6

Kansas Department of Agriculture
Division of Water Resources
PERMIT OF NEW APPLICATION WORKSHEET

1. File Number:	2. Status Change Date:	3. Field Office:	4. GMD:
49,078	10/4/2017	**2**	**0**

5. Status: ☒ Approved ☐ Denied by DWR/GMD ☐ Dismiss by Request/Failure to Return

6. Enclosures: ☒ Check Valve ☒ N of C Form ☒ Water Tube ☒ Driller Copy ☒ Meter

7a. Applicant(s) Person ID **62996**
New to system ☐ Add Seq# _____

MAX TJADEN
16415 W 103rd ST S
CLEARWATER KS 67026

7b. Landowner(s) Person ID **63000**
New to system ☐ Add Seq# _____

MAX TJADEN ET AL
16415 W 103rd ST S
CLEARWATER KS 67026

7c. Landowner(s) Person ID **63751**
New to system ☐ Add Seq# _____

MAURICE TJADEN TRUST
EARL TJADEN TRUSTEE
28337 WEST 85TH TERRACE
DESOTO KS 66018

7d. Misc. Person ID _____
New to system ☐ Add Seq# _____

8. WUR Correspondent Person ID _____
New to system ☐ Add Seq# _____
Overlap File (s) WUC Notarized WUC Form ☐
Agree ☐ Yes ☐ No

7a.

9. Use of Water: Changing? ☐ Yes ☒ No
☒ Groundwater ☐ Surface Water
☒ IRR ☐ REC ☐ DEW ☐ MUN
☐ STK ☐ SED ☐ DOM ☐ CON
☐ HYD DRG ☐ WTR PWR ☐ ART RECHRG
☐ IND SIC: _____ ☐ OTHER: _____

10. Completion Date: **12/31/2018** 11. Perfection Date: **12/31/2022** 12. Exp Date: _____

13. Conservation Plan Required? ☐ Yes ☒ No Date Required: _____ Date Approved: _____ Date to Comply: _____

14. Water Level Measuring Device? ☐ Yes ☒ No Date to Comply: _____ Date WLMD Installed: _____

Date Prepared: **9/14/2017** By: **DWS**
Date Entered: 10/5/2017 By: WM

DWR 1-660 (Rev. 09/19/2008)

52 F02

File No. 49,078	15. Formation Code: 100	Drainage Basin: NINNESCAH RIVER	County: SG	Special Use:	Stream:

16. Points of Diversion

17. Rate and Quantity MOD QTY

MOD DEL ENT	PDIV	Qualifier	S	T	R	ID	'N	'W		Authorized Rate gpm	Authorized Quantity af	Additional Rate gpm	Additional Quantity af	Overlap PD Files
MOD ✓ 83054		SE NE NE	28	29	2W	1	4092	305	(Geo-Ctr)	800	166	800	166	NONE
ENT 863666		SE NE NE	28	29	2W		4342	405	(Batt 1 of 4)					
ENT 863667		SE NE NE	28	29	2W		4217	355	(Batt 1 of 4)					
ENT 863668		SE NE NE	28	29	2W		3965	255	(Batt 1 of 4)					
ENT 863669		NE SE NE	28	29	2W		3842	205	(Batt 1 of 4)					
		Battery ID # 2043												

18. Storage: Rate _____ NF Quantity _____ ac/ft Additional Rate _____ NF Additional Quantity _____ ac/ft

19. Limitation: _____ af/yr at _____ gpm (_____ cfs) when combined with file number(s) _____

Limitation: _____ af/yr at _____ gpm (_____ cfs) when combined with file number(s) _____

20. Meter Required? ☒ Yes ☐ No To be installed by 12/31/2018 Date Acceptable Meter Installed _____

21. Place of Use

MOD DEL ENT	PUSE	S	T	R	ID	NE¼ NE ¼	NE¼ NW ¼	NE¼ SW ¼	NE¼ SE ¼	NW¼ NE ¼	NW¼ NW ¼	NW¼ SW ¼	NW¼ SE ¼	SW¼ NE ¼	SW¼ NW ¼	SW¼ SW ¼	SW¼ SE ¼	SE¼ NE ¼	SE¼ NW ¼	SE¼ SW ¼	SE¼ SE ¼	Total	Owner	Chg? YES	Overlap Files
√	64156	27	29	2W	2					18			30	7								55	7b.	NO	NONE
√	65941	27	29	2W	3						39	38			13							90	7b & c	YES	NONE
√	65942	28	29	2W	2	22			3													25	7b & c	YES	NONE

Comments:

KANSAS DEPARTMENT OF AGRICULTURE
Division of Water Resources

M E M O R A N D U M

TO: Files **DATE:** September 14, 2017

FROM: Doug Schemm **RE:** Application, File No. 49,078

Max Tjaden has filed the referenced new application to appropriate 166 acre-feet of groundwater from a proposed battery of 4 wells at a rate of 800 gallons per minute for irrigation use on 170 acres. The geographic center of the well battery will be located in the Northeast Quarter of Section 28, Township 29 South, Range 2 West, Sedgwick County, within the Ninnescah River Drainage Basin. The place of use is owned by the applicant and multiple other owners. Max has signed the application form stating he has access to the point of diversion. The requested quantity of water of 166 acre-feet is a bit less than the maximum allowable to irrigate the proposed acreage with 1.3 acre-feet per acre in Sedgwick County. However, it is very close to the reasonable acreage based on 50% NIR. There are no overlapping files in place of use or point of diversion. Note that the initial application had requested 221 acre-feet, but this was reduced based on safe yield calculations.

The applicant identified four domestic wells (complying with K.A.R. 5-3-4), within one-half mile, including his own. Nearby notification letters were sent out on February 24, 2017. No responses of any kind were received. The point of diversion meets minimum well spacing criteria to all existing wells per the requirements in K.A.R. 5-4-4. It is located over 5,300 feet from the nearest irrigation well, and over 900 feet from the nearest domestic well. Wizard database shows water levels in one nearby well (Section 19) have been fairly steady, however a well in Section 23 dropped several feet between 2008 and 2013 before leveling off the last couple of years.

After further review of many files in this general area of the state, it appears that the source of supply can be very limited in respect to the saturated thickness of the aquifer. Saturated thickness is typically defined as the distance from the water table to the base of the aquifer for a shallow, unconfined aquifer. The limited saturated thickness has created concerns as to what these sources of water supply can physically yield. Both regulation, K.A.R. 5-3-20 specifically (b)(2), and statute K.S.A. 82a-711 specifically (b)(2)(4), support the need for additional information, in order to better evaluate these aquifers. K.A.R. 5-3-20 (b), states, in part, the maximum reasonable annual quantity of water that may be approved for use on irrigated land shall be limited to the following: (2) the quantity of water reasonably physically available from the source of water supply based on the physical characteristics of the source of water supply and the proposed diversion works. The saturated thickness at a proposed point of diversion is a physical characteristic of the aquifer, and is likely to be a significant factor in determining what quantity of water the Division of Water Resources can approve.

Therefore, when applications are proposing to source an aquifer of less than 25 feet of saturated thickness, the applicant is required to provide additional information, such as a hydrologic analysis of the aquifer (e.g. aquifer pump test) to show what quantity of water is physically available from their source of supply. The applicant has provided a report prepared by Ground Water Associates, Inc., which includes the results of a 24 hour pump test. Readings were collected at both the pumping well and a nearby monitoring well. The test was ran at 100 gpm for 24 hours, and the pumping well drawdown (9.9 feet) was approximately half of the saturated thickness of the aquifer. Projected drawdowns if the battery of 4 wells were pumped at 600 gpm for 49 days (130 acre-feet), were 12.12 feet at 660 feet; 9.82 feet at 1,320 feet; and 7.29 feet at ½ mile. It is important to note that the wells will be located less than 250 feet from the Ninnescah River, and will certainly receive recharge from the river, which would lessen these drawdown values. The report suggests that 150 gallons per minute per well is a reasonable rate of diversion for the well battery (or 600 gpm total). Note that the landowners (Tjaden Family) own the two closest domestic wells. There is no indication that approval will impair any existing water right.

The source of water for the pending application appears to be alluvial (Quaternary system) deposits, based on the test hole log and other area well logs. In 2004 the United States Geological Survey (USGS) completed a hydrologic model of a portion of the Arkansas River and associated drainage basins (Ninnescah River), generally bounded by Ranges 2 West to 3 East and Townships 26 South to 34 South (near state line). The USGS model indicated that the aquifer in this area receives more recharge from precipitation than DWR has historically used in safe yield calculations. The data and analyses are detailed in the USGS Scientific Investigations Report 2004-5204 entitled "Characterization and Simulation of Flow in the Lower Arkansas River Alluvial Aquifer, South-Central Kansas". In order to evaluate the potential impact of this study on our safe yield calculations, DWR suspended processing applications for new appropriations of water in the model area.

DWR staff completed an evaluation of the USGS model and determined that the precipitation recharge value of 5.4 inches per year that is used in the USGS model is reasonable and appropriate. In order to reserve water in the alluvial aquifers that can contribute to base flow to area streams and for domestic use, it was determined that 75 percent of the 5.4 inches of precipitation recharge shall be available for appropriation. This is consistent with safe yield appropriation in many other basins across the state, and is the current percent available in for all applications in the Ninnescah River drainage basin. Therefore, for all pending applications within the model area, safe yield will be evaluated using the standard methodology in K.A.R. 5-3-11, which is based on the extent of the unconfined aquifer (area of consideration), a Potential Annual Recharge value of 5.4 inches, and a percent of recharge available for appropriation of 75%. Current annual recharge across the model area is approximately 3 inches.

Per the requirements in K.A.R. 5-3-11, safe yield is determined by the extent of the unconfined aquifer within a two-mile circle radius of the point of diversion, which establishes the area of consideration. For this application, the area of consideration (alluvial aquifer) provided an area of consideration of 6,749 acres, with a potential annual recharge of 5.4 inches, and 75% of recharge available for appropriation, safe yield was determined to be 2,277.79 acre-feet. Existing water rights have appropriated 2,111.9 acre-feet, providing 166 acre-feet available, and the application reduced to 166 acre-feet meets safe yield.

In accordance with K.S.A. 82a-706c, the Chief Engineer retains full authority to require any water user to install meters, gages, or other measuring devices, which devices he or she or his or her agents may read at any time. Water flowmeter requirements are further described in K.A.R. 5-1-4 through K.A.R 5-1-12. If any chemical or foreign substance is injected into the water pumped under this permit, a check valve will also need to be installed. A water level measurement tube is required because the rate of diversion exceeds 100 gpm.

In a September 13, 2017 telephone call, Jeff Lanterman, Water Commissioner, Stafford Field Office, stated that the referenced application can be approved, based on the results of the pumping test.

Based on the above discussion, that the area is open to new appropriations for groundwater, well spacing and safe yield criteria are met, the saturated thickness appears to be adequate, and approval of the application will not impair senior water rights nor prejudicially or unreasonably affect the public interest, it is recommended that the referenced new application be approved.

Douglas W. Schemm
Environmental Scientist
Topeka Field Office

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

Kansas
Department of Agriculture
agriculture.ks.gov

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

Jackie McClaskey, Secretary

Governor Sam Brownback

October 6, 2017

MAX TJADEN
16415 W 103RD ST S
CLEARWATER KS 67026

FILE COPY

Re: Appropriation of Water, File No. 49,078

Dear Mr. Tjaden:

There is enclosed a permit to appropriate water authorizing you to proceed with construction of the proposed diversion works (except those dams and stream obstructions regulated by K.S.A. 82a-301 through 305a), to divert such unappropriated water as may be available from the source and at the location specified in the permit, and to use it for the purpose and at the location described in the permit.

Your attention is directed to the enclosures and to the terms, conditions, and limitations specified in these approval documents. A water meter is required on the proposed diversion works and you must install it prior to water being put to beneficial use in order for you to maintain accurate records of water use. The meter should be used to provide the information required on the annual water use report.

Failure to notify the Chief Engineer of the Division of Water Resources of the completion of the diversion works within the time allowed, or within any authorized extension of time thereof, will result in the dismissal of this permit. Enclosed is a form which may be used to notify the Chief Engineer that the proposed diversion works have been completed.

All requests for extensions of time to complete diversion works, or to perfect appropriations, must be submitted to the Chief Engineer before the expiration of time originally set forth in the permit to complete diversion works or to perfect an appropriation. If for any reason, you require an extension of time, you must request it before the expiration of time set forth in this permit. Failure to comply with this regulation will result in the dismissal of your permit or your water right. Any request for an extension of time shall be accompanied by the required statutory fee, which is currently $100.00. There is also enclosed an information sheet setting forth the procedure to obtain a Certificate of Appropriation which will establish the extent of your water right. If you have any questions, please contact our office. If you wish to discuss this specific file, please have the file number ready so that we may help you more efficiently.

Sincerely,

Kristen A. Baum
New Application Unit Supervisor
Water Appropriation Program

KAB:dws
Enclosures
pc: Stafford Field Office
Max Tjaden et al
Maurice Tjaden Trust

THE STATE OF KANSAS

KANSAS DEPARTMENT OF AGRICULTURE
Jackie McClaskey, Secretary of Agriculture

DIVISION OF WATER RESOURCES
David W. Barfield, Chief Engineer

APPROVAL OF APPLICATION
and
PERMIT TO PROCEED

(This Is Not a Certificate of Appropriation)

This is to certify that I have examined Application, **File No. 49,078** of the applicant

MAX TJADEN
16415 W 103 ST S
CLEARWATER KS 67026

for a permit to appropriate water for beneficial use, together with the maps, plans and other submitted data, and that the application is hereby approved and the applicant is hereby authorized, subject to vested rights and prior appropriations, to proceed with the construction of the proposed diversion works (except those dams and stream obstructions regulated by K.S.A. 82a-301 through 305a, as amended), and to proceed with all steps necessary for the application of the water to the approved and proposed beneficial use and otherwise perfect the proposed appropriation subject to the following terms, conditions and limitations:

1. That the priority date assigned to such application is **May 12, 2014**.

2. That the water sought to be appropriated shall be used for irrigation use on land described in the application, as follows:

			NE¼				NW¼				SW¼				SE¼				TOTAL
Sec.	Twp.	Range	NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	
27	29S	2W					18	39	38	30	7	13							145
28	29S	2W	22			3													25

3. That the authorized source from which the appropriation shall be made is groundwater, to be withdrawn by means of a battery of four (4) wells with a geographic center located in the Southeast Quarter of the Northeast Quarter of the Northeast Quarter (SE¼ NE¼ NE¼) of Section 28, more particularly described as being near a point 4,092 feet North and 305 feet West of the Southeast corner of said section, in Township 29 South, Range 2 West, Sedgwick County, Kansas, located substantially as shown on the topographic map accompanying the application.

4. That the appropriation sought shall be limited to a maximum diversion rate not in excess of **800 gallons per minute (1.78 c.f.s.)** and to a quantity not to exceed **166 acre-feet** of water for any calendar year.

5. That installation of works for diversion of water shall be completed on or before **December 31, 2018** or within any authorized extension thereof. The applicant shall notify the Chief Engineer and pay the statutorily required field inspection fee of $400.00 when construction of the works has been completed. Failure to timely submit the notice and the fee will result in revocation of the permit. Any request for an extension of time shall be submitted prior to the expiration of the deadline and shall be accompanied by the required statutory fee of $100.00.

6. That the proposed appropriation shall be perfected by the actual application of water to the proposed beneficial use on or before **December 31, 2022** or any authorized extension thereof. Any request for an extension of time shall be submitted prior to the expiration of the deadline and shall be accompanied by the required statutory fee of $100.00.

7. That the applicant shall not be deemed to have acquired a water appropriation for a quantity in excess of the amount approved herein nor in excess of the amount found by the Chief Engineer to have been actually used for the approved purpose during one calendar year subsequent to approval of the application and within the time specified for perfection or any authorized extension thereof.

8. That the use of water herein authorized shall not be made so as to impair any use under existing water rights nor prejudicially and unreasonably affect the public interest.

9. That the right of the appropriator shall relate to a specific quantity of water and such right must allow for a reasonable raising or lowering of the static water level and for the reasonable increase or decrease of the streamflow at the appropriator's point of diversion.

10. That this permit does not constitute authority under K.S.A. 82a-301 through 305a to construct any dam or other obstruction; nor does it grant any right-of-way, or authorize entry upon or injury to, public or private property.

11. That all diversion works constructed under the authority of this permit into which any type of chemical or other foreign substance will be injected into the water pumped from the diversion works shall be equipped with an in-line, automatic quick-closing, check valve capable of preventing pollution of the source of the water supply. The type of valve installed shall meet specifications adopted by the Chief Engineer and shall be maintained in an operating condition satisfactory to the Chief Engineer.

12. That all wells with a diversion rate of 100 gallons per minute or more drilled under the authority of this permit shall have a tube or other device installed in a manner acceptable to, and in accordance with specifications adopted by, the Chief Engineer. This tube or device shall be suitable for making water level measurements and shall be maintained in a condition satisfactory to the Chief Engineer.

13. That an acceptable water flow meter shall be installed and maintained on the diversion works authorized by this permit in accordance with the Kansas Administrative Regulations 5-1-4 through 5-1-12 adopted by the Chief Engineer. This water flow meter shall be used to provide an accurate quantity of water diverted as required for the annual water use report (including the meter reading at the beginning and end of the report year).

14. That the applicant shall maintain accurate and complete records from which the quantity of water diverted during each calendar year may be readily determined and the applicant shall file an annual water use report with the Chief Engineer by March 1 following the end of each calendar year. Failure to file the annual water use report by the due date shall cause the applicant to be subject to a civil penalty.

15. That no water user shall engage in nor allow the waste of any water diverted under the authority of this permit.

16. That failure without cause to comply with provisions of the permit and its terms, conditions and limitations will result in the forfeiture of the priority date, revocation of the permit and dismissal of the application.

17. That the right to appropriate water under authority of this permit is subject to any minimum desirable streamflow requirements identified and established pursuant to K.S.A. 82a-703c for the source of supply to which this water right applies.

18. That this permit is limited such that all wells shall be located within a three hundred (300) foot radius circle, in the same local source of supply, and shall supply water to a common distribution system.

RIGHT TO A HEARING AND TO ADMINISTRATIVE REVIEW

If you are aggrieved by this Order, then pursuant to K.S.A. 82a-1901, you may:

1) request an evidentiary hearing before the Chief Engineer, or
2) request administrative review by the Secretary of Agriculture.

Failure to request an evidentiary hearing before the Chief Engineer does not preclude your right to administrative review by the Secretary.

To obtain an evidentiary hearing before the Chief Engineer, a written request for hearing must be filed within 15 days after service of this Order as provided in K.S.A. 77-531 **(i.e., within a total of 18 days after this Order was mailed to you)**, with: Kansas Department of Agriculture, Attn: Legal Section, 1320 Research Park Drive, Manhattan, Kansas 66502, FAX (785) 564-6777.

If you do not file a request for an evidentiary hearing before the Chief Engineer, you may petition for administrative review of the Order by the Secretary of Agriculture. A petition for review shall be in writing and state the basis for requesting administrative review. The request for hearing may be denied if the request fails to clearly establish factual or legal issues for review. See K.S.A. 77-527. The petition must be filed within 30 days after service of this Order as provided in K.S.A. 77-531 **(i.e., within a total of 33 days after this Order was mailed to you)**, and be filed with: Secretary of Agriculture, Attn: Legal Division, Kansas Department of Agriculture, 1320 Research Park Drive, Manhattan, Kansas 66502, FAX (785) 564-6777.

If neither a request for an evidentiary hearing nor a petition for administrative review is filed as set forth above, then this Order shall be effective and become a final agency action as defined in K.S.A. 77-607(b). Failure to timely request either an evidentiary hearing or administrative review may preclude further judicial review under the Kansas Judicial Review Act.

Ordered this 4th day of October, 2017, in Topeka, Shawnee County, Kansas.

Lane P. Letourneau

Lane P. Letourneau, P.G.
Program Manager
Water Appropriation Program
Division of Water Resources
Kansas Department of Agriculture

State of Kansas)
) SS
County of Riley)

The foregoing instrument was acknowledged before me this 4th day of October, 2017, by Lane P. Letourneau, P.G., Program Manager, Division of Water Resources, Kansas Department of Agriculture.

STATE OF KANSAS NOTARY PUBLIC
DANIELLE WILSON
My Appointment Expires
August 23, 2020

Danielle Wilson

Notary Public

CERTIFICATE OF SERVICE

On this 10th day of October, 2017, I hereby certify that the foregoing Approval of Application and Permit to Proceed, File No. 49,078, dated October 4, 2017 was mailed postage prepaid, first class, US mail to the following:

MAX TJADEN
16415 W 103RD ST S
CLEARWATER KS 67026

With photocopies to:

MAX TJADEN ET AL
16415 W 103RD ST S
CLEARWATER KS 67026

MAURICE TJADEN TRUST
EARL TJADEN TRUSTEE
28337 WEST 85TH TERRACE
DESOTO KS 66018

Stafford Field Office

Danielle Wilson

Division of Water Resources

APPLICATION COMPLETE
1/14/2017
Reviewer DWS

THE STATE OF KANSAS

KANSAS DEPARTMENT OF AGRICULTURE
Dale A. Rodman, Secretary of Agriculture

DIVISION OF WATER RESOURCES
David W. Barfield, Chief Engineer

File Number 49078
This item to be completed by the Division of Water Resources.

WATER RESOURCES
RECEIVED
MAY 12 2014
1:22
KS DEPT OF AGRICULTURE

APPLICATION FOR PERMIT TO APPROPRIATE WATER FOR BENEFICIAL USE

Filing Fee Must Accompany the Application
(Please refer to Fee Schedule attached to this application form.)

To the Chief Engineer of the Division of Water Resources, Kansas Department of Agriculture, 109 SW 9th Street, Second Floor, Topeka, KS 66612-1283:

1. Name of Applicant (Please Print): Max Tjaden

   Address: 16415 West 103 Street South

   City: Clearwater State KS Zip Code 67026

   Telephone Number: (620) 584-2433 620-545-5533 (cell)

2. The source of water is: ☐ surface water in _____ (stream)

   OR ☒ groundwater in Ninnescah River (drainage basin)

   Certain streams in Kansas have minimum target flows established by law or may be subject to administration when water is released from storage for use by water assurance district members. If your application is subject to these regulations on the date we receive your application, you will be sent the appropriate form to complete and return to the Division of Water Resources.

3. The maximum quantity of water desired is ~~221~~ 166 * Per safe yield evaluation. DWS/DWR acre-feet OR _____ gallons per calendar year, 2/23/17 to be diverted at a maximum rate of 800 gallons per minute OR _____ cubic feet per second.

   Once your application has been assigned a priority, the requested maximum rate of diversion and maximum requested quantity of water under that priority number can **NOT** be increased. Please be certain your requested maximum rate of diversion and maximum quantity of water are appropriate and reasonable for your proposed project and are in agreement with the Division of Water Resources' requirements.

4. The water is intended to be appropriated for **(Check use intended):**

   (a) ☐ Artificial Recharge (b) ☒ Irrigation (c) ☐ Recreational (d) ☐ Water Power
   (e) ☐ Industrial (f) ☐ Municipal (g) ☐ Stockwatering (h) ☐ Sediment Control
   (i) ☐ Domestic (j) ☐ Dewatering (k) ☐ Hydraulic Dredging (l) ☐ Fire Protection
   (m) ☐ Thermal Exchange (n) ☐ Contamination Remediation

YOU **MUST** COMPLETE AND ATTACH ADDITIONAL DIVISION OF WATER RESOURCES FORM(S) PROVIDING INFORMATION TO SUBSTANTIATE YOUR REQUEST FOR THE AMOUNT OF WATER FOR THE INTENDED USE REFERENCED ABOVE.

For Office Use Only:
F.O. 2 GMD 6 Meets K.A.R. 5-3-1 (YES) / NO) Use IRR Source G/S County SG By AGL Date 5-12-14
Code REJ Fee $ 50 TR # 1907989 Receipt Date 5-12-14 Check # 6541

DWR 1-100 (Revised 02/04/2013)

*Discussed quantity Reduction with applicant on 2/23/2017. He agreed. DWS/DWR

SCANNED

SCANNED 5-13-14 DSS

* Per Discussion with applicant on 9/14/17
Lined up wells North to South. DWR/DWR

File No. 49,078

4 of 4 NESENE 3842'N & 205'W 28-29S-2W 9/14/17 SG Co.

5. The location of the proposed wells, pump sites or other works for diversion of water is:

Note: For the application to be accepted, the point of diversion location must be described to at least a 10 acre tract, unless you specifically request a 60 day period of time in which to locate the site within a specifically described, minimal legal quarter section of land.

Geo-Center (A)* One in the SE quarter of the NE quarter of the ~~NW~~ NE quarter of Section 28, more particularly described as being near a point 4092 feet North and ~~210~~ 305 feet West of the Southeast corner of said section, in Township 29 South, Range 2 West, Sedgwick County, Kansas.

1 of 4 (B) One in the SE quarter of the NE quarter of the NE quarter of Section 28, more particularly described as being near a point 4342 feet North and 405 feet West of the Southeast corner of said section, in Township 29 South, Range 2 East/West (circle one), SG County, Kansas.

2 of 4 (C) One in the SE quarter of the NE quarter of the NE quarter of Section 28, more particularly described as being near a point 4217 feet North and 355 feet West of the Southeast corner of said section, in Township 29 South, Range 2 East/West (circle one), SG County, Kansas.

3 of 4 (D) One in the SE quarter of the NE quarter of the NE quarter of Section 28, more particularly described as being near a point 3965 feet North and 255 feet West of the Southeast corner of said section, in Township 29 South, Range 2 East/West (circle one), SG County, Kansas.

If the source of supply is groundwater, a separate application shall be filed for each proposed well or battery of wells, except that a single application may include up to four wells within a circle with a quarter (¼) mile radius in the same local source of supply which do not exceed a maximum diversion rate of 20 gallons per minute per well.

A battery of wells is defined as two or more wells connected to a common pump by a manifold; or not more than four wells in the same local source of supply within a 300 foot radius circle which are being operated by pumps not to exceed a total maximum diversion rate of 800 gallons per minute and which supply water to a common distribution system.

6. The owner of the point of diversion, if other than the applicant is (please print):
Max Tjaden (part-owner) & See Irrigation Supplemental Sheet for all owners
(name, address and telephone number)

(name, address and telephone number)

You must provide evidence of legal access to, or control of, the point of diversion from the landowner or the landowner's authorized representative. Provide a copy of a recorded deed, lease, easement or other document with this application. In lieu thereof, you may sign the following sworn statement:

I have legal access to, or control of, the point of diversion described in this application from the landowner or the landowner's authorized representative. I declare under penalty of perjury that the foregoing is true and correct.
Executed on May 9, 2014. Matt H. Tjaden
Applicant's Signature

The applicant must provide the required information or signature irrespective of whether they are the landowner. Failure to complete this portion of the application will cause it to be unacceptable for filing and the application will be returned to the applicant.

7. The proposed project for diversion of water will consist of Battery of 4 Wells and Pivot System
(number of wells, pumps or dams, etc.)
and completed (by) ASAP
(Month/Day/Year - each was or will be completed)

8. The first actual application of water for the proposed beneficial use was or is estimated to be ASAP
(Mo/Day/Year)

* 5-23-14 KAH/DWR per supplied driller's log

WATER RESOURCES RECEIVED
MAY 12 2014
KS DEPT OF AGRICULTURE

SCANNED

File No. 49,678

9. Will pesticide, fertilizer, or other foreign substance be injected into the water pumped from the diversion works?

   ☒ Yes ☐ No If "yes", a check valve shall be required.

   All chemigation safety requirements must be met including a chemigation permit and reporting requirements.

10. If you are planning to impound water, please contact the Division of Water Resources for assistance, prior to submitting the application. Please attach a reservoir area capacity table and inform us of the total acres of surface drainage area above the reservoir.

    Have you also made an application for a permit for construction of this dam and reservoir with the Division of Water Resources? ☐ Yes ☐ No

    - If yes, show the Water Structures permit number here _____
    - If no, explain here why a Water Structures permit is not required _____

11. The application must be supplemented by a U.S.G.S. topographic map, aerial photograph or a detailed plat showing the following information. On the topographic map, aerial photograph, or plat, identify the center of the section, the section lines or the section corners and show the appropriate section, township and range numbers. Also, please show the following information:

    (a) The location of the proposed point(s) of diversion (wells, stream-bank installations, dams, or other diversion works) should be plotted as described in Paragraph No. 5 of the application, showing the North-South distance and the East-West distance from a section line or southeast corner of section.

    (b) If the application is for groundwater, please show the location of any existing water wells of any kind within ½ mile of the proposed well or wells. Identify each existing well as to its use and furnish the name and mailing address of the property owner or owners. If there are no wells within ½ mile, please advise us.

    (c) If the application is for surface water, the names and addresses of the landowner(s) ½ mile downstream and ½ mile upstream from your property lines must be shown.

    (d) The location of the proposed place of use should be shown by crosshatching on the topographic map, aerial photograph or plat.

    (e) Show the location of the pipelines, canals, reservoirs or other facilities for conveying water from the point of diversion to the place of use.

    A 7.5 minute U.S.G.S. topographic map may be obtained by providing the section, township and range numbers to: Kansas Geological Survey, 1930 Constant, Campus West, University of Kansas, Lawrence, Kansas 66047.

12. List any application, appropriation of water, water right, or vested right file number that covers the same diversion points or any of the same place of use described in this application. Also list any other recent modifications made to existing permits or water rights in conjunction with the filing of this application.

    NONE

File No. 49,078

13. Furnish the following well information if the proposed appropriation is for the use of groundwater. If the well has not been completed, give information obtained from test holes, if available.

Information below is from: ☒ Test holes ☐ Well as completed ☒ Drillers log attached

Well location as shown in paragraph No.	(A)	(B)	(C)	(D)
Date Drilled				
Total depth of well				
Depth to water bearing formation				
Depth to static water level				
Depth to bottom of pump intake pipe				

14. The relationship of the applicant to the proposed place where the water will be used is that of Part Owner (owner, tenant, agent or otherwise).

15. The owner(s) of the property where the water is used, if other than the applicant, is (please print):

See paragraph 6 for all owners
(name, address and telephone number)

(name, address and telephone number)

16. The undersigned states that the information set forth above is true to the best of his/her knowledge and that this application is submitted in good faith.

Dated at CLEARWATER, Kansas, this 9 day of MAY (month), 2014 (year).

(Applicant Signature) — APPLICANT(S) SOCIAL SECURITY IDENTIFICATION NUMBER(S)

By (Agent or Officer Signature) — and/or APPLICANT(S) TAXPAYER I.D. NO.(S)

(Agent or Officer - Please Print)

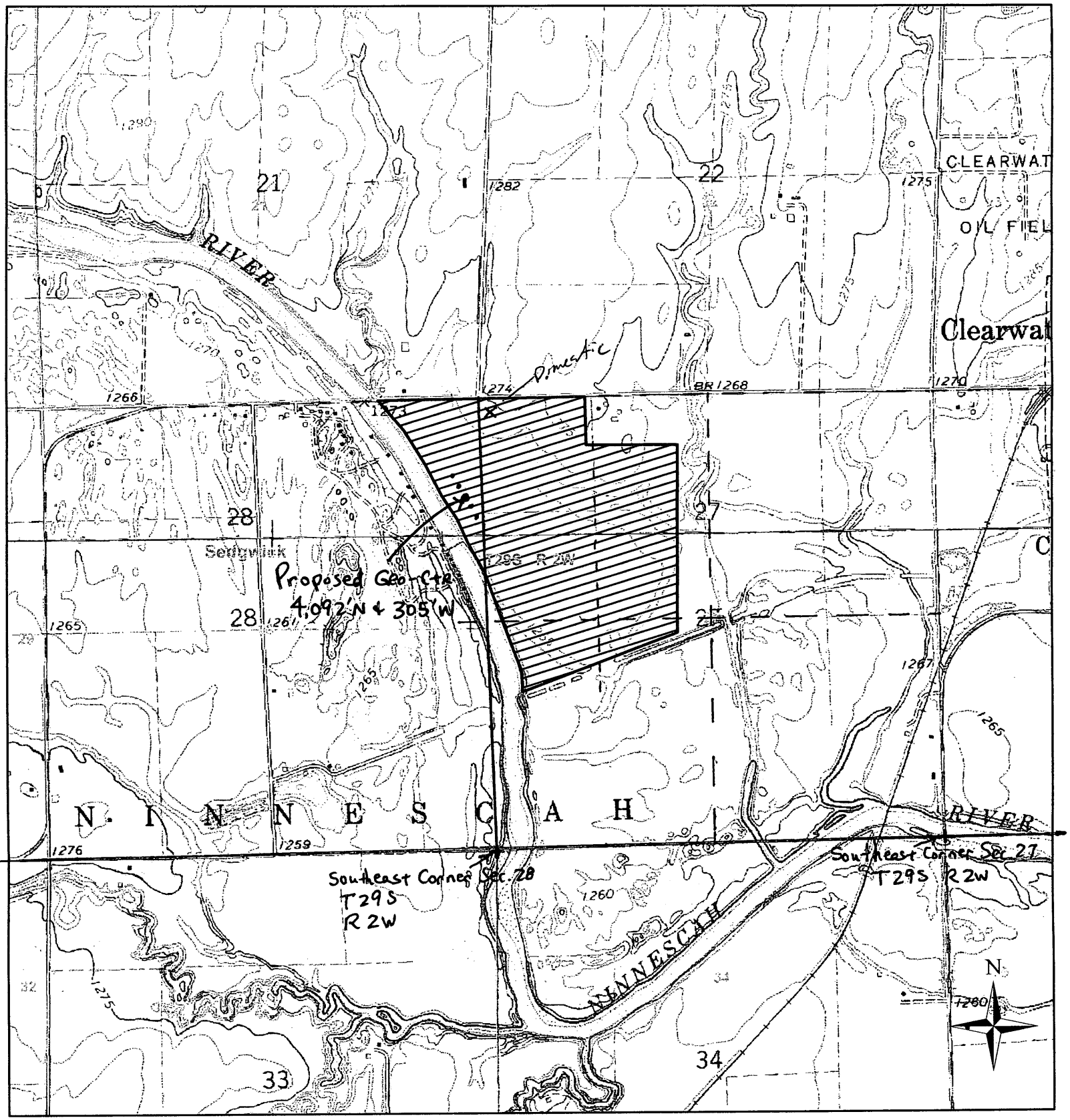
Assisted by Katie Hermes HQ/ESII (office/title) Date: 4/29/2014

WATER RESOURCES
RECEIVED
MAY 12 2014
KS DEPT OF AGRICULTURE

SCANNED

New Application

49,078



I declare that all water wells or diversion sites using the same source of supply and within 1/2 mile of the proposed point of diversion have been plotted on the application map.

WATER RESOURCES
RECEIVED
MAY 12 2014
KS DEPT OF AGRICULTURE

SCANNED
Date: 4/29/2014
KAH/DWR
1:18,000

Signature

May 9, 2014
Date

IRRIGATION USE
SUPPLEMENTAL SHEET

File No. 49,078

Name of Applicant (Please Print): Max Tjaden

1. Please supply the name and address of each landowner, the legal description of the lands to be irrigated, and designate the actual number of acres to be irrigated in each forty acre tract or fractional portion thereof:

Landowner of Record NAME: Max Tjaden & Van Tjaden & Jo Johnson & Jeri Blake (undivided interest)

ADDRESS: C/O - 16415 West 103 Street South - Clearwater, Kansas 67026

S	T	R	NE¼				NW¼				SW¼				SE¼				TOTAL
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
27	29	2W					18			30	7								55

Landowner of Record NAME: Maurice E. Tjaden Trust (Earl Tjaden Trustee) & Owners shown above

ADDRESS: 28337 West 85th Terrace - Desoto, Kansas 66018 (all undivided interest)

S	T	R	NE¼				NW¼				SW¼				SE¼				TOTAL
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
27	29	2W						39	38			13							90
28	29	2W	22			3													25

Total = 170

Landowner of Record NAME: _____

ADDRESS: _____

S	T	R	NE¼				NW¼				SW¼				SE¼				TOTAL
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	

RECEIVED
SEP 08 2017
Topeka Field Office
DIVISION OF WATER RESOURCES

Ground Water Associates, Inc.

109 W. 1st AVENUE, P.O. BOX 792 • GODDARD, KS 67052 • 316-550-6177

Aug 17, 2017

Doug Schemm
Division of Water Resources
Bldg 282, Forbes Field
P.O. Box 19323
Topeka, Kansas 66610-0323

Subject: Max Tjaden File No. 49,078

Dear Doug,

This letter is written to transmit information gathered on the twenty-four hour pumping test conducted on a 6" test well in the NE ¼ of Section 28, T29S, R2W, Sedgwick County, Kansas owned by Max Tjaden. Readings were collected on the 6" pumping well and a 2" observation well located 21.49 feet southwest.

A topographic map with two formation test holes, one 2" cased monitor well, one 4" cased test well and one 6"cased test well located is included with this report. Locations were established with hand held GPS. The Darling Drilling Company 4" test well and the Peterson McNett Drilling formation holes were located using NAD 83 datum which does not match the 1927 North American datum of the topographic map. This introduces a slight east-west location error to the two formation holes and the 4" test well locations. Ground Water Associates was not aware of the 4" test well during our 24 hour test. The well was located in a corn field.

The mapping datum used with the Ground Water Associates Garmin hand held is NAD1927 datum which matches the topographic map. Pumping test readings were collected on the 2" monitor well and the 6" test well, both of these sites are correctly located on our map.

The elevations were taken from the Clearwater and Millerton Quadrangle 7.5 minute topographic map.

	6" Test WELL	2" Monitor Well
Elevation	1265'	1265'
Well Screen	20'- 38'	?
Static Water Level @ GL (Elevation)	15.98' (1249')	15.75' (1249')
Sat. Thickness	19.02'	19.25'
Shale Elevation	1230'	1230'

On July 20 and 21, 2017, Ground Water Associates conducted a twenty-four hour pumping test and recovery; using the 6" test well as the pumping well and the 2" monitor well as the observation well to establish transmissivity, storativity and hydraulic conductivity of this aquifer. Max Tjaden assisted with reading drawdown during the test. The pumping 6" test well was pumped at 100 gallons per minute for 1440 minutes then recovery readings were taken.

This 6 inch test well would have pumped at greater than 100 gpm for the twenty-four hours, but our unfamiliarity of the aquifer and need to produce constant pumping rate data for the aquifer characteristics compelled us to stay at this pumping rate. The drawdown at the 6 inch pumping well at twenty-four hours was 9.85 feet or a 51.78% drawdown (9.85' drawdown divided by 19.02' of saturated thickness).

Geology

The northeast quarter of Section 28, T29S R2W is located along the Ninnescah River in southern Sedgwick County. See the attached Geohydrology map from Bulletin 176, Geohydrology of Sedgwick County, Kansas. Section 28 is in the lower left side of the included copy of the geohydrology map and is highlighted in red.

Bulletin 176 shows the NE quarter of Section 28 to be located in the Upper Pleistocene Wisconsinan to recent alluvium and terrace deposits. These are fine to coarse sand and fine to coarse arkosic gravel with clayey silt in the upper part. These terrace deposits yield large quantities of water. Bulletin 176 states "Locally along the Ninnescah River in southern Sedgwick County sediments correlated with Illinosan and Sangamonian deposition underlie terrace remnants well above the present river flood plain. These terrace remnants are particularly well preserved near the town of Clearwater."[1]

The five included drill logs (located on our topographic map) show tan clay on top, fine to medium sand to 34 and 35 feet on the Peterson McNett logs and to 30 feet on the Darling 4" test well. Static water level at the 6" test well was 15.98 feet on July 20, 2017 the day of our test pumping, which matches the elevation of the water flowing in the Ninnescah River, just west of the well site.

Findings

To determine the aquifer characteristics we used Aquifer Test Pro 4.0, Waterloo Hydrogeologic. This aquifer is unconfined and the best curve matches were made using Theis with Jacob Correction for the drawdown analysis and Agarwal Solution with Jacob Correction for the recovery analysis. We averaged the drawdown and recovery for both wells in the table below (Aquifer Test 4.0 charts included with report).

---

[1] Charles W. Lane & Don E. Miller, Geohydrology of Sedgwick County, Kansas, University of Kansas Publication, State Geological Survey of Kansas, Bulletin 176, 1965) pg 20

	6" Test Well	2" Monitor Well
Transmissivity (g/d/ft)	33,050	38,000
Storativity	0.0001873	0.0013695
Specific Capacity (gpm/ft of drawdown)	10.15	-

Getting accurate storativity from the pumping well is difficult, so we used the 2 inch monitor well aquifer characteristics to project the drawdown from the center point of a battery of four wells, pumping each at 150 gpm for 49 days, 42,336,00 gallons (130 acre feet). This projection (see attached Aquifer Test 4.0 projection) does not take in to account any recharge from rain or the recharge from the adjacent Ninnescah River.

Drawdown at 660 feet:	12.12′
" " " 1320 feet:	9.82′
" " " 2640 feet:	7.29′

Summary and Conclusion

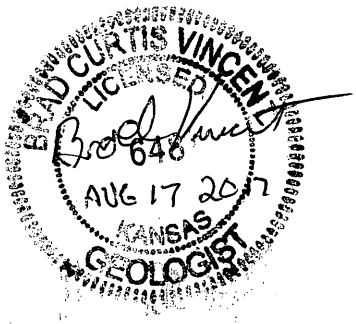
The proposed battery wells' location adjacent to the Ninnescah River provides a large amount of continuous recharge to the terrace deposits along the river during dry seasons. Because of the river, the projected drawdown will not be nearly as great as the Aquifer Test 4.0 indicates. During wet seasons, the direction of water flow will be toward the river and static water level will mirror the water level in the river or be slightly higher. However, fine to medium sand lowers the storativity and transmissivity of the aquifer, which will restrict the maximum gallons per minute this aquifer will produce. Larger drilled holes, larger and more efficient screens, and properly developed (bailed) production wells, the specific capacity of 10.15 gallon per foot of drawdown will increase, allowing for 150 gallons per minute battery wells.

If any additional information is needed or additional questions about this report, please contact me at 316-550-6177.

Best regards,

Brad C. Vincent, P.G.
Ground Water Associates

Pc: Max Tjaden
16415 W. 103rd St. S.
Clearwater, Kansas 67026



Ground Water Associates
109 W. 1st, P.O. Box 792
Goddard, KS 67052

Pumping Test - Water Level Data

Project: Max Tjaden (WR49078)

Number:

Client: Max Tjaden

Location: NE 1/4 Sec 28 T29S R2W	Pumping Test: 24 Hour Pumping Test	Pumping well: 6" Test Well
Test conducted by: Ground Water Associates	Test date: 7/20/2017	Discharge: variable, average rate 100 [U.S. gal/min]
Observation well: 6" Test Well	Static water level [ft]: 15.98	Radial distance to PW [ft]: -

	Time [min]	Water Level [ft]	Drawdown [ft]
1	1	24.38	8.40
2	2	24.83	8.85
3	3	24.96	8.98
4	5	25.06	9.08
5	7	25.11	9.13
6	9	25.13	9.15
7	11	25.15	9.17
8	15	25.19	9.21
9	20	25.19	9.21
10	25	25.20	9.22
11	30	25.21	9.23
12	35	25.23	9.25
13	40	25.24	9.26
14	45	25.24	9.26
15	50	25.24	9.26
16	60	25.26	9.28
17	180	25.38	9.40
18	240	25.42	9.44
19	300	25.47	9.49
20	360	25.50	9.52
21	420	25.54	9.56
22	480	25.60	9.62
23	540	25.64	9.66
24	600	25.66	9.68
25	660	25.69	9.71
26	720	25.71	9.73
27	840	25.75	9.77
28	900	25.78	9.80
29	960	25.79	9.81
30	1020	25.80	9.82
31	1080	25.82	9.84
32	1140	25.82	9.84
33	1200	25.82	9.84
34	1260	25.82	9.84
35	1320	25.83	9.85
36	1380	25.83	9.85
37	1440	25.83	9.85
38	1441	17.21	1.23
39	1442	17.03	1.05
40	1443	16.93	0.95
41	1444	16.86	0.88
42	1445	16.81	0.83
43	1447	16.75	0.77
44	1449	16.69	0.71
45	1451	16.66	0.68
46	1455	16.62	0.64

Recovery ↓

Ground Water Associates
109 W. 1st, P.O. Box 792
Goddard, KS 67052

Pumping Test - Water Level Data

Project: Max Tjaden (WR49078)

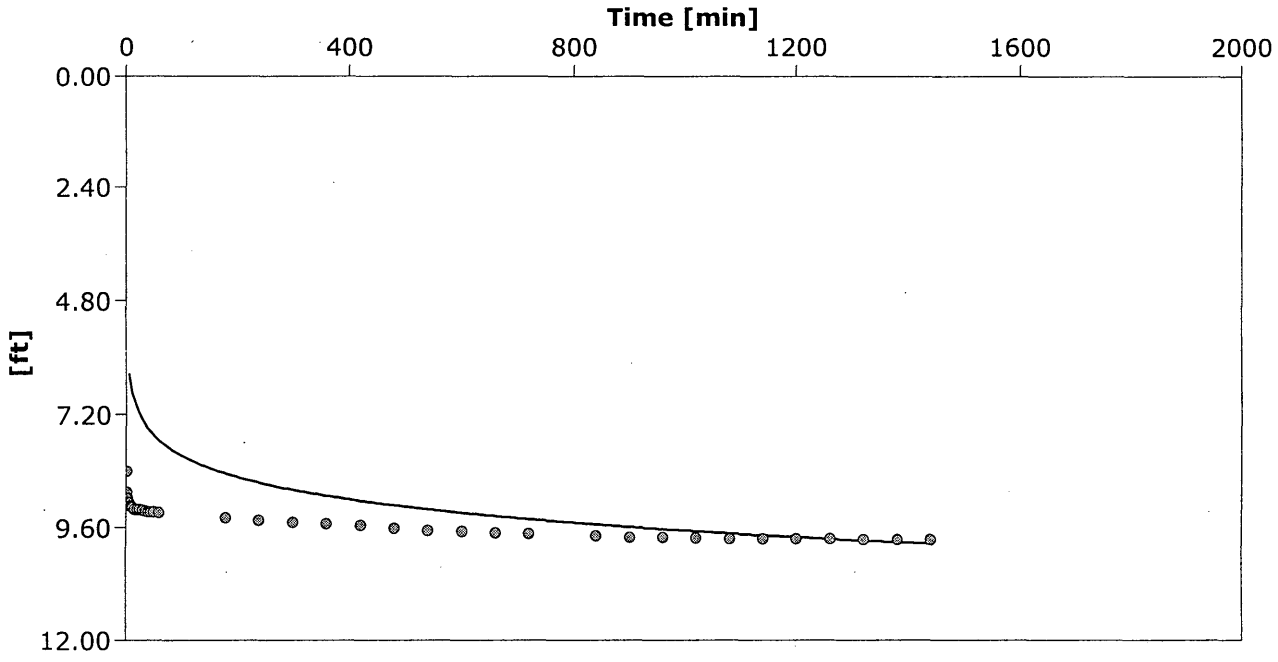
Number:

Client: Max Tjaden

	Time [min]	Water Level [ft]	Drawdown [ft]
47	1460	16.57	0.59
48	1465	16.54	0.56
49	1470	16.51	0.53
50	1475	16.49	0.51
51	1480	16.46	0.48
52	1485	16.45	0.47
53	1490	16.46	0.48
54	1500	16.40	0.42
55	1510	16.38	0.40
56	1520	16.36	0.38

Ground Water Associates 109 W. 1st, P.O. Box 792 Goddard, KS 67052	Pumping Test Analysis Report
	Project: Max Tjaden (WR49078)
	Number:
	Client: Max Tjaden

Location: NE 1/4 Sec 28 T29S R2W	Pumping Test: 24 Hour Pumping Test	Pumping well: 6" Test Well
Test conducted by: Ground Water Associates		Test date: 7/20/2017
Analysis performed by: Brad Vincent	Drawdown	Date: 8/1/2017
Aquifer Thickness: 19.02 ft	Discharge: variable, average rate 100 [U.S. gal/min]	

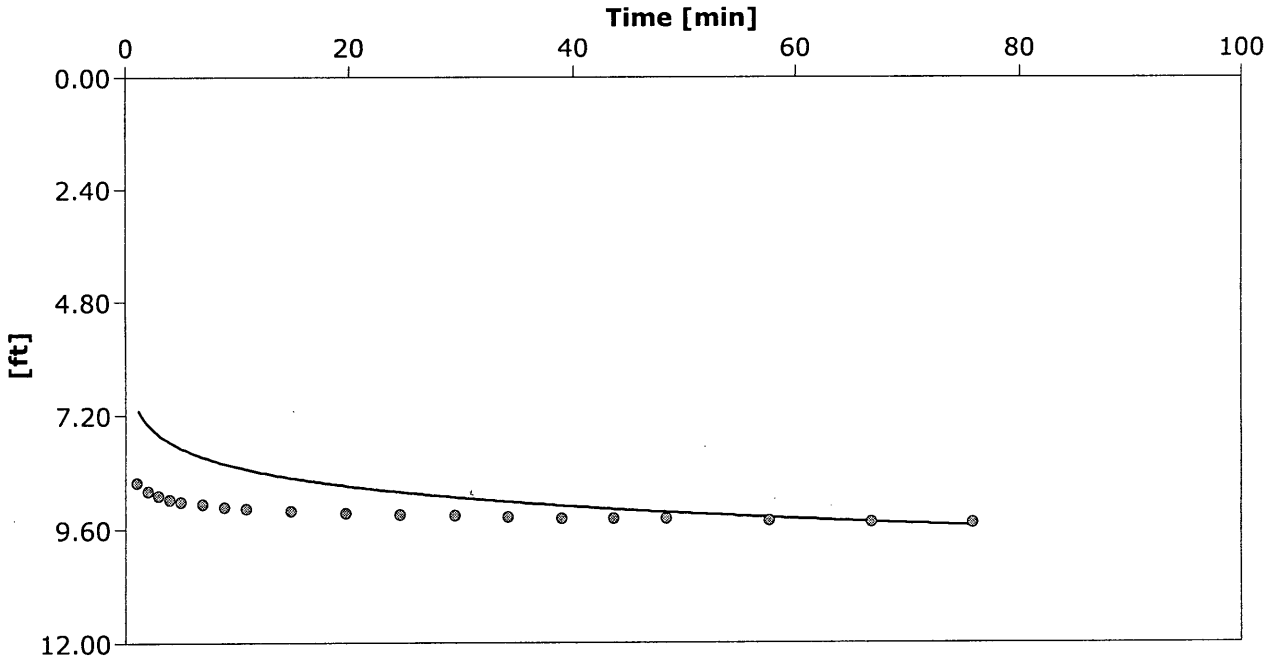


Calculation after Theis with Jacob Correction

Observation well	Transmissivity [U.S. gal/d-ft]	K [U.S. gal/d-ft²]	Storage coefficient	Radial distance to PW [ft]	
6" Test Well	3.09×10^{4}	1.62×10^{3}	3.72×10^{-4}	0.25	

Ground Water Associates 109 W. 1st, P.O. Box 792 Goddard, KS 67052	**Pumping Test Analysis Report**
	Project: Max Tjaden (WR49078)
	Number:
	Client: Max Tjaden

Location: NE 1/4 Sec 28 T29S R2W	Pumping Test: 24 Hour Pumping Test	Pumping well: 6" Test Well
Test conducted by: Ground Water Associates		Test date: 7/20/2017
Analysis performed by: Brad Vincent	Recovery	Date: 8/1/2017
Aquifer Thickness: 19.02 ft	Discharge: variable, average rate 100 [U.S. gal/min]	



Calculation after AGARWAL + Theis with Jacob Correction

Observation well	Transmissivity [U.S. gal/d-ft]	K [U.S. gal/d-ft²]	Storage coefficient	Radial distance to PW [ft]	
6" Test Well	3.52×10^{4}	1.85×10^{3}	2.60×10^{-6}	0.25	

Ground Water Associates
109 W. 1st, P.O. Box 792
Goddard, KS 67052

Pumping Test - Water Level Data

Project: Max Tjaden (WR49078)

Number:

Client: Max Tjaden

Location: NE 1/4 Sec 28 T29S R2W	Pumping Test: 24 Hour Pumping Test	Pumping well: 6" Test Well
Test conducted by: Ground Water Associates	Test date: 7/20/2017	Discharge: variable, average rate 100 [U.S. gal/min]
Observation well: 2" Test Hole	Static water level [ft]: 15.75	Radial distance to PW [ft]: 21.49

	Time [min]	Water Level [ft]	Drawdown [ft]
1	1.33	17.72	1.97
2	2.33	17.87	2.12
3	3.5	17.96	2.21
4	5.25	18.02	2.27
5	7.5	18.06	2.31
6	9.25	18.07	2.32
7	11.75	18.10	2.35
8	15.25	18.12	2.37
9	20.5	18.15	2.40
10	25	18.16	2.41
11	30	18.16	2.41
12	35	18.18	2.43
13	40	18.18	2.43
14	45	18.20	2.45
15	50	18.20	2.45
16	60	18.24	2.49
17	180	18.37	2.62
18	240	18.44	2.69
19	300	18.46	2.71
20	360	18.50	2.75
21	420	18.53	2.78
22	480	18.57	2.82
23	540	18.59	2.84
24	600	18.62	2.87
25	660	18.65	2.90
26	720	18.67	2.92
27	840	18.70	2.95
28	900	18.71	2.96
29	960	18.72	2.97
30	1020	18.73	2.98
31	1080	18.76	3.01
32	1140	18.76	3.01
33	1200	18.77	3.02
34	1260	18.78	3.03
35	1320	18.79	3.04
36	1380	18.80	3.05
37	1440	18.81	3.06
38	1441.5	16.90	1.15
39	1442.25	16.79	1.04
40	1443.25	16.68	0.93
41	1444.25	16.63	0.88
42	1445.25	16.54	0.79
43	1447.25	16.54	0.79
44	1449.25	16.50	0.75
45	1451.5	16.47	0.72
46	1455	16.42	0.67

Recovery ↓

Ground Water Associates
109 W. 1st, P.O. Box 792
Goddard, KS 67052

Pumping Test - Water Level Data

Project: Max Tjaden (WR49078)

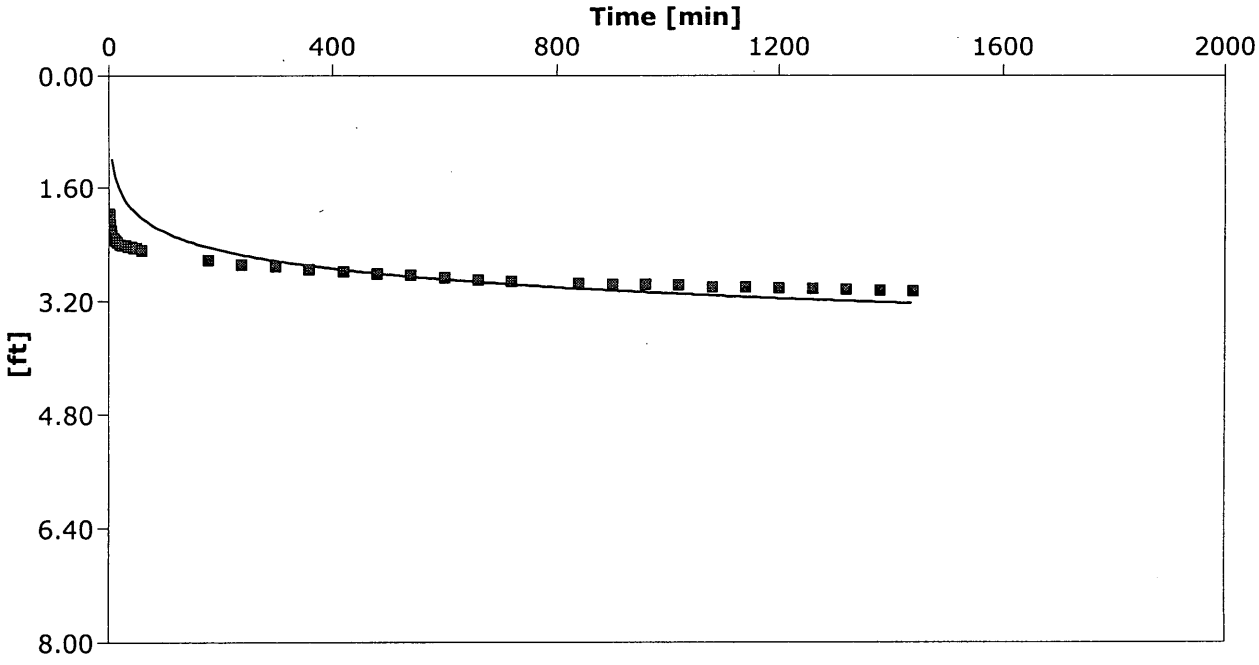
Number:

Client: Max Tjaden

	Time [min]	Water Level [ft]	Drawdown [ft]
47	1460	16.38	0.63
48	1465	16.35	0.60
49	1470	16.32	0.57
50	1475	16.31	0.56
51	1480	16.29	0.54
52	1485	16.22	0.47
53	1490	16.22	0.47
54	1500	16.22	0.47

Ground Water Associates 109 W. 1st, P.O. Box 792 Goddard, KS 67052	Pumping Test Analysis Report
	Project: Max Tjaden (WR49078)
	Number:
	Client: Max Tjaden

Location: NE 1/4 Sec 28 T29S R2W	Pumping Test: 24 Hour Pumping Test	Pumping well: 6" Test Well
Test conducted by: Ground Water Associates		Test date: 7/20/2017
Analysis performed by: Brad Vincent	Drawdown	Date: 8/1/2017
Aquifer Thickness: 19.02 ft	Discharge: variable, average rate 100 [U.S. gal/min]	

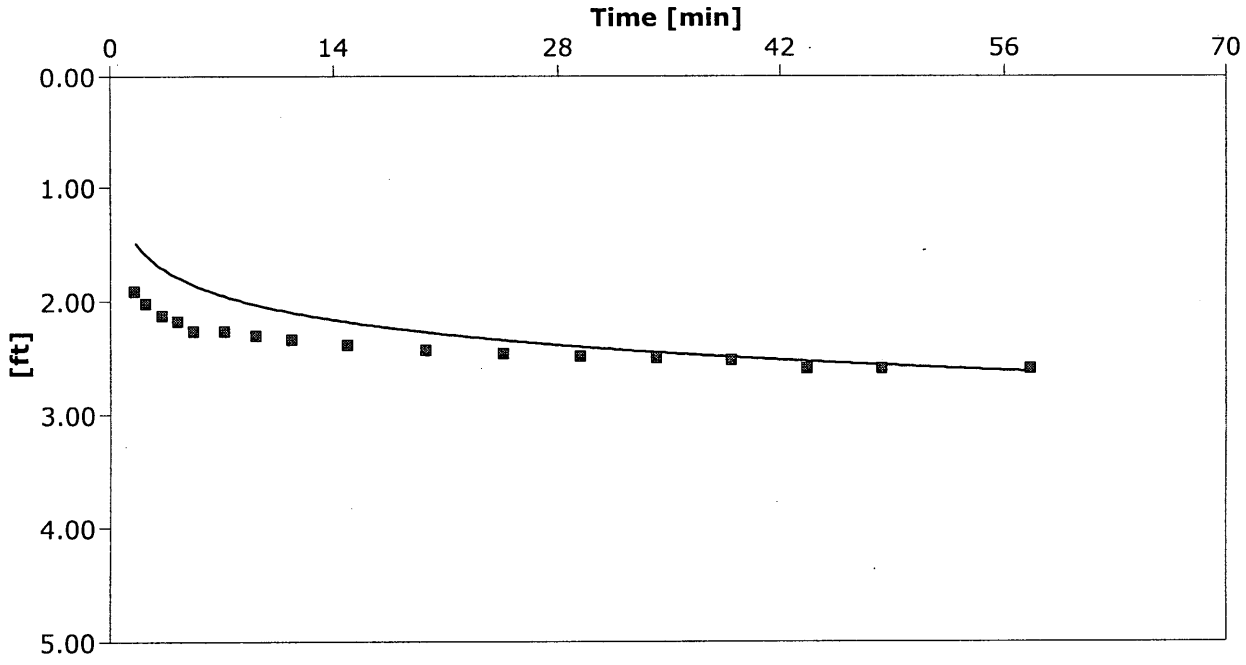


Calculation after Theis with Jacob Correction

Observation well	Transmissivity [U.S. gal/d-ft]	K [U.S. gal/d-ft²]	Storage coefficient	Radial distance to PW [ft]	
2" Test Hole	3.52×10^{4}	1.85×10^{3}	2.56×10^{-3}	21.49	

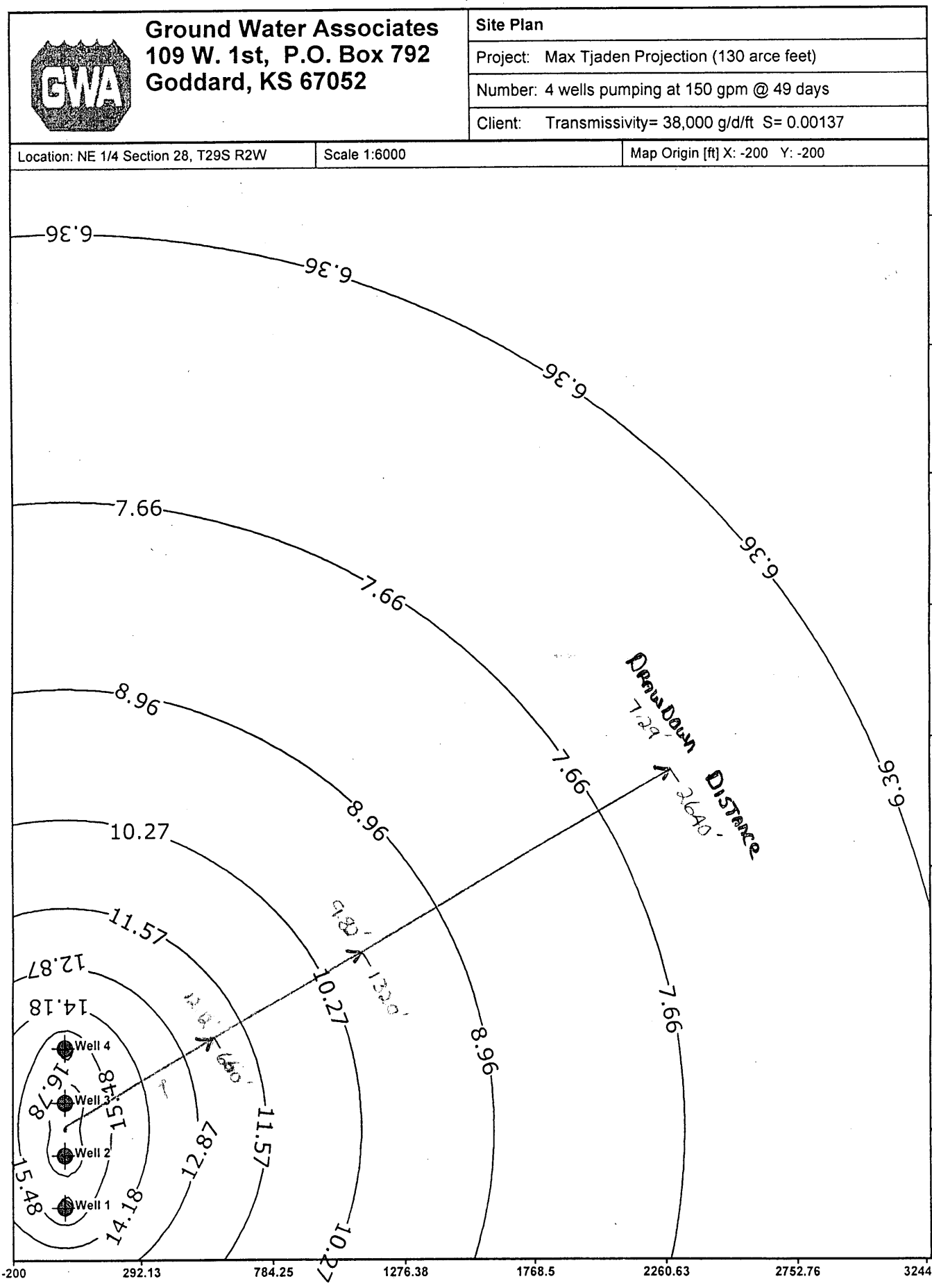
Ground Water Associates 109 W. 1st, P.O. Box 792 Goddard, KS 67052	**Pumping Test Analysis Report**
	Project: Max Tjaden (WR49078)
	Number:
	Client: Max Tjaden

Location: NE 1/4 Sec 28 T29S R2W	Pumping Test: 24 Hour Pumping Test	Pumping well: 6" Test Well
Test conducted by: Ground Water Associates		Test date: 7/20/2017
Analysis performed by: Brad Vincent	Recovery	Date: 8/1/2017
Aquifer Thickness: 19.02 ft	Discharge: variable, average rate 100 [U.S. gal/min]	



Calculation after AGARWAL + Theis with Jacob Correction

Observation well	Transmissivity [U.S. gal/d-ft]	K [U.S. gal/d-ft²]	Storage coefficient	Radial distance to PW [ft]	
2" Test Hole	4.08×10^{4}	2.15×10^{3}	1.79×10^{-4}	21.49	


Ground Water Associates
109 W. 1st, P.O. Box 792
Goddard, KS 67052
Site Plan
Project: Max Tjaden Projection (130 arce feet)
Number: 4 wells pumping at 150 gpm @ 49 days
Client: Transmissivity= 38,000 g/d/ft S= 0.00137
Location: NE 1/4 Section 28, T29S R2W
Scale 1:6000
Map Origin [ft] X: -200 Y: -200
6.36
7.66
8.96
10.27
11.57
12.87
14.18
15.48
Well 1
Well 2
Well 3
Well 4
Drawdown
Distance
7.29'
2640'
-200
292.13
784.25
1276.38
1768.5
2260.63
2752.76
3244.88[ft]
3737.01
2260.63
1768.5
1276.38
784.25
292.13
-200

Ground Water Associates
109 W. 1st, P.O. Box 792
Goddard, KS 67052

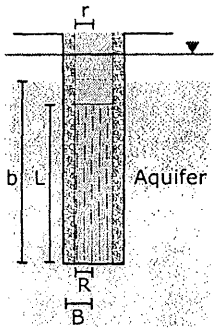
Wells

Project: Max Tjaden Projection (130 arce feet)

Number: 4 wells pumping at 150 gpm @ 49 days

Client: Transmissivity= 38,000 g/d/ft S= 0.00137

Location: NE 1/4 Section 28, T29S R2W



	Name	X [ft]	Y [ft]	Elevation (amsl)	Benchmark [ft]	Penetration	L [ft]	B [ft]
1	Well 1	0	0			Fully	20	0.5
2	Well 2	0	200			Fully	20	0.5
3	Well 3	0	400			Fully	20	0.5
4	Well 4	0	600			Fully	20	0.5

Ground Water Associates
109 W. 1st, P.O. Box 792
Goddard, KS 67052

Pumping Test Analysis Report

Project: Max Tjaden Projection (130 arce feet)

Number: 4 wells pumping at 150 gpm @ 49 days

Client: Transmissivity= 38,000 g/d/ft S= 0.00137

Location: NE 1/4 Section 28, T29S R2W	Pumping Test: Pumping Test	Pumping well: Well 1, Well 2, Well 3, Well 4
Test conducted by: Brad Vincent		Test date: 8/7/2017
Aquifer Thickness: 19.00 ft		

	Analysis Name	Analysis performed by	Date	Method name	Well	T [U.S. gal/d-ft]	K [U.S. gal/d-ft]	S]
1	New analysis 1	Brad Vincent	8/7/2017	Theis	Well 4	3.80×10^{4}	2.00×10^{3}	1.37×10^{-3}

6" Test Well

WATER WELL RECORD Form WWC-5

Division of Water Resources App. No. 49078 Well ID

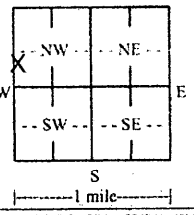
☑ Original Record ☐ Correction ☐ Change in Well Use

1 LOCATION OF WATER WELL: County: Sedgwick | Fraction: SW ¼ NW ¼ SW ¼ NW ¼ | Section Number: 27 | Township Number: T 29 S | Range Number: R 2 ☐ E ☑ W

2 WELL OWNER: Last Name: Tjaden First: Max
Business:
Address: 16415 W. 103rd St. S.
Address:
City: Clearwater State: KS ZIP: 67026

Street or Rural Address where well is located (if unknown, distance and direction from nearest town or intersection): If at owner's address, check here: ☐
Approx. 1.5 miles West of Clearwater, KS

3 LOCATE WELL WITH "X" IN SECTION BOX:



4 DEPTH OF COMPLETED WELL: 38 ft.
Depth(s) Groundwater Encountered: 1) 15 ft. 2) ..... ft. 3) ..... ft., or 4) ☐ Dry Well
WELL'S STATIC WATER LEVEL: 15 ft.
☑ below land surface, measured on (mo-day-yr) 3/6/2017
☐ above land surface, measured on (mo-day-yr) .....
Pump test data: Well water was ..... ft. after ..... hours pumping ..... gpm
Well water was ..... ft. after ..... hours pumping ..... gpm
Estimated Yield: 115 gpm
Bore Hole Diameter: 10 in. to 38 ft. and ..... in. to ..... ft.

5 Latitude: 37.499699 (decimal degrees)
Longitude: 97.532974 (decimal degrees)
Datum: ☐ WGS 84 ☑ NAD 83 ☐ NAD 27
Source for Latitude/Longitude:
☐ GPS (unit make/model: .....)
(WAAS enabled? ☐ Yes ☐ No)
☐ Land Survey ☐ Topographic Map
☐ Online Mapper: .....

6 Elevation: 1269 ft. ☑ Ground Level ☐ TOC
Source: ☐ Land Survey ☐ GPS ☐ Topographic Map ☑ Other KOLAR

7 WELL WATER TO BE USED AS:
1. Domestic: ☐ Household ☐ Lawn & Garden ☐ Livestock
2. ☑ Irrigation
3. ☐ Feedlot
4. ☐ Industrial
5. ☐ Public Water Supply: well ID .....
6. ☐ Dewatering: how many wells? .....
7. ☐ Aquifer Recharge: well ID .....
8. ☐ Monitoring: well ID .....
9. Environmental Remediation: well ID ..... ☐ Air Sparge ☐ Soil Vapor Extraction ☐ Recovery ☐ Injection
10. ☐ Oil Field Water Supply: lease .....
11. Test Hole: well ID ..... ☐ Cased ☐ Uncased ☐ Geotechnical
12. Geothermal: how many bores? ..... a) Closed Loop ☐ Horizontal ☐ Vertical b) Open Loop ☐ Surface Discharge ☐ Inj. of Water
13. ☐ Other (specify): .....

Was a chemical/bacteriological sample submitted to KDHE? ☐ Yes ☑ No If yes, date sample was submitted: .....
Water well disinfected? ☑ Yes ☐ No

8 TYPE OF CASING USED: ☐ Steel ☑ PVC ☐ Other ..... CASING JOINTS: ☑ Glued ☐ Clamped ☐ Welded ☐ Threaded
Casing diameter 6 in. to 20 ft., Diameter ..... in. to ..... ft., Diameter ..... in. to ..... ft.
Casing height above land surface 12 in. Weight ..... lbs./ft. Wall thickness or gauge No. 255

TYPE OF SCREEN OR PERFORATION MATERIAL:
☐ Steel ☐ Stainless Steel ☐ Fiberglass ☑ PVC ☐ Other (Specify) .....
☐ Brass ☐ Galvanized Steel ☐ Concrete tile ☐ None used (open hole)

SCREEN OR PERFORATION OPENINGS ARE:
☐ Continuous Slot ☑ Mill Slot ☐ Gauze Wrapped ☐ Torch Cut ☐ Drilled Holes ☐ Other (Specify) .....
☐ Louvered Shutter ☐ Key Punched ☐ Wire Wrapped ☐ Saw Cut ☐ None (Open Hole)

SCREEN-PERFORATED INTERVALS: From 20 ft. to 38 ft., From ..... ft. to ..... ft., From ..... ft. to ..... ft.
GRAVEL PACK INTERVALS: From 20 ft. to 38 ft., From ..... ft. to ..... ft., From ..... ft. to ..... ft.

9 GROUT MATERIAL: ☐ Neat cement ☐ Cement grout ☑ Bentonite ☐ Other .....
Grout Intervals: From 0 ft. to 20 ft., From ..... ft. to ..... ft., From ..... ft. to ..... ft.

Nearest source of possible contamination:
☐ Septic Tank ☐ Lateral Lines ☐ Pit Privy ☐ Livestock Pens ☐ Insecticide Storage
☐ Sewer Lines ☐ Cess Pool ☐ Sewage Lagoon ☐ Fuel Storage ☐ Abandoned Water Well
☐ Watertight Sewer Lines ☐ Seepage Pit ☐ Feedyard ☐ Fertilizer Storage ☐ Oil Well/Gas Well
☐ Other (Specify) .....
Direction from well? ..... Distance from well? ..... ft.

10 FROM	TO	LITHOLOGIC LOG	FROM	TO	LITHO. LOG (cont.) or PLUGGING INTERVALS
0	3	Top Soil			
3	7	Clay-Tan			
7	11	Sand			
11	20	Clay-Tan			
20	25	Sand/Clay-70/30			
25	31	Sand-Fine/Medium			
31	31.5	Clay			
31.5	35	Sand-Medium			
35	38	Shale-Grey/Hard			

Notes:

11 CONTRACTOR'S OR LANDOWNER'S CERTIFICATION: This water well was ☑ constructed, ☐ reconstructed, or ☐ plugged under my jurisdiction and was completed on (mo-day-year) 3/6/2017 and this record is true to the best of my knowledge and belief. Kansas Water Well Contractor's License No. 897 This Water Well Record was completed on (mo-day-year) 3/9/2017 under the business name of Peterson McNett Drilling, Inc.

Send one copy to WATER WELL OWNER and retain one for your records. Fee of $5.00 for each constructed well.
KS Department of Health and Environment, Bureau of Water, Geology Section, 1000 SW Jackson St., Suite 420, Topeka, Kansas 66612-1367. Telephone 785-296-3565.
Visit us at http://www.kdheks.gov/waterwell/index.html KSA 82a-1212

FORMATION HOLE #1

#1 PLUGGED

IRRIGATION TEST WELL

Driller & Assistant: LOGAN AND GARY Date: 3/6/17

CUSTOMER: MAX TJADEN 16615 W. 103rd St. S. Clearwater, KS 670

LOCATION:

Screen 2-1/2"	☐ Holeplug	☐ Gas & Oil - W.T.	☐ 6" or 5" Liner if needed
Casing 2-1/2"	☐ Quarters	☐ 3/4" Polyethylene	☐ Solvent & Glue
Couplings, 2-1/2"	☐ Water	☐ 2-1/2" PVC Tee	☐ Water Sample Bottle
End Caps, 2-1/2"	☐ Lime	☐ 5" & 6" Bits	☐ Inspection Sheet
Gravel Pack	☐ Drilling Mud	☐ Packing	

Depth:	Formation:	Well Information:
0-3'	top soil	Static Water Level: 13' approx
3-19'	clay tan	Est. production: 50-120gpm
19-25'	SAND medium w/ small clay layers	Casing size/depth: —
25-30'	SAND medium	Screen size/depth: —
30-32'	Shale hard	Slot size:
		Grouting depth: 0-32
		Number of bags: 1
		Nearest Contamination:
		Maintenance & Safety:
		Notes:

Directions:

Latitude: 37.501266891 N decimal degrees (ex. 38.881796)

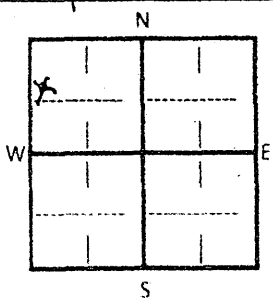
Longitude -97.533744502 W decimal degrees (ex. 95.373889)

Datum: ☐ NAD27 ☒ NAD83 ☐ WGS84

Elevation: 1203 ft.

SW 1/4	SW 1/4	NW 1/4	NW 1/4
Sec. 27	T 29	R 2	E/W

County Sedgwick



$ 8.00 x 32'	/ft. Well
$ 15.00	/Grout
$ —	/Test Pumping
$ —	/Water Sample
$ 200.00	/Mobilization/Travel
$ —	/Discount
Contract Received: 3-7-17	

Invoice #: 1488

Date Mailed:

Well Data: ✓ Access:

Materials: ✓ Incent: N/A

FORMATION Hole #2

IRRIGATION TEST WELL

#2 PLUGGED

Driller & Assistant: Logan and Gary Date: 3/6/17

CUSTOMER: Max Tjaden 16415 W. 103rd St. S. Clearwater, KS 67026

LOCATION:

- ☐ Screen 2-1/2"
- ☐ Casing 2-1/2"
- ☐ Couplings, 2-1/2"
- ☐ End Caps, 2-1/2"
- ☐ Gravel Pack
- ☐ Holeplug
- ☐ Quarters
- ☐ Water
- ☐ Lime
- ☐ Drilling Mud
- ☐ Gas & Oil - W.T.
- ☐ 3/4" Polyethylene
- ☐ 2-1/2" PVC Tee
- ☐ 5" & 6" Bits
- ☐ Packing
- ☐ 6" or 5" Liner if needed
- ☐ Solvent & Glue
- ☐ Water Sample Bottle
- ☐ Inspection Sheet

Depth:	Formation:	Well Information:
0-3	top soil	Static Water Level: 13' approx
3-20'	clay	Est. production: 50-120gpm
20-25'	sand clay 70/30	Casing size/depth: —
25-31'	sand fine	Screen size/depth: —
31-32'	clay	Slot size: —
32-34'	sand medium	Grouting depth: 0-35'
34-35'	shale hard	Number of bags: 2
		Nearest Contamination:
		Maintenance & Safety:
		Notes:

Directions:

Latitude: 37.19977233 N decimal degrees (ex. 38.881796)

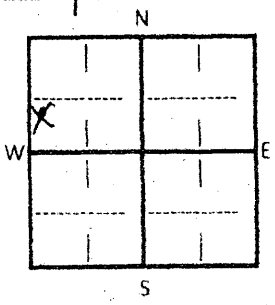
Longitude -97.53337439 W decimal degrees (ex. 95.373889)

Datum: ☐ NAD27 ☒ NAD83 ☐ WGS84

Elevation: 1270 ft.

SW 1/4	NW 1/4	SW 1/4	NW 1/4
Sec. 27	T 29	R 2	E/W

County: Sedgwick



$ 8" x 35'	/ft. Well
$ 90	/Grout
$ —	/Test Pumping
$ —	/Water Sample
$ —	/Mobilization/Travel
$ —	/Discount
Contract Received: 3-7-17	

Invoice #: 1488

Date Mailed:

Well Data: ✓ Access:

Materials: ✓ Incent: N/A

2" CASED MONITOR WELL

#5

IRRIGATION TEST WELL

Driller & Assistant: Logan And Gary Date: 3/6/17

CUSTOMER: Max Tjaden 16415 W. 103rd St. S. Clearwater, KS 67026

LOCATION:

- ☐ Screen 2-1/2"
- ☐ Casing 2-1/2"
- ☐ Couplings, 2-1/2"
- ☐ End Caps, 2-1/2"
- ☐ Gravel Pack
- ☐ Holeplug
- ☐ Quarters
- ☐ Water
- ☐ Lime
- ☐ Drilling Mud
- ☐ Gas & Oil - W.T.
- ☐ 3/4" Polyethylene
- ☐ 2-1/2" PVC Tee
- ☐ 5" & 6" Bits
- ☐ Packing
- ☐ 6" or 5" Liner if needed
- ☐ Solvent & Glue
- ☐ Water Sample Bottle
- ☐ Inspection Sheet

Depth:	Formation:	Well Information:
0-3'	top soil	Static Water Level: 15'
3'-7'	clay tan	Est. production: 80-150gpm
7'-11'	sand	Casing size/depth: ——
11'-20'	clay tan	Screen size/depth: ——
20'-25'	sand clay 50/50	Slot size:
25'-31'	sand fine-medium	Grouting depth: 0-35'
31'-31.5'	clay	Number of bags: 0
31.5'-35'	sand medium	Nearest Contamination:
	Shale	
		Maintenance & Safety:
	37.499699	Notes:
	-97.532974	

Directions:

Latitude: ~~37.499714 03~~	N decimal degrees	(ex. 38.881796)
Longitude ~~-97.5334 2419~~	W decimal degrees	(ex. 95.373889)

Datum: ☐ NAD27 ☐ NAD83 ☐ WGS84

Elevation: ft.

SW 1/4	NW 1/4	SW 1/4	NW 1/4
Sec. 29	T 29	R 2	E/W
County Sedgwick			

N / W / E / S

$ 8.25 x 35'	/ft. Well
$ ——	/Grout
$ ——	/Test Pumping
$ ——	/Water Sample
$ ——	/Mobilization/Travel
$ ——	/Discount

Contract Received: 3-7-17

Invoice #: 1488

Date Mailed:

Well Data: ✓ Access:

Materials: ✓ Incent: N/A

49,078

4" Test Well

Darling Drilling Company
Telephone (620) 662-7901 3916 W. 56th Ave.
Hutchinson, Ks. 67501

DRILLER'S TEST LOG

Date: 5/6/2014
Name: Max Jaden
Address: Clearwater, Ks.
County: Sedgwick
Quarter: NE **Section:** 28 **Township:** 29 **Range:** 2W

DRILLED FOOTAGE		DESCRIPTION OF STRATA
From	To	
0	3	Top soil
3	20	Reddish-brown clay-silty
20	30	Fine-med. sand
30	32	Grey shale
		Latitude: 37.50111
		Longitude: 097.53378
		NAD 83

Static water level: 15'
Depth of well: 32'
Type & size of casing: 160# 4"
Plain: 0 to 20'
Perf: 20' to 32'
Gravel pack intervals: 32-20
Grout material: 20 to 0
Contamination: n/a
Direction from well:
Casing above surface: 24"
Bore hole: 7"
Remarks:

Kansas
Department of Agriculture
Division of Water Resources

Topeka Field Office
6531 SE Forbes Ave., Suite B
Topeka, Kansas 66619

Phone: (785) 296-5733
Fax: (785) 862-2460
www.agriculture.ks.gov

Jackie McClaskey, Secretary
David W. Barfield, Chief Engineer
Katherine A. Tietsort, Water Commissioner

Sam Brownback, Governor

February 24, 2017

VAN TJADEN
16725 W 103RD ST S
CLEARWATER KS 67026

Re: Pending Application, File No. 49,078

Dear Sir or Madam:

This is to advise you that Max Tjaden has filed the application referred to above for a permit to appropriate 166 acre-feet of groundwater per calendar year for irrigation use to be diverted at a maximum rate of 800 gallons per minute. The proposed point of diversion is the geographic center of a proposed battery of wells located as follows:

In the Southeast Quarter of the Northeast Quarter of the Northeast Quarter of Section 28, in Township 29 South, Range 2 West, Sedgwick County, Kansas.

A map is enclosed indicating the location of the proposed point of diversion. Records in this office indicate that you may have a well or wells in this vicinity and you are being notified of receipt of this application in order that you may be fully informed of the proposed location of the applicant's point of diversion and proposed use of water. Consideration will be given to comments or other information which you desire to submit to this office **within 15 days** from the date of this letter.

If you have any questions or comments, you may also contact me at (785) 296-3495. If you call, please reference the file number so I can help you more efficiently.

Sincerely,

Doug Schemm

Douglas W. Schemm
Environmental Scientist
Topeka Field Office

Enclosure

pc: Max Tjaden

Kansas
Department of Agriculture
Division of Water Resources

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Jackie McClaskey, Secretary
David W. Barfield, Chief Engineer
Katherine A. Tietsort, Water Commissioner

Sam Brownback, Governor

February 24, 2017

CLINTON MOLDENHAUER
17102 W 103RD ST S
CLEARWATER KS 67026

Re: Pending Application, File No. 49,078

Dear Sir or Madam:

This is to advise you that Max Tjaden has filed the application referred to above for a permit to appropriate 166 acre-feet of groundwater per calendar year for irrigation use to be diverted at a maximum rate of 800 gallons per minute. The proposed point of diversion is the geographic center of a proposed battery of wells located as follows:

> In the Southeast Quarter of the Northeast Quarter of the Northeast Quarter of Section 28, in Township 29 South, Range 2 West, Sedgwick County, Kansas.

A map is enclosed indicating the location of the proposed point of diversion. Records in this office indicate that you may have a well or wells in this vicinity and you are being notified of receipt of this application in order that you may be fully informed of the proposed location of the applicant's point of diversion and proposed use of water. Consideration will be given to comments or other information which you desire to submit to this office **within 15 days** from the date of this letter.

If you have any questions or comments, you may also contact me at (785) 296-3495. If you call, please reference the file number so I can help you more efficiently.

Sincerely,

Doug Schemm

Douglas W. Schemm
Environmental Scientist
Topeka Field Office

Enclosure

pc: Max Tjaden

Kansas
Department of Agriculture
Division of Water Resources

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6531 SE Forbes Ave., Suite B
Topeka, Kansas 66619

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Jackie McClaskey, Secretary
David W. Barfield, Chief Engineer
Katherine A. Tietsort, Water Commissioner

Sam Brownback, Governor

February 24, 2017

NORMAN PELZ
17409 W 103RD ST S
CLEARWATER KS 67026

Re: Pending Application, File No. 49,078

Dear Sir or Madam:

This is to advise you that Max Tjaden has filed the application referred to above for a permit to appropriate 166 acre-feet of groundwater per calendar year for irrigation use to be diverted at a maximum rate of 800 gallons per minute. The proposed point of diversion is the geographic center of a proposed battery of wells located as follows:

In the Southeast Quarter of the Northeast Quarter of the Northeast Quarter of Section 28, in Township 29 South, Range 2 West, Sedgwick County, Kansas.

A map is enclosed indicating the location of the proposed point of diversion. Records in this office indicate that you may have a well or wells in this vicinity and you are being notified of receipt of this application in order that you may be fully informed of the proposed location of the applicant's point of diversion and proposed use of water. Consideration will be given to comments or other information which you desire to submit to this office **within 15 days** from the date of this letter.

If you have any questions or comments, you may also contact me at (785) 296-3495. If you call, please reference the file number so I can help you more efficiently.

Sincerely,

Doug Schemm

Douglas W. Schemm
Environmental Scientist
Topeka Field Office

Enclosure

pc: Max Tjaden

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6531 SE Forbes Ave., Suite B
Topeka, Kansas 66619

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Jackie McClaskey, Secretary
David W. Barfield, Chief Engineer
Katherine A. Tietsort, Water Commissioner

Sam Brownback, Governor

* Revised Safe Yield to 166 AF. DWS / DWR 2/23/17

RECEIVED
MAR 03 2015
Topeka Field Office
DIVISION OF WATER RESOURCES

January 22, 2015

MAX TJADEN
16415 W 103 ST SOUTH
CLEARWATER KS 67026

RE: Pending Application, File No. 49,078

Dear Mr. Tjaden:

We have completed a preliminary review of your application referenced above, and the original application is being returned to you. Based on information from your driller's test hole log, your proposed point of diversion (geographic center of well battery) would be located in the Southeast Quarter of the Northeast Quarter of the Northeast Quarter (SE¼ NE¼ NE¼) of Section 28, more particularly described as being near a point 4,092 feet North and 305 feet West of the Southeast corner of said section, in Township 29 South, Range 2 West, Sedgwick County, Kansas. The application is requesting to appropriate 221 acre-feet of groundwater for irrigation use.

The source of water for the pending application appears to be Ninnescah River alluvium, based on your test hole log and other area well logs. The specific method for calculating safe yield for unconfined groundwater aquifers is described in K.A.R. 5-3-11. Per K.A.R. 5-3-11(d)(1), the safe yield area of consideration represents the portion of the two-mile circle located within the limit of the unconfined aquifer expressed in acres (6,483 acres for this file). Calculated recharge is 5.4 inches, and for hydrologic units within the Ninnescah River basin, 75 percent of the calculated recharge can be considered to be available for appropriation. The safe yield determination is summarized below.

Safe Yield = Area of Consideration x potential annual recharge x percent of recharge available

6,483 acres x 5.4 inches x 75% = 26,256.2 acre-inches / 12	= 2,188.0 acre-feet
Prior Appropriations within the area of consideration	= 2,113.2 acre-feet
Total quantity of water available	= **74.8 acre-feet**

Per K.A.R. 5-3-11(c)(2) if there is sufficient water available to reasonably satisfy part of the request, then the application shall be approved for the quantity available if the remaining quantity is reasonable for the proposed use. Therefore, if you elect to pursue your proposed irrigation project based on the information presented above, the quantity you requested on Application, File No. 49,078 **must be reduced to 74.8 acre-feet**, and you must also reduce your proposed place of use acreage to ensure that this quantity of 74.8 acre-feet is reasonable for the proposed use. In order to comply with K.A.R. 5-3-19, for Sedgwick County, the maximum reasonable annual quantity of water for irrigation use is 1.3 acre-feet per acre. With your reduced quantity of 74.8 acre-feet, this would equate to a maximum of approximately **58 acres** that could be irrigated. Please revise both the enclosed topographic map, and the "Irrigation Use Supplemental Sheet" to depict this reduced acreage. Please initial any changes you make on these attachments, and return the originals to our office when completed.

In addition, based on the driller log information we received in our office, it appears that the saturated thickness of the aquifer in this local area is very limited (approximately 15 feet). Saturated thickness is typically defined as the distance from the water table to the base of the aquifer for a shallow, unconfined aquifer. The limited saturated thickness has created concerns as to what this source of water supply can physically yield. Both regulation, K.A.R. 5-3-20 specifically (b)(2), and statute K.S.A. 82a-711 specifically (b)(2)(4), support our request for additional information. K.A.R. 5-3-20 (b), states, in part, the maximum reasonable annual quantity of water that may be approved for use on irrigated land shall be limited to the following: (2) the quantity of water reasonably physically available from the source of water supply based on the physical characteristics of the source of water supply and the proposed diversion works.

As described above, the maximum allowable quantity of water that can be approved is limited to what is physically available from the source of water supply (aquifer). The saturated thickness at the proposed point of diversion is a physical characteristic of this aquifer, and is likely to be a significant factor in determining what quantity of water the Division of Water Resources can approve for this application. **Therefore, you must provide additional information such as a hydrologic analysis of the aquifer (e.g. aquifer pump test) to show what quantity of water is physically available from your source of supply.**

You have a period of 30 days (**until February 22, 2015**) to either (1) submit additional information to our office or (2) request additional time beyond the 30 days to submit additional information. If you wish to request additional time, you must do so **in writing**, before the 30 day period expires. Such a request should state what steps are being taken to obtain the information and the amount of time you will need to supply the information to our office. In order for the application to retain its priority of filing, the original application and attachments must be returned, with the requested information, to this office on or before **February 22, 2015**, or within any authorized extension of time thereof. According to the law, default in the refiling of the completed application and attachments as outlined above, within the time allowed, shall constitute forfeiture of your priority date and dismissal of the application.

Any relevant credible information submitted within the time allowed will be given due consideration, prior to final action on the application. If you have any questions, please contact me at (785) 296-3495. If you wish to discuss a specific file, please have the file number ready so that I may help you more efficiently.

Sincerely,

Doug Schemm

Douglas W. Schemm
Environmental Scientist
Topeka Field Office

Enclosure

Analysis Results

The selected PD is in an area to new appropriations.
The safe yield, based on the variables listed below is 2,277.79 AF.
Total prior appropriation in the circle is 2,505.79 AF. − 393.9 = 2,111.9
Total quantity of water available for appropriation is ~~0.00~~ 166 AF.

Safe Yield Variables

The area used for the analysis is set at 6749 acres.
Potential annual recharge of the area is estimated to be 5.4 inches.
The percent of recharge available for appropriation is 75%.

Authorized Quantity values are as of 23-FEB-2017 and are based on Appropriated and Vested ground water right and possible stream nodes for GMD #2. Domestic, Term and Temporary water rights have been excluded.

There are 13 water right(s) and 29 point(s) of diversion within the circle.

File Number	Use	ST	SR	Q4	Q3	Q2	Q1	FeetN	FeetW	Sec	Twp	Rng	ID	Qind	Auth_Quant	Add_Quant	Tacres	Nacres
A 8588 00	MUN	NK	G		SW	SE	SE	0	0	23	29	02W	1	WR	236.86	236.86		
Same	MUN	NK	G		SE	SE	SE	0	0	23	29	02W	2	WR				
Same	MUN	NK	G		SE	SE	SE	0	0	23	29	02W	3	WR				
A 22856 00	IND	NK	G		NE	SE	SE	785	520	20	29	02W	4	PD	177.23	177.23		
Same	IND	NK	G		SE	SE	SE	420	536	20	29	02W	15	PD	177.23	177.23		
Same	IND	NK	G		NW	SW	SW	1252	4891	21	29	02W	3	PD	177.23	177.23		
A 23611 00	IND	NK	G		NW	SE	SW	727	3484	20	29	02W	7	PD	177.23	177.23		
Same	IND	NK	G		SW	SE	SW	520	3859	20	29	02W	16	PD	177.23	177.23		
A 35899 00	IND	NK	G		NW	SW	SE	701	2359	20	29	02W	19	WR	175.48	175.48		
A 36005 00	IND	NK	G		SE	SW	SE	636	1638	20	29	02W	10	WR	177.23	177.23		
A 38976 00	IND	NK	G		SW	NW	SE	1204	2374	20	29	02W	17	WR	151.15	0.00		
A 38977 00	IND	NK	G		SE	NE	SE	1416	156	20	29	02W	18	WR	171.71	154.74		
A 38978 00	IND	NK	G		SW	NE	SE	1790	1237	20	29	02W	13	WR	158.05	134.84		
A 43942 00	IRR	NK	G		SW	SW	SW	13	5006	14	29	02W	6	WR	188.00	188.00	125.00	125.00
Same	IRR	NK	G		SW	SW	SW	305	4797	14	29	02W	7	WR				
Same	IRR	NK	G		SW	SW	SW	131	4999	14	29	02W	10	WR				
Same	IRR	NK	G		SW	SW	SW	75	5194	14	29	02W	11	WR				
A 46194 00	IRR	NK	G		NW	SW	NE	3808	2520	22	29	02W	5	WR	78.00	78.00	60.00	60.00
Same	IRR	NK	G		NW	SW	NE	3553	2511	22	29	02W	6	WR				
Same	IRR	NK	G		NW	SW	NE	3681	2516	22	29	02W	7	WR				
A 47077 00	IRR	NK	G			NC	N2	3838	2619	23	29	02W	4	WR	80.60	80.60	62.00	62.00
Same	IRR	NK	G			NC	N2	3529	2622	23	29	02W	8	WR				
Same	IRR	NK	G			NC	N2	3684	2621	23	29	02W	9	WR				
A 49078 00	IRR	AY	G				NW	3960	3960	28	29	02W	1	WR	221.00	221.00	170.00	170.00
A 49416 00	IRR	GY	G		SW	NE	SW	1535	3758	26	29	02W	5	WR	172.90	172.90	133.00	133.00
Same	IRR	GY	G		SE	NW	SW	1323	3970	26	29	02W	6	WR				
Same	IRR	GY	G		SE	NW	SW	1747	3970	26	29	02W	7	WR				
Same	IRR	GY	G		SW	NE	SW	1323	3546	26	29	02W	8	WR				
Same	IRR	GY	G		SW	NE	SW	1747	3546	26	29	02W	9	WR				

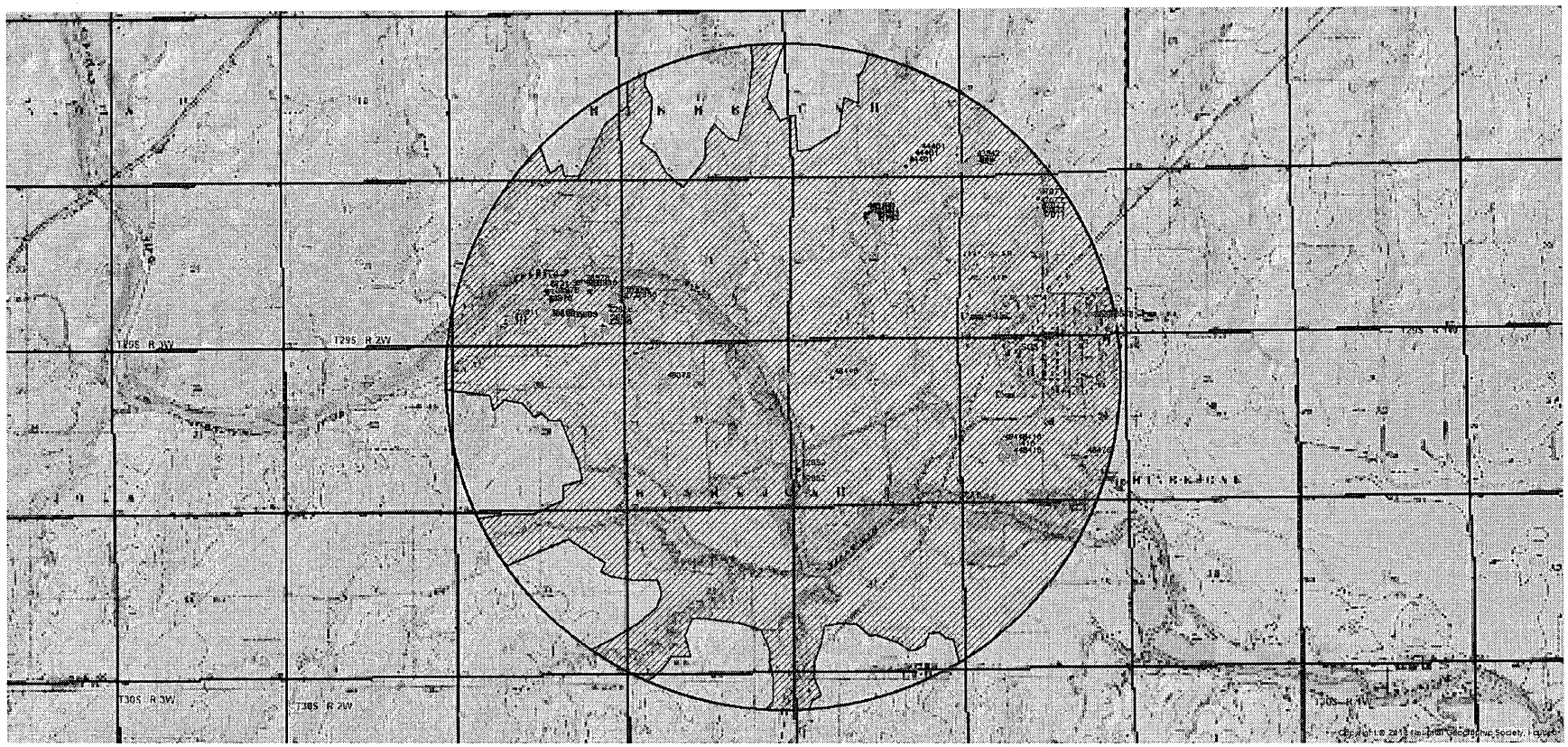
393.9

All Oxy chemical in Limited area (all close together in same 2 mile circle).

≠49,078

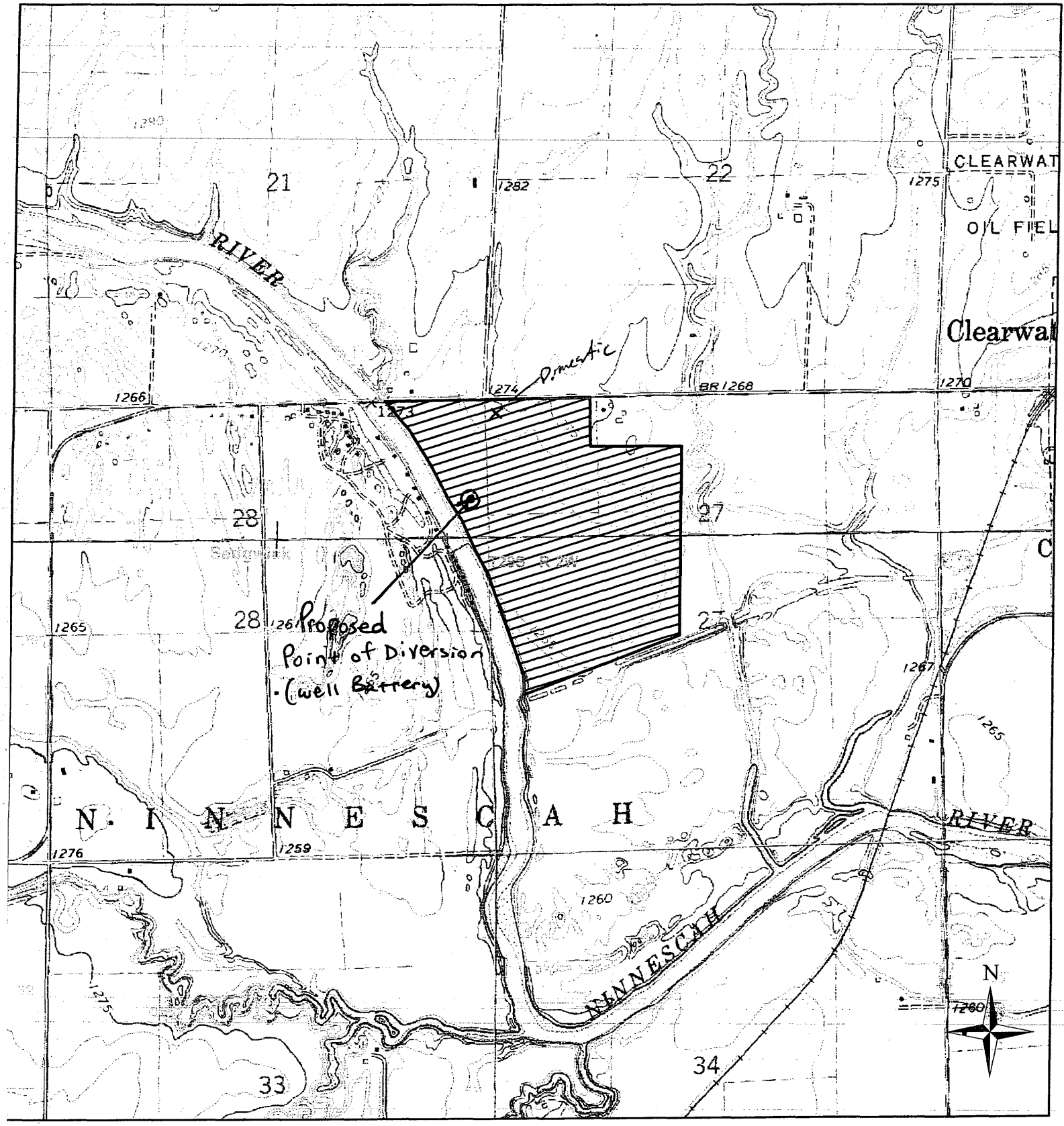
Safe Yield Report Sheet
Proposed Water Right Application
Point of Diversion in SESENENE 28-29S-02W
FILE NO. 49,078 (4092'N & 305'W)

==========



New Application

49,078



I declare that all water wells or diversion sites using the same source of supply and within 1/2 mile of the proposed point of diversion have been plotted on the application map.

WATER RESOURCES RECEIVED MAY 12 2014

KS DEPT OF AGRICULTURE

SCANNED

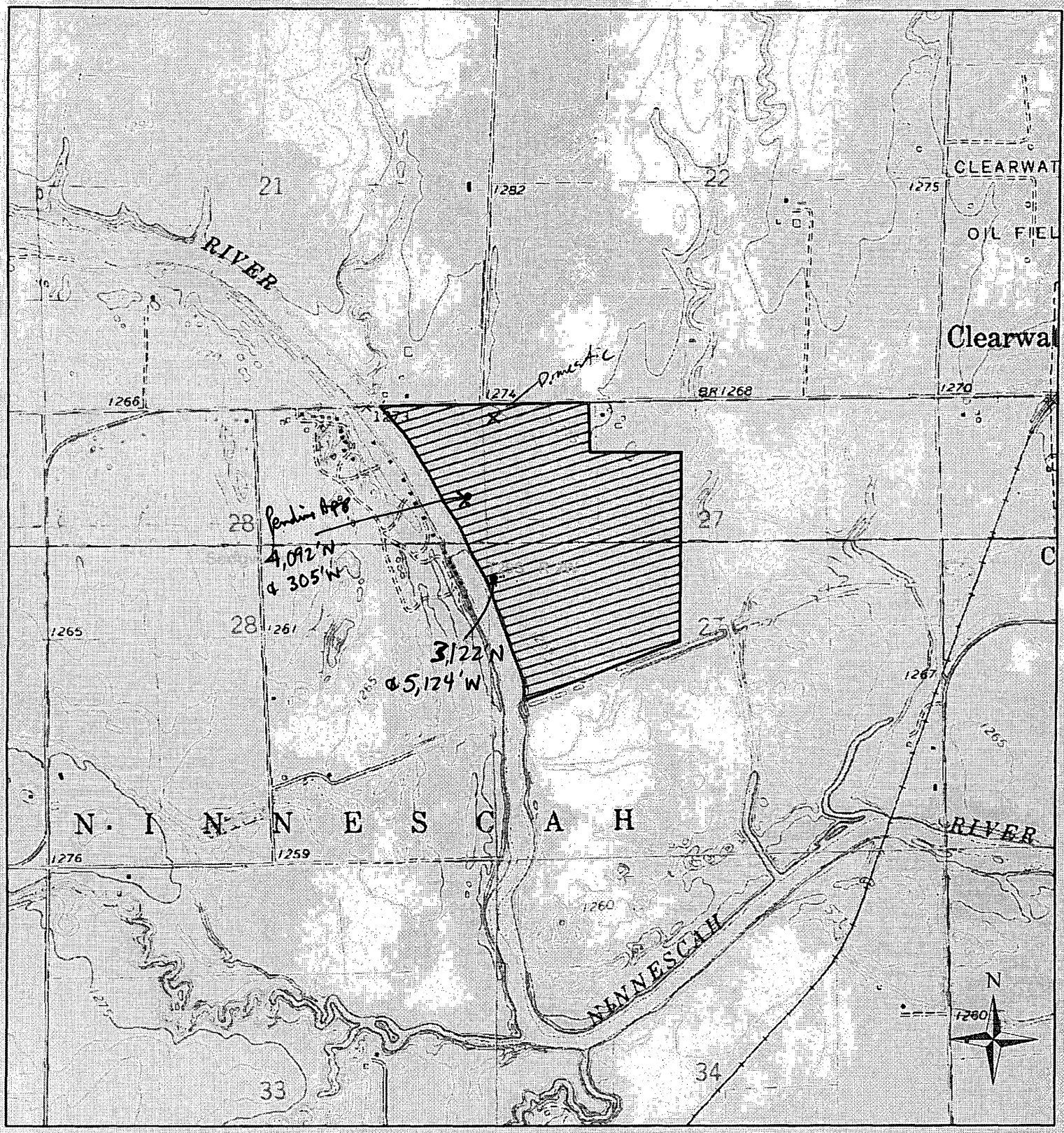
Signature

May 9, 2014
Date

Date: 4/29/2014
KAH/DWR
1:18,000

New Application

49,078



I declare that all water wells or diversion sites using the same source of supply and within 1/2 mile of the proposed point of diversion have been plotted on the application map.

WATER RESOURCES
RECEIVED
MAY 12 2014
KS DEPT OF AGRICULTURE

SCANNED

Signature

May 9, 2014
Date

Date: 4/29/2014
KAH/DWR
1:18,000

Max Tjaden
16415 W 103rd St S
Clearwater, KS 67026

Feb. 19, 2015

Dear Mr. Schemm. I am responding to the enclosed letter sent to me in January and concerns Application File No. 49078. As I spoke with you by phone last week, I am waiting to hear from you on my understanding of available water that may exceed 74.8 acre-feet appropriated initially. I am also hoping soon to get the test well pumped for a more accurate gpm determination. Therefore, I am asking for an extension of time to allow for me to arrive at more accurate and reliable information to proceed with this project.

Thank you for your consideration,

Max Tjaden

Topeka Field Office
6531 SE Forbes Ave., Suite B
Topeka, Kansas 66619

Kansas
Department of Agriculture
Division of Water Resources

Phone: (785) 296-5733
Fax: (785) 862-2460
www.agriculture.ks.gov

Jackie McClaskey, Secretary
David W. Barfield, Chief Engineer
Katherine A. Tietsort, Water Commissioner

Sam Brownback, Governor

January 22, 2015

MAX TJADEN
16415 W 103 ST SOUTH
CLEARWATER KS 67026

RE: Pending Application, File No. 49,078

Dear Mr. Tjaden:

We have completed a preliminary review of your application referenced above, and the original application is being returned to you. Based on information from your driller's test hole log, your proposed point of diversion (geographic center of well battery) would be located in the Southeast Quarter of the Northeast Quarter of the Northeast Quarter (SE¼ NE¼ NE¼) of Section 28, more particularly described as being near a point 4,092 feet North and 305 feet West of the Southeast corner of said section, in Township 29 South, Range 2 West, Sedgwick County, Kansas. The application is requesting to appropriate 221 acre-feet of groundwater for irrigation use.

The source of water for the pending application appears to be Ninnescah River alluvium, based on your test hole log and other area well logs. The specific method for calculating safe yield for unconfined groundwater aquifers is described in K.A.R. 5-3-11. Per K.A.R. 5-3-11(d)(1), the safe yield area of consideration represents the portion of the two-mile circle located within the limit of the unconfined aquifer expressed in acres (6,483 acres for this file). Calculated recharge is 5.4 inches, and for hydrologic units within the Ninnescah River basin, 75 percent of the calculated recharge can be considered to be available for appropriation. The safe yield determination is summarized below.

Safe Yield = Area of Consideration x potential annual recharge x percent of recharge available

6,483 acres x 5.4 inches x 75% = 26,256.2 acre-inches / 12	= 2,188.0 acre-feet
Prior Appropriations within the area of consideration	= 2,113.2 acre-feet
Total quantity of water available	= **74.8 acre-feet**

Per K.A.R. 5-3-11(c)(2) if there is sufficient water available to reasonably satisfy part of the request, then the application shall be approved for the quantity available if the remaining quantity is reasonable for the proposed use. Therefore, if you elect to pursue your proposed irrigation project based on the information presented above, the quantity you requested on Application, File No. 49,078 **must be reduced to 74.8 acre-feet**, and you must also reduce your proposed place of use acreage to ensure that this quantity of 74.8 acre-feet is reasonable for the proposed use. In order to comply with K.A.R. 5-3-19, for Sedgwick County, the maximum reasonable annual quantity of water for irrigation use is 1.3 acre-feet per acre. With your reduced quantity of 74.8 acre-feet, this would equate to a maximum of approximately **58 acres** that could be irrigated. Please revise both the enclosed topographic map, and the "Irrigation Use Supplemental Sheet" to depict this reduced acreage. Please initial any changes you make on these attachments, and return the originals to our office when completed.

In addition, based on the driller log information we received in our office, it appears that the saturated thickness of the aquifer in this local area is very limited (approximately 15 feet). Saturated thickness is typically defined as the distance from the water table to the base of the aquifer for a shallow, unconfined aquifer. The limited saturated thickness has created concerns as to what this source of water supply can physically yield. Both regulation, K.A.R. 5-3-20 specifically (b)(2), and statute K.S.A. 82a-711 specifically (b)(2)(4), support our request for additional information. K.A.R. 5-3-20 (b), states, in part, the maximum reasonable annual quantity of water that may be approved for use on irrigated land shall be limited to the following: (2) the quantity of water reasonably physically available from the source of water supply based on the physical characteristics of the source of water supply and the proposed diversion works.

As described above, the maximum allowable quantity of water that can be approved is limited to what is physically available from the source of water supply (aquifer). The saturated thickness at the proposed point of diversion is a physical characteristic of this aquifer, and is likely to be a significant factor in determining what quantity of water the Division of Water Resources can approve for this application. **Therefore, you must provide additional information such as a hydrologic analysis of the aquifer (e.g. aquifer pump test) to show what quantity of water is physically available from your source of supply.**

You have a period of 30 days (**until February 22, 2015**) to either (1) submit additional information to our office or (2) request additional time beyond the 30 days to submit additional information. If you wish to request additional time, you must do so **in writing**, before the 30 day period expires. Such a request should state what steps are being taken to obtain the information and the amount of time you will need to supply the information to our office. In order for the application to retain its priority of filing, the original application and attachments must be returned, with the requested information, to this office on or before **February 22, 2015**, or within any authorized extension of time thereof. According to the law, default in the refiling of the completed application and attachments as outlined above, within the time allowed, shall constitute forfeiture of your priority date and dismissal of the application.

Any relevant credible information submitted within the time allowed will be given due consideration, prior to final action on the application. If you have any questions, please contact me at (785) 296-3495. If you wish to discuss a specific file, please have the file number ready so that I may help you more efficiently.

Sincerely,

Douglas W. Schemm
Environmental Scientist
Topeka Field Office

Enclosure

Analysis Results

The selected PD is in an area to new appropriations.
The safe yield, based on the variables listed below is 2,188.01 AF.
Total prior appropriation in the circle is 2,334.19 AF. − 221 = 2113.19 AF
Total quantity of water available for appropriation is 0.00 AF.
74.8 AF

Safe Yield Variables

The area used for the analysis is set at 6483 acres.
Potential annual recharge of the area is estimated to be 5.4 inches.
The percent of recharge available for appropriation is 75%.

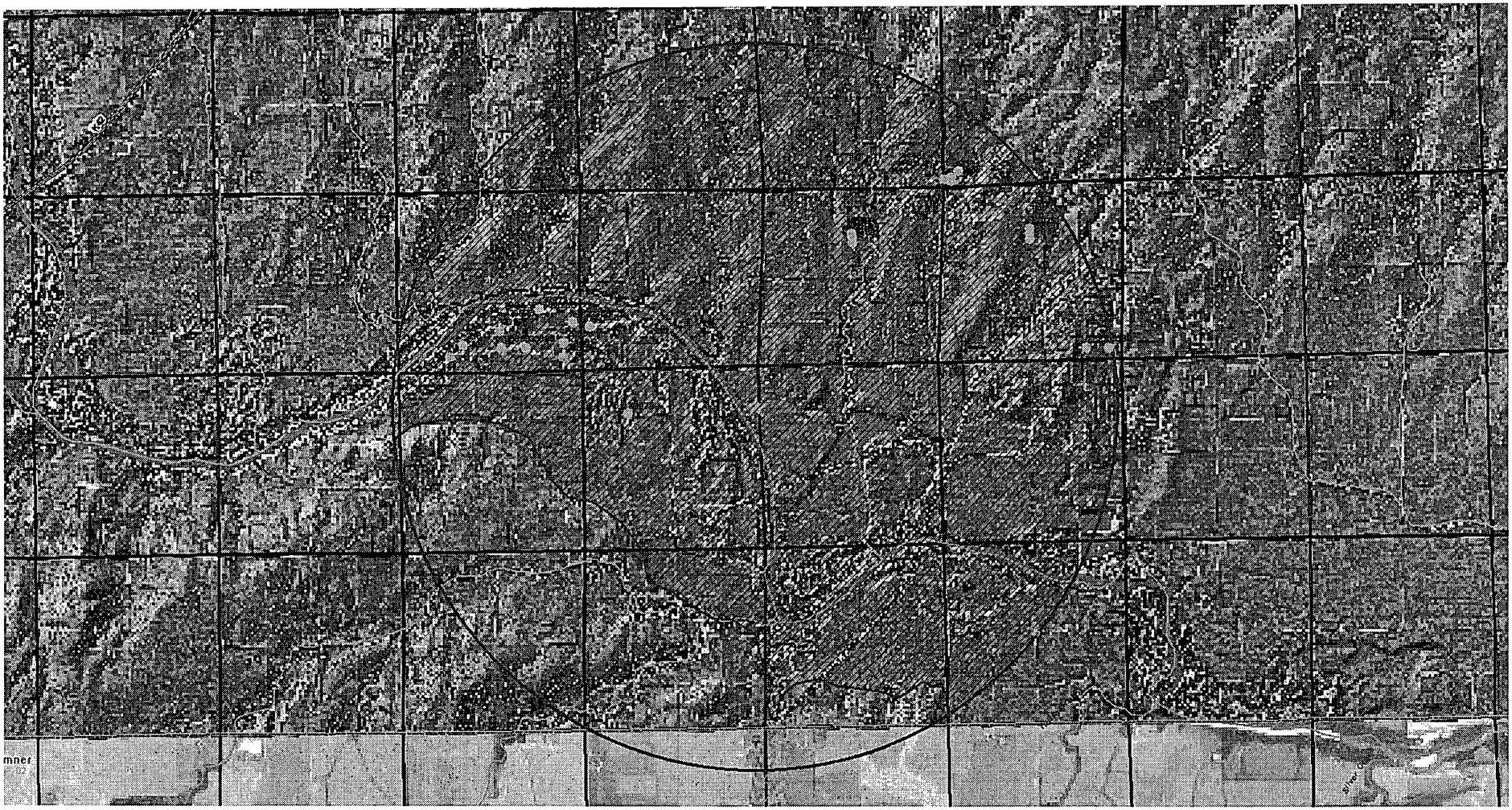
Authorized Quantity values are as of 22-JAN-2015 and are based on Appropriated and Vested ground water right and possible stream nodes for GMD #2. Domestic, Term and Temporary water rights have been excluded.

There are 12 water right(s) and 24 point(s) of diversion within the circle.

File Number	Use	ST	SR	Q4	Q3	Q2	Q1	FeetN	FeetW	Sec	Twp	Rng	ID	Qind	Auth_Quant	Add_Quant	Tacres	Nacres
A 8588 00	MUN	NK	G		SW	SE	SE	0	0	23	29	02W	1	WR	236.86	236.86		
Same	MUN	NK	G		SE	SE	SE	0	0	23	29	02W	2	WR				
Same	MUN	NK	G		SE	SE	SE	0	0	23	29	02W	3	WR				
A 22856 00	IND	NK	G		NE	SE	SE	785	520	20	29	02W	4	PD	177.23	177.23		
Same	IND	NK	G		SE	SE	SE	420	536	20	29	02W	15	PD	177.23	177.23		
Same	IND	NK	G		NW	SW	SW	1252	4891	21	29	02W	3	PD	177.23	177.23		
A 23611 00	IND	NK	G		NW	SE	SW	727	3484	20	29	02W	7	PD	177.23	177.23		
Same	IND	NK	G		SW	SE	SW	520	3859	20	29	02W	16	PD	177.23	177.23		
A 35899 00	IND	NK	G		SW	SW	SE	651	2359	20	29	02W	9	WR	175.48	175.48		
A 36005 00	IND	NK	G		SE	SW	SE	636	1638	20	29	02W	10	WR	177.23	177.23		
A 38976 00	IND	NK	G		SW	NW	SE	1204	2374	20	29	02W	17	WR	151.15	0.00		
A 38977 00	IND	NK	G		SE	NE	SE	1416	156	20	29	02W	18	WR	171.71	154.74		
A 38978 00	IND	NK	G		SW	NE	SE	1790	1237	20	29	02W	13	WR	158.05	134.84		
A 43942 00	IRR	NK	G		SW	SW	SW	13	5006	14	29	02W	6	WR	188.00	188.00	125.00	125.00
Same	IRR	NK	G		SW	SW	SW	305	4797	14	29	02W	7	WR				
Same	IRR	NK	G		SW	SW	SW	131	4999	14	29	02W	10	WR				
Same	IRR	NK	G		SW	SW	SW	75	5194	14	29	02W	11	WR				
A 46194 00	IRR	NK	G		NW	SW	NE	3808	2520	22	29	02W	5	WR	78.00	78.00	60.00	60.00
Same	IRR	NK	G		NW	SW	NE	3553	2511	22	29	02W	6	WR				
Same	IRR	NK	G		NW	SW	NE	3681	2516	22	29	02W	7	WR				
A 47077 00	IRR	KE	G			NC	N2	3990	2650	23	29	02W	4	WR	81.90	81.90	63.00	63.00
Same	IRR	KE	G		NW	SW	NE	3519	2619	23	29	02W	8	WR				
Same	IRR	KE	G		NW	SW	NE	3679	2619	23	29	02W	9	WR				
A 49078 00	IRR	AY	G				NW	3960	3960	28	29	02W	1	WR	221.00	221.00	170.00	170.00

Safe Yield Report Sheet
Proposed Water Right Application
Point of Diversion in SESENENE 28-29S-02W

==========



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DESCRIPTION OF OPERATION FOR IRRIGATION PROJECTS

REVIEW SHEET

File No. 49,078

County: SEDGWICK
50% NIR: 10.7
80% NIR: 13.1

Estimated irrigation application efficiency: 90%

Center pivot:	80%
LEPA (including cultural practices):	90%
Furrow irrigation:	70%
Furrow irrigation with tailwater recovery:	85%
Graded border irrigation:	70% (varies)
Level border irrigation:	80%

Net annual irrigation water requirement (NIR) for 80% rainfall for the anticipated crop with the highest water requirement:

Crop: Corn NIR: 13.1 inches

Estimated gross annual water requirement: **206.2** acre feet
(Authorized acres * NIR / Efficiency / 12)
170 13.1 0.9 12

Maximum Reasonable Acreage Based on 50% NIR: **167.6** Acres (Requesting 170 acres)
(Authorized Qty * 12 * Efficiency / 50%NIR)
166 12 0.9 10.7

Comments:

Requested quantity of 166 acre-feet is only slightly less than 169 acre-feet to meet reasonable acreage, and i

Proposed acreage just slightly exceeds the maximum reasonable acreage.
Therefore the requested quantity of water is reasonable and no conservation plan should be required based on the information provided.

Recommendation:

☐ Require a water conservation plan prior to acting on the application.

☐ Require a water conservation plan as a condition of the permit, to be submitted before the initial deadline to provide notice and proof of completion of the diversion works.

☐ Waive the requirement for a water conservation plan at this time.

☐ Conservation plan not required by K.S.A. 82a-733 and I concur.

By: _____

Title: _____ Date: _____

Report Date Tuesday, September 12 2017

Water Rights and Points of Diversion Within 2.00 miles of point defined as:
4092 ft N and 305 ft W of the SE Corner of Section 28, T 29S, R 2W
Located at: 97.533781 West Longitude and 37.501091 North Latitude
GROUNDWATER ONLY

All wells > ½ mile, meets well spacing of 1,320'

File Number	Use	ST	SR	Dist (ft)	Q4	Q3	Q2	Q1	FeetN	FeetW	Sec	Twp	Rng	ID	Batt	Auth_Quan	Add_Quan	Unit
A__ 8588	00 MUN	NK	G	9956	--	SW	SE	SE	-----	-----	23	29	2W	1		236.86	236.86	AF
A__ 22856	00 IND	NK	G	5815	--	NE	SE	SE	785	520	20	29	2W	4		177.23	177.23	AF
Same				5719	--	SE	SE	SE	420	536	20	29	2W	15		177.23	177.23	AF
Same				5371	--	NW	SW	SW	1252	4891	21	29	2W	3		177.23	177.23	AF
A__ 23611	00 IND	NK	G	8654	--	NW	SE	SW	727	3484	20	29	2W	7		177.23	177.23	AF
Same				8979	--	SW	SE	SW	520	3859	20	29	2W	16		177.23	177.23	AF
A__ 35899	00 IND	NK	G	7553	--	NW	SW	SE	701	2359	20	29	2W	19		175.48	175.48	AF
A__ 36005	00 IND	NK	G	6839	--	SE	SW	SE	636	1638	20	29	2W	10		177.23	177.23	AF
A__ 38976	00 IND	NK	G	7706	--	SW	NW	SE	1204	2374	20	29	2W	17		151.15	.00	AF
A__ 38977	00 IND	NK	G	5727	--	SE	NE	SE	1416	156	20	29	2W	18		171.71	154.74	AF
A__ 38978	00 IND	NK	G	6863	--	SW	NE	SE	1790	1237	20	29	2W	13		158.05	134.84	AF
A__ 43942	00 IRR	NK	G	8918	--	SW	SW	SW	131	4999	14	29	2W	10	G 3	188.00	188.00	AF
Same				8825	--	SW	SW	SW	13	5006	14	29	2W	6	B 3			
Same				9182	--	SW	SW	SW	305	4797	14	29	2W	7	B 3			
Same				8748	--	SW	SW	SW	75	5194	14	29	2W	11	B 3			
A__ 46194	00 IRR	NK	G	5742	--	NW	SW	NE	3681	2516	22	29	2W	7	G 2	78.00	78.00	AF
Same				5849	--	NW	SW	NE	3808	2520	22	29	2W	5	B 2			
Same				5635	--	NW	SW	NE	3553	2511	22	29	2W	6	B 2			
A__ 47077	00 IRR	NK	G	9606	--	--	NC	N2	3684	2621	23	29	2W	9	G 2	80.60	80.60	AF
Same				9689	--	--	NC	N2	3838	2619	23	29	2W	4	B 2			
Same				9525	--	--	NC	N2	3529	2622	23	29	2W	8	B 2			
A__ 49078	00 IRR	AY	G	0	--	--	--	NE	4092	305	28	29	2W	1		221.00	221.00	AF
A__ 49416	00 IRR	GY	G	7544	--	SW	NE	SW	1535	3758	26	29	2W	5	G 4	172.90	172.90	AF
Same				7416	--	SE	NW	SW	1323	3970	26	29	2W	6	B 4			
Same				7277	--	SE	NW	SW	1747	3970	26	29	2W	7	B 4			
Same				7814	--	SW	NE	SW	1323	3546	26	29	2W	8	B 4			
Same				7682	--	SW	NE	SW	1747	3546	26	29	2W	9	B 4			

Total Net Quantities Authorized:	Direct	Storage
Total Requested Amount (AF) =	221.00	.00
Total Permitted Amount (AF) =	172.90	.00
Total Inspected Amount (AF) =	.00	.00
Total Pro_Cert Amount (AF) =	.00	.00
Total Certified Amount (AF) =	2111.89	.00
Total Vested Amount (AF) =	.00	.00
TOTAL AMOUNT (AF) =	2505.79	.00

An * after the source of supply indicates a pending application for change for the file number.
An * after the ID indicates a 15 AF exemption was granted for the file number.
A "G" in the Batt column indicates the GEO CTR of a battery. A "B" indicates a well in the battery.
The number in the Batt column is the number of wells in the battery.

Water Rights and Points of Diversion Within 2.00 miles of point defined as:
97.533781 West Longitude and 37.501091 North Latitude
GROUNDWATER ONLY
WATER USE CORRESPONDENTS:

File Number Use ST SR
A__ 8588 00 MUN NK G
> CITY OF CLEARWATER
>
> PO BOX 453
> CLEARWATER KS 67026
>----------
A__ 22856 00 IND NK G
> OCCIDENTAL CHEMICAL CORPORATION
> MIKE E GANNAWAY
> PO BOX 12283
> WICHITA KS 67277
>----------
A__ 23611 00 IND NK G
> OCCIDENTAL CHEMICAL CORPORATION
> MIKE E GANNAWAY
> PO BOX 12283
> WICHITA KS 67277
>----------
A__ 35899 00 IND NK G
> OCCIDENTAL CHEMICAL CORPORATION
> MIKE E GANNAWAY
> PO BOX 12283
> WICHITA KS 67277
>----------
A__ 36005 00 IND NK G
> OCCIDENTAL CHEMICAL CORPORATION
> MIKE E GANNAWAY
> PO BOX 12283
> WICHITA KS 67277
>----------
A__ 38976 00 IND NK G
> OCCIDENTAL CHEMICAL CORPORATION
> MIKE E GANNAWAY
> PO BOX 12283
> WICHITA KS 67277
>----------
A__ 38977 00 IND NK G
> OCCIDENTAL CHEMICAL CORPORATION
> MIKE E GANNAWAY
> PO BOX 12283
> WICHITA KS 67277
>----------
A__ 38978 00 IND NK G
> OCCIDENTAL CHEMICAL CORPORATION
> MIKE E GANNAWAY
> PO BOX 12283
> WICHITA KS 67277
>----------
A__ 43942 00 IRR NK G
> DANIEL J LAUER
>

SDK Laboratories

1000 Corey Road
P.O. Box 886
Hutchinson, KS 67504-0886
620-665-5661
FAX: 620-665-0559
TOLL FREE: 877-464-0623
www.sdklabs.com

Sample # 1907.14
Sample: Water
Other ID: Max Jaden 28-29-2W

Date Received: 4/30/2014 10:45:00
Date/Time Sampled: 4/28/2014 0:00:00
Date Reported: 05/02/2014
Total Fee: $ 35.00

DARLING DRILLING
3916 WEST 56TH
HUTCHINSON, KS 67502

ANALYSIS

	Result	Units	Date/Time Analyzed	Analyst
++pH - SM 4500-H+ B	7.62	s.u.	4/30/2014 15:22	KO
++Chloride - SM 4500-Cl B	75.00	mg/L	5/1/2014 10:00	SE
++Total Hardness - SM 2340B	230	mg/L		
++Nitrate-Nitrogen - SM 4500-NO3 D	8.45	mg/L	4/30/2014 15:30	SE
++Calcium - SM 3111B	61.50	mg/L	5/1/2014 12:20	KLW
++Magnesium - SM 3111B	18.60	mg/L	5/1/2014 12:20	KLW
++Sodium - SM 3111B	146.00	mg/L	5/1/2014 15:40	MH
++Sulfate - SM 4500 SO4 E	135.00	mg/L	4/30/2014 13:30	SE
% Sodium	64.60	%		
SAR-Sodium Absorption Ratio	4.174	s.u.		
++Electrical Conductivity - SM 2510B	1030	umhos/cm	5/1/2014 13:00	SE
TDS-Total Dissolved Solids - Calculated	730	mg/L		
Irrigation Quality Rating	AS FOLLOWS			
Light Soil -Salinity Hazard	Low			
Light Soil - Sodium Hazard	Medium			
Medium Soil -Salinity Hazard	Medium			
Medium Soil -Sodium Hazard	High			
Heavy Soil -Salinity Hazard	Medium			
Heavy Soil -Sodium Hazard	Very High			
General Comment:	Permissible/Doubtful			

**Sample receipt temperature = 21.5 degrees C
**Sample beyond hold time for pH.
**No sample time listed.

* Denotes analysis was subcontracted to another laboratory for state compliance - see attached.
Methods of analysis per EPA-600 or EPA SW-846, 3rd Ed., 1986 or Standard Methods for the Examination of Water and Wastewater, 18th Edition, 1992.
++Denotes NELAP/KDHE Accredited Method. Lab Certificate #E-10152. Results meet all requirementsof NELAC unless noted.

WATER RESOURCES
RECEIVED
MAY 12 2014
KS DEPT OF AGRICULTURE

SCANNED

Approved By: _____, Quality Assurance Officer
Matt Hogan

NELAP ACCREDITED TNI LABORATORY

Copies

The results reported pertain only to the samples as received by the laboratory

New Application

49,078

I declare that all water wells or diversion sites using the same source of supply and within 1/2 mile of the proposed point of diversion have been plotted on the application map.

WATER RESOURCES RECEIVED
MAY 12 2014
KS DEPT OF AGRICULTURE

SCANNED

Signature

May 9, 2014
Date

Date: 4/29/2014
KAH/DWR
1:12,000

49,078

The following are the property owners of domestic wells within the ½ mile radius of the proposed irrigation wells/system.

1. Max H. Tjaden
   16415 W. 103rd St. S.
   Clearwater, KS 67026 620-584-2433

2. Van Tjaden
   16725 W. 103rd St. S.
   Clearwater, KS 67026 620-584-2994

3. Clinton Moldenhauer
   17102 W. 103rd St. S.
   Clearwater, KS 67026 620-584-2577

4. Norman Pelz
   17409 W. 103rd St. S.
   Clearwater, KS 67026 620-584-2982

49,078

2. Please complete the following information for the description of the operation for the irrigation project. Attach supplemental sheets as needed.

   a. Indicate the soils in the field(s) and their intake rates:

Soil Name	Percent of field (%)	Intake Rate (in/hr)	Irrigation Design Group
NAron fine sandy loam	50	.6 - 6.0	
ELANDCO Silt loam	50	.6 - 2.0	
Total:	100 %		

   b. Estimate the average land slope in the field(s): 0 - 1 %

      Estimate the maximum land slope in the field(s): 2 %

   c. Type of irrigation system you propose to use (check one):

      _____ Center pivot X Center pivot - LEPA _____ "Big gun" sprinkler

      _____ Gravity system (furrows) _____ Gravity system (borders) _____ Sideroll sprinkler

      Other, please describe: _____

   d. System design features:

      i. Describe how you will control tailwater:

      ii. For sprinkler systems:

         (1) Estimate the operating pressure at the distribution system: _____ psi

         (2) What is the sprinkler package design rate? _____ gpm

         (3) What is the wetted diameter (twice the distance the sprinkler throws water) of a sprinkler on the outer 100 feet of the system? _____ feet

         (4) Please include a copy of the sprinkler package design information.

   e. Crop(s) you intend to irrigate. Please note any planned crop rotations:

      SOYBEANS, CORN, WHEAT, MILO, VARIOUS COVER CROPS

   f. Please describe how you will determine when to irrigate and how much water to apply (particularly important if you do not plan a full irrigation).

You may attach any additional information you believe will assist in informing the Division of the need for your request.

May 9, 2014
(Date)

Kansas Department of Agriculture
Division of Water Resources
David W. Barfield, Chief Engineer
109 SW 9th Street, 2nd Floor
Topeka, Kansas 66612-1283

Re: Application
File No. 49,078

Minimum Desirable Streamflow

Dear Sir:

I understand that a Minimum Desirable Streamflow requirement has been established by the legislature for the source of supply to which the above referenced application applies.

I understand that diversion of water pursuant to this application will be subject to regulation any time Minimum Desirable Streamflow requirements are not being met.

I also understand that if this application is approved, there could be times, as determined by the Division of Water Resources, when I would not be allowed to divert water. I realize that this could affect the economics of my decision to appropriate water.

I am aware of the above factors, and with the knowledge thereof, request that the Division of Water Resources proceed with processing and approval, if possible, of the above referenced application.

Signature of Applicant

MAX H TJAOEN
(Print Applicant's Name)

State of Kansas)
) ss
County of Sedgwick)

I hereby certify that the foregoing instrument was signed in my presence and sworn to before me this 9th day of May, 2014.

Notary Public

My Commission Expires: 10-14-2017

ALICIA M. FISHER
Notary Public - State of Kansas
My Appt. Expires 10-14-2017

WATER RESOURCES
RECEIVED SCANNED
MAY 12 2014
KS DEPT OF AGRICULTURE

DWR 1-100.171 (Revised 03/27/2008)

MINIMUM DESIRABLE STREAMFLOW FORM TO BE USED WHEN APPLICABLE WHEN FILING AN APPLICATION FOR PERMIT TO APPROPRIATE WATER FOR BENEFICIAL USE

The Kansas Legislature has established minimum desirable streamflows for the streams listed below. If your proposed diversion of water is going to be from one of these watercourses or adjacent alluvial aquifers, please complete the back side of this page and submit it along with your application for permit to appropriate water.

Arkansas River
Big Blue River
Chapman Creek
Chikaskia River
Cottonwood River
Delaware River
Little Arkansas River
Little Blue River
Marais des Cygnes River
Medicine Lodge River
Mill Creek (Wabaunsee Co. area)
Neosho River
Ninnescah River
North Fork Ninnescah River
Rattlesnake Creek
Republican River
Saline River
Smoky Hill River
Solomon River
South Fork Ninnescah
Spring River
Walnut River
Whitewater River

Darling Drilling Company

Telephone (620) 662-7901 3916 W. 56th Ave.
Hutchinson, Ks. 67501

DRILLER'S TEST LOG

Date: 12/12/2013
Name: Max Jaden
Address: Clearwater, Ks.
County: Sedgwick
Quarter: NW **Section:** 27 **Township:** 29 **Range:** 2W

DRILLED FOOTAGE		DESCRIPTION OF STRATA
From	To	
0	3	Top soil
3	9	Brown clay
9	36	Fine-med. to sand & gravel
		Latitude: 37.49869
		Longitude: 097.53262
		Elevation: 1275

Static water level: 17'
Depth of well: 36'
Type & size of casing: 160# 4"
Plain: 0 to 26'
Perf: 26' to 36'
Gravel pack intervals: 36-17
Grout material: 17 to 0
Contamination: n/a
Direction from well:
Casing above surface: 16"
Bore hole: 7"
Remarks:

49,078

Darling Drilling Company

Telephone (620) 662-7901 3916 W. 56th Ave.
Hutchinson, Ks. 67501

DRILLER'S TEST LOG

Date: 5/6/2014
Name: Max Jaden
Address: Clearwater, Ks.
County: Sedgwick
Quarter: NE **Section:** 28 **Township:** 29 **Range:** 2W

DRILLED FOOTAGE		DESCRIPTION OF STRATA
From	To	
0	3	Top soil
3	20	Reddish-brown clay-silty
20	30	Fine-med. sand
30	32	Grey shale
		Latitude: 37.50111
		Longitude: 097.53378
		NAD 83

Static water level: 15'
Depth of well: 32'
Type & size of casing: 160# 4"
Plain: 0 to 20'
Perf: 20' to 32'
Gravel pack intervals: 32-20
Grout material: 20 to 0
Contamination: n/a
Direction from well:
Casing above surface: 24"
Bore hole: 7"
Remarks:

Kansas
Department of Agriculture
Division of Water Resources

109 SW 9th Street, 2nd Floor
Topeka, Kansas 66612-1280

Phone: (785) 296-3717
Fax: (785) 296-1176
www.agriculture.ks.gov

Jackie McClaskey, Secretary
David W. Barfield, Chief Engineer

Sam Brownback, Governor

May 12, 2014

MAX TJADEN
16415 WEST 103 STREET SOUTH
CLEARWATER KS 67026

RE: Application
File No. 49,078

Dear Sir or Madam:

Your application for permit to appropriate water in 28-29S-2W, in Sedgwick County, was received and has been assigned the file number noted above.

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. Once review of your application has begun, we will contact you, if additional information is required.

In accordance with the provisions of the Kansas Water Appropriation Act, a portion of which is included below, the use of water as proposed prior to approval of the application is unlawful. 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 our office. If you wish to discuss a specific file, please have the file number ready so that we may help you more efficiently.

Sincerely,

Douglas W. Schemm

Douglas W. Schemm
New Application Unit Supervisor
Water Appropriation Program

DWS: al
pc: Stafford Field Office

SCANNED

MAX TJADEN
16415 W. 103RD ST. S.
CLEARWATER, KS 67026

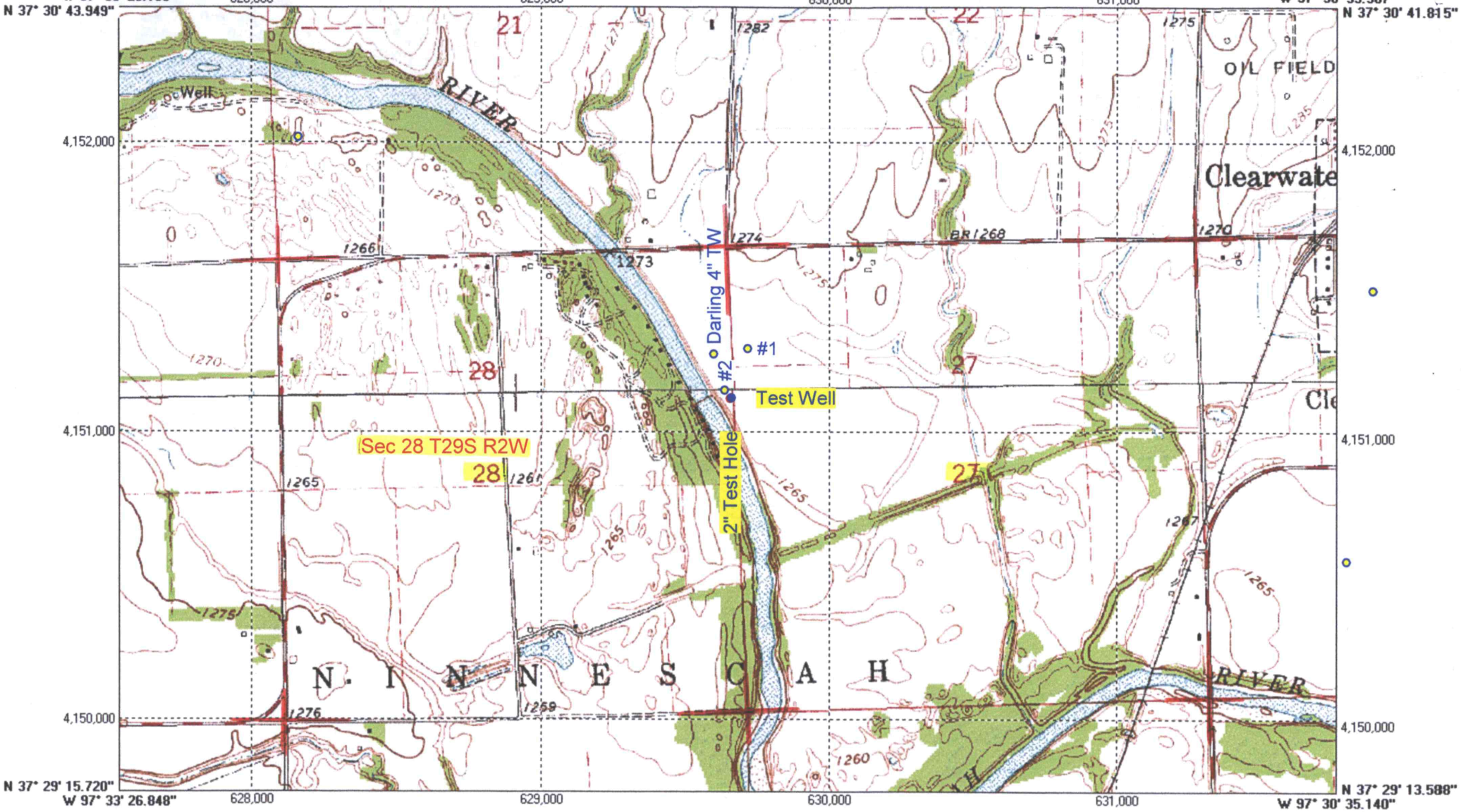
UNITED STATES POSTAL SERVICE
1000 66612
U.S. POSTAGE PAID CLEARWATER,KS 67026 MAY 09, 14 AMOUNT
$1.40
00068659-08

KANSAS DEPT. of AGRICULTURE
DIVISION of WATER RESOURCES
109 SW 9th Street, 2nd Floor
TOPEKA, KANSAS 66612-1283

K. HERMES

SCANNED

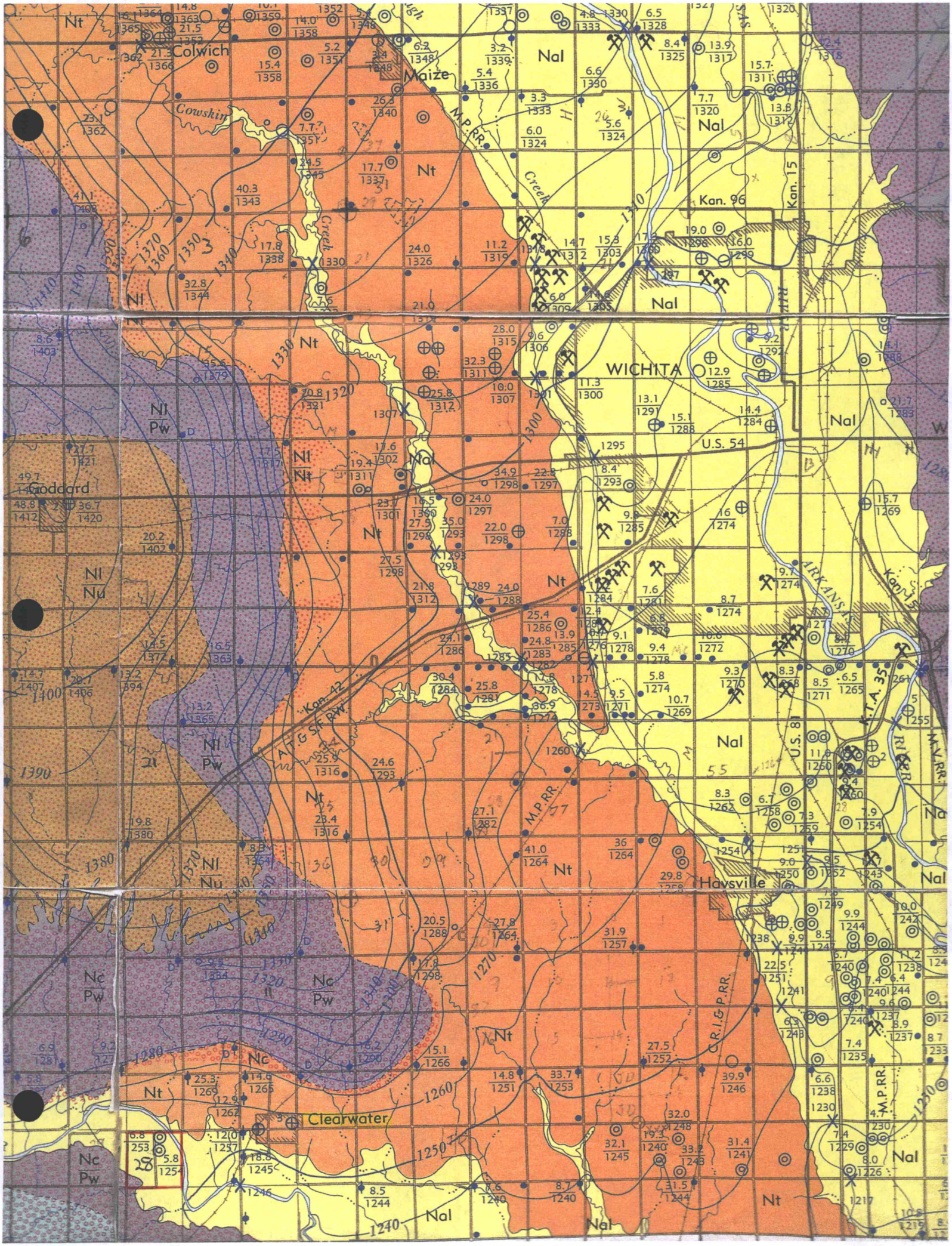
Tjaden1

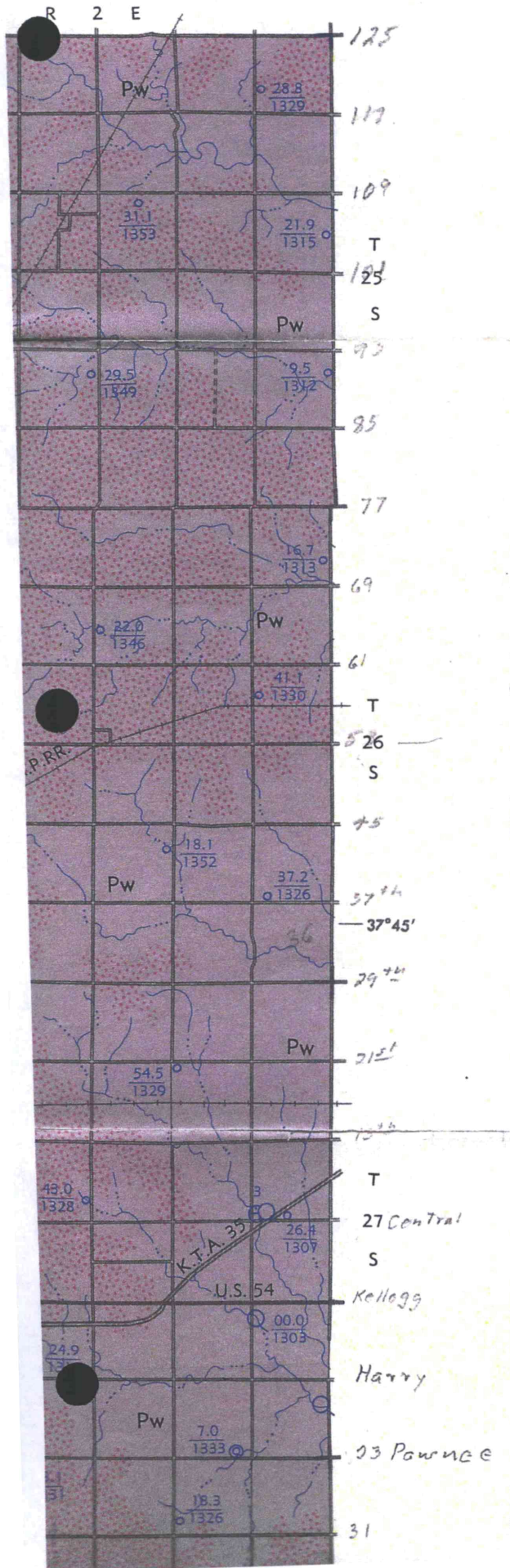


1927 North American Datum; 1,000-meter UTM grid zone 14
Generated by BigTopo (www.igage.com)
Map compiled from USGS Quads: Clearwater; KS Millerton; KS

0 ¼ ½ 1 Mile
0 1000 2000 3000 5000 Feet
0 0.5 1 Kilometer

Max Tjaden


WICHITA
Colwich
Maize
Goddard
Haysville
Clearwater
Cowskin Creek
Kan. 96
U.S. 54
U.S. 81
Kan. 15
Kan. 42
A.T. & S.F. Ry.
M.P.R.R.
C.R.I.G.P.R.R.
ARKANSAS RIVER
Nt
Nal
Nl
Nu
Nc
Pw



EXPLANATION

Pleistocene Series

Upper Pleistocene Subseries

Nal

Alluvium and terrace deposits (Wisconsinan to Recent)

Chiefly fine to coarse sand and fine to coarse arkosic gravel with clayey silt in upper part. Yields large quantities of water.

Nl

Loess (Illinoisan to Recent)

Tan to pinkish-tan calcareous silt; contains zones of caliche nodules and some sandy zones. Overlies Permian or Pleistocene deposits in most upland areas of the County. Generally lies above water table, but locally basal part is saturated and may yield small quantities of water.

Lower Pleistocene Subseries

Nc

Colluvium (Illinoisan to Recent)

Heterogeneous mixture of silt, clay, sand, gravel, and bedrock fragments. Generally lies above water table, but locally basal part is saturated and may yield small quantities of water from sandy zones.

Nt

Terrace deposits (Illinoisan)

Chiefly fine to coarse sand and fine to coarse arkosic gravel with sandy silt in upper part. Sand and gravel beds locally contain silt and clay lenses. Yields large quantities of water.

Nu

Undifferentiated deposits (Nebraskan and Kansan)

Light tan to gray, sandy silt and clay, fine to coarse sand, and fine to coarse arkosic gravel. Locally contains lenticular bed of volcanic ash in upper part. Yields small to moderate quantities of water where in upland position and large quantities in Arkansas Valley.

NEOGENE SYSTEM

Pn

Ninnescah Shale

Composed chiefly of beds of brownish-red silty shale and siltstone. Contains some thin beds of grayish-green shale, dolomite, and fine-grained sandstone. Yields small quantities of hard water.