



**Connecticut Department of
Energy & Environmental Protection**
Bureau of Materials Management & Compliance Assurance
Water Permitting & Enforcement Division

Complaint Investigation
Water Permitting and Enforcement Division (WPED)
Field Compliance and Enforcement
Department of Energy and Environmental Protection
79 Elm Street
Hartford, CT 06106-5127

Field Staff Only

Date Received: 11/10/2015

Rec. by: Melissa Blais

Complaint #: 764

Date Closed: 12/9/2015

NOV: Yes ☐ No ☒

Inspector M Hoover

Part I: Complaint information

Is this an emergency or spill: Yes ☐ No ☒ If yes, notify 860-424-3338
Ongoing occurrence: Yes ☐ No ☐ Unknown ☒

Town/City: Wallingford

Location Name: Toelles Road Bridge Crossing Location Address: Quinnipiac River State Park
Location Description: White PVC discharge pipe to the Quinnipiac River on the downstream side of
the Toelles Road bridge on the east shore of the river.

Describe complaint. What happened – who, what, where, when, why, When first observed, last observed:

On 11-10-15, Nancy Alderman, President of Environment and Human Health, contacted Melissa Blais, Supervisor DEEP, by phone stating that she was concerned about information learned from a meeting that included Harry Pylypiw, a Quinnipiac University Chemistry Professor. Professor Pylypiw (203 582-8265) had a grant to study phthalates in the Quinnipiac River. He discovered an intermittent discharge from a small, white plastic pipe beneath Tulles Bridge Road, north of Allnex, and sampled it. Flow is intermittent. It has a large flow (4 - 5 gpm) for about two weeks, then stops, and then starts again. Ms. Alderman was told it is near Quinnipiac State Park. Professor Pylypiw was going to send sample results to her. The sample results show chemicals that made them suspect the discharge was coming from Allnex.

When first observed (date and time): Ms. Alderman did not provide details, but suggested contacting professor Harry Pylypiw.

When last observed (date and time):

Who else have you reported this to: Ms. Alderman hadn't reported it to anyone else at DEEP. She didn't know whom to call.

What was the outcome:

Part II: Complainant Information

Name: Nancy Alderman, President, Environment and Human Health, Inc.

Address: 1191 Ridge Road

Town/City: North Haven

State: CT

Zip Code: 06473

Phone: (203) 248 - 6582

ext.:

Additional Phone:

ext.:

E-mail:

Or: Anonymous Complaint: ☐

Investigation Report

Investigated by: Marshall Hoover

Date(s) of Investigation: 11-16-15, 11-19-15, 12-1-15

Contact(s): Proffessor Harry Pylypiw, Quinnipiac University Phone:

Reed Raggio, Environmental Engineer, Nucor Steel

(203) 265-0615

Doyle Hopper, Vice President/General Manager, Nucor Steel

(203) 265-0615

Receiving Stream: Quinnipiac River

Watershed: South Central Watershed

Investigation Description/Notes/Information

11-16-15 – I spoke with Professor Pylypiw by telephone and was able to verify from his description of the discharge pipe location (white plastic pipe beneath Tulles Bridge Road) that it is the permitted discharge from Nucor Steel.

University students and staff, as part of the study of phthalates and organotin plasticizers in the Quinnipiac River, sampled the discharge from this pipe on at least three separate occasions in May, June, and July 2015. Professor Pylypiw said the sample results were qualitative rather than quantitative so they did not have numeric concentration levels for the parameters detected. The highest parameter concentration levels, according to Professor Pylypiw, were from a sample collected on May 2015. The sample was pink in color and contained Phenothiazine. He estimated that parameter concentrations were in the parts-per-million range.

The June and July samples did not have the pink color, the parts-per-million parameter concentrations, or contain Phenothiazine. The June and July samples did contain fragments of a methyl vinyl ether polymer. (See attached summary of sample results).

Review of a one-year summary Nucor Steel's discharge monitoring report data (attached) revealed that the company had detected high levels of both oil and grease and biological oxygen demand in their effluent samples collected on May 19, 2015. The concentrations of these two parameters exceeded the permit limit of Nucor Steel's NPDES permit. Nucor Steel determined the cause of these violations was a mechanical-seal leak in the company's finish mill. This malfunction allowed the release of

lubricating oil to the Quinnipiac River. The Department's August 2015 inspection of Nucor Steel noted this incident and resultant permit violations. The Department issued a Notice of Violation to Nucor Steel for improperly reporting the incident and violations as required by state regulation [22a-430-3 (j)(11)(D) RCSA] (See attached Inspection Report, NOV, and Response from the company). When Nucor Steel discovered the violations, the company shut down their discharge until the leak was repaired and released material was cleaned up.

11-19-15 – I inspected the Toelles Road Bridge Crossing area and verified that the only pipe in this vicinity was Nucor Steel's permitted discharge pipe. There was no discharge from the pipe at the time of the inspection. There were no obvious stains or discoloration at the discharge location. There was lawn furniture set up under the bridge that made it appear that someone has been living there.

12-1-15 – I conducted a site inspection to investigate potential chemical sources to the cooling water system blowdown discharge from Nucor Steel. I met with Reed Raggio, Environmental Engineer, and explained the reason for my visit to the site. He was unaware of the river sample study, Ms. Alderman's complaint filed with the Department, or the New Haven Independent newspaper article about Nucor Steel's discharge pipe. Mr. Raggio informed me that the company's monthly managers' meeting was in progress and asked if I would go over everything in the complaint with them as well. We joined the meeting that was being led by Doyle Hopper, Vice President/General Manager. None of the managers present in the meeting were aware of the complaint, the study, or the newspaper report. I supplied them with copies of the complaint, associated e-mails, the listing of chemicals the study found in their discharge, and a copy of the newspaper article. I explained the purpose of my investigation was to verify what chemicals were in use at the facility that could be the source of the sample findings from the Quinnipiac University samples of their discharge pipe.

After reviewing the sample summary, Mr. Hopper agreed the materials detected in the May samples were likely related to the release of lubricating oil to the process cooling water recycle system (see attached MSDS sheet). The company estimated the loss of oil to the system from the finish mill was about 100 gallons. The process cooling water system holds in excess of 1.4 million gallons of water and has an internal flow rate of about 6,000 gallons-per-minute (See attached plan). Most of the oil released to the process water cooling system would be captured in the oil skimming system in the decanting basins. The material detected in the May 19 sample was likely in the discharge until it was shut down on May 25 as well as earlier in the month. The time frame can be narrowed only by the fact that nothing was detected in the April sample (see attached summary of daily flows).

The June and July samples that contained monomers that were identified by Professor Pylypiw as fragments of a methyl vinyl ether based polymer from an industrial process that uses polymers can be traced back to the polymer used in the cooling water treatment system. The company utilizes Nalclear 776 Plus polymer to aid in the removal of iron scale from the contact cooling water (see attached MSDS).

Mr. Hopper stressed that Nucor Steel takes environmental compliance issues very seriously and asked that they be included in the meeting requested by Mathew Higbee of the Quinnipiac River Fund.

Findings

1. The complainant, Ms. Alderman, suspected that the pipe discharge was from the Allnex facility located in the vicinity of the pipe. This investigation determined that the discharge was not from Allnex—but was a permitted NPDES discharge from Nucor Steel.
2. The parameters found in the Quinnipiac University samples collected from Nucor Steel's discharge pipe in May 2015 can be attributed to the mechanical seal failure that resulted in oil leaking into the cooling water system and wastewater discharge to the Quinnipiac River. The potential duration of the release to the river is the time between the company's April 1, 2015 sample and when the results of their May 19, 2015 sample were received (May 25, 2015). Nucor shut down their discharge until they discovered and corrected the seal failure. The leak and resulting violations were reported to the Department with their discharge monitoring report and has not occurred since. Nucor Steel has taken corrective actions to prevent a reoccurrence. The Department issued a Notice of Violation to Nucor Steel for not reporting this incident properly to the Department as required by regulation. See attached inspection report and Field NOV for further details.
3. The effluent temperature being 4 to 5 degrees Centigrade higher than the river water temperature is consistent with the nature of the contact cooling discharge to the river. The thermal impact of a fifty gallon per minute discharge on this section of the Quinnipiac River is negligible (85 year minimum flow here exceeds 41 cubic feet per second).
4. The monomers that identified by Professor Pylypiw as fragments of a methyl vinyl ether based polymer from an industrial process that uses polymers is likely associated with the polymer used in the cooling water treatment system. The Department as part of Nucor Steel's NPDES permit application process approved the polymer for use as a treatment chemical.
5. The July 2015 sample collected by Professor Pylypiw containing a Cymel Resin (a Cytec compound according to Professor Pylypiw) was a mixture of river water and discharge water from the pipe. The main discharge from the Allnex treatment plant is located about 100 yards upstream of the Toelles Road Bridge. The source of Cymel Resin cannot be determined, as the source of the sample was a mixture of river and discharge waters.
6. Review of historical Nucor Steel discharge data indicates that their discharge meets whole effluent toxicity limits and has typically been non-acutely toxic since they took over the facility in 2006. Nucor Steels predecessor at the site, Connecticut Steel, triggered a toxicity reduction evaluation on two occasions. In 1995, the resulting toxicity was due to an addition of lime to their treatment system that resulted in a high pH and metals. The effluent was toxic to both *Daphnia pulex* and *Pimephales promelas*. In 1999, treatment chemicals and the shipment of new coagulant resulted in toxicity to the fish (*Pimephales promelas*). New treatment chemicals were vetted and the discharge had met permitted whole effluent limits since.

Complaint Referred to:

Date Referred:

Date Closed: 12/9/2015

Date NOV issued: N/A

Hoover, Marshall

From: Pylypiw, Harry Prof. <Harry.Pylypiw@quinnipiac.edu>
Sent: Thursday, November 19, 2015 4:18 PM
To: Blais, Melissa; 'Matthew Higbee'
Cc: Nancy Alderman (nancy.alderman@ehhi.org); Sarah Fabish; Standish, Christopher M.; McGinnis, Courtney L. Prof.; allan appel; Hoover, Marshall; Denise Canning
Subject: RE: Meeting At Q River Fund regarding Alltex Permit and Toelles Road Discharge Pipe

To All:

In May 2015, we started sampling the effluent from the pipe. The temperature of the water being discharged through the pipe was roughly 4 to 5 °C higher than the River water temperature. This led us to believe that the pipe was not form a storm drain source but an industrial discharge source. It wasn't till November that we learned from DEEP that the discharge pipe was from Nucor Steel in Wallingford, CT.

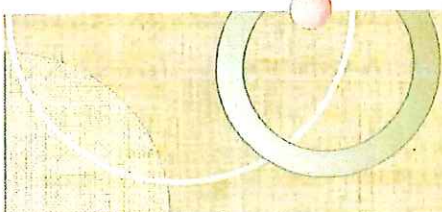
The samples collected in May contained detectable levels of phenothiazine; they also had a pink color. We measured the pH of the samples and found them to be neutral. Phenothiazine is used in polymer processes as an additive, however, it has no color in dilute water solutions. As all of our results are qualitative, no absolute concentrations could be assigned to the samples. We did, however, purchase a standard of phenothiazine to confirm that we did indeed detect the compound using our extraction method with mass spectrometry detection. As for the pink color, we not able to determine the identity of any pink compound(s). Sampling continued through June and July. Early June samples showed the presence of phenothiazine like the May samples, however, late June and all July samples had no detectable levels of phenothiazine.

All June and July samples showed the presence of what appeared to be monomers, or fragments from a methyl vinyl ether based polymer. Also noted was that the pink color was absent in all samples taken in June and July, but the temperature of the discharge water still was roughly 4 to 5 °C higher than the River water temperature. Our conclusions, using both low and high resolution mass spec, on the methyl vinyl ether based polymer was that we regularly found five or six congeners of a methyl vinyl ether polymer, all likely present as monomers or monomer/small polymer fragments ranging in masses, based upon chromatograph retention time, ranging from approximately 58 daltons to approximately 300 daltons. The identity of the parent molecule, or polymer, could not be determined as no standard could be obtained, but pipe discharges appeared to be consistent with an industrial process where the polymer was in use.

Late July sampling was not as consistent as previous samplings. Some pipe discharge samples had no detectable chemicals in the water by our method and some samples had the same polymer compounds as before. We did find one sample set to be interesting. A set of samples taken when the pipe appeared to be flowing much slower than its usual flow, showed the presence of a Cytec compound which was identified as Cymel Resin. This resin is in the chemical family of methylated melamine formaldehyde, CAS # 068002-20-0; no standard was obtained for this resin. Additionally, the sample contained the herbicides sulfometuron methyl and metolachlor. Drawing conclusions on the source or sources of this sample set, which likely has some back-flow from the River, would be dubious, however, the presence of the resin and herbicides were determined by mass spectrometry and were not present in any sample and system blanks.

August, September, and October samplings were not performed since the pipe was not actively running. We did find the pipe running in November, but those samples are not completed as of this report.

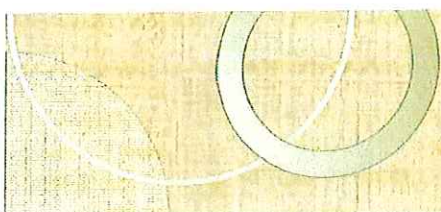
Regards,
Harry Pylypiw



QRF Grant # 20150081

A study of phthalate and organotin plasticizers in an effort to characterize contamination from industrial and municipal sources in the Quinnipiac River and New Haven tidal basin

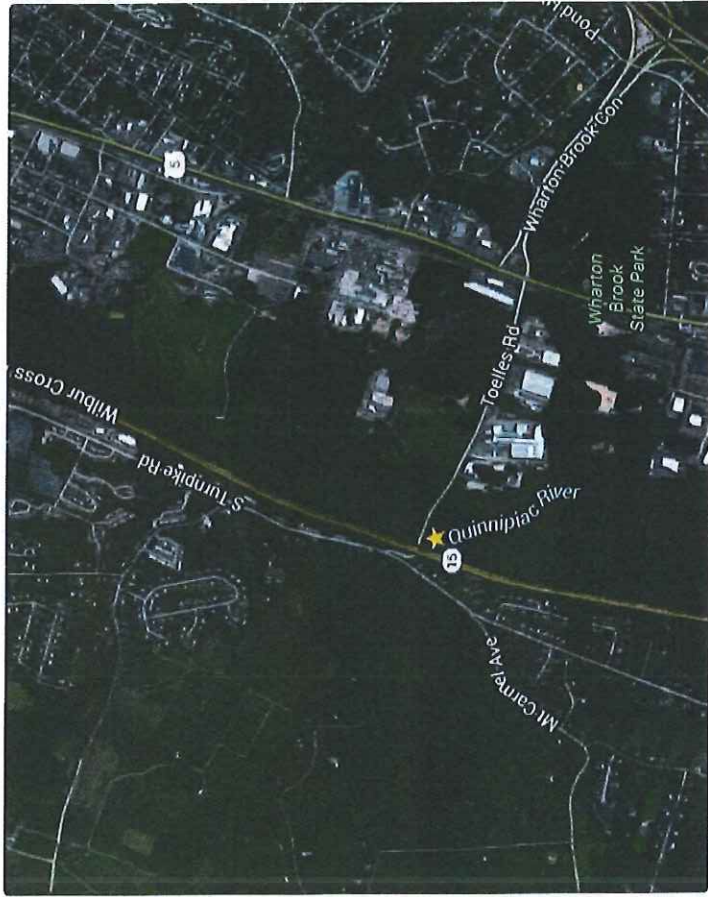
Harry Pylypiw (PI), Courtney McGinnis (co-PI), John Chiari (student)
Quinnipiac University



Goals of the Testing

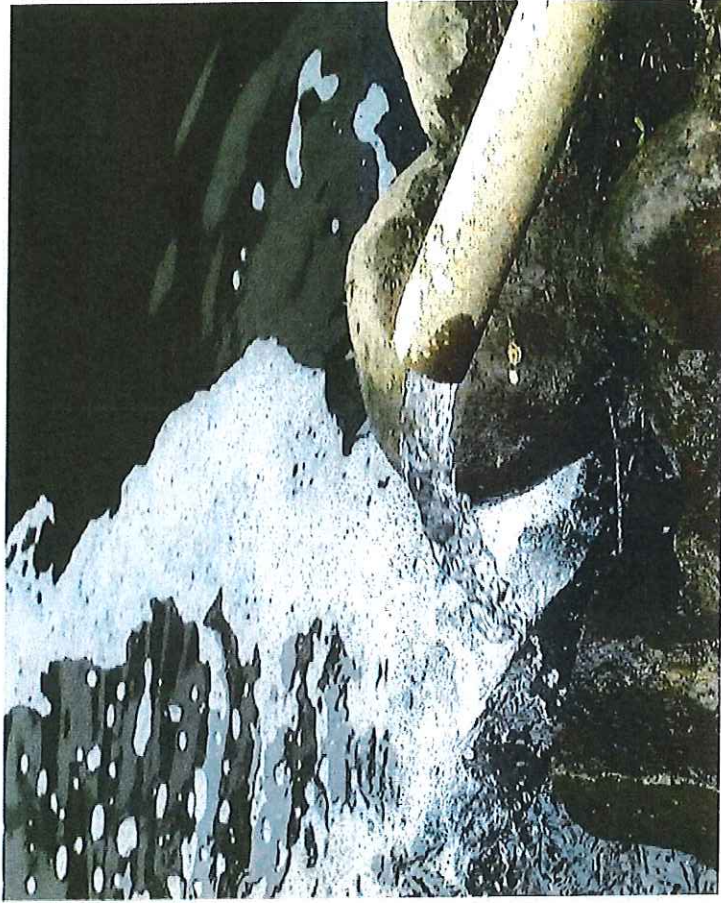
- 1) Collect & analyze water for plasticizers
 - Wallingford
 - Community Lake – after the dam
 - Toelles Road – at Cytec discharge point(s)
 - North Haven
 - Valley Service Road
 - QRSP Entrance
 - State Street near Broadway
 - Sackett Point Road
 - DEEP Boat Ramp – behind Tilcon plant
 - Hamden & North Haven – By Boat
 - Various points on the river and the Tidal Basin
- 2) Measure Climate Parameters
 - Water temperature of River and discharge points

Discharge Point in QRSP (near Cytec)



Toelles Road Sampling Site

Discharge Point in QRSP



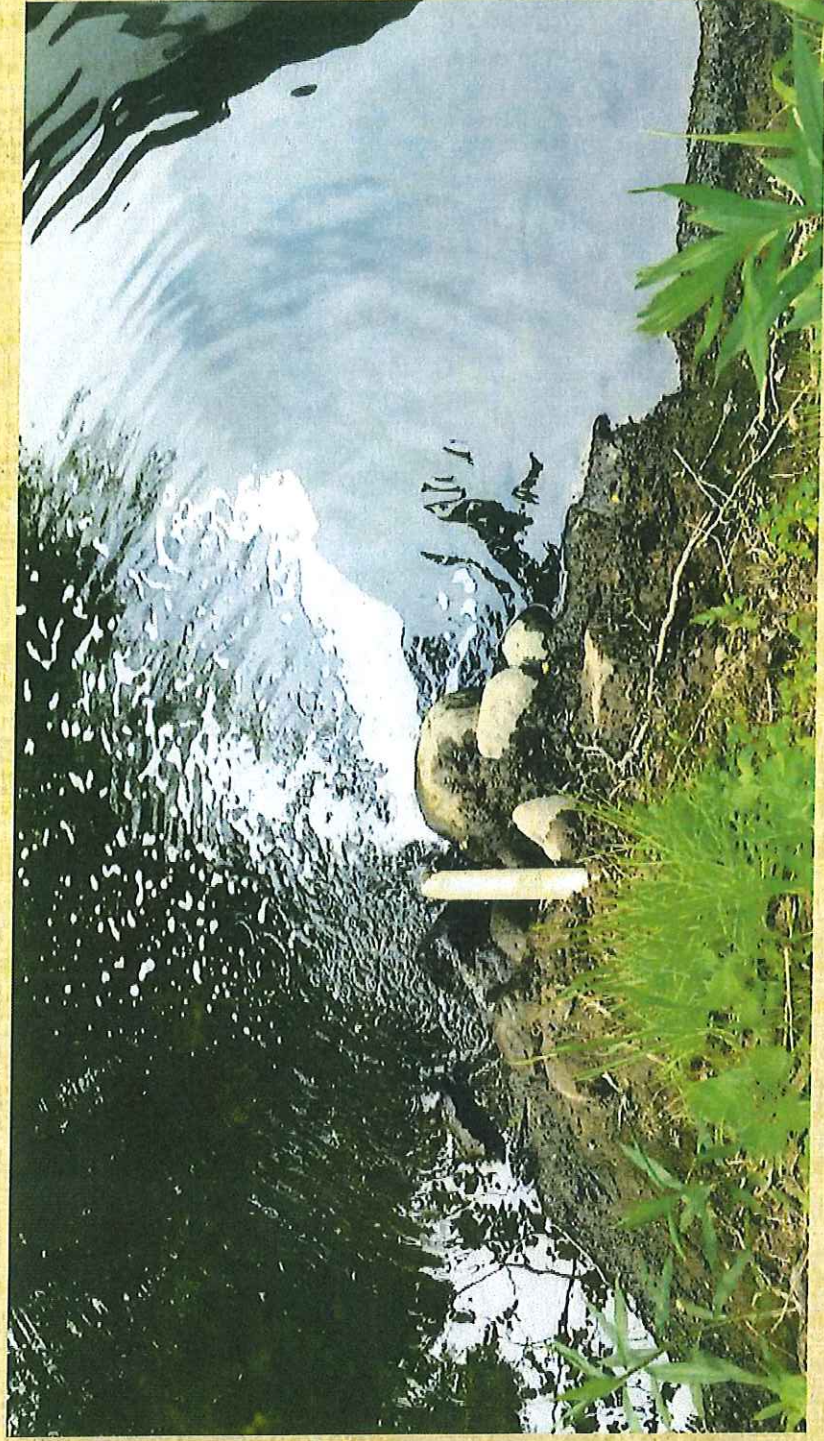
Toelles Road Sampling Site



Chemical Pollutants

- Used to soften plastics
- Diethylhexyl phthalate (DEHP), Dibutyl phthalate (DBP), and Benzyl butyl phthalate (BBP) are known to be present in the Quinnipiac River and tidal basin from past studies.
- Found as an environmental contamination resulting from municipal and industrial waste discharges.
- Phthalates are widely used in a variety of products such as: Vinyl pipes, Toothbrushes, IV bags, Glow sticks, etc.
- Organotin plasticizers, primarily tributyltin, which is used in paints used on marine equipment and boats.
- Tests for organotin are underway.

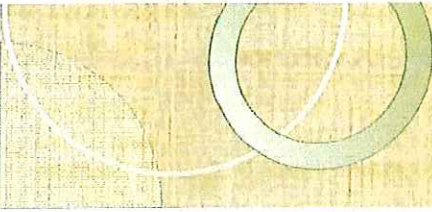
Video of Discharge Pipe – Toelles Road – QRSP



North Haven, Hamden, and Tidal Marsh Sampling Points



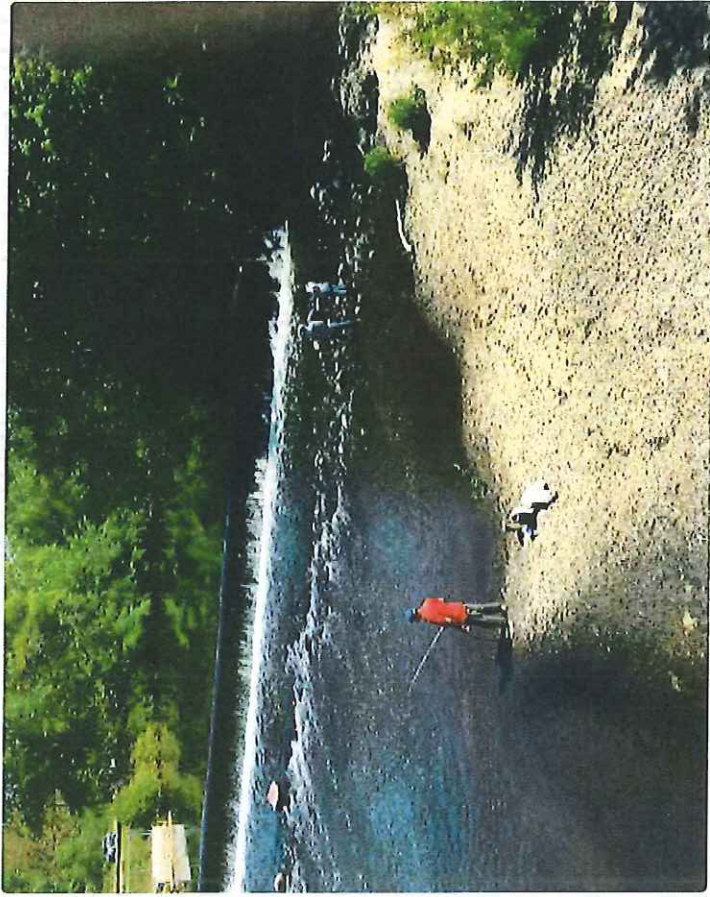
Locations in River including capped
landfill in North Haven



Summer and Fall 2015 Findings

- Trace phthalates – less than other years
 - Concentrations on the order of 10-50 ppb
- New Findings – from discharge pipe at Toelles Road
 - Phenothiazine – polymer softener
 - Vinyl ether monomers – plastic piping
 - Hexamethyl melamine – plastic “China” sets
 - Library matched to CAS#068002-20-0, $C_{15}H_{30}N_6O_6$
Internet search showed that to be a Cytec resin
 - Water from discharge pipe was 4-5 °C warmer than normal River temperature

Comments and Questions??



Quinnipiac Street - Wallingford

Permit CT0026794

Permit Name	Version Nbr	Curr. Major Minor Status	Issue Date	Effective Date	Expiration Date
Nucor Steel Connecticut, Inc.	0	Minor	#####	1/1/2010	12/31/2014

Version # 0

Outfall 0011

00056 Flow rate / Location 1 / Season 0 / Base

Limit Start Date	Limit End Date	Sample Type	Frequency of Analysis
1/1/2010	12/31/2014	TOTALZ	Daily

Limit	A1
Limit Unit Desc	Gallons per Day
Statistical Base	MO AVG
Limit Value	40000.
DMR Values	A1
1/31/15	5733
2/28/15	10868
3/31/15	13380
4/30/15	10911
5/31/15	16141
6/30/15	6279
7/31/15	9994
8/31/15	11468
9/30/15	13528
10/31/15	Not Received

00094 Conductivity / Location 1 / Season 0 / Base

Limit Start Date	Limit End Date	Sample Type	Frequency of Analysis
1/1/2010	12/31/2014	GRAB	Monthly

Limit	C3
Limit Unit Desc	micromhos per cm
Statistical Base	INST MAX
Limit Value	
DMR Values	C3
1/31/15	1364
2/28/15	1545
3/31/15	2031
4/30/15	1707
5/31/15	1657
6/30/15	1881
7/31/15	2610
8/31/15	2500
9/30/15	2540
10/31/15	Not Received

00310 BOD, 5-day, 20 deg. C / Location 1 / Season 0 / Base

Limit Start Date	Limit End Date	Sample Type	Frequency of Analysis
1/1/2010	12/31/2014	COMPOS	Quarterly

Limit	C3
Limit Unit Desc	Milligrams per Liter
Statistical Base	DAILY MX
Limit Value	15.
DMR Values	C3
2/28/15	0
5/31/15	86.3
8/31/15	7.5

00310 BOD, 5-day, 20 deg. C / Location 1 / Season 1 / Base

Limit Start Date	Limit End Date	Sample Type	Frequency of Analysis
1/1/2010	12/31/2014	COMPOS	Quarterly

Limit	C3
Limit Unit Desc	Milligrams per Liter
Statistical Base	DAILY MX
Limit Value	
DMR Values	C3
1/31/15	Not Received
3/31/15	Not Received
4/30/15	Not Received
6/30/15	Not Received
7/31/15	Not Received
9/30/15	Not Received
10/31/15	Not Received

00400 pH / Location 1 / Season 0 / Base

Limit Start Date	Limit End Date	Sample Type	Frequency of Analysis
1/1/2010	12/31/2014	RNG-DA	Monthly

Limit	C1	C3
Limit Unit Desc	Standard Units	Standard
Statistical Base	INST MIN	INST MAX
Limit Value	6.	9.
DMR Values	C1	C3
1/31/15	8.16	8.23
2/28/15	7.8	7.9
3/31/15	7.63	7.86
4/30/15	7.71	7.85
5/31/15	8.09	8.18
6/30/15	8.11	8.25
7/31/15	8.17	8.3
8/31/15	8.15	8.21
9/30/15	8.2	8.22
10/31/15	Not Received	Not Received

00530 Solids, total suspended / Location 1 / Season 0 / Base

Limit Start Date	Limit End Date	Sample Type	Frequency of Analysis
1/1/2010	12/31/2014	COMPOS	Monthly

Limit	A1	A2	C2	C3
Limit Unit Desc	Kilograms per Day	Kilograms per Day	Milligrams per Liter	Milligrams per Liter
Statistical Base	MO AVG	DAILY MX	MO AVG	DAILY MX
Limit Value	9.4	25.2	20.	30.
DMR Values	A1	A2	C2	C3
1/31/15	.15	.15	7	7
2/28/15	.32	.32	7	7
3/31/15	.31	.31	9	9
4/30/15	.19	.19	5	5
5/31/15	.07	.07	2	2
6/30/15	.15	.15	8	8
7/31/15	.18	.18	3	3
8/31/15	.05	.05	4	4
9/30/15	.06	.06	3	3
10/31/15	Not Received	Not Received	Not Received	Not Received

00556 Oil & Grease / Location 1 / Season 0 / Base

Limit Start Date	Limit End Date	Sample Type	Frequency of Analysis
1/1/2010	12/31/2014	GRAB	Monthly

Limit	A2	C2
Limit Unit Desc	Kilograms per Day	Milligrams per Liter
Statistical Base	DAILY MX	MO AVG
Limit Value	6.3	10.
DMR Values	A2	C2
1/31/15	0	0
2/28/15	0	0
3/31/15	0	0
4/30/15	0	0
5/31/15	2.15	59.7
6/30/15	.36	7.1
7/31/15	0	0
8/31/15	.02	1.4
9/30/15	0	0
10/31/15	Not Received	Not Received

01027 Cadmium, total [as Cd] / Location 1 / Season 0 / Base

Limit Start Date	Limit End Date	Sample Type	Frequency of Analysis
1/1/2010	12/31/2014	COMPOS	Quarterly

Limit	A1	A2	C2	C3
Limit Unit Desc	Kilograms per Day	Kilograms per Day	Milligrams per Liter	Milligrams per Liter
Statistical Base	MO AVG	DAILY MX	MO AVG	DAILY MX
Limit Value	.0032	.0064	.021	.042
DMR Values	A1	A2	C2	C3
2/28/15	0	0	0	0
5/31/15	0	0	0	0
8/31/15	0	0	0	0

01027 Cadmium, total [as Cd] / Location 1 / Season 1 / Base

Limit Start Date	Limit End Date	Sample Type	Frequency of Analysis
1/1/2010	12/31/2014	COMPOS	Quarterly

Limit	A1	A2	C2	C3
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Limit Unit Desc	Kilograms per Day	Kilograms per Day	Milligrams per Liter	Milligrams per Liter
Statistical Base	MO AVG	DAILY MX	MO AVG	DAILY MX
Limit Value				
DMR Values	A1	A2	C2	C3
1/31/15	Not Received	Not Received	Not Received	Not Received
3/31/15	Not Received	Not Received	Not Received	Not Received
4/30/15	Not Received	Not Received	Not Received	Not Received
6/30/15	Not Received	Not Received	Not Received	Not Received
7/31/15	Not Received	Not Received	Not Received	Not Received
9/30/15	Not Received	Not Received	Not Received	Not Received
10/31/15	Not Received	Not Received	Not Received	Not Received

01034 Chromium, total [as Cr] / Location 1 / Season 0 / Base

Limit Start Date	Limit End Date	Sample Type	Frequency of Analysis
1/1/2010	12/31/2014	COMPOS	Quarterly

Limit	C2	C3
Limit Unit Desc	Milligrams per Liter	Milligrams per Liter
Statistical Base	MO AVG	DAILY MX
Limit Value	1.	2.
DMR Values	C2	C3
2/28/15	0	0
5/31/15	0	0
8/31/15	0	0

01034 Chromium, total [as Cr] / Location 1 / Season 1 / Base

Limit Start Date	Limit End Date	Sample Type	Frequency of Analysis
1/1/2010	12/31/2014	COMPOS	Quarterly

Limit	C2	C3
Limit Unit Desc	Milligrams per Liter	Milligrams per Liter
Statistical Base	MO AVG	DAILY MX
Limit Value		
DMR Values	C2	C3
1/31/15	Not Received	Not Received
3/31/15	Not Received	Not Received
4/30/15	Not Received	Not Received
6/30/15	Not Received	Not Received
7/31/15	Not Received	Not Received
9/30/15	Not Received	Not Received
10/31/15	Not Received	Not Received

01042 Copper, total [as Cu] / Location 1 / Season 0 / Base

Limit Start Date	Limit End Date	Sample Type	Frequency of Analysis
1/1/2010	12/31/2014	COMPOS	Monthly

Limit	A1	A2	C2	C3
Limit Unit Desc	Kilograms per Day	Kilograms per Day	Milligrams per Liter	Milligrams per Liter
Statistical Base	MO AVG	DAILY MX	MO AVG	DAILY MX
Limit Value	.037	.075	.245	.493
DMR Values	A1	A2	C2	C3
1/31/15	.0006	.0006	.027	.027
2/28/15	.002	.002	.046	.046
3/31/15	.001	.001	.029	.029
4/30/15	.001	.001	.029	.029
5/31/15	.0008	.0008	.023	.023
6/30/15	.0005	.005	.029	.029
7/31/15	.0002	.0002	.013	.013
8/31/15	.0002	.0002	.015	.015
9/30/15	.0002	.0002	.009	.009
10/31/15	Not Received	Not Received	Not Received	Not Received

01045 Iron, total [as Fe] / Location 1 / Season 0 / Base

Limit Start Date	Limit End Date	Sample Type	Frequency of Analysis
1/1/2010	12/31/2014	COMPOS	Quarterly

Limit	C2	C3
Limit Unit Desc	Milligrams per Liter	Milligrams per Liter
Statistical Base	MO AVG	DAILY MX
Limit Value	3.	5.
DMR Values	C2	C3
2/28/15	.5	.5
5/31/15	.3	.3
8/31/15	.06	.06

01045 Iron, total [as Fe] / Location 1 / Season 1 / Base

Limit Start Date	Limit End Date	Sample Type	Frequency of Analysis
1/1/2010	12/31/2014	COMPOS	Quarterly

Limit	C2	C3
Limit Unit Desc	Milligrams per Liter	Milligrams per Liter
Statistical Base	MO AVG	DAILY MX
Limit Value		
DMR Values	C2	C3
1/31/15	Not Received	Not Received
3/31/15	Not Received	Not Received
4/30/15	Not Received	Not Received
6/30/15	Not Received	Not Received
7/31/15	Not Received	Not Received
9/30/15	Not Received	Not Received
10/31/15	Not Received	Not Received

01051 Lead, total [as Pb] / Location 1 / Season 0 / Base

Limit Start Date	Limit End Date	Sample Type	Frequency of Analysis
1/1/2010	12/31/2014	COMPOS	Monthly

Limit	A1	A2	C2	C3
Limit Unit Desc	Kilograms per Day	Kilograms per Day	Milligrams per Liter	Milligrams per Liter
Statistical Base	MO AVG	DAILY MX	MO AVG	DAILY MX
Limit Value	.0089	.018	.059	.12
DMR Values	A1	A2	C2	C3
1/31/15	0	0	0	0
2/28/15	0	0	0	0
3/31/15	0	0	0	0
4/30/15	0	0	0	0
5/31/15	0	0	0	0
6/30/15	0	0	0	0
7/31/15	0	0	0	0
8/31/15	0	0	0	0
9/30/15	0	0	0	0
10/31/15	Not Received	Not Received	Not Received	Not Received

01067 Nickel, total [as Ni] / Location 1 / Season 0 / Base

Limit Start Date	Limit End Date	Sample Type	Frequency of Analysis
1/1/2010	12/31/2014	COMPOS	Quarterly

Limit	C2	C3
Limit Unit Desc	Milligrams per Liter	Milligrams per Liter
Statistical Base	MO AVG	DAILY MX
Limit Value	1.	2.
DMR Values	C2	C3
2/28/15	.05	.05
5/31/15	.022	.022
8/31/15	.016	.016

01092 Zinc, total [as Zn] / Location 1 / Season 0 / Base

Limit Start Date	Limit End Date	Sample Type	Frequency of Analysis
1/1/2010	12/31/2014	COMPOS	Monthly

Limit	A1	A2	C2	C3
Limit Unit Desc	Kilograms per Day	Kilograms per Day	Milligrams per Liter	Milligrams per Liter
Statistical Base	MO AVG	DAILY MX	MO AVG	DAILY MX
Limit Value	.103	.207	.68	1.365
DMR Values	A1	A2	C2	C3
1/31/15	.0004	.0004	.02	.02
2/28/15	.0006	.0006	.013	.013
3/31/15	.003	.0003	.01	.01
4/30/15	.0004	.0004	.012	.012
5/31/15	0	0	0	0
6/30/15	.0004	.0004	.022	.022
7/31/15	.0004	.0004	.025	.025
8/31/15	.0003	.0003	.022	.022
9/30/15	.0004	.0004	.018	.018
10/31/15	Not Received	Not Received	Not Received	Not Received

01105 Aluminum, total [as Al] / Location 1 / Season 0 / Base

Limit Start Date	Limit End Date	Sample Type	Frequency of Analysis
1/1/2010	12/31/2014	COMPOS	Monthly

Limit	C2	C3
Limit Unit Desc	Milligrams per Liter	Milligrams per Liter
Statistical Base	MO AVG	DAILY MX
Limit Value	2.	4.

DMR Values	C2	C3
1/31/15	.67	.67
2/28/15	.55	.55
3/31/15	.33	.33
4/30/15	.81	.81
5/31/15	1.33	1.33
6/30/15	1.17	1.17
7/31/15	.76	.76
8/31/15	1.45	1.45
9/30/15	1.07	1.07
10/31/15	Not Received	Not Received

39100 Di[2-ethylhexyl] phthalate [DEHP] / Location 1 / Season 0 / Base

Limit Start Date	Limit End Date	Sample Type	Frequency of Analysis
1/1/2010	12/31/2014	COMPOS	Quarterly

Limit	C3
Limit Unit Desc	Milligrams per Liter
Statistical Base	DAILY MX
Limit Value	
DMR Values	C3
2/28/15	0
5/31/15	0
8/31/15	0

39100 Di[2-ethylhexyl] phthalate [DEHP] / Location 1 / Season 1 / Base

Limit Start Date	Limit End Date	Sample Type	Frequency of Analysis
1/1/2010	12/31/2014	COMPOS	Quarterly

Limit	C3
Limit Unit Desc	Milligrams per Liter
Statistical Base	DAILY MX
Limit Value	
DMR Values	C3
1/31/15	Not Received
3/31/15	Not Received
4/30/15	Not Received
6/30/15	Not Received
7/31/15	Not Received
9/30/15	Not Received
10/31/15	Not Received

50047 Flow, maximum during 24 hr period / Location 1 / Season 0 / Base

Limit Start Date	Limit End Date	Sample Type	Frequency of Analysis
1/1/2010	12/31/2014	TOTALZ	Daily

Limit	A2
Limit Unit Desc	Gallons per Day
Statistical Base	DAILY MX
Limit Value	72000.
DMR Values	A2
1/31/15	21902
2/28/15	25767
3/31/15	27852
4/30/15	22718
5/31/15	26109
6/30/15	14993
7/31/15	17406
8/31/15	28593
9/30/15	26167
10/31/15	Not Received

50060 Chlorine, total residual / Location 1 / Season 0 / Base

Limit Start Date	Limit End Date	Sample Type	Frequency of Analysis
1/1/2010	12/31/2014	GRAB	Monthly

Limit	C3
Limit Unit Desc	Milligrams per Liter
Statistical Base	INST MAX
Limit Value	
DMR Values	C3
1/31/15	.01
2/28/15	.09
3/31/15	0
4/30/15	0
5/31/15	.06
6/30/15	.03
7/31/15	.05

8/31/15	.02
9/30/15	0
10/31/15	Not Received

74076 Flow / Location 1 / Season 0 / Base

Limit Start Date	Limit End Date	Sample Type	Frequency of Analysis
1/1/2010	12/31/2014	TOTALZ	Daily

Limit	A1	A2
Limit Unit Desc	Gallons per Day	Gallons per
Statistical Base	MO AVG	DAILY MX
Limit Value		72000.
DMR Values	A1	A2
1/31/15	5683	5683
2/28/15	12169	12169
3/31/15	9162	9162
4/30/15	9813	9813
5/31/15	9484	9484
6/30/15	4344	4905
7/31/15	9883.45	16035
8/31/15	3571	3571
9/30/15	5268	5268
10/31/15	Not Received	Not Received

TDA3D Noael Static 48Hr Acute D. Pulex / Location 1 / Season 0 / Base

Limit Start Date	Limit End Date	Sample Type	Frequency of Analysis
1/1/2010	12/31/2014	COMPOS	Quarterly

Limit	C1
Limit Unit Desc	Percent
Statistical Base	INST MIN
Limit Value	36.
DMR Values	C1
2/28/15	100
5/31/15	50
8/31/15	100

TDA3D Noael Static 48Hr Acute D. Pulex / Location 1 / Season 1 / Base

Limit Start Date	Limit End Date	Sample Type	Frequency of Analysis
1/1/2010	12/31/2014	COMPOS	Quarterly

Limit	C1
Limit Unit Desc	Percent
Statistical Base	INST MIN
Limit Value	
DMR Values	C1
1/31/15	Not Received
3/31/15	Not Received
4/30/15	Not Received
6/30/15	Not Received
7/31/15	Not Received
9/30/15	Not Received
10/31/15	Not Received

TDA6C Noael Static 48Hr Acute Pimephales / Location 1 / Season 0 / Base

Limit Start Date	Limit End Date	Sample Type	Frequency of Analysis
1/1/2010	12/31/2014	COMPOS	Quarterly

Limit	C1
Limit Unit Desc	Percent
Statistical Base	INST MIN
Limit Value	36.
DMR Values	C1
2/28/15	100
5/31/15	50
8/31/15	100

TDA6C Noael Static 48Hr Acute Pimephales / Location 1 / Season 1 / Base

Limit Start Date	Limit End Date	Sample Type	Frequency of Analysis
1/1/2010	12/31/2014	COMPOS	Quarterly

Limit	C1
Limit Unit Desc	Percent
Statistical Base	INST MIN
Limit Value	
DMR Values	C1
1/31/15	Not Received
3/31/15	Not Received
4/30/15	Not Received
6/30/15	Not Received
7/31/15	Not Received

9/30/15	Not Received
10/31/15	Not Received

State of Connecticut Department of Energy & Environmental Protection
79 Elm Street, Hartford CT 06106
Water Permitting & Enforcement Division
Compliance Inspection Report

Rev. CT3560
3/2014

Section A: National Data System Coding (i.e., PCS)

Transaction Code	NPDES	yy/mm/dd	Inspection Type	Inspector	Fac Type
1 N	2 5	3 C T 0 0 2 6 7 9 4	11 12 1 5 - 0 8 - 1 8	17 18 C	19 S 20 2
Remarks					
21 D E P W P C # 1 4 8 - 1 4 0	66				
Inspection Work Days	Facility Self-Monitoring Evaluation Rating	B1	QA	Reserved	
67	69	70	71 N	72 N	73 74 75 80

Section B: Facility Data

Name and Location of Facility Inspected (For Industrial users discharging to POTW, also include POTW name and NPDES permit number)	Entry Time/Date 8:10am 8-18-15	Permit Effective Date 12-30-09
Nucor Steel Connecticut, Inc. 35 Toelles Road, P.O. Box 928 Wallingford, CT 06492	Exit Time/Date 2:05pm 8-18-15	Permit Expiration Date 12-29-14
Name(s) of On-Site Representative(s)/Title(s)/Phone and Fax Number(s)	Other Facility Data	
Reed Raggio - Environmental Supervisor - (203) 265-0615	SIC - 3312	
Name, Address of responsible Official/Title/Phone and Fax Number.	FNOV WR IN 15 208 FNOV can be closed based on the response submitted	
Doyle Hopper - General Manager	Contacted ☐ Yes ☒ No	
	CI ☒ CIS ☐	

Section C: Areas Evaluated During Inspection (Check only those areas evaluated)

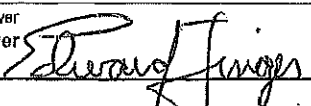
☒ Permit	☒ Self-Monitoring Program	☒ Stormwater	☐ Industrial User	☐ Sample results pending
☒ Records/Reports	☒ Compliance Schedules	☐ No exposure certification	☐ Pollution Prevention	☐ Pending submittal(s)
☒ Facility Site Review	☒ Operations & Maintenance	☐ SWPPP review	☐ Combined Sewer Overflow	☐ Pending review
☒ Flow Measurement	☒ Sludge Handling/Disposal	☒ General Permits	☐ Sanitary Sewer Overflow	☒ Final report
☐ Effluent/Receiving Waters	☒ Multimedia	☐ MS4		

Section D: Summary of Findings/Comments (Attach additional sheets of narrative and checklists as necessary)

SEV Codes	SEV Description
A 0 0 1 2	Numeric Effluent Violations - See Records/Reports Sections (a. & b.) below
E 0 0 1 3	Incorrect Reporting - See Records/Reports Section (c.) below

Permit - a. The Department issued a permit modification for additional contact cooling water from an expansion of the wire mesh production area.
b. A permit renewal application has been submitted and is under review by the department.
Records/Reports - Permit Violations - a. BOD - May 19 - 86.3mg/l (limit 15mg/l)
b. O+G - June 23 - 4:00am-16mg/l, 8:00am-19.6mg/l, 12:00-21.6mg/l and GSA (limits 15mg/l and 10 mg/l)
May 19 - 4:00am - 57.6mg/l, 8:00am - 64.4mg/l, 12:00 - 57.2mg/l and Monthly GSA
c. The violations noted above were reported not as required by the regulations (verbally within 2 hours and in writing within 7 days) but only with the discharge monitoring report.

Field Notice of Violation WR IN 15 208 was issued following the inspection for failure to properly report violations. The NOV can be closed based on the response submitted 8-25-15.

Name(s) and Signature(s) of Inspector(s) Marshall A. Hoover 	Agency/Office/Phone and Fax Numbers CT DEEP BMMCA/WPED (860) 424-3821	Date 8-31-15
Signature of Reviewer Edward Finger 	Agency/Office/Phone and Fax Numbers CT DEEP BMMCA/WPED (860) 424-3817	Date 8-31-15



NOTICE OF VIOLATION

To Nucor Steel Components, Inc., 35 Fox Hills Rd., Wallingford, CT Date 8-18-15
Address _____ Town Wallingford Phone (203) 265-0615
DEP/WPC 148-140 Permit No. CT0026794, GSI 001902 DSN(s) 001

Based upon an inspection of your facility/site conducted by the Department of Environmental Protection, Bureau of Materials Management & Compliance Assurance Permitting & Enforcement Division ["Department"], it appears that you have:

- ☐ 1. Discharged wastewater and/or unpermitted substances associated with the following operation(s) without a permit [CGS §22a-430 and/or 430b].
- ☐ 2. Failed to comply with paragraph/section _____ of permit # _____ (see below ☐)
- ☐ 3. Failed to comply with the requirement(s) of your general permit # _____ (see below ☐)
- ☐ 4. Failed to retain daily flow records and/or other permit specified flow measurements [RCSA §22a-430-3(j)(9)(A)(2)].
- ☐ 5. Failed to record the date, exact place and/or time of sample collection [RCSA §22a-430-3(j)(9)(A)(3)].
- ☐ 6. Failed to record the individual(s) who performed the sampling [RCSA §22a-430-3(j)(9)(A)(4)].
- ☐ 7. Failed to record the dates sample analyses were performed [RCSA §22a-430-3(j)(9)(A)(5)].
- ☐ 8. Failed to record the individual who performed the sample analysis [RCSA §22a-430-3(j)(9)(A)(6)].
- ☐ 9. Failed to record the analytical techniques or methods used [RCSA §22a-430-3(j)(9)(A)(7)].
- ☐ 10. Failed to maintain calibration, maintenance and/or strip chart recordings for continuous monitoring, recording or controlling instrumentation related to the wastewater treatment system [RCSA §22a-430-3(j)(9)(A)(11)].
- ☐ 11. Failed to collect flow proportioned daily composite samples [RCSA §22a-430-3(a) and (j)(7)].
- ☐ 12. Failed to collect samples at locations representative of the discharge [RCSA §22a-430-3(j)(7)].
- ☐ 13. Failed to use proper sample collection, preservation, handling, and/or analytical methods [RCSA §22a-430-3(j)(7)].
- ☐ 14. Failed to properly operate and maintain all facilities and systems and parts thereof for wastewater collection, storage, treatment or control [RCSA §22a-430-3(f)].
- ☐ 15. Maintained a bypass of collection or treatment facilities [RCSA §22a-430-3(k)].
- ☐ 16. Failed to notify the department of a bypass [RCSA §22a-430-3(k)(4)].
- ☐ 17. Failed to maintain all required monitoring equipment and/or notify the department of a failure or malfunction of such monitoring equipment [RCSA §22a-430-3(j)(8)].
- ☐ 18. Failed to provide facilities/instrumentation/alarms [RCSA §22a-430-3(q)(1) ☐, (2) ☐ and/or (3) ☐.
- ☒ 19. Other Violation(s): Failed to report permit violation within two hours of becoming aware of the violation and in writing within 5 days as required by 22a-430-3(j)(1)(D) of the RCSA. (See attached ☐)

ADDITIONAL COMMENTS:

1. The company needs to maintain hard copy records of all flow data that is recorded electronically.

(See attached ☐)

This Notice does not necessarily specify all violations of Connecticut environmental law or violations of any other legal requirements that may exist at your facility. This Notice does not preclude the Department or other state, local or federal agencies from commencing any enforcement action regarding any such violations.

Issued by Marshall A. Hooper Title Environmental Analyst

A copy of this Notice was left with the following individual:

Print Name Reed Riggio Title Environmental Supervisor

I acknowledge receipt of this Notice.

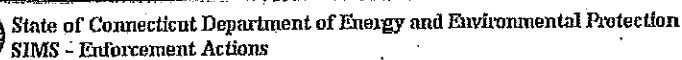
Signature: _____ Date 8/18/15

State of Connecticut Department of Energy and Environmental Protection
SIMS - Enforcement Actions[Assignment List](#) [Environmental Interest](#) [Reports](#) [Administration](#)
[detail](#) | [clients](#) | [sites](#) | [fees](#) | [workflow](#) | [history](#) | [environmental interests](#)

Enforcement Action	
Environmental Interest: Field Notice of Violation (FNOVWRIN15208)	Find
Client(s): NUCOR STEEL CONNECTICUT, INC. (Registrant)	
Site(s): NUCOR STEEL CONNECTICUT, INC. (WALLINGFORD, CT)	
Status: Closed	Action Date: 8/25/2015
Workflow: Single	
Enf Action Description: Failed to report effluent violations to the Department as required.	
Add Document	
Enforcement Action Details	
Add New	
Program: INDENF - Industrial NPDES Enforcement	Edit
Materials Management & Compliance Assurance	Verify
Water Permitting & Enforcement (MMCA-Per&Enf)-StormW	
Enforcement Action ID: FNOVWRIN15208	Date of Discovery: 8/18/2015
Assigned Staff: Hoover Marshall	Action Date: 8/25/2015
Number of Violations:	Resolution Date: 8/31/2015
Category: Inspection Program - 60000	Resolution Type: Returned to compliance
NOV Closure Letter	
Total Penalty: \$0.00	Civil Penalty: \$0.00
SEP Penalty: \$0.00	
SEP Description:	
NAICS Code:	SIC Code:

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Assignment List		Environmental Interest		Reports	Administration
detail	clients	sites	fees	workflow	history environmental interests

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NUCOR
BAR MILL GROUP
NUCOR STEEL CONNECTICUT, INC.

August 20, 2015

Bureau of Materials Management and Compliance Assurance
Water Permitting and Enforcement Division (Attn: Marshall Hoover)
Connecticut Department of Energy and Environmental Protection
79 Elm Street, 2nd Floor
Hartford, CT 06106-5127

RECEIVED

AUG 31 2015

BUREAU OF MATERIALS MANAGEMENT
& COMPLIANCE ASSURANCE

Dear Mr. Hoover,

Nucor Steel Connecticut, Inc. is responding to FNOV WR IN 15 208 per Mr. Hoover's site inspection on August 18, 2015, with attention to item 19. Other Violation(s) 'Failed to report violation within two hours of becoming aware of the violation and in writing within 5 days as required by 22a-430.3(j)(11)(D) of the RCSA.' Per Nucor's May and June 2015 DMR letter's Nucor reported effluent violations for Total Oil & Grease in accordance to the notification requirements specifically listed in NPDES permit CT0026794 but failed to meet the notification requirements referenced from RCSA 22a-430.3(j)(11)(D). Per Nucor's May and June 2015 DMR letters, Nucor has identified the root cause of the effluent exceedance and has taken all actions necessary to maintain compliance with NPDES permit CT0026794.

Since Mr. Hoover's inspection Nucor has reviewed in detail RCSA 22a-430.3(j)(11)(D) and the CT DEEP compliance assistance document 'How to Maintain Compliance with Your Individual Discharge Permit' for clarification with all 'Notification Requirements'. Nucor will perform periodic reviews of this guidance document to further ensure consistency and compliance with all applicable requirements. Effective immediately in the event of an NPDES exceedance Nucor will report according to both RCSA 22a-430.3(j)(11)(D) and the language specified within our permit.

Mr. Hoover made additional comments '1. The company needs to maintain hard copy records of pH & Flow data that is recorded electronically'. Nucor currently tracks all required pH and flow data electronically; however, Nucor does not maintain hard copy summary of this data. To correct this, Nucor is issuing an internal corrective action to restructure the electronic report such that a hard copy will be maintained with our Environmental Department. This corrective action will be completed on or before October 1, 2015. Nucor will continue to closely monitor our DMR results for the duration of our NPDES permit. Please do not hesitate to contact me directly at (203) 265 - 0615.

Regards,

Reed Raggio



Environmental Supervisor

NUCOR
BAR MILL GROUP
NUCOR STEEL CONNECTICUT, INC.

August 20, 2015

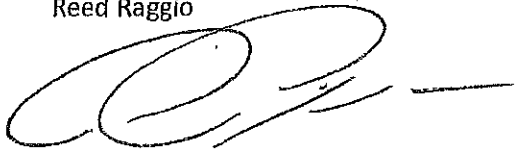
Jack Melcher
Water Technical Enforcement Unit
Office of Environmental Stewardship
US EPA, Region 1
5 Post Office Sq – Suite 100
Mail Code: OES04-1
Boston, MA 02109-3912

Mr. Melcher,

Please find enclosed is your copy of Nucor Steel Connecticut Inc.'s response to FNOV WR IN 15 208 per Mr. Marshall Hoover's (CT DEEP) August 18, 2015 site inspection. If you should have any questions please do not hesitate to contact me directly at (203) 265 – 0615.

Regards,

Reed Raggio

A handwritten signature in black ink, appearing to be 'Reed Raggio', with a long horizontal line extending to the right.

Environmental Supervisor

COMPLIANCE STATEMENT

This Compliance Statement shall be signed by: (1) You (if an individual-the individual signs); (if a corporation or partnership-by a responsible corporate officer/general partner or a duly authorized representative of such person, as those terms are defined in section 22a-430-3(b)(2) of the Regulations of Connecticut State Agencies); or (if a municipality-chief elected official or principal executive officer) and (2) if different, by the individual responsible for actually preparing such statement, each of whom shall read and sign the certification regarding false statements on the Compliance Statement.

Within fifteen days of the date you become aware of a change in any information in the Compliance Statement, or that any information was inaccurate or misleading or that any relevant information was omitted, submit the correct or omitted information to the DEEP and EPA staff contacts identified in the Notice of Violation.

Notice of Violation Issuance Date: 8/18/15
Facility name: Nucor Steel Connecticut, Inc.
Facility address: 35 Toelles Road, Wallingford, CT 06492
Attention: Reed Raggio

FNOV WR IN 15 208

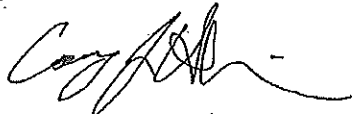
In accordance with the directions in the above-referenced Notice of Violation, I certify that the noted violations [and additional comments] have been corrected in the following manner:

Attach sheet(s) as needed
(Enclose supporting documentation demonstrating compliance)

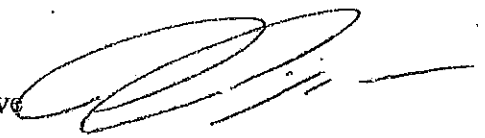
Certification of Accuracy

I certify that the information in this Compliance Statement and any attachments thereto are true, accurate and complete, and I understand that any false statement may be punishable as a criminal offense under Connecticut General Statutes sections 22a-6 and 53a-157.

8/25/15
Date
203 265 0615
Telephone

Signature 
(Type name and title) Corey J. Allain
Address Controller

8/20/15
Date
203 265 0615
Telephone

Preparer's Signature, 
if different from above
(Type name and title) REED RAGGIO
Address ENVIRONMENTAL SUPERVISOR

35 TOELLES ROAD
WALLINGFORD CT, 06492

NUCOR
BAR MILL GROUP
NUCOR STEEL CONNECTICUT, INC.

June 16, 2015

Bureau of Materials Water Protection and Land Reuse (Attn: Aquatic Toxicity)
Connecticut Department of Energy and Environmental Protection
79 Elm Street
Hartford, CT 06106-5127

Dear DMR Processor:

Please find enclosed Nucor Steel Connecticut's May 2015 DMR that includes monthly and quarterly data per NPDES Permit #CT0026794. Nucor collected a single process water discharge sample on May 19th with the required analysis enclosed.

Based on this sample, the average monthly 'Oil and Grease' for May 2015 was 59.7 mg/L which is above our permitted limit of 10.0 mg/L. As a result of elevated O&G the resulting BOD was 86.3 mg/L which is above our permitted daily limit of 15 mg/L. Please note based on discharge volume Nucor did not exceed the daily loading limit of 6.3 kg/day of 'Oil & Grease'.

The cause of the elevated O&G was a mechanical failure that allowed lubrication oil to weep into the process water cooling system. This mechanical failure was identified and corrected immediately however the O&G content was a residual effect of this failure.

Nucor's corrective actions for this event include the following:

- Stop all process water discharges related to NPDES Permit #CT0026794 until the cooling water could be verified to meet NPDES discharge parameters for O&G
- Identify source of O&G and evaluate water treatment options for reduction and/or elimination
- Repair mechanical seal to ensure no further oil would enter water system
- Verify cooling water is acceptable to discharge before resuming discharge pursuant to NPDES Permit #CT0026794
 - o Corrected/Verified: June 9, 2015 – while discharge remained locked out a water sample was analyzed for O&G and verified cooling water pursuant to NPDES Permit #CT0026794 was less than the permit limit of 10mg/L

As a result of this event, Nucor locked out discharge and verified O&G content of cooling water prior to resuming discharge. The analytical result for O&G was taken on June 9, 2015 and resulted in 1.6 mg/L which is below our discharge limit (see attached). Nucor will take a complete discharge sample in June per the June 2015 DMR and submit the results pending analysis.

If you have any questions about this report, please contact me at 203-265-0615.

Sincerely,



Reed Raggio
Environmental Supervisor

WATER & STANDARDS DIVISION
JUN 22 2015

Hoover, Marshall

From: Raggio, Reed (NSCT) <Reed.Raggio@nucor.com>
Sent: Tuesday, August 25, 2015 10:20 AM
To: Hoover, Marshall
Subject: Nucor Steel Connecticut FNOV Response
Attachments: 20150825100917.pdf

Marshall,

I hope this email finds you well. I have attached a copy of our response to FNOV WR IN 15 208 and I am additionally mailing a copy to your attention and Mr. Jack Melcher of the US EPA Region 1. As always please do not hesitate to contact me directly if you should have any questions.

Thank you,
Reed Raggio

Environmental Supervisor
Nucor Steel Connecticut, Inc.

203 265 0615

CONFIDENTIALITY NOTICE

This e-mail contains privileged and confidential information which is the property of Nucor, intended only for the use of the intended recipient(s). Unauthorized use or disclosure of this information is prohibited. If you are not an intended recipient, please immediately notify Nucor and destroy any copies of this email. Receipt of this e-mail shall not be deemed a waiver by Nucor of any privilege or the confidential nature of the information.

NUCOR
BAR MILL GROUP
NUCOR STEEL CONNECTICUT, INC.

August 20, 2015

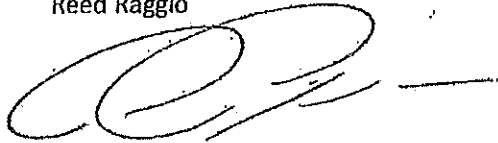
Jack Melcher
Water Technical Enforcement Unit
Office of Environmental Stewardship
US EPA, Region 1
5 Post Office Sq – Suite 100
Mail Code: OES04-1
Boston, MA 02109-3912

Mr. Melcher,

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Regards,

Reed Raggio

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Environmental Supervisor

NUCOR
BAR MILL GROUP
NUCOR STEEL CONNECTICUT, INC.

August 20, 2015

Bureau of Materials Management and Compliance Assurance
Water Permitting and Enforcement Division (Attn: Marshall Hoover)
Connecticut Department of Energy and Environmental Protection
79 Elm Street, 2nd Floor
Hartford, CT 06106-5127

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Nucor Steel Connecticut, Inc. is responding to FNOV WR IN 15 208 per Mr. Hoover's site inspection on August 18, 2015, with attention to Item 19. Other Violation(s) 'Failed to report violation within two hours of becoming aware of the violation and in writing within 5 days as required by 22a-430.3(j)(11)(D) of the RCSA.' Per Nucor's May and June 2015 DMR letter's Nucor reported effluent violations for Total Oil & Grease in accordance to the notification requirements specifically listed in NPDES permit CT0026794 but failed to meet the notification requirements referenced from RCSA 22a-430.3(j)(11)(D). Per Nucor's May and June 2015 DMR letters, Nucor has identified the root cause of the effluent exceedance and has taken all actions necessary to maintain compliance with NPDES permit CT0026794.

Since Mr. Hoover's inspection Nucor has reviewed in detail RCSA 22a-430.3(j)(11)(D) and the CT DEEP compliance assistance document 'How to Maintain Compliance with Your Individual Discharge Permit' for clarification with all 'Notification Requirements'. Nucor will perform periodic reviews of this guidance document to further ensure consistency and compliance with all applicable requirements. Effective immediately in the event of an NPDES exceedance Nucor will report according to both RCSA 22a-430.3(j)(11)(D) and the language specified within our permit.

Mr. Hoover made additional comments '1. The company needs to maintain hard copy records of pH & Flow data that is recorded electronically'. Nucor currently tracks all required pH and flow data electronically; however, Nucor does not maintain hard copy summary of this data. To correct this, Nucor is issuing an internal corrective action to restructure the electronic report such that a hard copy will be maintained with our Environmental Department. This corrective action will be completed on or before October 1, 2015. Nucor will continue to closely monitor our DMR results for the duration of our NPDES permit. Please do not hesitate to contact me directly at (203) 265 - 0615.

Regards,

Reed Raggio



Environmental Supervisor

COMPLIANCE STATEMENT

This Compliance Statement shall be signed by: (1) You (if an individual-the individual signs); (if a corporation or partnership-by a responsible corporate officer/general partner or a duly authorized representative of such person, as those terms are defined in section 22a-430-3(b)(2) of the Regulations of Connecticut State Agencies); or (if a municipality-chief elected official or principal executive officer) and (2) if different, by the individual responsible for actually preparing such statement, each of whom shall read and sign the certification regarding false statements on the Compliance Statement.

Within fifteen days of the date you become aware of a change in any information in the Compliance Statement, or that any information was inaccurate or misleading or that any relevant information was omitted, submit the correct or omitted information to the DEEP and EPA staff contacts identified in the Notice of Violation.

Notice of Violation Issuance Date: 8/18/15
Facility name: Nucor Steel Connecticut, Inc.
Facility address: 35 Towles Road, Wallingford, CT 06492
Attention: Reed Raggio

FNOV WR IN 15 208

In accordance with the directions in the above-referenced Notice of Violation, I certify that the noted violations [and additional comments] have been corrected in the following manner:

Attach sheet(s) as needed
(Enclose supporting documentation demonstrating compliance)

Certification of Accuracy

I certify that the information in this Compliance Statement and any attachments thereto are true, accurate and complete, and I understand that any false statement may be punishable as a criminal offense under Connecticut General Statutes sections 22a-6 and 53a-157.

8/25/15
Date
203 265 0615
Telephone

8/20/15
Date
203 265 0615
Telephone

Signature

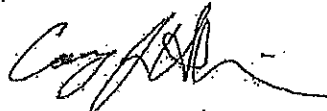
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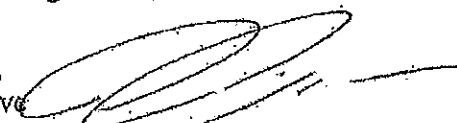
Address

Preparer's Signature,
if different from above

(Type name and title)

Address


Corey J. Allain
Controller


REED RAGGIO
ENVIRONMENTAL SUPERVISOR

35 TOWLES ROAD
WALLINGFORD CT, 06492

Hoover, Marshall

From: Blais, Melissa
Sent: Monday, November 23, 2015 11:21 AM
To: Hoover, Marshall
Subject: FW: Story on the recent find of pollution into the Q River

From: Nancy Alderman [mailto:nancy.alderman@ehhi.org]
Sent: Friday, November 20, 2015 10:33 AM
To: cjohnson@cfenv.org; dstrait@cfenv.org; rreynolds@cfenv.org
Cc: Blais, Melissa; Harry.Pylypiw@quinnipiac.edu; Courtney.McGinnis@quinnipiac.edu
Subject: Story on the recent find of pollution into the Q River

The New Haven Independent's article on the pipe spewing chemicals into the Q River
http://www.newhavenindependent.org/index.php/archives/entry/q_river_mystery/

Sleuth Probes Q River Mystery

by Allan Appel | Nov 20, 2015 New Haven Independent Allan Appel Photo

Harry Pylypiw stumbled across a Quinnipiac River "hot spot" where previously undetected chemicals pour into fish-filled water streaming toward New Haven Harbor.

Now he wants to find out if we should worry about that. And if it's legal.

For six years Pylypiw, a chemistry professor at Quinnipiac University, and his students have been testing the Quinnipiac River from Wallingford down to New Haven Harbor for industrial contaminants.

They've found plenty of them, because companies are still allowed to discharge a limited amount of pollutants, by permit. Not until this year, however, did they find a genuine "hot spot."

The spot is right next to a fishing spot and a state park.

The pollutants in question are phthalates, chemicals used in the softening of plastics. The hot spot is in water discharged from a pipe at the base of Toelles Road just east of the Wilbur Cross Parkway within Quinnipiac State Park, where the Q River is merely a stream.

Conclusion

Water samples tested from various locations of the Quinnipiac River were found positive for phthalates.

The presence of diethylhexyl phthalate, dibutyl phthalate, and benzyl butyl phthalate were detected in the water of the Quinnipiac River.

Phthalates accumulated primarily along the sides of the river.

Water samples collected from the middle of the river were negative for phthalate esters..

References

Pylypiw (pictured), who has taught at Quinnipiac for nine years following an 11-year stint as a research chemist at the Connecticut Agriculture Experiment Station in New Haven, did the work this summer along with Assistant Professor of Chemistry Courtney McGinnis and several students including John Chiari and Jake Laperche.

On a recent bright, crisp day the crew of teacher and student researchers took this reporter down to the pipe that until this May had not been running. The team discovered it in late May, took samples, along with samples of water at at least four other points along the banks and in the middle of the river, from the shore and by boat from North Haven to Hamden and where the river runs wide entering New Haven Harbor.

Pylypiw has received grants for these environmental studies over six years from the Greater New Haven Community Foundation-administered Quinnipiac River Fund.

The latest findings, recently published by the foundation, showed that in general pthalates in the river had abated. That was the good news of the report, which you can read in detail [here](#).

Gloved students Chiari and Laperche take samples from the pipe.

The bad news: the effluent from this pipe contained other chemicals new to the study: phenothiazine, vinyl ether monomers, and hexamethyl melamine. These are also, like pthalates, plasticizers, used in the making of PVC pipe and other plastic products.

These had never been recorded before.

Even more alarming, the water coming out of the pipe, both during the 20 or 30 sampling visits throughout the summer as well as on the visit with a reporter, was four to five degrees warmer than normal river water.

Students, John Chiari and Jake Laperche, wearing rubber gloves, took samples. , "The warmth indicates it's not natural," Pylypiw said, "not a run-off from a stream or storm sewer. From what we understand it's [from] a cooling process for an industrial process."

Returning with samples, along Toelles Road, just east of Wilbur Cross Parkway

"The new elements are unique to this location. We've targeted this as our 'hot spot' to find out what is happening to fish" that ingest it.

Because some chemical discharge is allowed by permit, overseen by the state Department of Energy and Environmental Protection [DEEP], Pylypiw was also at pains to point out that while the chemicals are harmful, the discharge may not be illegal.

When he reported the findings of the grant to the foundation, officials there notified DEEP.

DEEP in turn notified Pylypiw that the pipe belongs to the Nucor Steel Company, whose plant is nearby. DEEP plans to follow up with the company, according to DEEP emails sent to Pylypiw. The company did not respond to requests for comments for this article. DEEP spokesman Dennis Schain told that Independent that the agency is "trying to get the test results from the professor to evaluate them. Definitely Nucor in the area has a permit for a discharge but there's no way to know at this point if they or anyone else is doing anything outside the scope of their permit. We are aware and involved and engaged to determine if some additional actions are necessary." On To Professor McGinnis's Fish Tank

After the team returned to the Quinnipiac University chemistry department, where all the work on the project has been done and is ongoing, tit set about to do a chemical analysis of the sampling.

Chiari and Laperche, both undergraduate pre-med majors, then were dispatched to go back to the pipe, about a mile from the campus, to retrieve ten more gallons of the effluent from the pipe.

McGinnis (pictured) will pour that into a tank in her lab and drop mummichogs into it. The fish will swim in the effluent-laden water while nearby similar fish are swimming in clean water, the control group, said McGinnis.

"After seven to ten days, we take out the fish and look at the liver, brain, and gonad" and compare what they see to the control group. "We know what the parts should look like and we compare it to [the fish parts] the water from the pipe."

The use of these fish, which are native to Long Island Sound, is done in accordance with protocols established at the school for animal testing, said Pylypiw.

Pylypiw said he is passing the baton of the research on to his younger colleague. For the past six years, the focus has been on chemical analysis of the waters of the Q River.

"Our future efforts are [going to be] directed at changes of gene expression in fish as a result of industrial pollution," she added.

While he harbored, it was clear, strong personal opinions, Pylypiw repeatedly wanted to emphasize that his role, and that of the grant funded study are purely investigative and educational, helping students "get their feet wet," he said pointing out his own pun, in environmental science and its methodologies.

Mummichogs are visible in the foreground, if you look hard.

Whether what Nucor is doing is illegal and whether fish caught in the river should be eaten, he would say. He did say, "I don't eat fish."

That people are catching fish and right beside the pipe off Toelles Road is clear. The professor pointed out two green chairs not five feet from the pipe in which he observed anglers during the samplings.

McGinnis expects to write a grant to pursue the question on the biological impact on aquatic life in the Q River later this year

Tags: Harry Pylypiw, pollution, Quinnipiac River, chemical discharges, fish

Nancy Alderman, President
Environment and Human Health, Inc.
1191 Ridge Road
North Haven, CT 06473
(phone) 203-248-6582
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MATERIAL SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

PRODUCT

Product Name: MOBIL VACUOLINE 525
Product Description: Base Oil and Additives
Product Code: 201560504055, 608257-00, 970151
Intended Use: Circulating oil

COMPANY IDENTIFICATION

Supplier: EXXON MOBIL CORPORATION
3225 GALLOWS RD.
FAIRFAX, VA. 22037 USA
24 Hour Health Emergency 609-737-4411
Transportation Emergency Phone 800-424-9300
ExxonMobil Transportation No. 281-834-3296
MSDS Requests 713-613-3661
Product Technical Information 800-662-4525, 800-947-9147
MSDS Internet Address <http://www.exxon.com>, <http://www.mobil.com>

SECTION 2 COMPOSITION / INFORMATION ON INGREDIENTS

No Reportable Hazardous Substance(s) or Complex Substance(s).

SECTION 3 HAZARDS IDENTIFICATION

This material is not considered to be hazardous according to regulatory guidelines (see (M)SDS Section 15).

POTENTIAL HEALTH EFFECTS

Low order of toxicity. Excessive exposure may result in eye, skin, or respiratory irritation. High-pressure injection under skin may cause serious damage.

NFPA Hazard ID:	Health: 0	Flammability: 1	Reactivity: 0
HMIS Hazard ID:	Health: 0	Flammability: 1	Reactivity: 0

NOTE: This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary from person to person.

SECTION 4 FIRST AID MEASURES

INHALATION

Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use



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mouth-to-mouth resuscitation.

SKIN CONTACT

Wash contact areas with soap and water. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

EYE CONTACT

Flush thoroughly with water. If irritation occurs, get medical assistance.

INGESTION

First aid is normally not required. Seek medical attention if discomfort occurs.

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

Appropriate Extinguishing Media: Use water fog, foam, dry chemical or carbon dioxide (CO₂) to extinguish flames.

Inappropriate Extinguishing Media: Straight Streams of Water

FIRE FIGHTING

Fire Fighting Instructions: Evacuate area. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply. Firefighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

Hazardous Combustion Products: Aldehydes, Incomplete combustion products, Oxides of carbon, Smoke, Fume, Sulfur oxides

FLAMMABILITY PROPERTIES

Flash Point [Method]: 224C (435F) [ASTM D-92]

Flammable Limits (Approximate volume % in air): LEL: 0.9 UEL: 7.0

Autoignition Temperature: N/D

SECTION 6 ACCIDENTAL RELEASE MEASURES

NOTIFICATION PROCEDURES

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations. In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations. US regulations require reporting releases of this material to the environment which exceed the applicable reportable quantity or oil spills which could reach any waterway including intermittent dry creeks. The National Response Center can be reached at (800)424-8802.



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SPILL MANAGEMENT

Land Spill: Stop leak if you can do it without risk. Recover by pumping or with suitable absorbent.

Water Spill: Stop leak if you can do it without risk. Confine the spill immediately with booms. Warn other shipping. Remove from the surface by skimming or with suitable absorbents. Seek the advice of a specialist before using dispersants.

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

ENVIRONMENTAL PRECAUTIONS

Large Spills: Dike far ahead of liquid spill for later recovery and disposal. Prevent entry into waterways, sewers, basements or confined areas.

SECTION 7

HANDLING AND STORAGE

HANDLING

Prevent small spills and leakage to avoid slip hazard.

Static Accumulator: This material is a static accumulator.

STORAGE

Do not store in open or unlabelled containers.

SECTION 8

EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure limits/standards for materials that can be formed when handling this product: When mists / aerosols can occur, the following are recommended: 5 mg/m³ - ACGIH TLV, 10 mg/m³ - ACGIH STEL, 5 mg/m³ - OSHA PEL.

NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

ENGINEERING CONTROLS

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:

No special requirements under ordinary conditions of use and with adequate ventilation.

PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

Respiratory Protection: If engineering controls do not maintain airborne contaminant concentrations at a



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level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include:

No special requirements under ordinary conditions of use and with adequate ventilation.

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapor warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

Hand Protection: Any specific glove information provided is based on published literature and glove manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:

No protection is ordinarily required under normal conditions of use.

Eye Protection: If contact is likely, safety glasses with side shields are recommended.

Skin and Body Protection: Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include:

No skin protection is ordinarily required under normal conditions of use. In accordance with good industrial hygiene practices, precautions should be taken to avoid skin contact.

Specific Hygiene Measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

ENVIRONMENTAL CONTROLS

See Sections 6, 7, 12, 13.

SECTION 9

PHYSICAL AND CHEMICAL PROPERTIES

Typical physical and chemical properties are given below. Consult the Supplier in Section 1 for additional data.

GENERAL INFORMATION

Physical State: Liquid
Color: Amber
Odor: Characteristic
Odor Threshold: N/D

IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

Relative Density (at 15 C): 0.88
Flash Point [Method]: 224C (435F) [ASTM D-92]
Flammable Limits (Approximate volume % in air): LEL: 0.9 UEL: 7.0
Autoignition Temperature: N/D
Boiling Point / Range: > 316C (600F)
Vapor Density (Air = 1): > 2 at 101 kPa
Vapor Pressure: < 0.013 kPa (0.1 mm Hg) at 20 C
Evaporation Rate (n-butyl acetate = 1): N/D

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pH: N/A
 Log Pow (n-Octanol/Water Partition Coefficient): > 3.5
 Solubility in Water: Negligible
 Viscosity: 92.7 cSt (92.7 mm²/sec) at 40 C | 10.7 cSt (10.7 mm²/sec) at 100C
 Oxidizing Properties: See Sections 3, 15, 16.

OTHER INFORMATION

Freezing Point: N/D
 Melting Point: N/A
 Pour Point: -12°C (10°F)
 DMSO Extract (mineral oil only), IP-346: < 3 %wt

SECTION 10 STABILITY AND REACTIVITY

STABILITY: Material is stable under normal conditions.

CONDITIONS TO AVOID: Excessive heat. High energy sources of ignition.

MATERIALS TO AVOID: Strong oxidizers

HAZARDOUS DECOMPOSITION PRODUCTS: Material does not decompose at ambient temperatures.

HAZARDOUS POLYMERIZATION: Will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

ACUTE TOXICITY

Route of Exposure	Conclusion / Remarks
Inhalation	
Toxicity (Rat): LC50 > 5000 mg/m3	Minimally Toxic. Based on test data for structurally similar materials.
Irritation: No end point data.	Negligible hazard at ambient/normal handling temperatures. Based on assessment of the components.
Ingestion	
Toxicity (Rat): LD50 > 2000 mg/kg	Minimally Toxic. Based on test data for structurally similar materials.
Skin	
Toxicity (Rabbit): LD50 > 2000 mg/kg	Minimally Toxic. Based on test data for structurally similar materials.
Irritation (Rabbit): Data available.	Negligible irritation to skin at ambient temperatures. Based on test data for structurally similar materials.
Eye	
Irritation (Rabbit): Data available.	May cause mild, short-lasting discomfort to eyes. Based on test data for structurally similar materials.

CHRONIC/OTHER EFFECTS

Contains:

Base oil severely refined: Not carcinogenic in animal studies. Representative material passes IP-346, Modified Ames test, and/or other screening tests. Dermal and inhalation studies showed minimal effects; lung non-specific infiltration of immune cells, oil deposition and minimal granuloma formation. Not sensitizing in test



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animals.

Additional information is available by request.

The following ingredients are cited on the lists below: None.

--REGULATORY LISTS SEARCHED--

1 = NTP CARC
2 = NTP SUS

3 = IARC 1
4 = IARC 2A

5 = IARC 2B
6 = OSHA CARC

SECTION 12	ECOLOGICAL INFORMATION
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The information given is based on data available for the material, the components of the material, and similar materials.

ECOTOXICITY

Material -- Not expected to be harmful to aquatic organisms.

MOBILITY

Base oil component -- Low solubility and floats and is expected to migrate from water to the land.
Expected to partition to sediment and wastewater solids.

PERSISTENCE AND DEGRADABILITY

Biodegradation:

Base oil component -- Expected to be inherently biodegradable

BIOACCUMULATION POTENTIAL

Base oil component -- Has the potential to bioaccumulate, however metabolism or physical properties may reduce the bioconcentration or limit bioavailability.

SECTION 13	DISPOSAL CONSIDERATIONS
-------------------	--------------------------------

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

DISPOSAL RECOMMENDATIONS

Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products.

REGULATORY DISPOSAL INFORMATION

RCRA Information: The unused product, in our opinion, is not specifically listed by the EPA as a hazardous waste (40 CFR, Part 261D), nor is it formulated to contain materials which are listed as hazardous wastes. It does not exhibit the hazardous characteristics of ignitability, corrosivity or reactivity and is not formulated with contaminants as determined by the Toxicity Characteristic Leaching Procedure (TCLP). However, used product may be regulated.

Empty Container Warning Empty Container Warning (where applicable): Empty containers may contain residue and



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can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

SECTION 14	TRANSPORT INFORMATION
-------------------	------------------------------

LAND (DOT) : Not Regulated for Land Transport

LAND (TDG) : Not Regulated for Land Transport

SEA (IMDG) : Not Regulated for Sea Transport according to IMDG-Code

AIR (IATA) : Not Regulated for Air Transport

SECTION 15	REGULATORY INFORMATION
-------------------	-------------------------------

OSHA HAZARD COMMUNICATION STANDARD: When used for its intended purposes, this material is not classified as hazardous in accordance with OSHA 29 CFR 1910.1200.

NATIONAL CHEMICAL INVENTORY LISTING: KECI, ENCS, PICCS, AICS, IECSC, TSCA, DSL
Special Cases:

Inventory	Status
ELINCS	Restrictions Apply

EPCRA: This material contains no extremely hazardous substances.

SARA (311/312) REPORTABLE HAZARD CATEGORIES: None.

SARA (313) TOXIC RELEASE INVENTORY: This material contains no chemicals subject to the supplier notification requirements of the SARA 313 Toxic Release Program.

The Following Ingredients are Cited on the Lists Below:

Chemical Name	CAS Number	List Citations
PHOSPHORODITHOIC ACID, O,O-DI C1-14-ALKYL ESTERS, ZINC SALTS (2:1) (ZDDP)	68649-42-3	15

--REGULATORY LISTS SEARCHED--

1 = ACGIH ALL	6 = TSCA 5a2	11 = CA P65 REPRO	16 = MN RTK
2 = ACGIH A1	7 = TSCA 5e	12 = CA RTK	17 = NJ RTK
3 = ACGIH A2	8 = TSCA 6	13 = IL RTK	18 = PA RTK
4 = OSHA Z	9 = TSCA 12b	14 = LA RTK	19 = RI RTK



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5 = TSCA 4

10 = CA P65 CARC

15 = MI 293

Code key: CARC=Carcinogen; REPRO=Reproductive

SECTION 16

OTHER INFORMATION

N/D = Not determined, N/A = Not applicable

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:

No revision information is available.

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Internal Use Only

MHC: 0, 0, 0, 0, 0, 0

PPEC: A

DGN: 2008729XUS (548033)

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Section: 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : NALCLEAR® 7766 PLUS

Other means of identification : Not applicable.

Recommended use : FLOCCULANT

Restrictions on use : Refer to available product literature or ask your local Sales Representative for restrictions on use and dose limits.

Company : Nalco Company
1601 W. Diehl Road
Naperville, Illinois 60563-1198
USA
TEL: (630)305-1000

Emergency telephone number : (800) 424-9300 (24 Hours) CHEMTREC

Issuing date : 01/16/2015

Section: 2. HAZARDS IDENTIFICATION**GHS Classification**

Eye irritation : Category 2B

GHS Label element

Signal Word : Warning

Hazard Statements : Causes eye irritation.
If swallowed a jelly mass may form which in digestion may cause blockage.

Precautionary Statements : **Prevention:**
Wash skin thoroughly after handling. Water in contact with the product will cause slippery floor conditions.
Response:
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/ attention. Do NOT induce vomiting.
Storage:
Mix thoroughly before use. Protect product from freezing.

Other hazards : None known.

Section: 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No.	Concentration: (%)
Hydrotreated Light Disulfate	64742-47-8	10 - 30
Oxyalkylated alcohol	Proprietary	1 - 5

NALCLEAR® 7766 PLUS

Section: 4. FIRST AID MEASURES

- In case of eye contact : Rinse with plenty of water. Get medical attention if symptoms occur.
- In case of skin contact : Wash off with soap and plenty of water. Get medical attention if symptoms occur.
-
- ~~If swallowed : If swallowed, DO NOT induce vomiting. Get medical attention immediately.~~
- If inhaled : Get medical attention if symptoms occur.
- Protection of first-aiders : In event of emergency assess the danger before taking action. Do not put yourself at risk of injury. If in doubt, contact emergency responders. Use personal protective equipment as required.
- Notes to physician : If swallowed a jelly mass may form which in digestion may cause blockage. Treat symptomatically.
- Most important symptoms and effects, both acute and delayed : See Section 11 for more detailed information on health effects and symptoms.

Section: 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Unsuitable extinguishing media : None known.
- Specific hazards during firefighting : Not flammable or combustible.
- Hazardous combustion products : Carbon oxides nitrogen oxides (NOx)
- Special protective equipment for firefighters : Use personal protective equipment.
- Specific extinguishing methods : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. In the event of fire and/or explosion do not breathe fumes.

Section: 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Spills of this product are very slippery. Refer to protective measures listed in sections 7 and 8.
- Environmental precautions : Do not allow contact with soil, surface or ground water.
- Methods and materials for containment and cleaning up : Stop leak if safe to do so. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Flush away traces with water. For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway.

Section: 7. HANDLING AND STORAGE

- Advice on safe handling : Wash hands thoroughly after handling. Use only with adequate ventilation. Stir well prior to use.
- Conditions for safe storage : Keep out of reach of children. Keep container tightly closed. Store in suitable labeled containers. Store separately from oxidizers. Protect product from freezing.
- Suitable material : The following compatibility data is suggested based on similar product data and/or industry experience: Compatibility with Plastic Materials can vary; we therefore recommend that compatibility is tested prior to use.
- Unsuitable material : not determined

Section: 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Components with workplace control parameters**

Components	CAS-No.	Form of exposure	Permissible concentration	Basis
Hydrotreated Light Distillate	64742-47-8	TWA	500 ppm 2,000 mg/m ³	OSHA Z1
		TWA	200 mg/m ³	ACGIH

- Engineering measures : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Personal protective equipment

- Eye protection : Safety glasses
- Hand protection : Wear protective gloves.
Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.
- Skin protection : Wear suitable protective clothing.
- Respiratory protection : No personal respiratory protective equipment normally required.
- Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use.
Wash face, hands and any exposed skin thoroughly after handling.

Section: 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : Liquid
- Colour : off-white
- Odour : hydrocarbon-like
- Flash point : > 93,3 °C
Method: ASTM D 93, Pensky-Martens closed cup

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pH	: 8.0, 100 %
Odour Threshold	: no data available
Melting point/freezing point	: FREEZING POINT: -21.6 °C, ASTM D-1177
Initial boiling point and boiling range	: no data available
Evaporation rate	: no data available
Flammability (solid, gas)	: no data available
Upper explosion limit	: no data available
Lower explosion limit	: no data available
Vapour pressure	: no data available
Relative vapour density	: no data available
Relative density	: 0.99 - 1.07 (22 °C)
Density	: 0.994 - 1.078 g/cm ³ 8.3 - 9.0 lb/gal
Water solubility	: emulsifiable
Solubility in other solvents	: no data available
Partition coefficient: n-octanol/water	: no data available
Auto-ignition temperature	: no data available
Thermal decomposition temperature	: no data available
Viscosity, dynamic	: 200 - 1,000 mPa.s (23.89 °C)
Viscosity, kinematic	: 502 mm ² /s (20 °C)
VOC	: 22.17 % 222.88 g/l

Section: 10. STABILITY AND REACTIVITY

Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	: No dangerous reaction known under conditions of normal use.
Conditions to avoid	: Freezing temperatures.
Incompatible materials	: Addition of water results in gelling. Contact with strong oxidizers (e.g. chlorine, peroxides, chromates, nitric acid, perchlorate, concentrated oxygen, permanganate) may generate heat, fires, explosions and/or toxic vapors.
Hazardous decomposition products	: Oxides of carbon Oxides of nitrogen

Section: 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure	: Inhalation, Eye contact, Skin contact
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Potential Health Effects

Eyes	: Causes eye irritation.
Skin	: Health injuries are not known or expected under normal use.
Ingestion	: Health injuries are not known or expected under normal use.
Inhalation	: Health injuries are not known or expected under normal use.
Chronic Exposure	: Health injuries are not known or expected under normal use.

Experience with human exposure

Eye contact	: Redness, Irritation
Skin contact	: No symptoms known or expected.
Ingestion	: No information available.
Inhalation	: No symptoms known or expected.

Toxicity**Product**

Acute oral toxicity	: Acute toxicity estimate : > 5,000 mg/kg
Acute inhalation toxicity	: no data available
Acute dermal toxicity	: no data available
Skin corrosion/irritation	: no data available
Serious eye damage/eye irritation	: no data available
Respiratory or skin sensitization	: no data available
Carcinogenicity	
IARC	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
NTP	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
Reproductive effects	: no data available

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Germ cell mutagenicity : no data available
Teratogenicity : no data available
STOT - single exposure : no data available
STOT - repeated exposure : no data available

Aspiration toxicity : no data available

Components

Acute inhalation toxicity : Oxyalkylated alcohol
LC50 rat: > 50 mg/l
Exposure time: 4 h

Section: 12. ECOLOGICAL INFORMATION

Ecotoxicity

Environmental Effects : Toxic to aquatic life.

Product

Toxicity to fish : LC50 *Oncorhynchus mykiss* (rainbow trout): > 1,000 mg/l
Exposure time: 96 hrs
Test substance: 1% Aqueous Solution of Product

LC50 *Oncorhynchus mykiss* (rainbow trout): 35.7 mg/l
Exposure time: 96 hrs
Test substance: Product

NOEC *Oncorhynchus mykiss* (rainbow trout): 1,000 mg/l
Exposure time: 96 hrs
Test substance: 1% Aqueous Solution of Product

NOEC *Oncorhynchus mykiss* (rainbow trout): 15.6 mg/l
Exposure time: 96 hrs
Test substance: Product

Toxicity to daphnia and other aquatic invertebrates : LC50 *Daphnia magna* (Water flea): > 1,000 mg/l
Exposure time: 48 hrs
Test substance: 1% Aqueous Solution of Product

EC50 *Daphnia magna* (Water flea): 980 mg/l
Exposure time: 48 hrs
Test substance: 1% Aqueous Solution of Product

EC50 *Daphnia magna* (Water flea): 1.71 mg/l
Exposure time: 48 hrs
Test substance: Product

NOEC *Daphnia magna* (Water flea): 150 mg/l
Exposure time: 48 hrs
Test substance: 1% Aqueous Solution of Product

NOEC *Daphnia magna* (Water flea): 1.25 mg/l
Exposure time: 48 hrs
Test substance: Product

Components

Toxicity to algae : Hydrotreated Light Distillate
EC50 : > 1,000 mg/l
Exposure time: 48 h

Components

Toxicity to bacteria : Hydrotreated Light Distillate
> 1,000 mg/l

Persistence and degradability

no data available

Mobility

The environmental fate was estimated using a level III fugacity model embedded in the EPI (estimation program interface) Suite TM, provided by the US EPA. The model assumes a steady state condition between the total input and output. The level III model does not require equilibrium between the defined media. The information provided is intended to give the user a general estimate of the environmental fate of this product under the defined conditions of the models.

If released into the environment this material is expected to distribute to the air, water and soil/sediment in the approximate respective percentages;

Air : 5 - 10%
Water : 30 - 50%
Soil : 50 - 70%

The portion in water is expected to be soluble or dispersible.

Bioaccumulative potential

no data available

Other information

no data available

Section: 13. DISPOSAL CONSIDERATIONS

If this product becomes a waste, it is not a hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA) 40 CFR 261, since it does not have the characteristics of Subpart C, nor is it listed under Subpart D.

Disposal methods : The product should not be allowed to enter drains, water course, or the soil. Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations. Dispose of wastes in an approved waste disposal facility.

Disposal considerations : Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

Section: 14. TRANSPORT INFORMATION

The shipper/consignor/sender is responsible to ensure that the packaging, labeling, and markings are in compliance with the selected mode of transport.

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Land transport (DOT)

Proper shipping name : PRODUCT IS NOT REGULATED DURING
TRANSPORTATION

Air transport (IATA)

Proper shipping name : PRODUCT IS NOT REGULATED DURING
TRANSPORTATION

Sea transport (IMDG/IMO)

Proper shipping name : PRODUCT IS NOT REGULATED DURING
TRANSPORTATION

Section: 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : Acute Health Hazard

SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

INTERNATIONAL CHEMICAL CONTROL LAWS :

TOXIC SUBSTANCES CONTROL ACT (TSCA)

The substances in this preparation are included on or exempted from the TSCA 8(b) Inventory (40 CFR 710)

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA)

The substance(s) in this preparation are included in or exempted from the Domestic Substance List (DSL).

AUSTRALIA

All substances in this product comply with the National Industrial Chemicals Notification & Assessment Scheme (NICNAS).

CHINA

All substances in this product comply with the Provisions on the Environmental Administration of New Chemical Substances and are listed on or exempt from the Inventory of Existing Chemical Substances China (IECSC).

EUROPE

The substances in this preparation have been reviewed for compliance with the EINECS or ELINCS inventories.

JAPAN

All substances in this product comply with the Law Regulating the Manufacture and Importation Of Chemical Substances and are listed on the Existing and New Chemical Substances list (ENCS).

KOREA

All substances in this product comply with the Toxic Chemical Control Law (TCCL) and are listed on the Existing Chemicals List (ECL)

NEW ZEALAND

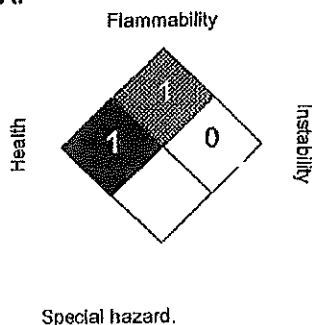
All substances in this product comply with the Hazardous Substances and New Organisms (HSNO) Act 1996, and are listed on or are exempt from the New Zealand Inventory of Chemicals.

PHILIPPINES

All substances in this product comply with the Republic Act 6969 (RA 6969) and are listed on the Philippines Inventory of Chemicals & Chemical Substances (PICCS).

Section: 16. OTHER INFORMATION

NFPA:



HMIS III:

HEALTH	1
FLAMMABILITY	1
PHYSICAL HAZARD	0

0 = not significant, 1 = Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

Revision Date : 01/16/2015
Version Number : 1.0
Prepared By : Regulatory Affairs

REVISED INFORMATION: Significant changes to regulatory or health information for this revision is indicated by a bar in the left-hand margin of the SDS.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.
For additional copies of an MSDS visit www.nalco.com and request access.

Figure B: Nucor Steel Connecticut Process Flow Diagram

Process Step	Contents	Volume	Flow(GPM)	Discharge Location	Location
1a	Contact cooling water	N/A	5000	discharge to roll mill flume to return pit	Contact cooling water at the rolling stands. Chemical coagulant injected here
1b	Contact cooling water	240,000	1000	discharge to roll mill return pit	Contact cooling water from the descaler and furnace
2	Contact cooling water	41,000	6000	discharge to LAKOS Separator	Roll Mill Retrun Pit. Chemical flocculant injected here.
3	Contact Cooling Water	N/A	6000	flow through application, solids removed and water discharges to decanting basin	Lakos Separator
4a,b each	Contact cooling water	375,000	3000	discharge to the cooling tower	Decanting Basin West & East
5a	Consolidated solids with contact cooling water	36,000	500	discharge to the filter press, water recycled to system	solids removal from both decanting sent to the gravity thickener for dewatering
6	Treated Contact Cooling Water	N/A	6000	Inline chemical injection for pH and corrosion control, discharge to cooling tower	water treatment building
6a	Treated Contact Cooling Water	345,000	4950-5000	discharge to the hot rolling mill and furnace for cooling water	Cooling Tower
6b	Treated Contact Cooling Water	N/A	1000	discharge to furnace cooling and descaler	Furnace/ Decaler Water
6c	Treated Contact Cooling Water	N/A	0-50	Discharge to the Quinnipiac River per NPDES CT0026794	discharge water: controlled automatically by real time monitoring
7	City Make-up Water	N/A	0-30	Fills directly to the Roll Mill cooling system	Pulpit

→	→	→	→	→	→
1a	1b	2	3	4a	4b

→	→	→	→	↑	↑
5	6a	6b	6c	7a	7b

WI-020.1-ENV-GEN-FRM
Daily Discharge (U.S. Gallons)

Day	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15
1	0	0	2752	9813	5799	0	5196	12282	23857	24792	1781	
2	0	7552	12650	8193	26109	0	6	9196	9589	25346	25604	
3	0	11659	9162	13794	7081	0	0	9117	11370	36293	30377	
4	0	3287	11548	0	18857	0	0	3571	7449	36148	8584	
5	0	0	20268	5856	24571	0	0	0	22473	26556	15520	
6	12912	0	27852	11927	18383	0	11410	0	3533	5093	10889	
7	0	0	12706	13411	24702	0	17406	1168	0	19067	16769	
8	0	1	0	8858	14066	0	3732	7608	14998	13220	12589	
9	0	11517	0	9587	23185	1	16470	3534	18276	8601	0	
10	1936	5033	12950	9605	18275	3551	15243	10244	22202	11573	0	
11	1657	9943	19659	15083	22254	7941	8814	16662	8523	5465	5867	
12	2007	1696	17042	18844	19319	7540	8467	12809	0	5094	13833	
13	1	0	25580	22718	23132	4372	9366	7900	0	8910	19467	
14	4	1287	20556	10580	16634	3189	8168	14676	8703	6588	14809	
15	675	10539	4074	17098	16296	3171	16035	4917	16137	0	10908	
16	226	12169	15305	8519	9484	14993	7746	2889	15693	0	12543	
17	13362	6218	800	19914	13399	10456	14257	9549	20573	0	16143	
18	5123	18390	4413	4688	21138	9918	11435	13808	25223	0	15842	
19	5683	4296	11994	1598	9484	12423	5965	13844	19289	0	5968	
20	21902	15402	17872	8217	18570	4312	3690	8313	5928	0	8529	
21	16828	14687	13916	21020	18271	3391	0	23891	8661	0	9695	
22	5235	13976	12691	8144	12806	8152	7301	11357	7759	0	8199	
23	3063	12548	11357	32	10751	4905	13995	5050	0	1117	10999	
24	0	24340	16057	2434	7760	11780	12378	20499	7723	0	18311	
25	23	13851	3845	3929	3194	6557	12400	28593	11374	0	13640	
26	2879	21012	11650	0	0	645	4900	25119	5120	6878	0	
27	565	25767	6478	0	0	0	11204	12694	0	10407	0	
28	9905	4802	21591	15551	0	0	12399	9280	4437	9871	0	
29	15934		11604	16190	0	4195	10634	3559	13154	11875	46	
30	479		12312	1	0	3933	8116	10625	26167	8036	2282	
31	0		19288	0	0		13099	19807		4272		
TOTAL	120399	249972	388012	294604	403520	125425	269832	332561	338211	285202	309194	0
AVERAGE	5733	10868	13380	10911	16141	6271	9994	11468	13528	13581	12368	#DIV/0!
MAX	21902	25767	27852	22718	26109	14993	17406	28593	26167	36293	30377	0

MEMO

To: Melissa Blaise, Supervising Sanitary Engineer, Permitting
Toyin Fakilede, Sanitary Engineer 2, Permitting
Marshall Hoover, Environmental Analyst 3, Permitting

Cc: Traci Iott, Supervising Environmental Analyst
Rob Hust, Assistant Director, Planning and Standards

From: Rosemary Gatter-Evarts, Environmental Analyst 3, Planning and Standards

Date: December 1, 2015

Re: Nucor Steel discharge pipe to Quinnipiac River and Quinnipiac University Findings.

Quinnipiac University Professor Harry Pylypiw conducted stream surveys of the Quinnipiac River. In May he collected a sample of effluent from a pipe located just downstream of Toelles Road. Given the location and the obvious temperature increase, the pipe most likely belongs to Nucor Steel. Nucor Steel discharges contact cooling water to the Quinnipiac River at that location under NPDES permit # CT 00026974. The discharge does not occur every day.

Review of data submitted by NuCor Steel indicates that the effluent consistently meets whole effluent limits (LC50 >36%) and is typically non-acutely toxic (>90% survival in 100% effluent). Since 1995, Nucor/CT Steel has triggered a toxicity reduction evaluation twice. In 1995 the resulting toxicity was due to an addition of lime to their treatment system which resulted in a high pH and metals. The effluent was toxic to both *Daphnia pulex* and *Pimephales promelas*. In 1999 treatment chemicals and the shipment of new coagulant resulted in toxicity to the fish (*Pimephales promelas*). New treatment chemicals were vetted and the discharge has met permitted whole effluent limits since.

In May of this year an upset occurred where a mechanical seal used to separate the recycling system to the effluent pipe broke, and resulted in a maximum oil and grease concentration of 59.7mg/l and a BOD of 83mg/l. The seal was replaced and subsequent oil and grease numbers are in line with their NPDES permit. The sample collected by Quinnipiac University was also collected in May.

Based on the Newspaper article in the New Haven Independent and an email from Dr. Pylypiw The chemical results collected by Quinnipiac University from the Nucor Steel's discharge pipe indicated the presence of the following compounds: Di-ethyl- hexyl adipate, diethyl phthalate, butyl-benzyl phthalate, vinyl ether monomer, methyl-hexyl melamine and phenothiazine as well as a noticeable pink color. Data for each sampling event did not include concentrations of the given compounds, only that they were present. Without knowing the concentrations of the compounds present it is difficult to determine or predict impacts. It would also have been helpful to know if other compounds were tested for and not detected.

Di-ethyl- hexyl adipate, diethyl phthalate and butyl benzyl phthalates are common plasticizers used in PVC pipe to add flexibility. The phthalates however bond poorly with the PVC and thus can leach out.

These compounds can also be found in epoxy resins for coiled and flat steel panels, so it is possible if Nucor Steel uses an epoxy coated product, that the phthalates and adipate can be removed in the quenching process (USEPA 2002).

Methylhexyl melamine is manufactured next door by Allinex (Cytec) so the resin which was identified is most likely a result of either Allinex's discharge or possibly groundwater or leachate from their landfill. The current permit for Allinex does not have them analyze for melamines, formaldehyde or phthalates in their landfill leachate discharge. It should be possible to determine if these compounds are present in the groundwater based on studies submitted to Remediation. Certain compounds can permeate plastic pipes, but they are usually the low molecular weight PAHs, and the volatile compounds, especially gasoline derivative (USEPA, 2002). But these compounds were not reported.

The pink color can come from either a cooling tower/blowdown additive (Pfizer Global has multicolored discharges from their cooling towers). Also a pink color can be result from a bituminous coating and linings be exposed to soft or slightly acidic waters (EPA, 2002).

Phenothiazine is a most commonly used as either deworming (anti-helminthic) or an anti-psychotic (Encyclopedia Britannica, on line. So it does not seem likely that this compound would be present in the discharge. Only Wikipedia listed it as a stabilizer for plastics.

With the exception of di ethyl hexyl and butyl benzyl phthalates, the water quality criteria to protect either against aquatic life, or human health from fish consumption is quite high in the part per million range. Di ethyl hexyl phthalate has a water quality criteria value of 2.2 ug/l instream and butyl benzyl phthalate has an aquatic life criteria of 23 ug/l to protect against chronic impacts.

Compound	Chronic aquatic life criteria (ug/l)	WQC for Human health Fish consumption (ug/)
Bis(2 ethyl hexyl phthalate	1.1 (ORNL)	2.2
Butyl benzyl Phthalate	23(Ohio GLI)	1900
Diethyl phthalate	220(Ohio GLI)	44000

Both Allinex and Nucor Steel currently monitor for bis (2-ethyl hexyl) phthalate. Most recent data reported with the ATMRS are non- detect for both companies, but previous data had bis 2 ethyl hexyl phthalates detected in the 7-36 ppb range. Allinex monitors other phthalates which are present in low concentrations usually less than 10 ug/l.

Rosemary

Encyclopedia Britannica www.britannica.com

Joint Research Center, 2008. European Union Summary Risk Assessment Report - Bis (2-ethylhexyl) Phthalate (DEHP).OPOEC, Sweden.

USEPA (2002). Distribution Systems Issues Report: Permeation and Leaching. Office of Water. Washington D.C