



Annual Report of Water Use Activities in the South Platte Natural Resources District

For the 2011 Basin-Wide Meeting

Report Years: 2010

Meeting Date: July 21, 2011

Prepared By: Kyle Liebig, Water Resources Manager

Table of Contents

General Summary	3
Introduction.....	3
Certified Acres.....	4
Approved Transfers	4
Well Construction Permits.....	4
Variances	5
Municipal and Industrial Accounting.....	5
Flow Meter Data.....	6
Retired Acres and Other Stream Flow Accretion Activities	6
Other Activities.....	7
Map 1 – Overappropriated, Fully Appropriated and Nebraska New Depletion Plan Areas	8
Map 2 – Allocation Subareas and Allocations Through 2012	9
Appendix A – SPNRD Certified Irrigated Acres.....	10
Appendix B – SPNRD Districtwide Industrial Water Usage 2001 through 2006.....	11
Appendix C – SPNRD Districtwide Industrial Water Usage 2006 through 2011.....	12
Appendix D – SPNRD 2010 Water Usage.....	13

**ANNUAL REPORT OF WATER USE ACTIVITIES
IN THE SOUTH PLATTE NATURAL RESOURCES DISTRICT
TO MEET THE REQUIREMENTS OF THE INTEGRATED MANAGEMENT PLAN
FOR THE 2011 BASIN-WIDE MEETING**

I. GENERAL SUMMARY

- A. The following is a compilation of records, statistics and historic conditions of water use which have been tracked by the South Platte Natural Resources District (SPNRD) for 2010. All information supplied for this summary is available within a GIS database, complete with the locations and attributes. This report has been compiled for the July 21, 2011 Basin-wide meeting.

II. INTRODUCTION

- A. This report is intended to satisfy the SPNRD tracking and reporting requirements as described by the Monitoring and Studies section of the SPNRD Integrated Management Plan (IMP). The SPNRD will be responsible for tracking the following activities within the District on an annual basis: (1) certification of ground water uses and any changes to these certifications; (2) approved transfers, including all of the information provided with the application and used in the approval of the transfer; (3) any flow meter data collected; (4) any water well construction permits issued; (5) any other permits issued by the SPNRD; (6) any conditions associated with any permits issued; (7) information gathered through the municipal and non-municipal industrial accounting process; (8) any variances issued, including: the purpose, the location, any required offset, the length of time for which the variance is applicable and the reasoning behind approval of the variance; (9) any retirements of irrigated acres or other activities by the SPNRD for the purpose of returning to a fully appropriated condition; (10) information related to any water banking transactions; and (11) offsets provided for depletions resulting from increased consumptive use related to the above listed items.

The items tracked and reported will subsequently be used by SPNRD and the Department of Natural Resources (DNR) to measure the success of the controls, incentive measures and other action items contained in the IMP at meeting the goals and objectives of the IMP. Two evaluation processes for measuring success are described in the IMP. The first is an annual evaluation that will forecast the balance of depletions and accretions from the report year through 2048. The second evaluation occurs periodically and will be more robust, including updating and running ground water models. These evaluation processes will be carried out by the SPNRD and the DNR after the annual basin-wide meeting. The tracking, reporting, and evaluation processes are described in more detail in the Monitoring and Studies section of the IMP. In addition to the evaluation processes, the information that is tracked and reported will also be used by the State to help meet requirements of the Platte River Recovery Implementation Program (Program).

III. CERTIFIED ACRES

- A. The SPNRD began certifying ground water irrigated acres in October 2002 and ended the certification process in the first half of 2006. The SPNRD certified irrigated acres are based on historically irrigated acres proven by Farm Service Agency (FSA) maps, tax records or other appropriate documentation. The SPNRD approved one variance in 2010 to certify 4.5 acres. These acres had historically been irrigated, but were missed at the initial certification.

The SPNRD has two types of certified acres, active and inactive. Inactive acres are any certified acres that belong to wells that are inactive and do not have a flow meter installed. These unused wells are enrolled in a SPNRD program called Temporary Deferment. Inactive acres do not receive an allocation a meter is installed. Active acres are all acres that are being irrigated or have a flow meter installed and therefore receive an allocation. Detailed data regarding the number of certified irrigated acres can be found in Appendix A. Map 1 provides a look at the state designated areas in the SPNRD.

IV. APPROVED TRANSFERS

- A. For 2010, the District approved nine transfers. There were six transfers that involved converting a gravity irrigated tract to a pivot irrigated tract. These transfers for pivots resulted in no net increase in consumptive use or irrigated acres. The other three transfers that the SPNRD Board approved all dealt with industrial transfer permits. DNR requested the SPNRD's consultation on two permits to transfer ground water to an adjoining state (Colorado or Wyoming). The permits allow the transfer from a municipal system, this water will be handled through the municipal accounting system. The third approved transfer allowed water used for aggregate production to be offset from an irrigation allocation. In this case the irrigator did not pump any water in 2010.

V. WELL CONSTRUCTION PERMITS

A. Supplemental Ground Water Wells

- 1. The SPNRD issued no supplemental ground water wells (coded SG).

B. Supplemental Surface Water Wells

- 1. The SPNRD issued no supplemental surface water well permits (coded SS).

C. Replacement Wells

- 1. The SPNRD issued three replacement well permits (coded RP). These are replacement wells for a well that has already been registered, and is no longer producing the amount of water for which it was originally designed. This could be

due to several reasons such as casing collapse, pumping sand, water table drop or other reasons

D. Temporary Wells

1. The SPNRD issued no temporary well permits (coded TP).

E. De-Watering Wells

1. The SPNRD issued no de-watering well permits (coded DW).

VI. OTHER PERMITS

A. The SPNRD issued no other well permits.

VII. VARIANCES

A. The SPNRD considers any request that is contrary to existing rules or regulations of the SPNRD or DNR as a variance. The SPNRD has a Variance Advisory Group that reviews and makes recommendations to the SPNRD Board of Directors on all variances requested. The Board reviews variances on a case-by-case basis and as the elected governing body, the Board makes the final determination.

In 2010 there were 10 approved variances, one pooling variance, one variance to add irrigated acres, one variance to transfer the ownership rights of certified irrigated acres and to move those acres to the adjacent quarter section, and seven variances that dealt with industrial accounting.

Of the seven industrial variances, one variance was to allow the individual to be granted an exception to the accounting protocol as the well in question no longer pumps above 50 gallons per minute and a restrictor device has also been installed. A second variance was requested when the industrial use did not have complete records for the baseline period and only had records for pumpage for two out of the five years and requested that they receive a 2/5's amount of what they pumped during the baseline period and they must offset everything over that amount. The other five industrial variances all dealt with established industrial users that were unable to provide any sort of reliable baseline pumping information. The Board decided to allow these established users to install flow meters and the SPNRD will read these meters monthly for three years. After the three year period the highest amount pumped for a twelve month period will become the baseline for that user. That number will then be used to fill in the blanks for the missing years from 2001 forward.

VIII. MUNICIPAL AND INDUSTRIAL ACCOUNTING

A. The SPNRD began tackling the Industrial Accounting portion of the IMP in early 2010. The SPNRD has decided to take a strict interpretation of the methodologies of the

industrial accounting process. In order for an industrial user to obtain a baseline certification they must have pumping history for every year during the August 1, 2001 through July 31, 2006 period.

Unless a variance is granted, deviation from that will result in a non-baseline certification and that user will be responsible for offsetting the water use. The SPNRD has granted variances during the baseline certification process. See Variances for further information. The SPNRD allows industrial users whom do not have a baseline to offset new or expanded uses through transfers including irrigation allocation(s), certified irrigated acres or the District's water bank. All Industries that are active have flow meters installed and those are read on a monthly basis. See Appendix B for all the Districtwide Industrial Water Usage for the baseline years and Appendix C for the Districtwide Industrial Water Usage for 2006 through 2011. The baseline year data is not reflected for five active industries as they do not have a set Baseline.

- B. The SPNRD began working on municipal accounting in 2011, the SPNRD will have Board and Municipality approved baselines by October 2011. A complete report on the municipal accounting will be in the 2011 report.

IX. FLOW METER DATA

- A. The SPNRD has had flow meters installed in the entire District since 2009. All certified irrigated acres located in the Lodgepole Creek Valley have had an allocation in place beginning in 2007. The remainder of the District (Tablelands and South Platte Valley) has had an allocation in place since 2009. In 2009 the SPNRD Board of Directors voted to lower allocations for the Lodgepole Creek Valley Subareas from 54" and 48" for three years to 48" and 42" respectively. Please see Map 2 for a breakdown of allocations subareas, amounts and the number of flow meters for the District through 2009. Appendix C provides a detailed look at water usage for the three years the Lodgepole Creek subareas have been under allocation and the 2009 water usage for the Tablelands and South Platte Valley subareas.

The current allocations will be valid through 2012. Beginning in 2013 all subareas will be on the same three year timeframe. The SPNRD will begin evaluation of the current allocations in the winter of 2011.

X. RETIRED ACRES AND OTHER STREAM FLOW ACCRETION ACTIVITIES

- A. The SPNRD will implement measures within the first ten (10) year increment of the IMP to offset an average annual depletion rate of one hundred fifty (150) acre-feet to the North Platte River, four hundred (400) acre-feet to the South Platte River, and one hundred fifty (150) acre-feet to Lodgepole Creek for the period 2043-2048. These rates are the current best estimates and are subject to change based upon new data and information.

Through 2010, the SPNRD retired or decertified 1,218 acres equating to an estimated 502 acre-feet of water benefitting the Lodgepole Creek. These acres are all located in the overappropriated Lodgepole Creek Valley.

XI. OTHER ACTIVITIES

- A. The SPNRD in cooperation with NPNRD has been developing a regional ground water model. The SPNRD and NPNRD share a ground water modeler, Thad Kuntz, P.G. This project is partially funded through the Interrelated Water Management Plan Program Fund.
- B. The SPNRD has also begun work on the Lodgepole Creek Flow Evaluation study. This study will reexamine the SPNRD's depletions identified in the IMP to the South Platte River, Lodgepole Creek and North Platte River, the possible augmentation potential of Lodgepole Creek, historic literature review and a stream routing modeling package. This project is partially funded through the Interrelated Water Management Plan Program Fund and DNR.
- C. The SPNRD and North Platte Natural Resources District (NPNRD) began work on a regional ground water model, Western Water Use Model (WWUM), for the two Districts in 2009. This regional model will build upon the modeling work that was completed during SPNRD and NPNRD's time spent participating in COHYST. The SPNRD and NPNRD share a ground water modeler, Thad Kuntz, P.G. This project is partially funded through the Interrelated Water Management Plan Program Fund.

XII. GROUND WATER LEVELS

- A. Tracking and reporting of ground water levels is not required in the IMP. The SPNRD measures 150 observation wells in the spring and fall annually as well as taking water levels on six recorder wells monthly. The SPNRD received a grant from the Nebraska Environmental Trust in 2010 to drill 39 new monitoring wells to improve the distribution of observation wells and improve our understanding of the District with inadequate coverage.

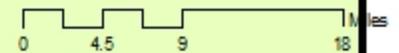
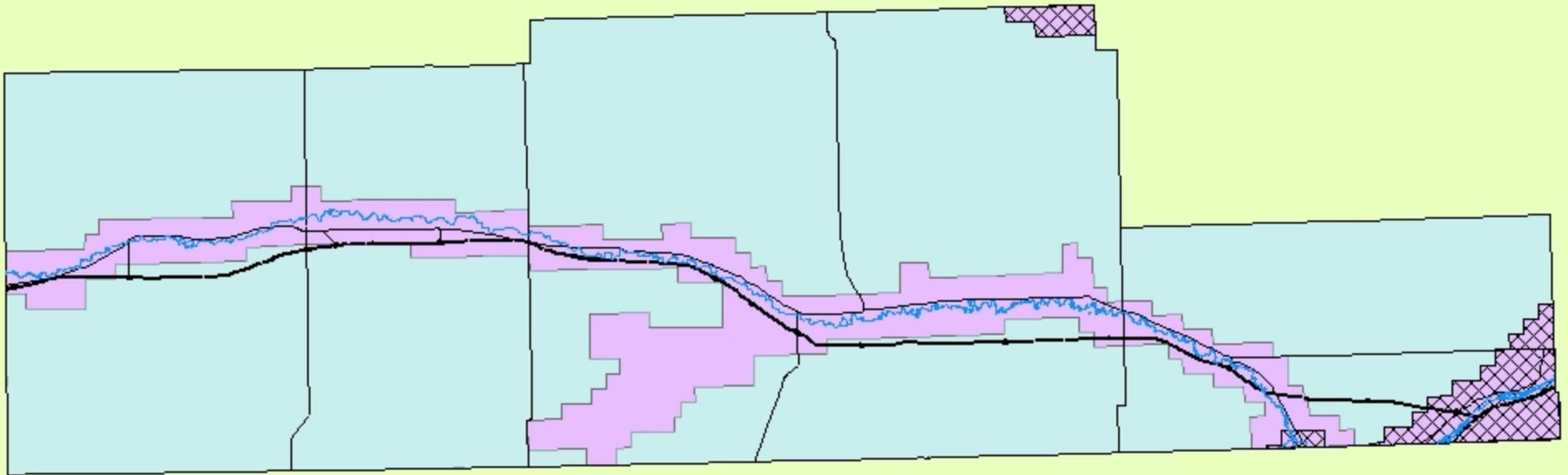
Map 1

Overappropriated, Fully Appropriated and Nebraska New Depletion Plan Areas



Explanation

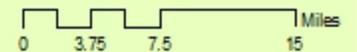
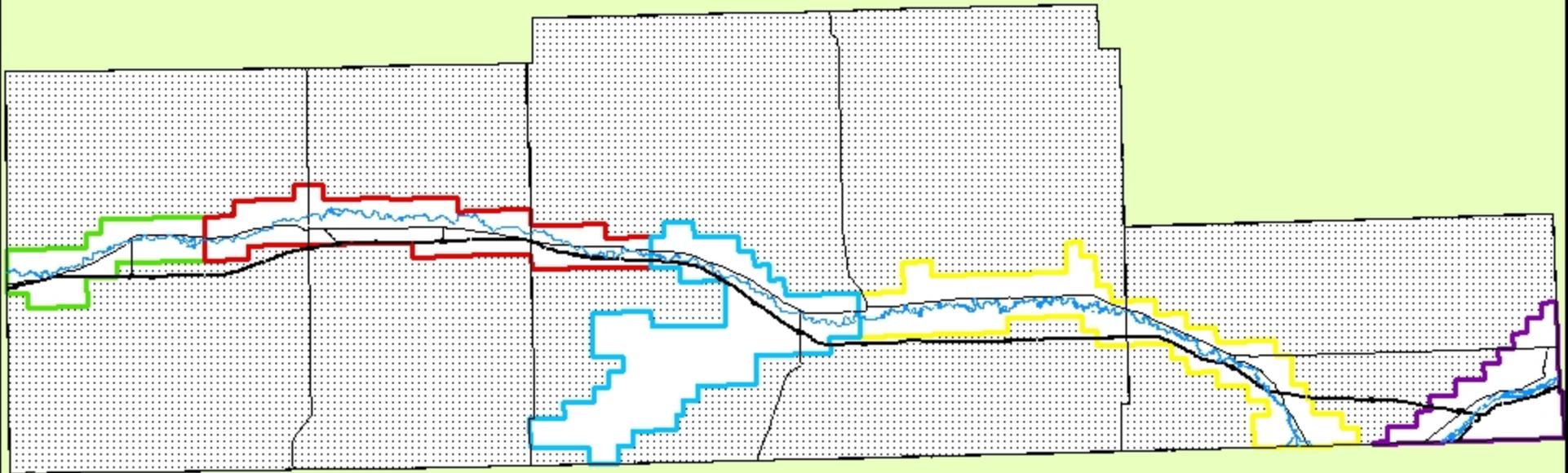
- Nebraska New Depletion Plan 28%/40-year Area
- Fully Appropriated
- Over Appropriated



Allocation Subareas and Allocations Through 2012



Explanation	
	Pine Bluffs to Oliver Reservoir; 14"/year or 42" for 2010 through 2012
	Oliver Reservoir to Buffalo Bend; 16"/year or 48" for 2010 through 2012
	Buffalo Bend to Sidney, 14"/year or 42" for 2010 through 2012
	Sidney to Colorado; 16"/year or 48" for 2010 through 2012
	South Platte Valley; 20"/year or 80" for 2009 through 2012
	Tablelands; 20"/year or 80" for 2009 through 2012



Appendix A

SPNRD Certified Irrigated Acres

	Kimball	Cheyenne	Deuel	Total
Active Overappropriated	16,226	18,851	14,642	49,719
Inactive Overappropriated	783	1,384	490	2,657
Active Fully-Appropriated	25,455	43,680	9,340	78,475
Inactive Fully-Appropriated	541	1,120	583	2,244
Total Certified	43,005	65,035	25,055	133,095
Total Cert. Acres in PRRIP Area	0	56	10,577	10,633

Appendix B
South Platte Natural Resources District
Districtwide Industrial Water Usage Report
Baseline Years: 2001 through 2006

2001-2002	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Total
Pumped	26,720,075	15,804,891	19,937,831	16,093,077	22,793,510	29,145,496	20,209,904	19,618,495	27,887,514	19,560,026	25,767,565	20,477,057	264,015,440
Discharged	0	0	0	0	0	0	0	0	0	0	0	0	0
Total:													264,015,440

2002-2003	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Total
Pumped	18,838,545	23,530,630	20,565,089	26,294,511	23,130,125	21,862,525	29,266,028	24,602,436	27,771,907	24,405,957	18,882,212	14,458,653	273,608,617
Discharged	0	0	0	0	0	0	0	0	0	0	0	0	0
Total:													273,608,617

2003-2004	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Total
Pumped	16,061,640	15,775,160	14,512,932	18,587,171	17,986,591	20,429,616	19,262,956	18,277,132	18,725,006	21,934,212	18,834,941	19,725,637	220,112,993
Discharged	0	0	0	0	0	0	0	0	0	0	0	0	0
Total:													220,112,993

2004-2005	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Total
Pumped	21,135,035	15,317,059	14,972,913	22,292,715	21,220,466	30,981,308	26,976,239	27,746,657	28,446,794	24,514,800	26,745,717	20,653,343	281,003,046
Discharged	0	0	0	0	0	0	0	0	0	0	0	0	0
Total:													281,003,046

2005-2006	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Total
Pumped	18,577,467	20,257,959	30,545,756	18,981,694	31,788,856	26,717,553	27,913,803	26,079,198	32,399,085	23,217,835	30,270,771	26,084,601	312,834,578
Discharged	0	0	0	0	0	0	0	0	0	0	0	0	0
Total:													312,834,578

	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	Baseline
Pumped	264,015,440*	273,608,617*	220,112,993*	281,003,046*	312,834,578*	312,834,578*
Discharged						

*Numbers does not include usage for five active users. These 5 users have received a variance to be monitored for three years, then a baseline will be established for them.

Appendix C
South Platte Natural Resources District
 Districtwide Industrial Water Usage Report
 Reporting Years: 2006 through 2011

2006-2007	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Total
Pumped	22,202,030	21,730,735	20,036,234	24,055,396	24,312,015	23,543,655	26,566,230	30,346,822	20,575,465	21,660,903	21,001,215	18,825,812	274,856,513
Discharged	0	0	0	0	0	0	0	0	0	0	0	0	0
Total:													274,856,513

2007-2008	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Total
Pumped	17,130,843	18,533,924	14,631,960	61,143,732	18,481,592	21,023,233	24,940,073	23,769,205	22,218,134	21,541,291	22,576,715	18,324,043	284,314,745
Discharged	0	0	0	0	0	0	0	0	0	0	0	0	0
Total:													284,314,745

2008-2009	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Total
Pumped	19,856,958	34,797,241	26,172,660	22,166,147	18,465,865	26,314,603	31,678,810	25,994,210	21,717,843	25,649,406	22,032,478	19,307,094	294,153,316
Discharged	0	0	0	0	0	0	0	0	0	0	0	0	0
Total:													294,153,316

2009-2010	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Total
Pumped	22,879,494	20,268,753	98,851,871	26,185,208	26,643,656	29,642,346	34,375,191	29,567,110	27,714,985	24,199,109	17,522,745	30,702,954	388,553,422
Discharged	0	0	0	0	0	0	0	0	0	0	0	0	0
Total:													388,553,422

2010-2011	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Total
Pumped	19,202,349	17,321,643	28,111,902	38,563,427	12,124,557	17,020,301	14,026,149	26,590,468	113,342,460	9,212,860	29,940,032		325,456,147
Discharged	0	0	0	0	0	0	0	0	0	0	0		0
Total:													325,456,147

	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	TOTAL
Pumped	274,856,513	284,314,745	294,153,316	388,553,422	325,456,147	1,567,334,142
Discharged						
Baseline	312,834,578*	312,834,578*	312,834,578*	312,834,578*	312,834,578*	1,564,172,890*
Difference	+37,969,065	+28,519,833	+18,681,262	-75,718,844	-12,621,569	-3,161,252

*Baseline number does not include baselines for five active uses. These 5 uses have received a variance to be monitored for three years, then a baseline will be established.

Appendix D

South Platte Natural Resources District

Districtwide Ground Water Usage Report

Analysis Period: 2010
Report Prepared: July 7, 2011

	2010	Total
Weighted Avg. Inches Pumped*	9.99	9.99
High	49.99	
Median	9.50	
Total Acre-Foot Pumped	98,518.08	98,518.08
Total Acres-Inches Pumped	1,182,216.98	1,182,216.98
Total Acres-Inches Pumped ÷ By Total Acres	9.22	9.22
Total Number of Inactive Certified Irrigated Acres***	4,830.4	
Total Number of Active Certified Irrigated Acres	128,266.6	
Total Number of Certified Irrigated Acres	133,097.0	

Range of Inches Used:

Scale	2010	Scale	2010 - 2010
0 - 4	19%	0 - 4	21%
4.01 - 8	21%	4.01 - 8	21%
8.01 - 12	30%	8.01 - 12	29%
12.01 - 16	20%	12.01 - 16	20%
16.01 - 20	7%	16.01 - 20	7%
20+	3%	20+	3%

Crop Water Usage**:

Crop	2010 Avg. In.	2010 Acres
Alfalfa	10.5	13,238.0
Beans	9.0	9,153.5
Corn	11.5	53,005.4
Fallow	0.0	1,702.5
Hay	5.9	3,304.7
Other	7.3	141.7
Pasture	6.1	5,815.4
Small Grains	5.3	29,734.1
Sugar Beets	15.7	6,059.7
Sunflowers	6.8	6,111.4
All Crops	9.2	128,266.6

* Calculated by removing the high use tract and the tracts that did not use any water, then calculated the usage of all tracts individually and averaged those numbers.

** Crop Water Usage is based off of the number of acres per crop, which are based on field observations taken at the time flow meters are read. Crop Water Usage could be subject to change as more accurate crop-acre information becomes available.

***Inactive Certified Irrigated Acres are acres enrolled in Temporary Deferment or incentive programs that offer incentives to discontinue irrigation use on a temporary basis.