# **NOTICE**

This scan only represents the application as filed. The information contained herein meets the requirements of K.A.R. 5-3-1 or K.A.R. 5-5-1, and has been found acceptable for filing in the office of the Chief Engineer. The application should not be considered to be a complete application as per K.A.R. 5-3-1b or K.A.R. 5-5-2a.

Submit To: CHIEF ENGINEER
Division of Water Resources
Kansas Department of Agriculture
1320 Research Park Drive
Manhattan, Kansas 66502
http://agriculture.ks.gov/dwr

DWR 1-120 (Revised 06/16/2014)

## APPLICATION FOR APPROVAL TO CHANGE THE PLACE OF USE, THE POINT OF DIVERSION OR THE USE MADE OF THE WATER UNDER AN EXISTING WATER RIGHT



Filing Fee Must Accompany the Application

(Please refer to Fee Schedule on signature page of application form.)

Paragraph Nos. 1, 2, 3, 4 & 8 must be completed. Complete all other applicable portions. A topographic map or detailed plat showing the authorized and proposed points(s) of diversion and /or place of use must accompany this application.

1.	Application is hereby made for approval of the Chief Engineer to change the  Place of Use  (Check one or more)  Point of Diversion  Use Made of Water	WATER RESOURCES RECEIVED  DEC 1 2 2016  \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
	File No. Sumner County Vested Right No. 002	
2.	Name of applicant: City of Mulvane - Attn Kent Hixson	
	Address: 211 N. 2nd Avenue	
	Other Other and The Mark and Th	
	Phone Number: ( ) E-mail address: khixson@mulvanekansas.org	
	What is your relationship to the water right; ☐ owner ☐ tenant ■ agent ☐ other? If	other, please explain.
	Name of water use correspondent: City of Mulvane  Address: 211 N. 2nd Avenue  City, State and Zip: Mulvane, KS 67110  Phone Number: ()	
3	The change(s) proposed herein are desired for the following reasons (please be specific):	See Attached Documentation
<b>.</b>	Existing City Well No. 3 has been inactive for an extended period of time, and significant rehabilitation or re-drilling would be required to bring this we	
	The City is experiencing increasing demand from normal growth and the recently built casino. Rather than re-drill three well sites at extended cost and in pro	ximity to existing contamination sources, the City would like
	to consolidate Sumner County Vested Right No. 2 and Water Right No. 02724.	
	The change(s) (was) (will be) completed by	
	(vale)	
For F.C	r Office Use Only:  D. 2 GMD Meets K.A.R. 5-5-1 (YES) NO) Use MVN Source G/S County 2  de TR # Receipt Date 12,	U By A3W Date 1412/14 114/14 Check # 43346

12/14/2016 LLM

Assisted by: \_

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List any other water rights that cover this place of use.

WATER RESOURCES
IF MORE SPACE IS NEEDED, ATTACH ADDITIONAL SHEETS AS NECESSARY

				F	ile No. Vested Su	mner Co. 2					
6.	The presently authorized po	oint(s) of diversion (is) (are)	One Well (Mulvane	e City Well No. 3)							
				(Provide description and num	ber of points)						
7.	The proposed point(s) of di	version (is) (are) One Well		(Provide description and numl	nor of points)	·					
	List all presently sutheris	and maint/a) of diversion.		(Flovide description and numi	per or points)						
	List all presently authoriz			<del></del>							
8.	Presently authorized poin		0 11 1								
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	of Section6	, Township	30	South, Range	2E	(E/W),					
	in Sumner				Southeast corner	of section.					
	Authorized Rate552 GI										
	(DWR use only: Compute				feet Wes	st)					
	☐ This point will not be c	hanged 🔳 This point w	ill be changed a	as follows:							
	Proposed point of diversi	on: (Complete only if cha	nge is requested	<u>d)</u>							
	One in theNorthwest	Quarter of the	Northeast	Quarter of the	Northeast	Quarter					
	One in the Northwest of Section 1	, Township	30	South, Range	1E	(E/W),					
	in Sumner	County, Kansas, 4035	feet North	1585 feet West of S	Southeast corner	of section.					
	Proposed Rate No Change	-									
	This point is:  Additional	Well ☐ Geo Center List	other water right	ts that will use this point	02724 Pending Cha	ange App					
				<del></del>							
9.	Presently authorized poin	t of diversion:									
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	of Section	, Township		South, Range		(E/W),					
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IF MORE SPACE IS NEEDED, ATTACH ADDITIONAL SHEET ARE NEGRESCARY
RECEIVED

will be plugged and abandoned or placed into inactive status in compliance with KDHE and DWR regulations

	lt is	nroi			purposes.						
13.		prop	posed that the use be changed to	No Changes	purposes.						
	If changing the place of use and/or use made of water, describe how the consumptive use will not be increased.  No changes to place of use or use made of water, consumptive use will not increase.										
•											
;	(Plea	se s	how any calculations here.)								
14.	lt is	requ	uested that the maximum annual quantity	of water be reduced to No	Change (acre-feet or million gallons)						
15.	lt is i	requ	uested that the maximum rate of diversion	of water be reduced to No	Change gallons per minute ( c.f.s.)						
   	The application must include either a topographic map or detailed plat. A U.S. Geological Survey Topographic Map, scale 1:24,000, is available through the Kansas Geological Survey, 1930 Constant Avenue, University of Kansas, Lawrence Kansas 66047-3726 ( <a href="www.usqs.gov">www.usqs.gov</a> ). The map should show the location of the presently authorized point(s) of diversion Distances North and West of the Southeast corner of the section must be shown. The presently authorized place of use should also be shown. Identify the center of the section, the section lines and the section corners and show the appropriate section, township, and range numbers on the map. In addition the following information must also be shown on the map.										
;	a.	lf a	change in the location of the point(s) of di	version is proposed, show:							
		1)		the information shown on	and West of the Southeast corner of the section the map agrees with the information shown in						
	:	2)	domestic wells, within 1/2 mile of the prop	osed well or wells. Identif	of existing water wells of any kind, including $y$ each well as to its use and furnish name and its within $\frac{1}{2}$ mile, please indicate so on the map						
	;	3)	If the source of supply is surface water, and $\ensuremath{\mathcal{V}}_2$ mile upstream from your property		dresses of all landowner(s) ½ mile downstrean						
ļ					use by crosshatching on the map. Please be n shown in Paragraph No. 5 of the application.						
! \	ocal vell	l soi logs	urce of supply as to which the water right	relates. This information	ir existing water rights and relates to the same may include statements, plats, geology reports show the above. Additional comments may be						
	Plea	ase	see attached documentation regarding	g same source of supply,	aquifer testing, and groundwater to surface						
_	water interaction. The City remains committed to investing in sustainable and reliable water resources to meet										
	a growing demand without impairing existing water resources. The proposed changes are not anticipated to significantly										
_	impact other local or regional water users.										
i 1 1	dent equ vill r	tify est not p	the rules and regulations for which you r should be granted. Attach documentation prejudicially and unreasonably affect the p	equest a waiver. State the showing that granting the ublic interest.	of the Kansas Water Appropriation Act, please e reason why a waiver is needed and why the request will not impair existing water rights and						
-	Please see attached documentation regarding same source of supply, aquifer testing, and groundwater to surface										
-	water interaction.										

Any use of water that is not as authorized by the water right or permit to authorize water <u>before</u> the chief engineer approves this application is a violation of the Kansas Water Appropriation Act for which criminal or civil penalties may be assessed. Such violation is a class C misdemeanor, punishable by a fine not to exceed \$500 and/or a term of confinement not to exceed one month in the county jail. K.S.A. 82a-728(b). Civil penalties shall be not less than \$100 nor more than \$1,000 per violation. In the case of a continuing violation, each day such violation continues may be deemed a separate violation. In addition to these penalties the water right may be modified or suspended. K.S.A. 82a-737, as amended.

The application must be signed by all owners of the place of use authorized under the water right and his or her spouse, if married. Please indicate if there is no spouse. If land is being purchased under contract, the seller must sign as landowner until such time as the contract is completed.

In the event that all applicants cannot appear before one notary public, they may as necessary sign separate copies of the application before any notary public conveniently available to them. All copies signed in this manner shall be considered to be valid parts of the application.

If the request is signed on behalf of any Owner by someone with legal authority to do so (for example, an agent, one who has power of attorney, or an executor, executrix, conservator), it will be necessary to attach proper documents showing such authority.

I declare that I am an owner of the currently authorized place of use a authorized to make this application on their behalf, and declare furth complete. By filing this application I authorize the chief engineer to pe as specified in sections 14 and 15 of this application.	er that the statements contained herein are true, correct, and
	6 day of D-00171625, 20 16.
My H. L Tem H	
Kent L. Hixson	(Spouse)
(Please Print)	(Please Print)
(Owner)	(Spouse)
(Please Print)	(Please Print)
(Owner)	(Spouse)
(Please Print)	(Please Print)
State of Kansas  County of <u>Ledgrivech</u> )  SS	•
I hereby certify that the foregoing application was signed in my reduced by the property of th	presence and sworn to before me this day of
My Commission Expires 3-2774	Notary Public
FEE SCHEDI	<u>JLE</u>
Each application to change the place of use, the point of diversion or the use application fee set forth in the schedule below:	made of the water under this section shall be accompanied by the
<ul> <li>(1) Application to change a point of diversion 300 feet or less</li> <li>(2) Application to change a point of diversion more than 300 feet</li> <li>(3) Application to change the place of use</li></ul>	

Make check payable to Kansas Department of Agriculture.

WATER RESOURCES RECEIVED

#### Water Well Owners within ½ Mile of Proposed Point of Diversion

- 1. Butts, Bradley C, 205 S Central AVE, Mulvane, KS 67110
- 2. Street, Medlody A, 1486 N Estfan Road, Mulvane, KS 67110
- 3. Street, Meloday A, 1478 N Estfan Road, Mulvane, KS 67110
- 4. Rooker, Ronalld Lee, 1466 N Estfan Road, Mulvane, KS 67110
- 5. McDonald, Larry, 1456 N Estfan Road, Mulvane, KS 67110
- 6. McDonald, Larry, 1456 N Estfan Road, Mulvane, KS 67110
- 7. McDonald, Jonathan & Abbie, 1438 N Estfan Road, Mulvane, KS 67110
- 8. Humbolt, Larry, 1435 N Deacon RD, Mulvane, KS 67110
- 9. McDonald, Larry, 1247 E 144rth Ave N, Mulvane, KS 67110
- 10. Moore, 1269 E 144th Ave N, Mulvane, KS 67110
- 11. Humbolt, Bonie 1273 E 144<sup>th</sup> Ave N, Mulvane, KS 67110
- 12. Parker, Ian & Meliessa, 1456 N Estfan RD, Mulvane, KS 67110
- 13. Hamm, Larry & Linda, 1299 E 119th St, Mulvane, KS 67110
- 14. BIGGS PROPERTIES LLC, 13889 SW 214TH ST, DOUGLASS, KS 67039
- 15. LENTZ MELVIN & BERNITA LIVING TRUST, 1325 WOODLAND ST, EMPORIA, KS 66801

WATER RESOURCES RECEIVED

DEC 1 2 2016

KS DEPT OF AGRICULTURE



December 2 2016

David Barfield Chief Engineer Division of Water Resources 1320 Research Park Drive Manhattan, Kansas 66502 WATER RESOURCES
RECEIVED

DEC 1 2 2016

KS DEPT OF AGRICULTURE

Re: Water Right Nos. Sumner County 002 & 02724

Dear Mr. Barfield:

The City of Mulvane's water supply is currently provided by from two water supply sources:

- Treated surface water from the City of Augusta (raw water sources include Eldorado Lake, Augusta City Lake, Santa Fe Lake)
- Groundwater from the City of Mulvane's Municipal Well Field (Total of 5 Wells)
  - o Wells 1,2, and 3 capable of chlorinated groundwater under emergency conditions
  - Wells 4 and 5 sent to new Reverse Osmosis Water Treatment Plant

The recent drought and growing municipal demand from domestic, industrial, and commercial users initiated a supplemental review of existing water resources and infrastructure by the City of Mulvane (City) to ensure that water resources and infrastructure are adequate to meet future requirements. The results of that review indicated a number of water rights and infrastructure challenges that should be addressed as first steps in securing a reliable water supply for the City.

### **Review of Treated Water Supply from Augusta**

The City entered into a contract with the City of Augusta during July of 1990 to supply treated water to the City to deliver up to 200 Million Gallons per Year (200 MGY). The treated water supply from Augusta currently makes up a majority of the supply for the City of Mulvane. Recent drought has shown the vulnerability of this water supply, and illustrated a number of concerns related to firm capacity, water quality, and condition of transmission lines:

- Drought Vulnerability
  - o Santa Fe Lake went dry during the intense drought of 2011
  - o Augusta City Lake went dry during the intense drought of 2011
  - o Eldorado lake has experienced significant storage losses throughout previous years of low precipitation and illustrated rapid declines during the recent drought
- Aging Pipeline & Infrastructure
  - O The line supplying treated water from the City of Augusta to the City of Mulvane was originally installed for water supply to support historic oil and gas field activity, significantly pre-dating the current use of treated water to the City
  - O This transmission line consists of steel materials which have already surpassed their anticipated service life, which directly limits peak line capacity and presents an increasing risk of pipeline failure
  - The cost and time to repair or replace portions or the entirety of this line would be significant



David Barfield Division of Water Resources December 2 2016 Page 2

- Water Quality Concerns
  - o Santa Fe Lake is susceptible to harmful algae blooms during warm dry years
  - o Augusta City Lake is susceptible to harmful algae blooms during warm dry years

#### Review of Mulvane Groundwater Wells & Treatment

The City of Mulvane currently has three wells on the east side of the Arkansas River (Wells 1 through 3 authorized by Water Right Nos 02724 and SU002) and two wells located on the west side (Wells 4 and 5 authorized by Water Right No. 41869) located directly west of the City.

Wells 4 and 5 supply the newly constructed Reverse Osmosis groundwater treatment plant which feeds highly treated water to the City and nearby Kansas Star Casino with up to roughly 45MGY after. A review of the existing municipal wells and raw water collection system, indicates that the wells east of the Arkansas River (Wells 1 through 3) currently offer a limited value to the City due to limited production capacity and age of the pumping equipment. The wells and pumping equipment at wells 1 through 3 would require replacement or significant rehabilitation in order to renew their value to the City. In addition, the quality of water produced from wells 1 through 3 requires the raw water to be blended without additional implemented treatment.

### **Optimization of Existing Water Resources**

Burns & McDonnell was tasked with identifying alternatives capable of increasing the City's firm water supply capacity and reducing direct risk from drought, water quality challenges, and aging infrastructure. Based on historic population growth and anticipated future demands from expansion of the Kansas Star Casino, total City demands are projected to exceed 225MGY within the next 10 years. To account for the projected increases in demand the City constructed a Reverse Osmosis Water Treatment Plant (ROWTP) supplied by City wells 4 and 5 capable of producing roughly 45MGY limited by the existing raw water supply rights authorized by permit no. 31869 (58MGY raw groundwater). With City wells 1 through 3 currently inoperable, the City has access to a total treated water supply of only 245MGY during years when surface water supplies are available.

Burns & McDonnell in collaboration with City staff began examining the value in reactivating water supply from Wells 1, 2, and 3. During the review, the estimated costs of re-drilling and restoring these wells individually became relatively high due to infrastructure upgrades that would be required to accompany new wells:

- The raw water collection lines for wells 1 through 3 are old enough that the service life has been surpassed, new collection lines would be required for re-drilling of the wells to be of value
- The well houses, pumping equipment, metering equipment, piping, and electrical controls for the existing facilities all require reconstruction and full replacement
- In order to meet desirable blending and treatment requirements, raw water from a new collection system would need to be piped west to the new ROWTP, requiring several miles of new pipeline and a costly pipeline boring underneath and crossing the Arkansas River.



David Barfield Division of Water Resources December 2 2016 Page 3

In an alternative method to re-vitalize the City's raw groundwater supply, Burns & McDonnell and the City began an approach to evaluate options to consolidate Wells 1 through 3 to a central well location to reduce additional infrastructure costs. Several sites were examined along the east side of the Arkansas River within the alluvial aquifer corridor, however each of these parcels exhibited substantial water quality or property acquisition issues. To this end the City was obligated to look outside of the traditional one-half mile well relocation rules established by the State of Kansas Division of Water Resources (DWR). Additional site investigations west of the Arkansas River found a single viable site with a willing landowner and property that met the hydrogeologic characteristics and water quality parameters compatible with development of a municipal groundwater source. The proposed well site is located within the same source of groundwater supply, the Arkansas River Alluvium, and indicates a similar aquifer response to flow conditions in the adjacent river flows.

Attached for your review are change in point of diversion applications and maps that illustrate the requested well consolidation. The City and Burns & McDonnell have already endeavored collection of significant amounts of hydrogeological information that demonstrates the viability of the proposed well site, long term sustainability, and the inert projected impacts to the local aquifer and surrounding users. The City will supply DWR with a memo containing additional information that supports and details the well site selection process which has included: water quality sampling, flood plain analysis, hydrogeologic investigations, water level monitoring, well yield projections, and drawdown scenarios. After submission of this memo, the City would like to request a meeting with DWR staff to provide additional information and to answer any questions you or DWR staff might have on the details of the change applications.

Thank you for your consideration, please feel free to contact our offices or the City directly if you have any questions.

Sincerely

Daniel Clement Hydrogeologist

Burns & McDonnell 800 E. 1st Street, Suite 400 Wichita, KS 67202

**DWC** 

**Enclosures** 

cc: Kent Hixson, City of Mulvane Brad Modlin, City of Mulvane

WATER RESOURCES RECEIVED

DEC 1 2 2016

KS DEPT OF AGRICULTURE

1320 Research Park Drive Manhattan, Kansas 66502 (785) 564-6700



900 SW Jackson, Room 456 Topeka, Kansas 66612 (785) 296-3556

Jackie McClaskey, Secretary

Governor Sam Brownback

December 13, 2016

CITY OF MULVANE KENT HIXSON 1020 S KANSAS AVE FL 2 211 N 2ND AVE MULVANE . KS



RE: File No. 2

Dear Sir or Madam:

An application for approval of the Chief Engineer to change the following condition or conditions of the file number referred to above has been received:

☐ place of use PD ☐ point of diversion ☐ use made of water

As a matter of record, the Division of Water Resources has on hand a large number of applications awaiting processing. Therefore to be fair to all concerned, and so that we can process those applications on hand in the order they were received, we intend to concentrate on the backlog of applications until the issue is resolved. You will be contacted regarding this application as soon as it has been examined.

In accordance with the provisions of the Kansas Water Appropriation Act, a portion of which is included below, the use of water prior to approval of the application is unlawful. You should not proceed and divert water as indicated by your plans in your application for a change for this file until you receive approval for this change from the Chief Engineer. Once approved, compliance with the terms, conditions and limitations of the permit is necessary. Conservation of the water resources of Kansas is required.

Section 82a-728 of the Kansas Water Appropriation Act, provides (a) except for the appropriation of water for the purpose of domestic use, . . . it shall be unlawful for any person to appropriate or threaten to appropriate water from any source without first applying for and obtaining a permit to appropriate water in accordance with the provisions of the Water Appropriation Act or for any person to violate any condition of a vested right, appropriation right or an approved application for a permit to appropriate water for beneficial use.

(b) (1) The violation of any provision of this section by any person is a class C misdemeanor...

A class C misdemeanor is punishable by a fine not to exceed \$500 and/or a term of confinement not to exceed one month in the county jail. Each day that the violation occurs constitutes a separate offense.

If you have any questions, please contact me at (785) 564-6645. If you wish to discuss a specific file, please have the file number ready so that we may help you more efficiently.

Sincerely,

Brent A Turney, L.G.

Change Applications Unit Supervisor

Water Appropriation Program

1320 Research Park Drive Manhattan, Kansas 66502 (785) 564-6700



900 SW Jackson, Room 456 Topeka, Kansas 66612 (785) 296-3556

Jackie McClaskey, Secretary

Governor Sam Brownback

BAT: dlw

pc: STAFFORD Field Office GMD







