



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

Mitchell E. Daniels Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis, Indiana 46204
(317) 232-8603
Toll Free (800) 451-6027
www.idem.IN.gov

TO: Interested Parties / Applicant

DATE: March 17, 2011

RE: Kemira Water Solutions / 089 - 30208 - 00489

FROM: Matthew Stuckey, Branch Chief
Permits Branch
Office of Air Quality

Notice of Decision – Approval

Please be advised that on behalf of the Commissioner of the Department of Environmental Management, I have issued a decision regarding the enclosed matter. Pursuant to 326 IAC 2, this approval was effective immediately upon submittal of the application.

If you wish to challenge this decision, IC 4-21.5-3-7 requires that you file a petition for administrative review. This petition may include a request for stay of effectiveness and must be submitted to the Office of Environmental Adjudication, 100 North Senate Avenue, Government Center North, Suite N 501E, Indianapolis, IN 46204, **within eighteen (18) calendar days from the mailing of this notice**. The filing of a petition for administrative review is complete on the earliest of the following dates that apply to the filing:

- (1) the date the document is delivered to the Office of Environmental Adjudication (OEA);
- (2) the date of the postmark on the envelope containing the document, if the document is mailed to OEA by U.S. mail; or
- (3) The date on which the document is deposited with a private carrier, as shown by receipt issued by the carrier, if the document is sent to the OEA by private carrier.

The petition must include facts demonstrating that you are either the applicant, a person aggrieved or adversely affected by the decision or otherwise entitled to review by law. Please identify the permit, decision, or other order for which you seek review by permit number, name of the applicant, location, date of this notice and all of the following:

- (1) the name and address of the person making the request;
- (2) the interest of the person making the request;
- (3) identification of any persons represented by the person making the request;
- (4) the reasons, with particularity, for the request;
- (5) the issues, with particularity, proposed for considerations at any hearing; and
- (6) identification of the terms and conditions which, in the judgment of the person making the request, would be appropriate in the case in question to satisfy the requirements of the law governing documents of the type issued by the Commissioner.

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178. Callers from within Indiana may call toll-free at 1-800-451-6027, ext. 3-0178.

Enclosures
FNPER-AM.dot12/3/07



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

Mitchell E. Daniels Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis, Indiana 46204
(317) 232-8603
Toll Free (800) 451-6027
www.idem.IN.gov

Ted Butler
Kemira Water Solutions, Inc.
3761 Canal Street
East Chicago, Indiana, 46312

March 17, 2011

Re: 089-30208-00489
Third Registration Notice-Only Change to
R089-21908-00489

Dear Ted Butler:

Kemira Water Solutions, Inc. was issued a Registration No. R089-21908-00489 on December 2, 2005 for a stationary facility to produce Ferrous Chloride (FeCl_2) and Ferric Chloride (FeCl_3) located at 3761 Canal Street, East Chicago, Indiana, 46312. On February 10, 2011, the Office of Air Quality (OAQ) received an application from the source requesting changes to its Registration to add two (2) cooling towers and requesting to make descriptive changes in order to more accurately reflect the process as it currently operates. Additional information was received on March 9 and March 16, 2011.

1. relating to the construction and operation of two (2) cooling towers, as follows:
 - (a) One (1) induced draft wet cooling tower, identified as CT-400, constructed in 2005, having a maximum capacity of 2,395,860 gallons per year (273.5 gallons per hour), using no controls; and
 - (b) One (1) induced draft wet cooling tower, identified as CT-1502, constructed in 2011, having a maximum capacity of 2,395,860 gallons per year (273.5 gallons per hour), using no controls.

The addition of these units to the registration is considered a notice-only change, since the potential emissions of regulated criteria pollutants and hazardous air pollutants are less than the ranges specified in 326 IAC 2-5.5-6(d)(10) and 326 IAC 2-5.5-6(d)(12), respectively. Applicable emissions include PM, PM10, and PM2.5 only. Emissions from the two cooling towers are shown in the table below:

CT-400 (capacity 273.5 gal/hr) Emissions Factor (lb./ 1000 gallons)	Pollutant		
	PM	PM10	PM2.5
Potential to Emit (lb/hr)	0.31	0.31	0.31
Potential to Emit (lb/day)	7.48	7.48	7.48
Potential to Emit (tons/yr)	1.37	1.37	1.37

CT-1502 (capacity 273.5 gal/hr) Emissions Factor (lb./ 1000 gallons)	Pollutant		
	PM	PM10	PM2.5
Potential to Emit (lb/hr)	0.31	0.31	0.31
Potential to Emit (lb/day)	7.48	7.48	7.48
Potential to Emit (tons/yr)	1.37	1.37	1.37

Methodology for above tables:
Emission Factors are from AP-42, Chapter 13, Miscellaneous Sources, Table 13.4-1, Wet Cooling Towers

Maximum gallons of water used is equivalent to the maximum gallons of water evaporated.
Gallons per hour is the maximum capacity per year, divided by 8,760 hours per year.
Emission factor is pounds PM per 1,000 gallons capacity usage.
Potential to emit (lb/hr) = gallons per hour / 1000 gallons * emission factor
Potential to emit (lb/day) = lb/hr emissions * 24 hours /day
Potential to emit (tons per year) = lb/hour * 8760 hours/year / 2000 lbs/ton.

Emissions for new Equipment For This Revision (tons/yr)	Pollutant		
	PM	PM10	PM2.5
CT-400 Cooling Tower	1.37	1.37	1.37
CT-1502 Cooling Tower	1.37	1.37	1.37
Total New Equipment Emissions for This Revision	2.74	2.74	2.74

The uncontrolled/unlimited potential to emit of the entire source will continue to be within the threshold levels specified in 326 IAC 2-5.5-1(b)(1). No new state rules are applicable to this equipment. There are no New Source Performance Standards (NSPS) (326 IAC 12 and 40 CFR Part 60) or National Emission standards for Hazardous Air Pollutants (NESHAPs) (326 IAC 14, 20 and 40 CFR Part 61, 63) included for this new equipment.

Section A.2 of the permit has been changed to reflect these changes described above.

2. requesting to make descriptive changes to the permit, in order to more accurately reflect the process as it currently operates. These changes are changes to Section A.2 only, and have no effect on emissions. Changes requested are as follows:
- (a) Tank T102, described in Section A.2(b), has been renamed as T111;
 - (b) The one (1) filter press described in Section A.2(f) should read that there are two (2) filter presses. There are no emissions from the two filter presses;
 - (c) Five (5) storage tanks are existing tanks that should have been included in the Registration, but were omitted:
 - (i) Tanks T124 and T131, each storing Ferrous Chloride, each having a maximum capacity of 20,000 gallons, with a true vapor pressure of less than 3.5 kPa;
 - (ii) Tank T121, storing Ferric Chloride, with a maximum capacity of 100,000 gallons, and a true vapor pressure of less than 3.5 kPa; and
 - (iii) Tanks T122 and T123, each storing Ferric Chloride, each with a maximum storage capacity of 20,000 gallons, and each with a maximum vapor capacity of less than 3.5 kPa.

The tanks have minimal emissions. The following rules were evaluated for these new tanks described above:

- (a) These facilities are not subject to the requirements of New Source Performance Standards for Storage Vessels of Petroleum Liquids (NSPS) 40 CFR 60, Subparts K and Ka because they do not store petroleum liquids. Therefore, the requirements of 40 CFR 60, Subparts K and Ka do not apply.
- (b) These facilities are not subject to the requirements of New Source Performance Standards for Storage Vessels of Volatile Organic Liquid Storage Vessels (NSPS) 40 CFR 60, Subpart Kb because they do not store VOCs. Therefore, the requirements of 40 CFR 60, Subpart Kb do not apply.

- (c) These facilities are not subject to the requirements of National Emissions Standards for Hazardous Air Pollutants (NESHAP) for Chemical Manufacturing Area Sources, 40 CFR Part 63, Subpart VVVVVV because this facility does not produce HAPs listed in Table 1 of that rule. Therefore, the requirements of 40 CFR 63, Subpart VVVVVV do not apply.
- (d) These facilities are not subject to the requirements of National Emissions Standards for Hazardous Air Pollutants (NESHAP) for Area Sources: Chemical Preparation Industry, 40 CFR Part 63, Subpart BBBB BBB because this facility does not produce target HAPS in the concentrations listed in Part 63.11588 of that rule. Therefore, the requirements of 40 CFR 63, Subpart BBBB BBB do not apply.
- (e) These facilities are not subject to the requirements of 326 IAC 8-9 (Volatile Organic Liquid Storage Vessels) because these tanks do not store any VOC materials. Therefore, the requirements of 326 IAC 8-9 do not apply.

These changes to the registration are considered notice-only changes pursuant to 326 IAC 2-5.5-6(d)(1).

Section A.2 of the permit has been changed to reflect the changes as described above. The new emission units added to Section A.2 will be grouped with other like units; therefore, the rest of the units have been renumbered accordingly.

IDEM, OAQ has decided to make the following additional changes to the permit:

- (a) OAQ has decided to include the fugitive dust emissions in the calculations for the purpose of the determination of the permit level. Therefore, these calculations have been included in this Registration Notice-only Change. The fugitive emissions are shown below and are detailed in Appendix A of this document. The inclusion of the fugitive emissions did not change the permit level, and the source will remain at the Registration level, pursuant to 326 IAC 2-5.1.

Fugitive Emissions for Unpaved Roads (tons/yr)	Pollutant		
	PM	PM10	PM2.5
Unpaved Roads (Uncontrolled)	0.45	0.11	0.01
Total Fugitive Emissions for This Revision	0.45	0.11	0.01

The uncontrolled/unlimited potential to emit of the entire source will continue to be within the threshold levels specified in 326 IAC 2-5.5-1(b)(1). No new state rules are applicable to this equipment. There are no New Source Performance Standards (NSPS) (326 IAC 12 and 40 CFR Part 60) or National Emission standards for Hazardous Air Pollutants (NESHAPs) (326 IAC 14, 20 and 40 CFR Part 61, 63) included for this new equipment.

- (b) OAQ has decided to include the determination that this source is considered one (1) of the twenty-eight (28) source categories listed in 326 IAC 2-2-1(gg)(1), as a chemical process plant, since it manufactures ferric chloride and its SIC code is 2819. Therefore, this determination has been included in this Registration Notice-only Change. Section A.1 of the permit has been changed to reflect this change.

The following Table represents the uncontrolled potential to emit from this source, after issuance of the Registration Notice-only Change:

Potential to Emit After Issuance of the Registration Notice-only Change (tons per year)									
Emissions (tons per year)	Pollutant								
	PM	PM10	PM2.5	SO2	NOx	VOC	CO	Worst HAP	Total HAPs
Existing Source Emissions *	0.07	0.28	0.28	0.02	3.68	0.20	3.09	2.63 (HCl)	2.70
CT-400 Cooling Tower	1.37	1.37	1.37	0.00	0.00	0.00	0.00	0.00	0.00
CT-1502 Cooling Tower	1.37	1.37	1.37	0.00	0.00	0.00	0.00	0.00	0.00
Fugitive Dust Emissions	0.45	0.11	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Revised Source Emissions	3.26	3.13	3.03	0.02	3.68	0.20	3.09	2.63 (HCl)	2.70
Registration Threshold Level	≥5,<25	≥5,<25	≥5,<25	≥10,<25	≥10,<25	≥10,<25	≥25,<100	<10	<25

Note: The revised source wide emissions indicate Exemption Level; however, the source has requested to remain at the registration level. The source was issued a Registration No. 089-21908-00489, on December 2, 2005. However, in its Second Notice-only Change, No. 089-28818-00489, issued January 22, 2010, the source removed one 50 MMBtu boiler and replaced it with an 8.4 MMBtu boiler, thereby reducing its potential to emit. At that time, the source elected to remain at the Registration level.

* Existing Source Emissions are from the Second Notice-only Change Permit No. 089-28818-00489, issued January 22, 2010.

Pursuant to 326 IAC 2-5.5-6, the registration is hereby revised as follows, with deleted language as ~~strikeouts~~ and new language **bolded**:

A.1 General Information

The Registrant owns and operates a stationary facility to produce Ferrous Chloride (FeCl₂) and Ferric Chloride (FeCl₃).

Source Address: 3761 Canal Street, East Chicago, Indiana 46312
 Mailing Address: 3761 Canal Street, East Chicago, Indiana 46312
 General Source Phone Number: 219-397-2646
 SIC Code: 2819
 County Location: Lake County
 Source Location Status: Attainment for all criteria pollutants
 Source Status: Registration
1 of 28 Source Categories

A.2 Emission Units and Pollution Control Equipment Summary

This stationary source consists of the following emission units and pollution control devices:

One (1) closed-loop Ferrous Chloride production facility, including the following:

- (a) ---
- (b) Tanks No. T101 and ~~T102~~**T111** for storing Spent Pickle Liquor (SPL), with storage capacities of 100,000 gallons each.
- (c) **Tanks T124 and T131, each storing Ferrous Chloride, each having a maximum capacity of 20,000 gallons, with a true vapor pressure of less than 3.5 kPa.**

- (d) Tank T121, storing Ferric Chloride, with a maximum capacity of 100,000 gallons, and a true vapor pressure of less than 3.5 kPa.
- (e) Tanks T122 and T123, each storing Ferric Chloride, each with a maximum storage capacity of 20,000 gallons, and each with a maximum vapor capacity of less than 3.5 kPa.
- (ef) ---
- (eg) ---
- (eh) ---
- (fi) ~~One~~Two (42) filter presses for treating unused scrap iron and carbon, which are then shipped out.
- (gj) ---
- (k) One (1) induced draft wet cooling tower, identified as CT-400, constructed in 2005, having a maximum capacity of 2,395,860 gallons per year (273.5 gallons per hour), using no controls.
- (l) One (1) induced draft wet cooling tower, identified as CT-1502, constructed in 2011, having a maximum capacity of 2,395,860 gallons per year (273.5 gallons per hour), using no controls.

The source shall continue to operate according to 326 IAC 2-5.5. Please find enclosed the revised registration. A copy of the registration is available on the Internet at: <http://www.in.gov/ai/appfiles/idem-caats/>. For additional information about air permits and how the public and interested parties can participate, refer to the IDEM's Guide for Citizen Participation and Permit Guide on the Internet at: www.idem.in.gov

This decision is subject to the Indiana Administrative Orders and Procedures Act - IC 4-21.5-3-5. If you have any questions on this matter, please contact Jack Harmon, at (800) 451-6027, press 0 and ask for Jack Harmon or extension 3-4228, or dial (317) 233-4228.

Sincerely,



Iryn Calilung,, Section Chief
Permits Branch
Office of Air Quality

IC/jh

Attachment: Revised Registration

cc: File - Lake County
Lake County Health Department
Compliance and Enforcement Branch
Billing, Licensing and Training Section



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

Mitchell E. Daniels Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis, Indiana 46204
(317) 232-8603
Toll Free (800) 451-6027
www.idem.IN.gov

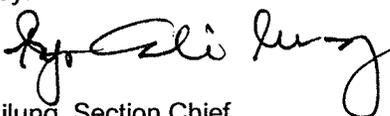
REGISTRATION OFFICE OF AIR QUALITY

Kemira Water Solutions, Inc.
3761 Canal Street
East Chicago, Indiana 46312

Pursuant to 326 IAC 2-5.1 (Construction of New Sources: Registrations) and 326 IAC 2-5.5 (Registrations), (herein known as the Registrant) is hereby authorized to construct and operate subject to the conditions contained herein, the source described in Section A (Source Summary) of this registration.

Registration No. 089-21908-00489	
Original signed by: Iryn Calilung, Section Chief Permits Branch Office of Air Quality	Issuance Date: December 2, 2005

First Registration Notice-Only Change No. 089-24042-00489 issued on January 3, 2007
Second Registration Notice-Only Change No. 089-28818-00489, issued on January 22, 2010

Third Registration Notice-Only Change No. 089-30208-00489	
Issued by:  Iryn Calilung, Section Chief Permits Branch Office of Air Quality	Issuance Date: March 17, 2011

SECTION A

SOURCE SUMMARY

This registration is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ). The information describing the source contained in conditions A.1 and A.2 is descriptive information and does not constitute enforceable conditions. However, the Registrant should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Registrant to obtain additional permits pursuant to 326 IAC 2.

A.1 General Information

The Registrant owns and operates a stationary facility to produce Ferrous Chloride (FeCl_2) and Ferric Chloride (FeCl_3).

Source Address:	3761 Canal Street, East Chicago, Indiana 46312
Mailing Address:	3761 Canal Street, East Chicago, Indiana 46312
General Source Phone Number:	219-397-2646
SIC Code:	2819
County Location:	Lake County
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Registration I of 28 Source Categories

A.2 Emission Units and Pollution Control Equipment Summary

This stationary source consists of the following emission units and pollution control devices:

One (1) closed-loop Ferrous Chloride production facility, including the following:

- (a) Tanks No. T310 and T311 for storing hydrochloric acid (HCl), with storage capacities of 20,000 gallons each.
- (b) Tanks No. T101 and T111 for storing Spent Pickle Liquor (SPL), with storage capacities of 100,000 gallons each.
- (c) Tanks T124 and T131, each storing Ferrous Chloride, each having a maximum capacity of 20,000 gallons, with a true vapor pressure of less than 3.5 kPa.
- (d) Tank T121, storing Ferric Chloride, with a maximum capacity of 100,000 gallons, and a true vapor pressure of less than 3.5 kPa.
- (e) Tanks T122 and T123, each storing Ferric Chloride, each with a maximum storage capacity of 20,000 gallons, and each with a maximum vapor capacity of less than 3.5 kPa.
- (f) Scrap metal digesters where FeCl_2 is produced in a continuous reaction system, using SPL and scrap iron as raw materials.
- (g) Three (3) chlorinators operated in series where reaction of FeCl_2 and Chlorine produces FeCl_3 .
- (h) One (1) wet scrubber for scrubbing HCl vapor and hydrogen gas produced, with a control efficiency of 80%, and flow rate of 15,000 cubic feet per minute.
- (i) Two (2) filter presses for treating unused scrap iron and carbon, which are then shipped out.
- (j) One (1) natural gas-fired boiler, identified as B-1400, approved for construction in 2010,

with a maximum heat input capacity of 8.4 MMBtu per hour, having no associated emission control device or alternative fuel option, and exhausting through stack CD-1408.

- (k) One (1) induced draft wet cooling tower, identified as CT-400, constructed in 2005, having a maximum capacity of 2,395,860 gallons per year (273.5 gallons per hour), using no controls.
- (l) One (1) induced draft wet cooling tower, identified as CT-1502, constructed in 2011, having a maximum capacity of 2,395,860 gallons per year (273.5 gallons per hour), using no controls.

SECTION B

GENERAL CONDITIONS

B.1 Definitions [326 IAC 2-1.1-1]

Terms in this registration shall have the definition assigned to such terms in the referenced regulation. In the absence of definitions in the referenced regulation, the applicable definitions found in the statutes or regulations (IC 13-11, 326 IAC 1-2 and 326 IAC 2-1.1-1) shall prevail.

B.2 Effective Date of Registration [IC 13-15-5-3]

Pursuant to IC 13-15-5-3, this registration is effective immediately, unless a petition for stay of effectiveness is filed and granted according to IC 13-15-6-3, and may be revoked or modified in accordance with the provisions of IC 13-15-7-1.

B.3 Registration Revocation [326 IAC 2-1.1-9]

Pursuant to 326 IAC 2-1.1-9 (Revocation), this registration to operate may be revoked for any of the following causes:

- (a) Violation of any conditions of this registration.
- (b) Failure to disclose all the relevant facts, or misrepresentation in obtaining this registration.
- (c) Changes in regulatory requirements that mandate either a temporary or permanent reduction of discharge of contaminants. However, the amendment of appropriate sections of this registration shall not require revocation of this registration.
- (d) For any cause which establishes in the judgment of the fact that continuance of this registration is not consistent with purposes of this article.

B.4 Prior Permits Superseded [326 IAC 2-1.1-9.5]

- (a) All terms and conditions of permits established prior to Registration No. 089-21908-00489 and issued pursuant to permitting programs approved into the state implementation plan have been either:
 - (1) incorporated as originally stated,
 - (2) revised, or
 - (3) deleted.
- (b) All previous registrations and permits are superseded by this registration.

B.5 Annual Notification [326 IAC 2-5.1-2(f)(3)] [326 IAC 2-5.5-4(a)(3)]

Pursuant to 326 IAC 2-5.1-2(f)(3) and 326 IAC 2-5.5-4(a)(3):

- (a) An annual notification shall be submitted by an authorized individual to the Office of Air Quality stating whether or not the source is in operation and in compliance with the terms and conditions contained in this registration.
- (b) The annual notice shall be submitted in the format attached no later than March 1 of each year to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, IN 46204-2251

- (c) The notification shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.

B.6 Source Modification Requirement [326 IAC 2-5.5-6(a)]

Pursuant to 326 IAC 2-5.5-6(a), an application or notification shall be submitted in accordance with 326 IAC 2 to the Office of Air Quality (OAQ) if the source proposes to construct new emission units, modify existing emission units, or otherwise modify the source.

B.7 Registrations [326 IAC 2-5.1-2(i)]

Pursuant to 326 IAC 2-5.1-2(i), this registration does not limit the source's potential to emit.

SECTION C

SOURCE OPERATION CONDITIONS

Entire Source

Emission Limitations and Standards [326 IAC 2-5.1-2(g)] [326 IAC 2-5.5-4(b)]

C.1 Opacity [326 IAC 5-1]

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this registration:

- (a) Opacity shall not exceed an average of twenty percent (20%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

C.2 Fugitive Dust Emissions [326 IAC 6-4]

The Registrant shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4 (Fugitive Dust Emissions).

SECTION D.1

OPERATION CONDITIONS

Facility Description [326 IAC 2-5.1-2(f)(2)] [326 IAC 2-5.5-4(a)(2)]:

- (a) One (1) natural gas-fired boiler, identified as B-1400, approved for construction in 2010, with a maximum heat input capacity of 8.4 MMBtu per hour, having no associated emission control device or alternative fuel option, and exhausting through stack CD-1408.

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-5.1-2(f)(1)] [326 IAC 2-5.5-4(a)(1)]

D.1.1 Particulate [326 IAC 6-2-4]

Pursuant to 326 IAC 6-2-4 (Particulate Matter Emission Limitations for Sources of Indirect Heating), the particulate emissions from the boiler (B1400) shall in no case exceed 0.6 pounds of particulate matter per million British thermal units heat input.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH**

**REGISTRATION
ANNUAL NOTIFICATION**

This form should be used to comply with the notification requirements under 326 IAC 2-5.1-2(f)(3) and 326 IAC 2-5.5-4(a)(3).

Company Name:	Kemira Water Solutions, Inc.
Address:	3761 Canal Street
City:	East Chicago, Indiana 46312
Phone Number:	219-397-2646
Registration No.:	089-21908-00489

I hereby certify that Kemira Water Solutions, Inc. is :

still in operation.

I hereby certify that Kemira Water Solutions, Inc. is :

no longer in operation.

in compliance with the requirements of Registration No. 089-21908-00489.

not in compliance with the requirements of Registration No. 089-21908-00489.

Authorized Individual (typed):
Title:
Signature:
Phone Number:
Date:

If there are any conditions or requirements for which the source is not in compliance, provide a narrative description of how the source did or will achieve compliance and the date compliance was, or will be achieved.

Noncompliance:

Appendix A: Emissions Calculations

Company Name: Kemira Water Solutions, Inc.
Address City IN Zip: 3761 Canal Street, East Chicago, Indiana 46312
Permit Number: 089-30208-00489
Pit ID: 089-00489
Reviewer: Jack Harmon
Date: 2011

New Total Potential Emissions For Source

<u>Pollutant</u>	<u>Potential Emissions</u> (tons per year)	<u>Thresholds</u> <u>Exemption Level</u>	<u>Thresholds</u> <u>Registration Level</u>
PM	3.26	<5 tpy	≥5 tpy < 25 tpy
PM10	3.13	<5 tpy	≥5 tpy < 25 tpy
PM2.5	3.03	<5 tpy	≥5 tpy < 25 tpy
SO2	0.02	<10 tpy	≥10 tpy < 25 tpy
Nox	3.68	<10 tpy	≥10 tpy < 25 tpy
VOC	0.2	<5 tpy when control equipment required; <10 tpy when control equipment not required	≥ 5 tpy when control equipment required; ≥ 10 tpy when control equipment not required
CO	3.09	<25 tpy	≥25 tpy < 100 tpy
HAP Total	2.7	< 25 tpy	No specific thresholds cited
HAP Worst Single	2.63 (HCl)	<10 tpy	No specific thresholds cited

New emissions levels qualify the source for an Exemption Level; however, the source has requested to remain at the Registration Level.

Appendix A: Emissions Calculations

Company Name: Kemira Water Solutions, Inc.
 Address City IN Zip: 3761 Canal Street, East Chicago, Indiana 46312
 Permit Number: 089-30208-00489
 Pit ID: 089-00489
 Reviewer: Jack Harmon
 Date: 2011

Summary of this Notice of Change

CT-400 (capacity 273.5 gal/hr)	Pollutant		
	PM	PM10	PM2.5
Emissions Factor (lb./ 1000 gallons)	0.019	0.019	0.019
Potential to Emit (lb/hr)	0.31	0.31	0.31
Potential to Emit (lb/day)	7.48	7.48	7.48
Potential to Emit (tons/yr)	1.37	1.37	1.37

CT-1502 (capacity 273.5 gal/hr)	Pollutant		
	PM	PM10	PM2.5
Emissions Factor (lb./ 1000 gallons)	0.019	0.019	0.019
Potential to Emit (lb/hr)	0.31	0.31	0.31
Potential to Emit (lb/day)	7.48	7.48	7.48
Potential to Emit (tons/yr)	1.37	1.37	1.37

	Pollutant		
	PM	PM10	PM2.5
CT-400 Cooling Tower	1.37	1.37	1.37
CT-1502 Cooling Tower	1.37	1.37	1.37
New Equipment This Revision	2.74	2.74	2.74
Fugitive Unpaved Roads	0.45	0.11	0.01
Total this revision	3.19	2.85	2.75

Methodology for above tables:

Emission Factors from AP-42, Chapter 13, Table 13.4-1

Maximum gallons of water used is equivalent to the maximum gallons of water evaporated.

Gallons per hour is the maximum capacity per year, divided by 8,760 hours per year.

Emission factor is pounds PM per 1,000 gallons capacity usage.

Potential to emit (lb/hr) = gallons per hour / 1000 gallons * emission factor

Potential to emit (lb/day) = lb/hr emissions * 24 hours /day

Potential to emit (tons per year) = lb/hour * 8760 hours/year / 2000 lbs/ton.

Appendix A: Emissions Calculations

Natural Gas Combustion Only

MM BTU/HR <100

Company Name: Kemira Water Solutions, Inc.
Address City IN Zip: 3761 Canal Street, East Chicago, Indiana 46312
Permit Number: 089-30208-00489
Plt ID: 089-00489
Reviewer: Jack Harmon
Date: 2011

New Boiler, added 2010 under NOC 089-28818-00489

Heat Input Capacity
MMBtu/hr

Potential Throughput
MMCF/yr

8.4

73.6

Emission Factor in lb/MMCF	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
	1.9	7.6	0.6	100 **see below	5.5	84
Potential Emission in tons/yr	0.07	0.28	0.02	3.68	0.20	3.09

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.

**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Methodology

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu

Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

See page 2 for HAPs emissions calculations.

Appendix A: Emissions Calculations

Natural Gas Combustion Only

MM BTU/HR <100

HAPs Emissions

Company Name: Kemira Water Solutions, Inc.
Address City IN Zip: 3761 Canal Street, East Chicago, Indiana 46312
Permit Number: 089-30208-00489
Plt ID: 089-00489
Reviewer: Jack Harmon
Date: 2011

New Boiler

HAPs - Organics						Total Organics	HCl from P. 7	Total
Emission Factor in lb/MMcf	Benzene 2.1E-03	Dichlorobenzene 1.2E-03	Formaldehyde 7.5E-02	Hexane 1.8E+00	Toluene 3.4E-03			
Potential Emission in tons/yr	7.726E-05	4.415E-05	2.759E-03	6.623E-02	1.251E-04	6.923E-02	2.63	2.699E+00

HAPs - Metals						Total Metals
Emission Factor in lb/MMcf	Lead 5.0E-04	Cadmium 1.1E-03	Chromium 1.4E-03	Manganese 3.8E-04	Nickel 2.1E-03	
Potential Emission in tons/yr	1.840E-05	4.047E-05	5.151E-05	1.398E-05	7.726E-05	2.016E-04

Methodology is the same as page 1.

The five highest organic and metal HAPs emission factors are provided above. Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Appendix A: Emissions Calculations

Natural Gas Combustion Only

MM BTU/HR <100

Company Name: Kemira Water Solutions, Inc.
Address City IN Zip: 3761 Canal Street, East Chicago, Indiana 46312
Permit Number: 089-30208-00489
Pit ID: 089-00489
Reviewer: Jack Harmon
Date: 2011

Boiler, Removed 2010 under 089-28818-00489

Heat Input Capacity Potential Throughput
MMBtu/hr MMCF/yr

50.0

438.0

Emission Factor in lb/MMCF	Pollutant					
	PM*	PM10*	SO2	NOx 100 **see below	VOC	CO
Potential Emission in tons/yr	1.9	7.6	0.6	21.90	5.5	84
	0.42	1.66	0.13		1.20	18.40

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.

**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Methodology

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu

Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

See page 2 for HAPs emissions calculations.

Appendix A: Emissions Calculations

Natural Gas Combustion Only

MM BTU/HR <100

HAPs Emissions

Company Name: Kemira Water Solutions, Inc.
Address City IN Zip: 3761 Canal Street, East Chicago, Indiana 46312
Permit Number: 089-30208-00489
Plt ID: 089-00489
Reviewer: Jack Harmon
Date: 2011

Removed Boiler

HAPs - Organics					
Emission Factor in lb/MMcf	Benzene 2.1E-03	Dichlorobenzene 1.2E-03	Formaldehyde 7.5E-02	Hexane 1.8E+00	Toluene 3.4E-03
Potential Emission in tons/yr	4.599E-04	2.628E-04	1.643E-02	3.942E-01	7.446E-04

HAPs - Metals					
Emission Factor in lb/MMcf	Lead 5.0E-04	Cadmium 1.1E-03	Chromium 1.4E-03	Manganese 3.8E-04	Nickel 2.1E-03
Potential Emission in tons/yr	1.095E-04	2.409E-04	3.066E-04	8.322E-05	4.599E-04

Methodology is the same as page 1.

The five highest organic and metal HAPs emission factors are provided above. Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Appendix A: Emissions Calculations
HCl Emission Calculations from Scrubber

Page 7 of 8 TSD App A

Company Name: Kemira Water Solutions, Inc.
Address City IN Zip: 3761 Canal Street, East Chicago, Indiana 46312
Permit Number: 089-30208-00489
Pit ID: 089-00489
Reviewer: Jack Harmon
Date: 2011

HCL Emission Calculations:

The source previously submitted the following emissions calculations.

The emissions estimates are based on actual tests conducted on the HCl scrubber exhaust at a similar Kemira facility located in California and used in original Registration calculations ref: R089-21908-00489 dated December 2, 2005.

Flow Rate = 5000 cubic-ft/min
Emissions of HCl = 0.2 lb/hr
Emissions of Chlorine = Negligible

The flow rate of the scrubber in Indiana facility = 15,000 cubic-ft/min
Therefore, estimated emissions of HCl = 0.6 lb/hr

$$= 0.6 \text{ lb/hr} \times 8760 \text{ hr/yr} \times 1 \text{ ton}/2000 \text{ lb} = \mathbf{2.63 \text{ tpy}}$$

**Appendix A: Emissions Calculations
Fugitive Dust - Unpaved Roads**

Company Name: Kemira Water Solutions, Inc.
Address City IN Zip: 3761 Canal Street, East Chicago, Indiana 46312
Permit Number: 089-30208-00489
Plt ID: 089-00489
Reviewer: Jack Harmon
Date: 2011

The following calculations determine the amount of emissions created by unpaved roads, based on 8,760 hours of use and AP-42, Ch 13.2.2 (12/2003).

Process	Vehicle Type	Maximum Weight of Vehicle (tons)	Maximum Weight of Load (tons)	Maximum Weight of Vehicle and Load (tons/trip)	Maximum trips per year (trip/yr)	Total Weight driven per year (ton/yr)	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)	Maximum one-way miles (miles/yr)
Security/Rail	Pick-Up Truck	17.0	22.4	39.4	1.8E+03	7.2E+04	1000	0.189	345.6
Total						7.2E+04			3.5E+02

Vehicle Weight Per Trip =

3.0	tons/trip
-----	-----------

Average Miles Per Trip =

0.189	miles/trip
-------	------------

Unmitigated Emission Factor, $E_f = k * [(s/12)^a] * [(W/3)^b]$ (Equation 1a from AP-42 13.2.2)

	PM	PM10	PM2.5	
where k =	4.9	1.5	0.15	lb/mi = particle size multiplier (AP-42 Table 13.2.2-2 for Industrial Roads)
s =	4.8	4.8	4.8	% = mean % silt content of unpaved roads (AP-42 Table 13.2.2-3 Sand/Gravel Processing Plant Road)
a =	0.7	0.9	0.9	= constant (AP-42 Table 13.2.2-2)
W =	3.0	3.0	0.0	tons = average vehicle weight (provided by source)
b =	0.45	0.45	0.45	= constant (AP-42 Table 13.2.2-2)

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor, $E_{ext} = E * [(365 - P)/365]$

Unmitigated Emission Factor, $E_{ext} = E * [(365 - P)/365]$

where P =

125

 days of rain greater than or equal to 0.01 inches (see Fig. 13.2.2-1)

	PM	PM10	PM2.5	
Unmitigated Emission Factor, $E_f =$	2.58	0.66	0.00	lb/mile
Mitigated Emission Factor, $E_{ext} =$	2.56	0.65	0.00	lb/mile
Dust Control Efficiency =	50%	50%	50%	(pursuant to control measures outlined in fugitive dust control plan)

Process	Vehicle Type	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)	Controlled PTE of PM2.5 (tons/yr)
Security/Rail	Pick-Up Truck	0.45	0.11	0.01	0.29	0.07	0.01	0.15	0.04	0.00
Totals		0.45	0.11	0.01	0.29	0.07	0.01	0.15	0.04	0.00

Methodology

Maximum Material Handling Throughput = [Annual Asphalt Production Limitation (tons/yr)] * [1 - Percent Asphalt Cement/Binder (weight %)]
Maximum Asphalt Cement/Binder Throughput = [Annual Asphalt Production Limitation (tons/yr)] * [Percent Asphalt Cement/Binder (weight %)]
Maximum Weight of Vehicle and Load (tons/trip) = [Maximum Weight of Vehicle (tons/trip)] + [Maximum Weight of Load (tons/trip)]
Maximum trips per year (trip/yr) = [Throughput (tons/yr)] / [Maximum Weight of Load (tons/trip)]
Total Weight driven per year (ton/yr) = [Maximum Weight of Vehicle and Load (tons/trip)] * [Maximum trips per year (trip/yr)]
Maximum one-way distance (mi/trip) = [Maximum one-way distance (feet/trip)] / [5280 ft/mile]
Maximum one-way miles (miles/yr) = [Maximum trips per year (trip/yr)] * [Maximum one-way distance (mi/trip)]
Average Vehicle Weight Per Trip (ton/trip) = SUM[Total Weight driven per year (ton/yr)] / SUM[Maximum trips per year (trip/yr)]
Average Miles Per Trip (miles/trip) = SUM[Maximum one-way miles (miles/yr)] / SUM[Maximum trips per year (trip/yr)]
Unmitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) * (Unmitigated Emission Factor (lb/mile)) * (ton/2000 lbs)
Mitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) * (Mitigated Emission Factor (lb/mile)) * (ton/2000 lbs)
Controlled PTE (tons/yr) = (Mitigated PTE (tons/yr)) * (1 - Dust Control Efficiency)

Abbreviations

PM = Particulate Matter
PM10 = Particulate Matter (<10 um)
PM2.5 = Particulate Matter (<2.5 um)
PM2.5 = PM10
PTE = Potential to Emit



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

Mitchell E. Daniels Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis, Indiana 46204
(317) 232-8603
Toll Free (800) 451-6027
www.idem.IN.gov

SENT VIA U.S. MAIL: CONFIRMED DELIVERY AND SIGNATURE REQUESTED

TO: Ted Butler
Kemira Water Solutions
3761 Canal St
E Chicago, IN 46312

DATE: March 17, 2011

FROM: Matt Stuckey, Branch Chief
Permits Branch
Office of Air Quality

SUBJECT: Final Decision
Registration - Notice-Only Change
089 - 30208 - 00489

Enclosed is the final decision and supporting materials for the air permit application referenced above. Please note that this packet contains the original, signed, permit documents.

The final decision is being sent to you because our records indicate that you are the contact person for this application. However, if you are not the appropriate person within your company to receive this document, please forward it to the correct person.

A copy of the final decision and supporting materials has also been sent via standard mail to:
Brandon Snoddy M3V, LLC
OAQ Permits Branch Interested Parties List

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178, or toll-free at 1-800-451-6027 (ext. 3-0178), and ask to speak to the permit reviewer who prepared the permit. If you think you have received this document in error, please contact Joanne Smiddie-Brush of my staff at 1-800-451-6027 (ext 3-0185), or via e-mail at jbrush@idem.IN.gov.

Final Applicant Cover letter.dot 11/30/07

Mail Code 61-53

IDEM Staff	LPOGOST 3/17/2011 Kemira Water Solutions, Inc. 089 - 30208 - 00489 final)		Type of Mail: CERTIFICATE OF MAILING ONLY	AFFIX STAMP HERE IF USED AS CERTIFICATE OF MAILING
Name and address of Sender		Indiana Department of Environmental Management Office of Air Quality – Permits Branch 100 N. Senate Indianapolis, IN 46204		

Line	Article Number	Name, Address, Street and Post Office Address	Postage	Handing Charges	Act. Value (If Registered)	Insured Value	Due Send if COD	R.R. Fee	S.D. Fee	S.H. Fee	Rest. Del. Fee
											Remarks
1		Ted Butler Kemira Water Solutions, Inc. 3761 Canal St E Chicago IN 46312 (Source CAATS) Via confirmed delivery									
2		East Chicago City Council 4525 Indianapolis Blvd East Chicago IN 46312 (Local Official)									
3		Gary - Hobart Water Corp 650 Madison St, P.O. Box M486 Gary IN 46401-0486 (Affected Party)									
4		Lake County Health Department-Gary 1145 W. 5th Ave Gary IN 46402-1795 (Health Department)									
5		WJOB / WZVN Radio 6405 Olcott Ave Hammond IN 46320 (Affected Party)									
6		Laurence A. McHugh Barnes & Thornburg 100 North Michigan South Bend IN 46601-1632 (Affected Party)									
7		Shawn Sobocinski 3229 E. Atlanta Court Portage IN 46368 (Affected Party)									
8		Ms. Carolyn Marsh Lake Michigan Calumet Advisory Council 1804 Oliver St Whiting IN 46394-1725 (Affected Party)									
9		Mark Coleman 9 Locust Place Ogden Dunes IN 46368 (Affected Party)									
10		Mr. Chris Hernandez Pipefitters Association, Local Union 597 8762 Louisiana St., Suite G Merrillville IN 46410 (Affected Party)									
11		Craig Hogarth 7901 West Morris Street Indianapolis IN 46231 (Affected Party)									
12		Lake County Commissioners 2293 N. Main St, Building A 3rd Floor Crown Point IN 46307 (Local Official)									
13		Anthony Copeland 2006 E. 140th Street East Chicago IN 46312 (Affected Party)									
14		Barbara G. Perez 506 Lilac Street East Chicago IN 46312 (Affected Party)									
15		Mr. Robert Garcia 3733 Parrish Avenue East Chicago IN 46312 (Affected Party)									

Total number of pieces Listed by Sender	Total number of Pieces Received at Post Office	Postmaster, Per (Name of Receiving employee)	The full declaration of value is required on all domestic and international registered mail. The maximum indemnity payable for the reconstruction of nonnegotiable documents under Express Mail document reconstructing insurance is \$50,000 per piece subject to a limit of \$50, 000 per occurrence. The maximum indemnity payable on Express mil merchandise insurance is \$500. The maximum indemnity payable is \$25,000 for registered mail, sent with optional postal insurance. See Domestic Mail Manual R900, S913, and S921 for limitations of coverage on inured and COD mail. See International Mail Manual for limitations o coverage on international mail. Special handling charges apply only to Standard Mail (A) and Standard Mail (B) parcels.
---	--	--	--

Mail Code 61-53

IDEM Staff	LPOGOST 3/17/2011 Kemira Water Solutions, Inc. 30208 (draft/final)		Type of Mail: CERTIFICATE OF MAILING ONLY	AFFIX STAMP HERE IF USED AS CERTIFICATE OF MAILING
Name and address of Sender	▶	Indiana Department of Environmental Management Office of Air Quality – Permits Branch 100 N. Senate Indianapolis, IN 46204		

Line	Article Number	Name, Address, Street and Post Office Address	Postage	Handing Charges	Act. Value (If Registered)	Insured Value	Due Send if COD	R.R. Fee	S.D. Fee	S.H. Fee	Rest. Del. Fee	Remarks
1		Karen 8212 Madison Ave Munster IN 46321-1627 (Affected Party)										
2		Calumet Township Trustee 31 E 5th Avenue Gary IN 46402 (Affected Party)										
3		Joseph Hero 11723 S Oakridge Drive St. John IN 46373 (Affected Party)										
4		Gary City Council 401 Broadway # 209 Gary IN 46402 (Local Official)										
5		Brandon Snoddy M3V, LLC 11925 East 65th Street Indianapolis IN 46236 (Consultant)										
6		Mr. Larry Davis 268 South, 600 West Hebron IN 46341 (Affected Party)										
7		Gitte Laasby Post Tribune 1433 E. 83rd Ave Merrillville IN 46410 (Affected Party)										
8		Susan Severtson City of Gary Law Dept. 401 Broadway 4th Floor Gary IN 46402 (Local Official)										
9		Mark Zeltwanger 26545 CR 52 Nappanee IN 46550 (Affected Party)										
10												
11												
12												
13												
14												
15												

Total number of pieces Listed by Sender	Total number of Pieces Received at Post Office	Postmaster, Per (Name of Receiving employee)	The full declaration of value is required on all domestic and international registered mail. The maximum indemnity payable for the reconstruction of nonnegotiable documents under Express Mail document reconstructing insurance is \$50,000 per piece subject to a limit of \$50, 000 per occurrence. The maximum indemnity payable on Express mil merchandise insurance is \$500. The maximum indemnity payable is \$25,000 for registered mail, sent with optional postal insurance. See Domestic Mail Manual R900, S913, and S921 for limitations of coverage on inured and COD mail. See International Mail Manual for limitations o coverage on international mail. Special handling charges apply only to Standard Mail (A) and Standard Mail (B) parcels.
---	--	--	--