Saari, Christopher A.

From: Saari, Christopher A.
Sent: Thursday, May 20, 2004 3:20 PM
To: 'Spiros Fafalios'
Cc: echristiansen@wi.rr.com
Subject: RE: Groundwater Sampling at CMC Poleyard, Phelps (BRRTS #02-64-000068)

Hi Spiros:

I had hoped to have the Expanded Site Inspection report completed and available to you and to Mr. Christiansen by now. However, the report is currently undergoing review at our Central Office in Madison, and after I make any requested changes, it then has to go to EPA Region 5 for another review and final approval.

If you want the groundwater results now, I believe that I can send you a copy of the data summary. This information will be included in the report as well, so it's up to you as to how soon you'd like to see it. Would you want to see the surface water and sediment results now, too, or can you wait until the report is done? Just let me know. Thanks.

-----Original Message-----
From: Spiros Fafalios [mailto:SFafalios@naturalrt.com]
Sent: Friday, May 14, 2004 11:39 AM
To: Saari, Christopher A.
Cc: echristiansen@wi.rr.com
Subject: Groundwater Sampling at CMC Poleyard, Phelps (BRRTS #02-64-000068)

Dear Chris,

On behalf of C.M. Christiansen Company, Inc. (CMC), Natural Resource Technology, Inc. (NRT) is providing this update to groundwater sampling for the above referenced site. In the past, we have conducted post-remediation semi-annual groundwater sampling in May and November. May 2003 was delayed with your concurrence until September 30 - October 1, 2003 to coincide with WDNR sediment and groundwater sampling. To date, neither CMC nor NRT has been made privy to the DNR's lab results from September 30 - October 1, 2003. No future groundwater monitoring schedule has been established.

The PCP results we do have from last October (wells not included in the DNR program, but scheduled for sampling by CMC) are attached. Since the previous round a year earlier, results show an increase for MW-6 (9.1 ppb, up from 0.96 ppb), and no detect (below 0.04 ppb, about the same) for MW-13. As you may recall, purged & treated groundwater was discharged to groundwater via infiltration basin from a holding tank based on the effluent lab results and a modified discharge permit. Prior to establishing a future groundwater monitoring schedule, CMC would want to see DNR information to refine list of wells and evaluate the remaining monitoring well results.

Thank you for your consideration.

Spiros Fafalios, P.E.
Environmental Engineer
Natural Resource Technology, Inc.
262.522.1235 office
262.719.4518 mobile

NORTHERN LAKE SERVICE, INC.
Analytical Laboratory and Environmental Services
400 North Lake Avenue - Crandon, WI 54520
Ph: (715)-478-2777 Fax: (715)-478-3060

ANALYTICAL REPORT

WDNR Laboratory ID No. 721026460
WDATCP Laboratory Certification No. 105-330
EPA Laboratory ID No. WI00034

NLS Project: 76907
NLS Customer: 84233

Client: Natural Resource Technology Inc
Attn: Spiros Fafalios
23713 West Paul Road (Suite D)
Pewaukee,WI 53072

Fax: 262 523 9001 Phone: 262 523 9000

Project: CM Christensen Co. Phelps, WI

MW-6 NLS ID: 321639
Ref. Line 1 COC 65069 MW-6 Matrix: GW
Collected: 09/30/03 17:40 Received: 10/02/03

Parameter	Result	Units	Dilution	LOD	LOQ	Analyzed	Method	Lab
Chlorinated Herbicides (water) by EPA 8151	see attached					10/09/03	SW846 8151	632021390
Organics Extraction (Herbicides)	yes					10/09/03	SW846 8151	632021390

MW-13 NLS ID: 321640
Ref. Line 2 COC 65069 MW-13 Matrix: GW
Collected: 09/30/03 17:51 Received: 10/02/03

Parameter	Result	Units	Dilution	LOD	LOQ	Analyzed	Method	Lab
Chlorinated Herbicides (water) by EPA 8151	see attached					10/09/03	SW846 8151	632021390
Organics Extraction (Herbicides)	yes					10/09/03	SW846 8151	632021390

Effluent NLS ID: 321641
Ref. Line 3 COC 65069 Effluent Matrix: GW
Collected: 09/30/03 18:00 Received: 10/02/03

Parameter	Result	Units	Dilution	LOD	LOQ	Analyzed	Method	Lab
Arsenic, tot. rec. as As by furnace AAS	ND	ug/L	1	2.6	9.1	10/10/03	SW846 7060	721026460
Lead, tot. rec. as Pb by furnace	[0.86]	ug/L	1	0.80	2.8	10/14/03	SW846 7421	721026460
Metals digestion - tot. recov. GF	yes					10/06/03	SW846 3020	721026460
PAHs (water) by EPA 8310	see attached					10/09/03	SW846 8310	721026460
Organics Extraction (Water) for PAHs	yes					10/03/03	SW846 3510	721026460
Chlorinated Herbicides (water) by EPA 8151	see attached					10/09/03	SW846 8151	632021390
Organics Extraction (Herbicides)	yes					10/09/03	SW846 8151	632021390

Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered to be in the region of "Certain Quantitation". LOD and LOQ tagged with an asterisk(*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dilution.

LOD = Limit of Detection LOQ = Limit of Quantitation ND = Not Detected 1000 ug/L = 1 mg/L
DWB = Dry Weight Basis NA = Not Applicable %DWB = (mg/kg DWB) / 10000
MCL = Maximum Contaminant Levels for Drinking Water Samples

Reviewed by: _____

Authorized by:
R. T. Krueger
President

ANALYTICAL RESULTS: Polynuclear Aromatic Hydrocarbons by EPA 8310 (w)

Customer: Natural Resource Technology Inc **NLS Project: 76907**

Project Description: CM Christensen Co. Phelps, WI

Project Title: **Template: 02PAHW** **Printed: 05/11/2004 14:02**

Sample: 321641 **Effluent** **Collected: 09/30/03** **Analyzed: 10/09/03 -**

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ
Naphthalene	ND	ug/L	1	0.013	0.042
P-Terphenyl (SURR**)	94%				

** Surrogates are used to evaluate a method's Quality Control.

ANALYTICAL RESULTS: Chlorinated Herbicides by EPA 8151

Customer: Natural Resource Technology Inc **NLS Project: 76907**

Project Description: CM Christensen Co. Phelps, WI

Project Title: **Template: DAV8151W Printed: 05/11/2004 14:02**

Sample: 321639 MW-6 **Collected: 09/30/03** **Analyzed: 10/09/03 -**

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ
Pentachlorophenol	9.1	ug/L	1	0.040	0.15
DCAA (SURR**)	121%				

Sample: 321640 MW-13 **Collected: 09/30/03** **Analyzed: 10/09/03 -**

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ
Pentachlorophenol	ND	ug/L	1	0.040	0.15
DCAA (SURR**)	97.4%				

Sample: 321641 Effluent **Collected: 09/30/03** **Analyzed: 10/09/03 -**

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ
Pentachlorophenol	ND	ug/L	1	0.040	0.15
DCAA (SURR**)	99.7%				

** Surrogates are used to evaluate a method's Quality Control.

Saari, Christopher A.

From: Charles Warzecha [warzecj@dhfs.state.wi.us]
Sent: Wednesday, March 03, 2004 9:41 AM
To: Schrank, Candy S.
Cc: Saari, Christopher A.; Janisch, Tom P
Subject: RE: Fish advisory for military creek

Thanks, Candy

Chris and Tom,
What are your thoughts on this?

Chuck Warzecha
Health Hazard Evaluation
Wisconsin Department of Health and Family Services
(608) 267-3732

Check out our website at:
www.dhfs.state.wi.us/eh
* * * * * * * * *

>>> "Schrank, Candy S." <Candy.Schrank@dnr.state.wi.us> 03/03/04 09:19AM >>>
I don't have time right now to look at this in detail but it looks like someone estimated the TCDD TEQ to be 15 ppt for whole fish based on sediment to fish bioaccumulation factors.

You also say that some fish were analyzed and the report says that only 2,3,4,6,7,8-HpCDD and OCDD were detected. I checked our database for dioxin/furan results and found results for only 2378TCDD and 2378TCDF. (I am wondering what the rest of the results were and where that data is?
Perhaps in 1993, Jim only recorded the TCDD and TCDF results.) But that suggests two things: First, no additional fish were analyzed because it was determined to not be a fish consumption issue at that time. (We started using 10 ppt in about 1990 and using the TEF approach in about 1999.) And, second, that additional congener data is available and even if concentrations are less than detection, rangefinding TEFs could be calculated using 0, 1/2 of the LOD, and the LOD for each measured congener to estimate 3 possible TEF ranges for each whole fish sample. If any one knows the rest of the congener data, we could do that calculation... maybe it is in one of Jim's old files.

Based on our statewide data, the 2378TCDD and TCDF concentrations recorded in WDNR's database are for the 2 samples from North Twin in line with some of our lowest documented concentrations measured statewide from 1970-2001. We have dioxin based advisories issued for some species in the Wisconsin River and based only on the 1993 2378-TCDD and -TCDF values, dioxin/furan do not appear to be a major concern in North Twin.

However, looking at the estimated TEC based on the BSAF, it appears

that additional fish sampling may be warranted, perhaps taking fish from the Creek (I don't know the exact source/hydrology here). It is unfortunate that I didn't know about this early because we did get muskies from North Twin Lake (Twin Lake Chain) from GLIFWC in 2001 and 2002 and analysis is complete.

What would be great to have is a statewide list of sites with dioxin in sediments ranked by concentration. Each year I put together a collection schedule that is reviewed by a number of people and was not asked to analyze dioxin in fish from this site.

Let me know if there is further info you need from me. I would be interested in the TEC calculated with 0, 1/2 LOD and =LOD and if you think fish should be collected and analyzed for dioxin/furans and from what location.

Candy

-----Original Message-----
From: Charles Warzecha [mailto:warzecj@dhfs.state.wi.us]
Sent: Monday, March 01, 2004 12:21 PM
To: Schrank, Candy S.
Subject: Fish advisory for military creek

Candy,
I was wondering what the policy is on issuing fish consumption advisories without tissue data? At a site up in Phelps we have a former
wood treating facility next to Military Creek with the typical related mix of dioxins (not much 2,3,7,8, mostly OCDD) in sediments next to the
former site. I few years ago we had some fish tissue testing done in North Twin Lake which is a couple hundred feet downstream. Those results didn't demonstrate an impact on the lake. Recently additional sediment data were collected for the creek and based on calculations done by Tom Janish the dioxin levels would significantly exceed the water quality criteria. The stretches of the creek is class 1 trout stream and with others being class 2,. It has a naturally reproducing trout population so the fish would be resident. Because the cost of analysis is high and resources for sample collection are always tight, I
was wondering if might be appropriate to issue an advisory based on the
"circumstantial evidence" as it were? I've attached a copy of the data
summary and narrative prepared by Tom. If it would be something to consider, I would take a closer look at the data to make sure an advisory would be appropriate. (The impacted area is primarily at the lower end of the stream)
Let me know your thoughts on the matter, thanks,
Chuck

Chuck Warzecha
Health Hazard Evaluation
Wisconsin Department of Health and Family Services
(608) 267-3732

Check out our website at:
www.dhfs.state.wi.us/eh
* * * * * * * * *

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES
Jim Doyle, Governor
Scott Hassett, Secretary
William H. Smith, District Director

Park Falls Area Headquarters
P.O. Box 220, 875 S. 4th Ave.
Park Falls, WI 54552
TELEPHONE 715:762-3204
FAX 715:762-4348

December 1, 2003

IN REPLY REFER TO: 3430

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Eric Christiansen
C.M. Christiansen Co., Inc.
P.O. Box 100
Phelps, WI 54554

SUBJECT: **Alternate Effluent Limit per NR140.28**

Dear Mr. Christiansen:

I have received a request for a permit modification pertaining to the general permit for groundwater remediation actions (WI-0046566-3) which was issued to your facility for discharge of well-purge wastewater. The cover letter for this permit was dated November 13, 2001. While I cannot issue a permit modification to the general permit, I can modify the conditions of the cover letter.

Mr. Spiros Fafalios of Natural Resources Technology, Inc. (your engineering consultant) has requested that the allowed effluent discharge concentration of pentachlorphenol (PCP) may be reduced from the Preventive Action Limit of 0.1 ug/L to the Enforcement Standard of 1.0 ug/L.

As background for this decision, the same permit was issued during the remediation phase of this project for discharge of treated effluent into a seepage cell within the center of the remediation zone. During this phase of the project, the cover letter for the permit (issued on September 1, 1998) included the following provision:

Alternate Effluent Limit: Per WPDES permit Part E.3. the Department is granting your request in Item #5 of your discharge management plan for an alternative effluent limit of 1 ug/L for pentachlorophenol, in lieu of the preventive action limit (PAL) of 0.1 ug/L. The alternative limit is warranted based on the temporary nature of the discharge; and the directly upgradient seepage cell from the dewatering area; and a detection limit for the analytical procedure (method 8270) of typically greater than 1 ug/L.

For the well-purge phase of the project, the alternate effluent limit (as described above) was rescinded because it was thought that, due to the small volume of discharge and anticipated long time span between discharges, the water could simply be passed through the treatment system several times and analyzed until the 0.1 limit was attained.

New information regarding this project has been provided by Mr. Fafalios that justifies allowance of a higher effluent limit for pentachlorophenol, again to the enforcement standard, 1.0 ug/L. This information is as follows (as presented in the request letter dated November 6, 2003:

1. Concentrations of PCP in groundwater in the area of the seepage cell are at or above the groundwater ES (enforcement standard).

2. Quantities of purge water are significantly less than the quantity of groundwater discharged during remediation (total of less than 300 gallons to date).

3. Historical treatment results using the requested methoid and method detection limit (MDL) equates to a practical quantitation limit (PQL - 0.25 ug/L) that is typically above the PAL (0.1 ug/L) for the effluent sample.

4. Historically, re-treatment of purge water has not resulted in concentrations of PCP below the PQL or PAL, while other parameters are within treatment limits.

Therefore, the alternate effluent limit for pentachlorophenol is 1.0 ug/L per the provisions in NR 140.28(5), Part F in your WPDES wastewater discharge permit. The remainder of the permit and cover letter issued November 13, 2001 remain in effect.

Please call me at (715) 762-4684, ext. 120 if you have any questions regarding this letter.

Sincerely;

James P. Hansen
Environmental Specialist

cc: 1. Janet Kazda - Rhinelander 2. J. Brauer - WT/2 3. Regina Hasken - Rhinelander 4. Chris Saari - Ashland
Mr. Spiros Fafalios, P.E., Natural Resource Technology, Inc., 23713 W. Paul Rd., Pewaukee, WI 53072

SEND INVOICE IN TRIPLICATE TO:

DEPT. OF NATURAL RESOURCES
NORTHERN CO-REGION FINANCE
514 SERVICE RD
SPOONER, WI 54801-0309

STATE OF WISCONSIN PURCHASE ORDER

ENTER TYPE CODE
1 - Regular
2 - Change Previous
3 - Cancel Previous
5 - Blanket-Non Contract
8 - Blanket-Contract

2

PURCHASE ORDER NUMBER
NKD00000076

SHOW THIS NUMBER ON ALL SHIPMENTS CORRESPONDENCE AND INVOICES

STATE USE: PD 370

VENDOR NUMBER
870503343 C

DATE: 10/13/03

PAGE: 1

VENDOR:

BOART LONGYEAR CO
101 ALDERSON ST
SCHOFIELD WI 54476

SHIP TO:

CHRIS SAARI
DEPT. OF NATURAL RESOURCES
ASHLAND SERVICE CENTER
2501 GOLF COURSE RD
ASHLAND, WI 54806

FOB	Terms	Delivery	Reference	Agency Bid No.:	SBOP Bulletin No.
DESTINATION	NET 30	09/30/03			

Item	Quantity	Unit	Commodity Code	Unit Price	Total
	THIS IS A MODIFICATION TO THE PREVIOUS VERSION OF PO # NKD00000076				
1	1.000	EACH	962-96-00-0000	4,309.000000	4,309.00
	WELL DRILLING AND INSTALLATION - PHELPS WI DRILL AND INSTALL THREE GROUNDWATER MONITORING WELLS LOCATED AT THE C.M. CHRISTIANSEN-POLE YARD SITE IN PHELPS WI PER 6/18/2003 PROPOSAL. DNR CONTRACT ADMINISTRATOR CHRIS SAARI 715-685-2920. TOTAL ORDER IS NOT TO EXCEED $4,309.00 10/13/2003 - CHANGED ORGN CODE FROM RRTH TO RRTR				

Complete the following and return to Spooner Finance when merchandise / service is received.

Date Received: 10/20/03 Complete X Partial ____

TOTAL: 4,309.00

IV ☐ Yes ____ ☒ No ____ Model ____ Serial No. ____

Delivery to ____

Signature Christopher A Saar

FOR STATE USE ONLY

LN	FUND	AGY	ORGN/SB	APPR	UNIT	ACTV	FUNC	OBJT/SB	JOB NUMB	CAT	TOTAL
01	274	370	RRTH/	2 75	4	RRPH		2740/31			.00
02	274	370	RRTR/	2 75	4	RRPH		2740/31			4,309.00

TOTAL: 4,309.00

CHRIS SAARI
(715) 685-2920

Ack:

Their Number:

Shipping:

Traced:

REGISTER NUMBER	INVOICE OR VOUCHER NO.	INV. OR VOU. DATE	NET AMOUNT	CASH DISCOUNT	DATE INV. FORWARDED	BALANCE

TO: Chris Saari - Ashland Date 10/15/03

From: Chris Wilmot - NOR FN - Spooner

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A Rev. 5-97

Boring Number PMW-4A Use only as an attachment to Form 4400-122.

Sample										Soil Properties					
Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			13											
			14											
			15											
			16											
			17											
			18											
			19											
			20											
			21											
			22											
			23											
			24											
			25											
			26											
			27											
			28	EOB 28.0' Well Set 27.0'										

State of Wisconsin
Department of Natural Resources

Route To: Watershed/Wastewater ☐ Waste Management ☐ Remediation/Redevelopment ☐ Other ☐

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 6-97

Facility/Project Name: Christiansen Pole Yard Site	Local Grid Location of Well: ____ ft. ☐ N. ☐ S. ____ ft. ☐ E. ☐ W.	Well Name: PMW-4A
Facility License, Permit or Monitoring No.	Grid Origin Location (Check if estimated: ☐) Lat. ° ' " Long. ° ' " or	Wis. Unique Well No. / DNR Well Number
Facility ID: 11616	St. Plane ____ ft. N, ____ ft. E. S/C/N	Date Well Installed: 09/08/2003
Type of Well: Well Code 12/pz	Section Location of Waste/Source: ____ 1/4 of ____ 1/4 of Sec. ____, T. ____ N, R. ____ ☐ E ☐ W	Well Installed By: (Person's Name and Firm) G. Jones / Boart Longyear
Distance Well Is From Waste/Source Boundary ____ ft.	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☐ Not Known	

A. Protective pipe, top elevation ____ ft. MSL
B. Well casing, top elevation 2.50 ft. MSL
C. Land surface elevation ____ ft. MSL
D. Surface seal, bottom ____ ft. MSL or 0.5 ft.

12. USC classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis attached? ☐ Yes ☐ No

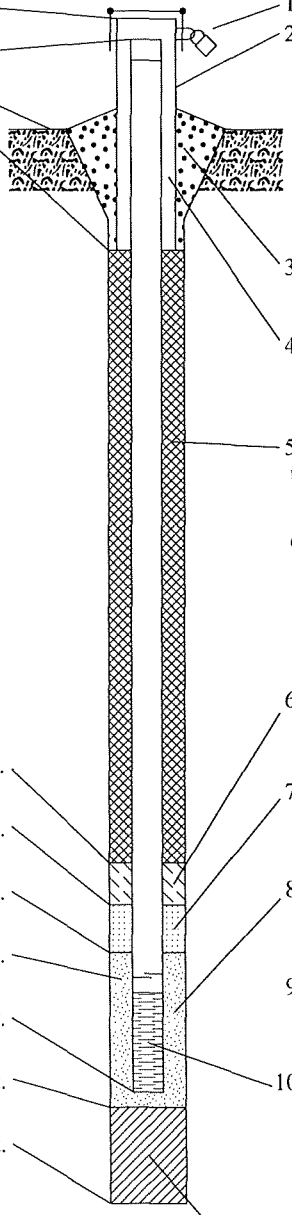
14. Drilling method used: Rotary ☐ 5 0 / Hollow Stem Auger ☒ 4 1 / ____ Other ☐ __

15. Drilling fluid used: Water ☐ 0 2 Air ☐ 0 1 Drilling Mud ☐ 0 3 None ☐ 9 9

16. Drilling additives used? ☐ Yes ☒ No
Describe ____

17. Source of water (attach analysis): ____

E. Bentonite seal, top ____ ft. MSL or 0.5 ft.
F. Fine sand, top ____ ft. MSL or 18.0 ft.
G. Filter pack, top ____ ft. MSL or 20.0 ft.
H. Screen joint, top ____ ft. MSL or 22.0 ft.
I. Well bottom ____ ft. MSL or 27.0 ft.
J. Filter pack, bottom ____ ft. MSL or 28.0 ft.
K. Borehole, bottom ____ ft. MSL or 28.0 ft.
L. Borehole, diameter 8.0 in.
M. O.D. well casing 2.37 in.
N. I.D. well casing 2.06 in.



1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 4.0 in.
b. Length: 7.0 ft.
c. Material: Steel ☒ 0 4 / ____ Other ☐ __
d. Additional protection? ☐ Yes ☒ No
If yes, describe: ____
3. Surface seal: Bentonite ☒ 3 0 / Concrete ☐ 0 1 / ____ Other ☐ __
4. Material between well casing and protective pipe: Bentonite ☐ 3 0 / Sand Other ☒ __
5. Annular space seal: a. Granular Bentonite ☒ 3 3
b. ____ Lbs/gal mud weight . Bentonite-sand slurry ☐ 3 5
c. ____ Lbs/gal mud weight . . . Bentonite slurry ☐ 3 1
d. ____ % Bentonite . . . Bentonite-cement grout ☐ 5 0
e. ____ Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 0 1 / Tremie pumped ☐ 0 2 / Gravity ☒ 0 8
6. Bentonite seal: a. Bentonite granules ☒ 3 3
b. ☐ 1/4 in. ☐ 3/8 in. ☐ 1/2 in. Bentonite pellets ☐ 3 2
c. ____ Other ☐ __
7. Fine sand material: Manufacturer, product name and mesh size
a. #7 Badger __
b. Volume added ____ ft^3
8. Filter pack material: Manufacturer, product name and mesh size
a. #40 Badger __
b. Volume added ____ ft^3
9. Well casing: Flush threaded PVC schedule 40 ☒ 2 3 / Flush threaded PVC schedule 80 ☐ 2 4 / ____ Other ☐ __
10. Screen material: PVC __
a. Screen Type: Factory cut ☒ 1 1 / Continuous slot ☐ 0 1 / ____ Other ☐ __
b. Manufacturer Boart Longyear
c. Slot size: 0.010 in.
d. Slotted length: 5.0 ft.
11. Backfill material (below filter pack): None ☒ 1 4 / ____ Other ☐ __

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: [signature] Firm: Boart Longyear Company, 101 Alderson Street Schofield, WI 54476 Tel: 715-359-7090 Fax: 715-355-5715

Please complete both Forms 4400-113A and 4400-113B and return to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and condut involved. Personnally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 6-97

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐

Facility/Project Name	County	Well Name
Christiansen Pole Yard Site	Vilas	PMW-4A

Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number	DNR Well Number
	64		

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method:

surged with bailer and bailed	☐	41
surged with bailer and pumped	☐	61
surged with block and bailed	☐	42
surged with block and pumped	☐	62
surged with block, bailed, and pumped	☐	70
compressed air	☐	20
bailed only	☐	10
pumped only	☐	51
pumped slowly	☐	50
other _____	☐	__

3. Time spent developing well 20 min.

4. Depth of well (from top of well casing) 29.8 ft.

5. Inside diameter of well 2.06 in.

6. Volume of water in filter pack and well casing 20.6 gal.

7. Volume of water removed from well 30.0 gal.

8. Volume of water added (if any) gal.

9. Source of water added _____

10. Analysis performed on water added? ☐ Yes ☐ No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing) a.	6.50 ft.	8.40 ft.
Date b.	09/09/2003	09/09/2003
Time c.	10:20 am	10:40 am
12. Sediment in well bottom	inches	inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15	Clear ☒ 20 Turbid ☐ 25
(Describe)	Brown Cloudy	Clear

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	mg/l	mg/l
15. COD	mg/l	mg/l

16. Well developed by: Person's Name and Firm
G. Jones
Boart Longyear

17. Additional comments on development:

Facility Address or Owner/Responsible Party Address

Name: _____

Firm: _____

Street: _____

City/State/Zip: _____

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: _____

Print Name: RON THALACKER

Firm: Boart Longyear Company

NOTE: See instructions for more information including a list of county codes and well type codes.

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 5-97

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Christiansen Pole Yard Site		PMW-4B

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
Boart Longyear - G. Jones	9/8/2003	9/8/2003	4 1/4" HSA

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		PMW-4B	Feet MSL	Feet MSL	8.0 Inches

Boring Location or Local Grid Origin (Check if estimated: ☐)
State Plane S / C / N
1/4 of 1/4 of Section , T N, R
Lat. ° ' "
Long. ° ' "
Local Grid Location (If applicable)
Feet ☐ N ☐ S Feet ☐ E ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
11616	Vilas	64	Phelps

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			1	Brn SAND & GRAVEL										
			2											
			3											
			4											
			5											
			6											
			7											
			8											
			9											
			10											
			11											
			12											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	
	Boart Longyear Company 101 Alderson Street Schofield, WI 54476	Tel: 715-359-7090 Fax: 715-355-5715

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completions of this form is mandatory. Failure to file this form may result in forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A Rev. 5-97

Boring Number PMW-4B Use only as an attachment to Form 4400-122. Page 2 of 3

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
1 SS	24 2	1 1 1 1	15 16							W				
2 SS	24 4	2 3 1 1	20 21	Brn SAND w/Trc. Silt						W				
3 SS	24 12	3 3 4 4	25 26							W				
4 SS	24 8	5 6 5 6	30 31							W				

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A Rev. 5-97

Boring Number PMW-4B Use only as an attachment to Form 4400-122.

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			33											
			34											
5 SS	18 3	20 20 50/.2	35	Brn M-F SAND w/Gravel						W				
			36											
			37											
			38											
			39											
6 SS	24	28 29 30 14	40							W				
			41											
			42											
			43											
			44	EOB 44.0' Well Set 43.0'										
7 SS	24 5	14 18 18 19								W				

State of Wisconsin
Department of Natural Resources Route To: Watershed/Wastewater ☐ Waste Management ☐ Remediation/Redevelopment ☐ Other ☐

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 6-97

Facility/Project Name: Christiansen Pole Yard Site	Local Grid Location of Well: ____ft. ☐N. ☐S. ____ft. ☐E. ☐W.	Well Name: PMW-4B
Facility License, Permit or Monitoring No.	Grid Origin Location (Check if estimated: ☐) Lat. ° ' " Long. ° ' " or	Wis. Unique Well No. / DNR Well Number
Facility ID: 11616	St. Plane ____ ft. N, ____ ft. E. S/C/N	Date Well Installed: 09/08/2003
Type of Well: Well Code 12/pz	Section Location of Waste/Source: ____1/4 of ____ 1/4 of Sec. ____, T. ____ N, R. ____ ☐E ☐W	Well Installed By: (Person's Name and Firm): G. Jones / Boart Longyear
Distance Well Is From Waste/Source Boundary ____ ft.	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☐ Not Known	

A. Protective pipe, top elevation ____ ft. MSL

B. Well casing, top elevation 2.50 ft. MSL

C. Land surface elevation ____ ft. MSL

D. Surface seal, bottom ____ ft. MSL or 0.5 ft.

12. USC classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis attached? ☐ Yes ☐ No

14. Drilling method used: Rotary ☐ 5 0 / Hollow Stem Auger ☒ 4 1 / ____ Other ☐ __

15. Drilling fluid used: Water ☐ 0 2 Air ☐ 0 1 Drilling Mud ☐ 0 3 None ☐ 9 9

16. Drilling additives used? ☐ Yes ☒ No

Describe ____

17. Source of water (attach analysis):

E. Bentonite seal, top ____ ft. MSL or 0.5 ft.

F. Fine sand, top ____ ft. MSL or 34.0 ft.

G. Filter pack, top ____ ft. MSL or 36.0 ft.

H. Screen joint, top ____ ft. MSL or 38.0 ft.

I. Well bottom ____ ft. MSL or 43.0 ft.

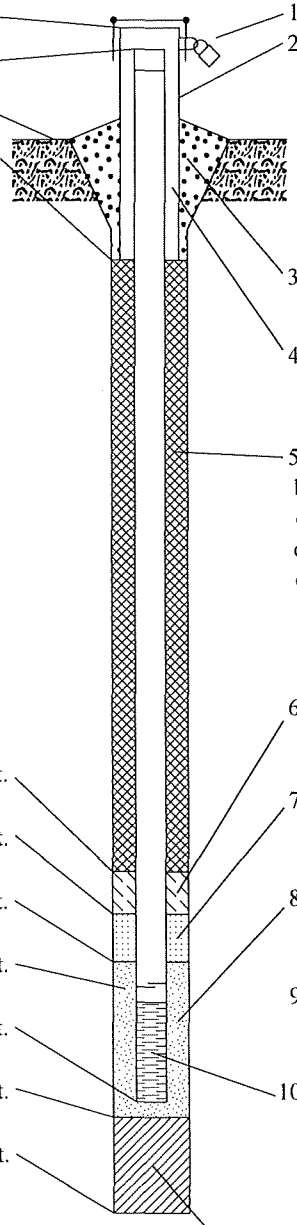
J. Filter pack, bottom ____ ft. MSL or 44.0 ft.

K. Borehole, bottom ____ ft. MSL or 44.0 ft.

L. Borehole, diameter 8.0 in.

M. O.D. well casing 2.37 in.

N. I.D. well casing 2.06 in.



1. Cap and lock? ☒ Yes ☐ No

2. Protective cover pipe:
a. Inside diameter: 4.0 in.
b. Length: 7.0 ft.
c. Material: Steel ☒ 0 4 / ____ Other ☐ __
d. Additional protection? ☐ Yes ☒ No
If yes, describe: ____

3. Surface seal: Bentonite ☒ 3 0 / Concrete ☐ 0 1 / ____ Other ☐ __

4. Material between well casing and protective pipe: Bentonite ☐ 3 0 / Sand Other ☒ __

5. Annular space seal: a. Granular Bentonite ☒ 3 3
b. ____Lbs/gal mud weight . Bentonite-sand slurry ☐ 3 5
c. ____Lbs/gal mud weight . . . Bentonite slurry ☐ 3 1
d. ____% Bentonite . . . Bentonite-cement grout ☐ 5 0
e. ____Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 0 1 / Tremie pumped ☐ 0 2 / Gravity ☒ 0 8

6. Bentonite seal: a. Bentonite granules ☒ 3 3
b. ☐ 1/4 in. ☐ 3/8 in. ☐ 1/2 in. Bentonite pellets ☐ 3 2
c. ____ Other ☐ __

7. Fine sand material: Manufacturer, product name and mesh size
a. #7 Badger
b. Volume added ____ ft^3

8. Filter pack material: Manufacturer, product name and mesh size
a. #40 Badger
b. Volume added ____ ft^3

9. Well casing: Flush threaded PVC schedule 40 ☒ 2 3 / Flush threaded PVC schedule 80 ☐ 2 4 / ____ Other ☐ __

10. Screen material: PVC
a. Screen Type: Factory cut ☒ 1 1 / Continuous slot ☐ 0 1 / ____ Other ☐ __
b. Manufacturer Boart Longyear
c. Slot size: 0.010 in.
d. Slotted length: 5.0 ft.

11. Backfill material (below filter pack): None ☒ 1 4 / ____ Other ☐ __

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: [signature] Firm: Boart Longyear Company, 101 Alderson Street Schofield, WI 54476 Tel: 715-359-7090 Fax: 715-355-5715

Please complete both Forms 4400-113A and 4400-113B and return to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personnally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 6-97

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐

Facility/Project Name	County	Well Name
Christiansen Pole Yard Site	Vilas	PMW-4B

Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number	DNR Well Number
	64		

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method:

surged with bailer and bailed	☐	41
surged with bailer and pumped	☒	61
surged with block and bailed	☐	42
surged with block and pumped	☐	62
surged with block, bailed, and pumped	☐	70
compressed air	☐	20
bailed only	☐	10
pumped only	☐	51
pumped slowly	☐	50
other _____	☐	

3. Time spent developing well 40 min.

4. Depth of well (from top of well casing) 45.1 ft.

5. Inside diameter of well 2.06 in.

6. Volume of water in filter pack and well casing 33.6 gal.

7. Volume of water removed from well 55.0 gal.

8. Volume of water added (if any) gal.

9. Source of water added _____

10. Analysis performed on water added? ☐ Yes ☐ No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing) a.	7.10 ft.	7.10 ft.
Date b.	09/09/2003	09/09/2003
Time c.	09:40 am	10:20 am
12. Sediment in well bottom	inches	inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15 (Describe) Brown Cloudy	Clear ☒ 20 Turbid ☐ 25 (Describe) Clear

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	mg/l	mg/l
15. COD	mg/l	mg/l

16. Well developed by: Person's Name and Firm
G. Jones
Boart Longyear

17. Additional comments on development:

Facility Address or Owner/Responsible Party Address

Name: _____

Firm: _____

Street: _____

City/State/Zip: _____

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: _____

Print Name: RON THALACKER

Firm: Boart Longyear Company

NOTE: See instructions for more information including a list of county codes and well type codes.

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 5-97

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Christiansen Pole Yard Site		PMW-11B

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
Boart Longyear - G. Jones	9/8/2003	9/8/2003	4 1/4" HSA

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		PMW-11B	Feet MSL	Feet MSL	8.0 Inches

Boring Location or Local Grid Origin (Check if estimated: ☐)
State Plane S / C / N
1/4 of 1/4 of Section , T N, R
Lat. ° ' "
Long. ° ' "
Local Grid Location (If applicable)
Feet ☐ N ☐ E
Feet ☐ S ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
11616	Vilas	64	Phelps

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			1	EARTH DRILL										
			2											
			3											
			4											
			5											
			6											
			7											
			8											
			9											
			10											
			11											
			12											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature [signature] Firm Boart Longyear Company
101 Alderson Street Schofield, WI 54476
Tel: 715-359-7090
Fax: 715-355-5715

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State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A Rev. 5-97

Boring Number PMW-11B Use only as an attachment to Form 4400-122.

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
1 SS	24 15	1 1 1 1	24 25	Gry Sandy SILT						W				
2 SS	24 18	4 5 5 7	29 30	Brn Sandy SILT w/Gravel						W				

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A Rev. 5-97

Boring Number PMW-11B Use only as an attachment to Form 4400-122.

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			33											
3 SS	24 8	12 17 18 22	34							W				
			35	Brn SAND & GRAVEL										
			36											
			37											
			38											
4 SS	24 6	10 10 15 20	39							W				
			40											
			41											
			42											
			43											
5 SS	24 12	12 12 18 18	44							W				
			45											
			46											
			47	EOB 47.0' Well Set 46.0'										

State of Wisconsin
Department of Natural Resources

Route To: Watershed/Wastewater ☐ Waste Management ☐ Remediation/Redevelopment ☐ Other ☐

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 6-97

Facility/Project Name: Christiansen Pole Yard Site	Local Grid Location of Well: ____ft. ☐N. ☐S. ____ft. ☐E. ☐W.	Well Name: PMW-11B
Facility License, Permit or Monitoring No.	Grid Origin Location (Check if estimated: ☐) Lat. ° ' " Long. ° ' " or St. Plane ____ ft. N, ____ ft. E. S/C/N	Wis. Unique Well No. / DNR Well Number
Facility ID: 11616	Section Location of Waste/Source: ____1/4 of ____ 1/4 of Sec. ____, T. ____ N, R. ____ ☐E ☐W	Date Well Installed: 09/08/2003
Type of Well: Well Code 12/pz	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☐ Not Known	Well Installed By: (Person's Name and Firm) G. Jones; Boart Longyear
Distance Well Is From Waste/Source Boundary: ____ ft.		

A. Protective pipe, top elevation ____ ft. MSL
B. Well casing, top elevation 2.50 ft. MSL
C. Land surface elevation ____ ft. MSL
D. Surface seal, bottom ____ ft. MSL or 32.0 ft.

12. USC classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis attached? ☐ Yes ☐ No

14. Drilling method used: Rotary ☐ 5 0
Hollow Stem Auger ☒ 4 1
____ Other ☐ __

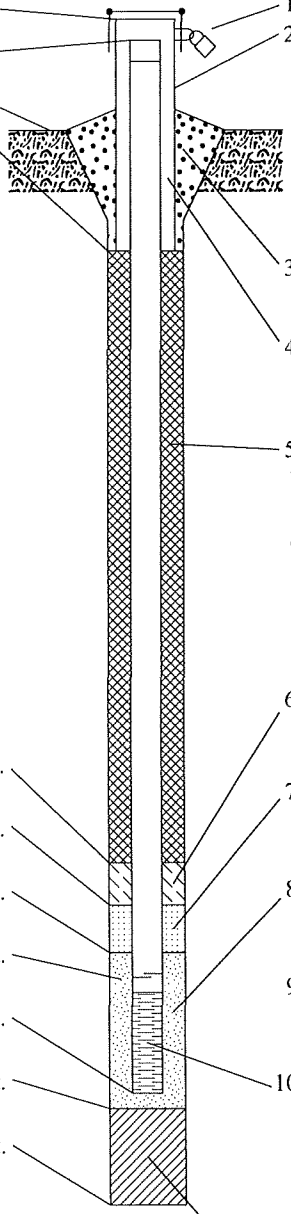
15. Drilling fluid used: Water ☐ 0 2 Air ☐ 0 1
Drilling Mud ☐ 0 3 None ☐ 9 9

16. Drilling additives used? ☐ Yes ☒ No

Describe ____

17. Source of water (attach analysis):
____

E. Bentonite seal, top ____ ft. MSL or 32.0 ft.
F. Fine sand, top ____ ft. MSL or 37.0 ft.
G. Filter pack, top ____ ft. MSL or 39.0 ft.
H. Screen joint, top ____ ft. MSL or 41.0 ft.
I. Well bottom ____ ft. MSL or 46.0 ft.
J. Filter pack, bottom ____ ft. MSL or 47.0 ft.
K. Borehole, bottom ____ ft. MSL or 47.0 ft.
L. Borehole, diameter 8.0 in.
M. O.D. well casing 2.37 in.
N. I.D. well casing 2.06 in.



1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 4.0 in.
b. Length: 7.0 ft.
c. Material: Steel ☒ 0 4
____ Other ☐ __
d. Additional protection? ☐ Yes ☒ No
If yes, describe: ____
3. Surface seal: Bentonite ☒ 3 0
Concrete ☐ 0 1
____ Other ☐ __
4. Material between well casing and protective pipe:
Bentonite ☐ 3 0
Sand Other ☒ __
5. Annular space seal: a. Granular Bentonite ☐ 3 3
b. ____Lbs/gal mud weight . Bentonite-sand slurry ☐ 3 5
c. ____Lbs/gal mud weight . . . Bentonite slurry ☒ 3 1
d. ____% Bentonite . . . Bentonite-cement grout ☐ 5 0
e. ____ Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 0 1
Tremie pumped ☒ 0 2
Gravity ☐ 0 8
6. Bentonite seal: a. Bentonite granules ☒ 3 3
b. ☐ 1/4 in. ☐ 3/8 in. ☐ 1/2 in. Bentonite pellets ☐ 3 2
c. ____ Other ☐ __
7. Fine sand material: Manufacturer, product name and mesh size
a. #7 Badger __
b. Volume added ____ ft^3
8. Filter pack material: Manufacturer, product name and mesh size
a. #40 Badger __
b. Volume added ____ ft^3
9. Well casing: Flush threaded PVC schedule 40 ☒ 2 3
Flush threaded PVC schedule 80 ☐ 2 4
____ Other ☐ __
10. Screen material: PVC __
a. Screen Type: Factory cut ☒ 1 1
Continuous slot ☐ 0 1
____ Other ☐ __
b. Manufacturer Boart Longyear
c. Slot size: 0.010 in.
d. Slotted length: 5.0 ft.
11. Backfill material (below filter pack): None ☒ 1 4
____ Other ☐ __

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: [signature] Firm: Boart Longyear Company, 101 Alderson Street Schofield, WI 54476 Tel: 715-359-7090 Fax: 715-355-5715

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State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 6-97

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐

Facility/Project Name	County	Well Name
Christiansen Pole Yard Site	Vilas	PMW-11B

Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number	DNR Well Number
	64		

1. Can this well be purged dry? ☒ Yes ☐ No

2. Well development method:

surged with bailer and bailed	☐	41
surged with bailer and pumped	☒	61
surged with block and bailed	☐	42
surged with block and pumped	☐	62
surged with block, bailed, and pumped	☐	70
compressed air	☐	20
bailed only	☐	10
pumped only	☐	51
pumped slowly	☐	50
other _____	☐	__

3. Time spent developing well 30 min.

4. Depth of well (from top of well casing) 48.6 ft.

5. Inside diameter of well 2.06 in.

6. Volume of water in filter pack and well casing 41.2 gal.

7. Volume of water removed from well 55.0 gal.

8. Volume of water added (if any) gal.

9. Source of water added _____

10. Analysis performed on water added? ☐ Yes ☐ No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing) a.	2.00 ft.	2.00 ft.
Date b.	09/09/2003	09/09/2003
Time c.	08:30 am	09:00 am
12. Sediment in well bottom	inches	inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15	Clear ☒ 20 Turbid ☐ 25
(Describe)	Brown Cloudy	Clear

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	mg/l	mg/l
15. COD	mg/l	mg/l

16. Well developed by: Person's Name and Firm
C. Huther
Boart Longyear

17. Additional comments on development:

Facility Address or Owner/Responsible Party Address

Name: _____

Firm: _____

Street: _____

City/State/Zip: _____

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: _____

Print Name: RON THALACKER

Firm: Boart Longyear Company

NOTE: See instructions for more information including a list of county codes and well type codes.

Saari, Christopher A

From: Janisch, Tom [janist@powerweb.net]
Sent: Thursday, October 02, 2003 9:39 AM
To: Saari, Christopher A
Subject: Christiansen Followup

Christiansen Followup 10-1.doc...

Chris
Attached are some notes on contact with NRT person at the site.

Also, I printed off your e-mail where Jody of NRT had some questions and comments in regard to the surface water and sediment sampling. I talked to him at the site in regard to some of the things he brought up. I thought I printed off your e-mail but can't seem to find it in my stuff. If you want any written response in regard to the NRT e-mail comments, let me know and send me a copy of NRTs Monday e-mail at janist@powerweb.net. I will provide responses to you for forwarding.

Tom J.

CORRESPONDENCE/MEMORANDUM

State of Wisconsin

DATE: October 1, 2003 FILE REF:

TO: Chris Saari – NOR /Ashland

FROM: Tom Janisch

SUBJECT: Notes on Contacts With NRT Personnel on September 30, 2003 at Christiansen Site During Surface Water and Sediment Sampling Activities

During our sediment and surface water sampling activities on September 30, 2003, we were observed by Jody _____ from NRT.

Sediment Samples

The NRT person asked if we could provide splits of our sediment samples to him. My understanding was that they wanted to archive the samples for possible later use to confirm any dioxin/furan analytical results we got from our samples. It wasn't clear to me if another intent for the split samples by NRT was to do particle size analysis. NRT asked for 1 liter of sediment. I indicated that this would likely go beyond the amount of samples we would collect to meet our purposes. Coring to obtain the amount of sediment materials we needed was difficult enough. To gain additional materials to meet both needs would have required more time and effort. The NRT person indicated he would take what we could provide. For the B segments at all of the sites, which was the longer segment collected for analysis, there generally was enough excess material to meet NRT's needs. For the A segment which was the shorter of the two segments, there was also excess material that was provided to NRT, but it was generally in the 500 ml range.

In providing the split samples to NRT the following should be noted in regard to quality assurance issues as they relate to the sediment samples provided to NRT:

Sample Container – NRT provided plastic Zip Loc bags for the split sediment samples we provided. Standard procedures where dioxin/furan analyses are involved would be to place the samples in properly cleaned glass jars with a Teflon lid.

Chain-of-Custody Procedures – The NRT person did not provide any chain-of-custody forms for me to sign when I turned the samples over to him so I don't know how they are documenting handling and possession of their samples.

Preservation – NRT took possession of the bagged samples at out vehicle when we returned to the processing area after collection at each site. I did not see if NRT person put their bagged samples on ice in coolers in his van to meet the 4 ^{0} C preservation requirement between the time of sample collection and analysis.

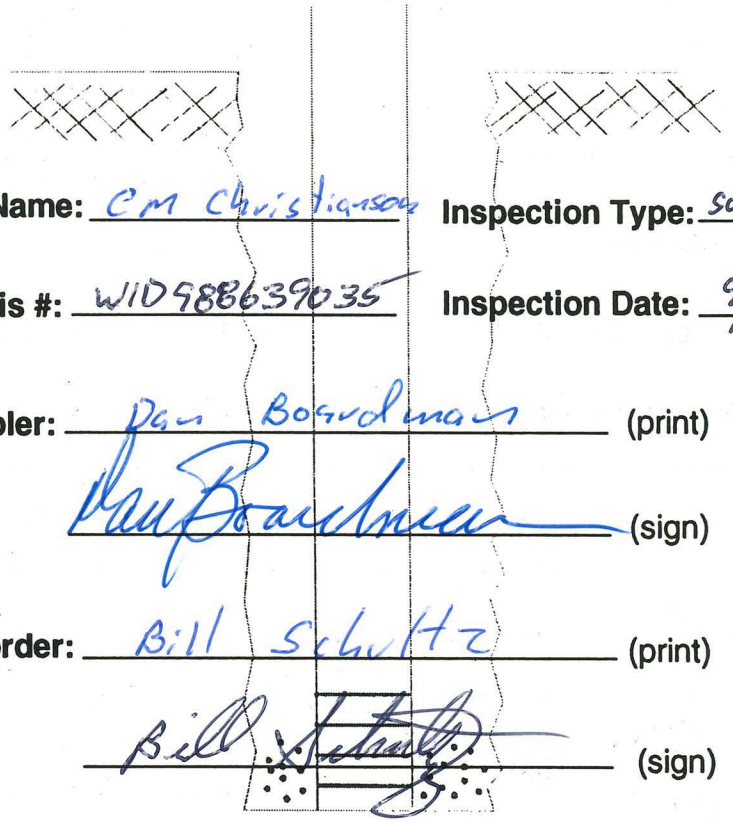
Holding Times – There are two time periods that are involved with the handling of the sediment samples for dioxin analysis that need to be met. 1) The dioxins/furans must be extracted from the sample within 14 days (depending on what guidelines are being followed this period may also be 7 or 10 days) after collection of the sample, and 2) the dioxins/furans need to be analyzed within 40 days after extraction. I assume If NRT waits for our results before doing any of the above steps, they will be well beyond the holding times involved.

Surface Water Sampling

The NRT person observed our collection of surface water samples at several sites. NRT did not take any surface water samples at the sites where we collected our samples or do any other measurements. They NRT person was not present when surface water samples were taken at SW-01 or SW-06.

MONITORING WELL SAMPLING FIELDBOOK

WDNR Brownfields Environmental Assessment Program



Site Name: CM Christianson **Inspection Type:** sampling

Cerclis #: WID988639035 **Inspection Date:** 9/30/03

Sampler: Dan Boardman (print)

Dan Boardman (sign)

Recorder: Bill Schultz (print)

Bill Schultz (sign)

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Form 4400-204 8-98

MONITORING WELL SAMPLING

PAGE 1 OF 6

Sample Number: GW-07

Sampling Time: ~~9:45~~ 9:45

Well Name: PMW-4A

PID/FID Reading: NA

QC Sample: YES NO Duplicate MSD Rinsate Trip Blank

Depth to Bottom: 45.8 (ft)

Water Column Length (A): 38.9 (ft)

Depth to Water: 6.9 (ft)

Inside Well Diameter: 2" (in)

38.9

Volume to be purged (AxB) 24 gal 38.9 × .65 = 24.

Time purging began 9:10

Time purging complete 9:43

Purged dry YES (NO)

Inches*	B
1.00	0.163
1.25	0.255
1.50	0.367
2.00	0.652
3.00	1.469
4.00	2.610

*Inside Well Diameter

Sampling Equipment: bailer

Dedicated Equipment: YES (NO)

Bailer No.:

Sample Description (include color, odor, turbidity, etc.):

lt brown no odo. turbid

Comments (include problems encountered/deviations from sampling plan)

Photo number(s):

Photo direction(s):

WELL CAP REPLACED AND LOCKED YES NO

MONITORING WELL SAMPLING

PAGE 2 OF 6

23 − 0.5 = 11.5 / 13.2 / 14.7

Sample Number: GW-06

Sampling Time: 9:55

Well Name: PMW-4A

PID/FID Reading: 0

QC Sample: YES NO Duplicate (MSD) Rinsate Trip Blank

MS & MSD

Depth to Bottom: 29.8 (ft)

Water Column Length (A): 23.3 (ft)

Depth to Water: 6.48 (ft)

Inside Well Diameter: 2" (in)

Volume to be purged (AxB) 15.

Time purging began 9:15

Time purging complete 9:43

Purged dry YES (NO)

Inches*	B
1.00	0.163
1.25	0.255
1.50	0.367
2.00	0.652
3.00	1.469
4.00	2.610

*Inside Well Diameter

Sampling Equipment: bailer

Dedicated Equipment: YES (NO)

Bailer No.:

Sample Description (include color, odor, turbidity, etc.):

M brown

Comments (include problems encountered/deviations from sampling plan)

Lost bailer down the well nylon rope Bailer untied.

Photo number(s):

Photo direction(s):

WELL CAP REPLACED AND LOCKED YES NO

MONITORING WELL SAMPLING

Sample Number: GW-05 Sampling Time: 10:40

Well Name: MW-4 PID/FID Reading: NA

QC Sample: YES NO Duplicate MSD Rinsate Trip Blank

Depth to Bottom: 16.5 (ft) Water Column Length (A): 10 (ft)

Depth to Water: 5.60 (ft) Inside Well Diameter: .65 (in)

Inches*	B
1.00	0.163
1.25	0.255
1.50	0.367
2.00	0.652
3.00	1.469
4.00	2.610

*Inside Well Diameter

Volume to be purged (AxB) 1 gal

Time purging began 10:40

Time purging complete _____

Purged dry YES (NO)

Sampling Equipment: bailer

Dedicated Equipment: (YES) NO Bailer No.: _____

Sample Description (include color, odor, turbidity, etc.): lt brown swampy odor.

Comments (include problems encountered/deviations from sampling plan) _____

Photo number(s): _____ Photo direction(s): _____

WELL CAP REPLACED AND LOCKED YES NO

MONITORING WELL SAMPLING

Sample Number: GW-02 Sampling Time: 11:45

Well Name: ~~MW-02~~ PMW-11B PID/FID Reading: NA

QC Sample: YES NO Duplicate MSD Rinsate Trip Blank

Depth to Bottom: 36.5 (ft) Water Column Length (A): 32.25 (ft)

Depth to Water: 4.25 (ft) Inside Well Diameter: .65 (in)

Inches*	B
1.00	0.163
1.25	0.255
1.50	0.367
2.00	0.652
3.00	1.469
4.00	2.610

*Inside Well Diameter

Volume to be purged (AxB) 2 l

Time purging began 11:15

Time purging complete 11:45

Purged dry YES (NO)

Sampling Equipment: bailer

Dedicated Equipment: YES (NO) Bailer No.: _____

Sample Description (include color, odor, turbidity, etc.): lt brown turbid

Comments (include problems encountered/deviations from sampling plan) GW-02 was sampled from monitoring well PMW-11B (not from MW10 as was listed on the sampling plan)

Photo number(s): _____ Photo direction(s): _____

WELL CAP REPLACED AND LOCKED YES NO

MONITORING WELL SAMPLING

PAGE 5 OF 6

Sample Number: GW-03

Sampling Time: 11:55

Well Name: PMW-11

PID/FID Reading: NA

QC Sample: YES NO Duplicate MSD Rinsate Trip Blank

Depth to Bottom: 29.0 (ft)

Water Column Length (A): 23.4 (ft)

Depth to Water: 5.60 (ft)

Inside Well Diameter: 0.65 (in)

Inches*	B
1.00	0.163
1.25	0.255
1.50	0.367
2.00	0.652
3.00	1.469
4.00	2.610

*Inside Well Diameter

Volume to be purged (AxB) 16 gal

Time purging began 11:15

Time purging complete 11:45

Purged dry YES (NO)

Sampling Equipment: bailer

Dedicated Equipment: (YES) NO

Bailer No.:

Sample Description (include color, odor, turbidity, etc.):

clear

Comments (include problems encountered/deviations from sampling plan)

Photo number(s):

Photo direction(s):

WELL CAP REPLACED AND LOCKED YES NO

MONITORING WELL SAMPLING

PAGE 6 OF 6

Sample Number: GW-04

Sampling Time: 12:50

Well Name: MW-10

PID/FID Reading: NA

QC Sample: YES NO (Duplicate) MSD Rinsate Trip Blank

Depth to Bottom: 13.0 (ft)

Water Column Length (A): 6 (ft)

Depth to Water: 5.7 (ft)

Inside Well Diameter: .65 (in)

Inches*	B
1.00	0.163
1.25	0.255
1.50	0.367
2.00	0.652
3.00	1.469
4.00	2.610

*Inside Well Diameter

Volume to be purged (AxB) 4 gal

Time purging began 12:40

Time purging complete 12:50

Purged dry YES NO

Sampling Equipment: bailer

Dedicated Equipment: (YES) NO

Bailer No.:

Sample Description (include color, odor, turbidity, etc.):

lt brown turbid

slight swampy odor.

Comments (include problems encountered/deviations from sampling plan)

GW-04 was sampled from MW-10 (not PMW-11B as was listed on the sampling plan)

Photo number(s):

Photo direction(s):

WELL CAP REPLACED AND LOCKED YES NO

SOIL/SEDIMENT SAMPLING FIELDBOOK

WDNR Brownfields Environmental Assessment Program

Name: C.M. Christiensen Inspection Type: _____

clis #: _____ Inspection Date: 9-30-03

npler: Tom Janisch (print)

Tom Janisch (sign)

corder: Chuck Weister (print)

Chuck Weister (sign)

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rm 4400-203 8-98

SOIL/SEDIMENT SAMPLING

SOIL / SEDIMENT (CIRCLE ONE)

Sample Number: SED-02A Sampling Time: 4:00

QC Sample: YES NO Duplicate MSD

Depth of Sample: _____ PID/FID Reading: _____

Grab / Composite (Circle One) If composite, number of locations: _____

If composite, spacing btwn locations: _____

Sample Location (include distance to a permanent feature):

3ft off west bank
8" from top of sediment
Very Flocculant

(Sketch)

Sampling Methods / Equipment: _____

Dedicated Equipment: YES NO

Sample Description (include color, texture, mottling/staining, odor, etc.): _____

Med. Brown
Silty with organics

Comments (include problems encountered/deviations from sampling plan): _____

~~Core #1 36" Clay~~
Core #01 34"
Core # 3 = 29

Soft Sediment > 5 ft.

Photo number(s): 12 Photo direction(s): _____

SOIL/SEDIMENT SAMPLING

SOIL / SEDIMENT (CIRCLE ONE)

Sample Number: SED-02B Sampling Time: 4:04

QC Sample: YES NO Duplicate MSD

Depth of Sample: _____ PID/FID Reading: _____

Grab / Composite (Circle One) If composite, number of locations: _____

If composite, spacing btwn locations: _____

Sample Location (include distance to a permanent feature):

(Sketch)

Sampling Method / Equipment: _____

Dedicated Equipment: YES NO

Sample Description (include color, texture, mottling/staining, odor, etc.): _____

Med. Brown
Silty
Woody - Fibrous - Natural odor

Comments (include problems encountered/deviations from sampling plan): _____

Photo number(s): _____ Photo direction(s): _____

SOIL / SEDIMENT (CIRCLE ONE)

Sample Number: _____ Sampling Time: _____

QC Sample: YES NO Duplicate MSD

Depth of Sample: _____ PID/FID Reading: _____

Grab / Composite (Circle One) If composite, number of locations: _____

If composite, spacing btwn locations: _____

Sample Location (include distance to a permanent feature):

_____

_____

_____

_____

(Sketch)

Sampling Methods / Equipment: _____

_____

Dedicated Equipment: YES NO

Sample Description (include color, texture, mottling/staining, odor, etc.): _____

_____

_____

_____

Comments (include problems encountered/deviations from sampling plan): _____

_____

_____

_____

_____

_____

Photo number(s): _____ Photo direction(s): _____

SOIL / SEDIMENT (CIRCLE ONE)

Sample Number: _____ Sampling Time: _____

QC Sample: YES NO Duplicate MSD

Depth of Sample: _____ PID/FID Reading: _____

Grab / Composite (Circle One) If composite, number of locations: _____

If composite, spacing btwn locations: _____

Sample Location (include distance to a permanent feature):

_____

_____

_____

_____

(Sketch)

Sampling Method / Equipment: _____

_____

Dedicated Equipment: YES NO

Sample Description (include color, texture, mottling/staining, odor, etc.): _____

_____

_____

_____

Comments (include problems encountered/deviations from sampling plan): _____

_____

_____

_____

_____

_____

Photo number(s): _____ Photo direction(s): _____

SOIL / SEDIMENT (CIRCLE ONE)

Sample Number: _____ Sampling Time: _____

QC Sample: YES NO Duplicate MSD

Depth of Sample: _____ PID/FID Reading: _____

Grab / Composite (Circle One) If composite, number of locations: _____

If composite, spacing btwn locations: _____

Sample Location (include distance to a permanent feature):

_____

_____

_____

_____

(Sketch)

Sampling Methods / Equipment: _____

_____

Dedicated Equipment: YES NO

Sample Description (include color, texture, mottling/staining, odor, etc.): _____

_____

_____

_____

Comments (include problems encountered/deviations from sampling plan): _____

_____

_____

_____

_____

_____

Photo number(s): _____ Photo direction(s): _____

SOIL / SEDIMENT (CIRCLE ONE)

Sample Number: _____ Sampling Time: _____

QC Sample: YES NO Duplicate MSD

Depth of Sample: _____ PID/FID Reading: _____

Grab / Composite (Circle One) If composite, number of locations: _____

If composite, spacing btwn locations: _____

Sample Location (include distance to a permanent feature):

_____

_____

_____

_____

(Sketch)

Sampling Method / Equipment: _____

_____

Dedicated Equipment: YES NO

Sample Description (include color, texture, mottling/staining, odor, etc.): _____

_____

_____

_____

Comments (include problems encountered/deviations from sampling plan): _____

_____

_____

_____

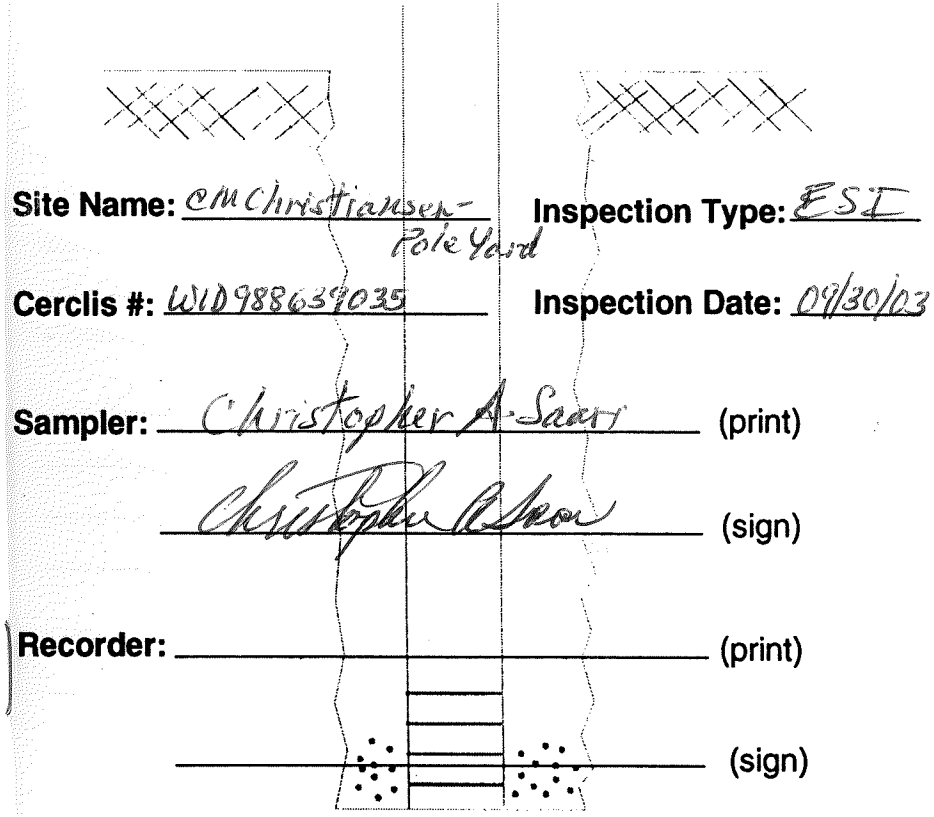
_____

_____

Photo number(s): _____ Photo direction(s): _____

MONITORING WELL SAMPLING FIELDBOOK

WDNR Brownfields Environmental Assessment Program



Site Name: CM Christiansen - Pole Yard **Inspection Type:** ESI

Cerclis #: WID988639035 **Inspection Date:** 09/30/03

Sampler: Christopher A. Saari (print)

Christopher A. Saari (sign)

Recorder: _____ (print)

_____ (sign)

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Form 4400-204 8-98

MONITORING WELL SAMPLING

Sample Number: GW-01

Sampling Time: 1145 hr

Well Name: MW-02

PID/FID Reading: _____

QC Sample: YES NO Duplicate MSD Rinsate Trip Blank

Depth to Bottom: 37.2 TOC (ft)

Water Column Length (A): 7.65 (ft)

Depth to Water: 29.55 TOC (ft)

Inside Well Diameter: 2.06 (in)

Volume to be purged (AxB) 4.98

Time purging began 1115 hr

Time purging complete 1140

Purged dry (YES) NO

Inches*	B
1.00	0.163
1.25	0.255
1.50	0.367
2.00	0.652
3.00	1.469
4.00	2.610

*Inside Well Diameter

Sampling Equipment: BAILER

Dedicated Equipment: (YES) NO

Bailer No.: MW-2

Sample Description (include color, odor, turbidity, etc.):

TURBIDITY CLEAR, NO ODOR

Comments (include problems encountered/deviations from sampling plan)

BAILER ROPE NOT LONG ENOUGH

ADDED EXTRA SECTION - REPLACED

WELL LOCK WITH NEW LOCK - OWR #

BAILER 2 LEFT IN WELL

Photo number(s): _____

Photo direction(s): _____

WELL CAP REPLACED AND LOCKED (YES) NO

MONITORING WELL SAMPLING

Sample Number: _____

Sampling Time: _____

Well Name: _____

PID/FID Reading: _____

QC Sample: YES NO Duplicate MSD Rinsate Trip Blank

Depth to Bottom: _____ (ft)

Water Column Length (A): _____ (ft)

Depth to Water: _____ (ft)

Inside Well Diameter: _____ (in)

Volume to be purged (AxB) _____

Time purging began _____

Time purging complete _____

Purged dry YES NO

Inches*	B
1.00	0.163
1.25	0.255
1.50	0.367
2.00	0.652
3.00	1.469
4.00	2.610

*Inside Well Diameter

Sampling Equipment: _____

Dedicated Equipment: YES NO

Bailer No.: _____

Sample Description (include color, odor, turbidity, etc.): _____

Comments (include problems encountered/deviations from sampling plan) _____

Photo number(s): _____

Photo direction(s): _____

WELL CAP REPLACED AND LOCKED YES NO

Sample Number: _____ Sampling Time: _____

Well Name: _____ PID/FID Reading: _____

QC Sample: YES NO Duplicate MSD Rinsate Trip Blank

Depth to Bottom: _____ (ft) Water Column Length (A): _____ (ft)

Depth to Water: _____ (ft) Inside Well Diameter: _____ (in)

Inches*	B
1.00	0.163
1.25	0.255
1.50	0.367
2.00	0.652
3.00	1.469
4.00	2.610

*Inside Well Diameter

Volume to be purged (AxB) _____

Time purging began _____

Time purging complete _____

Purged dry YES NO

Sampling Equipment: _____

_____

Dedicated Equipment: YES NO Bailer No.: _____

Sample Description (include color, odor, turbidity, etc.): _____

_____

_____

_____

Comments (include problems encountered/deviations from sampling plan) _____

_____

_____

_____

_____

_____

Photo number(s): _____ Photo direction(s): _____

WELL CAP REPLACED AND LOCKED YES NO

Sample Number: _____ Sampling Time: _____

Well Name: _____ PID/FID Reading: _____

QC Sample: YES NO Duplicate MSD Rinsate Trip Blank

Depth to Bottom: _____ (ft) Water Column Length (A): _____ (ft)

Depth to Water: _____ (ft) Inside Well Diameter: _____ (in)

Inches*	B
1.00	0.163
1.25	0.255
1.50	0.367
2.00	0.652
3.00	1.469
4.00	2.610

*Inside Well Diameter

Volume to be purged (AxB) _____

Time purging began _____

Time purging complete _____

Purged dry YES NO

Sampling Equipment: _____

_____

Dedicated Equipment: YES NO Bailer No.: _____

Sample Description (include color, odor, turbidity, etc.): _____

_____

_____

_____

Comments (include problems encountered/deviations from sampling plan) _____

_____

_____

_____

_____

_____

Photo number(s): _____ Photo direction(s): _____

WELL CAP REPLACED AND LOCKED YES NO

Sample Number: _____ Sampling Time: _____

Well Name: _____ PID/FID Reading: _____

QC Sample: YES NO Duplicate MSD Rinsate Trip Blank

Depth to Bottom: _____ (ft) Water Column Length (A): _____ (ft)

Depth to Water: _____ (ft) Inside Well Diameter: _____ (in)

Inches *	B
1.00	0.163
1.25	0.255
1.50	0.367
2.00	0.652
3.00	1.469
4.00	2.610

*Inside Well Diameter

Volume to be purged (AxB) _____

Time purging began _____

Time purging complete _____

Purged dry YES NO

Sampling Equipment: _____

_____

Dedicated Equipment: YES NO Bailer No.: _____

Sample Description (include color, odor, turbidity, etc.): _____

_____

_____

_____

Comments (include problems encountered/deviations from sampling plan) _____

_____

_____

_____

_____

_____

Photo number(s): _____ Photo direction(s): _____

WELL CAP REPLACED AND LOCKED YES NO

Sample Number: _____ Sampling Time: _____

Well Name: _____ PID/FID Reading: _____

QC Sample: YES NO Duplicate MSD Rinsate Trip Blank

Depth to Bottom: _____ (ft) Water Column Length (A): _____ (ft)

Depth to Water: _____ (ft) Inside Well Diameter: _____ (in)

Inches *	B
1.00	0.163
1.25	0.255
1.50	0.367
2.00	0.652
3.00	1.469
4.00	2.610

*Inside Well Diameter

Volume to be purged (AxB) _____

Time purging began _____

Time purging complete _____

Purged dry YES NO

Sampling Equipment: _____

_____

Dedicated Equipment: YES NO Bailer No.: _____

Sample Description (include color, odor, turbidity, etc.): _____

_____

_____

_____

Comments (include problems encountered/deviations from sampling plan) _____

_____

_____

_____

_____

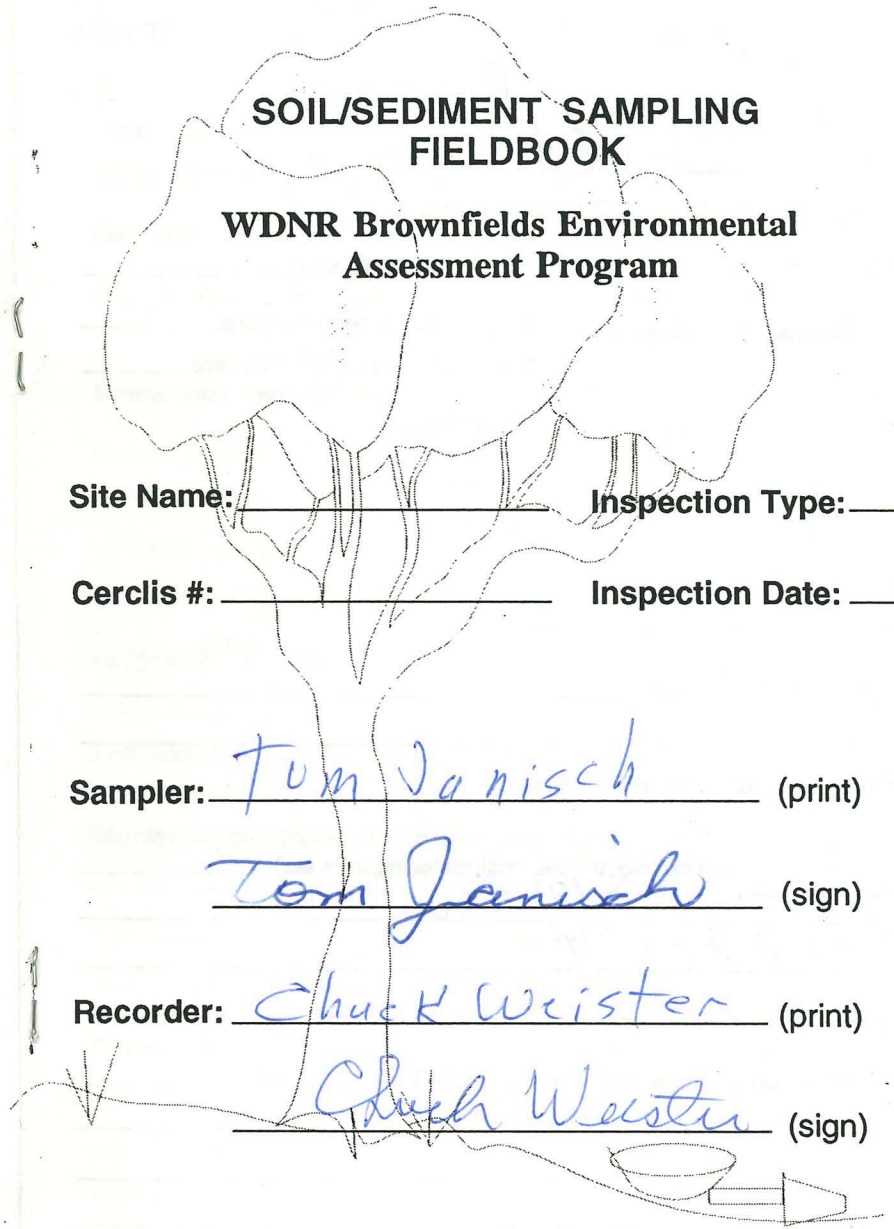
_____

Photo number(s): _____ Photo direction(s): _____

WELL CAP REPLACED AND LOCKED YES NO

SOIL/SEDIMENT SAMPLING FIELDBOOK

WDNR Brownfields Environmental Assessment Program



Site Name: _____ **Inspection Type:** _____

Cerclis #: _____ **Inspection Date:** _____

Sampler: Tom Janisch (print)

Tom Janisch (sign)

Recorder: Chuck Weister (print)

Chuck Weister (sign)

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SOIL / SEDIMENT (CIRCLE ONE)

Sample Number: SED-~~00~~05A cw Sampling Time: _____

QC Sample: YES NO Duplicate MSD

Depth of Sample: _____ PID/FID Reading: _____

Grab / Composite (Circle One) If composite, number of locations: _____

If composite, spacing btwn locations: _____

Sample Location (include distance to a permanent feature):

_____

_____

_____

_____ (Sketch)

Sampling Methods / Equipment: _____

_____

Dedicated Equipment: YES NO

Sample Description (include color, texture, mottling/staining, odor, etc.): _____

Core #1 = 17" Clay

Core #2 = 17"

Comments (include problems encountered/deviations from sampling plan): _____

_____

_____

_____

_____

Photo number(s): 9 Photo direction(s): _____

SOIL / SEDIMENT (CIRCLE ONE)

Sample Number: SED-05B Sampling Time: _____

QC Sample: YES NO Duplicate MSD

Depth of Sample: _____ PID/FID Reading: _____

Grab / Composite (Circle One) If composite, number of locations: _____

If composite, spacing btwn locations: _____

Sample Location (include distance to a permanent feature):

_____

_____

_____

_____ (Sketch)

Sampling Method / Equipment: _____

_____

Dedicated Equipment: YES NO

Sample Description (include color, texture, mottling/staining, odor, etc.): _____

_____

_____

_____

Comments (include problems encountered/deviations from sampling plan): _____

_____

_____

_____

_____

_____

Photo number(s): _____ Photo direction(s): _____

SOIL / SEDIMENT (CIRCLE ONE)

Sample Number: SED-04A Sampling Time: 2:35

QC Sample: YES NO Duplicate MSD

Depth of Sample: _____ PID/FID Reading: _____

Grab / Composite (Circle One) If composite, number of locations: _____

If composite, spacing btwn locations: _____

Sample Location (include distance to a permanent feature):

4 ft from east bank
Inside depositional area

(Sketch)

Sampling Methods / Equipment: _____

Dedicated Equipment: YES NO

Sample Description (include color, texture, mottling/staining, odor, etc.): _____

Plant organic layer (1cm) on top
Brown dominated by sand

Comments (include problems encountered/deviations from sampling plan): _____

Core # 1 = 31"
" #2 = 29"

Depth to refusal = ?
Soft sediment > 5 ft

Photo number(s): 10 Photo direction(s): _____

SOIL / SEDIMENT (CIRCLE ONE)

Sample Number: SED-04B Sampling Time: 2:39

QC Sample: YES NO Duplicate MSD

Depth of Sample: _____ PID/FID Reading: _____

Grab / Composite (Circle One) If composite, number of locations: _____

If composite, spacing btwn locations: _____

Sample Location (include distance to a permanent feature):

(Sketch)

Sampling Method / Equipment: _____

Dedicated Equipment: YES NO

Sample Description (include color, texture, mottling/staining, odor, etc.): _____

Slight Petro odor / Natural Marly Odor
Medium Brown
Black Inclusions
Silt

Comments (include problems encountered/deviations from sampling plan): _____

Photo number(s): _____ Photo direction(s): _____

SOIL / SEDIMENT (CIRCLE ONE)

Sample Number: SED-03A Sampling Time: 3:18

QC Sample: YES NO Duplicate MSD

Depth of Sample: _____ PID/FID Reading: _____

Grab / Composite (Circle One) If composite, number of locations: _____

If composite, spacing btwn locations: _____

Sample Location (include distance to a permanent feature):

1 ft. from East Bank

(Sketch)

Sampling Methods / Equipment: _____

Dedicated Equipment: YES NO

Sample Description (include color, texture, mottling/staining, odor, etc.):

Med Brown
High Water Content
Silty
Natural Marley Odor

Comments (include problems encountered/deviations from sampling plan):

Core #1 = 38"
#2 = 36"
Soft Sediment > 3-1

Segment B

Photo number(s): # 11 Photo direction(s): _____

SOIL / SEDIMENT (CIRCLE ONE)

Sample Number: SED-03B Sampling Time: 3:29

QC Sample: YES NO Duplicate MSD

Depth of Sample: _____ PID/FID Reading: _____

Grab / Composite (Circle One) If composite, number of locations: _____

If composite, spacing btwn locations: _____

Sample Location (include distance to a permanent feature):

(Sketch)

Sampling Method / Equipment: _____

Dedicated Equipment: YES NO

Sample Description (include color, texture, mottling/staining, odor, etc.):

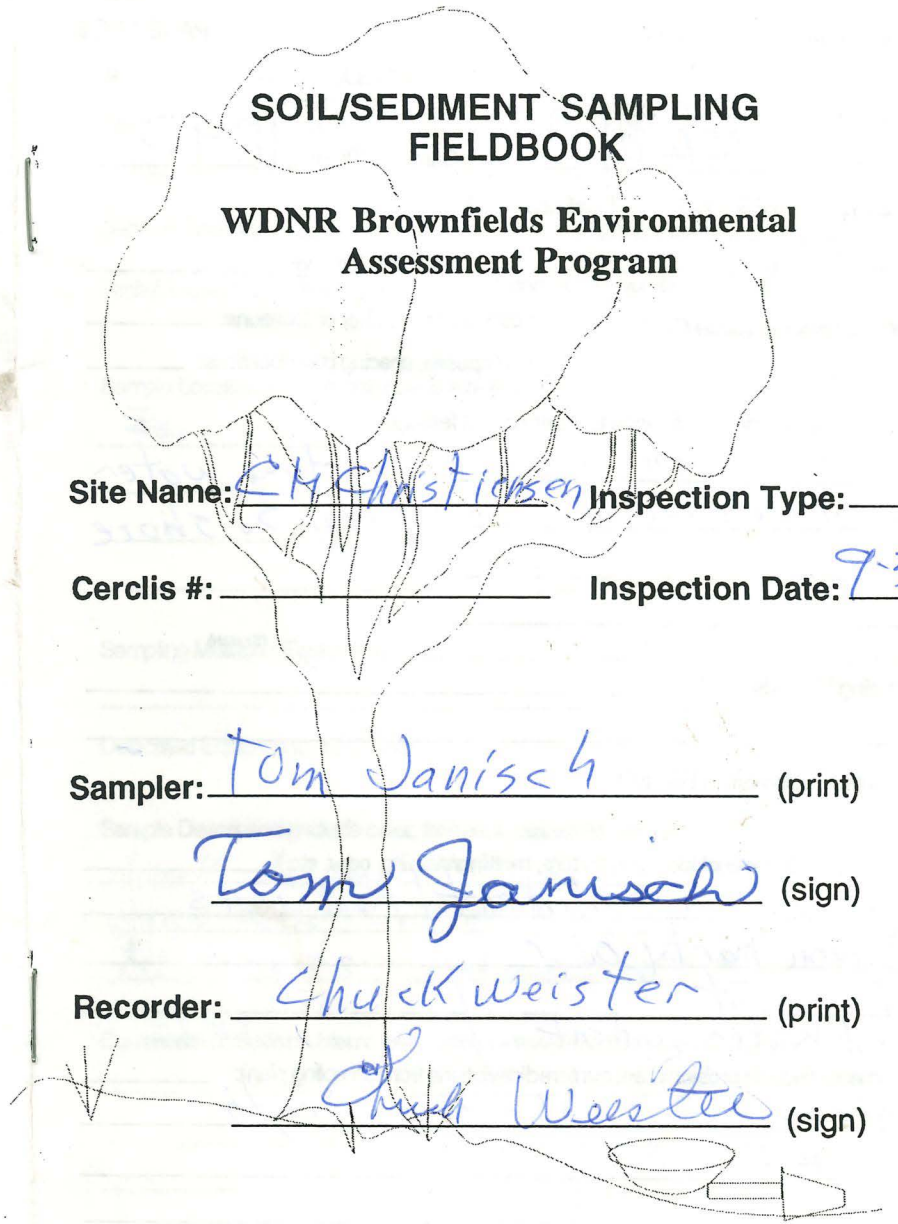
Med. Brown
Soft Silty Sediment
Natural Marley Odor

Comments (include problems encountered/deviations from sampling plan):

Photo number(s): _____ Photo direction(s): _____

SOIL/SEDIMENT SAMPLING FIELDBOOK

WDNR Brownfields Environmental Assessment Program



Site Name: C.M. Christiansen **Inspection Type:** _____

Cerclis #: _____ **Inspection Date:** 9-30-03

Sampler: Tom Janisch (print)

Tom Janisch (sign)

Recorder: Chuck Weister (print)

Chuck Weister (sign)

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SOIL / SEDIMENT (CIRCLE ONE)

Sample Number: SED-01 A Sampling Time: 11:43

QC Sample: YES NO Duplicate MSD

Depth of Sample: _____ PID/FID Reading: _____

Grab / Composite (Circle One) If composite, number of locations: _____

If composite, spacing btwn locations: _____

Sample Location (include distance to a permanent feature):

Sample depth Same as surface water
Sample collected 1 foot from So shore

(Sketch)

Sampling Methods / Equipment: _____

Dedicated Equipment: YES NO

Sample Description (include color, texture, mottling/staining, odor, etc.): _____

Dark Brown Sediment / Plant roots
Natural marly odor
Flocculant
High Water Content

Comments (include problems encountered/deviations from sampling plan): _____

Core #1 = 30" retrieved length
#2 36" "

A = 6" in both cores
B = remaining sample in both cores

Photo number(s): 7 Photo direction(s): _____

SOIL / SEDIMENT (CIRCLE ONE)

Sample Number: SED01-B Sampling Time: 11:46

QC Sample: YES NO Duplicate MSD

Depth of Sample: _____ PID/FID Reading: _____

Grab / Composite (Circle One) If composite, number of locations: _____

If composite, spacing btwn locations: _____

Sample Location (include distance to a permanent feature):

Same

(Sketch)

Sampling Method / Equipment: _____

Dedicated Equipment: YES NO

Sample Description (include color, texture, mottling/staining, odor, etc.): _____

Dark Brown
High Water Content (LA)
Plant parts + roots visable.
Natural Marly odor

Comments (include problems encountered/deviations from sampling plan): _____

Photo number(s): 7 Photo direction(s): _____

SOIL / SEDIMENT (CIRCLE ONE)

Sample Number: SED-06 A Sampling Time: 12:54

QC Sample: YES NO Duplicate MSD

Depth of Sample: _____ PID/FID Reading: _____

Grab / Composite (Circle One) If composite, number of locations: _____

If composite, spacing btwn locations: _____

Sample Location (include distance to a permanent feature):

_____

_____

_____

_____

(Sketch)

Sampling Methods / Equipment: _____

_____

Dedicated Equipment: YES NO

Sample Description (include color, texture, mottling/staining, odor, etc.): _____

Core # 1 = 17" Half to A or B

Core # 2 = 17" "

Core # 3 = 18" "

Core # 4 = 16" "

Comments (include problems encountered/deviations from sampling plan): _____

High Water Content

Dark Brown

Nonusual Odor

Silty muck

Point of refusal = 18"

Photo number(s): 8 Photo direction(s): _____

SOIL / SEDIMENT (CIRCLE ONE)

Sample Number: SED-06B Sampling Time: 12:58

QC Sample: YES NO Duplicate MSD

Depth of Sample: _____ PID/FID Reading: _____

Grab / Composite (Circle One) If composite, number of locations: _____

If composite, spacing btwn locations: _____

Sample Location (include distance to a permanent feature):

_____

_____

_____

_____

(Sketch)

Sampling Method / Equipment: _____

_____

Dedicated Equipment: YES NO

Sample Description (include color, texture, mottling/staining, odor, etc.): _____

Comments (include problems encountered/deviations from sampling plan): _____

Light Brown - sand dominated

Point of refusal = 18"

Photo number(s): 8 Photo direction(s): _____

SOIL / SEDIMENT (CIRCLE ONE)

Sample Number: SED-05A Sampling Time: 1:40

QC Sample: YES NO Duplicate MSD

Depth of Sample: _____ PID/FID Reading: _____

Grab / Composite (Circle One) If composite, number of locations: _____

If composite, spacing btwn locations: _____

Sample Location (include distance to a permanent feature):

4 ft from N. Shore

(Sketch)

Sampling Methods / Equipment: _____

Dedicated Equipment: YES NO

Sample Description (include color, texture, mottling/staining, odor, etc.):

Dark Brown, Silty material
No odor, High Water Content

Comments (include problems encountered/deviations from sampling plan):

Core #1 = 21"
#2 = 24"
Point of Refusal = 30"

Photo number(s): 9 Photo direction(s): _____

SOIL / SEDIMENT (CIRCLE ONE)

Sample Number: SED-05B Sampling Time: 1:44

QC Sample: YES NO Duplicate MSD

Depth of Sample: _____ PID/FID Reading: _____

Grab / Composite (Circle One) If composite, number of locations: _____

If composite, spacing btwn locations: _____

Sample Location (include distance to a permanent feature):

(Sketch)

Sampling Method / Equipment: _____

Dedicated Equipment: YES NO

Sample Description (include color, texture, mottling/staining, odor, etc.):

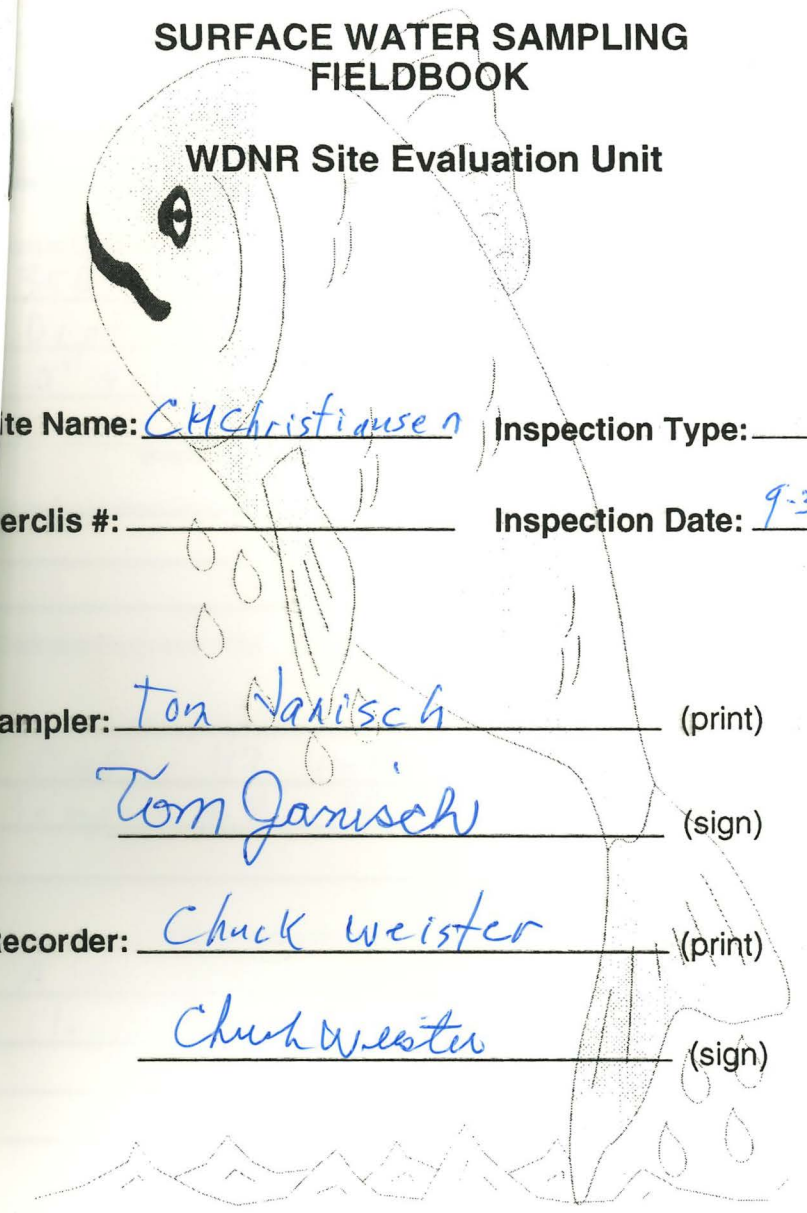
Dark Brown
No observable odors
Less water content than A
Sand at bottom of cores

Comments (include problems encountered/deviations from sampling plan):

Photo number(s): _____ Photo direction(s): _____

SURFACE WATER SAMPLING FIELDBOOK

WDNR Site Evaluation Unit



Site Name: CH Christiansen **Inspection Type:** _____

Cerclis #: _____ **Inspection Date:** 9-30-03

Sampler: Tom Janisch (print)

Tom Janisch (sign)

Recorder: Chuck Weister (print)

Chuck Weister (sign)

CROSSED-OUT (X) PAGES INDICATE LEFT INTENTIONALLY BLANK BY RECORDER

SURFACE WATER SAMPLING

Sample Number: SW-03 Sampling Time: 10:10

QC Sample: YES (NO) Duplicate MSD Rinsate Trip Blank

PID/FID Reading: _____

Water Body Type: Creek Flow: none (slow) mod rapid

Dimensions (est): 20' wide Substrate: Sand

Sample Location (include distance to a permanent feature):

175' Upgradient of CTH W & Culvert
Mid depth = 12"
Mid stream

(Sketch)

Sampling Method/ Equipment: Grab

Dedicated Equipment: YES NO

Sample Description (include color, odor, turbidity, etc.):

Cond = 117 umhmo
temp 4.8 °C

Comments (include problems encountered/deviations from sampling plan):

Clear Water
Alder & Sedge

Photo number(s): 5 Photo direction(s) and/or description(s): S

SURFACE WATER SAMPLING

Sample Number: SW-02 Sampling Time: 10:27

QC Sample: YES (NO) Duplicate MSD Rinsate Trip Blank

PID/FID Reading: _____

Water Body Type: Creek Flow: none (slow) mod rapid

Dimensions (est): 20' wide Substrate: Some wood chips Soft Organic

Sample Location (include distance to a permanent feature):

350' Upstream of E Culvert
Dept = 19"
5' from N. Bank

(Sketch)

Sampling Method/ Equipment: Grab

Dedicated Equipment: YES NO

Sample Description (include color, odor, turbidity, etc.):

Cond = 117 umhmo
temp = 4.8 °C

Comments (include problems encountered/deviations from sampling plan):

Alder
Clear Water

Photo number(s): 6 Photo direction(s) and/or description(s): S

Sample Number: _____ Sampling Time: _____

QC Sample: YES NO Duplicate MSD Rinsate Trip Blank

PID/FID Reading: _____

Water Body Type: _____ Flow: none slow mod rapid

Dimensions (est): _____ Substrate: _____

Sample Location (include distance to a permanent feature):

_____

_____

_____

_____

(Sketch)

Sampling Method/ Equipment: _____

_____

_____

Dedicated Equipment: YES NO

Sample Description (include color, odor, turbidity, etc.): _____

_____

_____

_____

Comments (include problems encountered/deviations from sampling plan): _____

_____

_____

_____

_____

Photo number(s): _____ Photo direction(s) and/or description(s): _____

_____

Sample Number: _____ Sampling Time: _____

QC Sample: YES NO Duplicate MSD Rinsate Trip Blank

PID/FID Reading: _____

Water Body Type: _____ Flow: none slow mod rapid

Dimensions (est): _____ Substrate: _____

Sample Location (include distance to a permanent feature):

_____

_____

_____

_____

(Sketch)

Sampling Method/ Equipment: _____

_____

_____

Dedicated Equipment: YES NO

Sample Description (include color, odor, turbidity, etc.): _____

_____

_____

_____

Comments (include problems encountered/deviations from sampling plan): _____

_____

_____

_____

_____

Photo number(s): _____ Photo direction(s) and/or description(s): _____

_____

Sample Number: _____ Sampling Time: _____

QC Sample: YES NO Duplicate MSD Rinsate Trip Blank

PID/FID Reading: _____

Water Body Type: _____ Flow: none slow mod rapid

Dimensions (est): _____ Substrate: _____

Sample Location (include distance to a permanent feature):

_____

_____

_____

_____

(Sketch)

Sampling Method/ Equipment: _____

_____

_____

Dedicated Equipment: YES NO

Sample Description (include color, odor, turbidity, etc.): _____

_____

_____

_____

Comments (include problems encountered/deviations from sampling plan): _____

_____

_____

_____

_____

Photo number(s): _____ Photo direction(s) and/or description(s): _____

_____

Sample Number: _____ Sampling Time: _____

QC Sample: YES NO Duplicate MSD Rinsate Trip Blank

PID/FID Reading: _____

Water Body Type: _____ Flow: none slow mod rapid

Dimensions (est): _____ Substrate: _____

Sample Location (include distance to a permanent feature):

_____

_____

_____

_____

(Sketch)

Sampling Method/ Equipment: _____

_____

_____

Dedicated Equipment: YES NO

Sample Description (include color, odor, turbidity, etc.): _____

_____

_____

_____

Comments (include problems encountered/deviations from sampling plan): _____

_____

_____

_____

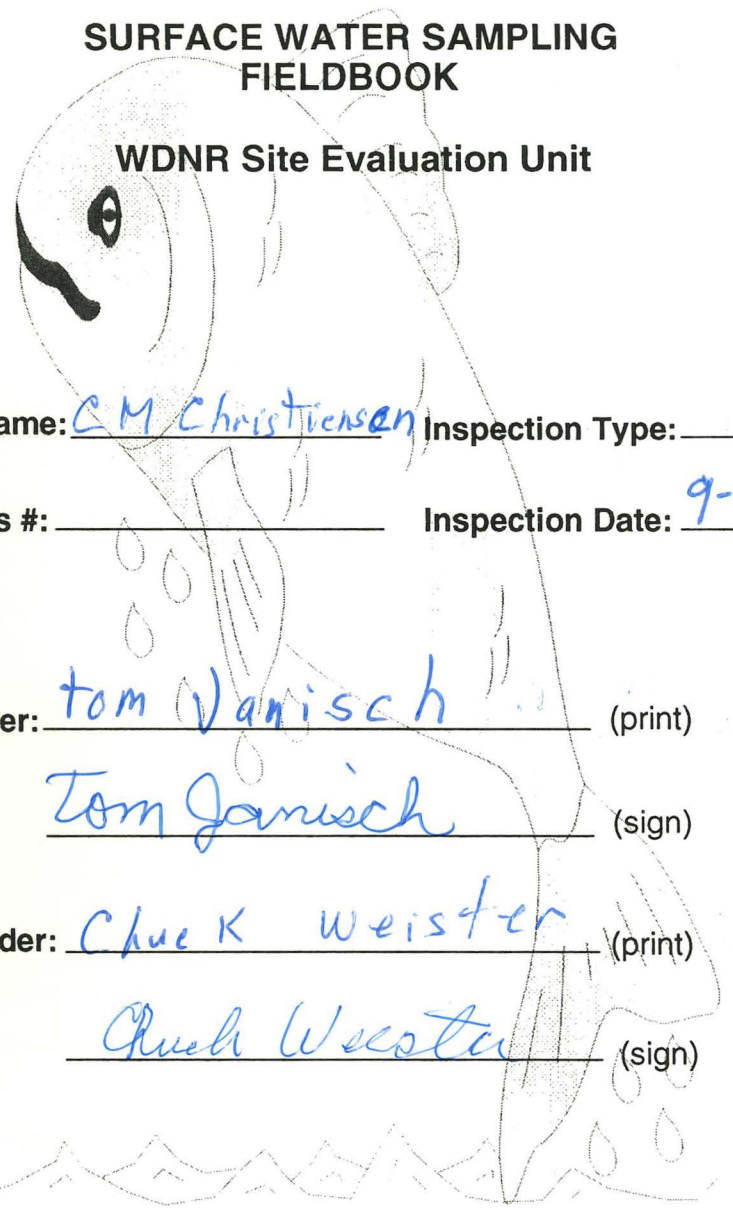
_____

Photo number(s): _____ Photo direction(s) and/or description(s): _____

_____

SURFACE WATER SAMPLING FIELDBOOK

WDNR Site Evaluation Unit



te Name: C M Christiensen Inspection Type: _____

erclis #: _____ Inspection Date: 9-30-03

mpler: tom Janisch (print)

Tom Janisch (sign)

corder: Chuck Weister (print)

Chuck Weister (sign)

SSED-OUT (X) PAGES INDICATE LEFT INTENTIONALLY BLANK BY RECORDER

SURFACE WATER SAMPLING

Sample Number: SW-01

Sampling Time: 0850

QC Sample: YES (NO) Duplicate MSD Rinsate Trip Blank

PID/FID Reading: _____

Water Body Type: Creek

Flow: (none) slow mod rapid

Dimensions (est): 70' width

Substrate: Soft Organic

Sample Location (include distance to a permanent feature):

3000' up stream of Hwy 6 Culvert. Opening of Military creek. No observable flow.

(Sketch)

Sampling Method/ Equipment: Grab Sample

Midwater Depth = 22"

2' off W. Bank

Dedicated Equipment: YES NO

Sample Description (include color, odor, turbidity, etc.):

Cond - 127 umhmo

Temp 5.9° C

Alder shrubs on shore

Comments (include problems encountered/deviations from sampling plan):

clear water

Photo number(s): 1 Photo direction(s) and/or description(s): North

SURFACE WATER SAMPLING

Sample Number: SW-06

Sampling Time: 0915

QC Sample: (YES) NO Duplicate (MSD) Rinsate Trip Blank

PID/FID Reading: _____

Water Body Type: Creek

Flow: none slow (mod) rapid

Dimensions (est): 25' Wide

Substrate: 10" Soft near shore, Debris sand bottom over harder substrate near middle of stream

Sample Location (include distance to a permanent feature):

250' Downstream of E Bridge

3' off N. Bank

(Sketch)

Sampling Method/ Equipment: Grab

Depth of Sample = 15"

Dedicated Equipment: YES NO

Sample Description (include color, odor, turbidity, etc.):

250' Downstream of E Bridge

Cond = 118 umhmo

temp = 4.7° C

Comments (include problems encountered/deviations from sampling plan):

Clear water

Photo number(s): 2 Photo direction(s) and/or description(s): South

SURFACE WATER SAMPLING

Sample Number: SW-06 MS/MSD Sampling Time: 0920 ~~0920~~ 15 clw

QC Sample: YES NO Duplicate MSD Rinsate Trip Blank

PID/FID Reading: _____

Water Body Type: _____ Flow: none slow mod rapid

Dimensions (est): _____ Substrate: _____

Sample Location (include distance to a permanent feature):

_____

_____

_____

_____

(Sketch)

Sampling Method/ Equipment: _____

_____

_____

Dedicated Equipment: YES NO

Sample Description (include color, odor, turbidity, etc.): _____

_____

_____

_____

Comments (include problems encountered/deviations from sampling plan): _____

_____

_____

_____

_____

Photo number(s): _____ Photo direction(s) and/or description(s): _____

_____

SURFACE WATER SAMPLING

Sample Number: SW-05 Sampling Time: 0942

QC Sample: YES NO Duplicate MSD Rinsate Trip Blank

PID/FID Reading: _____

Water Body Type: Creek Flow: none (slow) mod rapid

Dimensions (est): 60' wide Substrate: Soft sediments

Sample Location (include distance to a permanent feature):

30' upstream of Culvert

West Bank - 4' from shore

Mid depth = 13"

_____

(Sketch)

Sampling Method/ Equipment: Grab with bottle

_____

_____

Dedicated Equipment: YES NO

Sample Description (include color, odor, turbidity, etc.): _____

Cond = 117 umh mo

temp = 4.7° C

_____

Comments (include problems encountered/deviations from sampling plan): _____

Clear water No turbidity

_____

_____

_____

Photo number(s): 3 Photo direction(s) and/or description(s): East

_____

SURFACE WATER SAMPLING Duplicate

Sample Number: Field SW-05 (FD) Sampling Time: 0942

QC Sample: YES NO Field Duplicate MSD Rinsate Trip Blank

PID/FID Reading: _____

Water Body Type: _____ Flow: none slow mod rapid

Dimensions (est): _____ Substrate: _____

Sample Location (include distance to a permanent feature):

_____

_____

_____

_____

(Sketch)

Sampling Method/ Equipment: _____

_____

_____

Dedicated Equipment: YES NO

Sample Description (include color, odor, turbidity, etc.): _____

_____

_____

_____

Comments (include problems encountered/deviations from sampling plan): _____

_____

_____

_____

_____

Photo number(s): _____ Photo direction(s) and/or description(s): _____

_____

SURFACE WATER SAMPLING

Sample Number: SW-04 Sampling Time: 10:00

QC Sample: YES NO Duplicate MSD Rinsate Trip Blank

PID/FID Reading: _____

Water Body Type: Creek Flow: none slow mod rapid

Dimensions (est): 20' Width Substrate: Firm sand

Sample Location (include distance to a permanent feature):

175' upstream from Ctr of Culvert

Midstream

Mid depth = 15'

_____

(Sketch)

Sampling Method/ Equipment: Grab with bottle

_____

_____

Dedicated Equipment: YES NO

Sample Description (include color, odor, turbidity, etc.): _____

Cond = 447 um mho

Temp = 4.8 °C

_____

Comments (include problems encountered/deviations from sampling plan): _____

Alder + Sedge on bank

Clear water

_____

_____

Photo number(s): 4 Photo direction(s) and/or description(s): SE

_____

USEPA Contract Laboratory Program
Generic Chain of Custody

Reference Case 32215
Client No:
SDG No:

L

Date Shipped:	09/30/2003 10/01/03
Carrier Name:	FedEx SD
Airbill:	803497694428
Shipped to:	Central Regional Laboratory 536 South Clark, 10th floor Chicago IL 60605 (312) 353-9083

Chain of Custody Record

Sampler Signature: [signature]

Relinquished By	(Date / Time)	Received By	(Date / Time)
1 [signature]	9/30/03 1700	[signature]	09/30/03 1700
2 [signature]	10/01/03 0800		
3			
4			

For Lab Use Only

Lab Contract No:
Unit Price:
Transfer To:
Lab Contract No:
Unit Price:

SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		FOR LAB USE ONLY Sample Condition On Receipt
E2140	Sediment/ PHIL RICHARD	M/G	TOC SE (14)	5-246112 (ICE ONLY) (1)	SED-06A MILITARY ADJ & DS	S: 09/30/2003	12:59	
E2141	Sediment/ PHIL RICHARD	M/G	TOC SE (14)	5-246115 (ICE ONLY) (1)	SED-06B MILITARY ADJ & DS	S: 09/30/2003	12:58	
E2142	Sediment/ PHIL RICHARD	M/G	TOC SE (14)	5-246118 (ICE ONLY) (1)	SED-FDA MILITARY CREEK	S: 09/30/2003	13:40	
E2143	Sediment/ PHIL RICHARD	M/G	TOC SE (14)	5-246121 (ICE ONLY) (1)	SED-FDB MILITARY CREEK	S: 09/30/2003	13:44	

[signature]

Shipment for Case Complete?Y	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Cooler Temperature Upon Receipt	Chain of Custody Seal Number:
	E2134-5			~~82352~~ 82352-3 10/01/03

Analysis Key: Concentration: L = Low, M = Low/Medium, H = High Type/Designate: Composite = C, Grab = G | Custody Seal Intact? ___ | Shipment Iced? ___

TOC SE = TOTAL ORGANIC CARBON SE

TR Number: 5-475721606-093003-0011

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Send Copy to: Sample Management Office, 2000 Edmund Halley Dr., Reston, VA. 20191-3400 Phone 703/264-9348 Fax 703/264-9222

USEPA Contract Laboratory Program
Generic Chain of Custody

Reference Case 32215
Client No:
SDG No:

L

Date Shipped:	~~09/30/2003~~ 10/01/03 SO
Carrier Name:	FedEx
Airbill:	803497694428
Shipped to:	Central Regional Laboratory 536 South Clark, 10th floor Chicago IL 60605 (312) 353-9083

Chain of Custody Record

	Relinquished By	(Date / Time)	Received By	(Date / Time)
1	[signature]	9/30/03 1700	[signature]	09/30/03 1700
2	[signature]	10/01/03 0800		
3				
4				

Sampler Signature: [signature]

For Lab Use Only

Lab Contract No:
Unit Price:
Transfer To:
Lab Contract No:
Unit Price:

SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		FOR LAB USE ONLY Sample Condition On Receipt
E2130	Sediment/ PHIL RICHARD	M/G	TOC SE (14)	5-245882 (ICE ONLY) (1)	SED-01A MILITARY UPSTREAM	S: 09/30/2003	11:43	
E2131	Sediment/ PHIL RICHARD	M/G	TOC SE (14)	5-245885 (ICE ONLY) (1)	SED-01B MILITARY UPSTREAM	S: 09/30/2003	11:46	
E2132	Sediment/ PHIL RICHARD	M/G	TOC SE (14)	5-245888 (ICE ONLY) (1)	SED-02A MILITARY ADJ & DS	S: 09/30/2003	1600	
E2133	Sediment/ PHIL RICHARD	M/G	TOC SE (14)	5-245891 (ICE ONLY) (1)	SED-02B MILITARY ADJ & DS	S: 09/30/2003	1604	
E2134	Sediment/ PHIL RICHARD	M/G	TOC SE (14)	5-245894 (ICE ONLY) (1)	SED-03A MILITARY ADJ & DS	S: 09/30/2003	1518	
E2135	Sediment/ PHIL RICHARD	M/G	TOC SE (14)	5-245897 (ICE ONLY) (1)	SED-03B MILITARY ADJ & DS	S: 09/30/2003	1522	
E2136	Sediment/ PHIL RICHARD	M/G	TOC SE (14)	5-245900 (ICE ONLY) (1)	SED-04A MILITARY ADJ & DS	S: 09/30/2003	1435	
E2137	Sediment/ PHIL RICHARD	M/G	TOC SE (14)	5-246103 (ICE ONLY) (1)	SED-04B MILITARY ADJ & DS	S: 09/30/2003	1439 SO	
E2138	Sediment/ PHIL RICHARD	M/G	TOC SE (14)	5-246106 (ICE ONLY) (1)	SED-05A MILITARY ADJ & DS	S: 09/30/2003	13:40	
E2139	Sediment/ PHIL RICHARD	M/G	TOC SE (14)	5-246109 (ICE ONLY) (1)	SED-05B MILITARY ADJ & DS	S: 09/30/2003	13:44	

[signature] 10/01/03

Shipment for Case Complete? Y	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Cooler Temperature Upon Receipt	Chain of Custody Seal Number:
	E2134-5			82352-3

Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Custody Seal Intact? ___	Shipment Iced? ___

TOC SE = TOTAL ORGANIC CARBON SE

TR Number: 5-475721606-093003-0011

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USEPA Contract Laboratory Program
Generic Chain of Custody

Reference Case 32215
Client No:
SDG No:
L

Date Shipped: ~~09/30/2003~~ 10/01/03	**Chain of Custody Record**	Sampler Signature:	**For Lab Use Only**
Carrier Name: FedEx SD	Relinquished By (Date / Time)	Received By (Date / Time)	Lab Contract No:
Airbill: 803497694428	1 9/30/03 1700	09/30/03 1700	Unit Price:
Shipped to: Central Regional Laboratory 536 South Clark, 10th floor Chicago IL 60605 (312) 353-9083	2 10/01/03 0800		Transfer To:
	3		Lab Contract No:
	4		Unit Price:

SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		FOR LAB USE ONLY Sample Condition On Receipt
E2140	Sediment/ PHIL RICHARD	M/G	TOC SE (14)	5-246112 (ICE ONLY) (1)	SED-06A MILITARY ADJ & DS	S: 09/30/2003	12:59	
E2141	Sediment/ PHIL RICHARD	M/G	TOC SE (14)	5-246115 (ICE ONLY) (1)	SED-06B MILITARY ADJ & DS	S: 09/30/2003	12:58	
E2142	Sediment/ PHIL RICHARD	M/G	TOC SE (14)	5-246118 (ICE ONLY) (1)	SED-FDA MILITARY CREEK	S: 09/30/2003	13:40	
E2143	Sediment/ PHIL RICHARD	M/G	TOC SE (14)	5-246121 (ICE ONLY) (1)	SED-FDB MILITARY CREEK	S: 09/30/2003	13:44	

Shipment for Case Complete? Y	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Cooler Temperature Upon Receipt	Chain of Custody Seal Number: 10/01/03
	G2134-5			82352-3 ~~82353~~
Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G		Custody Seal Intact? ___ Shipment Iced? ___

TOC SE = TOTAL ORGANIC CARBON SE

TR Number: 5-475721606-093003-0011

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USEPA Contract Laboratory Program
Organic Traffic Report & Chain of Custody Record

Case No: 32215
DAS No:
R

Region:	5	**Date Shipped:**	09/30/2003	**Chain of Custody Record**	Sampler Signature: Tom Janisch
Project Code:		**Carrier Name:**	FedEx	**Relinquished By (Date / Time)**	**Received By (Date / Time)**
Account Code:		**Airbill:**	803497694417	1	
CERCLIS ID:		**Shipped to:**	Ceimic Corporation 10 Dean Knauss Drive Narragansett RI 02882 (401) 782-8900	2	
Spill ID:				3	
Site Name/State:	C.M. CHRISTIANSEN - POLE YARD/WI			4	
Project Leader:	CHRIS SAARI				
Action:	Preliminary Assessment				
Sampling Co:	WISCONSIN DNR				

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	QC Type
E2128	Surface Water/ TOM JANISCH	M/G	BNA SW (14), PEST SW (14)	~~5-245872~~ (Ice Only), ~~5-245873~~ (Ice Only), ~~5-245874~~ (Ice Only), ~~5-245875~~ (Ice Only), 5-245876 (Ice Only), 5-245877 (Ice Only) ~~(6)~~ 2 SD	SW-06 MILITARY ADJ & S: DS	09/30/2003 9:15		Spike

Shipment for Case Complete? Y	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
	E2128		1560263-4

Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced? _____

BNA SW = CLP TCL SEMIVOLATILES SW, PEST SW = CLP TCL PESTICIDE/PCBS SW

TR Number: 5-475721606-093003-0001

REGION COPY

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

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USEPA Contract Laboratory Program
Organic Traffic Report & Chain of Custody Record

Case No: 32215
DAS No:
SDG No: L

Date Shipped:	09/30/2003
Carrier Name:	FedEx
Airbill:	803497694417
Shipped to:	Ceimic Corporation 10 Dean Knauss Drive Narragansett RI 02882 (401) 782-8900

Chain of Custody Record

Relinquished By	(Date / Time)	Received By	(Date / Time)
1	09/30/03 1700		
2			
3			
4			

Sampler Signature: Tom Janisch

For Lab Use Only

Lab Contract No:
Unit Price:
Transfer To:
Lab Contract No:
Unit Price:

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	FOR LAB USE ONLY Sample Condition On Receipt
E2128	Surface Water/ TOM JANISCH	M/G	BNA SW (14), PEST SW (14)	~~5-245872~~ (Ice Only), ~~5-245873~~ (Ice Only), ~~5-245874~~ (Ice Only), ~~5-245875~~ (Ice Only), 5-245876 (Ice Only), 5-245877 (Ice Only) ~~(6)~~ SO 2	SW-06 MILITARY ADJ & DS	S: 09/30/2003 9:15		

Shipment for Case Complete? N Y	Sample(s) to be used for laboratory QC: E2128	Additional Sampler Signature(s):	Cooler Temperature Upon Receipt	Chain of Custody Seal Number: 180263-4
Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G		Custody Seal Intact? ___ Shipment Iced? ___

BNA SW = CLP TCL SEMIVOLATILES SW, PEST SW = CLP TCL PESTICIDE/PCBS SW

TR Number: 5-475721606-093003-0001

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Send Copy to: Sample Management Office, 2000 Edmund Halley Dr., Reston, VA. 20191-3400 Phone 703/264-9348 Fax 703/264-9222

USEPA Contract Laboratory Program
Organic Traffic Report & Chain of Custody Record

Case No: 32215 **R**
DAS No:

Region:	5	**Date Shipped:**	09/30/2003	**Chain of Custody Record**	Sampler Signature: Tom Janisch
Project Code:		**Carrier Name:**	FedEx	**Relinquished By (Date / Time)**	**Received By (Date / Time)**
Account Code:		**Airbill:**	803497694417	1 [signature] 9/30/03 1700	[signature]
CERCLIS ID:		**Shipped to:**	Ceimic Corporation 10 Dean Knauss Drive Narragansett RI 02882 (401) 782-8900	2	
Spill ID:				3	
Site Name/State:	C.M. CHRISTIANSEN - POLE YARD/WI			4	
Project Leader:	CHRIS SAARI				
Action:	Preliminary Assessment				
Sampling Co:	WISCONSIN DNR				

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	QC Type
E2123	Surface Water/ TOM JANISCH	M/G	BNA SW (14), PEST SW (14)	5-245862 (Ice Only), 5-245863 (Ice Only) (2)	SW-01 MILITARY UPSTREAM	S: 09/30/2003 8:50		--

Shipment for Case Complete? N Y SO	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
	E2128		186263-4
Analysis Key:	**Concentration:** L = Low, M = Low/Medium, H = High	**Type/Designate:** Composite = C, Grab = G	**Shipment Iced?** _____

BNA SW = CLP TCL SEMIVOLATILES SW, PEST SW = CLP TCL PESTICIDE/PCBS SW

TR Number: 5-475721606-093003-0002

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USEPA Contract Laboratory Program
Organic Traffic Report & Chain of Custody Record

Case No: 32215
DAS No:
SDG No: L

Date Shipped:	09/30/2003
Carrier Name:	FedEx
Airbill:	803497694417
Shipped to:	Ceimic Corporation 10 Dean Knauss Drive Narragansett RI 02882 (401) 782-8900

Chain of Custody Record

Sampler Signature: Tom Janisch

	Relinquished By (Date / Time)	Received By (Date / Time)
1	09/30/03 1700	
2		
3		
4		

For Lab Use Only

Lab Contract No:
Unit Price:
Transfer To:
Lab Contract No:
Unit Price:

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	FOR LAB USE ONLY Sample Condition On Receipt
E2123	Surface Water/ TOM JANISCH	M/G	BNA SW (14), PEST SW (14)	5-245862 (Ice Only), 5-245863 (Ice Only) (2)	SW-01 MILITARY UPSTREAM	S: 09/30/2003 8:50		

Shipment for Case Complete? N Y SD	Sample(s) to be used for laboratory QC: E2128	Additional Sampler Signature(s):	Cooler Temperature Upon Receipt	Chain of Custody Seal Number: 186263-4
Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G		Custody Seal Intact? ___ Shipment Iced? ___

BNA SW = CLP TCL SEMIVOLATILES SW, PEST SW = CLP TCL PESTICIDE/PCBS SW

TR Number: 5-475721606-093003-0002

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USEPA Contract Laboratory Program
Organic Traffic Report & Chain of Custody Record

Case No: 32215
DAS No:
R

Region:	5
Project Code:	
Account Code:	
CERCLIS ID:	
Spill ID:	
Site Name/State:	C.M. CHRISTIANSEN - POLE YARD/WI
Project Leader:	CHRIS SAARI
Action:	Preliminary Assessment
Sampling Co:	WISCONSIN DNR

Date Shipped:	09/30/2003
Carrier Name:	FedEx
Airbill:	803497694417
Shipped to:	Ceimic Corporation 10 Dean Knauss Drive Narragansett RI 02882 (401) 782-8900

Chain of Custody Record

Relinquished By	(Date / Time)	Received By	(Date / Time)
1	9/30/03 1700		
2			
3			
4			

Sampler Signature: Tom Janisch

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	QC Type
E2128	Surface Water/ TOM JANISCH	M/G	BNA SW (14), PEST SW (14)	5-245872 (Ice Only), 5-245873 (Ice Only), 5-245874 (Ice Only), 5-245875 (Ice Only), ~~5-245876 (Ice Only)~~, ~~5-245877 (Ice Only) (6)~~ 4 SD	SW-06 MILITARY ADJ & S: DS	09/30/2003 9:15		Spike

Shipment for Case Complete? Y	Sample(s) to be used for laboratory QC: E2128	Additional Sampler Signature(s):	Chain of Custody Seal Number: 186261-2
Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced? _____

BNA SW = CLP TCL SEMIVOLATILES SW, PEST SW = CLP TCL PESTICIDE/PCBS SW

TR Number: **5-475721606-093003-0001**

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USEPA Contract Laboratory Program
Organic Traffic Report & Chain of Custody Record

Case No: 32215
DAS No:
SDG No:
L

Date Shipped:	09/30/2003
Carrier Name:	FedEx
Airbill:	803497694417
Shipped to:	Ceimic Corporation 10 Dean Knauss Drive Narragansett RI 02882 (401) 782-8900

Chain of Custody Record

Relinquished By	(Date / Time)	Received By	(Date / Time)
1	9/30/03 1700		
2			
3			
4			

Sampler Signature: Tom Janisch

For Lab Use Only

Lab Contract No:
Unit Price:
Transfer To:
Lab Contract No:
Unit Price:

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	FOR LAB USE ONLY Sample Condition On Receipt
E2128	Surface Water/ TOM JANISCH	M/G	BNA SW (14), PEST SW (14)	5-245872 (Ice Only), 5-245873 (Ice Only), 5-245874 (Ice Only), 5-245875 (Ice Only), ~~5-245876~~ (Ice Only), ~~5-245877~~ (Ice Only) ~~(6)~~ 4	SW-06 MILITARY ADJ & DS	S: 09/30/2003 9:15		

SD

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Cooler Temperature Upon Receipt	Chain of Custody Seal Number:
	E2128			186261-2

Analysis Key: **Concentration:** L = Low, M = Low/Medium, H = High **Type/Designate:** Composite = C, Grab = G

Custody Seal Intact? ___ **Shipment Iced?** ___

BNA SW = CLP TCL SEMIVOLATILES SW, PEST SW = CLP TCL PESTICIDE/PCBS SW

TR Number: 5-475721606-093003-0001

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USEPA Contract Laboratory Program
Organic Traffic Report & Chain of Custody Record

Case No: 32215 **R**
DAS No:

Region:	5	**Date Shipped:**	09/30/2003	**Chain of Custody Record**	**Sampler Signature:** Tom Janisch
Project Code:		**Carrier Name:**	FedEx	**Relinquished By (Date / Time)**	**Received By (Date / Time)**
Account Code:		**Airbill:**	803497694417	1 9/30/03 1700	
CERCLIS ID:		**Shipped to:**	Ceimic Corporation 10 Dean Knauss Drive Narragansett RI 02882 (401) 782-8900	2	
Spill ID:				3	
Site Name/State:	C.M. CHRISTIANSEN - POLE YARD/WI			4	
Project Leader:	CHRIS SAARI				
Action:	Preliminary Assessment				
Sampling Co:	WISCONSIN DNR				

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE		ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		INORGANIC SAMPLE No.	QC Type
E2127	Surface Water/ TOM JANISCH	M/G	BNA	SW (14), PEST SW (14)	5-245870 (Ice Only), 5-245871 (Ice Only) (2)	SW-05 MILITARY ADJ & S: DS	09/30/2003	9:42		--
E2129	Surface Water/ TOM JANISCH	M/G	BNA	SW (14), PEST SW (14)	5-245878 (Ice Only), 5-245879 (Ice Only) (2)	SW-FD MILITARY CREEKS:	09/30/2003	9:42		Field Duplicate

Shipment for Case Complete? Y	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
	E2128		186265-6

Analysis Key: **Concentration:** L = Low, M = Low/Medium, H = High **Type/Designate:** Composite = C, Grab = G **Shipment Iced?** Y

BNA SW = CLP TCL SEMIVOLATILES SW, PEST SW = CLP TCL PESTICIDE/PCBS SW

TR Number: 5-475721606-093003-0003

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USEPA Contract Laboratory Program
Organic Traffic Report & Chain of Custody Record

Case No: 32215
DAS No:
SDG No:

L

Date Shipped:	09/30/2003
Carrier Name:	FedEx
Airbill:	803497694417
Shipped to:	Ceimic Corporation 10 Dean Knauss Drive Narragansett RI 02882 (401) 782-8900

Chain of Custody Record

Relinquished By	(Date / Time)	Received By	(Date / Time)
1	9/30/03 1700		
2			
3			
4			

Sampler Signature: Tom Janisch

For Lab Use Only

Lab Contract No:
Unit Price:
Transfer To:
Lab Contract No:
Unit Price:

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		INORGANIC SAMPLE No.	FOR LAB USE ONLY Sample Condition On Receipt
E2127	Surface Water/ TOM JANISCH	M/G	BNA SW (14), PEST SW (14)	5-245870 (Ice Only), 5-245871 (Ice Only) (2)	SW-05 MILITARY ADJ & DS	S: 09/30/2003	9:42		
E2129	Surface Water/ TOM JANISCH	M/G	BNA SW (14), PEST SW (14)	5-245878 (Ice Only), 5-245879 (Ice Only) (2)	SW-FD MILITARY CREEK	S: 09/30/2003	9:42		

Shipment for Case Complete?Y	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Cooler Temperature Upon Receipt	Chain of Custody Seal Number:
	E2128			186265-6

Analysis Key: **Concentration:** L = Low, M = Low/Medium, H = High **Type/Designate:** Composite = C, Grab = G

Custody Seal Intact? ___ **Shipment Iced?** ___

BNA SW = CLP TCL SEMIVOLATILES SW, PEST SW = CLP TCL PESTICIDE/PCBS SW

TR Number: 5-475721606-093003-0003

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USEPA Contract Laboratory Program
Organic Traffic Report & Chain of Custody Record

Case No: 32215
DAS No:

R

Region:	5	Date Shipped:	09/30/2003	**Chain of Custody Record**	Sampler Signature: Tom Janisch
Project Code:		Carrier Name:	FedEx	Relinquished By (Date / Time)	Received By (Date / Time)
Account Code:		Airbill:	803497694417	1 SDS 9/30/03 1700	
CERCLIS ID:		Shipped to:	Ceimic Corporation 10 Dean Knauss Drive Narragansett RI 02882 (401) 782-8900	2	
Spill ID:				3	
Site Name/State:	C.M. CHRISTIANSEN - POLE YARD/WI			4	
Project Leader:	CHRIS SAARI				
Action:	Preliminary Assessment				
Sampling Co:	WISCONSIN DNR				

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	QC Type
E2125	Surface Water/ TOM JANISCH	M/G	BNA SW (14), PEST SW (14)	5-245866 (Ice Only), 5-245867 (Ice Only) (2)	SW-03 MILITARY ADJ & S DS	09/30/2003 10:10		--
E2126	Surface Water/ TOM JANISCH	M/G	BNA SW (14), PEST SW (14)	5-245868 (Ice Only), 5-245869 (Ice Only) (2)	SW-04 MILITARY ADJ & S DS	09/30/2003 10:00		--

Shipment for Case Complete? Y	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
	E2128		186267-S
Analysis Key:	**Concentration:** L = Low, M = Low/Medium, H = High	**Type/Designate:** Composite = C, Grab = G	**Shipment Iced?** _____

BNA SW = CLP TCL SEMIVOLATILES SW, PEST SW = CLP TCL PESTICIDE/PCBS SW

TR Number: 5-475721606-093003-0004

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USEPA Contract Laboratory Program
Organic Traffic Report & Chain of Custody Record

Case No: 32215
DAS No:
SDG No: L

Date Shipped:	09/30/2003
Carrier Name:	FedEx
Airbill:	803497694417
Shipped to:	Ceimic Corporation 10 Dean Knauss Drive Narragansett RI 02882 (401) 782-8900

Chain of Custody Record

Relinquished By	(Date / Time)	Received By	(Date / Time)
1.	9/30/03 1700		
2			
3			
4			

Sampler Signature: Tom Janisch

For Lab Use Only

Lab Contract No:
Unit Price:
Transfer To:
Lab Contract No:
Unit Price:

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		INORGANIC SAMPLE No.	FOR LAB USE ONLY Sample Condition On Receipt
E2125	Surface Water/ TOM JANISCH	M/G	BNA SW (14), PEST SW (14)	5-245866 (Ice Only), 5-245867 (Ice Only) (2)	SW-03 MILITARY ADJ & DS	S: 09/30/2003	10:10		
E2126	Surface Water/ TOM JANISCH	M/G	BNA SW (14), PEST SW (14)	5-245868 (Ice Only), 5-245869 (Ice Only) (2)	SW-04 MILITARY ADJ & DS	S: 09/30/2003	10:00		

Shipment for Case Complete?Y	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Cooler Temperature Upon Receipt	Chain of Custody Seal Number:
	E2128			150267-8

Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Custody Seal Intact? ___	Shipment Iced? ___

BNA SW = CLP TCL SEMIVOLATILES SW, PEST SW = CLP TCL PESTICIDE/PCBS SW

TR Number: 5-475721606-093003-0004

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USEPA Contract Laboratory Program
Organic Traffic Report & Chain of Custody Record

Case No: 32215 **R**
DAS No:

Region: 5	**Date Shipped:** 09/30/2003	**Chain of Custody Record**	**Sampler Signature:** Dan Boardman
Project Code:	**Carrier Name:** FedEx	**Relinquished By** (Date / Time)	**Received By** (Date / Time)
Account Code:	**Airbill:** 803497694406	1 [signature] 9/30/03 1700	
CERCLIS ID:	**Shipped to:** A4 Scientific 1544 Sawdust Road Suite 505 The Woodlands TX 77380 (281) 292-5277	2	
Spill ID:		3	
Site Name/State: C.M. CHRISTIANSEN - POLE YARD/WI		4	
Project Leader: CHRIS SAARI			
Action: Preliminary Assessment			
Sampling Co: WISCONSIN DNR			

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	QC Type
E2119	Ground Water/ DAN BOARDMAN	L/G	BNA GW (14), PEST GW (14)	~~5-245707~~ (ICE ONLY), ~~5-245783~~ (Ice Only), ~~5-245784~~ (Ice Only), ~~5-245785~~ (Ice Only), 5-245786 (ICE ONLY), 5-245787 (ICE ONLY) ~~(6)~~ 2	GW-06 DOWNGRADIENTS: MW	09/30/2003 9:58		Spike
E2120	Ground Water/ DAN BOARDMAN	L/G	BNA GW (14), PEST GW (14)	5-245708 (Ice Only), 5-245709 (ICE ONLY) (2)	GW-07 DOWNGRADIENTS: MW	09/30/2003 9:45		--

SD

Shipment for Case Complete? Y	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
	E2119		180269-70

Analysis Key: **Concentration:** L = Low, M = Low/Medium, H = High **Type/Designate:** Composite = C, Grab = G **Shipment Iced?** _____

BNA GW = CLP TCL SEMIVOLATILES GW, PEST GW = CLP TCL PESTICIDE/PCBS GW

TR Number: 5-475721606-093003-0005

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USEPA Contract Laboratory Program
Organic Traffic Report & Chain of Custody Record

Case No: 32215
DAS No:

R

Region: 5	**Date Shipped:** 09/30/2003	**Chain of Custody Record**	**Sampler Signature:** Dan Boardman
Project Code:	**Carrier Name:** FedEx	**Relinquished By (Date / Time)**	**Received By (Date / Time)**
Account Code:	**Airbill:** 803497694406	1 SVJ 9/30/03 1700	
CERCLIS ID:	**Shipped to:** A4 Scientific 1544 Sawdust Road Suite 505 The Woodlands TX 77380 (281) 292-5277	2	
Spill ID:		3	
Site Name/State: C.M. CHRISTIANSEN - POLE YARD/WI		4	
Project Leader: CHRIS SAARI			
Action: Preliminary Assessment			
Sampling Co: WISCONSIN DNR			

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	QC Type
E2119	Ground Water/ DAN BOARDMAN	L/G	BNA GW (14), PEST GW (14)	5-245707 (ICE ONLY), 5-245783 (Ice Only), 5-245784 (Ice Only), 5-245785 (Ice Only), ~~5-245786 (ICE ONLY)~~, ~~5-245787 (ICE ONLY)~~ ~~(6)~~ 4	GW-06 DOWNGRADIENTS: MW	09/30/2003 9:58		Spike
E2120	Ground Water/ DAN BOARDMAN	L/G	BNA GW (14), PEST GW (14)	~~5-245708 (Ice Only)~~, ~~5-245709 (ICE ONLY)~~ ~~(2)~~ SD	GW-07 DOWNGRADIENTS: MW	09/30/2003 9:45		--

Shipment for Case Complete? Y	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
	E2119		186271-2

Analysis Key: **Concentration:** L = Low, M = Low/Medium, H = High **Type/Designate:** Composite = C, Grab = G **Shipment Iced?** _____

BNA GW = CLP TCL SEMIVOLATILES GW, PEST GW = CLP TCL PESTICIDE/PCBS GW

TR Number: **5-475721606-093003-0005**

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USEPA Contract Laboratory Program
Organic Traffic Report & Chain of Custody Record

Case No: 32215
DAS No:
SDG No:
L

Date Shipped:	09/30/2003
Carrier Name:	FedEx
Airbill:	803497694406
Shipped to:	A4 Scientific 1544 Sawdust Road Suite 505 The Woodlands TX 77380 (281) 292-5277

Chain of Custody Record

	Relinquished By (Date / Time)	Received By (Date / Time)
1	9/30/03 1700	
2		
3		
4		

Sampler Signature:

For Lab Use Only

Lab Contract No:
Unit Price:
Transfer To:
Lab Contract No:
Unit Price:

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		INORGANIC SAMPLE No.	FOR LAB USE ONLY Sample Condition On Receipt
E2119	Ground Water/ DAN BOARDMAN	L/G	BNA GW (14), PEST GW (14)	5-245707 (ICE ONLY), 5-245783 (Ice Only), 5-245784 (Ice Only), 5-245785 (Ice Only), 5-245786 (ICE ONLY), 5-245787 (ICE ONLY) (6)	GW-06 DOWNGRADIENT MW	S: 09/30/2003	9:58		
E2120	Ground Water/ DAN BOARDMAN	L/G	BNA GW (14), PEST GW (14)	5-245708 (Ice Only), 5-245709 (ICE ONLY) (2)	GW-07 DOWNGRADIENT MW	S: 09/30/2003	9:45		

Shipment for Case Complete? Y	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Cooler Temperature Upon Receipt	Chain of Custody Seal Number:
	E2119			1862697-70

Analysis Key: **Concentration:** L = Low, M = Low/Medium, H = High **Type/Designate:** Composite = C, Grab = G

Custody Seal Intact? ___ Shipment Iced? ___

BNA GW = CLP TCL SEMIVOLATILES GW, PEST GW = CLP TCL PESTICIDE/PCBS GW

TR Number: 5-475721606-093003-0005

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USEPA Contract Laboratory Program
Organic Traffic Report & Chain of Custody Record

Case No: 32215
DAS No:
SDG No: L

Date Shipped:	09/30/2003
Carrier Name:	FedEx
Airbill:	803497694406
Shipped to:	A4 Scientific 1544 Sawdust Road Suite 505 The Woodlands TX 77380 (281) 292-5277

Chain of Custody Record

Relinquished By	(Date / Time)	Received By	(Date / Time)
1	9/30/03 1700		
2			
3			
4			

Sampler Signature: Dan Boardman

For Lab Use Only

Lab Contract No:
Unit Price:
Transfer To:
Lab Contract No:
Unit Price:

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		INORGANIC SAMPLE No.	FOR LAB USE ONLY Sample Condition On Receipt
E2119	Ground Water/ DAN BOARDMAN	L/G	BNA GW (14), PEST GW (14)	5-245707 (ICE ONLY), 5-245783 (Ice Only), 5-245784 (Ice Only), 5-245785 (Ice Only), 5-245786 (ICE ONLY), 5-245787 (ICE ONLY) (6)	GW-06 DOWNGRADIENT MW	S: 09/30/2003	9:58		
E2120	Ground Water/ DAN BOARDMAN	L/G	BNA GW (14), PEST GW (14)	5-245708 (Ice Only), 5-245709 (ICE ONLY) (2)	GW-07 DOWNGRADIENT MW	S: 09/30/2003	9:45		

Shipment for Case Complete? Y	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Cooler Temperature Upon Receipt	Chain of Custody Seal Number:
	E2119			186271-2

Analysis Key: **Concentration:** L = Low, M = Low/Medium, H = High **Type/Designate:** Composite = C, Grab = G

Custody Seal Intact? ___ **Shipment Iced?** ___

BNA GW = CLP TCL SEMIVOLATILES GW, PEST GW = CLP TCL PESTICIDE/PCBS GW

TR Number: 5-475721606-093003-0005

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USEPA Contract Laboratory Program
Organic Traffic Report & Chain of Custody Record

Case No: 32215
DAS No:
R

Region:	5	**Date Shipped:**	09/30/2003	**Chain of Custody Record**	**Sampler Signature:** Tom Janisch
Project Code:		**Carrier Name:**	FedEx	**Relinquished By (Date / Time)**	**Received By (Date / Time)**
Account Code:		**Airbill:**	803497694417	1 BVA 9/30/03 1700	
CERCLIS ID:		**Shipped to:**	Ceimic Corporation 10 Dean Knauss Drive Narragansett RI 02882 (401) 782-8900	2	
Spill ID:				3	
Site Name/State:	C.M. CHRISTIANSEN - POLE YARD/WI			4	
Project Leader:	CHRIS SAARI				
Action:	Preliminary Assessment				
Sampling Co:	WISCONSIN DNR				

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	QC Type
E2124	Surface Water/ TOM JANISCH	M/G	BNA SW (14), PEST SW (14)	5-245864 (Ice Only), 5-245865 (Ice Only) (2)	SW-02 MILITARY ADJ & S: DS	09/30/2003 10:27		--

Shipment for Case Complete? Y	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
	E2128		186281-2

Analysis Key: **Concentration:** L = Low, M = Low/Medium, H = High **Type/Designate:** Composite = C, Grab = G **Shipment Iced?** _____

BNA SW = CLP TCL SEMIVOLATILES SW, PEST SW = CLP TCL PESTICIDE/PCBS SW

TR Number: **5-475721606-093003-0006**

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USEPA Contract Laboratory Program
Organic Traffic Report & Chain of Custody Record

Case No: 32215
DAS No:
SDG No:
L

Date Shipped:	09/30/2003
Carrier Name:	FedEx
Airbill:	803497694417
Shipped to:	Ceimic Corporation 10 Dean Knauss Drive Narragansett RI 02882 (401) 782-8900

Chain of Custody Record

Sampler Signature: Tom Janisch

Relinquished By	(Date / Time)	Received By	(Date / Time)
1	9/30/03 1700		
2			
3			
4			

For Lab Use Only

Lab Contract No:
Unit Price:
Transfer To:
Lab Contract No:
Unit Price:

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	FOR LAB USE ONLY Sample Condition On Receipt
E2124	Surface Water/ TOM JANISCH	M/G	BNA SW (14), PEST SW (14)	5-245864 (Ice Only), 5-245865 (Ice Only) (2)	SW-02 MILITARY ADJ & DS	S: 09/30/2003 10:27		

Shipment for Case Complete?Y	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Cooler Temperature Upon Receipt	Chain of Custody Seal Number:
	E2128			186281-2

Analysis Key: **Concentration:** L = Low, M = Low/Medium, H = High **Type/Designate:** Composite = C, Grab = G

Custody Seal Intact? ___ **Shipment Iced?** ___

BNA SW = CLP TCL SEMIVOLATILES SW, PEST SW = CLP TCL PESTICIDE/PCBS SW

TR Number: 5-475721606-093003-0006

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USEPA Contract Laboratory Program
Organic Traffic Report & Chain of Custody Record

Case No: 32215
DAS No:

R

Region:	5	**Date Shipped:**	09/30/2003	**Chain of Custody Record**	**Sampler Signature:**
Project Code:		**Carrier Name:**	FedEx	**Relinquished By (Date / Time)**	**Received By (Date / Time)**
Account Code:		**Airbill:**	803497694406	1 [signature] 9/30/03 1100	
CERCLIS ID:		**Shipped to:**	A4 Scientific 1544 Sawdust Road Suite 505 The Woodlands TX 77380 (281) 292-5277	2	
Spill ID:				3	
Site Name/State:	C.M. CHRISTIANSEN - POLE YARD/WI			4	
Project Leader:	CHRIS SAARI				
Action:	Preliminary Assessment				
Sampling Co:	WISCONSIN DNR				

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	QC Type
E2114	Ground Water/ CHRIS SAARI	L/G	BNA GW (14), PEST GW (14)	5-245627 (ICE ONLY), 5-245628 (ICE ONLY) (2)	GW-01 UPGRADIENT MW	S: 09/04/2003 11:45		--
E2115	Ground Water/ DAN BOARDMAN	L/G	BNA GW (14), PEST GW (14)	5-245629 (ICE ONLY), 5-245630 (ICE ONLY) (2)	GW-02 DOWNGRADIENTS MW	09/30/2003 11:45		--

Shipment for Case Complete? Y	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
	E2119	[signature]	186273-1
Analysis Key:	**Concentration:** L = Low, M = Low/Medium, H = High	**Type/Designate:** Composite = C, Grab = G	**Shipment Iced?** _____

BNA GW = CLP TCL SEMIVOLATILES GW, PEST GW = CLP TCL PESTICIDE/PCBS GW

TR Number: 5-475721606-093003-0007

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USEPA Contract Laboratory Program
Organic Traffic Report & Chain of Custody Record

Case No: 32215
DAS No:
SDG No:

L

Date Shipped:	09/30/2003
Carrier Name:	FedEx
Airbill:	803497694406
Shipped to:	A4 Scientific 1544 Sawdust Road Suite 505 The Woodlands TX 77380 (281) 292-5277

Chain of Custody Record

Sampler Signature:

Relinquished By	(Date / Time)	Received By	(Date / Time)
1	9/30/03 1700		
2			
3			
4			

For Lab Use Only

Lab Contract No:
Unit Price:
Transfer To:
Lab Contract No:
Unit Price:

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		INORGANIC SAMPLE No.	FOR LAB USE ONLY Sample Condition On Receipt
E2114	Ground Water/ CHRIS SAARI	L/G	BNA GW (14), PEST GW (14)	5-245627 (ICE ONLY), 5-245628 (ICE ONLY) (2)	GW-01 UPGRADIENT MW	S: 09/04/2003	11:45		
E2115	Ground Water/ DAN BOARDMAN	L/G	BNA GW (14), PEST GW (14)	5-245629 (ICE ONLY), 5-245630 (ICE ONLY) (2)	GW-02 DOWNGRADIENT MW	S: 09/30/2003	11:45		

Shipment for Case Complete? Y	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Cooler Temperature Upon Receipt	Chain of Custody Seal Number:
	E2119	Dan Boardman		180273-4

Analysis Key: **Concentration:** L = Low, M = Low/Medium, H = High **Type/Designate:** Composite = C, Grab = G

Custody Seal Intact? ___ **Shipment Iced?** ___

BNA GW = CLP TCL SEMIVOLATILES GW, PEST GW = CLP TCL PESTICIDE/PCBS GW

TR Number: 5-475721606-093003-0007

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USEPA Contract Laboratory Program
Organic Traffic Report & Chain of Custody Record

Case No: 32215 **R**
DAS No:

Region:	5	**Date Shipped:**	09/30/2003	**Chain of Custody Record**	**Sampler Signature:**
Project Code:		**Carrier Name:**	FedEx	**Relinquished By (Date / Time)**	**Received By (Date / Time)**
Account Code:		**Airbill:**	803497694406	1 [signature] 9/30/03 1700	
CERCLIS ID:		**Shipped to:**	A4 Scientific 1544 Sawdust Road Suite 505 The Woodlands TX 77380 (281) 292-5277	2	
Spill ID:				3	
Site Name/State:	C.M. CHRISTIANSEN - POLE YARD/WI			4	
Project Leader:	CHRIS SAARI				
Action:	Preliminary Assessment				
Sampling Co:	WISCONSIN DNR				

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	QC Type
E2116	Ground Water/ DAN BOARDMAN	L/G	BNA GW (14), PEST GW (14)	5-245631 (Ice Only), 5-245632 (ICE ONLY) (2)	GW-03 DOWNGRADIENTS: MW	09/30/2003 11:55		--
E2118	Ground Water/ DAN BOARDMAN	L/G	BNA GW (14), PEST GW (14)	5-245781 (Ice Only), 5-245782 (ICE ONLY) (2)	GW-05 DOWNGRADIENTS: MW	09/30/2003 10:50		--

Shipment for Case Complete? Y	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
	E2119		180275-6
Analysis Key:	**Concentration:** L = Low, M = Low/Medium, H = High	**Type/Designate:** Composite = C, Grab = G	**Shipment Iced?** _____

BNA GW = CLP TCL SEMIVOLATILES GW, PEST GW = CLP TCL PESTICIDE/PCBS GW

TR Number: 5-475721606-093003-0008

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USEPA Contract Laboratory Program
Organic Traffic Report & Chain of Custody Record

Case No: 32215
DAS No:
SDG No: L

Date Shipped:	09/30/2003
Carrier Name:	FedEx
Airbill:	803497694406
Shipped to:	A4 Scientific 1544 Sawdust Road Suite 505 The Woodlands TX 77380 (281) 292-5277

Chain of Custody Record

Relinquished By	(Date / Time)	Received By	(Date / Time)
1	9/30/03 1700		
2			
3			
4			

Sampler Signature:

For Lab Use Only

Lab Contract No:
Unit Price:
Transfer To:
Lab Contract No:
Unit Price:

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		INORGANIC SAMPLE No.	FOR LAB USE ONLY Sample Condition On Receipt
E2116	Ground Water/ DAN BOARDMAN	L/G	BNA GW (14), PEST GW (14)	5-245631 (Ice Only), 5-245632 (ICE ONLY) (2)	GW-03 DOWNGRADIENT MW	S: 09/30/2003	11:55		
E2118	Ground Water/ DAN BOARDMAN	L/G	BNA GW (14), PEST GW (14)	5-245781 (Ice Only), 5-245782 (ICE ONLY) (2)	GW-05 DOWNGRADIENT MW	S: 09/30/2003	10:50		

Shipment for Case Complete?Y	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Cooler Temperature Upon Receipt	Chain of Custody Seal Number:
	E2119			186275-6

Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Custody Seal Intact? ___	Shipment Iced? ___

BNA GW = CLP TCL SEMIVOLATILES GW, PEST GW = CLP TCL PESTICIDE/PCBS GW

TR Number: 5-475721606-093003-0008

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USEPA Contract Laboratory Program
Organic Traffic Report & Chain of Custody Record

Case No: 32215
DAS No:

R

Region:	5	**Date Shipped:**	09/30/2003	**Chain of Custody Record**	**Sampler Signature:**
Project Code:		**Carrier Name:**	FedEx	**Relinquished By (Date / Time)**	**Received By (Date / Time)**
Account Code:		**Airbill:**	803497694406	1 [signature] 9/30/03 1700	
CERCLIS ID:		**Shipped to:**	A4 Scientific 1544 Sawdust Road Suite 505 The Woodlands TX 77380 (281) 292-5277	2	
Spill ID:				3	
Site Name/State:	C.M. CHRISTIANSEN - POLE YARD/WI			4	
Project Leader:	CHRIS SAARI				
Action:	Preliminary Assessment				
Sampling Co:	WISCONSIN DNR				

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	QC Type
E2122	Ground Water/ CHRIS SAARI	L/G	BNA GW (14), PEST GW (14)	5-245712 (Ice Only), 5-245713 (ICE ONLY) (2)	GW-RS	S: 09/30/2003 12:30		Rinsate

Shipment for Case Complete? Y	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
	E2117		186277-8

Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced? _____

BNA GW = CLP TCL SEMIVOLATILES GW, PEST GW = CLP TCL PESTICIDE/PCBS GW

TR Number: 5-475721606-093003-0009

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USEPA Contract Laboratory Program
Organic Traffic Report & Chain of Custody Record

Case No: 32215
DAS No:
SDG No: L

Date Shipped:	09/30/2003
Carrier Name:	FedEx
Airbill:	803497694406
Shipped to:	A4 Scientific 1544 Sawdust Road Suite 505 The Woodlands TX 77380 (281) 292-5277

Chain of Custody Record

Relinquished By	(Date / Time)	Received By	(Date / Time)
1 [signature]	9/30/03 1700		
2			
3			
4			

Sampler Signature:

For Lab Use Only

Lab Contract No:
Unit Price:
Transfer To:
Lab Contract No:
Unit Price:

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		INORGANIC SAMPLE No.	FOR LAB USE ONLY Sample Condition On Receipt
E2122	Ground Water/ CHRIS SAARI	L/G	BNA GW (14), PEST GW (14)	5-245712 (Ice Only), 5-245713 (ICE ONLY) (2)	GW-RS	S: 09/30/2003	12:30		

Shipment for Case Complete? Y	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Cooler Temperature Upon Receipt	Chain of Custody Seal Number:
	E2119			186277-8

Analysis Key: **Concentration:** L = Low, M = Low/Medium, H = High **Type/Designate:** Composite = C, Grab = G

Custody Seal Intact? ___ Shipment Iced? ___

BNA GW = CLP TCL SEMIVOLATILES GW, PEST GW = CLP TCL PESTICIDE/PCBS GW

TR Number: 5-475721606-093003-0009

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USEPA Contract Laboratory Program
Organic Traffic Report & Chain of Custody Record

Case No: 32215 **R**
DAS No:

Region:	5	**Date Shipped:**	09/30/2003	**Chain of Custody Record**	**Sampler Signature:** Dan Boardman
Project Code:		**Carrier Name:**	FedEx	**Relinquished By (Date / Time)**	**Received By (Date / Time)**
Account Code:		**Airbill:**	803497694406	1 09/30/03 1700	
CERCLIS ID:		**Shipped to:**	A4 Scientific 1544 Sawdust Road Suite 505 The Woodlands TX 77380 (281) 292-5277	2	
Spill ID:				3	
Site Name/State:	C.M. CHRISTIANSEN - POLE YARD/WI			4	
Project Leader:	CHRIS SAARI				
Action:	Preliminary Assessment				
Sampling Co:	WISCONSIN DNR				

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	QC Type
E2117	Ground Water/ DAN BOARDMAN	L/G	BNA GW (14), PEST GW (14)	5-245633 (Ice Only), 5-245780 (ICE ONLY) (2)	GW-04 DOWNGRADIENT MW	S: 09/30/2003 12:45		--
E2121	Ground Water/ DAN BOARDMAN	L/G	BNA GW (14), PEST GW (14)	5-245710 (Ice Only), 5-245711 (ICE ONLY) (2)	GW-FD	S: 09/30/2003 12:45		Field Duplicate

Shipment for Case Complete? Y	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
	E2119		186279-SC
Analysis Key:	**Concentration:** L = Low, M = Low/Medium, H = High	**Type/Designate:** Composite = C, Grab = G	**Shipment Iced?** _____

BNA GW = CLP TCL SEMIVOLATILES GW, PEST GW = CLP TCL PESTICIDE/PCBS GW

TR Number: 5-475721606-093003-0010

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USEPA Contract Laboratory Program
Organic Traffic Report & Chain of Custody Record

Case No: 32215
DAS No:
SDG No: L

Date Shipped:	09/30/2003
Carrier Name:	FedEx
Airbill:	803497694406
Shipped to:	A4 Scientific 1544 Sawdust Road Suite 505 The Woodlands TX 77380 (281) 292-5277

Chain of Custody Record

	Relinquished By (Date / Time)	Received By (Date / Time)
1	9/30/03 1700	
2		
3		
4		

Sampler Signature: Dan Boardman

For Lab Use Only

Lab Contract No:
Unit Price:
Transfer To:
Lab Contract No:
Unit Price:

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		INORGANIC SAMPLE No.	FOR LAB USE ONLY Sample Condition On Receipt
E2117	Ground Water/ DAN BOARDMAN	L/G	BNA GW (14), PEST GW (14)	5-245633 (Ice Only), 5-245780 (ICE ONLY) (2)	GW-04 DOWNGRADIENT MW	S: 09/30/2003	12:45		
E2121	Ground Water/ DAN BOARDMAN	L/G	BNA GW (14), PEST GW (14)	5-245710 (Ice Only), 5-245711 (ICE ONLY) (2)	GW-FD	S: 09/30/2003	12:45		

Shipment for Case Complete?Y	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Cooler Temperature Upon Receipt	Chain of Custody Seal Number:
	E2119			186279-80

Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Custody Seal Intact? ___	Shipment Iced? ___

BNA GW = CLP TCL SEMIVOLATILES GW, PEST GW = CLP TCL PESTICIDE/PCBS GW

TR Number: 5-475721606-093003-0010

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USEPA Contract Laboratory Program
Generic Chain of Custody

Reference Case: 32215 R
Client No:

Region: 5	**Date Shipped:** 09/30/2003 10/01/03 SD	**Chain of Custody Record**		**Sampler Signature:**	
Project Code:	**Carrier Name:** FedEx	**Relinquished By**	**(Date / Time)**	**Received By**	**(Date / Time)**
Account Code:	**Airbill:** 803497694428	1	9/30/03 1700		09/30/03 1700
CERCLIS ID:	**Shipped to:** Central Regional Laboratory	2	10/01/03 0800		
Spill ID:	536 South Clark, 10th floor	3			
Site Name/State: C.M. CHRISTIANSEN - POLE YARD/WI	Chicago IL 60605	4			
Project Leader: CHRIS SAARI	(312) 353-9083				
Action: Preliminary Assessment					
Sampling Co: WISCONSIN DNR					

SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	QC Type
E2130	Sediment/ PHIL RICHARD	M/G	TOC SE (14)	5-245882 (ICE ONLY) (1)	SED-01A MILITARY UPSTREAM	S: 09/30/2003 11:43	--
E2131	Sediment/ PHIL RICHARD	M/G	TOC SE (14)	5-245885 (ICE ONLY) (1)	SED-01B MILITARY UPSTREAM	S: 09/30/2003 11:46	--
E2132	Sediment/ PHIL RICHARD	M/G	TOC SE (14)	5-245888 (ICE ONLY) (1)	SED-02A MILITARY ADJ DS	&S: 09/30/2003 1600	--
E2133	Sediment/ PHIL RICHARD	M/G	TOC SE (14)	5-245891 (ICE ONLY) (1)	SED-02B MILITARY ADJ DS	&S: 09/30/2003 1604	--
E2134	Sediment/ PHIL RICHARD	M/G	TOC SE (14)	5-245894 (ICE ONLY) (1)	SED-03A MILITARY ADJ DS	&S: 09/30/2003 1515	Spike
E2135	Sediment/ PHIL RICHARD	M/G	TOC SE (14)	5-245897 (ICE ONLY) (1)	SED-03B MILITARY ADJ DS	&S: 09/30/2003 1522	Spike
E2136	Sediment/ PHIL RICHARD	M/G	TOC SE (14)	5-245900 (ICE ONLY) (1)	SED-04A MILITARY ADJ DS	&S: 09/30/2003 1435	--
E2137	Sediment/ PHIL RICHARD	M/G	TOC SE (14)	5-246103 (ICE ONLY) (1)	SED-04B MILITARY ADJ DS	&S: 09/30/2003 1439 SD	--
E2138	Sediment/ PHIL RICHARD	M/G	TOC SE (14)	5-246106 (ICE ONLY) (1)	SED-05A MILITARY ADJ DS	&S: 09/30/2003 13:40	--
E2139	Sediment/ PHIL RICHARD	M/G	TOC SE (14)	5-246109 (ICE ONLY) (1)	SED-05B MILITARY ADJ DS	&S: 09/30/2003 13:44	--
E2140	Sediment/ PHIL RICHARD	M/G	TOC SE (14)	5-246112 (ICE ONLY) (1)	SED-06A MILITARY ADJ DS	&S: 09/30/2003 12:59	--

Shipment for Case Complete? Y	**Sample(s) to be used for laboratory QC:** E2134-5	**Additional Sampler Signature(s):**	**Chain of Custody Seal Number:** SD 10/06/03 ~~78223-4~~ 82352-3
Analysis Key: TOC SE = TOTAL ORGANIC CARBON SE	**Concentration:** L = Low, M = Low/Medium, H = High	**Type/Designate:** Composite = C, Grab = G	**Shipment Iced?** _____

TR Number: 5-475721606-093003-0011

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USEPA Contract Laboratory Program
Generic Chain of Custody

Reference Case: 32215
Client No:

R

Region: 5	**Date Shipped:** 09/30/2003 10/01/03 SD	**Chain of Custody Record**		**Sampler Signature:**	
Project Code:	**Carrier Name:** FedEx SD	**Relinquished By**	**(Date / Time)**	**Received By**	**(Date / Time)**
Account Code:	**Airbill:** 803497694428	1 SD	9/30/03 1700		10/1/03 0800
CERCLIS ID:	**Shipped to:** Central Regional Laboratory	2	10/01/03 0800		
Spill ID:	536 South Clark, 10th floor	3			
Site Name/State: C.M. CHRISTIANSEN - POLE YARD/WI	Chicago IL 60605	4			
Project Leader: CHRIS SAARI	(312) 353-9083				
Action: Preliminary Assessment					
Sampling Co: WISCONSIN DNR					

SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	QC Type
E2141	Sediment/ PHIL RICHARD	M/G	TOC SE (14)	5-246115 (ICE ONLY) (1)	SED-06B MILITARY ADJ DS	&S: 09/30/2003 12:58	--
E2142	Sediment/ PHIL RICHARD	M/G	TOC SE (14)	5-246118 (ICE ONLY) (1)	SED-FDA MILITARY CREEK	S: 09/30/2003 13:40	Field Duplicate
E2143	Sediment/ PHIL RICHARD	M/G	TOC SE (14)	5-246121 (ICE ONLY) (1)	SED-FDB MILITARY CREEK	S: 09/30/2003 13:44	Field Duplicate

Shipment for Case Complete? Y	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number: SD 10-06-03
	E2134-5		18223-4 82352-3
Analysis Key:	**Concentration:** L = Low, M = Low/Medium, H = High	**Type/Designate:** Composite = C, Grab = G	**Shipment Iced?**

TOC SE = TOTAL ORGANIC CARBON SE

TR Number: 5-475721606-093003-0011

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, 2000 Edmund Halley Dr., Reston, VA. 20191-3400 Phone 703/264-9348 Fax 703/264-9222

REGION COPY

USEPA Contract Laboratory Program
Generic Chain of Custody

Reference Case 32215
Client No:
SDG No: L

Date Shipped:	09/30/2003 10/01/03 SD
Carrier Name:	FedEx
Airbill:	803497694428
Shipped to:	Central Regional Laboratory 536 South Clark, 10th floor Chicago IL 60605 (312) 353-9083

Chain of Custody Record

Sampler Signature: [signature]

	Relinquished By	(Date / Time)	Received By	(Date / Time)
1	[signature]	9/30/03 1700	[signature]	09/30/03 1700
2	[signature]	10/01/03 0800		
3				
4				

For Lab Use Only

Lab Contract No:
Unit Price:
Transfer To:
Lab Contract No:
Unit Price:

SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		FOR LAB USE ONLY Sample Condition On Receipt
E2130	Sediment/ PHIL RICHARD	M/G	TOC SE (14)	5-245882 (ICE ONLY) (1)	SED-01A MILITARY UPSTREAM	S: 09/30/2003	11:43	
E2131	Sediment/ PHIL RICHARD	M/G	TOC SE (14)	5-245885 (ICE ONLY) (1)	SED-01B MILITARY UPSTREAM	S: 09/30/2003	11:46	
E2132	Sediment/ PHIL RICHARD	M/G	TOC SE (14)	5-245888 (ICE ONLY) (1)	SED-02A MILITARY ADJ & DS	S: 09/30/2003	1600	
E2133	Sediment/ PHIL RICHARD	M/G	TOC SE (14)	5-245891 (ICE ONLY) (1)	SED-02B MILITARY ADJ & DS	S: 09/30/2003	1604	
E2134	Sediment/ PHIL RICHARD	M/G	TOC SE (14)	5-245894 (ICE ONLY) (1)	SED-03A MILITARY ADJ & DS	S: 09/30/2003	1518	
E2135	Sediment/ PHIL RICHARD	M/G	TOC SE (14)	5-245897 (ICE ONLY) (1)	SED-03B MILITARY ADJ & DS	S: 09/30/2003	1522	
E2136	Sediment/ PHIL RICHARD	M/G	TOC SE (14)	5-245900 (ICE ONLY) (1)	SED-04A MILITARY ADJ & DS	S: 09/30/2003	1435	
E2137	Sediment/ PHIL RICHARD	M/G	TOC SE (14)	5-246103 (ICE ONLY) (1)	SED-04B MILITARY ADJ & DS	S: 09/30/2003	1439 SD	
E2138	Sediment/ PHIL RICHARD	M/G	TOC SE (14)	5-246106 (ICE ONLY) (1)	SED-05A MILITARY ADJ & DS	S: 09/30/2003	13:40	
E2139	Sediment/ PHIL RICHARD	M/G	TOC SE (14)	5-246109 (ICE ONLY) (1)	SED-05B MILITARY ADJ & DS	S: 09/30/2003	13:44	

[signature] 10/01/03

Shipment for Case Complete? Y	Sample(s) to be used for laboratory QC: E2134-5	Additional Sampler Signature(s):	Cooler Temperature Upon Receipt	Chain of Custody Seal Number: ~~180283~~ 82352-3
Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G		Custody Seal Intact? ___ Shipment Iced? ___

TOC SE = TOTAL ORGANIC CARBON SE

TR Number: 5-475721606-093003-0011

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USEPA Contract Laboratory Program
Generic Chain of Custody

Reference Case 32215
Client No:
SDG No:

L

Date Shipped:	09/30/2003 10/01/03
Carrier Name:	FedEx SD
Airbill:	803497694428
Shipped to:	Central Regional Laboratory 536 South Clark, 10th floor Chicago IL 60605 (312) 353-9083

Chain of Custody Record

	Relinquished By (Date / Time)	Received By (Date / Time)
1	9/30/03 1700	09/30/03 1700
2	10/01/03 0800	
3		
4		

Sampler Signature: PHJE. RH

For Lab Use Only

Lab Contract No:
Unit Price:
Transfer To:
Lab Contract No:
Unit Price:

SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLECOLLECT DATE/TIME		FOR LAB USE ONLY Sample Condition On Receipt
E2140	Sediment/ PHIL RICHARD	M/G	TOC SE (14)	5-246112 (ICE ONLY) (1)	SED-06A MILITARY ADJ & DS	S: 09/30/2003	12:59	
E2141	Sediment/ PHIL RICHARD	M/G	TOC SE (14)	5-246115 (ICE ONLY) (1)	SED-06B MILITARY ADJ & DS	S: 09/30/2003	12:58	
E2142	Sediment/ PHIL RICHARD	M/G	TOC SE (14)	5-246118 (ICE ONLY) (1)	SED-FDA MILITARY CREEK	S: 09/30/2003	13:40	
E2143	Sediment/ PHIL RICHARD	M/G	TOC SE (14)	5-246121 (ICE ONLY) (1)	SED-FDB MILITARY CREEK	S: 09/30/2003	13:44	

Christopher Soon

Shipment for Case Complete? Y	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Cooler Temperature Upon Receipt	Chain of Custody Seal Number:
	E2134-5			82352-3 10/01/03

Analysis Key: **Concentration:** L = Low, M = Low/Medium, H = High **Type/Designate:** Composite = C, Grab = G

Custody Seal Intact? ___ Shipment Iced? ___

TOC SE = TOTAL ORGANIC CARBON SE

TR Number: 5-475721606-093003-0011

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USEPA Contract Laboratory Program
Generic Chain of Custody

Reference Case: 32215
Client No:

R

Region: 5	**Date Shipped:** 09/30/2003- 10/01/03	**Chain of Custody Record**	**Sampler Signature:**
Project Code:	**Carrier Name:** FedEx	**Relinquished By (Date / Time)**	**Received By (Date / Time)**
Account Code:	**Airbill:** 803497694439	1 9/30/03 1700	09/30/03 1700
CERCLIS ID:	**Shipped to:** Southwest Labs of Oklahoma, Inc. 1700 West Albany Suite C Broken Arrow OK 74012 (918) 251-2858	2 10/01/03 0800	
Spill ID:		3	
Site Name/State: C.M. CHRISTIANSEN - POLE YARD/WI		4	
Project Leader: CHRIS SAARI			
Action: Preliminary Assessment			
Sampling Co: WISCONSIN DNR			

SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	QC Type
E2130	Sediment/ PHIL RICHARD	M/G	PCDD/PCDF (14)	5-245881 (ICE ONLY) (1)	SED-01A MILITARY UPSTREAM	S: 09/30/2003 11:43	--
E2131	Sediment/ PHIL RICHARD	M/G	PCDD/PCDF (14)	5-245884 (ICE ONLY) (1)	SED-01B MILITARY UPSTREAM	S: 09/30/2003 11:46	--
E2132	Sediment/ PHIL RICHARD	M/G	PCDD/PCDF (14)	5-245887 (ICE ONLY) (1)	SED-02A MILITARY ADJ DS	&S: 09/30/2003 1600	--
E2133	Sediment/ PHIL RICHARD	M/G	PCDD/PCDF (14)	5-245890 (ICE ONLY) (1)	SED-02B MILITARY ADJ DS	&S: 09/30/2003 1604	--
E2134	Sediment/ PHIL RICHARD	M/G	PCDD/PCDF (14)	5-245893 (ICE ONLY) (1)	SED-03A MILITARY ADJ DS	&S: 09/30/2003 1518	Spike
E2135	Sediment/ PHIL RICHARD	M/G	PCDD/PCDF (14)	5-245896 (ICE ONLY) (1)	SED-03B MILITARY ADJ DS	&S: 09/30/2003 1522	Spike
E2136	Sediment/ PHIL RICHARD	M/G	PCDD/PCDF (14)	5-245899 (ICE ONLY) (1)	SED-04A MILITARY ADJ DS	&S: 09/30/2003 1435	--
E2137	Sediment/ PHIL RICHARD	M/G	PCDD/PCDF (14)	5-246102 (ICE ONLY) (1)	SED-04B MILITARY ADJ DS	&S: 09/30/2003 1439 SD	--
E2138	Sediment/ PHIL RICHARD	M/G	PCDD/PCDF (14)	5-246105 (ICE ONLY) (1)	SED-05A MILITARY ADJ DS	&S: 09/30/2003 13:40	--
E2139	Sediment/ PHIL RICHARD	M/G	PCDD/PCDF (14)	5-246108 (ICE ONLY) (1)	SED-05B MILITARY ADJ DS	&S: 09/30/2003 13:44	--
E2140	Sediment/ PHIL RICHARD	M/G	PCDD/PCDF (14)	5-246111 (ICE ONLY) (1)	SED-06A MILITARY ADJ DS	&S: 09/30/2003 12:59	--

Shipment for Case Complete? Y	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
	E2134-5		186255.6
Analysis Key:	**Concentration:** L = Low, M = Low/Medium, H = High	**Type/Designate:** Composite = C, Grab = G	**Shipment Iced?**
PCDD/PCDF = DIOXIN/FURANS SE			

TR Number: 5-475721606-093003-0012

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USEPA Contract Laboratory Program
Generic Chain of Custody

Reference Case: 32215
Client No:

R

Region:	5	**Date Shipped:**	09/30/2003 10/14/03 SO	**Chain of Custody Record**	**Sampler Signature:**
Project Code:		**Carrier Name:**	FedEx	**Relinquished By (Date / Time)**	**Received By (Date / Time)**
Account Code:		**Airbill:**	803497694439	1 9/30/03 1700	09/30/03 1700
CERCLIS ID:		**Shipped to:**	Southwest Labs of Oklahoma, Inc. 1700 West Albany Suite C Broken Arrow OK 74012 (918) 251-2858	2 10/1/03 0800	
Spill ID:				3	
Site Name/State:	C.M. CHRISTIANSEN - POLE YARD/WI			4	
Project Leader:	CHRIS SAARI				
Action:	Preliminary Assessment				
Sampling Co:	WISCONSIN DNR				

SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	QC Type
E2141	Sediment/ PHIL RICHARD	M/G	PCDD/PCDF (14)	5-246114 (ICE ONLY) (1)	SED-06B MILITARY ADJ DS	S: 09/30/2003 12:58	--
E2142	Sediment/ PHIL RICHARD	M/G	PCDD/PCDF (14)	5-246117 (ICE ONLY) (1)	SED-FDA MILITARY CREEK	S: 09/30/2003 13:40	Field Duplicate
E2143	Sediment/ PHIL RICHARD	M/G	PCDD/PCDF (14)	5-246120 (ICE ONLY) (1)	SED-FDB MILITARY CREEK	S: 09/30/2003 13:44	Field Duplicate

Shipment for Case Complete? Y	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
	E2134-5		184285-6
Analysis Key: PCDD/PCDF = DIOXIN/FURANS SE	**Concentration:** L = Low, M = Low/Medium, H = High	**Type/Designate:** Composite = C, Grab = G	**Shipment Iced?** _____

TR Number: **5-475721606-093003-0012**

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USEPA Contract Laboratory Program
Generic Chain of Custody

Reference Case 32215
Client No:
SDG No: L

Date Shipped:	09/30/2003	**Chain of Custody Record**	Sampler Signature:
Carrier Name:	FedEx	Relinquished By (Date / Time)	Received By (Date / Time)
Airbill:	803497694439	1 9/30/03 1700	09/30/03 1700
Shipped to:	Southwest Labs of Oklahoma, Inc. 1700 West Albany Suite C Broken Arrow OK 74012 (918) 251-2858	2 10/01/03 0810	
		3	
		4	

For Lab Use Only
Lab Contract No:
Unit Price:
Transfer To:
Lab Contract No:
Unit Price:

SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		FOR LAB USE ONLY Sample Condition On Receipt
E2130	Sediment/ PHIL RICHARD	M/G	PCDD/PCDF (14)	5-245881 (ICE ONLY) (1)	SED-01A MILITARY UPSTREAM	S: 09/30/2003	11:43	
E2131	Sediment/ PHIL RICHARD	M/G	PCDD/PCDF (14)	5-245884 (ICE ONLY) (1)	SED-01B MILITARY UPSTREAM	S: 09/30/2003	11:46	
E2132	Sediment/ PHIL RICHARD	M/G	PCDD/PCDF (14)	5-245887 (ICE ONLY) (1)	SED-02A MILITARY ADJ & DS	S: 09/30/2003	1000	
E2133	Sediment/ PHIL RICHARD	M/G	PCDD/PCDF (14)	5-245890 (ICE ONLY) (1)	SED-02B MILITARY ADJ & DS	S: 09/30/2003	1004	
E2134	Sediment/ PHIL RICHARD	M/G	PCDD/PCDF (14)	5-245893 (ICE ONLY) (1)	SED-03A MILITARY ADJ & DS	S: 09/30/2003	1518	
E2135	Sediment/ PHIL RICHARD	M/G	PCDD/PCDF (14)	5-245896 (ICE ONLY) (1)	SED-03B MILITARY ADJ & DS	S: 09/30/2003	1522	
E2136	Sediment/ PHIL RICHARD	M/G	PCDD/PCDF (14)	5-245899 (ICE ONLY) (1)	SED-04A MILITARY ADJ & DS	S: 09/30/2003	1436	
E2137	Sediment/ PHIL RICHARD	M/G	PCDD/PCDF (14)	5-246102 (ICE ONLY) (1)	SED-04B MILITARY ADJ & DS	S: 09/30/2003	1437 SD	
E2138	Sediment/ PHIL RICHARD	M/G	PCDD/PCDF (14)	5-246105 (ICE ONLY) (1)	SED-05A MILITARY ADJ & DS	S: 09/30/2003	13:40	
E2139	Sediment/ PHIL RICHARD	M/G	PCDD/PCDF (14)	5-246108 (ICE ONLY) (1)	SED-05B MILITARY ADJ & DS	S: 09/30/2003	13:44	

Shipment for Case Complete? Y	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Cooler Temperature Upon Receipt	Chain of Custody Seal Number:
	E2134-S			186255-6

Analysis Key: **Concentration:** L = Low, M = Low/Medium, H = High **Type/Designate:** Composite = C, Grab = G

Custody Seal Intact? ___ Shipment Iced? ___

PCDD/PCDF = DIOXIN/FURANS SE

TR Number: 5-475721606-093003-0012

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USEPA Contract Laboratory Program
Generic Chain of Custody

Reference Case 32215
Client No:
SDG No:
L

Date Shipped:	09/30/2003 10/01/03 SD
Carrier Name:	FedEx
Airbill:	803497694439
Shipped to:	Southwest Labs of Oklahoma, Inc. 1700 West Albany Suite C Broken Arrow OK 74012 (918) 251-2858

Chain of Custody Record

Relinquished By	(Date / Time)	Received By	(Date / Time)
1	9/30/03 1700		09/30/03 1700
2	10/01/03 0800		
3			
4			

Sampler Signature:

For Lab Use Only

Lab Contract No:
Unit Price:
Transfer To:
Lab Contract No:
Unit Price:

SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		FOR LAB USE ONLY Sample Condition On Receipt
E2140	Sediment/ PHIL RICHARD	M/G	PCDD/PCDF (14)	5-246111 (ICE ONLY) (1)	SED-06A MILITARY ADJ & DS	S: 09/30/2003	12:59	
E2141	Sediment/ PHIL RICHARD	M/G	PCDD/PCDF (14)	5-246114 (ICE ONLY) (1)	SED-06B MILITARY ADJ & DS	S: 09/30/2003	12:58	
E2142	Sediment/ PHIL RICHARD	M/G	PCDD/PCDF (14)	5-246117 (ICE ONLY) (1)	SED-FDA MILITARY CREEK	S: 09/30/2003	13:40	
E2143	Sediment/ PHIL RICHARD	M/G	PCDD/PCDF (14)	5-246120 (ICE ONLY) (1)	SED-FDB MILITARY CREEK	S: 09/30/2003	13:44	

Shipment for Case Complete? Y	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Cooler Temperature Upon Receipt	Chain of Custody Seal Number:
	E2134-S			180285

Analysis Key: **Concentration:** L = Low, M = Low/Medium, H = High **Type/Designate:** Composite = C, Grab = G

Custody Seal Intact? ___ Shipment Iced? ___

PCDD/PCDF = DIOXIN/FURANS SE

TR Number: 5-475721606-093003-0012

LABORATORY COPY

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Send Copy to: Sample Management Office, 2000 Edmund Halley Dr., Reston, VA. 20191-3400 Phone 703/264-9348 Fax 703/264-9222

USEPA Contract Laboratory Program
Organic Traffic Report & Chain of Custody Record

Case No: 32215 **R**
DAS No:

Region: 5	Date Shipped: 10/6/03 09/30/2003 SD	Chain of Custody Record	Sampler Signature:
Project Code:	Carrier Name: FedEx	Relinquished By (Date / Time)	Received By (Date / Time)
Account Code:	Airbill: 803497694440	1 9/30/03 1700	09/30/03 1700
CERCLIS ID:	Shipped to: Ceimic Corporation	2 10/01/03 0800	
Spill ID:	10 Dean Knauss Drive	3	
Site Name/State: C.M. CHRISTIANSEN - POLE YARD/WI	Narragansett RI 02882	4	
Project Leader: CHRIS SAARI	(401) 782-8900		
Action: Preliminary Assessment			
Sampling Co: WISCONSIN DNR			

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	QC Type
E2130	Sediment/ PHIL RICHARD	M/G	SPP SE (14)	5-245880 (ICE ONLY) (1)	SED-01A MILITARY UPSTREAM	S: 09/30/2003 11:43		--
E2131	Sediment/ PHIL RICHARD	M/G	SPP SE (14)	5-245883 (ICE ONLY) (1)	SED-01B MILITARY UPSTREAM	S: 09/30/2003 11:46		--
E2132	Sediment/ PHIL RICHARD	M/G	SPP SE (14)	5-245886 (ICE ONLY) (1)	SED-02A MILITARY ADJ DS	&S: 09/30/2003 1600		--
E2133	Sediment/ PHIL RICHARD	M/G	SPP SE (14)	5-245889 (ICE ONLY) (1)	SED-02B MILITARY ADJ DS	&S: 09/30/2003 1604		--
E2134	Sediment/ PHIL RICHARD	M/G	SPP SE (14)	5-245892 (ICE ONLY) (1)	SED-03A MILITARY ADJ DS	&S: 09/30/2003 1515		Spike
E2135	Sediment/ PHIL RICHARD	M/G	SPP SE (14)	5-245895 (ICE ONLY) (1)	SED-03B MILITARY ADJ DS	&S: 09/30/2003 1522		Spike
E2136	Sediment/ PHIL RICHARD	M/G	SPP SE (14)	5-245898 (ICE ONLY) (1)	SED-04A MILITARY ADJ DS	&S: 09/30/2003 1435		--
E2137	Sediment/ PHIL RICHARD	M/G	SPP SE (14)	5-246101 (ICE ONLY) (1)	SED-04B MILITARY ADJ DS	&S: 09/30/2003 1439 SD		--
E2138	Sediment/ PHIL RICHARD	M/G	SPP SE (14)	5-246104 (ICE ONLY) (1)	SED-05A MILITARY ADJ DS	&S: 09/30/2003 13:40		--
E2139	Sediment/ PHIL RICHARD	M/G	SPP SE (14)	5-246107 (ICE ONLY) (1)	SED-05B MILITARY ADJ DS	&S: 09/30/2003 13:44		--
E2140	Sediment/ PHIL RICHARD	M/G	SPP SE (14)	5-246110 (ICE ONLY) (1)	SED-06A MILITARY ADJ DS	&S: 09/30/2003 12:59		--

Shipment for Case Complete? Y	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
	E2134-S		186287-8

Analysis Key: **Concentration:** L = Low, M = Low/Medium, H = High **Type/Designate:** Composite = C, Grab = G **Shipment Iced?** _____

SPP SE = CLP TCL SEMIVOLATILES, PCBS, PESTICIDES

TR Number: 5-475721606-093003-0013

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Send Copy to: Sample Management Office, 2000 Edmund Halley Dr., Reston, VA. 20191-3400 Phone 703/264-9348 Fax 703/264-9222

USEPA Contract Laboratory Program
Organic Traffic Report & Chain of Custody Record

Case No: 32215
DAS No:
R

Region:	5	**Date Shipped:**	10/6/03 SD ~~09/30/2003~~	**Chain of Custody Record**	**Sampler Signature:**
Project Code:		**Carrier Name:**	FedEx	**Relinquished By (Date / Time)**	**Received By (Date / Time)**
Account Code:		**Airbill:**	803497694440	1 9/30/03 1700	09/30/03 1700
CERCLIS ID:		**Shipped to:**	Ceimic Corporation	2 10/6/03 0800	
Spill ID:			10 Dean Knauss Drive	3	
Site Name/State:	C.M. CHRISTIANSEN - POLE YARD/WI		Narragansett RI 02882	4	
Project Leader:	CHRIS SAARI		(401) 782-8900		
Action:	Preliminary Assessment				
Sampling Co:	WISCONSIN DNR				

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	QC Type
E2141	Sediment/ PHIL RICHARD	M/G	SPP SE (14)	5-246113 (ICE ONLY) (1)	SED-06B MILITARY ADJ DS	S: 09/30/2003 12:58		--
E2142	Sediment/ PHIL RICHARD	M/G	SPP SE (14)	5-246116 (ICE ONLY) (1)	SED-FDA MILITARY CREEK	S: 09/30/2003 13:40		Field Duplicate
E2143	Sediment/ PHIL RICHARD	M/G	SPP SE (14)	5-246119 (ICE ONLY) (1)	SED-FDB MILITARY CREEK	S: 09/30/2003 13:44		Field Duplicate

Shipment for Case Complete? Y	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
	E2134-S		186287-8

Analysis Key: **Concentration:** L = Low, M = Low/Medium, H = High **Type/Designate:** Composite = C, Grab = G **Shipment Iced?** _____

SPP SE = CLP TCL SEMIVOLATILES, PCBS, PESTICIDES

TR Number: 5-475721606-093003-0013

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USEPA Contract Laboratory Program
Organic Traffic Report & Chain of Custody Record

Case No: 32215
DAS No:
SDG No: L

Date Shipped:	09/30/2003
Carrier Name:	FedEx
Airbill:	803497694440
Shipped to:	Ceimic Corporation 10 Dean Knauss Drive Narragansett RI 02882 (401) 782-8900

Chain of Custody Record

Relinquished By	(Date / Time)	Received By	(Date / Time)
1	9/30/03 1700		09/30/03 1700
2	10/01/03 0800		
3			
4			

Sampler Signature:

For Lab Use Only

Lab Contract No:
Unit Price:
Transfer To:
Lab Contract No:
Unit Price:

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		INORGANIC SAMPLE No.	FOR LAB USE ONLY Sample Condition On Receipt
E2130	Sediment/ PHIL RICHARD	M/G	SPP SE (14)	5-245880 (ICE ONLY) (1)	SED-01A MILITARY UPSTREAM	S: 09/30/2003	11:43		
E2131	Sediment/ PHIL RICHARD	M/G	SPP SE (14)	5-245883 (ICE ONLY) (1)	SED-01B MILITARY UPSTREAM	S: 09/30/2003	11:46		
E2132	Sediment/ PHIL RICHARD	M/G	SPP SE (14)	5-245886 (ICE ONLY) (1)	SED-02A MILITARY ADJ & DS	S: 09/30/2003	1600		
E2133	Sediment/ PHIL RICHARD	M/G	SPP SE (14)	5-245889 (ICE ONLY) (1)	SED-02B MILITARY ADJ & DS	S: 09/30/2003	1604		
E2134	Sediment/ PHIL RICHARD	M/G	SPP SE (14)	5-245892 (ICE ONLY) (1)	SED-03A MILITARY ADJ & DS	S: 09/30/2003	1515		
E2135	Sediment/ PHIL RICHARD	M/G	SPP SE (14)	5-245895 (ICE ONLY) (1)	SED-03B MILITARY ADJ & DS	S: 09/30/2003	1522		
E2136	Sediment/ PHIL RICHARD	M/G	SPP SE (14)	5-245898 (ICE ONLY) (1)	SED-04A MILITARY ADJ & DS	S: 09/30/2003	1435		
E2137	Sediment/ PHIL RICHARD	M/G	SPP SE (14)	5-246101 (ICE ONLY) (1)	SED-04B MILITARY ADJ & DS	S: 09/30/2003	1437 SD		
E2138	Sediment/ PHIL RICHARD	M/G	SPP SE (14)	5-246104 (ICE ONLY) (1)	SED-05A MILITARY ADJ & DS	S: 09/30/2003	13:40		
E2139	Sediment/ PHIL RICHARD	M/G	SPP SE (14)	5-246107 (ICE ONLY) (1)	SED-05B MILITARY ADJ & DS	S: 09/30/2003	13:44		

Shipment for Case Complete? Y	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Cooler Temperature Upon Receipt	Chain of Custody Seal Number:
	E2134-S			180287-8

Analysis Key: **Concentration:** L = Low, M = Low/Medium, H = High **Type/Designate:** Composite = C, Grab = G

Custody Seal Intact? ___ Shipment Iced? ___

SPP SE = CLP TCL SEMIVOLATILES, PCBS, PESTICIDES

TR Number: 5-475721606-093003-0013

LABORATORY COPY

PR provides preliminary results. Requests for preliminary results will increase analytical costs.
Send Copy to: Sample Management Office, 2000 Edmund Halley Dr., Reston, VA. 20191-3400 Phone 703/264-9348 Fax 703/264-9222

USEPA Contract Laboratory Program
Organic Traffic Report & Chain of Custody Record

Case No: 32215
DAS No:
SDG No:
L

Date Shipped:	09/30/2003 ~~10/6/03~~ SD
Carrier Name:	FedEx
Airbill:	803497694440
Shipped to:	Ceimic Corporation 10 Dean Knauss Drive Narragansett RI 02882 (401) 782-8900

Chain of Custody Record

	Relinquished By	(Date / Time)	Received By	(Date / Time)
1	SD	9/30/03 1700	[signature]	09/30/03 1700
2	[signature]	10/01/03 0800		
3				
4				

Sampler Signature: [signature]

For Lab Use Only

Lab Contract No:
Unit Price:
Transfer To:
Lab Contract No:
Unit Price:

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		INORGANIC SAMPLE No.	FOR LAB USE ONLY Sample Condition On Receipt
E2140	Sediment/ PHIL RICHARD	M/G	SPP SE (14)	5-246110 (ICE ONLY) (1)	SED-06A MILITARY ADJ & DS	S: 09/30/2003	12:59		
E2141	Sediment/ PHIL RICHARD	M/G	SPP SE (14)	5-246113 (ICE ONLY) (1)	SED-06B MILITARY ADJ & DS	S: 09/30/2003	12:58		
E2142	Sediment/ PHIL RICHARD	M/G	SPP SE (14)	5-246116 (ICE ONLY) (1)	SED-FDA MILITARY CREEK	S: 09/30/2003	13:40		
E2143	Sediment/ PHIL RICHARD	M/G	SPP SE (14)	5-246119 (ICE ONLY) (1)	SED-FDB MILITARY CREEK	S: 09/30/2003	13:44		

Shipment for Case Complete? Y	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Cooler Temperature Upon Receipt	Chain of Custody Seal Number:
	E2134-5			186287-8

Analysis Key: **Concentration:** L = Low, M = Low/Medium, H = High **Type/Designate:** Composite = C, Grab = G

Custody Seal Intact? ___ Shipment Iced? ___

SPP SE = CLP TCL SEMIVOLATILES, PCBS, PESTICIDES

TR Number: 5-475721606-093003-0013

LABORATORY COPY

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Wisconsin Department of Natural Resources
Superfund Site Assessment
Expanded Site Inspection

HEALTH AND SAFETY PLAN

Site Name:	C.M. Christiansen – Pole Yard
U.S. EPA ID#:	WID988639035
Location:	County E (Lake St.), Village of Phelps, Vilas County, Wisconsin
Directions to Site:	To reach the site, travel north from the Village of Phelps on State Highway 17 approximately 0.25 miles to County Highway E. Turn left (north) onto County Highway E and travel approximately 0.5 miles to the Military Creek bridge. The site access road is located immediately past the bridge on the north side of County Highway E. The site is located north of County Highway E and west of Military Creek.
Dates of Investigation:	September 30 – October 1, 2003
Project Manager:	Christopher A. Saari Department of Natural Resources 2501 Golf Course Road Ashland, WI 54806 Telephone 715-685-2920

I certify that I have read this Health and Safety Plan (please sign and date.)

Field Support Group:

Norm Dunbar Norman Dunbar 8/21/03

John Sager John Sager

Greer Lundquist Greer Lundquist

Shannon Davis Shannon Davis

Phil Richard Phil E. Richard

Tom Janisch Tom Janisch

Chuck Weister Chuck Weister

Bill Schultz Bill Schultz

~~Chuck Warzecha~~ Dan Boardman Dan Boardman

Chris Saari Christopher A. Saari 9/30/03

Reviewed and Approved by: John Thomas 8/21/03
Northern Region Team Supervisor **Date**

Prepared by Christopher A. Saari, Hydrogeologist
Bureau for Remediation and Redevelopment
Wisconsin Department of Natural Resources

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Superfund Site Assessment
Expanded Site Inspection

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Norm Dunbar _____ Tom Janisch _____

John Sager _____ Chuck Weister _____

Greer Lundquist _____ Bill Schultz _____

Shannon Davis _____ Chuck Warzecha _____

Phil Richard _____ Chris Saari _____

Reviewed and Approved by: _____
Northern Region Team Supervisor **Date**

Prepared by Christopher A. Saari, Hydrogeologist
Bureau for Remediation and Redevelopment
Wisconsin Department of Natural Resources

TABLE OF CONTENTS

ANTICIPATE

A. Objective

This plan was developed to help protect the health and safety of all DNR personnel investigating potentially contaminated sites. The primary purpose of this health and safety plan is to help site workers recognize and evaluate the chemical, physical, and biological hazards they may potentially encounter and implement controls to minimize the risks of these hazards.

B. Site Description and History

WDNR performed Preliminary Assessment (PA) and Screening Site Inspection (SSI) activities on this site in 1993. Much of the following information has been gathered from the PA and SSI reports, prepared by WDNR and dated September 27, 1993 and August 11, 1995, respectively. These reports are available for review at the WDNR office, 2501 Golf Course Road, Ashland, Wisconsin.

The C.M. Christiansen site is a non-operational pole dipping facility. The site is located on a 150-acre parcel owned by the C.M. Christiansen Company, Inc. Eric Christiansen is President of the company. The site property is split by Military Creek. The pole dipping operation was located on the western third of the property, west of Military Creek. The site operated from 1954 until 1981. Western red cedar and other wooden poles were treated in a vat or tank containing a solution of 5% pentachlorophenol (PCP) with No. 2 fuel oil as the carrier. Treated poles were removed from the vat and allowed to drip dry on pads near the vat or on other areas of the site. The treatment solution was stored in a 30,000-gallon aboveground storage tank, and was pumped to the treatment vat through underground piping. Several buildings and aboveground structures were present while the site was in operation, but these structures have all been removed.

In terms of its operating life, the C.M. Christiansen site does not have an extensive file history with WDNR. There is no documentation of enforcement actions taken against the company by WDNR or its predecessor agencies. The company appeared to have operated the facility under the regulations that were in effect for that period.

Previous field investigations by WDNR Water Resources (now Watershed) Management and Fisheries staff had determined that the numbers and diversity of aquatic species in Military Creek adjacent to the site were low in comparison to the given habitat. In June 1986, WDNR staff collected five fish samples from Military Creek for PCP analyses. Two of the samples, from a yellow perch and a burbot, contained 250 parts per billion of PCP each.

Following up on a complaint, a WDNR Solid Waste staff person inspected the site in August 1987 and observed diesel fuel odors and apparent PCP sludge on the ground near the former dip tank. WDNR requested that C.M. Christiansen Company retain an environmental consultant to prepare an in-field conditions report. In response to this request, White Water Associates, Inc. collected four soil samples near the former dip tank in December 1987. All four of the samples contained detectable concentrations of PCP.

WDNR's Water Resources staff collected sediment samples from Military Creek in September 1992. PCP concentrations ranged from <20 micrograms per kilogram (µg/Kg) to 640 µg/Kg in these samples.

As stated above, WDNR performed PA and SSI activities on this site in 1993. The PA report concluded that releases of PCP to the groundwater and surface water pathways were suspected, and that the potential existed for direct exposure to PCP-impacted soil on site. The SSI was conducted to evaluate the PA conclusions. The SSI consisted of sampling three private wells and the installation and sampling of four groundwater monitoring wells, and the collection of six surficial soil samples from suspect areas across the site and five sediment samples from Military Creek.

Significant PCP concentrations were observed in some of the SSI soil samples, and numerous pesticide compounds were also detected in these samples. PCP, polynuclear aromatic hydrocarbons (PAH) and pesticides were detected in the sediment samples, along with polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans (PCDD/PCDF). PCP was not detected in groundwater samples collected during the SSI.

C.M. Christiansen Company then retained Coleman Engineering Company (CEC) and White Water Associates to conduct an investigation of the site under the authority of section 292.11(3), (formerly section 144.76(3)), Wisconsin Statutes. CEC submitted their *Site Investigation Report* in February 1997. This report documented extensive site-related impacts to soil and groundwater. Soil contamination included PCP concentrations as high as 82,000 milligrams per kilogram (mg/Kg), total PAH concentrations as high as 1,765,000 µg/Kg, and a total PCDD/PCDF concentration of 182,285 nanograms per kilogram (ηg/Kg) in one sample. PCP concentrations as high as 5,200 micrograms per liter (µg/L) were detected in groundwater samples collected during this investigation. In the one groundwater sample for which total PCDD/PCDF were analyzed, a concentration of 453.924 nanograms per liter (ηg/L) was detected. In addition, up to 0.65 feet of free phase product was observed in one of the monitoring wells. The 5,200 µg/L of PCP and the PCDD/PCDF were detected in samples collected from monitoring MW-7; this is the same well in which the free phase product had been observed. However, MW-7 was removed as part of the soil remedial action described below, and is no longer available for sampling.

After the *Site Investigation Report* was submitted, C.M. Christiansen Company retained Natural Resource Technology, Inc. (NRT) to serve as the environmental consultant for the site. Among other things, NRT was tasked to develop a remedial action plan for soil contamination and to develop a work plan for investigating sediment contamination in Military Creek.

In May 1998, NRT submitted to WDNR a document entitled *C.M. Christiansen Company, Inc. Supplemental Evaluation of Military Creek and Revised Work Plan for Screening Level Assessment, Phelps, WI.* This work plan proposed comparing sediment quality adjacent to the site with local background concentrations, thereby evaluating the potential ecological risk posed by the site. WDNR Watershed Management Bureau staff commented on this proposal in July 1998. To date, however, this work plan has not been implemented.

In September and October 1999, NRT implemented a soil remedial action at the site. The remedial action consisted of the excavation of approximately 3,000 cubic yards of contaminated soil from five separate areas, and placement of a soil cap on areas with residual soil contamination to address potential direct contact issues. The excavated soil was transported to a landfill in Ontonagon, Michigan for disposal. Approximately 18,160 gallons of groundwater generated from excavation dewatering activities were treated during the soil remediation. WDNR determined that this remedial action appeared successful in addressing the contaminated soil.

Since completion of the soil remedial action, NRT has conducted semi-annual groundwater monitoring in an attempt to demonstrate that the soil remediation will lead to natural attenuation of groundwater impacts. While most detected PCP concentrations in groundwater have been in the tenths to single digit µg/L range, one piezometer (PMW-11) has consistently detected concentrations ranging from 170 to 1,300 µg/L. This piezometer is also one of the deepest monitoring points associated with the site.

C. Directions to Site and Site Access

To reach the site, travel north from the Village of Phelps on State Highway 17 approximately 0.25 miles to County Highway E. Turn left (north) onto County Highway E and travel approximately 0.5 miles to the Military Creek bridge. The site access road is located immediately past the bridge on the north side of County Highway E. The site is located north of County Highway E and west of Military Creek. Military Creek sampling locations will be accessed from within the site boundaries. Access permission has been obtained from the appropriate property owners. Please refer to Attachment 4 for further details.

RECOGNIZE AND EVALUATE

D. Description of Work

The sampling described in this plan will be directed at the groundwater and surface water pathways. Groundwater samples will be collected from seven monitoring wells, four of which currently exist at the site and three that will be installed as part of the ESI. The surface water pathway will be addressed by collecting eleven sediment and six surface water samples from Military Creek.

The monitoring well samples will provide data on background groundwater quality, support attribution of contaminants to the site, and further characterize the observed release through chemical analysis. Monitoring well sample GW-01 will serve as a background sample and support attribution, while monitoring well samples GW-02 through GW-07 will serve to document an observed release. All groundwater samples will be analyzed for semi-volatile organic compounds (SVOCs) and polychlorinated biphenyls and pesticides (PCBs/pesticides).

The sediment and surface water samples will provide data on background sediment and surface water conditions, support attribution of contaminants to the site, further characterize the observed release through chemical analysis, and document contaminant migration to receptors. Sediment and surface water samples SED-01 and SW-01 will be collected from Military Creek upstream of the site to document background conditions. Sediment samples SED-02 through SED-06 and corresponding surface water samples SW-02 through SW-06 will be collected adjacent to and downstream from the site, in order to further characterize the observed release through chemical analysis and to document attribution and contaminant migration to receptors. An effort will be made to collect sediment samples from two different depths (designated A and B) from each sediment sample location. All sediment and surface water samples will be analyzed for SVOCs and PCBs/pesticides. In addition, the sediment samples will be analyzed for PCDD/PCDF and total organic carbon (TOC).

E. Work Assignments and Training/Medical Exam Confirmation

All personnel working on site shall have completed, as required, a minimum of 24 hours of health and safety training and most staff have completed 40 hours of health and safety training. Annual refresher training will also be completed as required. Baseline or ongoing medical monitoring exams have been conducted for all personnel working on site within the last year. Staff participating in the surface water and sediment sample collection from a boat will have completed the required boating safety courses.

WORK ASSIGNMENTS

Name		Media	Duties
Shannon Davis	Buddy ↓	All	Sample Custodian – Documentation
Greer Lundquist	Buddy ↑	All	GIS locations, sample packaging, photos
Chris Saari	Buddy ↓	All	Project manager, on-site support, sample logistics
Norm Dunbar	Buddy ↑	All	H&S officer, on-site support, sample packaging
John Sager	Buddy ↓	Monitoring wells	Purging, field measurements, sample collection
Chuck Weister	Buddy ↑	Monitoring wells	Purging, field measurements, sample collection
Chuck Warzecha	Buddy ↑	Monitoring wells	Purging, field measurements, sample collection
Tom Janisch	Buddy ↓	Sediments/Surface Water	Field measurements, sample collection
Phil Richard	Buddy ↑	Sediments/Surface Water	Field measurements, sample collection
Bill Schultz	Buddy ↑	Sediments/Surface Water	Field measurements, sample collection

F. Known or Potential Hazards and Risk Analysis

Attachment 2., Risk Analysis Work Sheets for each task, have been completed and are included with this health and safety plan.

Chemical:

Previous investigations have determined that groundwater has been impacted with PCP. The maximum PCP concentration detected at the site was 5,200 µg/L, collected from a monitoring well that later contained free phase product. This well was abandoned during the soil remedial action. Of the remaining monitoring wells, concentrations of PCP as high as 1,300 µg/L have been recorded, although PCP concentrations have been much lower in most of these monitoring wells.

Both PCP and PCDD/PCDF have been detected in previous sediment samples. PCP concentrations as high as 1,600 µg/Kg (dry weight) were detected in sediments during the SSI. There are many congeners of dioxins that are discussed as a group, the most toxic of which is thought to be 2,3,7,8-tetrachlorodibenzo-p-dioxin (2,3,7,8-TCDD). When comparing sample results for dioxins, the concentration of each congener is translated to an equivalent concentration of the more toxic 2,3,7,8-TCDD. This translation is called a toxicity equivalency factor (TEF). SSI sediment samples detected total TEF as high as 1.49 µg/Kg.

Information regarding chemical preservatives can be found in Section I.

Physical:

Physical hazards anticipated to be present at the site during sampling include general mental stress, heat (groundwater, sediment and surface water sampling) stress, water hazards, and typical slip, trip and fall hazards. A reconnaissance inspection prior to the sampling event will help identify potential physical hazards.

The proposed monitoring well sampling locations are easily accessed on foot. The Military Creek sediment and surface water sampling locations should be accessible to sampling staff in waders, but a boat will be available in the event that the creek bottom is too mucky to allowing for safe wading. Difficulties in traversing these areas may be exacerbated by personal protective equipment.

Proper lifting techniques will be used for handling decontamination water, monitoring well purge water, and coolers that contain ice and packaged samples. Walking and carrying distances will be minimized by parking vehicles as close as safely possible to individual sample locations.

Biological:

Much of the site is heavily wooded, and as a result biological hazards including ticks, mosquitoes and poison ivy will possibly be encountered.

G. Air Monitoring

Ambient air will be monitored while personnel are in the exclusion zone utilizing a Photovac photoionization detector (PID). The unit will only detect contaminants that have a photoionization range within the lamp's detection limits. The Photovac will not detect PCP, PCDD/PCDF or semi-volatile organics, but it will detect some volatiles that might be encountered. Vapor detection is in parts-per-million and is in reference to a calibration standard; therefore, detects are not chemically specific.

CONTROL

H. Selection of Personal Protective Equipment and Action Levels

The level of personal protective equipment (PPE) required for all personnel entering the exclusion zone shall be Level D. Groundwater sampling personnel will wear Tyvek coveralls or an apron and boot covers for splash protection, safety glasses, and latex/nitrile gloves. Depending on water depth and sample location, sediment and surface water sampling personnel will wear Tyvek coveralls or an apron and boot covers, rubber boots or waterproof (neoprene or canvas) chest waders, and latex/nitrile gloves. All personnel traveling in a boat for sediment and surface water sampling will also be required to wear appropriate personal flotation devices. It is not anticipated that any sampling location would require the use of an air-purifying respirator.

I. Site Control Procedures

The risks involved in conducting this site investigation are considered minimal. Nevertheless, a three-zone system will be used to limit the potential of spreading contamination. These zones include 1) the exclusion zone, 2) the decontamination zone, and 3) the support/clean zone. During sampling the exclusion zone will be an area twenty feet in diameter centered on each individual sampling location. The decontamination and the support/clean zone will be established near the staging area. The staging area will be near the intersection of the site access road and County Highway E. Sampling personnel will transfer samples to the sample custodian support person in the decontamination zone. The sampling van will be outside of the decontamination zone and be considered the support/clean zone. Two figures have been included in **Attachment 1**. Figure 1 is a map depicting the site and the proposed sampling locations. Figure 2 contains example drawings of the zones to be established around groundwater and sediment/surface water sampling locations.

In the event of an emergency the site shall be evacuated and the personnel working on the site shall meet at the intersection of County Highway E and the site access road.

J. Decontamination Procedures

All sampling equipment will be decontaminated according to procedures outlined in the site-specific sampling plan.

Site personnel will decontaminate according to the following procedures:

All Tyvek coveralls, aprons, boot covers and latex/nitrile gloves will be removed and disposed of in a trash bag before personnel leave the decontamination zone. Hands and exposed skin areas will be washed with soap and water as soon as possible thereafter. Hands and faces must be washed with soap and water before eating.

K. Spill Containment and Investigative Waste

Preservatives for aqueous samples include hydrochloric acid, nitric acid, and sodium hydroxide. Material Safety Data Sheets for these preservatives and all other chemical products used on site are in a folder in each of the sampling vans. Spill containment kits for acids and bases are available for each of the sampling vans. Absorbent material such as vermiculite will also be available for chemical spills.

Investigative derived wastes will consist of disposable Tyvek coveralls, aprons, disposable gloves, boot covers, decontamination waters, purge waters and soil cuttings. All disposable personal protective equipment will be disposed of in plastic garbage bags and disposed of at WDNR offices. Disposable personal protective equipment that has come in contact with heavily contaminated media or potentially hazardous material, however, will be containerized on site along with decontamination and purge waters until they are properly transported to and disposed of at a licensed facility.

L. Standard Work Practices

These initial procedures will be performed before any site work begins:

- The project manager will brief the field support team regarding health and safety concerns associated with the site and confirm that all workers have read and understood this health and safety plan,
- All site workers will be shown how to use the mobile telephones in the sampling vans or available cellular phones,
- A vehicle (with all emergency information, Attachment 4) will be designated for emergency use,
- Prevailing wind direction will be determined,
- Air monitoring equipment will be calibrated up wind and off site, and
- The exclusion, decontamination, and support/clean zones will be delineated.

The following standard work practices shall be adhered to at all times:

- No eating, drinking, smoking, or applying of cosmetics or personal hygiene products shall be permitted within the exclusion and decontamination zones (drinking of water, etc., will be allowed in the clean zones),
- No ignition sources shall be permitted in the work zones,
- The "buddy system" shall be in effect at all times in the exclusion zone,
- No one shall enter a confined space,
- No one shall enter areas that require the use of PPE Levels A or B,
- Gloves and safety glasses shall be worn until sample containers are thoroughly decontaminated,
- Work shall be restricted to daylight hours,
- Site work will cease during severe weather conditions, including when thunder and lightning are present,
- Air monitoring shall occur when personnel are in the exclusion zone, and
- Eye protection and gloves shall be worn while handling chemical preservatives.

M. Emergency Information

All emergency information specific to this site is in **Attachment 5**.

N. Check List of Safety Equipment and Supplies

Below is a checklist of safety equipment and related supplies:

Safety Equipment and Supplies:

Fire extinguisher
First-aid kit
"Strip" thermometers
Air monitoring instrument (PID) and calibration gas
Portable eye/face wash with sterile solutions
Two-way communication system (walkie-talkies)
Material Safety Data Sheets
Personal Flotation Devices (as required)

Personal Protective Equipment and Supplies:

Air purifying respirators and appropriate canisters
Hard hats
Ear plugs or muffs
Tyvek coveralls, suits, aprons, sleeve covers, boot covers
Outer gloves (neoprene or other suitable material)
Inner disposable gloves
Safety boots (washable with steel toes/shanks)
Eye protection (safety goggles or glasses)
Duct tape
Drinking water or "sports drinks" and vessels
Hand and face soap, tap water, paper towels

Decontamination Supplies:

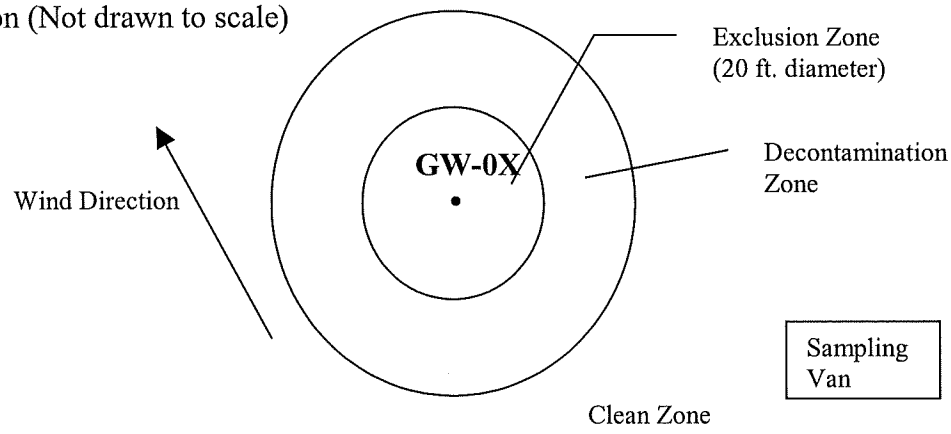
Alconox or equivalent
Wash tubs
Carboys of tap water
Carboys of contaminant-free distilled water
Hudson sprayer for contaminant-free distilled water
Paper towels
Trash bags
Barrels/buckets for investigative waste

ATTACHMENT 1

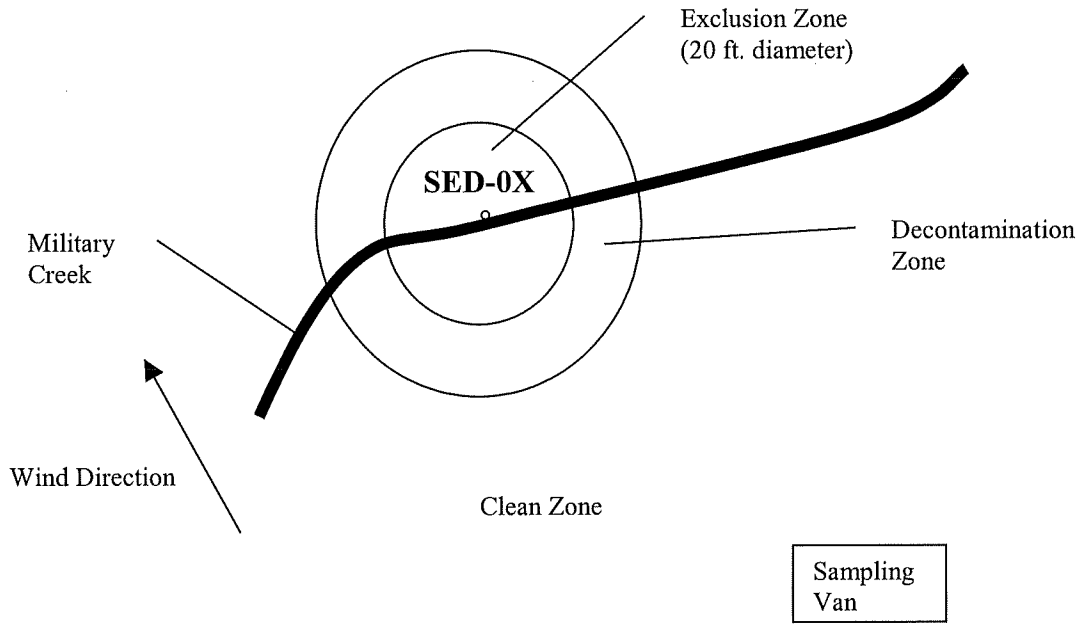
Maps of Site with Proposed Sampling Locations (Figures 1 and 2) and Example Drawings of Designated Work Zones (Figure 3)

FIGURE 3
ESI HEALTH & SAFETY PLAN
C.M. CHRISTIANSEN – POLE YARD

Example of zones around monitoring well sampling location (Not drawn to scale)



Example of zones around sediment and surface water sampling location
(Not drawn to scale)



PCP CONCENTRATIONS IN GROUNDWATER

C.M. CHRISTIANSEN COMPANY, INC.
FORMER POLE TREATMENT FACILITY
PHELPS, WISCONSIN

DRAWN BY: TAS	DATE: 12/27/02
CHECKED BY: SLF	DATE: 12/27/02
APPROVED BY: .	DATE: .
AUTOCAD FILE: 1226-54-B01.DWG	

COUNTY TRUNK HIGHWAY E

RIGHT-OF-WAY

CENTER LINE

MILITARY CREEK

STREAM FLOW

UPPER WETLANDS AREA

LOWER WETLANDS AREA

SMALL GROWTH

GATE

SAMPLE GW-01

SAMPLE GW-02

SAMPLE GW-03

SAMPLE GW-04

SAMPLE GW-05

SAMPLE GW-06

SAMPLE GW-07

MW-1 MW-2 MW-3 MW-4 MW-5 MW-6 MW-7 MW-8 MW-9 MW-10 MW-11 MW-12 MW-13 MW-17 MW-18

PMW-11 PMW-12 PMW-14 PMW-17 PMW-18

Date	PCP
9/14/95	0.18
12/15/95	0.73
7/24/96	27
11/18/96	4.8
5/25/99	1.3
11/29/99	4.0
5/23/00	1.3
11/30/00	0.054
5/30/01	0.12

Date	PCP
9/14/95	nd
12/14/95	nd
7/24/96	nd
11/18/96	nd
5/25/99	nd
11/30/99	nd

Date	PCP
9/14/95	0.12
12/15/95	0.56
7/24/96	0.42
11/18/96	0.58
5/24/99	0.12

Date	PCP
9/14/95	0.12
12/14/95	0.67
7/24/96	0.48
11/18/96	0.3
5/24/99	0.12
5/30/01	0.12

Date	PCP
7/24/96	nd
11/18/96	0.45
5/24/99	nd

Date	PCP
7/24/96	nd
11/18/96	nd
5/24/99	nd

Date	PCP
9/14/95	2.5
12/15/95	1.2
7/25/96	0.4
11/19/96	0.74
5/25/99	0.42
11/30/99	0.55
5/23/00	0.16
11/30/00	0.13
5/30/01	nd

Date	PCP
7/24/96	0.15
11/18/96	0.14
5/24/99	0.089

Date	PCP
7/25/96	350
11/19/96	2.5
5/25/99	0.2
11/30/99	0.77
5/23/00	0.15
11/30/00	0.32
5/30/01	1.8
11/27/01	20
5/31/02	<1
11/19/02	0.1

Date	PCP
7/25/96	820
11/18/96	720
11/6/97	1300
5/25/99	170
11/30/99	280
5/23/00	430
11/30/00	730
5/30/01	920
11/27/01	1,000
5/31/02	810
11/19/02	200

Date	PCP
9/14/95	960
12/15/95	5,200

Date	PCP
5/25/99	nd
11/29/99	nd
5/23/00	nd
11/30/00	nd

Date	PCP
9/14/95	1,300
12/15/95	32
7/25/96	21
11/19/96	10.0
5/25/99	1.9
11/30/99	28
5/23/00	13
11/30/00	18
5/30/01	1.0
11/27/01	2.7
5/31/02	1.0
11/19/02	0.96

Date	PCP
5/24/99	nd
11/29/99	nd
5/23/00	nd

Date	PCP
7/25/96	34
11/18/96	7.5
11/6/97	17
5/25/99	4.6
11/30/99	5.4
5/23/00	7.8
11/30/00	7.9
5/30/01	4.2
11/27/01	7.7
5/31/02	8.2
11/19/02	2.6

Date	PCP
9/14/95	nd
12/15/95	0.084
7/24/96	nd
11/18/96	nd
5/24/99	nd
11/29/99	0.26
5/23/00	0.13
11/30/00	0.092
5/30/01	nd

Date	PCP
5/25/99	0.54
11/29/99	nd
5/23/00	nd
11/30/00	nd
5/30/01	nd

Date	PCP
5/25/99	0.15
11/29/99	nd
5/23/00	nd
11/30/00	nd
5/30/01	nd

LEGEND

- MW-12 BORING/MONITORING WELL
- PMW-14 PIEZOMETER
- MW-7 ABANDONED MONITORING WELL
- APPROXIMATE TREE LINE OR NEW GROWTH
- PCP PENTACHLOROPHENOL
- NA NOT ANALYZED
- ND NOT DETECTED
- 170 CONCENTRATION AT OR ABOVE NR 140 ENFORCEMENT STANDARD (1.0 µg/L)
- 0.45 CONCENTRATION AT OR ABOVE NR 140 PREVENTIVE ACTION LIMIT (0.1 µg/L)

ALL DATA MICROGRAMS PER LITER (µg/L).

SOURCE NOTE:
THIS MAP WAS MODIFIED FROM DRAWING BY COLEMAN ENGINEERING COMPANY (CEC), IRON MOUNTAIN, MICHIGAN, DATED FEBRUARY 1997, JOB NO. 95042 A7, AND A SURVEY BY EAGLE LANDMARK SURVEYING, INC., EAGLE RIVER, WISCONSIN, DWG. NO. E1292, DATED 1-06-98, REVISED ON 5-13-99.

NOTES:
BASE MAP SURVEY COMPLETED BY CEC WITH ADDITIONAL INFORMATION OBTAINED FROM USDA-ASCS HISTORICAL AERIAL PHOTOGRAPHS, A 7/7/95 SITE VISIT WITH C M CHRISTIANSEN CO., AND A 5/21/96 FIELD INSPECTION.
MAY 30, 2001 PCP RESULTS ADDED JUNE 2001.
NOVEMBER 27, 2001 AND MAY 31, 2002 ADDED JUNE 2002.
NOVEMBER 19, 2002 PCP RESULTS ADDED DECEMBER 2002.

N

0 50 100 200

SCALE IN FEET

FIGURE 1
ESI HEALTH & SAFETY PLAN
C.M. CHRISTIANSEN – POLE YARD

Natural Resource Technology

PROJECT NO. 1226/5.4

DRAWING NO. 1226-54-B01

FIGURE NO. 2

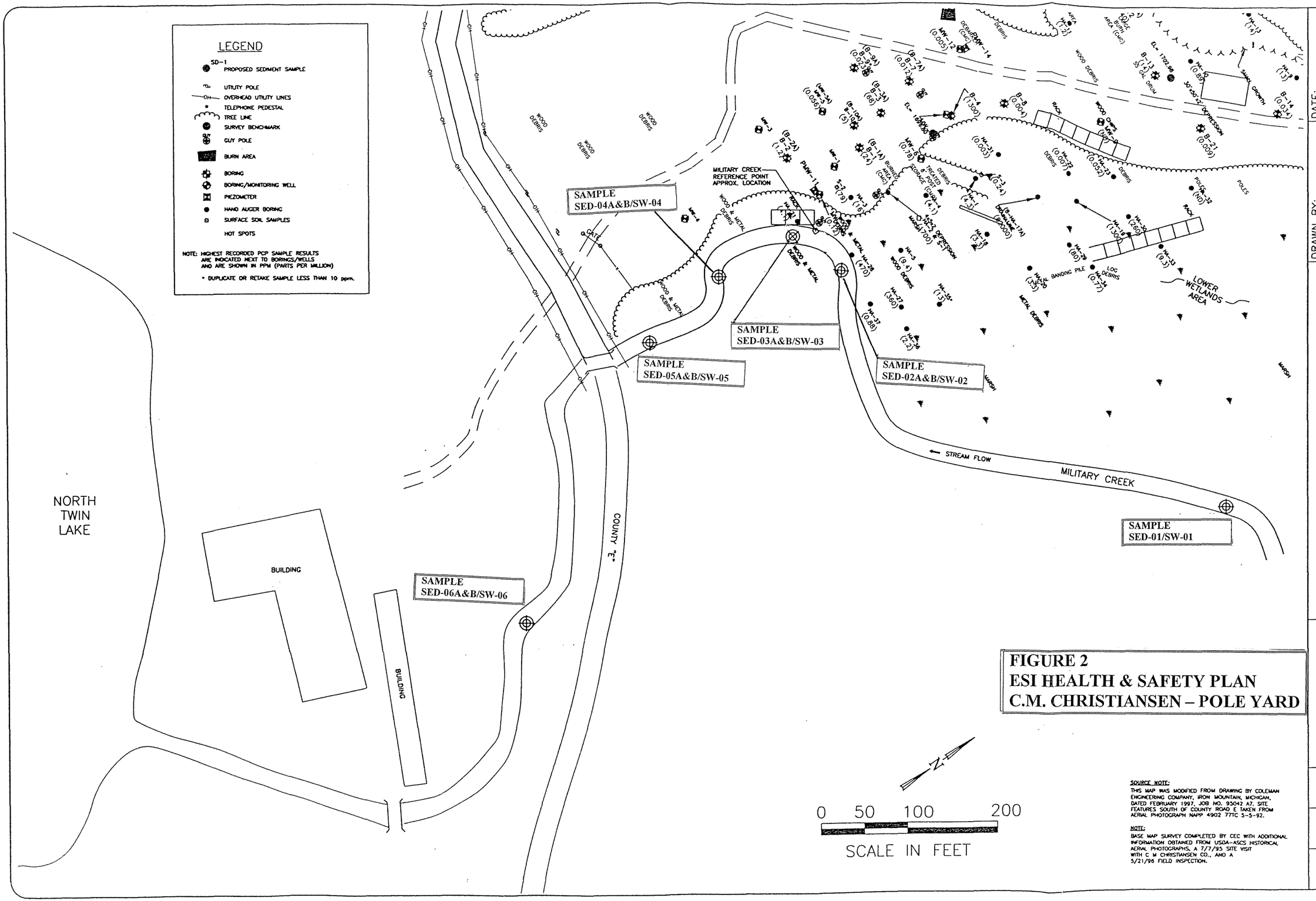


FIGURE 2
ESI HEALTH & SAFETY PLAN
C.M. CHRISTIANSEN – POLE YARD

SOURCE NOTE:
THIS MAP WAS MODIFIED FROM DRAWING BY COLEMAN ENGINEERING COMPANY, IRON MOUNTAIN, MICHIGAN, DATED FEBRUARY 1997, JOB NO. 95042 A7. SITE FEATURES SOUTH OF COUNTY ROAD E TAKEN FROM AERIAL PHOTOGRAPH NAPP 4902 177IC 5-5-92.

NOTE:
BASE MAP SURVEY COMPLETED BY CEC WITH ADDITIONAL INFORMATION OBTAINED FROM USDA-ASCS HISTORICAL AERIAL PHOTOGRAPHS, A 7/7/95 SITE VISIT WITH C M CHRISTIANSEN CO., AND A 5/21/96 FIELD INSPECTION.

DRAWN BY: TAS DATE: 5/7/98
CHECKED BY: KJP DATE: 5/15/98
APPROVED BY: KJP DATE: 5/15/98
AUTOCAD FILE: 1226-B02.DWG

PROPOSED SEDIMENT SAMPLING LOCATIONS
MILITARY CREEK INVESTIGATION WORK PLAN
C.M. CHRISTIANSEN COMPANY
FORMER POLE TREATMENT FACILITY
PHELPS, WISCONSIN

Natural Resource Technology

PROJECT NO. 1226/SED/2.3
DRAWING NO. 1226-B02
FIGURE NO. 1

Risk Analysis

The purpose of risk analysis is to identify conditions that may pose immediate danger to life or health (IDLH) or other conditions that may cause death or serious harm to staff at a work site. If such conditions are noted, they need to be addressed in appropriate sections of the site safety plan. Site conditions need to be reviewed to determine if any real or potential physical, biological or chemical hazards exist at the site before entering the site. Below we have analyzed risks under three categories: Physical hazards, biological hazards and chemical hazards.

Physical Hazard

	Yes	No
Will the site activity at the time it is performed result in stress?	☒	☐
Is there a potential for a noise exposure in excess of 90 dBA?	☐	☒
Will site activity be performed in extreme temperature (> 70°F and < 40°F? Potentially	☒	☐
Will site activity be performed in windy conditions? (wind in excess of 10 mph) Potentially	☒	☐
Will site activity be performed in severe weather? (rain or lightening)	☐	☒
Will site activity require lifting of heavy objects (> 30 lbs)?	☒	☐
Will site activity require repetitive twisting hand movements?	☐	☒
Will the work activity require repetitive elbow and shoulder movement?	☒	☐
Will the site activity require arms outstretched or elbows high?	☒	☐
Is there a potential for site workers to be struck by moving objects?	☐	☒
Will site activity include excessive physical effort (over exertion)	☐	☒
Will site activity be performed on platforms or at elevated heights?	☐	☒
Will site activity be performed in area with an increase potential for slip, trip or fall?	☒	☐
Will site activity be performed between moving or stationary objects?	☒	☐
Will work activity be performed in Level 1 confined space?	☐	☒

Department employees are forbidden to enter level 2 confined space

*** If Yes to any of these questions please refer to Chapter 4 for appropriate risk evaluation and control alternatives.**

Biological Hazard

	Yes	No
Do you know or suspect the presence of blood-borne pathogens and infections (Hepatitis A & B, HIV/AIDS)	☐	☒
Do you know or suspect the presence of blastomycosis causing fungus on site?	☒	☐
Is there potential for sharp rusty objects at work site (Is this addressed better under the medical monitoring?)	☒	☐
Do you know or suspect the presence of poisonous ivy, sumac or other poisonous plants at work site?	☒	☐
Do you know or suspect the presence of poisonous snakes at the worksite?	☐	☒
Do you know or suspect the presence of dangerous spiders and insects (including ticks)?	☒	☐

*** If yes to any of these questions please refer to Chapter 4 for the appropriate risk evaluation and control alternatives.**

Chemical Hazard

	Yes	No
Are there any known or suspected containers/drums?	☐	☒
Are there any known or suspected vapor clouds?	☐	☒
Are there any known or suspected dead or stressed animals or vegetation?	☐	☒
Are there any known or suspected staining of surfaces or soils?	☐	☒
Are there any known or suspected sheens on water other clue to the presence of chemicals? Potentially	☒	☐
Are there any known or suspected manmade or naturally occurring pathways including storm or sanitary sewers, culverts, electrical race ways, gas pipes, telephone wires, cables, etc.?	☐	☒

*** If the answer is "YES" to any of the above questions, complete Table 1 and quantify concentration.**

ATTACHMENT 2
Risk Analysis

ATTACHMENT 3
Heat Stress and Cold Stress Information

Heat Stress:

The protective clothing will increase the potential for **heat rash, heat cramps, heat exhaustion, and heat stroke**. The symptoms for each disorder are listed below:

1. **Heat rash** is caused by continuous exposure to heat and humid air and aggravated by chafing clothes. It decreases the ability to tolerate heat as well as being a nuisance.

2. **Heat cramps** are caused by profuse perspiration with inadequate fluid intake and chemical replacement (especially salts). Signs: muscle spasm and pain in the extremities and abdomen. Muscles fatigued from work are usually most susceptible to cramps.

3. **Heat exhaustion** is caused by increased stress on various organs to meet increased demands to cool the body. Signs: shallow breathing; pale, moist skin; profuse sweating; dizziness and lassitude.

4. **Heat stroke** is the most extreme form of heat stress. The body must be cooled immediately to prevent severe injury and/or death. Signs: red, hot, dry skin; no perspiration; nausea; dizziness and confusion; strong, rapid pulse; coma. Medical help must be obtained immediately.

Heat Stress Monitoring:

For monitoring the body's recuperative ability to excess heat, one or both of the following techniques should be used as a screening mechanism. Monitoring of personnel wearing protective clothing should commence when the ambient temperature is 70 degrees Fahrenheit (F) or above. Frequency of monitoring should increase as ambient temperature increases or if slow recovery rates are indicated. When temperatures exceed 80 degrees F workers must be monitored for heat stress after every work period.

1. **Heart rate** (HR) should be measured by the radial pulse for 30 seconds as early as possible in the resting period. The HR at the beginning of the rest period should not exceed 110 beats per minute. If the HR is higher, the next work period should be shortened by 10 minutes (or 33%), while the length of the rest period stays the same. If the HR is 100 beats per minute at the beginning of the next rest period, the following work cycle should be shortened by 33%.

2. **Body temperature** should be measured orally with a clinical thermometer (or forehead strip thermometer) as early as possible in the resting period. Oral temperature (OT) at the beginning of the rest period should not exceed 99 degrees F. If it does, the next work period should be shortened by 10 minutes (or 33%), while the length of the rest period stays the same. However, if the OT exceeds 99.7 degrees F at the beginning of the next period, the following work cycle should be further shortened by 33%. OT should be measured again at the end of the rest period to make sure that it has dropped below 99 degrees Fahrenheit.

The following steps will be taken to reduce the potential for heat stress if temperature extremes are reached:

1. Gatorade will be available as a source of electrolytes. Water will also be available. Personnel should be sure that they have decontaminated their hands and faces prior to consuming liquids. The liquids will be kept in a cooler in the van.

2. For temperatures between 70 and 90 degrees F a minimum of one ten minute rest break for each hour work period is planned. For temperatures exceeding 90 degrees F the planned rest break will be increased to 15 minutes. Monitoring for heat stress will be performed after each work period when temperatures exceed 80 degrees F with rest periods being modified as necessary,

3. Shade will be provided and an air conditioned car will be available. When possible, overheated personnel will cool down in the shade prior to entering an air conditioned car.

4. The team members will use the buddy system while working. They should report any potential symptoms immediately to their partner.

Cold Stress:

Although samplers may not be exposed to extreme cold conditions for prolonged periods, there are several different kinds of cold injuries which can occur, even at temperatures above freezing. This section describes exposure conditions which may cause cold injuries, and methods to prevent or care for such injuries.

Local Cold Injuries

Chilblains can result from prolonged exposures of bare skin to temperatures in the low sixties or below. The injury usually affects the extremities as a chronic injury of the skin and peripheral capillary circulation. Protecting the skin against exposure to cold for prolonged periods is the method for prevention and for treatment of chilblains.

Immersion foot results from wet cooling of the extremities. Although more common in wet feet exposed over hours or days at temperatures slightly above freezing, it can occur at higher temperatures if wet feet are exposed to cooling over prolonged periods. Prevention depends upon dry shoes and socks, and limited exposures with wet feet. Severe exposures will require emergency treatment.

Frostbite can affect hands, feet, ears and exposed parts of the face, and the severity of the frostbite can range from incipient frostbite, to superficial, to deep frostbite. Incipient frostbite, or frostnip, appears as a sudden blanching or whiteness of the skin, and often is not noticed by the person affected because it comes on slowly and is painless. If identified early, incipient frostbite can be treated effectively by warm hands or breath or by holding the nipped fingers in the armpits. No type of frostbite should be rubbed, and snow should not be used to rub frostbite.

Superficial frostbite causes the skin to have a white, waxy appearance and firm touch, with the tissue beneath soft and resilient. Treatment is protection from the cold and steady and careful re-warming of the frostbitten area. Do not rub any frostbitten area.

Deep frostbite usually involves the hands and feet, and is an extremely serious injury. Tissues are pale, cold, and solid, and emergency medical treatment is urgent. The injured person must be kept dry, given external warming, and watched to see if cardiopulmonary resuscitation is necessary.

Systemic Hypothermia

Severe and general body cooling, known as systemic hypothermia, can occur at temperatures well above freezing by exposure to low or rapidly dropping temperatures, or cold moisture, or to snow and ice. Fatigue, exertion, and hunger are contributing factors.

Generalized body cooling can progress through five stages: Shivering; apathy, sleepiness, listlessness, and indifference; unconsciousness, with slow respiratory rate and very slow pulse rate; freezing of the extremities; and death. Sustained shivering begins when the body core temperature falls below 95 degrees Fahrenheit. With continued cooling there will be stumbling, fumbling, clumsiness, slow reactions, mental confusion, and difficulty in speaking. If the cold conditions are extremely severe, death may occur within two hours of the first symptoms. Emergency treatment of hypothermia requires moving the person out of the wind, replacing wet clothing and providing external heat in any way possible, because the person is unable to generate sufficient body heat. Warm liquids and nourishing food should be provided if the person is conscious. However, since hypothermia is such a severe emergency, emergency medical treatment is needed promptly.

Wind Chill

The two important factors that contribute to cold injuries are the temperature of the environment and the velocity of the wind. Thermal conductivity of the environment is the mechanism that allows for the effects of the extreme cold. The most common conductors of cold to samplers are moisture, such as wet hands, and metal, such as ladders and railings. Still air is a very poor conductor, but increased velocity increases the wind chill factor. Sampling operations should not generally be conducted when the wind chill temperature is below -20 degrees Fahrenheit.

New Wind Chill Chart
(Shaded areas indicate wind chills at which frostbite occurs in 15 minutes or less.)

	Temperature (°F)											
	30	25	20	15	10	5	0	-5	-10	-15	-20	-25
5 mph	25	19	13	7	1	-5	-11	-16	-22	-28	-34	-40
10 mph	21	15	9	3	-4	-10	-16	-22	-28	-35	-41	-47
15 mph	19	13	6	0	-7	-13	-19	-26	-32	-39	-45	-51
20 mph	17	11	4	-2	-9	-15	-22	-29	-35	-42	-48	-55
25 mph	16	9	3	-4	-11	-17	-24	-31	-37	-44	-51	-58
30 mph	15	8	1	-5	-12	-19	-26	-33	-39	-46	-53	-60
35 mph	14	7	0	-7	-14	-21	-27	-34	-41	-48	-55	-62
40 mph	13	6	-1	-8	-15	-22	-29	-36	-43	-50	-57	-64
45 mph	12	5	-2	-9	-16	-23	-30	-37	-44	-51	-58	-65
50 mph	12	4	-3	-10	-17	-24	-31	-38	-45	-52	-60	-67
55 mph	11	4	-3	-11	-18	-25	-32	-39	-46	-54	-61	-68
60 mph	10	3	-4	-11	-19	-26	-33	-40	-48	-55	-62	-69

ATTACHMENT 4
Observation Note Sheet

The Project Manager or other site workers may use this sheet to note any observations made related to health and safety. For example, in extreme weather, work periods may be shortened to protect workers from the hazards of heat and cold. You may record the duration of work periods here. In cases of medical concerns or emergencies, health care professionals may find information, such as the persons body temperature, or other observed conditions, helpful. This sheet should not take the place of filing an incident report or a Workman's Compensation claim, but information recorded here may be useful in remembering events at a work site.

ATTACHMENT 5

Map with Directions to the Site with Highlighted Route to the Hospital And Emergency Information

Nearest Hospital: Eagle River Memorial Hospital, 201 Hospital Road, Eagle River, emergency telephone (715) 479-0255, non-emergency telephone (715) 479-7411. To reach the hospital from the site, turn from the site access road left (south) onto County Highway E and drive approximately 0.5 miles to the intersection with State Highway 17. Turn right (south) on State Highway 17 and drive approximately 12 miles to the intersection with US Highway 45/State Highway 32. Turn left (south) onto US Highway 45/State Highway 32 and drive approximately 4 miles to Eagle River. Proceed south on US Highway 45/State Highway 32 to the stop light at Hospital Road. Turn left (east) onto Hospital Road and proceed for two blocks; the hospital will be on your left.

Fire/Rescue/Police: Fire and ambulance services for the area are provided by the Phelps and North Phelps Fire Department. The emergency number for the Phelps Fire Department is 911, while the non-emergency number is (715) 545-2972. The Vilas County Sheriff's Department provides law enforcement and fire/ambulance dispatching services in this area. The emergency number for the Sheriff's Department is 911, while the non-emergency number is (715) 479-4441.

Complete Street Address of Site: The site does not have an address; see driving directions below for location information.

Mobile/Cell Phone Numbers at Site: (715) 209-0113 and (715) 790-0187

Driving Directions to the Site: To reach the site, travel north from the Village of Phelps on State Highway 17 approximately 0.25 miles to County Highway E. Turn left (north) onto County Highway E and travel approximately 0.5 miles to the Military Creek bridge. The site access road is located immediately past the bridge on the north side of County Highway E. The site is located north of County Highway E and west of Military Creek.

Poison Control Center: (800) 815-8855

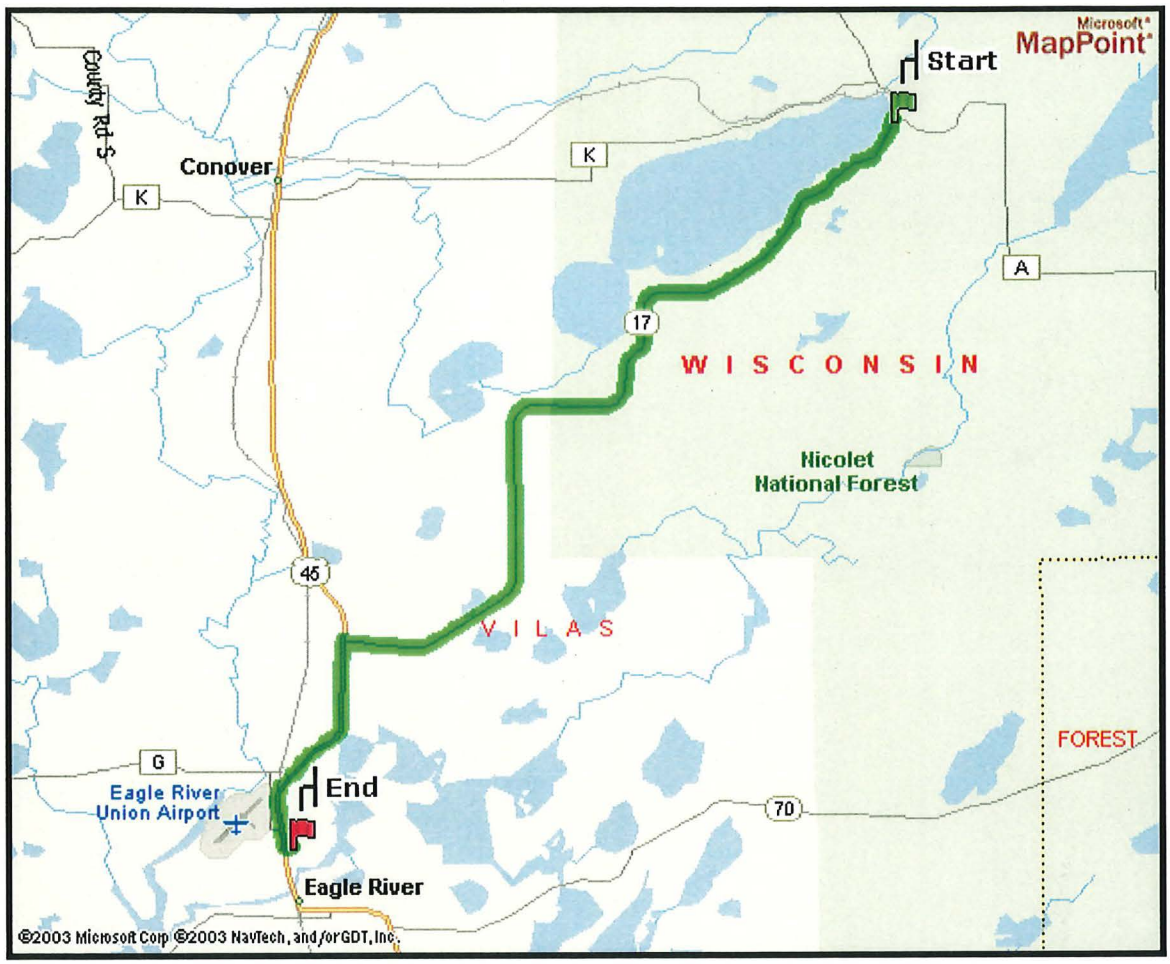
Chemtrec: (800) 424-9300

MED-TOX: (501) 370-8203

msn Maps & Directions

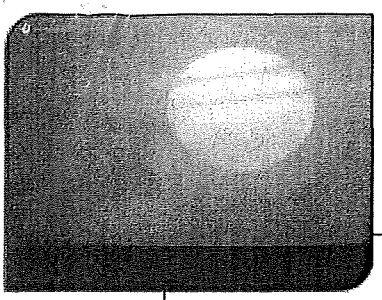
Featuring Microsoft® MapPoint® Technology

Start: Phelps, Wisconsin, United States
End: 201 Hospital Rd, Eagle River, WI 54521
Total Distance: 15.2 Miles
Estimated Total Time: 26 minutes



Directions	Miles	Map
Start: Depart Phelps, Wisconsin, United States on SR-17 (South)	12.0	
1: Turn LEFT (South) onto US-45 [SR-17]	3.1	
2: Turn LEFT (East) onto Hospital Rd **End:** Arrive 201 Hospital Rd, Eagle River, WI 54521	0.1	

Get driving directions no matter where you are!
Call **1-800-555-TELL** Powered by Tellme and just say "driving directions".



OSHA FACT Sheet

Working Outdoors

Hot summer months pose special hazards for outdoor workers who must protect themselves against heat, sun exposure, and other hazards. Employers and employees should know the potential hazards in their workplaces and how to manage them.

Sun

Sunlight contains ultraviolet (UV) radiation, which causes premature aging of the skin, wrinkles, cataracts, and skin cancer. *There are no safe UV rays or safe suntans.* Be especially careful in the sun if you burn easily, spend a lot of time outdoors, or have any of the following physical features: numerous, irregular, or large moles; freckles; fair skin; or blond, red, or light brown hair. Here's how to block those harmful rays:

- **Cover up.** Wear tightly woven clothing that you can't see through.
- **Use sunscreen.** A sun protection factor (SPF) of at least 15 blocks 93 percent of UV rays. Be sure to follow application directions on the bottle or tube.
- **Wear a hat.** A wide brim hat, *not a baseball cap*, works best because it protects the neck, ears, eyes, forehead, nose, and scalp.
- **Wear UV-absorbent shades.** Sunglasses don't have to be expensive, but they should block 99 to 100 percent of UVA and UVB radiation. Before you buy, read the product tag or label.
- **Limit exposure.** UV rays are most intense between 10 a.m. and 4 p.m.

Helpful link: www.cdc.gov/chooseyourcover

Heat

The combination of heat and humidity can be a serious health threat during the summer months. If you work at a beach resort, on a farm, or in a kitchen, laundry, or bakery, for example, you may be at risk for heat-related illness. So, take precautions. Here's how:

- Drink plenty of water before you get thirsty.
- Wear light, loose-fitting, breathable clothing—cotton is good.
- Take frequent short breaks in cool shade.
- Eat smaller meals before work activity.
- Avoid caffeine and alcohol or large amounts of sugar.
- Find out from your health-care provider if your medications and heat don't mix.
- Know that equipment such as respirators or work suits can increase heat stress.

Helpful links: www.cdc.gov/niosh/elcosh/docs/d0100/d000024/d000024.html

www.cdc.gov/nceh/hsb/extremeheat

Lyme Disease

This illness is caused by bites from infected ticks. Most, but not all, victims will develop a "bulls-eye" rash. Other signs and symptoms may be non-specific and similar to flu symptoms such as fever, lymph node swelling, neck stiffness, generalized fatigue, headaches, migrating joint aches, or muscle aches. You are at increased risk if your work outdoors involves construction, landscaping, forestry, brush clearing, land surveying, farming, railroads, oil fields, utility lines, or park and wildlife management. Protect yourself with these precautions:

- Wear light-colored clothes to see ticks more easily.
- Wear long sleeves; tuck pant legs into socks or boots.
- Wear high boots or closed shoes that cover your feet completely.
- Wear a hat.
- Use tick repellants, but not on your face.

Working Outdoors

- Shower after work. Wash and dry your work clothes at high temperature.
- Ask your health-care provider if using the LYMErix vaccine is okay for you.
- Examine your body for ticks after work. Remove any attached ticks promptly with fine-tipped tweezers. *Do not* use petroleum jelly, a hot match, or nail polish to remove the tick.

Helpful link: www.osha.gov/OshDoc/data_LymeFacts/lymefac.pdf

West Nile Virus

Illness from the West Nile virus is rare, but it does happen. Mild symptoms include fever, headache, and body aches, occasionally with a skin rash on the trunk of the body and swollen lymph glands. Symptoms of severe infection include headache, high fever, neck stiffness, stupor, disorientation, coma, tremors, convulsions, muscle weakness, and paralysis. Getting rid of standing water in containers such as discarded tires, buckets, and barrels helps reduce mosquito breeding areas. In addition, you can protect yourself from mosquito bites in these ways:

- Apply insect repellent with DEET to exposed skin.
- Spray clothing with repellents containing DEET or permethrin.
- Wear long sleeves, long pants, and socks.
- Be extra vigilant at dusk and dawn when mosquitoes are most active.

Helpful link: www.cdc.gov/ncidod/dvbid/westnile/index.htm

More Information

Do you have teenagers working at summer jobs this year? You and they may want to check out one of these websites:

- OSHA at www.osha.gov/SLTC/teenworkers/teenworkers.html
- Department of Labor at www.youthrules.dol.gov
- National Institute for Occupational Safety and Health at www.cdc.gov/niosh/adolespg.html

OSHA has many other materials available to help employers, employees, safety and health professionals, and others. For more information, visit our website at **www.osha.gov** or call us toll-free at **(800) 321-OSHA (6742)**.

OSHA
Occupational Safety and Health Administration
U.S. Department of Labor
2003

Saari, Christopher A

From: Spiros L. Fafalios [sfafalios@naturalrt.com]
Sent: Friday, September 26, 2003 5:31 PM
To: Saari, Christopher A
Cc: Jody T. Barbeau; Richard G. Fox; Laurie L. Parsons; Eric Christiansen (E-mail)
Subject: Questions/Comments on WDNR Sampling Plan

> Chris,
>
> NRT has reviewed your Sampling Plan for the CMC Former Poleyard property, received September 12, 2003. NRT has been tasked with providing sampling oversight on behalf of CMC, and NRT staff will be prepared to be onsite. Mr. Jody Barbeau, staff scientist will perform the following while onsite 30 Sep and 1 Oct 03 :
>
> 1. Package split samples for up to five sampling locations for sediment grain size analysis with hydrometer.
> 2. Sample two groundwater monitoring wells not within the scope of the WDNR Sampling Plan but within the scope of NRT> '> s December 30, 2002 Groundwater Monitoring Program Update letter, specifically, MW-6 and MW-13 for PCP, and collect groundwater elevations at wells not observed by WDNR personnel.
> 3. Observe WDNR sampling methods and well locations for groundwater samples.
> 4. Observe WDNR sampling methods and locations for collection of sediment and surface water samples, and collect split samples for archiving.
> 5. Treat purge water generated by sampling monitoring wells MW-6 and MW-13.
>
> The following comments and questions regarding the Sampling Plan are provided on behalf of CMC in advance of sampling activities. Please respond to each point, preferably prior to sampling next Tuesday and Wednesday.
>
> Regarding sediment and surface water sampling:
>
> 1. How are you planning to manage excess sediment sample?
>
> 2. There is no mention of grain size collection procedure. How will the samples be collected (homogenized is prefered over intact core).
>
> 3. Typically, bioactive zone is considered to be the uppermost 4 inches of sediment. Why was 6 to 8 inches selected as the bioactive zone? Can the WDNR further limit their definition to a single depth for consistency sake?
>
> 4. Surface water collection jars must be clean on the outside and only handled with nitrile (not latex) gloves, to avoid interferences with analyses of chlorinated compounds.
>
> Regarding groundwater sampling:
>
> 1. What time do you intend to be on site on September 30?
>
> 2. We understand through verbal discussions that you are collecting only one round of groundwater samples. There is no mention of drilling methods, in your sampling plan. We would caution you that the possibility of dragdown of contaminants, depending in part on well installation methods, may qualify your results as suspect.
>
> 3. How are you planning to manage purge water, drilling spoil, disposable sampling equipment?
>
> Regarding the treatment of purge water generated by sampling monitoring wells MW-6 and MW-13, NRT requested that Mr. Jim Hansen issue a WPDES general permit modification to specifically cover purged groundwater treatment. Treatment includes solids removal, free product removal, carbon treatment and discharge via infiltration gallery centrally located at the site. This treatment is almost identical to the permit for dewatering treatment during soil remediation, under a general WPDES permit, allowing discharge of PCP at the Enforcement Standard (ES). Since the volume of water to be treated is greatly reduced and we are in post-remediation phase, Mr. Hansen then issued a general permit modification reducing the allowed effluent PCP concentration from 1.0 µg/L (the ES) to 0.1 µg/L (the PAL). Rationale for alternate treatment limit as the ES, as provided in allowed per Page 8 of the April 2001 Fact Sheet for WPDES Permit for Contaminated Groundwater from Remedial Action Operations is appropriate for the following reasons:
>
> 1. Concentrations of PCP in groundwater in the area of the seepage cell are at or above the groundwater ES (1.0 µg/L).
> 2. Quantities of purge water are significantly less than the quantity of groundwater discharged during remediation.

> 3. Historical treatment results using the requested method and method detection limit (MDL) equates to a practical quantitation limit (PQL) that is above the PAL for the effluent sample, 0.25 and 0.1 > µg/L, respectively.
> 4. Re-treatment of purge water from past events has not result in concentrations of PCP below the PQL or PAL, while other parameters are within treatment limits.
> 5. There is no question that additional or alternate treatment methods would be required, at significantly higher cost and hardship to CMC with no added benefit, based on the small volume of purge water (total of less than 300 gallons to date) and ES exceedences of PCP in groundwater in the vicinity of the infiltration basin.
> There is no indication that further purge water treatment will achieve a lower discharge limit, however, NRT will treat purge water collected during the forthcoming field event using existing methods. This is a comment on the status of investigative groundwater status at the site. No raw groundwater is stored, however, current permit limits prohibit discharge.
>
> Your prompt response to our questions is much appreciated--thank you in advance. Please email or call if you have any questions or comments.
>

SEND INVOICE IN TRIPLICATE TO:

DEPT. OF NATURAL RESOURCES
NORTHERN CO-REGION FINANCE
514 SERVICE RD
SPOONER, WI 54801-0309

STATE OF WISCONSIN PURCHASE ORDER

ENTER TYPE CODE
1 - Regular
2 - Change Previous
3 - Cancel Previous
5 - Blanket-Non Contract
8 - Blanket-Contract

1

PURCHASE ORDER NUMBER
NKD00000076

SHOW THIS NUMBER ON ALL SHIPMENTS CORRESPONDENCE AND INVOICES

STATE USE: PD 370

VENDOR NUMBER: 870503343 C

DATE: 07/08/03

PAGE: 1

VENDOR:

BOART LONGYEAR CO
101 ALDERSON ST
SCHOFIELD WI 54476

SHIP TO:

CHRIS SAARI
DEPT. OF NATURAL RESOURCES
ASHLAND SERVICE CENTER
2501 GOLF COURSE RD
ASHLAND, WI 54806

FOB	Terms	Delivery	Reference	Agency Bid No.:	SBOP Bulletin No.
DESTINATION	NET 30	09/30/03			

Item	Quantity	Unit	Commodity Code	Unit Price	Total
1	1.000	EACH	962-96-00-0000	4,309.000000	4,309.00

WELL DRILLING AND INSTALLATION - PHELPS WI
DRILL AND INSTALL THREE GROUNDWATER MONITORING WELLS LOCATED AT THE C.M. CHRISTIANSEN-POLE YARD SITE IN PHELPS WI PER 6/18/2003 PROPOSAL.
DNR CONTRACT ADMINISTRATOR CHRIS SAARI 715-685-2920.

TOTAL ORDER IS NOT TO EXCEED $4,309.00

TOTAL: 4,309.00

FOR STATE USE ONLY

LN	FUND	AGY	ORG/SUB	APPR	ACTV	FUNC	OBJ/SUB	JOB NUM	CAT	TOTAL
01	274	370	RRTH/ 2	75	4	RRPH	2740/31			4,309.00

TOTAL: 4,309.00

Complete the following and return to Spooner Finance when merchandise / service is received.

Date Received: 9/9/03 Complete _____ Partial _____

Inventory ☐ Yes ____ ☐ No ____ Model No. _____ Serial No. _____

Inventory to _____

Signature Christopher A Saari

CHRIS SAARI
(715) 685-2920

Ack:

Their Number:

Shipping:

Traced:

REGISTER NUMBER	INVOICE OR VOUCHER NO.	INV. OR VOU. DATE	NET AMOUNT	CASH DISCOUNT	DATE INV. FORWARDED	BALANCE

43
.65
5
21
258
27.95

9/8/03

CMC ESE MW installs

Shallow PZ @ MW-4 = PMW-4A
Blind-drilled to 27'
Deep PZ @ MW-4 = PMW-4B
Blind drilled to 15'

PMW-11B - Total depth (top of casing) = 48.6, depth to water = 2'
PMW-4B - Total depth (top of casing) = 45'10", depth to water = 7'1"
PMW-4A - Total depth (top of casing) = 29.8', depth to water = 6.5'
8.4" after devel

Elevations (all measured above top of protective cover pipe cap except PMW-11B was top of casing)

MW-1 = 2.83

MW-4 = 4.62
PMW-4A = 2.53
PMW-4B = 2.03

PMW-11B = ~~3.91~~ ~~4.52~~ 4.52 ~~reversed?~~
PMW-11 = ~~3.91~~ ~~4.52~~ 3.91
MW-10 = 4.31

Saari, Christopher A

From: Saari, Christopher A
Sent: Thursday, August 28, 2003 10:32 AM
To: 'echristiansen@wi.rr.com'
Cc: 'lparsons@naturalrt.com'
Subject: Monitoring Well Installation and Sampling Schedule

Good Morning Mr. Christiansen:

At long last, I am able to provide you a (near) final schedule for the monitoring well installations and sampling at the C.M. Christiansen Co. Pole Yard site. My sampling and health & safety plans have been submitted to EPA Region V, and I anticipate receiving from them shortly a notice to proceed. Once the sampling plan has been approved by EPA, I will forward you both electronic (text) and full hard copy versions of the plan.

As of today, the plan is for a drilling crew from Boart Longyear to be at the site to install the monitoring wells on September 8 and 9. I will ask Boart Longyear to return a signed access agreement to you as soon as possible. I will also be on site to observe the drilling. Utility companies should be in the area marking their utility lines next week in preparation for the work. If the site access road is gated and/or locked, I will need to work out an arrangement with you to get a key for the lock.

In terms of sampling, DNR staff intend to be at the site on September 30 - October 1 to conduct the groundwater, sediment and surface water sampling. Hopefully the ~20 days between well installation and sampling will allow for any potential contaminants dragged to depth by the deeper drilling to dissipate. Please let me know if you will have NRT or other personnel present to do split sampling, and also if you will be willing to pay for the particle size analyses of sediments (my sampling plan will include total organic carbon (TOC) analyses).

I appreciate your patience while this process has worked itself out. If you have any questions regarding the above schedule, please let me know.

Chris Saari
Hydrogeologist
WDNR Ashland Service Center
2501 Golf Course Rd.
Ashland, WI 54806
Telephone: 715-685-2920
Fax: 715-685-2909
E-mail: Christopher.Saari@dnr.state.wi.us

NATURE SAVER™ FAX MEMO 01616	Date 9/2/03	#of pages ▶ 1
To Laurie Parsons	From Chris Saari	
Co./Dept. NRT	Co. WDNR	
Phone #	Phone # 715/685-2920	
Fax # 262/523-9001	Fax #	

Saari, Christopher A

From: Laurie L. Parsons [lparsons@naturalrt.com]
Sent: Tuesday, July 29, 2003 12:13 PM
To: Eric R. Christiansen (E-mail)
Cc: Saari, Christopher A
Subject: RE: Phelps Poleyard Property - Status of DNR Investigation Schedule

Eric,

I spoke with Chris Saari today regarding status of WDNR's plans to do the additional investigation work on the poleyard property. In short, things are proceeding, but there have been delays due to the justification steps/approval required by EPA. At this point, Chris has Boart Longyear (same contractor that drilled the last round of wells for us) tenatively scheduled for drilling August 12th & 13th. Sampling would follow within 2 weeks or more: possibly the 26th & 27th. Everthing is in to the EPA and approval should be forthcoming.

The schedule may get pushed if EPA approval does not come soon (drilling will still occur in August), but in that case sampling the wells/sediments may not happen until September. Because of this slide in schedule, Chris estimates he will not be able to file a report by the mid September timeframe in any case(end of federal fiscal year).

Action items forthcoming:

1. If you have already signed the access agreement, Chris will proceed with that unless you hear otherwise from him directly.

2. Chris will forward a sampling plan for CMC information after EPA approval and prior to mobilizing. He'll send electronic text, w/ full copy via mail with figures (Chris please send one to Eric at his Milwaukee address, unless he lets you know otherwise, and one to NRT).

2. For the sediment sampling, Chris would like to do some particle size analysis and total organic carbon analysis but will not be able to get that portion of the sampling funded by EPA. He asked whether CMC would consider picking up the cost for the laboratory work for those analyses only. DNR will collect the samples. He estimates 12 samples from six locations. Such information is typically used for evaluating contaminant mobility potential. Our original work plan from 1998 called for 5 grain sizes distributions($500) and 10 TOCs ($500). Lets discuss and get back to Chris on this item.

Thanks, call with any questions.

Laurie Parsons
Natural Resource Technology, Inc.
Direct 262.522.1193
Mobile 262.719.4502
Main 262.523.9000
Fax 262.523.9001

C.M. CHRISTIANSEN CO., INC.

P.O. Box 100
PHELPS, WI 54554
TEL: (715) 545-2333
FAX: (715) 545-2334

July 29, 2003

Mr. Christopher A. Saari
Wisconsin Dept. of Natural Resources
6250 South Ranger Road
Brule, WI 54820

Re: Property Access Agreement
Former Pole Treatment Facility (BRRTS #02-64-000068)

Dear Mr. Saari:

Two originals of the signed Property Access Agreement are enclosed.

Please don't hesitate to contact me if you have any questions or concerns.

Very truly yours,

C.M. CHRISTIANSEN CO., INC.

Eric R. Christiansen,
President

Encls.
cc: PC Christiansen (w/o encl)
Ms. Laurie Parsons (w/o encl)
Ms. Elizabeth Gamsky Rich (w/o encl)

PROPERTY ACCESS AGREEMENT

C.M. Christiansen Company, Inc., the owner of the Property (Owner) hereby gives permission to the Wisconsin Department of Natural Resources (WDNR) and its employees, duly authorized representatives, agents, contractors and subcontractors, to enter upon and have access at reasonable times to that portion of the property shown on the map attached hereto as Exhibit A (Property), subject to the terms and conditions listed below. The permission is granted for the limited purposes expressly described herein so that WDNR can conduct an Expanded Site Inspection (ESI). The proposed ESI field work consists of the following tasks:

A. The *Well Drilling Firm* hired by WDNR will install two (2) groundwater monitoring wells to a depth of 45 feet each, and one (1) groundwater monitoring well to a depth of 27 feet, at the locations shown on Exhibit A. During installation of the monitoring wells, field screening of soil cuttings will be conducted with a photoionization detector (or similar) for health and safety purposes, but no soil samples will be collected for laboratory analysis. Upon completion of the monitoring well installations, the *Well Drilling Firm* will develop the monitoring wells.

B. WDNR will collect groundwater samples from selected existing and newly-installed monitoring wells and will allow the Owner's representatives to observe the performance of this work and will allow split samples to be collected by the Owner's representatives should such representatives so request. Groundwater sampling locations and analytes will be identified in the ESI Sampling Plan prepared by WDNR, a copy of which will be furnished to the Owner prior to conducting the sampling.

C. WDNR will collect sediment and surface water samples from Military Creek, upstream, downstream and adjacent to the property and will allow the Owner's representatives to observe the performance of this work and will allow split samples to be collected by the Owner's representatives should such representatives so request. Sediment and surface water sampling locations and analytes will be identified in the ESI Sampling Plan prepared by WDNR, a copy of which will be furnished to the Owner prior to conducting the sampling.

The Owner hereby grants a revocable license for the requested access subject to the following terms and conditions:

1. The *Well Drilling Firm*, an agent of WDNR for the limited purpose of installing groundwater monitoring wells, is authorized to install the monitoring wells described in sub. A. above. If any additional work is required, the *Well Drilling Firm* (i) will notify the Owner at least 10 business days in advance of performing such additional work; (ii) will allow the Owner's representatives to observe the performance of the additional work and will allow split samples to be collected by the Owner's representatives should such representatives so request; and (iii) shall provide the Owner with detailed work plans describing all work proposed to be performed on the Property and identifying locations at which the *Well Drilling Firm* intends to perform such work. Any such additional work shall be subject to all of the terms and conditions set forth herein.

2. Except as expressly provided in the ESI Sampling Plan, no soil samples will be collected on the Property and no soil will be analyzed during the performance of the ESI, including, but not limited to, the use of field-screening or laboratory techniques, unless the WDNR obtains the Owner's permission to go on the Property to collect such samples or to perform such analysis, or obtains a special inspection warrant to conduct the additional work on the Property. All groundwater samples obtained during the performance of the work under this property access agreement will be analyzed only for the parameters specified in the ESI Sampling Plan.

3. The *Well Drilling Firm* will be responsible for contacting Digger's Hotline prior to performance of the monitoring well installations, and for conducting a reasonable investigation into the existence of underground utilities or structures that may be encountered during the Work. The Owner will cooperate with and assist the *Well Drilling Firm* and its designated representatives in locating any private underground utilities to the extent such information is reasonably available to the Owner; however, the Owner does not hereby assume any obligation for the location of any underground utilities or structures, nor any responsibility for the failure to locate the same.

4. The *Well Drilling Firm* and WDNR shall conduct the ESI so as not to interfere with Owner's use and enjoyment of the Property. Upon completion of the monitoring well installations, the *Well Drilling Firm* will restore the Property to its original condition and appearance. When the monitoring wells are no longer needed, WDNR shall be responsible for properly abandoning the monitoring wells installed under this property access agreement in accordance with all applicable laws, rules, and regulations.

5. The *Well Drilling Firm* shall be responsible for the proper characterization, storage, labeling, transportation, and disposal of all investigative wastes (decontamination & development waters and/or drill cuttings) generated from the monitoring well installation and development, except those determined to be hazardous wastes. WDNR will be responsible for the disposal of all investigative wastes determined to be hazardous wastes. No staging or storage of any investigative or other waste generated during the course of performance of the work conducted under this property access agreement shall be permitted on the Property other than as expressly provided by Owner. The *Well Drilling Firm* and WDNR, and not Owner, shall be responsible for full compliance with any applicable legal requirements and best management practices relating to the storage, labeling, transportation, and disposal of all waste materials generated in connection with the work conducted under this property access agreement.

6. WDNR shall provide to Owner copies of all data obtained from the ESI, including boring logs, laboratory reports and data, and all final reports incorporating the data obtained from the ESI. WDNR shall allow the Owner's representatives to observe the performance of all work performed and will allow split samples to be collected by the Owner's representatives should such representatives so request.

7. WDNR shall be solely responsible for payment of the contractors and subcontractors involved in performance of the ESI, and will not allow any liens to be placed upon the Property arising out the performance of the ESI. At least three business days prior to performance of the monitoring well installations, WDNR will provide to Owner copies of insurance certificates for all contractors and subcontractors

who will be involved in performing the monitoring well installations. The form and substance of such certificates shall be reasonably acceptable to Owner, and shall name Owner as an additional insured.

8. The *Well Drilling Firm* shall, and hereby does, agree to indemnify and hold Owner harmless from and defend Owner against any and all claims, suits, damages, costs, expenses, liability, or loss of any kind caused by the acts or omissions of the *Well Drilling Firm*, or their employees, agents, or subcontractors, arising out of or relating to the access being granted under this Agreement and/or the performance of the Work and any additional work performed on the Property (including, without limitation, any loss arising out of or relating to any underground utilities or structures located on the Property), provided that such indemnification shall not extend to loss caused solely by Owner or its employees or agents. As used in this Paragraph, "loss" is defined as all claims, demands, judgments, damages (including, but not limited to property damages), actions, causes of action, bodily injuries, administrative orders, liabilities, penalties, costs and expenses (including reasonable attorneys fees).

9. The *Well Drilling Firm* shall comply with all applicable federal, state, and local laws, ordinances, rules, orders or regulations in conducting the Work.

10. The license to enter onto the Property granted pursuant to this Agreement shall terminate on December 31, 2003. All covenants, representations, and indemnifications set forth herein shall survive the termination or expiration of this Agreement.

11. The license to enter onto the Property granted pursuant to this Agreement is contingent upon signature by the *Well Drilling Firm*, below, as part of its engagement by WDNR, evidencing that the *Well Drilling Firm* agrees to and accepts the provisions of this Agreement.

12. This Agreement shall be interpreted under the laws of the State of Wisconsin and may be signed in counterparts, each constituting an original, and all, collectively, one and the same Agreement.

IN WITNESS WHEREOF:

C.M. CHRISTIANSEN CO., INC.

P.O. Box 100
Phelps, WI 54554
(715) 545-2333

By: _____
Eric R. Christiansen, President

7/29/03
Date

AGREED TO AND ACCEPTED BY THE *WELL DRILLING FIRM*:

_____
[name of firm]

By: _____ _____
_____,[name] Date
Authorized Officer

Address & Telephone Number of *WELL DRILLING FIRM*:

_____

_____

_____

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B. WDNR will collect groundwater samples from selected existing and newly-installed monitoring wells and will allow the Owner's representatives to observe the performance of this work and will allow split samples to be collected by the Owner's representatives should such representatives so request. Groundwater sampling locations and analytes will be identified in the ESI Sampling Plan prepared by WDNR, a copy of which will be furnished to the Owner prior to conducting the sampling.

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IN WITNESS WHEREOF:

C.M. CHRISTIANSEN CO., INC.

P.O. Box 100
Phelps, WI 54554
(715) 545-2333

By: _____
Eric R. Christiansen, President

7/29/03
Date

AGREED TO AND ACCEPTED BY THE *WELL DRILLING FIRM*:

_____
[name of firm]

By: _____ _____
_____,[name] Date
Authorized Officer

Address & Telephone Number of *WELL DRILLING FIRM*:

_____

_____

_____

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7. WDNR shall be solely responsible for payment of the contractors and subcontractors involved in performance of the ESI, and will not allow any liens to be placed upon the Property arising out the performance of the ESI. At least three business days prior to performance of the monitoring well installations, WDNR will provide to Owner copies of insurance certificates for all contractors and subcontractors

who will be involved in performing the monitoring well installations. The form and substance of such certificates shall be reasonably acceptable to Owner, and shall name Owner as an additional insured.

8. The *Well Drilling Firm* shall, and hereby does, agree to indemnify and hold Owner harmless from and defend Owner against any and all claims, suits, damages, costs, expenses, liability, or loss of any kind caused by the acts or omissions of the *Well Drilling Firm*, or their employees, agents, or subcontractors, arising out of or relating to the access being granted under this Agreement and/or the performance of the Work and any additional work performed on the Property (including, without limitation, any loss arising out of or relating to any underground utilities or structures located on the Property), provided that such indemnification shall not extend to loss caused solely by Owner or its employees or agents. As used in this Paragraph, "loss" is defined as all claims, demands, judgments, damages (including, but not limited to property damages), actions, causes of action, bodily injuries, administrative orders, liabilities, penalties, costs and expenses (including reasonable attorneys fees).

9. The *Well Drilling Firm* shall comply with all applicable federal, state, and local laws, ordinances, rules, orders or regulations in conducting the Work.

10. The license to enter onto the Property granted pursuant to this Agreement shall terminate on December 31, 2003. All covenants, representations, and indemnifications set forth herein shall survive the termination or expiration of this Agreement.

11. The license to enter onto the Property granted pursuant to this Agreement is contingent upon signature by the *Well Drilling Firm*, below, as part of its engagement by WDNR, evidencing that the *Well Drilling Firm* agrees to and accepts the provisions of this Agreement.

12. This Agreement shall be interpreted under the laws of the State of Wisconsin and may be signed in counterparts, each constituting an original, and all, collectively, one and the same Agreement.

IN WITNESS WHEREOF:

C.M. CHRISTIANSEN CO., INC.

P.O. Box 100
Phelps, WI 54554
(715) 545-2333

By: _____
Eric R. Christiansen, President

7/29/03
Date

AGREED TO AND ACCEPTED BY THE *WELL DRILLING FIRM*:

Boart Longyear Company
[name of firm]

By: _____
Ron Thalacker ,[name]
Authorized Officer

9-3-03
Date

Address & Telephone Number of *WELL DRILLING FIRM*:

101 Alderson St
Schofield WI 54476
715 359 7090

CORRESPONDENCE/MEMORANDUM

State of Wisconsin

DATE: July 20, 2003 FILE REF:

TO: Chris Saari – NOR/Ashland

FROM: Tom Janisch – RR/3

SUBJECT: Comments On Draft Sampling Plan C.M. Christiansen Pole Yard

I thing I always thought was significant about the analytical results I have seen related to the sediments in the Creek were relatively low levels of PCP given the history of releases from the site to the Creek. The PCP concentrations (649 and 2,500 ug/kg) are above the probable effect level (PEC) in our draft sediment quality guidelines (200 ug/kg) but this was found only at a limited number of sites. I assumed over time that degradation processes were at work on the PCP compound deposited in the sediments and decreased the concentrations. The other significant thing was the high concentrations of PCGG/PCDF that were present in the creek sediments due to their persistency and little degradation. Given the high concentrations of the persistent PCDD/PCDF in the sediments, at one time there must have been relatively high levels of PCP when originally released. These PCP were lost through degradation while the PCDD/PCDFs were persistent and high concentrations remain.

In your sampling plan writeup you indicate that a soil sample had total PCDD/PCDFs of 182,285 ng/kg. For comparison purposes, the 1993 PA sampling showed the following total PCDD/PCDF concentrations and the TCDD equivalent concentrations at the sediment sampling sites.

	S-20 Reference Site	S-21	S-22	S-22 DUP	S-23	S-24
Total PCDD/PCDF ng/kg	ND	352,560	794,120	673,000	19,230	24,600
Total pg TCDD-EQ/g	Likely around 2.0	983	2,504	1,813	37	48

I think the last comments I made on the site were in regard to the NRT work plan. At the time I thought the implications and risks of the presence of these levels of total TCDD-EQ in the sediments needed to be looked at more closely beginning with the analysis of sediment segments followed by an ecological and human health risk assessments. Until this is done we don't know the implications of these levels of TCDD-EQs in the sediments may mean.

Suggestions for Wording in the Sampling Plan

Page 4. A. Waste Characteristics and Pathways to be investigated. Last paragraph.

I would suggest adding to the first sentence – "Investigative activities completed by WDNR, CEC and NRT have identified PCP and PCDD/PCDF impacts in sediments of Military Creek and the wetlands and floodplain adjacent to the creek." *[Comment: The data I have indicates PCDD in sediments but I'm not sure what the data shows for wetlands and floodplain]*

Fourth Sentence - "For a gross approximation, it can be assumed that the stream channel between the 1993 PA sample sites S-21 and S-24 have been affected by the site, based on the detection of PCP at S-21 and S-22 and detections of PCDD/PCDF above background at all four sites. The 2,3,7,8-TCDD equivalent concentrations of 983 and 2,504 pg TCDD-EQ /g at sample sites S-21 and S-22 respectively are the highest concentrations in sediments reported to date on a statewide basis (expected background would be 2 pg TCDD-EQ / g). These values are generally based on composited 2 foot cores. More information is needed on concentrations in the surface bioactive zone of the sediments (approximately the top 15 – 20 cm) and in deeper segments that may be a repository for possible later releases of PCP, PCDD/PCDF, and other site contaminants (PAHs) depending on the hydrodynamics of the stream and past releases from the site to the creek."

Other Considerations

In regard to the fuel oil carrier, is there any possibility an indicator parameter like DRO or Oil & Grease could be analyzed for in the sediment samples? PAHs as part of the SVOCs will give a standard analysis that will give an indication of fuel oil inputs. Based on Murphy Oil and Newton Creek, petroleum oils can have many more toxic compounds in it beside the unsubstituted PAHs normally analyzed for. I am looking for a grosser indicator of fuel oil contamination. Not a priority but I think it does add some useful qualitative information to the evaluation if either of these indicator parameters could be analyzed for.

Based on our 1992 sediment sampling, there should be no problems obtaining cores from creek sediments. As I remember, once you go downstream past the Co. Hwy. and toward the juncture of the creek with the Lake, the stream bottom gets harder due to cobbles and sand. If samples are taken in this segment, shovel cores can be obtained. Most of the creek is shallow and wadeable. The only problem as I remember it is that at the upstream reference sample site the water was deep with a soft bottom and is not wadable. The banks were somewhat floating bogish which didn't make for a stable platform. I think water levels were a little high at the time due to rains in the area. With normal water levels this will be less of a problem.

C. Sarri
F.Y.I.
7/9/03

C. M. CHRISTIANSEN CO - 11 YEARS
COSTS RELATED TO ENVIRONMENTAL CLEANUP
PHELPS, WISCONSIN
7/01/92 THRU 6/30/03

GRAND TOTAL 6/30/02			$ 868,993.00
NATURAL RESOURCE TECHNOLOGY		4,786.45	
MISCELLANEOUS CHARGES THRU 6/30/03		1,449.13	
WIPFLI	1,125.00		
TOWN OF PHELPS	279.13		
MI RUNNER SERVICE	30.00		
MI DEPT CONSUMER/INDUSTRY	15.00		
GRAND TOTAL JUNE 30, 2003			$ 875,228.58

NOTE: No "Grants", "Loans", or Financial Assistance from any 2nd parties. No help from Gov't! All "after-tax dollars" (From savings through two (2) full generations of private owner manufacturing operations).

Latest year (12 months) additional costs - $6,235.58

7/9/03

This now makes
a beautiful
cluster Park,
but not with
10+ Water-well
head "Stand Pipes".
Let's finish
up this year, K? I
can help!! Ray

CORRESPONDENCE/MEMORANDUM

State of Wisconsin

DATE: June 19, 2003 FILE REF:

TO: Chris Wilmot – Spooner

FROM: Chris Saari – Ashland CAS

SUBJECT: Purchase Requisition for Environmental Drilling Services

Attached please find a Purchase Requisition, service proposal and scopes of work for environmental drilling services at the C.M. Christiansen – Pole Yard site in Phelps, Wisconsin. Please note that I left the Object Code boxes blank because I could not determine the proper code to enter.

DNR intends to contract for the drilling and installation of three groundwater monitoring wells at the site as part of an Expanded Site Assessment under the Superfund Site Assessment program. I hope to schedule the drilling for either the second week of July 2003. As stated in the Site Specific Scope of Work, the monitoring wells are needed to determine whether groundwater contaminants are migrating to the south. Boart Longyear was contacted to submit this proposal because that firm installed most of the existing monitoring wells at the site and, as such, they are familiar with the drilling conditions that will likely be encountered. The proposal total of $4,309.00 appears reasonable considering the drilling footage, decontamination requirements, etc.

Please contact me at 715-685-2920 if you have questions or if I have missed something in this process.

5.5 *Checklist - Goods and Services Contracts*

INSTRUCTIONS: Staff must submit this checklist with the Requisition form (9300-12). The Requisition should not be submitted unless each item is included and checked on this checklist, except if the item is not applicable in which case NA should be entered.

Check Here:	Documentation to be Submitted with Requisition	SIMPLIFIED	BIDS	RFPS	WAIVERS
		Requirements(x)			
[✓]	Transmittal (justification) memo stating:	X	X	X	X
[✓]	[✓] state/federal law requiring or authorizing the procurement (services only)	X	X	X	X
[✓]	[✓] why goods or services are needed	X	X	X	X
[✓]	[✓] why competitive bidding and/or RFP cannot be used				X
[✓]	[✓] why it is more efficient to contract	X	X	X	X
[NA]	[NA] why not another state agency (services only)	X	X	X	X
[NA]	[NA] why not LTE, project, or permanent employees (services only)	X	X	X	X
[NA]	[NA] why the length of contract is proposed (more than three years only)	X	X	X	X
[✓]	[✓] how cost reflects market value				X
[✓]	Total and annual cost of request	X	X	X	X
[✓]	Specifications	X	X	X	X
[✓]	Method of award	X	X		
[NA]	List of evaluators			X	
[✓]	List of bidders/proposers	X	X	X	
[✓]	Qualifications of bidders/proposers if required	X	X	X	
[✓]	Evaluation criteria with cost as one of the criteria			X	
[✓]	Abstract of bids received	X			
[✓]	Copy of successful bid	X			

Simplified	$1,500 to $25,000
Bid	$25,000 +
RFP	Request for proposals
Waivers	Waiver of bid or RFP processes

Boart Longyear Company
Environmental Drilling Division
101 Alderson Street
Schofield, Wisconsin 54476
Telephone: 715-359-7090 • 800-236-4983
Fax: 715-355-5715

BOART LONGYEAR
CONTRACTING SERVICES GROUP

June 18, 2003

NATURE SAVER™ FAX MEMO 01616	Date 6/19/03	# of pages ▶ 11
To Mike Netzer	From Chris Saari	
Co./Dept. RR/3	Co. Ashland	
Phone #	Phone # 715/685-2920	
Fax # 608/267-7646	Fax #	

DNR-Ashland

Attn: Mr. Chris Saari

RE: C.M. Christiansen - Pole Yard
Phelps, WI

Proposal No.: 010051

Dear Mr. Saari:

In accordance with your recent request, we are pleased to submit our proposal for the desired technical services required for the above referenced project.

It is our understanding that one 27 foot piezometer and two 45 foot piezometers will be installed for this project. All work will be done in accordance with NR-141 and your specifications. We have assumed that the site is truck accessible and that no soil sampling will be required.

We assume normal drilling conditions, i.e. BPF < 50. If exessive blow counts of 50 or more are encountered, a surcharge of $3.00/ft. will be added. If blow counts of 100 or more are encountered, a surcharge of $5.00/ft. will be added.

Based upon the scope of work as summarized on the attached sheet, the cost of this project would be approximately $4,309.00 depending on the actual work performed. This proposal will remain valid for a period of 30 days.

If you have any questions regarding this proposal, please give me a call. We appreciate your consideration and look forward to working with you on this and future projects.

Sincerely,

Ron Thalacker
Drilling Manager

Attachment

Post-It® Fax Note 7671	Date 6-18	# of pages ▶ 2
To Chris Saari	From Ron Thalacker	
Co./Dept. DNR	Co. Boart Longyear	
Phone #	Phone # 715 359 7090	
Fax # 715 685 2909	Fax # 715 355 5715	

DNR-Ashland
Attention: Mr. Chris Saari

Proposal No.: 010051

C.M. CHRISTIANSEN - POLE YARD PROPOSAL

Service	U.O.M.	Rate	Quantity	Estimated Cost
Mobilization	Lump Sum	300.00	1.00	300.00
Per Diem (2 Man Crew)	Day	135.00	2.00	270.00
Project Coordination & Report	Lump Sum	50.00	1.00	50.00
Drill 4 1/4 HSA	Foot	11.00	117.00	1,287.00
2" PVC Well Installation Sch 40	Foot	11.00	117.00	1,287.00
Above Grade Protective Tops	Each	135.00	3.00	405.00
Bumper Posts	Each	40.00	0.00	0.00
Flush Mounts	Each	175.00	0.00	0.00
Well Development	Hour	125.00	2.00	250.00
Decontamination & Site Clean up	Hour	125.00	2.00	250.00
Drums	Each	35.00	6.00	210.00
TOTAL				$4,309.00

CORRESPONDENCE/MEMORANDUM

State of Wisconsin

DATE: June 17, 2003 FILE REF:

TO: Keith Laszewski – Boart Longyear (via facsimile 715-355-5715)

FROM: Chris Saari – DNR Ashland CAS

SUBJECT: Cost Estimate for Monitoring Well Installation (9 pages including cover sheet)

As we discussed on the telephone yesterday, I am planning to contract for drilling services at a contamination site in northern Vilas County. The proposal for which I need a cost estimate is to install two 45-foot deep piezometers and one 27-foot deep piezometer. These piezometers will be installed adjacent to existing wells at the site. Some of the questions that I have include:

- Will the reported heaving sands require special/different drilling techniques?
- Will double casing eliminate the potential for contaminants to be dragged to depth during the drilling process? In other words, is the added expense worthwhile?
- As I mentioned yesterday, if this project does not have to be bid, DNR might potentially want to have the work done before the end of this month. Is that a realistic time frame? If not, what would a realistic schedule be?

If you have questions regarding this project, please call me at 715-685-2920. You can fax the estimate back to me at 715-685-2909. Thanks.

PHONE CONVERSATION RECORD

DATE: 6/17/03
TIME: 1020 hrs.

CONVERSED WITH: Ron Thalacker
Boart Longyear
800/236-4983

SUBJECT/PROJECT: C.M. Christiansen EST

UNIQUE ID#.:

I returned a call to Ron, who said that if the MW-10/PMW-11 well nest did not have to be double-cased, his company could do the drilling for less than $5000. We discussed the merits of double casing the well; Ron said that as long as the borehole is properly grouted and the well is fully developed, drag-down of contaminants should not be an issue. Ron also said the heaving sand should not be a problem.

As far as scheduling, Ron said the earliest the company could do the work would be the week of 6/30 or 7/7. I explained the dilemma I faced with DNR Finance and the end of the fiscal year, and also the fact that DNR is still trying to gain access to the site.

Ron said he would fax me a cost estimate today.

Signature: Christopher A Saar
(please write legibly)

2003 SUPERFUND SITE ASSESSMENT PROGRAM
SITE SPECIFIC SCOPE OF WORK FOR
SUBSURFACE DRILLING AND MONITORING WELL INSTALLATION

SITE NAME: C.M. CHRISTIANSEN – POLE YARD
LOCATION: COUNTY E (LAKE ST.), PHELPS, WISCONSIN 54554

WDNR PROJECT MANAGER & MAILING ADDRESS:
Chris Saari
WDNR Ashland Service Center
2501 Golf Course Road
Ashland, WI 54806

SITE HISTORY

The C.M. Christiansen – Pole Yard site is a former wood treating facility that operated from approximately 1954 until the early 1980s. Wooden poles were treated here for the power transmission and telephone industries. Treatment reportedly occurred in a vat with a heated solution of 5% pentachlorophenol (PCP) and 95% No. 2 fuel oil. Poles were soaked in the solution for 24 hours. Following treatment, the poles were allowed to drip dry in the vat or on the ground adjacent to the vat. Other information suggests that poles were also treated in a plastic-lined depression in the ground; once the poles were removed, the plastic liner was lifted and the treatment solution was allowed to seep into the ground. Spent treatment residues, sludges and wood products were occasionally disposed of on the ground or burned.

SITE DESCRIPTION

The C.M. Christiansen – Pole Yard site is located on a 150-acre parcel northeast of the Village of Phelps, just off of Vilas County Highway E. The site is bordered by Military Creek to the east, wetlands and forest to the north and west, and County Highway E to the south. All of the former buildings have been removed and the site is now vacant. Site topography slopes from west to east, towards Military Creek. Approximately 500 feet downstream (south) of the site, Military Creek drains into North Twin Lake.

EXPECTED SOILS, GEOLOGY, AND HYDROGEOLOGY

Based on previous investigation, soil at the site is stratified glacial till consisting of sand with varying amounts of gravel and silt. Layers of silt, clayey silt and peat have also been encountered, primarily within the upper ten feet of the soil column. It is anticipated that soils that will be encountered during this drilling work will be similar to those observed on site previously. Depth to bedrock is greater than 37.5 feet, the maximum depth of investigation in this portion of the site. Up to 280 feet of glacial overburden can be found in this area of Vilas County.

Depth to groundwater in the area of study is approximately four feet. Shallow groundwater flows to the east-southeast, towards Military Creek. Based on groundwater elevation data from existing piezometers on site, deeper groundwater appears to have a more southerly flow direction, towards North Twin Lake.

POSSIBLE SOIL OR GROUNDWATER CONTAMINANTS

Possible soil contaminants include PCP, polynuclear aromatic hydrocarbons (PAH) and polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans (PCDD/PCDF). Elevated PCP concentrations were detected in soil during the earlier investigation of the site, but the majority of impacted soil was either excavated and transported off site or capped during a remedial action in the fall of 1999. There is a potential for low-level PCP contamination to be present at the existing MW-10/PMW-11 well nest, the

location of one of the monitoring wells to be installed. It does not appear that soil contaminants were detected at existing monitoring well MW-4, the proposed location for the other monitoring wells.

PCP groundwater concentrations in MW-10 have ranged from 2.6-34 micrograms per liter (µg/L), while concentrations in PMW-11 have ranged from 200-1,300 µg/L. PCP concentrations in MW-4 have historically been less than 1µg/L. PAH compounds have not been an issue in groundwater from these monitoring wells, and no PCDD/PCDF analyses have been conducted on these wells.

SOIL BORING REQUIREMENTS

Three soil borings will be drilled for the purpose of installing the monitoring wells described below. WDNR does not intend to collect soil samples from the borings for chemical analysis, but the lithologic logging and field screening required in the *General Scope of Work for Drilling at all Superfund Site Assessment Sites* shall be completed by the drilling crew. If hollow stem auger drilling is utilized, the driller will be responsible to supply and employ two three-inch split spoons for continuous sampling.

MONITORING WELL REQUIREMENTS

Three monitoring wells will be installed at the site, screened as piezometers, in accordance with the requirements of ch. NR 141, Wis. Adm. Code. One piezometer will be installed adjacent to the MW-10/PMW-11 well nest, screened from approximately 40-45 feet below ground surface (ft bgs). The other two monitoring wells will be installed adjacent to water table observation well MW-4, located approximately 150 feet south of the MW-10/PMW-11 well nest. These piezometers will be screened from approximately 22-27 and 40-45 ft bgs, respectively.

Based on conversations with the site consultant, heaving sands have been encountered during previous drilling in this area. Due to this condition, WDNR will require that the driller employ appropriate drilling techniques to overcome this potential difficulty. Also, there is a concern that dissolved contaminants could be dragged to depth during the installation of the piezometer at the MW-10/PMW-11 well nest. Therefore, the driller shall be prepared to double-case the piezometer installed at the MW-10/PMW-11 well nest to a depth of 40 ft bgs.

ESTIMATED DRILLING DATE

Late June-early July 2003

Bid Price Sheet **C.M. Christiansen – Pole Yard**

Item	Quantity	Pricing Basis	Unit Cost	Total
Mobilization	1	Lump sum	$	$
Site preparation	1	Lump sum	$	$
Drilling to specified depth	117 feet total	Per foot	$	$
Sampling	field screening only			
Geologist	1			
Material supply				
End caps	3	Each	$	$
Screen	15 feet	Lineal foot	$	$
Filter material		Lineal foot	$	$
Bentonite seal(s)		Lineal foot	$	$
Grout	High-Solids	Lineal foot	$	$
Casing protector	3	Each	$	$
55 gallon drums	6?	Each	$	$
Support equipment				
Water truck and water		Lump sum	$	$
Decontamination		Lump sum	$	$
Field expenses		Lump sum	$	$
Material installation (schedule 40)	111 feet (including 3-foot stick-up at each well)	Per foot	$	$
Well development	3 wells	Per hour	$	$
Demobilization	1	Lump sum	$	$
Technical report	1	Lump sum	$	$
Cost for project				**$**

			Unit Cost
Drilling cost adjustment for variations in depths		± per foot	$
Borehole abandonment		Per foot	$

Complete and return this Bid Sheet as part of your bid.

Bidder (Company name)

Signature Date

GENERAL SCOPE OF WORK FOR DRILLING AT ALL SUPERFUND SITE ASSESSMENT SITES

This scope of work sets forth the general requirements for the installation of groundwater monitoring wells at all Superfund Site Assessment sites. Site specific requirements are attached to this document in the form of a Site Specific Scope of Work for each site. The Contractor and WDNR responsibilities are listed below. Questions pertaining to individual sites included in this bid should be directed to the WDNR Project Manager for the site as indicated on the site-specific Scope of Work.

I. Contractor Responsibilities

A. General Description of Services

The contractor agrees to provide the services necessary for proper and complete drilling of boreholes for soil sampling and construction of groundwater monitoring wells in accordance with WDNR's NR 141, Wisconsin Administrative Code, *Groundwater Monitoring Well Requirements*, for the subject site. All of the following department forms shall be used, where applicable to the site or facility:

1. 4400–89, groundwater monitoring well information.
2. 4400–113A, monitoring well construction.
3. 4400–113B, monitoring well development.
4. 4400–122, soil boring log information.
5. 3300–5, well/drillhole/borehole abandonment.

Within 60 days of the completed work, the contractor will submit a report of the site work, including all completed forms and the surveyed well location maps to the Department. One copy shall be submitted to the Regional Project Manager identified in the Specific Scope of Work and another to:

Department of Natural Resources
Bureau for Remediation and Redevelopment
101 S. Webster Street
Madison, WI 53707
Attn: Mike Netzer - RR/3

In addition, the contractor may be called upon to provide legal testimony in a court of law, thus proper documentation shall be maintained for all activities. Any costs associated with legal testimony shall be contracted for separately.

B. Equipment and Service Requirements

1. Drilling Crew

All drilling activities shall be conducted by a crew of three people, two of whom are responsible for the drilling activities. The third individual shall be a field geologist to conduct all field borehole and well logging, sample collection for grain size analysis, and completion of all required well and soil boring documentation. All three crew members must be safety trained according to OSHA requirements for work on hazardous waste sites.

For accounting purposes, an hourly activity log shall be kept by the drilling crew to keep track of actual time spent on each task. This log should be included with the invoice.

The contractor shall perform all work in accordance with their standard safety plan. The plan shall adequately address potential hazards associated with the performance of this project.

The contractor shall notify the Department's Project Manager at least 48 hours prior to the start of any drilling or soil boring activity.

Notification of Digger's Hotline and any other necessary utility locators will be the responsibility of the contractor.

2. Survey

Upon completion of the borings and/or monitoring wells, the contractor shall conduct a topographic survey for vertical and horizontal control of all pertinent study area and work site features. Vertical elevations shall be referenced to USGS datum.

3. Drilling Equipment

Drilling rigs and equipment shall be used that are appropriate to perform the site specific tasks (See the site specific scopes of work for special equipment requirements, i.e. may need specific size sampling tools or rig requirements for entering a building). All equipment brought by contractor to the site shall be properly and appropriately decontaminated prior to beginning work. Generally a minimum of 4¼ inch hollow stem augers and two 3" diameter split spoon samplers will be required.

4. Decontamination of Equipment

Equipment must be decontaminated between boreholes to avoid cross-contamination. Between boreholes, all casing, rods, samplers, and other equipment used in the boreholes shall be decontaminated as deemed appropriate. If the borehole screening indicates presence of any hydrocarbons or volatiles, acetone and distilled water rinsing is required in addition to steam cleaning. Steam cleaning of any contaminated equipment shall take place over a polyethylene tarp and wastewater shall be containerized.

After cleaning, the drilling equipment shall be placed on a clean surface on the driller's truck bed or wrapped in clean polyethylene sheeting.

Upon completion of drilling activities, all casing, rods, tools and miscellaneous equipment shall be steam cleaned.

5. Decontamination & Development Fluids

Decontamination and development fluids shall be containerized. The contractor shall be responsible for acquiring and transporting to the site, clean 55-gallon drums to be used for containerization of drilling, development and decontamination fluids. Separate drums shall be used for each well drilled or other waste stream produced.

Upon filling, the drums shall be secured, properly labeled and transported to a designated (on-site) storage area. Waters retrieved during purging for the Superfund Site Assessment (to be performed by the Department at a later date) may also be discarded into an appropriate drum.

The contractor shall be responsible for the containment of all decontamination wastewater.

6. Drill Cuttings

a) On-site Screening

An on-site scan of the drill cuttings shall be performed using a photoionization (PID) meter. The contractor shall be responsible for bringing an operable PID for screening purposes.

b) Temporary Storage

Drill cuttings obtained shall be temporarily stored on-site until completion of a physical and chemical analysis of the material. The contractor shall be responsible for acquiring and transporting to the site, clean 55-gallon drums to be used for containerization of drill cuttings. The drill cuttings shall be containerized or placed on plastic sheeting and covered as determined by the WDNR Project Manager. Separate drums shall be used for each boring or well drilled. The temporary storage of drums shall be located to avoid interference with any ongoing operations at the site.

7. Investigative Waste Management

The contractor is responsible for sampling the containerized decontamination and development fluids, and drilling cuttings for proper disposal within 1 month of the completion of the project. The contractor is responsible for disposal of all investigative wastes except those determined to be hazardous wastes (see Section II.D.

8. Technical Well Log Information Report

The Technical Report submittal, indicated in Section I.A shall include:

all technical data such as boring logs, well construction details, well elevations, well/drillhole/borehole abandonment, water level measurements, well development techniques, soil sampling results, and hourly activity log. The technical data shall include: Groundwater Monitoring Well Information Forms 4400-89, Monitoring Well Construction and Development Forms 4400-113A, Soil Boring Log Information Forms 4400-122 and, if necessary, the Well/Drillhole/ Borehole Abandonment Forms 3300-5, in accordance with NR141.25.

C. On-site Activities

1. Soil Borings

The contractor shall perform soil borings to adequately define the soil and groundwater conditions at the site (see Site Specific Scope of Work). The soil borings are likely to range from 10 to 50 feet in depth. The locations of the borings shall be approved by the Department's project manager and the contractor prior to installation.

Soil samples shall be collected from each soil layer encountered and at a maximum of five foot intervals. All soil samples shall be field classified using the Unified Soil Classification System , as required in NR 141.06(1) Wis. Admin. Code, and each sample shall be described according to its physical texture, color, and geologic origin. Particular attention shall be given to high conductivity or low conductivity soil zones (seams, lenses) that may either promote or inhibit vertical or horizontal migration of contaminants.

The contractor shall screen each of the soil samples collected under item I.B.1 using a PID, or other approved screening device, for the purpose of determining any vertical and/or horizontal extent of soil contamination. The method of sample collection and PID soil sample screening shall be approved by the Department's project manager prior to commencing.

If it is necessary to abandon a borehole, abandonment procedures shall conform to provisions set forth in NR 141.25, Wis. Admin. Code.

2. Monitoring Wells

The contractor shall install monitoring wells following the provisions set forth in NR 141. The wells shall be located to determine if groundwater contamination has occurred. In some cases, wells shall be installed to intercept potential migration away from the site.

The construction and installation of each well shall be documented conforming with NR 507.14 (for landfills) and NR 141.23, Wis. Admin. Code.

Well development procedures shall conform with provisions set forth in NR 141.21, Wis. Admin. Code.

Protective posts may be necessary to protect the wells (see site specific requirements).

In the unlikely event that waste is encountered in a borehole which is designated to be completed as a water table monitoring well, drilling will immediately be ceased and abandonment procedures performed, as outline in NR 141.25, Wis. Admin. Code.

II. State of Wisconsin Responsibilities

The State of Wisconsin through the Department of Natural Resources agrees to provide the following support:

A. The Department will assign a project manager to serve as its official representative who will, as necessary, resolve in writing any problems regarding policy or procedure issues.

B. The Department will provide personnel to conduct on-site inspections.

C. The Department will be responsible for all public information activities associated with the project.

D. The Department will be responsible for the disposal of all investigative wastes (decontamination & development waters and/or drilling cuttings) determined to be hazardous wastes.

E. The department will be collecting soil samples from these borings for submittal to an EPA Contract Laboratory. These samples will be retrieved in a similar manner as those used to characterize the subsurface soils.

CORRESPONDENCE/MEMORANDUM

State of Wisconsin

FILE COPY

DATE: June 3, 2003 FILE REF:

TO: Mike Netzer – RR/3

FROM: Chris Saari – Ashland CAS

SUBJECT: Drilling/Monitoring Well Justification for the C.M. Christiansen – Pole Yard

Attached is my revised justification memo for the ESI monitoring well installations at the above named site. I added a map with tabulated contaminant data and proposed well locations to better clarify the request. I was not able to get an electronic version of the map so this hard copy will have to do.

Please contact me with any questions.

attach.

Drilling/ Monitoring Well Justification for
2003 Superfund Site Assessment Sites

Site Name: C.M. CHRISTIANSEN – POLE YARD
Address: COUNTY E (LAKE ST.), PHELPS, WISCONSIN 54554
U.S. EPA ID# /CERCLIS #: WID988639035

1. Targets of Potential Groundwater Contamination

Groundwater is the sole source of potable water supplies within at least four miles of the site. Private water supply wells are typically drilled into the glacial sand and gravel aquifer, with depths ranging from 40 to 130 feet. The nearest private water supply well is located approximately 400 feet southwest of the site. Three nearby private water supply wells were sampled by the Wisconsin Department of Natural Resources (WDNR) in 1993 as part of a Screening Site Inspection, and generally showed no detections of contaminants attributable to the site.

According to a Preliminary Assessment performed by WDNR in 1993, there were 3,622 persons within four miles of the site that utilized groundwater as their source of drinking water. Included in this estimate were the approximately 700 persons served by the Village of Phelps municipal well, located approximately 2,200 feet south-southwest of the site. The municipal well was drilled to a depth of 75 feet.

Per measured groundwater elevations, depth to groundwater on the site ranges from approximately 2.5 feet near Military Creek to approximately 27 feet near the western edge of the site. Shallow groundwater at the site discharges to Military Creek (a trout stream), and it appears that deeper groundwater flows towards North Twin Lake (classified as an Outstanding Resource Water by WDNR).

2. Site Geology/Hydrogeology

The Wisconsin Geological and Natural History Survey Soil classified the site soil as the Nashville Member of the Copper Falls Formation. This unit consists of stratified glacial till ranging from sand and gravel to clay to peat. The finer grained soils are generally found within the top ten feet of the soil column and do not appear to be continuous across the site.

Bedrock beneath the site consists of Precambrian igneous and metamorphic crystalline bedrock. Based on previous investigation, depth to bedrock is greater than 37 feet at the site.

As mentioned previously, the shallow groundwater flow direction is to the east-southeast, towards Military Creek. However, based on groundwater elevation data from piezometers on site, WDNR has determined that deeper groundwater flow is more southerly, towards North Twin Lake. This is also the general direction of the private water supply wells nearest to the site.

3. Historical Analytical Data

Previous investigation soil samples have detected pentachlorophenol (PCP) concentrations as high as 82,000 milligrams per kilogram (mg/Kg), and total polynuclear aromatic hydrocarbon (PAH) concentrations as high as 1,765,000 μg/Kg. One soil sample also detected a total polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans (PCDD/PCDF) concentration of 182,285 nanograms per kilogram (ηg/Kg). A soil remedial action consisting of the excavation and off-site disposal of approximately 3,000 cubic yards of contaminated soil was completed in 1999.

A total of eighteen monitoring wells have been installed on the site during previous investigations. Of those, four have been screened as piezometers. PCP concentrations as high as 5,200 micrograms per liter (μg/L) have been detected in groundwater samples collected from these monitoring wells. In the one groundwater sample for which total PCDD/PCDF were analyzed, a concentration of 453.924 nanograms per liter (ηg/L) was detected. In addition, up to 0.65 feet of free phase product was observed in one of the

monitoring wells; this well was destroyed during the soil remedial action and was not replaced. A piezometer (PMW-11) located near the site's former boiler house is the existing monitoring well with the highest recurrent PCP concentrations, ranging from 200-1,300 µg/L. Refer to the attached figure for monitoring well locations and tabulated PCP concentration data.

4. Site Assessment Activity, Proposed Monitoring Wells and Rationale

An Expanded Site Inspection (ESI) will be conducted following the installation of the monitoring wells. Proposed sampling during the ESI will include sampling the newly installed monitoring wells and four existing monitoring wells, one of which is a background monitoring well. As part of the ESI, sediment and surface water samples will also be collected from the creek that flows along the site's eastern boundary.

WDNR proposes to install three groundwater monitoring wells onsite in order determine whether dissolved contaminants have migrated beneath and/or beyond the existing monitoring network. The proposed locations are indicated on the attached figure. One monitoring well will be installed adjacent to PMW-11, screened from approximately 40-45 feet below ground surface (ft bgs). This piezometer will determine whether further vertical migration of contaminants has occurred. The other two monitoring wells will be installed adjacent to a water table observation well (MW-4) south of PMW-11. MW-4 is currently the southernmost monitoring point on the site. These piezometers will be screened from approximately 22-27 and 40-45 ft bgs, respectively, and will determine if contaminants at depth have migrated to the south, the apparent flow direction for deeper groundwater.

Following the ESI, the data will be evaluated and disposition of the site determined. The evaluation of this site can not be completed until the aquifer is sampled just down gradient from the site. Hazard Ranking System scoring has been initiated for the site and will be completed following the ESI.

Date	PCP
9/14/95	0.18
12/15/95	0.73
7/24/96	27
11/18/96	4.8
5/25/99	1.3
11/29/99	4.0
5/23/00	1.3
11/30/00	0.054
5/30/01	0.12

Date	PCP
9/14/95	nd
12/14/95	nd
7/24/96	nd
11/18/96	nd
5/25/99	nd
11/30/99	nd

Date	PCP
9/14/95	2.5
12/15/95	1.2
7/25/96	0.4
11/19/96	0.74
5/25/99	0.42
11/30/99	0.55
5/23/00	0.16
11/30/00	0.13
5/30/01	nd

Date	PCP
7/25/96	350
11/19/96	2.5
5/25/99	0.2
11/30/99	0.77
5/23/00	0.15
11/30/00	0.32
5/30/01	1.8
11/27/01	20
5/31/02	<1
11/19/02	0.1

Date	PCP
9/14/95	0.12
12/15/95	0.56
7/24/96	0.42
11/18/96	0.58
5/24/99	0.12

Date	PCP
7/24/96	nd
11/18/96	nd
5/24/99	nd

Date	PCP
7/24/96	nd
11/18/96	0.45
5/24/99	nd

Date	PCP
7/24/96	0.15
11/18/96	0.14
5/24/99	0.089

Date	PCP
9/14/95	0.12
12/14/95	0.67
7/24/96	0.48
11/18/96	0.3
5/24/99	0.12
5/30/01	0.12

Date	PCP
7/25/96	820
11/18/96	720
11/6/97	1300
5/25/99	170
11/30/99	280
5/23/00	430
11/30/00	730
5/30/01	920
11/27/01	1,000
5/31/02	810
11/19/02	200

Date	PCP
9/14/95	960
12/15/95	5,200

Date	PCP
5/25/99	nd
11/29/99	nd
5/23/00	nd
11/30/00	nd

Date	PCP
9/14/95	1,300
12/15/95	32
7/25/96	21
11/19/96	10.0
5/25/99	1.9
11/30/99	28
5/23/00	13
11/30/00	18
5/30/01	1.0
11/27/01	2.7
5/31/02	1.0
11/19/02	0.96

Date	PCP
5/24/99	nd
11/29/99	nd
5/23/00	nd

Date	PCP
7/25/96	34
11/18/96	7.5
11/6/97	17
5/25/99	4.6
11/30/99	5.4
5/23/00	7.8
11/30/00	7.9
5/30/01	4.2
11/27/01	7.7
5/31/02	8.2
11/19/02	2.6

Date	PCP
9/14/95	nd
12/15/95	0.084
7/24/96	nd
11/18/96	nd
5/24/99	nd
11/29/99	0.26
5/23/00	0.13
11/30/00	0.092
5/30/01	nd

Date	PCP
5/25/99	0.54
11/29/99	nd
5/23/00	nd
11/30/00	nd
5/30/01	nd

Date	PCP
5/25/99	0.15
11/29/99	nd
5/23/00	nd
11/30/00	nd
5/30/01	nd

MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, MW-7, MW-8, MW-9, MW-10, MW-11, MW-12, MW-13, MW-17, MW-18, PMW-11, PMW-14, PMW-17, PMW-18

COUNTY TRUNK HIGHWAY E

RIGHT-OF-WAY

CENTER LINE

MILITARY CREEK

STREAM FLOW

UPPER WETLANDS AREA

LOWER WETLANDS AREA

SMALL GROWTH

GATE

Proposed Piezometer

Proposed Piezometers

0 50 100 200

SCALE IN FEET

N

LEGEND

- MW-12 BORING/MONITORING WELL
- PMW-14 PIEZOMETER
- MW-7 ABANDONED MONITORING WELL
- APPROXIMATE TREE LINE OR NEW GROWTH
- PCP PENTACHLOROPHENOL
- NA NOT ANALYZED
- ND NOT DETECTED
- 170 CONCENTRATION AT OR ABOVE NR 140 ENFORCEMENT STANDARD (1.0 µg/L)
- 0.45 CONCENTRATION AT OR ABOVE NR 140 PREVENTIVE ACTION LIMIT (0.1 µg/L)

ALL DATA MICROGRAMS PER LITER (µg/L).

SOURCE NOTE:
THIS MAP WAS MODIFIED FROM DRAWING BY COLEMAN ENGINEERING COMPANY (CEC), IRON MOUNTAIN, MICHIGAN, DATED FEBRUARY 1997, JOB NO. 95042 A7, AND A SURVEY BY EAGLE LANDMARK SURVEYING, INC., EAGLE RIVER, WISCONSIN, DWG. NO. E1292, DATED 1-06-98, REVISED ON 5-13-99.

NOTES:
BASE MAP SURVEY COMPLETED BY CEC WITH ADDITIONAL INFORMATION OBTAINED FROM USDA-ASCS HISTORICAL AERIAL PHOTOGRAPHS, A 7/7/95 SITE VISIT WITH C M CHRISTIANSEN CO., AND A 5/21/96 FIELD INSPECTION.
MAY 30, 2001 PCP RESULTS ADDED JUNE 2001.
NOVEMBER 27, 2001 AND MAY 31, 2002 ADDED JUNE 2002.
NOVEMBER 19, 2002 PCP RESULTS ADDED DECEMBER 2002.

PCP CONCENTRATIONS IN GROUNDWATER

C.M. CHRISTIANSEN COMPANY, INC.
FORMER POLE TREATMENT FACILITY
PHELPS, WISCONSIN

DRAWN BY: TAS DATE: 12/27/02
CHECKED BY: SLF DATE: 12/27/02
APPROVED BY: . DATE: .
AUTOCAD FILE: 1226-54-B01.DWG

Natural Resource Technology

PROJECT NO. 1226/5,4

DRAWING NO. 1226-54-B01

FIGURE NO. 2

PENTACHLOROPHENOL
CAS #87-86-5

How likely is pentachlorophenol to cause cancer?

Some studies have found an increase in cancer risk in workers exposed to high levels of technical grade pentachlorophenol for a long time, but other studies have not found this. Increases in liver, adrenal gland, and nasal tumors have been found in laboratory animals exposed to high doses of pentachlorophenol.

The EPA has determined that pentachlorophenol is a probable human carcinogen and the International Agency for Cancer Research (IARC) considers it possibly carcinogenic to humans.

How can pentachlorophenol affect children?

Infants who were exposed to diapers and bedding which was accidentally contaminated with pentachlorophenol had high fevers, a large amount of sweating, difficulty breathing, and harmful effects on the nervous system and liver, and some died. Although these effects are similar to effects seen in adults exposed to pentachlorophenol, we do not know whether children and adults differ in their susceptibility to pentachlorophenol.

We do not know if exposure to pentachlorophenol will result in birth defects or other developmental effects in people. Death, low body weights, decreased growth, and skeletal effects have been observed in laboratory animals exposed to high levels of pentachlorophenol during development.

How can families reduce the risk of exposure to pentachlorophenol?

Pentachlorophenol was a widely used pesticide for a long time. Today its use is restricted and it can only be used by certified applicators. You may have old containers of pesticides in your attic, basement, or garage that contain pentachlorophenol. Removing these old containers will reduce your family's risk of exposure to pentachlorophenol.

If you live near utility poles and railroad tracks, you should prevent your children from playing, climbing, or sitting on them especially in the hot summer months.

Though pentachlorophenol has been found in some food, its levels are low. You can minimize the risk of your family's exposure by peeling and thoroughly washing fruits and vegetables before cooking.

Children should avoid playing in soils near hazardous waste sites where pentachlorophenol may have been discarded.

Is there a medical test to show whether I've been exposed to pentachlorophenol?

Tests are available to measure pentachlorophenol and its breakdown product in blood, urine, and body tissues. These tests cannot be performed in the doctor's office because they require the use of special equipment. Because pentachlorophenol leaves the body fairly quickly, these tests are best for finding exposures that occurred within the last several days. These tests do not tell you how much pentachlorophenol you have been exposed to and cannot be used to predict the occurrence, nature, or severity of toxic effects.

Has the federal government made recommendations to protect human health?

The EPA has set a limit for drinking water of 1 part of pentachlorophenol per billion parts of water (1 ppb).

The Occupational Safety and Health Administration (OSHA) has set a limit of 0.5 milligrams of pentachlorophenol per cubic meter of workplace air (0.5 mg/m^3) for 8 hour shifts and 40 hour work weeks.

Source of Information

Agency for Toxic Substances and Disease Registry (ATSDR). 2001. Toxicological Profile for Pentachlorophenol Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service. Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service.

Where can I get more information? For more information, contact the Agency for Toxic Substances and Disease Registry, Division of Toxicology, 1600 Clifton Road NE, Mailstop E-29, Atlanta, GA 30333. Phone: 1-888-422-8737, FAX: 404-498-0093. ToxFAQs Internet address via WWW is http://www.atsdr.cdc.gov/toxfaq.html. ATSDR can tell you where to find occupational and environmental health clinics. Their specialists can recognize, evaluate, and treat illnesses resulting from exposure to hazardous substances. You can also contact your community or state health or environmental quality department if you have any more questions or concerns.

ATSDR
AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY

FUEL OILS

CAS # 8008-20-6, 70892-10-3, 68476-30-2, 68476-34-6, 68476-31-3

This fact sheet answers the most frequently asked health questions (FAQs) about fuel oils. For more information, call the ATSDR Information Center at 1-888-422-8737. This fact sheet is one in a series of summaries about hazardous substances and their health effects. It's important you understand this information because this substance may harm you. The effects of exposure to any hazardous substance depend on the dose, the duration, how you are exposed, personal traits and habits, and whether other chemicals are present.

SUMMARY: Fuel oils are liquid mixtures produced from petroleum, and their use mostly involves burning them as fuels. Drinking or breathing fuel oils may cause nausea or nervous system effects. However, exposure under normal use conditions is not likely to be harmful. Fuel oils have been found in at least 26 of the 1,430 National Priorities List sites identified by the Environmental Protection Agency (EPA).

What are fuel oils?

(Pronounced fyo͞o′əl oilz)

Fuel oils are a variety of yellowish to light brown liquid mixtures that come from crude petroleum. Some chemicals found in fuel oils may evaporate easily, while others may more easily dissolve in water.

Fuel oils are produced by different petroleum refining processes, depending on their intended uses. Fuel oils may be used as fuel for engines, lamps, heaters, furnaces, and stoves, or as solvents.

Some commonly found fuel oils include kerosene, diesel fuel, jet fuel, range oil, and home heating oil. These fuel oils differ from one another by their hydrocarbon compositions, boiling point ranges, chemical additives, and uses.

What happens to fuel oils when they enter the environment?

- Some chemicals found in fuel oils may evaporate into the air from open containers or contaminated soil or water.
- Some chemicals found in fuel oils may dissolve in water after spills to surface waters or leaks from underground storage tanks.
- Some chemicals found in fuel oils may stick to particles in water, which will eventually cause them to settle to the bottom sediment.
- Some of the chemicals found in fuel oils may be broken down slowly in air, water, and soil by sunlight or small organisms.
- Some of the chemicals found in fuel oils may build up significantly in plants and animals.

How might I be exposed to fuel oils?

- Using a home kerosene heater or stove, or using fuel oils at work.
- Breathing air in home or building basements that has been contaminated with fuel oil vapors entering from the soil.
- Drinking or swimming in water that has been contaminated with fuel oils from a spill or a leaking underground storage tank.
- Touching soil contaminated with fuel oils.
- Using fuel oils to wash paint or grease from skin or equipment.

How can fuel oils affect my health?

Little information is available about the health effects that may be caused by fuel oils. People who use kerosene

stoves for cooking do not seem to have any health problems related to their exposure.

Breathing some fuel oils for short periods may cause nausea, eye irritation, increased blood pressure, headache, lightheadedness, loss of appetite, poor coordination, and difficulty concentrating. Breathing diesel fuel vapors for long periods may cause kidney damage and lower your blood's ability to clot.

Drinking small amounts of kerosene may cause vomiting, diarrhea, coughing, stomach swelling and cramps, drowsiness, restlessness, painful breathing, irritability, and unconsciousness. Drinking large amounts of kerosene may cause convulsions, coma, or death. Skin contact with kerosene for short periods may cause itchy, red, sore, or peeling skin.

How likely are fuel oils to cause cancer?

The International Agency for Research on Cancer (IARC) has determined that some fuel oils (heavy) may possibly cause cancer in humans, but for other fuel oils (light) there is not enough information to make a determination. IARC has also determined that occupational exposures to fuel oils during petroleum refining are probably carcinogenic in humans.

Some studies with mice have suggested that repeated contact with fuel oils may cause liver or skin cancer. However, other mouse studies have found this not to be the case. No studies are available in other animals or in people on the carcinogenic effects of fuel oils.

Is there a medical test to show whether I've been exposed to fuel oils?

There is no medical test that shows if you have been exposed to fuel oils. Tests are available to determine if some of the chemicals commonly found in fuel oils are in your blood. However, the presence of these chemicals in blood may not necessarily mean that you have been exposed to fuel oils.

Has the federal government made recommendations to protect human health?

The Occupational Safety and Health Administration (OSHA) and the Air Force Office of Safety and Health (AFOSH) have set a permissible exposure level (PEL) of 400 parts of petroleum distillates per million parts of air (400 ppm) for an 8-hour workday, 40-hour workweek.

The National Institute for Occupational Safety and Health (NIOSH) recommends that average workplace air levels not exceed 350 milligrams of petroleum distillates per cubic meter of air (350 mg/m^3) for a 40-hour workweek.

The Department of Transportation (DOT) lists fuel oils as hazardous materials and, therefore, regulates their transportation.

Glossary

Carcinogenic: Able to cause cancer.

CAS: Chemical Abstracts Service.

Evaporate: To change into a vapor or a gas.

Hydrocarbon: Any compound made up of hydrogen and carbon.

Milligram (mg): One thousandth of a gram.

ppm: Parts per million.

Sediment: Mud and debris that have settled to the bottom of a body of water.

Reference

Agency for Toxic Substances and Disease Registry (ATSDR). 1995. Toxicological profile for fuel oils. Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service.

Where can I get more information? For more information, contact the Agency for Toxic Substances and Disease Registry, Division of Toxicology, 1600 Clifton Road NE, Mailstop E-29, Atlanta, GA 30333. Phone:1-888-422-8737, FAX: 404-498-0093. ToxFAQs Internet address via WWW is http://www.atsdr.cdc.gov/toxfaq.html ATSDR can tell you where to find occupational and environmental health clinics. Their specialists can recognize, evaluate, and treat illnesses resulting from exposure to hazardous substances. You can also contact your community or state health or environmental quality department if you have any more questions or concerns.

ATSDR
AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY

CHLORINATED DIBENZO-p-DIOXINS (CDDs)

Agency for Toxic Substances and Disease Registry ToxFAQs February 1999

This fact sheet answers the most frequently asked health questions (FAQs) about chlorinated dibenzo-p-dioxins (CDDs). For more information, call the ATSDR Information Center at 1-888-422-8737. This fact sheet is one in a series of summaries about hazardous substances and their health effects. It's important you understand this information because this substance may harm you. The effects of exposure to any hazardous substance depend on the dose, the duration, how you are exposed, personal traits and habits, and whether other chemicals are present.

HIGHLIGHTS: Exposure to chlorinated dibenzo-p-dioxins (CDDs) (75 chemicals) occurs mainly from eating food that contains the chemicals. One chemical in this group, 2,3,7,8-tetrachlorodibenzo-p-dioxin or 2,3,7,8-TCDD, has been shown to be very toxic in animal studies. It causes effects on the skin and may cause cancer in people. This chemical has been found in at least 91 of 1,467 National Priorities List sites identified by the Environmental Protection Agency (EPA).

What are CDDs?

CDDs are a family of 75 chemically related compounds commonly known as chlorinated dioxins. One of these compounds is called 2,3,7,8-TCDD. It is one of the most toxic of the CDDs and is the one most studied.

In the pure form, CDDs are crystals or colorless solids. CDDs enter the environment as mixtures containing a number of individual components. 2,3,7,8-TCDD is odorless and the odors of the other CDDs are not known.

CDDs are not intentionally manufactured by industry except for research purposes. They (mainly 2,3,7,8-TCDD) may be formed during the chlorine bleaching process at pulp and paper mills. CDDs are also formed during chlorination by waste and drinking water treatment plants. They can occur as contaminants in the manufacture of certain organic chemicals. CDDs are released into the air in emissions from municipal solid waste and industrial incinerators.

What happens to CDDs when they enter the environment?

- When released into the air, some CDDs may be transported long distances, even around the globe.
- When released in waste waters, some CDDs are broken down by sunlight, some evaporate to air, but most attach to soil and settle to the bottom sediment in water.
- CDD concentrations may build up in the food chain, resulting in measurable levels in animals.

How might I be exposed to CDDs?

- Eating food, primarily meat, dairy products, and fish, makes up more than 90% of the intake of CDDs for the general population.
- Breathing low levels in air and drinking low levels in water.
- Skin contact with certain pesticides and herbicides.
- Living near an uncontrolled hazardous waste site containing CDDs or incinerators releasing CDDs.
- Working in industries involved in producing certain pesticides containing CDDs as impurities, working at paper and pulp mills, or operating incinerators.

How can CDDs affect my health?

The most noted health effect in people exposed to large amounts of 2,3,7,8-TCDD is chloracne. Chloracne is a severe skin disease with acne-like lesions that occur mainly on the face and upper body. Other skin effects noted in people exposed to high doses of 2,3,7,8-TCDD include skin rashes, dis-

coloration, and excessive body hair. Changes in blood and urine that may indicate liver damage also are seen in people. Exposure to high concentrations of CDDs may induce long-term alterations in glucose metabolism and subtle changes in hormonal levels.

In certain animal species, 2,3,7,8-TCDD is especially harmful and can cause death after a single exposure. Exposure to lower levels can cause a variety of effects in animals, such as weight loss, liver damage, and disruption of the endocrine system. In many species of animals, 2,3,7,8-TCDD weakens the immune system and causes a decrease in the system's ability to fight bacteria and viruses. In other animal studies, exposure to 2,3,7,8-TCDD has caused reproductive damage and birth defects. Some animal species exposed to CDDs during pregnancy had miscarriages and the offspring of animals exposed to 2,3,7,8-TCDD during pregnancy often had severe birth defects including skeletal deformities, kidney defects, and weakened immune responses.

How likely are CDDs to cause cancer?

Several studies suggest that exposure to 2,3,7,8-TCDD increases the risk of several types of cancer in people. Animal studies have also shown an increased risk of cancer from exposure to 2,3,7,8-TCDD.

The World Health Organization (WHO) has determined that 2,3,7,8-TCDD is a human carcinogen.

The Department of Health and Human Services (DHHS) has determined that 2,3,7,8-TCDD may reasonably be anticipated to cause cancer.

How can CDDs affect children?

Very few studies have looked at the effects of CDDs on children. Chloracne has been seen in children exposed to high levels of CDDs. We don't know if CDDs affect the ability of people to have children or if it causes birth defects, but given the effects observed in animal studies, this cannot be ruled out.

How can families reduce the risk of exposure to CDDs?

- ❑ Children should avoid playing in soils near uncontrolled hazardous waste sites.
- ❑ Discourage children from eating dirt or putting toys or other objects in their mouths.
- ❑ Everyone should wash hands frequently if playing or working near uncontrolled hazardous waste sites.
- ❑ For new mothers and young children, restrict eating foods from the proximity of uncontrolled sites with known CDDs.

Is there a medical test to show whether I've been exposed to CDDs?

Tests are available to measure CDD levels in body fat, blood, and breast milk, but these tests are not routinely available. Most people have low levels of CDDs in their body fat and blood, and levels considerably above these levels indicate past exposure to above-normal levels of 2,3,7,8-TCDD. Although CDDs stay in body fat for a long time, tests cannot be used to determine when exposure occurred.

Has the federal government made recommendations to protect human health?

The EPA has set a limit of 0.00003 micrograms of 2,3,7,8-TCDD per liter of drinking water (0.00003 µg/L). Discharges, spills, or accidental releases of 1 pound or more of 2,3,7,8-TCDD must be reported to EPA. The Food and Drug Administration (FDA) recommends against eating fish and shellfish with levels of 2,3,7,8-TCDD greater than 50 parts per trillion (50 ppt).

Source of Information

Agency for Toxic Substances and Disease Registry (ATSDR). 1998. Toxicological profile for chlorinated dibenzo-p-dioxins. Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service.

Where can I get more information? For more information, contact the Agency for Toxic Substances and Disease Registry, Division of Toxicology, 1600 Clifton Road NE, Mailstop E-29, Atlanta, GA 30333. Phone: 1-888-422-8737, FAX: 404-498-0093. ToxFAQs Internet address via WWW is http://www.atsdr.cdc.gov/toxfaq.html ATSDR can tell you where to find occupational and environmental health clinics. Their specialists can recognize, evaluate, and treat illnesses resulting from exposure to hazardous substances. You can also contact your community or state health or environmental quality department if you have any more questions or concerns.

5/27/03 1630 hrs
Conf. call w/ Eric Christiansen, CMC, & Laurie Parsons & Rick Fox, NRT

- Explained what we wanted to do this summer (install PZs, sample new & existing wells, implement NRT's 2001 sediment WP)
- E.C. wanted to know about costs
  - No cost recovery
- E.C. also wondered about worst/best case scenario
  - I explained what might happen
  - LP - install MW-4 nest first, see how that goes, then put in additional MW if feasible
- E.C. will have

* - E-mail E.C. draft access agreement
- They'd be interested in splitting GW samples
- They have lots of questions about how our results will bring site towards closure
- Does this proposed work meet obligations under Spill Response Agreement

Sed. portion
- Told him we want to implement NRT's 2001 sed. WP
- They want to know what will happen w/ dioxin results, especially if the results are the same

* We need to talk to Watershed Mgmt - what if these results are the same as previous

- I should contact Laurie

Saari, Christopher A

From: Saari, Christopher A
Sent: Friday, May 16, 2003 9:55 AM
To: 'echristiansen@wi.rr.com'
Subject: RE: C.M. Christiansen Co., Inc. - Pole Yard

Thank you. I look forward to hearing from you.

-----Original Message-----
From: echristiansen@wi.rr.com [mailto:echristiansen@wi.rr.com]
Sent: Friday, May 16, 2003 9:54 AM
To: Saari, Christopher A
Subject: RE: C.M. Christiansen Co., Inc. - Pole Yard

Mr. Saari -

I will attempt to discuss this with our advisers as soon as possible and get back to you by next Friday. However, please understand, (1) it is extremely difficult for me to find time during the day for this kind of thing in my new employment situation and (2) Mr. PC Christiansen spends the entire winter in Florida and is generally not available at the same times as I and our advisers might be. He should be returning to the office in Phelps soon, and then we will be able to make more definite progress.

Eric Christiansen

Original Message:

From: Saari, Christopher A Christopher.Saari@dnr.state.wi.us
Date: Fri, 16 May 2003 09:23:28 -0500
To: echristiansen@wi.rr.com, John.Robinson@dnr.state.wi.us, Michael.Netzer@dnr.state.wi.us
Subject: C.M. Christiansen Co., Inc. - Pole Yard

Hello Mr. Christiansen:

As I have not heard back from you since our last e-mail correspondence of March 17, I was wondering if you have had a chance to discuss with P.C. Christiansen, your counsel and your consultant the issues I raised in my letter of March 4?

The Expanded Site Inspection (ESI) that DNR is proposing to conduct should help to address areas upon which C.M. Christiansen Co., Inc. and DNR have not been in agreement. The information we are attempting to gather should also help bring this case towards closure.

However, the ESI process can be somewhat unwieldy, with many sequential steps involved (e.g., securing laboratory space, scheduling sampling teams and equipment). Therefore, if DNR hope to complete the proposed sampling during this field season, it is important that we know as soon as possible what C.M. Christiansen Co., Inc.'s feelings are on this matter. I would appreciate if you would get back to me by May 23 to let me know if/when we could discuss this further. Thank you for your attention to this matter.

Chris Saari
Hydrogeologist
WDNR Ashland Service Center
2501 Golf Course Rd.
Ashland, WI 54806
Telephone: 715-685-2920
Fax: 715-685-2909
E-mail: Christopher.Saari@dnr.state.wi.us

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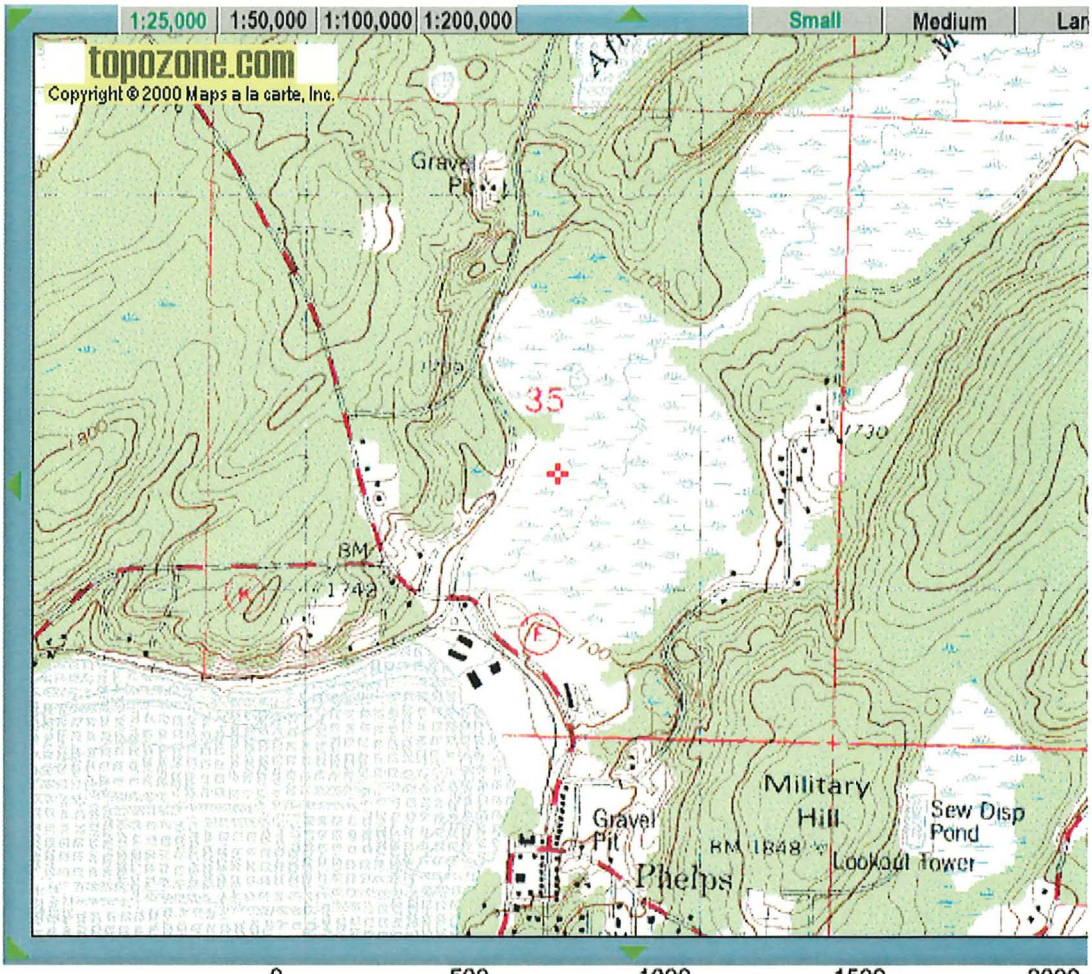

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Saari, Christopher A

From: Saari, Christopher A
Sent: Monday, March 17, 2003 2:18 PM
To: 'Eric R. Christiansen'
Cc: Robinson, John H.
Subject: RE: C.M. Christiansen Co., Inc. Poleyard

Eric, thank you for getting back to me. With your school schedule, it sounds like it would be difficult for us to get together face-to-face, so a conference call would be an acceptable alternative. If necessary, we could have this call either before or after your work day if that would help.

Please let me know as soon as possible some potential dates/times for us to discuss this case. Thank you.

-----Original Message-----
From: Eric R. Christiansen [mailto:echristiansen@wi.rr.com]
Sent: Sunday, March 16, 2003 6:37 PM
To: Saari, Christopher A
Cc: Laurie Parsons; erich@excel.com
Subject: C.M. Christiansen Co., Inc. Poleyard

Dear Mr. Saari:

I am in receipt of your letter of March 4, 2003 -- thank you for mailing it to me in Milwaukee as I have not been in Phelps since New Years' and the office operates on a very limited basis during the winter months.

As Laurie Parsons may have told you, I am now a full-time high school teacher. As a result, I am not able to travel up north except over holidays. I will try to find a time when we can discuss your concerns regarding the CMC Co., Inc. Poleyard. However, the dates you have suggested are not at all possible: I teach theatre and TV and also direct the theatre productions for my school. The weeks you suggest are the performances of my first high school musical theatre production here and the auditions for my next show involving middle school students. Since it is my first year, I am extremely limited in my ability to take off from school for non-school concerns. I am terribly sorry. Maybe we can find a time to talk on the phone?

I will discuss your letter with P.C. Christiansen and with our counsel, Elizabeth Gamsky Rich, and with Ms. Parsons, and we will be back to you as soon as possible.

Sincerely,

Eric

cc by regular mail to PC Christiansen (in Florida)

Eric R. Christiansen
President
C.M. Christiansen Co., Inc.
P.O. Box 100
Phelps, WI 54554
Phelps: (715) 545-2333 tel
Phelps: (715) 545-2334 fax
Milwaukee: (414) 963-9211 (tel)
Milwaukee: (414) 963-9213 (fax)
erc@execpc.com

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Jim Doyle, Governor
Scott Hassett, Secretary
William H. Smith, Regional Director

Ashland Service Center
2501 Golf Course Road
Ashland, Wisconsin 54806
Telephone 715-685-2900
FAX 715-685-2909

March 4, 2003

FILE COPY

MR ERIC R CHRISTIANSEN
PRESIDENT
CM CHRISTIANSEN COMPANY INC
PO BOX 100
PHELPS WI 54554

Subject: Environmental Contamination at the Former C.M. Christiansen Company Pole Treatment Facility (BRRTS #02-64-000068)

Dear Mr. Christiansen:

I am writing in regards to two issues associated with the above named site. The first is to acknowledge that the Department of Natural Resources' Remediation and Redevelopment program has received the draft report titled *Groundwater Monitoring Program Update: May 2001 – November 2002 Data*, prepared for this site by Natural Resource Technology, Inc. (NRT) and dated December 30, 2002.

The Department has conducted a cursory review of NRT's recent submittal. I note that you failed to conduct semi-annual sampling of monitoring well MW-4 or to include groundwater flow maps with this report, despite specific requests for you to do so in my May 2, 2001 letter review of the previous groundwater monitoring update. I note also that you are requesting further modifications to the groundwater monitoring program. The Department does not agree with the proposed modifications. Samples from MW-3 have consistently detected pentachlorophenol in excess of the preventive action limit listed in s. NR 140.10, Wis. Adm. Code, and wells MW-4, MW-18 and PMW-18 serve as downgradient controls on the plume margin. Discontinuing monitoring from these wells will not further the understanding of contaminant fate and transport at this site.

The second issue relates to a proposal by the Department to conduct some additional sampling at the site this year. As you are likely aware, this site was listed on the U.S. Environmental Protection Agency's (USEPA) Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) in April 1993. The Department then conducted a Preliminary Assessment (PA) and Screening Site Inspection (SSI) here later that same year. USEPA has requested that the Department provide follow-up on sites listed on CERCLIS. In response, the Department is now proposing to conduct an Expanded Site Inspection (ESI) at this site in 2003. As the name implies, the proposed ESI will expand upon the PA and SSI work to more fully evaluate the site, including a more thorough investigation of Military Creek and potentially of groundwater beneath the site.

The ESI would allow the Department to gather information on the extent and types of contaminants that might be impacting the surface water and sediments of Military Creek, including analyses for dioxins and furans. The dioxin/furan sampling has been one of the sticking points in our previous discussions on the investigation of Military Creek, and the proposed ESI work would be a way for the Department to gather what we believe to be necessary information. Our conceptual scope of work would also allow us to determine the extent of contamination at depth in the aquifer by installing one or more piezometers screened deeper than existing piezometer PMW-11. The need for better definition of the vertical extent of groundwater contamination at this site has been another area on which we have not agreed in the past and the Department views the ESI as an opportunity to gather this necessary data.

The Department would like to discuss these issues with you further in person, and we are proposing that we meet some time in late March or early April. We are looking at potential meeting dates of March 25, 26, 27 or 28, or April 1, 2, 3 or 4. The meeting would occur at our Regional Headquarters in Rhinelander. If you are interested in meeting with us and you would be available on one of these days, please let me know so that I can confirm the arrangements.

Please note that I have moved to the Department's Ashland Service Center, so my address and phone number have changed. If you have any questions concerning this letter or the project in general, please do not hesitate to write me at the address listed above, or call me at 715-685-2920. I can also be reached by e-mail at Christopher.Saari@dnr.state.wi.us.

Sincerely,

Christopher A. Saari
Hydrogeologist

cc: Laurie Parsons – NRT
Elizabeth Gamsky Rich, LLC
John Robinson – DNR Rhinelander
Linda Meyer – LS/5
Michelle DeBrock-Owens – DNR Rhinelander

State of Wisconsin
Department of Natural Resources
2501 Golf Course Road
Ashland, WI 54806

MR ERIC R CHRISTIANSEN
5501 N SANTA MONICA
MILWAUKEE WI 53217

Resent 3/10/03

Saari, Christopher A

From: Laurie L. Parsons [lparsons@naturalrt.com]
Sent: Friday, May 23, 2003 8:22 AM
To: Saari, Christopher A
Cc: Robinson, John H.; Eric R. Christiansen
Subject: RE: C.M. Christiansen Co., Inc. - Pole Yard

Chris,

On behalf of Eric Christiansen, this is to confirm our call at 4:30 pm Tuesday May 27 with yourself and John Robinson. Eric will be at our office, please call the main number listed below. Thanks.

Laurie Parsons
Natural Resource Technology, Inc.
Direct 262.522.1193
Mobile 262.719.4502
Main 262.523.9000
Fax 262.523.9001

-----Original Message-----
From: Saari, Christopher A [mailto:Christopher.Saari@dnr.state.wi.us]
Sent: Thursday, May 22, 2003 2:17 PM
To: 'Eric R. Christiansen'; Laurie L. Parsons
Cc: Robinson, John H.
Subject: RE: C.M. Christiansen Co., Inc. - Pole Yard

It appears that both myself and my supervisor (John Robinson) would be available for a conference call at 4:30 p.m. on Tuesday, May 27. Please let me know if this will work for you. Thanks.

-----Original Message-----
From: Eric R. Christiansen [mailto:echristiansen@wi.rr.com]
Sent: Wednesday, May 21, 2003 5:37 PM
To: Saari, Christopher A
Subject: RE: C.M. Christiansen Co., Inc. - Pole Yard

Mr. Saari:

We just finished a conference call & want to talk to you more about this -- sounds interesting. So, Laurie Parsons will contact you about a mutually convenient time to discuss your letter as soon as we can manage it.

Regards,
eric

At 09:54 AM 05/16/2003 -0500, you wrote:
>Thank you. I look forward to hearing from you.
>
>-----Original Message-----
>From: echristiansen@wi.rr.com [mailto:echristiansen@wi.rr.com]
>Sent: Friday, May 16, 2003 9:54 AM
>To: Saari, Christopher A
>Subject: RE: C.M. Christiansen Co., Inc. - Pole Yard
>
>
>Mr. Saari -
>
>I will attempt to discuss this with our advisers as soon as possible and
>get back to you by next Friday. However, please understand, (1) it is
>extremely difficult for me to find time during the day for this kind of
>thing in my new employment situation and (2) Mr. PC Christiansen spends the
>entire winter in Florida and is generally not available at the same times
>as I and our advisers might be. He should be returning to the office in
>Phelps soon, and then we will be able to make more definite progress.