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Amanda J. Ralson
11719 Glenn Circle
Plainfield, IL 60585

Via Federal Express

September 23, 2008

Ms. Phillis Johnson-Ball
Deputy Chief, Section of Environmental Analysis
Project Manager
Surface Transportation Board
395 E Street, SW
Washington, DC 20024

Ref: STB Finance Docket No. 35087

Dear Ms. Johnson-Ball:

Please find enclosed comments prepared by Richard J. Misorowski and Amanda J. Ralson on the Surface Transportation Board's Draft Environmental Impact Statement. You will find an original and one copy of each brief to be filed by each individual. Please file stamp each version, and return one copy of each to me in the enclosed, self-addressed and stamped envelope.

Thank you for your assistance in this matter.

Sincerely,

A handwritten signature in cursive script that reads "Amanda J. Ralson".

Amanda J. Ralson

Enclosures

BEFORE THE
SURFACE TRANSPORTATION BOARD

CANADIAN NATIONAL RAILWAY	)	
COMPANY AND GRAND TRUNK	)	FINANCE DOCKET
CORPORATION – CONTROL – EJ&E	)	NO. 35087
WEST COMPANY	)	

COMMENTS OF AMANDA RALSON¹
IN OPPOSITION TO THE DRAFT ENVIRONMENTAL
IMPACT STATEMENT ISSUED JULY 25, 2008

“WE THE PEOPLE,”
NOT
“WE THE FOREIGN RAILROAD CORPORATION”



I. The Ralson Family

My name is Amanda Ralson. I am 29 years old. I am married to Mark Ralson, 34, and have a 2 year old daughter named Paige. I am pregnant with a second child, who is due to be born on October 12, 2008. I live at 11719 Glenn Circle, Plainfield, Illinois.

¹ Ms. Amanda Ralson, pictured far right-hand portion of the above photograph, respectfully submits these comments on the Draft Environmental Impact Statement (“DEIS”) issued in the above captioned proceeding by the Surface Transportation Board (“STB”) on July 25, 2008. See Canadian National Railway Company and Grand Trunk Corporation –Control-EJ&E West Company, STB Finance Docket No. 35087, Draft Environmental Impact Statement, served July 25, 2008. STB acknowledged receiving Environmental Comments from Amanda Ralson regarding the above-captioned matter on Feb. 12, 2008.

My home is approximately 500 feet from the EJ&E track which Canadian National is attempting to purchase. I have been a paralegal since November 2005 at a boutique environmental law firm, and have worked with environmental attorneys for approximately ten years. The environmental firm that I work with specializes in hazardous materials emergency response matters, and has handled numerous cases involving anhydrous ammonia gas, one of the hazardous substances CN has recognized will be transported on the EJ&E line. I have seen first hand how dangerous anhydrous ammonia gas can be, and have also witnessed the catastrophic effects that an anhydrous ammonia gas release can have on a local community.

My concerns for the environmental and safety impacts of this proposed transaction are therefore not merely speculative or ethereal. My concerns are rooted in practical experiences from seeing the devastation caused by companies with poor safety records and lack of adequate response mechanisms that handle extremely hazardous substances like anhydrous ammonia through populated communities like mine. I do not want such devastation to play out in my community because CN, a company with nearly \$8,000,000,000 in annual revenue, does not want to invest in safety and infrastructure changes that would greatly decrease the chances that such horrendous derailments, collisions, and other “accidents” will occur in my community.

II. Introduction

Canadian National (CN) is a **foreign corporation**. The founders of the United States did not create our Constitution with the intention of providing foreign companies like Canadian National with greater rights, privileges and protections than **the People of the United States**. Canadian National is unabashedly ignoring the United States

Constitution through its attempted acquisition of the Elgin Joliet and Eastern Railway Co. In the process, CN's acquisition of the EJ&E would place me, my family, my friends, and my neighbors in tremendous physical danger; it would constitute a taking without just compensation in violation of the Fifth Amendment to the United States Constitution; and it would have a severe impact on the quality of life in my neighborhood.

While CN explicitly recognizes the potential "catastrophic liability risk" of handling huge loads of chlorine gas, anhydrous ammonia, and other extremely hazardous chemicals,² they continue to refuse to take any meaningful measures to prevent or minimize the chances that such catastrophes will occur. The DEIS also recognizes that the additional train traffic will increase the possibility of train accidents by 28%.³ It is clear that CN is not taking responsible action in order to protect U.S. citizens like me, my husband, my two-year old daughter, and my baby due in October 2008, from these tragedies taking place in my community. The United States Government must protect me and my family – The People of the United States – against an irresponsible CN acquisition proposal. The DEIS fails to address a multitude of health, safety, environmental, and Constitutional concerns that are at the forefront of CN's proposed acquisition of the EJ&E rail line, and therefore the DEIS as written must fail.

The Surface Transportation Board is the government agency that must ensure that *We the People of the United States* are protected from a foreign company that seeks to reap tremendous benefits from the purchase of a U.S. rail line without accepting the burdens and responsibilities that come with such a monumental transaction. Canadian

² Canadian National, 2008 Second Quarter Results, "Quarterly Review," available at <http://www.cn.ca/en/investors-financial-quarterly-releases-dividends-2008.htm> (last accessed Sept. 23, 2008)

³ DEIS at Page ES-12.

National refuses to see the danger this transaction would put U.S. citizens in. The Surface Transportation Board must be the voice of reason that steps in to protect the people that really count.

III. WE THE PEOPLE – The United States Constitution

The U.S. Constitution begins with words carefully chosen to emphasize that our new nation would be founded for the benefit of *the People*. The Preamble to the U.S. Constitution is the bedrock upon which our country was created:

*“We the People of the United States, in Order to form a more perfect Union, establish Justice, insure domestic Tranquility, provide for the common defence, promote the general Welfare, and secure the Blessings of Liberty to ourselves and our Posterity, do ordain and establish this Constitution for the United States of America.”*⁴

Likewise, the 14th Amendment to the United States Constitution makes it clear that the *People* are to be protected against oppression, tyranny, and the inequities that indelibly changed the United States and the world, and which continue to shape the way our government is permitted to act:

All persons born or naturalized in the United States, and subject to the jurisdiction thereof, are citizens of the United States and of the State wherein they reside. No State shall make or enforce any law which shall abridge the privileges or immunities of citizens of the United States; nor shall any State deprive **any person** of life, liberty, or property, without due process of law; nor deny to **any person** within its jurisdiction the equal protection of the laws.

Our Constitution exists to protect the People of the United States like me.⁵ It does not exist to protect corporations, and it most certainly does not exist to protect foreign corporations. The interests of the People (including me, my husband, and my children) must come first: we were born in the United States and reside in Illinois. A corporation

⁴ U.S. Const., Preamble.

⁵ See U.S. Constitution, Amend. IX, Amend X.

must by definition have lesser rights, and a foreign corporation's rights must be narrower still.

This is especially true where Canadian National has openly and explicitly stated that it will not pay any more than an inexcusably low amount to make the necessary infrastructure upgrades that would help alleviate some of the concerns the acquisition of the EJ&E line has created.

This is especially true where Canadian National proposes to increase the flow of hazardous materials at least six-fold through my community and adjacent to my home and backyard, where my children run and play on a daily basis.

This is especially true where the Canadian government has recognized that there is a "perceived 'disconnect' between [CN] management and frontline workers in understanding management's commitment to safety."⁶

This is especially true where the Canadian government has recognized that in terms of implementing the country's Safety Management System (SMS), CN ranks lowest of all major Canadian railroad companies, scoring 1 or 2 on a scale of 5 (five being optimum).⁷

This is especially true where the Canadian government has recognized that in terms of non-punitive reporting of safety violations, CN employees felt they were working within a "culture of fear."⁸

This is especially true where the Canadian government has recognized that CN provided newly-hired employees with only limited training.⁹

⁶ Report of the Standing Committee on Transport, Infrastructure and Communities on Rail Safety in Canada, House of Commons, Canada, May 2008, 39th Parliament, 2nd Session, Page 3.

⁷ *Id.* at Page 6.

⁸ *Id.* at Page 8.

This is especially true where the Canadian government Transportation Safety Board recalled some 48,000 faulty Canadian National wheels, which the government concluded had caused 15 train derailments. On June 13, 2008, the Government of Canada issued an "Emergency Safety Directive" to Canadian National, requiring CN to identify and remove from use as quickly as possible (but no later than October 15, 2008) any potentially faulty train wheels from service.¹⁰ According to the Canadian Government, "[t]he safety and security of Canadians is our number one priority, and our government is acting to make our railways as safe as possible."¹¹ The recall has not successfully removed all defective wheels, many of which may still be on trains carrying hazardous materials.¹²

The emergency directive also requires CN to (1) provide monthly updates on removal of the wheel sets; (2) notify the departments of all incidents of suspected systemic failures of major components; and (3) to create and implement a system to record and track major components, wheels, axles, roller bearings, draft gears and couplers throughout their service life by December 13, 2008.¹³

The DEIS does not consider how CN will implement this Emergency Directive for trains in Canada or the United States. While the Canadian government recognizes that its own citizens' safety and security is of the highest priority, the STB has failed to

⁹ *Id.* at Page 9.

¹⁰ See News Release, Transport Canada, "Government of Canada Issues Emergency Safety Directive Regarding Potentially Faulty Train Wheels," June 13, 2008, available at <http://www.tc.gc.ca/mediaroom/releases/nat/2008/08-h145e.htm> (last accessed Sept. 23, 2008).

¹¹ *Id.*

¹² Julian Beltrame, "Faulty railway wheels pose 'serious' risk of derailments: Safety Board," The Canadian Press, June 5, 2008; see also Ian Austen, *Canada Orders the Recall of Some Rail Car Wheels*, The New York Times, June 14, 2008.

¹³ See *Supra*, Note 10.

discuss how the citizens of the United States will be protected from CN's faulty train wheels and the increased risk of derailments and accidents.

In no uncertain terms, CN's own government has very recently expressed a plethora of serious concerns with CN's safety history, current safety procedures, equipment safety, and corporate attitude toward safe operations. If Canada has little faith in one of its own companies, how can the STB allow CN to transport hazardous materials through populated residential communities like my home town of Plainfield, Illinois? The obvious answer is that the DEIS in its current form must be rejected because it does not adequately address the serious safety concerns as articulated by the Canadian government, and it does not address the myriad other health, environmental, economic, and Constitutional concerns described below.

IV. The Draft Environmental Impact Statement (DEIS) is Inadequate by Not Discussing or Even Mentioning The Environmental Protection Guarantees That Are Expressly Provided in the Illinois Constitution

The Illinois Constitution contains a stand-alone article devoted to Environmental Protection. The Draft Environmental Impact Statement is completely void of any discussion of the Illinois Constitution's article on the Environment.

Article XI, Section 1 of the Illinois Constitution states:

The public policy of the State and the duty of each person is to provide and maintain a healthful environment for the benefit of this and future generations.

Article XI, Section 2 of the Illinois Constitution states:

Each person has the right to a healthful environment. Each person may enforce this right against any party, governmental or private, through appropriate legal proceedings subject to reasonable limitation and regulation as the General Assembly may provide by law.

The Illinois Constitution provides me and my family the right to a healthful environment, not just for my generation but also for my children and grandchildren's generations. CN has demonstrated throughout the present application and approval process that, in its opinion, the environmental effects of the transaction are minimal and inconsequential, that the requirements of NEPA are simply costly and unnecessary roadblocks to their ultimate financial goals, and that any environmental harm is outweighed by the "benefits" to the communities. CN's plans and actions are directly at odds with my State Constitutional rights to a healthful environment. The DEIS has failed to recognize the supreme importance that the State of Illinois places on providing a clean and healthful environment for all of its citizens, and unless and until my Constitutional rights have been properly addressed, the DEIS remains inadequate.

V. The Fourteenth Amendment DOES NOT Provide CN with the Same Protections That It Provides to Me and My Family

As described below, the current law which holds that corporations are persons within the meaning of the Fourteenth Amendment is based on erroneous "law." The language now relied upon for this "law" was not written by the U.S. Supreme Court, but rather by a former railroad executive in the late 1800s as part of the case summary for Santa Clara County v. Southern Pacific Railway Co.¹⁴ As this law was not based on informed oral argument and was not actually written by the Supreme Court or included in a Supreme Court opinion, the line of cases that followed are based on a fallacy created by the clerk of the U.S. Supreme Court, and should therefore not be considered by the STB.

¹⁴ Thom Hartmann, UNEQUAL PROTECTION: THE RISE OF CORPORATE DOMINANCE AND THE THEFT OF HUMAN RIGHTS, ISBN 1579546277 (2002).

Former Supreme Court Chief Justice William H. Rehnquist, in his dissent in First National Bank of Boston v. Belloti, wrote that “[t]his Court decided at an early date, *with neither argument nor discussion*, that a business corporation is a “person” entitled to the protection of the Equal Protection Clause of the Fourteenth Amendment.”¹⁵

Justice Rehnquist recognized that in the Santa Clara County decision, the Court provided no reasoning or discussion for this “ruling.” Justice Rehnquist understood there to be a serious problem with the U.S. Supreme Court establishing such an important rule of law without discussing its rationale for the decision at all.

What the late-Justice Rehnquist was telegraphing at the time of the Belloti decision was that this monumental “*holding*” of Santa Clara County was not actually part of the official decision of the Supreme Court. Instead, the syllabus for the court decision, a non-binding, unofficial case summary, contains this language, and was thereafter used to support the theory that corporations are persons under the 14th Amendment.

Specifically, the syllabus to the 1886 Supreme Court decision of Santa Clara County v. Southern Pacific Railroad Company,¹⁷ provides that “Corporations are persons within the intent of the clause in section 1 of the Fourteenth Amendment to the Constitution of the United States, which forbids a state to deny to any person within its jurisdiction the equal protection of the laws.”

The above-quoted text, however, is not found in the decision itself, and is only found in the case summary for the Santa Clara decision. For over one hundred years, every U.S. Supreme Court decision that contains a syllabus begins with the following

¹⁵ 435 U.S. 765 (1978) (emphasis added); See Syllabus of Santa Clara County v. Southern Pacific R. Co., 118 U.S. 394 (1886).

¹⁷ 118 U.S. 394 (1886)

admonition: "The syllabus constitutes no part of the opinion of the Court but has been prepared by the Reporter of Decisions for the convenience of the reader."¹⁸

The syllabus for the Santa Clara case was written by J.C. Bancroft Davis, the Clerk of the Supreme Court under Chief Justice Waite. Davis was the former Assistant Secretary of State under the Grant administration and also a former board of director for a railroad company.¹⁹ In the Santa Clara syllabus, Davis also wrote that:

One of the points made and discussed at length in the brief of counsel for defendants in error was that "corporations are persons within the meaning of the Fourteenth Amendment to the Constitution of the United States." Before argument, MR. CHIEF JUSTICE WAITE said:

"The Court does not wish to hear argument on the question whether the provision in the Fourteenth Amendment to the Constitution which forbids a state to deny to any person within its jurisdiction the equal protection of the laws applies to these corporations. We are all of opinion that it does."

Thus, J.C. Bancroft Davis took what was said prior to oral argument and wrongfully included it in the syllabus. In subsequent cases, lawyers attempting to argue that corporations were "persons" within the meaning of the Fourteenth Amendment used this non-binding case summary language. This ruse was not caught by the Supreme Court, and Davis' unofficial language has been cited by the U.S. Supreme Court for the proposition that corporations are entitled to the same constitutional rights as natural persons.

The National Archives in Washington D.C. has in its collection the documents that support this ingenious ruse. As J.C. Bancroft Davis began to write the case summary, he wrote a short memorandum to Chief Justice Waite, asking the Chief Justice whether he heard the justices correctly in the pre-oral argument discussion about the issue

¹⁸ See United States v. Detroit Timber & Lumber Co., 200 U.S. 321, 337.

¹⁹ See *Supra*, Note 14.

of constitutional protections for corporations. Chief Justice Waite's response to Davis stated:

I think your memo in the California Rail Road tax cases expresses with sufficient accuracy what was said before the arguments began. I leave it with you to determine whether anything need be said about it in the report inasmuch as *we avoided meeting the Constitutional question in the decision.*" See original memo from Waite to Davis, now found in the National Archives in Washington, D.C., attached as Exhibit 1 (emphasis added).

Chief Justice Waite's actual opinion in Santa Clara does not hold that corporations are persons within the meaning of the Fourteenth Amendment.²⁰ In fact, in the last paragraph of the opinion, Chief Justice Waite concluded the exact opposite: that because the case could be decided on non-constitutional grounds, the Court would not be reaching the Constitutional issue.²¹

Corporations are "artificial persons." I, my husband, and my two children are human beings, and citizens of the United States. We are "natural persons" as used in the Fourteenth Amendment. We eat, sleep, breathe and play within 500 feet of the EJ&E line.

Canadian National has clearly demonstrated through its communications and submissions to the STB that it doesn't care about the health, safety, or well-being of me, my family or the communities that will be deeply affected by the acquisition of the EJ&E line.

I believe the Surface Transportation Board does care about me and my children. If Canadian National is allowed to purchase the EJ&E line and use the line as they have

²⁰ According to current Supreme Court Justice Antonin Scalia, under an Originalist reading of the U.S. Constitution and the U.S. Supreme Court case of Santa Clara County, the law does not hold that corporations are entitled to the same constitutional protections as people. See Antonin Scalia, Foreword to *Originalism*, HARVARD JOURNAL OF LAW & PUBLIC POLICY, Vol. 31, No. 3, Summer 2008.

²¹ 118 U.S. at 417.

stated they intend to, my family will be placed in extraordinary jeopardy from the effects of a catastrophic railroad accident. The following is a list of just a few of the major train derailments in North America in recent years:

1. Los Angeles, California, September 13, 2008, freight and passenger collision and derailment, at least 25 confirmed deaths;
2. Minot, North Dakota, January 18, 2002, 31-car train derailment, approximately 250,000 pounds of anhydrous ammonia gas engulfed the Minot community, 300 injured, 1 fatality, 11,000 people impacted, over \$2 million in damages, over \$8 million spent to address environmental contamination;²²
3. Lake Wabamun, Alberta, Canada, August 3, 2005, 43-car Canadian National train derailment, 343,000 gallons of heavy bunker C fuel oil spilled into the lake. The environmental damages to the lake and community have not been fully remediated today. The Alberta government charged CN with failing to take all reasonable measures to remedy and confine the spill under section 112 of Alberta's Environmental Protection and Enhancement Act.²³
4. British Columbia, Canada, August 5, 2005, nine-car Canadian National train derailment which caused the release of 40,000 liters of highly corrosive sodium hydroxide (lye) into the Cheakamus River in British Columbia, Canada.

Since the DEIS did not discuss these accidents, nor did it adequately discuss the requisite mitigation efforts needed to avoid similar accidents in the future or for responding to

²² Federal Railroad Safety Improvement Act of 2007, Congressional testimony of Representative Steven LaTourette, Ohio, October 17, 2007

²³ See Alberta Environment, Environmental Protection Order, July 27, 2006, available at <http://www3.gov.ab.ca/env/water/Wabamun/epo.html>.

similar emergency situations, the DEIS as drafted is inadequate and must address these environmental and safety concerns.

VI. The DEIS Ignores Principles of “Our Federalism” as Explicated in Younger v. Harris, 401 U.S. 37 (1971), and is Therefore Inadequate

The primacy of rights belongs to the People – to me, my family, my friends, neighbors and colleagues – and does not belong to Canadian National. The current DEIS, by ignoring the Illinois Constitution and the rights of the citizens of the State of Illinois, is a direct affront to what has been recognized since our nation’s birth as the absolute need to balance federal and state interests, especially the crucial environmental rights of State citizens. Justice Black described “Our Federalism” in Younger v. Harris as follows:

What the concept [of Our Federalism] does represent is a system in which there is sensitivity to the legitimate interests of both State and National Governments, and in which the National Government, anxious though it may be to vindicate and protect federal rights and federal interests, always endeavors to do so in ways that will not unduly interfere with the legitimate activities of the States. It should never be forgotten that this slogan, "Our Federalism," born in the early struggling days of our Union of States, occupies a highly important place in our Nation's history and its future.²⁴

The United States Supreme Court has specifically taken the concept of “Our Federalism” – the crucial need to respect the interests of the States – and applied it in the context of environmental law. In Solid Waste Agency of Northern Cook County v. U.S. Army Corp of Engineers, Chief Justice Rehnquist highlighted the long-standing principle that States have traditionally been given authority to decide matters related to environmental issues within their states and for the benefit of its citizens.²⁵

Federalism in the environmental law context is not a new concept. Nearly every federal environmental law contains ‘citizen suit’ provisions that provide private citizens

²⁴ 401 U.S. 37, 44-45 (1971)

²⁵ 531 U.S. 159, 173-74 (2001)

with the right to enforce laws against the regulated community. States like Illinois have been given broad authority to administer environmental programs, with the federal government acting as a backstop only if necessary.²⁶

The DEIS does not take into account the principles of Younger v. Harris, of “Our Federalism,” in its review of CN’s proposed acquisition of the EJ&E line. Since the DEIS has failed to consider these fundamental constitutional issues, it must fail as a matter of law.

VII. The DEIS Does Not Consider the Fifth Amendment Takings Issues Associated with CN’s Proposed Acquisition of the EJ&E Line

The Fifth Amendment to the United States Constitution provides that private property shall not be taken for public use, without just compensation.²⁷ If the STB approves CN’s acquisition of the EJ&E line, the value of my home will be drastically reduced. Under the Fifth Amendment, I am entitled to compensation for the lost value of my home due to this regulatory taking. My neighbors and fellow residents of Plainfield, Illinois, whose homes will be devalued if CN’s proposed acquisition of the EJ&E is approved, would also be entitled to just compensation.

Since the STB does not consider the Fifth Amendment Takings Clause, nor does it take Supreme Court precedent such as Kelo v. City of New London²⁸ into consideration, the DEIS is fatally flawed and inadequate on its face, and must be modified to properly consider the economic impact of the EJ&E acquisition on the value of my home.

²⁶ Richard E. Ayres and Jessica L. Olson, *The New Federalism: States Take A Leading Role in Clean Air*, American Bar Association, Natural Resources & Environment, Vol. 23, No. 2, Fall 2008/

²⁷ U.S. Const. Amend. V.

²⁸ 545 U.S. 469 (2005)

VIII. The DEIS Failed to Adequately Assess the Importance of Highway/Rail-Grade Crossings, Given the Volume of Dangerous Anhydrous Ammonia and Chlorine Gas That CN Intends to Transport on the EJ&E Line, and is Therefore Inadequate

The DEIS states that there are “15 Highway/Rail Grade Crossings in the Study area that require mitigation due to effects under the proposed action,” and provides a range of mitigation options for consideration. Based on my experience in the Hazmat industry, I personally believe that *more than 15 grade crossings would need mitigation*. But, if we accept that *only these* 15 crossings would require mitigation, grade separations are the only realistic approach. At an average cost of \$35 million for each grade separation project, we would be looking at a minimum cost of \$525 million for just the 15 crossings identified in the DEIS.

Since the Board's Section of Environmental Analysis (SEA) would consider recommending that the Board *mandate that* CN only pay from 5% to 50% of these costs, it is a failure of the DEIS that SEA did not investigate the reasonable likelihood of whether the federal government, state governments, and localities actually have the taxpayer funded resources available to make up the differential that could approach the staggering sum of \$500 million. The DEIS also does not discuss whether specific, special appropriations legislation will be needed to authorize federal, state, and local expenditures on such a massive scale.

In an August 5 Congressional field hearing on this transaction, two State of Illinois agencies (Illinois Department of Transportation and Illinois Commerce Commission) definitively stated that Illinois is not in a position to fund any needed grade crossing mitigation that would result from approval of this transaction. A mitigation funding premise that fails to take government fiscal realities into account is nothing but an empty

promise to communities impacted by the proposed transaction. In the absence of Board-mandated mitigation efforts to prohibit CN's freight operations on the EJ&E until *AFTER* these grade separations are fully funded and constructed, the DEIS is insufficient and must specifically address this economic and political reality.

V. Canadian National Wants to Send Extremely Hazardous Chemicals Through my Backyard Dozens of Times Per Day

Canadian National intends to transport extremely hazardous chemicals on the EJ&E line right by my house dozens of times per day. Canadian National knows how dangerous the chemicals are that it will be transporting. It clearly stated as much in its Second Quarter 2008 Disclosure Statement:

In railroad and transportation operations, it is possible that derailments, explosions or other accidents may occur that could cause harm to human health or to the environment. In addition, *the Company is also exposed to potential catastrophic liability risk*, faced by the railroad industry generally, *in connection with the transportation of toxic-by-inhalation hazardous materials such as chlorine and anhydrous ammonia*, commodities that the Company may be required to transport to the extent of its common carrier obligations. As a result, *the Company may incur costs in the future, which may be material, to address any such harm, including costs relating to the performance of clean-ups, environmental penalties and remediation obligations, and compensatory or punitive damages relating to harm to individuals or property.*²⁹

Canadian National recognizes that chlorine gas and anhydrous ammonia gas are both toxic inhalation hazards (TIH). The U.S. Department of Transportation Hazardous Materials Regulations provide that a TIH material is a gas or liquid that is known or presumed on the basis of tests to be so toxic to humans as to pose a hazard to health in the event of a release during transportation.³⁰ As a paralegal for a boutique environmental law firm, I have seen first hand the devastating effects of anhydrous ammonia releases

²⁹ See *Supra*, Note 2.

³⁰ 49 CFR 171.8, 49 CFR 131.115, 49 CFR 173.132.

upon communities. Each rail car can carry up to 80 tons (160,000 pounds) of anhydrous ammonia, and each rail tank car transports the equivalent volume of four tanker-truck cargo loads.³¹ Even more concerning is the fact that “railroads are currently asking Congress to relieve them of their common-carrier obligation or to limit their liability in the event of an accident.”³²

A. Canadian National and Other Train Derailments

STB must fully consider the devastating effects of heavy freight traffic of hazardous materials through residential communities like mine. The tragedies resulting from a major freight train derailment like in Minot, North Dakota cannot be overstated. The Minot disaster resulted in the release of some 250,000 pounds of extremely hazardous and highly corrosive anhydrous ammonia into the environment. The effects on the community of Minot from this derailment were horrific and devastating. I do not want to live through (or die because of) an event that local residents in Minot described with such frightening reality:

- “It hit my eyes like two ice picks.”
- “It was like somebody dumped acid in my eyes.”
- “My face muscles were twitching and stuff was running out of my nose.”
- Nurse Manager for the emergency trauma center, Trinity Hospital, Minot: “I wondered if there would be a lot of fatalities.”
- Ward County Deputy Scott Erb “covered his mouth with his jacket and waited for help. The pungent air forced him to vomit eight times. He swallowed it each time, easing the burning in his throat and lungs.”³³

³¹ See Exhibit 2, Page 1 and 3.

³² *Id.* at Page 1.

³³ Steven P. Wagner, *Lost in the Cloud: Ammonia Spill Leaves Minot in Blind Panic*, The Forum, Aug. 18, 2002, available at <http://www.in-forum.com/specials/minot/part1.cfm>.

The toxic vapor cloud of anhydrous ammonia released in the Minot disaster spread over a distance of 5 miles long, 2.5 miles wide, and 350 feet tall. I live within 500 feet of the EJ&E rail line.³⁴ In the event of an anhydrous ammonia release on the EJ&E, my family and my home would be immediately engulfed in a highly poisonous, toxic, and deadly cloud of anhydrous ammonia.

B. Toxic Characteristics of Anhydrous Ammonia

Anhydrous ammonia is hydrophilic; it has a strong affinity for water and will readily attach itself to any water molecules it comes in contact with. This includes moisture in the skin, eyes, lungs, and mouth as well as any ground or surface water. I do not maintain Level-A Personal Protective Equipment (PPE), which is necessary to wear in order to escape an anhydrous ammonia release caused by a train derailment. The DEIS does not consider whether my local fire department in Plainfield, Illinois has adequate supplies of Level-A PPE and adequate self-contained breathing apparatuses in order to fight a toxic vapor plume of anhydrous ammonia.

In addition to the immediate health risks of exposure to anhydrous ammonia, we will be at risk for long-term, acute health effects from environmental contamination caused by an anhydrous ammonia release from a pressurized rail car. Environmental contamination from anhydrous ammonia may take the form of nitrate-contaminated soils and drinking water. The health effects of consuming nitrate-contaminated drinking water are severe, and include methemoglobinemia (blue baby syndrome), difficulty breathing, and possibly spontaneous abortions.³⁵ The DEIS does not consider these serious

³⁴ *Id.*

³⁵ See Exhibit 3-8, attached hereto, describing the health hazards of consuming nitrate-contaminated drinking water, as recognized by the U.S. Department of Health and Human Services, Center for Disease

environmental and health concerns. Therefore, my environmental rights under the Illinois Constitution have not been addressed at all in light of the toxic-inhalation-hazard presented by gases such as chlorine and anhydrous ammonia. Furthermore, the DEIS is deficient because it does not address the serious health effects that may be caused to me, my husband, my children, and my community, and it should therefore fail as being inadequate for the protection of human health and the environment.

Canadian National is no stranger to cleaning up environmentally contaminated sites. As of April 2008, CN was a Potentially Responsible Party (PRP) at twenty-two (22) Federal or State Superfund sites. As of March 31, 2008, CN had aggregate costs for environmental cleanup at these sites of \$109 million.³⁶ CN has also acknowledged that it may also have liability for environmental contamination at sites not yet discovered.³⁷ As stated above, the Canadian government has noted that CN failed to take all reasonable measures to remedy and confine the spill of 343,000 gallons of heavy bunker C fuel oil into Lake Wabamun, Alberta after the August 3, 2005 CN train derailment.³⁸

C. The DEIS Inadequately Discusses the U.S. Department of Transportation Rule on Enhancing Rail Transportation Safety and Security for Hazardous Materials Shipments, Effective June 1, 2008.

On June 1, 2008, an Interim Final Rule of the United States Department of Transportation called “Enhancing Rail Transportation Safety and Security for Hazardous Materials Shipments” became effective.³⁹ This Interim Final Rule, according to the U.S. Department of Transportation, fully complies with the 9/11 Commission Act of 2007

Control, Illinois Department of Public Health, Illinois Environmental Protection Agency, and the World Health Organization.

³⁶ See *Supra*, Note 2.

³⁷ See *Supra*, Note 2.

³⁸ See *Supra*, Note 23.

³⁹ 73 Fed. Reg. 74 (April 15, 2008)

(signed into law by President Bush on August 3, 2007). A key provision of this Rule augments rail hazardous materials car security by guarding against the possibility that an unauthorized individual has tampered with railcars containing hazardous materials to precipitate an incident during transportation, such as detonation or release using an improvised explosive devices (“IED”). This Rule requires railroad companies to perform a pre-trip inspection of placarded railcars to include an inspection for signs of tampering with the railcar, including its seals and closures, and a further inspection of any item that does not belong, is suspicious, or may be an IED.

My husband and I are not trained in inspecting for IEDS or in disarming an IED. The DEIS contains no discussion of whether any of the police or fire department in Plainfield or the surrounding communities have the expertise to identify and quickly disarm an IED. Indeed, the DEIS fails to discuss whether the operators of the CN trains have the technical expertise to identify an IED, or whether CN has taken any actual steps to establish procedures to comply with the vital requirements of this U.S. Department of Transportation Interim Final Rule.⁴⁰ While we are aware that the Federal Bureau of Investigation has a special Weapons of Mass Destruction (WMD) unit at its Chicago office, the DEIS does not discuss the potential response time for this special FBI unit to respond to a suspicious item found on a CN train in my community. With the severe risk of death or serious harm to humans, this omission from the DEIS constitutes a fatal flaw in the document, and the final EIS must address how CN will actually comply with this critical federal and national security issue.

⁴⁰ In section 6.3.2.6, part (13) of the DEIS, related to Hazardous Materials Transportation Safety, the SEA only recommends that “Applicants shall comply with the PHMSA, FRA, and TSA requirements for hazardous materials regulations at 49 CFR 172 and 174 applicable to the safe and secure transportation of hazardous materials.”

VI. The DEIS is Flawed By Not Addressing CN's Clear Economic Interests in Pushing For a Decision From the STB as Soon as Possible.

The Canadian National acquisition of the EJ&E line, if approved, would have a significant negative economic impact on United States citizens, with large benefits being reaped by Canadian and Chinese businesses. If CN acquires the EJ&E line, shipments from overseas, mainly from China, will no longer pass through American ports of entry in Seattle/Tacoma, Washington.⁴¹ Instead, freight shipments will bypass these U.S. ports, and instead flow through the Canadian port of Prince Rupert, and then use the EJ&E line to reach destinations in Chicago, Illinois and Memphis, Tennessee. The Prince Rupert Port Authority (PRPA) calls the shift from the ports at Seattle/Tacoma to Prince Rupert a “strategic advantage:”

CN's purchase of the EJ&E Railway in Chicago is expected to reduce cargo transit times from Prince Rupert to Memphis from 117 hours to 100 hours – 13% faster than from other North American West Coast ports and further enhancing Prince Rupert's competitive advantage.⁴²

The Chinese company China Ocean Shipping Company (COSCO) has expressed its appreciation to CN for helping COSCO in its endeavors into North America, and for CN's “innovative thinking that has sparked a new option for customers who are moving time sensitive cargo.”⁴³ The DEIS does not discuss the “strategic advantage” and “competitive advantage” that Canadian National would help create for the PRPA at the expense of the U.S. ports at Seattle/Tacoma. The DEIS also did not mention the benefits

⁴¹ See Letter from Port of Seattle to U.S. Congresswoman Melissa Bean, August 4, 2008, attached hereto as Exhibit 9.

⁴² See The New World Port Community Update: A News Report From the Prince Rupert Port Authority, Winter 2007, available at www.rupertport.com.

⁴³ *COSCO Adds Second Weekly Sailing to Prince Rupert*, Port of Prince Rupert Newsletter, June 2008, available at <http://www.rupertport.com/pdf/54North/54%20north%20newsletter%20june%202008.pdf>.

to the overseas markets in North, South, and East China, and the detriments to the U.S. ports, if Canadian National purchases the EJ&E line.

As the Port of Seattle has recognized, Prince Rupert's business strategy would be a serious economic threat to U.S. port communities. The Port of Seattle would be in jeopardy of losing 34,000 jobs, which generate \$2 billion in annual payroll, \$2.5 billion in business revenue, \$431 million in local purchases, and \$210 million in state and local tax revenue.⁴⁴ As the Port of Seattle also recognized, there are serious national security issues by having goods pass through U.S. land crossings instead of through U.S. seaports.⁴⁵

The DEIS is flawed because it does not take into account the serious economic and national security issues that are raised by the proposed CN acquisition of the EJ&E line.

VII. The DEIS is Flawed in That Petitioner Uses Slight of Hand to Support Its Position by Pitting Various Illinois Communities and Residents Against One Another.

Much of the DEIS analysis concludes that the environmental "benefits" to communities currently on CN rail lines would offset the harms done to communities along the EJ&E. This is based on the unsubstantiated assumption that CN's shift in operations will lead to a permanent reduction in freight traffic along those current lines of operation. Given the projected growth in freight traffic in Chicago, it seems inevitable that at least a portion of that freight increase will end up as backfill on these current CN lines. As a result, the DEIS analysis is flawed in that it fails to calculate the reasonably foreseeable reality that the negative environmental impacts will actually be compounded

⁴⁴ See *Supra*, Note 41.

⁴⁵ See *Supra*, Note 41.

(rather than just shifted) throughout the greater Chicagoland area as a result of this transaction.

The only valid way to ensure that the people of downtown Chicago can guarantee that CN actually abandons its tracks in Cook County is by way of a written agreement with CN and the other railroads that there will be no other freight traffic over the Chicagoland rail system over the next twenty-five years.

VIII. Benefit to the Region is Accepted Without Proof

Once the fallacy of “winner” communities is unmasked as the “bait and switch” maneuver that it is, it is difficult to find any real benefits that the greater Chicagoland region will derive from this transaction. In its application, CN states that rail jobs will be lost; the transaction threatens to siphon public funds from the CREATE project which would have done more to ease congestion for the other Class I railroads that operate in the region. No shippers have come forward to guarantee that the purported cost savings they derive from CN operating efficiencies would accrue to them or the end consumer. Instead, what opponents hear is hollow assertions that this transaction would benefit the region and the nation. However, the DEIS fails to provide any specific substantiation to that claim. Therefore the DEIS is flawed and is inadequate.

IX. Unsubstantiated and Unsourced Data

If an environmental impact study is meant to provide interested members of the public, the STB Board, and regulatory agencies with the details necessary to be fully informed of the environmental impacts, this DEIS is wholly inadequate in meeting that goal. The DEIS is filled with unsubstantiated claims based and outdated information.

As an example, the DEIS uses analysis and mitigation thresholds for hazardous materials that are unsubstantiated and in fact are inconsistent with petitioners own records. For example, CN's own corporate financial statements describe the potential catastrophic liability risk of transporting hazardous gases such as chlorine and anhydrous ammonia. However, the DEIS makes no mention of these risks to the communities affected by the proposed transaction. The public perception of validity for this DEIS must be based on an acceptable level of data validity and transparency and honesty in light of the post 9/11 world in which we live.

In the current DEIS document, the vitally important issues are overlooked or presented in a false manner. Therefore the DEIS document must be rejected.

X. The DEIS is Flawed in That it Fails to Consider Federal and State Environmental Laws and Critical Homeland Security Issues.

The DEIS is also flawed in that it fails to give adequate treatment to U.S. Environmental laws and regulations and Homeland Security Issues. This DEIS specifically fails to consider two critical issues: (1) an examination of air quality impacts, and (2) how this deal could impact critical homeland security issues.

A. Air quality impacts

There is no doubt that this proposed transaction will negatively impact air quality well beyond the Chicago Metro region. In light of CN's growth, and taking into account that the air quality impacts of its current operations have not been reviewed, a cumulative impact assessment needs to be done before the STB approves the sale of the EJ&E to CN. In 1998, Canadian National purchased the Illinois Central Railroad and connected its existing lines across all of Canada with a line from Chicago to New Orleans. In 2001, CN purchased the Wisconsin Central Railroad, which gave CN a network of rail lines

encircling Lake Superior, Lake Michigan and Lake Huron, enhancing CN's connections between Chicago and Western Canada.

In 2004, CN acquired Great Lakes Transportation, the owner of the Bessemer & Lake Erie Railroad, the Duluth, Missabe and Iron Range Railway, and the Pittsburgh Conneaut Dock Company. This transaction, among other things, allowed CN to close an ownership gap in Duluth, Minnesota and further enhance its routings from Western Canada to Chicago. The Surface Transportation Board did not create an environmental impact statement with any of these transactions. The STB also did not evaluate the cumulative effect of these transactions since CN's acquisition of the Illinois Central Railroad in 1999. The proposed transaction with the EJ&E line should have been the impetus for a broad cumulative air quality assessment that is long overdue under the federal Clean Air Act. Because of these critical deficiencies, the DEIS is fatally flawed and must address the cumulative air impacts that will result if CN operates on the EJ&E.

B. Homeland Security Issues

Congress and the current Administration have focused significant attention and resources on developing a security regime for the purpose of guarding against threats posed to the U.S., including the citizens of Plainfield, Illinois, through our robust trade system, and specifically, one of its primary mediums, the maritime cargo container. In the Safe Port Act and through other regulatory measures, Congress and the Administration have imposed a rigorous security regime on maritime cargo containers (intermodals) shipped from a foreign port that enter the U.S. directly via one of our maritime ports.

It is critical for the STB to note that foreign originated containers trans-shipped through our North American neighbors that enter via our land border are not subjected to the same strict standards as those intermodal units entering the U.S. through a domestic seaport. This fact represents a threat to both my family's security, my neighbors' security, my town's security, my county's security, my state's security, and my nation's security.

It is inexcusable that the DEIS did not examine the direct and indirect impacts on homeland security safeguards given the increased intermodal and rail traffic which CN plans to bring in through the Canadian Port of Prince Rupert-- which CN is marketing as the quickest route from Asia to the remainder of the US. The DEIS is inadequate and must be modified because it does not take national security and "Common Defense" issues into consideration.⁴⁶

XI. The DEIS Does Not Properly Consider First Responder Issues in the Event of a Major Train Derailment Like the Ones CN Has Experienced in Recent Years

A. Life and Death Impacts Downplayed

The DEIS methodology for assessing emergency response impacts is incomplete as it makes arbitrary assumptions based on unknown and incorrect rationales. To determine whether an emergency service facility would make it to the list of facilities noted as "potentially substantially impacted" and therefore in need of mitigation, the DEIS fails to take into account a number of important factors.

As an example, if a community has a first responder EMS facility on both sides of the EJ&E, it is automatically disqualified by SEA from being considered "potentially substantially impacted."

⁴⁶ See U.S. Const., Preamble.

This fails to take into account emergency response staffing levels at any given time for each of the impacted communities. If a community has limited personnel resources, an emergency response crew that is out on a call may deplete that community of EMS responders from the “right” side of the tracks if a subsequent call comes in. In this regard, the DEIS puts vital ambulance response time in jeopardy for me, my children, my husband, my neighbors and my fellow residents of Plainfield, Illinois.

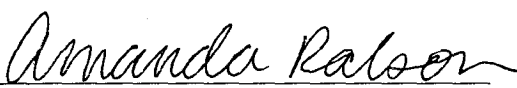
The DEIS also fails to take into account the evacuation zones in my community, which most likely would be set up in the event of a release of extremely hazardous gases such as chlorine and anhydrous ammonia. The emergency responders will not be able to enter the “hot zone” without self-contained breathing apparatuses and Level-A PPE. These issues were not discussed at all in the DEIS.

Compounding this problem is the fact that, unlike many of the more populated areas along the current CN line, communities along the EJ&E have fewer through roads, making it more difficult for first responders to travel expeditiously on alternative routes. Ultimately, if the closest medical facility is on the “wrong” side of the tracks, it does not matter if both patient and ambulance started out on the “right” side of the tracks if they can't get to the nearest medical facility.

The DEIS downplays these critical issues of health, well being and emergency care by noting that “response to the actual scene of an emergency is the most critical action, not the transport to the emergency medical facility.” It is astounding that SEA concludes that getting the patient in an ambulance to a hospital quickly is not a “critical action,” when in reality the timely access to a skilled medical team and life-saving equipment routinely means the difference between life and death. Therefore, the DEIS is fatally flawed.

XII. Conclusion

For the foregoing reasons, the Surface Transportation Board's Draft Environmental Impact Statement for the proposed Canadian National acquisition of the EJ&E rail line is fatally flawed, greatly inadequate, and fails to discuss fundamental United States and Illinois Constitutional provisions, critical environmental and safety considerations, Homeland Security matters, and economic effects upon me, my family, my community and the United States citizens as a whole. Furthermore, I incorporate and adopt the comments and concerns of Richard J. Misiorowski as if they were set forth in their entirety herein. The final Environmental Impact Statement must properly address these myriad issues before the STB can decide on whether to approve Canadian National's proposal to purchase the EJ&E rail line.


Amanda Ralson

Dated: September 23, 2008

1415: J. Unit

May 31. 1896

My dear Davis,

I think your mem.
in the California Rail
Road Coy case, especially
with sufficient accuracy
that may decide before the
argument begins. I leave
it with you to determine
whether anything needs be
said about it in the
report inasmuch as we
avoided meeting the com-

EXHIBIT

1

tabbles

Additional greeting in
the decision.

Mr. Wey, Dec 5

M. R. Paul



TFI AND IFCA SUPPORT EFFORTS TO ENSURE THE SAFE AND SECURE TRANSPORTATION OF ANHYDROUS AMMONIA.

TFI AND IFCA SUPPORT THE CONTINUED IMPLEMENTATION OF THE RAILROADS' COMMON CARRIER OBLIGATION.

TFI AND IFCA DO NOT SUPPORT SHIFTING THE LIABILITY FROM THE CARRIER TO THE SHIPPER; TRANSFERRING LIABILITY DOES NOT CREATE AN INCENTIVE FOR THE RAILROADS TO RUN SAFER OPERATIONS.

TFI AND IFCA SUPPORT THE RAILROADS' REQUEST TO CONGRESS FOR A TAX CREDIT DIRECTED TOWARD INVESTMENTS IN FREIGHT RAIL INFRASTRUCTURE, BUT ASK THAT THE NEEDS OF SHIPPERS ALSO BE TAKEN INTO CONSIDERATION.

The railroads are asking Congress to relieve them of their common carrier obligation or to limit their liability in the event of an accident.

TRANSFERRING LIABILITY DOES NOT CREATE AN INCENTIVE FOR THE RAILROADS TO RUN SAFER OPERATIONS.

The Association of American Railroads has been testifying before Congress that 2006 was the safest year for railroads based on the three most commonly cited rail safety measures – the train accident rate, the employee casualty rate and the grade crossing collision rate – and that rail transportation remains the safest way to carry chemicals such as anhydrous ammonia. Nevertheless, railroads argue that the risk associated with the transportation of toxic-by-inhalation chemicals is too great for them to carry. They have asked to be relieved of their common carrier obligation or to be protected by a liability cap.

The majority of ammonia is transported by rail. If the railroads are relieved of their common carrier obligation, switching from rail to truck transportation

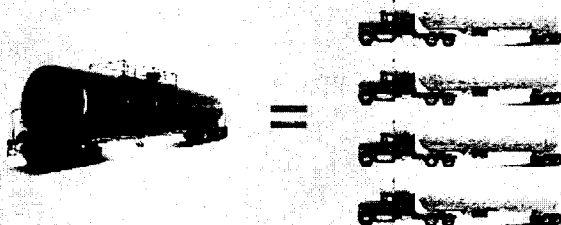
of ammonia will increase the volume of hazardous materials transported on our nation's highways.

It would take four truck cargo tanks to deliver the same amount of ammonia that can be carried in one rail tank car. There are not enough qualified drivers or cargo tanks to support the increased truck shipments.

The historically high safety record of anhydrous ammonia transport by rail has been achieved over the years by the fertilizer industry, the railroads and tank car manufacturing and leasing companies working in a close cooperative effort. TFI, IFCA and their members rely on the railroads to transport ammonia to our farmer customers and we hope to continue to work with them to identify ways to enhance the safety of rail transport.

Rail transportation is a *safe* way to transport anhydrous ammonia.

One rail tank car transports the same as four truck cargo loads.



EXHIBIT

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2



FERTILIZER'S ROLE IN AGRICULTURE

www.fertilizer.org

The safe rail transport of fertilizer is critical for the production of food, feed, fuel & fiber.

Fertilizer major crop nutrients are nitrogen, phosphorus and potassium – all naturally occurring elements in the environment – which are “fed” to plants and crops for healthy and abundant food production. Crops need nutrients to grow and be productive – just like humans.

The world's population is 6.5 billion and growing. Using fertilizer in an agronomically and environmentally sensitive way is critical for our planet's increasing need for food, feed, fuel and fiber.

Ammonia is the most economical and efficient source of nitrogen for most farmers and is the primary ingredient in most all nitrogen fertilizers. Additionally, it is an essential ingredient in many finished phosphate fertilizers. Ammonia is transported by rail, truck, barge or pipeline from the production site to a fertilizer terminal or to a fertilizer dealer or farm for use or for formulation into other fertilizers or direct application in the

THE MAJORITY OF AMMONIA IS
TRANSPORTED BY RAIL

52,116 SHIPMENTS IN 2005 -
APPROXIMATELY 4.2 MILLION TONS OF AMMONIA



NITROGEN (N)

is a primary building block for all organisms. It is essential to making proteins, helps keep plants green and is a critical component of soil structure.

COMES FROM THE AIR



PHOSPHORUS (P)

is found in every living cell. Phosphorus is a component of DNA and it also plays vital roles in capturing light during photosynthesis, helping with seed germination, and helping plants use water efficiently. Plants also use phosphorus to help fight external stress and prevent disease.

COMES FROM ANCIENT SEA LIFE



POTASSIUM (K)

is essential to the workings of every living cell. It plays an important role in plant's water utilization and also helps regulate the rate of photosynthesis. Other aspects of plant health influenced by potassium include the growth of strong stalks, protection from extreme temperatures, and the ability to fight stress and pests such as weeds and insects.

COMES FROM EVAPORATED OCEANS

TFI AND IFCA SUPPORT CONTINUED DIALOGUE BETWEEN

shippers, carriers & federal agencies to promote the safe and secure rail transportation of ammonia.

Railroads are concerned by the liability they face in the event of an accident involving toxic-by-inhalation chemicals. To limit their risk, they are aggressively increasing their rates to try and force hazardous material products off of their lines, at the expense of our nation's agriculture economy, and have indicated that they will continue to do so until the fertilizer industry interrupts all rail shipments of ammonia.

Since 2005, some freight rates on some carriers have increased by as much as 400 percent. Alongside these efforts, the Association of American Railroads has also recommended that the current anhydrous ammonia fleet be replaced with heavier cars. This dramatic change in the design of rail cars would impose an unbearable added cost for the fertilizer industry and its farmer customers.

Many fertilizer facilities were built at current locations based on their ability to receive fertilizer by rail and do not have the infrastructure in place to handle deliveries from heavier cars. They would suffer from the costs and time

frame associated with track modifications. Moreover, the current estimated cost of the heavier cars, which hold only approximately 87 percent of the product transported by current "best in class" ammonia cars, is 160 percent higher than new ammonia cars. TFI and IFCA have been working with the Federal Railroad Administration in an effort to reduce ton-miles traveled of anhydrous ammonia and develop performance based specifications for an improved tank car design. Performance-based specifications for a car design should be reviewed after the final results of the Volpe Study, which was mandated by Congress to develop a model which will quantify the relevant dynamic forces acting on railroad tank cars in an accident scenario.

Anhydrous ammonia is an indispensable tool that makes American farmers the most productive in the world. Stable shipping prices help America's fertilizer industry and farming community plan ahead for their fertilizer season. If these rate increases continue, the burden will be borne by America's farmers.

"I'm not sure what homeland security means, but producing a bounty of home-grown food that meets exacting regulatory standards with the use of the most efficient nitrogen products available, thereby allowing us to very efficiently feed fellow Americans and people around the globe, should surely rank as something worthwhile in the equation."

FRED MORSHECK | THE MCGREGOR COMPANY

TRANSPORTING ANHYDROUS AMMONIA



RAIL TANK CAR

- Each rail tank car can carry 80 tons of ammonia.
- In 2005, there were about 52,116 rail shipments of anhydrous ammonia, delivering approximately 4.2 million tons of anhydrous ammonia.
- TFI members own or lease approximately 6,000 tank cars.



TRUCK CARGO TANK

- Each truck cargo tank carries 20 tons of ammonia.
- In 2005, truck cargo tanks carried approximately 4 million tons of product on the nation's highways.
- Each additional truck cargo tank increases congestion on our nation's roads and the risk of accidents.



PIPELINE

- In 2005, approximately 3.7 million tons of anhydrous ammonia was transported by pipeline.
- There are only two ammonia pipelines – one runs from Texas to Minnesota and the other from Louisiana to Nebraska and Indiana.



BARGE

- In 2005, approximately 0.9 million tons of anhydrous ammonia was transported by barge.
- Only few retail locations are served by the river system.


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Division of Parasitic Diseases

Drinking Water


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Nitrate and Drinking Water from Private Wells

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What is nitrate?

Nitrate is a compound that is formed naturally when nitrogen combines with oxygen or ozone. Nitrogen is essential for all living things, but high levels of nitrate-nitrogen in drinking water can be dangerous to health, especially for infants and pregnant women. Nitrates are also made in large amounts by plants and animals, and are released in smoke and industrial or automotive exhaust.

How can I be exposed to nitrate?

Adults are mainly exposed to nitrate through foods. The main nitrate exposure for infants is contaminated well water used to prepare formula and other baby foods.

Where and how does nitrate get into drinking water?

Nitrate can occur naturally in surface and groundwater at a level that does not generally cause health problems. High levels of nitrate in well water often result from improper well construction, well location, overuse of chemical fertilizers, or improper disposal of human and animal waste. Sources of nitrate that can enter your well include fertilizers, septic systems, animal feedlots, industrial waste, and food processing waste.

What are the symptoms of methemoglobinemia?

Methemoglobinemia is a blood disorder caused by having too much nitrate in your body. This blood disorder has very visible signs and mainly affects infants. In babies less than 6 months of age, high levels of nitrate in the body will prevent the blood from delivering oxygen effectively to different parts of the body. As a result, the infant may have blueness around the mouth, hands, and feet (hence the name "blue baby syndrome"). This blue color does not necessarily mean that the infant is having breathing problems. However, without treatment and the removal of nitrate from drinking water, the condition could worsen and affect the baby's breathing. Other signs of blue baby syndrome include vomiting and diarrhea.

Pregnant women also do not tolerate nitrates very well. In women who are nursing their babies, nitrate can pass through the mother's milk to her baby and affect the baby indirectly.

What should I do if I have concerns about methemoglobinemia?

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See your health care provider immediately to discuss your concerns. Treatment is available.

How is methemoglobinemia diagnosed?

A simple and quick finger-prick blood test can be used to diagnose methemoglobinemia.

What is the treatment for nitrate exposure?

Changing your drinking water is usually the only treatment necessary. The new water should have less than 10 milligrams of nitrate-nitrogen per liter. Severely affected infants may need additional treatment. Consult with your health care provider.

How do I remove nitrate from my drinking water?

Please DO NOT heat or boil your water to remove nitrate. Because some of the water will evaporate during the boiling process, the nitrate levels of water can actually increase in concentration if the water is boiled. Mechanical filters or chemical disinfection, such as chlorination, DO NOT remove nitrate from water.

Nitrate may be successfully removed from water using treatment processes such as ion exchange, distillation, and reverse osmosis. Contact your local health department for recommended procedures. For more information on treatment systems, contact NSF International, an organization for public health and safety through standards development, product certification, education, and risk management.

NSF International
789 N. Dixboro Road
P.O. Box 130140
Ann Arbor, Michigan 48113-0140
Phone number: (800) 673-6275
Fax: 734-769-0109
Email: info@nsf.org
Web site: <http://www.nsf.org>

Revised Summer 2003

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FREQUENTLY ASKED QUESTIONS

Well Water Testing Frequently Asked Questions

Should I have my well tested?

Yes. In 1999 - 2000, contaminated private well water caused 26% of the drinking water outbreaks that made people sick. The U.S. Environmental Protection Agency's (EPA) rules that protect public drinking water systems do not apply to privately owned wells. Most states have rules for private wells, but these rules may not completely protect your private well. In other words, as a private well owner, it is up to you to make sure that your well water is safe to drink. Your local health or environmental department can help advise you.

When should I have my well tested?

Check your well every spring to make sure there are no mechanical problems; test it once each year for germs and once every two to three years for harmful chemicals. You should also have your well tested if:

- There are known problems with well water in your area
- You have experienced problems near your well (i.e., flooding, land disturbances, and nearby waste disposal sites)
- You replace or repair any part of your well system.

How do I find out if my well is contaminated?

The only way to find out if your well water is contaminated is to test it. You can contact your health or environmental department, or a private laboratory to test for germs and harmful chemicals. In some states, the drilling contractor must test a new well after it is built. However, as a well owner, it is up to you to maintain your well and have it tested regularly.

How do germs and chemicals get into my well water?

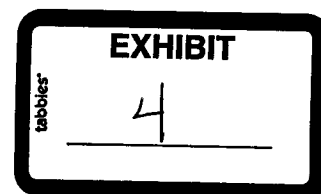
Germs and chemicals can get into your well water and contaminate it in different ways. Some germs and chemicals occur naturally. For example, heavy metals like arsenic, lead, and cadmium are naturally found in rocks and soil and sometimes seep into ground water. Other contaminants come from human and animal waste resulting from polluted storm water runoff, agricultural runoff, flooded sewers, or individual septic systems that are not working properly.

What are the germs and chemicals I should test for in my well?

Several things you should test for are listed below. These germs and chemicals can be a risk to your health. (Please see the Contaminants in Well Water fact sheet [www.cdc.gov/ncidod/dpd/healthywater/factsheets/contaminants.htm] for a list of common germs and chemicals in drinking water and the illnesses they cause.)

Total Coliform

Coliform bacteria are microbes found in the digestive systems of warm-blooded animals, in soil, on plants, and in surface water. These microbes typically do not make you sick; however, because microbes that do cause disease are hard to test for in the water, "total coliforms" are tested instead. If the total coliform count is high, then it is very possible that harmful germs like viruses, bacteria, and parasites might also be found in the water.



Well Water Testing Frequently Asked Questions

(continued from previous page)

Fecal Coliform / *Escherichia coli* (*E. coli*)

Fecal coliform bacteria are a kind of total coliform. The feces (or stool) and digestive systems of humans and warm-blooded animals contain millions of fecal coliforms. *E. coli* is part of the fecal coliform group and may be tested for by itself. Fecal coliforms and *E. coli* are usually harmless. However, a positive test may mean that feces and harmful germs have found their way into your water system. These harmful germs can cause diarrhea, dysentery, and hepatitis. It is important not to confuse the test for the common and usually harmless *E. coli* with a test for the more dangerous *E. coli* O157:H7.

Nitrate

Nitrate is naturally found in many types of food. However, high levels of nitrate in drinking water can make people sick. Nitrate in your well water can come from animal waste, private septic systems, wastewater, flooded sewers, polluted storm water runoff, fertilizers, agricultural runoff, and decaying plants. The presence of nitrate in well water also depends on the geology of the land around your well. A nitrate test is recommended for **all** wells. If the nitrate level in your water is higher than the EPA standards, you should look for other sources of water or ways to treat your water.

Volatile Organic Compounds (VOCs)

VOCs are industrial and fuel-related chemicals that may cause bad health effects at certain levels. Which VOCs to test for depends on where you live. Contact your local health or environmental department, or the EPA to find out if any VOCs are a problem in your region. Some VOCs to ask about testing for are benzene, carbon tetrachloride, toluene, trichloroethylene, and methyl tertiary butyl ether (MTBE).

pH

The pH level tells you how acidic or basic your water is. The pH level of the water can change how your water looks and tastes. If the pH of your water is too low or too high, it could damage your pipes, cause heavy metals like lead to leak out of the pipes into the water, and eventually make you sick.

Other germs or harmful chemicals that you should test for will depend on where your well is located on your property, which state you live in, and whether you live in an urban or rural area. These tests could include testing for lead, arsenic, mercury, radium, atrazine, and other pesticides. You should check with your local health or environmental department, or the EPA to find out if any of these are a problem in your region.

Please remember that if your test results say that there are germs or chemicals in your water, you should contact your local health or environmental department for help and test your water more often.

My well water has a funny smell or taste; should I worry about getting sick?

A change in your water's taste, color, or smell is often not a health concern. However, a change could be a sign of serious contamination problems. Any time you notice a change in your water quality, you should have it tested.

Where do I go to have my well water tested?

State and local health or environmental departments often test for bacteria and nitrates. Health or environmental departments, or county governments should have a list of the state-certified (licensed) laboratories in your area that test for a variety of substances.

Well Water Testing Frequently Asked Questions

(continued from previous page)

Others who may be able to provide you with this listing include:

- Your State Laboratory Certification Officer
- EPA's Safe Drinking Water Hotline: 1-800-426-4791
- EPA's Web site (www.epa.gov/safewater/privatewells/labs.html)

For more information, visit www.cdc.gov/ncidod/healthywater



April 1999

NITRATES IN DRINKING WATER

NITRATES AND DIET

Nitrate (NO_3) is a compound of nitrogen and oxygen found in many food items in your everyday diet. Generally, the concentration in the ground water is low. The major adult human intake of nitrate is from food rather than from water. Vegetables such as spinach, lettuce, beets and carrots contain significant amounts of nitrate. Drinking water normally contributes only a small percentage of the total nitrate intake.

NITRATES IN DRINKING WATER

Although low levels of nitrates may occur naturally in water, sometimes higher levels, which are potentially dangerous to infants, are found. Illinois has adopted a drinking water standard for nitrate of 10 milligrams per liter (10 mg/l) as N (nitrogen). This standard is mandatory for public water supplies and is used as a guide for private water supplies. The U.S. Environmental Protection Agency also uses 10 mg/l as N as a mandatory national standard for public supplies under the Safe Drinking Water Act. The 10 mg/l standard expressed as nitrogen (N) is equivalent to 45 mg/l expressed as nitrate.

SOURCES OF HIGH NITRATES

It is often difficult to pinpoint sources of nitrates because there are so many possibilities. Sources of nitrogen and nitrates may include runoff or seepage from fertilized agricultural lands, municipal and industrial waste water, refuse dumps, animal feedlots, septic tanks and private sewage disposal systems, urban drainage and decaying plant debris. Geologic formations and direction of ground water flow also may influence nitrate concentration.

HEALTH PROBLEMS

High nitrate levels in drinking water pose a risk to infants because they may cause methemoglobinemia, a condition known as "blue baby."

High nitrate levels interrupt the normal body processes of some infants. Nitrate becomes toxic when it is reduced to nitrite, a process that can occur in the stomach as well as in the saliva. Infants are especially susceptible because their stomach juices are less acidic and therefore are conducive to the growth of nitrate-reducing bacteria. (Adults can consume large quantities of nitrates in drinking water or food with no known ill effects; their stomachs produce strong acids that do not promote the growth of bacteria that convert nitrate to nitrite.) Nitrite in the blood combines with hemoglobin to form methemoglobin, which reduces the capability of the blood to carry oxygen to all parts of the body. This results in the "blue"

EXHIBIT

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condition of the baby's skin.

Infants younger than 6 months of age are most susceptible. However, because of individual differences in infants, some may not be affected. If an infant is affected, the skin turns a blue color, similar to the color of the blood vessels located close to the skin. If a parent or other caregiver observes this condition, medical help should be sought immediately. The infant is being asphyxiated because oxygen cannot be transported by the blood. Prompt medical attention normally results in quick recovery of the infant.

In all cases where drinking water contains more than 10 mg/l of nitrate as nitrogen, an alternative source of water should be found for the infant. Boiling the water will not reduce the nitrate concentration; in fact, it actually INCREASES the concentration by evaporating off the water. Water that is high in nitrates should not be used for preparing infant formula or in any other way that could result in consumption by a baby.

TESTING FOR NITRATE

Federal and state regulations require the testing of public water systems for nitrates; however, high nitrate concentrations can occur in private water wells. If infants will be consuming water from a private water well, the water should be tested for nitrates as well as for bacteria. To arrange for bacteriological and nitrate analyses of your drinking water or if you have questions concerning safe drinking water, contact your local health department or the nearest Illinois Department of Public Health regional office.

ROCKFORD REGION

4302 N. Main St.
Rockford, IL 61103
815-987-7511

MARION REGION

2309 W. Main - Ste. 106
Marion, IL 62959
618-993-7010

PEORIA REGION

5415 N. University
Peoria, IL 61614
309-693-5360

EDWARDSVILLE REGION

#22 Kettle River Drive
Glen Carbon, IL 62034
618-656-6680

CHAMPAIGN REGION

2125 S. First St.
Champaign, IL 61820
217-333-6914

WEST CHICAGO REGION

245 W. Roosevelt Rd., Bldg. 5
West Chicago, IL 6018
630-293-6800

Illinois Department of Public Health, Division of Environmental Health, 525 W. Jefferson St., Springfield, IL 62761, 217-782-5830, TTY (hearing impaired use only) 800-547-0466. Questions may be directed to your local health department, to one of the Illinois Department of Public Health's regional offices or to the Department's central office in Springfield.

idph online home  Illinois Department of Public Health
environmental health home  535 West Jefferson Street
Springfield, Illinois 62761
Phone 217-782-4977
Fax 217-782-3987
TTY 800-547-0466
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www.epa.state.il.us

Rod R. Blagojevich, Governor

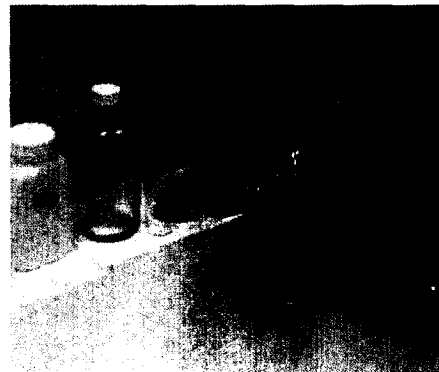
Well Water

Well Water Testing

Properly constructed and maintained water wells can provide many years of trouble-free service, but wells can eventually deteriorate or become damaged and allow surface contaminants to enter the water. In addition, some groundwater can contain one or more chemical substances in concentrations above health-based standards. In some cases, contamination of the water can be detected by sight, taste or smell; however, many of the most serious problems can only be detected through laboratory testing of the water.

Community public water systems are tested regularly under the supervision of the Illinois EPA for a variety of contaminants. However, if you have a private well, regular testing is your responsibility.

The information on this page is also available in the Testing Private Well Water brochure (2 pages, 196K pdf) produced jointly by the Illinois EPA and the Illinois Department of Public Health.



A homeowner sampling for VOC's from a faucet.

Here are some recommendations that you can follow to help ensure that your well water is safe:

Test your well water at least once a year for bacteria

Water that has become contaminated by human or animal waste can transmit a variety of infectious diseases, including dysentery, salmonellosis, hepatitis, and giardiasis. Symptoms vary, but nausea, vomiting, and diarrhea, with or without fever, are most common. To assess bacterial safety, drinking water is tested for a group of "indicator bacteria" called *coliform bacteria*. These bacteria do not usually cause disease themselves, but their presence indicates that surface contamination has found its way into the well and disease organisms may also be present. When coliform bacteria are found in well water, the water should be boiled before being used for drinking or cooking, and the well should be disinfected.

Test your well water every year for nitrate, and always test the water for nitrate before giving it to an infant

Nitrate is a common contaminant in Illinois groundwater. An elevated level of nitrate is often caused from septic systems or by run-off from barnyards, feedlots, or farm fields. Wells most vulnerable to nitrate contamination include shallow wells, dug wells with non-watertight casings, and wells with damaged, leaking casing or fittings. Well water containing nitrate at levels above the maximum contaminant level established by the U.S. Environmental Protection Agency (EPA), which is 10 milligrams per liter as nitrogen, should never be given to infants less than 6 months old because it can cause a potentially fatal disease called "blue baby syndrome." In many cases, constructing a deeper well can reduce or eliminate a nitrate problem. If you know, or suspect, that your well water may contain high levels of nitrate, **do not boil the water**, as this will only concentrate nitrate levels.

Testing your well water for other contaminants

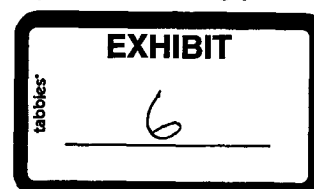
VOCs

Volatile organic compounds, or "VOCs," are common components of gasoline and other fuels, as well as paints and solvents, such as cleaners and degreasers. Long-term exposure to VOCs at levels above health standards may damage the central nervous system, liver, or kidneys, and some VOCs are known to cause cancer. If you live near a current or former commercial or industrial area, gas station, or landfill, and especially if your well is old or shallow, you should consider having your water tested for VOCs periodically, or when recommended by your local health department.

Pesticides

Wells most at risk of pesticide contamination are shallow or old, located close to areas of pesticide use or storage, and located in geologically sensitive areas, such as sand plains or "karst" bedrock areas. Wells that have elevated levels of nitrate are also more likely to have detectable levels of pesticides. Long-term exposure to some pesticides at levels above health standards may affect the development of the nervous system. If you have an old or shallow well and you live in an agricultural area, or if your well has an elevated level of nitrate, consider testing your well water for one or more of the pesticides used most frequently in your area.

Radium



This naturally occurring radioactive element is found primarily in the northern third of Illinois within the deep rocks and soil. Radium has been detected in private wells and can only be identified through testing of the water. Long-term exposure to radium at levels above health standards may increase the risk of bone cancer.

There are other potential contaminants for which you may want to test your well water.

Flush standing water to reduce levels of lead.

Well water in Illinois rarely contains detectable levels of lead. However, lead can enter drinking water through decay of plumbing materials. Homes built before 1986 are more likely to have lead pipes, fixtures and solder. However, new homes are also at risk: even legally "lead-free" plumbing may contain up to 8 percent lead. The most common problem is with brass or chrome-plated brass faucets and fixtures. Exposure to lead at levels above health standards can impair a child's development, as well as cause a variety of other adverse health effects in both children and adults.

To minimize your exposure to lead in drinking water, **run the water until it gets cold** before using it for drinking or cooking. This will flush out most of the lead that may have accumulated in the plumbing. Also, never use water from the hot water tap for drinking or cooking. Hot water is likely to contain higher levels of lead. The only way to be sure of the amount of lead in your household water is to have it tested by a certified laboratory.

Who can I contact to have my well water tested?

Coliform bacteria and nitrates should be tested on a yearly basis and can be done by most local health departments. To find your local county health department, visit the Illinois Department of Public Health's alphabetical listing of Local Health Departments. You can also locate your local health department by county on their online regional map. Certified labs also test well water and may be your only option for certain chemicals.

For More Information

For more information about water quality testing for private wells, including information about contacting certified labs in Illinois, contact your local health department, the Illinois Department of Public Health at (217)782-5830, the Illinois Environmental Protection Agency at (888) 372-1996 or visit these links:

- U.S. EPA's fact sheet, "Home Water Testing"
- American Ground Water Trust, "Water Testing" information
- Centers for Disease Control and Prevention's (CDC) Well Water Testing Frequently Asked Questions
- University of Illinois at Urbana-Champaign, Cooperative Extension Service's online publication, "Safe Drinking Water: Testing and Treating Home Drinking Water" provides information of when and how to test your well, along with descriptions of possible contaminants and the treatments available (21 pages, pdf. 1993).



Water-related diseases

Methaemoglobinemia

Methaemoglobinaemia caused by the decreased ability of blood to carry vital oxygen around the body. One of the most common causes is nitrate in drinking water. It is most important in bottle fed infants and water from wells in rural areas is of special concern. Controlling nitrate levels in drinking water sources to below around 50mg/litre is an effective preventive measure.

The disease and how it affects people

Methaemoglobinemia is characterized by reduced ability of the blood to carry oxygen because of reduced levels of normal haemoglobin. It is uncommon. Infants are most often affected, and may seem healthy, but show signs of blueness around the mouth, hands, and feet, hence the common name "blue baby syndrome". These children may also have trouble breathing as well as vomiting and diarrhoea. In extreme cases, there is marked lethargy, an increase in the production of saliva, loss of consciousness and seizures. Some cases may be fatal.

In the body nitrates are converted to nitrites. The nitrites react with haemoglobin in the red blood cells to form methaemoglobin, affecting the blood's ability to carry enough oxygen to the cells of the body. Bottle-fed infants less than three months of age are particularly at risk. The haemoglobin of infants is more susceptible and the condition is made worse by gastrointestinal infection. Older people may also be at risk because of decreased gastric acid secretion.

Malnutrition and infection seem to increase the risk of methaemoglobinaemia (McDonald and Kay, 1988). The general health of the infant as well as Vitamin C intake may determine whether or not the condition develops (Super et al, 1981).

Others at risk for developing methaemoglobinaemia include: adults with a hereditary predisposition, people with peptic ulcers or chronic gastritis, as well as dialysis patients.

The cause

The most common cause of methaemoglobinemia is high levels of nitrates in drinking-water. High nitrate levels may be present in drinking-water due to the use of manure and fertilizers on agricultural land. The natural level of nitrites and nitrates from the environment is normally a few milligrams per litre, although high levels may occur naturally in some areas. Intense farming practice may increase this to more than 50 mg/litre (WHO 1998). Levels greater than 50mg/litre are known to have been associated with methaemoglobinaemia in bottle fed infants. Nitrate is also found in vegetables. Methaemoglobinaemia can also be a side effect of some drugs (phenacetin and sulphonamides), although this is very rare with modern drugs.

Scope of the Problem

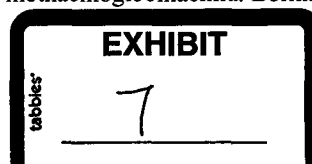
Methaemoglobinaemia is now rare in most of the industrialised countries due to control of nitrate contamination in water supplies, although occasional cases continue to be reported from rural areas. It is a risk in developing countries, for example where the drinking water is from shallow wells in farming areas.

There is no reliable estimate of the extent of the problem worldwide. WHO is presently collecting information in order to make such an estimate.

Interventions

Control of nitrate in drinking water is an effective preventive measure. WHO's Guideline Value for nitrate in drinking water is 50 mg /litre and for nitrite is 3mg/litre. This is relatively readily achieved in centralised, piped, supplies, but is difficult in rural and small supplies.

The group at greatest risk is bottle fed infants. Breastfeeding protects babies from methaemoglobinaemia. Boiling water does not remove nitrate.



For severely affected individuals, medical treatment is possible.

References

McDonald A T, Kay D. Water resources issues and strategies. UK: Longman Scientific and Technical, 1988, p 146-148

Super M, Heese HV , Mackenie D et al. An epidemiological study of well water nitrates in a group of South West African /Namibian infants. Water Research, 1981: 15: 1265-70

World Health Organization. WHO Guidelines for drinking water quality. 2nd edition, addendum to Volume 1: Recommendations. Geneva: WHO, 1998, p-8-10; and addendum to Volume 2: Health Criteria and other Supporting Information.

Prepared for World Water Day 2001. Reviewed by staff and experts from the Programme for Promotion of Chemical Safety (PCS), and the Water, Sanitation and Health unit (WSH), World Health Organization (WHO), Geneva.

CDC

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MMWR*Weekly*

July 05, 1996 / 45(26);569-572

Spontaneous Abortions Possibly Related to Ingestion of Nitrate-Contaminated Well Water -- LaGrange County, Indiana, 1991-1994

Health effects associated with ingestion of nitrate-contaminated water have included methemoglobinemia (i.e., blue baby syndrome) in infants (1) and spontaneous abortions in laboratory animals and livestock (2,3); however, only one study in humans has reported an association between increased methemoglobin levels and spontaneous abortion (4). During March 1993, the LaGrange County (Indiana) Health Department (LCHD) identified three women who reported a total of six spontaneous abortions during 1991-1993 and who resided in proximity to each other; each had obtained drinking water from nitrate-contaminated private wells in LaGrange County (1995 population: 29,350). LCHD was subsequently notified about a fourth woman from another part of the county who had had two spontaneous abortions after she had moved into a new home with a nitrate-contaminated private well. This report summarizes the investigations of these reports by LCHD, which indicate the need for further assessment of a possible relation between ingesting nitrate-contaminated water and spontaneous abortion.

Investigation 1

Patient 1. During May 1991 December 1992, a 35-year-old woman had four consecutive spontaneous abortions: the first three at 8 weeks' gestation, and the fourth at 11 weeks. Karyotyping of one fetus did not identify a genetic explanation for the spontaneous abortion. During the investigation of this case, a neighbor was identified who also had reported a spontaneous abortion (patient 2).

Patient 2. During March 1993, a 37-year-old woman who resided one half mile from patient 1 had spontaneous abortion of her second pregnancy at 8 weeks' gestation. Her first pregnancy (which occurred at age 34, before moving to the current home) had resulted in the birth of a full-term, live-born infant. During the investigation of patients 1 and 2, another neighbor reported to LCHD a history of a recent spontaneous abortion (patient 3).

Patient 3. During July 1993, a 20-year-old woman who resided approximately 1 mile from patient 1 had spontaneous abortion of her first pregnancy during the 8th week of gestation.

Environmental Investigation

EXHIBIT

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To determine possible causes of this cluster of spontaneous abortions in the three women, LCHD conducted an environmental investigation during June-September 1993. A well located on a hog farm in the vicinity of the residences of patients 1-3 had been documented to be nitrate contaminated (>50 mg/L) in 1989; LCHD had been notified about this contamination in 1990. Because of the proximity of the residences of patients 1-3 and the hog-confinement facility, persons in all 19 residences within 3 miles down gradient (i.e., the direction the groundwater was moving) of the hog-confinement facility were interviewed regarding illness and reproductive histories. Nine women of childbearing age lived in these residences, including the three patients whose spontaneous abortions had been investigated by LCHD. Five other women each reported having a full-term birth during the preceding 2 years. Water samples from the 19 wells serving the residences were tested for bacteria and nitrates. For patients 2 and 3, water samples also were analyzed for volatile and semivolatile compounds, pesticides, metals, inorganic compounds, and coliform bacteria.

Nitrate was the only contaminant in well water present at elevated levels. In the wells serving the households of patients 1-3, nitrate levels were 19.0 mg/L, 26.0 mg/L, and 19.2 mg/L, respectively (Environmental Protection Agency {EPA} maximum contaminant level {MCL} for nitrate: 10.0 mg/L). In comparison, for the five households in which women reported giving birth to full-term, live-born infants, drinking water nitrate levels ranged from 1.6 mg/L to 8.4 mg/L (mean: 3.1 mg/L).

An LCHD investigation of potential sources of nitrate contamination of the household wells indicated that the probable source of groundwater contamination was animal waste from the hog-confinement facility. This facility was located approximately one half mile from the residence of patient 1, 1 mile from patient 2, three fourths mile from patient 3, and approximately 2 miles from the residences of women reporting full-term births.

Investigation 2

After completing the investigations of patients 1-3, LCHD investigated a fourth case of spontaneous abortion in a 35-year-old woman who lived approximately 10 miles from the other three women. She had had five live births during 1984-1992. The woman's doctor reported to LCHD that she had had two spontaneous abortions during April and August 1994, both at 8 weeks' gestation: the first occurred 24 months after the birth of her fifth child and 44 months after beginning use of a new well. A mean nitrate-N level of 28.7 mg/L was detected in water samples collected during August 1994 from the household's well, which had been used since 1990. A nitrate-N level of 1.2 mg/L was detected in a second well on the property, approximately 100 feet from the first well; this well had been the source of the woman's drinking water during her first four pregnancies. Nitrate-N levels of <1.5 mg/L were present in water samples in six other wells located up gradient from the family's well and within 1 mile of the household. The only nitrate source identified near the contaminated well was the family's septic system, which was installed in sandy soil approximately 70 feet up gradient from the contaminated well. Although the well probably became contaminated by effluent from the septic tank, it is unknown when contamination occurred.

Following these investigations, all four women changed to nitrate-free sources of drinking water (i.e., bottled or reverse-osmosis treated). Subsequently, each delivered one or more full-term, live-born infants.

Reported by: W Grant, LaGrange County Health Dept, LaGrange; G Steele, DrPH, State Epidemiologist, Indiana State Dept of Health; SA Isiorho, PhD, Dept of Geosciences, Indiana-

Purdue Univ, Ft. Wayne, Indiana. Div of Parasitic Diseases, National Center for Infectious Diseases; Div of Reproductive Health, National Center for Chronic Disease Prevention and Health Promotion; Div of Birth Defects and Developmental Disabilities and Div of Environmental Hazards and Health Effects, National Center for Environmental Health, CDC.

Editorial Note

Editorial Note: The most widely recognized health problem associated with ingestion of nitrate-contaminated water is infant methemoglobinemia, and the EPA standard for nitrate in drinking water of 10 mg/L was established in 1977 to prevent this condition. Although the findings from studies of the influence of nitrate on the reproductive outcomes of laboratory animals and livestock have not been consistent, some studies have suggested a relation between nitrate consumption and spontaneous abortions (2,3). Epidemiologic studies of humans have suggested a possible relation between ingestion of drinking water containing elevated nitrate levels and an increased risk for neural tube defects (5,6) and, based on the findings of one study, a possible relation between methemoglobin levels in women during early pregnancy and subsequent spontaneous abortions (7).

An estimated 13.8 million households in the United States obtain drinking water from private wells (8). Based on recent studies, the EPA MCL for nitrates was exceeded by 13.4% of household wells in nine states in the Midwest (9) and 9% of household wells nationally (10). Because of the risks for potential adverse health effects, persons who use drinking water that contains nitrate levels >10 mg/L or other contaminants exceeding the EPA MCL should have alternative sources of water or appropriate treatment of existing supplies. Information regarding testing of well water may be obtained from city or county health departments.

Spontaneous abortions occur commonly, are directly associated with increasing maternal age, and may cluster by chance. Possible explanations for the cases of spontaneous abortion investigated by LCHD are that they may represent an otherwise unrelated cluster or that they may have been related to ingestion of nitrate-contaminated drinking water. Term births occurred before or after the period when each of the four women consumed contaminated water, and spontaneous abortions occurred coincident with the period of nitrate exposure. However, spontaneous abortions frequently are preceded or followed by live births, and this investigation did not compare the rate of spontaneous abortions in other residents of the community who either were or were not exposed to nitrate-contaminated water. Although this investigation did not establish a causal link between spontaneous abortion and nitrate exposure, the findings indicate the need for further assessment of the possible effects of this common groundwater contaminant on human reproduction.

Since 1971, EPA and CDC have maintained a surveillance system to monitor the occurrence of waterborne disease outbreaks. Illnesses related to exposures to pathogens and chemicals associated with recreational water use or ingestion of drinking water should be reported to the Epidemiology Branch, Division of Parasitic Diseases, National Center for Infectious Diseases, CDC, telephone (770) 488-7760.

References

1. Kross BC, Ayebo AD, Fuortes LJ. Methemoglobinemia: nitrate toxicity in rural America. *Am Fam Phys* 1992;46:183-8.

2. Food and Drug Administration. Teratologic evaluation of FDA 71-7 (sodium nitrate). Washington, DC: US Department of Health and Human Services, Public Health Service, Food and Drug Administration, 1972; publication no. PB 221775.
3. Sund J, Wright MJ, Simon J. Weeds containing nitrate cause abortion in cattle. *Agronomy Journal* 1957;49:278-9.
4. Muhrer ME, Garner GB, Pfander WH, et al. The effect of nitrate on reproduction and lactation. *J An Sci* 1959;15:1291-2.
5. Dorsch MM, Scragg RKR, McMichael AJ, et al. Congenital malformations and maternal drinking water supply in rural South Australia: a case-control study. *J Epidemiol* 1984;119:473-86.
6. Arbuckle TE, Sherman GJ, Corey PN, et al. Water nitrates and CNS birth defects: a population-based case-controlled study. *Arch Environ Health* 1988;43:162-7.
7. Schmitz JT. Methemoglobinemia: cause of abortions? *Obstet Gynecol* 1961;17:413-5.
8. Bureau of the Census. The Housing Survey of the United States, 1993. Washington, DC: US Department of Commerce, Economics and Statistics Administration, Bureau of the Census, 1993
9. CDC. Interim report: a survey of the presence of contaminants in water from private wells in nine Midwestern states. Atlanta, Georgia: US Department of Health and Human Services, Public Health Service, CDC, April 1996.
10. US Geological Survey. Nutrients in ground water and surface water of the United States: an analysis of data through 1992. Reston, Virginia: US Geological Survey, 1995.

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August 4, 2008

Honorable Melissa Bean
U.S. House of Representatives
318 Cannon House Office Building
Washington, DC 20515

Dear Congresswoman Bean:

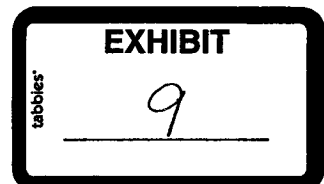
The Port of Seattle welcomes this opportunity to present its views at this field hearing on the potential downstream economic effects of the proposed acquisition of the Elgin Joliet & Eastern Railway Co. (EJ&E line) by Canadian National Railway Co.

The Port of Seattle is one of the largest ports in the U.S. and serves as a gateway for American industrial and agricultural exports as well as imported goods for businesses and consumers. The Port of Seattle's key markets for both imports and exports are the Midwest, Northeast and Southeast.

Press reports have stated Canadian National (CN) is marketing its proposed acquisition of the EJ&E as a way to cut 30 hours off of cargo movements to Southeastern markets. The head of the Port of Prince Rupert Authority (Prince Rupert) acknowledges that the acquisition of the EJ&E is a key long-term issue for the port. This business strategy, which has received a good deal of financial support from Ottawa, is a direct economic threat to U.S. port communities and thousands of family wage jobs in those communities.

Prince Rupert's strategy, in a nutshell, is to capture cargo moving to and from American markets via American ports – particularly the ports of Seattle and Tacoma. Once in Canada that cargo moves directly into the heartland of the United States on a rail system heavily supported and protected by Ottawa.

This strategy represents a serious economic threat to U.S. port communities. At the Port of Seattle, the cargo targeted by Prince Rupert supports more than 34,000 jobs. Those jobs generate in excess of \$2 billion in annual payroll, \$2.5 billion in business revenue, \$431 million in local purchases, and \$210 million in state and local tax revenues (Port of Seattle Economic Impact Study, 2003, John Martin & Associates).



Honorable Melissa Bean
August 4, 2008
Page Two

Another concern is that security measures at land borders where Canadian owned rail lines enter the U.S. are not as rigorous as at U.S. seaports. This statement is not meant to question Canadian security measures or the close and cooperative security relationship we enjoy with Canada. Indeed, the security measures employed at Prince Rupert and other Canadian seaports are rigorous and similar to those at American ports. The question is why U.S. border security at land crossings should be any less thorough than it is at seaports.

Fair competition is good and well. It helps keep U.S. ports sharp and transportation costs low for American businesses and consumers. But Prince Rupert's predatory practices are bad for American ports, American businesses, American workers, and American consumers.

We are very concerned about the economic threat of Prince Rupert to our U.S. ports. The merger of the CN and EJ&E Railway is a critical link necessary to implement Prince Rupert's strategy. For the reasons detailed in this letter, we ask that you carefully consider the downstream economic effects of this proposed transaction.

Sincerely,



Tay Yoshitani
CEO
Port of Seattle

Cc:
U.S. Senator Durbin
U.S. Senator Obama
U.S. Representative Roskam
U.S. Representative Foster
U.S. Representative Biggert
U.S. Representative Manzullo