Message

From: Rashid G. Hallaway [rhallaway@hhqventures.com]
Sent: 2/7/2018 2:00:04 PM
To: Greenwalt, Sarah [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=6c13775b8f424e90802669b87b135024-Greenwalt,]; Fotouhi, David [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=febaf0d56aab43f8a9174b18218c1182-Fotouhi, Da]
Subject: Sen. Young/Rep. Brooks Letter re: UAA
Attachments: 180206 - Young-Brooks Letter to EPA - Indianapolis CSO LTCP (attachment).pdf

Sarah/David,

I wanted to give you a heads up that Sen. Young and Rep. Brooks will be sending the attached letter to Administrator Pruitt later today expressing their support for Citizens Energy's UAA request. Please let me know if you have any questions or need additional information.

Thanks for your help and thoughtful consideration.

RH

Congress of the United States

Washington, DC 20510
February 6, 2018

Honorable Scott Pruitt
Administrator
Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, D.C. 20004

Dear Administrator Pruitt:

We are writing to request your assistance with the City of Indianapolis' Combined Sewer Overflow (CSO) Long Term Control Plan (LTCP) that was developed as part of a consent decree with the Environmental Protection Agency (EPA) in 2006. A critical component of the consent decree revolves around the anticipated issuance of the Agency's Use Attainability Analysis (UAA), which will ensure that investments culminate in compliance with stringent state and federal water quality standards. Unfortunately, EPA Region V has thus far been unwilling to honor the terms of the consent decree, and strongly discouraged the City of Indianapolis and State of Indiana from formally requesting the UAA.

The City of Indianapolis' $2 billion CSO plan is one of the largest water infrastructure projects in the country and will vastly improve public health and water quality in Central Indiana. We are told that Citizens Energy Group, who is now responsible for executing the LTCP, anticipates to exceed the water quality standards set forth in the consent decree and is projected by 2025 to achieve a 99 percent attainment rate. Additionally, Citizens Energy is ahead of schedule and $400 million under budget.

It is our understanding there are several steps associated with issuing the UAA, including a formal rule making process by the State of Indiana that could require more than 18 months to finalize. We respectfully request that you work with the State of Indiana and Citizens Energy Group to honor the terms of the consent decree, and consider the issuance of the UAA in a timely and expeditious manner.

Attached you will find a copy of Region V's correspondence regarding the UAA, which threatens to re-open the consent decree if the City requests the UAA. Given the Region V's firm position on the UAA, we believe this matter requires the attention and inclusion of your office.

Thank you for your hard work and service to our country. We are grateful for your leadership and thoughtful consideration of our request. Please do not hesitate to reach out to our offices if we can be of any assistance in this matter.

Sincerely,

Todd Young
United States Senator

Susan W. Brooks
Member of Congress

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF:

August 5, 2011 C-14J

David Sherman, Director
City of Indianapolis Department of Public Works
2460 City-County Building
200 E. Washington Street
Indianapolis, Indiana 46204

Re: *United States and State of Indiana v. City of Indianapolis*, No. 1:06-cv 1456-DFH-JMS

Dear Director Sherman:

This letter is being sent, at Indianapolis' request, to explain how the United States Environmental Protection Agency (U.S. EPA) intends to exercise its prosecutorial discretion under Paragraph 8(a) of the above-referenced consent decree.

Background

At the time that the 2006 consent decree was negotiated, Indianapolis estimated that the cost of the measures required by Sections VI and VII of the consent decree would be approximately $1,868,000 (in 2005 dollars). Indianapolis also provided estimates at that time regarding the costs of achieving higher levels of control than the Performance Criteria specified in Exhibit 1 to the consent decree. Based in large part on those cost estimates and other information developed by Indianapolis in the course of developing its Long Term Control Plan (LTCP), U.S. EPA and the Indiana Department of Environmental Management (IDEM) agreed with Indianapolis that it was likely there would be adequate information in the administrative record to allow IDEM and the Indiana Water Pollution Control Board to review and act on Indianapolis' request for a revision to water quality standards within five years of the date of lodging of the consent decree (*i.e.*, by October 4, 2011).

However, in the past four-and-one half years, Indianapolis has substantially revised and updated its LTCP. The parties, including U.S. EPA, agreed on amendments to the above-referenced consent decree to incorporate those LTCP revisions. Indianapolis has also substantially revised and updated its estimates as to (a) the cost of the CSO Control Measures required by the consent decree and (b) the costs to achieve higher levels of control than the levels expected to be achieved through construction of the CSO Control Measures. Moreover, Indianapolis is in the midst of transferring its sewer system and wastewater treatment plants and waterworks assets to Citizens Energy Group, a public charitable trust that Indianapolis asserts will serve as the Department of Public Utilities for the City of Indianapolis. Due to the potential synergies of consolidating Indianapolis' five operating utilities, that transaction is expected to reduce the anticipated rate of increase in future user fees for wastewater transport and treatment costs in Indianapolis. The extent of any future savings is not known at this time.

In light of these significant changes to the LTCP and to many of the financial assumptions that had been in place in 2006, and also given the likelihood that the sewer system and wastewater treatment plants will be acquired by the Citizens Energy Group in the near future, it does not appear that there will be adequate information in the administrative record to allow a water quality standards revision by October 4, 2011.

Indianapolis' Concern Regarding U.S. EPA's Discretionary Authority Under Consent Decree Paragraph 8(a) to Require a Revised CSO Control Measures Plan

Indianapolis has expressed concern that, if the water quality standards revision process is not completed by October 4, 2011, U.S. EPA has the authority under Paragraph 8(a) of the consent decree to require Indianapolis to develop and implement a Revised CSO Control Measures Plan to achieve a higher level of control than the Performance Criteria currently specified in Exhibit 1 to the consent decree. Specifically, Indianapolis asserts that the fact that the U.S. EPA has such authority, whether it chooses to exercise it or not, will cause Indianapolis significant uncertainty as it invests hundreds of millions of dollars to design and construct its CSO Control Measures in accordance with the Design and Performance Criteria specified in Exhibit 1.

To provide Indianapolis with greater certainty, this letter clarifies that, as long as Indianapolis (or its successors or assigns) is implementing its CSO Control Measures in compliance with all aspects of Section VII of the consent decree, U.S. EPA does not intend to exercise its authority under Paragraph 8(a) to require Indianapolis to develop and implement a Revised CSO Control Measures Plan. However, if Indianapolis is no longer in compliance with its implementation obligations, or chooses to proceed with a request for a revision to water quality standards and U.S. EPA has reason to believe that Indianapolis' request might not be approved, then U.S. EPA may consider exercising its discretionary authority under Paragraph 8(a) to require Indianapolis to develop and implement a Revised CSO Control Measures Plan.

This letter pertains solely to how U.S. EPA intends to exercise its discretionary authority under Paragraph 8(a) of the consent decree while Indianapolis is implementing the CSO Control Measures in accordance with Section VII of the consent decree. Nothing in this letter is intended to limit in any way the U.S. EPA's exercise of its authority under Section 8(a) of the consent decree after Indianapolis (or its successors or assigns) completes implementation of its CSO Control Measures. Moreover, the United States and U.S. EPA preserve their authority under other provisions of the consent decree, the Clean Water Act and U.S. EPA's implementing regulations, other provisions of federal law, to take action to (a) enforce the Clean Water Act, U.S. EPA's implementing regulations, Indianapolis' National Pollutant Discharge Elimination System permits, and the requirements of the consent decree; and (b) address any imminent or substantial endangerments. Finally, as noted above, nothing in this letter should be construed as limiting Indianapolis' right to pursue revisions to water quality standards in accordance with applicable state and federal laws.

Conclusion

Please contact me if you have any questions.

Sincerely,

Gary Prichard
Associate Regional Counsel

cc: Greg Sukys, DOJ
Beth Admire, IDEM

Message

From: Rashid G. Hallaway [rhallaway@hhqventures.com]
Sent: 2/7/2018 8:10:39 PM
To: Greenwalt, Sarah [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=6c13775b8f424e90802669b87b135024-Greenwalt,]
CC: Fotouhi, David [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=febaf0d56aab43f8a9174b18218c1182-Fotouhi, Da]
Subject: Re: Sen. Young/Rep. Brooks Letter re: UAA

Thanks, Sarah. Please let me know if you think it would be helpful for Gov. Holcomb to weigh in as well. I believe Bruno Pigott, the IDEM Commissioner, may have tried reaching out to you already. Just let me know your preference.

RH

Sent from my iPad

On Feb 7, 2018, at 1:24 PM, Greenwalt, Sarah <greenwalt.sarah@epa.gov> wrote:

> Thank you.
>
> **Sarah A. Greenwalt**
> Senior Counsel to the Administrator
>
> U.S. Environmental Protection Agency
> Work: Ex. 6 Cell: Ex. 6
> Greenwalt.Sarah@epa.gov
>
> **From:** Rashid G. Hallaway [mailto:rhallaway@hhqventures.com]
> **Sent:** Wednesday, February 7, 2018 9:00 AM
> **To:** Greenwalt, Sarah <greenwalt.sarah@epa.gov>; Fotouhi, David <Fotouhi.David@epa.gov>
> **Subject:** Sen. Young/Rep. Brooks Letter re: UAA
>
> Sarah/David,
>
> I wanted to give you a heads up that Sen. Young and Rep. Brooks will be sending the attached letter to Administrator Pruitt later today expressing their support for Citizens Energy's UAA request. Please let me know if you have any questions or need additional information.
>
> Thanks for your help and thoughtful consideration.
>
> RH

Message

From: Maui Orozco [Maui.Orozco@rubiconglobal.com]
Sent: 2/1/2018 4:46:24 PM
To: Nishida, Jane [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=65e465e683c54e1b825f1bad32dcb099-Nishida, Jane]; Greenwalt, Sarah [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=6c13775b8f424e90802669b87b135024-Greenwalt,]; Breen, Barry [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=1b44bce1a71e4a95acaf82f2fbc858b0-BBREEN]; McMurray, Forrest [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=344246fb2cb643bfab4f92fe016566e2-McMurray, F]; Hupp, Millan [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=92cac7b684b64f90953b753a01bee0d5-Hupp, Milla]
CC: Michael Allegretti [michael.allegretti@rubiconglobal.com]; David Rachelson [david.rachelson@rubiconglobal.com]
Subject: Re: Rubicon follow-up

Jane – Thank you for the connection! Please continue to keep us in the loop on developments of the great work you all are doing with Morocco and elsewhere abroad. While we are U.S.-focused (for now) we do have international strategic partners, and want to keep exploring opportunities to collaborate.

Barry – It's a pleasure to connect with you. We've had great conversations with your colleagues regarding our business and how our goals for waste and recycling align with the EPA's. There is some information about Rubicon and how we work with local governments below, but I would gladly hop on a phone call for a more detailed conversation to learn more about current EPA waste management programs and answer any questions you might have.

My best,
Maui

MAUI CHESKA OROZCO
Manager, Public Policy
maui.orozco@rubiconglobal.com
Ex. 6 *direct*

From: "Nishida, Jane" <Nishida.Jane@epa.gov>
Date: Tuesday, January 30, 2018 at 6:40 PM
To: Maui Orozco <Maui.Orozco@rubiconglobal.com>, "Greenwalt, Sarah" <greenwalt.sarah@epa.gov>, "McMurray, Forrest" <mcmurray.forrest@epa.gov>, "Hupp, Millan" <hupp.millan@epa.gov>
Cc: Michael Allegretti <michael.allegretti@rubiconglobal.com>, David Rachelson <david.rachelson@rubiconglobal.com>, "Breen, Barry" <Breen.Barry@epa.gov>
Subject: RE: Rubicon follow-up

Dear Maui,

Thank you for sharing information on Rubicon and your Smart Cities work, particularly as it relates to waste and recycling solutions. As we discussed on the phone last week, EPA has been working internationally with other countries on waste and recycling solutions which included a recent trip to Morocco.

EPA has also been working domestically with state and local governments on innovative waste and recycling approaches. EPA's Office of Land and Emergency Response (OLEM) is responsible for our waste management programs and I have copied Barry Breen, who is Principal Deputy Assistant Administrator of this office.

Please do not hesitate to contact me if you have additional questions,

Best regards,

Jane

Jane Nishida
Principal Deputy Assistant Administrator
Office of International and Tribal Affairs
U.S. Environmental Protection Agency
Tel: 202-564-1531

From: Maui Orozco [mailto:Maui.Orozco@rubiconglobal.com]
Sent: Friday, January 26, 2018 5:33 PM
To: Greenwalt, Sarah <greenwalt.sarah@epa.gov>; Nishida, Jane <Nishida.Jane@epa.gov>; McMurray, Forrest <mcmurray.forrest@epa.gov>; Hupp, Millan <hupp.millan@epa.gov>
Cc: Michael Allegretti <michael.allegretti@rubiconglobal.com>; David Rachelson <david.rachelson@rubiconglobal.com>
Subject: Rubicon follow-up

Sarah, Jane, Millan, and Forrest:

Thank you for taking the time to speak with us this week. We are honored that the Administrator sees the value of Rubicon's work and look forward to staying in touch with you all regarding opportunities to work together.

@Jane, as promised, below is a short description of Rubicon, our Smart Cities work, and how we interact with cities.

About Rubicon
Rubicon Global is a leader in sustainable, cloud-based waste and recycling solutions. Using its proprietary technology-enabled platform, the company provides comprehensive waste stream solutions that enable companies and governments to reduce operating expenses, divert waste from landfills, implement and improve recycling programs, track key metrics and work towards long-term sustainability goals, all with a focus on doing things in a way that are economically sustainable for businesses and governments. Rubicon is transforming an industry by empowering independent haulers and recyclers to grow their businesses. Through our extensive, pre-qualified network of haulers and partners in government, we currently service approximately 700,000 unique service locations worldwide.

About RUBICONSmartCity
RUBICONSmartCity is a suite of asset-light technology products that work together to improve the efficiency and effectiveness of municipal waste and recycling operations, while gathering and analyzing data around recycling participation and trends that can be used to guide long-term sustainability planning. At Rubicon, we believe that garbage trucks are a city's largest untapped resource. What other resource do local governments own that go up and down every single street of a city at least once a week? If equipped with the right technology, these trucks can turn into roving data centers, collecting pertinent data city-wide that can be used to increase visibility into a city's environmental impact and sustainability needs.

In 2017, Rubicon launched three municipal partnerships in Atlanta, GA, Santa Fe, NM, and Columbus, GA. In these cities, Rubicon deployed its Smart City technology into all city-owned waste collection vehicles to start tracking metrics around driver safety, route and operational efficiency, service confirmations, recycling participation, contamination issues, and more. Throughout the duration of the Atlanta pilot, 355 tons of recyclables were diverted from the landfill, which

delivered greenhouse gas emissions savings of 4,752 MTCO2e. This is the equivalent of eliminating 534,714 gallons of gasoline being consumed or 1,018 vehicles being driven for one year.

Please do not hesitate to reach out with any questions. We look forward to continuing the dialogue between Rubicon and the EPA.

My best,

Maui

MAUI CHESKA OROZCO
Manager, Public Policy
maui.orozco@rubiconglobal.com
Ex. 6 Direct

Message

From: Rashid G. Hallaway [rhallaway@hhqventures.com]
Sent: 1/23/2018 6:43:44 PM
To: Greenwalt, Sarah [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=6c13775b8f424e90802669b87b135024-Greenwalt,]
CC: Joseph Sutherland [JSutherland@citizensenergygroup.com]
Subject: Heads Up

Hi Sarah,

I want to give you a heads up that the Indiana Department of Environmental Management Commissioner, Bruno Pigott, may call you this week to express his support for the UAA. I know you have worked with Bruno and didn't want you to be caught off guard.

Also, I have a call with David Fotouhi tomorrow morning and look forward to speaking with him about the UAA. Thanks again for your help and consideration.

RH

Message

From: Rashid G. Hallaway [rhallaway@hhqventures.com]
Sent: 1/11/2018 10:38:26 PM
To: Greenwalt, Sarah [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=6c13775b8f424e90802669b87b135024-Greenwalt,]
CC: Joseph Sutherland [JSutherland@citizensenergygroup.com]
Subject: Thank You

Hi Sarah,

Thanks so much for meeting with Joe and me earlier today. We know you are very busy and appreciate you being so generous with your time.

Citizens Energy is committed to meeting and exceeding the attainment levels set forth in our consent decree, which will result in a 99% capture rate and significant improvements to public health and water quality in the City of Indianapolis. Please know we are not seeking any changes to the consent decree or subsequent amendments. We are only asking the agency to honor the terms of our agreement.

Thank you again for your time and thoughtful consideration.

Rashid

Message

From: Rashid G. Hallaway [rhallaway@hhqventures.com]
Sent: 1/11/2018 3:20:49 PM
To: Greenwalt, Sarah [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=6c13775b8f424e90802669b87b135024-Greenwalt,]
Subject: Re: Lobby

There are only two of us. Take your time. We wanted to get here early to get through security.

Sent from my iPhone

> On Jan 11, 2018, at 10:18 AM, Greenwalt, Sarah <greenwalt.sarah@epa.gov> wrote:
>
> She is out today, but I will be down as soon as I can to escort you up. How many are with you?
>
> Sent from my iPhone
>
>> On Jan 11, 2018, at 10:15 AM, Rashid G. Hallaway <rhallaway@hhqventures.com> wrote:
>>
>> We are through security and waiting in the north lobby. Tried calling Valerie but it went to voicemail.
>>
>> Sent from my iPhone

Message

From: Ward, Thomas [TWard@nahb.org]
Sent: 1/9/2018 6:51:15 PM
To: Greenwalt, Sarah [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=6c13775b8f424e90802669b87b135024-Greenwalt,]
Subject: Automatic reply: New filing

Thank you for contacting me by email. I will be out of the office until January 12 at NAHB's Builders Show.

If your email is urgent, please send a text to Ex. 6 Otherwise, I will respond to your message when I return.

Sincerely,

Tom Ward, National Association of Home Builders.

THOMAS WARD VP, Legal Advocacy

National Association of Home Builders
1201 15th Street, NW | Washington, DC 20005
d: Ex. 6 m: Ex. 6 e: TWard@nahb.org w: nahb.org

Message

From: David Rachelson [david.rachelson@rubiconglobal.com]
Sent: 1/9/2018 6:07:32 PM
To: Greenwalt, Sarah [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=6c13775b8f424e90802669b87b135024-Greenwalt,]; Hupp, Millan [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=92cac7b684b64f90953b753a01bee0d5-Hupp, Milla]
CC: Michael Allegretti [michael.allegretti@rubiconglobal.com]; Maui Orozco [Maui.Orozco@rubiconglobal.com]
Subject: Re: Introduction

Good afternoon Sarah (moving to Nate to bcc for the time being),

We look forward to connecting. Due to travel conflicts, could we please look at a time the week 1/22 or 1/29? Perhaps Thursday, January 25th, between 9AM and 2PM ET could work.

Please advise, and thanks.

Best regards,
-David

DAVID RACHELSON
Vice President of Sustainability
david.rachelson@rubiconglobal.com
Ex. 6 *direct*

From: "Greenwalt, Sarah" <greenwalt.sarah@epa.gov>
Date: Monday, January 8, 2018 at 8:42 PM
To: Nate Morris <NRM80@rubiconglobal.com>, "Hupp, Millan" <hupp.millan@epa.gov>
Cc: Michael Allegretti <michael.allegretti@rubiconglobal.com>, David Rachelson <david.rachelson@rubiconglobal.com>
Subject: RE: Introduction

Thank you both for the introduction. Michael and David—please let me know when you have a few minutes to chat.

Sarah A. Greenwalt
Senior Advisor to the Administrator
for Water and Cross-Cutting Issues

U.S. Environmental Protection Agency
Work: 202-564-1722 | Cell: Ex. 6
Greenwalt.Sarah@epa.gov

From: Nate Morris [mailto:NRM80@rubiconglobal.com]
Sent: Friday, January 5, 2018 6:20 PM
To: Hupp, Millan <hupp.millan@epa.gov>; Greenwalt, Sarah <greenwalt.sarah@epa.gov>
Cc: Michael Allegretti <michael.allegretti@rubiconglobal.com>; David Rachelson <david.rachelson@rubiconglobal.com>
Subject: Re: Introduction

MILLAN:

It is great to hear from you. Thank you for the introduction to Sarah.

SARAH:

It is a pleasure to be in touch with you. I am traveling for two weeks, so in the interest of time, I would like to connect you with Michael Allegretti and David Rachelson who lead public policy/smart cities and sustainability respectively. They will follow up to arrange a time to chat. We would love to be helpful to you.

All the best,

Nate

Nate Morris

Chairman & CEO

Rubicon Global

From: Hupp, Millan <hupp.millan@epa.gov>
Sent: Friday, January 5, 2018 2:35 PM
To: Nate Morris; Greenwalt, Sarah
Cc: Monique Williams
Subject: Introduction

Nate,

Good afternoon to you. I hope this email finds you well. I'd like to introduce you to Sarah Greenwalt. Sarah served as Administrator Pruitt's General Counsel when he was Attorney General back in Oklahoma and most recently was our

program lead for the Administrator's trip to Morocco. A major topic of the trip, and during her travels with EPA to Africa, was Waste Management. I shared with her that you and Administrator Pruitt had a great meeting on this topic and that a follow up conversation between she and you may prove to be constructive.

Warm regards,

Millan Hupp
Director of Scheduling and Advance
Office of the Administrator
Cell: Ex. 6 Email: hupp.millan@epa.gov

Message

From: Nate Morris [NRM80@rubiconglobal.com]
Sent: 1/9/2018 1:42:47 AM
To: Greenwalt, Sarah [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=6c13775b8f424e90802669b87b135024-Greenwalt,]
Subject: Automatic reply: Introduction

I am out of the office with limited access to email through January 23rd. Please contact Elizabeth Montoya at Elizabeth.Montoya@RubiconGlobal.com or **Ex. 6** with any urgent matters.

All the best,
Nate Morris

Message

From: Hupp, Millan [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=92CAC7B684B64F90953B753A01BEE0D5-HUPP, MILLA]
Sent: 1/17/2018 11:04:46 AM
To: Maui Orozco [Maui.Orozco@rubiconglobal.com]
CC: Nishida, Jane [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=65e465e683c54e1b825f1bad32dcb099-Nishida, Jane]; Greenwalt, Sarah [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=6c13775b8f424e90802669b87b135024-Greenwalt,]; Michael Allegretti [michael.allegretti@rubiconglobal.com]; David Rachelson [david.rachelson@rubiconglobal.com]
Subject: Re: Introduction

Maui,

A call in number would be deeply appreciated.

Thank you so much,

Millan Hupp
Director for Scheduling and Advance
202.380.7561
hupp.millan@epa.gov

Sent from my iPhone

On Jan 17, 2018, at 2:16 AM, Maui Orozco <Maui.Orozco@rubiconglobal.com> wrote:

> Hi Jane and Sarah,
>
> Is there a dial-in number that you prefer to use for our January 25th call? If not, I'm happy to send around a calendar notice with dial-in information.
>
> My best,
>
> Maui
>
> <image001.jpg>
>
> MAUI CHESKA OROZCO
> **Manager, Public Policy**
> maui.orozco@rubiconglobal.com
> Ex. 6 *direct*
> <image002.png><image003.png> <image004.png> <image005.png>

From: "Nishida, Jane" <Nishida.Jane@epa.gov>
Date: Wednesday, January 10, 2018 at 3:59 PM
To: "Greenwalt, Sarah" <greenwalt.sarah@epa.gov>, Maui Orozco <Maui.Orozco@rubiconglobal.com>, "Hupp, Millan" <hupp.millan@epa.gov>, David Rachelson <david.rachelson@rubiconglobal.com>
Cc: Michael Allegretti <michael.allegretti@rubiconglobal.com>
Subject: RE: Introduction

Thanks for sharing the invite – I would be happy to join the call.

Jane

Jane Nishida
Principal Deputy Assistant Administrator
Office of International and Tribal Affairs
U.S. Environmental Protection Agency
Tel: 202-564-1531

From: Greenwalt, Sarah
Sent: Tuesday, January 09, 2018 2:22 PM
To: Maui Orozco <Maui.Orozco@rubiconglobal.com>; Hupp, Millan <hupp.millan@epa.gov>; David Rachelson <david.rachelson@rubiconglobal.com>
Cc: Michael Allegretti <michael.allegretti@rubiconglobal.com>; Nishida, Jane <Nishida.Jane@epa.gov>
Subject: RE: Introduction

I will forward the invite to Jane Nishida, who is our Acting Assistant Administrator in our office of international affairs.

Sarah A. Greenwalt
Senior Advisor to the Administrator
for Water and Cross-Cutting Issues

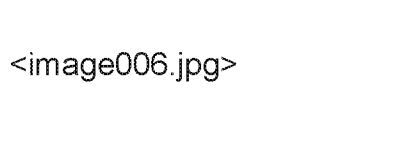
U.S. Environmental Protection Agency
Work: 202-564-1722 | Cell: Ex. 6
Greenwalt.Sarah@epa.gov

From: Maui Orozco [mailto:Maui.Orozco@rubiconglobal.com]
Sent: Tuesday, January 9, 2018 2:08 PM
To: Greenwalt, Sarah <greenwalt.sarah@epa.gov>; Hupp, Millan <hupp.millan@epa.gov>; David Rachelson <david.rachelson@rubiconglobal.com>
Cc: Michael Allegretti <michael.allegretti@rubiconglobal.com>
Subject: Re: Introduction

David – Thank you for looping us in.

Sarah and Millan – It's a pleasure to connect with you both. It looks like we are good to go for January 25th at 11:30am. Will anyone else on your team be joining us on this call?

Thank you, Maui



MAUI CHESKA OROZCO
Manager, Public Policy
maui.orozco@rubiconglobal.com
Ex. 6 *direct*

From: "Greenwalt, Sarah" <greenwalt.sarah@epa.gov>
Date: Tuesday, January 9, 2018 at 1:53 PM
To: "Hupp, Millan" <hupp.millan@epa.gov>, David Rachelson <david.rachelson@rubiconglobal.com>
Cc: Michael Allegretti <michael.allegretti@rubiconglobal.com>, Maui Orozco <Maui.Orozco@rubiconglobal.com>
Subject: RE: Introduction

Great, I'll put it on my calendar.

Sarah A. Greenwalt
Senior Advisor to the Administrator
for Water and Cross-Cutting Issues

U.S. Environmental Protection Agency
Work: 202-564-1722 | Cell: 202-816-1388
Greenwalt.Sarah@epa.gov

From: Hupp, Millan
Sent: Tuesday, January 9, 2018 1:32 PM
To: Greenwalt, Sarah <greenwalt.sarah@epa.gov>; David Rachelson <david.rachelson@rubiconglobal.com>
Cc: Michael Allegretti <michael.allegretti@rubiconglobal.com>; Maui Orozco <Maui.Orozco@rubiconglobal.com>
Subject: RE: Introduction

Certainly.

Millan Hupp
Director of Scheduling and Advance
Office of the Administrator
Cell: 202.380.7561 Email: hupp.millan@epa.gov

From: Greenwalt, Sarah
Sent: Tuesday, January 9, 2018 1:31 PM
To: David Rachelson <david.rachelson@rubiconglobal.com>; Hupp, Millan <hupp.millan@epa.gov>
Cc: Michael Allegretti <michael.allegretti@rubiconglobal.com>; Maui Orozco <Maui.Orozco@rubiconglobal.com>
Subject: RE: Introduction

Thank you David.

Millan, would Thursday, January 25th at 11:30 work for you?

Sarah A. Greenwalt
Senior Advisor to the Administrator
for Water and Cross-Cutting Issues

U.S. Environmental Protection Agency
Work: 202-564-1722 | Cell: 202-816-1388
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Subject: Re: Introduction

Good afternoon Sarah (moving to Nate to bcc for the time being),

We look forward to connecting. Due to travel conflicts, could we please look at a time the week 1/22 or 1/29? Perhaps Thursday, January 25th, between 9AM and 2PM ET could work.

Please advise, and thanks.

Best regards,
-David

DAVID RACHELSON
Vice President of Sustainability
david.rachelson@rubiconglobal.com
678-906-2601 *direct*

From: "Greenwalt, Sarah" <greenwalt.sarah@epa.gov>
Date: Monday, January 8, 2018 at 8:42 PM
To: Nate Morris <NRM80@rubiconglobal.com>, "Hupp, Millan" <hupp.millan@epa.gov>
Cc: Michael Allegretti <michael.allegretti@rubiconglobal.com>, David Rachelson <david.rachelson@rubiconglobal.com>
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Thank you both for the introduction. Michael and David—please let me know when you have a few minutes to chat.

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All the best,

Nate

Nate Morris

Chairman & CEO

Rubicon Global

From: Hupp, Millan <hupp.millan@epa.gov>
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Cc: Monique Williams
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Message

From: Nishida, Jane [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=65E465E683C54E1B825F1BAD32DCB099-NISHIDA, JANE]
Sent: 1/10/2018 8:59:15 PM
To: Greenwalt, Sarah [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=6c13775b8f424e90802669b87b135024-Greenwalt,]; Maui Orozco [Maui.Orozco@rubiconglobal.com]; Hupp, Millan [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=92cac7b684b64f90953b753a01bee0d5-Hupp, Milla]; David Rachelson [david.rachelson@rubiconglobal.com]
CC: Michael Allegretti [michael.allegretti@rubiconglobal.com]
Subject: RE: Introduction

Thanks for sharing the invite – I would be happy to join the call.

Jane

Jane Nishida
Principal Deputy Assistant Administrator
Office of International and Tribal Affairs
U.S. Environmental Protection Agency
Tel: 202-564-1531

From: Greenwalt, Sarah
Sent: Tuesday, January 09, 2018 2:22 PM
To: Maui Orozco <Maui.Orozco@rubiconglobal.com>; Hupp, Millan <hupp.millan@epa.gov>; David Rachelson <david.rachelson@rubiconglobal.com>
Cc: Michael Allegretti <michael.allegretti@rubiconglobal.com>; Nishida, Jane <Nishida.Jane@epa.gov>
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U.S. Environmental Protection Agency
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Thank you, Maui

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maui.orozco@rubiconglobal.com
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Chairman & CEO

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Sent: 1/10/2018 6:55:14 PM
To: Greenwalt, Sarah [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=6c13775b8f424e90802669b87b135024-Greenwalt,]; Hupp, Millan [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=92cac7b684b64f90953b753a01bee0d5-Hupp, Milla]; David Rachelson [david.rachelson@rubiconglobal.com]
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Subject: Re: Introduction

Sounds good. We look forward to our conversation!

My best, Maui

MAUI CHESKA OROZCO
Manager, Public Policy
maui.orozco@rubiconglobal.com
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Date: Tuesday, January 9, 2018 at 2:21 PM
To: Maui Orozco <Maui.Orozco@rubiconglobal.com>, "Hupp, Millan" <hupp.millan@epa.gov>, David Rachelson <david.rachelson@rubiconglobal.com>
Cc: Michael Allegretti <michael.allegretti@rubiconglobal.com>, "Nishida, Jane" <Nishida.Jane@epa.gov>
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Message

From: Maui Orozco [Maui.Orozco@rubiconglobal.com]
Sent: 1/16/2018 5:15:04 PM
To: Nishida, Jane [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=65e465e683c54e1b825f1bad32dcb099-Nishida, Jane]; Greenwalt, Sarah [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=6c13775b8f424e90802669b87b135024-Greenwalt,]
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Subject: Re: Introduction

Hi Jane and Sarah,

Is there a dial-in number that you prefer to use for our January 25th call? If not, I'm happy to send around a calendar notice with dial-in information.

My best,

Maui

MAUI CHESKA OROZCO
Manager, Public Policy
maui.orozco@rubiconglobal.com
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From: "Nishida, Jane" <Nishida.Jane@epa.gov>
Date: Wednesday, January 10, 2018 at 3:59 PM
To: "Greenwalt, Sarah" <greenwalt.sarah@epa.gov>, Maui Orozco <Maui.Orozco@rubiconglobal.com>, "Hupp, Millan" <hupp.millan@epa.gov>, David Rachelson <david.rachelson@rubiconglobal.com>
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Senior Advisor to the Administrator
for Water and Cross-Cutting Issues

U.S. Environmental Protection Agency
Work: 202-564-1722 | Cell: Ex. 6
Greenwalt.Sarah@epa.gov

From: Nate Morris [mailto:NRM80@rubiconglobal.com]
Sent: Friday, January 5, 2018 6:20 PM
To: Hupp, Millan <hupp.millan@epa.gov>; Greenwalt, Sarah <greenwalt.sarah@epa.gov>
Cc: Michael Allegretti <michael.allegretti@rubiconglobal.com>; David Rachelson <david.rachelson@rubiconglobal.com>
Subject: Re: Introduction

MILLAN:

It is great to hear from you. Thank you for the introduction to Sarah.

SARAH:

It is a pleasure to be in touch with you. I am traveling for two weeks, so in the interest of time, I would like to connect you with Michael Allegretti and David Rachelson who lead public policy/smart cities and sustainability respectively. They will follow up to arrange a time to chat. We would love to be helpful to you.

All the best,

Nate

Nate Morris

Chairman & CEO

Rubicon Global

From: Hupp, Millan <hupp.millan@epa.gov>
Sent: Friday, January 5, 2018 2:35 PM
To: Nate Morris; Greenwalt, Sarah
Cc: Monique Williams
Subject: Introduction

Nate,

Good afternoon to you. I hope this email finds you well. I'd like to introduce you to Sarah Greenwalt. Sarah served as Administrator Pruitt's General Counsel when he was Attorney General back in Oklahoma and most recently was our program lead for the Administrator's trip to Morocco. A major topic of the trip, and during her travels with EPA to Africa, was Waste Management. I shared with her that you and Administrator Pruitt had a great meeting on this topic and that a follow up conversation between she and you may prove to be constructive.

Warm regards,

Millan Hupp
Director of Scheduling and Advance
Office of the Administrator
Cell: Ex. 6 Email: hupp.millan@epa.gov

Message

From: Rashid G. Hallaway [rhallaway@hhqventures.com]
Sent: 1/2/2018 1:47:57 PM
To: Dominguez, Alexander [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5ced433b4ef54171864ed98a36cb7a5f-Dominguez,]
CC: Washington, Valerie [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9d031c02ce3a416dad0d421ee998d5a3-VWASHING]; Greenwalt, Sarah [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=6c13775b8f424e90802669b87b135024-Greenwalt,]
Subject: Re: Meeting Request

Hi Sarah,

Happy New Year! Sorry to keep bothering you. I wanted to follow up on my notes about meeting with Citizens Energy next week. We only need 30 minutes and are available on the afternoon of Jan 10th or morning of Jan 11th. Please advise what works best for you. Thanks for your consideration.

RH

On Dec 21, 2017, at 10:50 AM, Rashid G. Hallaway <rhallaway@hhqventures.com> wrote:

> Hi Valerie,
>
> Can you please let me know if Jan 10th or 11th works for Sarah. Thank you.
>
> RH
>
> Sent from my iPad
>
> On Dec 19, 2017, at 10:42 AM, Rashid G. Hallaway <rhallaway@hhqventures.com> wrote:
>
> > Thank you, Alex. Appreciate you connecting me with Valerie.
> >
> > Valerie, We are presently open on the afternoon of Jan 10th and morning of the 11th. Please advise what time works best for Sarah. Thanks so much for your help.
> >
> > RH
> >
> > Sent from my iPad
> >
> > On Dec 19, 2017, at 10:39 AM, Dominguez, Alexander <dominguez.alexander@epa.gov> wrote:
> >
> > > Hey Rashid,
> > >
> > > I unfortunately no longer work with Sarah and have moved to the Office of Air and Radiation. I am looping in Valerie Washington who handles Sarah's schedule and should be able to set something up for you.

Valerie - I know Sarah has been on work-travel quite a bit and I am not sure of her schedule on January 10th or 11th. If she is not available it would be worth checking if Lee Forsgren in the Office of Water and/or Patrick Traylor in the Office of Enforcement and Compliance would be able to meet with the group. Sarah and I previously met with Rashid and I know he will be able to provide you more details on the substance of the meeting request if necessary.

Thank you,
Alex

Alex Dominguez
Policy Analyst to the Principal Deputy
Office of Air and Radiation
U.S. Environmental Protection Agency

-----Original Message-----
From: Rashid G. Hallaway [mailto:rhallaway@hhqventures.com]
Sent: Monday, December 18, 2017 11:27 PM
To: Greenwalt, Sarah <greenwalt.sarah@epa.gov>; Dominguez, Alexander <dominguez.alexander@epa.gov>
Subject: Re: Meeting Request

Sarah/Alex,

Sorry to bother you. Just wanted to circle back regarding my meeting request on Jan 10th or 11th with Citizens Energy. Please advise which date works best for you.

Thanks again for your consideration.

RH

Message

From: Maui Orozco [Maui.Orozco@rubiconglobal.com]
Sent: 1/26/2018 10:33:02 PM
To: Greenwalt, Sarah [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=6c13775b8f424e90802669b87b135024-Greenwalt,]; Nishida, Jane [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=65e465e683c54e1b825f1bad32dcb099-Nishida, Jane]; McMurray, Forrest [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=344246fb2cb643bfab4f92fe016566e2-McMurray, F]; Hupp, Millan [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=92cac7b684b64f90953b753a01bee0d5-Hupp, Milla]
CC: Michael Allegretti [michael.allegretti@rubiconglobal.com]; David Rachelson [david.rachelson@rubiconglobal.com]
Subject: Rubicon follow-up

Sarah, Jane, Millan, and Forrest:

Thank you for taking the time to speak with us this week. We are honored that the Administrator sees the value of Rubicon's work and look forward to staying in touch with you all regarding opportunities to work together.

@Jane, as promised, below is a short description of Rubicon, our Smart Cities work, and how we interact with cities.

About Rubicon
Rubicon Global is a leader in sustainable, cloud-based waste and recycling solutions. Using its proprietary technology-enabled platform, the company provides comprehensive waste stream solutions that enable companies and governments to reduce operating expenses, divert waste from landfills, implement and improve recycling programs, track key metrics and work towards long-term sustainability goals, all with a focus on doing things in a way that are economically sustainable for businesses and governments. Rubicon is transforming an industry by empowering independent haulers and recyclers to grow their businesses. Through our extensive, pre-qualified network of haulers and partners in government, we currently service approximately 700,000 unique service locations worldwide.

About RUBICONSmartCity
RUBICONSmartCity is a suite of asset-light technology products that work together to improve the efficiency and effectiveness of municipal waste and recycling operations, while gathering and analyzing data around recycling participation and trends that can be used to guide long-term sustainability planning. At Rubicon, we believe that garbage trucks are a city's largest untapped resource. What other resource do local governments own that go up and down every single street of a city at least once a week? If equipped with the right technology, these trucks can turn into roving data centers, collecting pertinent data city-wide that can be used to increase visibility into a city's environmental impact and sustainability needs.

In 2017, Rubicon launched three municipal partnerships in Atlanta, GA, Santa Fe, NM, and Columbus, GA. In these cities, Rubicon deployed its Smart City technology into all city-owned waste collection vehicles to start tracking metrics around driver safety, route and operational efficiency, service confirmations, recycling participation, contamination issues, and more. Throughout the duration of the Atlanta pilot, 355 tons of recyclables were diverted from the landfill, which delivered greenhouse gas emissions savings of 4,752 MTCO2e. This is the equivalent of eliminating 534,714 gallons of gasoline being consumed or 1,018 vehicles being driven for one year.

Please do not hesitate to reach out with any questions. We look forward to continuing the dialogue between Rubicon and the EPA.

My best,

Maui

MAUI CHESKA OROZCO
Manager, Public Policy
maui.orozco@rubiconglobal.com
Ex. 6 *direct*

Message

From: Rashid G. Hallaway [rhallaway@hhqventures.com]
Sent: 12/12/2017 10:21:24 PM
To: Greenwalt, Sarah [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=6c13775b8f424e90802669b87b135024-Greenwalt,]; Dominguez, Alexander [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5ced433b4ef54171864ed98a36cb7a5f-Dominguez,]
Subject: Meeting Request

Hi Sarah & Alex,

I want to apologize for the delay in following up regarding Citizens Energy's consent decree. I will be sending you a memorandum this week that provides the legal justification and rationale for issuing a UAA. This took more time than we anticipated.

Joe Sutherland of Citizens and I would like to visit with you on the afternoon of January 10th or the morning of January 11th if your schedules permit. Please advise if either day works for your schedules.

Hope you have a safe and happy holidays. Thank you for your help and consideration.

Rashid Hallaway

Message

From: Monique Williams [Monique.Williams@rubiconglobal.com]
Sent: 11/13/2017 6:15:45 PM
To: Greenwalt, Sarah [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=6c13775b8f424e90802669b87b135024-Greenwalt,]
Subject: Automatic reply: Follow up from your meeting with Administrator Pruitt

I am out of the office today. Please contact Elizabeth Montoya at elizabeth.montoya@rubiconglobal.com for assistance.

Message

From: McDonough, Owen [OMcDonough@nahb.org]
Sent: 10/26/2017 3:24:26 PM
To: Greenwalt, Sarah [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=6c13775b8f424e90802669b87b135024-Greenwalt,]
CC: Ward, Thomas [TWard@nahb.org]
Subject: Meet Thursday Nov. 9th?

Sarah,

Nice to see you earlier this week.

Per our discussion, are you free to meet with Tom Ward and I on Thursday November 9th?

Thanks,
Owen

OWEN MCDONOUGH, PhD Program Manager, Environmental Policy

National Association of Home Builders
1201 15th Street, NW | Washington, DC 20005
d: Ex. 6 e: OMcDonough@nahb.org w: nahb.org

We Build Communities

2018 NAHB International Builders' Show
All Homes Start Here! Jan. 9-11, Orlando

Message

From: Rashid G. Hallaway [rhallaway@hhqventures.com]
Sent: 9/14/2017 10:01:02 PM
To: Dominguez, Alexander [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5ced433b4ef54171864ed98a36cb7a5f-Dominguez,]
CC: Sutherland, Joseph [JSutherland@citizensenergygroup.com]; Greenwalt, Sarah [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=6c13775b8f424e90802669b87b135024-Greenwalt,]
Subject: Re: Meeting

Yes, we are confirmed. Thank you again for the quick response.

Sent from my iPhone

On Sep 14, 2017, at 5:48 PM, Dominguez, Alexander <dominguez.alexander@epa.gov> wrote:

> Great. Rashid – If 9:30EST on Tuesday works for you let's lock that down.
>
> Conference Line: Ex. 6
> Passcode: Ex. 6
>
> Anything else just let me know.
>
> **From:** Sutherland, Joseph [mailto:JSutherland@citizensenergygroup.com]
> **Sent:** Thursday, September 14, 2017 4:52 PM
> **To:** Dominguez, Alexander <dominguez.alexander@epa.gov>
> **Cc:** Rashid G. Hallaway <rhallaway@hhqventures.com>; Greenwalt, Sarah <greenwalt.sarah@epa.gov>
> **Subject:** Re: Meeting
>
> 9:30 Tuesday would work great for me.
>
> Joseph M. Sutherland
> Director, Government & External Affairs
> 2020 North Meridian Street
> Indianapolis, Indiana 46202
> Phone: Ex. 6
> Cell: Ex. 6
> jsutherland@citizensenergygroup.com
>
> On Sep 14, 2017, at 4:47 PM, Dominguez, Alexander <dominguez.alexander@epa.gov> wrote:
>
> > WARNING: This email originated outside of Citizens Energy Group. **DO NOT CLICK** links or attachments unless you rec
> > the sender and know the content is safe.
> >
> > Sarah could do Monday 5:00PM EST or Tuesday 9:30, 10:30, or 11:00.
> >
> > Alex
> >
> > **From:** Rashid G. Hallaway [mailto:rhallaway@hhqventures.com]
> > **Sent:** Thursday, September 14, 2017 4:16 PM

To: Greenwalt, Sarah <greenwalt.sarah@epa.gov>
Cc: jsutherland@citizensenergygroup.com; Dominguez, Alexander <dominguez.alexander@epa.gov>
Subject: Re: Meeting

Hi Sarah,

Thanks so much for your note. I will coordinate times with Joe Sutherland and follow up with you this evening or tomorrow morning. Do you by chance have any availability next Monday or Tuesday?

RH

Sent from my iPad

On Sep 14, 2017, at 4:07 PM, Greenwalt, Sarah <greenwalt.sarah@epa.gov> wrote:

> Gentlemen,
>
> Thank you for taking the time to meet with Alex this afternoon. He has discussed with me some of the issues that were raised, and I think it would be beneficial to set up a call sometime next week. Please advise as to your availability.
>
> Best,
>
> **Sarah A. Greenwalt**
> Senior Advisor to the Administrator
> for Water and Cross-Cutting Issues
>
> U.S. Environmental Protection Agency
> Work: 202-564-1722 | Cell: Ex. 6
> Greenwalt.Sarah@epa.gov

Message

From: Rashid G. Hallaway [rhallaway@hhqventures.com]
Sent: 9/14/2017 8:50:50 PM
To: Dominguez, Alexander [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5ced433b4ef54171864ed98a36cb7a5f-Dominguez,]
CC: jsutherland@citizensenergygroup.com; Greenwalt, Sarah [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=6c13775b8f424e90802669b87b135024-Greenwalt,]
Subject: Re: Meeting

Thanks, Alex. I will circle back with you shortly to confirm a time.

Also, thank you for your time and interest earlier today. Appreciate your willingness to consider our request.

Sent from my iPhone

On Sep 14, 2017, at 4:48 PM, Dominguez, Alexander <dominguez.alexander@epa.gov> wrote:

> Sarah could do Monday 5:00PM EST or Tuesday 9:30, 10:30, or 11:00.
>
> Alex
>
> **From:** Rashid G. Hallaway [mailto:rhallaway@hhqventures.com]
> **Sent:** Thursday, September 14, 2017 4:16 PM
> **To:** Greenwalt, Sarah <greenwalt.sarah@epa.gov>
> **Cc:** jsutherland@citizensenergygroup.com; Dominguez, Alexander <dominguez.alexander@epa.gov>
> **Subject:** Re: Meeting
>
> Hi Sarah,
>
> Thanks so much for your note. I will coordinate times with Joe Sutherland and follow up with you this evening or tomorrow morning. Do you by chance have any availability next Monday or Tuesday?
>
> RH
>
> Sent from my iPad
>
> On Sep 14, 2017, at 4:07 PM, Greenwalt, Sarah <greenwalt.sarah@epa.gov> wrote:
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> > Gentlemen,
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> > Thank you for taking the time to meet with Alex this afternoon. He has discussed with me some of the issues that were raised, and I think it would be beneficial to set up a call sometime next week. Please advise as to your availability.
> >
> > Best,
> >
> > **Sarah A. Greenwalt**
> > Senior Advisor to the Administrator
> > for Water and Cross-Cutting Issues

U.S. Environmental Protection Agency
Work: 202-564-1722 | Cell: Ex. 6
Greenwalt.Sarah@epa.gov

Message

From: Rashid G. Hallaway [rhallaway@hhqventures.com]
Sent: 9/26/2017 6:29:38 PM
To: Greenwalt, Sarah [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=6c13775b8f424e90802669b87b135024-Greenwalt,]; Dominguez, Alexander [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5ced433b4ef54171864ed98a36cb7a5f-Dominguez,]
CC: Joseph Sutherland [JSutherland@citizensenergygroup.com]
Subject: Update

Sarah/Alex,

Want to let you know that Joe and I are working on a memorandum for you regarding our request the UAA. We hope to have something for you next week.

I also wanted to let you know that Joe served on a panel discussion late last week with Bruno Piggot (IDEM Commissioner) who publicly expressed his support for the UAA. Joe told Bruno that Sarah may be reaching out at some point in the near future.

Will touch base with you next week. Thanks so much for your help.

RH

Message

From: Dominguez, Alexander [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=5CED433B4EF54171864ED98A36CB7A5F-DOMINGUEZ,]
Sent: 9/18/2017 7:05:51 PM
To: Rashid G. Hallaway [rhallaway@hhqventures.com]; Greenwalt, Sarah [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=6c13775b8f424e90802669b87b135024-Greenwalt,]
CC: Sutherland, Joseph [JSutherland@citizensenergygroup.com]
Subject: RE: Meeting

We have a line not a problem:

Conference Line: Ex. 6
Passcode: Ex. 6

From: Rashid G. Hallaway [mailto:rhallaway@hhqventures.com]
Sent: Monday, September 18, 2017 3:04 PM
To: Greenwalt, Sarah <greenwalt.sarah@epa.gov>
Cc: Dominguez, Alexander <dominguez.alexander@epa.gov>; Sutherland, Joseph <JSutherland@citizensenergygroup.com>
Subject: Re: Meeting

Great. Thank you, Sarah. I will circulate a dial in number shortly.

RH

From: "Greenwalt, Sarah" <greenwalt.sarah@epa.gov>
Date: Monday, September 18, 2017 at 3:03 PM
To: "Rashid G. Hallaway" <rhallaway@hhqventures.com>
Cc: "Dominguez, Alexander" <dominguez.alexander@epa.gov>, Joseph Sutherland <JSutherland@citizensenergygroup.com>
Subject: Re: Meeting

It looks like the conflict I had was rescheduled to a later time. Let's keep the 9:30; sorry for the inconvenience.

Sent from my iPhone

On Sep 18, 2017, at 2:59 PM, Rashid G. Hallaway <rhallaway@hhqventures.com> wrote:

> Sarah/Alex,
>
> Any chance you could do 12pm tomorrow?
>
> RH
>
> ---
>
> **From:** "Greenwalt, Sarah" <greenwalt.sarah@epa.gov>
> **Date:** Monday, September 18, 2017 at 1:36 PM
> **To:** "Rashid G. Hallaway" <rhallaway@hhqventures.com>
> **Cc:** "Dominguez, Alexander" <dominguez.alexander@epa.gov>, Joseph Sutherland <JSutherland@citizensenergygroup.com>
> **Subject:** Re: Meeting

Thank you for your flexibility. I apologize for the sudden change.

Sent from my iPhone

On Sep 18, 2017, at 1:32 PM, Rashid G. Hallaway <rhallaway@hhqventures.com> wrote:

> I'm available. Let me check with Joe and get back to you.
>
> Sent from my iPhone
>
> On Sep 18, 2017, at 12:04 PM, Dominguez, Alexander <dominguez.alexander@epa.gov> wrote:
>
> > Apologies all would you be able to move this call to 11:30 or 12:00 tomorrow. Sarah had a meeting come up that is unable to be rescheduled.
> >
> > If those times do not work – Thursday between 10-12:00 is open as well.
> >
> > **Alex Dominguez**
> > *Policy Analyst to the Senior Advisors to*
> > *the Administrator for Air and Water*
> > U.S. Environmental Protection Agency
> >
> > **From:** Sutherland, Joseph
> > [mailto:JSutherland@citizensenergygroup.com]
> > **Sent:** Thursday, September 14, 2017 4:52 PM
> > **To:** Dominguez, Alexander <dominguez.alexander@epa.gov>
> > **Cc:** Rashid G. Hallaway <rhallaway@hhqventures.com>; Greenwalt, Sarah <greenwalt.sarah@epa.gov>
> > **Subject:** Re: Meeting
> >
> > 9:30 Tuesday would work great for me.
> >
> > Joseph M. Sutherland
> > Director, Government & External Affairs
> > 2020 North Meridian Street
> > Indianapolis, Indiana 46202
> > Phone Ex. 6
> > Cell: Ex. 6
> > jsutherland@citizensenergygroup.com
> >
> > On Sep 14, 2017, at 4:47 PM, Dominguez, Alexander <dominguez.alexander@epa.gov> wrote:
> >
> > >

Sarah could do Monday 5:00PM EST or Tuesday 9:30, 10:30, or 11:00.

Alex

From: Rashid G. Hallaway [mailto:rhallaway@hhqventures.com]
Sent: Thursday, September 14, 2017 4:16 PM
To: Greenwalt, Sarah <greenwalt.sarah@epa.gov>
Cc: jsutherland@citizensenergygroup.com; Dominguez, Alexander <dominguez.alexander@epa.gov>
Subject: Re: Meeting

Hi Sarah,

Thanks so much for your note. I will coordinate times with Joe Sutherland and follow up with you this evening or tomorrow morning. Do you by chance have any availability next Monday or Tuesday?

RH

Sent from my iPad

On Sep 14, 2017, at 4:07 PM, Greenwalt, Sarah <greenwalt.sarah@epa.gov> wrote:

> Gentlemen,
>
> Thank you for taking the time to meet with Alex this afternoon. He has discussed with me some of the issues that were raised, and I think it would be beneficial to set up a call sometime next week. Please advise as to your availability.
>
> Best,
>
> **Sarah A. Greenwalt**
> Senior Advisor to the Administrator
> for Water and Cross-Cutting Issues
>
> U.S. Environmental Protection Agency
> Work: 202-564-1722 | Cell: Ex. 6 Ex. 6
> Greenwalt.Sarah@epa.gov

Message

From: Rashid G. Hallaway [rhallaway@hhqventures.com]
Sent: 9/18/2017 5:39:05 PM
To: Greenwalt, Sarah [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=6c13775b8f424e90802669b87b135024-Greenwalt,]
CC: Dominguez, Alexander [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5ced433b4ef54171864ed98a36cb7a5f-Dominguez,]; Sutherland, Joseph [JSutherland@citizensenergygroup.com]
Subject: Re: Meeting

Not a problem. Completely understand. We appreciate you making time. Will confirm with Joe and circle back soon.

Sent from my iPhone

On Sep 18, 2017, at 1:36 PM, Greenwalt, Sarah <greenwalt.sarah@epa.gov> wrote:

> Thank you for your flexibility. I apologize for the sudden change.
>
> Sent from my iPhone
>
> On Sep 18, 2017, at 1:32 PM, Rashid G. Hallaway <rhallaway@hhqventures.com> wrote:
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> > I'm available. Let me check with Joe and get back to you.
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> >
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> > > If those times do not work – Thursday between 10-12:00 is open as well.
> > >
> > > **Alex Dominguez**
> > > *Policy Analyst to the Senior Advisors to*
> > > *the Administrator for Air and Water*
> > > U.S. Environmental Protection Agency
> > >
> > > **From:** Sutherland, Joseph
> > > [mailto:JSutherland@citizensenergygroup.com]
> > > **Sent:** Thursday, September 14, 2017 4:52 PM
> > > **To:** Dominguez, Alexander <dominguez.alexander@epa.gov>
> > > **Cc:** Rashid G. Hallaway <rhallaway@hhqventures.com>; Greenwalt, Sarah <greenwalt.sarah@epa.gov>
> > > **Subject:** Re: Meeting
> > >
> > > 9:30 Tuesday would work great for me.
> > >
> > > Joseph M. Sutherland

Director, Government & External Affairs
2020 North Meridian Street
Indianapolis, Indiana 46202
Phone: Ex. 6
Cell: Ex. 6
jsutherland@citizensenergygroup.com

On Sep 14, 2017, at 4:47 PM, Dominguez, Alexander <dominguez.alexander@epa.gov> wrote:

Sarah could do Monday 5:00PM EST or Tuesday 9:30, 10:30, or 11:00.

Alex

From: Rashid G. Hallaway [mailto:rhallaway@hhqventures.com]
Sent: Thursday, September 14, 2017 4:16 PM
To: Greenwalt, Sarah <greenwalt.sarah@epa.gov>
Cc: jsutherland@citizensenergygroup.com; Dominguez, Alexander <dominguez.alexander@epa.gov>
Subject: Re: Meeting

Hi Sarah,

Thanks so much for your note. I will coordinate times with Joe Sutherland and follow up with you this evening or tomorrow morning. Do you by chance have any availability next Monday or Tuesday?

RH

Sent from my iPad

On Sep 14, 2017, at 4:07 PM, Greenwalt, Sarah <greenwalt.sarah@epa.gov> wrote:

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>
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>
> Best,

Sarah A. Greenwalt
Senior Advisor to the Administrator
for Water and Cross-Cutting Issues

U.S. Environmental Protection
Agency
Work: 202-564-1722 | Cell: Ex. 6
Ex. 6
Greenwalt.Sarah@epa.gov

Message

From: Paul Balserak [pbalserak@steel.org]
Sent: 9/5/2017 3:41:17 PM
To: Greenwalt, Sarah [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=6c13775b8f424e90802669b87b135024-Greenwalt,]
Subject: RE: Follow-up regarding Conduit Theory

That's great to hear, Sarah. Happy "Monday" (that's really a Tuesday).

Best,
Paul

Paul Balserak
Vice President, Environment

American Iron and Steel Institute
25 Massachusetts Ave. NW, Suite 800
Washington, DC 20001
Ex. 6 (office)
(mobile)

From: Greenwalt, Sarah [mailto:greenwalt.sarah@epa.gov]
Sent: Friday, September 01, 2017 7:54 PM
To: Paul Balserak; Dominguez, Alexander
Subject: RE: Follow-up regarding Conduit Theory

Paul,

Thank you so much for the chart. This is extremely helpful. Hope you have an enjoyable weekend.

Best,

Sarah A. Greenwalt
Senior Advisor to the Administrator
for Water and Cross-Cutting Issues

U.S. Environmental Protection Agency
Work: 202-564-1722 | Cell: Ex. 6
Greenwalt.Sarah@epa.gov

From: Paul Balserak [mailto:pbalserak@steel.org]
Sent: Wednesday, August 30, 2017 5:33 PM
To: Greenwalt, Sarah <greenwalt.sarah@epa.gov>; Dominguez, Alexander <dominguez.alexander@epa.gov>
Subject: Follow-up regarding Conduit Theory

Dear Sarah and Alex,

Thank you again for the time and attention you have given us regarding groundwater discharges being treated as point sources under the Clean Water Act. Per our discussion with you on August 11th, we have attached a summary of the numerous cases where the courts decided whether hydraulically connected groundwater is subject to the CWA and NPDES permitting as a point source. You will note the courts are split on the treatment of groundwater discharges as a

point source. The text and legislative history of the CWA clearly indicate the CWA was never intended to regulate discharges to groundwater. Some courts have determined that discharges to groundwater with a hydraulic connection to surface water is not a point source. However, over the past few years, we have observed renewed attempts to expand the definition of a point source through litigation to capture a hydraulic connection to surface water as a point source using the "conduit theory". In our opinion, courts have made determinations beyond the original intent of the CWA. We believe there is an opportunity for the Agency to clarify the intent of the CWA with respect to defining a point source.

We would like to reiterate that we are not advocating for no regulation of discharges to groundwater. Rather, we believe there are existing regulatory frameworks that are designed to regulate discharges to groundwater, and currently are being employed to just that end without reference to the NPDES point source regime (e.g., Minnesota's SDS program, Michigan's groundwater regulations, other state and federal regulations (such as RCRA Correction Action, etc)). It is our position that these existing programs are the most appropriate framework for regulating discharges to groundwater, not the CWA or the courts.

A recap of the recommended options to address emerging opportunities to provide clarity and consistency are outlined below:

1) We believe it would bring clarity to what is becoming a more confused area of permitting if EPA were to provide written clarification, with regards to both law and policy, that groundwater discharges or hydraulically connected groundwater to surface water are not point sources and do not require NPDES permits.
2) Although not directly on point with respect to the given rule, as we discussed, another possible avenue for clarification could be the preamble of the anticipated WOTUS rulemaking, since groundwater was addressed in the last iteration of this rule.
3) And finally, it is our sense that lasting clarity on this issue will require federal rulemaking.

Thanks again for your time, and please do not hesitate to ask if there is any way we can assist or offer further clarification of the items outlined above.

Thanks very much,

Paul

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Message

From: Paul Balserak [pbalserak@steel.org]
Sent: 8/30/2017 9:32:40 PM
To: Greenwalt, Sarah [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=6c13775b8f424e90802669b87b135024-Greenwalt,]; Dominguez, Alexander [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5ced433b4ef54171864ed98a36cb7a5f-Dominguez,]
Subject: Follow-up regarding Conduit Theory
Attachments: Chart of Case Law on Discharges to Groundwater Hydrologically Connected to Navigable Waters (ELG. 8-22-2017).pdf

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ENVIRONMENTAL LAW GROUP

CASE LAW ON DISCHARGES TO GROUNDWATER THAT IS HYDROLOGICALLY CONNECTED TO SURFACE WATER

OPINION	COURT & YEAR	PROCEDURAL POSTURE	KEY FACTS OF THE CASE	DID THE COURT HOLD THAT HYDROLOGICALLY CONNECTED GROUNDWATER IS SUBJECT TO CWA JURISDICTION?	DID THE COURT FIND A JURISDICTIONAL DISCHARGE UNDER THE FACTS OF THIS CASE?	KEY ELEMENTS OF THE COURT'S REASONING
FIRST CIRCUIT						
Hernandez v. Esso Standard Oil Co., 599 F. Supp. 2d 175	District of Puerto Rico, 2009	Motions regarding whether to hold a jury or bench trial, in which defendants argued no right to a jury trial existed because no civil penalties were implicated under RCRA or CWA.	Plaintiffs alleged that gasoline from underground storage tanks owned by Esso reached navigable waters through groundwater hydrologically connected to the Piñonas River.	Yes	No. A factual determination still needed to be made about whether "contamination of the groundwater has an adverse impact on waters of the United States."	The court held that "the CWA extends federal jurisdiction over groundwater that is hydrologically connected to surface waters that are themselves waters of the United States." However, in each case, "there is a factual determination to be made as to the relationship between the groundwater…and the surface water[]…which may lead the fact finder to conclude that contamination of the groundwater has an adverse impact on waters of the United States."
Town of Norfolk v. U.S. Army Corps of Eng'rs, 968 F.2d 1438	First Circuit Court of Appeals, 1992[1]	Municipality's appeal of district court decision upholding decision of Army Corps of Engineers to issue a CWA section 404 permit to allow placement of fill in artificial wetlands, in connection with Boston Harbor cleanup project.	The town of Norfolk challenged the decision of the Corps to issue a permit under the CWA without considering groundwater resources as part of the "aquatic ecosystem" for purposes of the practicable alternatives analysis. Plaintiffs argued that groundwater resources should be considered because they are "waters of the U.S.," despite the Corps' interpretation of this definition to exclude groundwater.	No. The court deferred to the Corps' interpretation of "waters of the United States" as referring only to surface waters.	N/A	The court deferred to the Corps' interpretation of "waters of the United States," which excluded groundwater. With regard to whether "waters of the United States" should include groundwaters connected to surface waters, the court stated it agreed with the Corps that "since such a determination ultimately involves an ecological judgment about the relationship between surface waters and groundwaters, it should be left in the first instance to the discretion of the EPA and the Corps." The court affirmed the district court decision in favor of the Corps.
SECOND CIRCUT						
26 Crown Associates, LLC v. Greater New Haven Regional Water Pollution Control Authority, No. 3:15-cv-1439, 2017 WL 2960506	District of Connecticut, 2017	Defendant city's motion to dismiss plaintiffs' claims, which included a violation of the CWA's NPDES permit requirement.	Plaintiffs owned an apartment building in New Haven and alleged that the city's failure to properly operate its combined sewer system resulted in backflows of sewage into their building's basement. Plaintiffs also alleged that backflows into the basement of their building "seep into the ground and eventually to the ground waters below, and further that these ground waters in turn are 'hydraulically [sic] connected to the various streams that empty into the Long Island Sound'" in violation of the CWA's NPDES permit requirement.	No	N/A	The court first concluded that under *Rapanos* the plaintiffs had fallen well short of showing a surface connection as the plurality would require, or even a significant nexus as Justice Kennedy would require. The court went on to note that even if it assumed plaintiffs had alleged facts to show the backflows in their basement had a significant effect through groundwater migration on the Long Island Sound, this would still fall short of alleging a CWA violation for two reasons: First, the court held "ground water itself is not navigable, and so the act of polluting ground water does not of itself violate the [CWA]." Second, the court colorfully concluded that "[a]bsent exceptional

[1] Decisions by federal courts of appeal are shaded blue.

CASE LAW ON DISCHARGES TO GROUNDWATER THAT IS HYDROLOGICALLY CONNECTED TO SURFACE WATER

OPINION	COURT & YEAR	PROCEDURAL POSTURE	KEY FACTS OF THE CASE	DID THE COURT HOLD THAT HYDROLOGICALLY CONNECTED GROUNDWATER IS SUBJECT TO CWA JURISDICTION?	DID THE COURT FIND A JURISDICTIONAL DISCHARGE UNDER THE FACTS OF THIS CASE?	KEY ELEMENTS OF THE COURT'S REASONING
						proof of something akin to a mythical Styx-like subterranean river, a diffuse medium like ground water for the passive migration of pollutants to navigable waters cannot constitute a 'point source' within the meaning of the Clean Water Act." Pollution by ground water migration, the court held, is not a "a discrete and channelized conveyance" but rather is nonpoint source pollution.
Waterkeeper Alliance, Inc. v. U.S. Envtl. Prot. Agency, 399 F.3d 486	Second Circuit Court of Appeals, 2005	Challenge by various environmental and farm groups to EPA rule promulgating CWA technology-based performance standards for various categories of CAFOs.	Environmental-group plaintiffs challenged EPA's decision to remove from the final rule proposed provisions regulating discharges from CAFOs to surface water via hydrologically connected groundwater, which would have been the first (and only) time EPA promulgated rules regarding such discharges.	Yes (implicitly, by upholding EPA's decision to regulate groundwater-to-surface water discharges on a case-by-case basis)	N/A	The court upheld EPA's case-by-case approach to assessing jurisdiction for groundwater, noting that "groundwater-related requirements are highly dependent on site-specific variables and that, accordingly, such requirements are more effectively evaluated and implemented on a case-by-case basis, rather than imposed uniformly."
Mut. Life Ins. Co. of N.Y. v. Mobil Corp., No. 96-1781, 1998 WL 160820	Northern District of New York, 1998	Motion to dismiss CWA and other claims brought by shopping center against Mobil truck driver that released 750 gallons of gas into groundwater.	Plaintiffs alleged that this incident caused groundwater contamination on their property and the groundwater was hydrologically connected to wetlands and Bear Trap Creek, both navigable.	Yes	Not decided	The court agreed with case law holding that the "CWA does encompass ground waters that are hydrologically connected to regulated surface waters" and concluded that plaintiff had sufficiently pled a cause of action by alleging contamination via groundwater. The court noted, however, that "[a] general hydrological connection among all waters will be insufficient," and plaintiffs "will have to trace pollutants from their source to surface waters."
New York v. United States, 620 F. Supp. 374	Eastern District of New York, 1985	Motion for summary judgment brought by defendant United States. The court granted the U.S. summary judgment on the state's CWA claim on the basis of sovereign immunity.	Plaintiffs alleged that the defendants contaminated groundwater underlying former Suffolk County Air Force Base and the surrounding area with jet fuel and hydrocarbons. The plaintiffs alleged the contamination of the groundwater posed a threat to downgradient surface waters.	Yes (implicitly)	Not decided	The court declined to reach the defendants' legislative history arguments that the scope of the CWA does not cover groundwater. The court declined because, even though the discharges at issue were solely to groundwater, "it is clear that plaintiff has alleged that the pollutants threaten to contaminate [several] undisputably [sic] navigable waters."
THIRD CIRCUIT						
Aguilar v. Ken's Marine and Oil Service, Inc., No. 14–6735, 2016 WL 7234117	District of New Jersey, 2016	The court ruled on defendants' motion to dismiss plaintiffs' claims, including a claim under the Oil Pollution Act of 1990, 33 U.S.C. § 2701, et seq. (OPA), which imposes liability on "each responsible party	This lawsuit arose from the alleged discharge of oil and chemicals from defendants' properties to plaintiffs' properties during Superstorm Sandy. The opinion provides limited facts, but it appears that plaintiffs alleged in part that defendants' release of oil	No	N/A	In dismissing plaintiffs' OPA claim, the court held that plaintiffs failed to assert that defendants released oil into any "navigable waters or adjoining shorelines or the exclusive economic zone." In a footnote, the court went on to note that to the extent plaintiffs claimed groundwater constituted "navigable water," the claim would still fail. The court held

CASE LAW ON DISCHARGES TO GROUNDWATER THAT IS HYDROLOGICALLY CONNECTED TO SURFACE WATER

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		for a vessel or a facility from which oil is discharged, or which poses the substantial threat of a discharge of oil, *into or upon the navigable waters* or adjoining shorelines or the exclusive economic zone," 33 U.S.C. § 2702(a) (emphasis added). The OPA definition of "navigable waters" is the same as the definition of "navigable waters" in the CWA. *See* 33 U.S.C. § 1362(7).	and chemicals into groundwater constituted a release into "navigable waters."			("as have most courts to address the issue") that "groundwater does not fall within the meaning of 'navigable waters' under the OPA," and, citing Tri–Realty Co., Chevron v. Apex Oil, and Rice v. Harken, for the proposition that this was the case "regardless of whether that groundwater is eventually or somehow 'hydrologically connected' to navigable surface waters."
Raritan Baykeeper, Inc. v. NL Indus., Inc., No. 09-4117, 2013 WL 103880	District of New Jersey, 2013	Various dispositive motions including defendants' motion to dismiss plaintiffs' CWA citizen suit.	The site at issue was surrounded on 3 sides by the Raritan River. NL Industries allegedly violated the CWA by discharging, without an NPDES permit, arsenic, copper, lead, nickel, and zinc into the river through various means including percolation to groundwater that then migrates to the river. Concentrations of these pollutants were higher where groundwater discharged into the river.	Yes	Not decided	In rejecting defendants' motion to dismiss, the court—noting a split in case law regarding "whether groundwater is a point source," and apparently siding with those courts that concluded groundwater can be a point source—held that plaintiffs had sufficiently pled the "point source" element of a CWA claim by alleging that the groundwater is hydrologically connected to Raritan River.
Tri-Realty Co. v. Ursinus Coll., No. 11-5885, 2013 WL 6164092	Eastern District of Pennsylvania, 2013	Defendant's summary judgment motion on plaintiff's RCRA and CWA claims regarding fuel oil discharged to groundwater from USTs located on defendant's property.	Pollution from USTs took approximately five to six years to travel from groundwater into navigable surface waters.	No	N/A	The court disagreed that "given its natural physical attributes, groundwater could fairly be described as a "discernible, confined and discrete conveyance" (i.e., a "point source"). Accordingly, the Court held that "the diffuse downgradient migration of pollutants on top of or through soil and groundwater alleged here is nonpoint source pollution outside the purview of the CWA."
FOURTH CIRCUIT						
Sierra Club v. Virginia Electric and Power Company, ___F.Supp.3d ___ 2017 WL 1095039	Eastern District of Virginia, 2017	The Sierra Club sued Virginia Electric and Power Company d/b/a Dominion Virginia Power for violations of the CWA. The court's opinion followed a bench trial on the merits.	The violations stem from discharges of arsenic from Dominion's Chesapeake Energy Center (CEC) into the surrounding surface waters. For roughly fifty years, CEC burnt coal to generate electricity. Dominion stored ash from the burnt coal in piles and lagoons on the CEC site. The piles and lagoons, in turn, conveyed arsenic created in the power plant to groundwater and, through the groundwater, to surrounding	Yes	Yes	The court noted the split in courts but stated that it found persuasive those cases that hold that discharges to groundwater hydrologically connected to surface water are covered by the CWA. "Congress intended the CWA to protect the water quality of the nation's surface water. Where the facts show a direct hydrological connection between ground water and surface water, that goal would be defeated if the CWA's jurisdiction did not extend to discharges to that groundwater." Here, the court found that there was a direct

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			surface waters. Sierra Club claimed the unpermitted discharge via groundwater violated the CWA's NPDES permit requirement.			hydrological connection to surface water. The court was also persuaded by EPA's position statements regarding discharges via groundwater, and rejected defendant's argument that the unofficial nature of the policy statements mean they are not entitled to deference. The court concluded the defendant had violated the CWA.
Upstate Forever v. Kinder Morgan Energy Partners, L.P., ___ F.Supp.3d ___, 2017 WL 2266875	District of South Carolina, 2017	Nonprofit environmental advocacy organizations filed citizen suit against parent company and its subsidiary pipeline owner, claiming violation of Clean Water Act (CWA) due to pipeline leak. Defendants moved to dismiss for lack of subject matter jurisdiction and for failure to state claim.	Spill from the underground pipeline discharged an estimated 369,000 gallons of gasoline and petroleum products into the soil. Plaintiffs alleged that contaminants entered groundwater hydrologically connected to creeks and wetlands located in vicinity of spill.	No	N/A	In granting the motion to dismiss, the court was persuaded by the fact that "the two circuit courts to address this issue [7th Circuit in *Oconomowoc Lake* and 5th Circuit in *Rice*] have concluded that 'navigable waters' does not include groundwater that is hydrologically connected to surface waters." The court agreed with the Eastern District of North Carolina in *Cape Fear* that "Congress did not intend for the CWA to extend federal regulatory authority over groundwater, regardless of whether that groundwater is eventually or somehow 'hydrologically connected' to navigable surface waters."
Yadkin Riverkeeper, Inc. v. Duke Energy Carolinas, LLC, 141 F.Supp.3d 428	Middle District of North Carolina, 2015	Defendant Duke moved to dismiss citizen enforcement action under the CWA for failure to state a claim that seeps from coal ash lagoons into the Radkin River was a violation of the CWA.	Plaintiff alleged violations of NPDES permit for unpermitted discharges of wastewater through engineered and non-engineered seeps and an unpermitted pipe directly into waters of the U.S. It also alleged pollutants from the coal ash lagoons entered the groundwater, which is hydrologically connected to the Yadkin River and High Rock Lake, and contaminated both.	Yes	Not decided	The Court wrote that it "agrees with the line of cases affirming CWA jurisdiction over the discharge of pollutants to navigable surface waters via hydrologically connected groundwater, which serves as a conduit between the point source and the navigable waters." It framed the issue "not as whether the CWA regulates the discharge of pollutants into groundwater itself but rather whether the CWA regulates the discharge of pollutants to navigable waters via groundwater." The court concluded that the coal ash lagoons at issue were "point sources." The court also cited the goal of the CWA to protect the quality of the nation's waters. The Court denied defendant's request to dismiss the claim for failure to state a recognizable claim.
Chevron U.S.A. Inc. v. Apex Oil Company, Inc., 113 F.Supp.3d 807	District of Maryland, 2015	Energy corporation brought action against oil company and its parent company under various statutes including the Oil Pollution Act (OPA), alleging a discharge of oil to "navigable waters" and seeking to recover remediation costs incurred as a result of contamination from an underground pipeline allegedly	This dispute involved alleged ongoing releases of petroleum products from a 3.1-mile-long underground pipeline in southeast Baltimore, adjacent to Baltimore's Harbor. Plaintiff alleged that the oil leaked into the groundwater beneath the site, and then, over the course of several years, migrated across the Site, eventually entering a stormwater system approximately 200 yards from the	No	N/A	The court held that groundwater was not "navigable water" for purposes of liability under the Oil Pollution Act (OPA). Even if potentially connected to navigable waters, did not give rise to a claim under the Act. After discussing case law on both sides of the issue and noting that the only two circuit courts to weigh in on the issue rejected finding jurisdiction (*Oconomowoc Lake v. Dayton*, and *Rice v. Harken*), and after noting that the U.S. Supreme Court in *Rapanos* eschewed a broad interpretation of the CWA's jurisdictional reach, the

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		owned and operated by defendant oil company and parent company. Defendants filed a motion to dismiss all claims. The OPA definition of "navigable waters" is the same as the definition of "navigable waters" in the CWA. *See* 33 U.S.C. § 1362(7).	pipeline and discharging out through an outfall pipe connected to the drainage channel that emptied into the Harbor.			court held that "Congress did not intend for groundwater to fall within the purview of 'navigable water,' even if it is hydrologically connected to a body of 'navigable water.'" The court granted defendant's motion to dismiss the OPA claim.
Sierra Club v. Virginia Elec. & Power Co., 145 F.Supp.3d 601	Eastern District of Virginia, 2015	Defendant filed motion to dismiss nonprofit's suit alleging defendant violated CWA through seepage of pollutants from its coal ash disposal facility to groundwater hydrologically connected to navigable waters.	Power plant operated under a VPDES permit but permit did not authorize discharge of coal ash into groundwater or surrounding surface waters. Groundwater monitoring at the site showed elevated levels of pollutants migrating into surrounding waters of the U.S.	Yes	Not decided.	The court cited *Yadkin* in finding that the CWA extends jurisdiction to discharges of pollutants to surface waters via hydrologically connected groundwater. Here, plaintiff sufficiently pled that seepage from defendant's facility reaches navigable waters through hydrologically connected groundwater. Accordingly, the court denied defendant's motion to dismiss this claim.
Cape Fear River Watch, Inc. v. Duke Energy Progress, Inc., 25 F.Supp.3d 798, clarified 2014 WL 10991530	Eastern District of North Carolina, 2014	Defendant filed motion to dismiss for failure to state a claim, seeking dismissal of citizen's suit which alleged that the escape of coal ash from lagoons into groundwater discharging into drinking water supply wells was a violation the CWA.	Coal fired electricity generating plant discharged to Cape Fear River through an NPDES permit but had no permit for discharges to Sutton Lake. Pollutants from coal ash lagoons leached into the groundwater and formed a plume migrating towards drinking water supply wells. The contaminated groundwater also flowed directly into a canal that flowed into Sutton Lake.	No	N/A	Relying on *Oconomowoc Lake*, the court held the CWA did not extend federal authority over groundwater, even if connected to navigable waters. The court also said *Rapanos* does not endorse a broad meaning of navigable waters.
FIFTH CIRCUIT						
Rice v. Harken Exploration Co., 250 F.3d 264	Fifth Circuit Court of Appeals, 2001	Review of grant of summary judgment motion by defendant owner/operator of oil and gas leases in action by surface-rights owners alleging oil discharges into "navigable waters" in violation of the Oil Pollution Act of 1990. (The court concluded that "navigable waters" has the same meaning as in the CWA.)	The discharges at issue were a variety of leaks and spills onto dry land, which plaintiffs alleged seeped through the ground into groundwater, which in turn migrated into nearby bodies of "navigable" surface waters, including the Canadian River. Plaintiffs' only evidence of the hydrological connection between the groundwater and the river was "a general assertion by their expert that the Canadian River is down gradient" from the ranch. There was also "no evidence of actual oil contamination" in the Canadian River, no "discussion of flow rates into the river," "no estimate of when or to what extent the contaminants in the groundwater will affect	Not decided	N/A	The court affirmed the grant of summary judgment for defendant, holding that "a generalized assertion that covered surface waters will eventually be affected by remote, gradual, natural seepage from the contaminated groundwater is insufficient to establish liability." The court was also influenced by the fact that plaintiffs "failed to produce evidence of a close, direct and proximate link between Harken's discharges of oil and any resulting actual, identifiable oil contamination of a particular body of natural surface water that satisfies the jurisdictional requirements of the OPA."

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			the Canadian River," and "no evidence of any present or past contamination" of the river.			
Exxon Corp. v. Train, 554 F.2d 1310, 1322	Fifth Circuit Court of Appeals, 1977	A natural gas producer sought review of a claim by EPA that it had jurisdiction to control disposal of wastes into deep wells under certain circumstances and the Agency's denial of a permit to allow such waste disposal.	In designing the Flomaton natural gas facility, Exxon initially planned to dispose of waste water by discharging part of it into surface holding pits from which it eventually would enter the Escambia River system and by injecting the remainder into a formerly producing oil well about 5,000 feet deep. EPA argued it has the power to place conditions in such permits that limit the "associated" disposal of wastes into wells.	Not decided	N/A	In holding EPA did not have authority, as an incident to its power to issue permits authorizing the discharge of pollutants into surface waters to place conditions in such permits controlling the disposal of wastes into deep wells. The court provided a detailed overview of legislative history regarding Congress's decision not to regulate groundwater under the CWA. It concluded Congress did not mean to substitute federal authority for state authority over groundwater; rather, the court found a pattern of federal encouragement of states to control groundwater pollution, but no *direct* control. The court noted that neither party argued that the disposal into the deep wells was disposal into anything other than groundwaters. EPA "has not argued that the wastes disposed of into wells here do, or might, 'migrate' from groundwaters back into surface waters." The court clarified, "We mean to express no opinion on what the result would be if that were the state of facts."
United States v. GAF Corp., 389 F. Supp. 1379	Southern District of Texas, 1975	The US (EPA) requested an injunction prohibiting GAF from using deep wells for disposal without an NPDES permit. The Court's opinion addressed defendant's motion to dismiss for lack of subject matter jurisdiction for failure to state a claim.	The federal government sought relief against the drilling of deep wells and injecting organic chemical wastes (subsurface disposal) in them without the approval of the EPA.	Not decided	N/A	In granting defendant's motion to dismiss, the court concluded, based on legislative history, that Congress did not mean to include groundwater because it did not establish federal standards for groundwaters. The court concluded that "disposal of chemical wastes into underground waters which have not been alleged to flow into or otherwise affect surface waters does not constitute a 'discharge of a pollutant'" under the CWA. The court did not address what it might have ruled if EPA had alleged impacts to surface waters.
SIXTH CIRCUIT						
Ass'n Concerned Over Res. & Nature, Inc. v. Tenn. Aluminum Processors, Inc., No. 10-00084, 2011 WL 1357690	Middle District of Tennessee, 2011	Defendant's motion to dismiss the CWA and RCRA claims was denied as plaintiff had provided sufficient evidence to survive a motion to dismiss.	Plaintiff citizen group alleged Tennessee Aluminum Processors operated a dump that discharged pollutants including aluminum, ammonia, chlorides, lead, and manganese via groundwater into the city of Mount Pleasant's POTW and that some of the pollutants passed through in the POTW's discharge to a tributary of Quality Creek, a water of the US,	Yes	Not decided	Defendant's motion to dismiss was based on its argument that groundwater is not regulated under the CWA and, therefore, any discharges to the groundwater from Defendant's slag waste piles from aluminum processing facilities into the POTW is not regulated by the CWA. The Court looked to the case law regarding groundwater discharges to waters of the United States for guidance to assess whether groundwater discharges violated the CWA's

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			contributing to the POTW's NPDES permit violations.			pretreatment standards for POTWs. The Court concluded the CWA was meant to be liberally construed and found sufficient evidence existed as to the impact of alleged groundwater contamination on the POTW to survive a motion to dismiss. The plaintiff would still have to prove a link between contaminated groundwater and navigable waters, and that a general hydrological connection among all waters will be insufficient; plaintiff must trace pollutants from the source to surface waters.
Cooper Indus., Inc. v. Abbott Labs et al., No. 93–CV–193, 1995 WL 17079612	Western District of Michigan, 1995	The court ruled on the motion of defendant Michigan Department of Military Affairs to dismiss plaintiff's claims arising under CERCLA and the CWA.	Plaintiff alleged that defendants, including the Department of Military Affairs, operated facilities from which there were releases of hazardous substances, including T.C.E., P.C.E., and Polynuclear Aromatic Hydrocarbons, which caused the pollution of defendants' facilities as well as the ground water and necessitated the plaintiff's treatment of the site pursuant to an EPA administrative order. Plaintiff allegations included a claim that defendant's facilities have floor drains which drain into the sewer, which in turn discharges into the Nye Drain, which in turn discharges into the Fawn River, in violation of the CWA's NPDES permit requirement.	No	N/A	The court rejected plaintiff's CWA claim. Citing Oconomowoc Lake, the court held that a claim involving a discharge to groundwater that reaches surface water through a hydrologically connection is insufficient to state a cause of action under the CWA "since they concern ground waters and not 'waters of the United States.'" The court held that "the fact that these ground waters are hydrologically connected to some surface waters is insufficient to transform this case to a FWPCA cause of action." The court dismissed plaintiff's CWA claim.
Kelley *ex rel.* Mich. v. United States, 618 F. Supp. 1103	Western District of Michigan, 1985	Defendant US filed a motion to dismiss Plaintiffs' complaint, or alternately for summary judgment, on plaintiff's CWA claims.	Plaintiffs alleged that certain toxic chemicals were released into the ground at the US Coast Guard Air Station in Traverse City, Michigan, by Coast Guard personnel. Plaintiffs further alleged that these chemicals contaminated the groundwater underlying the Air Station and that the plume of contamination was migrating downgradient and eventually discharging into the East Arm of Grand Traverse Bay, a water of the US. The Coast Guard did not have an NPDES permit for this discharge.	No	N/A	In dismissing plaintiff's CWA claim, the court found CWA legislative history "unmistakably clear" that Congress did not intend the CWA to extend to groundwater contamination, even if there was a subsequent migration and discharge to navigable waters. Note, the court rejected the reasoning of an earlier unpublished opinion from the Eastern District of Michigan, *Kelley v. United States*, No. 79–10199 (E.D.Mich. Oct. 28, 1980), which held that the state could maintain an action against the US under the CWA for an alleged discharge of toxic chemicals into the groundwater, where the state claimed the discharge was ultimately affecting surface waters. This opinion is not readily available.
SEVENTH CIRCUIT						

CASE LAW ON DISCHARGES TO GROUNDWATER THAT IS HYDROLOGICALLY CONNECTED TO SURFACE WATER

OPINION	COURT & YEAR	PROCEDURAL POSTURE	KEY FACTS OF THE CASE	DID THE COURT HOLD THAT HYDROLOGICALLY CONNECTED GROUNDWATER IS SUBJECT TO CWA JURISDICTION?	DID THE COURT FIND A JURISDICTIONAL DISCHARGE UNDER THE FACTS OF THIS CASE?	KEY ELEMENTS OF THE COURT'S REASONING
Vill. of Oconomowoc Lake v. Dayton Hudson Corp., 24 F.3d 962	Seventh Circuit Court of Appeals, 1994	Review of lower court decision dismissing citizen suits under CAA and CWA against a Target distribution center.	Plaintiffs alleged that contaminated water from a stormwater retention pond at the facility seeps into the groundwater. The decision provides no additional details. It is not even clear if plaintiffs alleged a hydrological connection with surface waters—the court simply brings the possibility up itself. 24 F.3d 965.	No	N/A	The court held that the CWA does not extend jurisdiction over groundwater, and that this conclusion does not change "just because these may be hydrologically connected with surface waters." 24 F.3d 965. EPA's "collateral reference" to hydrological connections as a basis for regulation was no substitution, in the court's mind, for proper rulemaking. The court affirmed the decision below. The court concluded that Congress's omission of groundwater from the CWA was not oversight, referencing rejected proposals to add groundwater to the CWA.
EIGHTH CIRCUIT						
Patterson Farm, Inc. v. City of Britton, 22 F. Supp. 2d 1085	District of South Dakota, 1998	The court ruled on cross motions for summary judgment, including defendant's motion based on the court's lack of subject matter jurisdiction over plaintiff's CWA claims.	The plaintiff claimed the defendant city's poor operation and maintenance of an industrial lagoon facility allowed sewage and pollutants to seep into groundwater in violation of the CWA's NPDES permit requirement.	No	N/A	Citing both *Oconomowoc Lake* and *Washington Wilderness Coal*, the court held the CWA was not meant to regulate groundwater.[207] The court referred to its analysis as deciding that groundwaters are not part of the definition of "navigable waters."
Williams Pipe Line Co. v. Bayer Corp., 964 F. Supp. 1300	Southern District of Iowa, 1997	Judgment following trial in dispute between landowner and a pipeline company whose operations discharged significant amounts of hydrocarbons onto the property, including into a wetland. Landowner asserted various claims including a citizen's suit claim under the CWA alleging unpermitted discharges to waters of the United States.	The relevant claim was that the pipeline company discharged pollutants into the Des Moines River without an NPDES permit, because the permit did not address seepage of pollutants from the wetland to groundwater that reaches the river. An investigation of the groundwater after years of spills indicated presence of hydrocarbons in the "shallow groundwater system" below the property. Expert testimony in the case showed that the groundwater moved toward the Des Moines River, and based on this testimony, the court concluded that the groundwater under the property was "hydrologically connected" to the river. The court stated that the facts presented "more than the mere possibility" that pollutants discharged into groundwater will enter navigable waters.	Yes	Yes	After concluding that the CWA does cover discharges to groundwater that is hydrologically connected to navigable waters, the court concluded that a hydrological connection existed in this case. This would have been sufficient to establish a violation of the CWA; however, the court concluded that it did not have jurisdiction over the citizen's suit action because the state was "diligently prosecuting" the matter.
NINTH CIRCUIT						
Haw. Wildlife Fund v. Cnty. of Maui, 24 F.	District of Hawaii, 2014	Environmental organizations sought summary judgment in their suit	Tracer Dye tests demonstrated that the majority of the effluent from the injection	Yes	Yes	Recognizing that the EPA has never interpreted "waters of the United States" to include groundwater, the court

CASE LAW ON DISCHARGES TO GROUNDWATER THAT IS HYDROLOGICALLY CONNECTED TO SURFACE WATER

OPINION	COURT & YEAR	PROCEDURAL POSTURE	KEY FACTS OF THE CASE	DID THE COURT HOLD THAT HYDROLOGICALLY CONNECTED GROUNDWATER IS SUBJECT TO CWA JURISDICTION?	DID THE COURT FIND A JURISDICTIONAL DISCHARGE UNDER THE FACTS OF THIS CASE?	KEY ELEMENTS OF THE COURT'S REASONING
Supp. 3d 980		under the CWA against Maui County alleging the County discharged effluent to waters of the US without an NPDES permit. Plaintiffs alleged effluent from injection wells at defendant's wastewater treatment facility discharged into groundwater that migrated into the ocean. Note: an appeal of this case is currently pending before the Ninth Circuit Court of Appeals.	wells reached groundwater that flowed directly into the ocean. The dye tests demonstrated the effluent reached Maui's west shore beach through "submarine springs" within 84 days after being placed in the wells.			nevertheless found that migration of pollutants through groundwater into navigable-in-fact water brings the groundwater under the jurisdiction of the CWA. "If the point of emission is readily identified, and the transmission path to the ocean is clearly ascertainable, the discharge is functionally one into navigable water." Additionally, a plaintiff must also demonstrate that the pollutants emerging into navigable-in-fact water is more than de minimis. Finding uncontested evidence from the Tracer Dye testing that pollutants from the injection wells reached the ocean through groundwater in less than three months, the Court granted partial summary judgment to the plaintiff finding the County in violation of the CWA.
Nw. Envtl. Def. Ctr. v. Grabhorn, Inc., No. 08-548, 2009 WL 3672895	District of Oregon, 2009	Cross motions for summary judgment in citizens' suit brought under the CWA against operator of construction and demolition dry waste landfill, alleging discharges without an NPDES permit.	The landfill property at issue included a manmade containment pond (which the court determined was not a navigable water). Among other things, plaintiffs alleged that the pond itself discharged pollutants into a nearby jurisdictional creek through "hydrologically connected groundwater." Defendants moved for summary judgment on this claim, arguing that the CWA did not regulate discharges to groundwater.	Yes	Not decided	The court denied this part of defendant's summary judgment motion. The court stated that its prior decision rejecting jurisdiction over discharges via hydrologically connected groundwater, *Umatilla Water Quality Protect v. Smith Frozen*, 962 F. Supp. 1312 (D. Or., 1997), was premised on EPA not having formally addressed the issue. Since Umatilla, EPA did address the issue (e.g., in a proposed CAFO rule) and clearly stated its grounds for jurisdiction. The court thus concluded that discharges via hydrologically connected groundwater are subject to regulation under the CWA and, therefore, the court denied defendant's motion for summary judgment on this point.
Greater Yellowstone Coal. v. Larson, 641 F. Supp. 2d 1120	District of Idaho 2009	Cross motions for summary judgment in challenge to Forest Service decision to allow expansion of phosphate mining operation without first obtaining a CWA section 401 certification from the state of Idaho.	The plaintiffs challenged the decision of federal agencies to approve a mine expansion, alleging the agencies failed to address selenium contamination that could occur. Plaintiffs were concerned with precipitation falling on seleniferous waste and infiltrating the groundwater. There was dispute over whether a "direct" hydrological connection existed between the new mining pits and the springs feeding Sage Creek. The issue in this case—whether a CWA 401 certification was required—involves the same jurisdictional question as the NPDES permit requirement, since both are triggered by a "discharge" into navigable waters.	Yes	No. Deferred to agency decision that a direct hydrological connection did not exist.	The court stated that there is "little dispute" that if groundwater is hydrologically connected to surface water it can be subject to 401 certification (i.e., CWA jurisdiction). However, the court concluded that the agency had a rational basis for its decision that a 401 certification was not required in this case and thus granted defendant's motion for summary judgment on this issue. Specifically, the court referred to EPA guidance (e.g., 66 Fed reg. 2960, 3017, 01-12-2001) stating that the decision of whether a connection is "direct" is a "factual inquiry," and that the time and distance of the connection will be affected by "many site-specific factors, such as geology, flow and scope." In this case, faced with conflicting scientific information, the court deferred to the agency's determination that there was no direct hydrological

CASE LAW ON DISCHARGES TO GROUNDWATER THAT IS HYDROLOGICALLY CONNECTED TO SURFACE WATER

OPINION	COURT & YEAR	PROCEDURAL POSTURE	KEY FACTS OF THE CASE	DID THE COURT HOLD THAT HYDROLOGICALLY CONNECTED GROUNDWATER IS SUBJECT TO CWA JURISDICTION?	DID THE COURT FIND A JURISDICTIONAL DISCHARGE UNDER THE FACTS OF THIS CASE?	KEY ELEMENTS OF THE COURT'S REASONING
						connection between the groundwater underlying the phosphate mine and nearby surface waters. The agency's evidence indicated the contaminated water would have to pass through "hundreds of feet of overburden," "hundreds of feet of bedrock," and then travel underground through "soil and rock formations for between one to four miles" before reaching the surface water, all of which would take between 60 and 420 years. 641 F. Supp. 1139.
Coldani v. Hamm, No. 07-660, 2007 WL 2345016	Eastern District of California, 2007	The court ruled on defendant ranch-owners' motion to dismiss plaintiff's citizen suit action alleging violations of RCRA and the CWA.	The lawsuit alleged seepage and infiltration from defendants' waste storage ponds and irrigation water was polluting groundwater hydrologically connected to navigable waters. Plaintiff alleged the polluted groundwater migrated to the White Slough, which connected to the Sacramento-San Joaquin River Delta system--a navigable water located less than a mile from the ranch.	Yes	Not reached. Plaintiff later moved to dismiss his CWA claim.	The court denied defendants' motion to dismiss plaintiff's CWA claim, holding that by alleging defendants polluted groundwater that is hydrologically connected to surface waters that constitute navigable waters, plaintiff sufficiently alleged a claim within the purview of the CWA and consistent with the act's broad goals. In addition, the court concluded defendants' ranch met the definition of a CAFO and was thus by definition a "point source" under the CWEA.
N. Cal. River Watch v. City of Healdsburg, No. 01-04686, 2004 WL 201502	Northern District of California, 2004	Defendant City of Healdsburg appealed the California Northern District Court's holding (after a four-day trial) that discharges into Basalt Pond violated the CWA.	Water from the city's wastewater treatment facility discharged into Basalt Pond (once a rock quarry) which drained into the surrounding aquifer and into the Russian River. Both the pond and the river rested upon a vast gravel layer 65 feet or more deep. The groundwater freely mixed the pond with the river. Basalt pond contains wetlands and borders additional wetlands that are adjacent to navigable waters (Russian River). The wastewater reaches the river from the pond within a few months and seeps into the river along as much as 2200 feet of its banks. The city had not obtained an NPDES permit for this discharge but did have a state water emission permit.	Yes	N/A	The court cited *SWANCC* as establishing jurisdiction over (i) actually navigable waters, (ii) their tributaries, and/or (iii) wetlands adjacent to each. The court concluded that Basalt Pond and the surrounding waters were jurisdictional waters because both were "adjacent" to the Russian River. As a separate basis for jurisdiction, the court held that the pond and subterranean groundwater were "tributaries" within the meaning of the NPDES permit requirement. Finally, although the court found it unnecessary to reach the issue of whether hydrologically connected groundwater is covered under the CWA, it nonetheless found "persuasive" the *Idaho Rural Council* holding that "the Act extends federal jurisdiction over groundwaters hydrologically connected to surface waters that are themselves navigable waters."
Idaho Rural Council v. Bosma, 143 F.Supp.2d 1169	District of Idaho, 2001	Defendant dairy farm operators' motion for summary judgment in CWA citizen suit alleging noncompliance with NPDES permit.	Plaintiff alleged unlined wastewater ponds discharged into groundwater hydrologically connected to Walker and Butler Springs. The court held Butler and Walker Springs are connected through surface water to Clover	Yes	Not decided	In denying defendants' summary judgment motion, the court held that "the CWA extends federal jurisdiction over groundwater that is hydrologically connected to surface waters that are themselves waters of the United States." Congress did not to exempt groundwater from regulation if

CASE LAW ON DISCHARGES TO GROUNDWATER THAT IS HYDROLOGICALLY CONNECTED TO SURFACE WATER

OPINION	COURT & YEAR	PROCEDURAL POSTURE	KEY FACTS OF THE CASE	DID THE COURT HOLD THAT HYDROLOGICALLY CONNECTED GROUNDWATER IS SUBJECT TO CWA JURISDICTION?	DID THE COURT FIND A JURISDICTIONAL DISCHARGE UNDER THE FACTS OF THIS CASE?	KEY ELEMENTS OF THE COURT'S REASONING
			Creek, a water of the United States, to fall within the definition of waters of the United States.			pollutants affect jurisdictional waters. The legislative history only reveals the CWA should not cover isolated groundwater. However, the court emphasized that to succeed, the plaintiffs must be able to trace pollution from its source to the springs.
Umatilla Waterquality Protective Ass'n, v. Smith Frozen Foods, Inc., 962 F.Supp. 1312	District of Oregon, 1997	Joint motion to the district court for certification of three questions to the 9th Circuit (interpreted by the district court as a declaratory judgment motion) in CWA citizen suit against vegetable processing facility in Pine Creek, Oregon. The questions included whether discharges of pollutants via hydrologically connected groundwater were subject to the CWA.	Umatilla alleged that the defendant was discharging sodium and chloride from its old brine lagoon into groundwater that is then traveling to Pine Creek without an NPDES permit.	No, but the same court has since declined to follow this decision	N/A	The court determined that discharges to groundwater that subsequently released surface waters were not covered by the CWA (a finding the court overturned in its 2009 *Grabhorn* decision). However, the court noted that it if the 9th Circuit found otherwise, then it concluded that "ongoing migration of pollutants from an old brine pit's residues through groundwater to surface water without an NPDES permit would constitute an ongoing violation of the CWA." The court cited legislative history to conclude EPA is entitled to deference in a formal interpretation, but it has not made one, and nothing in the CWA suggests the NPDES program extends to groundwater.
United States v. ConAgra, No. 96-0134, 1997 WL 33545777	District of Idaho, 1997	The court ruled on various motions by the parties, including defendant's motion to dismiss for lack of subject matter jurisdiction on the U.S.'s CWA claim, which was based in part on alleged unpermitted discharges to groundwater hydrologically connected to navigable waters.	Defendant operated a slaughterhouse. Wastewater was treated and discharged into Indian Creek, allegedly in violation of its permit. The plaintiff alleged additional CWA violations, including unauthorized discharge of pollutants via groundwater from ConAgra's wastewater land application site.	No	N/A	The court noted the lack of Ninth Circuit precedent on the issue, then proceeded to adopt the District of Oregon's reasoning in *Umatilla*. The court relied on *Umatilla's* legislative history analysis and lack of EPA interpretation to determine that "discharges of pollutants into groundwater are not subject to the CWA's NPDES permit requirement even if that groundwater is hydrologically connected to surface water."
Wash. Wilderness Coal. v. Hecla Mining Co., 870 F. Supp. 983	Eastern District of Washington, 1994	Motion to dismiss by defendant gold and silver ore placer mine company on alleged violations of the CWA involving discharges of heavy metals.	The complaint alleged that from one of the mine's three tailing ponds, constructed without an impermeable liner, chemicals and heavy metals were bypassing a water collection system and seeping and leaking through the pond into the soil and groundwater, and thereafter, via a "hydrological connection" into the nearby surface waters of Eureka Creek and Mud lake.	Yes	Not decided	In denying the motion to dismiss, the court held the CWA encompasses discharge via hydrologically connected groundwater. However, the court cautioned that "Plaintiffs must still demonstrate that pollutants from a point source affect surface waters of the United States. It is not sufficient to allege groundwater pollution, and then to assert a general hydrological connection between all waters. Rather, pollutants must be traced from their source to surface waters, in order to come within the purview of the CWA." 707 F. Supp. at 1196.
McClellan Ecological Seepage v. Weinberger, 707 F. Supp. 1182 (E.D. Cal., 1988), vacated on	Eastern District of California, 1988	Cross motions for summary judgment in citizen suit action against DOD-operated aircraft maintenance facility alleging violations of various environmental	The plaintiffs alleged that Defendant was violating the CWA by allowing hazardous substances stored in unlined waste pits to enter groundwater beneath the base without an NPDES permit.	Yes	No	After concluding that the CWA does cover discharges to groundwater with a "direct hydrological connection to surface waters that themselves constitute 'waters of the United States,'" 707 F. Supp. 1194, the court denied the motions for summary judgment to allow plaintiffs to engage

CASE LAW ON DISCHARGES TO GROUNDWATER THAT IS HYDROLOGICALLY CONNECTED TO SURFACE WATER

OPINION	COURT & YEAR	PROCEDURAL POSTURE	KEY FACTS OF THE CASE	DID THE COURT HOLD THAT HYDROLOGICALLY CONNECTED GROUNDWATER IS SUBJECT TO CWA JURISDICTION?	DID THE COURT FIND A JURISDICTIONAL DISCHARGE UNDER THE FACTS OF THIS CASE?	KEY ELEMENTS OF THE COURT'S REASONING
other grounds 47 F.3d 325 (1995)		laws including the CWA.				in additional discovery to "demonstrate a hydrological connection" between the groundwater beneath the waste pits and nearby surface waters. The court cautioned that "[t]he mere fact that the groundwater might ultimately be consumed or might be used for irrigation purposes" was insufficient. Plaintiffs had to show that the groundwater is "naturally connected" to the jurisdictional surface waters. 707 F. Supp. 1196.
TENTH CIRCUIT						
Sierra Club v. El Paso Gold Mines, 421 F.3d 1133	Tenth Circuit Court of Appeals, 2005	Appeal from Magistrate summary judgment ruling that a mining shaft was hydrologically connected to waters of the U.S.	The defendant owned a gold mine shaft and related mineral rights. The mine is connected to the Roosevelt Tunnel, which is a six-mile man-made underground tunnel that was constructed to drain water from mines in that district. The tunnel's portal discharges water into Cripple Creek, which is a tributary of Fourmile Creek (a tributary of the Arkansas River). Samples from the discharge contained zinc and manganese.	Yes	No	The court determined the magistrate erroneously found there was no dispute regarding the composition of the tunnel water, where it came from and where it discharged. The court remanded for further review. The court found the receiving waters were waters of the U.S. and that the portal and mine shaft were point sources. Plaintiffs had failed to demonstrate, however, that the pollutants were coming from the mine AND being deposited in the navigable waters.
Friends of Santa Fe Cnty. v. LAC Minerals, Inc., 892 F. Supp. 1333	District of New Mexico, 1995	Summary judgment motion in citizens' suit against past and present operators of the Cunningham Hill gold mine, regarding discharges of acid mine drainage (AMD) associated with the mine's 77-acre overburden pile.	In the early 1990s, the owners found AMD in areas below the pile, including a catchment pond. After installing a state-approved remediation program, the owners again discovered AMD in seeps and an intermittent spring in the area. The mine owners installed a "curtain" to intercept minor amounts of AMD migrating in the shallow rock aquifer. Evidence in the case suggested that the AMD in the spring, surface flows, and seeps arising were released into the groundwater prior to completion of the remediation system (and prior to the lawsuit). Additionally, evidence showed that the AMD contamination was contained in a plume within the alluvium—thus, the AMD-affected water that occasionally emerged was simply emerging and changing positions in response to temporary fluctuations in the alluvial water level. Defendants acknowledged a direct	Yes	Not decided	The court acknowledged the validity of the basic "Conduit Theory" in the Tenth Circuit, noting that "the Tenth Circuit's expansive construction of the Clean Water Act's jurisdictional reach, foreclose[s] any argument that the CWA does not protect groundwater with some connection to surface waters" and that "most courts to have considered the issue have held that hydrologically connected groundwaters are regulated waters of the United States." In this particular case, however, the court concluded that the evidence before it did not establish the necessary hydrological connection. ("Acid water that is intercepted and moved to the surface and then moved downstream to percolate below the surface generally has no direct hydrologic connection with the groundwater in the area, but is just another component of the surface water regime.")

CASE LAW ON DISCHARGES TO GROUNDWATER THAT IS HYDROLOGICALLY CONNECTED TO SURFACE WATER

OPINION	COURT & YEAR	PROCEDURAL POSTURE	KEY FACTS OF THE CASE	DID THE COURT HOLD THAT HYDROLOGICALLY CONNECTED GROUNDWATER IS SUBJECT TO CWA JURISDICTION?	DID THE COURT FIND A JURISDICTIONAL DISCHARGE UNDER THE FACTS OF THIS CASE?	KEY ELEMENTS OF THE COURT'S REASONING
			hydrological connection between the alluvium and surface water (from which the seepages arose). However, Defendants denied any connection between the deeper bedrock groundwater and surface waters in the vicinity of the overburden pile, and plaintiffs did not present any sufficient evidence to the contrary.			
Sierra Club v. Colo. Ref. Co., 838 F. Supp. 1428	District of Colorado, 1993	Motion to dismiss by defendant refining company on alleged violations of the CWA involving discharges of petroleum and related compounds.	Sierra Club sued Colorado Refining Co. (CRC) for discharges into Sand Creek under the CWA and NPDES program. Sierra Club alleged, "[a]s a result of oilspills [sic], pipeline and tank leaks, and other releases at the refinery site, large quantities of petroleum and related compounds have entered, and continue to enter, the soils and groundwater," and that pollutants were discharged via groundwater to a tributary of a river.	Yes	Yes	The court concluded that CWA's prohibition of discharges of pollutants into "navigable waters" includes discharges that reach navigable waters through groundwater." 838 F. Supp. 1434. Accordingly, the court found that the plaintiff's allegations that CRC has and continues to discharge pollutants into the soils and groundwater, which then make their way to surface waters through the groundwater, stated a cause of action under the Act, and the court denied the motion to dismiss.
Quivira Mining Co. v. U.S. Envtl. Prot. Agency, 765 F.2d 126	Tenth Circuit Court of Appeals, 1985	Mining company challenged EPA's decision to require an NPDES permit for discharges from two mining facilities into gullies and groundwater.	Plaintiffs challenged the authority of the EPA under the CWA to regulate the discharge of pollutants from uranium mining and milling facilities into gullies or "arroyos." The companies contend that Arroyo del Puerto and San Mateo Creek are not "waters of the United States," and therefore the EPA has no jurisdiction under the Clean Water Act to require permits authorizing discharges into these waters.	Yes (implicitly)	N/A	EPA had authority to issue NPDES permits regulating discharges into arroyos. The court held that, although the arroyos were not navigable in fact, "flow occasionally occurs, providing a surface connection with navigable waters independent of the underground flow." Further, water in arroyos "soak into the earth's surface, become part of the underground aquifers, and the underground water moves toward eventual discharge ("after a lengthy period, perhaps centuries") at Horace Springs or the Rio San Jose." The court stressed it was the "clear intent of Congress" to regulate waters of the United States to the fullest extent.
U.S. v. Earth Sciences, Inc., 599 F.2d 368	Tenth Circuit Court of Appeals, 1979	United States brought action against operator of gold leaching process under the CWA. The United States District Court for the District of Colorado dismissed the suit, and the government appealed.	Warm April temperatures caused faster melting than expected of a blanket of snow covering defendant's gold ore heap, filling the primary and reserve sumps (fiberglass-lined pools) to capacity. This caused a one- to five-gallon-per-minute overflow discharge of the sodium cyanide-sodium hydroxide leachate solution into the Rito Seco Creek for about a six-hour period. In addition, groundwater	Yes (implicitly)	Yes	The court concluded that the sump was a "point source" and thus EPA had jurisdiction under the CWA. The court did nto expressly discuss whether there was a "direct hydrological connection." Rather, it stated that whether the sump fails "because of flaws in the construction or inadequate size to handle the fluids utilized, with resulting discharge, whether from a fissure in the dirt berm or overflow of a wall, the escape of liquid from the confined system is from a point source."

CASE LAW ON DISCHARGES TO GROUNDWATER THAT IS HYDROLOGICALLY CONNECTED TO SURFACE WATER

OPINION	COURT & YEAR	PROCEDURAL POSTURE	KEY FACTS OF THE CASE	DID THE COURT HOLD THAT HYDROLOGICALLY CONNECTED GROUNDWATER IS SUBJECT TO CWA JURISDICTION?	DID THE COURT FIND A JURISDICTIONAL DISCHARGE UNDER THE FACTS OF THIS CASE?	KEY ELEMENTS OF THE COURT'S REASONING
			seeps of approximately one gallon per minute were observed below the sumps running toward the Rito Seco and partially gathering into pools near the creek. Samples taken from two of these pools were found to contain cyanide. EPA found violations of the CWA permit requirement for both the overflow and groundwater discharges.			
ELEVENTH CIRCUIT						
Flint Riverkeeper, Inc. v. Southern Mills, Inc., No. 5:16-CV-435, 2017 WL 2059659	Middle District of Georgia, 2017	The court ruled on defendant fabric mill's motion to dismiss plaintiff's CWA citizen suit alleging discharge of industrial wastewater without an NPDES permit.	Defendant disposes of wastewater from its protective-fabrics manufacturing plant through a land application system. Some of the wastewater seeps underneath the spray fields and enters surface waters indirectly through groundwaters that have a direct hydrological connection to the Flint River.	Yes	Not decided	Noting this was a matter of first impression in the 11th Circuit, the court concurred with "a majority of district courts" and held that the CWA prohibits the discharge of pollutants that reach "navigable waters" through hydrologically connected groundwaters. Here, the court held plaintiffs had sufficiently stated a claim that "defendant discharges pollutants into 'navigable waters' via hydrologically connected groundwater," and denied defendant's motion to dismiss.
D.C. CIRCUIT						
NONE						

Message

From: Paul Balserak [pbalserak@steel.org]
Sent: 8/3/2017 10:16:50 PM
To: Greenwalt, Sarah [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=6c13775b8f424e90802669b87b135024-Greenwalt,]; Dominguez, Alexander [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5ced433b4ef54171864ed98a36cb7a5f-Dominguez,]
Subject: Conduit Theory One Pager and Additional Materials for Aug 11, 10a.m. Call with AISI
Attachments: Conduit Theory One Pager for 8_11_17 EPA Call.pdf; Letter to Neblett - Final ELECTRONIC VERSION w attachments 5-23-2014.pdf; InsideEPA - EPAs-doubts-minnesota-discharge.pdf; EAB Case Sets Up Test For Trump EPA On CWA Groundwater Protections _ Ins .pdf; Minntac Draft NPDES-SDS Permit Fact Sheet Excerpt p7 - 8 - wq-wwprm1-28b.pdf; EPA R5 Pierard Comments to MPCA Re Minntac Draft NPDES-SDS Permit 12-21-2016 wq-wwprm1-28c.pdf

Dear Sarah and Alex,

Attached are the materials for our Aug 11, 2017, 10 a.m. phone call with you on conduit theory. We will walk through the "Conduit Theory One Pager" on the call. The additional attachments are additional material for your reference; they are:

1) Memo Regarding Regulation of seepage from Tailings Basins to water of the US from the Environmental Law Group to Minnesota Pollution Control Agency [Letter to Neblett – Final Electronic Version w. attachments 5-23-2014]. This is a lengthy but balanced view of the issue. It explains the problems with groundwater discharges being regulated under the NPDES program in Section III, but particularly III.E.
2) Inside EPA article from February 11, 2015 "*EPA's Doubts on Minnesota Discharge Permit Highlight Groundwater Debate*"
3) Excerpt from Minntac's Draft NPDES Permit Fact Sheet from Minnesota Pollution Control Agency Detailing How Groundwater Discharges and NPDES Point Source Discharges are regulated [Minntac Draft NPDES-SDS Permit Fact Sheet Excerpt p7 – 8]
4) Inside EPA article from May 16, 2017 "*EAB Case Sets Up Test for Trump EPA on CWA Groundwater Protections*"
5) EPA Region 5's Comments on the Draft NPDES/SDS Permit for Minntac dated December 21, 2016. [EPA R5 Pierard Comments to MPCA Re Minntac NPDES-SDS Permit 12-21-2016]

We appreciate your time and attention to this issue, and look forward to our call.

Best,
Paul

Paul Balserak
Vice President, Environment

American Iron and Steel Institute
25 Massachusetts Ave. NW, Suite 800
Washington, DC 20001
Ex. 6 (office)
(mobile)

Groundwater Conduit Theory: Discharges to Groundwater should not be Regulated by the CWA
Phone Call with Sarah Greenwalt, August 11, 2017

Comment

The American Iron and Steel Association (AISI) requests clarification that the Clean Water Act (CWA) does not govern discharges to groundwater, even if there is a subsurface hydrologic connection between groundwater and surface water. The text and legislative history of the CWA indicate that it was never intended to regulate discharges to groundwater. EPA Headquarters has never adopted any formal position interpreting the CWA to require a National Pollutant Discharge Elimination System (NPDES) permit for the discharge of pollutants to groundwater that is hydrologically connected to surface water.

Request: AISI requests that administrative guidance be issued, or rulemaking be undertaken, to clarify that the NPDES program does not regulate discharges to groundwater, even if the groundwater is hydrologically connected to surface water. Alternatively, clarification within the anticipated Waters of the United States (WOTUS) replacement rule could be provided.

Key Points

- NPDES permits are required for "the discharge of a pollutant" from a "point source." *See* 33 U.S.C. § 1311, 1362; and a "point source" is any "discernible, confined and discrete conveyance". *See* 33 U.S.C. § 1362. Groundwater cannot be a point source by definition.
- There is a growing body of conflicting case law which has caused significant confusion regarding whether discharges of pollutants to groundwater that is hydrologically connected to a surface water constitutes a "point source" and requires an NPDES permit.
- NGOs are using the "conduit theory" during litigation to attempt to expand the scope of the CWA
- EPA's stance has not been consistent, and under the Obama administration the most recent public statement of a position was in *Hawai'i Wildlife Fund v. Cnty. of Maui amicus* brief:
  - "The Clean Water Act requires permits for discharges of pollutants that move to jurisdictional surface waters through groundwater with a direct hydrological connection."
- Other sectors that have been impacted: Municipalities, farmers, stormwater systems, pipelines, legacy sites, power plants, and a multitude of other active industrial facilities.
- EPA already has programs through RCRA Correction Action, Superfund and other clean up authorities which are the historic and far more appropriate venues within which to address groundwater contamination.
- Wellhead Protection Programs and Underground Injection Control limitations are additional effective ways that agencies prevent groundwater contamination.
- The federal NPDES program was not designed to manage groundwater discharges, and several issues exist with trying to do so.
  - The discharge of pollutants to groundwater should be regulated by state programs, not by the federal government.
  - The requirements of the CWA for point sources and compliance schedules are impractical with the nature of addressing groundwater discharges, such as projecting a final effluent limit date with certainty.
  - The NPDES permit requires discharges to leave through an outfall and that effluent limits apply to a monitoring point. This is an impossible construct to apply directly to a groundwater discharges.
- Under the current CWA, in the majority of instances states are best situated to regulate pollutants in groundwater, and in limited cases other federal programs.

- The industrial facilities located in Tidal zones and/or have shallow water tables will not be able to discern when to apply the NPDES program to impoundments, ditches, pits and dewatering systems that are required for safe operations and to prevent damage to infrastructure. How does the regulated community determine the direction and flow of the water underground during different phases of tides, weather conditions, ground water consumption etc.

Other recent relevant developments:

- *Upstate Forever et al v. Kinder Morgan Energy Partners LP et al*, No. 16-cv-4003
  - Suit dismissed by judge for lack of evidence on claim of a discharge of a pollutant from a point source.
- *In re Town of Marion*, EPA Environmental Appeals Board petition filed May 15, 2017
  - In part, the appeal alleges that EPA is wrongly regulating sludge that does not directly impact surface waters under the NPDES program.

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DAILY NEWS

EAB Case Sets Up Test For Trump EPA On CWA Groundwater Protections

May 16, 2017

A Massachusetts town is asking EPA's Environmental Appeals Board (EAB) to overturn a Trump agency-crafted Clean Water Act (CWA) permit that it claims restricts groundwater contamination based on a connection to protected surface waters -- setting up a legal test over whether the water law allows such limits in EPA-issued permits.

The town of Marion, MA, filed its EAB appeal May 15, asking the board to hold that EPA's National Pollutant Discharge Elimination System (NPDES) permit for the town's wastewater treatment plant goes beyond federal authority under the CWA, in part because it regulates groundwater contamination from sewage sludge lagoons.

EPA "has exceeded the scope of its CWA authority by impermissibly regulating sludge that lacks a direct impact on surface waters of the United States . . . the key is that the CWA does not govern groundwater, even if it is hydrologically connected to navigable waters," the filing says.

Marion's appeal means EPA will for the first time be directly involved in the ongoing legal fight over whether the CWA limits groundwater contamination when the pollutants will flow into surface waters. Until now, the only cases claiming the CWA applies to groundwater contamination have been citizen suits filed by environmentalists.

An EPA official as recently as last year said agency staff were divided over whether the water law applies to groundwater contamination, but the Trump EPA in the April 13 NPDES permit for Marion took the position that it does.

The CWA explicitly does not protect groundwater quality directly, but environmentalists have argued in other cases that when the groundwater flows into jurisdictional surface waters, it becomes a "point source" subject to CWA permitting.

In the Marion permit, the Trump EPA simply said that the town must limit nitrogen contamination in groundwater from sewage sludge without elaborating on a legal justification for such a requirement.

Marion counters that the groundwater requirements are not justified under the CWA. In other complaints raised in the suit, the town is also saying it did not receive proper notice of some of the limits EPA was considering for its permit, and that the agency is trying to dictate the "internal workings" of the wastewater plant despite the CWA limiting it to regulating pollution releases.

The Marion permit appears to be the first time EPA has moved on its own to invoke CWA authority over groundwater. The dispute has otherwise played out through citizen suits where environmentalist groups have sued private companies -- most often power plants -- over groundwater contamination they say has carried over to surface waters.

So far the groups have won a series of high-profile victories on the groundwater question in district court, but it is unclear when an appellate court might hand down a precedential decision since the only pending appeal faces procedural challenges before merits briefing can begin.

The latest such suit, filed by the Roanoke River Basin Association (RBBA) against Duke Energy, was filed May 16 in the U.S. District Court for the Middle District of North Carolina.

Groundwater Contamination

No Trump administration official appears to have weighed in directly on the issues of whether the CWA applies to groundwater contamination. Neither EPA nor the Department of Justice is involved with any of the pending suits, so how the agency responds to Marion's appeal could be a significant marker for how it will approach groundwater contamination through the CWA.

As recently as mid-2016, EPA staff seemed to be divided on whether to use the CWA to regulate groundwater pollution. Tom Laverty, who at the time worked in the EPA Office of Wastewater Management permit division, said the agency was "of two minds" on taking that step position during a May 20 at an American Legal Institute-Continuing Legal Education seminar in Washington, D.C.

During that event, Laverty said, "I think the hydrologists and the biologists see it as something -- they focus on the connectivity and the transmission [of pollutants], and because there is in some of these cases an identifiable source of pollution, they reason their way to 'well, you should permit the source.'"

But he noted that the agency's legal team did not appear to share that approach, saying, "However, I believe our good friends at [the EPA Office of General Counsel] take a more cautionary view."

RBBA's suit against Duke follows the power company filing its own case against the environmentalists in the southern district of Virginia. Duke sought a declaratory judgment on whether its power plant is violating the CWA, but RBBA and its attorneys at the Southern Environmental Law Center (SELC) countered that the company is trying to shift the case out of the North Carolina district, where other judges have already held that the water law extends to groundwater pollution that reaches surface waters.

In a May 16 press release announcing the North Carolina suit, SELC and RBBA say they “plan to file a motion to dismiss this Virginia suit."

The complaint says the environmentalists have traced pollution in the Roanoke and Dan River basins to coal ash lagoons at a Duke-run power plant in Person County, NC. But RBBA also claims that Duke is dumping waste directly into jurisdictional waters, meaning that even if the court rejects CWA authority over groundwater the case is likely to move forward in some capacity. -- *David LaRoss* (dlaross@iwpnews.com)

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
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DEC 2 1 2016

REPLY TO THE ATTENTION OF
WN-15J

Ann Foss
Metallic Mining Sector Director
Minnesota Pollution Control Agency
520 Lafayette Road
St. Paul, MN 55155-4194

Re: U.S. Environmental Protection Agency Review of the Draft NPDES/SDS Permit for U.S. Steel Corp. – Minntac Tailings Basin Area, Permit No. MN0057207

Dear Ms. Foss:

The U.S. Environmental Protection Agency has reviewed the Minnesota Pollution Control Agency's (MPCA) draft National Pollutant Discharge Elimination System/State Disposal System (NPDES/SDS) permit and related documents which was public noticed on November 15, 2016. EPA is providing the following comments on the draft permit.

We are concerned that this draft permit as written does not address, under MPCA's approved National Pollutant Discharge Elimination System (NPDES) program and in accordance with the Clean Water Act (CWA), all discharges to surface waters from this tailings basin. MPCA acknowledges in the fact sheet that discharges from this 8,700 acre tailings basin are causing exceedances of surface water quality standards. Based on this and facts supporting this conclusion, the CWA requires all such discharges to surface waters from the tailings basin be authorized by an NPDES permit. The original NPDES permit, which was issued in 1987, did not contemplate the full extent of the discharges to surface waters from this facility. In the years between expiration of that permit and today the nature and water quality impacts of the discharges to surface waters have continued and are better understood.

As a result, there is a need for an NPDES permit that includes extensive and specific actions, and definitive timeframes for these actions that will result in attaining water quality standards in the receiving waters. MPCA's proposed approach would establish compliance schedules that do not set a date by which compliance with surface water quality standards will be achieved nor do they fully describe the steps necessary to achieve compliance with these standards. In addition, we are concerned that some of the statements in MPCA's draft fact sheet regarding EPA's interpretation of the scope of the NPDES program are incorrect and should be corrected prior to MPCA finalizing this draft permit.

In this case the tailings basin is a point source which, according to MPCA's own documentation is discharging pollutants to nearby surface waters in the Sand and Dark River watersheds via direct, unmonitored surface seeps and subsurface pathways, as well as to the Dark River via the monitoring point identified as SD001. The permittee, by its own documentation acknowledges

that approximately 3,000 gallons per minute, or 4.3 million gallons per day are discharged from the tailings basin via subsurface seepage to the Sand and Dark River watersheds[1]. MPCA appears willing only to regulate the portion of the discharge to the Dark River that passes through Monitoring Station SD001 as a discharge requiring NPDES permit coverage.

The tailings basin is a point source that discharges pollutants to surface waters in the Sand and Dark River watersheds, which, as explained above is consistent with EPA's past interpretation that the CWA applies to discharges of pollutants from a point source to waters of the United States, including those made via ground water that has a "direct hydrologic connection" to surface water.[2] EPA's longstanding position is that a discharge from a point source to jurisdictional surface waters that moves through groundwater with a direct hydrological connection comes under the purview of the CWA's permitting requirements. *E.g.,* Amendments to the Water Quality Standards Regulations that Pertain to Standards on Indian Reservations, 56 Fed. Reg. 64,876, 64,982 (Dec. 12, 1991) ("[T]he affected ground waters are not considered 'waters of the United States' but discharges to them are regulated because such discharges are effectively discharges to the directly connected surface waters.").

The CWA's language prohibiting "any addition of any pollutant to navigable waters from any point source" does not limit liability only to discharges of pollutants *directly* to navigable waters. *See Rapanos v. United States*, 547 U.S. 715 at 743 (2006) (plurality op.) (emphasis in original). Courts have interpreted the CWA as covering not only discharges of pollutants directly to navigable waters, but also discharges of pollutants that travel from a point source to navigable waters over the surface of the ground or through underground means. *E.g., Sierra Club v. Abston Constr. Co.*, 620 F.2d 41, 44-45 (5th Cir. 1980). As one court noted, "it would hardly make sense for the CWA to encompass a polluter who discharges pollutants via a pipe running from the factory directly to the riverbank, but not a polluter who dumps the same pollutants into a man-made settling basin some distance short of the river and then allows the pollutants to seep into the river via the groundwater." *N. Cal. River Watch v. Mercer Fraser Co.*, No. 04-4620, 2005 WL 2122052, at *2 (N.D. Cal. Sept. 1, 2005).

The CWA defines point sources as follows:

> The term 'point source' means any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged. This term does not include agricultural stormwater discharges and return flows from irrigated agriculture. *33 U.S.C 1362(14)*

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[1] Liesch Associates, Inc. Memorandum to U.S. Steel. RE: January 2010 Minntac Tailings Basin Seep Estimate. January 26, 2010. (enclosed)

[2] See, Proposed National Pollutant Discharge Elimination System Regulations for Concentrated Animal Feeding Operations, 66 *Fed. Reg.* 2960, 3015 (Jan. 12, 2001); NPDES General Permits for Storm Water Discharges from Construction Activities, 63 *Fed. Reg.* 7,858, 7,881 (Feb. 17. 1998).

The need for an NPDES permit is highly dependent on the facts surrounding each situation. 66 *Fed. Reg.* at 3015; 63 *Fed. Reg.* at 7881. As EPA has explained:

> The determination of whether a particular discharge to surface waters via ground water which has a direct hydrologic connection is a discharge which is prohibited without an NPDES permit is a factual inquiry, like all point source determinations. The time and distance by which a point source discharge is connected to surface waters via hydrologically connected [ground] waters will be affected by many site specific factors, such as geology, flow, and slope. . . 66 *Fed. Reg.* at 3017.

The facts in this situation include the following and support a finding that the tailings basin point source is discharging pollutants to the nearby surface waters:

- The tailings basin is a container that holds tailings and wastewater
- The tailings basin is discharging pollutants to the surrounding surface waters through direct surface discharges and seeps and via subsurface flow which has a direct hydrologic connection as evidenced by:
  - Elevated pollutant concentrations in the receiving waters which are also present in the tailings basin waters
  - No other sources, or minimal other sources, contributing those pollutants to the same receiving waters,
  - Pre basin construction surface water quality data that demonstrate that the pollutants were not elevated in the receiving waters prior to basin construction, and
  - U.S. Steel's estimate that approximately 3,000 gallons of wastewater per minute are being discharged from the tailings basin to surface waters.

Receiving Waters – MPCA, by its own documentation acknowledges that pollutants are being discharged from the basin into the Sand River watershed. MPCA has even drafted compliance limits that apply in the Sand River watershed (although these limits do not have any effective date). However, the Sand River is not listed among the surface waters authorized to receive discharges under the draft NPDES permit. Failing to include the Sand River as a receiving water to which U.S. Steel is authorized to discharge under the NPDES permit would constitute a discharge of pollutants to surface waters in the absence of NPDES permit coverage, a violation of the Clean Water Act.

Timber Creek runs along the western side of the tailings basin and flows into the Dark River. There is evidence of ponding along the west side of the Basin, viewable from aerial imagery, indicating that pollutants are seeping from the basin directly into adjacent surface waters on the west side of the basin. It is likely that these pollutants are flowing into Timber Creek and reach the Dark River. Timber Creek is also not listed among the receiving waters to which U.S. Steel would be authorized to discharge to under this NPDES permit.

There is evidence, based on aerial imagery that the tailings basin is creating ponding in wetlands immediately adjacent to the basin on both the east and west sides. However, the permit would not authorize these discharges, as wetlands are not among the surface waters to which the permittee would be authorized to discharge and, if confirmed, would constitute a discharge of pollutants to surface waters in the absence of NPDES permit coverage, a violation of the Clean Water Act.

Compliance Schedule – MPCA has included some compliance limits in the draft permit that apply at certain surface water monitoring stations. However, these limits are not effective until the "Final Period". There is no definition of the "Final Period" in the draft permit. However, since MPCA has determined that the limits effective in the "Final Period" are necessary and there is no date at which they would be effective, the permit does not contain limits as stringent as necessary to ensure compliance with the applicable water quality requirements, as required by 40 C.F.R. § 122.4(d).

While the draft permit contains "compliance schedules" in three different Sections of Chapter 1, none of the schedules comport with 40 C.F.R. § 122.47, as they do not contain dates by which the permittee must attain compliance with final effluent limits, and do not contain enforceable milestones that ensure that the permittee is attaining compliance as soon as possible. An enforceable compliance schedule (or schedules) that contains a final compliance date is particularly important in light of the possibility that this NPDES permit is once again administratively continued for a long period of time. MPCA would be able to modify the schedule upon permit reissuance if new information becomes available that justifies a modification to the schedule.

Further, the draft permit includes schedules that require submittals of plans and schedules that then would become part of the permit. It appears that these submittals would constitute permit modifications that do not follow the procedures for modifying permits, including issuing public notice, in 40 C.F.R. § 124.

Limits and Monitoring Requirements –

Sandy and Little Sandy Lakes (a.k.a. the "Twin Lakes"), on the east side and downstream of the tailings basin, have been known to produce wild rice historically, as documented by the Minnesota Department of Natural Resources (MNDNR)[3] and in more recent years in a diminished capacity as documented by the 1854 Treaty Authority in their 2016 report.[4] The Sand River and Twin Lakes are downstream waters receiving discharges from the tailings basin and it appears that wild rice production is an existing use in these water bodies as defined by 40 C.F.R. § 131.3(e). Therefore, MPCA needs to include the Sand River in the draft NDPES permit including water quality based limits that will meet all applicable water quality standards [including the state's wild rice standard based on the documented wild rice stands in the Sand River and Twin Lakes, or explain why this standard does not apply].

Dark River at (SD001) - MPCA calculated WQBELs, shown in the fact sheet, for sulfate at 1221 mg/L daily maximum and monthly average of 1080 mg/L. The Draft Permit incorrectly expresses the monthly average limit as 1221 mg/L and does not contain the necessary daily maximum limit. Similarly, for specific conductance the fact sheet says that the daily maximum limit should be 1197 mg/L and the average monthly limit should be 1072 mg/L, but MPCA has only included an incorrect monthly average limit at 2430 mg/L. In addition, the fact sheet indicates that MPCA's calculation of the average monthly limit is based on 2x per month

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[3] Minnesota DNR. Memo from Gerald McHugh, Wild Rice Coordinator, December 7, 1987 (enclosed)
[4] 1854 Treaty Authority. Sandy Lake and Little Sandy Lake Monitoring (2010-2016). Vegetation Surveys starting on Page 16. (enclosed)

monitoring, but the permit only requires 1x per month monitoring. No justification for the discrepancy is included in the Fact Sheet.

Class 1B Reach of the Dark River (AUID 09030005-525) – the fact sheet states that discharges from the tailings basin are contributing to an exceedance of water quality standards (sulfate) that applies in the section of the Dark River downstream of the tailings basin that is designated as a Class 1B water. MPCA is proposing to implement a limit based on the criteria that apply in the Class 1B reach at a compliance monitoring station upstream, rather than at a compliance point in the Class 1B segment. MPCA appears to be applying a rationale that the concentration of sulfate at the upstream location ("SW003") can be approximately double the criteria that must be met in the downstream Class 1B segment of the River, based in part on available dilution. It is unclear how MPCA can authorize a discharge, to a surface water that is not meeting criteria, and limit sulfate to more than double the concentration necessary to protect the criteria.

Reasonable Potential Analysis - MPCA has decided not to conduct a reasonable potential analysis for several parameters for which it has limited data pertaining to discharge characterization (despite the facility operating under an NPDES permit since 1987). MPCA should conduct the reasonable potential analysis with the information that it has, and in addition should add monitoring requirements to the draft permit, for all of the surface water and discharge monitoring stations, monthly monitoring for at least the following parameters that have been detected in the discharge: Selenium, Arsenic, Cobalt, Copper, Manganese, and Thallium.

Permit Modification – In a few paragraphs in the permit, MPCA requests that the company apply for permit modifications. As you are aware, the permit may be modified during its term for cause under 40 C.F.R. § 122.62. MPCA need not wait for the permittee to submit an application for permit modification, if, for example, MPCA promulgates and EPA approves new water quality standards that need to be applied in the permit, as this would be a cause for permit modification under 40 C.F.R. § 122.62(a)(2).

Federal Effluent Limitations Guidelines at 40 C.F.R § 440.10 - It is unclear how MPCA is implementing the zero discharge requirements at 40 C.F.R. § 440.12(c) which requires that the facility not discharge wastewater from mills… with the exception of "a volume of water equivalent to the difference between annual precipitation falling on the treatment facility and … the annual evaporation…". In this case the processing facility is located at the adjacent mining area which is covered under NPDES Permit No. MN0052493. In order to evaluate compliance with 40 C.F.R. § 440.12(c), discharges from the mining area permit and the tailings basin area permit would have to be considered. The permit would have to require monitoring and reporting of all of the discharges from the tailings basin rather than limiting the monitoring, reporting, and therefore the estimation of the volume of discharge, to just that which passes through the monitoring station at SD001.

Construction of Dark River Seep Collection and Return System - It is unclear why MPCA is requiring the permittee to build a Seep Collection and Return System on the west side of the basin. There is no basis for this requirement provided in the fact sheet, and to our knowledge there is limited information as to how the system is predicted to resolve outstanding water quality standards exceedances in the Dark River. In a letter from EPA to the St. Paul District Army Corps of Engineers dated September 16, 2015 regarding the pending CWA Section 404 application for the construction of the Dark River Seepage Collection and Return System (SCRS), we articulated concerns regarding the substantial changes in hydrology and loss of

function to wetlands within the project boundary as well as adjacent wetlands; specifically the effect the proposed discharges will have on water circulation, fluctuation, water chemistry[5] as well as secondary effects on aquatic ecosystems[6]. The wetlands and open water complexes within the project footprint, as both conduits and storage basins for mine tailings seep water, will be subjected to increased concentrations of mine tailings constituents (e.g. hardness, total dissolved solids, specific conductance, alkalinity and sulfate), thus resulting in lower quality wetlands with diminished functional capabilities. In the letter, EPA objected to the construction of the Dark River SCRS because of a lack of compliance with the 404(b)(1) Guidelines. As such, EPA recommended a comprehensive monitoring plan and additional compensatory mitigation be required to address our concerns regarding the determination of wetland impacts and compensatory mitigation requirements.

The comments provided in this letter transmit EPA's initial concerns with the draft permit. Please see the enclosure for additional comments that you should consider to improve the enforceability or clarity of the draft permit language. We look forward to working with you as we conduct a formal review of the permit consistent with Section II. of our Memorandum of Agreement. When the Proposed Permit is prepared, please forward a copy and any significant comments received during any public notice period to r5npdes@epa.gov. Please include the permit number, the facility name, and the words "Proposed Permit" in the message title. If you have any technical questions related to EPA's review, please contact Krista McKim at (312) 353-8270 or at mckim.krista@epa.gov.

Sincerely,

Kevin M. Pierard, Chief
NPDES Programs Branch

cc: Erik Smith, MPCA

Enclosures:

Enclosure A: Additional comments

Liesch Associates, Inc. Memorandum to U.S. Steel. RE: January 2010 Minntac Tailings Basin Seep Estimate. January 26, 2010.

Minnesota DNR. Memo from Gerald McHugh, Wild Rice Coordinator, December 7, 1987

1854 Treaty Authority. Sandy Lake and Little Sandy Lake Monitoring (2010-2016). (enclosed)

[5] 40 CFR § 230.11(b)
[6] 40 CFR § 230.11(h)

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DAILY NEWS

EPA's Doubts On Minnesota Discharge Permit Highlight Groundwater Debate

February 11, 2015

EPA's concerns over Minnesota's preliminary plans to craft a discharge permit for a tailings basin -- which the agency says would unlawfully allow discharges for pollutants to surface water in excess of water quality standards (WQS) through groundwater seepage at the basin -- illustrate ongoing debate over when such groundwater connections require permit limits.

Environmentalists say how the state decides to address EPA's concerns in the final permit is potentially precedent-setting because it could serve as a guide for how regulators can address seepage that leads through underground hydrology to surface waters.

"The real question here is if pollution from the mine's tailings basin seeps out and ends up in surface water, can regulators pretend that groundwater standards are the only ones that apply," one environmentalist says.

Environmentalists expect the Minnesota Pollution Control Agency (MPCA) to issue in mid-February a formal draft permit for public comment for the Minntac tailings basin in Mountain Iron, MN, which is managed by U.S. Steel.

EPA outlined its concerns to state regulators in a Dec. 19 letter from EPA Region 5 National Pollutant Discharge Elimination System (NPDES) program branch chief Kevin Pierard.

"We are concerned that this draft permit as written does not address, under MCPA's approved National Pollutant Discharge Elimination System program and in accordance with the Clean Water Act (CWA), all discharges to surface waters from this tailings basin," Pierard writes.

At the root of EPA's concerns is language in the state's preliminary draft permit and accompanying fact sheet indicating that runoff occurs through seepage at the basin, causing exceedances of WQS for surface water, which Pierard says in the letter means a NPDES permit must include extensive and specific controls and definitive timeframes for curbing such discharges.

"Based on this and facts supporting this conclusion, the CWA requires a NPDES permit for all such discharges to surface waters from the tailings basin," the letter says, noting that while the basin is operating under the original 1987 permit, that permit did not consider the full extent of the possible discharges to surface water.

"In the years between expiration of that permit and today the discharges to surface waters have continued and are better understood," Pierard writes.

Permitting Dispute

The permitting dispute follows a federal court ruling from last year finding that a Hawaii wastewater reclamation plant discharged pollutants into the Pacific Ocean via underground springs, largely seen as highlighting the need for courts to clarify how CWA jurisdictional claims via groundwater connections are decided -- a key question emerging from EPA's proposed jurisdiction rule.

In that case, the U.S. District Court for the District of Hawaii in its May 30 ruling in *Hawaii Wildlife Fund v. County of Maui* says that while it granted the environmental plaintiffs' motion for partial summary judgment because a dye tracer test showed effluent migrating from the plant to the ocean, establishing CWA jurisdiction in similar cases absent such tests is a murkier issue.

Observers said the ruling is likely to shed more light on how jurisdictional determinations involving groundwater are made, given that EPA and the Army Corps of Engineers' proposed rule seeking to clarify the scope of the water law clearly exempts groundwater as being covered by the CWA but also acknowledge that waters with "shallow subsurface connections" to traditionally navigable waters may be jurisdictional.

The district court in *Hawaii Wildlife Fund* cited a 2006 U.S. Court of Appeals for the 9th Circuit ruling, *Northern California River Watch v. City of Healdsburg,* which is seen as upholding the possibility of regulating groundwater under the CWA when it serves as a medium through which pollutants are channeled into jurisdictional waters.

Minnesota's draft permit would supersede the previous permit, issued in September 1987 but still covering the facility because of a state law allowing an expired permit to continue to apply as long as the facility applies for a new permit, though a minor permit modification was done in 2010 to allow for construction of a seep collection and return system.

Preliminary Permit

The preliminary draft permit would cover the approximately 8,700-acre facility, which includes the basin, the drainage area contributing surface runoff to the basin, and wastewater disposal systems within the area, as well as part of the processing plant area.

But as EPA points out in the letter, MPCA's proposed approach would "establish a compliance schedule that does not set a date by which compliance with surface water quality standards will be achieved nor does it describe the steps necessary to achieve compliance with these standards."

In a Dec. 19 letter, the group Water Legacy has raised similar concerns to those of EPA, saying it appears the permit would take the position that seepage cannot be regulated under the CWA, despite what the groups says is years of hydrologic data showing a connection through which sulfates and other pollutants enter surface water.

Specifically, the group takes issue with the monitoring locations in the draft permit plans, saying they are not designed to ensure identification and control of pollutants at the nearest points where Minntac Tailings Basin discharges daylight to surface water.

"In the face of clear evidence of the hydrological connection between Minntac Tailings Basin pollutants and surface waters, regulation under the Clean Water Act NPDES program is required to protect beneficial uses in connected surface waters under applicable law," the group says, citing the *Hawaii Wildlife Fund* ruling. -- *Bridget DiCosmo* (bdicosmo@iwpnews.com)

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May 23, 2014

Adonis Neblett, Esq.
Minnesota Pollution Control Agency
520 Lafayette Road
St. Paul, MN 55155-4194

RE: Cliffs Erie: Reissuance of Permit for Tailings Basin

Dear Mr. Neblett:

Thank you for meeting with Rob Beranek and me a few weeks ago. As you requested, this letter elaborates on the points we made at that meeting. It presents the legal, technical, and policy reasons that support the regulation of seepage to groundwater from the Cliffs Erie Tailings Basin under a Minnesota State Disposal System (SDS) permit alone, rather than under a National Pollution Discharge Elimination System (NPDES) permit. The federal Clean Water Act (CWA or Act) requires an NPDES permit for the discharge of pollutants from a "point source" into "waters of the United States." Specifically, you have asked us whether seepage from the Tailings Basin should be subject to an NPDES permit if there is a "direct hydrologic connection," through groundwater, between the Basin and surface waters that are waters of the United States.

As discussed more fully below, we do not believe that the law requires the Minnesota Pollution Control Agency (MPCA) to regulate deep seepage from the Tailings Basin under an NPDES permit even if a direct subsurface hydrologic connection can be demonstrated. (Indeed, for the past many decades during which the Tailings Basin has been subject to a water discharge permit from the MPCA, deep seepage has not been regulated by an NPDES permit.) Though courts have taken varying positions on the "hydrologic connection" theory over the last few decades, the better reasoned opinions, in accord with recent Supreme Court pronouncements on CWA jurisdiction, suggest that the regulation of *any* discharges to groundwater falls outside the jurisdiction of the CWA.

Indeed, in the water-rich state of Minnesota, there will likely be direct subsurface hydrologic connections between most discharges to groundwater and nearby surface waters. Expanding the scope of the NPDES program to cover such discharges—not only from tailings basins but from ponds and other activities—would represent a major policy change for the MPCA and one likely to reduce its ability to fashion appropriate and site-specific remedies addressing exceedances of surface water quality standards to which groundwater discharges may be contributing. In addition, treating facilities such as a 3,000-acre tailings basin as "point sources" and applying the NPDES permit program to groundwater discharges from such facilities will raise a host of difficult technical problems and novel legal issues that the MPCA will need to resolve. Following is a more detailed discussion of these issues.

OUTLINE

FACTUAL BACKGROUND

DISCUSSION

I. THE MPCA HAS BROAD AUTHORITY UNDER STATE LAW TO REGULATE DISCHARGES TO GROUNDWATER THAT MAY AFFECT GROUNDWATER, SURFACE WATERS, OR BOTH, AND IT HAS TRADITIONALLY USED THIS AUTHORITY TO REGULATE NUMEROUS TYPES OF DISCHARGES TO GROUNDWATER UNDER SDS PERMITS ALONE.

   A. Statutory Authority and Scope of the SDS Program.

   B. Types of Discharges Regulated by SDS-Only Permits.

      1. Land Application Activities.

      2. Wastewater Treatment Facilities.

      3. Tailings Basins.

   C. SDS-only permits provide robust protection for affected waters, including surface waters.

II. THE CLEAN WATER ACT DOES NOT REQUIRE THE MPCA TO REGULATE GROUNDWATER DISCHARGES FROM THE TAILINGS BASIN UNDER AN NPDES PERMIT EVEN IF A SUBSURFACE HYDROLOGIC CONNECTION BETWEEN THE GROUNDWATER AND SURFACE WATERS CAN BE DEMONSTRATED.

   A. The text and legislative history of the CWA indicate that it was never intended to regulate discharges to groundwater.

B. The U.S. EPA has never adopted any formal position interpreting the CWA to require an NPDES permit for the discharge of pollutants to groundwater that is hydrologically connected to surface water.

C. Though case law is divided, the better reasoned decisions and those most consistent with recent Supreme Court precedent, hold that the Clean Water Act does not govern discharges to groundwater even if there is a direct subsurface hydrologic connection with surface water.

1. The "Broad View."

2. The "Narrow View."

3. The "Narrow View" is the more defensible position under current CWA jurisprudence.

III. FOR BOTH LEGAL AND POLICY REASONS, THE MPCA SHOULD NOT REGULATE GROUNDWATER SEEPAGE FROM THE CLIFFS ERIE TAILINGS BASIN UNDER AN NPDES PERMIT.

A. Characterizing the 3,034-acre Tailings Basin as a single "point source" stretches that statutory definition beyond recognition; the Tailings Basin is more logically regulated as a nonpoint source.

1. The Cliffs Erie Tailing Basin does not meet the definition of "point source."

2. Court decisions finding mining areas to be "point sources" are distinguishable.

3. Groundwater discharges to the Tailings Basin are more logically regulated as nonpoint source discharges under MPCA's SDS program.

B. If the MPCA regulates groundwater seepage from the Cliffs Erie Tailings Basin under its NPDES program, it will have no legal justification for not applying the same NPDES requirements to groundwater seepage from other basins, ponds, or defined sources.

C. There is no clear legal or policy basis for identifying a "direct" subsurface hydrologic connection between the Tailings Basin and nearby surface waters.

D. Expanding the NPDES program to include tailings basins and similar sources will create technical, financial, and staffing issues for the MPCA and the demand for clear guidance from regulated parties.

E. The State Disposal System program provides the MPCA with more tools and more discretion to address the complex technical issues associated with groundwater discharges that affect surface waters than the NPDES program.

1. SDS permits require only MPCA approval and oversight.

2. SDS schedules of compliance are not subject to CWA deadlines.

3. SDS permits can set more appropriate points of compliance.

IV. OTHER STATES DO NOT REGULATE TAILINGS BASINS OR OTHER PONDS THAT DISCHARGE ONLY TO GROUNDWATER UNDER NPDES PERMITS.

FACTUAL BACKGROUND

Cliff Erie, L.L.C. (Cliffs Erie) is a Minnesota company and a subsidiary of Cliffs Natural Resources, an Ohio corporation. Cliffs Erie owns and operates a number of mining facilities in Minnesota, including a facility known as the Hoyt Lakes Tailings Basin (Tailings Basin, or Basin). The Tailings Basin is subject to NPDES/SDS Permit No. MN0054089, which MPCA issued to the Basin's prior owner, the LTV Steel Mining Company (LTVSMC), on May 4, 2001.[1] Following LTVSMC's bankruptcy in January 2001, Cliffs Erie purchased the facility and on October 30, 2001, MPCA modified the permit to identify Cliffs Erie as the Permittee.

The former LTVSMC facility includes the taconite processing facility: crushers, concentrator, pellet plant and associated equipment shops, haul roads, and the Tailings Basin. Constructed beginning in the 1950s atop wetlands and other natural low-lying features, the Basin covers approximately 3,034 acres with an 11.28-mile perimeter.[2] The perimeter dams are built of graded rock fill, till and clay starter dams, and consolidated lifts of coarse taconite tailings with horizontal gravel filter drains at the base of the dams. When the LTVSCM mine was still in operation, pumps from the processing facility pumped fine tailings slurry to the Tailings Basin. However, the facility has been inactive since LTVSCM's bankruptcy and no process water or tailings have been added to the Basin since 2001.

The Tailings Basin consists of three main cells—1E, 2E and 2W, with approximate fill heights of 60, 95, and 200 feet, respectively. Currently, Cells 1E and 2E contain ponds of approximately 340 acres and 150 acres, respectively. Cell 2W, the largest of the three cells comprising approximately 50 percent of the total Basin area, contains a small pool of water only following snow melt. Natural grasses cover the remainder of the land surface of the Basin.

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[1] The permit includes an expiration date of November 30, 2005. Cliffs Erie submitted a timely application for renewal on May 27, 2005. The MPCA has yet to reissue the permit and the permit is being administratively continued by the Agency.

[2] *See* Exhibit A.

Historically, the Basin discharged water both to groundwater in the underlying aquifer and to surface waters surrounding the Basin. The Basin permit requires Cliffs Erie to monitor eight groundwater monitoring wells as well as five surface discharge stations.[3] Water pumped into the ponds as well as precipitation falling across the Basin soaks into the underlying earth and slowly—over a period of ten to twenty years—descends to the glacial materials comprising the underlying groundwater aquifer.[4] After entering the groundwater, some of the water from the Tailings Basin is transported by the slow-moving aquifer and eventually reappears at the surface, seeping into area wetlands and stream headwaters. The time it takes for the water to move from the underlying aquifer to these surface waters ranges from years to decades, depending on the distance involved and the hydrologic conditions. Exactly what paths the water takes to reach these surface waters is unclear.

In addition to these discharges to groundwater, the Basin also formerly discharged directly into surface waters. These discharges consisted of seepage from the bottom of the Basin that emerged directly onto land, creating creek-like flows that traveled directly into surrounding surface waters. However, these discharges ceased following an April 2010 consent decree between the MPCA and Cliffs Erie (Consent Decree, or Decree) to resolve alleged violations of the NPDES/SDS permit for the Basin.[5] Pursuant to the Decree, Cliffs Erie installed mitigation systems that included intercepting all discharges at the surface discharge points and pumping the water back into the Tailings Basin. These measures have been very effective, and for several years now there have been *zero discharges* from the Tailings Basin directly into surface water. It is for this reason, as more fully explained, below, that it is no longer necessary or appropriate to regulate the Tailings Basin under an NPDES permit.

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[3] Four of the eight groundwater monitoring wells are downgradient of the Tailings Basin (GW001, GW006 - GW008) and have instantaneous maximum limits for boron, fluoride, manganese and molybdenum. The permit lists five surface discharge stations (SD001, SD002, SD004, SD005, and SD006) and requires monitoring for, among other parameters, conductivity, hardness and bicarbonates. Cliffs Erie's NPDES/SDS permit for the Hoyt Lakes Mining Area associated with the Tailings Basin includes outfall SD-026 at the Second Creek headwaters, which, while located in the mine area, consisted primarily of seepage flow from the south side of the Tailings Basin.

[4] The ponds on cells 1E and 2E no longer contain any process water; enough time has passed that all remaining process water would have seeped into the earth and the water presently in the ponds consists solely of precipitation (although some surface water discharges are also being pumped back into the Basin as part of Cliffs Erie's mitigation systems, discussed *infra*).

[5] Consent Decree, *MPCA v. Cliffs Erie L.L.C.*, No. 62CV-10-2807 (Apr. 6, 2010).

DISCUSSION

I. THE MPCA HAS BROAD AUTHORITY UNDER STATE LAW TO REGULATE DISCHARGES TO GROUNDWATER THAT MAY AFFECT GROUNDWATER, SURFACE WATERS, OR BOTH, AND IT HAS TRADITIONALLY USED THIS AUTHORITY TO REGULATE NUMEROUS TYPES OF DISCHARGES TO GROUNDWATER UNDER SDS PERMITS ALONE.

A. Statutory Authority and Scope of the SDS Program.

Chapter 115 of the Minnesota Statutes vests in the MPCA authority to administer and enforce all laws regarding the pollution of "waters of the state" (WOS). Minn. Stat. 115.03, § subd. 1(a). The definition of "waters of the state"—and the scope of the MPCA's authority—is broad, encompassing all surface water, ground water, wetlands, streams, lakes, ponds, and generally "all other bodies or accumulations of water, surface or underground, natural or artificial, public or private, which are contained within, flow through, or border upon the state or any portion thereof." Minn. Stat. § 115.01, subd. 22. State law prohibits the discharge or "addition" of pollutants to such waters without a written permit from the MPCA. Minn. Stat. § 115.07, subd. 1(a). The MPCA issues these permits under its "state disposal system" program.[6]

The MPCA also administers the federal Clean Water Act's NPDES program in Minnesota. Like the SDS program, the NPDES program prohibits the discharge of pollutants into Minnesota waters without an NPDES permit. However, the scope of the NPDES program is much narrower. The NPDES program applies only to "waters of the United States" (WOUS), a subset of WOS that excludes groundwater and many types of surface waters. In addition, whereas "discharges" subject to the SDS program include *any* kind of "addition" of pollutants to Minnesota waters, "discharges" subject to the NPDES program are limited to "additions" that come from a "point source." *See* 33 U.S.C. § 1311, 1362.

B. Types of Discharges Regulated by SDS-Only Permits.

When permitting discharges to WOUS, the MPCA typically issues NPDES permits in combination with an SDS permit. Doing so allows the MPCA to assert not only its CWA authority over WOUS but also to utilize the agency's broader authority over WOS—for example, to regulate not only the principal surface water discharge but also any ancillary effects upon non-WOUS, such as groundwater. However, in situations where an activity may add pollutants to WOS but does not involve a discharge to surface waters from a point source, there is no need, or legal basis, for an NPDES permit. In these situations, the MPCA issues SDS-only permits. Examples include, but are not limited to, the following:

1. Land Application Activities.

The MPCA issues SDS-only permits for various types of land application activities, including industrial land discharges of process wastewater, spray irrigation, and subsurface

[6] So called because chapter 115 also requires permits for the construction or operation of a "disposal system," defined as "a system for disposing of sewage, industrial waste and other wastes," which includes "sewer systems and treatment works." Minn. Stat. § 115.01, subd. 5.

treatment systems (i.e., septic tanks).[7] In these situations, the pollution risk comes from contaminated water soaking through the underlying earth and entering groundwater. The discharge of pollutants to groundwater, which is not a WOUS under the CWA, is beyond the jurisdictional reach of the NPDES program. But the MPCA still has statutory authority to regulate groundwater pollution in these situations, and it does so under its SDS program.

2. Wastewater Treatment Facilities.

Similarly, the MPCA regulates municipal wastewater treatment facilities under SDS-only permits where the facility does not discharge directly to surface waters. For example, the MPCA recently noticed an SDS permit for the Clearwater Harbor Wastewater Treatment Facility.[8] The facility, which is located in Stearns County, is a system of septic tanks, filters, pumps, and drainfields designed to treat the wastewater of approximately 113 homes. According to the public notice, the facility will involve no point-source discharges to surface water; thus, no NPDES permit is required.[9] However, the facility clearly has implications for WOS: the drainfields will "drain" waste water into the underlying groundwater, and the facility is located very near Grass Lake, suggesting the possibility of surface water quality impacts as well.[10] The draft permit addresses these pollution risks by imposing groundwater monitoring requirements and parameter limits, requiring a compliance schedule and mitigation plan for elevated groundwater nitrogen levels, and establishing numerous operational procedures to minimize water pollution.

3. Tailings Basins.

Most relevant to the matter at hand, the MPCA has taken a similar approach to mine tailings basins, regulating the basins under the agency's SDS program if they do not involve direct discharges to surface waters. A good example is Magnetation LLC's scram mining and processing operation near Bovey, Minnesota (Magnetation Plant 2), which is regulated under an SDS-only permit.[11] Scram mining involves the production of iron ore from previously developed stockpiles, basins, underground workings, or open pits. Magnetation's Plant 2 operation is focused on mining the 430-acre former Holman tailings basin site. The basin is contained by earthen dikes and Magnetation's operation is designed so that all process water, as well as runoff from snow melt

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[7] *See generally*, MPCA's website regarding "Water Quality Permit Application and Miscellaneous Forms" (e.g., the permit application forms for Land Application of Wastewater permits are titled as SDS permit programs).

[8] *See* Clearwater Harbor WWTF Draft SDS Permit MN0065226 (Public Notice April 28, 2014).

[9] Compare, for example, the recently noticed draft NPDES/SDS permit for the Two Harbors waste water treatment facility (Permit MN0022250). This facility has "a continuous discharge to Lake Superior"—clearly a point source discharge to a WOUS—and thus requires an NPDES permit in addition to an SDS permit.

[10] *See* Exhibit B (map showing close proximity of Clearwater Harbor WWTF to surface waters). Many facilities for which MPCA issues SDS-only permits are similarly situated very close to surface waters. *See, e.g.*, Exhibit C (map from Pucks Point Draft WWTF SDS Permit MN0070530 (Public Notice May 12, 2104)).

[11] *See* Magnetation LLC's Final Modified SDS Permit No. MN0069868 (April 4, 2012).

and rainfall, is contained within the site and recirculated. There are no direct discharges to surface waters from the basin. However, some water naturally seeps through the basin, carrying constitutents of concern into the groundwater below. The basins are located very close to Holman Lake and the Swan River, which again suggests the possibility of surface water quality impacts.

To address these risks, Magnetation's SDS permit requires annual evaluations of "seepage zones" from the perimeter dikes as well as ongoing monitoring of both groundwater and nearby surface water. If the monitoring indicates "impacts to the environment," the MPCA retains the ability to reopen the permit. The permit also requires that Magnetation operate and maintain the facility to prevent the exceedance of surface and groundwater quality standards specified in Minn. R. chs. 7050 and 7060. In this way, through the SDS permit, the MPCA has the ability to protect not only the groundwater receiving seepage from the basin but also nearby surface waters affected by the discharges to groundwater.

The MPCA has taken a similar permitting approach to other tailings basins. For example, the MPCA regulates tailings basins at the two other scram mining operations in the state—Magnetation's Mesabi Chief Tailings Basin 3 near Keewatin, and Mining Resources LLC's scram mining operation near Hoyt Lakes[12]—under SDS-only permits. In both cases, water is contained and recirculated within the site such that there are no discharges directly to surface waters. And as with the Magnetation Plant 2 SDS permit, the SDS permits for these facilities require monitoring of both groundwater and surface water and impose similar operational requirements to protect water quality.

Even where a tailings basin is permitted as part of a larger mining operation under a combined NPDES/SDS permit, if there is no surface water discharge from the tailings basin, The MPCA still regulates the basin itself as an SDS-only facility. For example, in the NPDES/SDS permit issued to Minnesota Steel Industries, LLC in August 2007 for the company's taconite mine near Nashwauk, the MPCA expressly distinguished the NPDES part of the permit (which was required for dewatering discharges to surface waters) from the SDS part of the permit (which covered the tailings basin), stating:

> This NPDES/SDS Permit incorporates an SDS Permit authorizing the operation of the tailings basin and an NPDES Permit authorizing a discharge of stormwater and mine pit dewatering to the Ann and Sullivan Pits…[13]

In sum, when an activity will discharge pollutants directly to surface waters in Minnesota, the MPCA issues combined NPDES/SDS permits; however, when an activity will add pollutants to waters of the state—groundwater or surface water—but will not involve direct discharges to surface water, such as the operation of a tailings basin, the MPCA regulates the activity solely under its SDS permit program.

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[12] *See* Magnetation Inc.'s Final Modified SDS Permit No. MN0069221 (May 25, 2011) and Mining Resources, LLC's Final Issued SDS Permit No. MN0070050 (November 23, 2011).

[13] *See* Minnesota Steel Industries, LLC's NPDES/SDS Permit No. MN0068241 (August 21, 2007) p. 3.

C. SDS-only permits provide robust protection for affected waters, including surface waters.

An SDS permit provides the MPCA with many regulatory tools to protect affected waters, including permit limitations, monitoring requirements, schedules of compliance, and operational mandates such as storm water pollution prevention plans. And even though an activity permitted under an SDS-only permit does not involve direct discharges to surface waters, the MPCA can nonetheless impose SDS permit requirements necessary to protect surface waters that could be adversely affected. Section 115.03 of the Minnesota Statutes empowers the MPCA to issue SDS permits "under *such conditions as it may prescribe*, in order to prevent, control, or abate water pollution" (emphasis added). Consistent with this broad grant of authority, the MPCA could, for example, require permittees to monitor groundwater that could reach area surface waters or require direct monitoring of surface water quality, as in the tailings basin permits discussed above. The MPCA could also establish limitations for specific parameters in surface or groundwater, with compliance schedules as appropriate, or order a variety of measures designed to implement long-term mitigation goals. In short, the MPCA's SDS permitting authority is not only fully sufficient to protect the state's ground and surface waters from discharges, but it is broad enough to allow the agency to fashion appropriate site-specific mitigation or remedial measures. The only reason for the MPCA to insist upon an NPDES permit in addition to an SDS permit for a particular facility is if the CWA requires it. In the case of the Tailings Basin, no NPDES permit is required.

II. THE CLEAN WATER ACT DOES NOT REQUIRE THE MPCA TO REGULATE GROUNDWATER DISCHARGES FROM THE TAILINGS BASIN UNDER AN NPDES PERMIT EVEN IF A SUBSURFACE HYDROLOGIC CONNECTION BETWEEN THE GROUNDWATER AND SURFACE WATERS CAN BE DEMONSTRATED.

A. The text and legislative history of the CWA indicate that it was never intended to regulate discharges to groundwater.

There is little dispute that groundwater is outside the scope of the CWA. Although discharges to groundwater may be, and in Minnesota are, appropriately regulated by other means, they are not subject to the CWA's NPDES permit requirement. The CWA makes it unlawful for any person or entity to "discharge any pollutant" without an NPDES permit. 33 U.S.C. § 1311(a) & § 1342(a).[14] The Act defines "discharge of any pollutant" as "any addition of any pollutant to *navigable waters* from a point source," 33 U.S.C. § 1362(12)(A) (emphasis added), and simply defines ''navigable waters'' as "waters of the United States." 33 U.S.C. 1362(7).

The United States Environmental Protection Agency (EPA) has long considered groundwater beyond the reach of the CWA.[15] The agency's current regulatory definition of

[14] The MPCA administers the NPDES program in Minnesota pursuant to EPA's 1974 approval of Minnesota's program.

[15] *See* Opinion, Office of General Counsel, EPA (December 13, 1973) ("[T]he term 'discharge of a pollutant' is defined so as to include only discharges into navigable waters . . . . Discharges into ground water are not included.").

WOUS, although written broadly, does not include groundwater.[16] And the agency's recently proposed revision to its definition of WOUS goes a step further by expressly *excluding* groundwater from the definition.[17]

Courts that have considered the issue have also agreed that Congress did not intend "waters of the United States" to include groundwater and that discharges of pollutants into groundwater are not subject to regulation under the Act. *See, e.g., Idaho Rural Council v. Bosma*, 143 F. Supp. 2d 1169, 1179 (D. Idaho 2001); *Sierra Club v. Col. Refining Co.*, 838 F. Supp. 1428, 1432 (D. Col. 1993). *See also, Umatilla Waterquality Protect v. Smith Frozen*, 962 F. Supp. 1312 (D. Or. 1997) (discussing the legislative history of the CWA and noting that "both the Senate and the House specifically rejected attempts to require permits for discharges to groundwater under the NPDES program").[18]

Furthermore, excluding groundwater from the CWA accords with Congressional policy to "recognize, preserve, and protect the primary responsibilities and rights of States to prevent, reduce, and eliminate pollution" and to "plan the development and use ... of land and water resources." 33 U.S.C. § 1251(b). In the preamble to their Proposed Jurisdictional Rule, the EPA and the U.S. Army Corps of Engineers (Corps) emphasized that states and tribes "retain full authority to implement their own programs to more broadly or more fully protect the waters in their state," noting that "[m]any states and tribes, for example, protect groundwater..."[19] In short, discharges to groundwater are not subject to the CWA.

Accordingly, the discharges at issue from the Cliffs Erie Tailings Basin—which are undisputedly discharges to groundwater, not surface water—fall outside the scope of the CWA. They should be regulated not by an NPDES permit but by an SDS permit alone.

B. The EPA has never adopted any formal position interpreting the CWA to require an NPDES permit for the discharge of pollutants to groundwater that is hydrologically connected to surface water.

Whether the CWA can be applied to discharges of pollutants that only arrive in "waters of the United States" after percolating through "hydrologically connected" bodies of groundwater has been the subject of some discussion and dispute for several decades. Though the EPA has from time to time expressed an opinion on the issue, it has never translated its informal opinion

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[16] 40 C.F.R. 122.2.

[17] U.S. Corps of Engineers & EPA, Proposed Rule, *Definition of "Waters of the United States"*, 79 Fed. Reg. 22188, 22268 (Mon. Apr. 21, 2014) ("Proposed Jurisdictional Rule") (proposed 122.2(b)(vi)). *See also id.* at 22218 (stating, "The agencies have never interpreted ''waters of the United States'' to include groundwater and the proposed rule explicitly excludes groundwater...").

[18] *See also Tri-Realty Co.*, 2013 WL 6164092 at *9, 10 (noting that the Supreme Court in *SWANCC* and *Rapanos* repeatedly described the "navigable waters" covered by the CWA as "open water" and "open waters," and that groundwater "is even less fairly described as 'open water'...than any wetland").

[19] Proposed Jurisdictional Rule, *supra* at 22194.

into a formal agency position. It has never promulgated regulations on the subject. It has never even published guidance on the subject.[20]

The agency expressed its opinion, as well as a rationale for that opinion, most clearly in a preamble to certain proposed rules governing concentrated animal feeding operations (CAFOs). 66 Fed. Reg. 2960, 3015-3018 (Jan. 12, 2001). "As a legal and factual matter, EPA has made a determination that, in general, collected or channeled pollutants conveyed to surface waters via ground water can constitute a discharge subject to the Clean Water Act." *Id.* at 3017. The proposed rule would have imposed explicit national requirements on certain CAFOs to address possible discharges to surface water through groundwater with a direct subsurface hydrologic connection to surface waters.

In its final CAFO rule, however, the EPA chose not to establish such requirements. 68 Fed. Reg. 7176, 7216 (Feb. 12, 2003). In part, the EPA rejected the imposition of national effluent limitation guidelines because "discharges from CAFOs to surface water via a groundwater pathway are highly dependent on site specific variables, such as topography, climate, distance to surface water, and geologic factors such as depth of groundwater, soil porosity and permeability, and subsurface structure." *Id.* However, in rejecting the proposed requirements, the EPA "also recognize[d] there are conflicting legal precedents on this issue." *Id.*

Though more than a decade has now passed since the promulgation of the final CAFO regulation in 2003, the EPA has never clarified further, in guidance or otherwise, precisely how site- specific factors should be considered or applied in identifying a direct subsurface hydrologic connection between groundwater and surface waters. An obvious opportunity for the agency to have outlined its view regarding the appropriate use of site-specific factors was in its recent Proposed Jurisdictional Rule. EPA declined to do so. Rather, in the Proposed Rule, the EPA states that the Act does *not* cover groundwater.

C. Though case law is divided, the better reasoned decisions and those most consistent with recent Supreme Court precedent, hold that the Clean Water Act does not govern discharges to groundwater even if there is a direct subsurface hydrologic connection with surface water.

As the EPA aptly observed in the preamble to the 2003 final CAFO rule, there are indeed "conflicting legal precedents" on the question whether discharges of pollutants to groundwater that has a direct subsurface hydrologic connection to surface waters are subject to the CWA.[21] The

[20] Over the past several decades, as discussed below, numerous courts have addressed the issue of discharges to groundwater that may affect surface waters and have come to conflicting conclusions. However, in spite of occasionally opining that it has jurisdiction over discharges to hydrologically connected groundwater, the EPA has been reticent to assert that position in litigation. The agency has apparently participated in only one of the relevant cases, and that case was decided almost thirty years ago. *Quivira Mining Co. v. U.S. Environmental Protection Agency*, 765 F.2d 126 (10th Cir. 1985). In all other relevant cases, the hydrologic connection theory was raised and litigated by parties other than the EPA.

[21] The CWA itself does not address the issue of jurisdiction over discharges to hydrologically connected groundwater.

twenty-some federal court decisions that have addressed the issue have generally fallen into two camps: (1) those espousing a "broad view" of the jurisdictional scope of the CWA, concluding the Act confers regulatory authority over discharges to groundwater hydrologically connected to surface waters; and (2) those espousing a "narrow view," concluding that the CWA does not support such a broad assertion of authority and that regulation of groundwater discharges should be left to the states.

No Minnesota court has addressed the issue, nor has the Eighth Circuit Court of Appeals or the U.S. Supreme Court. Two district court decisions from other states within the Eighth Circuit—Iowa and South Dakota—have reached opposite conclusions.[22] Thus, if and when a United States District Court in Minnesota is faced with deciding the scope of CWA jurisdiction over discharges to hydrologically connected groundwaters, it will have no binding precedent to guide its interpretation. The court would instead conduct its own statutory interpretation and look to case law from other jurisdictions from both the "broad" and "narrow" camps. An analysis of the two bodies of case law indicates that the better reasoned decisions, and those most in accord with recent Supreme Court precedent, adopt the narrow view.

1. The "Broad View."

Courts embracing a broad view of jurisdiction often look no further than the purposes of the statute. Some note that the CWA is a remedial statute and therefore should be construed broadly. *See, e.g., Association Concerned Over Resources and Nature, Inc. v. Tenn. Aluminum Processors, Inc.*, No. 1:10-00084, 2011 WL 1357690 (M.D. Tenn. April 11, 2011) at *17 (citing remedial purpose as reason to follow courts adopting broad view). To find that the CWA governs discharges to hydrologically connected groundwater, courts look to "the goal of the CWA [ ] to protect the quality of surface waters," as well as precedent characterizing CWA jurisdiction as reaching the outermost boundaries of that permitted under the Commerce Clause. They conclude summarily that "any pollutant which enters such waters, whether directly or through groundwater, is subject to regulation[.]" *Washington Wilderness Coalition v. Hecla Mining Co.*, 870 F. Supp. 983, 990 (E.D. Wash. 1994).[23] This logic has led some courts to describe the scope of the CWA as including groundwater that is "tributary" to navigable waters. *Sierra Club*, 838 F. Supp. at 1432. Courts accepting the broad view of CWA jurisdiction also typically maximize the import of EPA's expressions of opinion, discussed above, touching upon groundwater discharges. *See, e.g., Northwest Environmental Defense Center*, 2009 WL 3672895, at *10-*11 (deferring to the

[22] *Williams Pipe Line Co. v. Bayer Corp.*, 964 F. Supp. 1300 (S.D. Iowa 1997) (broad view), and *Patterson Farm, Inc. v. City of Britton*, 22 F. Supp. 2d 1085 (D.S.D. 1998) (narrow view).

[23] *See also, Sierra Club v. Colorado Ref. Co.,* 838 F. Supp. 1428, 1434 (D. Colo. 1993) (reading Tenth Circuit cases as instruction to "interpret the terminology of the [CWA] broadly to give full effect to Congress' declared goal and policy"); *Friends of Santa Fe County v. LAC Minerals, Inc.,* 892 F. Supp. 1333, 1358 (D.N.M. 1995) (stating in dicta that "the Tenth Circuit's expansive construction of the [CWA's] jurisdictional reach[ ] foreclose[s] any argument that the CWA does not protect groundwater with some connection to surface water"); *Idaho Rural Council v. Bosma,* 143 F. Supp. 2d 1169, 1178 (D. Idaho 2001) ("The Ninth Circuit defines waters of the United States broadly."); *Mutual Life Ins. Co. v. Mobil Corp.,* No. Civ. A. 96–CV1781, 1998 WL 160820 (N.D.N.Y. 1998) at *2 (denying motion to dismiss action based on broad theory "[g]iven the broad interpretation of navigable waters under the CWA, the general policy of the act to protect the quality of surface waters, and the preliminary stage of this litigation").

EPA position despite contrary indications in legislative history and structure of statute and discussing at length the *Umatilla* court's refusal to defer to EPA).

2. The "Narrow View."

Courts espousing the "narrow view" rely on the text and structure of the CWA. Their most powerful argument is that "when Congress wanted certain provisions of the CWA to apply to groundwater, it said so explicitly." *Umatilla Waterquality Protective Ass'n v. Smith Frozen Foods, Inc.*, 962 F. Supp. 1312, 1318 (D. Or. 1997). To illustrate Congress' knowing reference to groundwater, the *Umatilla* court pointed to 33 U.S.C. § 1252(a), which instructs the EPA to "develop comprehensive programs for preventing . . . pollution of the navigable waters and ground waters . . ." and to 33 U.S.C. § 1254(a)(5), which discusses "monitoring the quality of the navigable waters and ground waters and the contiguous zone and the oceans." The NPDES permitting provisions of the CWA, of course, make no reference to groundwater and, thus, some courts find such silence determinative when contrasted with express references to groundwater elsewhere in the Act. *Id.; see also Kelley v. United States,* 618 F. Supp. 1103, 1105 (W.D. Mich. 1985) (discussing Congress' inclusion of groundwater in research provisions of CWA and choice not to include groundwater in regulatory provisions). The *Umatilla* court also noted that, of the four categories of water described throughout the CWA—navigable waters, groundwater, the contiguous zone and oceans—only groundwater is excluded as a proper object in the definition of "discharge of a pollutant." 962 F. Supp. at 1318 (citing 33 U.S.C. § 1362(12)).

Courts that adopt the narrow view also tend to place great weight on clear indications from Congress that it did not intend to regulate groundwater in enacting the CWA. *See Tri-Realty Co.*, at *9 (holding that "Congress did not intend either the CWA or the OPA to extend federal regulatory authority over groundwater, regardless of whether that groundwater is eventually or somehow 'hydrologically connected' to navigable surface waters"). *See also Village of Oconomowoc Lake v. Dayton Hudson Corp.*, 24 F.3d 962, 965 (7th Cir. 1994); *Umatilla Waterquality*, 962 F. Supp. at 1318-19; *Kelley*, 618 F. Supp. at 1105-06. For example, the Senate report that accompanied the CWA described the rejection of several bills that included regulation of groundwater because "jurisdiction regarding groundwaters is so complex." S. Rep. No. 414, 92d Congress, 1st Sess. 73 (1972), U.S. Code Cong. & Admin. News 1972, pp. 3668, 3749 (cited in *Village of Oconomowoc Lake*, 24 F.3d at 965; *Umatilla Waterquality*, 962 F. Supp. at 1319; *Kelley*, 618 F. Supp. at 1105-06).[24]

Narrow-view courts also reject EPA's position that it can assert CWA jurisdiction over hydrologically connected groundwater. These courts point out, as discussed above, that the agency has never subjected its broad interpretation to notice-and-comment rulemaking or even squarely addressed the question in its policy pronouncements. *See Umatilla Waterquality*, 962 F. Supp. at

[24] *See also* 118 Cong. Rec. 10,667 (1972 Leg. Hist. 590-91 (remarks of Rep. Clausen) (cited in *Umatilla Waterquality*, 962 F. Supp. at 1319) (noting that the House rejected the so-called Aspin Amendment, which sought to include groundwater within the ambit of the CWA, based on the committee's determination "that there was not sufficient information on ground waters to justify the types of controls that are required for navigable waters").

1317 ("EPA itself has never promulgated a formal regulation nor issued formal guidance interpreting the CWA to include regulation of groundwater."). As the Seventh Circuit put it:

> Collateral reference to a problem is not a satisfactory substitute for focused attention in rule-making or adjudication. By amending its regulations, the EPA could pose a harder question. As the statute and regulations stand, however, the federal government has not asserted a claim of authority over artificial ponds that drain into ground waters.

Village of Oconomowoc Lake, 24 F.3d at 966 (in reference to statement in 1990 storm water regulations and similar conclusory assertions of EPA authority).

3. The "Narrow View" is the more defensible position under current CWA jurisprudence.

After many of the "broad view" cases endorsing the "hydrologic connection" theory had been decided—including every such appellate court decision—the Supreme Court issued its opinion in *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers* (SWANCC), 531 U.S. 159 (2001). Although the case did not involve discharges to groundwater, the Court's opinion nonetheless undercut the two principal arguments in favor of the "broad view"—that the CWA should be interpreted as expansively as possible and that courts should defer to the EPA's unofficial position on hydrologically connected groundwater—making the broad view an increasingly untenable position.

At issue in *SWANCC* was the validity of the Corps' 1986 interpretive rule known as the Migratory Bird Rule (MBR).[25] By asserting CWA jurisdiction over waters used by migratory birds, the MBR cast a remarkably wide jurisdictional net, capturing even isolated, intrastate, and non-navigable waters within the scope of the CWA. This broad understanding of the Act's scope was firmly in place during the 1990s when many of the key "broad view" hydrologic-connection cases were decided, including *Hecla* (1994) and *Williams Pipe Line Co. v. Bayer Corp.*, 964 F. Supp. 1300 (S.D. Iowa 1997). However, in 2001, the Supreme Court in *SWANCC* struck down the MBR, holding that the Corps' interpretation of the CWA scope, as expressed in the MBR, was too broad: even though the CWA was not limited to traditionally "navigable" waters, the Court concluded, the Corps' understanding of the Act's jurisdiction was so broad that it impermissibly gave the term "navigable" "no effect whatever."[26] With *SWANCC*, the high Court significantly narrowed the jurisdiction of the CWA and in the process removed a fundamental underpinning of the hydrologic-connection "broad view": that the Act should be interpreted as expansively as possible.

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[25] 51 Fed. Reg. 41206, 41217 (Nov. 13, 1986) (clarifying that the Corps deemed WOUS to include waters which "are or would be used as habitat by birds protected by Migratory Bird Treaties; [or]… by other migratory birds which cross state lines; [or]...[w]hich are or would be used as habitat for endangered species…").

[26] *SWANCC* at 172. *See also Rapanos v. United States*, 547 U.S. 715, 734 (2006) (affirming that the term "navigable waters must carry "*some* of its original substance" (emphasis in original)).

SWANCC also brought sharply into question a second conclusion underpinnng the broad-view courts' opinions—i.e., that courts should defer to the EPA's unofficial interpretation that it has power to regulate discharges of pollutants to hydrologically connected groundwater. In *SWANCC*, the Corps had argued that the Court should accord "*Chevron*" deference to the Corps' interpretation, in the MBR, of the meaning of "waters of the United States" under the CWA, because it involved a statute administered by the Corps.[27] The Court disagreed. First, the Court did not find section 404(a)'s reference to "navigable waters" to be ambiguous. However, even if section 404(a) was ambiguous, the Court held, it would still not extend *Chevron* deference to the MBR. The Court invoked a longstanding rule of statutory construction that a court should show no deference to an agency's statutory interpretation in cases where the interpretation "invokes the outer limit of Congress' power" unless there is a "clear indication that Congress intended that result."[28] This is particularly so when the agency's interpretation "alters the federal-state framework by permitting federal encroachment upon a traditional state power."[29]

In *SWANCC*, the Court concluded that the MBR raised significant Constitutional issues regarding the scope of Congress's Commerce Clause authority to regulate waters based on the presence of migratory birds.[30] Moreover, the MBR would result in "a significant impingement of the States' traditional and primary power over land and water use."[31] Accordingly, the Court rejected the Corps' request for deference. In essence, the issue in *SWANCC* was not whether the MBR exceeded the Corps' *statutory* authority under the CWA but rather whether the rule exceeded Congress's *constitutional* authority under the Commerce Clause.[32] *Chevron* deference was simply not applicable.[33]

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[27] *Chevron U.S.A. Inc. v. Nat. Res. Defense Council, Inc.*, 467 U.S. 837 (1984).

[28] *SWANCC* at 172, *citing Edward J. DeBartolo Corp. v. Florida Gulf Coast Building & Constr. Trades Council*, 485 U.S. 568, 575 (1988) ("[W]here an otherwise acceptable construction of a statute would raise serious constitutional problems, the Court will construe the statute to avoid such problems unless such construction is plainly contrary to the intent of Congress."). This requirement stems from the Court's "prudential desire not to needlessly reach constitutional issues" and its "assumption that Congress does not casually authorize administrative agencies to interpret a statute to push the limit of congressional authority." *SWANCC* at 172.

[29] *Id.*

[30] *Id.* (noting the difficulty of evaluating "the precise object or activity that, in the aggregate, substantially affects interstate commerce").

[31] *Id.*

[32] *Cf. City of Arlington, Tex. v. F.C.C.*, -- U.S. --, 133 S.Ct. 1863 (2013) (addressing a court's obligation to give *Chevron* deference to an agency's interpretation of an ambiguous *statutory* provision, even if the interpretation concerns the scope of the agency's jurisdiction).

[33] *See also Rapanos* at 738 (reaching the same conclusion regarding deference to the Corps' CWA interpretation asserting jurisdiction over saturated lands located 11-20 miles away from the nearest body of "navigable water," and holding that "[e]ven if the term 'the waters of the United States' were ambiguous as applied to channels that sometimes host ephemeral flows of water (which it is not), we would expect a clearer statement from Congress to authorize an agency theory of jurisdiction that presses the envelope of constitutional validity").

For the same reasons, the Court would be unlikely to defer to any interpretation by the EPA that it has CWA jurisdiction over hydrologically connected groundwater. Intrastate groundwater, even more so than intrastate surface waters used by migratory birds, has at best a tenuous connection to interstate commerce, and groundwater is unquestionably an area of traditional state regulation. Like the MBR, then, the EPA's assertion of jurisdiction over discharges to groundwater "invokes the outer limit of Congress' power." And, as discussed above, Congress, in the CWA, made no statement, let alone provided a "clear indication," that its Constitutional authority should extend to hydrologically connected groundwater.

In short, the primary bases for the "broad view" are no longer in place, and the "narrow view" is the more defensible position. As summarized by a 2005 law review article:

> In the wake of *SWANCC*, the EPA's assertion of hydrologically connected groundwater authority will likely have difficulty surviving a challenge to the Supreme Court . . . [T]he specter of a challenge in the Supreme Court may have been a persuasive but unstated reason for the EPA's omission of groundwater regulation from the final CAFO rule . . . The regulation of groundwater belongs at the regional, state, or local level. And for the most part, states . . . administer groundwater regulation with a reasonable level of sophistication. Just because EPA may not regulate pollutant discharges to groundwater under the CWA, regardless of hydrological connection to surface water, does not mean such discharges go unregulated . . .[34]

III. FOR BOTH LEGAL AND POLICY REASONS, THE MPCA SHOULD NOT REGULATE GROUNDWATER SEEPAGE FROM THE CLIFFS ERIE TAILINGS BASIN UNDER AN NPDES PERMIT.

A. Characterizing the 3,034-acre Tailings Basin as a single "point source" stretches the statutory definition beyond recognition; the Tailings Basin is more logically regulated as a nonpoint source.

1. The Cliffs Erie Tailing Basin does not meet the definition of "point source."

To establish a CWA violation based on a discharge to groundwater, a plaintiff or regulatory body must establish not only that the defendant discharged pollutants to waters of the United States but also that the discharge originated from a "point source." 33 U.S.C. §1362(12)(A). The Act defines "point source" as:

> [A]ny discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete

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[34] Comment, *Regulating Point-Source Discharges to Groundwater Hydrologically Connected to Navigable Waters: An Unresolved Question of Environmental Protection Authority under the Clean Water Act*, 5 BARRY LAW REV. 95, 125-126 (2005).

> fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged.

33 U.S.C. § 1362(14).[35]

It stretches credulity to view the Tailings Basin as falling within this definition. As described above, the Basin is enormous—a 3,034-acre land mass with an 11.28-mile perimeter—hardly a "confined and discrete conveyance." Most of the Basin area, including all of Cell 2W, and approximately half of Cells 1E and 2E, has been reclaimed and is covered with natural grasses. Because the LTVSCM mining operation has been inactive since 2001, no new process water or tailings are being introduced to the Basin. Rather, the only current source of water at the Basin (other than the former surface water discharges being pumped back to the Basin pursuant to Cliffs Erie's mitigation system, described above) is precipitation—rain and snow falling onto the Basin grasslands and into its ponds. There is no manmade or natural feature such as a pipe, ditch, channel, tunnel, or conduit conveying or channeling the water to a particular location. Rather the precipitation falls evenly across the Basin, soaking into the earth below the grasslands and ponds and then slowly, over a period of ten to twenty years, making its way to the underlying groundwater, if at all, in accordance with the natural geological features—more like water soaking through a carpet than water being directed down a drain. Only the most tortured interpretation of the CWA "point source" definition could encompass the Tailings Basin.

2. Court decisions finding mining areas to be "point sources" are distinguishable.

Notwithstanding the apparently narrow definition of "point source," some courts have interpreted the term broadly.[36] In the mining context, numerous courts have concluded that mining areas or features can constitute "point sources." However, these decisions are distinguishable from the facts here because each case involved some sort channeling or conveyance of contaminated water. *See e.g.*, *Sierra Club v. El Paso Gold Mines*, 421 F.3d 1133 (10th Cir. 2005) (precipitation falling on inactive gold mining area funneled to groundwater via abandoned mineshaft on property); *United States v. Earth Sciences, Inc.*, 599 F.2d 368, 370 (10th Cir. 1979) (process water overflowed closed circulating system of sumps, ditches, hoses and pumps at gold leaching operation, escaping into nearby surface waters); *Sierra Club v. Abston Const. Co., Inc.*, 620 F.2d 41 (5th Cir. 1980) (precipitation falling on spoil piles at coal mine created ditches and gullies in the piles that channeled the water and conveyed it to surface waters); *Trustees for Alaska v. E.P.A.*, 749 F.2d 549, 557 -558 (9th Cir. 1984) (wastewater at gold placer mines collected and released to surface waters from "sluice boxes").[37]

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[35] *See also* the almost identical definition of "point source" in the EPA's regulations and Minnesota Statutes, 40 C.F.R. § 122.2, Minn. Stat. § 115.01, subd. 11.

[36] *See, e.g.*, *Peconic Baykeeper, Inc. v. Suffolk County*, 600 F.3d 180, 189 (2d Cir. 2010) (stating that the "point source" definition is to be "broadly interpreted" and "embraces the broadest possible definition of any identifiable conveyance from which pollutants might enter waters of the United States").

[37] *Cf.*, *Hecla* at 988 (holding that tailing ponds at active gold and silver place mine from which wastewater escaped into the soil and groundwater constituted "point sources" and citing the "touchstone" of being able

3. Groundwater discharges to the Tailings Basin are more logically regulated as nonpoint source discharges under MPCA's SDS program.

Whereas the Cliffs Erie Tailings Basin does not naturally fit within the definition of "point source," Minnesota's definition of "nonpoint source" is directly applicable:

> a land management or land use activity that contributes or may contribute to ground and surface water pollution as a result of runoff, seepage, or percolation and that is not defined as a point source…[38]

The Basin is a land management or use activity (land disposal of tailings), it may contribute to both groundwater and surface water discharges, it does so through seepage, or percolation, and, as discussed above, it is not clearly defined as a "point source."[39] In short, the Tailings Basin is a nonpoint source.

This conclusion is supported by the Tenth Circuit's opinion in *El Paso Gold Mines*, 421 F.3d 1133 (10th Cir. 2005). The case involved an inactive mining area from which rainfall was funneled down an abandoned mine shaft and ultimately to a nearby river. Because of the abandoned mine shaft, the court had no trouble concluding that the mining area was a "point source" under the Act. However, the court was also clear that "absent the El Paso shaft, which is undoubtedly a point source, this case would implicate a different set of issues altogether." Without the mineshaft collecting and conveying precipitation to WOUS, waters from the site would simply be "groundwater seepage that travels through fractured rock." This, the court opined, "would be nonpoint source pollution, which is not subject to NPDES permitting." Because the Cliffs Erie Basin contains no artificial or natural feature like the El Paso mineshaft that would collect and convey water from the Basin, it essentially involves "groundwater seepage that travels through fractured rock," i.e., it is a nonpoint source discharge.

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to identify the "discrete facility" from which pollutants have escaped (i.e., the tailings ponds)). The precise facts of this case are not clear from the decision and it is thus difficult to know how similar the tailings basins were to the Cliffs Erie Basin. However, to the extent *Hecla* holds that mine tailings basins in general can constitute "point sources,' the case is an outlier. As explained above, in most cases where courts have found mining areas to constitute "point sources," there was some sort of manmade or natural feature that channeled or conveyed pollutants to navigable waters.

[38] Minn. R. 7050.0130, subp. 5.

[39] Although there is no federal definition of "nonpoint source" pollution — the EPA describes it on the Agency's website as any source of water pollution that does not meet the legal definition of "point source," www.water.epa.gov --- the Tailings Basin also fits within various agency descriptions of nonpoint source pollution. *See, e.g.*, EPA "Tribal Handbook for Developing and Managing Tribal Nonpoint Source Pollution Programs Under Section 319 of the Clean Water Act" (Feb. 2010) ("NPS pollution—polluted runoff—occurs when rainfall, snowmelt, or irrigation water runs over land or *through the ground*, picks up pollutants, and transports them into surface waters or ground water." (emphasis added)).

B. If the MPCA regulates groundwater seepage from the Cliffs Erie Tailings Basin under its NPDES program, it will have no legal justification for not applying the same NPDES requirements to groundwater seepage from other basins, ponds, or defined sources.

The MPCA's SDS program, as outlined above, regulates many types of discharges to groundwater besides seepage to groundwater from the Tailings Basin. The agency issues SDS permits for other tailings basins, including inactive basins that are being used for scram mining; for land application of wastewater; and for septic tanks. Many of these discharges occur in close proximity to surface waters.

If the MPCA characterizes a 3,034-acre tailings basin as a "point source"—as a "discernible, confined and discrete conveyance"—it will have no principled basis for not characterizing wastewater ponds, land spreading locations, and septic tanks as point sources also.[40] Those other sources will all be far smaller and even more "discernible, confined, and discrete" than the Tailings Basin. And if the MPCA takes the position that a direct subsurface hydrologic connection between a discharge to groundwater from the Basin and nearby surface water triggers the need for an NPDES permit, it will have no principled basis for not bringing those other sources of groundwater discharges within the scope of the federal program also.

The MPCA cannot take the position that it need only require NPDES permits in cases like Cliffs Erie, where the agency happens to acquire information establishing some type of subsurface hydrologic connection, such as the information developed by the PolyMet EIS. Representatives of Cliffs and PolyMet have already described to the agency why the information developed for the PolyMet EIS is relevant only to the proposed PolyMet project. The hydrologic information collected for the PolyMet EIS was intended to assess the impacts of the PolyMet Project and was premised on the unique design and specifications of that Project, which will include the installation of a hydraulic barrier to capture and contain groundwater seepage from the Tailings Basin. A great deal more study and technical analysis will be necessary to define the specific nature of any hydrologic connection or connections between the existing Tailings Basin and nearby surface waters, as well as to trace the course of specific pollutants from the Basin to those waters and to define the duration of their travel time.

In water-rich Minnesota, whenever any discharge to groundwater occurs in reasonable proximity to surface waters, it can probably be assumed that there is some type of subsurface hydrologic connection between the two. It would be unfair of the MPCA to willfully turn a blind eye to that fact simply because it does not already have in its possession information about the nature of that connection.

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[40] As one Seventh Circuit Judge put it, a "natural consequence" of applying the "hydrological connection" theory is to explode the universe of potential permittees, providing a basis for "collateral attacks against parking lots, septic tanks and sprinkler systems." *Village of Oconomowoc Lake*, 24 F.3d at 966 (Manion, J., concurring).

Similarly the agency cannot justify the selective NPDES-permitting of a limited number of sources on the grounds of "enforcement discretion." Certainly, in choosing whether to bring an enforcement action with respect to one, but not another, violation of law, the MPCA maintains the discretion to allocate its enforcement resources as it sees fit. *See, e.g., Heckler v. Chaney*, 470 U.S. 821, 831 (D. Col. 1985).[41] But the issuance of permits is not "enforcement."[42] The agency cannot decide that NPDES permits are necessary wherever there is a direct subsurface hydrologic connection between groundwater discharges and surface water, but then choose to ignore most situations where such connections are probable. It cannot require permits only for tailings basins or for the mining industry. Such an approach to permitting would clearly be arbitrary and capricious.

When the MPCA chose to apply the wild rice sulfate standard to the mining industry but not to municipal dischargers of sulfate, it was sued by the Minnesota Chamber of Commerce on equal protection grounds. The equal protection claim was dropped when the agency began to require municipal dischargers to study their sulfate discharges. Selective application of the hydrologic connection theory in the permitting of groundwater discharges would be almost certain to result in the same sort of legal challenge.

C. There is no clear legal or policy basis for identifying a "direct" subsurface hydrologic connection between the Tailings Basin and nearby surface waters.

Even under the broadest interpretation of the CWA, there must be a "direct" subsurface hydrologic connection through groundwater between a source and surface waters to justify the requirement of an NPDES permit. *See,* EPA Preamble, *supra,* 66 Fed. Reg. at 3017. *See also, Hecla Mining Company, supra,* 870 F. Supp. At 990 ("It is not sufficient to allege groundwater pollution, and then assert a general hydrologic connection between all waters. Rather, pollutants must be traced from their source to surface waters, in order to come within the purview of the CWA.").

But where the Tailings Basin has a perimeter more than eleven miles long, groundwater escaping from that perimeter will presumably enter into nearby surface waters across a broad range of different locations and over a broad range of different time periods. Spatially, is a "direct" connection a factual situation where groundwater enters surface waters within 100 feet of the tailings basin perimeter? Within 1000 feet? Within a mile? Temporally, is a "direct" connection a factual situation where the groundwater enters surface waters within days after it escapes the perimeter of the Tailings Basin? Within months? Within years? And if the spatial or temporal factors vary along different portions of the 11.28-mile long perimeter, as they surely will, is only *some* of the groundwater seepage from the Tailings Basin subject to the CWA? There are at present no answers to these questions, and more importantly there are no clear, non-arbitrary legal

[41] In *Heckler*, the Court stated, "This Court has recognized on several occasions over many years that an agency's decision not to prosecute or enforce, whether through civil or criminal process, is a decision generally committed to an agency's absolute discretion."

[42] This distinction is made clear in the structure of the CWA, which address enforcement and permitting in different chapters. *Compare* 33 USC chapter 26 subchapter III ("Standards and Enforcement") *with* subchapter IV ("Permits and Licenses").

or policy bases for arriving at answers—for drawing lines in some places but not in others. Equally important, as discussed below, the inevitable murkiness of the facts of groundwater seepage will render it problematic to regulate that seepage using the traditional provisions of an NPDES permit.

D. Expanding the NPDES program to include tailings basins and similar sources will create technical, financial, and staffing issues for the MPCA and the demand for clear guidance from regulated parties.

Regulating a tailings basin, a land spreading site, a septic system, or other such groundwater discharge sources as though they were "point sources" will raise a host of technical tasks for MPCA staff that will need to be undertaken even before permits can be written. These tasks include identifying, at a minimum, the specific sources and flow paths of groundwater discharges, the locations and time periods at which they enter surface waters, the nature and fate of any pollutants that may be carried by those waters, and the specific controls that can be applied at the source to bring discharges within effluent limits. The MPCA should be aware that expanding the scope of the NPDES program to include numerous new categories of sources will undoubtedly require more staff members and higher budgets. Moreover, MPCA will need to develop—and regulated parties will demand—guidance on what constitutes a direct subsurface hydrologic connection requiring an NPDES permit. It is one thing for a court to espouse the hydrologic connection theory. It is quite another matter for an administrative agency to put that theory into practice and bear the burden of addressing these daunting and expensive practical questions in everyday decisions and disputes related to permitting programs.

E. The State Disposal System program provides the MPCA with more tools and more discretion to address the complex technical issues associated with groundwater discharges that affect surface waters than the NPDES program.

When compared to the NPDES permit requirements, the SDS program is much better suited to regulating the unique aspects of tailings basins. Although both types of permits are subject to the MPCA's general permitting rules in Minn. R. 7001.0010 to 7001.0210, NPDES permits must also meet the requirements of the MPCA's NPDES-specific rules, Minn. R. 7001.1000 to 7001.1150, and federal requirements under the CWA and EPA regulations applicable to NPDES permits. *See, e.g.*, 40 CFR pts. 122, 123, 125. In addition, NPDES permits in Minnesota are subject to various procedural requirements set forth the Memorandum of Agreement between MPCA and EPA regarding implementation of Minnesota's NPDES program.

Many aspects of the SDS and NPDES program are very similar. For instance, both have maximum permit terms of five years,[43] and both are subject to the same requirements for permit modification[44] and for mixing zones.[45] However, there are significant differences as well,

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[43] Minn. R. 7001.0150, subp. 1, 40 C.F.R. § 122.46 (a).

[44] Minn. R. 7001.0170 (NPDES permits are also subject to additional modification requirements in Minn. R. 7001.1150, but these relate primarily to POTWs).

[45] Minnesota's rules on mixing zones are set forth in 7050.0210, subp. 5 (general standards) and 7052.0210 (more detailed requirements for Lake Superior Basin). There are no additional state or federal provisions

including stricter penalties for NPDES violations,[46] more specific NPDES monitoring requirements,[47] and industry-specific technology-based effluent limitations that must be included in NPDES permits.[48] Three aspects of the SDS permit program in particular offer MPCA significant advantages over the NPDES programs when permitting tailings basins:

1. SDS permits require only MPCA approval and oversight.

Because the NPDES program, although administered by the MPCA, is a federal program, the EPA retains oversight authority. In addition to adding an extra layer of administration to the permitting process, the EPA can slow or even veto the MPCA's permitting plans. Under federal regulations and the MPCA-EPA memorandum of Understanding, before issuing a proposed NPDES permit, the MPCA must provide the EPA an opportunity to review and object to the permit.[49] Third parties can petition the EPA to object and in certain circumstances obtain an administrative hearing. If the EPA has objections to the permit, the MPCA cannot issue the permit

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applicable to NPDES permits. Mixing-zone regulation is a matter of state law, EPA Water Quality Handbook, Chapter 5. *See also* 40 C.F.R. § 131.13 (giving states discretion adopt provisions implementing water quality standards, such as mixing zones, low flows and variances, subject to EPA review and approval).

[46] Compare Minn. Stat. 115.071 (up to $10,000 per day per negligent violation) with 33 U.S.C. § 1319 as modified by 78 Fed. Reg. 66643 (Nov. 6, 2013) (up to $37,000 per day per negligent violation). Minnesota's NPDES rules also include a specific penalty provision for disabling or tampering with monitoring devices. Minn. 7001.1090, subp. 1(G).

[47] Both SDS and NPDES must comply with MPCA's general monitoring provisions of Minn. R. 7001.0150, subp. 2(B), but the state NPDES rules set forth certain additional NPDES-specific monitoring requirements, including the volume of effluent discharged from each outfall, specification of test procedures that differ from those set forth in the CFR, and specification of the appropriate measurement to be reported for each pollutant limited in the permit. Minn. R. 7001.1080, subp. 5. NPDES permits must include "more frequent monitoring" requirements. Minn. R. 7001.1090, subp. 1(E). The NPDES program also offers permittees certain defenses that are not expressly applicable to SDS permittees, including a limited defenses against liability for bypasses and upsets. Minn. R. 7001.1090, subp. 1(K) and Minn. R. 7001.1090, subp. 1(L) (providing an "affirmative defense" that a permittee can make against agency enforcement action regarding temporary noncompliance with an effluent limitation resulting from an "upset" due to factors beyond the permittee's control).

[48] The EPA develops national regulations or "guidelines" for specific categories of industrial wastewater dischargers that set technology-based numerical limitations for specific pollutants at several levels of control (e.g., New Source Performance Standards (NSPS) for new direct dischargers or Best Conventional Pollutant Control Technology (BCT) for existing direct dischargers). *See* EPA's online overview at http://water.epa.gov/scitech/wastetech/guide/questions_index.cfm#imp. The EPA has published effluent guidelines for a wide variety of industries that could involve groundwater discharges, including mineral mining and processing, nonferrous metals manufacturing, ore mining and dressing, and landfills. *See* http://water.epa.gov/scitech/wastetech/guide/industry.cfm. If a permittee falls into one of the industrial categories, the permitting agency must incorporate the appropriate technology-based standards into the NPDES permit. SDS permits may, but are not required to, incorporate these technology-based effluent limitations.

[49] *See* the 1974 memorandum of agreement (and amendments) between the EPA and the MPCA regarding Minnesota's implementation of its authorized state NPDES permit (MOA), pp. 9-11, and 40 CFR § 123.44.

until the objections are resolved to the EPA's satisfaction. And if the objections cannot be resolved, the EPA may supplant the MPCA's permitting authority and issue the permit itself.

By contrast, SDS permits are exclusively a creature of state law. The EPA has no authority to veto or even comment upon SDS permits, which allows the MPCA to proceed at its own permitting pace.

2. SDS schedules of compliance are not subject to CWA deadlines.

Both SDS and NPDES permits can include a schedule of compliance (SOC), defined as "a schedule of remedial measures including an enforceable sequence of actions or operations leading to compliance with an effluent limitation, other limitation, prohibition, or standard."[50] For both types of permits, the SOC must require compliance in the "shortest reasonable period of time" or by a specified deadline if required by state or federal law.

One of the environmental issues associated with the Cliffs Erie Tailings Basin is that decades of mining and operation of the Tailings Basin have contributed to levels of various parameters—specifically sulfate, bicarbonate, TDS, conductivity, and hardness[51]—exceeding state water quality standards in surrounding surface waters. Although this impairment was likely caused in part by direct surface-water discharges from the Basin—discharges that have now ceased pursuant to the Consent Decree—it is also likely that the impairment has resulted in part from contaminated groundwater that seeped and continues to seep into the surface waters.

Whereas addressing the direct surface water discharges from the Basin was relatively straightforward (Cliffs installed systems to pump the discharges back into the Tailings Basin), addressing the contaminated groundwater seepage is much more complicated and will take time. If the MPCA treats the groundwater seepage as a point source discharge from the Basin, through a direct subsurface hydrologic connection, these "discharges" will likely not be able to immediately meet NPDES permit effluent limitations based on the relevant water quality standards. That is, the Basin, which is currently in compliance with its NPDES permit, would be rendered out of compliance.

To provide time for measures to be put into place allowing the Basin to come into compliance, the obvious solution would be for the MPCA to include appropriate SOCs in the Basin's permit for the parameters of concern. However, this is not an option under the NPDES program. The MPCA adopted these particular water quality standards prior to 1977, and pursuant to a longstanding EPA interpretation of section 301(b) of the CWA, NPDES permits may not

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[50] Minn. Stat. § 115.01; see also Minn. R. 7000.0100, subd. 11 (same) and 40 CFR § 122.2 (similar federal definition).

[51] These standards were adopted solely to protect agricultural and industrial "uses" that do not now exist at the site and are not likely to ever exist there. With the exception of sulfate, these standards are also undergoing a Triennial Water Quality Standard Review currently. If the MPCA adopts the revisions to the standards recommended in 2010, the topic of this letter will become almost entirely moot. The recommended standards have been attained at the site. Only the bicarbonate standard would not be met.

include SOCs for permit effluent limitations based on water quality standards adopted prior to July 1, 1977.[52]

There is no such restriction on SOCs in SDS permits because the CWA applies only to point source discharges to WOUS. An SDS permit for the Cliffs Erie Tailings Basin would regulate the Basin's discharges to groundwater, which is not a WOUS and not subject to the CWA section 301(b) deadline. If the MPCA deemed it necessary to protect groundwater and surface water, the agency could establish levels for the parameters of concern that must be achieved in the groundwater surrounding the Tailings Basin. If immediate compliance is not feasible, state law would allow the MPCA to include one or more SOCs in the SDS permit, requiring Cliffs Erie to come into compliance in the "shortest reasonable period of time."[53]

3. SDS permits allow for more appropriate points of compliance.

Minnesota and federal rules require that NPDES permit effluent limitations must be established (and compliance determined) at "the point of discharge" or at "outfalls."[54] Only in exceptional circumstances can the MPCA establish alternate effluent limitations "in internal waste streams at the point prior to mixing with other waste streams or cooling water streams."[55] This presents significant logistical issues when regulating a tailings basin such as Cliffs Erie's, not the least of which is finding a "point of discharge" where the Basin has a 11.28-mile perimeter and the alleged "discharge" involves nothing more than widespread groundwater seepage.

The SDS program is not tied to "discharge points" or "outfalls" and is thus better suited to regulate discharges from nonpoint sources such as a tailings basin. The MPCA can determine groundwater levels necessary to protect ground and surface waters potentially affected by seepage from the Tailings Basin and establish appropriate monitoring wells where the levels must be met. There is no need to artificially create a "discharge point" where none exists.

The reality of solving longstanding exceedances of water quality standards resulting from nonpoint source discharges, as exists around the Tailings Basin and at many similar sites across the Iron Range, is that it is a complex process requiring significant time and adaptability. Water from the LTVSCM facility took decades to reach the groundwater beneath the Tailings Basin and will take decades more to reach surface waters. Concentrations of constituents in that water which exceed surface water quality standards will not be eliminated simply by adding "end of pipe" controls or permit effluent limitations to a permit. The process of determining when, where, and

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[52] *See In the Matter of Star-Kist Caribe, Inc. Petitioner*, 3 E.A.D. 172 (E.A.B. 1990) (explaining EPA's interpretation of section 301(b)).

[53] For an example of how this could work, see the MPCA's Draft SDS Permit MN0065226 (Public Notice April 28, 2014) for the Clearwater Harbor wastewater Treatment Facility. Page 11 of the draft permit includes a schedule of compliance for nitrogen. It requires the permittee to meet a total nitrate level of 10 mg/L in groundwater monitoring wells prior to permit expiration, and includes various related requirements such as additional treatment units and disposal techniques.

[54] Minn. R. 7001.1080, subp. 2.

[55] *Id.*

how the groundwater may reach surface waters, let alone deciding upon an effective mitigation plan, could take years of research. In many cases, schedules of compliance will be necessary, particularly for surface water quality standards that predate CWA deadlines, but they would not be available for an NPDES permit. And the ultimate solution is likely to involve long-term, regional, adaptive mitigation strategies implemented through diverse, broad-ranging permit requirements—i.e., those available under the SDS program. In sum, an SDS permit is not only the legally correct means of regulating the Tailings Basin, it is also the best, offering the MPCA the ability to appropriately regulate the Tailings Basin in ways not available under the NPDES program.

IV. OTHER STATES DO NOT REGULATE TAILINGS BASINS OR OTHER PONDS THAT DISCHARGE ONLY TO GROUNDWATER UNDER NPDES PERMITS.

A survey of states in EPA Region 5 indicates that most if not all of these states do not adopt the hydrologic connection theory of NPDES jurisdiction. Three of the six states in Region 5—Illinois, Indiana, and Wisconsin—fall within the jurisdiction of the United States Court of Appeals for the Seventh Circuit. District courts in these states are bound by the Seventh Circuit's holding in *Village of Oconomowoc Lake*, which precludes any assertion of CWA jurisdiction over groundwater discharges on the basis of a direct subsurface hydrologic connection. 24 F.3d at 965 ("Neither the Clean Water Act nor the EPA's definition asserts authority over ground waters, just because these may be hydrologically connected with surface waters").

Of the remaining three Region 5 states, Michigan and Minnesota take a very similar approach, regulating tailings basins under state groundwater discharge permits where the facility does not discharge directly to surface water. The Michigan Department of Environmental Quality (MDEQ) distinguishes between a "direct discharge to surface waters of the state," which is regulated under the DEQ's NPDES permit program, and a "direct discharge to land that enters groundwater of the state,"[56] which is regulated under the state groundwater discharge permit program. For example, the MDEQ is proposing to regulate the Eagle Mine tailings basin — a nickel/copper mine in Marquette County very similar to the proposed NorthMet project --- solely under its state groundwater discharge permit program. The Eagle Mine's wastewater treatment system will discharge 504,000 gallons of wastewater per day to groundwater via infiltration basins.[57] Although the facility's only direct discharges will be to groundwater, MDEQ emphasizes that its groundwater permit program "requires standards that are protective of surface water when groundwater is known to vent to a surface water" and that the proposed permit "is designed so that surface water quality standards will be met at the ground water surface water interface."[58]

The sixth Region 5 state, Ohio, also handles NPDES permitted discharges to surface waters separately from groundwater discharges. Groundwater discharges are handled under the state's Underground Injection Control program,[59] which encompasses a variety of discharge activities

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[56] *See* MDEQ "Frequently Asked Questions," *available at* http://www.michigan.gov/deq.

[57] *See* MDEQ Fact Sheet for Groundwater Discharge Permit No. GW1810162 (2013), *available at* http://www.michigan.gov/deq.

[58] *Id.*

[59] *See* Ohio Rev. Code 6111.043 and Ohio Admin. Code Ch. 3745-34.

including surface-runoff drainage wells, septic tank systems, agricultural drainage wells, and industrial disposal wells. While it seems likely that Ohio, like Minnesota and Michigan, would regulate tailings basin discharges to hydrologically connected groundwater under its groundwater permitting program, and not its NPDES program, we have so far been unable to find any specific examples.[60]

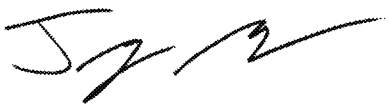
*****

For all of the reasons set forth above, we do not believe that it is either appropriate or legally necessary to regulate groundwater seepage from the Cliffs Erie Tailings Basin under an NPDES permit. Rather a State Disposal System permit will provide the MPCA will all appropriate and necessary tools to protect both groundwater and surface waters impacted by the Basin.

Please do not hesitate to contact us if you wish to discuss this letter, or if you have any questions or would like further information.

Sincerely yours,

James A. Payne



Jeremy P. Greenhouse

Attachments

c: Rob Beranek, Cliffs Natural Resources

[60] While we have not conducted a nationwide search regarding the circumstances under which state agencies outside of Region 5 have (or have not) regulated tailings basin groundwater discharges through NPDES permits, we were able to learn, from 2013 conversations between Rob Beranek of Cliffs Erie and staff at Washington State's Department of Ecology, that because of changed circumstances the DOE did not finally require an NPDES permit for the tailings ponds at the heart of the motion to dismiss in the *Hecla* case, 870 F. Supp. 983 (E.D. Wash. 1994).

Barr Footer: ArcGIS 10.2.1, 2014-05-20 15:32 File: I:\Client\PolyMet_Mining\Work_Orders\Confidential_Task_04\Maps\Reports\LetterToMPCA\Existing Tailings Basin.mxd User: arm2

Public Water Inventory (PWI) Watercourses

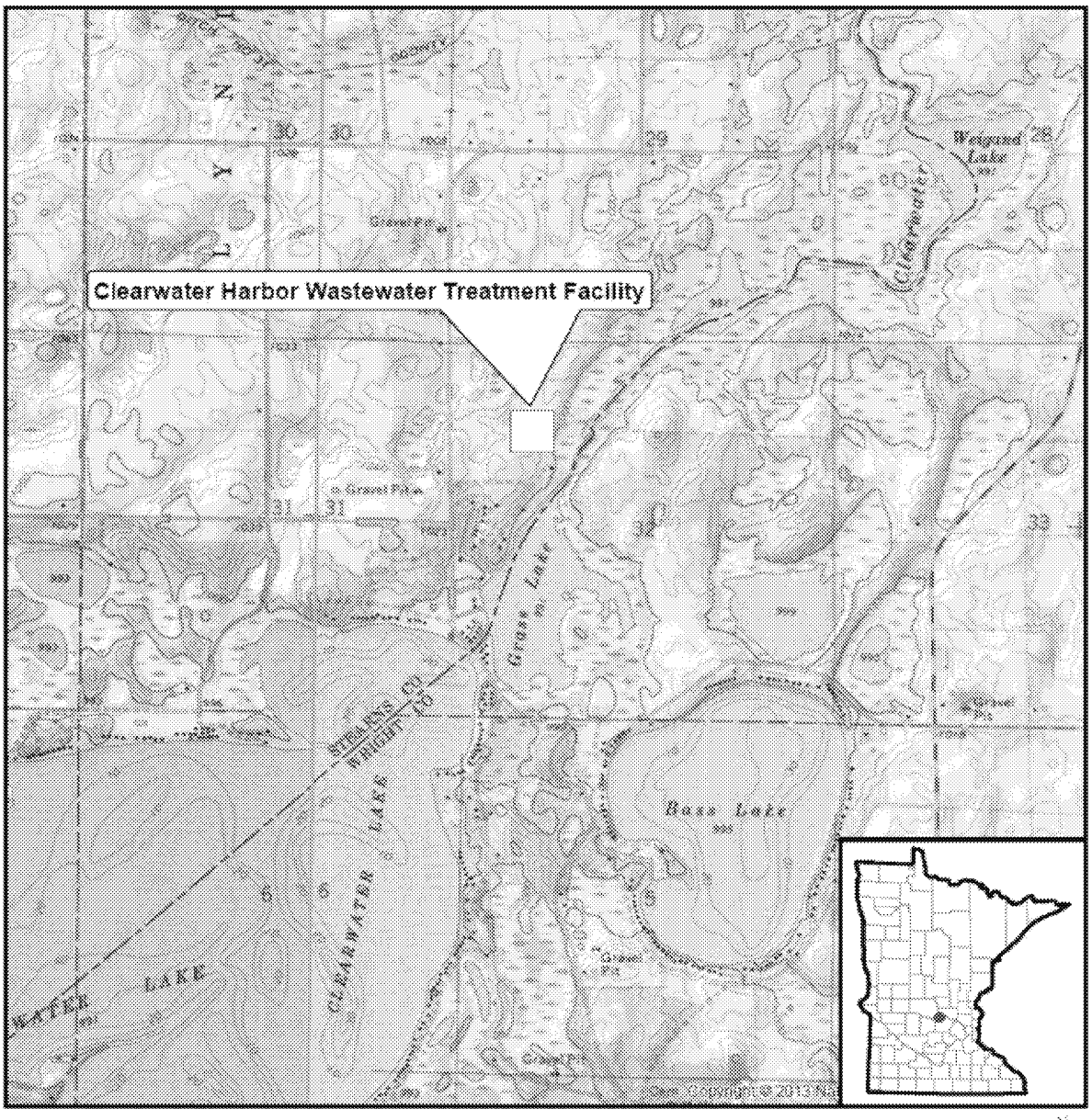
0 4,000 8,000
Feet

EXISTING TAILINGS BASIN
NorthMet Project
Poly Met Mining Inc.
Hoyt Lakes, MN

EXHIBIT B

Topographic Map of Permitted Facility

MN0065226: Clearwater Harbor Wastewater Treatment Facility
T122N, R27W, Section 32
Lynden Township, Stearns County, Minnesota



Map produced by: MPCA Staff, 2/4/2014
Source: USGS Quad, Clearwater Harbor WWTF
Scale: 1:24,000

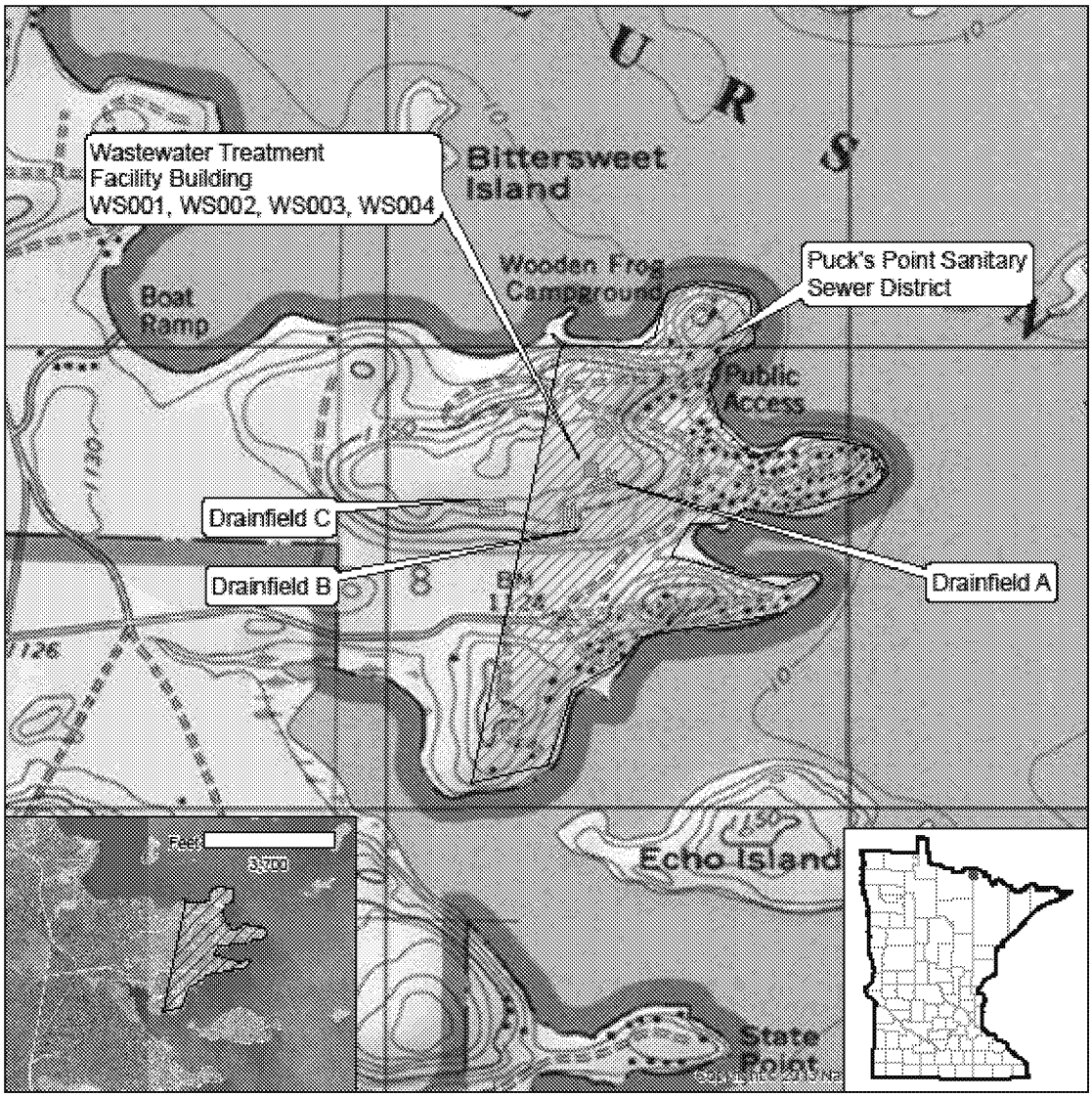
0 0.25 0.5 1 Miles

N

EXHIBIT C

Topographic Map of Permitted Facility

MN0070530 Puck's PointSanitary Sewer District
T69N, R21W, Section 8, Kabetogama, St. Louis County, Minnesota



Map produced by: MPCA Staff, 4/14/2014
Source: USGS Quad
Main Map Scale: 1:12,000

0 0.125 0.25 0.5Miles

N

Distinction between discharges subject to regulation under state law and those subject to regulation under state and federal law

Within this fact sheet, the term "discharge" can have several meanings. The intended meaning will be denoted as follows:

- Discharge(H) – (Hydrologic definition): The flow of water, including any suspended solids, dissolved chemicals, and or biological materials from one water body or aquifer to another, or through a given cross-sectional area. This includes movement through **both surface water and ground water**.
- Discharge(NPDES) – (NPDES - CWA definition): Federal law requires a permit for any addition of a pollutant to **navigable waters** from any point source. Navigable waters means waters of the United States, including the territorial seas. State law applies the permit requirement to **surface waters** of the state under Minn. R. 7001.1030.
- Discharge(SDS) – (Minn. Stat. § 115.01 definition): The addition of any pollutant to the **waters of the state** or to any disposal system. This includes discharge to groundwater as described below.

    - "Waters of the state" means all streams, lakes, ponds, marshes, watercourses, waterways, wells, springs, reservoirs, **aquifers**, irrigation systems, drainage systems and all other bodies or accumulations of water, surface or **underground**, natural or artificial, public or private, which are contained within, flow through, or border upon the state or any portion thereof. [Disposal systems or treatment works operated under permit or certificate of compliance of the agency are not "waters of the state" for purposes of water quality standards - Minn. R. 7050.0130(2)]

This permit contains conditions and limits on the management and discharge(H) of the facility's industrial process wastewater, stormwater, and onsite domestic wastewater effluent. The conditions and limits are derived from both state and federal authority. Those derived from state authority govern discharge(SDS) of wastewater from the tailings basin to groundwater, which is a water of the state but not a water of the United States (navigable water). Additionally, any indirect impacts to surface waters from pollutants that were transported from the tailings basin via groundwater are addressed under state statute based on the reasoning discussed below. MPCA has regulated under NPDES permits all seepage that emerges either from the side of the basin dam, or within the vicinity of the toe of the dam, that creates surface flow or ponded features that would not exist in the absence of the tailings basin. That practice will continue under this permit. The differentiation between this seepage and discharge(H & SDS) to groundwater is discussed below.

Discharge(H) from the tailings basin may occur as surface seepage points along the exterior toe of the outer basin dam. These features are similar to base of hillslope springs. Some are small and flow intermittently, while some of the larger seeps create ponded features with measureable flows of several hundred gallons per minute (gpm) into the adjacent wetlands and streams. The source of this water, particularly at the larger, persistent seeps, is primarily flow from the tailings basin traveling through or immediately under the basin dam.

Historically, MPCA has issued an NPDES permit establishing effluent limits and other conditions to regulate these near-basin seeps and intends to do so under this permit. NPDES permitting guidelines can be applied because flow from the large seeps is often observable, and with installation of a berm and outlet weir the flow can be measured, similar to flow from a ditch or channel. This allows quantification of flow volume and pollutant load, such that the reasonable potential to cause or contribute to exceedance of a water quality standard can be evaluated and, if necessary, effluent limits can be determined and applied. Although this seepage will be regulated under the NPDES portion of this permit, one requirement of this permit is to intercept/eliminate these seepage discharges(NPDES). This will reduce the loading of pollutants to surrounding surface waters, and elimination of this seepage is the fastest way to achieve compliance with NPDES requirements, rather than traditional effluent limits.

MPCA uses the term "deep seepage" to refer to wastewater that enters the underlying surficial aquifer throughout the area of the basin and does not discharge(H) to the ground surface adjacent to its source. The deep seepage travels as groundwater, which may emerge into the surrounding wetlands, lakes or stream channels as baseflow, or may remain in the subsurface within the regional groundwater flow system. The surficial aquifer beneath and surrounding the tailings basin consists of unconsolidated glacial sediments and as such, the movement of water through it is consistent with the physics of porous media flow. Within the aquifer, which at this facility extends laterally for several miles, water can move in any direction depending on the hydraulic head (water table) conditions, which vary spatially and over time. This flow system is neither confined nor discrete and is not consistent with the examples of underground conveyances explicitly mentioned in the CWA definition of a point source (i.e., is not a tunnel or discrete fissure). Flow through porous media is also subject to lateral dispersion, which is the mixing and spreading of the pollutant perpendicular to the path of fluid flow. There is a scaling factor to this phenomenon, whereby the degree of dispersion often increases at a greater rate as the flow path lengthens. Consequently, the area over which impacted groundwater may discharge(H) to surface water features can be thousands of feet in length, covering hundreds or thousands of acres, particularly when discharging(H) to wetlands. Although deep seepage may eventually commingle with surface water, the flow path that the pollutants travel from the basin to surface water is not a discernible, confined, and discrete conveyance, nor is there typically a discrete, discernible and measureable discharge(H) from groundwater to surface water from deep seepage. Precipitation that has infiltrated, along with other groundwater not directly impacted by the basin, may interact with the basin-affected water to alter its interaction with surface water. Therefore, in this permit the MPCA finds the transfer of pollutants via deep groundwater from the tailings basin to distant surface water (not adjacent to the basin) does not meet the CWA definition of a point source. Consequently, it is not a discharge(NPDES) under the CWA.

In finding that the deep seepage is not an NPDES discharge, the MPCA notes that it is consistent with Effluent Limit Guidelines and New Source Performance Standards for the mining industry published by the U.S. Environmental Protection Agency (EPA). In the preamble to these longstanding guidelines, EPA stated:

> the Agency does not propose to regulate seepage from impoundments at ore mines and mills other than those extracting uranium. The extent to which such seepage adversely affects navigable waters (as opposed to groundwater) is highly problematic. Frequently, even when seepages reaches navigable waters, it does not constitute a point source discharge – a discernible, confined and discrete conveyance – and is therefore not subject to effluent limitations.
>
> 47 Fed. Reg. 25,682, 25,702 (June 14, 1982).

In addition to the ways that deep seepage does not conform to the physical description of a point source, the EPA has recently revised the definition of waters of the United States to explicitly exclude "groundwater, including groundwater drained through subsurface drainage systems." *See* Clean Water Rule: Definition of "Waters of the United States," 80 Fed. Reg. 37,054, 37,099 (June 29, 2015) (to be codified at 40 CFR § 122.2). While the definition is not currently in force, it demonstrates EPA's intent not to regulate groundwater directly. Thus, to the extent that deep seepage is a groundwater problem, it seems appropriate to treat it as an issue best resolved under state law.

Although Federal regulations do not govern discharges(H) to groundwater or seepage from tailings basins, state law gives MPCA authority to require permits for the operation of disposal systems discharging(S & H) to waters of the state. Minn. Stat. § 115.03, subd. 1(e). A person operating a disposal system is required to have a permit under Minn. Stat. § 115.07. The Minntac tailings basin meets the definition of disposal system in Minn. Stat. § 115.01, subd. 5. Waters of the state include all accumulations of water, surface or underground (Minn. Stat. § 115.01, subd. 23). Consequently, MPCA intends to regulate basin seepage to groundwater and deep seepage expected to eventually impact surface water as discharges(SDS) to a water of the state in accordance with State Disposal System Permit guidelines.

Message

From: Dominguez, Alexander [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=5CED433B4EF54171864ED98A36CB7A5F-DOMINGUEZ,]
Sent: 7/31/2017 5:47:35 PM
To: Paul Balserak [pbalserak@steel.org]
CC: Greenwalt, Sarah [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=6c13775b8f424e90802669b87b135024-Greenwalt,]
Subject: Re: Follow-up on Conductivity

Got it. Appreciate clarifying the distinction and looking forward to our call.

Sent from my iPhone

On Jul 31, 2017, at 1:41 PM, Paul Balserak <pbalserak@steel.org> wrote:

> Alex,
>
> Yes, at our meeting with Sarah in late June we discussed conductivity (i.e., the topic that these two attachments relate to). At that meeting, we very briefly mentioned the issue of conduit theory at the end, and Sarah suggested we set up a call to discuss that more – hence the Aug 11 call we have set up with Sarah. So, thank you for your guidance; I'll reach out to Lee's office and seek to set up a meeting on conductivity. I'll make sure to note that they should coordinate with you/Sarah so you all can be able to attend.
>
> Thanks
> Paul
>
> ---
>
> **From:** Dominguez, Alexander [mailto:dominguez.alexander@epa.gov]
> **Sent:** Monday, July 31, 2017 1:34 PM
> **To:** Paul Balserak
> **Cc:** Greenwalt, Sarah
> **Subject:** RE: Follow-up on Conductivity
>
> Paul,
>
> I just want to double check since I was not at the original meeting – is this in regards to something different than the call we have set up for Friday, August 11th at 10AM? If so, and the main priority is to ensure Lee is there for the meeting, I would recommend reaching out to Lee's office who can then coordinate with me/Sarah as necessary. Sarah will be traveling often this month so it may be difficult to find a time for both her and Lee to attend.
>
> Alex
>
> **Alex Dominguez**
> *Policy Analyst to the Senior Advisors to the Administrator for Air and Water*
> U.S. Environmental Protection Agency

From: Paul Balserak [mailto:pbalserak@steel.org]
Sent: Monday, July 31, 2017 1:04 PM
To: Greenwalt, Sarah <greenwalt.sarah@epa.gov>
Cc: Dominguez, Alexander <dominguez.alexander@epa.gov>
Subject: Follow-up on Conductivity

Hi Sarah,

I am forwarding two documents related to the draft conductivity guidance that we discussed when we met with you at the end of June. As we described, there are some significant scientific flaws associated with the draft conductivity guidance. Just leaving the guidance as draft, however, will not stop it from being used in actual permitting decisions or as a basis to pursue litigation. The Region V memo attached shows one example of an individual EPA scientist advocating use of the conductivity methodology in Region V (northeast Minnesota). The GEI Review, also attached, provides a detailed, science-based assessment of Susan Cormier's (U.S. EPA ORD) work, highlighting some of the key concerns with science behind this conductivity guidance.

We continue to be very concerned with how the draft conductivity guidance issued at the end of the Obama EPA is dealt with moving forward. As we discussed with you in our meeting, we would be very interested in meeting with OW Deputy AA Lee Forsgren and key OW managers/staff on conductivity in order to continue to raise our concerns on this matter. You told us in our meeting with you that you would like to join us if we went to meet with OW. If you would like this meeting to be set up through your office, that would work very well for us. Alternatively, I can reach out to DAA Forsgren's office to initiate plans for that meeting, making sure that you are included.

Thank you again,
Paul

Paul Balserak
Vice President, Environment

American Iron and Steel Institute
25 Massachusetts Ave. NW, Suite 800
Washington, DC 20001
Ex. 6 (office)
(mobile)

Message

From: Paul Balserak [pbalserak@steel.org]
Sent: 7/31/2017 5:03:36 PM
To: Greenwalt, Sarah [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=6c13775b8f424e90802669b87b135024-Greenwalt,]
CC: Dominguez, Alexander [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5ced433b4ef54171864ed98a36cb7a5f-Dominguez,]
Subject: Follow-up on Conductivity
Attachments: Region V memo 20160204 Finalsmc.pdf; 170419 GEI_Review_Cormier-MPCA_MN_Conductivity.pdf

Hi Sarah,

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Thank you again,
Paul

Paul Balserak
Vice President, Environment

American Iron and Steel Institute
25 Massachusetts Ave. NW, Suite 800
Washington, DC 20001
Ex. 6 (office)
(mobile)

Technical Memo

Date: April 19, 2017

Re: Evaluation of data and methodology associated with USEPA's (Susan M. Cormier, Ph.D.) review of the Johnson and Johnson report titled "An Evaluation of a Field-Based Aquatic Benchmark for Specific Conductance in Northeast Minnesota" (November 2015)

Executive Summary

GEI Consultants, Inc. (GEI) reviewed the U.S. Environmental Protection Agency's white paper and corresponding data regarding the development of a conductivity benchmark for Ecoregion 50 (Northern Lakes and Forest) in Minnesota. It is GEI's professional opinion that the methodology used to develop the benchmark contains inconsistencies and flaws, as does the supporting data, which precludes their use in establishing a conductivity benchmark for Ecoregion 50.

GEI found multiple stressor-response profiles in the most sensitive taxa that provided conflicting evidence for the genera's presumed physiological limits to conductivity which highlights flaws in the conductivity benchmark approach. For example, the most sensitive benthic macroinvertebrate genus found in Ecoregions 69 & 70, *Lepidostoma* (XC95 = 121 µS/cm), has a positive 1,162 percent change in the extirpation coefficient compared to Ecoregion 50 (XC95 = 1,527 µS/cm). The third most sensitive genus in Ecoregion 50, *Rhyacophila* (XC95 = 254 µS/cm), has a negative 87 percent change in Ecoregions 69 & 70 (XC95 >1,890 µS/cm). These substantially conflicting extirpation coefficients for the same genera highlight the inconsistencies in the supposed physiological responses at the genus level and represent a flaw in the EPA's conductivity benchmark approach. The finding that virtually all of the common genera found in Ecoregion 50 had substantially different extirpation coefficients when compared to the same genera, and in some cases the same species, found in Ecoregion 69 & 70 undermines the premise that measurements of conductivity are the dominant stressor that affect the distribution of benthic invertebrate taxa.

GEI also observed multiple data-related inconsistencies and questionable water chemistry values during evaluation of benthic invertebrate and water chemistry data sets utilized to develop the Ecoregion 50 conductivity criteria. For example, approximately 60 percent of the MPCA macroinvertebrate data was missing paired water quality data, including conductivity measurements. GEI also identified significant issues in the reproducibility and traceability of water quality data. It is unclear the extent to which these factors may affect the analysis but does suggest the possibility of underlying bias. The key findings outlined above are elaborated upon in the sections that follow and demonstrate that the conductivity benchmark approach is not appropriate for Ecoregion 50.

GEI Consultants, Inc.
4601 DTC Boulevard, Suite 900, Denver, CO 80237
303.662.0100 Fax: 303.662.8757
www.geiconsultants.com

1. Background and Introduction

GEI Consultants, Inc. (GEI) was asked to continue assisting Cliffs Natural Resources, U.S. Steel, and ArcelorMittal ("the clients") in responding to the issue of the possible development of a conductivity benchmark in Minnesota. On February 4, 2016, the U.S. Environmental Protection Agency (USEPA) published a memo (authored by Dr. Susan Cormier) that reviewed the November 2015 Johnson and Johnson report titled "An Evaluation of a Field-Based Aquatic Life Benchmark for Specific Conductance in Northeast Minnesota" (Johnson and Johnson 2015). USPEA's memo evaluated benthic invertebrate and water quality data sets generated by the Minnesota Pollution Control Agency (MPCA) and supported the conclusions of Johnson and Johnson (2015) concerning the effects of conductivity on benthic invertebrates, citing that "....that more than 5% of genera would be extirpated in streams greater than 320 µS/cm." GEI has obtained the MPCA data utilized by Dr. Cormier in USEPA's review of the Johnson and Johnson report. This memo provides a summary of GEI's in-depth examination of the data and underlying methodology utilized in USEPA's memo. It should be noted that these comments will also have direct relevance to USEPA's more recent national December 2016 draft "Field-Based Methods for Developing Aquatic Life Criteria for Specific Conductivity" (USEPA 2016).

GEI conducted a brief evaluation of the data provided by Dr. Cormier and those retrieved from the MPCA FTP site and provided initial findings in September 2016. The data were then further examined in detail with respect to 1) the extent to which the Dr. Cormier dataset could be reproduced from MPCA Macroinvertebrate and MPCA Water Quality files, and 2) the completeness of the available data and its integration into the final data set utilized by Dr. Cormier. GEI's findings are as follows.

1.1 Conductivity Benchmark Approach for Ecoregion 50

- *GEI found multiple species response profiles in the most sensitive taxa that provided conflicting evidence for the genera's physiological limits to conductivity which raises significant uncertainty in the benchmark approach.*

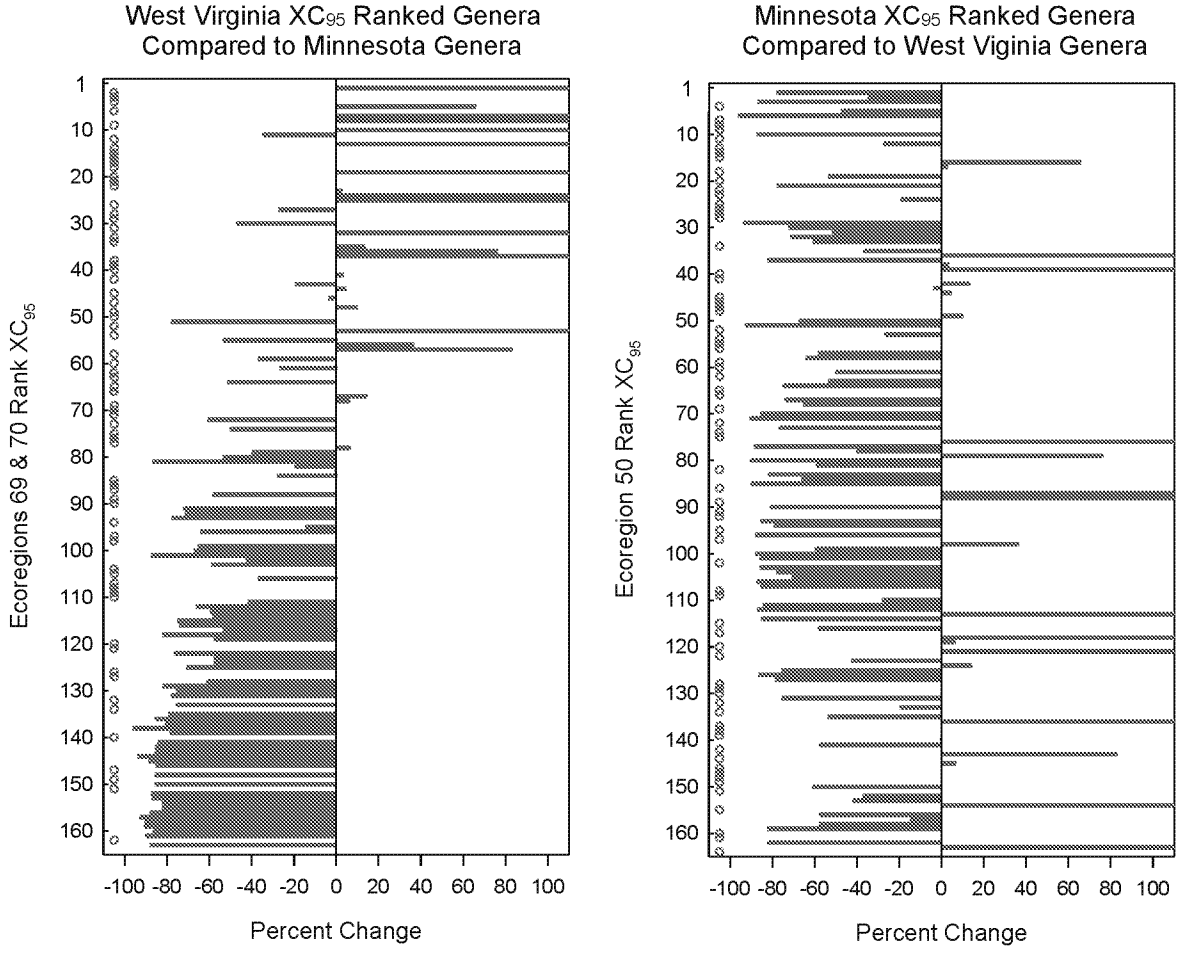
One of the major conceptual issues with the USEPA conductivity benchmark is the assumption that the absence of any benthic invertebrate genera is solely due to a conductivity level that exceeds the physiological limits of that genus. However, as we have noted in our prior comments to the underlying benchmark document (GEI 2010, Roark et al. 2013), there are many factors that contribute to the absence of benthic invertebrates from a stream sample, such as interspecific competition, habitat suitability, other stressors (i.e., metals and sedimentation), or simply sampling and sample processing bias, which were not addressed in the document.

However, if the premise is true that absence is due to conductivity's effects on a genus' physiological limits, then any particular genus' extirpation coefficient (XC_{95}) should be consistent across ecoregions. A comparison of the extirpation coefficients (XC_{95}) for

Ecoregion 50 with Ecoregions 69 & 70 provides some insight to the physiological limits and/or conflicting limits previously identified for some taxa. The Minnesota taxa list was compared to the West Virginia taxa (from USEPA 2011) list to identify common genera among the ecoregions as well as to identify unique genera in Ecoregion 50. Of the total 164 genera found in Minnesota, 95 genera were common to Ecoregions 69 & 70 of the Appalachians, while 69 genera were unique to Ecoregion 50 in northeastern Minnesota.

When considering the entire taxa list, most genera rankings greatly changed between ecoregions, putting the concept of conductivity as the prime reason for presence/absence into significant doubt. In fact, when considering the 20 most sensitive taxa based on their XC_{95} ranking for each ecoregion (i.e., 50 and 69 &70), there are only two genera – *Leptophlebia* and *Epeorus* – that are common to both lists strongly indicating there is not a universally expressed relationship between presence of genera and conductivity. Stated plainly, differences in extirpation coefficients (Figure 1 – next page) for common genera suggests that any purported relationship to "conductivity" is simply an artifact of the benchmark methodology, or other factors affect the frequency of occurrence (or absence) of invertebrates.

Figure 1: The percent change in extirpation coefficients for common genera from Ecoregions 69 & 70 compared to Ecoregion 50. Rank 1 is the smallest XC_{95} value for each ecoregion. Open circles denote unique genera to each ecoregion. Positive percent change values are truncated at 110%, because the maximum percent changes was 1,162 percent. Percent Change = [(MN XC_{95} - WV XC_{95}) / WV XC_{95}] × 100.



Notably, the most sensitive genus found in Ecoregions 69 & 70 was *Lepidostoma* (XC_{95} = 121 µS/cm). However, in Ecoregion 50, *Lepidostoma* was actually one of the least sensitive genera (XC_{95} = 1,527 µS/cm). The difference between these two extirpation coefficients represents a *positive 1,162 percent change* for this genus (Figure 1, left panel Rank 1, right panel Rank 121) in Ecoregion 50.

Similarly, the third most sensitive genus in Ecoregion 50 – *Rhyacophila* (XC_{95} = 254 µS/cm) – was shown to be fairly tolerant of conductivity (XC_{95} >1,890 µS/cm) in Ecoregions 69 & 70; a *negative 87 percent change* (Figure 1, right panel Rank 3). These differences highlight our concern that genera characterized as being sensitive to conductivity in one ecoregion may in fact not be sensitive to conductivity in another ecoregion. Such large variability in the purported physiological limits of "sensitive" genera raises considerable uncertainty regarding

the applicability of a surrogate measurement such as conductivity to determine the frequency of occurrence (or absence) of a given taxa. This is an extremely important issue that puts into question the entire approach used in EPA's conductivity benchmark analysis and needs to be more fully investigated by EPA before any conductivity "criterion" is adopted.

To further explore these differences, we examined the 20 most sensitive genera in Ecoregion 50 (Table 1) in the context of previously identified species sensitivity distributions for conductivity (USEPA 2011). The Dr. Cormier data file was filtered accordingly (i.e., pH > 6, genera present ≧ 25 samples, invertebrates identified to at least genera level) which resulted in 743 sampling events representing 600 sampling locations in Ecoregion 50. The dataset was not censored for conductivity values on the extreme left or right tails of the distribution. The list includes 7 genera of Ephemeroptera (mayflies), 5 genera of Diptera (midges), 3 genera of Trichoptera (caddisflies), 2 genera of Odonata (dragonflies), and 1 genera each of Plecoptera (stoneflies), Lepidoptera (moth), and Basommatophora (snail). For these genera, the weighted cumulative distributions were generated to determine if the XC_{95} values could be replicated and species sensitivity distributions were generated to evaluate the relationship with conductivity. Of the 20 genera identified in Ecoregion 50, only 10 genera were common to Ecoregions 69 & 70 in West Virginia. GEI's calculated metrics (e.g., number samples, XC_{95}) were generally within ±2% (RPD) with the differences likely due to the binning approach (Roark et al. 2013).

Table 1: The twenty most sensitive genera in Ecoregion 50 with summary information and comparison to extirpation coefficients in Ecoregions 69 & 70. Shaded cells denote common genera. Percent Single Individual per Sample is the percentage of the total number of occurrences represented by only 1 individual.

Rank	EcoR 50 XC_{95}	EcoR 69 & 70 XC_{95}	Order	Family	Genus	Present in Number of Samples	% Single Individual per Sample
1	191	863	Trichoptera	Philopotamidae	*Dolophilodes*	86	7%
2	201	307	Ephemeroptera	Heptageniidae	*Epeorus*	96	24%
3	254	1,890	Trichoptera	Rhyacophilidae	*Rhyacophila*	39	62%
4	272		Odonata	Gomphidae	*Ophiogomphus*	75	63%
5	283	535	Ephemeroptera	Ephemerellidae	*Serratella*	43	23%
6	298	7,340	Odonata	Aeshnidae	*Boyeria*	126	60%
7	302		Plecoptera	Perlidae	*Agnetina*	25	52%
8	327		Diptera	Chironomidae	*Trissopelopia*	26	35%
9	335		Diptera	Chironomidae	*Xenochironomus*	36	58%
10	338	2,630	Diptera	Chironomidae	*Larsia*	25	36%
11	338		Lepidoptera	Crambidae	*Paraponyx*	33	58%
12	357	490	Ephemeroptera	Ephemerellidae	*Eurylophella*	157	34%
13	361		Diptera	Chironomidae	*Stictochironomus*	47	53%
14	374		Basommatophora	Planorbidae	*Helisoma*	96	38%
15	390		Diptera	Chironomidae	*Lopescladius*	60	47%
16	416	251	Ephemeroptera	Leptophlebiidae	*Leptophlebia*	43	23%
17	435	424	Ephemeroptera	Heptageniidae	*Leucrocuta*	129	29%

Rank	EcoR 50 XC_{95}	EcoR 69 & 70 XC_{95}	Order	Family	Genus	Present in Number of Samples	% Single Individual per Sample
18	456		Ephemeroptera	Baetidae	*Labiobaetis*	60	30%
19	464	996	Ephemeroptera	Baetidae	*Plauditus*	38	24%
20	502		Trichoptera	Leptoceridae	*Triaenodes*	58	47%

In addition to the notable differences in XC_{95} values outlined above, Table 1 also points out another concern with developing extirpation coefficient and species sensitivity distributions using field based count data. Specifically, the relative abundance of any one genera is not factored into the presence/absence benchmark approach. Thus, single individuals are afforded the same weighting as multiple individuals in a sample. This is tenuous when extirpation of a genus is largely pinned on the presence or absence of a single individual. The benthic invertebrate processing approach that often utilizes subsampling of the entire sample that can greatly affect the outcome of distributions. In the case of the Ecoregion 50 data, for the 20 most sensitive genera, single individuals represented from 7% to 63% of their respective occurrences (see far right column in Table 1) with an average of 40% of the data being used to develop extirpation coefficients and species sensitivity distributions based on genera represented by a single organism in a sample. With such a significant portion of the data comprised of single individuals, sampling bias could be significantly influencing the outcome of the use of presence/absence data.

1.2 Diversity of Conflicting Stressor-Response Profiles

- *GEI reviewed the twenty most sensitive genera in Ecoregion 50, and found multiple stressor-response profiles that provide conflicting results within the most sensitive genera as well as compared to response-profiles from other ecoregions, a key fundamental flaw in the approach.*

One of the underlying principles governing the use of a species sensitivity distribution (SSD) to derive biological thresholds is that all of the organisms represented in the distribution exhibit the same type of response to the stressor in question (Posthuma et al. 2002). However, three types of stressor-responses are recognized by Dr. Cormier (2016, EPA 2010), as exemplified in Figure 2, and a fourth type (GEI 2010) not recognized by EPA—but was observed in the Ecoregion 50 dataset. The fourth type of profile is basically characterized by no response or a bimodal (i.e., inverse optimal) response to conductivity (Figure 2). The no response profile results in conflicting stressor response concentrations when the tails of the distribution are used to establish thresholds. The four response profiles are:

- Decreasing probability of observation with increasing conductivity,
- Increasing probability of observation with increasing conductivity, and
- Optimal or "bell-curve" probability of observation with increasing conductivity.

- No response or bimodal, where probably of observation is not related to increasing conductivity

Figure 2: Biological response profiles with respect to conductivity and probability of capture.

Based on our review of the twenty most sensitive taxa in Ecoregion 50, the most common response profile was the no response/bimodal profile (9 of 20), followed by the decreasing profile (7 of 20), optimum profile (2 of 20), and increasing profile (2 of 20)

In Ecoregion 50, the most sensitive genus - *Dolophilodes* - was comprised of three species with *Dolophilodes distinctus* being the most common taxon observed. These three taxa generated a decreasing SSD (Figure A-1, Attachment) that was very similar is shape to previously identified SSD for *Dolophilodes* in Ecoregions 69 & 70, albeit the extirpation coefficient was considerably greater at 863 µS/cm. *Dolophilodes distinctus* was present in West Virginia but an unidentified species was more abundant.

The genera *Epeorus* and *Rhyacophila* exhibited similar decreasing patterns in their SSD although their response range was considerably more narrow than the West Virginia data relationships (Figure 3). As discussed above, *Rhyacophila* exhibited vastly different extirpation coefficients between the two ecoregions (MN = 254 µS/cm, WV >1,890 µS/cm) despite sharing a common species *R. fuscula*, although the most abundant taxon remained unidentified in both ecoregions.

The 4th ranked genera (*Ophiogomphus*) is a dragonfly that exhibited relatively low capture probabilities (i.e., < 30%) with a decreasing pattern through the range of conductivity values from 45 to 200 µS/cm, but this genus was not observed in WV which limited comparability of the SSD (Figure A-1, Attachment).

The genus *Seratella* (mayfly) was comprised of the species *S. serrata* and an unidentified sp. that exhibited low capture probabilities (i.e., <15%) from 45 to 420 µS/cm. Similarly, in West Virginia, this genus exhibited low capture probabilities (i.e., <15%) through the range of conductivity from approximately 40 to 500 µS/cm (Figure A-1, Attachment). The extirpation coefficient in Ecoregion 50 was calculated as 283 µS/cm and was 535 µS/cm in Ecoregions 69 & 70, representing nearly a two-fold difference in the sensitivity of this genera.

The dragonfly *Boyeria* was the third most commonly observed genera of the MN top 20 genera with *B. grafiana, B. vinosa,* and an unidentified sp. comprising the observed individuals. *B. grafiana* and *B. vinosa* were also present in the WV database as well as an unidentified sp.,

thus given the similar taxonomic composition it would be expected that the taxonomic response to conductivity would be similar for each ecoregion. However, the SSDs are extremely different with the Ecoregion 50 SSD exhibiting a decreasing relationship with conductivity (XC_{95} = 298 µS/cm, and the Ecoregions 69 & 70 SSD exhibiting a unimodal relationship with an estimated extirpation coefficient of >7,340 µS/cm (Figure A-1, Attachment). The differences in physiological responses and extirpation levels for this genus raises concern for confounding factors such a seasonal life-stages, habitat preferences, and timing of sampling. Seasonal patterns and habitat availability such as debris dams, emergent vegetation, and coarse substrates are likely important factors in regulating the distribution of *Boyeria* in Northeastern Minnesota (Haarstad 1997). In fact, *B. grafiana* is a species of special concern in Minnesota (MN Administrative Rule 6134.0200) indicating the species is extremely uncommon in Minnesota, and has a unique or highly specific habitat requirements.

The 7th through 9th ranked genera consisted of a stonefly (*Agnetina*) and two midges (*Trissopelopia* and *Xenochironomus*) that bracket the proposed conductivity benchmark of 320 µS/cm for Ecoregion 50. These three taxa were not present in the Ecoregion 69 & 70 dataset so there are no comparative SSD. These three taxa exhibit poor capture probabilities, generally less than 15%, through the conductivity range of approximately 50 to 300 µS/cm and do not show a clear response to conductivity (Figure A-1, Attachment). Furthermore, these taxa were observed in a small number of samples just above the ≧ 25 sample cut-off ranging from 25 to 36 samples out of the 734 samples comprising the Ecoregion 50 dataset used by Dr. Cormier, with nearly 50% of the count data represented by a single individual found in the sample. The absence of a well-defined response to conductivity raises concern regarding the appropriateness of calculating "extirpation coefficients" when the rarity of a taxon is not fully vetted with respect to habitat preferences, substrate conditions, or flow characteristics, much less a lack of significant response to conductivity.

The 10th ranked genus *Larsia*, also a midge, was observed in the Ecoregion 69 & 70 data set and exhibited an extirpation coefficient of 2,360 µS/cm as compared to extirpation coefficient of 338 µS/cm for Ecoregion 50 (Figure A-1, Attachment). This genus also exhibited poor capture probabilities of <10% through the range of conductivity that dominated conditions observed in Ecoregion 50. Similarly, the absence of a well-defined response to conductivity raises concerns.

Comparisons of the 11th through 20th ranked genera identified only four common genera between Ecoregions 50, 69, and 70 which were all mayflies – *Eurylophella*, *Leptophlebia*, *Leucrocuta*, *Plauditus*. Both *Eurylophella* and *Leucrocuta* exhibited decreasing SSD that was similar in shape among the ecoregions and with respect to extirpation coefficient (Figure A-1, Attachment). *Leptophlebia* exhibited a no response/bimodal response in Ecoregion 50 while the SSD for Ecoregions 69 & 70 was decreasing. *Plauditus* exhibited an optimum response with observations noted on the lower and upper tail of the distribution, which is very similar to the response in Ecoregions 69 & 70, but the extirpation coefficient was very different in

Ecoregion 50. *Leptophlebia* and *Leucrocuta* exhibited a greater extirpation coefficient in Ecoregion 50 when compared to the Ecoregions 69 & 70. The remaining six genera ranked 11th through 20th were unique to Ecoregion 50 with respect to their XC_{95} data – *Paraponyx*, *Stictochironomus*, *Helisoma*, *Lopescladius*, *Labiobaetis*, and *Triaenodes*. These genera exhibited a mix of no response/bimodal and increasing SSD profiles as a function of conductivity, indicating low sensitivity to increasing specific conductance.

Based on our review of the twenty most sensitive genera in Ecoregion 50, there are multiple stressor-response profiles that provide conflicting results within the most sensitive genera as well as compared to response-profiles from other ecoregions. These conflicting stressor-response profiles do not represent an internally consistent dataset especially when considering the genera that bracket the 5th centile hazardous concentration (320 µg/L). These genera do not exhibit an increasing sensitivity to increasing conductivity. This is a key fundamental flaw in the approach, as it suggests that either invertebrate genera are exhibiting fundamentally different physiological responses to elevated conductivity levels or, more likely, that factors other than conductivity are much more closely and functionally related to the probability of finding a genus in an ecoregion.

2. Data Validation

- *GEI's review of the data sets revealed that approximately 60 percent of the MPCA macroinvertebrate data was missing paired water quality data, including conductivity measurements. Significant issues in the reproducibility and traceability of water quality data were also documented.*

Dr. Cormier provided GEI a zip file containing a single file (in Microsoft Excel® csv format) with benthic invertebrate and water quality data that were apparently used to develop the XC_{95} values published in USEPA's February 4, 2016 memo. GEI also obtained 23 Excel files from an MPCA FTP site, one of which was the file that Dr. Cormier provided to GEI. The MPCA files contain a substantially larger amount of data than the file passed along by Dr. Cormier (**Error! Reference source not found.**2). Twenty of 23 files contained a mix of water quality and physicochemical measurements with a minimum of habitat quality site descriptors. Of these 20 files, eight files did not contain data for Ecoregion 50 – Northern Lakes and Forest –the region of interest in Johnson and Johnson (2015) and USEPA (2016). The remaining three files contained benthic invertebrate (2 files) and fishery (1 file) data along with limited water quality data and Minnesota Stream Habitat Assessment (MSHA) data. In summary, there are water quality files and aquatic life use files with limited water quality (e.g. specific conductance and nutrients) collected at the time of the sampling as well as descriptive habitat data (e.g., percent riffles and substrate etc.). As such, information is lacking for many sampling efforts, precluding a full understanding of water quality and physical characteristics during each sampling effort.

Table 2: Data files obtained from Dr. Cormier and the MPCA FTP site.

Data File Names
Dr. Cormier data file
InvertsWFieldChem_Rev20150123.csv
MPCA Macroinvertebrate data file
SendMeAllTheData_InvertsChemMSHAHabitat_2014Oct21.xlsx
MPCA Water Quality data files
04010201_07010203_07020005_2007_2013.xlsx
04010301_07010107_07010108_2007_2013.xlsx
07010101_07020007_07020010_2007_2013.xlsx
Data File Names
07010205_07040004_09020303_2007_2013.xlsx
07020002_07010204_07010202_2007_2013.xlsx
07020004_07040003_09020101_2007_2013.xlsx
07020011_07040001_07040008_2007_2013.xlsx
07030005_07080201_07080202_2007_2013.xlsx
07040002_09020301_09020304_2007_2013.xlsx
09020102_09030006_04010102_2007_2013.xlsx
09020104_09020311_09030005_2007_2013.xlsx
09020106_07010106_07010206_2007_2013.xlsx
09020306_09030009_09020312_2007_2013.xlsx
09020309_04010101_07010207_2007_2013.xlsx
10170202_10170203_10170204_2007_2013.xlsx
10230003_07010102_07010105_2007_2013.xlsx
Samples_1996_2000.xlsx
Streams_1996_2000.xlsx
Streams_2001_2003.xlsx
Streams_2004_2006.xlsx
MPCA Fish data file
SendMeAllTheData_FishChemMSHAHabitat_2014Oct21.xlsx

2.1 Data Completeness and Consistency

- *GEI found multiple data-related inconsistencies and questionable water chemistry values during evaluation of how benthic invertebrate and water chemistry data were paired up in Dr. Cormier's final data set.*

For Dr. Cormier's review of "*An Evaluation of A Field-Based Aquatic Life Benchmark For Specific Conductance In Northeast Minnesota*" (Johnson and Johnson 2015), a dataset was developed from multiple water quality and macroinvertebrate datasets provided by the Minnesota Pollution Control Agency (MPCA). The MPCA macroinvertebrate dataset is a compilation of data from a variety of sampling events of which roughly 40 percent included

paired water quality data (i.e., temperature, conductivity, pH, dissolved oxygen and limited nutrients) while the remaining 60 percent of the sample events did not include any water quality data. The MPCA macroinvertebrate dataset did not include any ion chemistry such as sulfate, carbonates, or chloride.

Given these findings, it's not surprising the file provided by Dr. Cormier corroborated that *approximately 60 percent of the MPCA macroinvertebrate data was missing paired water quality data*, including conductivity measurements. Therefore, the annual geometric mean for selected water quality measures – temperature, pH, dissolved oxygen and others – was calculated for each sample location in the MPCA water quality data files and used by MPCA to provide paired water quality with macroinvertebrate data. These calculated geometric mean values are essentially "estimated" values that cannot be verified and thus, their impact on the overall data set cannot be quantified. The Dr. Cormier dataset included a data qualifier indicating an "Exact Match" or "Same Year Match" which presumably identified the paired water quality data collected at the time of the macroinvertebrate sample, or the calculated geometric mean water quality data used to provide paired results, respectively.

GEI investigated the continuity and completeness of the dataset used by Dr. Cormier to establish the conductivity benchmark value of 320 µS/cm by retracing the origin of the water quality data. Within the "Exact Match" and "Same Year Match" groups we selected the sampling events with the highest and lowest conductivity measurements and three other sampling events that exhibited a high, mid, and low conductivity measurement for a total of 10 samples to trace the origins of the water quality data (Table A-1 and Table A-2, Attachment). Notably, the file provided by Dr. Cormier contained macroinvertebrate and water quality data for Ecoregions 46, 47, 48, 49, 50, 51, and 52, but we filtered the data to only examine Ecoregion 50 data as well as for other MPCA water quality data files.

For our comparison, the data sources – Dr. Cormier file, MPCA Macroinvertebrate file, and 20 MPCA Water Quality files were cross referenced using a combination of Field Number, Location Code, Location Description, Basin Code, Sample Date, and Latitude/Longitude to trace the origin/availability of the water quality data. Each sampling location was spatially referenced in Google Earth to evaluate data availability for nearby sampling locations. The geometric mean of selected water quality parameters, from the MPCA Water Quality datasets, was calculated for cases when multiple samples were collected in the same year at the same site, which was consistent with the data estimation procedure used by Dr. Cormier.

The macroinvertebrate total taxa, total count and mean conductivity for each of the "Exact Match" qualified sampling events were the same between the Dr. Cormier and MPCA Macroinvertebrate data files. This was reassuring because these two parameters provided the basis of the benchmark approach.

In contrast, however, GEI found that the "Exact Match" water quality data (e.g. water temperature, pH, dissolved oxygen) was not always the same between the Dr. Cormier data file and the presumed parent file – MPCA Macroinvertebrate data file that provided the data (Table A-1 and Table A-2, Attachment). Three out of the five sampling events showed data inconsistencies. For two of the sampling events that revealed data inconsistencies, there was no data present in the MPCA Water Quality data files that could supplement these data. Based on the MPCA Macroinvertebrate data file, it is reasonable to assume that if water quality data was collected at the time of the macroinvertebrate sampling the data would remain paired to ensure data integrity. This is important from the standpoint of evaluating confounding effects other than conductivity on the macroinvertebrate assemblages.

We also found data inconsistencies for the selected sampling events qualified as "Same Year Match" in the Dr. Cormier data file. All sampling events selected in the Dr. Cormier data file were located in the MPCA Macroinvertebrate dataset, along with the macroinvertebrate total taxa and count being the same. Two of the five sampling events, however, included water quality data in the MPCA Macroinvertebrate data file which was not expected. These two sampling events should have been qualified as "Exact Match" but weren't. Three of the five samples selected from the Dr. Cormier dataset were located in the MPCA Water Quality data files but two of these were not sampled in the same year as the macroinvertebrates. Only one of the five sampling events had water quality data associated with the sampling location and in the same year to estimate the annual geometric mean value to replace data gaps, and the geometric mean or mean values are close but do not match the estimated data in Dr. Cormier's file. The data file should have included comments and/or notes enabling users to understand what values were used when paired water quality values were not available.

During this investigation of continuity and completeness of all datasets, GEI noticed a repetitive pattern in the Dr. Cormier and MPCA Macroinvertebrate data files. In both data files, specific numbers were often repeated across dates, sample sites, waterbodies, ecoregions, and analytes (Table 3 and Table 4). This repetitiveness may not appear odd if the values were whole numbers, but instead, some were to the 14^{th} decimal place. The chances of, for example, both DO and pH having a calculated geometric mean value of 8.39000034332275 is very unlikely. At some stage in the data management process it appears that data columns and values were erroneously sorted or pasted into cells causing the repetition throughout the data file. From a data management perspective, the repetitive values raise a substantial concern on the validity of evaluating the effects of water quality on macroinvertebrates in Ecoregion 50.

Table 3: Examples of commonly repeated values (shaded cells) for estimated data used to fill data gaps in the Dr. Cormier data file. Shaded cells denote consistent values repeated in the data.

Field Number	Ecoregion	Sample Date	DO (mg/L)	pH	Water Temperature (C°)	Data Qualifier
05RN079	50	8/8/2005	10.30000019000000	7.89999985700000	20.32499981000000	Same Year Match
97LS047	50	9/11/1997	10.30000019000000	7.69000005700000	15.50000000000000	Same Year Match
05RD009	51	9/22/2005	10.30000019000000	8.00000000000000	22.31999970000000	Same Year Match
04LM095	52	9/1/2004	10.30000019000000	7.76999998100000	17.05999947000000	Same Year Match
97LS071	50	9/10/2013	9.89999961900000	6.26000022900000	17.70000076000000	Same Year Match
04LM127	52	8/17/2004	9.89999961900000	7.69999980900000	16.29999924000000	Same Year Match
09CD058	47	8/12/2009	9.89999961900000	8.18000030500000	17.79999924000000	Same Year Match
09CD029	47	8/6/2009	6.26000022900000	6.65999984700000	19.29999924000000	Same Year Match
04CD017	47	8/31/2004	17.70000076000000	9.39999961900000	22.22999954000000	Same Year Match
00UM101	51	10/9/2000	10.80000019000000	8.90999984700000	17.70000076000000	Same Year Match
04LM083	51	8/18/2004	7.59999990500000	8.00000000000000	17.70000076000000	Same Year Match

Table 4: Examples of commonly repeated values (shaded cells) found in the MPCA Macroinvertebrate data file for sampling events where paired water quality data was collected with the macroinvertebrate sample.

Field Number	Water Body Name	Ecoregion	Sample Date	DO (mg/L)	pH
10UM055	Shell River	51	8/30/2010	8.39000034332275	8.39000034332275
11MS114	Rock River	47	8/8/2011	8.39000034332275	8.36999988555908
13RD007	Snake River	48	8/6/2013	8.39000034332275	7.98999977111816
00UM010	Mississippi River	50	8/26/2013	7.96999979019165	7.53000020980834
11LS017	Captain Jacobson Creek	50	8/16/2011	8.60999965667725	7.53000020980834
13UM021	Mississippi River	50	9/5/2013	7.53000020980834	7.88999986648560
98LS026	Crow Creek	50	8/8/2011	9.25000000000000	7.53000020980834
12UM140	Dabill Creek	50	8/2/2012	0.20000000298023	7.40999984741211
12UM112	Leech Lake River	50	8/29/2012	7.40999984741211	7.48999977111816
10MN108	Smith Creek	47	8/9/2010	7.40999984741211	7.80000019073486
10RN040	Big Fork River	49	9/2/2010	7.40999984741211	7.88000011444092
11LM054	Trib. to Prairie Creek	47	8/3/2011	7.40999984741211	8.09000015258789

Our review of the data sets revealed that approximately 60 percent of the MPCA macroinvertebrate data was missing paired water quality data, including conductivity measurements, and identified significant issues in the reproducibility and traceability of water quality data. It is unclear the extent to which these factors may affect the analysis but does suggest the possibility of underlying bias.

3. Summary and Conclusions

The lack of internal consistency for species response profiles and extirpation coefficients demonstrates significant flaws with the EPA's conductivity benchmark approach. The finding that virtually all of the common genera found in Ecoregion 50 had substantially different calculated XC_{95} values when compared to the same taxa found in Ecoregion 69 & 70 invalidates the entire underlying premise of the conductivity benchmark that conductivity levels affect the distribution of benthic invertebrate taxa.

While arguments have been presented elsewhere (EPA 2016) that differing extirpation coefficients for the same genera would be expected because the physiological limits of species within a genus may be different is a concern with how a national level criterion approach is applied to site-specific water quality conditions. As noted above, the genus *Boyeria* exemplifies this issue in the Ecoregion 50 and 69 & 70 data sets. All three ecoregions are represented by two common species *Boyeria grafiana* and *Boyeria vinosa* as well as an unidentified species. Given the commonality of the taxa at the species level it would be expected that extirpation coefficients would be similar for the genus – ***yet there was a difference of over 7,000 µS/cm in their XC_{95} values***, again invalidating the premise that conductivity is the primary factor that affects the distribution of this genus.

The multiple response profiles found in the twenty most sensitive genera also raises concern from a criterion development standpoint. The most "sensitive" genera should all exhibit a decreasing SSD profile such that the effect of a stressor (i.e., conductivity) is well defined and does not provide conflicting responses. However, in Ecoregion 50, the genera that bracket the 5th centile hazard concentration (320 µS/cm) – and, thus, are largely responsible for the calculated benchmark – exhibit very poor capture probabilities (<10%) over the range of conductivity conditions and generally show no response/bimodal or an optimum response which results in conflicting stressor thresholds indicating their distribution is not related to conductivity.

While a premise of this approach is that different species within a genus can have vastly different physiological limits, it is the intent of the 1985 criteria development guidelines to document these physiological limits for each species such that genus level chronic and acute responses can be weighted accordingly. As such, the use of XC_{95} values derived from conflicting SSD response profiles at this low end of the SSD is yet another fundamental flaw in the approach used to establish a benchmark conductivity value for Ecoregion 50, and is not consistent with guidelines for developing a water quality criterion (Stephan et al. 1985).

Further, there were significant issues in the reproducibility and traceability of water quality data that raise concern in using the dataset to validate macroinvertebrate response to conductivity or other water quality conditions. There are numerous instances where water quality data was estimated to fill data gaps – almost 60% of the sites where there was not a site

or data available in that year to fill the missing information. Furthermore, water quality data that was collected at the time of the macroinvertebrate sampling event was not always the same value found in Dr. Cormier's data file. This lack of matched invertebrate/conductivity data, as well as the lack of agreement and traceability between Dr. Cormier, MPCA Macroinvertebrate, and MPCA Water Quality data files combined with the repeated parameter values for a small subset of samples examined indicates inconsistent and incomplete datasets and is a flawed foundation for attempting to establish a conductivity benchmark for Ecoregion 50.

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Attachments

Table A-1: Traceability of the "Exact Match" water quality data present in Dr. Cormier's data file with the MPCA Macroinvertebrate data file and the MPCA Water Quality data files. Shaded cells denote inconsistencies in the data.

Conductivity	Comparison	Dr. Cormier	MPCA Macroinvertebrate	MPCA Water Quality
Lowest	Location	12UM140	12UM140/ Dabill Creek	No data. No sites located on Dabill Creek
	Lat, long	--	46.72779, -94.53639	
	Sample date	8/2/2012	8/2/12 8:43	
	Macroinvertebrate taxa	89	89	
	Macroinvertebrate count	609	609	
	Mean conductivity	3.880000114	3.880000114	
	Minimum conductivity	3.880000114	--	
	Maximum conductivity	3.880000114	--	
	DO	2.290000059	0.200000003	
	pH	7.279999971	7.409999847	
	Temperature	18.0999999	21.5	
Low	Location	13LS008	13LS008/ South Brule River	S007-327/ S Brule R. at Gunflint Tr. (Cook Cr-12), 6.6 mi. SW of E Cook, MN
	Lat, long	--	47.92698, -90.31118	47.926659, -90.307443
	Sample date	8/13/2013	8/13/13 14:25	8/13/2013 7:30
	Macroinvertebrate taxa	45	45	--
	Macroinvertebrate count	322	322	--
	Mean conductivity	33.90000153	33.90000153	34.1
	Minimum conductivity	33.90000153	--	--
	Maximum conductivity	33.90000153	--	--
	DO	8.895000219	9.81000042	8.74
	pH	7.069999933	7	--
	Temperature	20.5	18.70000076	16
Mid	Location	12UM088	12UM088/ Necktie River	S006-256/ Necktie R. at county state aid Highway 45. Site is located 2.5 mi. NE of Laporte, MN
	Lat, long	--	47.24681, -94.72887	47.248083, -94.727972
	Sample date	8/29/2012	8/29/12 14:43	8/27/2012 11:12
	Macroinvertebrate taxa	21	21	--
	Macroinvertebrate count	314	314	--

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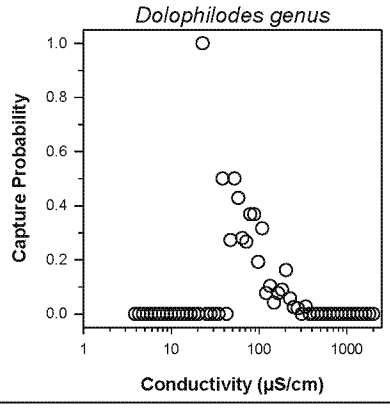
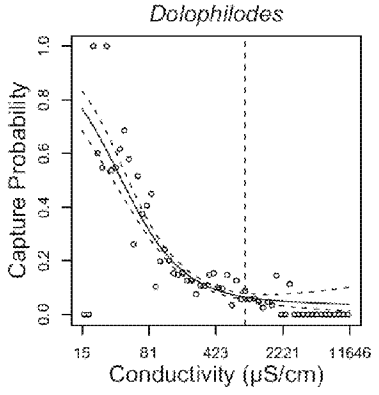
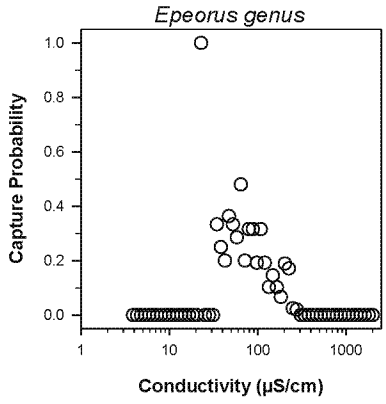
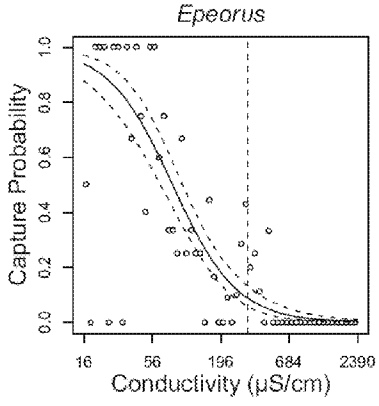
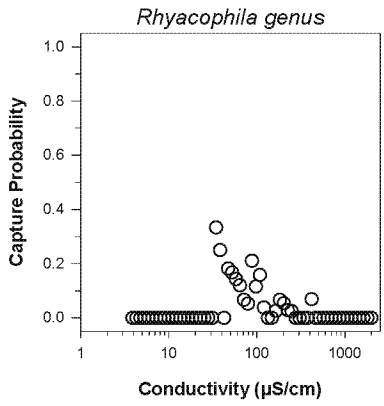
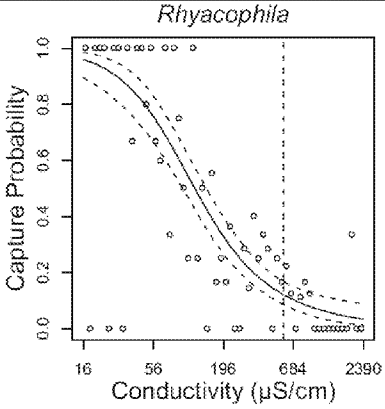
Conductivity	Comparison	Dr. Cormier	MPCA Macroinvertebrate	MPCA Water Quality
	Mean conductivity	438	438	449
	Minimum conductivity	438	--	--
	Maximum conductivity	438	--	--
	DO	3.089999914	3.089999914	2.59
	pH	7.170000076	7.170000076	7.37
	Temperature	23.60000038	23.60000038	20
High	Location	11LS075	11LS075/ Trib. to McQuade Lake	S007-255/ Unn. Str. at Hayes Rd., 3 mi. SSE of Buhl, MN. T58R19WS34
	Lat, long	--	47.45847, -92.74807	47.45761, -92.748022
	Sample date	9/12/2011	9/12/11 13:41	No 2011 data. Site in database but samples did not occur in 2011. No other sites on same tributary have sample dates in 2011.
	Macroinvertebrate taxa	36	36	
	Macroinvertebrate count	316	316	
	Mean conductivity	825	825	
	Minimum conductivity	825	--	
	Maximum conductivity	825	--	
	DO	9.390000343	9.390000343	
	pH	8.039999962	8.039999962	
	Temperature	21.29999924	21.29999924	
Highest	Location	78SC001	78SC001/ Wolf Creek	No data. No sites located on Wolf Creek
	Lat, long	--	46.1296704672535, -92.6271409649827	
	Sample date	8/17/2010	8/17/10 11:40	
	Macroinvertebrate taxa	53	53	
	Macroinvertebrate count	319	319	
	Mean conductivity	1594	1594	
	Minimum conductivity	1594	--	
	Maximum conductivity	1594	--	
	DO	7.700000048	8.460000038	
	pH	7.424999952	7.619999886	
	Temperature	19.59999943	15.89999962	

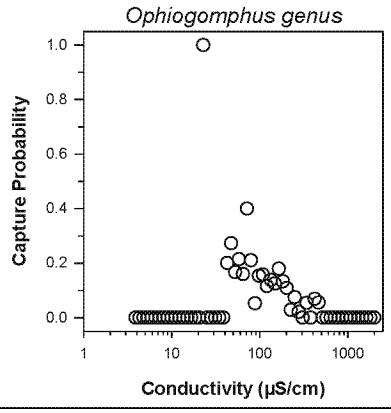
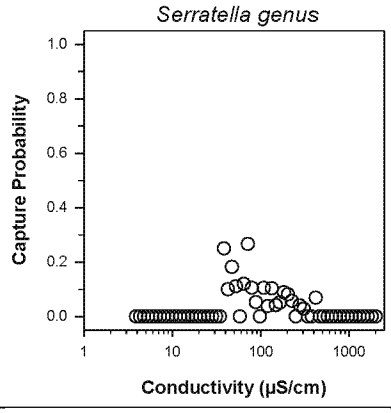
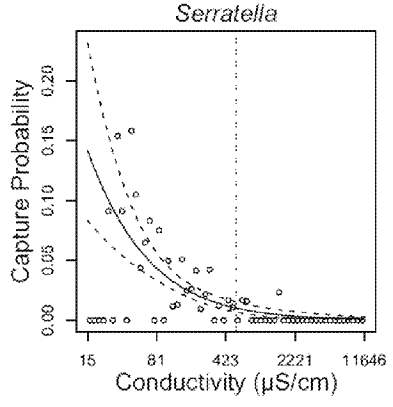
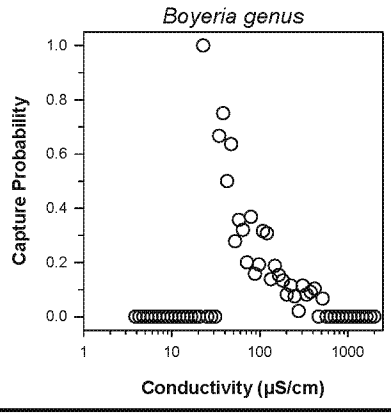
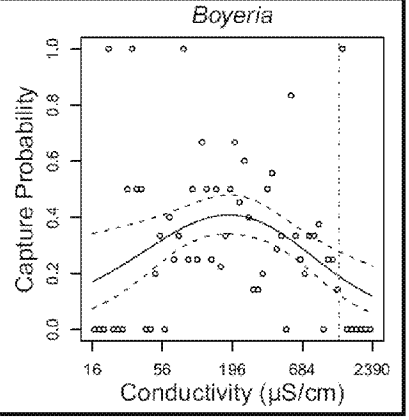
Table A-2: Traceability of the "Same Year Match" water quality data present in Dr. Cormier's data file with the MPCA Macroinvertebrate data file and the MPCA Water Quality data files. Shaded cells denote inconsistencies in the data.

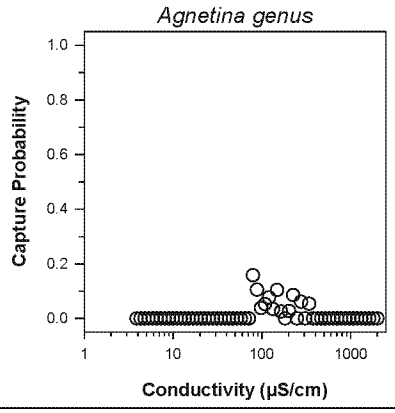
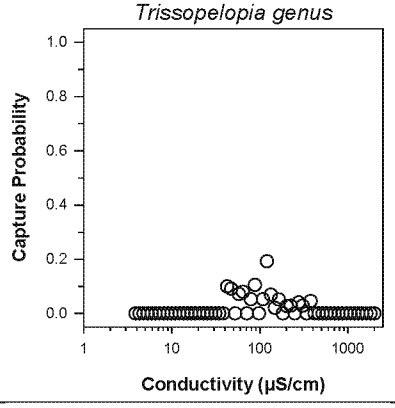
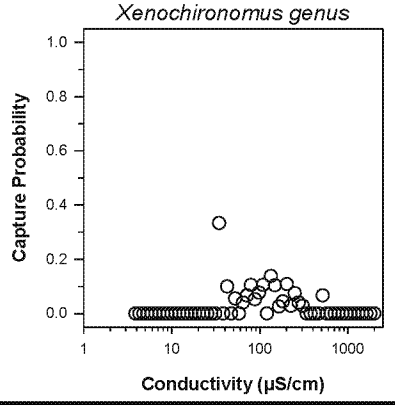
Conductivity	Comparison	Dr. Cormier	MPCA Macroinvertebrate	MPCA Water Quality
Lowest	Location	13LS001	13LS001/ Portage Brook	No data. No sites located on Portage Brook
	Lat, long	--	47.99209, -90.04431	
	Sample date	9/10/2013	9/10/13 10:09	
	Macroinvertebrate taxa	45	45	
	Macroinvertebrate count	313	313	
	Mean conductivity	22.16499996	26	
	Minimum conductivity	21.53000069	--	
	Maximum conductivity	22.79999924	--	
	DO	9.505000115	9.329999924	
	pH	6.700000048	7.429999828	
	Temperature	19.64999962	16.10000038	
Low	Location	97LS071	97LS071/ Stump River	No data. No sites located on Stump River
	Lat, long	--	48.0188748454965, -90.0340544538571	
	Sample date	9/10/2013	9/10/13 14:04	
	Macroinvertebrate taxa	132	132	
	Macroinvertebrate count	630	630	
	Mean conductivity	31.20000076	49.09999847	
	Minimum conductivity	31.20000076	--	
	Maximum conductivity	31.20000076	--	
	DO	9.899999619	8.079999924	
	pH	6.260000229	7.099999905	
	Temperature	17.70000076	17.10000038	
Mid	Location	09LS073	09LS073/ West Two River	West Two R. at CR-661, 4 mi. SW of Forbes
	Lat, long	--	47.34011667, -92.68305	47.338853, -92.683021
	Sample date	8/11/2009	8/11/2009	12 samples in 2009
	Macroinvertebrate taxa	54	54	--
	Macroinvertebrate count	314	314	--
	Mean conductivity	533	No data as expected	520.7
	Minimum conductivity	529		341

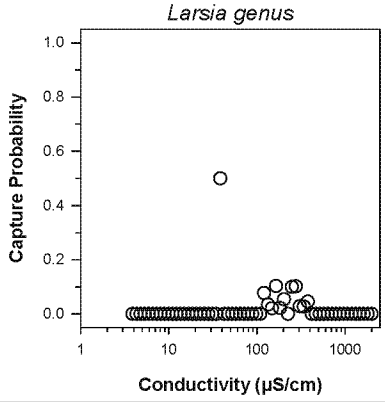
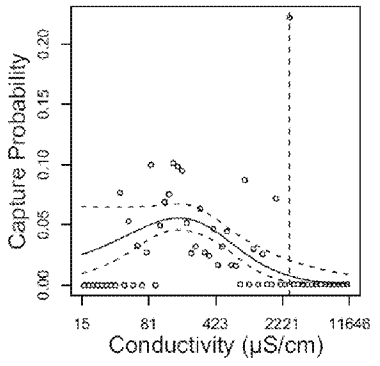
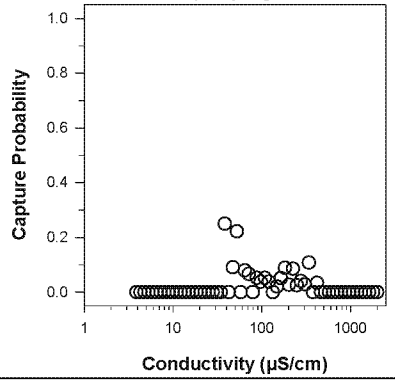
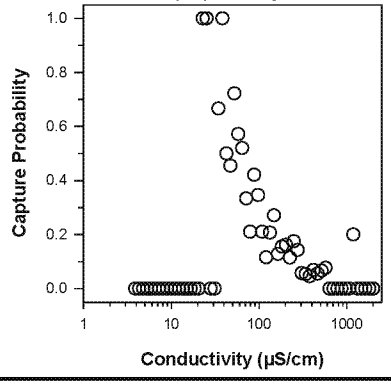
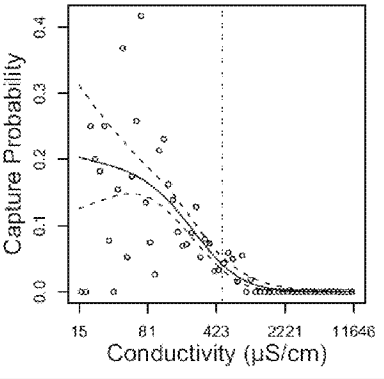
Conductivity	Comparison	Dr. Cormier	MPCA Macroinvertebrate	MPCA Water Quality
	Maximum conductivity	537		601
	DO	7.329999924		9.1
	pH	8.085000038		8.081818182
	Temperature	19.10000038		18.86363636
High	Location	05RN079	05RN079/ Dark River	Dark R. at Sherwood Anderson Rd., 7.5 mi. N of Buhl
	Lat, long	--	47.6228004276397, -92.7309723802619	47.62358, -92.73175
	Sample date	8/8/2005	8/8/2005	No samples in 2005
	Macroinvertebrate taxa	44	44	--
	Macroinvertebrate count	296	296	--
	Mean conductivity	1447	No data as expected	No data. Site in database but samples did not occur in 2005. No other sites on Dark R. have conductivity data.
	Minimum conductivity	1083		
	Maximum conductivity	1811		
	DO	10.30000019		
	pH	7.899999857		
	Temperature	20.32499981		
Highest	Location	09LS005	09LS005/ Otter Creek	Otter Ck. at CSAH-1 / 3rd St. Br. in Carlton, MN
	Lat, long	--	46.66095, -92.42676667	46.660849, -92.42444
	Sample date	9/10/2009	9/10/2009	No samples in 2009
	Macroinvertebrate taxa	104	104	--
	Macroinvertebrate count	648	648	--
	Mean conductivity	1997.699951	No data as expected	No data. Site in database but samples did not occur in 2009.
	Minimum conductivity	1997.699951		
	Maximum conductivity	1997.699951		
	DO	10.14000034		
	pH	7.53000021		
	Temperature	8.399999619		

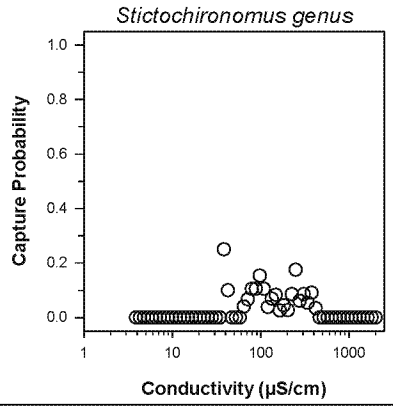
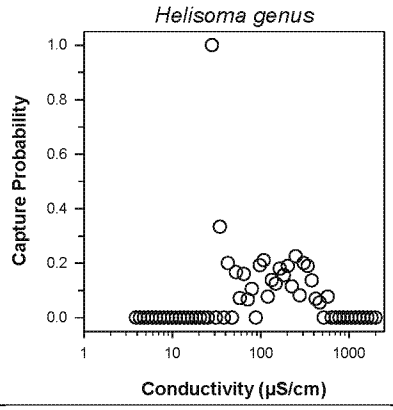
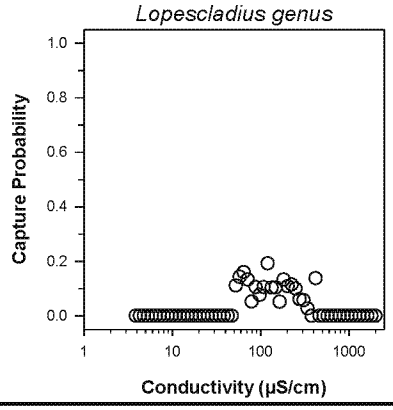
Figure A-1: The species sensitivity distributions for the 20 most sensitive genera found in Ecoregion 50 and a comparison to those genera that were common in Ecoregions 69 & 70. The Ecoregion 50 SSD were generated as part of this review and Ecoregion 69 & 70 SSD are from Appendix E (EPA 2011).

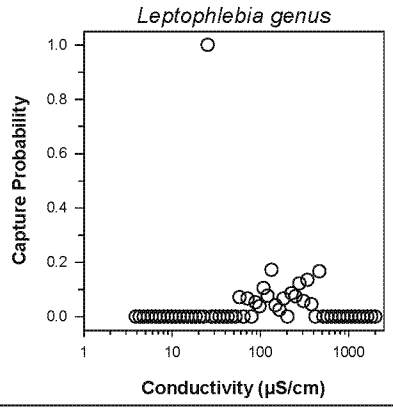
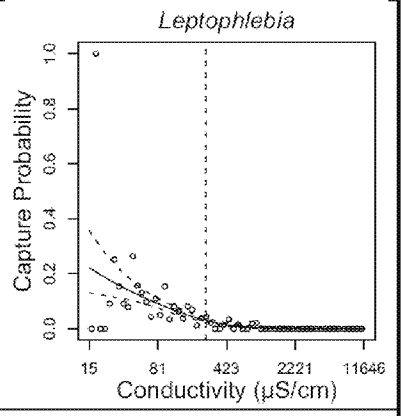
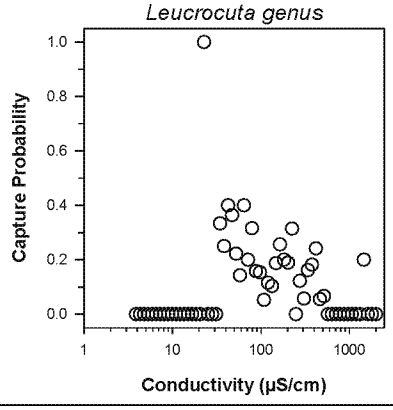
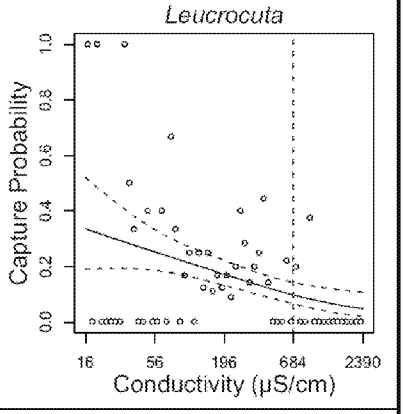
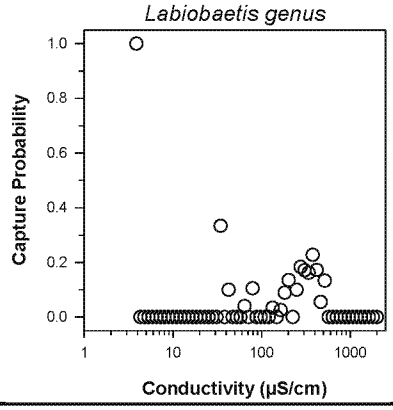
Ecoregion 50 XC_{95} Rank	Minnesota Ecoregion 50	West Virginia Ecoregions 69 & 70
1		
2		
3		

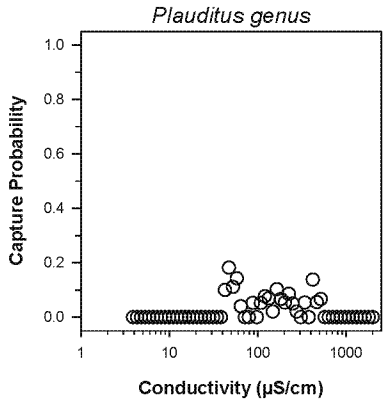
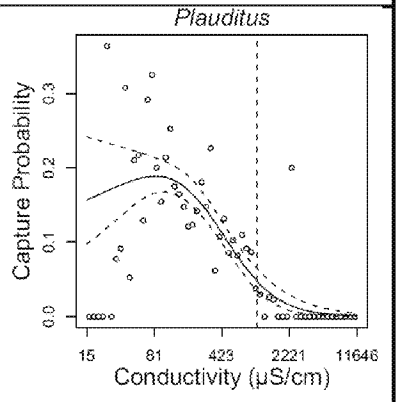
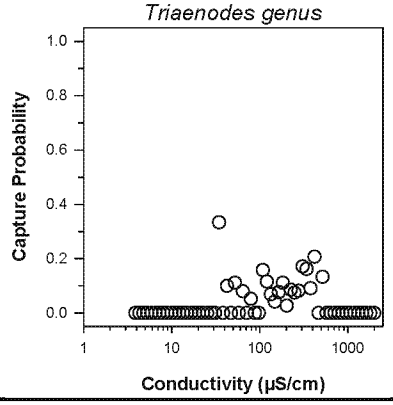
Ecoregion 50 XC_{95} Rank	Minnesota Ecoregion 50	West Virginia Ecoregions 69 & 70
4		Not Available
5		
6		

Ecoregion 50 XC_{95} Rank	Minnesota Ecoregion 50	West Virginia Ecoregions 69 & 70
7		Not Available
8		Not Available
9		Not Available

Ecoregion 50 XC_{95} Rank	Minnesota Ecoregion 50	West Virginia Ecoregions 69 & 70
10		
11		Not Available
12		

Ecoregion 50 XC_{95} Rank	Minnesota Ecoregion 50	West Virginia Ecoregions 69 & 70
13		Not Available
14		Not Available
15		Not Available

Ecoregion 50 XC_{95} Rank	Minnesota Ecoregion 50	West Virginia Ecoregions 69 & 70
16		
17		
18		Not Available

Ecoregion 50 XC_{95} Rank	Minnesota Ecoregion 50	West Virginia Ecoregions 69 & 70
19		
20		Not Available

REVIEW: "An Evaluation of a Field-Based Aquatic Benchmark for Specific Conductance in Northeast Minnesota" (November 2015). Prepared by B. L. Johnson and M. K. Johnson for WaterLegacy.

PREPARER: Susan M. Cormier, Ph.D.
National Center for Environmental Assessment—Cincinnati,
Office of Research and Development, U.S. EPA

DATE: February 4, 2016

Introduction

The evaluation by Johnson and Johnson (2015) examined the ionic mixtures of mining effluents and their impact on northeast Minnesota waters. The authors made the following inference: Because organisms (benthic macroinvertebrates) are extirpated in Appalachian streams by mineral additions that increase specific conductivity (SC)[1] to 300 microsiemens per centimeter (µS/cm) where natural background is 146 µS/cm (U.S. EPA, 2011), then organisms in waters of northeast Minnesota waters are likely to be affected by the same levels given a similar mineral composition.

"Northeast Minnesota waters" defined by Johnson and Johnson (2015) refers to a portion of the Northern Lakes and Forests Level III Ecoregion 50 (Omernik, 1987), which includes parts of the Boundary Lakes and Hills (50n), the northern portion of Toimi Drumlins (50p), and North Shore Highlands (50t). The Minnesota Pollution Control Agency (MPCA, 2016) describes the Northern Lakes and Forests on their website:

> "This heavily forested ecoregion is made up of steep, rolling hills interspersed with pockets of wetlands, bogs, lakes and ponds. Lakes are typically deep and clear, with good gamefish populations. These lakes are very sensitive to damage from atmospheric deposition of pollutants, storm water runoff from logging operations, urban and shoreland development, mining, inadequate wastewater treatment, and failing septic systems" (MPCA accessed 1/5/2016).

[1] This review uses conductivity as a measure of ionic concentration rather than as description of an electrical property of water. As ionic concentration increases, conductivity increases. Both specific conductivity and specific conductance are often used synonymously in the open literature indicating normalization or measurement at 25°C. Conductivity is a property of water expressed in units of micro-Siemens per centimeter (µS/cm). Conductance of a sample or electrical component is measured as Siemens (S). All measurements in this review refer to specific conductivity, µS/cm at 25°C and background is estimated as the 25th centile of SC measurements.

The Johnson and Johnson (2015) evaluation describes the ionic mixture of effluents in northeast Minnesota. In Appalachia (U. S. EPA, 2011) and northeast Minnesota, the ionic mixture is dominated by bicarbonate and sulfate anions and calcium and magnesium cations (Thingvold et al., 1979). This finding is consistent with dominant ions for Ecoregion 50 (including Minnesota, Wisconsin, and Michigan) reported by Griffith (2014), whose study Johnson and Johnson (2015) did not cite. The data set used in the Johnson and Johnson study had a reported mean (note: not the 25th centile) background SC of 68 µS/cm in the defined regions of Ecoregion 50 (parts of 50n, 50p, and 50t). This is less than the 25th centile SC of the data set used in the development of the central Appalachian benchmark (146 µS/cm). The Johnson and Johnson (2015) report provides evidence that where the SC is high, there are disturbed environments. In particular, the mean and maximum SC in their study area increase below mineral effluent discharges associated with mines in the northeast region of Minnesota.

The study also provides evidence that benthic invertebrates are adversely affected where SC is greater than background. Where SC is greater than background, benthic invertebrate diversity and abundance decreases and the proportion of dominant genera increases. Attachment A, Table 1 of Johnson and Johnson (2015) identified the genera occurring in both central Appalachia and northeast Minnesota.

Overall, the weight of evidence supports the inference that effluents that increase waterbody SC to more than 300 µS/cm have adverse effects in northeast Minnesota waters. Using effect levels developed in central Appalachia, more than 5% of these shared genera are likely to be extirpated in waters with SC >300 µS/cm.

Confirmation using independent data sets

Benthic invertebrate and water quality data sets collected by the MPCA had been made available to the U.S. Environment Protection Agency (EPA) for research on stressor-response relationships. These data are used here to assess the validity of the Johnson and Johnson's findings. In Ecoregion 50, the MPCA data set consists of 40,585 water chemistry samples collected from less than 2000 sites between 1996–2013, with most of the water chemistry samples collected from repeated sampling in the same location in the same year between June and September. Annual site averages (geometric means) for SC and several other measured water quality parameters were calculated. The mean, median, minimum, maximum, and several quantiles for the population of sites in the data set are shown in Table 1.

Table 1. Summary statistics of annual geometric mean water chemistry parameters for Ecoregion 50 (MPCA, 1996–2013) prepared for this review. Mean, minimum, 5th–95th quantiles, and maximum are shown.

Parameter	*N*	Mean	Min	5th	10th	25th	50th	75th	90th	95th	Max
SC (µS/cm)	1,409	210	23	64	83	135	222	338	461	567	1,458
Alk (mg/L, unfiltered)	293	78.4	7.9	17.1	24.8	47.0	90.8	142	220	249	363
Chl a (µg/L)	200	2.3	0.5	0.8	1.0	1.5	2.3	3.7	5.2	6.6	14.6
DO (mg/L)	1,362	8.8	0.1	4.7	5.8	7.5	9.0	10.2	11.3	11.9	17.2
NH_3 (mg/L)	616	0.06	0.00	0.02	0.03	0.04	0.05	0.07	0.14	0.22	1.24
NO_x (mg/L)	850	0.09	0.00	0.02	0.03	0.05	0.07	0.15	0.34	0.63	20.8
OP (filtered, mg/L)	149	0.015	0.004	0.005	0.006	0.010	0.012	0.025	0.045	0.078	0.32
OP (unfiltered, mg/L)	339	0.013	0.001	0.005	0.005	0.007	0.011	0.020	0.037	0.058	0.61
TDS (mg/L)	165	170	49	62	70	117	200	250	307	372	780
TKN (mg/L)	632	0.77	0.20	0.43	0.50	0.59	0.74	0.96	1.29	1.54	3.91
TN (mg/L)	799	0.84	0.12	0.44	0.50	0.62	0.79	1.05	1.49	1.95	21.5
TP (mg/L)	1,151	0.043	0.003	0.015	0.019	0.026	0.042	0.066	0.102	0.154	0.91
Transp (cm)	1,768	71.5	4.9	33.6	45	60	79	99	100	100	122
TSS (mg/L)	1,217	6.4	1.0	1.7	2.0	3.0	5.1	10.4	28.3	50.9	1,076
Turbidity (NTU)	223	8.1	0.6	1.7	1.9	2.9	5.9	17.1	52.2	117.0	453

Alk = alkalinity; Chl a = chlorophyll a; DO = dissolved oxygen; NH_3 = ammonia; NO_X = oxides of nitrogen; OP = orthophosphate; TDS = total dissolved solids; TKN = total Kjeldahl nitrogen; TN = total nitrogen; TP = total phosphorous; Transp = transparency; TSS = total suspended solids; NTU = nephelometric turbidity units.

Background conductivity

The 25th centile of all samples from the MPCA data set (years: 1996–2013) was used to estimate the background SC for seven Level III ecoregions in Minnesota (see Figure 1). The estimated background SC for the entire Level III Ecoregion 50 in northeastern Minnesota is 135 µS/cm (90% confidence interval [CI] 130–140 µS/cm, $N = 1{,}409$). A number of the MPCA sampling sites had paired biological and chemical measurements. The 25th centile estimated background SC for sites with paired MPCA biological and chemical measurements was 108 µS/cm (90% CI 97–116 µS/cm, $N = 735$). Estimates were not made for the Level IV Ecoregions. Using either data set, Ecoregion 50 has the lowest background SC among the ecoregions in Minnesota (see Figure 1).

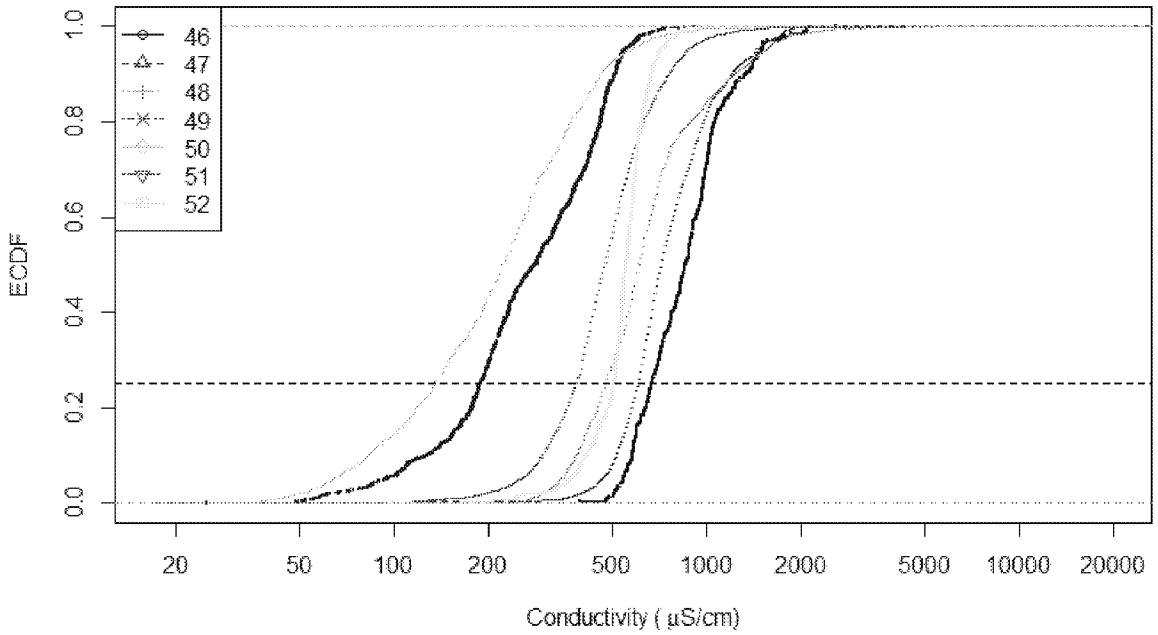


Figure 1. Empirical cumulative distribution function (ECDF) of annual geometric mean conductivity values in ecoregions of Minnesota. The dark horizontal dashed line is the 25th centile of ECDF. Ecoregion 50 is the Minnesota ecoregion with the lowest background SC and is plotted at the far left in turquoise (data: MPCA, 1996–2013).

Another water chemistry analysis was published in 2014 by Griffith for the entire Ecoregion 50 extending from northeastern Minnesota through Wisconsin and into northern Michigan. These published results were generated from data sets compiled from several EPA surveys that used probability-based sampling designs (Griffith, 2014). The 25th centile SC for that data set at the Level III Ecoregion 50 was 111 µS/cm (N = 151), which is less than in the Appalachian study data set.

In comparison, Table 2 contains values from the Minnesota Environmental Quality Board MEQB (1979), which were collected between 1975 and 1977. This earlier sampling effort is confined to an area of interest consisting of 14 watersheds that are included in the Johnson and Johnson evaluation (2015). The median stream SC is reported as 55 µS/cm. Johnson and Johnson (2015) report a mean of 68 µS/cm using data from a comparable time period. Both values are less than the 25th centile background in Appalachia streams (U.S. EPA, 2011).

Based on these independent data sets, it appears that, currently and 40 years ago, the background SC in the study area has been less than the background estimated from the data set used to derive the conductivity benchmark for the combined Appalachian Ecoregions 69 and 70 (U. S. EPA, 2011). This confirms the Johnson and Johnson claim.

Table 2. Data from Minnesota Environmental Quality Board collected between 1975 and 1977 from streams in "Group C stations" and reproduced here for the reader's convenience

Parameters	Median stream value
Specific conductivity (µS/cm) (25°C)	55
Al (µg/L)	90
As (µg/L)	0.8
Ca (mg/L)	6.0
Cd (µg/L)	0.03
Cl (mg/L)	1.6
Co (µg/L)	0.4
Cu (µg/L)	1.3
Fe (µg/L)	560
F (mg/L)	310
Hg (µg/L)	0.08
K (mg/L)	0.6
Mg (mg/L)	3
Mn (µg/L)	35
Na (mg/L)	1.6
Ni (µg/L)	1.0
Pb (µg/L)	0.5
Zn (µg/L)	2.0
Alkalinity (mg/L))($CaCO_3$)	19
TOC (mg/L)	15
P-total (µg/L)	20
Total Nitrogen (mg/L)	0.79
SO_4 (mg/L)	6.6
pH	6.9
Color (Pt-Co scale)	90.2
Silica (mg/L)	6.3

TOC = total organic carbon; P-total = total phosphorous; Pt-Co = platinum-cobalt.

Biological effect

Extirpation is the loss of a taxon from its normal habitat, such as a portion of a stream or geographic area. For this review, the concentration resulting in extirpation is defined as the SC level above which less than 5% of observations of a genus were made in an ecoregion, an extirpation concentrations (XC_{95}) (U. S. EPA, 2011).

Johnson and Johnson (2015, Attachment A, Table 1 of their report) identified the benthic macroinvertebrate genera occurring in both Appalachia and northeast Minnesota streams. They used XC_{95} values for Appalachian genera to evaluate extirpation of the same genera in northeast Minnesota streams. Using effect levels developed in central Appalachia, more than 5% of these shared genera are likely to be extirpated in waters with SC >300 µS/cm. Because Johnson and Johnson did not use Minnesota data to calculate effect levels for individual genera in northeastern Minnesota streams, there is uncertainty whether the species comprising a genus in Minnesota is similar enough to those in West Virginia for comparison. This point is important because the extirpation concentration (XC_{95}) values represent the effect level for the most tolerant species in that genus.

We were able to overcome this limitation for this review because we had a paired biological and SC data from Ecoregion 50 in Minnesota. Using the MPCA data set, we directly calculated XC_{95} levels for benthic invertebrates in northeastern Minnesota streams. Then, we used these Ecoregion 50-Minnesota XC_{95} values to predict the SC at which 5% of benthic invertebrate genera are likely to be extirpated.

Estimation of specific conductivity (SC) likely to cause extirpation

Paired biological and chemical data were analyzed using the MPCA data set from 1996–2013 (see Figure 2) and using the methods described in EPA (2011). XC_{95} values were calculated for 164 genera (see Table 3) that occurred at ≥25 sites in the MPCA paired data set (see Figure 2) using the methods in EPA (2011). Although the number of sites was modest (number of samples was 734, number of sites was 596) and the range of SC values is limited, the tolerance range was defined for more than 12% of genera that were analyzed, which allowed confident estimation of the SC that would result in the loss of 5% of genera.

Estimation of the specific conductivity (SC) likely to extirpate 5% of genera

In this review, extirpation of 5% of genera was used as the effect threshold. The SC level predicted to cause 5% extirpation is referred to as the hazardous concentration (HC_{05}) (U.S. EPA, 2011). Using the available data set, the interpolated 5th centile of the ranked XC_{95} values (HC_{05}) for Ecoregion 50 in Minnesota is 320 µS/cm. Note that even if a genus is not extirpated at the HC_{05}, the abundance or ecoregion occurrences may still be reduced. The

Minnesota HC_{05} for Ecoregion 50 (320 µS/cm) is similar to the HC_{05} of the Appalachian study (295 µS/cm).

Most samples in the MPCA data set were collected during August and September, and many salt-intolerant genera may not have been collected because they are more likely to be collected earlier in the year. Therefore, this HC_{05} may be higher than would be obtained with a data set that included more mayfly genera which are collected in the spring and tend to be among the more intolerant genera. Also, the estimated HC_{05} is for this review only and it does not represent a benchmark for Ecoregion 50. Additional analyses are recommended to evaluate the seasonal effects in the data set that was used for the estimate.

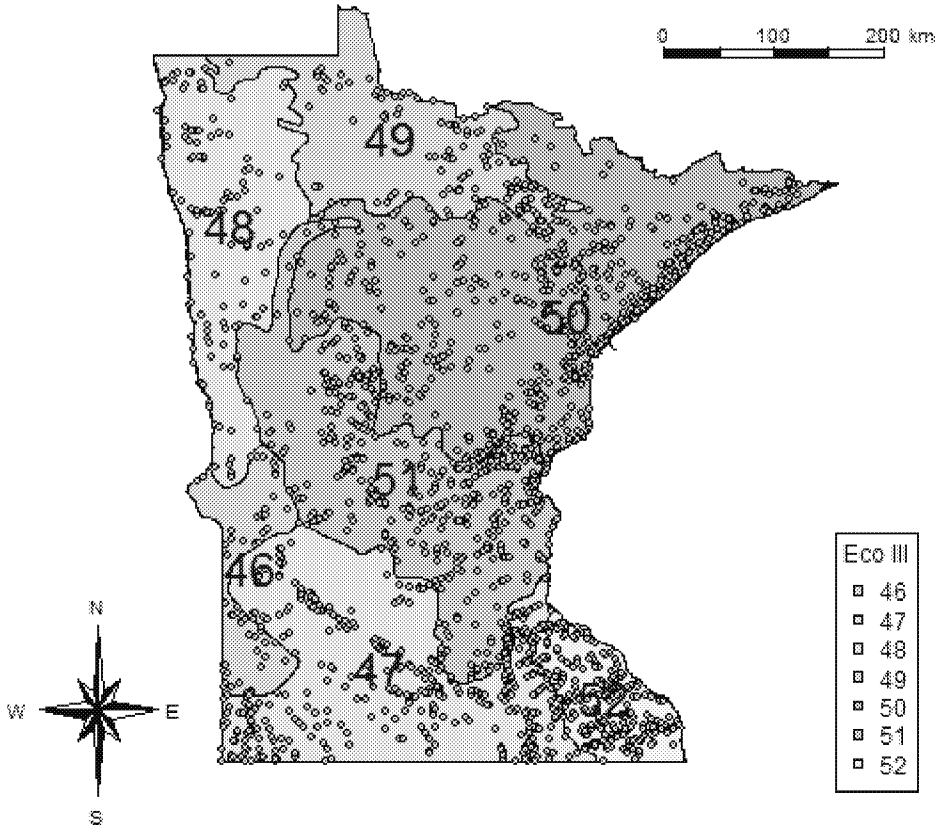


Figure 2. Ecoregion 50 is contained in the orange area in the northeast portion of Minnesota. Circles represent paired biological and water quality sampling sites. There are fewer samples in the area bordering Canada, often referred to as the boundary waters, which are less accessible for sampling.

Table 3. XC_{95} values for 164 genera with ≥25 occurrences in Ecoregion 50 of Minnesota prepared for this review

Genus	XC_{95} µS/cm	Samples	Genus	XC_{95} µS/cm	Samples	Genus	XC_{95} µS/cm	Samples
Dolophilodes	191	82	*Protoptila*	717	106	*Rheotanytarsus*	912	477
Epeorus	201	94	*Psychomyia*	717	71	*Tvetenia*	912	347
Rhyacophila	254	35	*Pycnopsyche*	717	51	*Nilothauma*	1,008	71
Ophiogomphus	272	73	*Chimarra*	719	277	*Dicranota*	1,029	70
Serratella	283	40	*Ephemera*	719	44	*Chrysops*	1,110	38
Boyeria	298	117	*Ephemerella*	719	144	*Clinotanypus*	1,110	31
Agnetina	302	25	*Nyctiophylax*	719	30	*Gammarus*	1,110	40
Trissopelopia	327	25	*Paratendipes*	719	67	*Sigara*	1,110	52
Xenochironomus	335	36	*Pteronarcys*	719	82	*Ceraclea*	1,134	140
Larsia	338	25	*Stenonema*	719	184	*Neophylax*	1,134	26
Paraponyx	338	33	*Dixa*	736	28	*Nigronia*	1,134	101
Eurylophella	357	151	*Neoplea*	736	71	*Potthastia*	1,134	30
Stictochironomus	361	46	*Stenochironomus*	736	205	*Stempellina*	1,134	112
Helisoma	374	95	*Xylotopus*	736	64	*Chironomus*	1,138	86
Lopescladius	390	60	*Hexagenia*	829	32	*Zavrelimyia*	1,138	34
Leptophlebia	416	43	*Stenacron*	859	125	*Micrasema*	1,182	162
Leucrocuta	435	124	*Acroneuria*	867	225	*Antocha*	1,185	123
Labiobaetis	456	55	*Atherix*	867	211	*Cryptochironomus*	1,185	83
Plauditus	464	38	*Endochironomus*	867	53	*Dicrotendipes*	1,185	197
Triaenodes	502	58	*Isonychia*	867	98	*Glyptotendipes*	1,185	47
Nilotanypus	510	50	*Neureclipsis*	867	127	*Taeniopteryx*	1,185	33
Nectopsyche	529	56	*Labrundinia*	872	198	*Conchapelopia*	1,353	51
Liodessus	559	73	*Oecetis*	872	329	*Gyraulus*	1,353	107
Procloeon	568	131	*Paragnetina*	872	161	*Hydropsyche*	1,353	294
Callibaetis	620	26	*Sublettea*	872	28	*Limnephilus*	1,353	25
Cryptotendipes	620	35	*Tricorythodes*	872	141	*Nanocladius*	1,353	140
Valvata	620	26	*Enallagma*	879	53	*Tanytarsus*	1,353	511
Ancyronyx	626	45	*Parakiefferiella*	879	134	*Thienemannimyia*	1,353	524
Hexatoma	626	37	*Brachycentrus*	882	113	*Hydraena*	1,370	86
Atrichopogon	630	29	*Macronychus*	882	159	*Ablabesmyia*	1,412	297
Acentrella	650	164	*Rheocricotopus*	882	163	*Helicopsyche*	1,412	213
Cardiocladius	650	30	*Probezzia*	912	40	*Maccaffertium*	1,412	244
Glossosoma	650	191	*Psectrocladius*	912	105	*Microtendipes*	1,412	412

Table 3. XC_{95} values for 164 genera with ≥25 occurrences in Ecoregion 50 of Minnesota prepared for this review (continued)

Genus	XC_{95} µS/cm	Samples	Genus	XC_{95} µS/cm	Samples	Genus	XC_{95} µS/cm	Samples
Pseudochironomus	1,412	27	*Anacaena*	1,594	39	*Dixella*	1,998	102
Stenelmis	1,412	302	*Anopheles*	1,594	79	*Eukiefferiella*	1,998	198
Tribelos	1,412	66	*Baetis*	1,594	402	*Ferrissia*	1,998	348
Thienemanniella	1,417	259	*Ceratopsyche*	1,594	436	*Haliplus*	1,998	109
Micropsectra	1,426	275	*Cladotanytarsus*	1,594	97	*Hydatophylax*	1,998	88
Polypedilum	1,442	628	*Dubiraphia*	1,594	371	*Iswaeon*	1,998	87
Cricotopus	1,447	508	*Gyrinus*	1,594	60	*Limnophyes*	1,998	69
Hemerodromia	1,447	308	*Hyalella*	1,594	436	*Mystacides*	1,998	95
Parachironomus	1,447	34	*Lype*	1,594	62	*Orconectes*	1,998	54
Pentaneura	1,447	56	*Simulium*	1,594	463	*Orthocladius*	1,998	219
Corynoneura	1,451	274	*Somatochlora*	1,594	35	*Paraleptophlebia*	1,998	217
Cheumatopsyche	1,458	422	*Tipula*	1,594	120	*Paramerina*	1,998	120
Hydroptila	1,458	223	*Physa*	1,818	387	*Parametriocnemus*	1,998	286
Isoperla	1,458	42	*Caenis*	1,825	369	*Phaenopsectra*	1,998	187
Optioservus	1,458	401	*Acerpenna*	1,998	251	*Polycentropus*	1,998	138
Oxyethira	1,458	233	*Aeshna*	1,998	79	*Procladius*	1,998	205
Paratanytarsus	1,458	238	*Baetisca*	1,998	41	*Pseudocloeon*	1,998	82
Amnicola	1,527	80	*Belostoma*	1,998	75	*Ptilostomis*	1,998	97
Bezzia	1,527	94	*Brillia*	1,998	118	*Sialis*	1,998	88
Cordulegaster	1,527	29	*Caecidotea*	1,998	39	*Stempellinella*	1,998	330
Fossaria	1,527	49	*Calopteryx*	1,998	259	*Synorthocladius*	1,998	47
Lepidostoma	1,527	267	*Centroptilum*	1,998	67			

Conclusion

The results of the analyses performed for this review support the conclusions of Johnson and Johnson (2015) concerning the effects of SC on benthic invertebrates.

1. Independent data sets from different decades confirm Johnson and Johnson's conclusion that the background SC in Ecoregion 50 in Minnesota is less than the background of the data set used to develop the SC benchmark for Ecoregions 69 and 70 in Central Appalachia. Hence, a benchmark value for SC in Ecoregion 50 is not expected to be greater than the benchmark for central Appalachia, i.e. 300 µS/cm.

2. Likewise, the inference that 5% extirpation of benthic invertebrates would occur at similar conductivity levels in central Appalachia and Ecoregion 50 in Minnesota was supported by analysis of an independent data set of paired benthic invertebrate and SC data from Ecoregion 50 in Minnesota. We estimated that more than 5% of genera would be extirpated in streams greater than 320 µS/cm. However, additional analyses are needed to evaluate the effect of seasonal collection.

3. Johnson and Johnson evaluated biological effects where SC was greater than background at several mine sites and streams draining in or near the mines. SC associated with discharges and mine pits exceeded 300 µS/cm. For some sites, dilution may reduce the SC below 300 µS/cm in the waterbody, but the data are not shown and may not be available for all sites. In other cases, SC is very high (>1,000 µS/cm) and biological effects have been reported by MPCA. The severity of the effects are consistent with effects expected for increased level of SC.

4. Metal contamination, habitat alteration, temperature, and nutrient enrichment may contribute to biological effects at some of the mine sites. These stressors may exacerbate the effect, but the extirpation due to SC would still occur if these stressors were removed based on removal of other stressors and persistent effects observed in Appalachia when only conductivity was high and other stressors were low or absent (U.S. EPA, 2011; Timpano et al., 2015; Cook et al., 2015).

Johnson and Johnson (2015) make several recommendations based on their findings. These are policy decisions and are not part of this scientific review.

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U.S. EPA (Environmental Protection Agency). (2011) A field-based aquatic life benchmark for conductivity in Central Appalachian streams. [EPA/600/R-10/023F]. Washington, DC: Office of Research and Development, National Center for Environmental Assessment. http://cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=233809.

Message

From: Hite, Rita [RHite@forestfoundation.org]
Sent: 7/13/2017 5:58:52 PM
To: Greenwalt, Sarah [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=6c13775b8f424e90802669b87b135024-Greenwalt,]
Subject: followup on Tree Farm Visit--EPA procurement
Attachments: One Pager on EPA Forest Products Issue 05.08.17.docx

Hey Sarah—just wanted to followup on the conversation in Georgia at the Barr's place, RE: this EPA procurement issue. I've attached a brief background paper on the topic and would be happy to discuss.

Thanks so much.
--Rita

Rita Hite
Executive Vice President, ATFS, Woodlands and Policy
American Forest Foundation
rhite@forestfoundation.org

Ex. 6 (c)

Ensure EPA's Procurement Recommendations Do Not Discriminate Against Forest Products
May 8, 2017

Summary of Issue:
We want to ensure that our federal government is encouraged to purchase forest products from the millions of acres of responsibly managed forests across the US. Unfortunately, with unclear authority, EPA issued procurement recommendations in 2015 that were harmful to our forests and discriminated against two recognized and credible forest certification standards – the Sustainable Forestry Initiative (SFI) and the American Tree Farm System (ATFS). While EPA in December 2015 said this recommendation was "under review", we are concerned about further actions that EPA may take on this issue. We are also concerned that this policy could now be recognized in the Federal Acquisition Regulations, making it a requirement on federal agencies, not just an EPA recommendation backed by an Obama-era executive order.

Our Recommendation:
EPA should discontinue its work on any recommendations for lumber/wood purchasing, deferring exclusively to the USDA BioPreferred Program, which sets mandatory purchasing requirements for federal agencies. This approach not only avoids duplicative and conflicting agency guidance but it is also backed by Congressional mandate. EPA's current approach is not backed by a Congressional mandate and lacks appropriate authority.

Background:
On Sept. 25, 2015, EPA published, without an opportunity for public review and comment, Interim Recommendations related to the use of environmental standards and ecolabels in procurement by federal agencies. EPA designated lumber and wood as products subject to the new requirements, identifying only one forest certification standard – Forest Stewardship Council (FSC) – as qualifying lumber and wood for federal procurement. This action made products certified to the Sustainable Forestry Initiative (SFI) and American Tree Farm (ATFS) standards, and most other U.S. produced wood products, ineligible for procurement. EPA offered no credible justification for this action.

Because EPA-recommended standards and labels are made mandatory under Executive Order 13693 "Planning for Federal Sustainability in the Next Decade" and exclusive under the Implementing Instructions issued by CEQ, the effect of EPA's decision is to significantly discourage the use of wood products from over 95% of North American forests, including those certified to SFI and ATFS standards.

After close to a year of bipartisan congressional inquiries, EPA signaled in December 2016 that this recommendation is under review, which was a positive development. However, neither SFI nor ATFS has been informed of when and how this recommendation may be further considered or finalized.

In March, SFI and ATFS submitted joint comments to GSA in regards to the proposed Sustainable Acquisition amendments to the Federal Acquisition Regulation (FAR Case 2015-033), as published in the Federal Register (82 Fed. Reg. 5490, Jan. 18, 2017). SFI and ATFS' joint comments expressed concern about the proposal that agencies must purchase products that "meet or exceed specifications, standards, or labels recommended by EPA" as defined by EPA's "greener products" website (https://www.epa.gov/greenerproducts). If the amendments to the FAR were implemented as proposed, it would put required regulatory weight behind any EPA recommendations for lumber and wood, regardless of what those recommendations might specify.

The USDA BioPreferred program, which sets mandatory purchasing requirements for federal agencies as directed by Congress beginning in the 2002 Farm Bill, directs that that the raw material used in a product be sourced from "a legal source, a responsible source, or a certified source as designated by the ASTM 7612–10 standard" for wood and wood-based products – which lists SFI and ATFS among its recognized forest certification standards.

It is critical that EPA bring this issue to a close by referring solely to the USDA BioPreferred Program.

On May 3, 2017, EPA hosted a webinar that they billed as a "**Community Update on EPA's Recommendations of Specs, Standards, and Ecolabels, Implementation Plans, and Next Steps".** During this webinar, EPA highlighted the supposed authority for the Environmentally Preferable Purchasing (EPP) program, referring to the following:

- The P2 Act (42 U.S.C.A. §13103(b)(11)]
- Various clauses and subparts of FAR 7, 11, 12, 13, and 23
- Executive Orders for environmental leadership in the Federal government since 1993 (including EO 13693)
- National Technology Transfer and Advancement Act and OMB Circular A-119

EPA also indicated that "to the extent practicable and applicable, products/services purchased by feds must be mandated by name in statutes (e.g., USDA Biopreferred, Energy Star) ***AND*** must meet other EPA programs to help meet federal purchasing requirements OR must meet EPA recommended private sector standards/labels/specs." The EPA recommended private sector standards/labels/specs are the ones that were included in their September 2015 Interim Recommendations or that were approved through the pilot process. This demonstrates that EPA is looking to make their recommendations mandatory for federal procurement.

Message

From: Dravis, Samantha [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=ECE53F0610054E669D9DFFE0B3A842DF-DRAVIS, SAM]
Sent: 7/25/2017 3:03:25 PM
To: Greenwalt, Sarah [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=6c13775b8f424e90802669b87b135024-Greenwalt,]
CC: Warner, Elizabeth [elizabeth.warner@santeecooper.com]; Stephen Fotis [scf@vnf.com]; Brown, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9242d85c7df343d287659f840d730e65-Brown, Byro]
Subject: Re: [EXTERNAL SENDER] RE: Call

I'm on another call as well

Sent from my iPhone

On Jul 25, 2017, at 11:02 AM, Greenwalt, Sarah <greenwalt.sarah@epa.gov> wrote:

> I am running a few minutes behind at another meeting. Sorry, if you'll give me 5 minutes that would be great.
>
> Sent from my iPhone
>
> On Jul 24, 2017, at 6:49 PM, Warner, Elizabeth <elizabeth.warner@santeecooper.com> wrote:
>
> > Sarah,
> > 11 a.m. suits Stephen and me. Should we call your office?
> >
> > Thanks also for the opportunity to talk with Byron and Samantha. Stephen is coordinating getting in touch with them quickly to share information.
> >
> > Thanks,
> > Babs
> >
> > Elizabeth Henry Warner
> > Vice President Legal Services and
> > Corporate Secretary
> > Santee Cooper
> > **Ex. 6**
> > ehwarner@santeecooper.com
> >
> > The contents of this message may be privileged and confidential. Therefore, if this message has been received in error, please delete it without reading it. Your receipt of this message is not intended to waive any applicable privilege. Please do not disseminate this message without the permission of the author.
> >
> > **From:** Greenwalt, Sarah [mailto:greenwalt.sarah@epa.gov]
> > **Sent:** Monday, July 24, 2017 6:08 PM
> > **To:** Warner, Elizabeth

Cc: Stephen Fotis; Brown, Byron; Dravis, Samantha
Subject: [EXTERNAL SENDER] RE: Call

WARNING: This e-mail is from an external sender. Use caution when opening attachments and clicking links.

Thank you Elizabeth! It was a very productive meeting. I'm cc'ing Byron Brown and Samantha Dravis who are very familiar with CCR. If you would please communicate to them what you were sharing with the Administrator today, that would be very helpful.

As of now, I'm free from 11-11:30 and 3:00-3:45 to discuss the other.

Thanks!

Sarah A. Greenwalt
Senior Advisor to the Administrator
for Water and Cross-Cutting Issues

U.S. Environmental Protection Agency
Work: 202-564-1722 | Cell: Ex. 6
Greenwalt.Sarah@epa.gov

From: Warner, Elizabeth [mailto:elizabeth.warner@santeecooper.com]
Sent: Monday, July 24, 2017 2:09 PM
To: Greenwalt, Sarah <greenwalt.sarah@epa.gov>
Cc: Stephen Fotis <scf@vnf.com>
Subject: Call

Sarah,
Very nice to meet you today. Thanks for all the work you have been doing on water issues for EPA. Stephen Fotis and I are available for a call re ELG anytime tomorrow. Stephen is very familiar with the issues we discussed. We look forward to hearing from you.
Thanks,
Babs

Elizabeth Henry Warner
Vice President Legal Services and
Corporate Secretary
Santee Cooper
Ex. 6
ehwarner@santeecooper.com

Message

From: Paul Balserak [pbalserak@steel.org]
Sent: 6/30/2017 9:52:26 PM
To: Greenwalt, Sarah [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=6c13775b8f424e90802669b87b135024-Greenwalt,]
CC: Dominguez, Alexander [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5ced433b4ef54171864ed98a36cb7a5f-Dominguez,]
Subject: RE: Thank you

Dear Sarah and Alex,

Regarding conduit theory, I'm thinking we would have roughly the same group that met with you back on the 20th on this call. Alex, might you be able to suggest four or five time slots that work for Sarah between July 17-21. I know that's a bit far, but with the holiday next week, and with Sarah's very busy schedule, that seems reasonable to me. I'll check in with my folks on those time slots, once received, and we'll go from there.

Re conductivity, obviously, just let us know Sarah, as soon as you are ready, and we'll very gladly have a call or come in for a meeting.

Thanks so much, and have a wonderful July 4th!

Best,
Paul

Paul Balserak
Vice President, Environment

American Iron and Steel Institute
25 Massachusetts Ave. NW, Suite 800
Washington, DC 20001
Ex. 6 (office)
(mobile)

From: Greenwalt, Sarah [mailto:greenwalt.sarah@epa.gov]
Sent: Tuesday, June 20, 2017 4:45 PM
To: Paul Balserak
Cc: Dominguez, Alexander
Subject: RE: Thank you

Paul,

It was a pleasure to sit down with you today. Please pass along my thanks to everyone for the helpful discussion. I look forward to discussing conduit theory with you guys soon. I have cc'ed Alex, who doubles as both my policy analyst and keeper of the schedule.

Alex – As Paul has indicated we are going to set up two different items on the schedule. The first is a phone call with whomever Paul deems appropriate to discuss conduit theory, and the second is a reminder to me in a few weeks to touch base with Paul on conductivity.

Thanks,

Sarah A. Greenwalt

Senior Advisor to the Administrator
for Water and Cross-Cutting Issues

U.S. Environmental Protection Agency
Work: 202-564-1722 | Cell: Ex. 6
Greenwalt.Sarah@epa.gov

From: Paul Balserak [mailto:pbalserak@steel.org]
Sent: Tuesday, June 20, 2017 2:10 PM
To: Greenwalt, Sarah <greenwalt.sarah@epa.gov>
Subject: Thank you

Dear Sarah,

Thank you very much for meeting with us this morning on conductivity and conduit theory. I will forward the regional petition on conductivity that you requested in the next few days. I'll also be very glad to follow up with you via the contact person you designate to have a call set up on conduit theory. Similarly, let's touch base over the next few weeks regarding a potential conductivity meeting with Mike Shapiro and others once you are at a place where that makes sense.

We genuinely appreciate your time today. Should you have any questions do not hesitate to call me at any time.

All the best,

Paul

Paul Balserak
Vice President, Environment

American Iron and Steel Institute
25 Massachusetts Ave. NW, Suite 800
Washington, DC 20001
Ex. 6 (office)
(mobile)

Message

From: Rachel Jones [RJones@nam.org]
Sent: 6/28/2017 1:19:26 PM
To: Greenwalt, Sarah [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=6c13775b8f424e90802669b87b135024-Greenwalt,]
Subject: Geneva

Sarah—

Hope all is well. I have been working with several different trades and companies on a G20 issue that appears to have slipped through the cracks. I wanted to flag it for you as soon as possible. Would you have time for a call?

Thanks!

Rachel

Rachel Jones
National Association of Manufacturers
Director, Energy and Resources Policy
E-mail: rjones@nam.org
Direct:
Mobile **Ex. 6**

NATIONAL ASSOCIATION OF Manufacturers

Message

From: Hite, Rita [RHite@forestfoundation.org]
Sent: 7/13/2017 7:04:32 PM
To: Greenwalt, Sarah [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=6c13775b8f424e90802669b87b135024-Greenwalt,]
Subject: RE: followup on Tree Farm Visit--EPA procurement

Fantastic! Thanks so much!

From: Greenwalt, Sarah [mailto:greenwalt.sarah@epa.gov]
Sent: Thursday, July 13, 2017 2:51 PM
To: Hite, Rita <RHite@forestfoundation.org>
Subject: RE: followup on Tree Farm Visit--EPA procurement

Hi Rita,

Good to hear from you again. Thank you for the background paper. I've forwarded it to the head of our Office of Policy who will be looking into this issue.

Sarah A. Greenwalt
Senior Advisor to the Administrator
for Water and Cross-Cutting Issues

U.S. Environmental Protection Agency
Work: 202-564-1722 | Cell: Ex. 6
Greenwalt.Sarah@epa.gov

From: Hite, Rita [mailto:RHite@forestfoundation.org]
Sent: Thursday, July 13, 2017 1:59 PM
To: Greenwalt, Sarah <greenwalt.sarah@epa.gov>
Subject: followup on Tree Farm Visit--EPA procurement

Hey Sarah—just wanted to followup on the conversation in Georgia at the Barr's place, RE: this EPA procurement issue. I've attached a brief background paper on the topic and would be happy to discuss.

Thanks so much.
--Rita

Rita Hite
Executive Vice President, ATFS, Woodlands and Policy
American Forest Foundation
rhite@forestfoundation.org
Ex. 6 (c)

Message

From: Anthony L. Francois [TFrancois@pacificlegal.org]
Sent: 5/22/2017 5:35:02 PM
To: Greenwalt, Sarah [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=6c13775b8f424e90802669b87b135024-Greenwalt,]
Subject: FW: Following up on 2008 Rapanos Guidance and President's 2/28/17 EO on WOTUS

Dear Ms. Greenwald,

I am writing you to follow up on the below note that I sent your colleague Samantha Dravis last month, but which appears may have been more properly addressed to you. It relates to EPA's possible use of the 2008 Post-*Rapanos* Guidance in the course of revising the 2015 regulation defining "waters of the US" under the Clean Water Act. As detailed in the note below, we have serious concerns about this, from both policy and legal perspectives.

You may be familiar with Pacific Legal Foundation's experience and expertise with this aspect of the Clean Water Act; we would be happy to offer any legal insights we can to EPA's key decision makers in the effort to successfully implement the provision in President Trump's WOTUS Executive Order relating to the use of the late Justice Scalia's opinion in *Rapanos* in place of Justice Kennedy's.

Best,

Tony Francois
Senior Attorney
Pacific Legal Foundation
930 G Street
Sacramento, CA 95814
Ex. 6
alf@pacificlegal.org
www.pacificlegal.org

From: Anthony L. Francois
Sent: Tuesday, April 18, 2017 6:00 PM
To: 'dravis.samantha@epa.gov' <dravis.samantha@epa.gov>
Subject: Following up on 2008 Rapanos Guidance and President's 2/28/17 EO on WOTUS

Good evening Ms. Dravis,

I am writing to follow up a note that I sent last Friday afternoon, regarding the EPA's efforts under President Trump's February 28, 2017 Executive Order to repeal the 2015 WOTUS Rule and replace it with a revised definition of Waters of the United States that is based on Justice Scalia's opinion in *Rapanos v. U.S.*, rather than Justice Kennedy's opinion in that case, on which the agency's 2008 Post-*Rapanos* Guidance and the 2015 WOTUS Rule are based.

We have a specific concern relating to a report that was circulated last Wednesday by E&E News, that EPA's Acting Director of the Wetlands Division in the Office of Wetlands, Oceans and Watersheds, Mindy Eisenberg, had reported to the annual meeting of the Association of State Wetlands Managers that once the 2015 WOTUS Rule was repealed, the agency would rely on its 2008 Post-*Rapanos* Guidance while it developed a new WOTUS definition to replace the 2015 Rule. The article is here: https://www.eenews.net/greenwire/2017/04/12/stories/1060053007

We have two significant concerns, if EPA is in fact considering this approach, both related to the 2008 Post-*Rapanos* Guidance. First, as a policy matter, the 2008 Guidance shares many of the flaws of the 2015 WOTUS Rule, especially its use of Justice Kennedy's *Rapanos* opinion as the basis for determining EPA jurisdiction over wetlands under the Clean Water Act. Since President Trump's WOTUS Executive Order calls for the new WOTUS definition to be based on Justice Scalia's *Rapanos* opinion instead of Justice Kennedy's, it does not seem to advance the implementation of the EO to use the Kennedy-based 2008 Guidance while developing a new rule, the development of which agency career staff may be inclined to drag out over several years. A better course would be to develop new interim guidance that implements the Scalia *Rapanos* opinion.

The second concern is legal. The 2008 Guidance was never submitted to Congress for review under the Congressional Review Act, 5 U.S.C. § 801 et seq., which means that under that Act, it cannot take legal effect. My PLF colleague Jonathan Wood wrote an excellent piece for the Daily Caller which spells this out in detail, at http://dailycaller.com/2017/03/09/trumps-progress-on-the-epa-is-a-good-start-but-more-reform-is-needed/. The 2008 Guidance is one of the rules which we feature on our RedTapeRollback.com project website, as never having been submitted to Congress, in violation of the Review Act (see https://www.redtaperollback.com/unreported-regulations). The bottom line, we think, is that if EPA does intend to rely on the 2008 Post-*Rapanos* Guidance while developing a new permanent regulation to define Waters of the United States, the agency is required by the Review Act to submit it to Congress in order for it to have legal effect.

For the long term project of a new WOTUS definition, built on Justice Scalia's opinion in *Rapanos* per the President's WOTUS EO, submitting the 2008 Post-*Rapanos* Guidance to Congress for review under the Congressional Review Act would advance the effort significantly. Under the Review Act, if Congress disapproves of a rule, the agency cannot later adopt a substantially similar one. That may be the only way to tie the hands of a future administration, which may want to revert to a Kennedy based rule in order to more broadly impose Clean Water Act requirements, as the last administration did. And, disapproval of the 2008 Guidance (which is based on the Kennedy test) under the Review Act would substantially strengthen Administrator Pruitt's legal case that the new WOTUS definition must be based on the Scalia test.

We would be happy to discuss these issues at greater length; you are probably aware that Pacific Legal Foundation probably has the best team of attorneys in the nation on the issues of both the Rapanos decision and the Waters of the U.S. Rule, and the Congressional Review Act.

Best,

Tony Francois
Senior Attorney
Pacific Legal Foundation
930 G Street
Sacramento, CA 95814
Ex. 6
alf@pacificlegal.org
www.pacificlegal.org

received this communication in error, please contact the sender at its Internet address above, or by telephone at (916) 419-7111. Thank you.

Message

From: Paul Balserak [pbalserak@steel.org]
Sent: 6/21/2017 12:46:56 PM
To: Dominguez, Alexander [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5ced433b4ef54171864ed98a36cb7a5f-Dominguez,]
CC: Greenwalt, Sarah [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=6c13775b8f424e90802669b87b135024-Greenwalt,]
Subject: RE: Thank you

Thanks to both of you. I'll be in touch soon on conduit theory.
Paul

Paul Balserak
Vice President, Environment

American Iron and Steel Institute
25 Massachusetts Ave. NW, Suite 800
Washington, DC 20001
Ex. 6 (office)
(mobile)

From: Dominguez, Alexander [mailto:dominguez.alexander@epa.gov]
Sent: Tuesday, June 20, 2017 5:33 PM
To: Paul Balserak
Cc: Greenwalt, Sarah
Subject: RE: Thank you

Thanks Sarah

Paul – Just let me know who to reach out to regarding conduit theory and will set something up.

Best,

Alex Dominguez
Policy Analyst to the Senior Advisors to
the Administrator for Air and Water
U.S. Environmental Protection Agency
Work: 202-564-3164|Cell: Ex. 6

From: Greenwalt, Sarah
Sent: Tuesday, June 20, 2017 4:45 PM
To: Paul Balserak <pbalserak@steel.org>
Cc: Dominguez, Alexander <dominguez.alexander@epa.gov>
Subject: RE: Thank you

Paul,

It was a pleasure to sit down with you today. Please pass along my thanks to everyone for the helpful discussion. I look forward to discussing conduit theory with you guys soon. I have cc'ed Alex, who doubles as both my policy analyst and keeper of the schedule.

Alex – As Paul has indicated we are going to set up two different items on the schedule. The first is a phone call with whomever Paul deems appropriate to discuss conduit theory, and the second is a reminder to me in a few weeks to touch base with Paul on conductivity.

Thanks,

Sarah A. Greenwalt
Senior Advisor to the Administrator
for Water and Cross-Cutting Issues

U.S. Environmental Protection Agency
Work: 202-564-1722 | Cell: Ex. 6
Greenwalt.Sarah@epa.gov

From: Paul Balserak [mailto:pbalserak@steel.org]
Sent: Tuesday, June 20, 2017 2:10 PM
To: Greenwalt, Sarah <greenwalt.sarah@epa.gov>
Subject: Thank you

Dear Sarah,

Thank you very much for meeting with us this morning on conductivity and conduit theory. I will forward the regional petition on conductivity that you requested in the next few days. I'll also be very glad to follow up with you via the contact person you designate to have a call set up on conduit theory. Similarly, let's touch base over the next few weeks regarding a potential conductivity meeting with Mike Shapiro and others once you are at a place where that makes sense.

We genuinely appreciate your time today. Should you have any questions do not hesitate to call me at any time.

All the best,

Paul

Paul Balserak
Vice President, Environment

American Iron and Steel Institute
25 Massachusetts Ave. NW, Suite 800
Washington, DC 20001
Ex. 6 (office)
(mobile)

Message

From: McDonough, Owen [OMcDonough@nahb.org]
Sent: 4/4/2017 1:48:28 PM
To: Greenwalt, Sarah [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=6c13775b8f424e90802669b87b135024-Greenwalt,]
CC: Ward, Thomas [TWard@nahb.org]; Washington, Valerie [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9d031c02ce3a416dad0d421ee998d5a3-VWASHING]
Subject: RE: Opportunity to Meet with NAHB Water Staff
Attachments: removed.txt

Perfect. We will see you tomorrow at 1:00.

Owen

OWEN MCDONOUGH Program Manager, Environmental Policy

National Association of Home Builders
1201 15th Street, NW | Washington, DC 20005
d: Ex. 6 e: OMcDonough@nahb.org w: nahb.org

From: Greenwalt, Sarah [mailto:greenwalt.sarah@epa.gov]
Sent: Tuesday, April 04, 2017 9:47 AM
To: McDonough, Owen <OMcDonough@nahb.org>
Cc: Ward, Thomas <TWard@nahb.org>; Washington, Valerie <Washington.Valerie@epa.gov>
Subject: RE: Opportunity to Meet with NAHB Water Staff

Great, we've got you down.

The North entrance is best. If you'll give them my name and number they will let me know when you've arrived. Look forward to seeing you.

Sarah A. Greenwalt
Senior Advisor to the Administrator
for Water and Cross-Cutting Issues

U.S. Environmental Protection Agency
Work: 202-564-1722 | Cell: Ex. 6
Greenwalt.Sarah@epa.gov

From: McDonough, Owen [mailto:OMcDonough@nahb.org]
Sent: Tuesday, April 4, 2017 9:43 AM
To: Greenwalt, Sarah <greenwalt.sarah@epa.gov>
Cc: Ward, Thomas <TWard@nahb.org>; Washington, Valerie <Washington.Valerie@epa.gov>
Subject: RE: Opportunity to Meet with NAHB Water Staff

Hi Sarah,

Tom and I are available to meet tomorrow (Wednesday) at 1:00 PM.

At which EPA entrance should we meet you?

Thanks and looking forward to our discussion.

Cheers,
Owen

OWEN MCDONOUGH Program Manager, Environmental Policy

National Association of Home Builders
1201 15th Street, NW | Washington, DC 20005
d: Ex. 6 e: OMcDonough@nahb.org w: nahb.org

From: Greenwalt, Sarah [mailto:greenwalt.sarah@epa.gov]
Sent: Tuesday, April 04, 2017 9:33 AM
To: McDonough, Owen <OMcDonough@nahb.org>
Cc: Ward, Thomas <TWard@nahb.org>; Washington, Valerie <Washington.Valerie@epa.gov>
Subject: RE: Opportunity to Meet with NAHB Water Staff

Hi Owen, good to hear from you.

I am available tomorrow at 11:30 or 1:00, and Thursday at 10:00 or 10:30. Would any of those times work?

Sarah A. Greenwalt
Senior Advisor to the Administrator
for Water and Cross-Cutting Issues

U.S. Environmental Protection Agency
Work: 202-564-1722 | Cell: Ex. 6
Greenwalt.Sarah@epa.gov

From: McDonough, Owen [mailto:OMcDonough@nahb.org]
Sent: Tuesday, April 4, 2017 9:03 AM
To: Greenwalt, Sarah <greenwalt.sarah@epa.gov>
Cc: Ward, Thomas <TWard@nahb.org>
Subject: Opportunity to Meet with NAHB Water Staff

Good morning, Sarah,

Last week, National Association of Home Builders (NAHB) senior leadership and staff had the opportunity to meet with Administrator Pruitt.

At that time, NAHB Environmental Policy AVP Michael Mittelholzer met you and learned that you are the point of contact regarding priority water issues at EPA.

As key water policy staff at NAHB, Tom Ward and I would appreciate the opportunity to meet with you in your new role.

Is there a chance that you're available to meet with us this week (other than Friday)?

Thank you,
Owen McDonough

OWEN MCDONOUGH Program Manager, Environmental Policy

National Association of Home Builders
1201 15th Street, NW | Washington, DC 20005
d: Ex. 6 e: OMcDonough@nahb.org w: nahb.org

We Build Communities

April is New Homes Month – celebrate with your favorite home buyer!

Members saved $20 million last year with Member Advantage!
Jump on those member discounts at nahb.org/ma.

Message

From: McDonough, Owen [OMcDonough@nahb.org]
Sent: 4/12/2017 6:28:34 PM
To: Greenwalt, Sarah [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=6c13775b8f424e90802669b87b135024-Greenwalt,]
CC: Ward, Thomas [TWard@nahb.org]
Subject: RE: State Wetland Protection
Attachments: removed.txt

Hi Sarah,

No worries. I hope you find the ELI report useful.

Don't hesitate to reach out if you have any questions about the document or last week's discussion.

Thanks,
Owen

OWEN MCDONOUGH Program Manager, Environmental Policy

National Association of Home Builders
1201 15th Street, NW | Washington, DC 20005
d: Ex. 6 e: OMcDonough@nahb.org w: nahb.org

From: Greenwalt, Sarah [mailto:greenwalt.sarah@epa.gov]
Sent: Wednesday, April 12, 2017 2:25 PM
To: McDonough, Owen <OMcDonough@nahb.org>
Cc: Ward, Thomas <TWard@nahb.org>
Subject: RE: State Wetland Protection

Owen and Tom,

I am realizing I never responded to your email. Thanks for sending! Looking forward to talking again with you soon.

Best,

Sarah A. Greenwalt
Senior Advisor to the Administrator
for Water and Cross-Cutting Issues

U.S. Environmental Protection Agency
Work: 202-564-1722 | Cell: Ex. 6
Greenwalt.Sarah@epa.gov

From: McDonough, Owen [mailto:OMcDonough@nahb.org]
Sent: Wednesday, April 5, 2017 3:16 PM
To: Greenwalt, Sarah <greenwalt.sarah@epa.gov>
Cc: Ward, Thomas <TWard@nahb.org>
Subject: State Wetland Protection

Sarah,

It was very nice meeting with you this afternoon, and thank you again for your time.

Per our discussion, I wanted to follow up by sharing the Environmental Law Institute (ELI) report I mentioned regarding the status of state wetland protection beyond the federal Clean Water Act.

This study was conducted post-*SWANCC* and supported by EPA.

https://www.eli.org/sites/default/files/eli-pubs/d18_06.pdf

Happy to answer any questions if you've got them.

Best,
Owen

OWEN MCDONOUGH Program Manager, Environmental Policy

National Association of Home Builders
1201 15th Street, NW | Washington, DC 20005
d: Ex. 6 e: OMcDonough@nahb.org w: nahb.org

We Build Communities

April is New Homes Month – celebrate with your favorite home buyer!

Members saved $20 million last year with Member Advantage!
Jump on those member discounts at nahb.org/ma.

Message

From: Ward, Thomas [TWard@nahb.org]
Sent: 4/12/2017 6:25:24 PM
To: Greenwalt, Sarah [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=6c13775b8f424e90802669b87b135024-Greenwalt,]
Subject: Automatic reply: State Wetland Protection

Thank you for contacting me by email. I will be away from the office through April 17th 13th and only have intermittent email access.

If you need assitance immediately, please contact Lavon Roxbury<lroxbury@nahb.org>. Otherwise, I will respond to your message when I return.

Thanks you and have a nice week.

Sincerely,

Tom Ward, National Association of Home Builders.

THOMAS WARD VP, Legal Advocacy

National Association of Home Builders
1201 15th Street, NW | Washington, DC 20005
d: Ex. 6 m: Ex. 6 e: TWard@nahb.org w: nahb.org

Message

From: Maui Orozco [Maui.Orozco@rubiconglobal.com]
Sent: 8/7/2018 4:55:26 PM
Subject: Re: Review attach agreement on your Approval
Attachments: Zero-Hour Auto Purge - Malware Alert Text.txt

Hello,

Please see the attached agreement, signed by Marty and notarized.

Thanks,

Maui

MAUI CHESKA OROZCO
Sr. Manager, Public Policy & Government Affairs
maui.orozco@rubiconglobal.com

Message

From: Greenwalt, Sarah [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=6C13775B8F424E90802669B87B135024-GREENWALT,]
Sent: 7/25/2017 11:55:26 AM
To: Warner, Elizabeth [elizabeth.warner@santeecooper.com]
Subject: RE: [EXTERNAL SENDER] RE: Call

Elizabeth, please call my cell: Ex. 6

Thank you.

Sarah A. Greenwalt
Senior Advisor to the Administrator
for Water and Cross-Cutting Issues

U.S. Environmental Protection Agency
Work: 202-564-1722 | Cell: Ex. 6
Greenwalt.Sarah@epa.gov

From: Warner, Elizabeth [mailto:elizabeth.warner@santeecooper.com]
Sent: Monday, July 24, 2017 6:48 PM
To: Greenwalt, Sarah <greenwalt.sarah@epa.gov>
Cc: Stephen Fotis <scf@vnf.com>; Brown, Byron <brown.byron@epa.gov>; Dravis, Samantha <dravis.samantha@epa.gov>
Subject: RE: [EXTERNAL SENDER] RE: Call

Sarah,
11 a.m. suits Stephen and me. Should we call your office?

Thanks also for the opportunity to talk with Byron and Samantha. Stephen is coordinating getting in touch with them quickly to share information.

Thanks,
Babs

Elizabeth Henry Warner
Vice President Legal Services and
Corporate Secretary
Santee Cooper
Ex. 6
ehwarner@santeecooper.com

From: Greenwalt, Sarah [mailto:greenwalt.sarah@epa.gov]
Sent: Monday, July 24, 2017 6:08 PM

To: Warner, Elizabeth
Cc: Stephen Fotis; Brown, Byron; Dravis, Samantha
Subject: [EXTERNAL SENDER] RE: Call

WARNING: This e-mail is from an external sender. Use caution when opening attachments and clicking links.

Thank you Elizabeth! It was a very productive meeting. I'm cc'ing Byron Brown and Samantha Dravis who are very familiar with CCR. If you would please communicate to them what you were sharing with the Administrator today, that would be very helpful.

As of now, I'm free from 11-11:30 and 3:00-3:45 to discuss the other.

Thanks!

Sarah A. Greenwalt
Senior Advisor to the Administrator
for Water and Cross-Cutting Issues

U.S. Environmental Protection Agency
Work: 202-564-1722 | Cell: Ex. 6
Greenwalt.Sarah@epa.gov

From: Warner, Elizabeth [mailto:elizabeth.warner@santeecooper.com]
Sent: Monday, July 24, 2017 2:09 PM
To: Greenwalt, Sarah <greenwalt.sarah@epa.gov>
Cc: Stephen Fotis <scf@vnf.com>
Subject: Call

Sarah,
Very nice to meet you today. Thanks for all the work you have been doing on water issues for EPA. Stephen Fotis and I are available for a call re ELG anytime tomorrow. Stephen is very familiar with the issues we discussed. We look forward to hearing from you.
Thanks,
Babs

Elizabeth Henry Warner
Vice President Legal Services and
Corporate Secretary
Santee Cooper
Ex. 6
ehwarner@santeecooper.com

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Message

From: Greenwalt, Sarah [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=6C13775B8F424E90802669B87B135024-GREENWALT,]
Sent: 3/28/2017 3:26:28 PM
To: Rachel Jones [RJones@nam.org]
Subject: RE: hello

Looking forward to meeting with you.

Sarah A. Greenwalt
Senior Advisor to the Administrator
for Water and Cross-Cutting Issues

U.S. Environmental Protection Agency
Work: 202-564-1722 | Cell: Ex. 6
Greenwalt.Sarah@epa.gov

From: Rachel Jones [mailto:RJones@nam.org]
Sent: Tuesday, March 28, 2017 11:26 AM
To: Greenwalt, Sarah <greenwalt.sarah@epa.gov>
Cc: Washington, Valerie <Washington.Valerie@epa.gov>
Subject: RE: hello

That would be great. I'll come by then.

Thank you!

Rachel Jones
Ex. 6

From: Greenwalt, Sarah [mailto:greenwalt.sarah@epa.gov]
Sent: Tuesday, March 28, 2017 11:24 AM
To: Rachel Jones <RJones@nam.org>
Cc: Washington, Valerie <Washington.Valerie@epa.gov>
Subject: RE: hello

How about Friday at 4:15? It should be relatively quiet by then.

Sarah A. Greenwalt
Senior Advisor to the Administrator
for Water and Cross-Cutting Issues

U.S. Environmental Protection Agency
Work: 202-564-1722 | Cell: Ex. 6
Greenwalt.Sarah@epa.gov

From: Rachel Jones [mailto:RJones@nam.org]
Sent: Tuesday, March 28, 2017 11:02 AM
To: Greenwalt, Sarah <greenwalt.sarah@epa.gov>
Subject: RE: hello

I'm free early mornings (8-9:30) or Thursday and Friday afternoons after 3 this week. Next week I'm out of town until Thursday, but free on Thursday and Friday afternoons that week. Is there any time that might work for you?

Rachel Jones
Ex. 6

From: Greenwalt, Sarah [mailto:greenwalt.sarah@epa.gov]
Sent: Tuesday, March 28, 2017 10:49 AM
To: Rachel Jones <RJones@nam.org>
Subject: RE: hello

Hi Rachel,

Thank you for reaching out. I would be delighted to get something on the calendar. What is your availability for late this week or early next?

Sarah A. Greenwalt
Senior Advisor to the Administrator
for Water and Cross-Cutting Issues

U.S. Environmental Protection Agency
Work: 202-564-1722 | Cell: Ex. 6
Greenwalt.Sarah@epa.gov

From: Rachel Jones [mailto:RJones@nam.org]
Sent: Thursday, March 23, 2017 4:53 PM
To: Greenwalt, Sarah <greenwalt.sarah@epa.gov>
Subject: hello

Hi Sarah,

We haven't met, but I wanted to come by and introduce myself when you have time. It sounds like we may share some common acquaintances. I also graduated in the 2013 Oklahoma legal class! But I ended up coming to work on environmental/energy issues in DC, rather than staying in OK.

Separately, I heard you were running point on the CWA jurisdictional question. Given the importance of this issue (and others) to manufacturers, I would love to share our perspectives and thoughts on ways to achieve clarity moving forward.

Would you have time to meet?

Thanks!

Rachel

Rachel Jones
National Association of Manufacturers
Director, Energy and Resources Policy
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