



LOWER NIOBRARA NATURAL RESOURCES DISTRICT

WINTER 2004/2005 NEWSLETTER

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Water Quality Cost Share Programs

The Lower Niobrara NRD has several financial assistance programs available to cooperators in the District. These cost share programs are available through the Natural Resources Water Quality Fund (NRWQF), which is funded in part by the pesticide applicator license fee. This fiscal year, the budget has set aside \$18,000 for the cost share programs. The following is an outline of the programs available in the District. All cost share applications must be approved by the District, prior to cooperator implementation of the program. For more information, details on specific cost share programs, or applications, please contact our office.

Automatic Rain Gauge Shut Off - The District will cost share 65% on the purchase of a rain gauge shut off for an irrigation system. Cost share will not exceed \$135 per shut off and is limited to 5 units/cooperator/year.

Automatic Drip Oiler - The District will cost share 65% on the purchase of a drip oiler, including the 4-gallon poly tank, for an irrigation pump. Cost share will not exceed \$130 per oiler and is limited to 5 units/cooperator/year.

Nitrogen Management - The purpose of this program is to encourage landowners to manage fertilizer application by knowing the fertilizer potential in the crop root zone and in the irrigation water. Cost share is made at 75% of actual costs, not to exceed \$1.50/acre. The maximum cost share for each cooperator per year is \$200. The cooperator is required to fill out the Annual Crop Report Form.

Livestock Manure Analysis - This program provides cost share for the shipping and analysis of livestock manure samples. Cost share is set at 65%, with a maximum of \$200/cooperator/year.

Domestic Well - The purpose of this program is to provide assistance to private well owners whose water for residential use has nitrate levels that exceed 10 ppm. Assistance will be for technical assessment and design, and where necessary for well replacement, filter purification systems, and pipelines. The District will provide 65% cost share, not exceeding \$800 on permanent well construction, \$500 on necessary pipeline for an existing water system, and \$800 on filtration or purification systems.

Well Abandonment - This program provides assistance for water wells abandoned in the District. The NRD will pay 65% of materials and labor cost of a licensed well driller or pump installer. Maximum cost share is \$500 per well and is based on well dimensions. Annual cost share per cooperator will not exceed \$1,500.

Soil Probe - The LNNRD has purchased 3' soil sampling probes for resale through the District office. The District will absorb 50% of the cost for landowner in the LNNRD. The cost to the cooperator will be approximately \$30. There will be a limit on one per landowner at this price. A soil sampling probe is a valuable tool for collecting soil samples for nutrient or moisture analysis. The analysis results can be very helpful in making fertilizer and irrigation management decisions.

Ground Water Management Plan

On July 1, 1996 the LNNRD implemented a Groundwater Management Area. This area included the entire District and with this designation came Phase I regulations. Phase I requirements are Nitrogen Management Certification and well permits before construction of wells pumping over 50 gpm. Along with these requirements the District discourages fall and winter application of nitrogen fertilizer until after March 1 and encourages irrigation water nitrate analysis and deep soil sampling.

The Lower Niobrara NRD has been sampling 455 wells throughout the District since 1996. According to the LNNRD's Groundwater Management Plan there are three phases in the water quality portion of the plan. The Phase I area includes all the land in the District where 50% of the monitoring wells indicate nitrate-nitrogen levels are 0-75% of the maximum contaminant level (MCL) for nitrates. The MCL for nitrates is 10 ppm. Phase II areas will be designated when concentration levels in 50% of the monitoring wells indicate levels greater than 75% of MCL. Phase III areas will be designated when nitrate nitrogen levels are greater than 95% of MCL.

According to samples collected, nitrate nitrogen levels show there are 2 main areas of concern in the District. On page 2 is a chart of the nitrate levels in the District. The LNNRD implemented a Phase II area north of Page on April 2, 2004. The District is proposing another Phase II area in the Atkinson/Stuart area and a small portion of Boyd County. An informational meeting and a public hearing are being planned for this area in the fall of 2005. Phase II requirements include: deep soil sampling, irrigation water analysis once every 4 years for irrigation wells, well permit required before well construction, restriction on applying nitrogen fertilizers prior to November 1, preferring application after March 1, preferring application in excess of 100 lbs of actual nitrogen be split applied, also animal waste must be properly applied and accounted for, and maintaining certification once every four years in Nitrogen Management. Operators must also submit a report for each crop planted including alfalfa to the NRD by December 31 following each crop year. This report is also required if no nitrogen was applied to the crop. Areas not designated as Phase II remain in Phase I.

Flowmeter

Flowmeters measure how much water is flowing through an irrigation system. Over time flow rates can change due to fluctuating water tables and normal pump wear and tear. Therefore original well registration information may not be accurate. The LNNRD has purchased a new portable Fuji flowmeter. This flowmeter attaches to the outside of the pipe to measure flow. This is a non-intrusive way of measuring flow in a full flowing pipe. Irrigators interested in measuring the flow through their irrigation system may call the office to make arrangements.

Is Your Well Protected

According to Nebraska law, all irrigation wells must be registered with the Department of Natural Resources. Domestic wells, including stock wells, need to be registered if they were drilled after September 9, 1993. An unregistered well is considered an illegal well. Registering your well protects your rights from neighboring well owners and spacing restrictions. It is also important to make sure your well registration (i.e. location, owner etc.) is correct. Incorrect information also makes the well an illegal well. You may check your well registration online at "<http://www.dnr.state.ne.us>" or the LNNRD can assist you with registration information.

Chemigation

The Lower Niobrara NRD received 939 applications to apply chemicals through an irrigation system. The District inspected 109 new and 392 renewal applications and also spot checks irrigation systems randomly throughout the chemigation season. To pass inspection, no water may leak through the mainline check valve and the chemical injection valve must be able to withstand 10 lbs of pressure without allowing fluid to pass through. Only 3 systems in the LNNRD did not pass due to a faulty mainline check valve or no check valve installed. The District carries Mister-Mist'r injection valves so if a chemical injection valve fails it can be replaced at the time of the inspection. These valves are sold for \$27.00 plus tax. Chemigation renewal applications are due to the NRD by June 1 of each year. Application forms are available at the NRD office in Butte.

Groundwater Level Changes

The LNNRD has monitored groundwater levels since 1975. The District currently takes readings from 66 irrigation and dedicated monitoring wells. Groundwater levels are measured in the spring and fall each year. The results of these measurements are used by the District to monitor groundwater level changes overtime.

Data over the past few years has shown a decline in groundwater levels due to little recharge. Results from fall 2004 show a decline of 2.7 feet from fall 2003 while the spring 2004 results show a decline of 3.6 feet from spring 2003. The charts show results by each county for spring and fall 2004.

Nitrate and Bacteria Water Testing

The LNNRD has lab equipment to test water for nitrates and bacteria. Anyone in the District may bring a water sample to be analyzed. A sample, the size of a baby food jar is all that is needed for a nitrate sample. Sterilize a plastic or glass container by washing it in a dishwasher, collect water from a cold water faucet by letting it run 10 minutes to clear water line, and triple rinse jar before taking sample. Bring sample to the NRD right away or keep the sample cool until it can be brought to the office. The NRD can also test for bacteria. Special bottles are available for bacteria testing at the office in Butte.

The West Knox Rural Water System in Verdigre has a bacteria testing kit. They can test water samples for bacteria at a cost of \$4 per sample.

LNNRD Groundwater Quality Monitoring Wells 2004 Nitrate Results						
	Boyd	Holt	K.P.	Knox	Rock	NRD
Number of wells sampled	5	186	14	6	11	222
Lowest Nitrate result (ppm)	1.3	0.4	<0.1	1.8	2	avg. in NRD 1.1
Highest nitrate result (ppm)	26.4	70	10	15.2	10.6	avg. in NRD 26.4
Average Nitrate result (ppm)	16.8	17.7	5.3	6.3	6.8	10.6
Number of wells w/ increase from 02-04	0	75	2	1	3	81
Number of wells w/ decrease from 02-04	3	58	2	2	4	69
Number of wells with no change from 02-04	2	53	10	3	4	72
Change in average nitrate from 02-04 (ppm)	-1.0	0.7	-0.2	-2.6	-5.5	-1.7

LNNRD Groundwater Levels Spring 2004						
	Boyd	Holt	K.P.	Knox	Rock	NRD
Number of wells	3	30	7	9	3	52
Number of wells lower than Spring 03	3	30	6	9	3	51
Number of wells higher than Spring 03	0	0	1	0	0	1
Number of wells unchanged since Spring 03	0	0	0	0	0	0
Greatest decline in one well (feet)	-1.5	-5.2	-9.3	-10.7	-2.3	avg. in NRD -5.8
Greatest rise in one well (feet)	0	0	0.4	0	0	avg. in NRD 0.4
Average change from Spring 03-Spring 04 (feet)	-1.3	-2.3	-1.9	-2.9	-1.9	-2.1
Average change Spring 04 compared to previous 4 year average (feet)	-2.5	-4.7	-3.0	-4.4	-3.6	-3.6

LNNRD Groundwater Levels Fall 2004						
	Boyd	Holt	K.P.	Knox	Rock	NRD
Number of wells	3	32	7	9	3	54
Number of wells lower than Fall 03	2	30	7	7	2	48
Number of wells higher than Fall 03	1	2	0	1	1	5
Number of wells unchanged since Fall 03	0	0	0	1	0	1
Greatest decline in one well (feet)	-3.1	-7.2	-6.5	-3.8	-1.2	avg. in NRD -4.4
Greatest rise in one well (feet)	1.1	0.2	0	2.6	5.2	avg. in NRD 1.8
Average change from Fall 03-Fall 04 (feet)	-0.9	-1.6	-1.6	-1.2	1.2	-0.8
Average change Fall 04 compared to previous 4 year average (feet)	-2.0	-4.1	-2.5	-2.8	-2.6	-2.7

Message from Duane Filsinger, General Manager LNNRD

After completing my second year as General Manager, I am pleased to review some of the 2004 activities and accomplishments. I will give you a snapshot of where we are currently, and the plans for our future in 2005.

Recalling the events of the past year, in January 2004, we attended the NARD Legislative Session. At that meeting we monitor and vote on current legislation that Nebraska lawmakers are working on and we meet and renew our associations with State Senators. During the spring we conducted Nitrogen Application Certification Classes. Our March event was the Water-fall of Knowledge held in O'Neill for the students from district schools that attend the 5th grade. Also, as spring arrives so do trees, mulch and staples. The tree planting was finished in April. During April Lower Niobrara moved to Phase II in our groundwater area north of O'Neill and Page to help with nitrate control. June highlight was the NARD meeting and tour from Sioux City through northeast Nebraska to view related projects and activities, Lower Niobrara was one of the hosts. The LNNRD continued its membership with the State Groundwater Management Coalition Team, where 13 NRD managers meet and monitor water related issues from across the state. During the fall we participated in Husker Harvest Days, attended the NARD Fall Conference in Kearney, and held 3 Eighth Grade Conservation Days. Lower Niobrara hosted both the High School Area Range and Land Judging Contests this past fall.

Ongoing events include committee meetings, with board approval and state approval of the Groundwater Quality Management Plan. We are moving forward with our Phase II Implementation north of Atkinson and Stuart. We continue participation in several meetings with State Senators and other public officials to discuss the Lewis and Clark sedimentation issues on the Missouri River. Work continues on reviving the Spencer Pond and monitoring State Bill 553 which may cause us to change our sub-districts.

During my second year I have been pleased to represent the LNNRD at numerous meetings and have covered many miles in 2004. We are well into 2005 and this year begins with Legislative issues and implementation of Phase II controls in some areas of our district to help reduce nitrate levels. One of our main concerns will be the lack of surface water. This drought continues to underline the importance of our large aquifer and the manner in which we continue to manage the quality and quantity of it.

I want to thank the staff, Vivian Frasch, Assistant Manager, and Janet Classen, Water Resources Coordinator, and Bernard Jorgensen, Manager West Knox Rural Water System for their continued support during the year.

Thank you also to the 17 member Board of Director team for their help and support this past year and I will look forward to our monthly board meeting as we work together to make decisions that allow our district to progressively move forward.

2004 Accomplishments

- 81,510,000 gallons of water were pumped through the West Knox Rural Water System.
- 24 water samples were analyzed for bacteria.
- 13 dedicated monitoring wells are located in the Lower Niobrara NRD.
- \$69,931.37 of NSWCP funds were administered as cost share assistance to area landowners for conservation practices.
- \$10,831.65 was paid out to 21 landowners, who enrolled 660 acres into WILD Nebraska.
- 34 contracts were approved for \$896,038 inside the EQIP priority area.
- Over \$2 million of EQIP funds have been obligated in LNNRD since 1997.
- 39 landowners using the District's native grass drills seeded 1347.6 acres.
- 830 renewal and 109 new chemigation permits were issued for a total of 939.
- 501 chemigation sites were inspected for compliance by District staff.
- 304 water samples were tested for nitrates.
- 52 water samples were analyzed for pesticides.
- LNNRD's Flow Meter was used to take measurements of irrigation water pumped at 47 sites.
- 54 wells were measured Spring and Fall for static water levels.
- 10 Nitrogen Certification Classes were held in conjunction with Upper Elkhorn NRD, of which 95 landowners were certified in the LNNRD.
- 23 fields were deep soil sampled in the Spring and Fall by LNNRD staff.
- 74 well permits were approved.
- 68 students participated in three Eighth Grade Conservation Days.
- 1 student attended the Natural Resources Leadership Camp at Halsey as a result of LNNRD assistance.
- Hosted high school area Land and Range Judging Contests.

Plant Trees

Once again it is time to be thinking about tree planting. Anyone interested in planting a windbreak, adding to an existing planting or ordering some hand plants should contact the Lower Niobrara NRD or your local Natural Resources Conservation Service (NRCS) office.

Trees are 65 cents each, with conservation weed barrier set at 35 cents per running foot. The District is available to plant your trees at 33 cents per tree with a \$100.00 minimum charge. Mulch installation is also available from independent contractors.

Tree survival is dependant on many factors, with the most important being ground preparation. A clean tilled site is best for tree survival and is required if mulch is to be installed. The fall is the best time to begin your site tillage before your spring tree planting.

Cost share assistance will be available again for the 2005 planting season for livestock windbreaks, homestead shelterbelts, wildlife plantings, and erosion prevention plantings. Cost share assistance up to 50% is available to qualified applicants.

As everyone knows the best time to plant a tree was twenty years ago. Since we missed the best time, we have to go with the second best time to plant a tree, which is now. For more information contact the LNNRD at (402) 775-2343 or your local NRCS office.

Available Tree Species for 2004-2005

Pines/Conifers

Eastern Red Cedar
Rocky Mountain Juniper
Colorado Blue Spruce
Jack Pine
Ponderosa Pine

Broadleaves/Hardwoods

Black Cherry
Black Walnut
Bur Oak
Cottonwood
Green Ash
Hackberry
Harbin Pear
Honeylocust
Silver Maple

Shrubs

American Plum
American Hazel
Amur Maple
Buffaloberry
Caragana
Chokecherry
Cotoneaster
Crabapple
Golden Current
Lilac
Manchurian Apricot
Nanking Cherry
Red Osier Dogwood
Sand Cherry
Skunkbush Sumac

EQIP

The Environmental Quality Incentive Program (EQIP) is one of several USDA conservation programs. EQIP is the single most utilized conservation program in recent years. 2004 saw a huge increase in the funding of EQIP. There was \$896,038 approved in new contracts within the Lower Niobrara NRD area this past year.

The EQIP program offers a 2-10 year long conservation contract to carry out conservation practices. NRCS staff will begin by developing a conservation plan with the applicant. If approved for funding, the applicant then receives an EQIP contract.

These conservation plans and contracts result in a variety of different conservation practices. Practices approved for funding in 2004 included: Ag waste systems, conversion of center pivot systems to low pressure nozzles, livestock dams, erosion control structures, windbreaks, grass seeding, cross fences, livestock wells, pipelines, tanks and wildlife habitat development.

All landowners are eligible to apply for the EQIP program. Applications that involve multiple practices to install, which will treat several resource needs, generally rank better and have a better chance of being approved than an application which is for a single practice.

Continuous CRP

The Conservation Reserve Program (CRP) was introduced with the 1995 Farm Bill and has been one of the most effective land improvement programs of all time. CRP provides annual payments to landowners for enrolling highly erodible land and other environmentally sensitive land to long-term vegetative cover such as grass and trees.

Continuous CRP allows landowners to sign up for certain practices any time during the year. Within the Lower Niobrara NRD, field windbreaks and shelterbelts have been the most commonly installed practices through Continuous CRP contracts. Farmable wetlands have also received a good deal of interest through Continuous CRP.

Beginning in June 2001, small farmable wetlands of 5 acres or less in size have been offered for enrollment into CRP. In addition to placing the wetland into CRP, a buffer of up to 3 times the wetland size may also be enrolled.

To be eligible for Continuous CRP, areas such as small farmable wetlands and windbreaks must meet crop history requirements. Your local USDA office personnel can determine if your area is eligible. In addition to receiving annual payments for up to 15 years, there are cost-share incentives available for installing the required cover. These incentives and cost share often cover over 90% of the landowners cost of establishing grass, trees, and shrubs. Continuous CRP has recently become the favorite program for landowners to utilize when installing shelterbelts due to the excellent cost share incentives given.

WKRWS

The West Knox Rural Water System will begin its 21st year of operation in 2005. The system pumped 81,510,000 gallons of water in 2004. The total number of meters at this time is 224, providing water to 2 villages and 190 rural subscribers.

The Rural Water System has water-testing equipment for testing presence of bacteria, nitrates, and water hardness. Monthly water tests for bacteria are still sent to a certified lab. The most recent nitrate test sent in November 2004, resulted in a level of 4.1 PPM. The maximum safe contamination level for nitrates is 10 PPM.

Chlorinating equipment was done on a maintenance basis and at times during the summer and fall when water temperatures are warmer.

The West Knox Rural Water System is dedicated to serving its customers with high quality water and reasonable rates. A new well field was added to make it possible to continue serving quality water in the coming years. The Rural Water System can be reached by calling (402) 668 - 7223.

Lower Niobrara NRD Board of Directors

Larry Baumeister, Chairman	Stuart
Jack Engelhaupt, Vice Chairman, RCND Rep	Butte
Jack Reiman, Treasurer	Naper
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Kenard Kreycik, Lewis & Clark Rep	Niobrara
Arden Uhlir, Lewis & Clark Rep.	Verdigre
Dave Beck	Mills
Don Boettcher	Spencer
Roger Frickel	Atkinson
Lynn Grass	Page
Don Holtgrew	Atkinson
Dennis Hrbek	Lynch
Gary Woita	Atkinson

District Staff

Duane Filsinger	General Manager
Vivian Frasch	Assistant Manager
Janet Classen	Water Resources Coordinator

West Knox Rural Water System

Bernard Jorgensen	Manager
Marilyn Frank	Bookkeeper
Milan Jensen	Maintenance Asst.
Wendell Rohrer	Maintenance Asst.

County NRCS Clerks

Jeanne Frickel, Boyd	Allison Ganow, Holt
Jeanne Koenig, Knox	Barb Shannon, Keya Paha & Rock