by the Secretary of State on March 1, 1976 and was subsequently filed in the offices of the Register of Deeds in each of the ten counties which have land within the district boundaries. An official copy of that certificate may be viewed in the main office of the district.

An organizational meeting to set up and elect the initial board of directors for the district was conducted in Colby, Kansas on May 24, 1976. By resolution, 11 positions were opened for election, with the initial terms staggered as follows:

POSITION	COUNTY REPRESENTATION	INITIAL TERM*
1	Cheyenne	2 years-1978
2	Rawlins/Decatur	3 years-1979
3	Sherman/Wallace	3 years-1979
4	Sherman/Wallace	2 years-1978
5	Thomas	3 years-1979
6	Thomas	2 years-1978
7	Sheridan	3 years-1979
8	Sheridan	1 year -1977
9	Graham	1 year -1977
10	Logan	1 year -1977
11	Gove	1 year -1977

* After initial term is served all positions are then elected for 3 year terms.

Per K.S.A. 82a-1030, expiring directors' positions will be filled by an election to be held during the annual meeting of that year.

III. DESCRIPTION OF THE DISTRICT

1. Location

Northwest Kansas Groundwater Management District No. 4 includes all of Sherman, Thomas and Sheridan Counties and portions of Cheyenne, Rawlins, Decatur, Graham, Gove, Logan and Wallace Counties in northwest Kansas. (see District Boundaries Map page III-2). The district, which covers approximately 3,100,000 acres is located in the High Plains section of the Great Plains Physiographic Province. Elevations range from approximately 3900 feet above sea level at the western district boundary to approximately 2200 feet above sea level at the eastern edge.

2. Climate

Average annual precipitation ranges from seventeen (17) inches in the western tier of counties (Cheyenne, Sherman and Wallace) to twenty-one (21) inches in Graham County on the eastern edge of the district. Rain showers account for the majority of the annual precipitation falling during the growing season from April to September.

Daily and annual temperatures vary significantly with summer days being warm and summer nights generally cool. This is true when the relative humidity is low, even during the hottest periods of the summer. Statistics show that a low relative humidity and frequent cloudless or near cloudless days are typical for the area, as are moderate to strong surface winds most of the year. All of the above typical conditions result in the need for special soil and water management practices.

Overall, the climate is well suited for grassland and certain agricultural crops. This is particularly true if irrigation is developed to supply needed moisture during dry periods. The major climatic drawback is the occasional devastating occurrences of hail and damaging winds associated with severe thunderstorms and/or tornadic activity. These events generally occur in the spring or summer months when the low-pressure storm centers tend to be most intense.

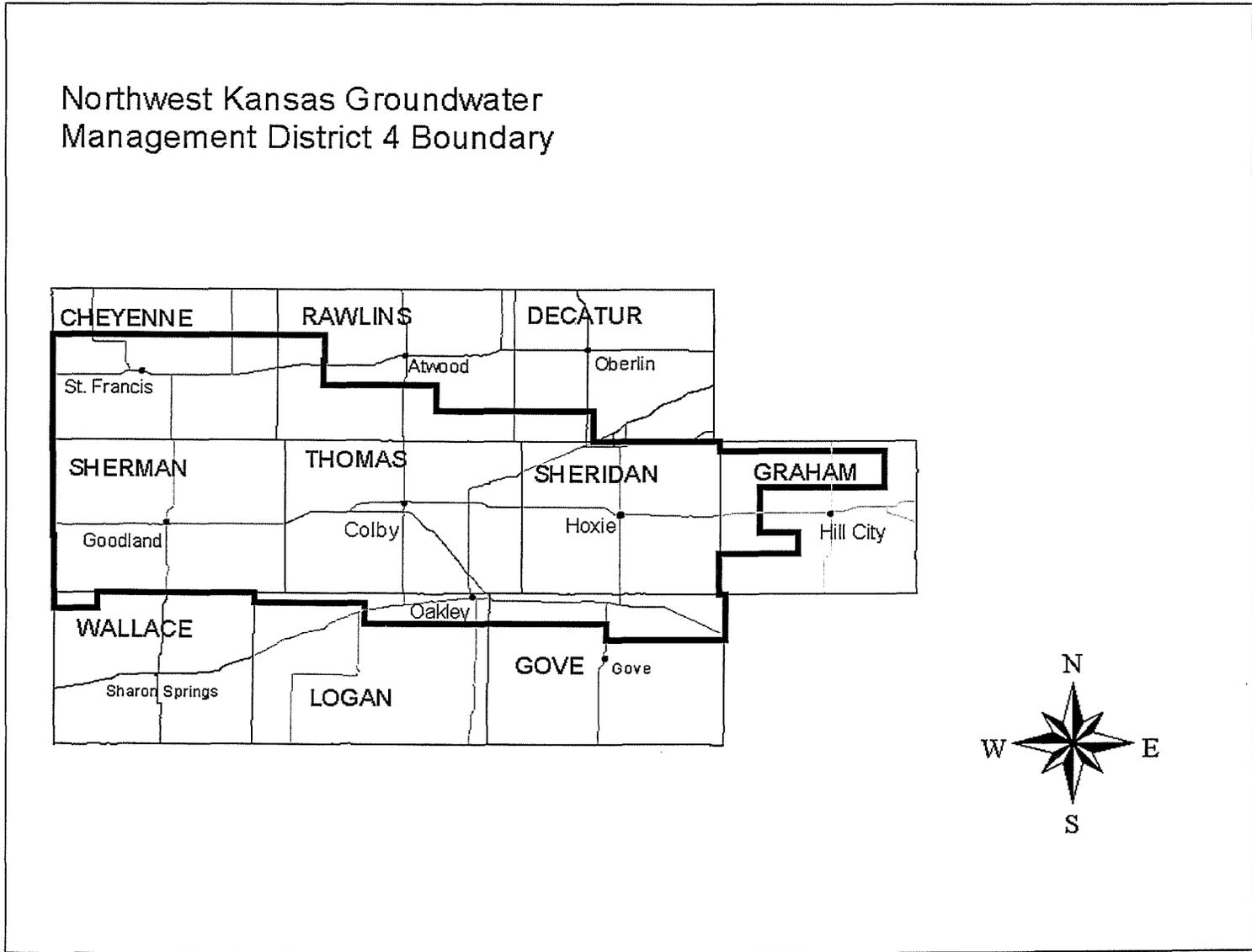
3. Soils

Soils in the district are primarily those resulting from windblown loess deposited during the Pleistocene Age. Most of the river valleys contain a more granular soil type resulting from stream-laid deposits. The primary soils are as follows:

- a. *Ulysses-Colby Association*. Deep, grayish-brown to dark grayish-brown silt loams, nearly level to slightly sloping. This soil type is found in the western three-fourths of the district.
- b. *Holdrege-Ulysses Association*. Consisting of deep to moderately deep, dark grayish-brown silt loams and moderately deep gray clays that are gently sloping. This type is typically found in the eastern one-fourth of the district.

With today's irrigation equipment and techniques most of the soils in the district are potentially irrigable. This is evidenced by the fact that most of the soils in the district are classified as Class I, II, III with respect to land use capability. It is generally recognized that in many cases these soils do require special management in order to be effectively irrigated.

MAP III-1: DISTRICT BOUNDARIES



II. PURPOSES OF THE DISTRICT

1. To locally organize, develop and administer proper management and conservation practices of the groundwater resource for the benefit of the entire district.
2. To establish a framework by which local landowners and water users can help determine their own policies and programs with respect to the vital management and use of the groundwater resource within the district.
3. To support and participate in research and education relevant to the proper use and management of the limited groundwater resource.
4. To derive optimum social and economic benefits accruing from the wise development, use, and management of the groundwater reserves.
5. To cooperate with all levels of government and all district members in order to accomplish the objectives of the district and the Groundwater Management District Act and amendments thereto.

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4. Surface Drainage

In the geologic past, four drainage basins have established themselves within the present district boundaries. (see Drainage Pattern Map page III-4). These basins are:

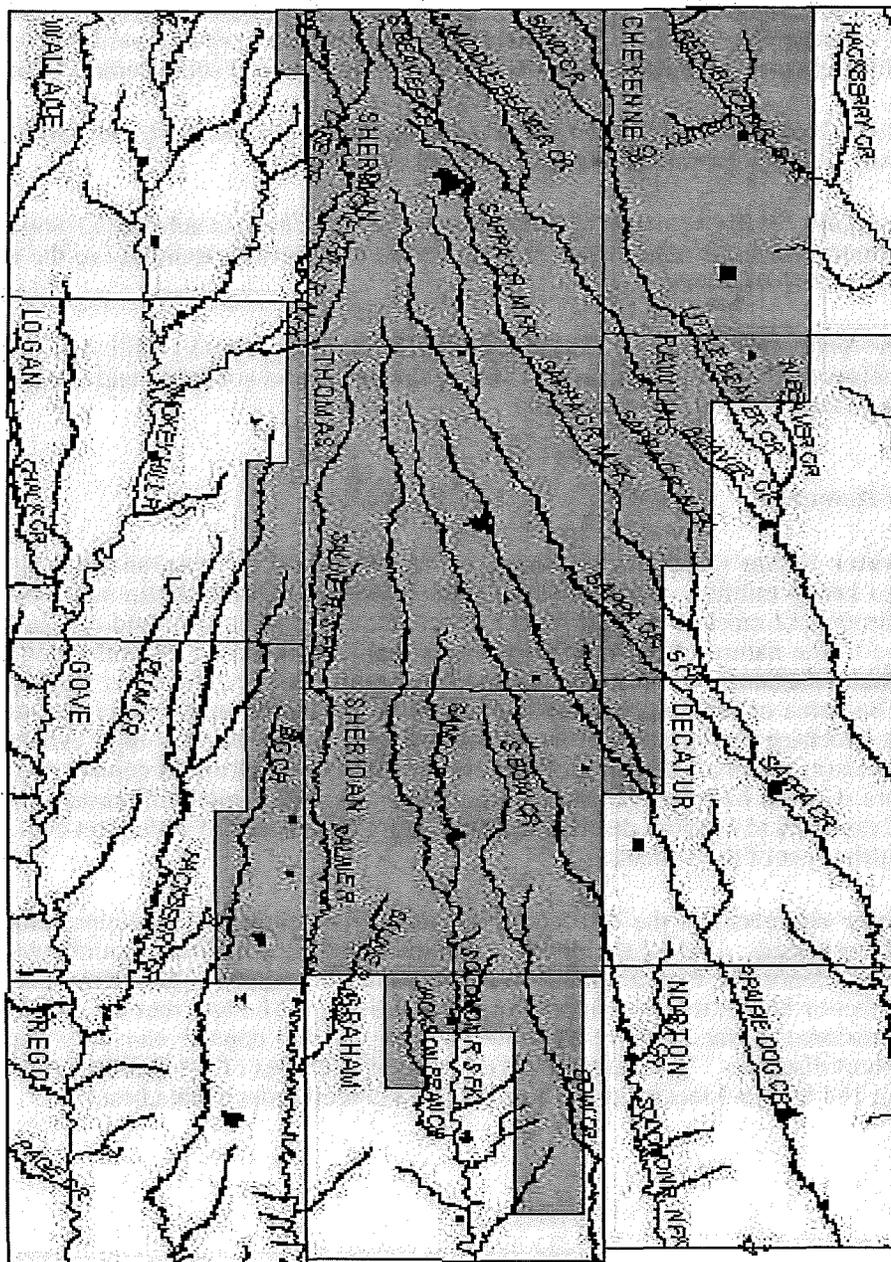
- a. *The Upper Republican.* Consists of the South Fork Republican, Beaver Creek, Sappa Creek and Prairie Dog Creek. This basin's drainage trends northeastward across the district and ultimately meets the Republican River in southwestern and south central Nebraska.
- b. *The Solomon Basin.* Consists of Bow Creek and both the North and South Forks Solomon River which trend primarily eastward across the district.
- c. *The Saline Basin.* Consists of the Saline River and its less substantial South Fork. Like the Solomon Basin, it trends eastward and leaves the district essentially in the extreme northeast corner of Gove County.
- d. *The Smoky Hill Basin.* Consists of the North Fork Smoky Hill and Smoky Hill River, Hackberry Creek and Big Creek. This basin trends east-southeast and leaves the district along the eastern border of Gove County.

5. Water Resources

Surface water within the district is limited to surface runoff during and shortly after periods of moderate to heavy rainfall, and base flows in the South Fork Republican and South Fork Solomon Rivers. Throughout most of the district the surface runoff is rather low and difficult to economically capture due to the nature of the rainfall, the soil characteristics and general topography. Locations where suitable structures could be constructed to capture surface runoff in significant amounts are limited. The value of such large structures at this time is questionable from the standpoints of both groundwater recharge and irrigation use. Studies have shown that the high evaporation rate in the northwest area (as much as 72 inches of pan evaporation per year) would deplete much of the captured water before it could be recharged into the aquifer or used for irrigation purposes. However, future studies are expected to be more detailed in determining the amount of water that could be captured and used versus the cost of the structures.

Groundwater resources in the district supply a large percentage of municipal, industrial, domestic and agricultural needs. All of the district overlies at least the Ogallala aquifer which is a Tertiary aged, fluvially deposited silt, sand and gravel formation. It ranges in thickness from 300 feet in the west to 50 feet or less in the eastern portions of the district. The fact that the Ogallala was deposited on a pre-erosional surface means that the thickness of the deposit can vary significantly within relatively short distances. The January, 2016 saturated thickness of the Ogallala Aquifer in the district ranges from 164 feet to 0 feet (Source: KGS WIZARD section-level data base).

MAP III-2: DRAINAGE PATTERNS OF NORTHWEST KANSAS



North 

Using an average 2016 saturated thickness of 79 feet, district size of 3,100,000 acres and an average storage coefficient of .12, the district has an estimated 29,000,000 acre-feet of water in storage. District records as of October 2015 show 3504 non-domestic wells registered with the Division of Water Resources with 850,871.6 acre-feet of water appropriated. This development has resulted in declining water table elevations over most areas of the district.

Alluvial deposits generally 30-80 feet thick along the major streams and creeks supply water of varying amounts to wells. These deposits do not generally exceed 50 feet in saturated thickness, but due to their medium to coarse texture often yield enough water for limited irrigation.

6. Economy

Northwest Kansas, for the present and future, is largely dependent on the availability of good quality groundwater because a large percentage of the local economy is based on agriculture and agri-related business, which in turn depend heavily on this resource.

Contributing to the economy of NW Kansas are cultivated cropland, both irrigated and dryland, the cattle feeding industry, dairy industry and associated agricultural businesses such as implement dealers, irrigation supply dealers, feed and seed dealers, well drillers and grain elevators and marketing personnel.

Major crops grown from cultivated land are corn, wheat, sorghum, sunflowers, alfalfa, dry beans and soybeans. All of these crops except wheat and sunflowers are predominantly irrigated. Current economic trends reviewed indicate that the marketing potential for these crops remains a stimulus for the higher production achieved by irrigation.

The livestock feeding industry, dairy industry, and a growing ethanol production capacity in the area depends on the production of feed grains and forage crops from irrigated land and are three areas of the present economy which have the best potential for expansion.

7. Table III-1: Assessed Land, Wells and Acre-feet Appropriated (October, 2015 data)

County	Total Assessable Acres+	Assessed Acres	Excluded Acres and % of Total	Wells	Authorized Appropriation in Acre-feet
Cheyenne	445,303	412,335	32,968 (7)	465	105,007
Rawlins	251,796	219,852	31,944 (13)	155	31,436
Decatur	44,576	42,779	1,797 (4)	31	4,358
Sherman	653,090	618,504	34,586 (5)	899	264,294
Thomas	664,387	622,853	41,534 (6)	825	208,791
Sheridan	556,806	518,339	38,467 (7)	731	164,173
Graham	171,197	156,371	14,826 (9)	118	21,952
Wallace	12,650	12,650	0 (0)	8	2,779
Logan	88,844	84,797	4,047 (5)	92	17,156
Gove	159,666	145,268	14,398 (9)	180	30,926
TOTALS	3,048,315	2,833,748	214,567 (7)	3,504	850,872

+ Land within the county, within the district which is subject to assessment.

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IV. MANAGEMENT PROBLEMS

1. Depletion

Over-appropriation in many areas within the district continues to be a major management problem. Historically, groundwater development was very limited from its introduction into the area until approximately 1950. Since that time the rate of development had increased steadily until the early part of 1980 when the rate of development began to slow significantly mainly due to district policies. By this time however, most of the district had been developed in excess of the rate of recharge or any safe yield criteria. Consequently the groundwater table over most of the district is declining, but at differing rates as shown by figure IV-1. Equally, if not more, concerning is the rate at which the remaining resource is being depleted (see figure IV-2). At current annual depletion rates some areas are facing less than a 50 year supply of water if current pumping levels are maintained. Many other areas face major aquifer loss within 50 to 100 years.

Water Level Change in Feet: 2004 - 2013

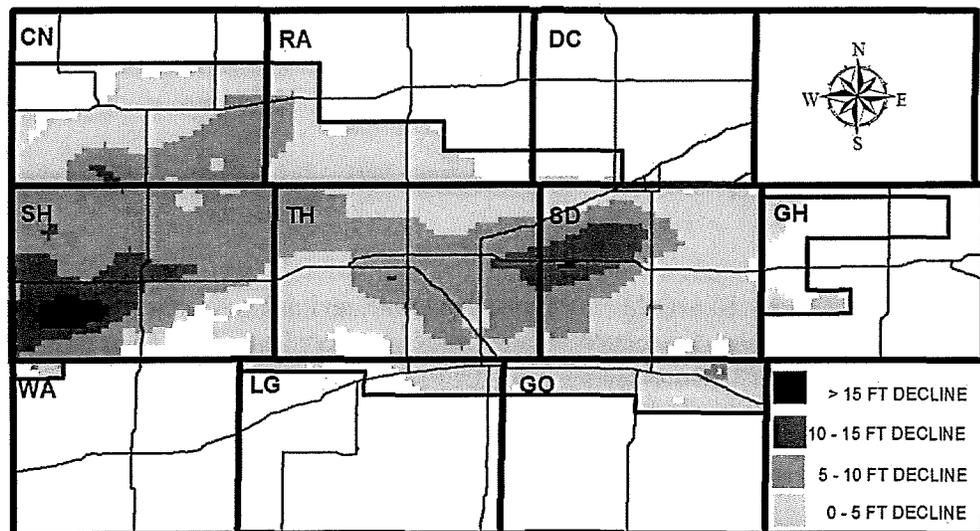


Figure IV-1: Decline areas from 2004 - 2013. Source: KGS section-level data base.

Average Annual Per Cent Change in Saturated Thickness 2004 - 2013

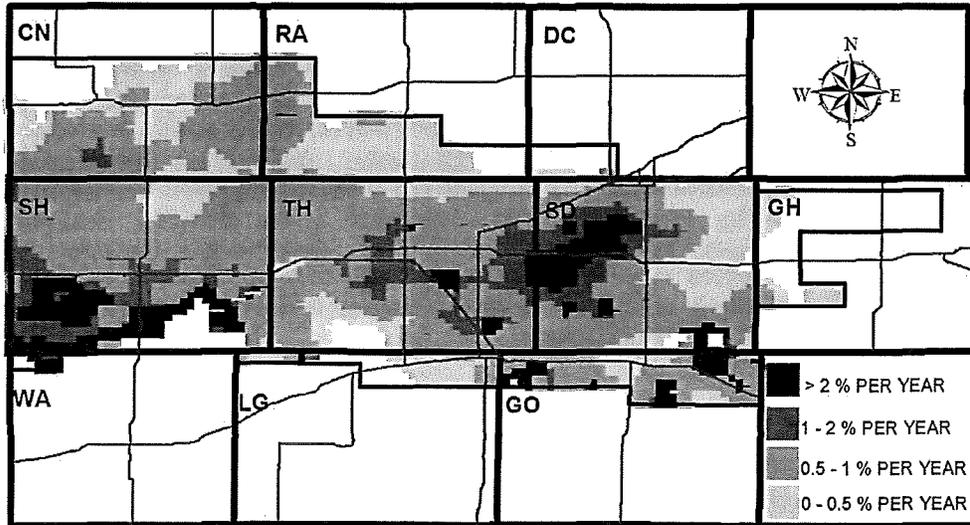


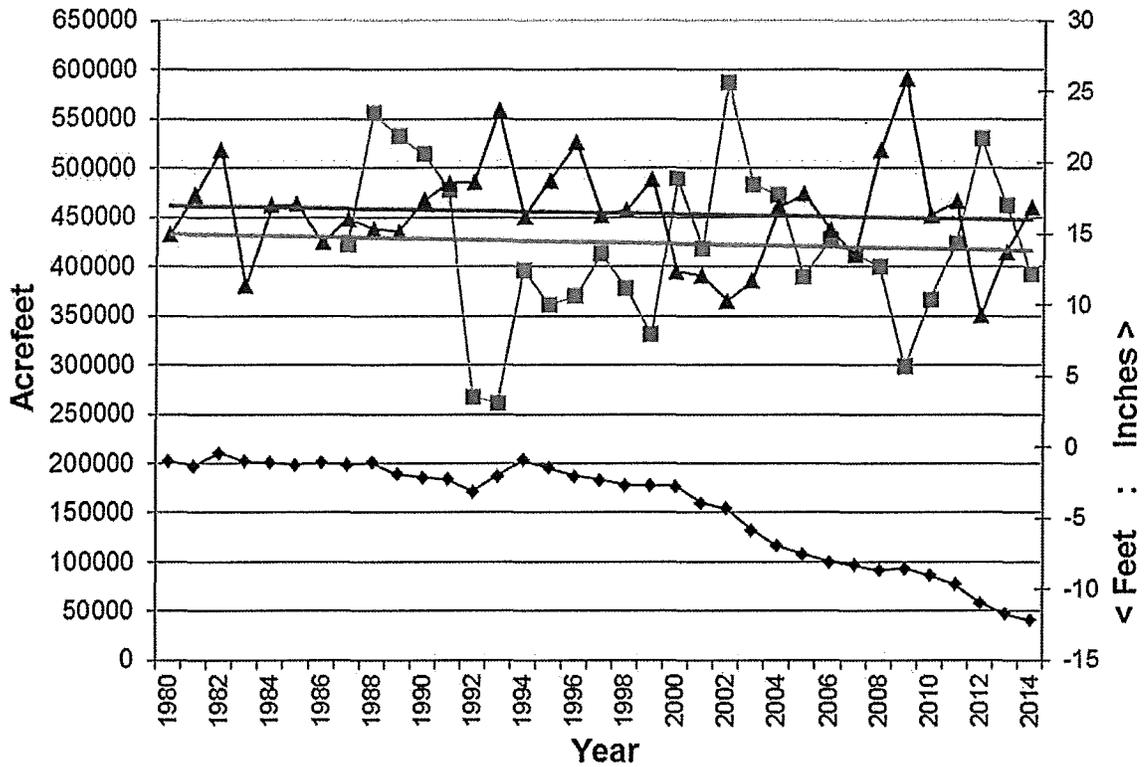
Figure IV-2: Annual % decline in saturated thickness from 2004 - 2013. Source: KGS section-level data base.

Because the decline rates are so variable over space and time, and due to the slow movement of water through the aquifer, the problems associated with declines are very localized. Therefore it is difficult, if not impossible, to make generalized statements on district-wide over-appropriation.

In the broadest of terms, GMD 4 is considered 5.7 times overappropriated, when based on district-wide, "appropriated" water quantities, and 3 times overappropriated when based on district-wide, "pumped" water quantities. However, there exist smaller areas within the district that are as much as 25 times overappropriated (based on appropriated amounts) and other areas that are completely underappropriated - that is, not yet developed at all. (Source of appropriated water right information is DWR Water Rights Information System (WRIS) data base)

Depletion is also a problem that shares relationships with climate and other influences that are not yet fully understood. One of these better understood relationships is rainfall - particularly in-season rainfall. This climate factor affects both recharge and gross irrigation requirements for the crops grown. Data on water use and rainfall collected in GMD 4 over the past 20 years show a significant inverse relationship between in-season rainfall and groundwater reported pumped. (See Figure IV-3)

1980-2014: Pumped Water, Average Seasonal Rainfall (April-October), and Water Level Declines



- Pumped Irr Wtr (AF, axis 1)
- ▲ Ave Apr-Oct Rain (Inches, axis 2)
- ◆ Cumulative Decline
- Linear (Pumped Irr Wtr (AF, axis 1))
- Linear (Ave Apr-Oct Rain (Inches, axis 2))

Figure IV-3: Relationships between in-season rainfall, groundwater pumping and water table changes. (Source: GMD 4 rainfall data; DWR water use reporting data; and Kansas Observation well network data.)

However, to fully understand the nature of pumpage and water level declines, all the other relationships need to be identified and further studied.

Stopping or controlling groundwater depletion is a complex problem. A pure resource approach toward a solution will necessitate focusing equally on the control of new development, the ability to direct or influence the use of existing development as necessary, and the design and implementation of programs for augmenting water supplies where possible. Other factors such as social, economic and legal impacts will also require attention, but are at this time actually non-resource components of the problem that will likely require State or Federal cooperation when resource solutions are being designed.

- a. *The control of new development.* The district is now closed to all new development that requests a source of supply that wholly or partially includes the Ogallala aquifer.

Goal(s) for Management Problem 1. a. - The control of new development as it impacts depletion:

- 1) To prohibit new development from the Ogallala Aquifer within GMD 4.
- 2) To prohibit any new water right from directly impairing any existing water right to an unreasonable degree.
- 3) To provide limited access to new water rights for small, legitimate use requests in specified circumstances that does not increase consumptive water use.

Applicable Regulations: KAR 5-24-2; KAR 5-24-3; KAR 5-24-10

Applicable Programs: V-1-c

- b. *Direction/Influence of existing development.* This particular sub-problem of depletion may necessitate policies encouraging or mandating higher efficiencies of water usage along with efforts that reduce consumptive water use. It could also involve additional control measures designed to reduce annual withdrawals within over-appropriated areas to new acceptable limits - including compliance and enforcement, incentive programs or other efforts.

Examples of such efforts would be: multi-year allocations of existing water rights in specified, high priority areas; additional restrictions on adding acres to existing water rights; non-private ownership of existing water rights to explore other conservation/economic uses of the limited supply in specified, high priority areas; and/or incorporating an economic component in decisions regarding changes to existing water rights. Some of these approaches may require the establishment of an Intensive Groundwater Use Control Area (IGUCA) or a Local Enhanced Management Area (LEMA). State supported programs, such as Water Conservation Areas (WCAs) may also be considered.

Finally, it might also entail work on federal or state programs (Kansas Water Plan, federal Farm Program, etc.) as they impact the use and/or conservation of groundwater. This sub-problem potentially could prove to be the most effective way to ease the declines. Its success,

however, will hinge on quantifying existing groundwater rights and year-to-year pumpage. The possibility of extensive programs such as metering or resource development planning (irrigation development plans) appears probable.

Goal(s) for Management Problem 1. b - Direction/Influence of existing development as it impacts depletion:

- 1) Reduce diversions from the aquifer from existing water rights per the Enhanced Management Program process contained in section V-g of this management program. This may include any program mentioned within section 1. b. above or any regulation needed to implement a desired program;
- 2) Elimination of irrigation on unauthorized places of use;
- 3) Elimination of over-pumping authorized quantities of water through a State enforcement policy which emphasizes suspensions and, when necessary, revocations of offending water rights;
- 4) Promoting the enrollment of water rights into WRCP, MYFA, EQIP, WCA or any other such programs;
- 5) Supporting the creation and proper operation of water banks;
- 6) Helping to develop and supporting state and federal programs designed to reduce groundwater use, such as the EQIP program in the Farm bill, as long as these programs use financial or other incentives to reduce consumptive water use; and
- 7) Cooperating with other state and local entities in evaluating other ideas for the regulation or direction of existing development for the purpose of reducing overall diversions. This effort would include the local development and implementation of sub-aquifer management areas designed to identify and address the decline problems in the highest priority areas of the district.
- 8) Working cooperatively with DWR to ensure that water use is not increased as a result of changes made to existing water rights; and
- 9) Ensuring that all water use within the district is per the Kansas Water Appropriation Act.

Applicable Regulations: KAR 5-24-2; KAR 5-24-3; KAR 5-24-4; KAR 5-24-5; KAR 5-24-6; KAR 5-24-8; KAR 5-24-9; KAR 5-24-10; KAR 5-24-11
Applicable Programs: V-1-a; V-1-b; V-1-c; V-1-d; V-1-g

- c. *Design and implementation of programs augmenting water supplies* as a sub-problem of depletion could require policies regarding artificial recharge, water reuse, weather modification and/or water importation.

Goal(s) for Management Problem 1. c. - Design and implementation of programs augmenting water supplies:

- 1) Promote new water importation projects as practical;
- 2) Design and operate artificial recharge structures when non-district funding is available;
- 3) Promote current water use efficiency to the maximum extent practical.

Applicable Regulations: KAR 5-24-8; KAR 5-24-11
Applicable Programs: V-1-a; V-1-b; V-1-c; V-1-d; V-1-g

2. Public Education and Involvement

The entire concept of local control hinges on public awareness and involvement in the affairs of the district. This is particularly true in the formulation of management policy and in other planning activities. Encouraging public interest and involvement has remained a problem from the start of the district and will require continuing attention from the board. The importance of a well-informed and active membership cannot be over-emphasized.

Areas where a lack of public education has been identified include water rights administration; general water doctrine in Kansas; the role of local districts in managing water, the hydrologic characteristics of the aquifer and awareness of the different responsibilities of various water-related agencies and authorities in Kansas, including the Kansas Geological Survey, United States Geological Survey, Division of Water Resources, Kansas Water Office, Kansas Water Authority, Kansas Department of Health & Environment, Kansas Corporation Commission, Kansas Department of Wildlife and Parks and our own groundwater management district. Without an acceptable knowledge of the areas just mentioned, the effectiveness of public input into district planning and policies will be restricted.

Goal(s) for Management Problem 2. - Public education and Involvement:

1) To develop a public education program that supports all district activities through its ability to inform and educate people about district actions, important non-district activities, water rights and anything else that may affect or assist them. To this end the district shall strive to:

(a) support schools, service clubs, local groups, etc. with presentations or other public information whenever requested;

(b) periodically notify schools of GMD 4 presentation capabilities;

(c) periodically produce a newsletter of general circulation;

(d) use public service announcements or television interviews whenever possible;

(e) periodically conduct a district-wide listening tour for better information transfer between the board and the members;

(f) actively work with all applicable agencies, authorities and the Legislature on water-related issues - both ours and theirs;

(g) maintain a district website that can be used for information dissemination.

Applicable Regulations: None

Applicable Programs: V-1-c

3. Water Quality

The availability of suitable water quality for the needs of GMD members is recognized as a problem within the district. Moreover, human activities are considered to be the major threat to groundwater quality problems, as natural influences on water quality within the district have yet to be identified. Specifically included in the GMD's list of potential groundwater quality degradation problems are:

- a. *Unplugged, poorly constructed or improperly maintained wells.* This category would include water wells, oil and gas wells, all test holes, seismic holes, core holes, injection wells, disposal wells and all other drillings and borings having a potential to induce water unnaturally into the subsurface. Wells which do not meet or exceed state and local GMD standards are considered to be potential threats to groundwater contamination or leakage, because they can allow fluid migration either inside or outside the casing(s), either up or down the well or well bore.

Goal(s) for Management Problem 3. a. - Unplugged, poorly constructed or improperly maintained wells:

1) Within 6 months or less cause the plugging, capping or re-construction of every deficient well brought to the attention of the district or found by the district on its own.

Applicable Regulations: KAR 5-24-11

Applicable Programs: V-1-c

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- b. *Surface activities which require the collection or use of any substance which can possibly influence the quality of the groundwater resource.* This category would include feedlots, landfills and other waste dumps, underground fuel storage facilities, oilfield tank batteries and distribution systems, and all the agricultural-related storage, handling and usage of chemicals including elevators, chemical plants, and chemigation systems. By the very collection of materials, substances or animals, there exists the potential for infiltration and percolation of leachates, chemicals, water soluble by-products, and other organic and inorganic substances into the subsurface and to the water table.

Goal(s) for Management Problem 3. b. - Surface activities which require the collection or use of any substance which can possibly influence the quality of the groundwater resource:

1) Monitor federal and state policy and regulation of all listed surface activities and consider the development of local regulation if any of these are believed to be inadequate to protect district water quality.

Applicable Regulations: None
Applicable Programs: V-1-e; V-1-f

Specifically identified as surface activities which need additional emphasis are the agricultural practices of chemigation and general nitrate/nitrogen usage, and the salt water handling and disposal practices of the oil and gas industry.

4. Availability of Energy

The availability of economical energy is critical to the availability and use of groundwater within the district. Should energy become too costly, the resulting immediate decline in the area-wide economy would be undesirable at best. It is in the best interest of the district to support and/or assist private efforts aimed at assuring an adequate supply of energy at a reasonable cost for the pumping and diversion of valid water rights within the district.

Goal(s) for Management Problem 4 - Availability of energy:

1) To support and/or assist private efforts aimed at assuring an adequate supply of energy at a reasonable cost for the pumping and diversion of valid water rights within the district.

2) To work on behalf of the energy users of the district in maintaining a cost-effective and reliable source of energy for the production of crops and all other water uses within the district.

Applicable Regulations: None
Applicable Programs: None

5. Enforcement

Enforcement of locally developed policies could pose problems in the effective management of remaining groundwater reserves. Usually, local enforcement is more effective, more efficient and less expensive than state enforcement. However, anticipating a certain percentage of cases whereby local enforcement is not going to be effective, the district has identified this as a potential problem. Moreover, the district recognizes potential problems concerning the consistency of enforcement when there is not proper coordination between federal, state and local concerns.

It will remain the desire of this district to work at local enforcement as a primary endeavor, yet also be able to quickly coordinate and implement a cooperative enforcement program with the appropriate state agency(s) in those cases where this type of approach is warranted.

Goal(s) for Management Problem 5 - Enforcement:

- 1) To work on local enforcement as a primary endeavor yet be able to quickly coordinate and implement a cooperative enforcement program with the appropriate state agency(s) when the board deems it necessary.
- 2) To monitor federal and state enforcement activities and develop our own enforcement capability whenever these efforts are deemed inadequate.
- 3) To promote responsive state enforcement of local policies and regulations when requested.

Applicable Regulations: All Regulations
Applicable Programs: None

6. Public Interest

"Public interest" is a fundamental term used throughout the Kansas Water Appropriation Act and the Groundwater Management District Act, and within regulations developed under both statutes. Yet the term is only narrowly defined within state statute and regulation. It has been generally accepted that the complete definition of this term is actually embodied in the full suite of statutes and associated regulations, and therefore must be considered in this total, overarching context. This full context also includes the administrative, executive and judicial systems whose policies and actions also become part of the complete definition. In contrast, it has also been generally accepted that a specific statutory definition of "public interest" would be restrictive and confining, thus having more disadvantages than advantages.

The groundwater management district act made it state policy that the local land owners and water users were to determine their own destiny in regard to groundwater management issues - so long as local decisions were consistent with state law. Since a groundwater management district cannot determine its own destiny without also expressing its own public interest, it seems logical that such authority is inherent in the groundwater management district act. Yet, any local expression of public interest must also be consistent with the overarching state expression of public interest, which is subject to eventual change through any administrative, legislative or judicial actions taken.

This issue is identified as a problem because it is not currently known if the existing state expression of "public interest" can be interpreted to accommodate the regional exclusivity being proposed herein.

If so, there is little problem. If not, the state's inability to accommodate local programs and regulations defining a more local expression of public interest, will be considered a local management problem.

In this spirit, this management program is being written to embody a more local definition (expression) of public interest which the board believes is best for the landowners and water users of this GMD and hence best for the state of Kansas. The board also believes it is more clearly within the spirit of the groundwater management district act. If in fact the entire suite of statutes and regulations define public interest in concert with the administrative, executive and judicial systems, then the groundwater management districts are clearly part of these systems and they deserve sufficient consideration. A single expression of public interest exclusively from the state perspective may not serve Kansas as well as a more flexible definition recognizing regional diversity.

Goal(s) for Management Problem 6 - Public interest:

- 1) To convey through this management program a clear expression of what the local "public interest" is within this GMD relative to groundwater management issues.
- 2) To insure the district's ability to continue determining the local public interest within the authorities expressed in the groundwater management district act. In order to insure the ability to continue determining the local public interest, the district shall work with the Legislature and all appropriate state agencies insuring that they recognize, support and promote the local public interest expressed herein.

Applicable Regulations: All Regulations
Applicable Programs: All Programs

7. Funding Issues

Funding issues have been discussed often within the district in two contexts. First, the fairness of the existing assessment system, and secondly, does the existing system provide all the conservation support that it might? The Northwest Kansas Groundwater Management District board generally agrees that the current assessment system could be made more fair if variable assessment rates were possible for both the land assessment and/or the water user charge – allowing for differing rates by area; by water use type; or by land use. The new, flexible assessment system should also allow for the rate structure itself to be used as a conservation incentive if necessary in special management areas.

Goal(s) for Management Problem 7 – Funding Issues:

- 1) Work with Kansas groundwater management districts and the Legislature to consider amendments to the Groundwater Management District Act to accomplish variable assessments. This could be done for all GMD's or only those interested in the amended assessment system.

Applicable Regulations: None
Applicable Programs: None

V. PROGRAMS and RESOLUTIONS

To solve, control or prevent the six management problem areas described in chapter IV, and to address all other aspects of the district's operation, the following programs and resolutions are considered important.

1. Programs

a. Water Use Efficiency Improvement Program: The district shall initially establish a program designed to achieve a district-wide, minimum water application efficiency for irrigation use that places appropriate emphasis on both system design and operator management. Irrigation water use efficiency is considered the percentage of pumped groundwater that enters and remains available for crop production in the effective root zone of the crop being grown. Increased water use efficiency efforts for the other use types will also be undertaken. Increased water use efficiency is deemed important in that it will reduce the demand on the groundwater resource and will also allow the district to more effectively undertake, if necessary, future management alternatives.

The district will also if necessary: 1) require enhanced water use reports from all water users from which reasonable efficiency levels can be determined; 2) develop a method to assess the water application efficiency of all existing irrigation systems; 3) require improved water use measurement for all appropriate water users; and 4) encourage all non-irrigation water users to utilize water as efficiently as possible until similar efficiency improvement programs are specifically established by the district.

b. Water Rights Administration Program: The district shall review all groundwater rights applications filed from within its boundaries to insure compliance with district policies, and shall recommend to the Chief Engineer, Division of Water Resources, any actions or additional requirements deemed necessary.

When consulted, the district will assist in the preparation of applications for a permit to appropriate water for beneficial use and other such water-rights related paperwork, but it shall be the responsibility of the applicant to review all such information and to submit same to the Chief Engineer.

The district shall continue working with the Chief Engineer to establish and maintain reasonable limitations on rates of diversion and total annual quantities for proposed beneficial uses of water within the district for those use types deemed applicable.

The district may also monitor annual water use reports from within the district and work with or assist the Chief Engineer in improving the reporting process and/or correcting any deficiencies found.

Finally, the district shall endeavor to work with the Chief Engineer on any water rights issue which might affect its operation, whether initiated at the federal, state or local level.

c. Public Education Program: This program encompasses all programs to the extent that the district shall provide information concerning all phases of its operation to the members through the use of written publications, news releases, newsletters, public meetings, radio and television announcements, district webpage and other media available. Of particular interest shall be the wide dissemination of information concerning water rights, regulatory policies and specific projects affecting water resources, legislation affecting district operations, and water-related public meetings, hearings, workshops and other gatherings.

Public involvement shall be encouraged at every opportunity, and should be enhanced by an effective public information program. The key to increasing public involvement is to generate interest, provide

practical and credible public information, and to instill and reinforce public belief in the merits of decision-making at the local level.

d. Investigations and Research Program: The district shall maintain an active interest in the following topics:

1) *Artificial Recharge.* The concept of artificial recharge shall be considered in a broadened sense within the district. The board of directors recognize that certain land treatment practices designed to decrease precipitation runoff and soil erosion can increase recharge as well as replenish soil moisture levels. Both these situations can increase water use efficiency and result in the reduction of groundwater pumpage. The district shall continue to study and evaluate more conventional methods of recharge such as injection wells, retention structures and playa lake management. Other such schemes which may be considered include low-head dams, stream channel flow control (gabions) and certain cultivation practices, both irrigated and dryland. Benefits to be expected from any recharge projects undertaken by the district shall relate to soil moisture management or the direct recharge of additional water.

2) *Evapotranspiration Research.* The district shall cooperate with and encourage research dealing with the impact evapotranspiration has on water management and use. Areas of promise could be: increased use of irrigation scheduling; genetic reduction of crop water requirements; and selection of new hybrids possessing lower water requirements. With increased surface runoff retention and 15% less water required by irrigated crops due to genetic improvements, a reduced number of fully irrigated acres could remain in production for a longer period of time. This combination of conditions might also support the supplemental irrigation of all currently irrigated acres so long as dryland production goals are uniformly established and adhered to.

3) *Water Transfers - Importation.* Western Kansas and the Great Plains region offers the nation a large food production area which has not yet reached its production potential. The major limiting factor in developing this potential is water. Since presently available water supplies are inadequate to fully develop and maintain the area to its production potential (or even to maintain current development), water from other areas will need to be made available if existing or increased development is desired, or if full production potential is to be realized.

Importation of water from areas of surplus supply seems to be technically feasible if the economic and political aspects of such ventures can be resolved. Some of the problems appear to be legal in nature and deal with inter/intra basin transfers. Any significant importation of water for irrigation use will by necessity be a large scale project and will require the coordination of many water-related entities including local, state, federal and possibly foreign nations. Other smaller-scale transfers will also take considerable coordination and planning.

The district shall encourage the long-range planning and study of projects which are economically feasible or may become economically feasible and which offer potential for the importation of water into northwest Kansas for whatever purposes may be deemed reasonable.

4) *Water Transfers - Exportation.* The board shall endeavor to involve itself with any exportation of groundwater from within the district boundary to any area or location outside the boundary. Such involvement should be relative to the Water Transfer Act, and all amendments thereto, and should insure that all district policies are met, including those policies which may apply to the receiving entity, such as waste of water and resource development plan policies.

5) *Federal Farm Program Refinements.* Whenever the federal farm program makes it financially attractive to grow high water-use crops because of the subsidy levels attached to those crops; or provides any other incentives to grow specific, high-water use crops; or provides disincentives to grow low-water use crops; the board should explore ways to alter the farm program so that an equal level of economic incentive can be provided to NW Kansas GMD producers such that they may choose lower water-use crop alternatives without economic or financial penalty or disincentive. All other programs relating to water use or water conservation contained in the farm program (such as EQIP) should also

be evaluated and appropriately supported by the district if such programs encourage decreased consumptive water use and achieve district goals.

e. Data Collection Program: The data collection needs of the district are expected to be very broad as its programs are developed and implemented. They will necessarily range from water quantity and water quality issues, to research and investigation needs, to land ownership records, to whatever other data needs may become necessary and important to the board. This could include at any time additional water use, cropping, soils or climate data that would be necessary to support improved water use efficiency efforts.

At very least, the district shall maintain a water well inventory designed to show the location and status of each non-domestic well; mapping and data concerning area groundwater reserves; water quality information that is available or can be collected; a land ownership and mailing list data base for education and enforcement purposes; a water rights data base including authorized points of diversion, places of use and rates and quantities of water; and climate data for the region that is necessary for any irrigation scheduling programs or research.

The district shall also encourage the improvement of the state-wide, water-related data base covering water levels and water level changes in northwest Kansas, and promote the adoption of a state-wide, integrated water data base or geographic information system provided it will have access to such a system.

Finally, coordination and cooperation between the district and any state, federal, or other private or governmental agency shall be a high priority for the board at all times. Such cooperative efforts shall be encouraged whenever district manpower, technical or financial capabilities are not adequate to initiate or complete a study program or other effort approved by the board.

f. Water Quality Protection Program: In reference to the problem stated in Chapter IV-3, the district shall implement and maintain the following water quality protection program(s):

1) *Existing Pollution Problems.* Any known pollution problems within the district, or outside of district boundaries that pose a direct threat to groundwater within the district, may be researched and evaluated or re-evaluated by staff to determine if present or past clean-up and/or monitoring is sufficient. If staff deems it necessary to take further control measures, whether it be in conjunction with other federal, state or local water-related agencies, or as its sole responsibility, staff will then present its recommendations to the board for consideration of pertinent action.

2) *Potential Pollution Problems.* The water quality program goal will be to prevent any future degradation of groundwater quality by attempting to identify all potential sources of pollution, and addressing these before they become major problems. Possible programs which satisfy this mission could include, among others:

a) *Oil and gas industry monitoring.* The district should consider building and maintaining a file on all oil and gas activity in the district. Staff could then review this information to screen for improperly constructed or plugged oil and gas wells. Also to be included under this section could be the implementation of a simple map system for updating well status and/or density within a specific target area, and a computer link with other data bases to obtain information currently not on file.

b) *General monitoring.* The district could also conduct random visual inspections of oil and gas leases, drilling, completion and plugging operations, feedlots, landfills and other waste dumps, storage facilities for fuels and chemicals, chemigation systems, abandoned or improperly maintained wells and any other agricultural or industrial site that staff considers to have the potential to degrade or contaminate groundwater.

3) *Observation well network.* The district may set up a network of observation wells in any area that it feels may be threatened by a potential source. This network may contain the following: present

irrigation; domestic; stock; or rotary rig supply wells; observation wells drilled either solely by the district or by the district in conjunction with other federal, state or local agency(s); or any combination of these.

4) *Water quality testing.* The district may establish its own water quality testing unit or coordinate with state, federal or private water quality testing facilities as it deems necessary. All water quality data generated locally shall be made available to cooperating agencies upon their request unless special confidentiality arrangements were made prior to the data collection. All applicable state and federal agencies shall be notified if any district water quality test indicates the existence of a water quality problem.

5) *Others.* Any other program or effort which the board determines necessary or desirable to prevent groundwater contamination may also fall under this general water quality protection statement.

g. Enhanced Management Program

1) **Overview:** In general accordance with the Kansas State Water Plan, the district will identify aquifer sub-units of similar hydrology, prioritize these sub-units, and develop an enhanced management program for the high-priority sub-units identified. The goal will be to slow the groundwater table decline rate in all high-priority aquifer sub-units identified and to extend the economic life of the local groundwater resources.

More specifically, the program is outlined as follows:

Task 1) - Cluster aquifer sub-units

Use existing KGS section-level data sets and other data available to cluster or otherwise be used in the determination of aquifer sub-units. This data will be clustered or otherwise considered based upon appropriate hydrologic parameter(s) in order to show reasonable regions of groundwater management need. This task will generate aquifer sub-units of similar groundwater dynamics within the district which can be prioritized for subsequent enhanced management efforts. The entire data set for NW Kansas will be used so as to minimize the boundary effects as much as possible.

The parameter primarily to be used for the designation of aquifer sub-units shall be percent decline of 1996 aquifer saturated thickness between 1996 and 2002 using 3-year averaged values for all data sets. Other hydrologic parameters may also be considered.

Task 2) - Prioritize aquifer sub-units:

The board will set appropriate high, medium, and low threshold triggers based on the Task 1 parameter(s) chosen. The sub-units exceeding the top trigger will be designated as high priority aquifer sub-units for subsequent enhanced management efforts. Additionally, upon request of landowners and/or water users, any high priority area may be expanded to adjacent areas and considered a high priority area provided: the entire area is sufficiently sized to justify the expansion; the landowners and water users within have systematically met and prepared a specific enhanced management plan that meets or exceeds the basic goals and criteria of this protocol; and the board feels it is in the public interest to build upon the local momentum generated by the expansion group.

Task 3) - Verify data for each high priority aquifer sub-unit:

The board will consider KGS/GMD special study findings and other reports and information to more clearly assess if the existing data adequately supports any or all of the high and medium priority aquifer sub-units rendered by task 1. If the data is considered sufficient, the board will continue to task 4. If not, before task 4 is started the board will work with KGS, DWR, KWO, USGS and others who are knowledgeable in data reliability and application to enhance, re-design, find funding for, or whatever else is necessary to obtain or enhance the data considered necessary to scientifically support not only the identification of the sub-units, but also any likely management options for the immediate future.

Task 4) - Establish preliminary water use goals and enhanced management actions for the high priority aquifer sub-units:

The board will conduct at least one public meeting within each high priority aquifer sub-unit in order to: a) inform the land owners and water users of the district's process and findings; b) to discuss the area's future outlook based on the district findings; c) to request input from the attendees about preferred future actions - specifically including preferences for a groundwater budget for the next 20 years; and d) what management policies/actions/strategies should be considered by the board to achieve the preferred groundwater budget.

Following the public meetings, the board will decide what groundwater use goals (groundwater budgets) are appropriate for each high priority aquifer sub-unit and what management approaches should be implemented. These decisions will be incorporated into the management program before being undertaken. If new regulatory authorities are considered necessary or prudent, either by the public or the board, they will be further explored at this step in the process.

(NOTE: In both the public meeting venue and the final board decision process, the following methods for reducing water use will be discussed: 1) targeting funding for water use efficiency improvements, water right set asides, or water right buyouts; 2) mandatory metering; 3) stricter regulation of water rights to include both negative and positive incentives concerning: a) overpumpage; b) tailwater control and reuse; and c) unreasonable pumpage; and 4) IGUCAs or other special management areas. Any other ideas brought up by the district members within either venue will also be considered.)

Task 5) - Assess the management program per board decisions resulting from task 4.

At this point, there may or may not be additional changes required in the management program to implement the enhanced management decisions of task 4. If management program changes are required, there will be no further implementation until the management program is appropriately revised through the prescribed process.

Task 6) - Develop assistance plans to transition to dryland farming.

This issue may or may not be addressed within tasks 4 and 5. If it is, no further specifics need to be included here. If not addressed in tasks 4 and 5, the board will work with the district members and others (state agencies and private groups) to develop a list of economically acceptable transition plans/ideas. All plans/ideas identified through this effort will next be presented to the district members at a public meeting or public meetings if the board decides to pursue such plan(s).

Task 7) - Review, evaluate and reiterate.

On a regular, identified schedule the board will again cluster or otherwise consider each medium and low priority aquifer sub-unit and using the same threshold parameters as originally used and will re-prioritize each. The high priority aquifer sub-units identified through this task will start the process at that time at task 3.

2) Timeframes:

The first timeframe will be to appropriately include the approved protocol into the next management program revision process. The board expects to begin this process in May, 2003, and have the new revised management program approved by the chief engineer by May, 2005. There are, of course, no guarantees to this timeframe. The board would also expect to hold a public hearing on the revised management program shortly after the effective date of the revised program. If approved by the district members, this revised management program, including this protocol, would likely become effective by August, 2005.

Once a protocol is included into the management program and that management program is adopted, the timeframes for the individual tasks are expected to be:

Task 1: Cluster aquifer sub-units: This task should be completed within 3 months of approval of the management program.

Task 2: Prioritize aquifer sub-units: Within 3 months of completion of task 1.

Task 3: Verify data for each high priority aquifer sub-unit: This task will begin by January, 2006, but a completion date is impossible to predict. It should take about 6 months to assess the data originally used in identifying the high priority aquifer sub-units. If the data adequately supports the sub-unit identification, this task would be expected to be completed by July, 2006. However, if the data cannot adequately support the sub-unit identifications, the board believes it could take an additional 4-5 years to design what data sets will be needed, to obtain that data and to re-apply it to tasks 1 and 2.

Task 4: Establish preliminary water use goals and enhanced management actions for the high priority aquifer sub-units: This task should take 6-8 months of time following the completion of task 3. This could be as early as February, 2007 and as late as February, 2012.

Task 5: Assess the management program per board decisions resulting from task 4: Assessment of the management program should take 4 months of time following the completion of task 4. If no revisions are necessary (that is to say that all programs and regulations needed to implement the decisions made in task 4 already exist in the revised management program) the board will be able to begin implementation immediately. Should there be required management program revisions, the implementation process could take up to 2 years while the revised management program process takes place.

Task 6: Develop assistance plans to transition to dryland farming: It is possible that district transition plans can be incorporated in tasks 4 and 5 and that no special plans need to be developed. If so, no timeframe needs to be identified. If district transition plans are not incorporated in tasks 4 and 5, this task would be begun immediately upon the conclusion of task 4. It would be expected to take 2-3 years to develop unique dryland transition plans as proposed.

Task 7: Review, evaluate and reiterate: This task will begin 5 years after the completion of task 2.

3) Individual Enhanced HPA Management Programs: On April 12, 2001 the Kansas Water Authority approved the start of an Ogallala Management concept through its water planning process. This action included the creation of two advisory committees to evaluate and recommend management ideas for the Ogallala – the Management Advisory Committee (MAC) and the Technical Advisory Committee (TAC). These committees generated one final report (dated October 16, 2001) containing 5 recommendations and 17 guiding principals – basically supporting local groundwater management toward an aquifer sub-unit approach. June 5, 2003 the GMD 4 board adopted an enhanced management protocol that included 7 tasks. This protocol was incorporated into the Revised Management Program on March 9, 2006. On March 8, 2007 the GMD 4 board completed Task 1 and established 6 high priority areas based on the protocol procedures. The Task 4 process began in November, 2008 when public meetings were called in each of the six areas to discuss the process. The following sections are the individual enhanced management plans for each HPA that has successfully completed Task 4 of the GMD 4 enhanced management protocol.

a) High Priority Area (HPA) SD-6:

ORDER

NOW, THEREFORE, it is the decision and order of the Chief Engineer, Division of Water Resources, Kansas Department of Agriculture, that the Sheridan 6 LEMA is hereby designated and established in the Sheridan County and Thomas County, and shall be in full force and effect as of the date of the Order of Decision, January 1, 2013:

BOUNDARIES.

1. That the geographical boundaries of the Sheridan 6 LEMA shall be as follows and shall include all water rights whose points of diversion are located within the following sections in Sheridan County and Thomas County:

Sheridan County:

TWP 7S-28W: Sections 19-21 and 28-33;

TWP 7S-29W: Sections 4-9 and 16-36;

TWP 7S-30W: Sections 19-36;

TWP 8S-29W: Sections 1-18;

TWP 8S-30W: Sections 1-18.

Thomas County:

TWP 8S-R31W: Sections 22-27 and 34-36.

2. This Order shall be in effect as of the date of the Order of Decision, January 1, 2013, and shall govern all irrigation, stockwatering, and recreational rights within the Sheridan 6 LEMA between January 1, 2013, and December 31, 2017. This five-year term shall be known as the "Sheridan 6 LEMA Period."

3. Attached as Attachment 1 is a spreadsheet that lists the water rights affected by this Order of Designation.

ALLOCATIONS.

4. The total amount of diversions of water within the Sheridan 6 LEMA shall be restricted to no more than 114,000 AF during the Sheridan 6 LEMA Period.

5. Each irrigation water right within the Sheridan 6 LEMA shall be limited to a total maximum quantity of 55 inches per designated eligible acre for the Sheridan 6 LEMA Period. This five-year quantity of 55 inches per designated eligible acre shall be known as the "initial irrigation allocation," and shall be applied only to the designated eligible acres for each irrigation water right in the Sheridan 6 LEMA, which have been quantified by GMD4 as described in the Proposal, GMD4 Exh. 1, Appendix 5, p. 35. Somewhat simplified, that procedure for quantifying designated eligible acres is as follows:

i. Where the irrigation water right's water use report for 2010 reports the same irrigated acreage as do the reports for 2007, 2008, and 2009, then the designated eligible acres for that water right shall be the reported acreage for 2010.

ii. Where the irrigation water right's water use report for 2010 reports irrigated acreage that differs from the reports for 2007, 2008, or 2009, then the designated eligible acres for that water right shall be the highest reported acres for any of these four years (2007 to 2010 inclusive) that can be verified by GMD4 as having been legally irrigated under that right.

GMD4 has completed this procedure for every water right within the Sheridan 6 LEMA, and every owner of an irrigation water right within the Sheridan 6 LEMA has received notification of that right's designated eligible acres.

6. The initial irrigation allocation may be increased or decreased subject to the terms and limitations set forth below. In the event of such increase or decrease, that allocation shall be known as the "irrigation allocation."

7. Individual points of diversion pumping to a common irrigation system or systems shall be provided a single allocation for the total system irrigated acres. The total amount of water pumped by all of the points of diversion must remain within that system's allocation.

8. Multiple irrigation allocations may be combined into an irrigation allocation account, which may be apportioned to the irrigation water rights' individual points of diversion within that irrigation allocation account, provided the total allocation account is not exceeded, subject to further limitations set forth below.

9. GMD4 shall administer the combining of multiple irrigation allocations as set forth in Paragraph 8 above, using an "Application to Combine SD-6 LEMA Amounts" form approved by DWR, a version of which is attached to this Order of Designation as Attachment 2. GMD4 shall supply a verified summary of this information to DWR on or before November 1 of each year of the Sheridan 6 LEMA Period.

10. Irrigation allocations may be transferred to a different place of use and/or point of diversion within the Sheridan 6 LEMA, provided that the transferors and transferees of such allocations comply with GMD4 procedures for approving these transfers, subject to the further limitations below.

11. GMD4 shall administer the transfer of irrigation allocations within the Sheridan 6 LEMA, using the "Application for Temporary Transfer of Allocation within the SD-6 Local Enhanced Management Area" form approved by DWR, and attached to this Order of Designation as Attachment 3. GMD4 shall supply a verified summary of all transfers within the Sheridan 6 LEMA to DWR, as set forth more fully at Section VII, ¶¶ 28-30 below. All such transfers shall be limited to the Sheridan 6 LEMA Period.

12. Whether through transfer, purchase, lease, or other conveyance, no irrigation allocation within the Sheridan 6 LEMA shall exceed 5 times the annual quantity of water authorized by the irrigation water right or rights that comprise the irrigation allocation.

13. No irrigation allocation shall be allowed to divert more than the annual quantity of water authorized by its constituent irrigation water right or rights in any single year.

14. Regardless of any irrigation allocation specified pursuant to this Order, any additional restriction or restrictions established pursuant to K.A.R. 5-5-11 shall continue to apply.

15. Each and every irrigation allocation shall be assigned to a specific point or points of diversion, and shall consist of all of the water rights and appurtenant acres related to that point of diversion.

16. Before October 1, 2013, any irrigation allocation may be converted to a Multiyear flex account ("MYFA") pursuant to K.S.A. 82a-736 and its attendant regulations, provided that such allocation is eligible for a MYFA, and provided further that the MYFA quantity or quantities of water do not exceed the irrigation allocation. After October 1, 2013, no conversions to MYFA's shall be allowed.

17. For any irrigation water right enrolled in any state or federal conservation program approved pursuant to K.S.A. 82a-741 and/or K.A.R. 5-7-4, whose term expires on or before September 30, 2017, the initial irrigation allocation for such right shall be limited to 11 acre-inches per acre per year for the remaining years of the Sheridan 6 LEMA Period.

18. Any irrigation water right enrolled into, contracting with, or participating in a reduced water use program (such as the Agricultural Water Enhancement Program, or AWEP, the Environmental Quality Incentives Program, or EQIP, or the Northwest Kansas Groundwater Conservation Foundation) during the Sheridan 6 LEMA Period shall not be allowed to transfer

any part of its initial irrigation allocation.

19. All stockwatering water rights within the Sheridan 6 LEMA shall be granted an allocation for use based on 12 gallons per head per day, according to their licensed lot capacity as of December 31, 2010, for the Sheridan 6 LEMA Period. This quantity of 12 gallons per head per day shall include both drinking water and additional quantities for servicing/flushing, as those terms are used in K.A.R. 5-3-22.

20. All stockwatering water rights within the Sheridan 6 LEMA shall be converted to a five-year allocation, to be known as the "initial stockwatering allocation."

21. The initial stockwatering allocation may be increased or decreased by purchase, sale, transfer, or other conveyance of water rights and water allocations. The KWAA and its attendant regulations shall govern any such modification. In the event of any modification in quantity from the initial stockwatering allocation, that subsequent allocation shall be known as the "stockwatering allocation." No stockwatering allocation shall be allowed to divert more than the annual quantity of water authorized by its constituent water right or rights in any single year.

22. During the Sheridan 6 LEMA Period, recreational water rights shall be limited to five times 90% of their annual authorized quantity as of December 31, 2010. No recreational water right shall be allowed to divert more than its annual quantity of water authorized in any single year.

METERING.

23. All water right owners shall be responsible for ensuring that their meters are in compliance with state law. In addition to the requirements set forth in the KWAA, including K.S.A. 82a-706c, K.A.R. 5-1-4 through 5-1-12, and any other relevant statutes and regulations, all water right owners shall perform one of the following two procedures.

- i. Inspect, read, and record the flow meter at least every two weeks during any period in which the pump and well are operating. The owner shall maintain this record and provide it to GMD4 upon request. In the event that reported readings are questioned by either GMD4 or DWR and that the records are not provided to GMD4, the water right shall be presumed to have diverted its full annual authorized quantity for the year in which GMD4 has requested the record of the well.
- ii. Install and maintain an alternative method of determining the time that the well is operating. This information must be sufficient to determine the operating time in the event of a meter failure. Should the alternative method fail or be determined inaccurate, the water right shall be presumed to have diverted its full annual authorized quantity for the year or years in which the alternative method was installed. Well and/or water right owners who select this procedure shall submit the details of this alternative method to GMD4 at least 60 days in advance of installation, so that GMD4 can determine whether the method is sufficient. Well owners who select this procedure shall also submit proof of installation to GMD4.

24. Any water right owner or his or her authorized designee who finds a flow meter that is inoperable or inaccurate shall notify GMD4 within 48 hours, and shall provide the following information to GMD4:

- i. The water right file number;
- ii. The legal description of the location of the point of diversion;
- iii. The date the problem was discovered;
- iv. The flow meter manufacturer, model, registering units, and serial number;

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- v. The meter reading on the date the problem was discovered;
 - vi. A description of the problem;
 - vii. The alternative method that the owner will use to compute the amount of water diverted while the meter is being repaired or replaced; and
 - viii. The projected date that the meter will be repaired or replaced.

25. Whenever an inoperable or inaccurate meter is repaired or replaced, the owner or authorized water use correspondent shall notify GMD4 within 7 days and provide the following information:

- i. Water right file number;
- ii. Date the meter was replaced or repaired;
- iii. If the meter was replaced, the make, model, registering units, serial number, and meter reading of the new meter before it records any water use;
- iv. If the meter was repaired, the date of repair and confirmation of the meter reading before it records any water use; and
- v. A total of the water pumped while the meter was inoperative.

26. These metering provisions and protocol shall be a specific annual review issue pursuant to Section VII, ¶ 45 of this Order, and may be adjusted upon recommendation by the Chief Engineer or the Advisory Committee.

27. Nothing in this Order of Designation shall limit the authority of DWR to require metering or other water measurements in all other respects pursuant to the KWAA and regulations.

ACCOUNTING OF WATER USE.

28. GMD4 shall account for and monitor the use of water within the Sheridan 6 LEMA by keeping complete records of the following on an annual basis:

- i. The diversion amounts for each water right, using the annual water use reports filed with DWR;
- ii. Any combining of allocations;
- iii. Any transfers of allocations;
- iv. Any other changes in allocations; and
- v. The remaining allocation balance for each water right in the Sheridan 6 LEMA for the Sheridan 6 LEMA Period.

GMD4 shall provide DWR and the owner of each water right within the Sheridan 6 LEMA of a summary of the above-described records. GMD4 shall provide the first summary by November 1, 2014 (for 2013 water use) and by November 1 of each successive year (for the previous year's water use), with the final summary to be due by November 1, 2018. GMD4 shall keep copies of each such annual summary in its files.

29. GMD4 shall notify DWR of any combining, transfers, or other changes in allocations within the Sheridan 6 LEMA within 30 days of their approval by GMD4.

30. GMD4 shall develop a system using a commonly accepted electronic spreadsheet program to approve and to track transfers of water within the Sheridan 6 LEMA, and shall make that system and that program accessible to DWR.

VIOLATIONS, ENFORCEMENT, AND CIVIL PENALTIES.

31. Exceeding any total allocation quantity, including any transferred quantities, by an amount less than 4 acre-feet within the allocation period shall result in a \$1,000.00 fine for every day that pumping was taking place in excess of the allocation. This penalty shall also apply

to all rights in combined allocation accounts.

32. Exceeding any total allocation quantity, including any transferred quantities, by an amount equal to or more than 4 acre-feet within the allocation period shall result in an automatic two-year suspension of the water right. This penalty shall also apply to all rights in combined allocation accounts.

33. Exceeding the annual authorized quantity of the water right, not including any transferred quantities, shall result in a \$1,000.00 fine.

34. These penalties shall not exclude the availability of other civil penalties made available pursuant to K.S.A. 82a-737.

35. If GMD4 learns of any violation of this Order, it shall promptly report any such violation to DWR, request that DWR apply the appropriate civil penalty, and fully assist DWR in any compliance action taken by DWR in response to such violation.

WATER RIGHTS ADMINISTRATION; IMPAIRMENT COMPLAINTS.

36. Nothing in this Order of Designation shall preclude a water right owner from requesting administration of water rights as provided for by the KWAA and its regulations.

37. Nothing in this Order of Designation shall preclude a water right owner from bringing a well-to-well impairment complaint pursuant to K.A.R. 5-4-1.

38. In the event that an impairment investigation produces a determination that the impairment is caused substantially by a regional lowering of the water table, K.A.R. 5-4-1a shall apply; but in such an event, the Chief Engineer may consider the requirements of this Order of Designation in determining the appropriate resolution of such impairment.

WATER LEVEL MONITORING; MONITORING PLAN.

39. The following observation wells, all in Sheridan County, shall be used to monitor changes in depths to water in the SD-6 LEMA, as described by location and well number below:

- i. TWP 7S-28W, Section 21, Well No. 07S28W21;
- ii. TWP 7S-29W, Section 5, Well No. 07S29W05;
- iii. TWP 7S-29W, Section 27, Well No. 07S29W27;
- iv. TWP 7S-29W, Section 30, Well No. 07S29W30;
- v. TWP 8S-29W, Section 1, Well No. 08S29W01-1;
- vi. TWP 8S-29W, Section 1, Well No. 08S29W01-2;
- vii. TWP 8S-30W, Section 5, Well No. 08S30W05;
- viii. TWP 8S-30W, Section 11, Well No. 08S30W11; and
- ix. TWP 8S-30W, Section 13, Well No. 08S30W13.

40. GMD4 shall convert observation Well No. 08S30W13 to an hourly measurement schedule by installing a continuous pressure transducer by January 1, 2013.

41. GMD4 shall drill at least three additional observation wells and equip each of these three wells with pressure transducers that allow the hourly recordation of water levels. These additional wells shall be located in Sheridan County as follows, with parenthetical references to their current landowners:

- i. TWP 7S-29W, Section 25, Well No. 07S29W25 (Moss);
- ii. TWP 7S-30W, Section 27, Well No. 07S30W27 (Seegmiller);
- iii. TWP 8S-31W, Section 26, Well No. 08S31W26 (Steiger); and

These observation wells shall be installed, fully tested, and operational by January 1, 2013. If

GMD4 adds observation wells in addition to these three wells and equips them with instruments subsequent to this order, GMD4 shall notify DWR and KGS upon setting the data logger equipment and collecting data for the first time from those wells. Any such additional observation wells that become operational subsequent to the date of this Order shall be subject to the terms of this Order.

42. GMD4 shall be responsible for maintaining all observation wells that GMD4 has constructed and equipped with instruments, as described in Section VII, ¶¶ 40-41 above, during the Sheridan 6 LEMA Period.

43. DWR and GMD4 shall cooperate in obtaining and analyzing the data obtained from the observation wells.

ADVISORY COMMITTEE; REVIEW.

44. GMD4 shall maintain a Sheridan 6 LEMA Advisory Committee (“Advisory Committee”) consisting of nine members. One member shall be an employee of DWR, who shall serve as the designee of the Chief Engineer. One member shall be an at-large member from GMD4. The remaining seven members shall be owners of irrigated land within the Sheridan 6 LEMA, residents of the Sheridan 6 LEMA, or tenant farmer operators of irrigated land within the Sheridan 6 LEMA; and one of these seven Sheridan 6 LEMA members must represent nonirrigation water users. The chair of the Advisory Committee shall be a resident within the Sheridan 6 LEMA.

45. The Advisory Committee shall meet at least annually to consider the following:

- i. Water use data;
- ii. Water table information;
- iii. Economic data;
- iv. Whether the combining of allocations and the transfers of allocations have altered the geographic distribution of diversions and/or water use within the Sheridan 6 LEMA;
- v. Whether the combining of allocations and the transfers of allocations have produced a concentration of diversions and/or water use within the Sheridan 6 LEMA;
- vi. Violations, issues relating to violations, and metered data that relates to violations;
- vii. New and preferable enhancement management options; and
- viii. Other items deemed pertinent by the Advisory Committee.

46. The Advisory Committee shall produce an annual report providing a summary of its considerations, and shall transmit that report to GMD4 and to the Chief Engineer by December 31 of each year of the Sheridan 6 LEMA Period.

47. The Advisory Committee shall conduct a formal review of this Order of Designation. This formal review shall consider the following:

- i. Economic impacts of the Sheridan 6 LEMA;
- ii. Changes in water levels;
- iii. Whether the flexibility afforded by the use of allocations in the Sheridan 6 LEMA substantially increased water use in any part of the LEMA, or raised other concerns;
- iv. Whether the Sheridan 6 LEMA should be extended in time;
- v. Whether the geographical boundaries of the Sheridan 6 LEMA should be expanded; and
- vi. The impact of the Sheridan 6 LEMA upon the public interest.

Following this formal review, the Advisory Committee shall produce a final report containing specific recommendations regarding future LEMA actions. These recommendations shall be supported by reports, data, testimonials, affidavits, or other documents attesting to their foundation. The Advisory Committee shall submit the final report to GMD4 and to the Chief Engineer on or before December 31, 2016.

RETAINED JURISDICTION.

48. The Chief Engineer specifically retains jurisdiction in this matter to make changes to this Order of Designation to protect the public interest and to prevent the impairment of water rights.

FINAL AGENCY ACTION; DISTRIBUTION OF ORDER.

49. This Order of Designation is final agency action as defined by K.S.A. 77-607(b)(2).

b) [Reserved if future HPA Enhanced Management Plans are generated]

h. Metering:

In response to the division of water resource's announcement that all wells in NW Kansas will be metered, the district will work with the division in developing a mutually acceptable metering program. This effort will be pursued via the adoption of a Memorandum of Understanding with the division of water resources that specifies the obligations and responsibilities of each entity in implementing the MOU.

i. Enhanced Allocation of Water:

In concert with the Northwest Kansas Groundwater Conservation Foundation, and within the established high priority areas determined through the enhanced management program expressed in section V. g, above, it shall be the intent of GMD 4 to obtain water rights in order to immediately reduce consumptive water use while working to lease or re-sell portions of the purchased water rights to maintain or enhance economic returns. The district should work closely with the division of water resources, Kansas department of agriculture and the Kansas department of commerce to respectively facilitate water right transfers and then prepare to market the water rights. It will be the goal of this program to both reduce consumptive water use and to increase economic returns made from the reduced water use.

2. Resolutions:

a. Geographic Distribution of the Board of Directors (PR-76-1)

WHEREAS the Northwest Kansas Groundwater Management District No. 4 was formed for the management and conservation of groundwater resources; for the prevention of economic deterioration; and to secure for Kansas the benefit of its fertile soils and favorable location with respect to national and world markets; and

WHEREAS the Board of Directors of Northwest Kansas Groundwater Management District No. 4 are elected to represent the wishes of the eligible voters of the district; and

WHEREAS the boundaries of the district include all or portions of ten counties;

THEREFORE, BE IT RESOLVED by the eligible voters of the Northwest Kansas Groundwater Management District No. 4 that the board of directors be elected such that all geographic locations within the district will be represented, that one board member be elected from Cheyenne County, hereafter to be considered position No. 1, that one board member be elected from the Rawlins-Decatur County area, hereafter to be considered position No. 2, that two board members be elected from the Sherman-Wallace County area, hereafter to be considered position numbers 3 and 4, and two board members be elected from Thomas County, hereafter to be considered position numbers 5 and 6, that two board members be elected from Sheridan County, hereafter to be considered position numbers 7 and 8, that one board member be elected from Graham County, hereafter to be considered position No. 9, that one board member be elected from Logan County, hereafter to be considered position number 10, and that one board member be elected from Gove County, hereafter to be considered position number 11.

BE IT FURTHER RESOLVED that in order to be eligible as a candidate for a board of directors position, the eligible voter must reside within the boundaries of that respective position as previously described.

b. Schedule of Annual Meeting Rotation (PR-76-2)

WHEREAS the Northwest Kansas Groundwater Management District No. 4 was formed for the management and conservation of groundwater resources; for the prevention of economic deterioration; and to secure for Kansas the benefit of its fertile soils and favorable location with respect to national and world markets; and

WHEREAS the board of directors of the Northwest Kansas Groundwater Management District No. 4 are elected to represent the wishes of the eligible voters of the district; and

WHEREAS the boundaries of the district include all or portions of ten counties which constitute a considerable traveling distance for many voters;

THEREFORE, BE IT RESOLVED by the eligible voters of the Northwest Kansas Groundwater Management District No. 4 that after the initial annual meeting, the annual meeting location be in a rotation of Hoxie, Goodland and Colby, respectively, in order to coincide with the geographic election of the board of directors as follows:

1. Hoxie, 1977, Positions 8, 9, 10 and 11
2. Goodland, 1978, Positions 1, 4 and 6
3. Colby, 1979, Positions 2, 3, 5 and 7

c. Exclusions and Inclusions (PR-84-1)

WHEREAS the Groundwater Management District Act specifically outlines parameters within which land may be excluded from district assessment, but does not adequately address the assessment status of land transfers; and

WHEREAS Northwest Kansas Groundwater Management District No. 4 now has a landowner data base through which exclusions can more readily be monitored; and

WHEREAS numerous discrepancies in the status of excluded land now exist because of the inability of this district to require landowner updates due to the vagueness of the statutory language regarding same;

BE IT THEREFORE RESOLVED that the Northwest Kansas Groundwater Management District No. 4 shall adopt the following policy with regard to reasonable and equitable

administrative actions to prevent persons from unknowingly conflicting with existing statutes concerning land exclusions, or refusing to come into compliance.

- 1) The term "tract" shall be considered as a portion of land as it is legally described by the county records of the local county clerks office.
- 2) Any excluded tract of land involved in a change in ownership by any means shall revert to its original included status, as no exclusion form with the current landowner will be on file with the district office.
- 3) Ownership or acquisition of a water right shall be presumed as intent to use water on or withdraw water from beneath said tract(s) and shall void or prevent the exclusion status of said tract(s).
- 4) If the assessment status of either the previous owner or the new owner of any transferred tract(s) changes, the district will on its own initiative, administratively correct the situation(s) provided its action is the only legal alternative of that party.
- 5) When multiple alternatives exist for the seller or buyer because of any transaction involving land resulting in a mixed assessment status which is inconsistent with the Groundwater Management District Act, the owner will be notified and given 45 days from the district's notification date to correct the discrepancy. If no such response and direction is received within that time, the board shall direct staff to implement the district's only option of including all previously excluded land as a result of a voided (outdated) exclusion form on the part of that owner.
- 6) Sections 1-5 of this policy shall be applied to all land within the district retroactive to March 1, 1976, provided no assessments shall be levied pursuant to this policy prior to January 1, 1985.

d. District Election Procedure (PR-91-2)

WHEREAS KSA 82a-1021 in essence defines an "Eligible voter" as any person who is 18 years old and older if that person either 1) owns 40 or more contiguous acres within the boundaries of the district and outside the corporate limits of a municipality, provided the land has not been voluntarily excluded from district assessments, or 2) withdraws or uses at least 1 acre-foot (325,851 gallons) of groundwater per year from within the district; and

WHEREAS KSA 82a-1021 continues to say that each tract of land and each quantity of water use can only be represented by 1 eligible voter, and if the land is held by lease, contract, or estate, the deed holder is the person or corporation who is presumed to be the eligible voter unless an agreement to the contrary has been reached by the parties involved. Furthermore, if the land is held jointly or in common, the majority of interest determines which person or corporation can vote. If equal interests exist, only 1 voter can be selected; and

WHEREAS KSA 82a-1021 continues to state each eligible voter may cast only one vote except that person who is the duly authorized representative for an estate, a trust, a municipality, or a corporation who may cast an additional vote for each one of these entities that he or she represents; and

WHEREAS KSA 82a-1021(e) strictly prohibits proxy voting; and

WHEREAS some convention or policy is necessary to positively identify the authorized voters so as to insure legal voting during any district event;

BE IT THEREFORE RESOLVED THAT the Northwest Kansas Groundwater Management District No. 4 Board should adopt the following as GMD 4 election policy:

- 1) The District shall prepare from its records annually an eligible voter list, for use during all voting events, of all known eligible voters based on land ownership and permitted water use.
- 2) Unless known to or approved by the election officer, any person requesting a ballot(s) on behalf of any estate, trust, municipality, or public or private corporation will be required to furnish written proof of voter status as follows: a) for an estate, the person must be an Executor or Administrator; b) for a trust, the person must be a Trustee; c) for a Municipality, the person must be an Elected Official, or d) for a Public or private corporation, the person must be a Corporate Officer. In each case such approved voter authority shall be construed to be effective for that election only, and pre-arranging such voting status in advance of the voting event is highly recommended.
- 3) Unless known to or approved by the election officer, any person requesting a ballot for land which is leased, held under and estate for years or held under contract shall furnish written confirmation from the deed holder that a voting agreement has been reached which authorizes the tenant or contract holder to vote, specifying at least one tract of land on which the agreement has been reached. A tenant or contract holder cannot collect more than one such agreement. In each case such written authority shall be construed to be effective for that election only. Pre-arranging such voting status in advance of the voting event is highly recommended.
- 4) Any person requesting a ballot based on water use in excess of 325,851 gallons of non-permitted water use, shall furnish written confirmation of such use consisting of either; a) water utility receipt(s) showing total calendar year annual use from the previous year; b) energy and pumping records from the previous calendar year substantiating such use; or c) other documentation sufficient to support such use within the previous calendar year. In each case such written authority shall be construed to be effective for that election only. Pre-arranging such voting status in advance of the voting event is highly recommended.

BE IT FINALLY RESOLVED THAT this resolution shall become effective December 12, 1991, and remain in effect until duly amended or rescinded.

VI. District Operation

The district shall operate from a centrally located office established within its boundaries. Staff who are employed with the approval of the board of directors shall run the day-to-day operation and direct the programs heretofore listed. The district shall be run by eleven elected board of director members who shall each represent a certain constituency as has been set out in this program. They shall be responsible for setting policy and insuring the district is working toward the established goals and objectives at all times. They shall meet periodically to review district activities and formulate planning concepts. An annual meeting shall be held each year to allow input and information to flow freely between the district and its members. This is not to say that the district is closed on a day-to-day basis for any individual comments, criticisms or ideas.

The district shall operate on funds resulting from the assessment authority given in K.S.A. 82a-1030. Each year the district's tax rolls shall be re-validated to the appropriate county clerks' and new assessment charges levied. Moreover, the district shall adhere to all laws, regulations and policy statements issued which pertain to the formation and operation of the state's groundwater management districts.

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