

Water Appropriation and Management

in North Dakota



Topics

- ❖ North Dakota Water Law
- ❖ Water Permitting Process
- ❖ Management and Monitoring

North Dakota Water Law

- John Wesley Powell – 1889 ND Constitutional Convention –
 - “...All other wealth falls into insignificance compared to that which is to come from these lands from the pouring on them of the running streams of this country. Don't let these streams get out of the possession of the people. If you fail in making a constitution in any other respect, fail not in this one....Fix it in your constitution that no corporation –no body of men-no capital can get possession and right to your waters.”

North Dakota Water Law

- John Wesley Powell, second Director of the U.S. Geological Survey, in a speech at the North Dakota Constitutional Convention:
 - Advised that the concept of eastern water law would not work in the arid western states based on his work in the arid western states.
 - Proposed that ND adopt a law that water be held in the public trust, with the right to use the water be administered by the State.
 - Set the direction for water law in North Dakota based on the Prior Appropriation Doctrine.

North Dakota Water Law

❖ Prior Appropriation Doctrine

“First in time, first in right”

- The water user with the earliest priority date is superior to any water user with a later priority date.
- Used in the more arid western states; different than the riparian water laws used in the eastern states.

North Dakota Water Law

- North Dakota Constitution:
 - Section 3 of Article XI, General Provisions, of the North Dakota State Constitution:
 - “All flowing streams and natural watercourses shall forever remain the property of the state for mining, irrigating and manufacturing purposes.”

North Dakota Water Law

- North Dakota Century Code:
 - Section 61-01-01 defines “waters of the State” as
 - All waters within the limits of the state from the following sources of water supply belong to the public and are subject to appropriation for beneficial use and the right to the use of these waters for such use must be acquired pursuant to chapter 61-04:
 - 1. Waters on the surface of the earth, excluding diffused surface waters but including surface waters whether flowing in well-defined channels or flowing through lakes, ponds, or marshes which constitute integral parts of a stream system, or waters in lakes;

North Dakota Water Law

- 2. Waters under the surface of the earth whether such waters flow in defined subterranean channels or are diffused percolating underground water;
- 3. All residual waters resulting from beneficial use, and all waters artificially drained; and
- 4. All waters, excluding privately owned waters, in areas determined by the state engineer to be noncontributing areas. A noncontributing drainage area is any area that does not contribute natural flowing surface water to a natural stream or watercourse at an average frequency more often than once in three years over the latest thirty-year period.

North Dakota Water Law

- ❖ A water permit is required for all uses except when less than 12.5 acre-feet is used annually for domestic, livestock, fish and wildlife, or recreation
- ❖ These *de minimus* users can register their water use to preserve and document their priority date.

Water Permitting Process

- North Dakota Century Code Chapter 61-04 and North Dakota Administrative Code Article 89-03 outline the water permitting process.
- The priority date is the basis for determining seniority of the water permits.
- The type of beneficial use category is used only for applications received within 90 days requesting water from the same source.

Water Permitting Process

■ Beneficial Use:

- A right to appropriate water can be acquired for beneficial use only as provided in this chapter (NDCC 61-04).
- Beneficial use shall be the basis, the measure, and the limit of the right to the use of water.
- Use of water for a purpose consistent with the best interests of the people of the State:

Water Permitting Process

- Beneficial use:
 - North Dakota Century Code Section 61-04-06.1 recognizes beneficial use categories of:
 - Domestic Use
 - Municipal Use
 - Livestock Use
 - Irrigation Use
 - Industrial Use
 - Fish, Wildlife and other outdoor recreational uses.

Water Permitting Process

- 1) Receipt of Application, priority date
- 2) Public Notice
- 3) Comment Period
- 4) Recommended Decision
- 5) Additional Comments / Hearing
- 6) Final Decision
- 7) Issue Conditional Water Permit
- 8) Beneficial Use
- 9) Issue Perfected Water Permit

Water Permitting Process

- Water Permit Criteria
 - Effects on prior appropriators
 - Means of diversion or construction are adequate
 - Use of water is beneficial
 - Public interest

Water Permitting Process

■ Public Interest Factors

- Benefit to the applicant
- Effect of economic activity
- Effect on fish, game, and public recreation
- Alternate uses within a reasonable time
- Harm to other persons
- Intent and ability to develop

Water Permitting Process

- ❖ Temporary Water Permits
 - ❖ Valid up to 12 months
 - ❖ Simple application process
 - ❖ Does not create a water right
 - ❖ Filing fee structure to be instituted later this year

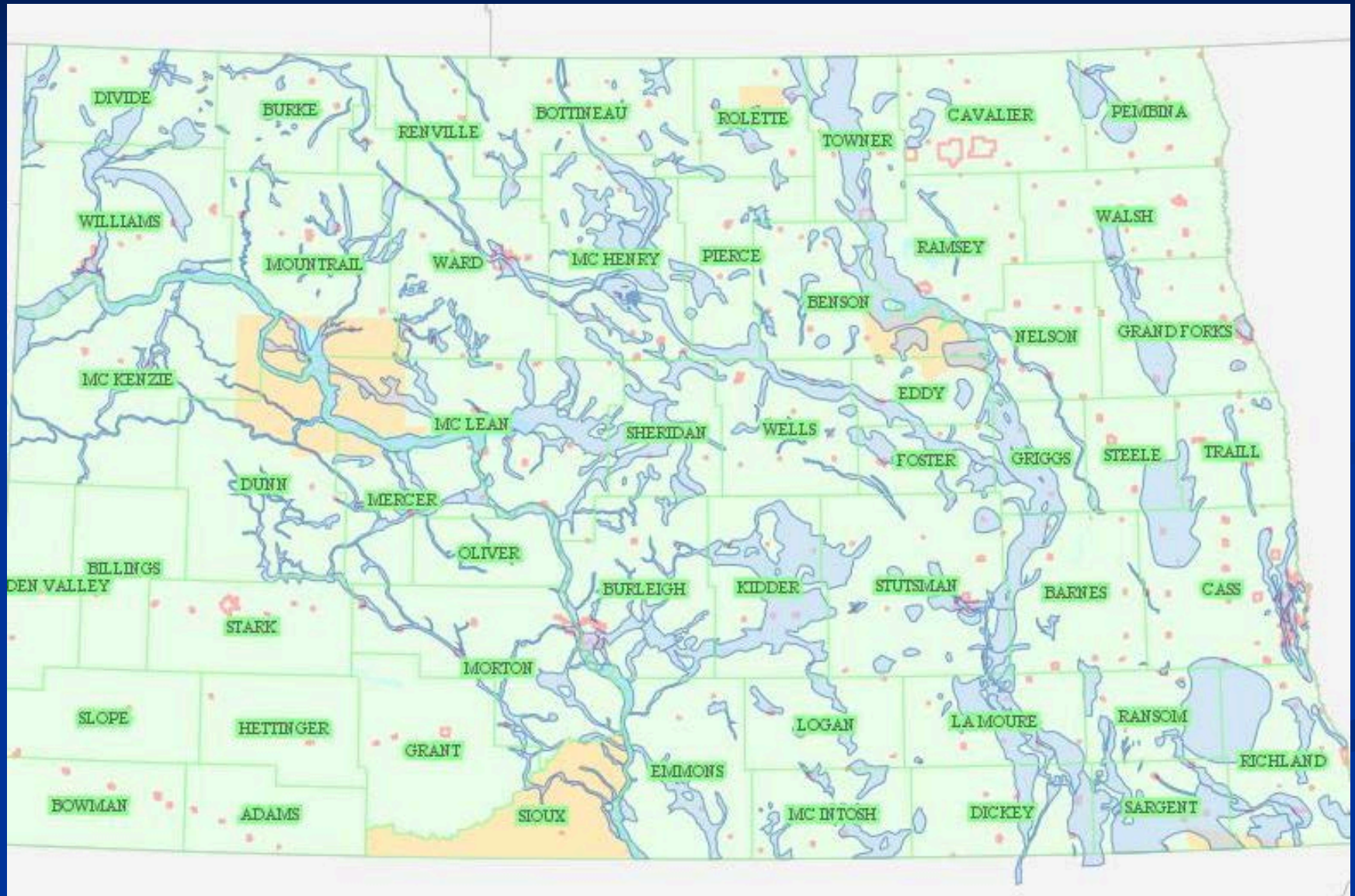
Management & Monitoring

- The State Engineers Office has been tasked with the proper management of the water resource since its inception in 1905.
- The Water Appropriation Division employs 23 Full Time Employees to manage and monitor the waters of the State.
- The State Water Commission's Information Technology group manages the various databases that the hydrologists use to manage & monitor the water resources.

Management & Monitoring

- The groundwater resources in North Dakota are managed and monitored using a state-wide network of observation wells.
 - 4,190 observation wells
 - Levels taken daily, monthly, quarterly
 - Using Water Appropriation Division personnel, contractors, or data loggers to collect the groundwater levels.
 - Data is downloaded or entered into the database

Management & Monitoring



Management & Monitoring

- 154 surface water monitoring gauges are used to manage the appropriation of surface waters.
 - Cooperative agreement with the United States Geological Survey (USGS) in cost share of several USGS gauges on major rivers.
 - 53 temporary stream gauges installed very spring, several with recorders capable of retaining hourly data for months.
 - Records from 177 discontinued stream gauges are retained for use by hydrologists in reviews.
 - Surface water managed by basins defined by Hydrologic Unit Codes (HUC) developed by USGS.

Management & Monitoring

- North Dakota Century Code Section 61-04-27:
 - On or before the thirty-first day of March of each year all persons holding a water permit shall file with the state engineer, on forms supplied by the state engineer, topographic, mapping, foundation test borings, design, water use, and such other information as the state engineer shall require.
 - The state engineer may also require any such persons to install measuring devices, which must conform to the state engineer's specifications, at all points specified by the state engineer.

Management & Monitoring

- Permit holders with these beneficial uses report water use annually, and are required to have water meter:
 - Municipal
 - Rural Domestic
 - Irrigation, excepting flood irrigation
 - Industrial
 - Industrial – Water Depot

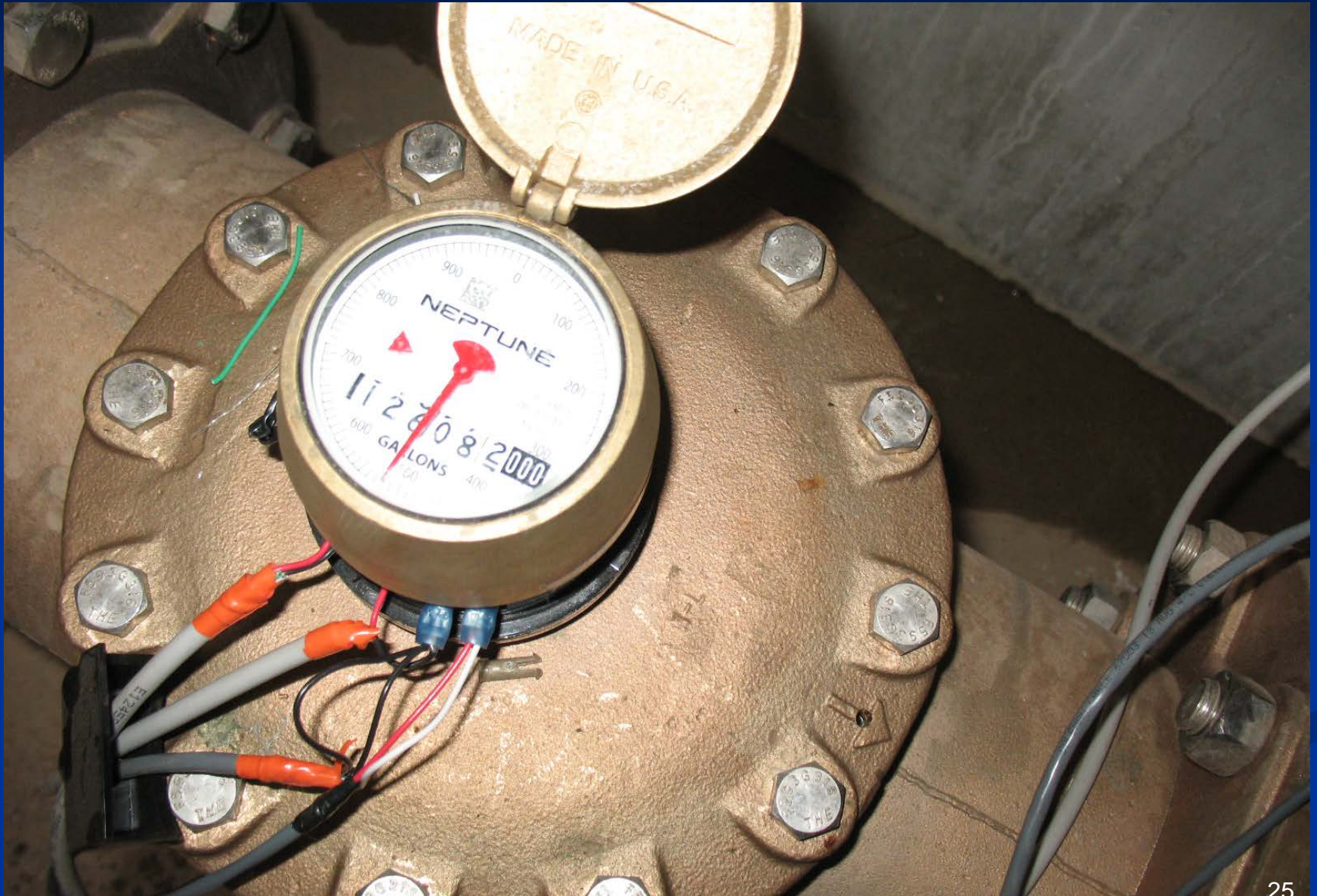
Management & Monitoring



Management & Monitoring



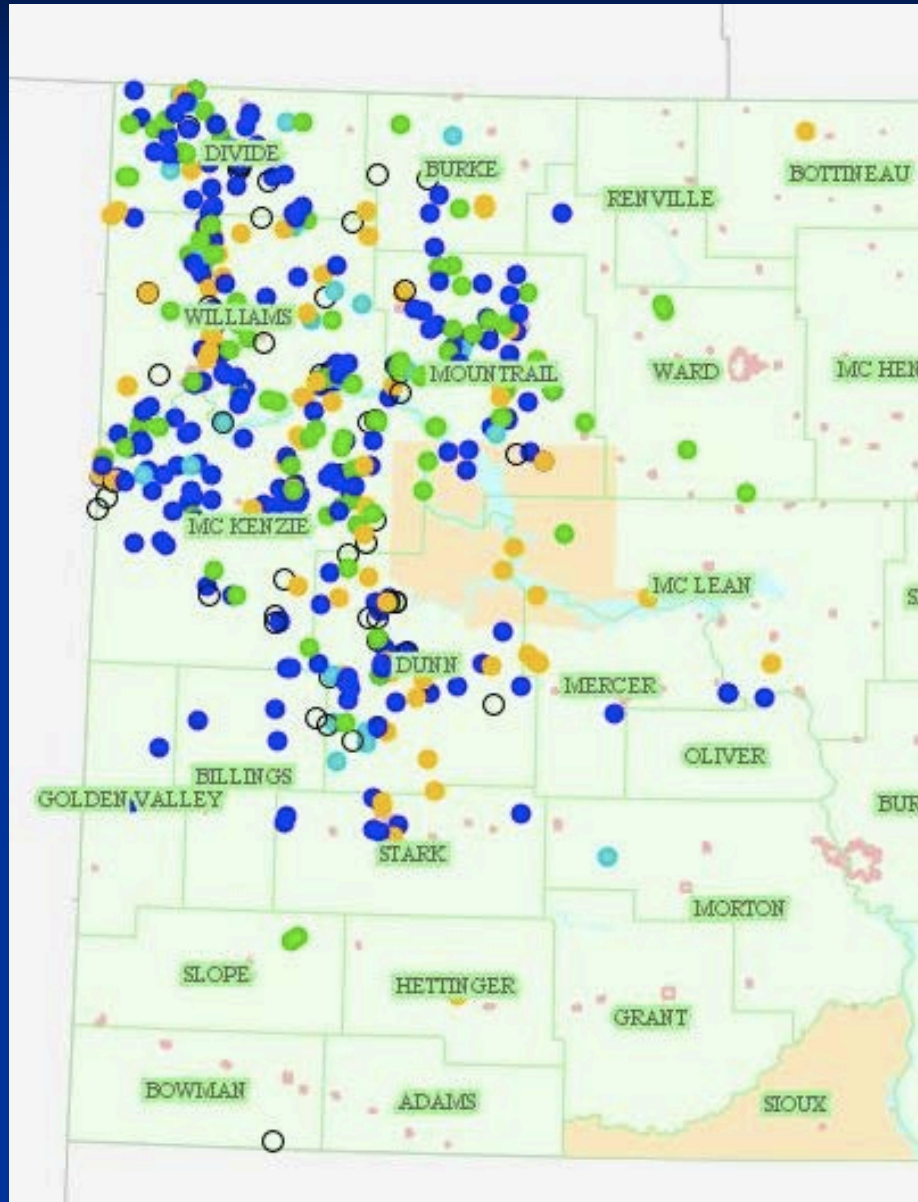
Management & Monitoring



Management & Monitoring

- Permit holders with Industrial – Water Depot designations report water use annually but must also report meter readings monthly.
- Fourteen violators in 2012 have been required to install real-time monitoring (telemetry) to automatically report meter readings daily.
- All permits with Industrial – Water Depot designations will be required to have telemetry by the end of 2014.

Management & Monitoring



Management & Monitoring

- Effective January 1, 2015, all permits associated with the sale of water to industry are required to have real-time monitoring (telemetry) that is capable of communicating with the State Engineers Office.

Management & Monitoring



Management & Monitoring

Relay State: Deactivated (Open)

Gallons (Aug02: 173,303,000): 0 Gallons

Tricon (Dodge GPM): 1.6 GPM

Battery: 4.51 V

Latest Connections

Next connection expected in about 1 hour

Today at 09:17 MST

Today at 08:18 MST

Today at 07:19 MST

Today at 06:19 MST

Today at 05:20 MST

Latest Data

Dodge Depot_27.csv

Dodge Depot_27.dtf

Dodge Depot_26.csv

Dodge Depot_26.dtf

Dodge Depot_25.csv

Device Information

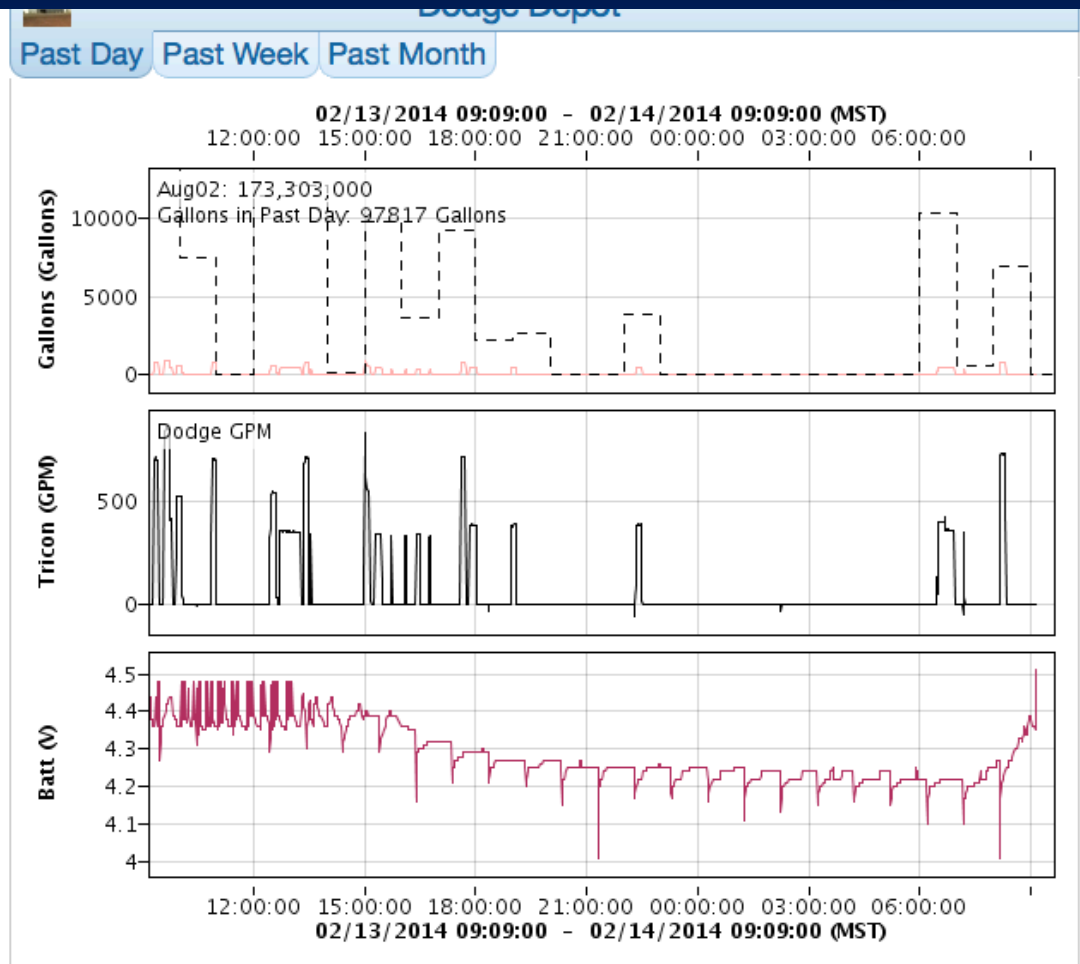
Status: Logging every 05 min

Memory: Wrapping

Battery Level: 100%

Nickname: Dodge Depot

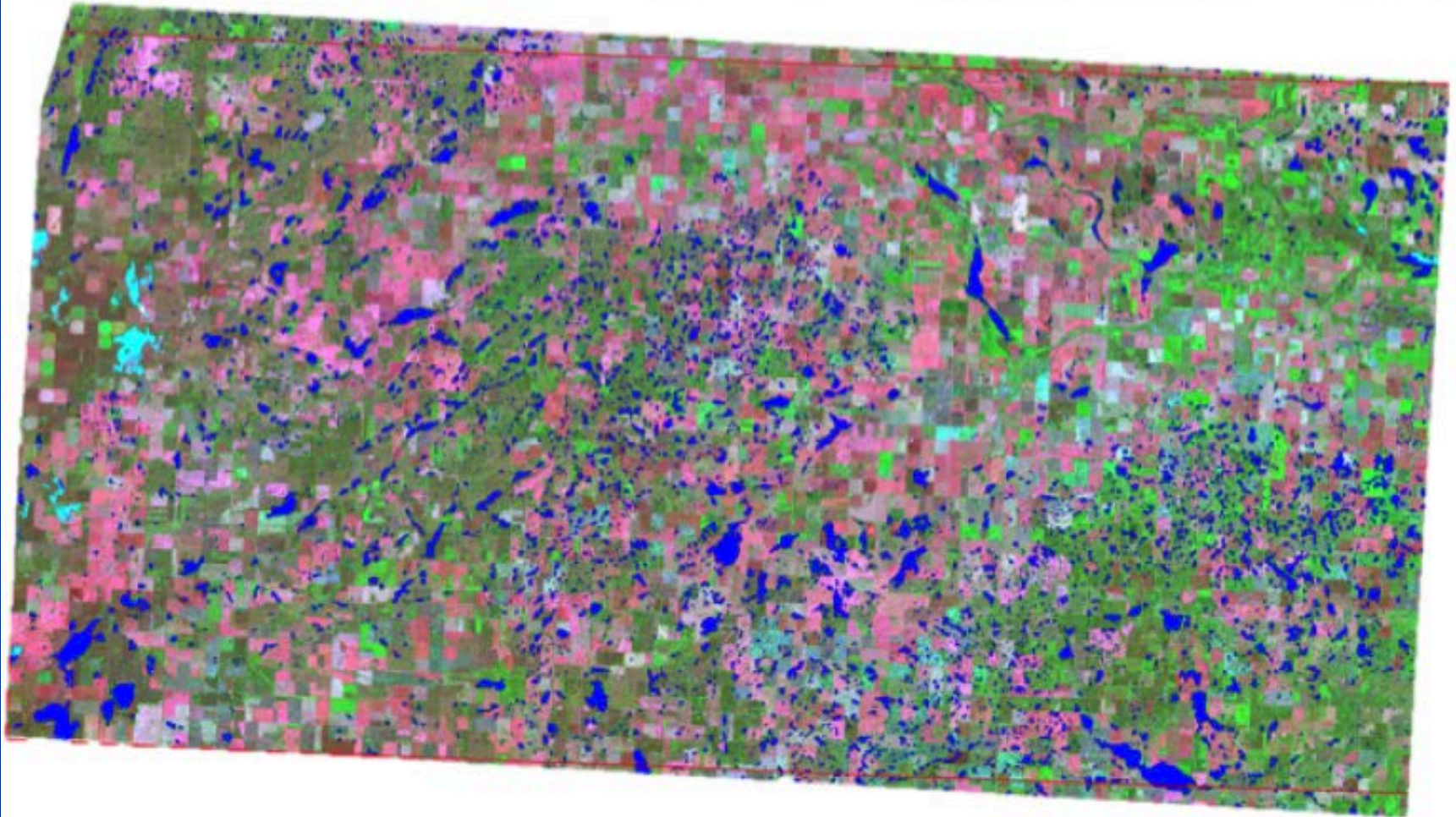
Serial Number (SN): 10044830



Management & Monitoring

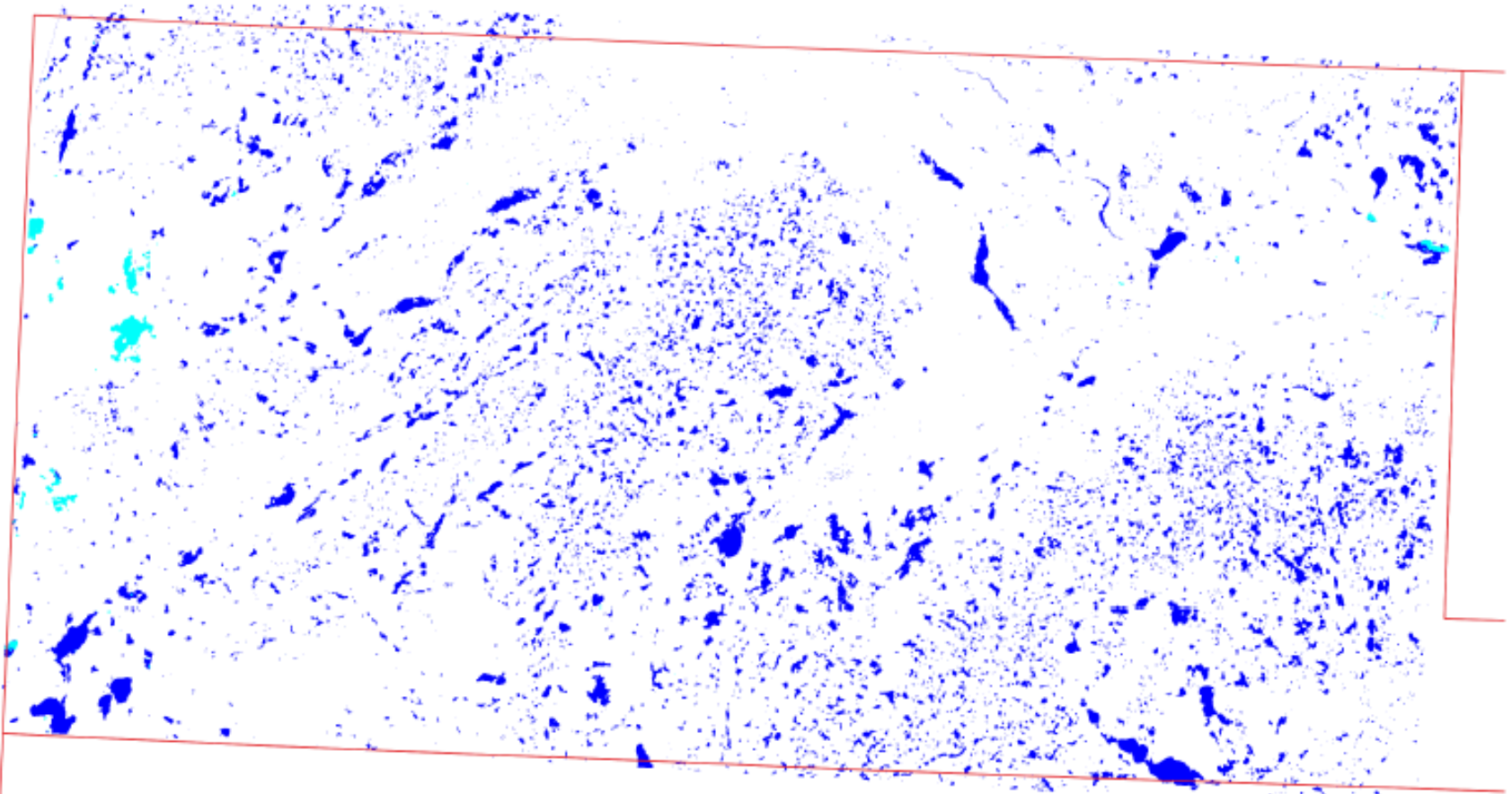
Landsat image for Divide County, North Dakota on September 17, 2013

Open water areas are dark blue, exposed soils are in shades of pink, vegetation is shades of green.



Management & Monitoring

Landsat image for Divide County, North Dakota on September 17, 2013
Extracted open water areas are dark blue and cover approximately 83 square miles.

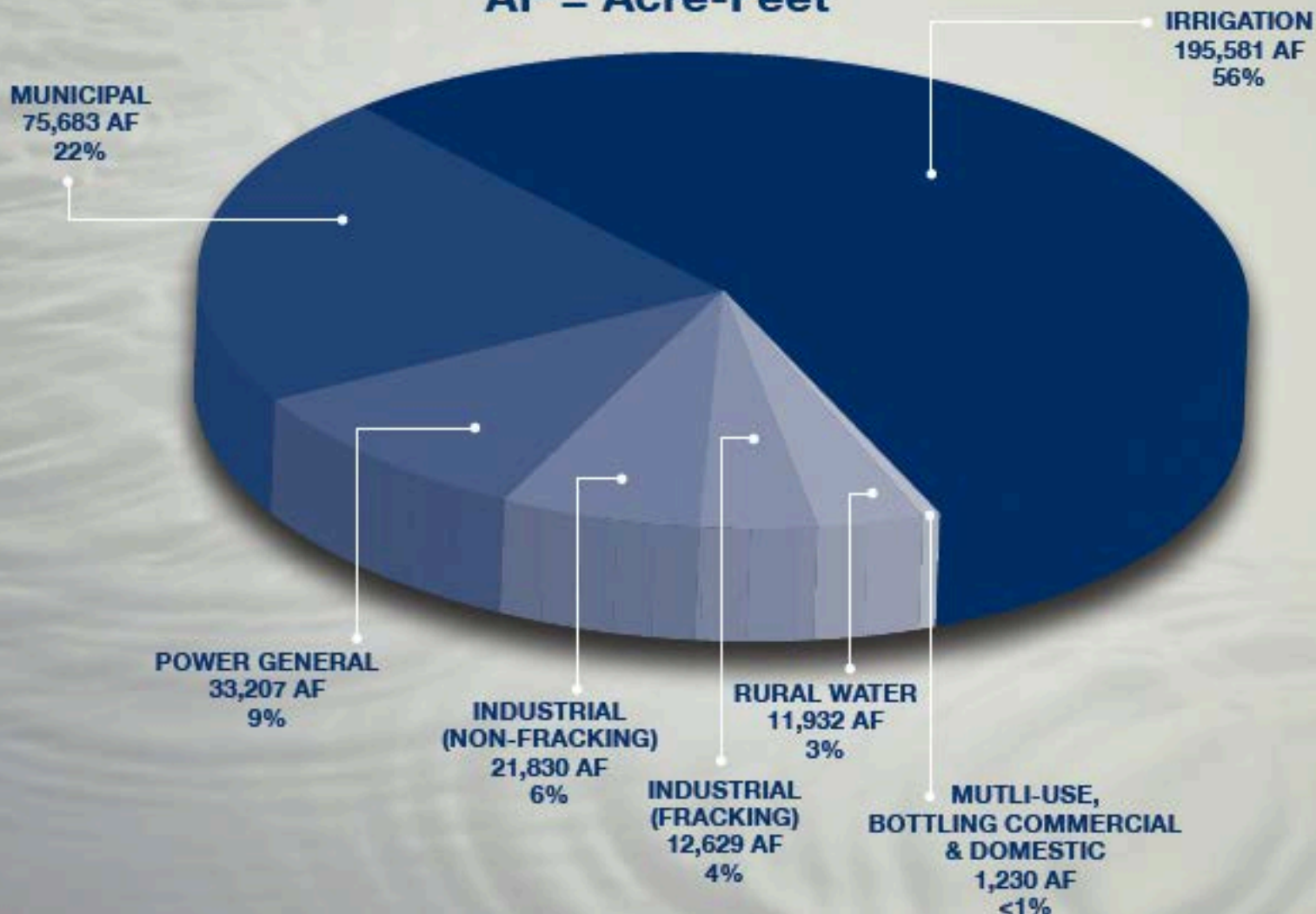


Temporary surface water permits account for less than 2% of the 2013 surface water area in Divide Co.

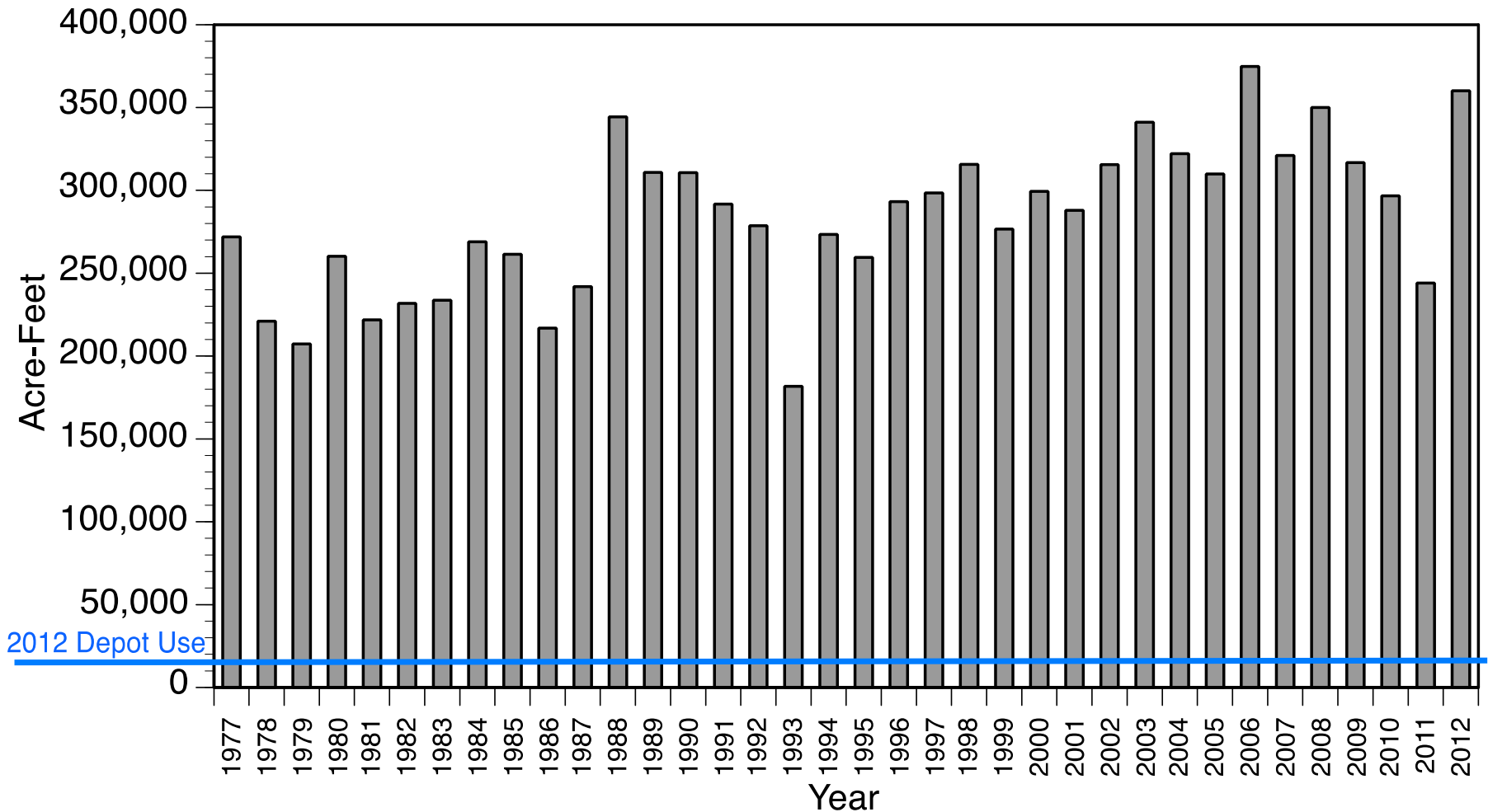
Management & Monitoring

2012 Consumptive Water Use in North Dakota

AF = Acre-Feet



Total Reported Annual Water Use for All North Dakota Water Permits



Note: The decline in reported water use during the years of 1993, 2010 & 2011 was primarily due to very wet growing seasons, which reduced the demand for irrigation water use.

Additional Information

- Water Appropriations Division of the State Engineers Office/State Water Commission
 - 900 East Boulevard, Bismarck
 - N46.817214 W100.778189
 - 701-328-2754
 - swc@nd.gov
- Maps and Data Resources:
 - www.swc.nd.gov
 - <http://mapservice.swc.nd.gov>
 - <http://survey.swc.nd.gov>

QUESTIONS?

THANK YOU