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# **2015 ANNUAL INTEGRATED MANAGEMENT PLAN REPORT:**

NEBRASKA DEPARTMENT OF NATURAL RESOURCES  
&  
UPPER NIOBRARA WHITE NATURAL RESOURCES DISTRICT

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REPORTING ON CALENDAR YEAR 2014 DATA

ANNUAL MEETING HELD ON OCTOBER 23, 2015



*Serving Box Butte, Dawes, Sheridan and Sioux Counties*

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Annual report by Upper Niobrara White Natural Resources District (UNWNRD) on the activities related to the joint Integrated Management Plan (IMP) with the Nebraska Department of Natural Resources (DNR).

Purpose: The purpose of the report is to fulfill the UNWNRD's responsibilities under the IMP annual reporting obligations and provide updates to current monitoring projects and studies as outlined in the IMP.

Reporting and exchanging information gathered from monitoring projects, streamflow data or other studies provides a basis to increase understanding of the surface water and hydrologically connected ground water system. As surface and ground water are hydrologically connected throughout much of the district, estimates of water quantity of either surface or ground water cannot be evaluated separately. The data gathered through this IMP's monitoring plan is designed to evaluate and measure the success of the objectives of this IMP. This information exchange also helps to test the validity of the conclusions and information upon which the IMP is based.

### **UNWNRD Reporting: Permitting**

The IMP requires that the UNWNRD annually report to the following permitting actions within the district:

- 1) Ground Water Permitting
- 2) Ground Water Variances/Modifications
- 3) New Ground Water Uses
- 4) Municipal Accounting

- 1) Ground Water Permitting – The following ground water permits were granted in 2014:

#### **A) Replacement well permits**

- (1) 18 – Replacement Irrigation
- (2) 0 – Replacement Public Water Supply
- (3) 0 – Replacement Commercial/Industrial

#### **B) New well permits**

- (1) 0 – New Public Water Supply
- (2) 0 – New Public Water Supply – Test Wells
- (3) 0 – New Irrigation – Failed to Decommission within 180 Days
- (4) 1 – New Industrial Well – Replacing Use From Existing Well (Acre Offset Provided)

- 2) Ground Water Variances/Modifications – The following ground water variances were requested in 2014:
- A) Tod Dorshorst moved to approve the Schnell water transfer for Paul and Brenda Schnell of Alliance; John Burke seconded the motion. PASS (January 2014)
  - B) Tod Dorshorst moved to approve the HK Farms & Rich Zochol water transfer request; Steve Sandberg seconded the motion. PASS (February 2014)
  - C) Tod Dorshorst moved to approve the John Burke water transfer request; Steve Sandberg seconded the motion. PASS (March 2014)
  - D) Tod Dorshorst moved to approve the Nebraska Beef Packers water transfer and variance request; Dave Carlson seconded the motion. PASS (March 2014)
  - E) John Burke motioned to approve the water transfer request for the Barbara Marcy Trust application to transfer water from one tract of land to another as there is an allocation remaining for the transfer, Dave Carlson seconded the motion. PASS (April 2014)
  - F) Tod Dorshorst motioned to approve the William Diers allocation transfer from one tract of land to another, Scott Berndt seconded the motion. PASS (May 2014)
  - G) Tod Dorshorst motioned to approve the allocation transfer for Ross Alcorn from one tract of land to the other, Scott Berndt seconded the motion. PASS (May 2014)
  - H) Steve Sandberg motioned to approve the variance request for Gordon Lockwood to update a well so that it is in compliance with state laws, Scott Berndt seconded the motion. PASS (May 2014)
  - I) Tod Dorshorst motioned to approve the Cover application for Allocation Transfer, Scott Berndt seconded the motion. PASS (June 2014)
  - J) Dave Carlson moved to approve the Broken Saddle Cattle Companies request for Transfer. Curt Roth seconded the motion. PASS (July 2014)
  - K) John Burke motioned to approve the Buskirk transfer request, Dave Carlson seconded the motion. PASS (October 2104)
  - L) Tod Dorshorst motioned to approve the Irwin transfer request, John Burke seconded the motion. PASS (November 2014)
  - M) Tod Dorshorst motioned to approve the Unverzagt Farms transfer request, Scott Berndt seconded the motion. Absent: Kevin Oligmueller PASS (December 2014)
- 3) Ground Water Uses – No new ground water uses were granted in 2014.

The UNWNRD does allow through the “483” application process, additional acres to be added to existing wells in an area of subarea 3 that was once fully appropriated. The District received no applications.

Road Construction Uses: None 2014

- 4) Municipal Accounting – This use is required to be reported by October 1 of each year. At meeting time one report is missing, because of multiple Village staffing changes. The accounting report is submitted as preliminary. The final report will be compiled and forwarded to the Department when completed.

### **Integrated Management Studies**

Currently, DNR and UNWNRD have several joint/cooperative studies:

1) Niobrara Hydrogeologic and Hydrostratigraphic Framework Study (Finished 2010)

This study provides geospatial coverages of aquifer properties throughout the upper portion of the Niobrara Basin. It is intended to help expand the Box Butte ground water model. The study was finished in 2010, with basin coverages delivered to DNR.

2) Niobrara Operations Model Study (IWMPPF) (Completed with ongoing refinement)

The operations model will combine three separate models, CROPSIM, a ground water model and a surface water model to develop operational scenarios that maximize water use efficiency. All portions of the operations model are currently developed and the model has been calibrated. Work continues on data collection needs for model refinement and is currently being utilized to analyze the model area.

3) Niobrara River Basin Study (Bureau of Reclamation Basin Study Program)

The basin study will assist in projecting water supply and demand in the basin, analyze water supply operations under alternate water availability conditions and develop and analyze options for providing and optimizing use of future water supplies. The study will include development of a basin-wide ground water model and a surface water operations model used to analyze conjunctive management options. Currently model is completed and continued analysis of basin is ongoing.

4) Economic implications of reduced ground water allocations study (Completed 2014)

The multi-NRD study has a goal to provide farm-level economic analysis of limited irrigation impacts for crops grown in the panhandle of Nebraska and to provide educational programming to assist producers effectively manage ground water irrigation in areas that instituted pumping allocations. The study was completed in 2014, with final reporting being completed by UNL staff.

5) Upper Niobrara River Basin Model evaluation of existing water use data utilizing the INSIGHT Data enhancement Program (IDEP) to create a program for converting metered water use into model input data sets. (2014-2015)

The work has been completed on the program for converting actual metered water use to a model input data set. Follow up will be provided by Marc Groff and the Flatwater Group to the NRD and the DNR to finalize deliverables.

6) Upper Niobrara River Basin Model evaluation of modeled water use in the district as estimated by CROPSIM and comparing estimates to actual water use as measured since 2007 utilizing the INSIGHT Data enhancement Program (IDEP). (2014-2015)

The work has been completed on the evaluation of estimated model water use vs actual metered water use. Follow up will be provided by Marc Groff and the Flatwater Group to the NRD and the DNR to finalize deliverables.

# Municipal Pumping and Consumption Analysis

IMP Report

October 2015

Total Ground Water Consumed						
Year	Harrison	Crawford	Chadron	Hemingford	Alliance	Totals
2001-2002	42,659,770.00	2,317,170.85	290,590,000.00	92,127,600.00	939,049,000.00	1,366,743,540.85
2002-2003	32,881,170.00	1,134,426.67	205,370,000.00	73,471,700.00	747,359,000.00	1,060,216,296.67
2003-2004	38,736,290.00	1,139,258.38	222,540,000.00	80,977,600.00	762,402,000.00	1,105,795,148.38
2004-2005	30,832,360.00	989,245.19	167,290,000.00	73,997,700.00	700,382,000.00	973,491,305.19
2005-2006	34,191,160.00	3,397,553.26	213,950,000.00	73,666,200.00	854,551,000.00	1,179,755,913.26
Baseline Average	35,860,150.00	1,795,530.87	219,948,000.00	78,848,160.00	800,748,600.00	1,137,200,440.87
2006-2007	33,515,350.00	6,098,591.49	215,840,000.00	62,344,500.00	755,301,000.00	1,073,099,441.49
2007-2008	30,508,130.00	6,178,706.41	252,880,000.00	62,902,801.00	726,318,000.00	1,078,787,637.41
2008-2009	28,186,390.00	1,460,376.57	170,430,000.00	62,396,468.00	572,650,000.00	835,123,234.57
2009-2010	23,009,380.00	1,883,287.76	78,112,467.72	63,859,442.00	528,620,000.00	695,484,577.48
2010-2011	28,995,660.00	427,640.96	13,647,502.97	59,925,360.00	527,891,000.00	630,887,163.93
5 Year Average	28,842,982.00	3,209,720.64	146,181,994.14	62,285,714.20	622,156,000.00	862,676,410.98
2011-2012	35,879,760.00	2,673,073.78	92,617,749.00	76,119,700.00	698,624,000.00	905,914,282.78
2012-2013	32,078,600.00	2,772,729.87	69,682,045.72	64,233,900.00	635,348,000.00	804,115,275.59
2013-2014	24,839,900.00	551,335.33	16,981,185.74	64,106,683.00	500,263,000.00	606,742,104.07
2014-2015	25,249,500.00	548,305.56	10,213,875.47	51,234,600.00	509,189,000.00	596,435,281.03
5 Year Average	29,511,940.00	1,636,361.14	47,373,713.98	63,923,720.75	585,856,000.00	728,301,735.87
2001-2015 Total	441,563,420.00	31,571,702.08	2,020,144,826.62	961,364,254.00	9,457,947,000.00	12,912,591,202.70
Total Ground Water Consumed per person per day						
Year	Harrison	Crawford	Chadron	Hemingford	Alliance	Averages
2001-2002	442.71	5.75	140.73	263.20	295.58	229.59
2002-2003	333.65	2.84	99.04	209.90	236.82	176.45
2003-2004	383.13	2.85	107.49	237.79	247.46	195.74
2004-2005	316.38	2.54	83.44	222.05	232.25	171.33
2005-2006	352.16	8.81	108.17	224.50	287.30	196.19
Baseline Average	365.61	4.56	107.77	231.49	259.88	193.86
2006-2007	357.29	15.99	110.57	192.13	256.61	186.52
2007-2008	327.78	16.37	126.82	193.42	246.09	182.10
2008-2009	312.64	3.91	86.28	192.29	192.93	157.61
2009-2010	262.66	5.01	39.36	201.33	180.99	137.87
2010-2011	316.49	1.12	6.39	204.46	189.50	143.59
5 Year Average	315.37	8.48	73.88	196.73	213.22	161.54
2011-2012	391.64	7.35	43.37	259.71	239.19	188.25
2012-2013	350.15	7.62	32.63	219.16	217.53	165.42
2013-2014	275.52	1.53	8.04	219.54	161.28	133.18
2014-2015	280.07	1.53	4.78	175.46	164.16	125.20
2001-2015 Avg.	335.88	5.94	71.22	215.35	224.84	170.65

**2014 ANNUAL REPORT OF THE DEPARTMENT OF NATURAL RESOURCES  
TO MEET THE REQUIREMENTS OF THE UPPER NIOBRARA WHITE NATURAL  
RESOURCES DISTRICT'S INTEGRATED MANAGEMENT PLAN**

Purpose: The purpose of the report is to fulfill the Department of Natural Resources (Department) responsibilities under the integrated management plan (IMP) annual reporting obligations and provide updates to current monitoring projects or studies as outlined in the IMP.

Reporting and exchanging information gathered from monitoring projects, streamflow data, or other studies provides a basis to increase understanding of the surface water and hydrologically connected groundwater system. As surface water and groundwater are hydrologically connected throughout much of the district, estimates of water quantity of either surface water or groundwater cannot be evaluated separately. The data gathered through this IMP's monitoring plan are designed to evaluate and measure the success of the objectives of this IMP. This information exchange also helps to test the validity of the conclusions and information upon which the IMP is based. This report contains information on variance activities and permit activities from January 1, 2014, through December 31, 2014. Also included are stream measurements from October 1, 2013 through September 30, 2014.

**Department Reporting: Data**

The IMP requires that the Department annually report on the following surface water data within the district:

- 1) Diversion records upstream of Box Butte Reservoir
- 2) Non-gaged stream measurements

*1) Surface Water Diversion Records Upstream of Box Butte Reservoir*

Surface water diversion records for the water year 2014 are included in Appendix A. The canals measured include: Bennett-Kay Canal; Cook Canal No. 1; Earnest Canal (South); Earnest Canal (North); Excelsior Canal; Harris-Neece Canal; Geo. Hitsheew Canal; Hughes Canal; Johnson Canal; Labelle Canal; Lakota Canal; Lichte Canal; McGinley-Stover Canal; McLaughlin Canal; Mettlen Canal; Montague Canal; and the Moore-Kay Canal.

*2) Non-gaged Stream Measurements*

Non-gaged stream measurements for the water year 2014 are included in Appendix B. Measurements were conducted at the following streams: Deadman Creek, Deep Creek, Hat Creek, Jim Creek, Monroe Creek, Niobrara River, Soldier Creek, Sow Belly Creek, and White River. Measurements were also conducted at various diversions: Armstrong Pump, Big Monroe Canal, Buckley Pump, Coffee Flood Canal, Cook Pump, Crawford City Park Pump, Delsing Pump, Enterprise Pump, Hageman Canal, Harris-Cooper Canal, Hoover Pump, Montague Canal

Pump, Pioneer Pump #2, Schumacher Pump, White River Canal, Whitney Reservoir and Wilkins Pump.

### **Department Reporting: Permitting**

The IMP requires that the Department annually report the following permitting actions within the surface water control area of the district:

- 1) Surface water variance
- 2) Cancelled surface water rights
- 3) New uses and increases in municipal and industrial consumptive uses

Tables 1 and 2 below contain detailed information on the permitting activities for calendar year 2014.

#### *1) Surface Water Variances*

During calendar year 2014 the surface water appropriation activity was limited to six temporary permits for road construction that were granted to the Dawes County Road Department, each for 10 acre-feet (Table 1). The permitted variances address public safety issues, meeting the criteria of Department rules *457 Neb. Admin. Code* Chapter 23, § 001.05. Applications were filed and surface water appropriations were granted for all six variances.

#### *2) Cancelled Surface Water Rights*

During calendar year 2014, four surface water permits were cancelled. They were temporary, one-year permits for road construction granted to the Dawes County Road Department (Table 2).

#### *3) New or Increased Municipal and Industrial Uses*

There were no new or increased municipal or industrial uses in calendar year 2014.

### **Current Studies**

The Interrelated Water Management Plan Program Fund (IWMPPF) conjunctive water management study, jointly undertaken by the Department and UNWNRD, has been completed. This study combined surface and groundwater modeling tools to evaluate potential water management strategies within the UNWNRD. Development of surface water and groundwater modeling tools has concluded and data is available through the modeling data link on INSIGHT (<http://dnr.nebraska.gov/INSIGHT/>). These UNW area models were incorporated as part of the Niobrara River Basin Study with the Bureau of Reclamation.

The Niobrara River Basin study was similar to the IWMPPF study, except that it expanded the study region, incorporated climate and economic components, and included funding and in-kind

contributions from the Bureau of Reclamation WaterSMART program. The study incorporated several models, including land-use, groundwater, surface water, and economic models. All portions of the study are completed.



# 2014 ANNUAL REPORT OF THE DEPARTMENT OF NATURAL RESOURCES

Table 1. Calendar year 2014 surface water variances in the surface water control area of the UNWNRD

Appropriation Number	Order Date	Variance	Approval Date	Sec	Twn	Rng	Dir.	Use	Grant in CFS	Grant in AF	Mitigation
A-19222	6/30/2014	VAR-4947	3/11/2014	24	32	52	W	Manufacturing; Temporary Construction	0.89	10	Variance granted pursuant to 457 Neb. Admin. Code Chapter 23, § 001.05
A-19223	6/30/2014	VAR-4945	3/11/2014	13	33	48	W	Manufacturing; Temporary Construction	0.89	10	Variance granted pursuant to 457 Neb. Admin. Code Chapter 23, § 001.05
A-19224	6/30/2014	VAR-4944	3/11/2014	3	31	52	W	Manufacturing; Temporary Construction	0.89	10	Variance granted pursuant to 457 Neb. Admin. Code Chapter 23, § 001.05
A-19225	6/30/2014	VAR-4946	3/11/2014	6	34	47	W	Manufacturing; Temporary Construction	0.89	10	Variance granted pursuant to 457 Neb. Admin. Code Chapter 23, § 001.05
A-19226	6/30/2014	VAR-4943	3/11/2014	27	34	48	W	Manufacturing; Temporary Construction	0.89	10	Variance granted pursuant to 457 Neb. Admin. Code Chapter 23, § 001.05
A-19227	6/30/2014	VAR-4942	3/11/2014	12	32	49	W	Manufacturing; Temporary Construction	0.89	10	Variance granted pursuant to 457 Neb. Admin. Code Chapter 23, § 001.05

Table 2. Calendar year 2014 cancelled surface water permits in the surface water control area of the UNWNRD.

Appropriation Number	Order of Cancellation Date	Variance	Sec	Twn	Rng	Dir	Use	Begin Acres	Cancelled Acres	Cancellation in CFS	Cancellation in AF
A-19067	5/24/2013	VAR-3582	6	34	47	W	Manufacturing; Temporary Construction	N/A	N/A	N/A	10
A-19068	5/24/2013	VAR-3583	27	34	48	W	Manufacturing; Temporary Construction	N/A	N/A	N/A	10
A-19069	5/24/2013	VAR-3580	8	31	50	W	Manufacturing; Temporary Construction	N/A	N/A	N/A	10
A-19070	5/24/2013	VAR-3581	24	32	52	W	Manufacturing; Temporary Construction	N/A	N/A	N/A	10

# **Appendix A**

## **Surface Water Diversion Records**

### **Upstream of Box Butte Reservoir**

2014 ANNUAL REPORT FO THE DEPARTMENT OF NATURAL RESOURCES  
UPPER NIOBRARA WHITE IMP

**13000 Bennett-Kay Canal from Niobrara River**  
**DISCHARGE, CUBIC FEET PER SECOND,**  
**WATER YEAR OCT 2013 TO SEP 2014**  
**Daily Mean Values**

Day	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14
1	0.00	---	---	---	---	---	---	0.05	0.21	2.1	1.1	0.00
2	0.00	---	---	---	---	---	---	0.02	0.21	2.0	1.1	0.00
3	---	---	---	---	---	---	---	0.02	0.20	2.0	1.1	0.00
4	---	---	---	---	---	---	---	0.03	0.18	0.51	1.1	0.00
5	---	---	---	---	---	---	---	0.06	0.18	0.00	1.1	0.00
6	---	---	---	---	---	---	---	0.11	0.15	0.00	1.2	0.00
7	---	---	---	---	---	---	---	0.43	0.12	0.00	1.2	0.00
8	---	---	---	---	---	---	---	0.95	0.12	0.00	1.5	0.00
9	---	---	---	---	---	---	---	0.97	0.56	0.00	1.3	0.00
10	---	---	---	---	---	---	0.00	1.0	2.6	0.00	1.1	0.01
11	---	---	---	---	---	---	0.02	1.0	0.95	0.00	0.32	0.13
12	---	---	---	---	---	---	0.04	1.0	0.08	0.00	0.00	0.19
13	---	---	---	---	---	---	0.06	1.0	0.07	0.00	0.00	0.15
14	---	---	---	---	---	---	0.00	1.0	0.08	0.00	0.00	0.18
15	---	---	---	---	---	---	0.00	1.0	0.1	0.00	0.00	0.15
16	---	---	---	---	---	---	0.00	1.0	0.1	0.00	0.00	0.09
17	---	---	---	---	---	---	0.00	0.91	0.12	0.00	0.00	0.00
18	---	---	---	---	---	---	0.00	0.71	0.12	0.00	0.00	0.00
19	---	---	---	---	---	---	0.00	0.69	0.12	0.00	0.00	0.00
20	---	---	---	---	---	---	0.00	0.67	0.12	0.00	0.00	0.00
21	---	---	---	---	---	---	0.00	0.82	0.1	0.00	0.00	0.00
22	---	---	---	---	---	---	0.00	0.50	0.06	0.00	0.00	0.00
23	---	---	---	---	---	---	0.01	0.32	0.02	0.00	0.00	0.00
24	---	---	---	---	---	---	0.01	0.32	1.1	0.00	0.00	0.00
25	---	---	---	---	---	---	0.03	0.31	2.2	0.00	0.00	0.00
26	---	---	---	---	---	---	0.05	0.28	2.1	0.00	0.00	0.00
27	---	---	---	---	---	---	0.09	0.28	2.4	0.00	0.00	0.00
28	---	---	---	---	---	---	0.16	0.28	2.7	0.00	0.00	0.00
29	---	---	---	---	---	---	0.11	0.24	2.5	0.00	0.00	0.00
30	---	---	---	---	---	---	0.09	0.21	2.3	0.15	0.00	0.00
31	---	---	---	---	---	---	---	0.21	---	1.1	0.00	---
<b>Total</b>	0	---	---	---	---	---	0.67	16.39	21.87	7.86	12.12	0.9
<b>Mean</b>	0.000	---	---	---	---	---	0.031	0.53	0.73	0.25	0.39	0.030
<b>Max</b>	0.00	---	---	---	---	---	0.16	1.0	2.7	2.1	1.5	0.19
<b>Min</b>	0.00	---	---	---	---	---	0.00	0.02	0.02	0.00	0.00	0.00
<b>AC-FT</b>	0	---	---	---	---	---	1.3	33	43	16	24	1.8
<b>CAL YEAR</b>	2013	<b>TOTAL</b>	116	<b>MEAN</b>	0.90	<b>MAX</b>	5.0	<b>MIN</b>	0.00	<b>AC-FT</b>	230	
<b>WTR YEAR</b>	2014	<b>TOTAL</b>	60	<b>MEAN</b>	0.34	<b>MAX</b>	3.0	<b>MIN</b>	0.00	<b>AC-FT</b>	119	

2014 ANNUAL REPORT FO THE DEPARTMENT OF NATURAL RESOURCES

UPPER NIOBRARA WHITE IMP

29000 Cook Canal No. 1 from Niobrara River  
DISCHARGE, CUBIC FEET PER SECOND,  
WATER YEAR OCT 2013 TO SEP 2014  
Daily Mean Values

Day	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	---	---	---	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	---	---	---	---	---	---	---	---	---	---	---
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9	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	---	---	---	---	---	---
15	---	---	---	---	---	---	---	---	---	---	---	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	---	---	---	---
21	---	---	---	---	---	---	---	---	---	---	---	---
22	---	---	---	---	---	---	---	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	---	---	---	---	---	---	---	---	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	---	---	---
30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
Total	---	---	---	---	---	---	---	---	---	---	---	---
Mean	---	---	---	---	---	---	---	---	---	---	---	---
Max	---	---	---	---	---	---	---	---	---	---	---	---
Min	---	---	---	---	---	---	---	---	---	---	---	---
AC-FT	---	---	---	---	---	---	---	---	---	---	---	---
CAL YEAR	2013	TOTAL	0	MEAN	0.000	MAX	0.0	MIN	0.00	AC-FT	0.00	
WTR YEAR	2014	TOTAL	0	MEAN		MAX	-0.0	MIN	0.00	AC-FT	0.00	

2014 ANNUAL REPORT FO THE DEPARTMENT OF NATURAL RESOURCES  
UPPER NIOBRARA WHITE IMP

38100 Earnest Canal (South) from Niobrara River  
DISCHARGE, CUBIC FEET PER SECOND,  
WATER YEAR OCT 2013 TO SEP 2014  
Daily Mean Values

Day	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14
1	0.00	---	---	---	---	---	---	2.4	0.00	0.00	0.00	0.00
2	---	---	---	---	---	---	---	2.4	0.00	0.00	0.00	0.00
3	---	---	---	---	---	---	---	2.4	0.00	0.00	0.00	0.00
4	---	---	---	---	---	---	---	2.4	0.00	0.00	0.00	---
5	---	---	---	---	---	---	---	2.4	0.00	0.00	0.00	---
6	---	---	---	---	---	---	---	4.7	0.00	0.00	0.00	---
7	---	---	---	---	---	---	---	6.9	0.00	0.00	0.00	---
8	---	---	---	---	---	---	---	6.3	0.00	0.00	0.00	---
9	---	---	---	---	---	---	---	6.4	0.00	0.00	0.00	---
10	---	---	---	---	---	---	---	6.4	0.00	0.00	0.00	---
11	---	---	---	---	---	---	---	6.4	0.00	0.00	0.00	---
12	---	---	---	---	---	---	---	6.4	0.00	0.00	0.00	---
13	---	---	---	---	---	---	---	6.4	0.00	0.00	0.00	---
14	---	---	---	---	---	---	---	6.4	0.00	0.00	0.00	---
15	---	---	---	---	---	---	---	6.4	0.00	0.00	0.00	---
16	---	---	---	---	---	---	---	6.4	0.00	0.00	0.00	---
17	---	---	---	---	---	---	---	6.4	0.00	0.00	0.00	---
18	---	---	---	---	---	---	---	6.4	0.00	0.00	0.00	---
19	---	---	---	---	---	---	---	6.4	0.00	0.00	0.00	---
20	---	---	---	---	---	---	---	6.4	0.00	0.00	0.00	---
21	---	---	---	---	---	---	---	6.4	0.00	0.00	0.00	---
22	---	---	---	---	---	---	2.6	6.4	0.00	0.00	0.00	---
23	---	---	---	---	---	---	2.5	6.6	0.00	0.00	0.00	---
24	---	---	---	---	---	---	2.5	6.6	0.00	0.00	0.00	---
25	---	---	---	---	---	---	2.4	6.8	0.00	0.00	0.00	---
26	---	---	---	---	---	---	2.7	7.0	0.00	0.00	0.00	---
27	---	---	---	---	---	---	3.4	6.7	0.00	0.00	0.00	---
28	---	---	---	---	---	---	2.1	6.7	0.00	0.00	0.00	---
29	---	---	---	---	---	---	1.3	4.1	0.00	0.00	0.00	---
30	---	---	---	---	---	---	2.5	0.00	0.00	0.00	0.00	---
31	---	---	---	---	---	---	---	0.00	---	0.00	0.00	---
<b>Total</b>	0	---	---	---	---	---	22	164	0	0	0	0
<b>Mean</b>	0.000	---	---	---	---	---	2.46	5.27	0.000	0.000	0.000	0.000
<b>Max</b>	0.00	---	---	---	---	---	3.4	7.0	0.00	0.00	0.00	0.00
<b>Min</b>	0.00	---	---	---	---	---	1.3	0.00	0.00	0.00	0.00	0.00
<b>AC-FT</b>	0	---	---	---	---	---	44	325	0	0	0	0
<b>CAL YEAR</b>	2013	<b>TOTAL</b>	8	<b>MEAN</b>	0.055	<b>MAX</b>	2.0	<b>MIN</b>	-0.00	<b>AC-FT</b>	15	
<b>WTR YEAR</b>	2014	<b>TOTAL</b>	186	<b>MEAN</b>	1.37	<b>MAX</b>	7.0	<b>MIN</b>	0.00	<b>AC-FT</b>	369	

2014 ANNUAL REPORT FO THE DEPARTMENT OF NATURAL RESOURCES  
UPPER NIOBRARA WHITE IMP

**38200 Earnest Canal (North) from Niobrara River**  
**DISCHARGE, CUBIC FEET PER SECOND,**  
**WATER YEAR OCT 2013 TO SEP 2014**  
**Daily Mean Values**

Day	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14
1	0.00	---	---	---	---	---	---	2.7	5.4	2.6	0.00	0.00
2	---	---	---	---	---	---	---	2.7	5.4	2.6	0.00	0.00
3	---	---	---	---	---	---	---	2.7	5.4	0.00	0.00	0.00
4	---	---	---	---	---	---	---	2.7	5.3	0.00	0.00	---
5	---	---	---	---	---	---	---	2.7	5.3	0.00	0.00	---
6	---	---	---	---	---	---	---	2.7	5.2	0.00	0.00	---
7	---	---	---	---	---	---	---	2.7	5.2	0.00	0.00	---
8	---	---	---	---	---	---	---	3.3	5.2	0.00	0.00	---
9	---	---	---	---	---	---	---	3.2	5.2	0.00	0.00	---
10	---	---	---	---	---	---	---	2.9	5.2	0.00	0.00	---
11	---	---	---	---	---	---	---	3.0	5.2	0.00	0.00	---
12	---	---	---	---	---	---	---	3.2	5.1	0.00	0.00	---
13	---	---	---	---	---	---	---	0.00	4.1	0.00	0.00	---
14	---	---	---	---	---	---	---	0.00	3.2	0.00	0.00	---
15	---	---	---	---	---	---	---	0.00	4.7	0.00	0.00	---
16	---	---	---	---	---	---	---	0.00	4.9	0.00	0.00	---
17	---	---	---	---	---	---	---	0.00	4.8	0.00	0.00	---
18	---	---	---	---	---	---	---	0.00	4.8	0.00	0.00	---
19	---	---	---	---	---	---	---	0.00	4.8	0.00	0.00	---
20	---	---	---	---	---	---	---	0.00	3.6	0.00	0.00	---
21	---	---	---	---	---	---	---	0.00	2.7	0.00	0.00	---
22	---	---	---	---	---	---	8.5	0.00	2.7	0.00	0.00	---
23	---	---	---	---	---	---	8.4	0.00	2.7	0.00	0.00	---
24	---	---	---	---	---	---	8.3	0.00	2.7	0.00	0.00	---
25	---	---	---	---	---	---	8.3	0.00	2.7	0.00	0.00	---
26	---	---	---	---	---	---	6.2	0.00	2.7	0.00	0.00	---
27	---	---	---	---	---	---	4.4	0.00	2.7	0.00	0.00	---
28	---	---	---	---	---	---	4.4	0.00	2.7	0.00	0.00	---
29	---	---	---	---	---	---	2.7	5.3	2.7	0.00	0.00	---
30	---	---	---	---	---	---	2.7	5.4	2.6	0.00	0.00	---
31	---	---	---	---	---	---	---	5.4	---	0.00	0.00	---
<b>Total</b>	0	---	---	---	---	---	53.9	50.6	124.9	5.2	0	0
<b>Mean</b>	0.000	---	---	---	---	---	5.98	1.63	4.15	0.17	0.000	0.000
<b>Max</b>	0.00	---	---	---	---	---	8.5	5.4	5.4	2.6	0.00	0.00
<b>Min</b>	0.00	---	---	---	---	---	2.7	0.00	2.6	0.00	0.00	0.00
<b>AC-FT</b>	0	---	---	---	---	---	107	100	248	10	0	0
<b>CAL YEAR</b>	2013	<b>TOTAL</b>	13	<b>MEAN</b>	0.096	<b>MAX</b>	2.0	<b>MIN</b>	0.00	<b>AC-FT</b>	26	
<b>WTR YEAR</b>	2014	<b>TOTAL</b>	235	<b>MEAN</b>	1.72	<b>MAX</b>	9.0	<b>MIN</b>	0.00	<b>AC-FT</b>	465	

2014 ANNUAL REPORT FO THE DEPARTMENT OF NATURAL RESOURCES  
UPPER NIOBRARA WHITE IMP

**46000 Excelsior Canal from Niobrara River  
DISCHARGE, CUBIC FEET PER SECOND,  
WATER YEAR OCT 2013 TO SEP 2014  
Daily Mean Values**

Day	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14
1	0.00	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
2	0.00	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
3	0.00	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
4	0.00	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
5	0.00	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
6	0.00	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
7	0.00	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
8	0.00	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
9	0.00	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
10	0.00	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
11	0.00	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
12	0.00	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
13	0.00	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
14	0.00	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
15	0.00	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
16	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
17	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
18	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
19	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
20	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
21	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
22	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
23	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
24	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
25	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
26	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	---
27	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	---
28	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	---
29	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	---
30	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	---
31	---	---	---	---	---	---	---	0.00	---	0.00	0.00	---
<b>Total</b>	0	---	---	---	---	---	---	0	0	0	0	0
<b>Mean</b>	0.000	---	---	---	---	---	---	0.000	0.000	0.000	0.000	0.000
<b>Max</b>	0.00	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
<b>Min</b>	0.00	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
<b>AC-FT</b>	0	---	---	---	---	---	---	0	0	0	0	0
<b>CAL YEAR</b>	2013	<b>TOTAL</b>	8	<b>MEAN</b>	0.050	<b>MAX</b>	1.0	<b>MIN</b>	0.00	<b>AC-FT</b>	16	
<b>WTR YEAR</b>	2014	<b>TOTAL</b>	0	<b>MEAN</b>	0.000	<b>MAX</b>	0.0	<b>MIN</b>	0.00	<b>AC-FT</b>	0.00	

2014 ANNUAL REPORT FO THE DEPARTMENT OF NATURAL RESOURCES  
UPPER NIOBRARA WHITE IMP

**62000 Harris-Neece Canal from Niobrara River**  
**DISCHARGE, CUBIC FEET PER SECOND,**  
**WATER YEAR OCT 2013 TO SEP 2014**  
**Daily Mean Values**

Day	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14
1	6.1	---	---	---	---	---	---	0.00	11	5.6	4.4	6.5
2	5.9	---	---	---	---	---	---	0.00	11	5.4	4.4	6.8
3	4.7	---	---	---	---	---	---	0.00	11	5.3	4.4	6.8
4	4.7	---	---	---	---	---	---	0.00	11	5.0	4.3	6.8
5	4.7	---	---	---	---	---	---	0.00	11	4.8	4.4	6.9
6	4.7	---	---	---	---	---	---	0.00	10	4.8	4.3	7.0
7	4.7	---	---	---	---	---	---	0.00	10	4.9	4.2	7.0
8	4.7	---	---	---	---	---	---	0.00	10	5.1	4.4	7.1
9	4.7	---	---	---	---	---	---	0.00	10	5.4	4.4	7.2
10	4.7	---	---	---	---	---	0.00	0.00	2.9	5.7	4.5	7.4
11	---	---	---	---	---	---	0.00	0.00	0.00	6.1	4.5	7.7
12	---	---	---	---	---	---	0.00	0.00	0.00	6.7	4.4	4.8
13	---	---	---	---	---	---	0.00	0.00	0.00	6.9	4.6	0.00
14	---	---	---	---	---	---	0.00	0.00	0.00	6.7	4.6	0.00
15	---	---	---	---	---	---	0.00	0.00	0.00	5.0	4.8	0.00
16	---	---	---	---	---	---	0.00	0.00	0.00	0.00	4.8	0.00
17	---	---	---	---	---	---	0.00	0.00	0.00	0.00	4.7	0.00
18	---	---	---	---	---	---	0.00	0.00	3.4	0.00	4.6	0.00
19	---	---	---	---	---	---	0.00	0.00	5.7	0.00	4.7	---
20	---	---	---	---	---	---	0.00	0.00	5.8	0.00	4.8	---
21	---	---	---	---	---	---	0.00	0.00	5.8	0.00	4.8	---
22	---	---	---	---	---	---	0.00	0.00	5.6	0.00	4.9	---
23	---	---	---	---	---	---	0.00	0.00	5.7	0.00	5.0	---
24	---	---	---	---	---	---	0.00	0.00	6.1	0.00	5.0	---
25	---	---	---	---	---	---	0.00	0.00	6.0	0.00	5.0	---
26	---	---	---	---	---	---	0.00	0.00	6.2	0.00	5.2	---
27	---	---	---	---	---	---	0.00	6.9	6.0	3.2	5.6	---
28	---	---	---	---	---	---	0.00	11	6.0	4.4	5.4	---
29	---	---	---	---	---	---	0.00	11	6.0	4.4	5.6	---
30	---	---	---	---	---	---	0.00	11	5.4	4.4	5.9	---
31	---	---	---	---	---	---	---	11	---	4.4	6.1	---
<b>Total</b>	49.6	---	---	---	---	---	0	50.9	171.6	104.2	148.7	82
<b>Mean</b>	4.98	---	---	---	---	---	0.000	1.65	5.73	3.35	4.79	4.55
<b>Max</b>	6.1	---	---	---	---	---	0.00	11	11	6.9	6.1	7.7
<b>Min</b>	4.7	---	---	---	---	---	0.00	0.00	0.00	0.00	4.2	0.00
<b>AC-FT</b>	98	---	---	---	---	---	0	101	340	207	295	163
<b>CAL YEAR</b>	2013	<b>TOTAL</b>	738	<b>MEAN</b>	4.50	<b>MAX</b>	9.0	<b>MIN</b>	0.00	<b>AC-FT</b>	1460	
<b>WTR YEAR</b>	2014	<b>TOTAL</b>	607	<b>MEAN</b>	3.53	<b>MAX</b>	11.0	<b>MIN</b>	0.00	<b>AC-FT</b>	1200	



2014 ANNUAL REPORT FO THE DEPARTMENT OF NATURAL RESOURCES  
UPPER NIOBRARA WHITE IMP

63000 Geo. HitsheW Canal from Niobrara River  
DISCHARGE, CUBIC FEET PER SECOND,  
WATER YEAR OCT 2013 TO SEP 2014  
Daily Mean Values

Day	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14
1	0.00	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	---	---	---	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	---	---	---	---	---	---	---	---	---	---	---
8	---	---	---	---	---	---	---	---	---	---	---	---
9	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	---	---	---	---	---	---
15	---	---	---	---	---	---	---	---	---	---	---	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	---	---	---	---
21	---	---	---	---	---	---	---	---	---	---	---	---
22	---	---	---	---	---	---	---	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	---	---	---	---	---	---	---	---	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	---	---	---
30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
Total	0	---	---	---	---	---	---	---	---	---	---	---
Mean	0.00	---	---	---	---	---	---	---	---	---	---	---
Max	0.00	---	---	---	---	---	---	---	---	---	---	---
Min	0.00	---	---	---	---	---	---	---	---	---	---	---
AC-FT	0	---	---	---	---	---	---	---	---	---	---	---
CAL YEAR	2013	TOTAL	0	MEAN	0.000	MAX	0.0	MIN	0.00	AC-FT	0.00	
WTR YEAR	2014	TOTAL	0	MEAN	0.000	MAX	0.0	MIN	0.00	AC-FT	0.00	

2014 ANNUAL REPORT FO THE DEPARTMENT OF NATURAL RESOURCES  
UPPER NIOBRARA WHITE IMP

69000 Hughes Canal from Niobrara River  
DISCHARGE, CUBIC FEET PER SECOND,  
WATER YEAR OCT 2013 TO SEP 2014  
Daily Mean Values

Day	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14
1	0.00	---	---	---	---	---	---	0.29	0.04	0.00	0.00	0.00
2	0.00	---	---	---	---	---	---	0.28	0.11	0.00	0.00	0.00
3	0.00	---	---	---	---	---	---	0.26	0.04	0.00	0.00	0.00
4	0.00	---	---	---	---	---	---	0.22	0.00	0.00	0.00	0.00
5	0.00	---	---	---	---	---	---	0.19	0.00	0.00	0.00	0.00
6	0.00	---	---	---	---	---	---	0.29	0.00	0.00	0.00	0.00
7	0.00	---	---	---	---	---	---	0.56	0.00	0.00	0.00	0.00
8	0.00	---	---	---	---	---	---	0.61	0.00	0.00	0.00	0.00
9	0.00	---	---	---	---	---	---	0.45	0.00	0.00	0.00	0.00
10	0.00	---	---	---	---	---	---	0.45	0.00	0.00	0.00	0.00
11	0.00	---	---	---	---	---	---	0.54	0.00	0.00	0.00	0.00
12	0.00	---	---	---	---	---	---	0.65	0.00	0.00	0.00	0.00
13	0.00	---	---	---	---	---	---	0.70	0.00	0.00	0.00	0.00
14	0.00	---	---	---	---	---	---	0.70	0.00	0.00	0.00	0.00
15	0.00	---	---	---	---	---	---	0.65	0.00	0.00	0.00	0.00
16	---	---	---	---	---	---	---	0.57	0.00	0.00	0.00	0.00
17	---	---	---	---	---	---	---	0.50	0.00	0.00	0.00	0.00
18	---	---	---	---	---	---	---	0.43	0.00	0.00	0.00	0.00
19	---	---	---	---	---	---	---	0.35	0.00	0.00	0.00	0.00
20	---	---	---	---	---	---	---	0.32	0.00	0.00	0.00	0.00
21	---	---	---	---	---	---	---	0.31	0.00	0.00	0.00	0.00
22	---	---	---	---	---	---	---	0.29	0.00	0.00	0.00	0.00
23	---	---	---	---	---	---	---	0.26	0.00	0.00	0.00	0.00
24	---	---	---	---	---	---	---	0.25	0.00	0.00	0.00	0.00
25	---	---	---	---	---	---	---	0.22	0.00	0.00	0.00	0.00
26	---	---	---	---	---	---	---	0.20	0.00	0.00	0.00	---
27	---	---	---	---	---	---	---	0.17	0.00	0.00	0.00	---
28	---	---	---	---	---	---	---	0.15	0.00	0.00	0.00	---
29	---	---	---	---	---	---	---	0.06	0.00	0.00	0.00	---
30	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	---
31	---	---	---	---	---	---	---	0.00	---	0.00	0.00	---
<b>Total</b>	0	---	---	---	---	---	---	10.92	0.19	0	0	0
<b>Mean</b>	0.000	---	---	---	---	---	---	0.35	0.006	0.00	0.00	0.000
<b>Max</b>	0.00	---	---	---	---	---	---	0.70	0.11	0.00	0.00	0.00
<b>Min</b>	0.00	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
<b>AC-FT</b>	0	---	---	---	---	---	---	22	0.4	0	0	0
<b>CAL YEAR</b>	2013	<b>TOTAL</b>	12	<b>MEAN</b>	0.071	<b>MAX</b>	1.0	<b>MIN</b>	-0.00	<b>AC-FT</b>	25	
<b>WTR YEAR</b>	2014	<b>TOTAL</b>	11	<b>MEAN</b>	0.068	<b>MAX</b>	1.0	<b>MIN</b>	0.00	<b>AC-FT</b>	22	

2014 ANNUAL REPORT FO THE DEPARTMENT OF NATURAL RESOURCES  
UPPER NIOBRARA WHITE IMP

72000 Johnson Canal from Niobrara River  
DISCHARGE, CUBIC FEET PER SECOND,  
WATER YEAR OCT 2013 TO SEP 2014  
Daily Mean Values

Day	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14
1	1.6	---	---	---	---	---	---	0.00	4.5	0.00	0.00	0.00
2	1.6	---	---	---	---	---	---	0.00	4.7	0.00	0.00	0.00
3	1.6	---	---	---	---	---	---	0.00	e5.0	0.00	0.00	0.00
4	3.4	---	---	---	---	---	---	0.00	e5.0	0.00	0.00	0.00
5	1.6	---	---	---	---	---	---	0.00	e5.0	0.00	0.00	0.00
6	0.00	---	---	---	---	---	---	0.00	e5.0	0.00	0.00	0.00
7	0.00	---	---	---	---	---	---	0.00	e5.0	0.00	0.00	0.00
8	0.00	---	---	---	---	---	---	0.00	0.53	0.00	0.00	0.00
9	0.00	---	---	---	---	---	---	0.00	0.22	0.00	0.00	0.00
10	0.00	---	---	---	---	---	---	0.00	0.05	0.00	0.00	0.00
11	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
12	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
13	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
14	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
15	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00	0.00
16	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00	0.00
17	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00	0.00
18	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00	0.00
19	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00	0.00
20	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00	0.00
21	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00	0.00
22	---	---	---	---	---	---	0.00	2.6	0.00	0.00	0.00	0.00
23	---	---	---	---	---	---	0.00	5.7	0.00	0.00	0.00	0.00
24	---	---	---	---	---	---	0.00	5.8	0.00	0.00	0.00	---
25	---	---	---	---	---	---	0.00	5.6	0.00	0.00	0.00	---
26	---	---	---	---	---	---	0.00	6.1	0.00	0.00	0.00	---
27	---	---	---	---	---	---	0.00	5.8	0.00	0.00	0.00	---
28	---	---	---	---	---	---	0.00	5.1	0.00	0.00	0.00	---
29	---	---	---	---	---	---	0.00	4.6	0.00	0.00	0.00	---
30	---	---	---	---	---	---	0.00	4.2	0.00	0.00	0.00	---
31	---	---	---	---	---	---	---	4.3	---	0.00	0.00	---
<b>Total</b>	9.8	---	---	---	---	---	0	49.8	35	0	0	0
<b>Mean</b>	0.97	---	---	---	---	---	0.000	1.60	1.17	0.000	0.000	0.000
<b>Max</b>	3.4	---	---	---	---	---	0.00	6.1	5.0	0.00	0.00	0.00
<b>Min</b>	0.00	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00	0.00
<b>AC-FT</b>	19	---	---	---	---	---	0	99	69	0	0	0
<b>CAL YEAR</b>	2013	<b>TOTAL</b>	40	<b>MEAN</b>	0.33	<b>MAX</b>	3.0	<b>MIN</b>	0.00	<b>AC-FT</b>	80	
<b>WTR YEAR</b>	2014	<b>TOTAL</b>	95	<b>MEAN</b>	0.55	<b>MAX</b>	6.0	<b>MIN</b>	0.00	<b>AC-FT</b>	188	

2014 ANNUAL REPORT FO THE DEPARTMENT OF NATURAL RESOURCES  
UPPER NIOBRARA WHITE IMP

**78000 Labelle Canal from Niobrara River**  
**DISCHARGE, CUBIC FEET PER SECOND,**  
**WATER YEAR OCT 2013 TO SEP 2014**  
**Daily Mean Values**

Day	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14
1	0.00	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
2	0.00	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
3	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
4	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
5	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
6	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
7	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
8	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
9	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00	0.00
10	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00	0.00
11	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00	0.00
12	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00	0.00
13	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00	0.00
14	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00	0.00
15	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00	0.00
16	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00	0.00
17	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00	0.00
18	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00	0.00
19	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00	---
20	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00	---
21	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00	---
22	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00	---
23	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00	---
24	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00	---
25	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00	---
26	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00	---
27	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00	---
28	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00	---
29	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00	---
30	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00	---
31	---	---	---	---	---	---	---	0.00	---	0.00	0.00	---
<b>Total</b>	0	---	---	---	---	---	0	0	0	0	0	0
<b>Mean</b>	0.000	---	---	---	---	---	0.000	0.000	0.000	0.000	0.000	0.000
<b>Max</b>	0.00	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00	0.00
<b>Min</b>	0.00	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00	0.00
<b>AC-FT</b>	0	---	---	---	---	---	0	0	0	0	0	0
<b>CAL YEAR</b>	2013	<b>TOTAL</b>	0	<b>MEAN</b>	0.00 0	<b>MAX</b>	0.0	<b>MIN</b>	0.00	<b>AC-FT</b>	0.00	
<b>WTR YEAR</b>	2014	<b>TOTAL</b>	0	<b>MEAN</b>	0.00 0	<b>MAX</b>	0.0	<b>MIN</b>	0.00	<b>AC-FT</b>	0.00	

2014 ANNUAL REPORT FO THE DEPARTMENT OF NATURAL RESOURCES  
UPPER NIOBRARA WHITE IMP

**79000 Lakotah Canal from Niobrara River  
DISCHARGE, CUBIC FEET PER SECOND,  
WATER YEAR OCT 2013 TO SEP 2014  
Daily Mean Values**

Day	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14
1	0.00	---	---	---	---	---	---	3.4	0.06	0.89	0.15	0.52
2	---	---	---	---	---	---	---	2.7	0.09	0.80	0.15	0.50
3	---	---	---	---	---	---	---	2.5	0.08	0.70	0.15	0.47
4	---	---	---	---	---	---	---	2.2	0.39	0.60	0.15	0.47
5	---	---	---	---	---	---	---	2.0	0.62	0.54	0.14	0.47
6	---	---	---	---	---	---	---	1.9	0.56	0.47	0.14	0.47
7	---	---	---	---	---	---	---	1.8	0.58	0.39	0.19	0.47
8	---	---	---	---	---	---	---	2.5	1.4	0.31	0.22	0.47
9	---	---	---	---	---	---	---	3.0	1.7	0.27	0.23	0.43
10	---	---	---	---	---	---	---	3.0	1.7	0.26	0.25	0.48
11	---	---	---	---	---	---	---	3.2	1.7	0.38	0.24	0.56
12	---	---	---	---	---	---	---	4.8	1.9	0.60	0.22	0.59
13	---	---	---	---	---	---	---	4.5	1.8	0.66	0.21	0.65
14	---	---	---	---	---	---	---	4.7	1.9	0.65	0.19	0.65
15	---	---	---	---	---	---	---	3.9	1.9	0.68	0.18	0.65
16	---	---	---	---	---	---	---	3.3	1.9	0.76	0.19	0.65
17	---	---	---	---	---	---	---	2.9	2.1	0.84	0.19	0.63
18	---	---	---	---	---	---	---	2.6	2.1	0.87	0.20	0.61
19	---	---	---	---	---	---	---	2.5	1.8	0.76	0.20	0.59
20	---	---	---	---	---	---	---	2.5	1.6	0.65	0.19	0.56
21	---	---	---	---	---	---	---	0.44	1.4	0.55	0.17	0.56
22	---	---	---	---	---	---	0.00	0.00	1.3	0.43	0.16	0.56
23	---	---	---	---	---	---	0.00	0.00	1.3	0.31	0.16	0.47
24	---	---	---	---	---	---	0.00	0.00	1.4	0.24	0.16	0.43
25	---	---	---	---	---	---	0.00	0.08	1.6	0.21	0.16	0.43
26	---	---	---	---	---	---	1.6	0.07	1.6	0.19	0.19	0.43
27	---	---	---	---	---	---	2.0	0.06	1.5	0.18	0.24	0.43
28	---	---	---	---	---	---	3.1	0.05	1.4	0.16	0.32	0.44
29	---	---	---	---	---	---	3.7	0.05	1.2	0.14	0.51	0.57
30	---	---	---	---	---	---	4.0	0.05	1.0	0.15	0.58	1.3
31	---	---	---	---	---	---	---	0.05	---	0.16	0.44	---
<b>Total</b>	0	---	---	---	---	---	14.4	60.75	39.58	14.8	6.87	16.51
<b>Mean</b>	0.000	---	---	---	---	---	1.60	1.96	1.32	0.48	0.22	0.55
<b>Max</b>	0.00	---	---	---	---	---	4.0	4.8	2.1	0.89	0.58	1.3
<b>Min</b>	0.00	---	---	---	---	---	0.00	0.00	0.06	0.14	0.14	0.43
<b>AC-FT</b>	0	---	---	---	---	---	29	120	79	29	14	33
<b>CAL YEAR</b>	2013	<b>TOTAL</b>	143	<b>MEAN</b>	0.97	<b>MAX</b>	4.0	<b>MIN</b>	0.00	<b>AC-FT</b>	284	
<b>WTR YEAR</b>	2014	<b>TOTAL</b>	153	<b>MEAN</b>	0.94	<b>MAX</b>	5.0	<b>MIN</b>	0.00	<b>AC-FT</b>	303	

2014 ANNUAL REPORT FO THE DEPARTMENT OF NATURAL RESOURCES  
UPPER NIOBRARA WHITE IMP

**81000 Lichte Canal from Niobrara River**  
**DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCT 2013**  
**TO SEP 2014**  
**Daily Mean Values**

Day	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14
1	---	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00
2	---	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00
3	---	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00
4	---	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00
5	---	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00
6	---	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00
7	---	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00
8	---	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00
9	---	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00
10	---	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00
11	---	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00
12	---	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00
13	---	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00
14	---	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00
15	---	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00
16	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
17	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
18	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
19	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
20	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	---
21	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	---
22	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	---
23	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	---
24	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	---
25	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	---
26	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	---
27	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	---
28	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	---
29	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	---
30	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	---
31	---	---	---	---	---	---	---	0.00	---	0.00	0.00	---
<b>Total</b>	---	---	---	---	---	---	---	0	0	0	0	0
<b>Mean</b>	---	---	---	---	---	---	---	0.000	0.000	0.000	0.000	0.000
<b>Max</b>	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
<b>Min</b>	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
<b>AC-FT</b>	---	---	---	---	---	---	---	0	0	0	0	0
<b>CAL YEAR</b>	2013	<b>TOTAL</b>	0	<b>MEAN</b>	0.00 0	<b>MAX</b>	0.0	<b>MIN</b>	0.00	<b>AC-FT</b>	0.00	
<b>WTR YEAR</b>	2014	<b>TOTAL</b>	0	<b>MEAN</b>	0.00 0	<b>MAX</b>	0.0	<b>MIN</b>	0.00	<b>AC-FT</b>	0.00	

2014 ANNUAL REPORT FO THE DEPARTMENT OF NATURAL RESOURCES  
UPPER NIOBRARA WHITE IMP

**84000 McGinley-Stover Canal from Niobrara River**  
**DISCHARGE, CUBIC FEET PER SECOND,**  
**WATER YEAR OCT 2013 TO SEP 2014**  
**Daily Mean Values**

Day	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14
1	0.00	---	---	---	---	---	---	0.00	0.00	0.32	2.1	0.01
2	---	---	---	---	---	---	---	0.00	1.6	2.2	2.0	0.00
3	---	---	---	---	---	---	---	0.00	4.8	2.2	1.9	0.00
4	---	---	---	---	---	---	---	0.00	3.4	0.65	1.9	0.00
5	---	---	---	---	---	---	---	0.00	3.1	0.83	2.0	0.00
6	---	---	---	---	---	---	---	0.00	2.9	1.9	2.1	0.00
7	---	---	---	---	---	---	---	0.00	2.9	1.8	0.80	0.00
8	---	---	---	---	---	---	---	0.00	2.9	1.7	0.09	0.00
9	---	---	---	---	---	---	---	0.00	3.0	1.7	0.06	0.00
10	---	---	---	---	---	---	---	0.00	2.9	1.8	0.05	0.00
11	---	---	---	---	---	---	---	0.00	2.8	2.0	1.0	0.00
12	---	---	---	---	---	---	---	0.00	2.8	2.0	1.8	0.00
13	---	---	---	---	---	---	---	0.00	2.7	2.1	1.8	0.00
14	---	---	---	---	---	---	---	0.00	2.6	2.1	1.9	0.00
15	---	---	---	---	---	---	---	0.00	2.6	2.0	1.9	0.00
16	---	---	---	---	---	---	---	0.00	2.6	1.9	1.8	0.00
17	---	---	---	---	---	---	---	0.00	2.5	2.0	1.7	0.57
18	---	---	---	---	---	---	---	0.00	2.4	1.9	1.7	2.4
19	---	---	---	---	---	---	---	0.00	2.3	1.9	1.7	2.4
20	---	---	---	---	---	---	---	0.00	0.86	0.63	1.6	2.6
21	---	---	---	---	---	---	---	0.00	0.13	0.02	1.6	2.8
22	---	---	---	---	---	---	0.00	0.00	0.09	0.00	1.5	2.3
23	---	---	---	---	---	---	0.00	0.00	0.05	0.00	1.8	2.4
24	---	---	---	---	---	---	0.00	0.00	0.02	0.00	1.7	2.4
25	---	---	---	---	---	---	0.00	0.00	0.00	0.00	1.7	0.90
26	---	---	---	---	---	---	0.00	0.00	0.00	0.00	1.8	0.09
27	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.65	0.05
28	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.01	0.03
29	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00	0.02
30	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00	0.02
31	---	---	---	---	---	---	---	0.00	---	0.24	0.00	---
<b>Total</b>	0	---	---	---	---	---	0	0	51.95	33.89	40.66	18.99
<b>Mean</b>	0.000	---	---	---	---	---	0.000	0.00	1.74	1.09	1.31	0.63
<b>Max</b>	0.00	---	---	---	---	---	0.00	0.00	4.8	2.2	2.1	2.8
<b>Min</b>	0.00	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00	0.00
<b>AC-FT</b>	0	---	---	---	---	---	0	0	103	67	81	38
<b>CAL YEAR</b>	2013	<b>TOTAL</b>	123	<b>MEAN</b>	0.83	<b>MAX</b>	4.0	<b>MIN</b>	0.00	<b>AC-FT</b>	245	
<b>WTR YEAR</b>	2014	<b>TOTAL</b>	145	<b>MEAN</b>	0.89	<b>MAX</b>	5.0	<b>MIN</b>	0.00	<b>AC-FT</b>	289	

2014 ANNUAL REPORT FO THE DEPARTMENT OF NATURAL RESOURCES  
UPPER NIOBRARA WHITE IMP

**86000 McLaughlin Canal from Niobrara River**  
**DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCT**  
**2013 TO SEP 2014**  
**Daily Mean Values**

Day	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14
1	2.1	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
2	2.1	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
3	2.2	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
4	3.9	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
5	1.6	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
6	0.03	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
7	0.00	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
8	2.1	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
9	3.9	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
10	7.4	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
11	7.7	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
12	6.7	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
13	6.7	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
14	5.6	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
15	5.6	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
16	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
17	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
18	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
19	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
20	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
21	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
22	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
23	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
24	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
25	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
26	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	---
27	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	---
28	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	---
29	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	---
30	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	---
31	---	---	---	---	---	---	---	0.00	---	0.00	0.00	---
<b>Total</b>	57.63	---	---	---	---	---	---	0	0	0	0	0
<b>Mean</b>	3.83	---	---	---	---	---	---	0.000	0.000	0.000	0.000	0.000
<b>Max</b>	7.7	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
<b>Min</b>	0.00	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
<b>AC-FT</b>	114	---	---	---	---	---	---	0	0	0	0	0
<b>CAL YEAR</b>	2013	<b>TOTAL</b>	248	<b>MEAN</b>	1.43	<b>MAX</b>	9.0	<b>MIN</b>	0.00	<b>AC-FT</b>	492	
<b>WTR YEAR</b>	2014	<b>TOTAL</b>	58	<b>MEAN</b>	0.35	<b>MAX</b>	8.0	<b>MIN</b>	0.00	<b>AC-FT</b>	114	



2014 ANNUAL REPORT FO THE DEPARTMENT OF NATURAL RESOURCES  
UPPER NIOBRARA WHITE IMP

**89000 Mettlen Canal from Niobrara River**  
**DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCT 2013**  
**TO SEP 2014**  
**Daily Mean Values**

Day	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14
1	0.00	---	---	---	---	---	---	0.00	0.00	0.00	0.58	0.00
2	0.00	---	---	---	---	---	---	0.00	0.00	0.00	0.33	0.00
3	---	---	---	---	---	---	---	0.00	0.00	0.00	0.19	0.00
4	---	---	---	---	---	---	---	0.00	0.00	0.00	0.19	0.00
5	---	---	---	---	---	---	---	0.00	0.00	0.00	0.32	0.00
6	---	---	---	---	---	---	---	0.00	0.00	0.00	0.58	0.00
7	---	---	---	---	---	---	---	0.00	0.00	0.00	0.47	0.00
8	---	---	---	---	---	---	---	0.00	0.00	0.00	0.51	0.00
9	---	---	---	---	---	---	---	0.00	0.00	0.00	0.65	0.00
10	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.28	0.00
11	---	---	---	---	---	---	0.00	0.00	0.00	0.42	0.16	0.00
12	---	---	---	---	---	---	0.00	0.00	0.00	1.7	0.16	0.00
13	---	---	---	---	---	---	0.00	0.00	0.00	2.0	0.18	0.00
14	---	---	---	---	---	---	0.00	0.00	0.00	2.7	0.17	0.00
15	---	---	---	---	---	---	0.00	0.00	0.00	2.4	0.15	0.00
16	---	---	---	---	---	---	0.00	0.00	0.00	2.2	0.11	0.00
17	---	---	---	---	---	---	0.00	0.00	0.00	2.5	0.09	0.00
18	---	---	---	---	---	---	0.00	0.00	0.00	3.4	0.00	0.00
19	---	---	---	---	---	---	0.00	0.00	0.00	3.8	0.00	---
20	---	---	---	---	---	---	0.00	0.00	0.00	4.0	0.00	---
21	---	---	---	---	---	---	0.00	0.00	0.00	3.9	0.00	---
22	---	---	---	---	---	---	0.00	0.00	0.00	3.6	0.00	---
23	---	---	---	---	---	---	0.00	0.00	0.00	3.3	0.00	---
24	---	---	---	---	---	---	0.00	0.00	0.00	3.1	0.00	---
25	---	---	---	---	---	---	0.00	0.00	0.00	2.8	0.00	---
26	---	---	---	---	---	---	0.00	0.00	0.00	2.8	0.00	---
27	---	---	---	---	---	---	0.00	0.00	0.00	2.6	0.00	---
28	---	---	---	---	---	---	0.00	0.00	0.00	2.7	0.00	---
29	---	---	---	---	---	---	0.00	0.00	0.00	1.8	0.00	---
30	---	---	---	---	---	---	0.00	0.00	0.00	0.71	0.00	---
31	---	---	---	---	---	---	---	0.00	---	0.63	0.00	---
<b>Total</b>	0	---	---	---	---	---	0	0	0	53.06	5.12	0
<b>Mean</b>	0.000	---	---	---	---	---	0.000	0.000	0.000	1.71	0.17	0.000
<b>Max</b>	0.00	---	---	---	---	---	0.00	0.00	0.00	4.0	0.65	0.00
<b>Min</b>	0.00	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00	0.00
<b>AC-FT</b>	0	---	---	---	---	---	0	0	0	105	10	0
<b>CAL YEAR</b>	2013	<b>TOTAL</b>	102	<b>MEAN</b>	0.65	<b>MAX</b>	5.0	<b>MIN</b>	0.00	<b>AC-FT</b>	203	
<b>WTR YEAR</b>	2014	<b>TOTAL</b>	58	<b>MEAN</b>	0.35	<b>MAX</b>	4.0	<b>MIN</b>	0.00	<b>AC-FT</b>	115	

2014 ANNUAL REPORT FO THE DEPARTMENT OF NATURAL RESOURCES  
UPPER NIOBRARA WHITE IMP

**102000 Montague Canal from Niobrara River**  
**DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCT 2013**  
**TO SEP 2014**  
**Daily Mean Values**

Day	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14
1	0.00	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	---	---	---	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	---	---	---	---	---	---	---	---	---	---	---
8	---	---	---	---	---	---	---	---	---	---	---	---
9	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	---	---	---	---	---	---
15	---	---	---	---	---	---	---	---	---	---	---	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	---	---	---	---
21	---	---	---	---	---	---	---	---	---	---	---	---
22	---	---	---	---	---	---	---	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	---	---	---	---	---	---	---	---	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	---	---	---
30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
<b>Total</b>	0	---	---	---	---	---	---	---	---	---	---	---
<b>Mean</b>	0.000	---	---	---	---	---	---	---	---	---	---	---
<b>Max</b>	0.00	---	---	---	---	---	---	---	---	---	---	---
<b>Min</b>	0.00	---	---	---	---	---	---	---	---	---	---	---
<b>AC-FT</b>	0	---	---	---	---	---	---	---	---	---	---	---
<b>CAL YEAR</b>	2013	<b>TOTAL</b>	0	<b>MEAN</b>	0.000	<b>MAX</b>	0.0	<b>MIN</b>	0.00	<b>AC-FT</b>	0.00	
<b>WTR YEAR</b>	2014	<b>TOTAL</b>	0	<b>MEAN</b>	0.000	<b>MAX</b>	0.0	<b>MIN</b>	0.00	<b>AC-FT</b>	0.00	

2014 ANNUAL REPORT FO THE DEPARTMENT OF NATURAL RESOURCES  
UPPER NIOBRARA WHITE IMP

**104000 Moore-Kay Canal from Niobrara River**  
**DISCHARGE, CUBIC FEET PER SECOND,**  
**WATER YEAR OCT 2013 TO SEP 2014**  
**Daily Mean Values**

Day	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14
1	0.00	---	---	---	---	---	---	2.0	1.6	0.00	0.00	0.00
2	0.00	---	---	---	---	---	---	1.8	1.6	0.00	0.00	0.00
3	---	---	---	---	---	---	---	1.6	1.3	0.00	0.00	0.00
4	---	---	---	---	---	---	---	1.4	1.2	0.00	0.00	0.00
5	---	---	---	---	---	---	---	1.4	1.0	0.00	0.00	0.00
6	---	---	---	---	---	---	---	1.5	0.68	0.00	0.00	0.00
7	---	---	---	---	---	---	---	1.7	0.34	0.00	0.00	0.00
8	---	---	---	---	---	---	---	3.3	0.18	0.00	0.00	0.00
9	---	---	---	---	---	---	---	3.6	0.12	0.00	0.00	0.00
10	---	---	---	---	---	---	---	3.3	0.01	0.00	0.00	0.00
11	---	---	---	---	---	---	---	3.9	0.00	0.00	0.00	0.00
12	---	---	---	---	---	---	---	4.7	0.00	0.00	0.00	0.00
13	---	---	---	---	---	---	---	4.3	0.00	0.00	0.00	0.00
14	---	---	---	---	---	---	---	3.7	0.00	0.00	0.00	0.00
15	---	---	---	---	---	---	---	3.2	0.00	0.00	0.00	0.00
16	---	---	---	---	---	---	---	3.0	0.00	0.00	0.00	0.00
17	---	---	---	---	---	---	2.8	2.8	0.00	0.00	0.00	0.00
18	---	---	---	---	---	---	2.6	2.7	0.00	0.00	0.00	0.00
19	---	---	---	---	---	---	2.3	2.5	0.00	0.00	0.00	---
20	---	---	---	---	---	---	2.1	2.5	0.00	0.00	0.00	---
21	---	---	---	---	---	---	1.9	2.7	0.00	0.00	0.00	---
22	---	---	---	---	---	---	1.8	2.6	0.00	0.00	0.00	---
23	---	---	---	---	---	---	1.7	2.5	0.00	0.00	0.00	---
24	---	---	---	---	---	---	1.6	2.4	0.00	0.00	0.00	---
25	---	---	---	---	---	---	1.5	2.3	0.00	0.00	0.00	---
26	---	---	---	---	---	---	1.4	2.3	0.00	0.00	0.00	---
27	---	---	---	---	---	---	1.5	2.1	0.00	0.00	0.00	---
28	---	---	---	---	---	---	2.4	1.7	0.00	0.00	0.00	---
29	---	---	---	---	---	---	2.2	1.4	0.00	0.00	0.00	---
30	---	---	---	---	---	---	2.2	1.3	0.00	0.00	0.00	---
31	---	---	---	---	---	---	---	1.4	---	0.00	0.00	---
<b>Total</b>	0	---	---	---	---	---	28	77.6	8.03	0	0	0
<b>Mean</b>	0.000	---	---	---	---	---	2.00	2.50	0.27	0.00	0.000	0.000
<b>Max</b>	0.00	---	---	---	---	---	2.8	4.7	1.6	0.00	0.00	0.00
<b>Min</b>	0.00	---	---	---	---	---	1.4	1.3	0.00	0.00	0.00	0.00
<b>AC-FT</b>	0	---	---	---	---	---	56	154	16	0	0	0
<b>CAL YEAR</b>	2013	<b>TOT AL</b>	0	<b>MEA N</b>	0.00	<b>MAX</b>	0.0	<b>MIN</b>	0.00	<b>AC-FT</b>	0.00	
<b>WTR YEAR</b>	2014	<b>TOT AL</b>	114	<b>MEA N</b>	0.72	<b>MAX</b>	5.0	<b>MIN</b>	0.00	<b>AC-FT</b>	225	

# **Appendix B**

## Non-Gaged Stream Measurements

2014 ANNUAL REPORT OF THE DEPARTMENT OF NATURAL RESOURCES

Date	Site Number	Site Name	Discharge
9/3/2013	6400	Armstrong Pump fr Niobrara River	0
9/10/2013	6400	Armstrong Pump fr Niobrara River	0
9/17/2013	6400	Armstrong Pump fr Niobrara River	0
10/2/2013	6400	Armstrong Pump fr Niobrara River	0
5/5/2014	6400	Armstrong Pump fr Niobrara River	2.41
6/10/2014	6400	Armstrong Pump fr Niobrara River	
6/17/2014	6400	Armstrong Pump fr Niobrara River	
7/8/2014	6400	Armstrong Pump fr Niobrara River	
7/15/2014	6400	Armstrong Pump fr Niobrara River	
7/22/2014	6400	Armstrong Pump fr Niobrara River	
7/29/2014	6400	Armstrong Pump fr Niobrara River	0
8/5/2014	6400	Armstrong Pump fr Niobrara River	0
8/12/2014	6400	Armstrong Pump fr Niobrara River	0
8/19/2014	6400	Armstrong Pump fr Niobrara River	0
8/28/2014	6400	Armstrong Pump fr Niobrara River	0
9/18/2014	6400	Armstrong Pump fr Niobrara River	0
9/23/2013	6050	Big Monroe Canal fr Monroe Creek	0
9/11/2013	6065	Buckley Pump fr White River	
10/23/2013	6015	Coffee Flood Canal fr Hat Creek	0
9/3/2013	6380	Cook Pump fr Niobrara River	0
9/10/2013	6380	Cook Pump fr Niobrara River	1.44
9/17/2013	6380	Cook Pump fr Niobrara River	
5/22/2014	6380	Cook Pump fr Niobrara River	
6/4/2014	6380	Cook Pump fr Niobrara River	
6/10/2014	6380	Cook Pump fr Niobrara River	
6/17/2014	6380	Cook Pump fr Niobrara River	
7/2/2014	6380	Cook Pump fr Niobrara River	
7/8/2014	6380	Cook Pump fr Niobrara River	1.53
7/15/2014	6380	Cook Pump fr Niobrara River	1.53
7/22/2014	6380	Cook Pump fr Niobrara River	
7/29/2014	6380	Cook Pump fr Niobrara River	0
8/5/2014	6380	Cook Pump fr Niobrara River	1.44
8/12/2014	6380	Cook Pump fr Niobrara River	0
8/19/2014	6380	Cook Pump fr Niobrara River	0
9/2/2014	6380	Cook Pump fr Niobrara River	0
9/11/2013	6090	Crawford City Park Pump fr White River	
7/9/2014	3655	Deadman Creek above city diversion	1.23
7/9/2014	3280	Deep Creek near Glen	0.48

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Date	Site Number	Site Name	Discharge
9/13/2013	6440	Delsing Pump fr Niobrara River	0
9/19/2013	6440	Delsing Pump fr Niobrara River	0
6/26/2014	6440	Delsing Pump fr Niobrara River	
7/10/2014	6440	Delsing Pump fr Niobrara River	
7/17/2014	6440	Delsing Pump fr Niobrara River	
7/24/2014	6440	Delsing Pump fr Niobrara River	
8/11/2014	6440	Delsing Pump fr Niobrara River	2.5
8/26/2014	6440	Delsing Pump fr Niobrara River	0
9/4/2014	6440	Delsing Pump fr Niobrara River	0
9/16/2014	6440	Delsing Pump fr Niobrara River	0
7/10/2014	6435	Enterprise Pump fr Niobrara River	
9/4/2014	6435	Enterprise Pump fr Niobrara River	0
9/12/2013	6205	Hageman Canal fr White River	0
7/21/2014	6130	Harris-Cooper Canal fr White River	8.74
9/30/2013	3250	Hat Creek near Ardmore, South Dakota	0
10/1/2013	6365	Hoover Pump fr Niobrara River	0
9/23/2013	3110	Jim Creek @ junction w/ Warbonnett Cr	0
9/30/2013	3110	Jim Creek @ junction w/ Warbonnett Cr	0
9/13/2013	6255	Logan Pump fr White River	0
9/30/2013	3160	Monroe Creek above Jordan Reservoir	0
9/19/2013	6445	Montague Canal Pump fr Niobrara River	0
7/10/2014	6445	Montague Canal Pump fr Niobrara River	0
7/17/2014	6445	Montague Canal Pump fr Niobrara River	0
7/24/2014	6445	Montague Canal Pump fr Niobrara River	0
8/26/2014	6445	Montague Canal Pump fr Niobrara River	0
9/4/2014	6445	Montague Canal Pump fr Niobrara River	0
9/16/2014	6445	Montague Canal Pump fr Niobrara River	0
9/9/2013	3750	Niobrara River at old Dunlap Bridge	9.27
9/10/2013	3750	Niobrara River at old Dunlap Bridge	34.9
5/6/2014	3750	Niobrara River at old Dunlap Bridge	9.97
6/26/2014	3750	Niobrara River at old Dunlap Bridge	23.75
8/13/2014	3755	Niobrara River below Mirage Flats Diversion	3.71
8/13/2014	3755	Niobrara River below Mirage Flats Diversion	1.41
8/26/2014	3755	Niobrara River below Mirage Flats Diversion	3.79
9/6/2013	6020	Old Sow Belly Canal fr Sow Belly Creek	0
9/5/2013	6425	Pioneer Pump #2 fr Niobrara River	0
6/12/2014	6425	Pioneer Pump #2 fr Niobrara River	
7/17/2014	6425	Pioneer Pump #2 fr Niobrara River	
7/24/2014	6425	Pioneer Pump #2 fr Niobrara River	0
8/7/2014	6425	Pioneer Pump #2 fr Niobrara River	0

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Date	Site Number	Site Name	Discharge
9/4/2014	6425	Pioneer Pump #2 fr Niobrara River	0
9/12/2013	6250	Schumacher Pump fr White River	0
9/12/2013	6260	Schumacher Pump fr White River	0
9/12/2013	6260	Schumacher Pump fr White River	0
6/23/2014	3345	Soldier Creek Mouth at White River	2.53
9/30/2013	3170	Sow Belly Creek below Jim Creek Junction	0
9/10/2013	3580	White River @ Hwy 385 north of Chadron	0.6
7/9/2014	3320	White River at Andrew's	1.38
7/9/2014	3285	White River at Kreman Crossing	12
9/10/2013	3415	White River at Whitney	0.92
7/21/2014	6105	White River Canal fr White River	7.75
9/10/2013	3625	White River near state line	3.29
7/18/2014	6165	Whitney Pipeline fr White River	0
3/20/2014	6149	Whitney Reservoir	
4/21/2014	6149	Whitney Reservoir	
6/2/2014	6149	Whitney Reservoir	10925
7/18/2014	6149	Whitney Reservoir	
8/21/2014	6149	Whitney Reservoir	
9/5/2013	6430	Wilkins Pump fr Niobrara River	0
9/19/2013	6430	Wilkins Pump fr Niobrara River	0.5
6/12/2014	6430	Wilkins Pump fr Niobrara River	0
7/17/2014	6430	Wilkins Pump fr Niobrara River	0
7/24/2014	6430	Wilkins Pump fr Niobrara River	0
8/14/2014	6430	Wilkins Pump fr Niobrara River	0
8/26/2014	6430	Wilkins Pump fr Niobrara River	0.53
9/4/2014	6430	Wilkins Pump fr Niobrara River	0