Watershed Semi-Annual Report for Reporting Year 2015

Please complete and submit to your project manager.

Reporting Period:  □ January 1 through June 30 (Due August 1)
☑ July 1 through December 31 (Due February 1)

All information is required by the U.S. Environmental Protection Agency (EPA) and the Minnesota Pollution Control Agency (MPCA). Do not leave blanks (unless otherwise noted). This report form can be typed using your computer. Use the "tab" key to move through the fields of this form. Enter responses using text and check boxes as indicated. Keep a copy for your records.

I. General Report Information

1. Project title:  Heron Lake Third Crop Phosphorus Reduction Effort
2. Project sponsor (Grantee):  Heron Lake Watershed District
3. Contact name:  Jan Voit, District Administrator
4. E-mail address:  jan.voit@mysmbs.com
5. Funding:  ☑ 319 CWP □ Clean Water Fund □ Other:
6. Contract number:  69593
7. MPCA Project Manager:  Katherine Pekarek-Scott
8. Effective date (mm/dd/yyyy):  7/1/2014  Expiration date (mm/dd/yyyy):  8/31/2017

II. Semi-annual Report Information

1. Project activities completed during last six (6) months according to the program objectives or tasks (please be specific):
   
   Objective 1. Task A. On August 26, 2015, Jerry Ackermann contacted Jan Voit regarding cover crop seeding.
   
   Objective 1. Task A. Nancy Ackermann contacted Jan Voit on August 29, 2015. The cover crops on their property and the Christoffer property were seeded that day. The Perkins and Hansberger sites were seeded on August 30, 201.
   
   Objective 1. Task B. Andy Nesseth submitted the soil sample results summary on December 14, 2015.
   
   Objective 2. Task A and B. On July 2, 2015, contact was made with potential committee members. A memo was sent to the members on July 7, 2015. Catherine Sereg and Jan Voit met on July 16, 2015 to plan the steering committee meeting. The meeting agenda and detailed agenda were drafted. The agenda was sent to committee members on July 17, 2015.
   
   Objective 2. Task B. The Crop Steering Committee met on July 28, 2015. Following an evening meal and an ice breaker, introductions were given. An explanation of the grant and description of expectations were discussed. A snow card activity was done for the question, “what does water quality mean to you?” Discussion was held regarding meeting dates and times, the Cover Crop Learning Tour, expectations, and the end result of the steering committee efforts.
   
   Objective 2. Task B. The Crop Steering Committee set the meeting date in conjunction with the Cover Crop Learning Tour on September 15, 2015. A memo and information about the tour was sent to committee members on August 25, 2015.
   
   Objective 2. Task B. Catherine Sereg and Jan Voit met on September 1, 2015 to plan the next Cover Crop Steering Committee meeting. The meeting was held on September 15, 2015 in conjunction with the Cover Crop Learning Tour. There were six committee members in attendance. The Crop Steering Committee met on July 28, 2015.
   
   Objective 2. Task B. The Cover Crop Learning Tour was held on September 15, 2015 at the Ackermann farm. Registration was held from 8:30 a.m. to 9:00 a.m. Participants were divided into four groups and attended rotating stations that included a research plot tour, soil health evaluations, experiences with cover crop programs, and managing risk. Following lunch six University of Minnesota (UM) graduate students gave an overview of their individual projects. An update on crop insurance implications with cover crops was given. The tour ended with the Pennsylvania State Interseeder, high-clearance drill, strip till, and RowBot equipment demonstrations.
   
   Objective 2. Task B. At their meeting on September 15, 2015, the Cover Crop Steering Committee asked for an opportunity to visit cover crop fields after harvest. They also suggested that area farmers also be invited. On October 8, 2015, Catherine
Wegehaupt and Jan Voit met with Jerry and Nancy Ackermann to begin planning the event. It was decided to begin with a few short presentations and then visit harvested cover crop fields. An agenda and flyer were drafted. The documents were distributed to project partners for comments.

Objective 2. Task B. On October 21 and 22, 2015, time was spent revising the flyer and press release for the cover crop field day. A mailing list was developed. The flyers were mailed on October 26, 2015.

Objective 2. Task B. On October 22, 2015, the press release for the Conversations about Cover Crops was drafted and distributed. A flyer and mailing list were created. The flyer and press release were mailed on October 26, 2015.

Objective 2. Task B. Information about the cover crop event was published in The Farmer magazine on November 5, 2015.

Objective 2. Task B. The flyer and press release were mailed to additional addresses that were provided on November 2, 2015. PowerPoint presentations were created for Christoffer, Ackermann, Brunk, and Post on November 5, 2015. Revisions were made on November 9 and 10, 2015.

Objective 2. Task B. The HLWD hosted Conversations about Cover Crops on November 10, 2015 from 8:30 a.m. to 11:30 a.m. Participants met at the American Legion Hall in Okabena. Coffee and cookies were served during registration. The event included presentations about 2015 cover crop results from Bryan Biegler, Brian Post, Bruce Brunk, Tim Hansberger, Dave Christoffer, Jerry Ackermann, and Darwin Roberts. Following the question and answer session, attendees made a site visit to harvested cover crop fields. In addition, a map was provided that contained the locations of cover crop fields in Jackson and Nobles Counties. There were 36 people in attendance. Of those, four were Cover Crop Steering Committee members.

Objective 2. Task B. On November 16, 2015, an article regarding the Conversations about Cover Crops was published in the Daily Globe.

Objective 2. Task C. The cover crop seeding summary was drafted on September 10, 2015. The document was uploaded to the website on September 14, 2015.

Objective 3. Task A. An article regarding the Third Crop Phosphorus Reduction Effort was published in the Tri State Neighbor on August 7, 2015.

Objective 3. Task A. On October 5, 2015, the Corn and Soybean Digest article regarding the cover crop grant was distributed to project partners.


2. **List all products (documents, pamphlets, videos, maps, etc.) produced in this reporting period:**

   - Agenda - July 28 Steering Committee meeting
   - Memo to steering committee
   - Ground rules
   - July 28 detailed agenda
   - July 28 Steering Committee minutes
   - September 15 detailed agenda
   - September 15 meeting minutes
   - Tri State Neighbor article
   - Corn + Soybean Digest article
   - Daily Globe article
   - Infiltration test results
   - Flyer
   - Press release
   - Ackermann Ppt presentation
   - Brunk Ppt presentation
   - Christoffer Ppt presentation
   - Post Ppt presentation

3. **Challenges faced (optional):**

   n/a
4. Summary of monitoring data collected (if applicable):

Infiltration Test Results

All sites have similar tillage practices, no till beans and strip till corn. Three out of the 4 test sites were completed on soybean fields and the other was a corn field. We timed each inch of water that was infiltration within the ring’s surface water for one hour.

The weather was much different in 2014 than 2015. 2014 was very dry in the fall, very wet in the summer (June) and dry in the fall. In 2015, spring was dry, but summer and fall had regular rainfall events. Because of the difference in the weather you see different infiltration rates between 2014 and 2015.

The 2015 fall season brought more moisture than 2014. The Nobles County infiltration test locations have soils with a high water holding capacity and showed higher infiltration rates than Jackson County. In Nobles County, the infiltration rate was 7 and 8 inch per hour. We see similar results for the Jackson County infiltration test locations. As expected, these sites seen slower rates due to their “poorly drained” soil characteristics. The infiltration rate was 3 and 4 inches per hour. All infiltration test were completed on October 21, 2015 and October 22, 2015. Both counties had higher soil moisture, causing the infiltration rates to be slower compared to the past year.

Soil Sample Results

Christoffer:
Six composite soil tests were taken in November 2015 from 0-6” and sent to MVTL Laboratories to be analyzed for Organic Matter, pH, Buffer pH, Phosphorus, Potassium, and Zinc. Soil texture was determined by examining the NRCS Soil Survey for Jackson County. Organic matter is high averaging 5.4% which is fairly typical for the region and soil types. The soil pH is approximately 7.0 in the top 6 inches. Again, this is within the ranges expected for the soil types in the field. Soil phosphorus is averaged 10 ppm on the weak Bray test. Soil potassium averaged 166 ppm. Zinc levels averaged 2.2 ppm Soils are calcareous in nature and are fine textured.

Perkins:
Six composite soil tests were taken in November 2015 from 0-6” and sent to MVTL Laboratories to be analyzed for Organic Matter, pH, Buffer pH, Phosphorus, Potassium, and Zinc. Soil texture was determined by examining the NRCS Soil Survey for Nobles County. Organic matter is high averaging 4.5% which is fairly typical for the region and soil types. The soil pH is slightly acidic averaging 6.6 in the top 6 inches. Soil phosphorus averaged 14 ppm on the weak Bray test. Soil potassium averaged 132 ppm. Zinc levels averaged 1.9 ppm. Soils are calcareous in nature and are fine textured.

Hansberger:
Twelve composite soil tests were taken in November 2015 from 0-6” and sent to MVTL Laboratories to be analyzed for Organic Matter, pH, Buffer pH, Phosphorus, Potassium, and Zinc. Soil texture was determined by examining the NRCS Soil Survey for Nobles County. Organic matter averaged 4.4%, which is fairly typical for the region and soil types. The soil pH is neutral averaging 7.3 in the top 6 inches. Soil phosphorus averaged 22 ppm on the weak Bray test. Soil potassium averaged 186 ppm. Zinc levels averaged 2.0 ppm. Soils are calcareous in nature and are fine textured.

Ackermann:
Six composite soil tests were taken in November 2015 from 0-6” and sent to MVTL Laboratories to be analyzed for Organic Matter, pH, Buffer pH, Phosphorus, Potassium, and Zinc. Soil texture was determined by examining the NRCS Soil Survey for Jackson County. Organic matter averaged 4.5% which is fairly typical for the region and soil types. The soil pH averaged 6.9 in the top 6 inches. Soil phosphorus averaged 16 on the weak Bray test. Soil potassium averaged 151 ppm. Zinc levels averaged 1.3 ppm. Soils are calcareous in nature and are fine textured.

Overall, there were very small changes in soil fertility characteristics that are likely the result of sampling variability and/or soil mineralization.

4a. Have all monitoring stations been established in EQuIS?  □ Yes  □ No  ☒ N/A

4b. Are the data being routinely submitted for storage into EQuIS?  □ Yes  □ No  ☒ NA

If yes, last submittal date (mm/dd/yyyy): __________________________

5. Are the Best Management Practices data being annually entered into eLINK?  □ Yes  □ No  ☒ N/A

If yes, date last entered (mm/dd/yyyy): __________________________

6. Describe specific (quantifiable, if possible) results achieved during this period:

n/a

<table>
<thead>
<tr>
<th>Phosphorus Load Reduction:</th>
<th>n/a</th>
<th>lbs./year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitrogen Load Reduction:</td>
<td>n/a</td>
<td>lbs./year</td>
</tr>
<tr>
<td>Sediment Load Reduction:</td>
<td>n/a</td>
<td>lbs./year</td>
</tr>
</tbody>
</table>
7. Did the MPCA execute a change order or amendment for this project during this reporting period? No ☐  Yes ☐
If yes, summarize those changes:

8. List anticipated program objectives or tasks to be completed during the next six (6) months please be specific:
   Objective 1. Task A: Cover crop termination.
   Objective 1. Task B: Schedule approximate dates to take tillage transects, soil samples, and infiltration measurements.
   Objective 2. Task B: Hold semi-annual meeting.
   Objective 2. Task C: Update web page on the HLWD website.
   Objective 3. Task A: Submit annual report.

III. Expenditure Information for this Period
Provide a copy of your work plan budget showing cumulative expenditures and budget balances by work plan objective and task. Also, fill out the summary below.

☑ Expenditure Report attached

Complete the table below:

<table>
<thead>
<tr>
<th>Complete the table below:</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Grant Amount</td>
<td>$33,120.00</td>
</tr>
<tr>
<td>Total Match Amount (if applicable)</td>
<td>$30,980.00</td>
</tr>
<tr>
<td><strong>Total Project Amount</strong></td>
<td><strong>$64,100.00</strong></td>
</tr>
<tr>
<td>Grant Expenditures this period</td>
<td>$7,387.20</td>
</tr>
<tr>
<td>Match Expenditures this period (if applicable)</td>
<td>$4,276.25</td>
</tr>
<tr>
<td>Cumulative Grant Expenditures to date</td>
<td>$16,452.80</td>
</tr>
<tr>
<td>Cumulative Match Expenditures to date (if applicable)</td>
<td>$20,959.83</td>
</tr>
<tr>
<td><strong>Total Cumulative Expenditures to date</strong></td>
<td><strong>$37,412.63</strong></td>
</tr>
</tbody>
</table>

Date form completed (mm/dd/yyyy): 12/29/2015