

Exhibit A

Sanitary District of Decatur

NPDES Permit

Issued by Illinois EPA on April 20, 2007



ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9376 - (217) 782-3307

JAMES R. THOMPSON CENTER, 100 WEST RANDOLPH, SUITE 11-300, CHICAGO, IL 60601 - (312) 814-6026

217/782-0610

ROD R. BLAGOJEVICH, GOVERNOR DOUGLAS P. SCOTT, DIRECTOR

April 20, 2007

Sanitary District of Decatur
501 Dipper Lane
Decatur, Illinois 62522

RECEIVED

APR 23 2007

SANITARY DISTRICT
OF DECATUR

Re: Sanitary District of Decatur
Sanitary District of Decatur Main STP
NPDES Permit No. IL0028321
Final Permit

Gentlemen:

Attached is the final NPDES Permit for your discharge. The Permit as issued covers discharge limitations, monitoring, and reporting requirements. Failure to meet any portion of the Permit could result in civil and/or criminal penalties. The Illinois Environmental Protection Agency is ready and willing to assist you in interpreting any of the conditions of the Permit as they relate specifically to your discharge.

The Agency has begun a program allowing the submittal of electronic Discharge Monitoring Reports (eDMRs) instead of paper Discharge Monitoring Reports (DMRs). If you are interested in eDMRs, more information can be found on the Agency website, <http://epa.state.il.us/water/edmr/index.html>. If your facility is not registered in the eDMR program, a supply of preprinted paper DMR Forms for your facility will be sent to you prior to the initiation of DMR reporting under the reissued permit. Additional information and instructions will accompany the preprinted DMRs upon their arrival.

The attached Permit is effective as of the date indicated on the first page of the Permit. Until the effective date of any re-issued Permit, the limitations and conditions of the previously-issued Permit remain in full effect. You have the right to appeal any condition of the Permit to the Illinois Pollution Control Board within a 35 day period following the issuance date.

Should you have questions concerning the Permit, please contact Ralph Hahn at the telephone number indicated above.

Sincerely,

Alan Keller, P.E.
Manager, Permit Section
Division of Water Pollution Control

SAK:RJJ:06120503.bah

Attachment: Final Permit

cc: Records
Compliance Assurance Section
Champaign Region
US EPA

***** PCB 2009-125 *****

NPDES Permit No. IL0028321

Illinois Environmental Protection Agency

Division of Water Pollution Control

1021 North Grand Avenue East

Post Office Box 19276

Springfield, Illinois 62794-9276

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

Reissued (NPDES) Permit

Expiration Date: June 30, 2012

Issue Date: April 20, 2007

Effective Date: July 1, 2007

Name and Address of Permittee:

Sanitary District of Decatur
501 Dipper Lane
Decatur, Illinois 62522

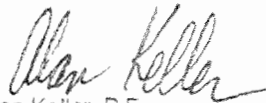
Facility Name and Address:

Sanitary District of Decatur Main STP
501 Dipper Lane
Decatur, Illinois
(Macon County)

Receiving Waters: Sangamon River

In compliance with the provisions of the Illinois Environmental Protection Act, Title 35 of the Ill. Adm. Code, Subtitle C, Chapter 1, and the Clean Water Act (CWA), the above-named Permittee is hereby authorized to discharge at the above location to the above-named receiving stream in accordance with the standard conditions and attachments herein.

Permittee is not authorized to discharge after the above expiration date. In order to receive authorization to discharge beyond the expiration date, the Permittee shall submit the proper application as required by the Illinois Environmental Protection Agency (IEPA) not later than 180 days prior to the expiration date.



Alan Keller, P.E.
Manager, Permit Section
Division of Water Pollution Control

SAK:RJH:06120503.bah

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NPDES Permit No. IL0028321

Effluent Limitations, Monitoring, and Reporting

FINAL

Discharge Number(s) and Name(s): 001 STP Outfall

Load limits computed based on a design average flow (DAF) of 41.0 MGD (design maximum flow (DMF) of 125.0 MGD).

Excess flow facilities (if applicable) shall not be utilized until the main treatment facility is receiving its maximum practical flow.

From the effective date of this Permit until the expiration date, the effluent of the above discharge(s) shall be monitored and limited at all times as follows:

| Parameter | LOAD LIMITS lbs/day DAF (DMF)* | | | CONCENTRATION LIMITS MG/L | | | Sample Frequency | Sample Type |
|----------------------------|---|--------------------|------------------|------------------------------|-------------------|------------------|---------------------|----------------|
| | Monthly Average | Weekly Average | Daily Maximum | Monthly Average | Weekly Average | Daily Maximum | | |
| Flow (MGD) | | | | | | | Continuous | |
| CBOD ₅ ** | 6,839 (20,850) | 13,678 (41,700) | | 20 | 40 | | 2 days/week | Composite |
| Suspended Solids | 8,549 (26,063) | 15,387 (46,913) | | 25 | 45 | | 2 days/week | Composite |
| Dissolved Oxygen | Shall not be less than 6 mg/L | | | | | | 2 days/week | Grab |
| pH | Shall be in the range of 6 to 9 Standard Units | | | | | | 2 days/week | Grab |
| Fecal Coliform*** | Daily Maximum shall not exceed 400 per 100 mL (May through October) | | | | | | 2 days/week | Grab |
| Chlorine Residual**** | | | | | | 0.05 | 2 days/week | Grab |
| Ammonia Nitrogen as (N) | | | | | | | | |
| March-May/Sept.-Oct. | 513 (1,564) | | 1,026 (3,128) | 1.5 | | 3.0 | 2 days/week | Composite |
| June-August | 445 (1,355) | | 1,026 (3,128) | 1.3 | | 3.0 | 2 days/week | Composite |
| Nov.-Feb. | 513 (1,564) | | 1,026 (3,128) | 1.5 | | 3.0 | 2 days/week | Composite |
| Zinc**** | 16 (48) | | 88 (269) | 0.046 | | 0.258 | 5 days/week | Composite |
| Nickel**** | 3.8 (12) | | | 0.011 | | | 5 days/week | Composite |

*Load limits based on design maximum flow, shall apply only when flow exceeds design average flow.

**Carbonaceous BOD₅ (CBOD₅) testing shall be in accordance with 40 CFR 136.

***See Special Condition 7.

****See Special Condition 18.

Flow shall be reported on the Discharge Monitoring Report (DMR) as monthly average and daily maximum.

Fecal Coliform shall be reported on the DMR as daily maximum.

pH shall be reported on the DMR as a minimum and a maximum.

Chlorine Residual shall be reported on DMR as daily maximum.

Dissolved oxygen shall be reported on DMR as minimum.

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Effluent Limitations, Monitoring, and Reporting

FINAL

Discharge Number(s) and Name(s): 003 Oakland Avenue Treated Combined Sewage Outfall
 004 South Edward Street Treated Combined Sewage Outfall
 007 McKinley Avenue Treated Combined Sewage Outfall
 008 Seventh Ward Treated Combined Sewage Outfall

These flow facilities shall not be utilized until the main treatment facility is receiving its maximum practical flow.

From the effective date of this Permit until the expiration date, the effluent of the above discharge(s) shall be monitored and limited at all times as follows:

| Parameter | CONCENTRATION LIMITS mg/L | | |
|------------------|--|------------------------|-------------|
| | Monthly Average | Sample Frequency | Sample Type |
| Total Flow (MG) | See Below | Daily When Discharging | Continuous |
| BOD ₅ | | Daily When Discharging | Grab |
| Suspended Solids | | Daily When Discharging | Grab |
| pH | Shall be in the range of 6 to 9 Standard Units | Daily When Discharging | Grab |

Total flow in million gallons shall be reported on the Discharge Monitoring Report (DMR) in the quantity maximum column.

Report the number of days of discharge in the comments section of the DMR.

pH shall be reported on the DMR as a minimum and a maximum.

BOD₅ and Suspended Solids shall be reported on the DMR as a monthly average concentration.

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Influent Monitoring, and Reporting

The influent to the plant shall be monitored as follows:

| Parameter | Sample Frequency | Sample Type |
|------------------|------------------|-------------|
| Flow (MGD) | Continuous | *RIT |
| BOD ₅ | 2 days/week | Composite |
| Suspended Solids | 2 days/week | Composite |

Influent samples shall be taken at a point representative of the influent.

Flow (MGD) shall be reported on the Discharge Monitoring Report (DMR) as monthly average and daily maximum.

BOD₅ and Suspended Solids shall be reported on the DMR as a monthly average concentration.

*Recording, Indicating, Totalizing.

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Special Conditions

SPECIAL CONDITION 1. This Permit may be modified to include different final effluent limitations or requirements which are consistent with applicable laws, regulations, or judicial orders. The IEPA will public notice the permit modification.

SPECIAL CONDITION 2. The use or operation of this facility shall be by or under the supervision of a Certified Class 1 operator.

SPECIAL CONDITION 3. The IEPA may request in writing submittal of operational information in a specified form and at a required frequency at any time during the effective period of this Permit.

SPECIAL CONDITION 4. The IEPA may request more frequent monitoring by permit modification pursuant to 40 CFR § 122.63 and Without Public Notice in the event of operational, maintenance or other problems resulting in possible effluent deterioration.

SPECIAL CONDITION 5. The effluent, alone or in combination with other sources shall not cause a violation of any applicable water quality standard outlined in 35 Ill. Adm. Code 302.

SPECIAL CONDITION 6. Samples taken in compliance with the effluent monitoring requirements shall be taken at a point representative of the discharge, but prior to entry into the receiving stream.

SPECIAL CONDITION 7. Fecal Coliform limits for Discharge Number 001 are effective May thru October. Sampling of Fecal Coliform is only required during this time period.

The total residual chlorine limit is applicable at all times. If the Permittee is chlorinating for any purpose during the months of November through April, sampling is required on a daily grab basis. Sampling frequency for the months of May through October shall be as indicated on effluent limitations, monitoring and reporting page of this Permit.

SPECIAL CONDITION 8. The Permittee shall monitor the effluent for the following parameters monthly for a period of six (6) consecutive months, beginning three (3) months from the effective date of this Permit. This Permit may be modified with public notice to establish effluent limitations if appropriate, based on information obtained through sampling. The sample shall be a 24-hour effluent composite except as otherwise specifically provided below and the results shall be submitted on the DMR's to IEPA. The parameters to be sampled and the minimum reporting limits to be attained are as follows:

| <u>STORET</u> <u>CODE</u> | <u>PARAMETER</u> | <u>Minimum</u> <u>reporting limit</u> |
|------------------------------|----------------------|--|
| 00951 | Fluoride | 0.1 mg/L |
| 32101 | Dichlorobromomethane | 0.005 mg/L |

Unless otherwise indicated, concentrations refer to the total amount of the constituent present in all phases, whether solid, suspended or dissolved, elemental or combined, including all oxidation states.

SPECIAL CONDITION 9.A. Publicly Owned Treatment Works (POTW) Pretreatment Program General Provisions

1. The Permittee shall implement and enforce its approved Pretreatment Program which was approved on September 3, 1985 and all approved subsequent modifications thereto. The Permittee shall maintain legal authority adequate to fully implement the Pretreatment Program in compliance with Federal (40 CFR 403), State, and local laws. The Permittee shall:
 - a. Carry out independent inspection and monitoring procedures at least once per year, which will determine whether each significant industrial user (SIU) is in compliance with applicable pretreatment standards;
 - b. Perform an evaluation, at least once every two (2) years, to determine whether each SIU needs a slug control plan. If needed, the SIU slug control plan shall include the items specified in 40 CFR § 403.6 (f)(2)(v);
 - c. Update its inventory of Industrial Users (IUs) at least annually and as needed to ensure that all SIUs are properly identified, characterized and categorized;
 - d. Receive and review self monitoring and other IU reports to determine compliance with all pretreatment standards and requirements, and obtain appropriate remedies for noncompliance by an IU with any pretreatment standard and/or requirement;

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Special Conditions

- e. investigate instances of noncompliance, collect and analyze samples, and compile other information with sufficient care as to produce evidence admissible in enforcement proceedings, including judicial action;
 - f. Require development, as necessary, of compliance schedules by each industrial user for the installation of control technologies to meet applicable pretreatment standards; and,
 - g. Maintain an adequate revenue structure for continued operation of the Pretreatment Program.
2. The Permittee shall issue/reissue permits or equivalent control mechanisms to all SIUs prior to expiration of existing permits or prior to commencement of discharge in the case of new discharges. The permits at a minimum shall include the elements listed in 40 CFR § 403.8(f)(1)(iii).
 3. The Permittee shall develop, maintain, and enforce, as necessary, local limits to implement the prohibitions in 40 CFR § 403.5 which prohibit the introduction of specific pollutants to the waste treatment system from any source of nondomestic discharge.
 4. In addition to the general limitations expressed in Paragraph 3 above, applicable pretreatment standards must be met by all industrial users of the POTW. These limitations include specific standards for certain industrial categories as determined by Section 307(b) and (c) of the Clean Water Act, State limits, or local limits, whichever are more stringent.
 5. The USEPA and IEPA individually retain the right to take legal action against any industrial user and/or the POTW for those cases where an industrial user has failed to meet an applicable pretreatment standard by the deadline date regardless of whether or not such failure has resulted in a permit violation.
 6. The Permittee shall establish agreements with all contributing jurisdictions, as necessary, to enable it to fulfill its requirements with respect to all IUs discharging to its system.
 7. Unless already completed, the Permittee shall within six (6) months of the effective date of this Permit submit to USEPA and IEPA a proposal to modify and update its approved Pretreatment Program to incorporate Federal revisions to the general pretreatment regulations. The proposal shall include all changes to the approved program and the sewer use ordinance which are necessary to incorporate the regulations commonly referred to as PIRT and DSS, which were effective November 16, 1988 and August 23, 1990, respectively. This includes the development of an Enforcement Response Plan (ERP) and a technical re-evaluation of the Permittee's local limits.
 8. The Permittee's Pretreatment Program has been modified to incorporate a Pretreatment Program Amendment approved on February 6, 1995. The amendment became effective on the date of approval and is a fully enforceable provision of your Pretreatment Program.

Modifications of your Pretreatment Program shall be submitted in accordance with 40 CFR § 403.18, which established conditions for substantial and nonsubstantial modifications.

B. Reporting and Records Requirements

1. The Permittee shall provide an annual report briefly describing the permittee's pretreatment program activities over the previous calendar year. Permittees who operate multiple plants may provide a single report providing all plant-specific reporting requirements are met. Such report shall be submitted no later than April 28 of each year, and shall be in the format set forth in IEPA's POTW Pretreatment Report Package which contains information regarding:
 - a. An updated listing of the Permittee's industrial users.
 - b. A descriptive summary of the compliance activities including numbers of any major enforcement actions, (i.e., administrative orders, penalties, civil actions, etc.), and the outcome of those actions. This includes an assessment of the compliance status of the Permittee's industrial users and the effectiveness of the Permittee's Pretreatment Program in meeting its needs and objectives.
 - c. A description of all substantive changes made to the Permittee's Pretreatment Program. Changes which are "substantial modifications" as described in 40 CFR § 403.18(c) must receive prior approval from the Approval Authority.

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- d. Results of sampling and analysis of POTW influent, effluent, and sludge.
- e. A summary of the findings from the priority pollutants sampling. As sufficient data becomes available the IEPA may modify this Permit to incorporate additional requirements relating to the evaluation, establishment, and enforcement of local limits for organic pollutants. Any permit modification is subject to formal due process procedures pursuant to State and Federal law and regulation. Upon a determination that an organic pollutant is present that causes interference or pass through, the Permittee shall establish local limits as required by 40 CFR § 403.5(c).
2. The Permittee shall maintain all pretreatment data and records for a minimum of three (3) years. This period shall be extended during the course of unresolved litigation or when requested by the IEPA or the Regional Administrator of USEPA. Records shall be available to USEPA and the IEPA upon request.
3. The Permittee shall establish public participation requirements of 40 CFR 25 in implementation of its Pretreatment Program. The Permittee shall at least annually, publish the names of all IU's which were in significant noncompliance (SNC), as defined by 40 CFR § 403.8(f)(2)(vii), in the largest daily paper in the municipality in which the POTW is located or based on any more restrictive definition of SNC that the POTW may be using.
4. The Permittee shall provide written notification to the Deputy Counsel for the Division of Water Pollution Control, IEPA, 1021 North Grand Avenue East, P.O. Box 19276, Springfield, Illinois 62794-9276 within five (5) days of receiving notice that any Industrial User of its sewage treatment plant is appealing to the Circuit Court any condition imposed by the Permittee in any permit issued to the Industrial User by Permittee. A copy of the Industrial User's appeal and all other pleadings filed by all parties shall be mailed to the Deputy Counsel within five (5) days of the pleadings being filed in Circuit Court.

C. Monitoring Requirements

1. The Permittee shall monitor its influent, effluent and sludge and report concentrations of the following parameters on monitoring report forms provided by the IEPA and include them in its annual report. Samples shall be taken at quarterly (four times per year) intervals at the indicated reporting limit or better and consist of a 24-hour composite unless otherwise specified below. Sludge samples shall be taken of final sludge and consist of a grab sample reported on a dry weight basis.

| <u>STORET CODE</u> | <u>PARAMETER</u> | <u>Minimum reporting limit</u> |
|------------------------|--|------------------------------------|
| 01097 | Antimony | 0.07 mg/L |
| 01002 | Arsenic | 0.05 mg/L |
| 01007 | Barium | 0.5 mg/L |
| 01012 | Beryllium | 0.005 mg/L |
| 01027 | Cadmium | 0.001 mg/L |
| 01032 | Chromium (hex - grab not to exceed 24 hours)* | 0.01 mg/L |
| 01034 | Chromium (total) | 0.05 mg/L |
| 01042 | Copper | 0.005 mg/L |
| 00718 | Cyanide (grab) (weak acid dissociable)* | 5.0 ug/L |
| 00720 | Cyanide (grab) (total) | 5.0 ug/L |
| 00951 | Fluoride* | 0.1 mg/L |
| 01045 | Iron (total) | 0.5 mg/L |
| 01048 | Iron (Dissolved)* | 0.5 mg/L |
| 01051 | Lead | 0.05 mg/L |
| 01055 | Manganese | 0.5 mg/L |
| 71900 | Mercury (effluent grab using USEPA Method 1631 or equivalent)*** | 1.0 ng/L** |
| 01067 | Nickel | 0.005 mg/L |
| 00556 | Oil (hexane soluble or equivalent) (Grab Sample only)* | 5.0 mg/L |
| 02730 | Phenols (grab) | 0.005 mg/L |
| 01147 | Selenium | 0.005 mg/L |
| 01077 | Silver (total) | 0.003 mg/L |
| 01059 | Thallium | 0.3 mg/L |
| 01092 | Zinc | 0.025 mg/L |

* Influent and effluent only.

** ng/L = 1 part per trillion.

*** Other approved methods may be used for influent, combined and sludge.

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Special Conditions

Unless otherwise indicated, concentrations refer to the total amount of the constituent present in all phases, whether solid, suspended or dissolved, elemental or combined including all oxidation states. Where constituents are commonly measured as other than total, the phase is so indicated.

2. The Permittee shall conduct an analysis for the one hundred and ten (110) organic priority pollutants identified in 40 CFR 122 Appendix D, Table II as amended. This monitoring shall be done once per year and reported on monitoring report forms provided by the IEPA and shall consist of the following:

a. The influent and effluent shall be sampled and analyzed for the one hundred and ten (110) organic priority pollutants. The sampling shall be done during a day when industrial discharges are expected to be occurring at normal to maximum levels.

Samples for the analysis of acid and base/neutral extractable compounds shall be 24-hour composites.

Five (5) grab samples shall be collected each monitoring day to be analyzed for volatile organic compounds. A single analysis for volatile pollutants (Method 624) may be run for each monitoring day by compositing equal volumes of each grab sample directly in the GC purge and trap apparatus in the laboratory, with no less than one (1) mL of each grab included in the composite.

Wastewater samples must be handled, prepared, and analyzed by GC/MS in accordance with USEPA Methods 624 and 625 of 40 CFR 136 as amended.

b. The sludge shall be sampled and analyzed for the one hundred and ten (110) organic priority pollutants. A sludge sample shall be collected concurrent with a wastewater sample and taken as final sludge.

Sampling and analysis shall conform to USEPA Methods 624 and 625 unless an alternate method has been approved by IEPA.

c. Sample collection, preservation and storage shall conform to approved USEPA procedures and requirements.

3. In addition, the Permittee shall monitor any new toxic substances as defined by the Clean Water Act, as amended following notification by the IEPA.

4. Permittee shall report any noncompliance with effluent or water quality standards in accordance with Standard Condition 12(e) of this Permit.

5. Analytical detection limits shall be in accordance with 40 CFR 136. Minimum detection limits for sludge analyses shall be in accordance with 40 CFR 503.

SPECIAL CONDITION 10. The Permittee has undergone a Monitoring Reduction review and the influent and effluent sample frequency has been reduced for CBOD₅, BOD₅, suspended solids, dissolved oxygen, pH, fecal coliform, chlorine residual and ammonia nitrogen due to sustained compliance. The IEPA will require that the influent and effluent sampling frequency for these parameters be increased to 5 days/week if effluent deterioration occurs due to increased wasteload, operational, maintenance or other problems. The increased monitoring will be required Without Public Notice when a permit modification is received by the Permittee from the IEPA.

SPECIAL CONDITION 11. During January of each year the Permittee shall submit annual fiscal data regarding sewerage system operations to the Illinois Environmental Protection Agency/Division of Water Pollution Control/Compliance Assurance Section. The Permittee may use any fiscal year period provided the period ends within twelve (12) months of the submission date.

Submission shall be on forms provided by IEPA titled "Fiscal Report Form For NPDES Permittees".

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Special ConditionsSPECIAL CONDITION 12. The Permittee shall conduct biomonitoring of the effluent from Discharge Number(s) 001.Biomonitoring

1. Acute Toxicity - Standard definitive acute toxicity tests shall be run on at least two trophic levels of aquatic species (fish, invertebrate) representative of the aquatic community of the receiving stream. Testing must be consistent with Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms (Fifth Ed.) EPA/821-R-02-012. Unless substitute tests are pre-approved, the following tests are required:
 - a. Fish - 96 hour static LC₅₀ Bioassay using fathead minnows (*Pimephales promelas*).
 - b. Invertebrate 48-hour static LC₅₀ Bioassay using *Ceriodaphnia*.
2. Testing Frequency - The above tests shall be conducted using 24-hour composite samples unless otherwise authorized by the IEPA. Samples must be collected in the 18th, 15th, 12th, and 9th month prior to the expiration date of this Permit.
3. Reporting - Results shall be reported according to EPA/821-R-02-012, Section 12, Report Preparation, and shall be submitted to IEPA, Bureau of Water, Compliance Assurance Section within one week of receipt from the laboratory. Reports are due to the IEPA no later than the 16th, 13th, 10th, and 7th month prior to the expiration date of this Permit.
4. Toxicity Reduction Evaluation - Should the results of the biomonitoring program identify toxicity, the IEPA may require that the Permittee prepare a plan for toxicity reduction evaluation and identification. This plan shall be developed in accordance with Toxicity Reduction Evaluation Guidance for Municipal Wastewater Treatment Plants, EPA/833B-99/002, and shall include an evaluation to determine which chemicals have a potential for being discharged in the plant wastewater, a monitoring program; to determine their presence or absence and to identify other compounds which are not being removed by treatment, and other measures as appropriate. The Permittee shall submit to the IEPA its plan for toxicity reduction evaluation within ninety (90) days following notification by the IEPA. The Permittee shall implement the plan within ninety (90) days or other such date as contained in a notification letter received from the IEPA.

The IEPA may modify this Permit during its term to incorporate additional requirements or limitations based on the results of the biomonitoring. In addition, after review of the monitoring results, the IEPA may modify this Permit to include numerical limitations for specific toxic pollutants. Modifications under this condition shall follow public notice and opportunity for hearing.

SPECIAL CONDITION 13. Discharge Number 002 is an emergency high level bypass. Discharges from this overflow are subject to the following conditions:

- (1) Definitions
 - (i) "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility.
 - (ii) "Severe property damage" means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.
- (2) Bypass not exceeding limitations. The Permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of paragraphs (3) and (4) of this section.
- (3) Notice
 - (i) Anticipated bypass. If the Permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten days before the date of the bypass.
 - (ii) Unanticipated bypass. The Permittee shall submit notice of an unanticipated bypass as required in Standard Condition 12(c) of this Permit (24-hour notice).

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Special Conditions

- (4) Prohibition of bypass. Bypass is prohibited, and the IEPA may take enforcement action against a Permittee for bypass, unless:
- (i) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
 - (ii) There was no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
 - (iii) The Permittee submitted notices as required under Standard Condition 12(e) of this Permit.
- (5) Emergency Bypass when discharging, shall be monitored daily by grab sample for BOD₅ and Suspended Solids. The Permittee shall submit the monitoring results on Discharge Monitoring Report forms using one such form for each month in which bypassing occurs. The Permittee shall specify the number of discharges per month that occur and shall report this number in the quantity daily maximum column. The Permittee shall report the highest concentration value of BOD₅ and Suspended Solids discharged in the concentration daily maximum column.

SPECIAL CONDITION 14. For the duration of this Permit, the Permittee shall determine the quantity of sludge produced by the treatment facility in dry tons or gallons with average percent total solids analysis. The Permittee shall maintain adequate records of the quantities of sludge produced and have said records available for IEPA inspection. The Permittee shall submit to the IEPA, at a minimum, a semi-annual summary report of the quantities of sludge generated and disposed of, in units of dry tons or gallons (average total percent solids) by different disposal methods including but not limited to application on farmland, application on reclamation land, landfilling, public distribution, dedicated land disposal, sod farms, storage lagoons or any other specified disposal method. Said reports shall be submitted to the IEPA by January 31 and July 31 of each year reporting the preceding January thru June and July thru December interval of sludge disposal operations.

Duty to Mitigate. The Permittee shall take all reasonable steps to minimize any sludge use or disposal in violation of this Permit.

Sludge monitoring must be conducted according to test procedures approved under 40 CFR 136 unless otherwise specified in 40 CFR 503, unless other test procedures have been specified in this Permit.

Planned Changes. The Permittee shall give notice to the IEPA on the semi-annual report of any changes in sludge use and disposal.

The Permittee shall retain records of all sludge monitoring, and reports required by the Sludge Permit as referenced in Standard Condition 23 for a period of at least five (5) years from the date of this Permit.

If the Permittee monitors any pollutant more frequently than required by the Sludge Permit, the results of this monitoring shall be included in the reporting of data submitted to the IEPA.

Monitoring reports for sludge shall be reported on the form titled "Sludge Management Reports" to the following address:

Illinois Environmental Protection Agency
Bureau of Water
Compliance Assurance Section
Mail Code #19
1021 North Grand Avenue East
Post Office Box 19276
Springfield, Illinois 62794-9276

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Special ConditionsSPECIAL CONDITION 15.AUTHORIZATION OF
COMBINED SEWER AND TREATMENT PLANT DISCHARGES

The IEPA has determined that at least a portion of the collection system consists of combined sewers. References to the collection system and the sewer system refer only to those parts of the system which are owned and operated by the Permittee unless otherwise indicated. The Permittee is authorized to discharge from the overflow(s)/bypass(es) listed below provided the diversion structure is located on a combined sewer and the following terms and conditions are met:

| <u>Discharge Number</u> | <u>Location</u> | <u>Receiving Water</u> |
|-------------------------|--|-----------------------------------|
| A03 | Oakland Avenue CSO Treatment Bypass | Sangamon River |
| A04 | South Edward Street CSO Treatment Bypass | Sangamon River |
| A07 | McKinley Avenue CSO Treatment Bypass | Unnamed tributary of Spring Creek |
| A08 | Seventh Ward CSO Treatment Bypass | Sangamon River |

Treatment Requirements

1. All combined sewer overflows and treatment plant bypasses shall be given sufficient treatment to prevent pollution and the violation of applicable water quality standards. Sufficient treatment shall consist of the following:
 - a. Treatment as described in PCB AS 91-7 and dated June 23, 1992 shall be provided. The terms and conditions of this Board Order are hereby incorporated by reference as if fully set forth herein; and,
 - b. Any additional treatment, necessary to comply with applicable water quality standards and the federal Clean Water Act, including any amendments made by the Wet Weather Water Quality Act of 2000.
2. All CSO discharges authorized by this Permit shall be treated, in whole or in part, to the extent necessary to prevent accumulations of sludge deposits, floating debris and solids in accordance with 35 Ill. Adm. Code 302.203 and to prevent depression of oxygen levels below the applicable water quality standards.
3. Overflows during dry weather are prohibited. Dry weather overflows shall be reported to the IEPA pursuant to Standard Condition 12(e) of this Permit (24 hour notice).
4. The collection system shall be operated to optimize transport of wastewater flows and to minimize CSO discharges.
5. The treatment system shall be operated to maximize treatment of wastewater flows.

Nine Minimum Controls

6. The Permittee shall comply with the nine minimum controls contained in the National CSO Control Policy published in the Federal Register on April 19, 1994. The nine minimum controls are:
 - a. Proper operation and maintenance programs for the sewer system and the CSOs (Compliance with this Item shall be met through the requirements imposed by Paragraph 8 of this Special Condition);
 - b. Maximum use of the collection system for storage (Compliance with this Item shall be met through the requirements imposed by Paragraphs 1, 4, and 8 of this Special Condition);
 - c. Review and modification of pretreatment requirements to assure CSO impacts are minimized (Compliance with this Item shall be met through the requirements imposed by Paragraph 9 of this Special Condition);
 - d. Maximization of flow to the POTW for treatment (Compliance with this Item shall be met through the requirements imposed by Paragraphs 4, 5, and 8 of this Special Condition)

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- e. Prohibition of CSOs during dry weather (Compliance with this Item shall be met through the requirements imposed by Paragraph 3 of this Special Condition);
- f. Control of solids and floatable materials in CSOs (Compliance with this Item shall be met through the requirements imposed by Paragraphs 2 and 8 of this Special Condition);
- g. Pollution prevention programs which focus on source control activities (Compliance with this Item shall be met through the requirements imposed by Paragraph 6 of this Special Condition, **See Below**);
- h. Public notification to ensure that citizens receive adequate information regarding CSO occurrences and CSO impacts (Compliance with this Item shall be met through the requirements imposed by Paragraph 12 of this Special Condition); and,
- i. Monitoring to characterize impacts and efficiency of CSO controls (Compliance with this Item shall be met through the requirements imposed by Paragraphs 10 and 11 of this Special Condition).

A pollution prevention plan (PPP) shall be developed by the Permittee unless one has already been prepared for this collection system. Any previously-prepared PPP shall be reviewed, and revised if necessary, by the Permittee to address the items contained in Chapter 8 of the U.S. EPA guidance document, Combined Sewer Overflows, Guidance For Nine Minimum Controls, and any items contained in previously-sent review documents from the IEPA concerning the PPP. Combined Sewer Overflows, Guidance For Nine Minimum Controls is available on line at <http://www.epa.gov/NPDES/pubs/owm0030.pdf>. The PPP (or revised PPP) shall be presented to the general public at a public information meeting conducted by the Permittee within nine (9) months of the effective date of this Permit. The Permittee shall submit documentation that the pollution prevention plan complies with the requirements of this Permit and that the public information meeting was held. Such documentation shall be submitted to the IEPA within twelve (12) months of the effective date of this Permit and shall include a summary of all significant issues raised by the public, the Permittee's response to each issue, and two (2) copies of the "CSO Pollution Prevention Plan Certification" one (1) with original signatures. This certification form is available online at <http://www.epa.state.il.us/water/permits/waste-water/forms/cso-ppi-prev.pdf>. Following the public meeting, the Permittee shall implement the pollution prevention plan within one (1) year and shall maintain a current pollution prevention plan, updated to reflect system modifications, on file at the sewage treatment works or other acceptable location and made available to the public. The pollution prevention plan shall be submitted to the IEPA upon written request.

Sensitive Area Considerations

- 7. Pursuant to Section II.C.3 of the federal CSO Control Policy of 1994, sensitive areas are any water likely to be impacted by a CSO discharge which meet one or more of the following criteria: (1) designated as an Outstanding National Resource Water; (2) found to contain shellfish beds; (3) found to contain threatened or endangered aquatic species or their habitat; (4) used for primary contact recreation; or, (5) within the protection area for a drinking water intake structure.

The IEPA has tentatively determined that none of the outfalls listed in this Special Condition discharge to sensitive areas. However, if information becomes available that causes the IEPA to reverse this determination, the IEPA will notify the Permittee in writing. Within three (3) months of the date of notification, or such other date contained in the notification letter, the Permittee shall submit two (2) copies of either a schedule to relocate, control, or treat discharges from these outfalls. If none of these options are possible, the Permittee shall submit adequate justification at that time as to why these options are not possible. Such justification shall be in accordance with Section II.C.3 of the National CSO Control Policy.

Operational and Maintenance Plans

- 8. The IEPA reviewed and accepted a CSO operational and maintenance plan "CSO O&M plan" on February 1, 2000 prepared for this sewerage system. The Permittee shall review and revise, if needed, the CSO O&M plan to reflect system changes.

The CSO O&M plan shall be presented to the general public at a public information meeting conducted by the Permittee within nine (9) months of the effective date of this Permit. The Permittee shall submit documentation that the CSO O&M plan complies with the requirements of this Permit and that the public information meeting was held. Such documentation shall be submitted to the IEPA within twelve (12) months of the effective date of this Permit and shall include a summary of all significant issues raised by the public, the Permittee's response to each issue, and two (2) copies of the "CSO Operational Plan Checklist and Certification", one (1) with original signatures. Copies of the "CSO Operational Plan Checklist and Certification" are available online at <http://www.epa.state.il.us/water/permits/waste-water/forms/cso-checklist.pdf>. Following the public meeting, the Permittee shall implement the CSO O&M plan within one (1) year and shall maintain a current CSO O&M plan, updated to reflect system modifications, on file at the sewage treatment works or other acceptable location and made available to the public. The CSO O&M plan shall be submitted to the IEPA upon written request.

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The objectives of the CSO O&M plan are to reduce the total loading of pollutants and floatables entering the receiving stream and to ensure that the Permittee ultimately achieves compliance with water quality standards. These plans, tailored to the local government's collection and waste treatment systems, shall include mechanisms and specific procedures where applicable to ensure:

- a. Collection system inspection on a scheduled basis;
- b. Sewer, catch basin, and regulator cleaning and maintenance on a scheduled basis;
- c. Inspections are made and preventive maintenance is performed on all pump/lift stations;
- d. Collection system replacement, where necessary;
- e. Detection and elimination of illegal connections;
- f. Detection, prevention, and elimination of dry weather overflows;
- g. The collection system is operated to maximize storage capacity and the combined sewer portions of the collection system are operated to delay storm entry into the system; and,
- h. The treatment and collection systems are operated to maximize treatment.

Sewer Use Ordinances

9. The Permittee, within six (6) months of the effective date of this Permit, shall review and where necessary, modify its existing sewer use ordinance to ensure it contains provisions addressing the conditions below. If no ordinance exists, such ordinance shall be developed and implemented within six (6) months from the effective date of this Permit. Upon completion of the review of the sewer use ordinance(s), the Permittee shall submit two (2) copies of a completed "Certification of Sewer Use Ordinance Review", one (1) with original signatures. Copies of the certification form can be obtained on line at <http://www.epa.state.il.us/water/permits/waste-water/ctoms-sewer-use.pdf>. The Permittee shall submit copies of the sewer use ordinance(s) to the IEPA upon written request. Sewer use ordinances are to contain specific provisions to:

- a. prohibit introduction of new inflow sources to the sanitary sewer system;
 - b. require that new construction tributary to the combined sewer system be designed to minimize and/or delay inflow contribution to the combined sewer system;
 - c. require that inflow sources on the combined sewer system be connected to a storm sewer, within a reasonable period of time, if a storm sewer becomes available;
 - d. provide that any new building domestic waste connection shall be distinct from the building inflow connection, to facilitate disconnection if a storm sewer becomes available;
 - e. assure that CSO impacts from non-domestic sources are minimized by determining which non-domestic discharges, if any, are tributary to CSOs and reviewing, and, if necessary, modifying the sewer use ordinance to control pollutants in these discharges; and,
 - f. notify the owners of all publicly owned systems with combined sewers tributary to the Permittee's collection system of their obligations to have procedures in place adequate to ensure that the objectives, mechanisms, and specific procedures given in Paragraph 8 of this Special Condition are achieved.
- The Permittee shall enforce the applicable sewer use ordinance.

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Special ConditionsLong-Term Control Planning and Compliance with Water Quality Standards

10. a. Pursuant to Section 301 of the federal Clean Water Act, 33 U.S.C. § 1311 and 40 CFR § 122.4, discharges from the CSOs, including the outfalls listed in this Special Condition and any other outfall listed as a "Treated Combined Sewage Outfall", shall not cause or contribute to violations of applicable water quality standards or cause use impairment in the receiving waters. In addition, discharges from CSOs shall comply with all applicable parts of 35 Ill. Adm. Code 306.305(a), (b), (c), and (d).
- b. Based on available information, it appears that the CSOs authorized in this Permit meet the criteria of Section II.C.4.a.i of the federal CSO Control Policy of 1994 (Policy), not more than four overflow events per year, and are presumed to meet the water quality-based requirements of the federal Clean Water Act. Pursuant to Section I.C.1 and Section II.C.9 of the Policy, the Permittee shall develop a post-construction water quality monitoring program adequate to verify compliance with water quality standards and to verify protection of designated uses in the receiving water(s) and to ascertain the effectiveness of CSO controls. This program shall contain a plan that details the monitoring protocols to be followed, including any necessary effluent and ambient monitoring, and if appropriate, other monitoring protocols such as biological assessments, whole effluent toxicity testing, and sediment sampling. This plan shall be presented to the public at an informational meeting within nine (9) months of the effective date of this Permit. Within twelve (12) months of the effective date of this Permit, the Permittee shall submit a summary of all significant issues raised by the public, the Permittee's response to each issue, and two (2) copies of the final plan (revised following the public meeting, if necessary) implementing the post-construction monitoring program. The post-construction monitoring plan shall be implemented within six (6) months of the date of IEPA approval. The Permittee shall respond to an IEPA review letter in writing within ninety (90) days of the date of such an initial review letter and within thirty (30) days of any subsequent review letter(s), if any. Within thirty (30) months of the approval of the plan, the results shall be submitted to the IEPA along with recommendations and conclusions as to whether or not the discharges from any of the CSOs (treated or untreated) authorized by this Permit are causing or contributing to violations of applicable water quality standards or causing use impairment in the receiving water(s).
- c. Should the results of the post-construction water quality monitoring plan or if information becomes available that causes IEPA to conclude that the discharges from any of the CSOs (treated or untreated) authorized to discharge under this Permit are causing or contributing to violations of water quality standards or are causing use impairment in the receiving water(s), the IEPA will notify the Permittee in writing. Upon receiving such notification, the Permittee shall develop and implement a CSO Long-Term Control Plan (LTCP) for assuring that the discharges from the CSOs (treated or untreated) authorized in this Permit comply with the provisions of Paragraph 10.a above. The LTCP shall contain all applicable elements of Paragraph 10.d below including a schedule for implementation and provisions for re-evaluating compliance with applicable standards and regulations after complete implementation. Two (2) copies of the LTCP shall be submitted to the IEPA within twelve (12) months of receiving the IEPA written notice. The LTCP shall be:
1. Consistent with Section II.C.4.a.i of the Policy; or,
 2. Consistent with either Section II.C.4.a.ii, Section II.C.4.a.iii, or Section II.C.4.b of the Policy and be accompanied by data sufficient to demonstrate that the LTCP, when completely implemented, will be sufficient to meet water quality standards.
- d. Pursuant to the Policy, the required components of the LTCP include the following:
1. Characterization, monitoring, and modeling of the Combined Sewer System (CSS);
 2. Consideration of Sensitive Areas;
 3. Evaluation of alternatives;
 4. Cost/Performance considerations;
 5. Revised CSO Operational Plan;
 6. Maximizing treatment at the treatment plant;
 7. Implementation schedule;
 8. Post-Construction compliance monitoring program; and
 9. Public participation.

Following submission of the LTCP, the Permittee shall respond to any initial IEPA review letter in writing within ninety (90) days of the date of such a review letter, and within thirty (30) days of any subsequent review letter(s), if any. Implementation of the LTCP shall be as indicated by IEPA in writing or other enforceable mechanism.

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Special ConditionsMonitoring, Reporting and Notification Requirements

11. The Permittee shall monitor the frequency of discharge (number of discharges per month) and estimate the duration (in hours) of each discharge from each outfall listed in this Special Condition. Estimates of storm duration and total rainfall shall be provided for each storm event.

For frequency reporting, all discharges from the same storm, or occurring within 24 hours, shall be reported as one. The date that a discharge commences shall be recorded for each outfall. Reports shall be in the form specified by the IEPA and on forms provided by the IEPA. These forms shall be submitted to the IEPA monthly with the DMRs and covering the same reporting period as the DMRs. Parameters (other than flow frequency), if required in this Permit, shall be sampled and reported as indicated in the transmittal letter for such report forms.

12. A public notification program in accordance with Section II.B.8 of the federal CSO Control Policy of 1994 shall be developed employing a process that actively informs the affected public. The program shall include at a minimum public notification of CSO occurrences and CSO impacts, with consideration given to including mass media and/or Internet notification. The Permittee shall also consider posting signs in waters likely to be impacted by CSO discharges at the point of discharge and at points where these waters are used for primary contact recreation. Provisions shall be made to include modifications of the program when necessary and notification to any additional member of the affected public. The program shall be presented to the general public at a public information meeting conducted by the Permittee. The Permittee shall conduct the public information meeting within nine (9) months of the effective date of this Permit. The Permittee shall submit documentation that the public information meeting was held, shall submit a summary of all significant issues raised by the public and the Permittee's response to each issue and shall identify any modifications to the program as a result of the public information meeting. The Permittee shall submit the public information meeting documentation to the IEPA and implement the public notification program within twelve (12) months of the effective date of this Permit. The Permittee shall submit copies of the public notification program to the IEPA upon written request.
13. If any of the CSO discharge points listed in this Special Condition are eliminated, or if additional CSO discharge points, not listed in this Special Condition, are discovered, the Permittee shall notify the IEPA in writing within one (1) month of the respective outfall elimination or discovery. Such notification shall be in the form of a request for the appropriate modification of this NPDES Permit.

Summary of Compliance Dates in this CSO Special Condition

14. The following summarizes the dates that submittals contained in this Special Condition are due at the IEPA (unless otherwise indicated):

| | |
|--|--|
| Submission of CSO Monitoring Data (Paragraph 11) | 15th of every month |
| Elimination of a CSO or Discovery of Additional CSO Locations (Paragraph 13) | 1 month from discovery or elimination |
| Control (or Justification for No Control) of CSOs to Sensitive Areas (Paragraph 7) | 3 months from IEPA notification |
| Certification of Sewer Use Ordinance Review (Paragraph 9) | 6 months from the effective date of this Permit |
| Implement Post-Construction Monitoring Plan (Paragraph 10) No Submittal Due with this Milestone | 6 months from the date of IEPA plan approval |
| Conduct Pollution Prevention, OMP, Post-Construction Monitoring Plan and PN Public Information Meeting (Paragraphs 6, 8, 10 and 12) No Submittal Due with this Milestone | 9 months from the effective date of this Permit |
| Submit Pollution Prevention Certification, OMP Certification, Post-Construction Monitoring Plan and PN Information Meeting Summary (Paragraphs 6, 8, 10 and 12) | 12 months from the effective date of this Permit |
| Submit CSO Long-Term Control Plan (Paragraph 10) | 12 months from the date of IEPA notification |

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Special Conditions

Submit Results of Post-Construction Monitoring Plan (Paragraph 10) 30 months from the date of IEPA plan approval

All submittals listed in this Special Condition can be mailed to the following address:

Illinois Environmental Protection Agency
Division of Water Pollution Control
1021 North Grand Avenue East
Post Office Box 19276
Springfield, Illinois 62794-9276

Attention: CSO Coordinator, Compliance Assurance Section

All submittals hand carried shall be delivered to 1021 North Grand Avenue East.

Reopening and Modifying this Permit

15. The IEPA may initiate a modification for this Permit at any time to include requirements and compliance dates which have been submitted in writing by the Permittee and approved by the IEPA, or other requirements and dates which are necessary to carry out the provisions of the Illinois Environmental Protection Act, the Clean Water Act, or regulations promulgated under those Acts. Public Notice of such modifications and opportunity for public hearing shall be provided.

SPECIAL CONDITION 16. The Permittee shall record monitoring results on Discharge Monitoring Report (DMR) Forms using one such form for each outfall each month.

In the event that an outfall does not discharge during a monthly reporting period, the DMR Form shall be submitted with no discharge indicated.

The Permittee may choose to submit electronic DMRs (eDMRs) instead of mailing paper DMRs to the IEPA. More information, including registration information for the eDMR program, can be obtained on the IEPA website. <http://www.epa.state.il.us/water/edmr/index.html>.

The completed Discharge Monitoring Report forms shall be submitted to IEPA no later than the 15th day of the following month, unless otherwise specified by the permitting authority.

Permittees not using eDMRs shall mail Discharge Monitoring Reports with an original signature to the IEPA at the following address:

Illinois Environmental Protection Agency
Division of Water Pollution Control
1021 North Grand Avenue East
Post Office Box 19276
Springfield, Illinois 62794-9276

Attention: Compliance Assurance Section, Mail Code # 19

SPECIAL CONDITION 17. The Permittee may collect data in support of developing a site-specific metals translator for nickel and zinc. Total and dissolved metals for a minimum of twelve weekly samples need to be collected from the effluent and at a downstream location indicative of complete mixing between the effluent and the receiving water to determine a metal translator for these parameters. The IEPA will review submitted sample data and may reopen and modify this Permit to eliminate or include revised effluent limitations for these parameters based on the metal translator determined from the collected data.

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Special ConditionsSPECIAL CONDITION 18.

Project Description: Compliance with Nickel and Zinc Water Quality Standards

Twenty-four (24) months from the effective date of this Permit the following nickel and zinc limits shall become effective:

| | Load Limits lbs/day DAF (DMF)* | | Concentration Limits mg/L | |
|--------|-----------------------------------|------------|------------------------------|------------|
| | Monthly Avg. | Daily Max. | Monthly Avg. | Daily Max. |
| Zinc | 16 (48) | 88 (269) | 0.046 | 0.258 |
| Nickel | 3.8 (12) | | 0.011 | |

*Load limits based on design maximum flow shall apply only when flow exceeds the design average flow.

The Permittee shall complete the project described above in accordance with the following schedule:

- | | | |
|-----|---|--|
| (1) | Interim Report on effluent and stream sampling to date and what measures are necessary to comply with Final Nickel and Zinc Limitations | 6 months from the effective date of this Permit |
| (2) | Interim Report | 12 months from the effective date of this Permit |
| (3) | Interim Report | 18 months from the effective date of this Permit |
| (4) | Permittee Achieves Compliance with Final Nickel and Zinc Effluent Limitations | 24 months from the effective date of this Permit |

This Permit may be modified, with Public Notice, to include revised compliance dates set out in this Permit that are superseded or supplemented by compliance dates in judicial orders, Pollution Control Board orders or grant agreements. Prior to such permit modification, the revised dates in the appropriate orders or grant agreements shall govern the Permittee's compliance.

In addition, the IEPA may initiate a modification of the construction schedule set forth in this Permit at any time, to include other dates which are necessary to carry out the provisions of the Illinois Environmental Protection Act, the Federal Clean Water Act or regulations promulgated under those Acts or compliance dates which have been submitted in writing by the Permittee and approved by the IEPA. Public Notice of such modifications and opportunity for public hearing shall be provided consistent with 40 CFR § 122.63.

REPORTING

The Permittee shall submit a report no later than fourteen (14) days following the completion dates indicated for each numbered item in the compliance schedule, indicating: a) the date the item was completed, or b) that the item was not completed. All reports shall be submitted to IEPA at the following address:

Illinois Environmental Protection Agency
 Division of Water Pollution Control
 1021 North Grand Avenue East
 Post Office box 19276
 Springfield, Illinois 62794-9276

Attention: Compliance Assurance Section Mail Code # 19

- (1) **Duty to comply.** The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Act and is grounds for enforcement action, permit termination, revocation and reissuance, modification, or for denial of a permit renewal application. The permittee shall comply with effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants within the time provided in the regulations that establish these standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.
- (2) **Duty to reapply.** If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit. If the permittee submits a proper application as required by the Agency no later than 180 days prior to the expiration date, this permit shall continue in full force and effect until the final Agency decision on the application has been made.
- (3) **Need to halt or reduce activity not a defense.** It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.
- (4) **Duty to mitigate.** The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.
- (5) **Proper operation and maintenance.** The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with conditions of this permit. Proper operation and maintenance includes: effective performance; adequate funding; adequate operator staffing and training; and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities, or similar systems on a regular basis, necessary to achieve compliance with the conditions of the permit.

(9) **Permit duration.** This permit shall be modified, renewed and reissued, or terminated or cause by the Agency pursuant to 40 CFR 122.62. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

- (7) **Property rights.** This permit does not convey any property rights of any sort, or any exclusive privilege.
- (8) **Duty to provide information.** The permittee shall furnish to the Agency within a reasonable time, any information which the Agency may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with the permit. The permittee shall also furnish to the Agency, upon request, copies of records required to be kept by this permit.
- (9) **Inspection and entry.** The permittee shall allow an authorized representative of the Agency, upon the presentation of credentials and other documents as may be required by law, to:
 - (a) Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or whose records must be kept under the conditions of this permit;
 - (b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
 - (c) Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
 - (d) Sample or monitor at reasonable times, for the purpose of assuring permit compliance, or as otherwise authorized by the Act, any substances or parameters at any location.
- (10) **Monitoring and records.**
 - (a) Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
 - (b) The permittee shall retain records of all monitoring information, including all calibration and maintenance records, and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of this permit, measurement, report or application. This period may be extended by request of the Agency at any time.
 - (c) Records of monitoring information shall include:
 - (1) The date, exact place, and time of sampling or measurements;
 - (2) The individual(s) who performed the sampling or measurements;
 - (3) The date(s) analyses were performed;
 - (4) The individual(s) who performed the analyses;
 - (5) The analytical techniques or methods used; and
 - (6) The results of such analyses.
 - (d) Monitoring must be conducted according to test procedures approved under 40 CFR Part 136, unless other test procedures have been specified in this permit. Where no test procedure under 40 CFR Part 136 has been approved, the permittee must submit to the Agency a test method for approval. The permittee shall calibrate and perform maintenance procedures on all monitoring and analytical instrumentation at intervals to ensure accuracy of measurements.
- (11) **Signatory requirement.** All applications, reports or information submitted to the Agency shall be signed and certified.
 - (a) **Application.** All permit applications shall be signed as follows:
 - (1) For a corporation; by a principal executive officer of at least the level of vice president or a person or position having overall responsibility for environmental matters for the corporation;
 - (2) For a partnership or sole proprietorship; by a general partner or the proprietor, respectively; or
 - (3) For a municipality, State, Federal, or other public agency; by either a principal executive officer or ranking elected official.
 - (b) **Reports.** All reports required by permits, or other information requested by the Agency shall be signed by a person described in paragraph (a) or by a duly authorized representative of that person. A person is a duly authorized representative only if:
 - (1) The authorization is made in writing by a person described in paragraph (a), and
 - (2) The authorization specifies either an individual or a position responsible for the overall operation of the facility, from which the discharge originates, such as a plant manager, superintendent, or person of equivalent responsibility, and
 - (3) The written authorization is submitted to the Agency.

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- (c) **Changes of Authorization.** If an authorization under (b) is transferred to another permittee because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of (b) must be submitted to the Agency prior to or together with any reports, information, or applications to be signed by an authorized representative.
- 2) **Reporting requirements.**
- (a) **Planned changes.** The permittee shall give notice to the Agency as soon as possible of any planned physical alterations or additions to the permitted facility.
- (b) **Anticipated noncompliance.** The permittee shall give advance notice to the Agency of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.
- (c) **Compliance schedules.** Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.
- (d) **Monitoring reports.** Monitoring results shall be reported at the intervals specified elsewhere in this permit.
- (1) Monitoring results must be reported on a Discharge Monitoring Report (DMR).
- (2) If the permittee monitors any pollutant more frequently than required by the permit, using test procedures approved under 40 CFR 136 or as specified in the permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR.
- (3) Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified by the Agency in the permit.
- (e) **Twenty-four hour reporting.** The permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and time; and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. The following shall be included as information which must be reported within 24 hours:
- (1) Any unanticipated bypass which exceeds any effluent limitation in the permit.
- (2) Violation of a maximum daily discharge limitation for any of the pollutants listed by the Agency in the permit to be reported within 24 hours.
- The Agency may waive the written report on a case-by-case basis if the oral report has been received within 24 hours.
- (f) **Other noncompliance.** The permittee shall report all instances of noncompliance not reported under paragraphs (12)(c), (d), or (e), at the time monitoring reports are submitted. The reports shall contain the information listed in paragraph (12)(e).
- (g) **Other information.** Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application, or in any report to the Agency, it shall promptly submit such facts or information.
- (13) **Transfer of permits.** A permit may be automatically transferred to a new permittee if:
- (a) The current permittee notifies the Agency at least 30 days in advance of the proposed transfer date.
- (b) The notice includes a written agreement between the existing and new permittees containing a specific date for transfer of permit responsibility, coverage and liability between the current and new permittees; and
- (c) The Agency does not notify the existing permittee and the proposed new permittee of its intent to modify or revoke and reissue the permit. If this notice is not received, the transfer is effective on the date specified in the agreement.
- (14) All manufacturing, commercial, mining, and silvicultural dischargers must notify the Agency as soon as they know or have reason to believe:
- (a) That any activity has occurred or will occur which would result in the discharge of any toxic pollutant identified under Section 307 of the Clean Water Act which is not limited in the permit, if that discharge will exceed the highest of the following notification levels:
- (1) One hundred micrograms per liter (100 ug/l);
- (2) Two hundred micrograms per liter (200 ug/l) for acrolein and acrylonitrile; five hundred micrograms per liter (500 ug/l) for 2,4-dinitrophenol and for 2-methyl-4,8-dinitrophenol; and one milligram per liter (1 mg/l) for entimony.
- (3) Five (5) times the maximum concentration value reported for that pollutant in the NPDES permit application; or
- (b) That they have begun or expect to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant which was not reported in the NPDES permit application.
- (15) All Publicly Owned Treatment Works (POTWs) must provide adequate notice to the Agency of the following:
- (a) Any new introduction of pollutants into that POTW from an indirect discharge which would be subject to Sections 301 or 306 of the Clean Water Act if it were directly discharging those pollutants; and
- (b) Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.
- (c) For purposes of this paragraph, adequate notice shall include information on (i) the quality and quantity of effluent introduced into the POTW, and (ii) an anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.
- (16) If the permit is issued to a publicly owned or publicly regulated treatment works, the permittee shall require any industrial user of such treatment works to comply with federal requirements concerning:
- (a) User charges pursuant to Section 204(b) of the Clean Water Act, and applicable regulations appearing in 40 CFR 35;
- (b) Toxic pollutant effluent standards and pretreatment standards pursuant to Section 307 of the Clean Water Act; and
- (c) Inspection, monitoring and entry pursuant to Section 308 of the Clean Water Act.
- (17) If an applicable standard or limitation is promulgated under Section 301(c)(2)(C) and (D), 304(b)(2), or 307(a)(2) and that effluent standard or limitation is more stringent than any effluent limitation in the permit, or controls a pollutant not limited in the permit, the permit shall be promptly modified or revoked, and reissued to conform to that effluent standard or limitation.
- (18) Any authorization to construct issued to the permittee pursuant to 35 Ill. Adm. Code 309.154 is hereby incorporated by reference as a condition of this permit.
- (19) The permittee shall not make any false statement, representation or certification in any application, record, report, plan or other document submitted to the Agency or the USEPA, or required to be maintained under this permit.
- (20) The Clean Water Act provides that any person who violates a permit condition implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Clean Water Act is subject to a civil penalty not to exceed \$10,000 per day of such violation. Any person who willfully or negligently violates permit conditions implementing Sections 301, 302, 306, 307, or 308 of the Clean Water Act is subject to a fine of not less than \$2,500 nor more than \$25,000 per day of violation, or by imprisonment for not more than one year, or both.
- (21) The Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under permit shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.
- (22) The Clean Water Act provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit shall, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.
- (23) Collected screenings, slurrries, sludges, and other solids shall be disposed of in such a manner as to prevent entry of those wastes (or runoff from the wastes) into waters of the State. The proper authorization for such disposal shall be obtained from the Agency and is incorporated as part hereof by reference.
- (24) In case of conflict between these standard conditions and any other condition(s) included in this permit, the other condition(s) shall govern.
- (25) The permittee shall comply with, in addition to the requirements of the permit, all applicable provisions of 35 Ill. Adm. Code, Subtitle C, Subtitle D, Subtitle E, and all applicable orders of the Board.
- (26) The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit is held invalid, the remaining provisions of this permit shall continue in full force and effect.
- (Rev. 3-13-98)

Exhibit B

Illinois EPA Memorandum Regarding
Water Quality Based Effluent Limits at the Sanitary District of Decatur,
November 9, 2006

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY



1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 - (217) 782-3397
 JAMES R. THOMPSON CENTER, 100 WEST RANDOLPH, SUITE 11-300, CHICAGO, IL 60601 - (312) 814-6026

ROD R. BLAGOJEVICH, GOVERNOR DOUGLAS P. SCOTT, DIRECTOR

Memorandum

RECEIVED
 NOV 15 2006

DATE: 9 November 2006

TO: Ralph Hahn

FROM: Scott Twait *ST*

ILLINOIS ENVIRONMENTAL
 PROTECTION AGENCY
 BOW/WPC/PERMIT SECTION

**SUBJECT: Water Quality Based Effluent Limits
 Decatur Sanitary District NPDES #IL0028321 (Macon County)**

The subject facility discharges to the Sangamon River at a point where 0 cfs of flow exists upstream of the outfall during critical 7Q10 low-flow conditions. The Sangamon River is classified as a General Use Water and is rated a "C" stream under the Agency's Biological Stream Characterization (BSC) program. The Sangamon River, Waterbody Segment, E-09, is found on the 2006 Illinois 303(d) List. The uses impaired for this segment were aquatic life, fish consumption, and primary contact recreation. The potential causes of impairment given for the segment at that time were manganese, nitrogen (total), dissolved oxygen, PCBs, and fecal coliform. The potential sources associated with the impairment are crop production (crop land or dry land), industrial point source discharges, urban runoff/storm sewers, agriculture, combined sewer overflows, highway/road/bridge runoff (non-construction related), and source unknown.

Cadmium, Chromium (Trivalent), Copper, Lead, Nickel, and Zinc standards are based on hardness data collected at AWQMN station E-05, Sangamon River, SE of Niantic, with a critical hardness value of 242 mg/L as CaCO₃. Water quality standards identified in the table are expressed in units of mg/L. Dissolved metals standards have been converted to total metal except where noted. All data was provided by the discharger.

| Substance | Max. Eff. Conc. | No. of Samples | Multiply by | 95% Potential | Acute Standard | Chronic Standard | 302.208(g) standard | Further Analysis? |
|------------------|-----------------|----------------|-------------|---------------|----------------|------------------|---------------------|-------------------|
| Arsenic | < 0.005 | 20 | 1.4 | 0.007 | 0.3600 | 0.1900 | - | No RP* |
| Barium | 0.064 | 20 | 1.4 | 0.0896 | - | - | 5.0 | No RP* |
| Cadmium | < 0.002 | 20 | 1.4 | 0.0028 | 0.0264 | 0.0023 | - | Yes |
| Chromium (Hex) | 0.039 | 20 | 1.4 | 0.0546 | 0.0160 | 0.0110 | - | Yes |
| Chromium (Total) | 0.026 | 20 | 1.4 | 0.0364 | 3.5812 | 0.4269 | - | No RP* |
| Cyanide (WAD) | 0.015 | 20 | 1.4 | 0.021 | 0.0220 | 0.0052 | - | Yes |
| Copper | 0.024 | 20 | 1.4 | 0.0336 | 0.0408 | 0.0252 | - | Yes |
| Fluoride | 1.83 | 20 | 1.4 | 2.562 | - | - | 1.4 | Yes |
| Iron (Dissolved) | 0.332 | 20 | 1.4 | 0.4648 | - | - | 1.0 | No RP* |
| Lead | 0.011 | 20 | 1.4 | 0.0154 | 0.2948 | 0.0618 | - | No RP* |
| Manganese | 0.039 | 20 | 1.4 | 0.0546 | - | - | 1.0 | No RP* |
| Mercury | < 0.0002 | 20 | 1.4 | 0.0003 | 0.0026 | 0.0013 | - | No RP* |

ROCKFORD - 4302 North Main Street, Rockford, IL 61103 - (815) 987-7760 • DES PLAINES - 9511 W. Harrison St., Des Plaines, IL 60016 - (847) 294-4000
 ELGIN - 595 South State, Elgin, IL 60123 - (847) 608-3131 • PEORIA - 5415 N. University St., Peoria, IL 61614 - (309) 693-5463
 BUREAU OF LAND - PEORIA - 7620 N. University St., Peoria, IL 61614 - (309) 693-5462 • CHAMPAIGN - 2125 South First Street, Champaign, IL 61820 - (217) 278-5800
 SPRINGFIELD - 4500 S. Sixth Street Rd., Springfield, IL 62706 - (217) 786-6892 • COLLINSVILLE - 2009 Mall Street, Collinsville, IL 62234 - (618) 346-5120
 MARION - 2309 W. Main St., Suite 116, Marion, IL 62959 - (618) 993-7200

| | | | | | | | | |
|----------------------------|---------|----|-----|--------|--------|--------|-------|--------|
| Nickel | 0.028 | 20 | 1.4 | 0.0392 | 0.1743 | 0.0106 | - | Yes |
| Phenols | 0.005 | 20 | 1.4 | 0.007 | - | - | 0.1 | No RP* |
| Silver | 0.002 | 20 | 1.4 | 0.0028 | - | - | 0.005 | No RP* |
| Zinc | 0.418 | 20 | 1.4 | 0.5852 | 0.2583 | 0.0463 | - | Yes |
| Selenium | < 0.002 | 20 | 1.4 | 0.0028 | - | - | 1.0 | No RP* |
| Bis(2-ethylhexyl)phthalate | 0.036 | 5 | 2.3 | 0.0828 | 0.4 | 0.38 | - | No RP* |
| Bromoform | 0.076 | 5 | 2.3 | 0.1748 | - | - | - | No RP* |
| Chlorodibromomethane | 0.064 | 5 | 2.3 | 0.1472 | - | - | - | No RP* |
| Chloroform | 0.031 | 5 | 2.3 | 0.0713 | 1.9 | 0.15 | - | No RP* |
| Dichlorobromomethane | 0.026 | 5 | 2.3 | 0.0598 | 0.01 | 0.001 | - | Yes |
| Methylene chloride | 0.038 | 5 | 2.3 | 0.0874 | 17 | 1.4 | - | No RP* |

* No RP = no reasonable potential to exceed water quality standards.

** derived water quality criteria.

Further Analysis:

The Decatur Sanitary District met the permit required minimum detection level (MDL) for Cadmium, with no detections reported in twenty effluent samples. My conclusion is that no regulation of Cadmium is necessary and that no monitoring beyond the routine requirements is needed.

Chromium (Hex) was not detected in 19 of the twenty samples. The one sample that it was detected was greater than the Chromium total result. This was most likely a laboratory error. My conclusion is that no regulation of Chromium (Hex) is necessary and that no monitoring beyond the routine requirements is needed.

Cyanide (WAD) was not detected in 19 of the twenty samples. The one sample that it was detected was greater than the Cyanide total result. This was most likely a laboratory error. My conclusion is that no regulation of Cyanide (WAD) is necessary and that no monitoring beyond the routine requirements is needed.

There is no reasonable potential to exceed the acute water quality standard for Copper. The average of the Copper samples times the multiplier ($0.0092 \text{ mg/L} \times 1.4 = 0.01288 \text{ mg/L}$) was less than the chronic water quality standard. My conclusion is that no regulation of Copper is necessary and that no monitoring beyond the routine requirements is needed.

The Decatur SD had a detection for Fluoride above the water quality standard in 2001 and has not had a detection above the water quality since. My conclusion is that 6 months of monitoring for Fluoride is necessary to determine if the Fluoride detection was representative of the discharge or if there was a lab or sampling error.

There is no reasonable potential to exceed the acute water quality standard for Nickel. The average of the Nickel samples times the multiplier ($0.01652 \text{ mg/L} \times 1.4 = 0.02313 \text{ mg/L}$) was greater than the chronic water quality standard. Nickel should be regulated as a monthly average in the NPDES permit at the chronic water quality standard using the default metals translator.

Zinc has exceeded the acute and chronic water quality standards. Zinc should be regulated as a daily maximum and monthly average in the NPDES permit at the acute and chronic water quality standards respectively using the default metals translator.

The Decatur SD had a detection for Dichlorobromomethane above the water quality criteria. My conclusion is that 6 months of monitoring for Dichlorobromomethane is necessary to determine if the Dichlorobromomethane detection was representative of the discharge or if there was a lab or sampling error.

Recommendations:

Attached is a copy of the Ammonia Worksheet used to derive the appropriate water quality based effluent limits based on 35 IAC Part 355.

Given the predicted ambient conditions of the Sangamon River near the outfall, as determined using data collected at AWQMN station E-05, Sangamon River, SE of Niantic, monthly average limits of 1.6 mg/L (spring/fall), 1.3 mg/L (summer), and 4.0 mg/L (winter) are appropriate. The spring/fall limit is based on 75th percentile pH and the summer and winter limits are based on median pH.

Daily maximum limits of 8.1 mg/L (spring/fall), 8.6 mg/L (summer) and 9.6 mg/L (winter) are recommended. These limits reflect the seasonal acute water quality standards with no mixing allowance since the stream has no flow during 7Q10 conditions.

If applicable, weekly average limits of 3.9 mg/L (spring/fall) and 3.3 mg/L (summer) are appropriate. These values are based on 2.5 times the chronic limit. No weekly average limit for winter is recommended because the value would be higher than the daily maximum permit limit.

All available data collected by the discharger and the Agency has been evaluated. Because of the number of parameters that were sampled for in the routine monitoring of the permit, those parameters that were not detected were not included in this memorandum.

My evaluation of the metals and other substances given in the first table finds that water quality based permit limits are necessary for Nickel and Zinc at the limits below. To correctly evaluate potential to exceed water quality standards, a six-month monitoring condition is needed for Fluoride and Dichlorobromomethane. Permit limits identified in the table are expressed in units of mg/L.

| Substance | Daily Maximum | Monthly Average |
|-----------|---------------|-----------------|
| Nickel | | 0.011 |
| Zinc | 0.258 | 0.046 |

The permittee should be informed that it is possible to use a site-specific metals translator for Nickel and Zinc in order to increase or eliminate any potential permit limit for these substances. Total and dissolved metal would need to be collected from the effluent and a downstream location once a week for twelve weeks to determine a metal translator for these substances. The availability of metals translators could demonstrate that no reasonable potential exists to exceed standards. The permittee should be encouraged to submit a study plan to the Standards Unit if they desire to pursue this course. A compliance schedule may be appropriate, allowing for time to perform the metals translator study.

According to Alyson Grady's September 15, 2006 memorandum, no biomonitoring is recommended as a permit condition other than the routine acute definitive testing with *Ceriodaphnia* and fathead minnow.

These recommendations reflect a water quality standards perspective only and should not be construed as being inclusive of all factors that must be taken into consideration by the permit writer.

Attachment

cc: Bob Mosher
Joe Koronkowski
Bill Ettinger
Chron

Exhibit C

Sanitary District of Decatur

First Interim Report

December 20, 2007

Sanitary District of Decatur

501 DIPPER LANE • DECATUR, ILLINOIS 62522 • 217/422-6931 • FAX: 217/423-8171

December 20, 2007

Illinois Environmental Protection Agency
Attn.: Michael S. Garretson
Bureau of Water Compliance Assurance Section, MC #19
1021 North Grand Avenue East
P.O. Box 19276
Springfield, Illinois 62794-9276

Re: NPDES Permit IL0028321
Compliance Schedule Interim Report

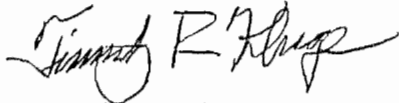
Dear Mr. Garretson:

Enclosed is the Interim Report regarding compliance with nickel and zinc limits required by Special Condition 18 of the Sanitary District of Decatur's NPDES Permit.

We appreciate the input received from Agency personnel at our meeting on October 30, 2007.

Please contact me at 422-6931 ext. 214 or at timk@sdd.dst.il.us if you have any questions regarding this report.

Sincerely,



Timothy R. Kluge, P.E.
Technical Director

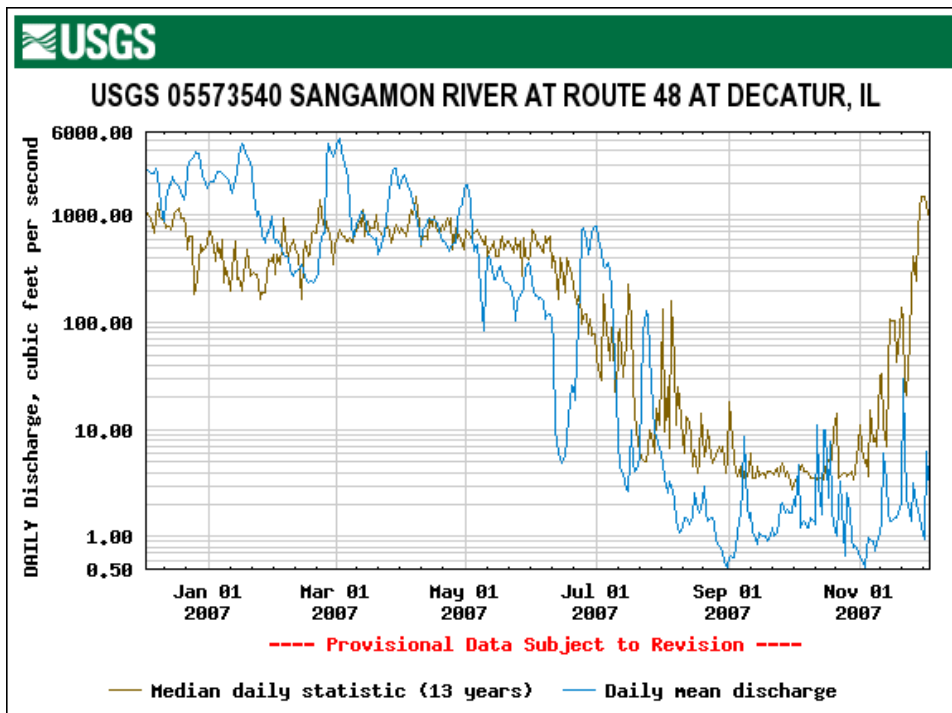
cc: Toby Frevert, DWPC Manager
Bob Mosher, DWPC Standards
Rick Pinneo, DWPC Permits

**Sanitary District of Decatur
Nickel and Zinc Limits
Interim Report on Effluent and Stream Sampling
December 2007**

The reissued NPDES permit for the Sanitary District of Decatur effective July 1, 2007 contains new limits for nickel and zinc and a two-year compliance schedule for meeting the limits. Special Condition 18 requires that an interim report covering “effluent and stream sampling to date, and what measures are necessary to comply with final nickel and zinc limitations” be submitted to Illinois EPA by January 1, 2008. A summary of information gathered and activities to date is provided below.

Translator Study

A twelve-week translator study was completed between August and October 2007 as outlined in Special Condition 17 of the NPDES permit. This period of time coincided with seasonal low flows, and 2007 Sangamon River flows (especially August – October) were generally below historical averages based on USGS data.



A complete report of the translator study is attached.

Hardness Sampling

The hardness used by Illinois EPA for calculating the nickel and zinc limits was 242 mg/L according to the permit engineer’s review notes. A summary of hardness data from

Industrial Source Sampling

Analyses for metals including nickel and zinc have been performed semi-annually as part of the District's industrial pretreatment program. Sampling of the major industries and other industries discharging metals will be increased to at least quarterly in 2008.

Receiving Stream Sampling

Upstream and downstream sampling at the locations described in the translator study will be continued at a twice monthly frequency to provide a more complete picture of nickel and zinc in the Sangamon River.

Chronic WET Testing

Chronic toxicity tests were conducted in July and September 2007. An additional chronic toxicity test using EDTA to chelate metals in the samples is planned for December 2007.

Planned Activities

Continuing meetings are planned with industrial users regarding potential reduction of metals in their discharges. As part of these discussions, an analysis is being conducted of local pretreatment limits that would be required to comply with nickel and zinc permit limits. Preliminary discussions have been held with our two largest industrial users, and meetings with their management personnel are being scheduled to occur in early January 2008. District personnel will continue to work closely with both of these users as well as smaller dischargers of nickel and zinc tributary to the treatment plant to determine what reductions are possible.

In addition, review of information that could potentially support a site-specific standard is ongoing. At the suggestion of Illinois EPA and U.S. EPA, guidance for determining a Water Effect Ratio and whether that process might be applicable to this situation is being reviewed. Information on the biotic ligand model is also being reviewed to determine its potential usefulness. District personnel intend to work closely with Illinois EPA and U.S. EPA Region 5 if the decision is made to decide to pursue either of these options.

Compliance Plan

Based on current information, the measures necessary to comply with final nickel and zinc limitations will include a combination of the following:

1. Recalculation of NPDES permit limits based on the results of the translator study and low flow hardness analyses. The following limits are proposed calculated as shown in the study report:

| | Current Limit | Proposed Limit |
|--------------------------|---------------|----------------|
| Ni monthly average, mg/L | 0.011 | 0.019 |
| Zn monthly average, mg/L | 0.046 | 0.092 |
| Zn daily maximum, mg/L | 0.258 | 0.510 |

-
2. Recalculation of local pretreatment limits for nickel and zinc, and analysis of industrial discharge changes that would be needed to meet the limits.
3. Ongoing review and analysis of technical information that would be needed to support a site-specific water quality standard.

The next interim report will be submitted by July 1, 2008 as required by our NPDES permit.

Sanitary District of Decatur Translator Study

Objective:

To determine acute and chronic metals translators for Nickel and Zinc in the discharge from the Sanitary District of Decatur (SDD) main treatment plant final effluent. Our main reference for conduction of this study was "The Metals Translator: Guidance for Calculating a Total Recoverable Permit Limit from a Dissolved Criterion", US EPA, EPA823-B-96-007, June 1996.

Approach:

We collected samples from the Sangamon River at the St. Louis Bridge (Upstream), the plant's final effluent (FE), Steven's Creek at West Main Street Bridge (creek that empties into Sangamon River just downstream of the plant final effluent) and the Sangamon River at the Wyckles Road Bridge (Downstream). (River flow will be taken from the United States Geological Survey (USGS) location at St. Louis Bridge). These samples were analyzed for temperature, hardness, pH, total suspended solids (TSS), total non purgeable organic carbon (NPTOC), total recoverable Nickel and Zinc, and dissolved Nickel and Zinc. Translators were calculated as the geometric mean of the ratios of dissolved metal to total recoverable metal for all usable data pairs for both the final effluent and downstream river sampling sites using data from August 1 to November 1, 2007 which was the period of sustained low flow for the Sangamon River upstream from the plant. Equipment and field blanks and duplicates were used to document data quality.

Sample Types:

We sampled the SDD final effluent as it leaves the west end of the chlorine contact tank by using a continuous 24-hour automated sampler. We collected grab samples from the stream sites.

Parameters : All metals analyses performed by TestAmerica (Chicago)
All other analyses performed in house

| Parameter: | Analytical Method: | Sample Practice: | QA Requirements |
|--------------------------|--------------------|------------------|--|
| Total Recoverable Nickel | 200.7 | Standard | Once weekly trip blanks & duplicates, lab. method blanks for batches, MS/MSD on some batches of samples. |
| Dissolved Nickel | 200.7 | Standard | Same as above |
| Total Recoverable Zinc | 200.7 | Standard | Same as above |
| Dissolved Zinc | 200.7 | Standard | Same as above |
| Volume of Flow in MGD | Metered | | Periodic meter calibration & manual measurements |
| Hardness | 130.1 | Standard | Once weekly trip blanks & duplicates, lab. method blanks for batches, MS/MSD on some batches of samples. |
| pH | 150.1 or 4500-H+ B | On site & lab. | Daily standardization of meters |
| TSS | 160.2 or 2540D | Standard | Standard lab. QA/QC |
| NPTOC | 5310C | Standard | Standard lab. QA/QC |

Sampling Procedure

1. Given the low metals concentrations expected, extreme care was taken to ensure that samples were not contaminated during sample collection. *Neither smoking nor eating was permitted while on station, at any time when sample bottles were being handled, or during filtration.*
2. Each person on the field crew wore clean clothing, i.e., free of dirt, grease, etc. that could contaminate sampling apparatus or sample bottles.
3. An equipment blank was done periodically with the actual equipment used for the environmental samples. The field blank described in this section was performed with the sampling equipment BEFORE the environmental samples were collected. This blank served to verify equipment and sampling protocol cleanliness.
4. Each person handling sampling apparatus or sample bottles wore new disposable sampling gloves at each location. In the field, only one person handled sample bottles, and that person touched nothing else while collecting or transferring samples.
5. For a composite at the SDD FE, the sampler placed a specially cleaned sample bottle into the automatic sampler's refrigerator and started the sampler on Tuesday and Thursday mornings. A chain of custody form was started at that time, to be completed the following morning at the time of sample collection. On Wednesday and Friday mornings, the sampler capped the bottles and took them to the laboratory. Laboratory personnel filtered a portion of the sample for dissolved metals, and poured off a portion of the composite for total recoverable metals and hardness. Laboratory personnel also cleaned the composite sample bottles to prepare them for the next sample day. Laboratory personnel also took portions of the FE composite samples for TSS and TOC analyses.
6. The grab samples collected from the SDD's FE shall be analyzed just as they have for the river runs we have done in the past.
7. To collect the samples from the stream sites, two people were involved, both wearing clean clothing. The team gathered-up the coolers and sampling equipment and then oriented themselves with respect to the wind and current to minimize contamination. The non-sampling member of the team started a river run log sheet and collected temperature and appearance data.
8. The sampler held a metals-cleaned plastic pitcher and attached the rope to the pitcher. He lowered the pitcher into the water of the stream at a spot deep enough to allow the bottle to submerge completely without reaching the bottom. Care was taken not to disturb sediment on the bottom of the river. The sampler then pulled up the sample and took the pitcher and discarded the water off to the side where it would not contaminate or roil the water in the river. He then filled the sample bottle for transportation to the laboratory. When filling the sample bottles, ½ to 1 inch of air space was left at the top.
9. The sampler placed the capped sample bottle into a clean cooler.
10. A duplicate sample was collected in the same way as the original sample at either SDD FE or a stream site at least once per week. All bottles were properly marked with the locations they came from.
11. A field blank was collected by filling the sample jug with DI clean water and then pouring off the DI water as if it was a stream or effluent sample. A field blank was taken at a random location and day of the week once per week.
12. Samplers filled out a river run form while collecting samples and returned all samples to the SDD laboratory as soon as possible after collection. Samples were logged in at the

laboratory and custody was transferred to laboratory personnel. Lab personnel then filtered a portion of the sample for dissolved metals analyses and preserved the total recoverable and dissolved metals samples appropriately. Lab personnel completed the rest of the analytical and cleaning procedures.

13. Samples for metals and hardness analyses were held in the sample refrigerator in the SDD W. D. Hatfield Laboratory until Friday morning each week. Each Friday morning, samples were packed up in a cooler and covered with ice and sent to the appropriate contract laboratory for the metals analyses.
14. After analyses and cleaning procedures were complete in the laboratory, clean dry bottles and sampling apparatuses used for the metals samples were stored in a manner to prevent contamination prior to the next usage.

Laboratory Equipment:

- Gelman filtering apparatus
- 1 L filter flasks (metals cleaned) for filtering samples for soluble metals
- Pall 0.45 um certified sterilized membrane filters for metals filtering
- Whatman 934-AH glass fiber filters for total suspended solids analysis
- Orion 520 pH meter
- Mettler AE200 analytical balance
- Star Model 100 Total Organic Carbon Analyzer
- TestAmerica used an inductively coupled plasma – optical emission spectrophotometer for all metals analyses
- Barnstead Nanopure II Type 1 grade water system (resistivity > 16.7 megohm-cm)
- VWR 1370-FM Laboratory Oven
- Assorted appropriately cleaned laboratory glassware

Laboratory Reagents:

- Type 1 reagent grade water
- Mallinckrodt AR Nitric Acid
- VWR pH Buffers 4.0, 7.0, 10.0
- NPTOC calibration standards prepared from potassium acid phthalate
- NPTOC control standard prepared from sucrose
- Ricca ACS grade Sulfuric Acid

Laboratory Analyses:

All laboratory analysis performed in house (pH, Total Suspended Solids, and Non Purgeable Total Organic Carbon) utilized district laboratory standard operating procedures which are in accordance with 40 CFR Part 136. All metals analyses performed by TestAmerica (Chicago) in accordance with 40 CFR Part 136.

Data Analysis

The district's latest NPDES permit (issued in July 2007) included water quality based standards for Nickel and Zinc. This is due to the sanitary district discharging to the Sangamon River downstream from the Lake Decatur dam. This segment of the river has 0 cfs flow at critical 7Q10 low-flow conditions. The permit required a minimum 12 week study of dissolved and total metals concentration for samples taken of the district effluent and the Sangamon River downstream of the plant after complete mixing. We decided to perform a longer study during both high flow and low flow conditions. We also sampled from the Sangamon River upstream of the plant and Steven's Creek which empties into the Sangamon River just downstream of the plant discharge. This would help increase our understanding of the overall situation. Metals results during high flow conditions would enable us to see if any water quality standards were being violated downstream during this period. Metals results for low flow conditions would be used to calculate the translator and evaluate the hardness value used for the water quality standards calculation for the district effluent since this is the period of maximum concern. All data obtained during this study is attached as an appendix in an excel spreadsheet format.

Study results indicated essentially no Nickel and Zinc contribution from the Sangamon River upstream of the plant or Steven's Creek which means that the district's effluent is responsible for the levels of these metals in the river downstream of the plant. A summary of effluent and downstream river data follows :

| Month | Upstream Flow, cfs | Effluent Zn Dissolved, mg/l | Effluent Zn Total, mg/l | Downstream Zn Dissolved, mg/l | Downstream Zn Total, mg/l | Effluent Ni Dissolved, mg/l | Effluent Ni Total, mg/l | Downstream Ni Dissolved, mg/l | Downstream Ni Total, mg/l |
|----------------|--------------------|-----------------------------|-------------------------|-------------------------------|---------------------------|-----------------------------|-------------------------|-------------------------------|---------------------------|
| March 2007 | 1304 | 0.083 | 0.085 | <0.012 | <0.011 | 0.016 | 0.016 | <0.0050 | <0.0050 |
| April 2007 | 1196 | 0.072 | 0.076 | <0.010 | <0.010 | 0.015 | 0.016 | <0.0050 | <0.0050 |
| May 2007 | 488 | 0.058 | 0.065 | <0.010 | <0.011 | 0.018 | 0.019 | <0.0050 | <0.0050 |
| June 2007 | 255 | 0.051 | 0.061 | <0.017 | 0.021 | 0.020 | 0.022 | 0.0081 | 0.0086 |
| July 2007 | 152 | 0.038 | 0.048 | <0.016 | <0.020 | 0.025 | 0.025 | 0.011 | 0.011 |
| August 2007 | 1.75 | 0.034 | 0.044 | 0.030 | 0.034 | 0.027 | 0.028 | 0.025 | 0.026 |
| September 2007 | 1.55 | 0.035 | 0.044 | 0.024 | 0.038 | 0.026 | 0.027 | 0.024 | 0.025 |
| October 2007 | 2.63 | 0.042 | 0.051 | 0.041 | 0.044 | 0.022 | 0.023 | 0.020 | 0.020 |

As can be seen, Nickel and Zinc levels in the downstream Sangamon River did not exhibit a discernable increase until June when river flow dropped to around 250 cfs. No chronic water quality based standard violations would have occurred in the river downstream until August of 2007 and this was for Nickel only. This would support the assertion that the low-flow period is the most critical in regard to these limits and therefore, data generated during this period would be most applicable to generation of the district water quality based effluent standards for these metals.

During this period, the most significant thing noted in addition to the dissolved to total metal ratios was that the river downstream hardness was significantly different from that used by the IEPA for the permit limit calculations. A critical hardness value of 242 mg/L as CaCO₃ from a sample collected at AWQMN station E-05, Sangamon River, SE of Niantic. Our study indicated the hardness value at this critical period is significantly higher than that which would affect the

***** PCB 2009-125 *****

water quality based standard concentration. A summary of hardness data follows :

| Month | Upstream Flow, cfs | Effluent Hardness as CaCO ₃ , mg/L | Downstream Hardness as CaCO ₃ , mg/L |
|----------------|--------------------|---|---|
| March 2007 | 1304 | 548 | 292 |
| April 2007 | 1196 | 540 | 308 |
| May 2007 | 488 | 505 | 304 |
| June 2007 | 255 | 497 | 346 |
| July 2007 | 152 | 544 | 373 |
| August 2007 | 1.75 | 518 | 521 |
| September 2007 | 1.55 | 488 | 473 |
| October 2007 | 2.63 | 445 | 414 |

As can be seen by the preceding tables, upstream river flow was at it's lowest from August to October 2007. Therefore, the twelve week period from August 2 to November 1 was used to calculate the nickel and zinc translators and mean downstream hardness. Summary data is included in the following tables :

| Sample Date | Plant Effluent Total Hardness mg/L | River Downstream Total Hardness mg/L |
|-------------------------|------------------------------------|--------------------------------------|
| 8/2/2007 | 523 | 509 |
| 8/7/2007 | 552 | 544 |
| 8/9/2007 | 557 | 540 |
| 8/14/2007 | 542 | 546 |
| 8/16/2007 | 507 | 585 |
| 8/21/2007 | 503 | 480 |
| 8/23/2007 | 489 | 483 |
| 8/28/2007 | 499 | 479 |
| 8/30/2007 | 489 | 524 |
| 9/4/2007 | 547 | 543 |
| 9/6/2007 | 496 | 554 |
| 9/11/2007 | 428 | 369 |
| 9/13/2007 | 465 | 429 |
| 9/18/2007 | 457 | 446 |
| 9/20/2007 | 489 | 454 |
| 9/25/2007 | 518 | 512 |
| 9/27/2007 | 501 | 480 |
| 10/2/2007 | 471 | 462 |
| 10/4/2007 | 428 | 344 |
| 10/9/2007 | 485 | 462 |
| 10/11/2007 | 502 | 521 |
| 10/16/2007 | 321 | 167 |
| 10/18/2007 | 301 | 314 |
| 10/23/2007 | 408 | 412 |
| 10/25/2007 | 481 | 429 |
| 10/30/2007 | 527 | 495 |
| 11/1/2007 | 526 | 534 |
| Geometric Mean : | 477 | 456 |

| Sample Date | Plant Effluent Dissolved Zinc mg/L | Plant Effluent Total Zinc mg/L | Plant Effluent Dissolved/Total Ratio | River Downstream Dissolved Zinc mg/L | River Downstream Total Zinc mg/L | River Downstream Dissolved/Total Ratio |
|-------------------------|------------------------------------|--------------------------------|--------------------------------------|--------------------------------------|----------------------------------|--|
| 8/2/2007 | 0.032 | 0.042 | 0.762 | 0.027 | 0.021 | 1.000 |
| 8/7/2007 | 0.036 | 0.048 | 0.750 | 0.015 | 0.023 | 0.652 |
| 8/9/2007 | 0.029 | 0.041 | 0.707 | 0.020 | 0.025 | 0.800 |
| 8/14/2007 | 0.044 | 0.050 | 0.880 | 0.036 | 0.044 | 0.818 |
| 8/16/2007 | 0.038 | 0.045 | 0.844 | 0.043 | 0.044 | 0.977 |
| 8/21/2007 | ND1 | 0.049 | | 0.032 | 0.034 | 0.941 |
| 8/23/2007 | ND1 | 0.046 | | 0.035 | 0.038 | 0.921 |
| 8/28/2007 | 0.036 | 0.0425 | 0.847 | 0.046 | 0.050 | 0.920 |
| 8/30/2007 | 0.026 | 0.030 | 0.867 | 0.019 | 0.028 | 0.679 |
| 9/4/2007 | 0.037 | 0.053 | 0.698 | 0.053 | 0.061 | 0.869 |
| 9/6/2007 | 0.030 | 0.037 | 0.811 | 0.024 | 0.030 | 0.800 |
| 9/11/2007 | 0.027 | 0.031 | 0.871 | 0.022 | 0.0245 | 0.898 |
| 9/13/2007 | 0.031 | 0.042 | 0.738 | 0.018 | 0.024 | 0.750 |
| 9/18/2007 | 0.037 | 0.042 | 0.881 | 0.049 | 0.055 | 0.891 |
| 9/20/2007 | 0.031 | 0.037 | 0.838 | 0.024 | 0.027 | 0.889 |
| 9/25/2007 | 0.059 | 0.0725 | 0.814 | 0.020 | 0.026 | 0.769 |
| 9/27/2007 | 0.030 | 0.038 | 0.789 | 0.048 | 0.054 | 0.889 |
| 10/2/2007 | 0.044 | 0.049 | 0.898 | 0.019 | 0.024 | 0.792 |
| 10/4/2007 | 0.031 | 0.033 | 0.939 | 0.017 | 0.021 | 0.810 |
| 10/9/2007 | 0.031 | 0.038 | 0.816 | 0.058 | 0.063 | 0.921 |
| 10/11/2007 | 0.036 | 0.043 | 0.837 | 0.023 | 0.030 | 0.767 |
| 10/16/2007 | 0.028 | 0.049 | 0.571 | 0.073 | 0.044 | 1.000 |
| 10/18/2007 | 0.037 | 0.062 | 0.597 | 0.047 | 0.060 | 0.783 |
| 10/23/2007 | 0.054 | 0.0655 | 0.824 | 0.075 | 0.087 | 0.862 |
| 10/25/2007 | 0.089 | 0.096 | 0.927 | 0.033 | 0.041 | 0.805 |
| 10/30/2007 | 0.037 | 0.039 | 0.949 | 0.031 | 0.035 | 0.886 |
| 11/1/2007 | 0.036 | 0.038 | 0.947 | 0.032 | 0.035 | 0.914 |
| Geometric Mean : | | | 0.810 | | | 0.847 |

indicates Cd/Ct set to 1 since dissolved result was higher than the total as per US EPA The Metals Translator : Guidance for Calculating a Total Recoverable Permit Limit From a Dissolved Criterion, Appendix C, p.48.

ND1 = matrix interference(Na)

| Sample Date | Plant Effluent Dissolved Nickel mg/L | Plant Effluent Total Nickel mg/L | Plant Effluent Dissolved/Total Ratio | River Downstream Dissolved Nickel mg/L | River Downstream Total Nickel mg/L | River Downstream Dissolved/Total Ratio |
|-------------------------|--------------------------------------|----------------------------------|--------------------------------------|--|------------------------------------|--|
| 8/2/2007 | 0.033 | 0.033 | 1.000 | 0.027 | 0.027 | 1.000 |
| 8/7/2007 | 0.029 | 0.031 | 0.935 | 0.024 | 0.027 | 0.889 |
| 8/9/2007 | 0.027 | 0.028 | 0.964 | 0.026 | 0.026 | 1.000 |
| 8/14/2007 | 0.029 | 0.030 | 0.967 | 0.030 | 0.0295 | 1.000 |
| 8/16/2007 | 0.025 | 0.026 | 0.962 | 0.027 | 0.029 | 0.931 |
| 8/21/2007 | 0.028 | 0.027 | 1.000 | 0.021 | 0.021 | 1.000 |
| 8/23/2007 | ND1 | 0.023 | | 0.022 | 0.022 | 1.000 |
| 8/28/2007 | 0.023 | 0.025 | 0.920 | 0.025 | 0.024 | 1.000 |
| 8/30/2007 | 0.025 | 0.024 | 1.000 | 0.023 | 0.024 | 0.958 |
| 9/4/2007 | 0.029 | 0.031 | 0.935 | 0.029 | 0.030 | 0.967 |
| 9/6/2007 | 0.027 | 0.026 | 1.000 | 0.028 | 0.029 | 0.966 |
| 9/11/2007 | 0.022 | 0.022 | 1.000 | 0.018 | 0.0175 | 1.000 |
| 9/13/2007 | 0.027 | 0.029 | 0.931 | 0.021 | 0.022 | 0.955 |
| 9/18/2007 | 0.025 | 0.025 | 1.000 | 0.026 | 0.026 | 1.000 |
| 9/20/2007 | 0.025 | 0.026 | 0.962 | 0.023 | 0.024 | 0.958 |
| 9/25/2007 | 0.026 | 0.028 | 0.929 | 0.025 | 0.026 | 0.962 |
| 9/27/2007 | 0.025 | 0.027 | 0.926 | 0.026 | 0.027 | 0.963 |
| 10/2/2007 | 0.027 | 0.026 | 1.000 | 0.023 | 0.023 | 1.000 |
| 10/4/2007 | 0.024 | 0.024 | 1.000 | 0.018 | 0.018 | 1.000 |
| 10/9/2007 | 0.022 | 0.026 | 0.846 | 0.023 | 0.024 | 0.958 |
| 10/11/2007 | 0.022 | 0.024 | 0.917 | 0.023 | 0.024 | 0.958 |
| 10/16/2007 | 0.017 | 0.018 | 0.944 | 0.011 | 0.0088 | 1.000 |
| 10/18/2007 | 0.014 | 0.015 | 0.933 | 0.015 | 0.016 | 0.938 |
| 10/23/2007 | 0.020 | 0.0205 | 0.976 | 0.020 | 0.021 | 0.952 |
| 10/25/2007 | 0.026 | 0.027 | 0.963 | 0.019 | 0.020 | 0.950 |
| 10/30/2007 | 0.024 | 0.024 | 1.000 | 0.022 | 0.022 | 1.000 |
| 11/1/2007 | 0.023 | 0.023 | 1.000 | 0.022 | 0.023 | 0.957 |
| Geometric Mean : | | | 0.961 | | | 0.972 |

indicates Cd/Ct set to 1 since dissolved result was higher than the total as per US EPA The Metals Translator : Guidance for Calculating a Total Recoverable Permit Limit From a Dissolved Criterion, Appendix C, p.48.

ND1 = matrix interference(Na)

An attempt was also made to calculate the translators using an alternative method involving the levels of TSS. This was found to be of very poor correlation.

Using the experimental data obtained during low flow conditions, we made these calculations of Zinc and Nickel water quality standards for our effluent.

Table Excerpt from Title 35; Subtitle C; Chapter I; Part 302 Water Quality Standards (IPCB)

| Constituent | STORET Number | AS (µg/L) | CS (µg/L) |
|--------------------|------------------|---|--|
| Zinc (dissolved) | 01090 | $\exp[A+B\ln(H)] X$ 0.978^* , where A=0.9035 and B=0.8473 | $\exp[A+B\ln(H)] X$ 0.986^* , where A=-0.8165 and B=0.8473 |
| | | ACUTE | CHRONIC |
| Nickel (dissolved) | 01065 | $\exp[A+B\ln(H)] X$ 0.998^* , where A=0.5173 and B=0.8460 | $\exp[A+B\ln(H)] X$ 0.997^* , where A=-2.286 and B=0.8460 |
| | | ACUTE | CHRONIC |

$$\begin{aligned} \text{Zinc (dissolved) chronic} &= \exp[(-.8165)+0.8473(\ln(\text{Hardness mg/L}))] X 0.986 \\ &= (\exp[(-.8165)+0.8473(\ln(456 \text{ mg/L}))] X 0.986) \div (1000 \text{ ug/mg}) \\ &= 0.078 \text{ mg/L} \times (1/\text{Zn translator}) \text{ to convert to total metal} \\ &= 0.078 \text{ mg/L} \times (1/0.847) \\ &= 0.092 \text{ mg/L for Total Zinc} \end{aligned}$$

$$\begin{aligned} \text{Zinc (dissolved) acute} &= \exp[(0.9035)+0.8473(\ln(\text{Hardness mg/L}))] X 0.978 \\ &= (\exp[(0.9035)+0.8473(\ln(456 \text{ mg/L}))] X 0.978) \div (1000 \text{ ug/mg}) \\ &= 0.432 \text{ mg/L} \\ &= 0.432 \text{ mg/L} \times (1/\text{Zn translator}) \text{ to convert to total metal} \\ &= 0.432 \text{ mg/L} \times (1/0.847) \\ &= 0.510 \text{ mg/L for Total Zinc} \end{aligned}$$

$$\begin{aligned} \text{Nickel (dissolved) chronic} &= \exp[(-2.286)+0.8460(\ln(\text{Hardness mg/L}))] X 0.997 \\ &= (\exp[(-2.286)+0.8460(\ln(456 \text{ mg/L}))] X 0.997) \div (1000 \text{ ug/mg}) \\ &= 0.018 \text{ mg/L} \\ &= 0.018 \text{ mg/L} \times (1/\text{Ni translator}) \text{ to convert to total metal} \\ &= 0.018 \text{ mg/L} \times (1/0.972) \\ &= 0.019 \text{ mg/L for Total Nickel} \end{aligned}$$

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 Study of Nickel and Zinc in plant final effluent and Sangamon River
 PCB 2009-125
 Supplementary Analytical data

| Sample Date | River Upstream pH, S.U. | Plant Effluent pH, S.U. | Steven's Creek pH, S.U. | River Downstream pH, S.U. | River Upstream T.S.S. mg/L | Plant Effluent T.S.S. mg/L | Steven's Creek T.S.S. mg/L | River Downstream T.S.S. mg/L | River Upstream P.O.C. mg/L | Plant Effluent P.O.C. mg/L | Steven's Creek P.O.C. mg/L | River Downstream P.O.C. mg/L |
|-------------|----------------------------------|----------------------------------|----------------------------------|------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|---------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|---------------------------------------|
| 3/20/2007 | 8.31 | 8.01 | 8.11 | 8.21 | 25 | 6.8 | 99 | 25 | 9.8 | 19 | 13 | 11 |
| 3/22/2007 | 8.36 | 8.03 | 8.13 | 8.21 | 23 | 4.0 | 10 | 22 | 12 | 18 | 13 | 12 |
| 3/27/2007 | 8.61 | 8.09 | 8.09 | 8.54 | 24 | 4.4 | 21 | 31 | 8.3 | 16 | 8.9 | 9.1 |
| 3/29/2007 | 8.37 | 8.01 | 8.11 | 8.37 | 33 | 4.6 | 38 | 35 | 9.6 | 19 | 9.3 | 9.5 |
| 4/3/2007 | 8.21 | 7.92 | 8.03 | 8.16 | 25 | 7.6 | 58 | 33 | 13 | 16 | 11 | 11 |
| 4/5/2007 | 8.33 | 7.98 | 8.17 | 8.28 | 26 | 6.2 | 19 | 25 | 10 | 17 | 10 | 11 |
| 4/10/2007 | 8.42 | 7.91 | 8.17 | 8.30 | 9.0 | 6.4 | 7.0 | 9.0 | 8.7 | 15 | 8.9 | 9.2 |
| 4/17/2007 | 8.62 | 7.93 | 8.13 | 8.52 | 13 | 3.8 | 11 | 15 | 8.7 | 15 | 9.6 | 9.9 |
| 4/19/2007 | 8.52 | 8.03 | 8.19 | 8.45 | 17 | 3.6 | 7.5 | 20 | 10 | 20 | 9.0 | 9.9 |
| 4/24/2007 | 8.41 | 8.05 | 8.08 | 8.30 | 30 | 5.2 | 13 | 28 | 8.3 | 16 | 8.2 | 8.5 |
| 4/26/2007 | 8.43 | 7.96 | 8.00 | 8.22 | 26 | 4.4 | 36 | 33 | 7.9 | 17 | 9.0 | 8.9 |
| 5/1/2007 | 8.38 | 7.98 | 8.11 | 8.34 | 21 | 6.0 | 17 | 25 | 10 | 20 | 13 | 13 |
| 5/3/2007 | 8.25 | 7.99 | 8.04 | 8.26 | 28 | 6.6 | 16 | 26 | 13 | 23 | 14 | 15 |
| 5/8/2007 | 8.39 | 7.91 | 8.07 | 8.21 | 17 | 9.0 | 17 | 27 | 7.9 | 13 | 7.9 | 8.3 |
| 5/10/2007 | 8.33 | 8.05 | 8.06 | 8.10 | 19 | 7.0 | 23 | 29 | 8.9 | 14 | 8.4 | 9.0 |
| 5/15/2007 | 8.60 | 7.85 | 8.05 | 8.39 | 19 | 8.4 | 22 | 21 | 9.4 | 19 | 10 | 11 |
| 5/17/2007 | 8.57 | 7.99 | 8.17 | 8.35 | 21 | 6.6 | 44 | 30 | 11 | 17 | 10 | 11 |
| 5/22/2007 | 8.47 | 7.93 | 8.14 | 8.26 | 25 | 8.8 | 32 | 29 | 12 | 13 | 11 | 11 |
| 5/24/2007 | 8.44 | 7.98 | 8.20 | 8.22 | 28 | 5.8 | 33 | 29 | 12 | 17 | 9.5 | 9.7 |
| 5/29/2007 | 8.57 | 7.95 | 8.18 | 8.38 | 22 | 4.6 | 35 | 25 | 13 | 21 | 14 | 15 |
| 5/31/2007 | 8.39 | 7.89 | 8.24 | 7.96 | 17 | 4.2 | 34 | 25 | 16 | 22 | 15 | 15 |
| 6/5/2007 | 8.25 | 8.03 | 8.12 | 8.10 | 23 | 5.6 | 35 | 27 | 14 | 20 | 12 | 13 |
| 6/7/2007 | 8.40 | 7.98 | 8.19 | 8.17 | 25 | 7.2 | 30 | 29 | 12 | 27 | 9.7 | 12 |
| 6/12/2007 | 8.42 | 8.04 | 8.21 | 8.08 | 21 | 7.8 | 20 | 24 | 13 | 27 | 14 | 17 |
| 6/14/2007 | 8.20 | 7.97 | 8.25 | 8.11 | 23 | 7.0 | 23 | 23 | 15 | 22 | 14 | 19 |
| 6/19/2007 | 7.74 | 7.95 | 7.89 | 7.95 | 28 | 8.4 | 23 | 20 | 15 | 21 | 19 | 21 |
| 6/21/2007 | 8.21 | 8.05 | 8.01 | 7.99 | 32 | 9.6 | 18 | 20 | 15 | 25 | 16 | 19 |
| 6/26/2007 | 8.39 | 7.95 | 7.97 | 8.17 | 19 | 4.6 | 93 | 6.0 | 11 | 22 | 13 | 12 |
| 6/28/2007 | 8.15 | 7.92 | 7.92 | 8.02 | 29 | 7.4 | 120 | 66 | 9.4 | 19 | 12 | 11 |
| 7/3/2007 | 8.57 | 8.02 | 8.16 | 8.46 | 27 | 6.2 | 44 | 34 | 13 | 26 | 14 | 14 |
| 7/5/2007 | 8.39 | 7.94 | 8.05 | 8.21 | 26 | 7.8 | 35 | 38 | 12 | 26 | 12 | 14 |
| 7/10/2007 | 8.39 | 8.01 | 8.16 | 8.08 | 26 | 5.8 | 20 | 27 | 14 | 22 | 13 | 15 |
| 7/12/2007 | 8.24 | 8.03 | 8.14 | 8.05 | 31 | 5.8 | 15 | 21 | 14 | 24 | 14 | 16 |
| 7/17/2007 | 7.87 | 7.94 | 8.12 | 8.02 | 22 | 7.6 | 11 | 15 | 15 | 16 | 16 | 18 |
| 7/19/2007 | 7.60 | 8.01 | 7.95 | 7.95 | 10 | 6.8 | 8.0 | 13 | 24 | 27 | 20 | 22 |
| 7/24/2007 | 8.80 | 8.05 | 8.15 | 8.40 | 29 | 6.2 | 6.0 | 24 | 13 | 21 | 14 | 15 |
| 7/26/2007 | 8.69 | 8.04 | 8.11 | 8.45 | 24 | 7.0 | 8.0 | 26 | 13 | 22 | 13 | 15 |

| Sample Date | River Upstream pH, S.U. | Plant Effluent pH, S.U. | Steven's Creek pH, S.U. | River Downstream pH, S.U. | River Upstream T.S.S. mg/L | Plant Effluent T.S.S. mg/L | Steven's Creek T.S.S. mg/L | River Downstream T.S.S. mg/L | River Upstream P.O.C. mg/L | Plant Effluent P.O.C. mg/L | Steven's Creek P.O.C. mg/L | River Downstream P.O.C. mg/L |
|-------------|----------------------------------|----------------------------------|----------------------------------|------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|---------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|---------------------------------------|
| 7/31/2007 | 8.47 | 8.01 | 7.99 | 7.99 | 17 | 9.8 | 6.0 | 18 | 13 | 17 | 14 | 14 |
| 8/2/2007 | 8.34 | 8.03 | 7.93 | 7.96 | 22 | 5.2 | 4.5 | 14 | 14 | 17 | 13 | 16 |
| 8/7/2007 | 7.98 | 8.08 | 7.94 | 8.01 | 21 | 10 | 3.5 | 11 | 12 | 22 | 14 | 18 |
| 8/9/2007 | 8.06 | 8.08 | 7.94 | 8.01 | 17 | 12 | 4.0 | 14 | 15 | 21 | 15 | 20 |
| 8/14/2007 | 8.03 | 8.16 | 7.93 | 8.07 | 24 | 3.4 | 5.5 | 14 | 13 | 18 | 13 | 17 |
| 8/16/2007 | 8.01 | 8.17 | 7.97 | 8.15 | 13 | 7.2 | 3.5 | 17 | 14 | 20 | 14 | 20 |
| 8/21/2007 | 7.81 | 8.14 | 7.88 | 8.07 | 18 | 9.0 | 7.0 | 10 | 16 | 24 | 16 | 18 |
| 8/23/2007 | 8.13 | 8.11 | 7.95 | 8.09 | 18 | 2.0 | 4.5 | 8.0 | 16 | 26 | 16 | 21 |
| 8/28/2007 | 8.16 | 8.16 | 7.94 | 8.14 | 26 | 3.6 | 4.0 | 13 | 12 | 20 | 11 | 14 |
| 8/30/2007 | 8.16 | 8.18 | 7.96 | 8.09 | 23 | 4.0 | 5.0 | 11 | 14 | 24 | 12 | 15 |
| 9/4/2007 | 8.25 | 8.19 | 8.02 | 8.17 | 19 | 8.4 | 5.5 | 11 | 11 | 18 | 12 | 15 |
| 9/6/2007 | 8.11 | 8.20 | 8.00 | 8.09 | 28 | 4.4 | 4.0 | 11 | 14 | 18 | 13 | 17 |
| 9/11/2007 | 7.62 | 8.22 | 7.72 | 8.10 | 12 | 1.2 | 15 | 6.0 | 12 | 21 | 16 | 19 |
| 9/13/2007 | 7.77 | 7.77 | 7.85 | 8.10 | 14 | 4.2 | 4.5 | 12 | 13 | 23 | 15 | 18 |
| 9/18/2007 | 7.96 | 8.36 | 8.02 | 8.14 | 12 | 2.8 | 4.0 | 10 | 14 | 20 | 13 | 17 |
| 9/20/2007 | 7.97 | 8.26 | 7.97 | 8.15 | 18 | 3.4 | 4.0 | 15 | 14 | 23 | 14 | 19 |
| 9/25/2007 | 7.90 | 8.32 | 7.93 | 8.15 | 17 | 2.2 | 3.0 | 13 | NR | NR | NR | NR |
| 9/27/2007 | 8.01 | 8.26 | 7.95 | 8.19 | 20 | 3.0 | 5.0 | 11 | NR | NR | NR | NR |
| 10/2/2007 | 8.16 | 8.30 | 8.07 | 8.14 | 18 | 4.2 | 8.0 | 14 | 24 | 58 | 36 | 50 |
| 10/4/2007 | 7.73 | 8.29 | 7.63 | 8.01 | 22 | 3.2 | 12 | 15 | 23 | 58 | 20 | 46 |
| 10/9/2007 | 7.61 | 8.17 | 7.65 | 8.13 | 16 | 3.2 | 7.0 | 16 | 19 | 53 | 24 | 51 |
| 10/11/2007 | 7.69 | 8.04 | 7.85 | 8.11 | 13 | 2.8 | 3.0 | 9.0 | 23 | 48 | 28 | 47 |
| 10/16/2007 | 7.67 | 7.99 | 7.76 | 7.89 | 34 | 6.2 | 160 | 71 | 14 | 40 | 18 | 24 |
| 10/18/2007 | 7.65 | 8.08 | 7.74 | 7.96 | 34 | 21 | 58 | 37 | 18 | 41 | 18 | 41 |
| 10/23/2007 | 7.79 | 8.13 | 7.90 | 8.07 | 26 | 5.2 | 10 | 17 | 20 | 47 | 27 | 47 |
| 10/25/2007 | 7.72 | 8.05 | 7.79 | 8.11 | 12 | 5.0 | 4.0 | 12 | 23 | 57 | 22 | 46 |
| 10/30/2007 | 7.59 | 8.09 | 7.83 | 8.06 | 7.0 | 2.8 | 2.0 | 6.0 | 25 | 59 | 27 | 59 |
| 11/1/2007 | 7.65 | 8.04 | 7.84 | 8.02 | 8.0 | 2.0 | 1.0 | 5.0 | 27 | 61 | 32 | 58 |

NR = no results due to TOC unit being down

Study of Nickel and Zinc in plant final effluent and Sangamon River
Nickel Analytical data

| Sample Date | River Upstream Dissolved Nickel mg/L | Plant Effluent Dissolved Nickel mg/L | Steven's Creek Dissolved Nickel mg/L | River Downstream Dissolved Nickel mg/L | River Upstream Total Nickel mg/L | Plant Effluent Total Nickel mg/L | Steven's Creek Total Nickel mg/L | River Downstream Total Nickel mg/L | Plant Effluent Dissolved/Total Ratio | River Downstream Dissolved/Total Ratio |
|-------------|--------------------------------------|--------------------------------------|--------------------------------------|--|----------------------------------|----------------------------------|----------------------------------|------------------------------------|--------------------------------------|--|
| 3/20/2007 | <0.0050 | 0.018 | <0.0050 | <0.0050 | <0.0050 | 0.018 | <0.0050 | <0.0050 | 1.000 | |
| 3/22/2007 | <0.0050 | 0.017 | <0.0050 | <0.0050 | <0.0050 | 0.017 | <0.0050 | <0.0050 | 1.000 | |
| 3/27/2007 | <0.0050 | 0.014 | <0.0050 | <0.0050 | <0.0050 | 0.014 | <0.0050 | <0.0050 | 1.000 | |
| 3/29/2007 | <0.0050 | 0.014 | <0.0050 | <0.0050 | <0.0050 | 0.015 | <0.0050 | <0.0050 | 0.933 | |
| 4/3/2007 | <0.0050 | 0.015 | <0.0050 | <0.0050 | <0.0050 | 0.015 | <0.0050 | <0.0050 | 1.000 | |
| 4/5/2007 | <0.0050 | 0.014 | <0.0050 | <0.0050 | <0.0050 | 0.014 | <0.0050 | <0.0050 | 1.000 | |
| 4/10/2007 | <0.0050 | 0.017 | <0.0050 | <0.0050 | <0.0050 | 0.017 | <0.0050 | <0.0050 | 1.000 | |
| 4/17/2007 | <0.0050 | 0.016 | <0.0050 | <0.0050 | <0.0050 | 0.017 | <0.0050 | <0.0050 | 0.941 | |
| 4/19/2007 | <0.0050 | 0.016 | <0.0050 | <0.0050 | <0.0050 | 0.016 | <0.0050 | <0.0050 | 1.000 | |
| 4/24/2007 | <0.0050 | 0.016 | <0.0050 | <0.0050 | <0.0050 | 0.017 | <0.0050 | <0.0050 | 0.941 | |
| 4/26/2007 | <0.0050 | 0.012 | <0.0050 | <0.0050 | <0.0050 | 0.013 | <0.0050 | <0.0050 | 0.923 | |
| 5/1/2007 | <0.0050 | 0.014 | <0.0050 | <0.0050 | 0.0051 | 0.014 | <0.0050 | <0.0050 | 1.000 | |
| 5/3/2007 | <0.0050 | 0.016 | <0.0050 | <0.0050 | <0.0050 | 0.017 | <0.0050 | <0.0050 | 0.941 | |
| 5/8/2007 | <0.0050 | 0.017 | <0.0050 | <0.0050 | <0.0050 | 0.0175 | <0.0050 | <0.0050 | 0.971 | |
| 5/10/2007 | <0.0050 | 0.014 | <0.0050 | <0.0050 | <0.0050 | 0.017 | <0.0050 | <0.0050 | 0.824 | |
| 5/15/2007 | <0.0050 | 0.018 | <0.0050 | <0.0050 | <0.0050 | 0.019 | <0.0050 | <0.0050 | 0.947 | |
| 5/17/2007 | <0.0050 | 0.019 | <0.0050 | <0.0050 | <0.0050 | 0.019 | <0.0050 | <0.0050 | 1.000 | |
| 5/22/2007 | <0.0050 | 0.022 | <0.0050 | <0.0050 | <0.0050 | 0.023 | <0.0050 | <0.0050 | 0.957 | |
| 5/24/2007 | <0.0050 | 0.021 | <0.0050 | <0.0050 | <0.0050 | 0.020 | <0.0050 | <0.0050 | 1.000 | |
| 5/29/2007 | <0.0050 | 0.021 | <0.0050 | <0.0050 | <0.0050 | 0.021 | <0.0050 | <0.0050 | 1.000 | |
| 5/31/2007 | <0.0050 | 0.020 | <0.0050 | <0.0050 | <0.0050 | 0.020 | <0.0050 | <0.0050 | 1.000 | |
| 6/5/2007 | <0.0050 | 0.022 | <0.0050 | <0.0050 | <0.0050 | 0.0235 | <0.0050 | <0.0050 | 0.936 | |
| 6/7/2007 | <0.0050 | 0.024 | <0.0050 | <0.0050 | <0.0050 | 0.025 | <0.0050 | 0.0051 | 0.960 | |
| 6/12/2007 | <0.0050 | 0.023 | <0.0050 | 0.0085 | <0.0050 | 0.024 | <0.0050 | 0.010 | 0.958 | |
| 6/14/2007 | <0.0050 | 0.021 | <0.0050 | 0.012 | <0.0050 | 0.022 | <0.0050 | 0.013 | 0.955 | |
| 6/19/2007 | <0.0050 | 0.021 | <0.0050 | 0.011 | <0.0050 | 0.022 | <0.0050 | 0.012 | 0.955 | |
| 6/21/2007 | <0.0050 | 0.022 | <0.0050 | 0.013 | <0.0050 | 0.023 | <0.0050 | 0.014 | 0.957 | |
| 6/26/2007 | <0.0050 | 0.015 | <0.0050 | <0.0050 | <0.0050 | 0.016 | <0.0050 | <0.0050 | 0.938 | |
| 6/28/2007 | <0.0050 | 0.016 | <0.0050 | <0.0050 | <0.0050 | 0.016 | <0.0050 | <0.0050 | 1.000 | |
| 7/3/2007 | <0.0050 | 0.018 | <0.0050 | <0.0050 | <0.0050 | 0.0195 | <0.0050 | <0.0050 | 0.923 | |
| 7/5/2007 | <0.0050 | 0.017 | <0.0050 | <0.0050 | <0.0050 | 0.017 | <0.0050 | <0.0050 | 1.000 | |
| 7/10/2007 | <0.0050 | 0.020 | <0.0050 | 0.0061 | <0.0050 | 0.020 | <0.0050 | 0.0071 | 1.000 | |
| 7/12/2007 | <0.0050 | 0.020 | <0.0050 | 0.010 | <0.0050 | 0.019 | <0.0050 | 0.011 | 1.000 | |
| 7/17/2007 | <0.0050 | 0.018 | <0.0050 | 0.015 | <0.0050 | 0.019 | <0.0050 | 0.016 | 0.947 | |
| 7/19/2007 | <0.0050 | 0.026 | <0.0050 | 0.015 | <0.0050 | 0.026 | <0.0050 | 0.016 | 1.000 | |
| 7/24/2007 | <0.0050 | 0.033 | <0.0050 | 0.0058 | <0.0050 | 0.030 | <0.0050 | 0.0067 | 1.000 | |

| Sample Date | River Upstream Dissolved Nickel mg/L | Plant Effluent Dissolved Nickel mg/L | Steven's Creek Dissolved Nickel mg/L | River Downstream Dissolved Nickel mg/L | River Upstream Total Nickel mg/L | Plant Effluent Total Nickel mg/L | Steven's Creek Total Nickel mg/L | River Downstream Total Nickel mg/L | Plant Effluent Dissolved/Total Ratio | River Downstream Dissolved/Total Ratio |
|-------------|--------------------------------------|--------------------------------------|--------------------------------------|--|----------------------------------|----------------------------------|----------------------------------|------------------------------------|--------------------------------------|--|
| 7/26/2007 | <0.0050 | 0.035 | <0.0050 | 0.0068 | <0.0050 | 0.036 | <0.0050 | 0.0079 | 0.972 | |
| 7/31/2007 | <0.0050 | 0.035 | <0.0050 | 0.027 | <0.0050 | 0.036 | <0.0050 | 0.027 | 0.972 | |
| 8/2/2007 | <0.0050 | 0.033 | <0.0050 | 0.027 | <0.0050 | 0.033 | <0.0050 | 0.027 | 1.000 | 1.000 |
| 8/7/2007 | <0.0050 | 0.029 | <0.0050 | 0.024 | <0.0050 | 0.031 | <0.0050 | 0.027 | 0.935 | 0.889 |
| 8/9/2007 | <0.0050 | 0.027 | <0.0050 | 0.026 | <0.0050 | 0.028 | <0.0050 | 0.026 | 0.964 | 1.000 |
| 8/14/2007 | <0.0050 | 0.029 | <0.0050 | 0.030 | <0.0050 | 0.030 | <0.0050 | 0.0295 | 0.967 | 1.000 |
| 8/16/2007 | <0.0050 | 0.025 | <0.0050 | 0.027 | <0.0050 | 0.026 | <0.0050 | 0.029 | 0.962 | 0.931 |
| 8/21/2007 | <0.0050 | 0.028 | <0.0050 | 0.021 | <0.0050 | 0.027 | <0.0050 | 0.021 | 1.000 | 1.000 |
| 8/23/2007 | <0.0050 | ND1 | <0.0050 | 0.022 | <0.0050 | 0.023 | <0.0050 | 0.022 | | 1.000 |
| 8/28/2007 | <0.0050 | 0.023 | <0.0050 | 0.025 | <0.0050 | 0.025 | <0.0050 | 0.024 | 0.920 | 1.000 |
| 8/30/2007 | <0.0050 | 0.025 | <0.0050 | 0.023 | <0.0050 | 0.024 | <0.0050 | 0.024 | 1.000 | 0.958 |
| 9/4/2007 | <0.0050 | 0.029 | <0.0050 | 0.029 | <0.0050 | 0.031 | <0.0050 | 0.030 | 0.935 | 0.967 |
| 9/6/2007 | <0.0050 | 0.027 | <0.0050 | 0.028 | <0.0050 | 0.026 | <0.0050 | 0.029 | 1.000 | 0.966 |
| 9/11/2007 | <0.0050 | 0.022 | <0.0050 | 0.018 | <0.0050 | 0.022 | <0.0050 | 0.0175 | 1.000 | 1.000 |
| 9/13/2007 | <0.0050 | 0.027 | <0.0050 | 0.021 | <0.0050 | 0.029 | <0.0050 | 0.022 | 0.931 | 0.955 |
| 9/18/2007 | <0.0050 | 0.025 | <0.0050 | 0.026 | <0.0050 | 0.025 | <0.0050 | 0.026 | 1.000 | 1.000 |
| 9/20/2007 | <0.0050 | 0.025 | <0.0050 | 0.023 | <0.0050 | 0.026 | <0.0050 | 0.024 | 0.962 | 0.958 |
| 9/25/2007 | <0.0050 | 0.026 | <0.0050 | 0.025 | <0.0050 | 0.028 | <0.0050 | 0.026 | 0.929 | 0.962 |
| 9/27/2007 | <0.0050 | 0.025 | <0.0050 | 0.026 | <0.0050 | 0.027 | <0.0050 | 0.027 | 0.926 | 0.963 |
| 10/2/2007 | <0.0050 | 0.027 | <0.0050 | 0.023 | <0.0050 | 0.026 | <0.0050 | 0.023 | 1.000 | 1.000 |
| 10/4/2007 | <0.0050 | 0.024 | <0.0050 | 0.018 | <0.0050 | 0.024 | 0.011 | 0.018 | 1.000 | 1.000 |
| 10/9/2007 | <0.0050 | 0.022 | <0.0050 | 0.023 | <0.0050 | 0.026 | <0.0050 | 0.024 | 0.846 | 0.958 |
| 10/11/2007 | <0.0050 | 0.022 | <0.0050 | 0.023 | <0.0050 | 0.024 | <0.0050 | 0.024 | 0.917 | 0.958 |
| 10/16/2007 | <0.0050 | 0.017 | <0.0050 | 0.011 | <0.0050 | 0.018 | 0.0055 | 0.0088 | 0.944 | 1.000 |
| 10/18/2007 | <0.0050 | 0.014 | <0.0050 | 0.015 | <0.0050 | 0.015 | <0.0050 | 0.016 | 0.933 | 0.938 |
| 10/23/2007 | <0.0050 | 0.020 | <0.0050 | 0.020 | <0.0050 | 0.0295 | <0.0050 | 0.021 | 0.976 | 0.952 |
| 10/25/2007 | <0.0050 | 0.026 | <0.0050 | 0.019 | <0.0050 | 0.027 | <0.0050 | 0.020 | 0.963 | 0.950 |
| 10/30/2007 | <0.0050 | 0.024 | <0.0050 | 0.022 | <0.0050 | 0.024 | <0.0050 | 0.022 | 1.000 | 1.000 |
| 11/1/2007 | <0.0050 | 0.023 | <0.0050 | 0.022 | <0.0050 | 0.023 | <0.0050 | 0.023 | 1.000 | 0.957 |

ND1 = matrix interference(Na)

| | |
|---|-------|
| Effluent Ni trans Aug 2 to Nov 1 (geo mean) | 0.961 |
|---|-------|

| | |
|---|-------|
| Downstream Ni trans Aug 2 to Nov 1 (geo mean) | 0.972 |
|---|-------|

indicates Cd/Ct set to 1 since dissolved result was higher than the total as per US EPA The Metals Translator : Guidance for Calculating a Total Recoverable Permit Limit From a Dissolved Criterion, Appendix C, p.48.

| Sample Date | River Upstream Dissolved Zinc mg/L | Plant Effluent Dissolved Zinc mg/L | Steven's Creek Dissolved Zinc mg/L | River Downstream Dissolved Zinc mg/L | River Upstream Total Zinc mg/L | Plant Effluent Total Zinc mg/L | Steven's Creek Total Zinc mg/L | River Downstream Total Zinc mg/L | Plant Effluent Dissolved/Total Ratio | River Downstream Dissolved/Total Ratio |
|-------------|------------------------------------|------------------------------------|------------------------------------|--------------------------------------|--------------------------------|--------------------------------|--------------------------------|----------------------------------|--------------------------------------|--|
| 3/20/2007 | <0.010 | 0.087 | <0.010 | <0.010 | <0.010 | 0.090 | 0.027 | 0.011 | 0.967 | |
| 3/22/2007 | <0.010 | 0.10 | <0.010 | 0.016 | <0.010 | 0.099 | <0.010 | 0.011 | 1.000 | |
| 3/27/2007 | <0.010 | 0.072 | <0.010 | <0.010 | <0.010 | 0.074 | <0.010 | 0.0125 | 0.973 | |
| 3/29/2007 | <0.010 | 0.074 | <0.010 | <0.010 | <0.010 | 0.078 | 0.010 | <0.010 | 0.949 | |
| 4/3/2007 | <0.010 | 0.063 | <0.010 | <0.010 | <0.010 | 0.063 | <0.010 | <0.010 | 1.000 | |
| 4/5/2007 | <0.010 | 0.067 | <0.010 | <0.010 | <0.010 | 0.072 | <0.010 | <0.010 | 0.931 | |
| 4/10/2007 | <0.010 | 0.084 | <0.010 | <0.010 | 0.039 | 0.0855 | <0.010 | <0.010 | 0.982 | |
| 4/17/2007 | <0.010 | 0.079 | <0.010 | <0.010 | <0.010 | 0.088 | <0.010 | <0.010 | 0.898 | |
| 4/19/2007 | <0.010 | 0.078 | <0.010 | <0.010 | <0.010 | 0.085 | <0.010 | <0.010 | 0.918 | |
| 4/24/2007 | <0.010 | 0.066 | <0.010 | <0.010 | <0.010 | 0.076 | <0.010 | <0.010 | 0.868 | |
| 4/26/2007 | <0.010 | 0.066 | <0.010 | <0.010 | <0.010 | 0.060 | <0.010 | <0.010 | 1.000 | |
| 5/1/2007 | <0.010 | 0.058 | <0.010 | <0.010 | <0.010 | 0.061 | <0.010 | <0.010 | 0.951 | |
| 5/3/2007 | <0.010 | 0.067 | <0.010 | <0.010 | <0.010 | 0.071 | <0.010 | <0.010 | 0.944 | |
| 5/8/2007 | <0.010 | 0.072 | <0.010 | <0.010 | <0.010 | 0.074 | <0.010 | <0.010 | 0.973 | |
| 5/10/2007 | <0.010 | 0.058 | <0.010 | <0.010 | <0.010 | 0.080 | <0.010 | 0.012 | 0.725 | |
| 5/15/2007 | <0.010 | 0.054 | <0.010 | <0.010 | <0.010 | 0.061 | <0.010 | <0.010 | 0.885 | |
| 5/17/2007 | <0.010 | 0.066 | <0.010 | <0.010 | <0.010 | 0.072 | <0.010 | <0.010 | 0.917 | |
| 5/22/2007 | <0.010 | 0.068 | <0.010 | <0.010 | <0.010 | 0.081 | <0.010 | 0.012 | 0.840 | |
| 5/24/2007 | <0.010 | 0.062 | <0.010 | <0.010 | <0.010 | 0.065 | 0.011 | 0.015 | 0.954 | |
| 5/29/2007 | <0.010 | 0.040 | <0.010 | <0.010 | <0.010 | 0.045 | <0.010 | 0.011 | 0.889 | |
| 5/31/2007 | <0.010 | 0.037 | <0.010 | <0.010 | <0.010 | 0.042 | <0.010 | <0.010 | 0.881 | |
| 6/5/2007 | <0.010 | 0.041 | <0.010 | <0.010 | <0.010 | 0.0495 | <0.010 | 0.011 | 0.828 | |
| 6/7/2007 | <0.010 | 0.063 | <0.010 | 0.012 | <0.010 | 0.074 | <0.010 | 0.018 | 0.851 | |
| 6/12/2007 | <0.010 | 0.059 | <0.010 | 0.018 | <0.010 | 0.065 | <0.010 | 0.024 | 0.908 | |
| 6/14/2007 | <0.010 | 0.058 | <0.010 | 0.025 | <0.010 | 0.066 | <0.010 | 0.032 | 0.879 | |
| 6/19/2007 | <0.010 | 0.051 | <0.010 | 0.019 | 0.012 | 0.058 | <0.010 | 0.0235 | 0.879 | |
| 6/21/2007 | <0.010 | 0.060 | <0.010 | 0.029 | 0.087 | 0.071 | <0.010 | 0.034 | 0.845 | |
| 6/26/2007 | <0.010 | 0.040 | <0.010 | <0.010 | <0.010 | 0.055 | 0.0145 | 0.014 | 0.727 | |
| 6/28/2007 | <0.010 | 0.037 | <0.010 | <0.010 | <0.010 | 0.046 | 0.021 | 0.014 | 0.804 | |
| 7/3/2007 | <0.010 | 0.036 | 0.016 | <0.010 | <0.010 | 0.0515 | <0.010 | <0.010 | 0.699 | |
| 7/5/2007 | <0.010 | 0.030 | <0.010 | <0.010 | <0.010 | 0.040 | <0.010 | <0.010 | 0.750 | |
| 7/10/2007 | <0.010 | 0.038 | 0.066 | 0.010 | <0.010 | 0.046 | <0.010 | 0.022 | 0.826 | |
| 7/12/2007 | <0.010 | 0.038 | <0.010 | 0.019 | <0.010 | 0.044 | <0.010 | 0.031 | 0.864 | |
| 7/17/2007 | <0.010 | 0.035 | <0.010 | 0.022 | <0.010 | 0.045 | <0.010 | 0.0295 | 0.778 | |
| 7/19/2007 | <0.010 | 0.038 | <0.010 | 0.022 | <0.010 | 0.045 | <0.010 | 0.026 | 0.844 | |
| 7/24/2007 | <0.010 | 0.050 | <0.010 | <0.010 | <0.010 | 0.061 | <0.010 | 0.014 | 0.820 | |

| Sample Date | River Upstream Dissolved Zinc mg/L | Plant Effluent Dissolved Zinc mg/L | Steven's Creek Dissolved Zinc mg/L | River Downstream Dissolved Zinc mg/L | River Upstream Total Zinc mg/L | Plant Effluent Total Zinc mg/L | Steven's Creek Total Zinc mg/L | River Downstream Total Zinc mg/L | Plant Effluent Dissolved/Total Ratio | River Downstream Dissolved/Total Ratio |
|-------------|------------------------------------|------------------------------------|------------------------------------|--------------------------------------|--------------------------------|--------------------------------|--------------------------------|----------------------------------|--------------------------------------|--|
| 7/26/2007 | <0.010 | 0.038 | <0.010 | <0.010 | <0.010 | 0.049 | <0.010 | 0.014 | 0.776 | |
| 7/31/2007 | <0.010 | 0.042 | <0.010 | 0.017 | <0.010 | 0.0505 | <0.010 | 0.022 | 0.832 | |
| 8/2/2007 | <0.010 | 0.032 | <0.010 | 0.027 | <0.010 | 0.042 | <0.010 | 0.021 | 0.762 | 1.000 |
| 8/7/2007 | <0.010 | 0.036 | <0.010 | 0.015 | <0.010 | 0.048 | <0.010 | 0.023 | 0.750 | 0.652 |
| 8/9/2007 | <0.010 | 0.029 | <0.010 | 0.020 | <0.010 | 0.041 | <0.010 | 0.025 | 0.707 | 0.800 |
| 8/14/2007 | <0.010 | 0.044 | <0.010 | 0.036 | <0.010 | 0.050 | <0.010 | 0.044 | 0.880 | 0.818 |
| 8/16/2007 | <0.010 | 0.038 | <0.010 | 0.043 | <0.010 | 0.045 | <0.010 | 0.044 | 0.844 | 0.977 |
| 8/21/2007 | <0.010 | ND1 | 0.011 | 0.032 | <0.010 | 0.049 | QC1 | 0.034 | | 0.941 |
| 8/23/2007 | <0.010 | ND1 | <0.010 | 0.035 | <0.010 | 0.046 | <0.010 | 0.038 | | 0.921 |
| 8/28/2007 | <0.010 | 0.036 | <0.010 | 0.046 | <0.010 | 0.0425 | <0.010 | 0.050 | 0.847 | 0.920 |
| 8/30/2007 | <0.010 | 0.026 | <0.010 | 0.019 | <0.010 | 0.030 | <0.010 | 0.028 | 0.867 | 0.679 |
| 9/4/2007 | <0.010 | 0.037 | <0.010 | 0.053 | <0.010 | 0.053 | <0.010 | 0.061 | 0.698 | 0.869 |
| 9/6/2007 | <0.010 | 0.030 | <0.010 | 0.024 | <0.010 | 0.037 | <0.010 | 0.030 | 0.811 | 0.800 |
| 9/11/2007 | <0.010 | 0.027 | <0.010 | 0.022 | <0.010 | 0.031 | <0.010 | 0.0245 | 0.871 | 0.898 |
| 9/13/2007 | <0.010 | 0.031 | <0.010 | 0.018 | <0.010 | 0.042 | <0.010 | 0.024 | 0.738 | 0.750 |
| 9/18/2007 | <0.010 | 0.037 | <0.010 | 0.049 | <0.010 | 0.042 | <0.010 | 0.055 | 0.881 | 0.891 |
| 9/20/2007 | <0.010 | 0.031 | <0.010 | 0.024 | <0.010 | 0.037 | <0.010 | 0.027 | 0.838 | 0.889 |
| 9/25/2007 | <0.010 | 0.059 | <0.010 | 0.020 | <0.010 | 0.0725 | <0.010 | 0.026 | 0.814 | 0.769 |
| 9/27/2007 | <0.010 | 0.030 | <0.010 | 0.048 | <0.010 | 0.038 | <0.010 | 0.054 | 0.789 | 0.889 |
| 10/2/2007 | <0.010 | 0.044 | <0.010 | 0.019 | 0.0175 | 0.049 | <0.010 | 0.024 | 0.898 | 0.792 |
| 10/4/2007 | <0.010 | 0.031 | <0.010 | 0.017 | 0.010 | 0.033 | 0.064 | 0.021 | 0.939 | 0.810 |
| 10/9/2007 | <0.010 | 0.031 | <0.010 | 0.058 | <0.010 | 0.038 | <0.010 | 0.063 | 0.816 | 0.921 |
| 10/11/2007 | <0.010 | 0.036 | <0.010 | 0.023 | <0.010 | 0.043 | <0.010 | 0.030 | 0.837 | 0.767 |
| 10/16/2007 | <0.010 | 0.028 | <0.010 | 0.073 | 0.033 | 0.049 | 0.050 | 0.044 | 0.571 | 1.000 |
| 10/18/2007 | <0.010 | 0.037 | <0.010 | 0.047 | 0.022 | 0.062 | 0.016 | 0.060 | 0.597 | 0.783 |
| 10/23/2007 | <0.010 | 0.054 | <0.010 | 0.075 | <0.010 | 0.0655 | <0.010 | 0.087 | 0.824 | 0.862 |
| 10/25/2007 | <0.010 | 0.089 | <0.010 | 0.033 | <0.010 | 0.096 | <0.010 | 0.041 | 0.927 | 0.805 |
| 10/30/2007 | <0.010 | 0.037 | <0.010 | 0.031 | <0.010 | 0.039 | <0.010 | 0.035 | 0.949 | 0.886 |
| 11/1/2007 | <0.010 | 0.036 | <0.010 | 0.032 | <0.010 | 0.038 | <0.010 | 0.035 | 0.947 | 0.914 |

QC1 =
QC problem (see QC worksheet)
ND1 =
matrix interference(Na)

Effluent Zn trans Aug 2 to Nov 1 (geo mean) 0.810

Downstream Zn trans Aug 2 to Nov 1 (geo mean) 0.847

indicates Cd/Ct set to 1 since dissolved result was higher than the total as per US EPA The Metals Translator : Guidance for Calculating a Total Recoverable Permit Limit From a Dissolved Criterion, Appendix C, p.48.

| Sample Date | River Upstream Total Hardness mg/L | Plant Effluent Total Hardness mg/L | Steven's Creek Total Hardness mg/L | River Downstream Total Hardness mg/L |
|-------------|------------------------------------|------------------------------------|------------------------------------|--------------------------------------|
| 3/20/2007 | 248 | 526 | 341 | 265 |
| 3/22/2007 | 259 | 589 | 341 | 298 |
| 3/27/2007 | 296 | 567 | 353 | 309 |
| 3/29/2007 | 302 | 509 | 351 | 297 |
| 4/3/2007 | 255 | 501 | 340 | 273 |
| 4/5/2007 | 275 | 537 | 355 | 288 |
| 4/10/2007 | 296 | 561 | 380 | 306 |
| 4/17/2007 | 310 | 580 | 375 | 336 |
| 4/19/2007 | 308 | 563 | 364 | 328 |
| 4/24/2007 | 311 | 579 | 384 | 318 |
| 4/26/2007 | 282 | 459 | 290 | 306 |
| 5/1/2007 | 287 | 534 | 365 | 294 |
| 5/3/2007 | 307 | 599 | 394 | 311 |
| 5/8/2007 | 294 | 528 | 360 | 299 |
| 5/10/2007 | 281 | 530 | 363 | 321 |
| 5/15/2007 | 282 | 452 | 365 | 306 |
| 5/17/2007 | 278 | 455 | 346 | 302 |
| 5/22/2007 | 255 | 521 | 399 | 303 |
| 5/24/2007 | 259 | 474 | 384 | 334 |
| 5/29/2007 | 259 | 500 | 365 | 294 |
| 5/31/2007 | 256 | 452 | 277 | 276 |
| 6/5/2007 | 274 | 516 | 364 | 310 |
| 6/7/2007 | 271 | 535 | 364 | 322 |
| 6/12/2007 | 303 | 509 | 365 | 386 |
| 6/14/2007 | 310 | 508 | 379 | 441 |
| 6/19/2007 | 227 | 497 | 303 | 405 |
| 6/21/2007 | 247 | 572 | 306 | 418 |
| 6/26/2007 | 227 | 428 | 267 | 248 |
| 6/28/2007 | 229 | 409 | 236 | 235 |
| 7/3/2007 | 244 | 517 | 381 | 253 |
| 7/5/2007 | 249 | 469 | 310 | 266 |
| 7/10/2007 | 225 | 564 | 384 | 346 |
| 7/12/2007 | 255 | 552 | 374 | 446 |
| 7/17/2007 | 293 | 471 | 340 | 500 |
| 7/19/2007 | 194 | 555 | 254 | 433 |
| 7/24/2007 | 223 | 608 | 361 | 322 |

| Sample Date | River Upstream Total Hardness mg/L | Plant Effluent Total Hardness mg/L | Steven's Creek Total Hardness mg/L | River Downstream Total Hardness mg/L |
|-------------|------------------------------------|------------------------------------|------------------------------------|--------------------------------------|
| 7/26/2007 | 213 | 613 | 361 | 309 |
| 7/31/2007 | 244 | 550 | 305 | 486 |
| 8/2/2007 | 256 | 523 | 323 | 509 |
| 8/7/2007 | 301 | 552 | 389 | 544 |
| 8/9/2007 | 308 | 557 | 403 | 540 |
| 8/14/2007 | 326 | 542 | 413 | 546 |
| 8/16/2007 | 333 | 507 | 440 | 585 |
| 8/21/2007 | 266 | 503 | 298 | 480 |
| 8/23/2007 | 277 | 489 | 350 | 483 |
| 8/28/2007 | 307 | 499 | 351 | 479 |
| 8/30/2007 | 318 | 489 | 388 | 524 |
| 9/4/2007 | 335 | 547 | 422 | 543 |
| 9/6/2007 | 338 | 496 | 403 | 554 |
| 9/11/2007 | 148 | 428 | 210 | 369 |
| 9/13/2007 | 191 | 465 | 237 | 429 |
| 9/18/2007 | 276 | 457 | 337 | 446 |
| 9/20/2007 | 267 | 489 | 341 | 454 |
| 9/25/2007 | 316 | 518 | 366 | 512 |
| 9/27/2007 | 287 | 501 | 387 | 480 |
| 10/2/2007 | 278 | 471 | 424 | 462 |
| 10/4/2007 | 238 | 428 | 129 | 344 |
| 10/9/2007 | 200 | 485 | 249 | 462 |
| 10/11/2007 | 230 | 502 | 273 | 521 |
| 10/16/2007 | 67 | 321 | 94 | 167 |
| 10/18/2007 | 126 | 301 | 142 | 314 |
| 10/23/2007 | 177 | 408 | 260 | 412 |
| 10/25/2007 | 226 | 481 | 196 | 429 |
| 10/30/2007 | 222 | 527 | 255 | 495 |
| 11/1/2007 | 234 | 526 | 267 | 534 |

| | |
|--|-----|
| DS Hard Aug 2 to Nov 1 (geo mean) | 456 |
|--|-----|

| | |
|---|-----|
| Eff Hard Aug 2 to Nov 1 (geo mean) | 477 |
|---|-----|

| Date | River Upstream Flow cfs | River Upstream Flow mgd |
|-----------|----------------------------------|----------------------------------|
| 3/15/2007 | 1,180 | 762.60 |
| 3/16/2007 | 802 | 518.31 |
| 3/17/2007 | 793 | 512.49 |
| 3/18/2007 | 753 | 486.64 |
| 3/19/2007 | 710 | 458.85 |
| 3/20/2007 | 739 | 477.60 |
| 3/21/2007 | 521 | 336.71 |
| 3/22/2007 | 587 | 379.36 |
| 3/23/2007 | 773 | 499.57 |
| 3/24/2007 | 770 | 497.63 |
| 3/25/2007 | 1,110 | 717.36 |
| 3/26/2007 | 1,870 | 1208.53 |
| 3/27/2007 | 2,220 | 1434.72 |
| 3/28/2007 | 2,610 | 1686.77 |
| 3/29/2007 | 2,670 | 1725.55 |
| 3/30/2007 | 2,100 | 1357.17 |
| 3/31/2007 | 1,960 | 1266.69 |
| 4/1/2007 | 2,260 | 1460.57 |
| 4/2/2007 | 2,430 | 1570.44 |
| 4/3/2007 | 2,250 | 1454.11 |
| 4/4/2007 | 2,080 | 1344.25 |
| 4/5/2007 | 1,820 | 1176.22 |
| 4/6/2007 | 1,630 | 1053.42 |
| 4/7/2007 | 1,400 | 904.78 |
| 4/8/2007 | 1,210 | 781.99 |
| 4/9/2007 | 856 | 553.21 |
| 4/10/2007 | 629 | 406.51 |
| 4/11/2007 | 880 | 568.72 |
| 4/12/2007 | 938 | 606.20 |
| 4/13/2007 | 1,050 | 678.59 |
| 4/14/2007 | 1,130 | 730.29 |
| 4/15/2007 | 1,120 | 723.82 |

| Date | River Upstream Flow cfs | River Upstream Flow mgd |
|-----------|----------------------------------|----------------------------------|
| 4/16/2007 | 1,110 | 717.4 |
| 4/17/2007 | 1,050 | 678.6 |
| 4/18/2007 | 1,010 | 652.7 |
| 4/19/2007 | 769 | 497.0 |
| 4/20/2007 | 684 | 442.1 |
| 4/21/2007 | 680 | 439.5 |
| 4/22/2007 | 608 | 392.9 |
| 4/23/2007 | 554 | 358.0 |
| 4/24/2007 | 602 | 389.1 |
| 4/25/2007 | 634 | 409.7 |
| 4/26/2007 | 666 | 430.4 |
| 4/27/2007 | 994 | 642.4 |
| 4/28/2007 | 1,440 | 930.6 |
| 4/29/2007 | 1,530 | 988.8 |
| 4/30/2007 | 1,860 | 1202.1 |
| 5/1/2007 | 2,060 | 1331.3 |
| 5/2/2007 | 2,070 | 1337.8 |
| 5/3/2007 | 1,590 | 1027.6 |
| 5/4/2007 | 741 | 478.9 |
| 5/5/2007 | 546 | 352.9 |
| 5/6/2007 | 642 | 414.9 |
| 5/7/2007 | 414 | 268 |
| 5/8/2007 | 219 | 142 |
| 5/9/2007 | 95 | 61 |
| 5/10/2007 | 278 | 180 |
| 5/11/2007 | 465 | 301 |
| 5/12/2007 | 494 | 319 |
| 5/13/2007 | 390 | 252 |
| 5/14/2007 | 291 | 188 |
| 5/15/2007 | 299 | 193 |
| 5/16/2007 | 388 | 251 |
| 5/17/2007 | 402 | 260 |

| Date | River Upstream Flow cfs | River Upstream Flow mgd |
|-----------|----------------------------------|----------------------------------|
| 5/18/2007 | 335 | 217 |
| 5/19/2007 | 284 | 184 |
| 5/20/2007 | 279 | 180 |
| 5/21/2007 | 264 | 171 |
| 5/22/2007 | 247 | 160 |
| 5/23/2007 | 186 | 120 |
| 5/24/2007 | 117 | 76 |
| 5/25/2007 | 176 | 114 |
| 5/26/2007 | 205 | 132 |
| 5/27/2007 | 218 | 141 |
| 5/28/2007 | 245 | 158 |
| 5/29/2007 | 385 | 249 |
| 5/30/2007 | 432 | 279 |
| 5/31/2007 | 380 | 246 |
| 6/1/2007 | 265 | 171 |
| 6/2/2007 | 206 | 133 |
| 6/3/2007 | 201 | 130 |
| 6/4/2007 | 194 | 125 |
| 6/5/2007 | 196 | 127 |
| 6/6/2007 | 181 | 117 |
| 6/7/2007 | 122 | 78.8 |
| 6/8/2007 | 130 | 84.0 |
| 6/9/2007 | 139 | 89.8 |
| 6/10/2007 | 122 | 78.8 |
| 6/11/2007 | 62 | 40.1 |
| 6/12/2007 | 9 | 5.82 |
| 6/13/2007 | 5 | 3.23 |
| 6/14/2007 | 4 | 2.71 |
| 6/15/2007 | 4 | 2.52 |
| 6/16/2007 | 5 | 3.04 |
| 6/17/2007 | 7 | 4.59 |
| 6/18/2007 | 13 | 8.40 |

| Date | River Upstream Flow cfs | River Upstream Flow mgd |
|-----------|----------------------------------|----------------------------------|
| 6/19/2007 | 28 | 18.1 |
| 6/20/2007 | 26 | 16.8 |
| 6/21/2007 | 20 | 12.9 |
| 6/22/2007 | 52 | 33.6 |
| 6/23/2007 | 254 | 164 |
| 6/24/2007 | 859 | 555 |
| 6/25/2007 | 904 | 584 |
| 6/26/2007 | 705 | 455.6 |
| 6/27/2007 | 508 | 328.3 |
| 6/28/2007 | 623 | 402.6 |
| 6/29/2007 | 854 | 551.9 |
| 6/30/2007 | 944 | 610.1 |
| 7/1/2007 | 961 | 621.1 |
| 7/2/2007 | 749 | 484.1 |
| 7/3/2007 | 526 | 339.9 |
| 7/4/2007 | 403 | 260.4 |
| 7/5/2007 | 390 | 252.0 |
| 7/6/2007 | 435 | 281.1 |
| 7/7/2007 | 353 | 228.1 |
| 7/8/2007 | 226 | 146.1 |
| 7/9/2007 | 106 | 68.50 |
| 7/10/2007 | 21 | 13.57 |
| 7/11/2007 | 7 | 4.524 |
| 7/12/2007 | 3.3 | 2.133 |
| 7/13/2007 | 2.9 | 1.874 |
| 7/14/2007 | 2.3 | 1.486 |
| 7/15/2007 | 1.9 | 1.228 |
| 7/16/2007 | 1.9 | 1.228 |
| 7/17/2007 | 9.7 | 6.269 |
| 7/18/2007 | 3.7 | 2.391 |
| 7/19/2007 | 3.1 | 2.003 |
| 7/20/2007 | 3.5 | 2.262 |

| Date | River Upstream Flow cfs | River Upstream Flow mgd |
|-----------|----------------------------------|----------------------------------|
| 7/21/2007 | 4.8 | 3.102 |
| 7/22/2007 | 24 | 15.51 |
| 7/23/2007 | 89 | 57.52 |
| 7/24/2007 | 148 | 96 |
| 7/25/2007 | 131 | 85 |
| 7/26/2007 | 56 | 36 |
| 7/27/2007 | 16 | 10 |
| 7/28/2007 | 8.6 | 5.6 |
| 7/29/2007 | 7.6 | 4.9 |
| 7/30/2007 | 5.7 | 3.7 |
| 7/31/2007 | 4.9 | 3.2 |
| 8/1/2007 | 4.80 | 3.10 |
| 8/2/2007 | 3.40 | 2.20 |
| 8/3/2007 | 2.60 | 1.68 |
| 8/4/2007 | 3.30 | 2.13 |
| 8/5/2007 | 3.00 | 1.94 |
| 8/6/2007 | 2.20 | 1.42 |
| 8/7/2007 | | 0.00 |
| 8/8/2007 | 1.20 | 0.78 |
| 8/9/2007 | 1.10 | 0.71 |
| 8/10/2007 | 1.20 | 0.78 |
| 8/11/2007 | 1.50 | 0.97 |
| 8/12/2007 | 1.50 | 0.97 |
| 8/13/2007 | 1.30 | 0.84 |
| 8/14/2007 | 1.40 | 0.90 |
| 8/15/2007 | 1.50 | 0.97 |
| 8/16/2007 | 2.60 | 1.68 |
| 8/17/2007 | 1.80 | 1.16 |
| 8/18/2007 | 1.70 | 1.10 |
| 8/19/2007 | 1.80 | 1.16 |
| 8/20/2007 | 3.00 | 1.94 |
| 8/21/2007 | 1.70 | 1.10 |

| Date | River Upstream Flow cfs | River Upstream Flow mgd |
|-----------|----------------------------------|----------------------------------|
| 8/22/2007 | 1.40 | 0.90 |
| 8/23/2007 | 1.50 | 0.97 |
| 8/24/2007 | 1.50 | 0.97 |
| 8/25/2007 | 1.30 | 0.84 |
| 8/26/2007 | 0.93 | 0.60 |
| 8/27/2007 | 0.83 | 0.54 |
| 8/28/2007 | 0.78 | 0.50 |
| 8/29/2007 | 0.69 | 0.45 |
| 8/30/2007 | 0.53 | 0.34 |
| 8/31/2007 | 0.52 | 0.34 |
| 9/1/2007 | 0.63 | 0.41 |
| 9/2/2007 | 0.67 | 0.43 |
| 9/3/2007 | 0.63 | 0.41 |
| 9/4/2007 | 0.79 | 0.51 |
| 9/5/2007 | 1.1 | 0.71 |
| 9/6/2007 | 1.7 | 1.10 |
| 9/7/2007 | 2.9 | 1.87 |
| 9/8/2007 | 8.5 | 5.49 |
| 9/9/2007 | 1.9 | 1.23 |
| 9/10/2007 | 1.5 | 0.97 |
| 9/11/2007 | 1.7 | 1.10 |
| 9/12/2007 | 1.1 | 0.71 |
| 9/13/2007 | 0.94 | 0.61 |
| 9/14/2007 | 0.86 | 0.56 |
| 9/15/2007 | 1.1 | 0.71 |
| 9/16/2007 | 1 | 0.65 |
| 9/17/2007 | 1 | 0.65 |
| 9/18/2007 | 1 | 0.65 |
| 9/19/2007 | 0.93 | 0.60 |
| 9/20/2007 | 1 | 0.65 |
| 9/21/2007 | 1.2 | 0.78 |
| 9/22/2007 | 1 | 0.65 |

| Date | River Upstream Flow cfs | River Upstream Flow mgd |
|------------|----------------------------------|----------------------------------|
| 9/23/2007 | 1.1 | 0.71 |
| 9/24/2007 | 1.4 | 0.90 |
| 9/25/2007 | 1.9 | 1.23 |
| 9/26/2007 | 2.1 | 1.36 |
| 9/27/2007 | 1.7 | 1.10 |
| 9/28/2007 | 1.8 | 1.16 |
| 9/29/2007 | 1.7 | 1.10 |
| 9/30/2007 | 1.7 | 1.10 |
| 10/1/2007 | 2.2 | 1.42 |
| 10/2/2007 | 1.9 | 1.23 |
| 10/3/2007 | 4.7 | 3.04 |
| 10/4/2007 | 1.2 | 0.78 |
| 10/5/2007 | 1.3 | 0.84 |
| 10/6/2007 | 1.4 | 0.90 |
| 10/7/2007 | 1.2 | 0.78 |
| 10/8/2007 | 1.2 | 0.78 |
| 10/9/2007 | 1.5 | 0.97 |
| 10/10/2007 | 1.4 | 0.90 |
| 10/11/2007 | 1.3 | 0.84 |
| 10/12/2007 | 11.0 | 7.11 |
| 10/13/2007 | 3.1 | 2.00 |
| 10/14/2007 | 1.6 | 1.03 |
| 10/15/2007 | 10.0 | 6.46 |
| 10/16/2007 | 10.0 | 6.46 |
| 10/17/2007 | 2.3 | 1.49 |
| 10/18/2007 | 7.7 | 4.98 |
| 10/19/2007 | 1.8 | 1.16 |
| 10/20/2007 | 1.3 | 0.84 |
| 10/21/2007 | 1 | 0.65 |
| 10/22/2007 | 1.9 | 1.23 |
| 10/23/2007 | 3.3 | 2.13 |
| 10/24/2007 | 1.1 | 0.71 |

| Date | River Upstream Flow cfs | River Upstream Flow mgd |
|------------|----------------------------------|----------------------------------|
| 10/25/2007 | 0.67 | 0.43 |
| 10/26/2007 | 2.6 | 1.68 |
| 10/27/2007 | 1.7 | 1.10 |
| 10/28/2007 | 0.94 | 0.61 |
| 10/29/2007 | 0.79 | 0.51 |
| 10/30/2007 | 0.81 | 0.52 |
| 10/31/2007 | 0.71 | 0.46 |
| 11/1/2007 | 0.65 | 0.42 |

* * * * * PCB 2009-125 * * * * *

| Sample date | Source | Duplicate Data | | | | | | | | Field Blank Data | | |
|-------------|----------|----------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------------|------------|------------|
| | | Replicate 1 | Replicate 2 | Replicate 1 | Replicate 2 | Replicate 1 | Replicate 2 | Replicate 1 | Replicate 2 | Hardness, mg/L | Zn T, mg/L | Ni T, mg/L |
| | | Ca, mg/L | Ca, mg/L | Mg, mg/L | Mg, mg/L | Zn T, mg/L | Zn T, mg/L | Ni T, mg/L | Ni T, mg/L | | | |
| 3/20/2007 | RT 48 | 60 | 56 | 26 | 24 | <0.010 | <0.010 | <0.0050 | <0.0050 | | | |
| 3/22/2007 | FE | | | | | | | | | <0.66 | <0.010 | <0.0050 |
| 3/27/2007 | Wyckle's | 71 | 69 | 33 | 32 | <0.010 | 0.015 | <0.0050 | <0.0050 | | | |
| 3/29/2007 | RT 48 | | | | | | | | | <0.66 | <0.010 | <0.0050 |
| 4/3/2007 | WMS | 80 | 80 | 34 | 34 | <0.010 | <0.010 | <0.0050 | <0.0050 | | | |
| 4/3/2007 | Wyckle's | | | | | | | | | <0.66 | <0.010 | <0.0050 |
| 4/10/2007 | FE | 65 | 66 | 96 | 97 | 0.086 | 0.085 | 0.017 | 0.017 | | | |
| 4/10/2007 | WMS | | | | | | | | | 1.3 | <0.010 | <0.0050 |
| 4/17/2007 | RT 48 | 71 | 73 | 31 | 32 | <0.010 | <0.010 | <0.0050 | <0.0050 | | | |
| 4/17/2007 | FE | | | | | | | | | <0.66 | <0.010 | <0.0050 |
| 4/24/2007 | Wyckle's | 66 | 60 | 40 | 38 | <0.010 | <0.010 | <0.0050 | <0.0050 | | | |
| 4/24/2007 | RT 48 | | | | | | | | | <0.66 | <0.010 | <0.0050 |
| 4/24/2007 | Lab | | | | | | | | | <0.66 | <0.010 | <0.0050 |
| 5/1/2007 | WMS | 83 | 82 | 39 | 38 | <0.010 | <0.010 | <0.0050 | <0.0050 | | | |
| 5/1/2007 | Wyckle's | | | | | | | | | <0.66 | <0.010 | <0.0050 |
| 5/8/2007 | FE | 69 | 70 | 80 | 92 | 0.066 | 0.082 | 0.015 | 0.018 | | | |
| 5/8/2007 | WMS | | | | | | | | | <0.66 | <0.010 | <0.0050 |
| 5/15/2007 | R48 | 62 | 63 | 30 | 31 | <0.010 | <0.010 | <0.0050 | <0.0050 | | | |
| 5/15/2007 | FE | | | | | | | | | <0.66 | <0.010 | <0.0050 |
| 5/22/2007 | Wyckle's | 59 | 58 | 38 | 38 | 0.012 | 0.012 | <0.0050 | <0.0050 | | | |
| 5/22/2007 | RT 48 | | | | | | | | | <0.66 | <0.010 | <0.0050 |
| 5/29/2007 | WMS | 82 | 83 | 38 | 39 | <0.010 | <0.010 | <0.0050 | <0.0050 | | | |
| 5/29/2007 | Wyckle's | | | | | | | | | <0.66 | <0.010 | <0.0050 |
| 6/7/2007 | WMS | | | | | | | | | <0.66 | <0.010 | <0.0050 |
| 6/7/2007 | FE | 56 | 54 | 94 | 90 | 0.050 | 0.049 | 0.024 | 0.023 | | | |
| 6/12/2007 | R48 | | | | | <0.010 | <0.010 | <0.0050 | <0.0050 | | | |
| 6/14/2007 | FE | | | | | | | | | <0.66 | <0.010 | <0.0050 |
| 6/19/2007 | Wyckle's | 64 | 64 | 60 | 59 | 0.024 | 0.023 | 0.012 | 0.012 | | | |
| 6/19/2007 | RT 48 | | | | | | | | | 2.3 | <0.010 | <0.0050 |
| 6/26/2007 | WMS | 70 | 42 | 30 | 32 | 0.015 | 0.014 | <0.0050 | <0.0050 | | | |
| 6/26/2007 | Wyckle's | | | | | | | | | <0.66 | <0.010 | <0.0050 |
| 7/3/2007 | FE | 55 | 59 | 88 | 94 | 0.050 | 0.053 | 0.019 | 0.020 | | | |
| 7/3/2007 | WMS | | | | | | | | | <0.66 | <0.010 | <0.0050 |
| 7/10/2007 | RT 48 | 38 | 38 | 31 | 32 | <0.010 | <0.010 | <0.0050 | <0.0050 | | | |
| 7/12/2007 | FE | | | | | | | | | <0.66 | <0.010 | <0.0050 |
| 7/17/2007 | Wyckle's | 66 | 66 | 82 | 81 | 0.029 | 0.030 | 0.016 | 0.016 | | | |
| 7/17/2007 | RT 48 | | | | | | | | | <0.66 | <0.010 | <0.0050 |
| 7/24/2007 | WMS | 77 | 80 | 39 | 41 | <0.010 | <0.010 | <0.0050 | <0.0050 | | | |
| 7/24/2007 | Wyckle's | | | | | | | | | <0.66 | <0.010 | <0.0050 |
| 7/31/2007 | FE | 58 | 56 | 100 | 98 | 0.050 | 0.051 | 0.036 | 0.036 | | | |

Electronic Filing - Received, Clerk's Office, June 15, 2009

***** PCB 2009-125 *****
Quality Control Data

| Sample date | Source | Duplicate Data | | | | | | | | Field Blank Data | | |
|-------------|----------|-------------------------|-------------------------|-------------------------|-------------------------|---------------------------|---------------------------|---------------------------|---------------------------|-------------------|------------|------------|
| | | Replicate 1 Ca, mg/L | Replicate 2 Ca, mg/L | Replicate 1 Mg, mg/L | Replicate 2 Mg, mg/L | Replicate 1 Zn T, mg/L | Replicate 2 Zn T, mg/L | Replicate 1 Ni T, mg/L | Replicate 2 Ni T, mg/L | Hardness, mg/L | Zn T, mg/L | Ni T, mg/L |
| 7/31/2007 | WMS | | | | | | | | | <0.66 | <0.010 | <0.0050 |
| 8/7/2007 | RT 48 | 60 | 62 | 35 | 37 | <0.010 | <0.010 | <0.0050 | <0.0050 | | | |
| 8/7/2007 | FE | | | | | | | | | <0.66 | <0.010 | <0.0050 |
| 8/14/2007 | Wyckle's | 57 | 54 | 100 | 98 | 0.045 | 0.043 | 0.030 | 0.029 | | | |
| 8/14/2007 | RT 48 | | | | | | | | | <0.66 | <0.010 | <0.0050 |
| 8/21/2007 | WMS | 66 | 67 | 32 | 32 | 0.098 | <0.010 | <0.0050 | <0.0050 | | | |
| 8/21/2007 | Wyckle's | | | | | | | | | <0.66 | <0.010 | <0.0050 |
| 8/28/2007 | FE | 49 | 49 | 91 | 92 | 0.042 | 0.043 | 0.025 | 0.025 | | | |
| 8/28/2007 | WMS | | | | | | | | | <0.66 | <0.010 | <0.0050 |
| 9/4/2007 | RT 48 | 72 | 69 | 39 | 38 | <0.010 | <0.010 | <0.0050 | <0.0050 | | | |
| 9/4/2007 | FE | | | | | | | | | <0.66 | <0.010 | <0.0050 |
| 9/11/2007 | Wyckle's | 47 | 47 | 61 | 61 | 0.025 | 0.024 | 0.018 | 0.017 | | | |
| 9/11/2007 | RT 48 | | | | | | | | | <0.66 | <0.010 | <0.0050 |
| 9/18/2007 | WMS | 79 | 77 | 35 | 34 | <0.010 | <0.010 | <0.0050 | <0.0050 | | | |
| 9/18/2007 | Wyckle's | | | | | | | | | <0.66 | <0.010 | <0.0050 |
| 9/25/2007 | FE | 44 | 43 | 100 | 99 | 0.066 | 0.079 | 0.028 | 0.028 | | | |
| 9/25/2007 | WMS | | | | | | | | | <0.66 | <0.010 | <0.0050 |
| 10/2/2007 | RT 48 | 55 | 54 | 35 | 34 | 0.015 | 0.020 | <0.0050 | <0.0050 | | | |
| 10/2/2007 | FE | | | | | | | | | <0.66 | <0.010 | <0.0050 |
| 10/9/2007 | Wyckle's | 46 | 45 | 85 | 84 | 0.064 | 0.062 | 0.025 | 0.023 | | | |
| 10/9/2007 | RT 48 | | | | | | | | | <0.66 | <0.010 | <0.0050 |
| 10/16/2007 | WMS | 25 | 24 | 8.0 | 7.7 | 0.046 | 0.054 | 0.0056 | 0.0054 | | | |
| 10/16/2007 | Wyckle's | | | | | | | | | <0.66 | <0.010 | <0.0050 |
| 10/23/2007 | FE | 43 | 43 | 73 | 73 | 0.067 | 0.064 | 0.021 | 0.020 | | | |
| 10/23/2007 | WMS | | | | | | | | | <0.66 | <0.010 | <0.0050 |
| 10/30/2007 | RT 48 | 51 | 53 | 22 | 23 | <0.010 | <0.010 | <0.0050 | <0.0050 | | | |
| 10/30/2007 | FE | | | | | | | | | <0.66 | <0.010 | <0.0050 |

PCB 2009-125

| Month | River Upstream Dissolved Nickel mg/L | Plant Effluent Dissolved Nickel mg/L | Steven's Creek Dissolved Nickel mg/L | River Downstream Dissolved Nickel mg/L | River Upstream Total Nickel mg/L | Plant Effluent Total Nickel mg/L | Steven's Creek Total Nickel mg/L | River Downstream Total Nickel mg/L | Plant Effluent Dissolved/Total Ratio |
|--------------|--------------------------------------|--------------------------------------|--------------------------------------|--|----------------------------------|----------------------------------|----------------------------------|------------------------------------|--------------------------------------|
| March-07 | <0.0050 | 0.016 | <0.0050 | <0.0050 | <0.0050 | 0.016 | <0.0050 | <0.0050 | 1.000 |
| April-07 | <0.0050 | 0.015 | <0.0050 | <0.0050 | <0.0050 | 0.016 | <0.0050 | <0.0050 | 0.938 |
| May-07 | <0.0050 | 0.018 | <0.0050 | <0.0050 | <0.0050 | 0.019 | <0.0050 | <0.0050 | 0.947 |
| June-07 | <0.0050 | 0.020 | <0.0050 | 0.0081 | <0.0050 | 0.022 | <0.0050 | 0.0086 | 0.909 |
| July-07 | <0.0050 | 0.025 | <0.0050 | 0.011 | <0.0050 | 0.025 | <0.0050 | 0.011 | 1.000 |
| August-07 | <0.0050 | 0.027 | <0.0050 | 0.025 | <0.0050 | 0.028 | <0.0050 | 0.026 | 0.964 |
| September-07 | <0.0050 | 0.026 | <0.0050 | 0.024 | <0.0050 | 0.027 | <0.0050 | 0.025 | 0.963 |
| October-07 * | <0.0050 | 0.022 | <0.0050 | 0.020 | <0.0050 | 0.023 | <0.0056 | 0.020 | 0.957 |

Proposed Ni Effluent standard = 0.011 mg/L monthly average

█ indicates exceeds proposed standard

| Month | River Upstream Dissolved Zinc mg/L | Plant Effluent Dissolved Zinc mg/L | Steven's Creek Dissolved Zinc mg/L | River Downstream Dissolved Zinc mg/L | River Upstream Total Zinc mg/L | Plant Effluent Total Zinc mg/L | Steven's Creek Total Zinc mg/L | River Downstream Total Zinc mg/L | Plant Effluent Dissolved/Total Ratio |
|--------------|------------------------------------|------------------------------------|------------------------------------|--------------------------------------|--------------------------------|--------------------------------|--------------------------------|----------------------------------|--------------------------------------|
| March-07 | <0.010 | 0.083 | <0.010 | <0.012 | <0.010 | 0.085 | <0.014 | <0.011 | 0.976 |
| April-07 | <0.010 | 0.072 | <0.010 | <0.010 | <0.014 | 0.076 | <0.010 | <0.010 | 0.947 |
| May-07 | <0.010 | 0.058 | <0.010 | <0.010 | <0.010 | 0.065 | <0.0101 | <0.011 | 0.892 |
| June-07 | <0.010 | 0.051 | <0.010 | <0.017 | <0.020 | 0.061 | <0.012 | 0.021 | 0.836 |
| July-07 | <0.010 | 0.038 | <0.017 | <0.016 | <0.010 | 0.048 | <0.010 | <0.020 | 0.792 |
| August-07 | <0.010 | 0.034 | <0.0101 | 0.030 | <0.010 | 0.044 | <0.010 | 0.034 | 0.773 |
| September-07 | <0.010 | 0.035 | <0.010 | 0.024 | <0.010 | 0.044 | <0.010 | 0.038 | 0.795 |
| October-07 * | <0.010 | 0.042 | <0.010 | 0.041 | <0.014 | 0.051 | <0.020 | 0.044 | 0.824 |

Proposed Zn Effluent standard = 0.046 mg/L monthly average

River Upstream Flow Data

| Month | Mean Flow, cfs | Min Flow, cfs | Max Flow, cfs |
|-------------------------|----------------|---------------|---------------|
| March-07 (3/15 to 3/31) | 1304 | 521 | 2670 |
| April-07 | 1196 | 554 | 2430 |
| May-07 | 488 | 95 | 2070 |
| June-07 | 255 | 3.90 | 944 |
| July-07 | 152 | 1.90 | 961 |
| August-07 | 1.75 | 0.520 | 4.80 |
| September-07 | 1.55 | 0.630 | 8.50 |
| October-07 * | 2.63 | 0.670 | 11.0 |

* includes 11/1/07 sampling

* * * * * PCB 2009-125 * * * * *

Variables :

Cd = Concentration Dissolved
 Cp = Concentration Particulate
 Ct = Concentration Total
 Kp = Partition Coefficient (=Cp/(Cd x TSS))
 TSS = Total Suspended Solids

| Sample Date | Cd | Cp | Ct | TSS | Kp | (Ct/Cd)-1 |
|-------------|--------|---------|--------|-----|-----------|-----------|
| 3/20/2007 | <0.010 | #VALUE! | 0.011 | 25 | #VALUE! | #VALUE! |
| 3/22/2007 | 0.016 | -0.005 | 0.011 | 22 | -0.014205 | -0.3125 |
| 3/27/2007 | <0.010 | #VALUE! | 0.012 | 31 | #VALUE! | #VALUE! |
| 3/29/2007 | <0.010 | #VALUE! | <0.010 | 35 | #VALUE! | #VALUE! |
| 4/3/2007 | <0.010 | #VALUE! | <0.010 | 33 | #VALUE! | #VALUE! |
| 4/5/2007 | <0.010 | #VALUE! | <0.010 | 25 | #VALUE! | #VALUE! |
| 4/10/2007 | <0.010 | #VALUE! | <0.010 | 9.0 | #VALUE! | #VALUE! |
| 4/17/2007 | <0.010 | #VALUE! | <0.010 | 15 | #VALUE! | #VALUE! |
| 4/19/2007 | <0.010 | #VALUE! | <0.010 | 20 | #VALUE! | #VALUE! |
| 4/24/2007 | <0.010 | #VALUE! | <0.010 | 28 | #VALUE! | #VALUE! |
| 4/26/2007 | <0.010 | #VALUE! | <0.010 | 33 | #VALUE! | #VALUE! |
| 5/1/2007 | <0.010 | #VALUE! | <0.010 | 25 | #VALUE! | #VALUE! |
| 5/3/2007 | <0.010 | #VALUE! | <0.010 | 26 | #VALUE! | #VALUE! |
| 5/8/2007 | <0.010 | #VALUE! | <0.010 | 27 | #VALUE! | #VALUE! |
| 5/10/2007 | <0.010 | #VALUE! | 0.012 | 29 | #VALUE! | #VALUE! |
| 5/15/2007 | <0.010 | #VALUE! | <0.010 | 21 | #VALUE! | #VALUE! |
| 5/17/2007 | <0.010 | #VALUE! | <0.010 | 30 | #VALUE! | #VALUE! |
| 5/22/2007 | <0.010 | #VALUE! | 0.012 | 29 | #VALUE! | #VALUE! |
| 5/24/2007 | <0.010 | #VALUE! | 0.015 | 29 | #VALUE! | #VALUE! |
| 5/29/2007 | <0.010 | #VALUE! | 0.011 | 25 | #VALUE! | #VALUE! |
| 5/31/2007 | <0.010 | #VALUE! | <0.010 | 25 | #VALUE! | #VALUE! |
| 6/5/2007 | <0.010 | #VALUE! | 0.011 | 27 | #VALUE! | #VALUE! |
| 6/7/2007 | 0.012 | 0.006 | 0.018 | 29 | 0.017241 | 0.5 |
| 6/12/2007 | 0.018 | 0.006 | 0.024 | 24 | 0.013889 | 0.333333 |
| 6/14/2007 | 0.025 | 0.007 | 0.032 | 23 | 0.012174 | 0.28 |
| 6/19/2007 | 0.019 | 0.0045 | 0.0235 | 20 | 0.011842 | 0.236842 |
| 6/21/2007 | 0.029 | 0.005 | 0.034 | 20 | 0.008621 | 0.172414 |
| 6/26/2007 | <0.010 | #VALUE! | 0.014 | 6.0 | #VALUE! | #VALUE! |
| 6/28/2007 | <0.010 | #VALUE! | 0.014 | 66 | #VALUE! | #VALUE! |
| 7/3/2007 | <0.010 | #VALUE! | <0.010 | 34 | #VALUE! | #VALUE! |
| 7/5/2007 | <0.010 | #VALUE! | <0.010 | 38 | #VALUE! | #VALUE! |
| 7/10/2007 | 0.010 | 0.012 | 0.022 | 27 | 0.044444 | 1.2 |
| 7/12/2007 | 0.019 | 0.012 | 0.031 | 21 | 0.030075 | 0.631579 |
| 7/17/2007 | 0.022 | 0.0075 | 0.0295 | 15 | 0.022727 | 0.340909 |
| 7/19/2007 | 0.022 | 0.004 | 0.026 | 13 | 0.013986 | 0.181818 |

* * * * * PCB 2009-125 * * * * *

Variables :

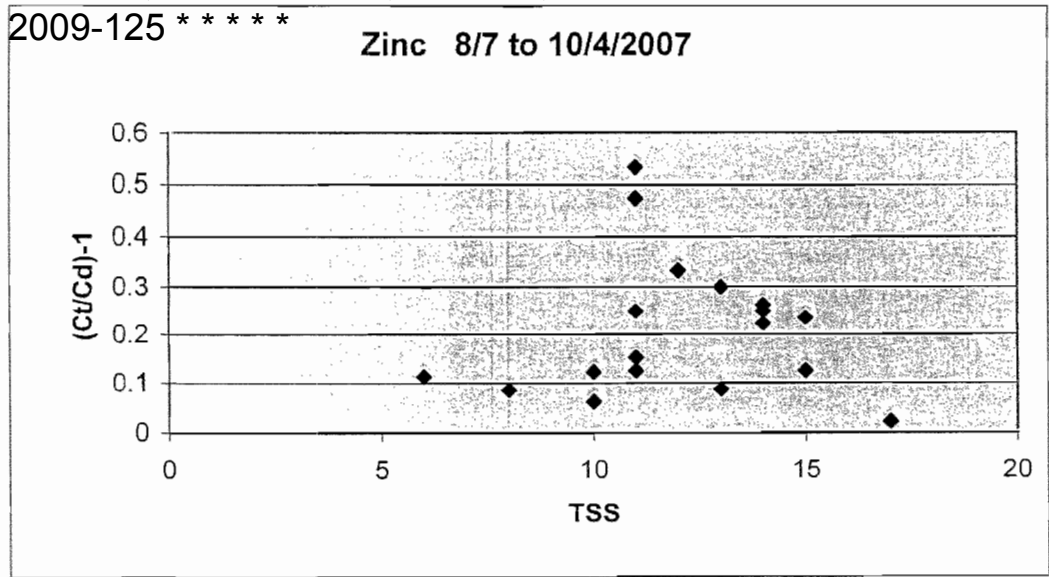
Cd = Concentration Dissolved
 Cp = Concentration Particulate
 Ct = Concentration Total
 Kp = Partition Coefficient (=Cp/(Cd x TSS))
 TSS = Total Suspended Solids

| Sample Date | Cd | Cp | Ct | TSS | Kp | (Ct/Cd)-1 |
|-------------|--------|---------|--------|-----|-----------|-----------|
| 7/24/2007 | <0.010 | #VALUE! | 0.014 | 24 | #VALUE! | #VALUE! |
| 7/26/2007 | <0.010 | #VALUE! | 0.014 | 26 | #VALUE! | #VALUE! |
| 7/31/2007 | 0.017 | 0.005 | 0.022 | 18 | 0.01634 | 0.294118 |
| 8/2/2007 | 0.027 | -0.006 | 0.021 | 14 | -0.015873 | -0.222222 |
| 8/7/2007 | 0.015 | 0.008 | 0.023 | 11 | 0.048485 | 0.533333 |
| 8/9/2007 | 0.020 | 0.005 | 0.025 | 14 | 0.017857 | 0.25 |
| 8/14/2007 | 0.036 | 0.008 | 0.044 | 14 | 0.015873 | 0.222222 |
| 8/16/2007 | 0.043 | 0.001 | 0.044 | 17 | 0.001368 | 0.023256 |
| 8/21/2007 | 0.032 | 0.002 | 0.034 | 10 | 0.00625 | 0.0625 |
| 8/23/2007 | 0.035 | 0.003 | 0.038 | 8.0 | 0.010714 | 0.085714 |
| 8/28/2007 | 0.046 | 0.004 | 0.050 | 13 | 0.006689 | 0.086957 |
| 8/30/2007 | 0.019 | 0.009 | 0.028 | 11 | 0.043062 | 0.473684 |
| 9/4/2007 | 0.053 | 0.008 | 0.061 | 11 | 0.013722 | 0.150943 |
| 9/6/2007 | 0.024 | 0.006 | 0.030 | 11 | 0.022727 | 0.25 |
| 9/11/2007 | 0.022 | 0.0025 | 0.0245 | 6.0 | 0.018939 | 0.113636 |
| 9/13/2007 | 0.018 | 0.006 | 0.024 | 12 | 0.027778 | 0.333333 |
| 9/18/2007 | 0.049 | 0.006 | 0.055 | 10 | 0.012245 | 0.122449 |
| 9/20/2007 | 0.024 | 0.003 | 0.027 | 15 | 0.008333 | 0.125 |
| 9/25/2007 | 0.020 | 0.006 | 0.026 | 13 | 0.023077 | 0.3 |
| 9/27/2007 | 0.048 | 0.006 | 0.054 | 11 | 0.011364 | 0.125 |
| 10/2/2007 | 0.019 | 0.005 | 0.024 | 14 | 0.018797 | 0.263158 |
| 10/4/2007 | 0.017 | 0.004 | 0.021 | 15 | 0.015686 | 0.235294 |

***** PCB 2009-125 *****

Zinc 8/7 to 10/4/2007

| Date | x TSS | y (Cu/Cd)-1 |
|-----------|----------|----------------|
| 8/7/2007 | 11 | 0.533333 |
| 8/9/2007 | 14 | 0.25 |
| 8/14/2007 | 14 | 0.222222 |
| 8/16/2007 | 17 | 0.023256 |
| 8/21/2007 | 10 | 0.0625 |
| 8/23/2007 | 8.0 | 0.085714 |
| 8/28/2007 | 13 | 0.086957 |
| 8/30/2007 | 11 | 0.473684 |
| 9/4/2007 | 11 | 0.150943 |
| 9/6/2007 | 11 | 0.25 |
| 9/11/2007 | 6.0 | 0.113636 |
| 9/13/2007 | 12 | 0.333333 |
| 9/18/2007 | 10 | 0.122449 |
| 9/20/2007 | 15 | 0.125 |
| 9/25/2007 | 13 | 0.3 |
| 9/27/2007 | 11 | 0.125 |
| 10/2/2007 | 14 | 0.263158 |
| 10/4/2007 | 15 | 0.235294 |



slope = 0.001044
 R-Square = 0.000407
 Y-int = 0.196168

Poor Correlation

Exhibit D

Illinois EPA Email to Sanitary District of Decatur

January 2, 2008

***** PCB 2009-125 *****

Tim Kluge

From: Twait, Scott [Scott.Twait@Illinois.gov]
Sent: Wednesday, January 02, 2008 4:55 PM
To: timk@sdd.dst.il.us
Cc: Keller, Al; Mosher, Bob; Pinneo, Rick
Subject: Zinc and Nickel

Tim,

I looked at the Decatur December 20, 2007 report for zinc and nickel. Based on our procedures, the Agency uses the tenth percentile hardness during the tenth percentile low flows. In this case, we used the tenth percentile hardness for the low flow period August 2, 2007 through November 1, 2007 which resulted in a critical hardness of 359 mg/L. The Agency also used all of the translator data (excluding data when both the dissolved and total were below the detection level) that was available. This resulted in a translator for zinc of 0.848 and a translator for nickel of 0.966. Permit limits would result in:

Zinc monthly average = $0.0637/0.848 = 0.075$ mg/L
Zinc daily maximum = $0.3529/0.848 = 0.416$ mg/L

Nickel monthly average = $0.0147/0.966 = 0.015$ mg/L

If you have any questions or would like to schedule a meeting, please let me know.

Scott

11/3/2008