

# NOTICE

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

WATER RESOURCES RECEIVED 39 Pages

JAN 18 2022

THE STATE OF KANSAS



KS DEPT OF AGRICULTURE

KANSAS DEPARTMENT OF AGRICULTURE
Mike Beam, Secretary of Agriculture

DIVISION OF WATER RESOURCES
Earl D. Lewis Jr., Chief Engineer

50704

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

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,
1320 Research Park Drive, Manhattan, Kansas 66502:

1. Name of Applicant (Please Print): Grainland Farms, Inc
Address: Attn: Dennis Shurtz, 2508 Edgemont Drive, STE #4
City: Arkansas City State KS Zip Code 67005
Telephone Number: (620) 441-7040

2. The source of water is: [ ] surface water in (stream)
OR [x] groundwater in Arkansas 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 192 acre-feet OR -- gallons per calendar year,
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) [x] 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 Meets K.A.R. 5-3-1 (YES/NO) Use IRR Source G/S County CL By BMM Date 1/19/22
Code RE2 Fee \$ 300 TR # Receipt Date 1/19/22 Check # 4376

1/21/2022
LMoody

WATER RESOURCES  
RECEIVED

File No. \_\_\_\_\_  
JAN 18 2022

KS DEPT OF AGRICULTURE

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.

- (A) One in the NW quarter of the SW quarter of the SE quarter of Section 33, more particularly described as being near a point 953 feet North and 2315 feet West of the Southeast corner of said section, in Township 34 South, Range 3 East, Cowley County, Kansas. (this point is the geo-center)
- (B) One in the \_\_\_\_\_ quarter of the \_\_\_\_\_ quarter of the \_\_\_\_\_ quarter of Section \_\_\_\_\_, more particularly described as being near a point \_\_\_\_\_ feet North and \_\_\_\_\_ feet West of the Southeast corner of said section, in Township \_\_\_\_\_ South, Range \_\_\_\_\_ East, Cowley County, Kansas.
- (C) One in the \_\_\_\_\_ quarter of the \_\_\_\_\_ quarter of the \_\_\_\_\_ quarter of Section \_\_\_\_\_, more particularly described as being near a point \_\_\_\_\_ feet North and \_\_\_\_\_ feet West of the Southeast corner of said section, in Township \_\_\_\_\_ South, Range \_\_\_\_\_ East, Cowley County, Kansas.
- (D) One in the \_\_\_\_\_ quarter of the \_\_\_\_\_ quarter of the \_\_\_\_\_ quarter of Section \_\_\_\_\_, more particularly described as being near a point \_\_\_\_\_ feet North and \_\_\_\_\_ feet West of the Southeast corner of said section, in Township \_\_\_\_\_ South, Range \_\_\_\_\_ East, Cowley County, Kansas.
- (E) One in the \_\_\_\_\_ quarter of the \_\_\_\_\_ quarter of the \_\_\_\_\_ quarter of Section \_\_\_\_\_, more particularly described as being near a point \_\_\_\_\_ feet North and \_\_\_\_\_ feet West of the Southeast corner of said section, in Township \_\_\_\_\_ South, Range \_\_\_\_\_ East, Cowley 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 (1/4) 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):

Grainland Farms, Inc, Attn: Dennis Shurtz, 2508 Edgemont Drive, STE #4, Arkansas City, KS 67005  
(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 January 12, 2022 X Grainland Farms Inc  
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.



WATER RESOURCES  
RECEIVED

File No. JAN 18 2022

7. The proposed project for diversion of water will consist of 4 wells, 4 pumps, 4 motors KS DEPT OF AGRICULTURE  
(number of wells, pumps or dams, etc.)  
and will be completed (by) as soon as possible if approved, depending on weather and crops.  
(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 1/1/23  
(Mo/Day/Year)

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 n/a
- If no, explain here why a Water Structures permit is not required This application is not impounding water

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.

There are no other water rights associated with this property.



**WATER WELL RECORD Form WWC-5**

Division of Water Resources App. No.

JAN 18 2022 Well ID

Original Record  Correction  Change in Well Use

**1 LOCATION OF WATER WELL:** County: Cowley Fraction SE 1/4 NW 1/4 SW 1/4 SE 1/4 Section Number 33 Township Number T 34 S Range Number R 3 E

**2 WELL OWNER:** Last Name: Shurtz First: Dennis 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:  Nearest intersection 41st Rd and 302nd RD, Arkansas City, KS  
 Business: grainland farms, inc. Address: 2508 Edgemont Dr. Address: Suite #4 City: Arkansas City State: KS ZIP: 67005

**3 LOCATE WELL WITH "X" IN SECTION BOX:**

**4 DEPTH OF COMPLETED WELL:** 80 ft.  
 Depth(s) Groundwater Encountered: 1) 68 ft. 2) ... ft. 3) ... ft. or 4)  Dry Well  
 WELL'S STATIC WATER LEVEL: 34 ft. 9/25/2021  
 below land surface, measured on (mo-day-yr) ...  
 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: 400 gpm  
 Bore Hole Diameter: 8.5 in. to 80 ft. and ... in. to ... ft.

**5 Latitude:** 37.044550 (decimal degrees)  
**Longitude:** -97.101530 (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:** ... ft.  Ground Level  TOC  
 Source:  Land Survey  GPS  Topographic Map  Other

**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): Irrigation Test well

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 5 in. to 80 ft., Diameter 18 in. to ... ft., Diameter ... in. to ... ft.  
 Casing height above land surface 18 in. Weight ... lbs./ft. Wall thickness or gauge No. 160

**TYPE OF SCREEN OR PERFORATION MATERIAL:**  
 Steel  Stainless Steel  PVC  Other (Specify) ...  
 Brass  Galvanized Steel  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 40 ft. to 80 ft., From ... ft. to ... ft., From ... ft. to ... ft.  
**GRAVEL PACK INTERVALS:** From 25 ft. to 80 ft., From ... ft. to ... ft., From ... ft. to ... ft.

**9 GROUT MATERIAL:**  Neat cement  Cement grout  Bentonite  Other  
 Grout Intervals: From 0 ft. to 25 ft., From ... ft. to ... ft., From ... ft. to ... ft.  
**Nearest source of possible contamination:**  No potential source of contamination within 200 ft.  
 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	1	top soil			
2	40	red clay			
40	42	lime			
43	59	red shale			
59	68	gray shale			
68	72	gyp			
72	80	gray shale			
<b>Notes:</b>					

**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) 9/22/2021 and this record is true to the best of my knowledge and belief. Kansas Water Well Contractor's License No. 746 This Water Well Record was completed on (mo-day-year) 12/21/2021 under the business name of McPherson Drilling Co.



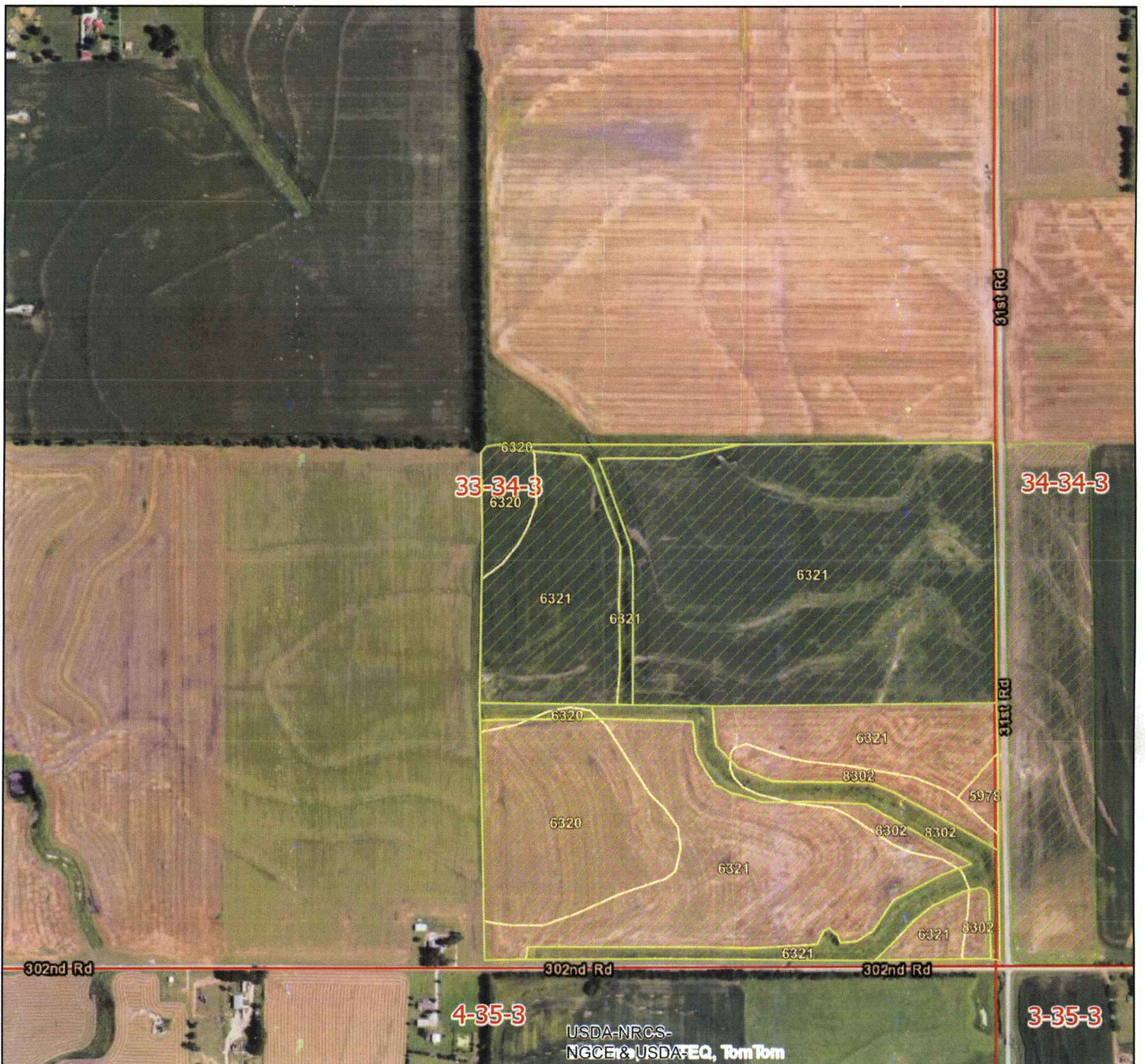
# Soils Map

JAN 18 2022

Client(s): GRAINLAND FARMS  
Location: 33-34-3  
Cowley County, Kansas

Assisted By: JUSTIN KNEISEL  
WINFIELD SERVICE CENTER  
COWLEY COUNTY CD

KS DEPT OF AGRICULTURE



Prepared with assistance from USDA-Natural Resources Conservation Service

0 752 Feet

Case PLUs	
	Planned
Soils	
	Soil Mapunit





JAN 18 2022

KS DEPT OF AGRICULTURE

## Map Unit Description (Brief, Generated)

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this report, along with the maps, provide information on the composition of map units and properties of their components.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

The Map Unit Description (Brief, Generated) report displays a generated description of the major soils that occur in a map unit. Descriptions of non-soil (miscellaneous areas) and minor map unit components are not included. This description is generated from the underlying soil attribute data.

Additional information about the map units described in this report is available in other Soil Data Mart reports, which give properties of the soils and the limitations, capabilities, and potentials for many uses. Also, the narratives that accompany the Soil Data Mart reports define some of the properties included in the map unit descriptions.

### Report—Map Unit Description (Brief, Generated)

#### Cowley County, Kansas

**Map Unit:** 5978--Vanoss silt loam, 3 to 7 percent slopes

**Component:** Vanoss (85%)

The Vanoss component makes up 85 percent of the map unit. Slopes are 3 to 7 percent. This component is on paleoterraces on valleys. The parent material consists of alluvium. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is very high. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent. This component is in the R076XY115KS Loamy Hills ecological site. Nonirrigated land capability classification is 3e. Irrigated land capability classification is 3e. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface.

**Component:** Minco (5%)

Generated brief soil descriptions are created for major soil components. The Minco soil is a minor component.

**Component:** Farnum (5%)

Generated brief soil descriptions are created for major soil components. The Farnum soil is a minor component.

**Component:** Nalim (4%)

Generated brief soil descriptions are created for major soil components. The Nalim soil is a minor component.

**Component:** Aquolls, occasionally ponded (1%)

JAN 18 2022

KS DEPT OF AGRICULTURE

Generated brief soil descriptions are created for major soil components. The Aquolls, occasionally ponded soil is a minor component.

**Map Unit:** 6320--Bethany silt loam, 0 to 1 percent slopes

**Component:** Bethany (98%)

The Bethany component makes up 98 percent of the map unit. Slopes are 0 to 1 percent. This component is on ridges on uplands. The parent material consists of clayey loess over old clayey alluvium. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is high. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 3 percent. This component is in the R080AY015KS Loamy Upland (PE 24-32) ecological site. Nonirrigated land capability classification is 1. This soil does not meet hydric criteria. The calcium carbonate equivalent within 40 inches, typically, does not exceed 22 percent.

**Component:** Aquolls (1%)

Generated brief soil descriptions are created for major soil components. The Aquolls soil is a minor component.

**Component:** Aquolls, ponded (1%)

Generated brief soil descriptions are created for major soil components. The Aquolls, ponded soil is a minor component.

**Map Unit:** 6321--Bethany silt loam, 1 to 3 percent slopes

**Component:** Bethany (95%)

The Bethany component makes up 95 percent of the map unit. Slopes are 1 to 3 percent. This component is on hillslopes on uplands. The parent material consists of clayey loess over old clayey alluvium. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is high. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 3 percent. This component is in the R080AY015KS Loamy Upland (PE 24-32) ecological site. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria. The calcium carbonate equivalent within 40 inches, typically, does not exceed 22 percent.

**Component:** Vanoss (4%)

Generated brief soil descriptions are created for major soil components. The Vanoss soil is a minor component.

**Component:** Aquolls (1%)

Generated brief soil descriptions are created for major soil components. The Aquolls soil is a minor component.

**Map Unit:** 8302--Verdigris silt loam, 0 to 1 percent slopes, occasionally flooded

**Component:** Verdigris, occasionally flooded (90%)

The Verdigris, occasionally flooded component makes up 90 percent of the map unit. Slopes are 0 to 1 percent. This component is on flood plains on river valleys. The parent material consists of silty alluvium. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is very high. Shrink-swell potential is moderate. This soil is occasionally flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 3 percent. This component is in the R076XY113KS Loamy Lowland ecological site. Nonirrigated land capability classification is 2w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface.

**Component:** Brewer, rarely flooded (5%)

Generated brief soil descriptions are created for major soil components. The Brewer, rarely flooded soil is a minor component.

**Component:** Chase, rarely flooded (4%)

Generated brief soil descriptions are created for major soil components. The Chase, rarely flooded soil is a minor



JAN 18 2022

component.

**Component:** Osage, ponded (1%)

Generated brief soil descriptions are created for major soil components. The Osage, ponded soil is a **minor component**.

### Data Source Information

Soil Survey Area: Cowley County, Kansas

Survey Area Data: Version 18, Sep 13, 2021

JAN 18 2022

**Soils Inventory Report**

KS DEPT OF AGRICULTURE

Tract	Land Unit	Map Unit Symbol	Map Unit Name	Acres	Percent
1268	2	6321	Bethany silt loam, 1 to 3 percent slopes	55.8	100%
<b>Total</b>				<b>55.8</b>	<b>100%</b>

Tract	Land Unit	Map Unit Symbol	Map Unit Name	Acres	Percent
1268	3	6320	Bethany silt loam, 0 to 1 percent slopes	3.3	17%
1268	3	6321	Bethany silt loam, 1 to 3 percent slopes	16.3	83%
<b>Total</b>				<b>19.6</b>	<b>100%</b>

Tract	Land Unit	Map Unit Symbol	Map Unit Name	Acres	Percent
1268	4	6320	Bethany silt loam, 0 to 1 percent slopes	0.1	3%
1268	4	6321	Bethany silt loam, 1 to 3 percent slopes	3.1	97%
<b>Total</b>				<b>3.2</b>	<b>100%</b>

Tract	Land Unit	Map Unit Symbol	Map Unit Name	Acres	Percent
1456	1	6320	Bethany silt loam, 0 to 1 percent slopes	18.8	40%
1456	1	6321	Bethany silt loam, 1 to 3 percent slopes	26.7	57%
1456	1	8302	Verdigris silt loam, 0 to 1 percent slopes, occasionally flooded	1.5	3%
<b>Total</b>				<b>47.0</b>	<b>100%</b>

Tract	Land Unit	Map Unit Symbol	Map Unit Name	Acres	Percent
1456	17	5978	Vanoss silt loam, 3 to 7 percent slopes	1.0	7%
1456	17	6321	Bethany silt loam, 1 to 3 percent slopes	10.4	70%
1456	17	8302	Verdigris silt loam, 0 to 1 percent slopes, occasionally flooded	3.5	23%
<b>Total</b>				<b>14.9</b>	<b>100%</b>

Tract	Land Unit	Map Unit Symbol	Map Unit Name	Acres	Percent
1456	3	6320	Bethany silt loam, 0 to 1 percent slopes	0.3	2%
1456	3	6321	Bethany silt loam, 1 to 3 percent slopes	7.5	61%
1456	3	8302	Verdigris silt loam, 0 to 1 percent slopes, occasionally flooded	4.4	36%
<b>Total</b>				<b>12.2</b>	<b>100%</b>



JAN 18 2022

KS DEPT OF AGRICULTURE

Tract	Land Unit	Map Unit Symbol	Map Unit Name	Acres	Percent
1456	8	6321	Bethany silt loam, 1 to 3 percent slopes	2.1	68%
1456	8	8302	Verdigris silt loam, 0 to 1 percent slopes, occasionally flooded	1.0	32%
<b>Total</b>				<b>3.1</b>	<b>100%</b>
<b>Grand Total</b>				<b>155.8</b>	<b>100%</b>

JAN 18 2022

KS DEPT OF AGRICULTURE

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	9-22-21			
Total depth of well	80'			
Depth to water bearing formation	68'			
Depth to static water level	34'			
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

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):

Grainland Farms, Inc, Attn: Dennis Shurtz, 2508 Edgemont Drive, STE #4, Arkansas City, KS 67005  
(name, address and telephone number)

A A S Oil, Inc, 2508 Edgemont Drive, STE #4, Arkansas City, KS 67005  
(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 Arkansas City, Kansas, this 12 day of January, 2022.  
(month) (year)

Grainland Farms, Inc  
[Signature]  
(Applicant Signature)

By [Signature]  
(Agent or Officer Signature)

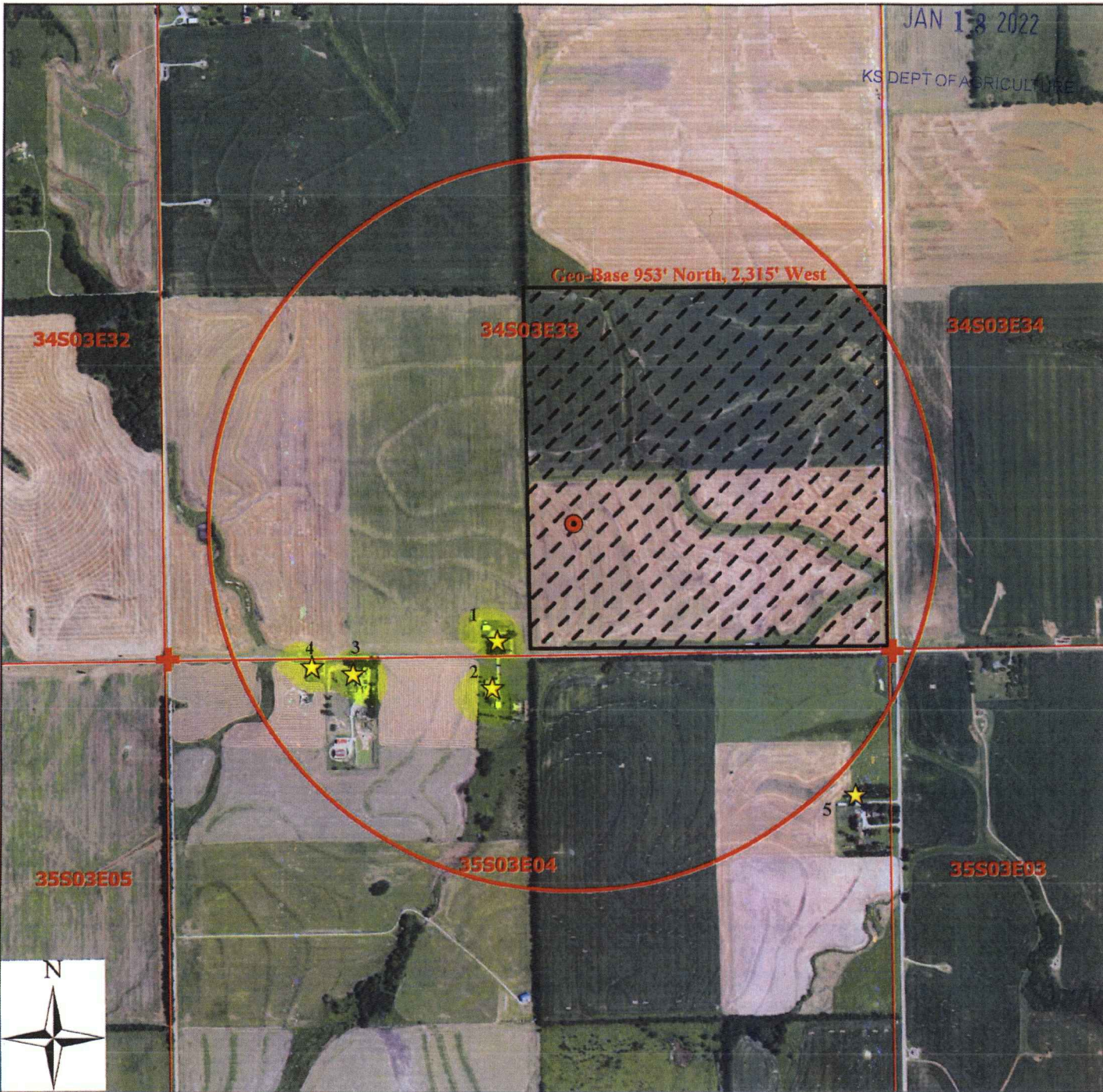
Dennis K Shurtz Pres  
(Agent or Officer - Please Print)



WATER RESOURCES RECEIVED

JAN 18 2022

KS DEPT OF AGRICULTURE



Geo-Base 953' North, 2,315' West

34S03E32

34S03E33

34S03E34

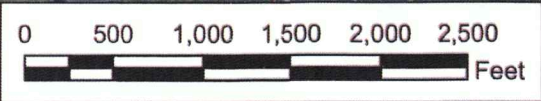
35S03E05

35S03E04

35S03E03



- Legend**
- Water Appropriation
  - ★ Domestic Well
  - Proposed Geo-Center
  - + Section Corner
  - Section Line
  - Half Mile Circle
  - Place Of Use



**Water Right Application, File No. \_\_\_\_\_**  
**33-34-3E // Cowley County**

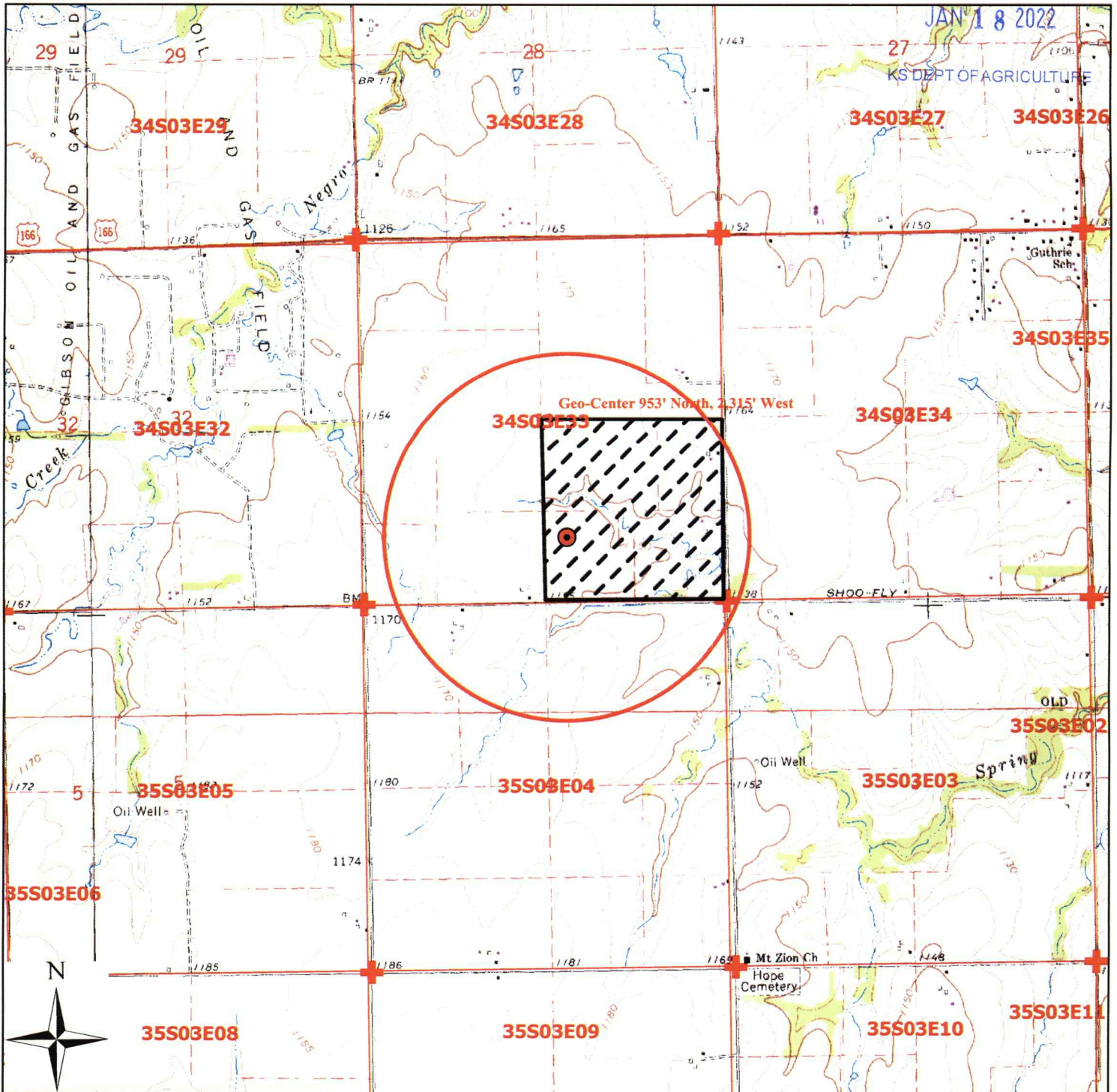
To the best of my knowledge, all points of diversion within one-half mile of the proposed point of diversion have been shown.

*[Handwritten Signature]* Pres. Cornland Farms Inc 1-12-22  
 Signature / Date 12/08/2021 JNE/SFFO 1:12,000 scale



JAN 18 2022

KS DEPT OF AGRICULTURE



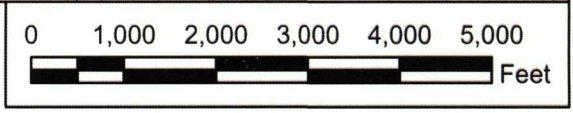
Geo-Center 953' North, 2,315' West

34S03E33



**Legend**

- Water Appropriation
- Proposed Geo-Center
- + Section Corner
- Section Line
- Half Mile Circle
- Place Of Use



**Water Right Application, File No. \_\_\_\_\_**  
**33-34-3E // Cowley County**

To the best of my knowledge, all points of diversion within one-half mile of the proposed point of diversion have been shown.

*[Handwritten Signature]* *[Handwritten Name: Craigland Farms Inc]* 1-12-2022

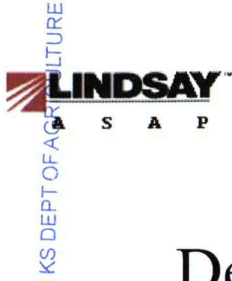
Signature / Date

12/08/2021 JNE/SFFO 1:24,000 scale



WATER RESOURCES  
RECEIVED

JAN 18 2022



Senninger Irrigation  
[www.senninger.com](http://www.senninger.com)

Dealer : Carmichael Irrigation  
210 E Hwy 96 Frontage Rd

Customer :

Printout No: 012201



\*\* Specify Senninger UP3 Nozzles when ordering \*\*

Senninger Irrigation INC. Clermont, FL U.S.A.

Date: 12/28/2021

SENNPAQ II

Page 1

WATER RESOURCES RECEIVED

JAN 18 2022

KANSAS DEPT OF AGRICULTURE

Date: 12/28/2021


Chart No: 012201

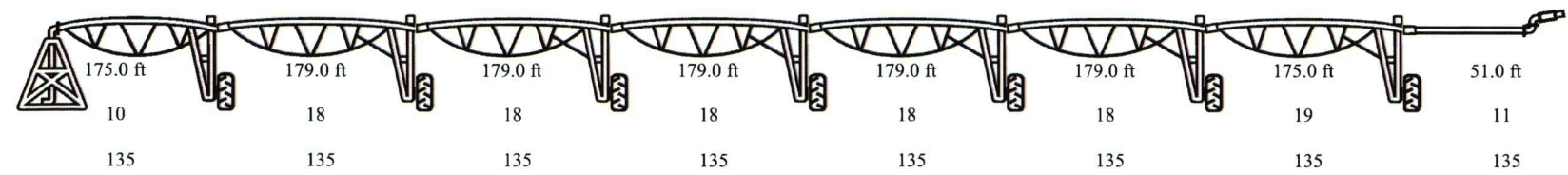
Page 2

**Dealer:** Carmichael Irrigation  
210 E Hwy 96 Frontage Rd  
Mount Hope, KS 67108

**Customer:**

**Comments:**

Machine	Pipes	Elevation
<p>Mfg: Reinke Flow: 800.00 gpm Pivot Pressure: 36.00 psi Base Press: 40.56 psi End Pressure: 25.33 psi Spacing: Span dependent Length: 1300.25 ft GPM / Acre: 5.79 gpm Average Drop: 10.5 ft End Gun: SR100 18deg .65 End Gun Throw: 113.5 ft Booster pump: 130 gpm</p>	<p>C Factor: 135 Pipe 1: 1249.3 ft, 6.43 inch ID Pipe 2: 51.0 ft, 5.80 inch ID</p>	<p>Difference above(+) pivot 0.00 Difference below(-) pivot 0.00 Elevation Rise included in calculations</p>
	Sprinklers	Regs
	<p>130 IWob2 UP3 (130)Std 9 Grv</p> 	<p>Position : Bottom 130 PSR-2-10</p>
Spans # 7		



40.56 psi



WATER RESOURCES  
RECEIVED  
JAN 18 2022  
DEPT OF AGRICULTURE

Date: 12/28/2021

Chart No: 012201

Page 3

## WARRANTY

WATER APPLICATION UNIFORMITY OBTAINED WITH THIS SYSTEM CAN BE ADVERSELY AFFECTED BY MANY VARIABLES INCLUDING THE IMPROPER MAKEUP OR INSTALLATION OF THE SPRINKLER OR SPRAY NOZZLE PACKAGE, OBSTRUCTED NOZZLES, MAINTAINING INCORRECT PIVOT PRESSURE, UNFAVORABLE CLIMATE CONDITIONS, TIGHT AND/OR SLOPING SOILS, IMPROPER END GUN ARC SETTINGS, ERRATIC AND IMPROPER OPERATING SPEED OF THE SYSTEM, AND AS WELL AS INHERENT VARIABLES IN THE MANY COMPONENTS COMPRISING THE SYSTEM. THEREFORE, SENNINGER IRRIGATION INC. MAKES NO WARRANTY AS TO THE UNIFORMITY OF COVERAGE OBTAINED FROM THIS WATER APPLICATION PRINTOUT OTHER THAN ITS MATHEMATICAL ACCURACY.

PRODUCTS MANUFACTURED BY SENNINGER IRRIGATION INC. THAT ARE SPECIFIED ON THIS SYSTEM ARE COVERED UNDER THE PRINTED "LIMITED WARRANTY" OF EACH INDIVIDUAL ITEM.

IT IS THE RESPONSIBILITY OF THE END USER TO DETERMINE IF ANY INCOMPATIBILITY EXISTS BETWEEN THE WATER DISTRIBUTION DEVICES AND THE CROP, THE SOIL, AND THE PHYSICAL STRUCTURE OF THE MECHANICAL MOVE SYSTEM. SENNINGER IRRIGATION THEREFORE DISCLAIMS ANY LIABILITY FOR DAMAGES DUE TO FAILURE OF THE SYSTEM TO PERFORM AS CONTEMPLATED.

ALL FIGURES PRESENTED ON THIS COMPUTER PRINTOUT ARE BASED ON THE FOLLOWING...

1. INFORMATION PROVIDED TO SENNINGER IRRIGATION, INC. CONCERNING PIPE LENGTH, DIAMETER, SURFACE FINISH AND OUTLET SPACINGS, PLUS WATER FLOW AND PRESSURE, PLUS ALL OTHER APPLICABLE DATA IS CORRECT.
2. THERE IS 100% WATER APPLICATION EFFICIENCY (ZERO WIND VELOCITY & NO EVAPORATION)
3. ALL BOW STRING AND WARREN TRUSS TYPE SPANS (EXCEPT THE LAST) ARE CONSIDERED TO END AT THE CENTER OF THE FLEXIBLE COUPLING. THE LAST SPAN IS CONSIDERED TO END AFTER THE "TOWER TOP" OR "END BOOM TRANSITION PIECE" FLANGE. CABLE SUPPORTED SPANS ARE CONSIDERED TO END AT THE CENTER OF THE TOWER.
4. PIVOT PRESSURE IS MEASURED UP ON THE MAIN HORIZONTAL DISTRIBUTION PIPE JUST AFTER THE LAST ELBOW.
5. PIVOT PRESSURE HAS BEEN DETERMINED IN CONSIDERATION OF A MAXIMUM FIELD ELEVATION RISE AND FALL FROM THE PIVOT POINT AS SHOWN ON PAGE ONE, WITH THESE ELEVATIONS OCCURRING AT THE END OF THE SYSTEM.
6. SPRINKLER OR SPRAY NOZZLE BASE PRESSURE MAY BE LESS THAN MAIN LINE PIPE PRESSURE DUE TO THE USE OF PRESSURE REGULATORS, WITH FLOW VS. FRICTION LOSS THROUGH EACH REGULATOR CONSIDERED. WHERE DROP PIPES ARE USED THE STATIC HEAD IS ADDED TO THE MAIN PIPE PRESSURE TO DETERMINE SPRAY NOZZLE INLET PRESSURE.

WATER RESOURCES  
RECEIVED

JAN 18 2022

DEPT OF AGRICULTURE

Date: 12/28/2021

Chart No: 012201

Page 4

## CAUTIONS

WHEN IRRIGATING WITH SENNINGER I-WOBS, USE STANDARD INTEGRAL WEIGHTS OR THREADED PLASTIC OR GALVANIZED DROP WEIGHT ONLY, DO NOT USE SLIP OVER DROP WEIGHTS.

SENNINGER IRRIGATION RECOMMENDS SPACING I-WOBS NO MORE THAN 18 FEET APART WHEN INSTALLED ON DROP PIPES!

SENNINGER I-WOBS ARE DESIGNED TO OPERATE AT 10-20 PSI. THE USE OF I-WOBS AT PRESSURES GREATER THAN 25 PSI VOIDS PRODUCT WARRANTY!

WHEN IRRIGATING WITH I-WOBS, DO NOT EXCEED 18 FOOT SPRINKLER SPACING PAST 2 SPANS WHEN CROP INTERFERENCE CAN PROHIBIT I-WOBS DESIGN DISTRIBUTION!

I-Wob Sprinklers require at least 24" of drop hose. Do not use slip weights. Do not install integrated weights on drop with double I-Wob. Inadequate crop clearance and/or structural interference may cause poor water distribution, resulting in decreased uniformity and possibly streaking.

This package was plugged with the recommended minimum ground clearance and above the crop canopy.



WATER RESOURCES RECEIVED

JAN 18 2022

KANSAS DEPT OF AGRICULTURE

Date: 12/28/2021

Chart No: 012201

Page 5

**Dealer:**

**Customer:**

**Comments:**

Carmichael Irrigation  
210 E Hwy 96 Frontage Rd  
Mount Hope, KS 67108

**Precipitation**

**Circle Degree 360**

Delivered Flow:	800.71 gpm
Pivot Pressure:	36.00 psi
Length:	1300.25 ft
Area:	138.22 acre
Distance to last tower:	1249.25 ft
Speed of last tower:	12.65 ft
Precip. / Acre: (360)	5.79 gpm
Time for coverage:	10.34Hrs
Tire Size	11.2 x 38
Motor loaded speed (RPM)	1745
Center gear box reduction (RATIO)	40:1
Wheel gear box reduction (RATIO)	50:1
End Gun Throw:	113.5 ft

<u>Average Depth</u>	<u>Timer</u>	<u>Rotation</u>
0.13 inch	100.00%	10.3hrs
0.20 inch	66.10%	15.6hrs
0.30 inch	44.07%	23.5hrs
0.40 inch	33.05%	31.3hrs
0.50 inch	26.44%	39.1hrs
0.60 inch	22.03%	46.9hrs
0.70 inch	18.89%	54.7hrs
0.80 inch	16.53%	62.6hrs
0.90 inch	14.69%	70.4hrs
1.00 inch	13.22%	78.2hrs
1.25 inch	10.58%	97.7hrs
1.50 inch	8.81%	117.3hrs
2.00 inch	6.61%	156.4hrs
2.50 inch	5.29%	195.5hrs

Caution\*\*This chart is an estimate of the performance for your irrigation system. Tire inflation, tire slippage, soil conditions, flow fluctuations and other conditions can cause application and time deviations. The info above should be used as a guide and used with caution.

0.15 inch	86.15%	12 hrs
0.31 inch	43.07%	24 hrs

# SENNINGER IRRIGATION

Chart No: 012201

WATER RESOURCES  
 DIVISION  
 RECEIVED  
 JAN 18 2022  
 KSDP TO A  
 ULTRIE

OUTLET COUNT	LOCATION			HYDRAULICS DATA					HARDWARE DESCRIPTION				Goose Neck
	DISTANCE FROM LAST OUTLET (FT)	LAST TOWER (FT)	PIVOT POINT (FT)	OUTLET FLOW NEEDED (GPM)	ACTUAL OUTLET FLOW (GPM)	MAIN PIPE PRESS (PSI)	SPR. BASE PRESS (PSI)	DROP LENGTH (in)	PRESS REG MODEL	SENNINGER SPRINKLER MODEL&PAD/Weight	NOZZ SIZE (64TH INCH) &COLOR	G=180°Sg Sg=125°Sg Db=125°Db NOZZ#	
<b>Pivot Gauge</b>													
1		9.00	9.0	0.14	0.85	35.87	11.42	118	PSR-2-10	IWob UP3-2 Std 9 Grv 0	6-GOLD	1 G	
2-Plg			18.5										
3	19.00	28.00	28.0	0.45	0.85	35.60	11.41	124	PSR-2-10	IWob UP3-2 Std 9 Grv 0	6-GOLD	2 G	
4-Plg			37.5										
5	19.00	47.00	47.0	0.75	0.85	35.34	11.41	128	PSR-2-10	IWob UP3-2 Std 9 Grv 0	6-GOLD	3 G	
6-Plg			56.5										
7	19.00	66.00	66.0	1.05	1.00	35.07	11.41	132	PSR-2-10	IWob UP3-2 Std 9 Grv 0	6.5-GLD/*	4 G	
8-Plg			75.5										
9	19.00	85.00	85.0	1.36	1.34	34.80	11.40	133	PSR-2-10	IWob UP3-2 Std 9 Grv 0	7.5-LIM/*	5 G	
10-Plg			94.5										
11	19.00	104.00	104.0	1.66	1.72	34.54	11.38	132	PSR-2-10	IWob UP3-2 Std 9 Grv 0	8.5-LAV/*	6 G	
12-Plg			113.5										
13	19.00	123.00	123.0	1.96	1.93	34.27	11.37	129	PSR-2-10	IWob UP3-2 Std 9 Grv 0	9-GREY	7 G	
14-Plg			132.5										
15	19.00	142.00	142.0	2.27	2.16	34.01	11.36	125	PSR-2-10	IWob UP3-2 Std 9 Grv 0	9.5-GRY/*	8 G	
16-Plg			151.5										
17	19.00	161.00	161.0	1.90	1.93	33.75	11.37	119	PSR-2-10	IWob UP3-2 Std 9 Grv 0	9-GREY	9 G	
18	9.50	170.50	170.5	1.66	1.72	33.62	11.38	116	PSR-2-10	IWob UP3-2 Std 9 Grv 0	8.5-LAV/*	10 G	
<b>Tower 1</b>		175.00	179.25										
19	13.50	4.75	184.0	1.77	1.72	33.43	11.38	116	PSR-2-10	IWob UP3-2 Std 9 Grv 0	8.5-LAV/*	11 G	
20	9.50	14.25	193.5	1.55	1.53	33.30	11.39	119	PSR-2-10	IWob UP3-2 Std 9 Grv 0	8-LAVENDER	12 G	
21	9.50	23.75	203.0	1.62	1.53	33.17	11.39	122	PSR-2-10	IWob UP3-2 Std 9 Grv 0	8-LAVENDER	13 G	
22	9.50	33.25	212.5	1.70	1.72	33.04	11.38	125	PSR-2-10	IWob UP3-2 Std 9 Grv 0	8.5-LAV/*	14 G	
23	9.50	42.75	222.0	1.77	1.72	32.92	11.38	127	PSR-2-10	IWob UP3-2 Std 9 Grv 0	8.5-LAV/*	15 G	
24	9.50	52.25	231.5	1.85	1.93	32.79	11.38	129	PSR-2-10	IWob UP3-2 Std 9 Grv 0	9-GREY	16 G	
25	9.50	61.75	241.0	1.92	1.93	32.66	11.37	131	PSR-2-10	IWob UP3-2 Std 9 Grv 0	9-GREY	17 G	
26	9.50	71.25	250.5	2.00	1.93	32.54	11.37	132	PSR-2-10	IWob UP3-2 Std 9 Grv 0	9-GREY	18 G	
27	9.50	80.75	260.0	2.08	2.16	32.41	11.37	133	PSR-2-10	IWob UP3-2 Std 9 Grv 0	9.5-GRY/*	19 G	
28	9.50	90.25	269.5	2.15	2.16	32.29	11.36	133	PSR-2-10	IWob UP3-2 Std 9 Grv 0	9.5-GRY/*	20 G	
29	9.50	99.75	279.0	2.23	2.16	32.16	11.36	133	PSR-2-10	IWob UP3-2 Std 9 Grv 0	9.5-GRY/*	21 G	
30	9.50	109.25	288.5	2.30	2.39	32.04	11.35	132	PSR-2-10	IWob UP3-2 Std 9 Grv 0	10-TURQUOISE	22 G	
31	9.50	118.75	298.0	2.38	2.39	31.91	11.35	131	PSR-2-10	IWob UP3-2 Std 9 Grv 0	10-TURQUOISE	23 G	
32	9.50	128.25	307.5	2.46	2.39	31.79	11.35	129	PSR-2-10	IWob UP3-2 Std 9 Grv 0	10-TURQUOISE	24 G	
33	9.50	137.75	317.0	2.53	2.64	31.67	11.34	127	PSR-2-10	IWob UP3-2 Std 9 Grv 0	10.5-TUR/*	25 G	
34	9.50	147.25	326.5	2.61	2.63	31.55	11.34	125	PSR-2-10	IWob UP3-2 Std 9 Grv 0	10.5-TUR/*	26 G	
35	9.50	156.75	336.0	2.68	2.63	31.43	11.34	122	PSR-2-10	IWob UP3-2 Std 9 Grv 0	10.5-TUR/*	27 G	
36	9.50	166.25	345.5	3.94	4.04	31.31	11.25	119	PSR-2-10	IWob UP3-2 Std 9 Grv 0	13-WHITE	28 G	
<b>Tower 2</b>		179.00	358.25										
37	17.50	4.75	363.0	4.10	4.04	31.09	11.24	116	PSR-2-10	IWob UP3-2 Std 9 Grv 0	13-WHITE	29 G	
38	9.50	14.25	372.5	2.97	2.89	30.98	11.32	119	PSR-2-10	IWob UP3-2 Std 9 Grv 0	11-YELLOW	30 G	
39	9.50	23.75	382.0	3.05	3.16	30.86	11.31	122	PSR-2-10	IWob UP3-2 Std 9 Grv 0	11.5-YEL/*	31 G	




































# SENNINGER IRRIGATION

Date: 12/28/2021

Chart No: 012201

Page 7

WATER RESOURCES RECEIVED JAN 18 2022


































OUTLET COUNT	LOCATION			HYDRAULICS DATA					HARDWARE DESCRIPTION					Goose Neck
	LAST OUTLET (FT)	DISTANCE FROM LAST TOWER (FT)	PIVOT POINT (FT)	OUTLET FLOW NEEDED (GPM)	ACTUAL FLOW (GPM)	MAIN PIPE PRESS (PSI)	SPR. BASE PRESS (PSI)	DROP LENGTH (in)	PRESS REG MODEL	SENNINGER SPRINKLER MODEL&PAD/Weight	NOZZ SIZE (64TH INCH) &COLOR	G=180°Sg Sg=125°Sg Db=125°Db NOZZ#		
40	9.50	33.25	391.5	3.13	3.16	30.74	11.31	125	PSR-2-10	IWob UP3-2 Std 9 Grv 0		11.5-YEL/*	32 G	
41	9.50	42.75	401.0	3.20	3.16	30.63	11.31	127	PSR-2-10	IWob UP3-2 Std 9 Grv 0		11.5-YEL/*	33 G	
42	9.50	52.25	410.5	3.28	3.16	30.52	11.30	129	PSR-2-10	IWob UP3-2 Std 9 Grv 0		11.5-YEL/*	34 G	
43	9.50	61.75	420.0	3.35	3.44	30.40	11.29	131	PSR-2-10	IWob UP3-2 Std 9 Grv 0		12-RED	35 G	
44	9.50	71.25	429.5	3.43	3.44	30.29	11.29	132	PSR-2-10	IWob UP3-2 Std 9 Grv 0		12-RED	36 G	
45	9.50	80.75	439.0	3.51	3.44	30.18	11.29	133	PSR-2-10	IWob UP3-2 Std 9 Grv 0		12-RED	37 G	
46	9.50	90.25	448.5	3.58	3.44	30.07	11.29	133	PSR-2-10	IWob UP3-2 Std 9 Grv 0		12-RED	38 G	
47	9.50	99.75	458.0	3.66	3.73	29.96	11.27	133	PSR-2-10	IWob UP3-2 Std 9 Grv 0		12.5-RED/*	39 G	
48	9.50	109.25	467.5	3.73	3.73	29.86	11.27	132	PSR-2-10	IWob UP3-2 Std 9 Grv 0		12.5-RED/*	40 G	
49	9.50	118.75	477.0	3.81	3.73	29.75	11.27	131	PSR-2-10	IWob UP3-2 Std 9 Grv 0		12.5-RED/*	41 G	
50	9.50	128.25	486.5	3.88	4.04	29.65	11.25	129	PSR-2-10	IWob UP3-2 Std 9 Grv 0		13-WHITE	42 G	
51	9.50	137.75	496.0	3.96	4.04	29.54	11.25	127	PSR-2-10	IWob UP3-2 Std 9 Grv 0		13-WHITE	43 G	
52	9.50	147.25	505.5	4.04	4.04	29.44	11.25	125	PSR-2-10	IWob UP3-2 Std 9 Grv 0		13-WHITE	44 G	
53	9.50	156.75	515.0	4.11	4.04	29.34	11.24	122	PSR-2-10	IWob UP3-2 Std 9 Grv 0		13-WHITE	45 G	
54	9.50	166.25	524.5	5.97	6.08	29.23	11.06	119	PSR-2-10	IWob UP3-2 Std 9 Grv 0		16-ORANGE	46 G	
<b>Tower 3</b>		179.00	537.25											
55	17.50	4.75	542.0	6.13	6.08	29.05	11.05	116	PSR-2-10	IWob UP3-2 Std 9 Grv 0		16-ORANGE	47 G	
56	9.50	14.25	551.5	4.40	4.35	28.95	11.22	119	PSR-2-10	IWob UP3-2 Std 9 Grv 0		13.5-WHT/*	48 G	
57	9.50	23.75	561.0	4.48	4.35	28.86	11.22	122	PSR-2-10	IWob UP3-2 Std 9 Grv 0		13.5-WHT/*	49 G	
58	9.50	33.25	570.5	4.56	4.68	28.76	11.20	125	PSR-2-10	IWob UP3-2 Std 9 Grv 0		14-BLUE	50 G	
59	9.50	42.75	580.0	4.63	4.68	28.67	11.20	127	PSR-2-10	IWob UP3-2 Std 9 Grv 0		14-BLUE	51 G	
60	9.50	52.25	589.5	4.71	4.67	28.58	11.19	129	PSR-2-10	IWob UP3-2 Std 9 Grv 0		14-BLUE	52 G	
61	9.50	61.75	599.0	4.78	4.67	28.48	11.19	131	PSR-2-10	IWob UP3-2 Std 9 Grv 0		14-BLUE	53 G	
62	9.50	71.25	608.5	4.86	5.01	28.39	11.17	132	PSR-2-10	IWob UP3-2 Std 9 Grv 0		14.5-BLU/*	54 G	
63	9.50	80.75	618.0	4.93	5.01	28.30	11.17	133	PSR-2-10	IWob UP3-2 Std 9 Grv 0		14.5-BLU/*	55 G	
64	9.50	90.25	627.5	5.01	5.01	28.22	11.16	133	PSR-2-10	IWob UP3-2 Std 9 Grv 0		14.5-BLU/*	56 G	
65	9.50	99.75	637.0	5.09	5.01	28.13	11.16	133	PSR-2-10	IWob UP3-2 Std 9 Grv 0		14.5-BLU/*	57 G	
66	9.50	109.25	646.5	5.16	5.01	28.04	11.16	132	PSR-2-10	IWob UP3-2 Std 9 Grv 0		14.5-BLU/*	58 G	
67	9.50	118.75	656.0	5.24	5.36	27.96	11.14	131	PSR-2-10	IWob UP3-2 Std 9 Grv 0		15-DK BROWN	59 G	
68	9.50	128.25	665.5	5.31	5.36	27.88	11.13	129	PSR-2-10	IWob UP3-2 Std 9 Grv 0		15-DK BROWN	60 G	
69	9.50	137.75	675.0	5.39	5.36	27.80	11.13	127	PSR-2-10	IWob UP3-2 Std 9 Grv 0		15-DK BROWN	61 G	
70	9.50	147.25	684.5	5.47	5.35	27.72	11.13	125	PSR-2-10	IWob UP3-2 Std 9 Grv 0		15-DK BROWN	62 G	
71	9.50	156.75	694.0	5.54	5.71	27.64	11.10	122	PSR-2-10	IWob UP3-2 Std 9 Grv 0		15.5-DBN/*	63 G	
72	9.50	166.25	703.5	8.01	8.04	27.56	10.82	119	PSR-2-10	IWob UP3-2 Std 9 Grv 0		18.5-PUR/*	64 G	
<b>Tower 4</b>		179.00	716.25											
73	17.50	4.75	721.0	8.16	8.04	27.42	10.81	116	PSR-2-10	IWob UP3-2 Std 9 Grv 0		18.5-PUR/*	65 G	
74	9.50	14.25	730.5	5.83	5.71	27.35	11.09	119	PSR-2-10	IWob UP3-2 Std 9 Grv 0		15.5-DBN/*	66 G	
75	9.50	23.75	740.0	5.91	6.08	27.28	11.07	122	PSR-2-10	IWob UP3-2 Std 9 Grv 0		16-ORANGE	67 G	
76	9.50	33.25	749.5	5.98	6.08	27.21	11.06	125	PSR-2-10	IWob UP3-2 Std 9 Grv 0		16-ORANGE	68 G	
77	9.50	42.75	759.0	6.06	6.08	27.14	11.06	127	PSR-2-10	IWob UP3-2 Std 9 Grv 0		16-ORANGE	69 G	
78	9.50	52.25	768.5	6.14	6.08	27.07	11.05	129	PSR-2-10	IWob UP3-2 Std 9 Grv 0		16-ORANGE	70 G	
79	9.50	61.75	778.0	6.21	6.08	27.00	11.05	131	PSR-2-10	IWob UP3-2 Std 9 Grv 0		16-ORANGE	71 G	



# SENNINGER IRRIGATION

Chart No: 012201

Date: 12/28/2021

WATER RECEIVED COUNT	LOCATION			HYDRAULICS DATA					HARDWARE DESCRIPTION				Goose Neck
	LAST OUTLET (FT)	DISTANCE FROM LAST TOWER (FT)	PIVOT POINT (FT)	OUTLET FLOW NEEDED (GPM)	ACTUAL FLOW (GPM)	MAIN PIPE PRESS (PSI)	SPR. BASE PRESS (PSI)	DROP LENGTH (in)	PRESS REG MODEL	SENNINGER SPRINKLER MODEL&PAD/Weight	NOZZ SIZE (64TH INCH) &COLOR	G=180°Sg Sg=125°Sg Db=125°Db NOZZ#	
81	9.50	71.25	787.5	6.29	6.46	26.94	11.03	132	PSR-2-10	IWob UP3-2 Std 9 Grv 0	 16.5-ORN/*	72 G	
82	9.50	80.75	797.0	6.36	6.45	26.87	11.02	133	PSR-2-10	IWob UP3-2 Std 9 Grv 0	 16.5-ORN/*	73 G	
83	9.50	90.25	806.5	6.44	6.45	26.81	11.02	133	PSR-2-10	IWob UP3-2 Std 9 Grv 0	 16.5-ORN/*	74 G	
84	9.50	99.75	816.0	6.52	6.45	26.75	11.01	133	PSR-2-10	IWob UP3-2 Std 9 Grv 0	 16.5-ORN/*	75 G	
85	9.50	109.25	825.5	6.59	6.45	26.69	11.01	132	PSR-2-10	IWob UP3-2 Std 9 Grv 0	 16.5-ORN/*	76 G	
86	9.50	118.75	835.0	6.67	6.84	26.63	10.98	131	PSR-2-10	IWob UP3-2 Std 9 Grv 0	 17-DK GREEN	77 G	
87	9.50	128.25	844.5	6.74	6.84	26.57	10.98	129	PSR-2-10	IWob UP3-2 Std 9 Grv 0	 17-DK GREEN	78 G	
88	9.50	137.75	854.0	6.82	6.84	26.52	10.97	127	PSR-2-10	IWob UP3-2 Std 9 Grv 0	 17-DK GREEN	79 G	
89	9.50	147.25	863.5	6.90	6.84	26.47	10.97	125	PSR-2-10	IWob UP3-2 Std 9 Grv 0	 17-DK GREEN	80 G	
90	9.50	156.75	873.0	6.97	6.84	26.41	10.96	122	PSR-2-10	IWob UP3-2 Std 9 Grv 0	 17-DK GREEN	81 G	
90	9.50	166.25	882.5	10.04	10.19	26.36	10.51	119	PSR-2-10	IWob UP3-2 Std 9 Grv 0	 21-MUSTARD	82 G	
<b>Tower 5</b>		179.00	895.25										
91	17.50	4.75	900.0	10.19	10.18	26.27	10.50	116	PSR-2-10	IWob UP3-2 Std 9 Grv 0	 21-MUSTARD	83 G	
92	9.50	14.25	909.5	7.26	7.23	26.22	10.92	119	PSR-2-10	IWob UP3-2 Std 9 Grv 0	 17.5-DGN/*	84 G	
93	9.50	23.75	919.0	7.34	7.23	26.18	10.92	122	PSR-2-10	IWob UP3-2 Std 9 Grv 0	 17.5-DGN/*	85 G	
94	9.50	33.25	928.5	7.41	7.23	26.13	10.91	125	PSR-2-10	IWob UP3-2 Std 9 Grv 0	 17.5-DGN/*	86 G	
95	9.50	42.75	938.0	7.49	7.64	26.09	10.88	127	PSR-2-10	IWob UP3-2 Std 9 Grv 0	 18-PURPLE	87 G	
96	9.50	52.25	947.5	7.57	7.63	26.05	10.88	129	PSR-2-10	IWob UP3-2 Std 9 Grv 0	 18-PURPLE	88 G	
97	9.50	61.75	957.0	7.64	7.63	26.01	10.87	131	PSR-2-10	IWob UP3-2 Std 9 Grv 0	 18-PURPLE	89 G	
98	9.50	71.25	966.5	7.72	7.63	25.97	10.87	132	PSR-2-10	IWob UP3-2 Std 9 Grv 0	 18-PURPLE	90 G	
99	9.50	80.75	976.0	7.79	7.63	25.93	10.86	133	PSR-2-10	IWob UP3-2 Std 9 Grv 0	 18-PURPLE	91 G	
100	9.50	90.25	985.5	7.87	8.04	25.90	10.83	133	PSR-2-10	IWob UP3-2 Std 9 Grv 0	 18.5-PUR/*	92 G	
101	9.50	99.75	995.0	7.95	8.04	25.86	10.83	133	PSR-2-10	IWob UP3-2 Std 9 Grv 0	 18.5-PUR/*	93 G	
102	9.50	109.25	1004.5	8.02	8.04	25.83	10.82	132	PSR-2-10	IWob UP3-2 Std 9 Grv 0	 18.5-PUR/*	94 G	
103	9.50	118.75	1014.0	8.10	8.04	25.79	10.82	131	PSR-2-10	IWob UP3-2 Std 9 Grv 0	 18.5-PUR/*	95 G	
104	9.50	128.25	1023.5	8.17	8.04	25.76	10.81	129	PSR-2-10	IWob UP3-2 Std 9 Grv 0	 18.5-PUR/*	96 G	
105	9.50	137.75	1033.0	8.25	8.46	25.73	10.78	127	PSR-2-10	IWob UP3-2 Std 9 Grv 0	 19-BLACK	97 G	
106	9.50	147.25	1042.5	8.32	8.46	25.71	10.77	125	PSR-2-10	IWob UP3-2 Std 9 Grv 0	 19-BLACK	98 G	
107	9.50	156.75	1052.0	8.40	8.46	25.68	10.77	122	PSR-2-10	IWob UP3-2 Std 9 Grv 0	 19-BLACK	99 G	
108	9.50	166.25	1061.5	11.00	11.07	25.65	10.36	119	PSR-2-10	IWob UP3-2 Std 9 Grv 0	 22-MAROON	100 G	
<b>Tower 6</b>		179.00	1074.2										
109	15.13	2.38	1076.6	11.13	11.07	25.61	10.35	116	PSR-2-10	IWob UP3-2 Std 9 Grv 0	 22-MAROON	101 G	
110-Plg			1081.4										
111	9.50	11.88	1086.1	8.67	8.88	25.59	10.72	119	PSR-2-10	IWob UP3-2 Std 9 Grv 0	 19.5-BLK/*	102 G	
112-Plg			1090.9										
113	9.50	21.38	1095.6	8.75	8.88	25.57	10.71	122	PSR-2-10	IWob UP3-2 Std 9 Grv 0	 19.5-BLK/*	103 G	
114-Plg			1100.4										
115	9.50	30.88	1105.1	8.82	8.88	25.55	10.71	124	PSR-2-10	IWob UP3-2 Std 9 Grv 0	 19.5-BLK/*	104 G	
116-Plg			1109.9										
117	9.50	40.38	1114.6	8.90	8.88	25.53	10.70	127	PSR-2-10	IWob UP3-2 Std 9 Grv 0	19.5-BLK/*	105 G	
118-Plg			1119.4										
119	9.50	49.88	1124.1	8.98	8.88	25.51	10.70	129	PSR-2-10	IWob UP3-2 Std 9 Grv 0	19.5-BLK/*	106 G	

WATER RECEIVED  
 COUNT  
 JAN 18 2022  
 KENTON COUNTY
















WATER RESOURCES RECEIVED

Date: 12/28/2021









**SENNINGER IRRIGATION**

Chart No: 012201

Page 9

OUTLET COUNT	LOCATION			HYDRAULICS DATA					HARDWARE DESCRIPTION				Goose Neck
	DISTANCE FROM LAST OUTLET (FT)	DISTANCE FROM LAST TOWER (FT)	PIVOT POINT (FT)	OUTLET FLOW NEEDED (GPM)	ACTUAL FLOW (GPM)	MAIN PIPE PRESS (PSI)	SPR. BASE PRESS (PSI)	DROP LENGTH (in)	PRESS REG MODEL	SENNINGER SPRINKLER MODEL&PAD/Weight	NOZZ SIZE (64TH INCH) &COLOR	G=180°Sg Sg=125°Sg Db=125°Db NOZZ#	
120			1128.9										
121	9.50	59.38	1133.6	9.05	8.87	25.49	10.69	131	PSR-2-10	IWob UP3-2 Std 9 Grv 0	 19.5-BLK/*	107 G	
122			1138.4										
123	9.50	68.88	1143.1	9.13	9.31	25.48	10.65	132	PSR-2-10	IWob UP3-2 Std 9 Grv 0	 20-TURQ	108 G	
124			1147.9										
125	9.50	78.38	1152.6	9.20	9.31	25.46	10.65	133	PSR-2-10	IWob UP3-2 Std 9 Grv 0	 20-TURQ	109 G	
126			1157.4										
127	9.50	87.88	1162.1	9.28	9.31	25.45	10.64	133	PSR-2-10	IWob UP3-2 Std 9 Grv 0	 20-TURQ	110 G	
128			1166.9										
129	9.50	97.38	1171.6	9.36	9.31	25.44	10.64	133	PSR-2-10	IWob UP3-2 Std 9 Grv 0	 20-TURQ	111 G	
130			1176.4										
131	9.50	106.88	1181.1	9.43	9.30	25.42	10.63	132	PSR-2-10	IWob UP3-2 Std 9 Grv 0	 20-TURQ	112 G	
132			1185.9										
133	9.50	116.38	1190.6	9.51	9.30	25.41	10.62	131	PSR-2-10	IWob UP3-2 Std 9 Grv 0	 20-TURQ	113 G	
134			1195.4										
135	9.50	125.88	1200.1	9.58	9.75	25.40	10.58	129	PSR-2-10	IWob UP3-2 Std 9 Grv 0	 20.5-DTQ/*	114 G	
136			1204.9										
137	9.50	135.38	1209.6	9.66	9.74	25.39	10.58	127	PSR-2-10	IWob UP3-2 Std 9 Grv 0	 20.5-DTQ/*	115 G	
138			1214.4										
139	9.50	144.88	1219.1	9.73	9.74	25.39	10.57	124	PSR-2-10	IWob UP3-2 Std 9 Grv 0	 20.5-DTQ/*	116 G	
140			1223.9										
141	9.50	154.38	1228.6	9.81	9.74	25.38	10.57	122	PSR-2-10	IWob UP3-2 Std 9 Grv 0	 20.5-DTQ/*	117 G	
142			1233.4										
143	9.50	163.88	1238.1	7.41	7.23	25.37	10.91	119	PSR-2-10	IWob UP3-2 Std 9 Grv 0	 17.5-DGN/*	118 G	
144	4.75	168.63	1242.9	6.66	6.84	25.37	10.98	117	PSR-2-10	IWob UP3-2 Std 9 Grv 0	 17-DK GREEN	119 G	
<b>Tower 7</b>		175.00	1249.2										

**PIPE I.D. CHANGE AT 1249.25 ft FROM 6.430 inch TO 5.800 inch**

145	8.00	1.63	1250.9	6.70	6.84	25.36	10.98	115	PSR-2-10	IWob UP3-2 Std 9 Grv 0	 17-DK GREEN	120 G
146	4.75	6.38	1255.6	5.01	5.01	25.36	11.16	115	PSR-2-10	IWob UP3-2 Std 9 Grv 0	 14.5-BLU/*	121 G
147	4.75	11.13	1260.4	5.03	5.01	25.35	11.16	115	PSR-2-10	IWob UP3-2 Std 9 Grv 0	 14.5-BLU/*	122 G
148	4.75	15.88	1265.1	5.05	5.01	25.35	11.16	115	PSR-2-10	IWob UP3-2 Std 9 Grv 0	 14.5-BLU/*	123 G
149	4.75	20.63	1269.9	5.07	5.01	25.34	11.16	115	PSR-2-10	IWob UP3-2 Std 9 Grv 0	 14.5-BLU/*	124 G
150	4.75	25.38	1274.6	5.09	5.01	25.34	11.16	115	PSR-2-10	IWob UP3-2 Std 9 Grv 0	 14.5-BLU/*	125 G
151	4.75	30.13	1279.4	5.11	5.01	25.34	11.16	115	PSR-2-10	IWob UP3-2 Std 9 Grv 0	 14.5-BLU/*	126 G
152	4.75	34.88	1284.1	5.13	5.01	25.34	11.16	115	PSR-2-10	IWob UP3-2 Std 9 Grv 0	 14.5-BLU/*	127 G
153	4.75	39.63	1288.9	4.60	4.68	25.33	11.20	115	PSR-2-10	IWob UP3-2 Std 9 Grv 0	14-BLUE	128 G
154	3.75	43.38	1292.6	4.07	4.04	25.33	11.25	115	PSR-2-10	IWob UP3-2 Std 9 Grv 0	13-WHITE	129 G
155	3.75	47.13	1296.4	4.09	4.04	25.33	11.24	115	PSR-2-10	IWob UP3-2 Std 9 Grv 0	13-WHITE	130 G
	3.87	51.00	1300.3	91.15	90.95	25.33	54.38	End Gun 1		SR100 18deg .65		

Booster Pump added 30.3 psi to inline pressure      Loss through Nelson 800P 2" = 1.2 psi







WATER RESOURCES RECEIVED

JAN 18 2022

DEPT OF AGRICULTURE

Date: 12/28/2021

Chart No: 012201

Page 12

**QUANTITIES**

Qty	Item	Description
130	IWob UP3	(130)Std 9 Grv
130	PSR-2-10	
130	Weights	(130)Magnum 1b
25	Plugs	
1	SR100 18deg .65	
	(inch)	
11 x	115 Drop	
7 x	116 Drop	
1 x	117 Drop	
1 x	118 Drop	
13 x	119 Drop	
12 x	122 Drop	
3 x	124 Drop	
11 x	125 Drop	
12 x	127 Drop	
1 x	128 Drop	
13 x	129 Drop	
12 x	131 Drop	
14 x	132 Drop	
19 x	133 Drop	
	1362.17ft	TOTAL DROP LENGTH



Drop lengths are based on the following values.  
 Span Tower height Crown height Ground Clearance ft  
 1,2,3,4,5,6,7  
 13.00 14.50  
 Ground Clearance : General 3.00

These dimensions must be confirmed  
 prior to manufacturing the drop components

**DEVIATION SUMMARY**

Span number	Area	Required flow	Actual flow	% Deviation	GPM/Acre
1	2.32	13.47	14.62	8.57	6.31
2	6.94	40.21	40.27	0.15	5.80
3	11.56	67.23	67.23	-0.00	5.82
4	16.18	94.16	94.15	-0.00	5.82
5	20.80	121.09	121.27	0.15	5.83
6	25.43	147.98	148.15	0.11	5.83
7	29.33	171.24	171.46	0.13	5.85
8	9.38	52.97	52.63	-0.64	5.61
End Gun 1	16.44	91.15	90.95	-0.23	5.53

Nozzle Discharge Uniformity Coefficient = 98.3 %

WATER RESOURCES RECEIVED

JAN 18 2022

MISSISSIPPI DEPT OF AGRICULTURE

Date: 12/28/2021

Chart No: 012201

Page 14

**BILL of MATERIALS - Hydraulic Components**

Qty	PartNumber	Cost	----- Description -----
130	IWOB2000B3UP3		I-Wob-2 Std Angle 9 Grve (Black)
25	FTP3		3/4" Plugs
3	UP3NZ06		# 6 UP3 Nozzle (gold)
1	UP3NZ065		# 6.5 UP3 Nozzle (gold) notched
1	UP3NZ075		# 7.5 UP3 Nozzle (lime) notched
2	UP3NZ08		# 8 UP3 Nozzle (lavender)
5	UP3NZ085		# 8.5 UP3 Nozzle (lavender) notched
5	UP3NZ09		# 9 UP3 Nozzle (grey)
4	UP3NZ095		# 9.5 UP3 Nozzle (grey) notched
3	UP3NZ10		#10 UP3 Nozzle (turquoise)
3	UP3NZ105		#10.5 UP3 Nozzle (turquoise) notched
1	UP3NZ11		#11 UP3 Nozzle (yellow)
4	UP3NZ115		#11.5 UP3 Nozzle (yellow) notched
4	UP3NZ12		#12 UP3 Nozzle (red)
3	UP3NZ125		#12.5 UP3 Nozzle (red) notched
8	UP3NZ13		#13 UP3 Nozzle (white)
2	UP3NZ135		#13.5 UP3 Nozzle (white) notched
5	UP3NZ14		#14 UP3 Nozzle (blue)
12	UP3NZ145		#14.5 UP3 Nozzle (blue) notched
4	UP3NZ15		#15 UP3 Nozzle (brown)
2	UP3NZ155		#15.5 UP3 Nozzle (brown) notched
7	UP3NZ16		#16 UP3 Nozzle (orange)
5	UP3NZ165		#16.5 UP3 Nozzle (orange) notched
7	UP3NZ17		#17 UP3 Nozzle (dark green)
4	UP3NZ175		#17.5 UP3 Nozzle (dark green) notche
5	UP3NZ18		#18 UP3 Nozzle (purple)
7	UP3NZ185		#18.5 UP3 Nozzle (purple) notched
3	UP3NZ19		#19 UP3 Nozzle (black)
6	UP3NZ195		#19.5 UP3 Nozzle (black) notched



WATER RESOURCES RECEIVED  
 JAN 18 2022  
 DEPT OF AGRICULTURE

Date: 12/28/2021

Chart No: 012201

Page 15

**BILL of MATERIALS - Hydraulic Components**

Qty	PartNumber	Cost	----- Description -----
6	UP3NZ20		#20 UP3 Nozzle (dark turquoise)
4	UP3NZ205		#20.5 UP3 Nozzle (dark turquoise) no
2	UP3NZ21		#21 UP3 Nozzle (mustard)
2	UP3NZ22		#22 UP3 Nozzle (maroon)
130	PSR2103F3F		10 PSI PSR 2 - 3/4"f X 3/4"f
130	MAGWGTRB		WEIGHT, Magnum, Barb (I-Wob)
130	MAGWGTSLP		WEIGHT, Magnum Slip
1	Nozzle, Nelson SR100		Nozzle, Nelson SR100/100NV, 0.65"
676	Total		

WATER RESOURCES RECEIVED

JAN 18 2022


KS DEPT OF AGRICULTURE

Date: 12/28/2021

Chart No: 012201

Page 16

**BILL of MATERIALS - Drop Components**

Qty	PartNumber	Cost	----- Description -----
130	<b>Reinke Test</b>		<b>I-Wob2 Drop</b>
130	GNAP180X6B		 Sen Gsneck 180 MXBarb
130	HSC40ET		 Clamp, Hose, 1-1/16" ODx3/4"ID
130	HSC40ET		 Clamp, Hose, 1-1/16" ODx3/4"ID
130	FTA3M3B		 Hose Barb, Sen. 3/4"Hx3/4" MNPT
1363 ft	* HS3R		 3/4" Black Reinf.Hose (total machine)



WATER RESOURCES RECEIVED  
 JAN 18 2022  
 DEPT OF AGRICULTURE

**Dealer :** Carmichael Irrigation  
 210 E Hwy 96 Frontage Rd  
**Customer :**  
**Printout No:** 012201

Date: 12/28/2021

Chart No: 012201

Page 17

**INSTALLATION**

Out#	Len	Pos	Reg	Out#	Len	Pos	Reg	Out#	Len	Pos	Reg	Out#	Len	Pos	Reg	Out#	Len	Pos	Reg				
1	118	1	6	PSR-2-10	-- Drop Summary --				14	129	60	15	PSR-2-10	10	133	92	18.5	PSR-2-10	32	122	117	20.5	PSR-2-10
2					116x1	119x2	122x2	15	127	61	15	PSR-2-10	11	133	93	18.5	PSR-2-10	33	122	117	20.5	PSR-2-10	
3	124	2	6	PSR-2-10	125x2	127x2	129x2	16	125	62	15	PSR-2-10	12	132	94	18.5	PSR-2-10	34					
4					131x2	132x2	133x3	17	122	63	15.5	PSR-2-10	13	131	95	18.5	PSR-2-10	35	119	118	17.5	PSR-2-10	
5	128	3	6	PSR-2-10	-- Drop Summary --				18	119	64	18.5	PSR-2-10	14	129	96	18.5	PSR-2-10	36	117	119	17	PSR-2-10
6					116x1	119x2	122x2	-- Drop Summary --				15	127	97	19	PSR-2-10	-- Drop Summary --						
7	132	4	6.5	PSR-2-10	125x2	127x2	129x2	116x1	119x2	122x2	16	125	98	19	PSR-2-10	116x1	117x1	119x2					
8					131x2	132x2	133x3	125x2	127x2	129x2	17	122	99	19	PSR-2-10	122x2	124x2	127x2					
9	133	5	7.5	PSR-2-10	<b>Tower No. 2</b>				131x2	132x2	133x3	18	119	100	22	PSR-2-10	129x2	131x2	132x2				
10					1	116	29	13	PSR-2-10	-- Drop Summary --				116x1 119x2 122x2									
11	132	6	8.5	PSR-2-10	2	119	30	11	PSR-2-10	116x1 119x2 122x2				125x2 127x2 129x2									
12					3	122	31	11.5	PSR-2-10	125x2 127x2 129x2				131x2 132x2 133x3									
13	129	7	9	PSR-2-10	4	125	32	11.5	PSR-2-10	<b>Tower No. 4</b>				116x1 119x2 122x2									
14					5	127	33	11.5	PSR-2-10	1	116	65	18.5	PSR-2-10	125x2 127x2 129x2								
15	125	8	9.5	PSR-2-10	6	129	34	11.5	PSR-2-10	2	119	66	15.5	PSR-2-10	131x2 132x2 133x3								
16					7	131	35	12	PSR-2-10	3	122	67	16	PSR-2-10	<b>Tower No. 6</b>								
17	119	9	9	PSR-2-10	8	132	36	12	PSR-2-10	4	125	68	16	PSR-2-10	1	116	101	22	PSR-2-10	116x1 120 17 PSR-2-10			
18	116	10	8.5	PSR-2-10	9	133	37	12	PSR-2-10	5	127	69	16	PSR-2-10	2					2 115 121 14.5 PSR-2-10			
-- Drop Summary --				10	133	38	12	PSR-2-10	6	129	70	16	PSR-2-10	3	119	102	19.5	PSR-2-10	3 115 122 14.5 PSR-2-10				
116x1	118x1	119x1		11	133	39	12.5	PSR-2-10	7	131	71	16	PSR-2-10	4					4 115 123 14.5 PSR-2-10				
124x1	125x1	128x1		12	132	40	12.5	PSR-2-10	8	132	72	16.5	PSR-2-10	5	115	124	14.5	PSR-2-10	5 115 124 14.5 PSR-2-10				
129x1	132x2	133x1		13	131	41	12.5	PSR-2-10	9	133	73	16.5	PSR-2-10	6	115	125	14.5	PSR-2-10	6 115 125 14.5 PSR-2-10				
<b>Tower No. 1</b>				14	129	42	13	PSR-2-10	10	133	74	16.5	PSR-2-10	7	115	126	14.5	PSR-2-10	7 115 126 14.5 PSR-2-10				
1	116	11	8.5	PSR-2-10	15	127	43	13	PSR-2-10	11	133	75	16.5	PSR-2-10	8	115	127	14.5	PSR-2-10	8 115 127 14.5 PSR-2-10			
2	119	12	8	PSR-2-10	16	125	44	13	PSR-2-10	12	132	76	16.5	PSR-2-10	9	115	128	14	PSR-2-10	9 115 128 14 PSR-2-10			
3	122	13	8	PSR-2-10	17	122	45	13	PSR-2-10	13	131	77	17	PSR-2-10	10	115	129	13	PSR-2-10	10 115 129 13 PSR-2-10			
4	125	14	8.5	PSR-2-10	18	119	46	16	PSR-2-10	14	129	78	17	PSR-2-10	11	115	130	13	PSR-2-10	11 115 130 13 PSR-2-10			
5	127	15	8.5	PSR-2-10	-- Drop Summary --				15	127	79	17	PSR-2-10	<b>Overhang</b>									
6	129	16	9	PSR-2-10	116x1	119x2	122x2	15	127	79	17	PSR-2-10	-- Drop Summary --										
7	131	17	9	PSR-2-10	125x2	127x2	129x2	16	125	80	17	PSR-2-10	115x11										
8	132	18	9	PSR-2-10	131x2	132x2	133x3	17	122	81	17	PSR-2-10	---										
9	133	19	9.5	PSR-2-10	<b>Tower No. 3</b>				18	119	82	21	PSR-2-10	--- Drop Total ---									
10	133	20	9.5	PSR-2-10	1	116	47	16	PSR-2-10	-- Drop Summary --				115x11 116x7 117x1									
11	133	21	9.5	PSR-2-10	2	119	48	13.5	PSR-2-10	116x1	119x2	122x2	118x1 119x13 122x12										
12	132	22	10	PSR-2-10	3	122	49	13.5	PSR-2-10	125x2	127x2	129x2	124x3 125x11 127x12										
13	131	23	10	PSR-2-10	4	125	50	14	PSR-2-10	131x2	132x2	133x3	128x1 129x13 131x12										
14	129	24	10	PSR-2-10	5	127	51	14	PSR-2-10	<b>Tower No. 5</b>				132x14 133x19									
15	127	25	10.5	PSR-2-10	6	129	52	14	PSR-2-10	1	116	83	21	PSR-2-10									
16	125	26	10.5	PSR-2-10	7	131	53	14	PSR-2-10	2	119	84	17.5	PSR-2-10									
17	122	27	10.5	PSR-2-10	8	132	54	14.5	PSR-2-10	3	122	85	17.5	PSR-2-10									
18	119	28	13	PSR-2-10	9	133	55	14.5	PSR-2-10	4	125	86	17.5	PSR-2-10									
				10	133	56	14.5	PSR-2-10	5	127	87	18	PSR-2-10										
				11	133	57	14.5	PSR-2-10	6	129	88	18	PSR-2-10										
				12	132	58	14.5	PSR-2-10	7	131	89	18	PSR-2-10										
				13	131	59	15	PSR-2-10	8	132	90	18	PSR-2-10										
								9	133	91	18	PSR-2-10											
												10	133	110	20	PSR-2-10							
												11	133	111	20	PSR-2-10							
												12											
												13	132	112	20	PSR-2-10							
												14											
												15	131	113	20	PSR-2-10							
												16											
												17	129	114	20.5	PSR-2-10							
												18											
												19	127	115	20.5	PSR-2-10							
												20											
												21	124	116	20.5	PSR-2-10							
												22											
												23											
												24											
												25											
												26											
												27											
												28											
												29											
												30											
												31											
												32											

JAN 18 2022

## FEE SCHEDULE

1. The fee for an application for a permit to appropriate water for beneficial use, except for domestic use, shall be (see paragraph No. 2 below if requesting storage):

ACRE-FEET	FEE
0-100	\$200.00
101-320	\$300.00
More than 320	\$300.00 plus \$20.00 for each additional 100 acre-feet or any part thereof.

2. The fee for an application in which storage is requested, except for domestic use, shall be:

ACRE-FEET	FEE
0-250	\$200.00
More than 250	\$200.00 plus \$20.00 for each additional 250 acre-feet of storage or any part thereof.

Note: If an application requests both direct use *and* storage, the fee charged shall be as determined under No. 1 or No. 2 above, whichever is greater, but not both fees.

3. The fee for an application for a permit to appropriate water for water power or dewatering purposes shall be \$100.00 plus \$200.00 for each 100 cubic feet per second, or part thereof, of the diversion rate requested.

Note: The applicant shall notify the Chief Engineer and pay the statutorily required field inspection fee of \$400.00 when construction of the works for diversion has been completed, except that for applications filed on or after July 1, 2009, for works constructed for sediment control use and for evaporation from a groundwater pit for industrial use shall be accompanied by a field inspection fee of \$200.00.

**MAKE CHECKS PAYABLE TO THE KANSAS DEPARTMENT OF AGRICULTURE**

### ATTENTION

A Water Conservation Plan may be required per K.S.A. 82a-733. A statement that your application for permit to appropriate water may be subject to the minimum desirable streamflow requirements per K.S.A. 82a-703a, b, and c may also be required from you. After the Division of Water Resources has had the opportunity to review your application, you will be notified whether or not you will need to submit a Water Conservation Plan. You also may be required to install a water flow meter or water stage measuring device on your diversion works prior to diverting water. There may be other special conditions or Groundwater Management District regulations that you will need to comply with if this application is approved.

### CONVERSION FACTORS

1 acre-foot equals 325,851 gallons

1 million gallons equal 3.07 acre-feet



WATER RESOURCES  
RECEIVED

JAN 18 2022

KS DEPT OF AGRICULTURE

1. Helen J Yung & Leslie N Yung & Chad E Somers  
1718 W Bullard Dr  
Arkansas City KS 67005
2. Scott M & Branine L Yvonne  
3441 302<sup>nd</sup> Rd  
Arkansas City KS 67005
3. Justin S & Lisa M Wise  
3230 302<sup>nd</sup> Rd  
Arkansas City KS 67005
4. Elizabeth Sue Hoskins  
Attn: Elizabeth Berry  
1419 Andrews  
Winfield KS 67156
5. Steven F & Phyllis L McCorgary  
31221 31<sup>st</sup> Rd  
Arkansas City KS 67005

JAN 18 2022

**IRRIGATION USE  
SUPPLEMENTAL SHEET**

File No. \_\_\_\_\_

Name of Applicant (Please Print): Grainland Farms, Inc

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: Grainland Farms, Inc

ADDRESS: Attn: Dennis Shurtz, 2508 Edgemont Drive, STE #4, Arkansas City, KS 67005

S	T	R	NE¼				NW¼				SW¼				SE¼				TOTAL
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
33	34S	3E															40	40	80

**Landowner of Record** NAME: A A S Oil, Inc

ADDRESS: 2508 Edgemont Drive, STE #4, Arkansas City, KS 67005

S	T	R	NE¼				NW¼				SW¼				SE¼				TOTAL
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
33	34S	3E												40	40			80	

**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	



JAN 18 2022

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
Bethany silt loam	95		
Total:	100 %		

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

Estimate the maximum land slope in the field(s): 3 %

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

- Center pivot       Center pivot - LEPA       "Big gun" sprinkler  
 Gravity system (furrows)       Gravity system (borders)       Sideroll sprinkler

Other, please describe: Reinke design package included showing 132.61 acre pivot with end gun.

d. System design features:

i. Describe how you will control tailwater:

match infiltration rate with application rate

ii. For sprinkler systems:

(1) Estimate the operating pressure at the distribution system: 3540 psi

(2) What is the sprinkler package design rate? 800 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? 40 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:

SOY BEAN, WHEAT, CORN

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).

ONLY DURING PEAK USAGE PERIODS OF ARID WEATHER CONDITIONS

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



# Carmichael Irrigation, LLC

210 N Hwy 96 Frontage Rd.  
Mt. Hope, KS 67108  
316.250.2593  
carmichaelirrigation@gmail.com

WATER RESOURCES  
RECEIVED  
JAN 18 2022  
KS DEPT OF AGRICULTURE

**Grower:** Dennis Shurtz

**Date:** 11/23/2021

**Farm:** System Design 1 : 11/23/2021 **Field Name:** Field Layout 1 : 11/23/2021

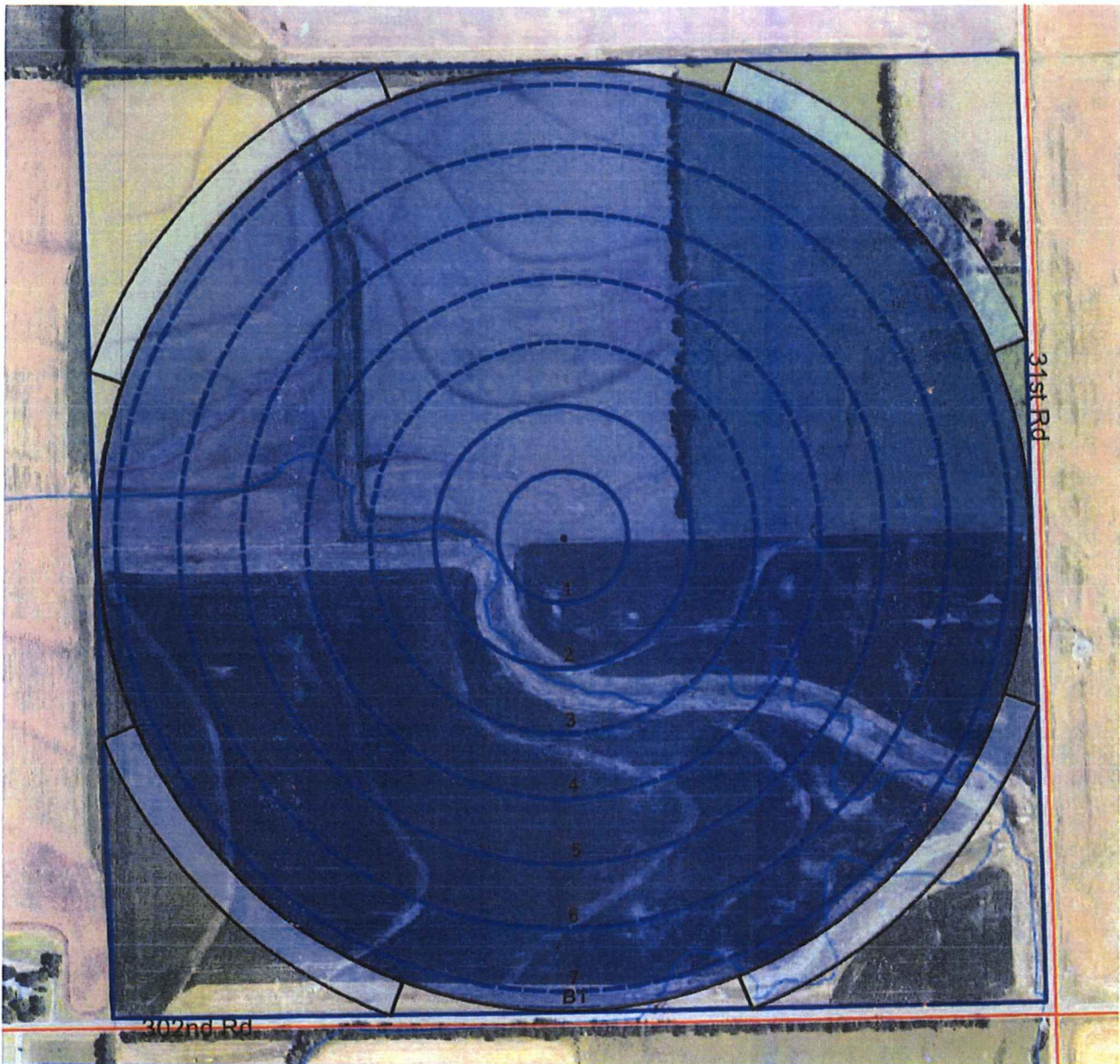
**Field Area:** 157.09 acres

**System Model:** E2065

**System Length:** 1,302.00 ft

**Total Irr. Area:** 132.61 acres

**Number of Spans:** 7





JAN 18 2022

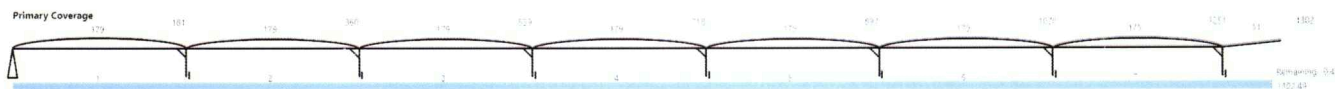
System Length 1,302.00 Total Spans: 7  
Pivot Center Lat/Long: 37.045626degree / -97.098191degree

1st/2nd Endgun Throw: 100  
Degree of Sweep: 360.00

Total Irrigated Acres: 132.61  
Swing Arm Acres:

Pivot Acres: 122.26  
Wrap Span Acres:

1st/2nd Endgun Areas: 10.35  
Drop Span Acres:



Span Information									
Span No.	1	2	3	4	5	6	7		
Model:	E2065	E2065	E2065	E2065	E2065	E2065	E2065	End Boom	
Length:	179'	179'	179'	179'	179'	179'	175'	51'	
Dist - Twr.	181.00 ft'	360.00 ft'	539.00 ft'	718.00 ft'	897.00 ft'	1,076.00 ft'	1,251.00 ft'		
Pipe Size:	6_5/8	6_5/8	6_5/8	6_5/8	6_5/8	6_5/8	6_5/8	N/A	
Outlet Sp:	57"	57"	57"	57"	57"	57"	57"	57"	

Primary (1st) Endgun Areas by Location							
SR100 (feet)	Degree from North		Degree from Pivot Start		Latitude / Longitude in Degrees		Area Acres
	Start	Stop	Start	Stop	Start	Stop	
Area 1	19.9	66.9	19.9	66.9	37.049221 -97.096466	37.047066 -97.093735	2.55 acres
Area 2	109.2	157.7	109.2	157.7	37.044287 -97.093687	37.042035 -97.096458	2.63 acres
Area 3	200.0	246.5	200.0	246.5	37.042036 -97.099925	37.044161 -97.102633	2.52 acres
Area 4	288.8	337.9	288.8	337.9	37.046940 -97.102706	37.049222 -97.099911	2.66 acres

Field Layout Annotations					
Label	Start Lat.	Start Lon.	End Lat.	End Lon.	Length

WATER RESOURCES  
RECEIVED

JAN 18 2022

KS DEPT OF AGRICULTURE

COWLEY COUNTY GIS North



NWSWSE 33 34S 3E

From Geo = 416' W. TO PROPERTY  
322' N. TO PROPERTY \*

GEOCENTER COORDINATES

37.044578

-97.101587

DATUM WGS84



JAN 18 2022

1-12-22  
(Date)

Kansas Department of Agriculture  
Division of Water Resources  
Earl D. Lewis, Jr, Chief Engineer  
1320 Research Park Drive  
Manhattan, Kansas 66502

Re: Application  
File No. \_\_\_\_\_

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.

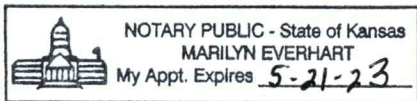
I also understand that if this application is approved, there could be times, as determined by the Division of Water Resources, when I would not be allowed to divert water. I realize that this could affect the economics of my decision to appropriate water.

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.

Grainland Farm Inc.  
Dennis K. Shurtz Pres.  
Signature of Applicant  
Grainland Farms, Inc.  
Dennis K. Shurtz Pres  
(Print Applicant's Name)

State of Kansas )  
County of Cowley ) ss

I hereby certify that the foregoing instrument was signed in my presence and sworn to before me this 12th day of January, 2022.



Marilyn Everhart  
Notary Public

My Commission Expires: 5-21-23



JAN 18 2022

**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

**DATA ENTRY SYSTEM ID NUMBER SHEET**

FILE NUMBER 50704

APPLICANT PERSON ID & SEQ #	PDIV ID	BATTERY ID
68196	89246	

LANDOWNER PERSON ID & SEQ #	PUSE ID
68196	70697
68197	70698

WATER USE CORRESPONDENT PERSON ID & SEQ #
68196

1320 Research Park Drive  
Manhattan, KS 66502  
785-564-6700  
www. agriculture.ks.gov



900 SW Jackson, Room 456  
Topeka, KS 66612  
785-296-3556

Mike Beam, Secretary

Laura Kelly, Governor

January 25, 2022

GRAINLAND FARMS, INC.  
ATTN:DENNIS SHURTZ, 2508 EDGEMONT DRIVE STE #4  
ARKANSAS CITY KS 67005

RE: Application, File No(s). **50704**

Dear Sir or Madam:

The Division of Water Resources (Division) has received your application(s) for a permit to appropriate water for beneficial use. Your application(s) has been assigned the file number(s) referenced above. Please be aware that the Division may have a large number of pending applications on hand at times and makes every attempt to process them in the order in which they are received. You will be contacted if additional information is required.

Please note, this letter only acknowledges receipt of your application(s) and does not guarantee approval. In accordance with the provisions of the Kansas Water Appropriation Act, the use of water as proposed prior to approval of the application(s) is unlawful.

Additional information about the process may be found on our website at [agriculture.ks.gov/divisions-programs/dwr](http://agriculture.ks.gov/divisions-programs/dwr). If you have any other questions, please contact our office at 785-564-6640 or your local Stafford Field Office at 620-234-5311. *Stafford Field Office at 620-234-5311*. If you call, please reference the file number so we can help you more efficiently.

Sincerely,

A handwritten signature in black ink that reads "Kris Neuhauser". The signature is written in a cursive style with a long horizontal flourish at the end.

Kris Neuhauser  
New Applications Lead  
Water Appropriation Program