

SUBJECT: Presentation of 2011 Laboratory of the Year Awards

FOR: MARCH 2011 BOARD MEETING

TO BE PRESENTED BY / TITLE: Camille Turcotte / Chief, Environmental Science Services

**SUMMARY:**

The Department present annually the Registered Laboratory of the Year Awards to recognize Wisconsin's best registered laboratories for their outstanding commitment to producing high quality data. Awards are offered in two categories: Large Registered Facility and Small Registered Facility. This will be the 16th consecutive year the Department has presented the awards.

The 2011 Large Registered Facility Award will be presented to the Fond du Lac Regional Wastewater Treatment Facility. The 2011 Small Registered Facility Award will be presented to the New Holstein Wastewater Treatment Plant.

The nomination papers, along with an overview of the award selection criteria, are included in the attached memorandum.

**RECOMMENDATION:**

**LIST OF ATTACHED MATERIALS:**

- No  Fiscal Estimate Required
- No  Environmental Assessment or Impact Statement Required
- No  Background Memo

- Yes  Attached
- Yes  Attached
- Yes  Attached

**APPROVED:**

*John R. Sullivan*  
Bureau Director,

2/10/2011  
Date

*Cynthia J. Johnson*  
Administrator,

2/10/2011  
Date

*Matt Mowrey*  
Secretary, Cathy Stepp

2/14/11  
Date

- cc: NRB Liaison  
DNR Rules Coordinator
- John R. Sullivan - SS/7  
Joseph W. Renville - LS/8  
Tom Trainor - SS/Green Bay



## *2011 Wisconsin DNR Registered Laboratory of the Year Instruction Form*

The Wisconsin Department of Natural Resources is asking for nominations for registered laboratories that are worthy of receiving the prestigious “Registered Laboratory of the Year (LOY)” award. This award is presented annually\* in order to recognize registered laboratories for their outstanding commitment to producing high quality data.

### **Please note:**

- Nominees for the award must be registered laboratories located in the State of Wisconsin.
- Certified laboratories are not eligible and therefore will not be considered.
- Laboratories may be nominated multiple times and can win this award more than once.
- A LOY awards committee will choose a winner in the small lab category and a winner in the large lab category (categories will be determined by the DNR).
- Nominations can be made by anyone with the exception that laboratories may not nominate themselves.

### **To nominate a registered laboratory for the 2011 Laboratory of the Year Award:**

1. Complete the attached form.
2. Write a summary describing the reasons why you are nominating the laboratory. In the summary, please address the questions asked. Answers to these questions will be used in choosing the winner. All of the questions may not apply to all labs – if they don’t apply then they do not need to be answered. Please limit the summary to two pages or less.
3. Submit the form and summary by **January 14, 2011**.
4. Please send the completed nomination form and summary to:

Wisconsin DNR  
Laboratory of the Year Award  
c/o Camille Johnson  
625 E. County Road Y, Suite 700  
Oshkosh, WI 54901  
Or send via email: [camille.johnson@wisconsin.gov](mailto:camille.johnson@wisconsin.gov)  
Or fax: 920-424-4404

\* The Department reserves the right to decide if awards will be issued or not.

## **Nomination Criteria for Laboratory of the Year Award:**

**Please provide an answer for each of the questions listed below (unless not applicable).**

- 1. Describe what quality control (QC) samples the laboratory analyzes that are above minimum requirements (if possible give the frequency that each of them is analyzed).**
- 2. Discuss how often the laboratory has QC failures and how they respond to them.**
- 3. Describe how well the laboratory documents maintenance activities and corrective actions.**
- 4. Explain if the laboratory performs any testing of registered parameters beyond what is required by their permit (i.e. extra samples analyzed).**
- 5. Describe any unique or advanced techniques the laboratory uses to improve their data quality.**
- 6. Discuss any special ways the laboratory uses QC or compliance sample results to improve their operations.**
- 7. Discuss any unique or exceptional ways in which the laboratory performs their testing that improves data quality.**
- 8. Discuss the degree to which the laboratory has established their quality system and how well it is adhered to.**
- 9. Discuss any other reasons why you believe this laboratory is worthy of nomination for the Laboratory of the Year award.**



***2011 Wisconsin DNR  
Registered Laboratory of the Year  
Nomination Form***

Due January 14, 2011

<b>Name of Laboratory</b>	Fond du Lac Water Pollution Control Plant
<b>Laboratory Manager</b>	James Kaiser (Lab Coordinator and Analyst)
<b>Other Key Laboratory Employees</b>	Richard (Dick) Graham (40 yrs exp) and Autumn Fisher
<b>Laboratory Address</b>	P.O. Box 150 (700 Doty Street) Fond du Lac 54935
<b>Laboratory Phone Number</b>	920-322-3665
<b>Nominator (your name)</b>	Camille Turcotte
<b>Your Affiliation with Laboratory</b>	Auditor
<b>Your Address</b>	101 S Webster St Madison
<b>Your Phone Number</b>	920-765-3018
<b>Your Email Address</b>	<u><a href="mailto:Camille.Turcotte@wisconsin.gov">Camille.Turcotte@wisconsin.gov</a></u>
<b>Is a 1-2 page summary attached?</b>	yes

## Fond Du Lac WPCP

- 1. Describe what quality control (QC) samples the laboratory analyzes that are above minimum requirements (if possible give the frequency that each of them is analyzed).** Replicates are analyzed for BOD, TSS, and phosphorus even though they are not required (ammonia is usually ND so replicates are pointless). Three GGA standards and 3 BOD blanks are analyzed on each analysis day. The lab has chosen to continue analyzing QCS and use them as continuing verifications of capability for their analysts. Second source standards are used for phosphorus and ammonia LCS (90-110% acceptance). Four ICVs are analyzed after each phosphorus curve. TSS samples are always dried to a constant weight and the balance is checked with three weights on a monthly basis. Up to 1000mL of sample is analyzed. 4-5 dilutions are analyzed for BOD to ensure at least 3 good dilutions.
- 2. Discuss how often the laboratory has QC failures and how they respond to them.** QC failures are very rare – control charts are used for tracking and to see trends. A monthly QC checklist is prepared summarizing any issues and corrective action is taken. Even with running BOD 6 days (7 compliance samples) a week, 3 BOD blanks and 3 GGA a day - the BOD blank and GGA failures are very rare. They analyze 16 blanks and 16 GGA a week. All NH<sub>3</sub> LCS were within 10% recovery. Phosphorus CCV exceedances are very rare as well and most the recoveries were within 5%. Replicates are all very precise and rarely exceed tight control limits. PT and QCS results are very close to true value.
- 3. Describe how well the laboratory documents maintenance activities and corrective actions.** They create detailed monthly summaries of QC and maintenance issues/tasks.
- 4. Explain if the laboratory performs any testing of registered parameters beyond what is required by their permit (i.e. extra samples analyzed).** They do their required testing of influent and effluent BOD and TSS 7 days a week and effluent also for phos and ammonia 7 days a week – can't really do more than that.
- 5. Describe any unique or advanced techniques the laboratory uses to improve their data quality.**

They have both analysts analyze all QCS samples to check their abilities. If the results are not very close they do another QCS even if the results were in the acceptable range. Extra samples are analyzed for BOD dilutions to insure a good fit
- 6. Discuss any special ways the laboratory uses QC or compliance sample results to improve their operations.**

Their use of QC charts and summaries is somewhat unique these days. They also do replicates to track their progress. Results are used to work with their industries to improve plant operations. QC results are used to make sure the lab staff are well trained and performing well. PT test results are graphed with the true value to make reviewing easier.

## Fond Du Lac WPCP

7. **Discuss any unique or exceptional ways in which the laboratory performs their testing that improves data quality.**
  
8. **Discuss the degree to which the laboratory has established their quality system and how well it is adhered to.**

The quality system is very well prepared and followed. There is an excellent quality manual and SOPs. There are logbooks or binders for all activities and it is very organized. Summaries and QC charts are used extensively to track system performance. Benchsheet traceability is top notch – contributing to excellent tracking system. Reagent records were fully traceable. DMR qualification is done well.

9. **Discuss any other reasons why you believe this laboratory is worthy of nomination for the Laboratory of the Year award.**

Mark Stanek wrote in support of Fond du lac: *“I am the Wastewater Engineer that oversees compliance for the Fond du Lac Water Pollution Control Facility. I work directly with James Kaiser who is the Chemist for the laboratory at the treatment facility.*

*I strongly support the nomination of the city of Fond du Lac for the Lab of the Year Award in the Large Category. I have worked closely with James Kaiser – Chemist, since 1997. James supervises the laboratory and is the point of contact for their pretreatment program. The city of Fond du Lac has a delegated pretreatment program and part of that responsibility involves extensive sample collection and analysis of wastewater discharges from industrial contributors. The Fond du Lac laboratory has always been very open and responsive to Department requests for data, bench sheet checks, and chain of custody requests. The Fond du Lac laboratory provides extensive analysis for quality control parameters that allow the treatment plant operators to operate its biological wastewater treatment facility at a high level of efficiency. This treatment facility discharges an average of 7 million gallons per day into Lake Winnebago. The city of Fond du Lac Water Pollution Control Facility provides wastewater treatment to its residents, a large variety of industrial contributors and residents of outlying sanitary districts.”*

The Fond du Lac wastewater lab analysts are very knowledgeable, hardworking and dedicated to generating quality data. There was not single deficiency at their last lab evaluation. Please consider them for this important honor.



***2011 Wisconsin DNR  
Registered Laboratory of the Year  
Nomination Form***

Due January 14, 2011

<b>Name of Laboratory</b>	<b>New Holstein WWTP</b>
<b>Laboratory Manager</b>	<b>Don Lintner</b>
<b>Other Key Laboratory Employees</b>	<b>Kevin Nett</b>
<b>Laboratory Address</b>	<b>2110 Washington Street, New Holstein, WI 53061</b>
<b>Laboratory Phone Number</b>	<b>920-898-5776</b>
<b>Nominator (your name)</b>	<b>Tom Trainor</b>
<b>Your Affiliation with Laboratory</b>	<b>WDNR Laboratory Audit Chemist</b>
<b>Your Address</b>	<b>WDNR, 2984 Shawano Avenue, Green Bay, WI 54313</b>
<b>Your Phone Number</b>	<b>920-662-5475 office, 920-412-5970 cell</b>
<b>Your Email Address</b>	<b>Tom.trainor@wisconsin.gov</b>
<b>Is a 1-2 page summary attached?</b>	<b>Yes</b>

# *NEW HOLSTEIN WASTEWATER TREATMENT PLANT*

## 2011 Nomination Criteria for Laboratory of the Year Award:

- 1. Describe what quality control (QC) samples the laboratory analyzes that are above minimum requirements (if possible give the frequency that each of them is analyzed).**
  - CCV standards for TP are performed at 2 different concentrations on each day of analysis when only one concentration is required.
  - BOD and TSS sample replicates are generally analyzed quarterly on the influent and effluent even though they are no longer required.
  - TP sample replicates and a matrix spike are generally analyzed quarterly on the effluent even though they are no longer required.
  - Three dilutions each are analyzed for BOD on the influent, effluent, and seed controls. Three are not required but they are analyzed to ensure that at least one valid dilution is obtained.
  - Two BOD blanks are analyzed with each analysis (and assessed separately) when only one is required.
  - Two GGA standards are analyzed once a week (and assessed separately) when only one is required each week.
  - TP curves are generally performed quarterly but they are only required annually.
  - Nine different concentration standards are used in the TP calibration curve when only 3 are required.
- 2. Discuss how often the laboratory has QC failures and how they respond to them.**
  - On average, over the last 3 years, the laboratory fails about one BOD blank and one BOD GGA standard a month (remember they run double what is required). In 2009 and 2010 they have had a number of challenges trying to keep their BOD QC failures at this rate. The very old analog YSI Model 54 DO meter finally decided enough was enough and was acting up too frequently. They have since purchased a new DO meter. Their only industry left town and since they have been experiencing higher than normal GGA results. They are testing for nitrifiers at this time to see if that is the source of the problem. They have also been training a new analyst that has been struggling some with the testing (due mostly to the sensitive nature of the DO meter, he didn't have the experience to deal with it).
  - When QC failures are observed, a lot of thought and documentation goes into their resolution. The analysts assess all areas that could have impacted the test – sampling, test procedures, glassware cleaning, etc. Those that make the most sense are tackled first. Each attempt to fix the problem and the result are documented in the corrective action log. If an issue has them stumped they do not hesitate to look for help elsewhere, such as NCL, WRWA, or the DNR. Once the issue is resolved it is documented as such in the corrective action logbook.
- 3. Describe how well the laboratory documents maintenance activities and corrective actions.**
  - Detailed maintenance records are kept for the analytical instruments and the support equipment. Each piece of equipment has its own dedicated page for documenting maintenance. As a result, the reader is able to quickly and easily review the complete history of a piece of equipment.
  - Corrective action records are documented in good detail and they are reviewed on a regular basis. This laboratory even documents the instances where a BOD sample has an IDO greater than the TDO.
  - DMR qualification is extremely well documented. The date of the failure, the QC type of failure, the test, and whether the result failed high or low and by how much are documented on the DMR. The system to track QC failures is also very well done. The laboratory uses a “double check” system to ensure that quality control failures are documented on the DMR. Each month when the DMR is filled out all of the benchsheets from that month are reviewed for quality control failures. In addition to the benchsheet reviews, the corrective action logs for the month are also reviewed. With all of these checks and balances in place it is highly unlikely that an out of control sample will be missed on the DMR and that out of control situations are allowed to continue without being addressed.
- 4. Explain if the laboratory performs any testing of registered parameters beyond what is required by their permit.**
  - TSS collection is required 3 times per week by permit. The laboratory collects and reports TSS 4 times a week.

- TP is not required on the influent but it is also analyzed 3 times a week.
  - pH testing is performed on the influent and on every septage load that comes into the plant, even though it is not required.
  - The laboratory is performing side by side cBOD samples in order to determine if they are having nitrification issues.
- 5. Describe any unique or advanced techniques the laboratory uses to improve their data quality.**
- The lab has just begun using an optical probe/meter for the DO measurements used in BOD testing.
- 6. Discuss any special ways the laboratory uses QC or compliance sample results to improve their operations.**
- Unknown.
- 7. Discuss the laboratory's success in coming into full compliance with the new NR 149 code requirements that took effect on September 1, 2008.**
- The laboratory was proactive in their approach to the new NR149 requirements. Without being asked, they sent their new quality manual to their auditor way before their audit so it could be reviewed for suggested improvements.
  - This laboratory was audited in September 2010 and had just one minor deficiency from that evaluation (and that deficiency was just a misunderstanding of the new requirements).
  - The laboratory was prepared to meet the new code requirements.
  - Benchsheets contained all of the required information for traceability.
  - The Quality Manual and Method SOPs are nicely done.
  - Chemical tracking is superbly done. The laboratory keeps a separate page for each chemical used which makes it extremely easy to track its use. The laboratory includes tracking of their dilution water (store bought) and combined color reagents solutions as part of the suite of chemicals that are tracked. Each chemical used for analysis is tied to the benchsheet using a unique chemical id.
  - The total phosphorus LOD study was very well done. One LOD study sample was analyzed each week for 10 weeks. So 10 LOD study samples were used in the generation of the LOD.
- 8. Discuss any unique or exceptional ways in which the laboratory performs their testing that improves data quality.**
- Composite sampler containers and laboratory containers are well cleaned frequently and include a disinfection step.
  - Sampler tubing is generally replaced each month and disinfected every other week.
  - BOD and TP glassware are acid cleaned after each use.
  - Ascorbic acid used for TP analysis is made fresh each time it is used.
  - The laboratory has implemented a CDC (continuing demonstration of capability) that is performed at least annually.
  - TSS filter paper is purchase pre-washed, but they still wash and dry the filters before use.
  - Each TP curve is graphed in order to obtain a visual display of how well the curve fits a line. This is not required.
- 9. Discuss the degree to which the laboratory has established their quality system and how well it is adhered to.**
- The quality system is well established based on the corrective action documentation and general documentation that is performed in the lab. All previous audit deficiencies were corrected and maintained.
- 10. Discuss any other reasons why you believe this laboratory is worthy of nomination for the Laboratory of the Year award.**
- Don and Kevin were very easy to work with during the evaluation and they both have a very good understanding of the tests they are performing. Don and Kevin were both very willing and interested to listen to all recommendations.
  - If a tie breaker is needed, the Operators pointed out that they are a very good looking – just sayin.