



*Platte-Republican Diversion (PRD) Pasture Burn, April 20, 2020*

# **2019 Annual Report of Integrated Water Management Activities in the Republican Basin Within Tri-Basin NRD**



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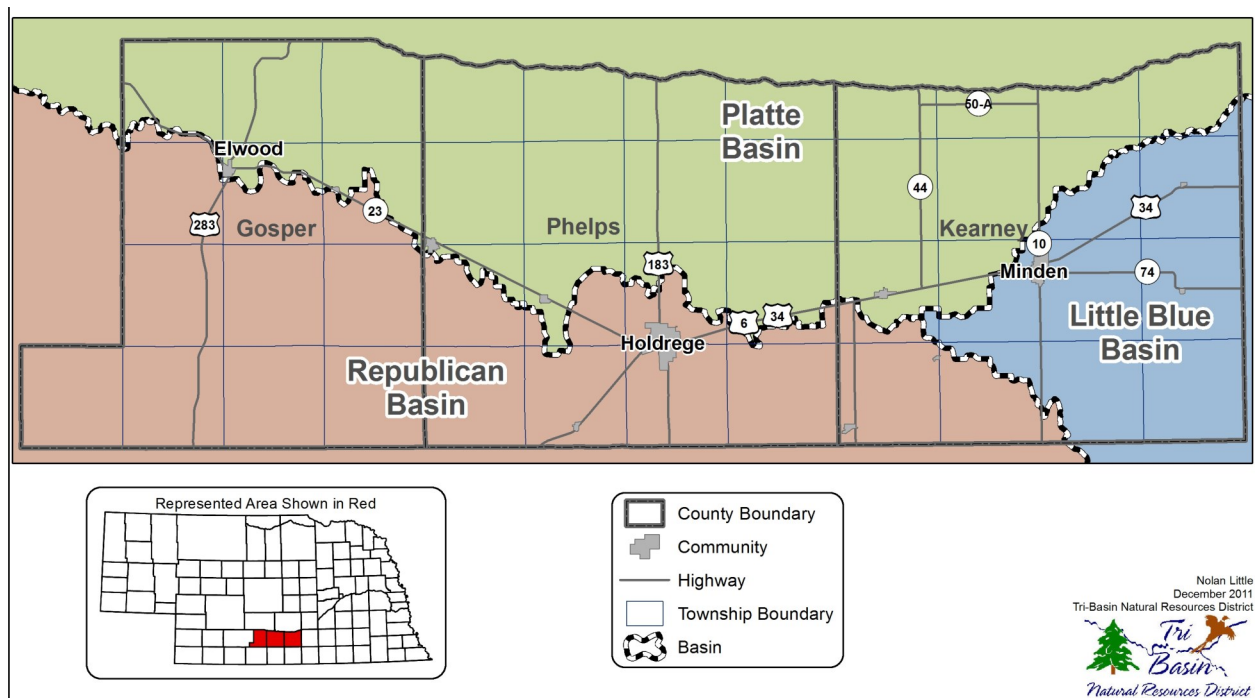
**October 2020**

**ANNUAL REPORT OF WATER USE ACTIVITIES  
IN THE REPUBLICAN BASIN WITHIN TRI-BASIN NRD**  
TO MEET THE REQUIREMENTS OF THE JOINT INTEGRATED MANAGEMENT PLAN  
FOR THE 2019 JOINT INTEGRATED MANAGEMENT PLAN PROGRESS REVIEW MEETING

**I. SUMMARY**

The purpose of this report is to convey information that Tri-Basin Natural Resources District (TBNRD) agreed to supply to the State of Nebraska as part of a joint Integrated Water Resources Management Plan for the Republican River Basin portion of the district.

**Map #1: Basin Reference Map**



**II. INTRODUCTION**

TBNRD encompasses portions of the Republican, Platte and Little Blue River Basins (see map #1, above). The district also contains an area commonly referred to as the "Groundwater Mound," a large area spanning portions of all three basins that is characterized by groundwater levels that are generally higher than historic "pre-development" groundwater elevations.

More than 100,000 acres of cropland within the Platte Basin portion of TBNRD are irrigated with water diverted from the Platte River and distributed through the canals of the Central Nebraska Public Power and Irrigation District (CNPPID). Surface irrigation water and the canals that distribute it enhance recharge of groundwater supplies within the district. In addition to helping sustain groundwater supplies, this incidental recharge has increased streamflows in Platte and Republican tributaries.

### III. CERTIFIED IRRIGATED ACRES

The district began certifying irrigated acres in the Republican Basin in 2004. Development of additional certified irrigated acres in the Republican Basin was prohibited as of September 15, 2004. Since that time, corrections and revisions to the certified acre database have occurred with a net result of 189,926.13 certified irrigated acres in the Republican Basin portion of Tri-Basin NRD as of December 31, 2019. Data regarding certified irrigated acres can be found in **TABLE 1: Certified Irrigated Acres**, below. The commingled acres referred to in the table are acres that may be watered with either groundwater or surface water, or a combination of both. Detailed information about locations and distribution of certified irrigated acres is available in the Tri-Basin NRD office.

<b>TABLE 1: Certified Irrigated Acres</b>					
	<b>Year</b>	<b>Groundwater</b>	<b>Commingled Acres</b>	<b>Surface Water</b>	<b>Totals</b>
Gosper County	2012	56,489.90	1,057.16	173.00	57,720.06
	2013	56,501.89	1,013.68	216.48	57,732.05
	2014	56,494.37	1,013.68	123.48	57,631.53
	2015	56,671.20	1,013.68	123.48	57,808.36
	2016	56,707.83	1,013.68	88.48	57,809.99
	2017	56,590.81	1,017.11	87.98	57,695.90
	2018	56,605.10	1,017.11	87.98	57,710.19
	2019	56,604.94	1,017.11	87.98	57,710.03
Kearney County	2012	40,955.11	427.59		41,382.70
	2013	40,938.11	427.59		41,365.70
	2014	40,937.45	427.59		41,365.04
	2015	40,918.57	427.59		41,346.16
	2016	40,922.16	427.59		41,349.75
	2017	40,938.16	427.59		41,365.75
	2018	40,941.91	427.59		41,369.50
	2019	40,975.52	427.59		41,403.11
Phelps County	2012	85,504.59	4,532.56	236.51	90,273.66
	2013	85,550.50	4,562.40	236.51	90,349.41
	2014	85,926.68	4,562.66	161.23	90,650.57
	2015	86,090.68	4,488.25	235.65	90,814.58
	2016	86,100.60	4,488.25	235.65	90,824.50
	2017	86,098.12	4,488.25	235.65	90,822.02
	2018	86,071.22	4,645.38	74.42	91,180.93
	2019	86,093.19	4,645.38	74.42	90,812.99
<b>Basinwide Total</b>	<b>2012</b>	<b>182,949.60</b>	<b>6,017.31</b>	<b>409.51</b>	<b>189,376.42</b>
	<b>2013</b>	<b>182,990.50</b>	<b>6,003.67</b>	<b>452.99</b>	<b>189,447.16</b>
	<b>2014</b>	<b>183,358.50</b>	<b>6,003.93</b>	<b>284.71</b>	<b>189,647.14</b>
	<b>2015</b>	<b>183,680.45</b>	<b>5,929.52</b>	<b>359.13</b>	<b>*189,969.10</b>
	<b>2016</b>	<b>183,730.59</b>	<b>4,929.52</b>	<b>324.13</b>	<b>*189,984.24</b>
	<b>2017</b>	<b>183,627.09</b>	<b>5,932.95</b>	<b>323.63</b>	<b>*189,883.67</b>
	<b>2018</b>	<b>183,618.23</b>	<b>6,090.08</b>	<b>162.40</b>	<b>*189,870.71</b>
	<b>2019</b>	<b>183,673.65</b>	<b>6,090.08</b>	<b>162.40</b>	<b>*189,926.13</b>

\*total does not include 157.8 Harlan County acres

#### IV. APPROVED CERTIFIED ACRE AND GROUNDWATER TRANSFERS

- A. TBNRD allows certified irrigated acres to be transferred from one parcel to another within the Republican Basin portion of the district, with some limitations. Certified irrigated acres cannot be transferred from parcels with surface water or commingled water resources to parcels that have groundwater wells as their only water source. The NRD also pro-rates certified acre transfers in which acres are transferred from low to high streamflow depletion zones. Between January 1, 2019 and December 31, 2019 the district approved five certified irrigated acre transfers in the Republican Basin. A total of 42.15 certified irrigated acres were involved in these transfers. Data regarding the location, amount and conditions associated with each transfer can be found in **TABLE 2A: Republican Basin Transfers-Acres Original Locations** (below) and **TABLE 2B: Republican Basin Transfers-Destinations for Transferred Acres** (below).

<b>TABLE 2A: Republican Basin Transfers - Acres <u>Original Locations</u></b>		
<b>NRD Permit Number</b>	<b>Legal Description</b>	<b>Acres Dried Up</b>
TBAT-0344	Section 29-5- 16W	5.83
TBAT-0345	Section 28-5- 16W	4.1
TBAT-0346	Section 21-5- 16W	8.22
TBAT-0347	Section 31-6- 18W	17.5
TBAT-0348	Section 31-6- 18W	6.5
<b>Total</b>		<b>42.15</b>

<b>TABLE 2B: Republican Basin Transfers - <u>Destinations</u> for Transferred Acres</b>		
<b>NRD Permit Number</b>	<b>Legal Description</b>	<b>New Irrigated Acres</b>
TBAT-0344	Section 10-5- 16W	5.83
TBAT-0345	Section 10-5- 16W	4.1
TBAT-0346	Section 10-5- 16W	8.22
TBAT-0347	Section 15-6- 19W	17.5
TBAT-0348	Section 18-6- 18W	6.5
<b>Total</b>		<b>42.15</b>

- B. TBNRD regulates groundwater pumping off of overlying land by requiring landowners to secure groundwater transfer permits before they can pump groundwater to properties that are not under the same ownership. Groundwater transfer permits can only be used to supply groundwater for irrigation of certified irrigated acres. Landowners are required to install flowmeters on wells that are permitted for transfers and to report pumping from these wells annually to TBNRD. TBNRD issued two groundwater transfer permits involving 77 acres in the Republican Basin between January 1, 2019 and December 31, 2019 (see **TABLE 3: Groundwater Transfers**, below).

<b>TABLE 3: Groundwater Transfers</b>				
<b>NRD Permit Number</b>	<b>Legal Description</b>	<b>Neighboring Certified Acres to be watered with well</b>	<b>Well</b>	<b>Well ID</b>
GWT-0341	Section 29-5- 17W	67	G-022287    G-042442	164695    49735
GWT-0342	Section 13-5- 15W	10	G-075089	83571

## V. WELL CONSTRUCTION PERMITS

- A. Since 1989, TBNRD has required landowners to secure well construction permits before they drill wells capable of pumping more than 50 gallons per minute. The district issues three categories of well permits: new well permits, conditional replacement well permits, and replacement well permits.

TBNRD requires landowners to agree to several conditions on the operation of new wells and conditional replacement wells before permits are issued. These conditions are listed in an agreement that is signed by landowners when they apply for these types of well permits. A copy of that agreement is attached to this report as Appendix A.

<b>TABLE 4: TBNRD Well Permits</b>	
<b>Well Permit Type</b>	<b>Permits</b>
New (variance) irrigation	0
Replacement irrigation	3
Conditional replacement irrigation - supplemental to groundwater	0
Conditional replacement irrigation—supplemental to surface water	0
Dewatering	0
New commercial/industrial [Acre transfer involved]	0
Domestic (over 50 gallons per minute)	0

- B. **TABLE 4: TBNRD Well Permits** (above) is a breakdown of well permits TBNRD issued in the Republican Basin between January 1, 2019 and December 31, 2019. A detailed listing of well permits issued by TBNRD in 2019 is found in **TABLE 5: Well Permit Summary** (below).

<b>TABLE 5: Well Permit Summary</b>				
<b>Permit Number</b>	<b>Well Permit Type</b>	<b>Legal Description</b>	<b>NDNR Reg. Number</b>	<b>NDNR Well ID Number</b>
TBRP-G044893-R1	Replacement Well	Lots 3-4; 9-10 Section 6-5-17W	G-044893	257672
TBRP-G031733-R1	Replacement Well	SW 1/4 Section 13-5- 17W	G-031733	258074
TBRP-G025628-R1	Replacement Well	SW 1/4 Section 19-6- 16W	G-025628	258225

## VI. VARIANCES

TBNRD considers variances to the district rules regarding certified irrigated acre transfers. In 2019, district directors approved one variance regarding the location of irrigated acres within a parcel that was involved in a prior certified irrigated acre transfer. The variance did not change the number of certified irrigated acres associated with the parcel. Information about this variance is in **TABLE 6: Republican Basin Certified Irrigated Variances** (below).

<b>TABLE 6: Republican Basin Certified Irrigated Variances</b>				
<b>Date Approved</b>	<b>Type of Variance</b>	<b>Legal Description</b>	<b>Affected Acres</b>	<b>Comment</b>
3/12/2019	Acre Correction	Section 7-5- 16	33.61	



## VII. MUNICIPAL AND INDUSTRIAL ACCOUNTING

TBNRD collects water use data annually from all municipalities and industries within the district. Municipal and industrial water use data for communities and industries located in the Republican Basin reported to TBNRD in 2019 are shown in the next two tables. A summary of Municipal Water Use may be found in **TABLE 7: Republican Basin Municipal Water Use Data** (below) and **TABLE 8: Industrial and Commercial Water Use Data** (below).

<b>TABLE 7: Republican Basin Municipal Water Use Data (in gallons)</b>								
<b>Municipality</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>
Atlanta	33,219,000	23,124,400	20,357,400	21,729,800	18,953,600	14,161,100	10,210,500	9,046,300
Arapahoe	138,279,000	120,573,000	97,223,000	91,449,000	103,916,000	101,311,000	90,286,000	83,598,000
Holdrege	512,347,700	473,755,500	519,360,800	470,600,100	478,038,800	441,265,200	402,611,800	373,071,300
Wilcox	27,905,000	25,414,900	22,987,500	27,343,300	25,688,000	25,049,600	26,343,100	28,349,000
<b>Total</b>				<b>611,122,200</b>	<b>626,596,400</b>	<b>581,786,900</b>	<b>529,451,400</b>	<b>494,064,600</b>

<b>TABLE 8: Republican Basin Industrial and Commercial Water Use Data</b>				
<b>NDNR Reg. Number</b>	<b>Well ID</b>	<b>Owner</b>	<b>Legal Description</b>	<b>Gallons Used</b>
G-030619	37512	City of Holdrege	Section 9-5- 18	0
G-025572	32122	City of Holdrege	Section 9-5- 18	0
G-096786	109719	City of Holdrege	Section 34-6- 18	903,500
G-135221	169721	Geer Utility	Section 27-6- 18	1,066,250
G-135220	171309	Geer Utility	Section 27-6- 18	0
G-069908	78071	Holdrege County Club	Section 29-6- 18	15,446,700
G-009687	14429	Holdrege County Club	Section 29-6- 18	15,156,200
G-070168	78331	Holdrege Well Service	Section 34-6- 18	231,350
G-070393	78555	NE Game & Parks, Sac-Wilcox WMA	Section 27-5- 17	7,800
G-184679	250906	Norder Supply Inc	Section 12-6- 23	868,000
G-071934	80096	Sargent Irrigation Co Inc	Section 34-6- 18	105,800
G-179201	241336	Tri-Basin NRD	Section 7-6- 21	13,001,064

## VIII. FLOWMETER DATA

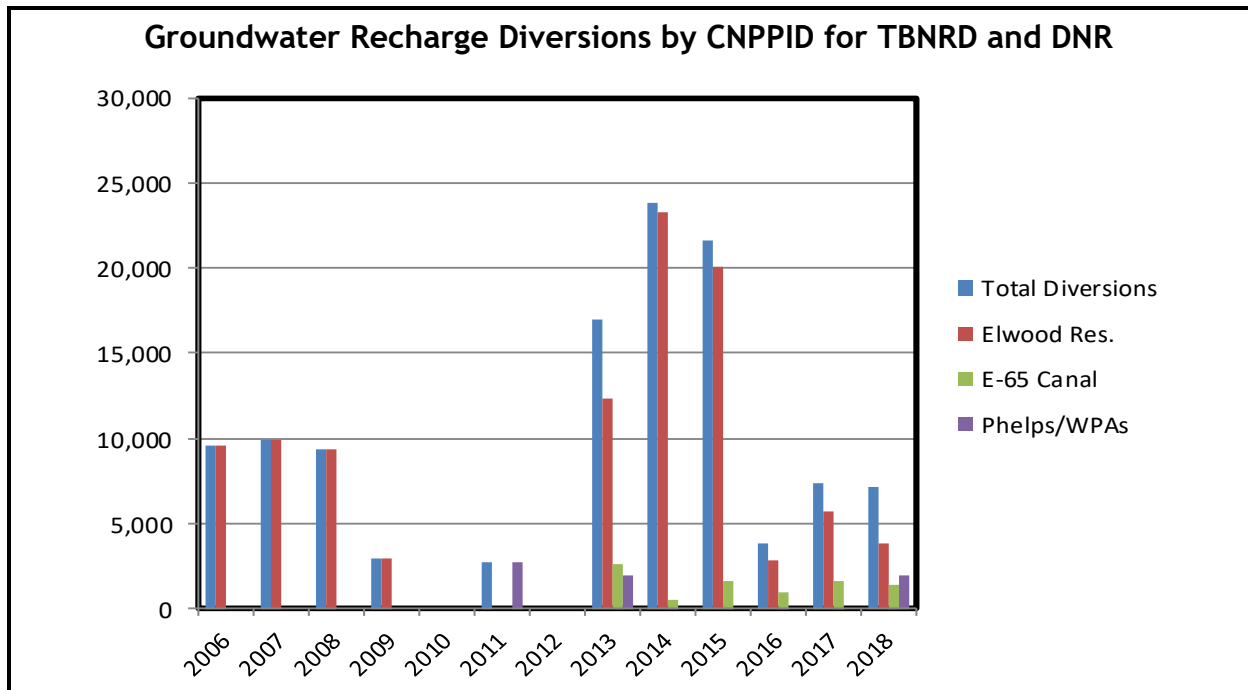
TBNRD requires flowmeters to be installed on all irrigation, commercial and industrial wells in the Republican Basin portion of the district. Annual water use is reported to TBNRD. In 2019, landowners reported data from 1,438 metered wells in the Republican Basin, which provided irrigation for 174,566.3 certified irrigated acres. There are 29 wells in the Republican Basin that are exempt from having flowmeters because they irrigate less than 15 acres water use on these wells is estimated and reported annually. All District flowmeter data is reported annually to the Nebraska Department of Natural Resources (NDNR) for Republican River Basin Compact Administration accounting. A summary of Republican Basin water use data is included in this report as Appendix B. Detailed Republican Basin flowmeter data is available from the Tri-Basin NRD office.

## IX. WATER BANKING ACTIVITIES

TBNRD has initiated a new program called the Water Conservation Incentive Program (see program summary in Appendix E). Participants in this program sign contracts agreeing to limit irrigation to the UNL Average Corn Crop Irrigation requirement. In exchange, Tri-Basin NRD agrees to pay them if they use less water than their allocated amount. Participants will be provided with credit accounts that track available water use credits for participating fields. A total of 1449.57 certified irrigated acres in the Republican Basin portion of the district were approved in 2019 for this new program. The TBNRD board of directors has committed funds sufficient to pay incentives for as many as 8000 acres to be enrolled in the program.

## X. RETIRED ACRES AND OTHER STREAMFLOW ACCRETION ACTIVITIES

Tri-Basin NRD started utilizing the facilities of Central Nebraska Public Power District (CNPPID) to provide groundwater recharge and to augment streamflows when the district and the NE Game and Parks Commission paid CNPPID to divert 9551 acre-feet of water from the Platte River into Elwood Reservoir in Gosper County in 2006. Additional diversions (see Appendix C and graph below) have been made regularly over the ensuing 13 years. In all these instances, diversions were made when Platte streamflows exceeded target flows, or when irrigation deliveries were suspended because of heavy rainfall in the CNPPID irrigated area. Diversions into Elwood Reservoir and E-65 Canal provide groundwater recharge and “imported water” to augment Republican Basin water supplies.



Tri-Basin and Lower Republican NRDs commissioned a feasibility study to examine directly diverting excess flows from the Platte via E-65 Canal to Turkey Creek, a Republican tributary in Gosper County. That study concluded that the diversion project is feasible both hydrologically and economically. The partners have purchased a 330 acre parcel of pasture at the upper end of Turkey Canyon. We have also applied for a water right for the project. Construction is anticipated in 2021, assuming that water right is approved this year.

Tri-Basin NRD also constructed a streamflow augmentation well on the east branch of Turkey Creek. This augmentation well is capable of pumping as much as 1000 acre-feet per year. The well has been tested and is fully functional. It hasn't been used yet for augmentation.

Tri-Basin NRD records previously indicated that 2329.24 irrigated acres are enrolled in USDA Conservation Reserve Enhancement Program (CREP) in the Republican Basin portion of the district. Nine of these contracts are set to expire by 2020. We reviewed the contracts and found a correction needs to be made. An additional 305.84 irrigated acres were enrolled in 2018 bringing the total to 1959.84 irrigated acres enrolled.

On district water use reports, landowners reported to TBNRD that conservation tillage practices have been adopted or continue to be utilized on 79,565.4 certified irrigated acres in the Republican Basin portion of the district during 2019 (no-till data is available from the Tri-Basin NRD office). University research (Klocke, et al, 2009) indicates that evapotranspiration (ET) is reduced by as much as 3 inches per acre on minimally-tilled irrigated cropland, as compared to conventional tillage systems. If the estimates of no-till acres are accurate, as much as 19,891.34 acre-feet of water was conserved in the Republican Basin in TBNRD in 2019 through this conservation practice.

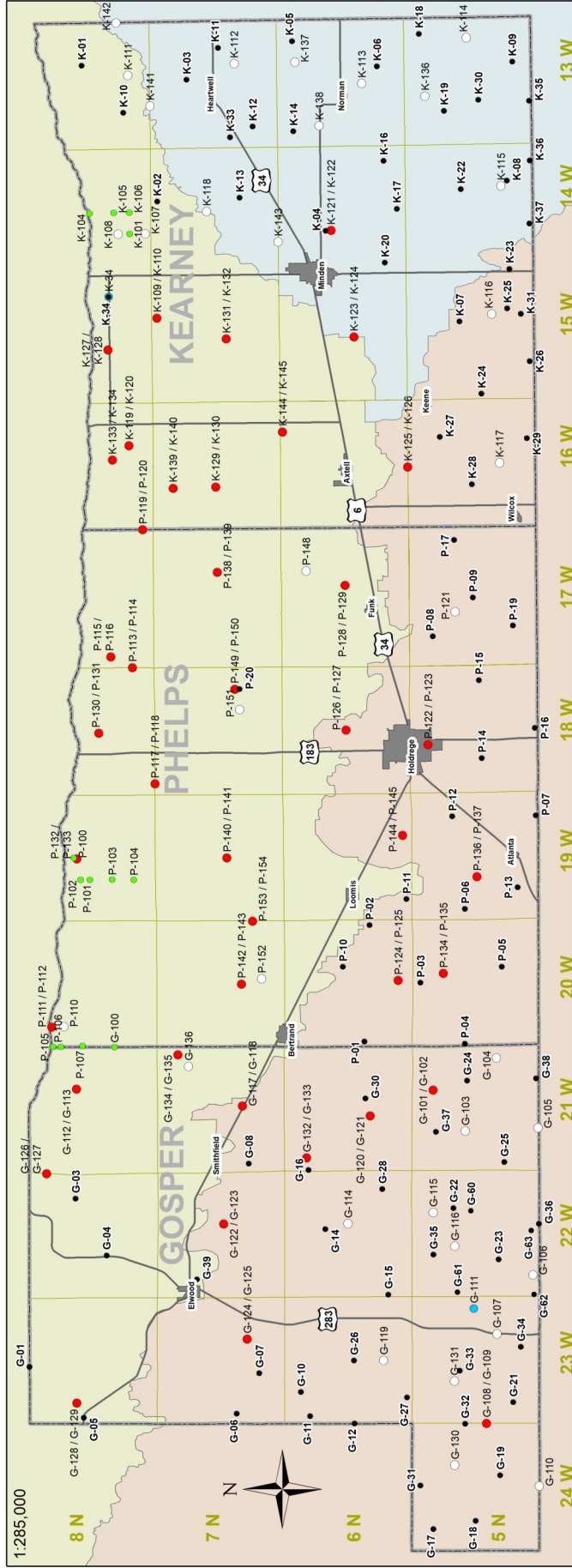
#### XI. GROUNDWATER LEVELS

TBNRD has an extensive network of 131 dedicated groundwater observation wells (44 in the Republican Basin) and 90 irrigation wells (60 in the Republican Basin) that are used to measure groundwater levels (see Map #2, page 9). TBNRD also works cooperatively with CNPPID to gather groundwater level data. Data from 10 wells in the Republican Basin that are measured by CNPPID are included in TBNRD's groundwater observation well data base. District water level data is reported semi-annually to U.S. Geological Survey and UNL Conservation and Survey Division. Groundwater level data for the district is available from the Tri-Basin NRD office.



# Tri-Basin Natural Resources District

## Static Water Measurement Wells



A map of the United States with state boundaries outlined. A small rectangular area in the eastern United States, covering parts of Virginia, North Carolina, and South Carolina, is highlighted in red. This area corresponds to the 'Referenced Area Shown in Red' mentioned in the text.

- |   |                 |                   |
|---|-----------------|-------------------|
| • | Irrigation Well | Community         |
| ● | Transect Well   | County Boundary   |
| ○ | Single Well     | Township          |
| ● | Nested Well     | Little Blue Basin |
| ● | Other Well      | Republican Basin  |
| — | Highway         | Platte Basin      |

- 91 Sites
- 41 Nested Wells
- 134 Data Loggers
- 12 Hour Interval

- Irrigation Well Stats:**
- 9 Platte Basin
  - 21 Little Blue Basin
  - 60 Republican Basin
  - 90 Measured Wells
  - Spring & Fall

Nolan Little  
March 2020  
Tri-Basin Natural Resources District

**Tri-Basin NRD – Republican Basin Annual Report  
Appendix A**

**Tri-Basin Natural Resources District  
New Well and Conditional Replacement Well Permit  
Applicant Certification and Agreement**

Applicant Certification and Agreement to be bound by Conditions and Limitations on operation of a Well permitted as a New Well or as a Conditional Replacement Well pursuant to Rule 1.13, Tri-Basin Natural Resources District Rules and Regulations for Management of Land and Water Resources

NRD Permit # \_\_\_\_\_ Applicant \_\_\_\_\_

Applicant is the owner of the following- described real estate:

\_\_\_\_\_ ¼ Section T N - R W \_\_\_\_\_

\*\*\*\*\*

Applicant accepts and agrees to be bound by the following conditions and limitations on the operation of a well that is constructed under the authority of a permit issued by the Tri-Basin Natural Resources District ("NRD"). The conditions and limitations are (check the box and initial those that apply):

1. ☐ \_\_\_\_\_ Applicant agrees to offset any "new depletions" to streamflows of the Platte River, Little Blue River, Republican River, or their tributaries that may be determined to be associated with use of this well. Applicant agrees to use methods to offset those depletions that are deemed acceptable by the NRD and the State of Nebraska. Applicant understands and agrees that Applicant's failure to offset said new depletions may result in closure of this well or restrictions being imposed by the NRD on the number of acres of land that can be irrigated by this well.
2. ☐ \_\_\_\_\_ Applicant agrees to abide by well spacing and pumping capacity limitations that apply to the well that is the subject of this permit, whether such limitations arise pursuant to federal or state law or by rule or regulation of the NRD. Applicant understands and agrees that Applicant's failure to comply with all rules and regulations of the NRD that pertain to this well may result in closure of this well and civil or criminal prosecution and other penalties.
3. ☐ \_\_\_\_\_ Applicant agrees to comply with all current and future rules and regulations of the NRD that pertain to this well. Applicant understands and agrees that Applicant's failure to comply with all rules of regulations of the NRD that pertain to this well may result in closure of this well and civil or criminal prosecution and other penalties.
4. ☐ \_\_\_\_\_ Applicant agrees to maintain any and all surface water rights associated with the land to be irrigated by this well for the lifespan of the permitted well. Applicant understands and agrees that Applicant's failure to comply with all rules and regulations of the NRD that pertain to this well may result in closure of this well and civil or criminal prosecution and other penalties.
5. ☐ \_\_\_\_\_ Applicant agrees to irrigate only land that has been certified for irrigation by the NRD (no new irrigated acres will be allowed). Applicant understands and agrees that Applicant's failure to prevent irrigation of land not certified for irrigation by the NRD may result in closure of this well and prosecution by the State of Nebraska.

Applicant certifies that Applicant is familiar with the information contained in this instrument and that to the best of Applicant's knowledge and belief, such information is true, complete and accurate. Applicant further acknowledges and agrees that the NRD and/or the State of Nebraska may impose additional conditions, limitations and restrictions on operation of the well that is the subject of this permit. Applicant further acknowledges and agrees that the conditions and limitations agreed to herein shall also be binding upon Applicant's successors-in-interest to the well and/or the subject real estate.

**Tri-Basin NRD – Republican Basin Annual Report**  
**Appendix A**

I certify that I am familiar with the information contained in this application and that to the best of my knowledge and belief such information is true, complete and accurate. I further acknowledge that Tri-Basin Natural Resources District or the State of Nebraska may impose additional conditions, limitations and restrictions on operation of the well that is the subject of this permit.

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature of Applicant

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature of Applicant

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature of Witness

**Approval by Tri-Basin Natural Resources District**

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature of Tri-Basin NRD Representative

**Tri-Basin NRD – Republican Basin Annual Report**  
**Appendix B**

<b>Tri-Basin NRD Republican Basin Water Use</b>							<b>Kearney County</b>	
<b>YEAR</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	
<b>Certified Irrigated Acres</b>	41,365.70	41,365.04	41,346.16	41,349.75	41,370.75	41,369.50	41,403.11	
<b>Pivots</b>								
<b>Actual Reported Acres</b>	24,643.73	24,765.78	24,650.91	25,014.85	31,018.14	31,190.1	30,659.10	
<b>Gallons Used</b>	7,063,988,419	3,748,611,721	6,060,475,376	7,037,163,570	5,486,469,797	4,713,924,522	3,331,595,134	
<b>Average acre Inches</b>	10.56	5.57	9.05	10.36	6.51	5.6	4.00	
<b>Gravity</b>								
<b>Actual Reported Acres</b>	4,280.08	3,817.91	3,584.80	3,458.16	2,624.22	2,169.7	1,858.60	
<b>Gallons Used</b>	2,290,597,600	1,004,222,115	1,610,758,519	1,902,782,114	896,621,660	726,021,399	576,820,423	
<b>Average acre Inches</b>	19.71	9.69	16.55	20.26	12.58	12.3	11.40	
<b>Combination</b>								
<b>Actual Reported Acres</b>	10,100.91	9,834.82	10,367.16	10,052.32	4,977.82	4,968.2	5,075.90	
<b>Gallons Used</b>	3,338,885,321	1,662,313,886	2,655,672,700	2,938,231,843	970,126,131	820,374,310	568,830,323	
<b>Average acre Inches</b>	11.98	6.22	9.43	10.76	7.18	6.1	4.13	
<b>Drip Tape</b>								
<b>Actual Reported Acres</b>		37.00	37.00	37.00	37.00	37.0	82.00	
<b>Gallons Used</b>		7,942,200	18,391,400	12,882,000	9,601,700	8,759,500	13,702,512	
<b>Average acre Inches</b>		7.91	18.31	12.82	9.56	8.7	6.15	
<b>Total Irrigation Use</b>								
<b>Actual Reported Acres</b>	39,024.72	38,455.51	38,639.87	38,562.33	38,657.18	38,365.08	37,675.60	
<b>Gallons Used</b>	12,693,471,340	6,423,089,922	10,345,297,995	11,891,059,527	7,362,819,288	6,269,079,731	4,490,948,392	
<b>Average acre Inches</b>	11.98	6.15	9.86	11.36	7.01	6.02	4.39	
<b>Misc [gallons used]</b>								
<b>Wildlife Areas</b>			104,039,000	10,227,000	58,700,000	52,748,000	8,000	
<b>Other Uses</b>						40,459		
<b>Total Gallons Used</b>	12,693,471,340	6,423,089,922	10,449,336,995	11,901,286,527	7,421,519,288	6,321,868,191	4,490,956,392	
								February 18, 2020

**Tri-Basin NRD – Republican Basin Annual Report**  
**Appendix B**

<b>Tri-Basin NRD Republican Basin Water Use</b>							<b>Phelps County</b>		
<b>YEAR</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>		
<b>Certified Irrigated Acres</b>	90,349.41	90,650.57	90,814.58	90,823.25	90,822.02	91,180.93	91,186.60		
<b>Pivots</b>									
Actual Reported Acres	51,634.20	50,670.04	51,898.96	53,338.05	55,447.14	55,100.54	56,220.80		
Gallons Used	18,349,493,213	8,303,306,913	11,443,663,774	15,208,478,608	10,910,834,987	6,762,281,160	7,482,177,323		
Average acre Inches	13.09	6.03	8.12	10.50	7.25	4.52	4.90		
<b>Gravity</b>									
Actual Reported Acres	8,916.10	7,431.08	7,894.43	7,652.13	6,145.48	5,529.48	5,184.00		
Gallons Used	5,972,669,159	2,358,776,689	3,343,075,013	4,134,425,635	2,295,801,707	1,765,607,050	1,504,333,084		
Average acre Inches	24.67	11.69	15.60	19.90	13.76	11.76	10.69		
<b>Combination</b>									
Actual Reported Acres	22,874.36	22,523.31	23,976.76	23,270.96	22,411.53	22,387.63	21,745.80		
Gallons Used	8,950,299,149	3,596,843,384	5,701,876,965	7,562,355,869	4,819,237,536	2,958,296,992	3,141,038,609		
Average acre Inches	14.41	5.88	8.76	11.97	7.92	4.87	5.32		
<b>Drip Tape</b>									
Actual Reported Acres		435.40	435.40	670.40	732.40	732.40	856.00		
Gallons Used		79,980,790	133,860,021	189,132,035	155,429,742	100,822,467	135,178,288		
Average acre Inches		6.76	11.32	10.39	7.82	5.07	5.82		
<b>Total Irrigation Use</b>									
Actual Reported Acres	83,424.66	81,059.83	84,205.55	84,931.54	84,736.55	83,750.05	84,006.60		
Gallons Used	33,272,461,521	14,338,907,776	20,622,475,773	27,094,392,147	18,181,303,972	11,587,007,669	12,262,727,304		
Average acre Inches	14.69	6.51	9.02	11.75	7.90	5.10	5.38		
<b>Misc [gallons used]</b>									
Wildlife Areas			14,106,000	45,054,000	58,903,200	43,286,200	21,822,300		
Other Uses							5,000		
<b>Total Gallons Used</b>	<b>33,272,461,521</b>	<b>14,338,907,776</b>	<b>20,636,581,773</b>	<b>27,139,446,147</b>	<b>18,240,207,172</b>	<b>11,630,293,869</b>	<b>12,284,554,604</b>		
							February 18, 2020		

**Tri-Basin NRD – Republican Basin Annual Report**  
**Appendix B**

<b>Tri-Basin NRD Republican Basin Water Use</b>						<b>Gosper County</b>	
<b>YEAR</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>
<b>Certified Irrigated Acres</b>	57,732.05	57,631.53	57,808.36	57,809.99	57,689.54	57,710.19	57,710.03
<b>Pivots</b>							
Actual Reported Acres	34,348.63	34,731.48	34,890.31	35,728.47	36,932.09	36,354.3	35,626.34
Gallons Used	12,023,940,692	6,214,034,271	7,540,338,329	8,270,724,930	7,646,156,083	5,415,780,801	4,561,602,106
Average acre Inches	12.89	6.59	7.96	8.53	7.62	5.5	4.72
<b>Gravity</b>							
Actual Reported Acres	5,515.43	5,313.43	4,590.33	4,193.53	3,398.67	3,371.67	3,183.67
Gallons Used	3,343,182,638	1,735,788,826	1,936,717,927	1,618,658,819	1,485,661,126	900,908,023	712,867,325
Average acre Inches	22.32	12.03	15.54	14.21	16.10	9.84	8.25
<b>Combination</b>							
Actual Reported Acres	14,310.51	14,543.61	14,714.00	14,829.31	14,498.23	14,483.43	13,409.90
Gallons Used	7,034,537,746	3,063,979,197	4,145,559,266	3,830,557,883	3,437,938,742	2,228,362,381	1,809,296,480
Average acre Inches	18.10	7.76	10.38	9.51	8.73	5.67	4.97
<b>Drip Tape</b>							
Actual Reported Acres		360.77	360.77	510.37	538.76	538.76	622.80
Gallons Used		84,044,100	123,091,700	133,466,835	131,221,335	92,376,011	95,243,727
Average acre Inches		8.58	12.57	9.63	8.97	6.31	5.63
<b>Total Irrigation Use</b>							
Actual Reported Acres	54,174.57	54,949.29	54,555.41	55,261.68	55,367.75	54,748.12	52,842.71
Gallons Used	22,401,661,076	11,097,846,394	13,745,707,222	13,853,408,466	12,700,977,286	8,637,427,217	7,179,009,638
Average acre Inches	15.23	7.44	9.28	9.23	8.45	5.81	5.00
<b>Misc [gallons used]</b>							
Wildlife Areas			76,368,100				
Other Uses						201,000	
<b>Total Gallons Used</b>	22,401,661,076	11,097,846,394	13,822,075,322	13,853,408,466	12,700,977,286	8,637,628,217	7,179,009,638
February 18, 2020							



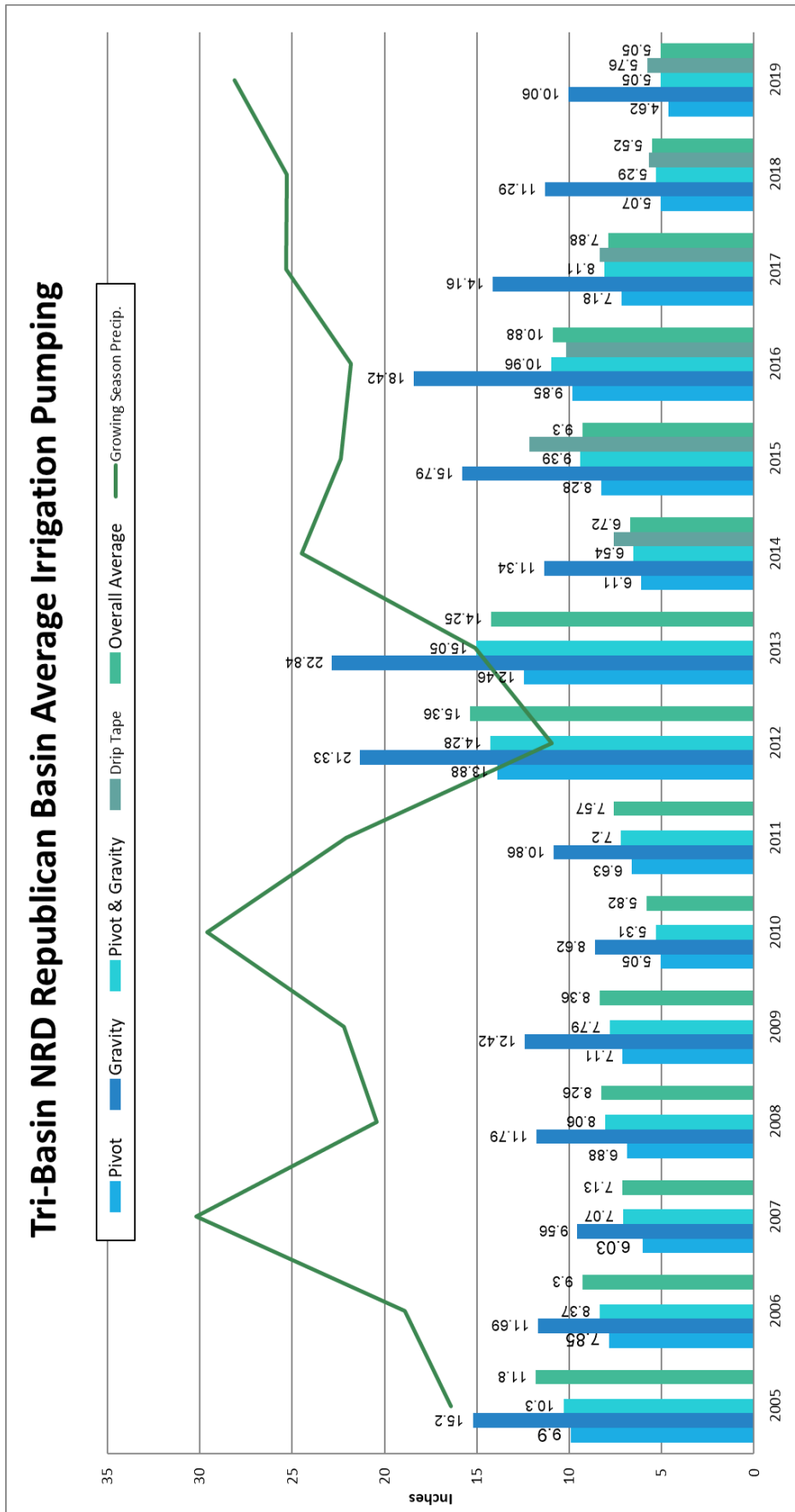
**Tri-Basin NRD – Republican Basin Annual Report**  
**Appendix B**

<b>Tri-Basin NRD Republican Basin Water Use</b>							<b>Republican Basin</b>		
<b>YEAR</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>		
<b>Certified Irrigated Acres</b>	189,447.16	189,647.14	189,969.10	189,982.99	189,882.31	190,260.62	190,299.74		
<b>Pivots</b>									
Actual Reported Acres	110,626.56	110,167.30	111,440.18	114,081.37	123,397.37	122,644.94	122,506.24		
Gallons Used	37,437,422,324	18,265,952,905	25,044,477,479	30,516,367,107	24,043,460,867	16,891,986,484	15,375,374,563		
Average acre Inches	12.46	6.11	8.28	9.85	7.18	5.07	4.62		
<b>Gravity</b>									
Actual Reported Acres	18,711.61	16,562.42	16,069.56	15,303.82	12,168.37	11,070.87	10,226.27		
Gallons Used	11,606,449,397	5,098,787,630	6,890,551,459	7,655,866,568	4,678,084,493	3,392,536,472	2,794,020,832		
Average acre Inches	22.84	11.34	15.79	18.42	14.16	11.29	10.06		
<b>Combination</b>									
Actual Reported Acres	47,285.78	46,901.74	49,057.92	48,152.59	41,887.58	41,839.28	40,231.60		
Gallons Used	19,323,722,216	8,323,136,467	12,503,108,931	14,331,145,595	9,227,302,409	6,007,033,683	5,519,165,412		
Average acre Inches	15.05	6.535280715	9.39	10.96	8.11	5.29	5.05		
<b>Drip Tape</b>									
Actual Reported Acres	0.00	833.17	833.17	1,217.77	1,308.16	1,308.16	1,560.80		
Gallons Used	0.00	171,967,090	275,343,121	335,480,870	296,252,777	201,957,978	244,124,527		
Average acre Inches		7.60	12.17	10.15	8.34	5.69	5.76		
<b>Total Volume Pumped</b>									
Actual Reported Acres	176,623.95	174,464.63	177,400.83	178,755.55	178,761.48	176,863.25	174,524.91		
Gallons Used	<b>68,367,593,937</b>	<b>31,859,844,092</b>	<b>44,713,480,990</b>	<b>52,838,860,140</b>	<b>38,245,100,546</b>	<b>26,493,514,617</b>	<b>23,932,685,334</b>		
Basin Inches Per Acre	14.25	6.73	9.28	10.89	7.88	5.52	5.05		
Wildlife Acres	0	0	0	0	0	241,459	5,000		
Other Use [Non Irrigation]	0	0	0	0	0				
<b>Basin Total Gallons Used</b>	<b>68,367,593,937</b>	<b>31,859,844,092</b>	<b>44,907,994,090</b>	<b>52,894,141,140</b>	<b>38,362,703,746</b>	<b>26,589,790,276</b>	<b>23,954,520,634</b>		
<b>Basin Acre Feet</b>	<b>209,812.442</b>	<b>97,774.271</b>	<b>137,817.573</b>	<b>162,326.159</b>	<b>117,730.815</b>	<b>81,601.070</b>	<b>73,513.724</b>		
Harlan County Wells					19,580,400	20,133,900	17,748,400		
<b>* Lower Republican Reports volume on these wells</b>							February 18, 2020		

**Tri-Basin NRD – Republican Basin Annual Report**  
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<b>Tri-Basin NRD Republican Basin Water Use</b>							<b>Union Township</b>		
<b>YEAR</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>		
<b>Certified Irrigated Acres</b>	8,259.02	8,184.02	8,163.02	8,164.49	8,167.47	8,169.29	8,169.29		
<b>Pivots</b>									
Actual Reported Acres	7275.42	7029.67	7176.67	7,156.70	7,224.67	7,007.70	6,941.00		
Gallons Used	2,029,206,694	955,549,803	1,290,179,868	1,650,537,892	1,439,253,491	1,107,044,683	1,024,037,708		
Average acre Inches	10.3	5.0	6.6	8.50	7.34	5.82	5.43		
<b>Gravity</b>									
Actual Reported Acres					45.00	45.00	45.00		
Gallons Used					10,749,400	8,066,600	6,333,100		
Average acre Inches					8.80	6.60	5.18		
<b>Combination</b>									
Actual Reported Acres	476.7	462.8	462.8	462.80	462.80	417.00	171.00		
Gallons Used	90,473,600	46,298,000	71,712,700	64,802,400	59,907,800	37,224,800	24,930,100		
Average acre Inches	7.0	3.7	5.7	5.20	4.77	3.29	5.37		
<b>Drip Tape</b>									
Actual Reported Acres									
Gallons Used									
Average acre Inches									
<b>Total Irrigation Use</b>									
Actual Reported Acres	7,752.12	7,492.47	7,639.47	7,619.50	7,732.47	7,469.70	7,157.00		
Gallons Used	2,119,680,294	1,001,847,803	1,361,892,568	1,715,340,292	1,509,910,691	1,152,336,083.00	1,055,300,908		
Average acre Inches	10.07	4.92	6.57	8.29	7.19	5.68	5.43		
									February 18, 2020

# Tri-Basin NRD – Republican Basin Annual Report Appendix B



**CNPPID Groundwater Recharge Diversions Summary**  
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**Appendix D**

<b>2006</b>			
<b>Dates of Recharge Diversion</b>	1/24/06 to 2/13/06	8/8/06 to 2 /13/06	12/22/06 to 12/31/06
<b>Elwood Reservoir Diversions</b>			
AF, in	6131	627	
\$/af			
\$/other			
Notes	gravity, Appears to be no charges	gravity, Appears to be no charges	gravity, JO costs, NGPC was billed for 50% of the JO costs
<b>Elwood Releases</b>			
AF, in			
\$/af			
\$/other			
Notes			
<b>E65 Canal</b>			
AF, in			
\$/af			
\$/other			
Notes			
<b>Phelps Canal</b>			
AF, in			
\$/af			
\$/other			
Notes			
<b>Funk Lagoon</b>			
AF, in			
\$/af			
Notes			
<b>Funds</b>			
Total \$	N/A	N/A	\$16,752.44
PRRIP			
NDNR			
TBNRD			
NGPC			\$16,752.44

**CNPPID Groundwater Recharge Diversions Summary**  
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2007			
Dates of Recharge Diversion	5/30/07 to 6/25/07	7/9/07 to 7/11/07	7/31/07 to 8/8/07
<b>Elwood Reservoir Diversions</b>			
AF, in			
\$/af			
\$/other			
Notes	gravity, JO costs	gravity, Not billed	gravity, JO Costs
<b>Elwood Releases</b>			
AF, in			
\$/af			
\$/other			
Notes			
<b>E65 Canal</b>			
AF, in			
\$/af			
\$/other			
Notes			
<b>Phelps Canal</b>			
AF, in			
\$/af			
\$/other			
Notes			
<b>Funk Lagoon</b>			
AF, in			
\$/af			
Notes			
<b>Funds</b>			
Total \$	\$57,819.51	N/A	\$17,686.39
PRRIP			
NDNR			
TBNRD			
NGPC	\$57,819.51		\$17,686.39

**CNPPID Groundwater Recharge Diversions Summary**  
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<b>2008-2009</b>				
<b>Dates of Recharge Diversion</b>	5/23/08 to 6/11/08	7/18/08 to 7/21/08	8/10/08 to 8/19/08	6/21/09 to 8/21/09
<b>Elwood Reservoir Diversions</b>				
AF, in				
\$/af				
\$/other				
Notes	4240 af gravity, 2543 pumped, \$ pump & hydro	pumped, \$pump & hydro	gravity, \$ for hydro offset	diversions stopped once irrigation decision was made
<b>Elwood Releases</b>				
AF, in				
\$/af				
\$/other				
Notes				
<b>E65 Canal</b>				
AF, in				
\$/af				
\$/other				
Notes				
<b>Phelps Canal</b>				
AF, in				
\$/af				
\$/other				
Notes				
<b>Funk Lagoon</b>				
AF, in				
\$/af				
Notes				
<b>Funds</b>				
Total \$	\$66,568.32	\$12,878.02	\$10,498.40	\$25,572.80
PRRIP				
NDNR				
TBNRD	\$33,284.16	\$6,439.01	\$5,249.20	\$12,786.40
NGPC	\$33,284.16	\$6,439.01	\$5,249.20	\$12,786.40



**CNPPID Groundwater Recharge Diversions Summary**  
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<b>2012-2013</b>								
<b>Dates of Recharge Diversion</b>	9/28/11 to 1/5/12	12/4/12 to 3/11/13	9/19/13 to 10/31/13					
<b>Elwood Reservoir Diversions</b>								
AF, in			12385					
\$/af			35					
\$/other								
Notes			Pumped					
<b>Elwood Releases</b>								
AF, in								
\$/af								
\$/other								
Notes								
<b>E65 Canal</b>								
AF, in				2615				
\$/af				35				
\$/other								
Notes				Canal to NP 23.7-3.2, Cottonwood WPA, and 36.2S				
<b>Phelps Canal</b>								
AF, in						3890	2000	3897
\$/af						25	25	NA
\$/other								
Notes						down to MP 13.3	Funk Lagoon	Phelps below 13.3 to 51.1 plus 19.1, 38.6. No payment for these diversions.
<b>Funk Lagoon</b>								
AF, in								
\$/af								
Notes								
<b>Funds</b>								
Total \$	\$138,954.00	\$102,200.00	\$433,475.00	\$91,525.00	\$97,250.00	\$50,000.00	NA	
PRRIP	\$69,477.00	\$102,200.00			\$48,625.00	\$50,000.00		
NDNR	\$41,686.20		\$260,085.00	\$54,915.00	\$29,175.00			
TBNRD	\$27,790.80		\$173,390.00	\$36,610.00	\$19,450.00			
NGPC								

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<b>2014</b>							
<b>Dates of Recharge Diversion</b>	6/10/14 to 7/7/14	11/26/14 to 11/30/14			12/9/14 to 12/27/14		11/26/14 to 12/31/14
<b>Elwood Reservoir Diversions</b>							
AF, in	13237	1763	37		8309.2		
\$/af	39	39	NA		41		
\$/other							
Notes	Pumped, 15,000 af contract with amendment	Pumped, finished contract 11-26 to 11-30	Not billed but pumped into Elwood		Pumped, 5000 af contract + 5000 af amendment		
<b>Elwood Releases</b>							
AF, in							
\$/af							
\$/other							
Notes							
<b>E65 Canal</b>							
AF, in				70		567.1	
\$/af				NA		38	
\$/other							
Notes				Not billed, part of Elwood filling, down to MP 5.9		down to MP 20.1	
<b>Phelps Canal</b>							
AF, in							2346
\$/af							27
\$/other							
Notes							down to MP 13.3
<b>Funk Lagoon</b>							
AF, in							
\$/af							
Notes							
<b>Funds</b>							
Total \$	\$516,243.00	\$68,757.00	NA	NA	\$340,677.20	\$21,549.80	\$63,339.30
PRRIP							\$31,669.65
NDNR	\$258,121.50	\$34,378.50			\$170,338.60	\$10,774.90	\$31,669.65
TBNRD	\$258,121.50	\$34,378.50			\$170,338.60	\$10,774.90	
NGPC							

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2015 (cont. on 46) Dates of Recharge Diversion	1/1/15 to 2/14/15		1/14/15 to 1/21/15		5/11/15 to 8/24/15		
<b>Elwood Reservoir Diversions</b>							
AF, in			1028.8		6800		9007
\$/af			42.6		42.6		42.6
\$/other							
Notes			Finished out 10,000 af contract, pumped		For NDNR/ TBNRD, finished out Amend- ments No 1 thru No 4 (Total 17,000 AF)		For PRRIP
<b>Elwood Releases</b>							
AF, in							
\$/af							
\$/other							
Notes							
<b>E65 Canal</b>							
AF, in				94.9		200	
\$/af				39.5		39.5	
\$/other							
Notes				in Canal to MP 5.9		Into Cotton- wood WPA, part of Amend- ment No 1	
<b>Phelps Canal</b>							
AF, in	1654	543.7					
\$/af	28.1	28.1					
\$/other							
Notes	down to MP 13.3, up to 4000 af, then PRRIP to get 100%	down to MP 13.3, PRRIP only					
<b>Funk Lagoon</b>							
AF, in							
\$/af							
Notes							
Total \$	\$46,447.13	\$15,267.10	\$43,868.03	\$3,750	\$289,952.00	\$7,904.00	\$384,058.48
PRRIP	\$23,223.56	\$15,267.10					\$384,058.48
NDNR	\$23,223.56		\$21,934.02	\$1,875.22	\$144,976.00	\$3,950.00	
TBNRD			\$21,934.02	\$1,875.22	\$144,976.00	\$3,950.00	
NGPC							

**CNPPID Groundwater Recharge Diversions Summary**  
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2015 (cont.) Dates of Recharge Diversion	11/23/15 to 12/18/15			11/16/15 to 12/31/15		12/19/15 to 2/1/16
<b>Elwood Reservoir Diversions</b>						
AF, in	3227		5776			
\$/af	42.6		42.6			
\$/other						
Notes	For NDNR/ TBNRD, 11-16- 15 Agreement for 4500 af total Canal and Elwood		For PRRIP, May 2015 Agree- ment and Amendment No 1			
<b>Elwood Releases</b>						
AF, in						1119
\$/af						
\$/other						
Notes						Released from Elwood to E65 Canal. Subtracted from NDNR/State El- wood Acct for recharge in E65 Canal, No charge in the contract
<b>E65 Canal</b>						
AF, in					1273	
\$/af					39.5	
\$/other						
Notes					For NDNR/ TBNRD, 11-16- 15 Agree- ment for 4500 af total Canal and Elwood, down to MP 20.1	
<b>Phelps Canal</b>						
AF, in				747.5	2243	
\$/af				28.1	28.1	
\$/other						
Notes				down to MP 13.3, 25% of diversions for NDNR, 11-18- 15 Agreement	down to MP 13.3, 75% of diversions for PRRIP, 11-26- 14 Agreement	
<b>Funk Lagoon</b>						
AF, in						
\$/af						
Notes						
<b>Funds</b>						
Total \$	\$137,599.28	\$50,308.96	\$246,288.64	\$20,989.80	\$62,969.40	NA
PRRIP			\$246,288.64		\$62,969.40	
NDNR	\$68,799.64	\$25,154.48		\$20,989.80		
TBNRD	\$68,799.64	\$25,154.48				
NGPC						

**CNPPID Groundwater Recharge Diversions Summary**  
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2016 (Cont. on pg. 48) Dates of Recharge Diversion	1/1/16 to 2/14/16		3/16/16 to 4/13/16		3/16/16 to 3/20/16		9/15/16 to 12/31/16	
<b>Elwood Reservoir Diversions</b>								
AF, in								
\$/af								
\$/other								
Notes								
<b>Elwood Releases</b>								
AF, in								
\$/af								
\$/other								
Notes								
<b>E65 Canal</b>								
AF, in			500	28				
\$/af			41.1					
\$/other								
Notes			Fullfills 3-17-16 agreement (ammendment NO.1), down to MP 20.1	Not Billed, excess diversion as part of 500 af agreement				
<b>Phelps Canal</b>								
AF, in	489.25	1467.75	157.5	472.5			1080.5	3241.4
\$/af	29.2	29.2	29.2	29.2			29.2	29.2
\$/other								
Notes	down to MP 13.3, 25% of diversions for NDNR, 11-18-15 Agreement	down to MP 13.3, 75% of diversions for PRRIP, 12-11-15 Agreement	down to MP 13.3, 25% of diversions for NDNR, 11-18-15 Agreement	down to MP 13.3, 75% of diversions for PRRIP, 12-11-15 Agreement			down to MP 13.3, 25% of diversions for NDNR, 9-20-2016 Agreement	down to MP 13.3, 75% of diversions for PRRIP, 9-26-2016 Agreement
<b>Funk Lagoon</b>								
AF, in								
\$/af								
Notes								
<b>Funds</b>								
Total \$	\$14,286.10	\$42,858.30	\$4,599.00	\$13,797.00	\$20,550.00	NA	\$31,550.60	\$94,648.88
PRRIP		\$42,858.30		\$13,797.00				\$94,648.88
NDNR	\$14,286.10		\$4,599.00		\$10,275.00		\$31,550.60	
TBNRD					\$10,275.00			
NGPC								

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<b>2016 (Cont.) Dates of Recharge Diversion</b>	<b>12/10/16 to 12/31/16</b>			<b>12/9/16 to 12/31/16</b>	
<b>Elwood Reservoir Diversions</b>					
AF, in	1152	2880	1728		
\$/af	44.4	44.4	44.4		
\$/other					
Notes	For TBNRD, 12-7-2016 Agreement with \$127,036 limit for TBNRD and 60% NDNR/40% TBNRD split	For TBNRD, 12-7-2016 Agreement with \$127,036 limit for TBNRD and 60% NDNR/40% TBNRD split	For NDNR, 12-7-2016 Agreement with \$190,554 limit for NDNR and 60% NDNR/40% TBNRD split		
<b>Elwood Releases</b>					
AF, in					
\$/af					
\$/other					
Notes					
<b>E65 Canal</b>					
AF, in				335.9	503.8
\$/af				41.1	41.1
\$/other					
Notes				For TBNRD, 12-7-2016 Agreement with \$127,036 limit for TBNRD and 60% NDNR/40% TBNRD split, Water down to MP 19.3	For NDNR, 12-7-2016 Agreement with \$190,554 limit for NDNR and 60% NDNR/40% TBNRD split, Water down to MP 19.3
<b>Phelps Canal</b>					
AF, in					
\$/af					
\$/other					
Notes					
<b>Funk Lagoon</b>					
AF, in					
\$/af					
Notes					
<b>Funds</b>					
Total \$	\$51,091.20	\$127,728.00	\$76,636.80	\$13,805.49	\$20,706.18
PRRIP		\$127,728.00			
NDNR			\$76,636.80		\$20,706.18
TBNRD	\$51,091.20			\$13,805.49	
NGPC					



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<b>2017</b> (Cont. on pg. 50) <b>Dates of Recharge</b> <b>Diversion</b>	1/1/17 to 1/30/17		1/1/17 to 1/31/17	1/1/17 to 2/14/17		1/1/17 to 2/14/17	1/1/17 to 2/14/17	9/15/17 to 10/12/17	
<b>Elwood Reservoir Diversions</b>									
AF, in	1631.6	2447.4							
\$/af	45.7	45.7							
\$/other									
Notes	For TBNRD, 1-23-17 Am- endment for \$164,800	For NDNR, 1-23-17 Am- endment for \$247,200 limit.							
<b>Elwood Releases</b>									
AF, in									
\$/af									
\$/other									
Notes									
<b>E65 Canal</b>									
AF, in				599.4	899.1				
\$/af				42.3	42.3				
\$/other									
Notes				For TBNRD, 1-23-17 Am- endment for \$164,800 limit. Water to MP 19.3	For NDNR, 1-23-17 Am- endment for \$247,200 limit. Water to MP 19.3				
<b>Phelps Canal</b>									
AF, in						338.50	1015.40	1353.50	451.20
\$/af						30.1	30.1	30.1	30.1
\$/other									
Notes						down to MP 13.3, 25% of diversions for NDNR, 9-20- 2016 Agree-ment, 2,666 af limit	down to MP 13.3, 75% of diversions for PRRIP, 9-26- 2016 Agree-ment, 8,000 af limit	down to MP 13.3, 75% of diversions for PRRIP, 10-20- 2016 Agree-ment, 2,666 af limit	down to MP 13.3, 25% of diversions for NDNR, 9-20- 2016 Agree-ment, 2,666 af limit
<b>Funk Lagoon</b>									
AF, in									
\$/af									
Notes									
<b>Funds</b>									
Total \$	\$74,531.49	\$111,797.23	\$208,789.58	\$25,372.60	\$38,058.90	\$10,182.08	\$30,543.23	\$40,713.28	\$13,572.10
PRRIP			\$208,789.58				\$30,543.23	\$40,713.28	
NDNR		\$111,797.23			\$38,058.90	\$10,182.08			\$13,572.10
TBNRD	\$74,531.49			\$25,372.60					
NGPC									

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<b>2017 (Cont.) Dates of Recharge Diversion</b>	<b>11/28/17 to 12/22/17</b>	<b>12/15/17 to 12/22/17</b>				<b>12/1/17 to 12/31/17</b>	
<b>Elwood Reservoir Diversions</b>							
AF, in	6953.6	657.5	986.3				
\$/af	45.7	50.7	50.7				
\$/other							
Notes	For PRRIP, 10-20-17 Agreement, 8,000 af limit, All diversion to PRRIP until 12-15-17 when NDNR/TBNRD signed agreement, then 50%/50% split with them	For TBNRD, 12-15-17 Agreement, 50/50 split with PRRIP and then 40% of that split to TBNRD, 13,500 af limit for State and TBNRD combined	For NDNR, 12-15-17 Agreement, 50/50 split with PRRIP and then 60% of that split to State, 13,500 af limit for State and TBNRD combined				
<b>Elwood Releases</b>							
AF, in							
\$/af							
\$/other							
Notes							
<b>E65 Canal</b>							
AF, in				66.6	100		
\$/af				42.3	42.3		
\$/other							
Notes				For TBNRD, 12-15-17 Agreement, Contract No. 1024, 40% split to TBNRD, 60% to NDNR, 13,500 af limit for State and TBNRD combined	For NDNR, 12-15-17 Agreement, Contract No. 1024, 60% of that split to NDNR, 40% split to TBNRD, 13,500 af limit for State and TBNRD combined		
<b>Phelps Canal</b>							
AF, in						1317.70	439.20
\$/af						30.1	30.1
\$/other							
Notes						down to MP 13.3, 75% of diversions for PRRIP, 10-20-17 Agreement	down to MP 13.3, 25% of diversions for NDNR, 9-20-2016 Agreement, 2,666 af limit
<b>Funk Lagoon</b>							
AF, in							
\$/af							
Notes							
<b>Funds</b>							
Total \$	\$317,640.45	\$33,322.10	\$49,985.68	\$2,819.18	\$4,233.00	\$39,636.42	\$13,211.14
PRRIP	\$317,640.45					\$39,636.42	
NDNR			\$49,985.68		\$4,233.00		\$13,211.14
TBNRD		\$33,322.10		\$2,819.18			
NGPC							

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2018 (Cont. on pg. 52) Dates of Recharge Diversion	1/3/18 to 3/22/18		1/5/18 to 2/8/18			1/1/18 to 2/12/18
<b>Elwood Reservoir Diversions</b>						
AF, in			3854.9	1542	2313	
\$/af			47.1	52.2	52.2	
\$/other						
Notes			For PRRIP, 10-20-17 Agreement, 8,000 af limit, 1-8-18 Amendment took limit to 12,000 af, 50%/50% split with NDNR/TBNRD	For TBNRD, 12-15-17 Agreement, 50/50 split with PRRIP and then 40% of that split to TBNRD, 13,500 af limit and/or \$362,948 limit for State and TBNRD combined	For NDNR, 12-15-17 Agreement, 50/50 split with PRRIP and then 60% of that split to State, 13,500 af limit and/or \$362,948 limit for State and TBNRD combined	
<b>Elwood Releases</b>						
AF, in						
\$/af						
\$/other						
Notes						
<b>E65 Canal</b>						
AF, in	360.5	540.8				
\$/af	43.6	43.6				
\$/other						
Notes	For TBNRD, 12-15-17 Agreement, Contract No. 1024, 40% split to TBNRD, 60% to NDNR, 13,500 af limit for State and TBNRD combined. Diversions down to MP 19.3	For NDNR, 12-15-17 Agreement, Contract No. 1024, 60% of that split to NDNR, 40% split to TBNRD, 13,500 af limit for State and TBNRD combined. Diversions down to MP 19.3				
<b>Phelps Canal</b>						
AF, in						1066.00
\$/af						31
\$/other						
Notes						10-20-17 Agreement. No agreement with NDNR, PRRIP got all diversions. Diversions down to MP 13.3. NOTE: Total diversions were reduced by 200 af for water left in the Phelps Canal at the start of irrigation season.
<b>Funk Lagoon</b>						
AF, in						
\$/af						
Notes						
<b>Funds</b>						
Total \$	\$15,717.80	\$23,578.88	\$181,373.05	\$80,492.40	\$120,738.60	\$33,024.68
PRRIP			\$181,373.05			\$33,024.68
NDNR		\$23,578.88			\$120,738.60	
TBNRD	\$15,717.80			\$80,492.40		
NGPC						

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<b>2018 (Cont.) Dates of Recharge Diversion</b>	<b>11/19/18 to 12/31/18</b>	<b>11/21/18 to 12/20/18</b>	<b>11/22/18 to 12/20/18</b>	<b>12/3/18 to 12/31/18</b>		
<b>Elwood Reservoir Di- versions</b>						
AF, in				11061		
\$/af				47.1		
\$/other						
Notes				11-26-18 SWA Amendment No. 2, took limit to 30,000 af. All for PRRIP. NDNR and TBNRD wanted the remainder of their contract in E65 Canal		
<b>Elwood Releases</b>						
AF, in						
\$/af						
\$/other						
Notes						
<b>E65 Canal</b>						
AF, in					196.8	295.1
\$/af					43.6	43.6
\$/other						
Notes					Contract 1024, for TBNRD, down to MP 19.3	Contract 1024, for NDNR, down to MP 19.3
<b>Phelps Canal</b>						
AF, in	2191.80	1001.00				
\$/af	31	31				
\$/other						
Notes	10-27-19 WSA w/ PRRIP, Diversions down to MP 13.3	11-15-17 WPA WSA with TBNRD, from MP 13.3 to MP 34.2.				
<b>Funk Lagoon</b>						
AF, in			1952.4			
\$/af			25.5			
Notes			11-15-17 WPA WSA with TBNRD, Delivery to Funk Lagoon			
<b>Funds</b>						
Total \$	\$67,901.96	\$31,010.98	\$49,786.20	\$520,401.23	\$8,580.48	\$12,866.36
PRRIP	\$67,901.96			\$520,401.23		
NDNR						\$12,866.36
TBNRD		\$31,010.98	\$49,786.20		\$8,580.48	
NGPC						

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Dates of Recharge Diversion	1/1/19 to 1/24/19	1/1/19 to 1/28/19	1/1/19 to 1/31/19	
<b>Elwood Reservoir Diversions</b>				
AF, in				
\$/af				
\$/other				
Notes				
<b>Elwood Releases</b>				
AF, in				
\$/af				
\$/other				
Notes				
<b>E65 Canal</b>				
AF, in			297	445.5
\$/af			44.9	44.9
\$/other				
Notes			Contract 1024 w/ 1-7-19 Amendment, for TBNRD, down to MP 19.3	Contract 1024 w/ 1-7-19 Amendment, for NDNR, down to MP 19.3
<b>Phelps Canal</b>				
AF, in	712.1			
\$/af	31.9			
\$/other				
Notes	10-27-19 WSA w/ PRRIP, Diversions			
<b>Funk Lagoon</b>				
AF, in				
\$/af				
Notes				
<b>Funds</b>				
Total \$	\$22,723.11	\$347,879.80	\$13,338.27	\$20,007.41
PRRIP	\$22,723.11	\$347,879.80		
NDNR				\$20,007.41
TBNRD			\$13,338.27	
NGPC				

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2019 (Cont. on pg. 60 & 61)	1-1-19 to 1-24-19	1-1-19 to 1-28-19	1-1-19 to 1-31-19	
Dates of Recharge Diversion				
<b>Elwood Reservoir Diversions</b>				
AF, in		7178.7		
\$/af		48.46		
\$/other				
Notes		11-26-18 SWA Ammendment No. 2, took limit to 30,000 af. All for PRRIP. NDNR and TBNRD wanted the remainder of their contract in E65 Canal		
<b>Elwood Releases</b>				
AF, in				
\$/af				
\$/other				
Notes				
<b>E65 Canal</b>				
AF, in			297	445.5
\$/af			44.91	44.91
\$/other				
Notes			Contract 1024 w/ 1-7-19 Ammendment, for TBNRD, down to MP 19.3	Contract 1024 w/ 1-7-19 Ammendment, for NDNR, down to MP 19.3
<b>Phelps Canal</b>				
AF, in	712.10			
\$/af	31.91			
\$/other				
Notes	10-20-17 WSA w/ PRRIP, Diversions down to MP 13.3			
<b>Funk Lagoon</b>				
AF, in				
\$/af				
Notes				
<b>Funds</b>				
Total \$	\$ 22,723.11	\$ 347,879.80	\$ 13,338.27	\$20,007.40
PRRIP	\$ 22,723.11	\$ 347,879.80		
NDNR				\$20,007.40
TBNRD			\$ 13,338.27	
NGPC				



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<b>2019</b>				
(Cont.)				
<b>Dates of Recharge Diversion</b>	5-10-19 to 5-16-19			5-10-19 to 5-20-19
<b>Elwood Reservoir Diversions</b>				
AF, in	941.3	123.2	184.9	
\$/af	48.46	53.77	53.77	
\$/other				
<b>Notes</b>	For PRRIP. 11-26-18 SWA Amendment No. 2 , took limit to 30,000 af for PRRIP. 1-3-19 WSA Amendment to 1024 extends cost cap to \$402,247 for TBNRD-NDNR. 50% split until TBNRD-NDNR full then all to PRRIP. These deliveries fulfilled both amendments.	For TBNRD. 11-26-18 SWA Amendment No. 2 , took limit to 30,000 af for PRRIP. 1-3-19 WSA Amendment to 1024 extends cost cap to \$402,247 for TBNRD-NDNR. 50% split until TBNRD-NDNR full then all to PRRIP. These deliveries fulfilled both amendments. TBNRD 40%, NDNR 60% of their 50% of total diversions	For NDNR. 11-26-18 SWA Amendment No. 2 , took limit to 30,000 af for PRRIP. 1-3-19 WSA Amendment to 1024 extends cost cap to \$402,247 for TBNRD-NDNR. 50% split until TBNRD-NDNR full then all to PRRIP. These deliveries fulfilled both amendments. TBNRD 40%, NDNR 60% of their 50% of total diversions	
<b>Elwood Releases</b>				
AF, in				
\$/af				
\$/other				
<b>Notes</b>				
<b>E65 Canal</b>				
AF, in				
\$/af				
\$/other				
<b>Notes</b>				
<b>Phelps Canal</b>				
AF, in				
\$/af				
\$/other				
<b>Notes</b>				
<b>Funk Lagoon</b>				
AF, in				
\$/af				
<b>Notes</b>				
<b>Funds</b>				
Total \$	\$ 45,615.40	\$ 6,624.46	\$ 9,942.07	\$ 6,557.12
PRRIP	\$ 45,615.40			
NDNR			\$ 9,942.07	
TBNRD		\$ 6,624.46		\$ 6,557.12
NGPC				

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2019 (Cont.) Dates of Recharge Diversion	7-9-19 to 7-29-19	9-12-19 to 9-28-19	12-16-19 to 12-31-19	12-16-19 to 12-31-19	12-20-19 to 12-31-19
<b>Elwood Reservoir Diversions</b>					
AF, in	4955.2	5463.9			
\$/af	48.46	48.46			
\$/other					
Notes	For PRRIP. 6-24-19 WSA (30,000 af limit annually)	For PRRIP. 6-24-19 WSA (30,000 af limit annually)			
<b>Elwood Releases</b>					
AF, in					
\$/af					
\$/other					
Notes					
<b>E65 Canal</b>					
AF, in			250.4	375.6	
\$/af			44.91	44.91	
\$/other					
Notes			E65 Canal recharge down to MP 23.7-0.3-TBNRD under contract #1150, 60/40 split TBNRD/DNR	E65 Canal recharge down to MP 23.7-0.3 -DNR under contract #1150, 60/40 split TBNRD/DNR	
<b>Phelps Canal</b>					
AF, in					
\$/af					
\$/other					
Notes					
<b>Funk Lagoon</b>					
AF, in					
\$/af					
Notes					
<b>Funds</b>					
Total \$	\$ 240,128.99	\$ 264,780.59	\$ 11,245.46	\$ 16,868.20	\$ 12,101.63
PRRIP	\$ 240,128.99	\$ 264,780.59			
NDNR				\$ 16,868.20	
TBNRD			\$ 11,245.46		\$ 12,101.63
NGPC					

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2019 Dates of Recharge Diversion	1-1-20 to 2-14-20	1-1-20 to 2-14-20	1-1-20 to 2-23-20	3-19-20 to 4-14- 20	3-26-20 to 4-14-20		Total
<b>Elwood Reservoir Diversions</b>							
AF, in							153932.8
\$/af							
\$/other							
Notes							
<b>Elwood Releases</b>							
AF, in							1118.7
\$/af							
\$/other							
Notes							
<b>E65 Canal</b>							
AF, in	465.5	698.30			253.9	380.8	12413
\$/af	46.26	46.26			46.26	46.26	
\$/other							
Notes	E65 Canal recharge down to MP 23.7-0.3- TBNRD under con- tract #1150, 60/40 split TBNRD/DNR	E65 Canal re- charge down to MP 23.7-0.3 -DNR under contract #1150, 60/40 split TBNRD/DNR			E65 Canal recharge down to MP 23.7-0.3 -TBNRD under con- tract #1150, 60/40 split TBNRD/DNR	E65 Canal recharge down to MP 23.7- 0.3 -DNR under contract #1150, 60/40 split TBNRD/ DNR	
<b>Phelps Ca- nal</b>							
AF, in				910.40			44672.56
\$/af				32.87			
\$/other							
Notes				9-25-19 WSA w/ PRRIP, Diversions down to MP 13.3			
<b>Funk La- goon</b>							
AF, in							1952.4
\$/af							
Notes							
<b>Funds</b>							
Total \$	\$21,534.03	\$32,303.36	\$30,766.20	\$29,924.85	\$11,745.41	\$17,615.81	\$7,275,028.61
PRRIP				\$29,924.85			\$3,703,930.27
NDNR		\$32,303.36				\$17,615.81	\$1,774,743.16
TBNRD	\$21,534.03		\$30,766.20		\$11,745.41		\$1,646,340.21
NGPC							\$150,014.98

## **Tri-Basin NRD Water Conservation Incentive Program**

### **Appendix E**

3/12/19

**Introduction:** The Tri-Basin NRD Water Conservation Incentive Program (WCIP) is intended to address two natural resources management issues: ensuring sustainability of groundwater supplies and protecting streamflows from diminishment due to groundwater pumping. The goal of this voluntary program is to reduce groundwater pumping and increase irrigation water use efficiency in Tri-Basin NRD.

**The Program:** Tri-Basin will allow landowners to enroll up to 8000 NRD-certified irrigated acres in the program. The enrollment period will be from March 26 through April 19, or until the program acre enrollment limit is reached. Once the enrollment limit is reached, water savings to the district could reach 650 acre-feet per year. Incentives in this program will likely be most attractive to landowners in phase two and phase three groundwater quantity management areas, so the water-use reductions should be greatest where the need is greatest (there are approximately 30,000 certified irrigated acres in Tri-Basin's phase two and phase three townships).

In exchange for their participation, landowners will be paid for the equivalent of one acre-inch of water credit per acre per year, with the opportunity to sell additional credits to the NRD at a set price. In addition to NRD purchases, landowners will have the opportunity to sell water credits on the open market at any agreed-upon price (private transactions require NRD board approval). Tri-Basin will maintain an "electronic bulletin board" to facilitate connections between buyers and sellers. Landowners will also be granted flexibility to irrigate any acres within enrolled parcels and to share (pool) allocations between parcels. Pooling agreements will be required to enable sharing allocations between parcels under different ownership.

**The Contract:** The NRD and the landowner will sign a five-year agreement. The agreement commits the landowner to limiting water use (allocation) on parcels that they select. The allocation will be equal to the UNL average corn crop consumptive irrigation requirement, which is nine inches per acre per year in Kearney County, ten inches per acre per year in Phelps County and eleven inches per acre per year in Gosper County (allocation will be limited to current allocation of nine inches per acre per year in Union Township in Gosper County). Landowners will be required to have flowmeters installed on all wells serving participating parcels and to report water use annually to the NRD. Tri-Basin NRD will offer cost share on flowmeters for participants. Tri-Basin NRD will spot check flowmeter readings on 20% of participating parcels annually. As a condition of their participation, landowners will agree to subject enrolled parcels to (most of) the same rules that apply to all landowners in Phase three groundwater quantity management areas. An instrument will be filed with the county clerk recording these contracts, to provide notice to potential buyers of water use limitations associated with program participation.

In exchange for their participation, the NRD agrees to buy one acre-inch per acre per year from every acre enrolled in the contract. Landowners will have two payment options: an annual payment of \$5 per acre-inch credit for one acre-inch per year, or payment at the end of the contract period for up to five acre-inches of credits per acre (assuming the landowner has that much unused allocation) at a rate of \$4 per acre-inch. The NRD may also choose to purchase additional credits from participants. NRD purchases of additional acre-inches will be prioritized in Groundwater Quantity Management Phase 2 and Phase 3 areas and 50%+ stream depletion zones. The NRD will have the right of first refusal to purchase unused allocations from landowners, so landowners would need NRD board approval before they make private sales.

Landowners will also have the option to irrigate any and all acres within participating parcels. They can also pool acre-inches between parcels under the same ownership (pooling water credits associated with parcels under different ownership, but the same management will

## **Tri-Basin NRD Water Conservation Incentive Program**

### **Appendix E**

require a separate NRD-approved pooling agreement). Pools are only allowed for multiple parcels in the same basin and with the same groundwater quantity management phase status. Water use will be deducted from landowner water credit “accounts.”

If a producer overuses their allocation, they will need to purchase credits from other landowners to eliminate their deficit. Otherwise they will be prohibited from irrigating enrolled parcels until the deficit is eliminated. The only way a landowner can cancel a contract would be to pay the NRD for the full contracted amount (refund any payments that we’ve already made to them and pay the NRD the amount we would have paid them at the end of the contract period).

### **Terminology**

**Accounts-** An account will track the number of acre-inches of water available for pumping on a parcel. Each parcel will have a separate account, unless landowners form pool accounts.

**Allocations-** Allocation amounts would be based on estimated safe yields from aquifers that would not result in long-term declines in groundwater levels. An initial allocation will be equal to the University of Nebraska’s average annual irrigation water consumption requirement for corn (that amount is nine inches per acre in Kearney County, ten inches per acre in Phelps County and eleven inches per acre in Gosper County).

**Credits (Water Use Credits)-** Credits are accumulated on a per-NRD-certified irrigated acre per-parcel basis. Allocation credits are granted at the beginning of each allocation period.

**Debits-** Debits would be made against accounts based on actual pumping or water credits marketed and sold to the NRD or other water users.

## **Tri-Basin NRD Water Conservation Incentive Program Expansion**

### **Appendix F**

**Introduction:** Tri-Basin NRD launched the Water Conservation Incentive Program (WCIP) in March 2019. The program was initially aimed at groundwater irrigators. One of the main benefits that is anticipated is that it will encourage participants to be more efficient irrigators and help sustain groundwater supplies. We initially excluded CNPPID customers from the WCIP because the incentives set up for groundwater irrigators don't encourage conservation on commingled fields. We want to encourage irrigators who have parcels that have both surface water turnouts and groundwater wells (commingled parcels) to use canal water rather than groundwater on those fields to the greatest extent possible. This has the dual benefit of reducing groundwater pumping and increasing groundwater recharge.

A different approach is needed to incentivize surface water use. We need to incentivize commingled water users to use canal water rather than groundwater. CNPPID customers and landowners with individual surface water rights will be offered five year contracts that pay the equivalent of the cost per acre of CNPPID water delivery, with the understanding that payments will be reduced by \$5 per acre inch of groundwater used during the contract period. If, however, CNPPID is unable to deliver the full amount of contracted water to a parcel for any reason, a landowner will be allowed to pump groundwater without penalty to make up the difference between what CNPPID is able to deliver and the full contract amount.

CNPPID charges \$34.61 to deliver nine inches of water to their irrigation customers (2019). Their prices are subject to annual increases. Tri-Basin will pay incentives to landowners based on the current delivery rate at the time of enrollment in WCIP. We won't adjust our payments if CNPPID raises prices.

Tri-Basin NRD irrigated acre certification data indicate that there are 114,016 acres in commingled irrigated fields in the Platte Basin portion of Tri-Basin NRD. This is an exaggeration of truly commingled acres, because it includes all irrigated acres in fields that have both an irrigation well and a CNPPID delivery point or individual surface water right. According to CNPPID, they deliver water by contract to 103,068 acres within Tri-Basin NRD (109,000 acres total). Their estimate of truly commingled acres associated with CNPPID deliveries is 82,508 acres. WCIP incentives will be paid on all CNPPID contracted acres that are also NRD-certified for groundwater irrigation ("commingled acres"). Because NRD funds are limited, we will initially approve contracts for 8000 acres. If applications exceed the number of acres allowed for enrollment, applications will be selected for approval using a ranking system.

The WCIP requires annual reporting of groundwater use. As of 2018, only 15,597 commingled acres (TBNRD definition) have flowmeters in place and are reporting water use to Tri-Basin NRD. Applications from landowners with flowmeters currently in place will be favored in the ranking system.

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#### **Terminology**

**Accounts-** An account will track the number of acre-inches of water available for pumping on a parcel. Each parcel will have a separate account, unless landowners form pool accounts.

**Allocations-** Allocation amounts would be based on estimated safe yields from aquifers that would not result in long-term declines in groundwater levels. An initial allocation will be equal to the University of Nebraska's average annual irrigation water consumption requirement for corn (that amount is nine inches per acre in Kearney County, ten inches per acre in Phelps County and eleven inches per acre in Gosper County).

**Credits (Water Use Credits)-** Credits are accumulated on a per-NRD-certified irrigated acre per-parcel basis. Allocation credits are granted at the beginning of each allocation period.

**Debits-** Debits would be made against accounts based on actual pumping or water credits marketed and sold to the NRD or other water users.