Lauridsen, Keld B - DNR

From: Brochocki, Philip R [Philip.Brochocki@Foth.com]
Sent: Tuesday, April 19, 2011 9:51 AM
To: Lauridsen, Keld B - DNR
Subject: FW: Better Brite Results

Attachments: Official Results for 2009.pdf

Official Results for 2009.pdf ...

Phil

My Email address has changed to Philip.Brochocki@Foth.com; please update your records.

Philip R. Brochocki, PG
Foth Infrastructure & Environment, LLC
2737 South Ridge Road, Suite 600, P.O. Box 12326 Green Bay, WI 54307-2326
Ph: (920) 496-6801 / Fax (920) 497-8516 http://www.foth.com
Go Green, keep it on the screen. Please do not print this email unless necessary.

-----Original Message-----
From: Lauridsen, Keld B - DNR [mailto:Keld.Lauridsen@wisconsin.gov]
Sent: Wednesday, April 22, 2009 9:23 AM
To: Brochocki, Phil R.; John Fassbender
Subject: FW: Better Brite Results

FYI

-----Original Message-----
From: BOldenburg@gbmsd.org [mailto:BOldenburg@gbmsd.org]
Sent: Tuesday, April 21, 2009 9:02 AM
To: Lauridsen, Keld B - DNR
Subject: Better Brite Results

Good Morning Keld,

Attached are the results for effluent samples collected from Better Brite on March 27 and March 31, 2009. If you have any questions, please call.
Thanks!

Bill Oldenburg
Pretreatment Program Coordinator
Green Bay Metropolitan Sewerage District P.O. Box 19015
2231 North Quincy Street
Green Bay, WI 54307-9015
P: 920-438-1079
F: 920-438-3079

(See attached file: Official Results for 2009.pdf)

Laboratory Services - IPS Data Report

Sample ID: BETTER BRITE
Lab#: GB09-03798
Sample Type: WW
Sample Note: CHROME

Collection Date: 3/27/2009
Received Date: 4/2/2009
Report Date: 4/15/2009

Test		Result	Units	MDL	LOQ	Flag	Anl Date	Anl Method	Analyst
Cyanide, Total		0.02	mg/L	0.003	0.011		4/3/2009	SM 4500 CN E	DB

Test		Result	Units	MDL	LOQ	Flag	Anl Date	Anl Method	Analyst
Silver	<	0.70	ug/L	0.70	2.70		4/7/2009	EPA 200.7	MJU
Arsenic	<	8.00	ug/L	8.00	17.0		4/7/2009	EPA 200.7	MJU
Beryllium	<	0.80	ug/L	0.80	2.50		4/7/2009	EPA 200.7	MJU
Cadmium	<	1.00	ug/L	1.00	3.20		4/7/2009	EPA 200.7	MJU
Chromium		388	ug/L	2.00	6.00		4/7/2009	EPA 200.7	MJU
Copper		4	ug/L	2.00	7.00		4/7/2009	EPA 200.7	MJU
Manganese		28	ug/L	3.00	9.00		4/7/2009	EPA 200.7	MJU
Molybdenum		3	ug/L	3.00	10.00		4/7/2009	EPA 200.7	MJU
Nickel		8	ug/L	3.50	11.0		4/7/2009	EPA 200.7	MJU
Lead	<	7.00	ug/L	7.00	22.0		4/7/2009	EPA 200.7	MJU
Antimony	<	3.40	ug/L	3.40	12.0		4/7/2009	EPA 200.7	MJU
Selenium		31	ug/L	4.00	13.0		4/7/2009	EPA 200.7	MJU
Thallium		6	ug/L	4.00	13.0		4/7/2009	EPA 200.7	MJU
Zinc	<	5.00	ug/L	5.00	16.0		4/7/2009	EPA 200.7	MJU

I certify that data contained in this final report has been generated and reviewed in accordance with approved methods.

Approved by: Debra A Crowley

Date: 4-15-09

Green Bay Metropolitan Sewerage District

2231 North Quincy Street
Green Bay, WI 54302-1248
Phone: (920)438-1070
Fax: (920)438-3073

CHAIN OF CUSTODY RECORD

Project #: DPF

Sampled by:
☐ Treatment
x Field Services
☐ River Bay
☐ Other:

Condition of Contents:
☐ Meets all sampling requirements.
☐ See non-conformance report.

Preservation status:
A= none
B = HCl
C = H_2SO_4
D = HNO_3
E = NaOH
F = Other (Indicate)__________

Other Analyses:

Lab ID #	Sample ID	Date	Time	Grab	Comp	Ammonia	BOD	Chloride	COD	Cyanide	Metals	Mercury	Nitrate-nitrite	Orthophosphorus	pH	Phosphorus-Total	SVOA - 8270	TSS	% TS / %VS	TKN	VOA	VFA		CBOD		% TS DRY
						C			C								C			C						
				√	☐																					
				√	☐																					
				☐	☐																					
3798	Better Brite effluent	3-27-09	2:00 Pm	☒	☐					x																
	Better Brite effluent	3-27-09	2:00 Pm	☒	☐						X															
				☐	☐																					
				☐	☐																					
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				☐	☐																					
				☐	☐																					

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
[signature]	3-27-09	2:15 Pm	[signature]	4-2-09	940
[signature]	4-2-09	1120	Mary Unger	4-2-09	11:35pm

Sample Receiving Notes:
Received on ice: √
Temp of Contents:________
Temp of Blank:________
Temp of Melt Water:________
Blue Ice:________
Sampled & brought directly to the Lab:________
Disposed of by:________

Send Results to:

Comments:

Laboratory Services - IPS Data Report

Sample ID: BETTER BRITE
Lab#: GB09-03799
Sample Type: WW
Sample Note: CHROME

Collection Date: 3/31/2009
Received Date: 4/2/2009
Report Date: 4/15/2009

Test		Result	Units	MDL	LOQ	Flag	Anl Date	Anl Method	Analyst
Cyanide, Total	<	0.003	mg/L	0.003	0.011		4/3/2009	SM 4500 CN E	DB

Test		Result	Units	MDL	LOQ	Flag	Anl Date	Anl Method	Analyst
Silver	<	0.70	ug/L	0.70	2.70		4/7/2009	EPA 200.7	MJU
Arsenic	<	8.00	ug/L	8.00	17.0		4/7/2009	EPA 200.7	MJU
Beryllium	<	0.80	ug/L	0.80	2.50		4/7/2009	EPA 200.7	MJU
Cadmium	<	1.00	ug/L	1.00	3.20		4/7/2009	EPA 200.7	MJU
Chromium		599	ug/L	2.00	6.00		4/7/2009	EPA 200.7	MJU
Copper		4	ug/L	2.00	7.00		4/7/2009	EPA 200.7	MJU
Manganese		51	ug/L	3.00	9.00		4/7/2009	EPA 200.7	MJU
Molybdenum		3	ug/L	3.00	10.00		4/7/2009	EPA 200.7	MJU
Nickel		9	ug/L	3.50	11.0		4/7/2009	EPA 200.7	MJU
Lead	<	7.00	ug/L	7.00	22.0		4/7/2009	EPA 200.7	MJU
Antimony		6	ug/L	3.40	12.0		4/7/2009	EPA 200.7	MJU
Selenium		44	ug/L	4.00	13.0		4/7/2009	EPA 200.7	MJU
Thallium		4	ug/L	4.00	13.0		4/7/2009	EPA 200.7	MJU
Zinc	<	5.00	ug/L	5.00	16.0		4/7/2009	EPA 200.7	MJU

I certify that data contained in this final report has been generated and reviewed in accordance with approved methods.

Approved by: Debra A Cawley

Date: 4-15-09

Green Bay Metropolitan Sewerage District
2231 North Quincy Street
Green Bay, WI 54302-1248
Phone: (920)438-1070
Fax: (920)438-3073

CHAIN OF CUSTODY RECORD

Project #: DPF

Sampled by:
- ☐ Treatment
- x Field Services
- ☐ River Bay
- ☐ Other:

Condition of Contents:
- ☐ Meets all sampling requirements.
- ☐ See non-conformance report.

Preservation status:
A = none
B = HCl
C = H_2SO_4
D = HNO_3
E = NaOH
F = Other (Indicate)_____

Lab ID #	Sample ID	Date	Time	Grab	Comp	Ammonia	BOD	Chloride	COD	Cyanide	Metals	Mercury	Nitrate-nitrite	Orthophosphorus	pH	Phosphorus-Total	SVOA - 8270	TSS	% TS / %VS	TKN	VOA	VFA	CBOD	% TS DRY	Other Analyses:
				√	☐																				
				√	☐																				
				☐	☐																				
~~3798~~	Better Brite effluent	3-3-09	12:30	☒	☐					X															
3799	Better Brite effluent	3-3-09	12:30	☒	☐						X														
				☐	☐																				
				☐	☐																				
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				☐	☐																				
				☐	☐																				

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Ronald McCracken	3.31.09	12:45		4-2-09	9:40
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
	4-2-09	1120	Mary Unger	4-2-09	11:35am
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time

Send Results to:

Comments:

Sample Receiving Notes:
Received on ice: √
Temp of Contents:_____
Temp of Blank:_____
Temp of Melt Water:_____
Blue Ice:_____
Sampled & brought directly to the Lab:_____
Disposed of by:_____

DE PERE WASTEWATER TREATMENT PLANT
315 LEONARD STREET
DE PERE, WI 54115
PHONE # (920) 339-4094
FAX # (920) 339-4048

FAX

TO: K. Lavridsen

FROM: Bob Kennedy

COMPANY: WDNR

DATE: 2-6-07

FAX NUMBER: 662-5413

TOTAL NO. OF PAGES INCLUDING COVER: 9

RE: BB Chrome Results

X For Your Information.

____ For Your Approval.

____ Your Comments, Please.

____ Per Your Request.

I have not sent these for a while.
Note on January test results that they
mixed up labels.
Call w/ questions

Bob

If you do not receive all of the pages, or if there is any other problem with this transmission,

please call _____ at (920) 339-4094.

Pace Analytical Services, Inc.

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436

Analytical Report Number: 880237

Client : DEPERE WWTP
Project Name : BETTER BRITE
Project Number :
Field ID : ~~UNTREATED~~ treated

Matrix Type : GROUNDWATER
Collection Date : 01/16/07
Report Date : 01/25/07
Lab Sample Number : 880237-001

INORGANICS

Test	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
Chromium	590	1.3	4.4		1	ug/L		01/18/07	SW846 3010A	SW846 6010B
Zinc	30	20	67		1	ug/L	Q	01/18/07	SW846 3010A	SW846 6010B

Pace Analytical Services, Inc.

Analytical Report Number: 880237

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436

Client : DEPERE WWTP
Project Name : BETTER BRITE
Project Number :
Field ID : UNTREATED

Matrix Type : GROUNDWATER
Collection Date : 01/16/07
Report Date : 01/25/07
Lab Sample Number : 880237-002

INORGANICS

Test	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
Cyanide, Total	0.17	0.0094	0.031		1	mg/L		01/25/07	EPA 335.4	EPA 335.4

Pace Analytical Services, Inc.

Analytical Report Number: 880237

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436

Client: DEPERE WWTP
Project Name: BETTER BRITE
Project Number:
Field ID: ~~TREATED~~ unheated

Matrix Type: GROUNDWATER
Collection Date: 01/16/07
Report Date: 01/25/07
Lab Sample Number: 880237-003

INORGANICS

Test	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
Chromium	8700	1.3	4.4		1	ug/L		01/18/07	SW846 3010A	SW846 6010B
Zinc	64	20	67		1	ug/L	Q	01/18/07	SW846 3010A	SW846 6010B

Pace Analytical Services, Inc.

Analytical Report Number: 880237

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436

Client : DEPERE WWTP
Project Name : BETTER BRITE
Project Number :
Field ID : ~~TREATED~~ untreated

Matrix Type : GROUNDWATER
Collection Date : 01/16/07
Report Date : 01/25/07
Lab Sample Number : 880237-004

INORGANICS

Test	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
Cyanide, Total	0.36	0.0094	0.031		1	mg/L		01/25/07	EPA 335.4	EPA 335.4

Pace Analytical Services, Inc.

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436

Analytical Report Number: 877471

Client : DEPERE WWTP
Project Name : BETTER BRITE
Project Number :
Field ID : UNTREATED - METALS

Matrix Type : WASTEWATER
Collection Date : 10/18/06
Report Date : 11/03/06
Lab Sample Number : 877471-001

INORGANICS

Test	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
Chromium	10000	1.3	4.4		1	ug/L		10/20/06	SW846 3010A	SW846 6010B
Zinc	61	20	67		1	ug/L	Q	10/20/06	SW846 3010A	SW846 6010B

Pace Analytical Services, Inc.

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436

Analytical Report Number: 877471

Client : DEPERE WWTP
Project Name : BETTER BRITE
Project Number :
Field ID : UNTREATED - CN

Matrix Type : WASTEWATER
Collection Date : 10/18/06
Report Date : 11/03/06
Lab Sample Number : 877471-002

INORGANICS

Test	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
Cyanide, Total	0.19	0.0094	0.031		1	mg/L		11/01/06	EPA 335.4	EPA 335.4

Pace Analytical Services, Inc.

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436

Analytical Report Number: 877471

Client : DEPERE WWTP
Project Name : BETTER BRITE
Project Number :
Field ID : TREATED - METALS

Matrix Type : WASTEWATER
Collection Date : 10/18/06
Report Date : 11/03/06
Lab Sample Number : 877471-003

INORGANICS

Test	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
Chromium	580	1.3	4.4		1	ug/L		10/20/06	SW846 3010A	SW846 6010B
Zinc	< 20	20	67		1	ug/L		10/20/06	SW846 3010A	SW846 6010B

Pace Analytical Services, Inc.

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436

Analytical Report Number: 877471

Client : DEPERE WWTP
Project Name : BETTER BRITE
Project Number :
Field ID : TREATED - CN

Matrix Type : WASTEWATER
Collection Date : 10/18/06
Report Date : 11/03/06
Lab Sample Number : 877471-004

INORGANICS

Test	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
Cyanide, Total	0.11	0.0094	0.031		1	mg/L		11/01/06	EPA 335.4	EPA 335.4

DE PERE WASTEWATER TREATMENT PLANT
315 LEONARD STREET
DE PERE, WI 54115
PHONE # (920) 339-4094
FAX # (920) 339-4048

FAX

TO: Kelli Lavrildsen

FROM: Bob Kennedy

COMPANY: WDNR

DATE: 7-28-06

FAX NUMBER: 5413 662-~~2731~~

TOTAL NO. OF PAGES INCLUDING COVER: 3

RE: Latest Chrome test Results

X For Your Information.

____ For Your Approval.

____ Your Comments, Please.

____ Per Your Request.

If you do not receive all of the pages, or if there is any other problem with this transmission,

please call _____ **at (920) 339-4094.**

Pace Analytical Services, Inc.

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436

Analytical Report Number: 874092

Client : DEPERE WWTP
Project Name : BETTER BRITE
Project Number :
Field ID : UNTREATED

Matrix Type : WATER
Collection Date : 07/17/06
Report Date : 07/21/06
Lab Sample Number : 874092-001

INORGANICS

Test	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
Chromium	12000	1.3	4.4		1	ug/L		07/20/06	SW846 3010A	SW846 6010B
Zinc	130	20	67		1	ug/L		07/20/06	SW846 3010A	SW846 6010B
Cyanide, Total	0.46	0.047	0.16		5	mg/L		07/19/06	EPA 335.4	EPA 335.4

Pace Analytical Services, Inc.

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436

Analytical Report Number: 874092

Client : DEPERE WWTP
Project Name : BETTER BRITE
Project Number :
Field ID : TREATED

Matrix Type : WATER
Collection Date : 07/17/06
Report Date : 07/21/06
Lab Sample Number : 874092-002

INORGANICS

Test	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
Chromium	570	1.3	4.4		1	ug/L		07/20/06	SW846 3010A	SW846 6010B
Zinc	< 20	20	67		1	ug/L		07/20/06	SW846 3010A	SW846 6010B
Cyanide, Total	0.23	0.0094	0.031		1	mg/L		07/19/06	EPA 335.4	EPA 335.4

Pace Analytical Services, Inc.

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436

Analytical Report Number: 884044

Client : DEPERE WWTP
Project Name : BETTER BRITE
Project Number :
Field ID :

Matrix Type : WATER
Collection Date : 05/21/70
Report Date : 05/31/07
Lab Sample Number : 884044-001

INORGANICS

Test	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date/Time	Prep Method	Anl Method
Chromium	11000	1.6	5.3		1	ug/L		05/24/07 7:18 PM	SW846 3010A	SW846 6010B
								Prep Date/Time: 05/23/07 12:15 PM	Anl By: DLB	
Zinc	35	20	67		1	ug/L	Q	05/24/07 7:18 PM	SW846 3010A	SW846 6010B
								Prep Date/Time: 05/23/07 12:15 PM	Anl By: DLB	
Cyanide, Total	0.30	0.0060	0.020		1	mg/L		05/31/07 8:17 AM	EPA 335.4	EPA 335.4
								Prep Date/Time: 05/30/07 11:37 AM	Anl By: DAW	

Post-it® Fax Note 7671		Date 6-6-07	# of pages ▶ 2
To K. Lawrudsen		From R Kenney	
Co./Dept. WDNR		Co. De Pere WWTP	
Phone #		Phone # 920-336-4054	
Fax # 662-5413		Fax # 336-4088	

Pace Analytical Services, Inc.

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436

Analytical Report Number: 884044

Client : DEPERE WWTP
Project Name : BETTER BRITE
Project Number :
Field ID :

Matrix Type : WATER
Collection Date : 05/21/70
Report Date : 05/31/07
Lab Sample Number : 884044-002

INORGANICS

Test	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date/Time	Prep Method	Anl Method
Chromium	550	1.6	5.3		1	ug/L		05/25/07 2:47 PM	SW846 3010A	SW846 6010B
								Prep Date/Time: 05/23/07 5:20 PM		Anl By: DLB
Zinc	< 20	20	67		1	ug/L		05/25/07 2:47 PM	SW846 3010A	SW846 6010B
								Prep Date/Time: 05/23/07 5:20 PM		Anl By: DLB
Cyanide, Total	0.18	0.0060	0.020		1	mg/L		05/31/07 8:18 AM	EPA 335.4	EPA 335.4
								Prep Date/Time: 05/30/07 11:37 AM		Anl By: DAW

DE PERE WASTEWATER TREATMENT PLANT
315 LEONARD STREET
DE PERE, WI 54115
PHONE # (920) 339-4094
FAX # (920) 339-4048

FAX

TO: K. Lauridsen
FROM: Bob Kennedy
COMPANY: WDNR
DATE: 1-24-06
FAX NUMBER: 662-5413
TOTAL NO. OF PAGES INCLUDING COVER: 4
RE:

X For your information. ____ For your approval.

____ Your comments, please. ____ Per your request.

Here are 1st Quarter test results, + sludge drum sheet for 2005. I will have a drum filled Later this week or early next week, that will give us 3 on site.

Bob

If you do not receive all of the pages, of if there is any other problem with this transmission, please call _____ at (920) 339-4094.

Pace Analytical®

1241 Bellevue Street, Suite 9
Green Bay, WI 54302
920-469-2436, Fax: 920-469-8827

Analytical Report Number: 868026

Client: DEPERE WWTP
Project Name: BETTER BRITE
Project Number:

Lab Contact: Eric Bullock

Lab Sample Number	Field ID	Matrix	Collection Date
868026-001	UNTREATED	GW	01/04/06 10:47
868026-002	TREATED	GW	01/04/06 14:37

Approval Signature

1/20/06
Date

Pace Analytical Services, Inc.

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436

Analytical Report Number: 868026

Client : DEPERE WWTP
Project Name : BETTER BRITE
Project Number :
Field ID : UNTREATED

Matrix Type : GROUNDWATER
Collection Date : 01/04/06
Report Date : 01/19/06
Lab Sample Number : 868026-001

INORGANICS

Test	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
Chromium	14000	0.45	1.5		1	ug/L		01/13/06	SW846 3010A	SW846 6010B
Zinc	49	1.8	6.1		1	ug/L		01/11/06	SW846 3010A	SW846 6010B
Cyanide, Total	0.19	0.0037	0.012		1	mg/L		01/06/06	EPA 335.4	EPA 335.4

Pace Analytical Services, Inc.

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436

Analytical Report Number: 868026

Client : DEPERE WWTP
Project Name : BETTER BRITE
Project Number :
Field ID : TREATED

Matrix Type : GROUNDWATER
Collection Date : 01/04/06
Report Date : 01/19/06
Lab Sample Number : 868026-002

INORGANICS

Test	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
Chromium	660	0.45	1.5		1	ug/L		01/13/06	SW846 3010A	SW846 6010B
Zinc	2.1	1.8	6.1		1	ug/L	Q	01/11/06	SW846 3010A	SW846 6010B
Cyanide, Total	0.060	0.0037	0.012		1	mg/L	N	01/06/06	EPA 335.4	EPA 335.4

DE PERE WASTEWATER TREATMENT PLANT
315 LEONARD STREET
DE PERE, WI 54115
PHONE # (920) 339-4094
FAX # (920) 339-4048

FAX

TO: Keld Laursen
FROM: Bob Kennedy
COMPANY: WDNR
DATE: 12-8-05
FAX NUMBER: 662-5413
TOTAL NO. OF PAGES INCLUDING COVER: 7
RE: BeNur-Brite Results

_____For your information. _____For your approval.

_____Your comments, please. _____Per your request.

Keld-
Last Quarter BB Results.
All is Going well, New heater installed & working well. Have A Great Holiday.

Bob

If you do not receive all of the pages, or if there is any other problem with this transmission, please call _____ at (920) 339-4094.

Pace Analytical®

1241 Bellevue Street, Suite 9
Green Bay, WI 54302
920-469-2436, Fax: 920-469-8827

Analytical Report Number: 866652

Client: DEPERE WWTP
Project Name: BETTER BRITE
Project Number:

Lab Contact: Eric Bullock

Lab Sample Number	Field ID	Matrix	Collection Date
866652-001	UNTREATED	GW	11/16/05 09:21
866652-002	TREATED	GW	11/16/05 12:54

Approval Signature

12/2/05
Date

Pace Analytical Services, Inc.

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436

Analytical Report Number: 866652

Client : DEPERE WWTP
Project Name : BETTER BRITE
Project Number :
Field ID : UNTREATED

Matrix Type : GROUNDWATER
Collection Date : 11/16/05
Report Date : 12/01/05
Lab Sample Number : 866652-001

INORGANICS

Test	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
Chromium	15000	0.45	1.5		1	ug/L		11/23/05	SW846 3010A	SW846 6010B
Zinc	150	1.8	6.1		1	ug/L		11/23/05	SW846 3010A	SW846 6010B
Cyanide, Total	0.22	0.0037	0.012		1	mg/L	N	11/28/05	EPA 335.4	EPA 335.4

Pace Analytical Services, Inc.

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436

Analytical Report Number: 866652

Client : DEPERE WWTP
Project Name : BETTER BRITE
Project Number :
Field ID : TREATED

Matrix Type : GROUNDWATER
Collection Date : 11/16/05
Report Date : 12/01/05
Lab Sample Number : 866652-002

INORGANICS

Test	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
Chromium	600	0.45	1.5		1	ug/L		11/23/05	SW846 3010A	SW846 6010B
Zinc	83	1.8	6.1		1	ug/L	A	11/23/05	SW846 3010A	SW846 6010B
Cyanide, Total	0.056	0.0037	0.012		1	mg/L		12/01/05	EPA 335.4	EPA 335.4

Pace Analytical Services, Inc.

1241 Bellevue Street
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920-469-2436
Fax: 920-469-8827

Lab Number	TestGroupID	Field ID	Comment
866852-002	M-ZN-W	TREATED	A - Analyte is detected in the method blank at a concentration of 4.9 ug/L.

Qualifier Codes

Flag	Applies To	Explanation
A	Inorganic	Analyte is detected in the method blank. Method blank criteria is evaluated to the laboratory method detection limit. Additionally, method blank acceptance may be based on project specific criteria or determined from analyte concentrations in the sample and are evaluated on a sample by sample basis.
B	Inorganic	The analyte has been detected between the method detection limit and the reporting limit.
B	Organic	Analyte is present in the method blank. Method blank criteria is evaluated to the laboratory method detection limit. Additionally, method blank acceptance may be based on project specific criteria or determined from analyte concentrations in the sample and are evaluated on a sample by sample basis.
C	All	Elevated detection limit.
D	All	Analyte value from diluted analysis or surrogate result not applicable due to sample dilution.
E	Inorganic	Estimated concentration due to matrix interferences. During the metals analysis the serial dilution failed to meet the established control limits of 0-10%. The sample concentration is greater than 50 times the IDL for analysis done on the ICP or 100 times the IDL for analysis done on the ICP-MS. The result was flagged with the E qualifier to indicate that a physical interference was observed.
E	Organic	Analyte concentration exceeds calibration range.
F	Inorganic	Due to potential interferences for this analysis by Inductively Coupled Plasma techniques (SW-846 Method 6010), this analyte has been confirmed by and reported from an alternate method.
F	Organic	Surrogate results outside control criteria.
G	All	The result is estimated because the concentration is less than the lowest calibration standard concentration utilized in the initial calibration. The method detection limit is less than the reporting limit specified for this project.
H	All	Preservation, extraction or analysis performed past holding time.
HF	Inorganic	This test is considered a field parameter, and the recommended holding time is 15 minutes from collection. The analysis was performed in the laboratory beyond the recommended holding time.
J	All	Concentration detected equal to or greater than the method detection limit but less than the reporting limit.
K	Inorganic	Sample received unpreserved. Sample was either preserved at the time of receipt or at the time of sample preparation.
K	Organic	Detection limit may be elevated due to the presence of an unrequested analyte.
L	All	Elevated detection limit due to low sample volume.
M	Organic	Sample pH was greater than 2
N	All	Spiked sample recovery not within control limits.
O	Organic	Sample received overweight.
P	Organic	The relative percent difference between the two columns for detected concentrations was greater than 40%.
Q	All	The analyte has been detected between the limit of detection (LOD) and limit of quantitation (LOQ). The results are qualified due to the uncertainty of analyte concentrations within this range.
S	Organic	The relative percent difference between quantitation and confirmation columns exceeds internal quality control criteria. Because the result is unconfirmed, it has been reported as a non-detect with an elevated detection limit.
U	All	The analyte was not detected at or above the reporting limit.
V	All	Sample received with headspace.
W	All	A second aliquot of sample was analyzed from a container with headspace.
X	All	See Sample Narrative.
Z	Organics	This compound was separated in the check standard but it did not meet the resolution criteria as set forth in SW846.
&	All	Laboratory Control Spike recovery not within control limits.
*	All	Precision not within control limits.
+	Inorganic	The sample result is greater than four times the spike level: therefore, the percent recovery is not evaluated.
<	All	The analyte was not detected at or above the reporting limit.
1	Inorganic	Dissolved analyte or filtered analyte greater than total analyte; analyses passed QC based on precision criteria.
2	Inorganic	Dissolved analyte or filtered analyte greater than total analyte; analyses failed QC based on precision criteria.
3	Inorganic	BOD result is estimated due to the BOD blank exceeding the allowable oxygen depletion.
4	Inorganic	BOD duplicate precision not within control limits. Due to the 48 hour holding time for this test, it is not practical to reanalyze and try to correct the deficiency.
5	Inorganic	BOD result is estimated due to insufficient oxygen depletion. Due to the 48 hour holding time for this test, it is not practical to reanalyze and try to correct the deficiency.
6	Inorganic	BOD laboratory control sample not within control limits. Due to the 48 hour holding time for this test, it is not practical to reanalyze and try to correct the deficiency.
7	Inorganic	BOD result is estimated due to complete oxygen depletion. Due to the 48 hour holding time for this test, it is not practical to reanalyze and try to correct the deficiency.

Pace Analytical Services, Inc.

Analysis Summary by Laboratory

1241 Bellevue Street
Green Bay, WI 54302

Test Group Name	866652-001	866652-002
CHROMIUM	B	B
CYANIDE, TOTAL	B	B
ZINC	B	B

Code	Facility	Address	WI Certification
B	Green Bay Lab (Bellevue St)	1241 Bellevue Street, Suite 9 Green Bay, WI 54302	405132750 / DATCP: 105-444

DE PERE WASTEWATER TREATMENT PLANT
315 LEONARD STREET
DE PERE, WI 54115
PHONE # (920) 339-4094
FAX # (920) 339-4048

FAX

TO: Keld Lauridsen
FROM: Bob Kennedy
COMPANY: WDNR
DATE: 8-24-05
FAX NUMBER: ~~[illegible]~~ 662-5413
TOTAL NO. OF PAGES INCLUDING COVER: 6
RE: Better-Brite Results

X For your information. ____ For your approval.
____ Your comments, please. ____ Per your request.

Keld-
Here are latest Quarterly Results for chrome facility. Is Groundwater from Midwest Plating a Lead issue?

9/7/05 @ 11 Bob
Talked to Bob Kennedy about Midwest Plating. We don't think we will be bringing in additional water from there but not 100% sure yet. Will let the City know when we know for sure. KBL

If you do not receive all of the pages, or if there is any other problem with this transmission, please call _____ at (920) 339-4094.

Pace Analytical Services, Inc.

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436

Analytical Report Number: 862206

Client : DEPERE WWTP
Project Name : BETTER BRITE
Project Number :
Field ID : UNTREATED

Matrix Type : GROUNDWATER
Collection Date : 08/02/05
Report Date : 08/19/05
Lab Sample Number : 862206-001

INORGANICS

Test	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
Chromium	18000	0.65	2.2		1	ug/L		08/17/05	SW846 3010A	SW846 6010B
Zinc	43	1.0	3.4		1	ug/L		08/15/05	SW846 3010A	SW846 6010B

Pace Analytical Services, Inc.

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436

Analytical Report Number: 862206

Client : DEPERE WWTP
Project Name : BETTER BRITE
Project Number :
Field ID : TREATED

Matrix Type : GROUNDWATER
Collection Date : 08/02/05
Report Date : 08/19/05
Lab Sample Number : 862206-002

INORGANICS

Test	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
Chromium	480	0.85	2.2		1	ug/L		08/17/05	SW846 3010A	SW846 6010B
Zinc	6.4	1.0	3.4		1	ug/L	A	08/15/05	SW846 3010A	SW846 6010B

Pace Analytical Services, Inc.

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436

Analytical Report Number: 862206

Client : DEPERE WWTP
Project Name : BETTER BRITE
Project Number :
Field ID : UNTREATED

Matrix Type : GROUNDWATER
Collection Date : 08/02/05
Report Date : 08/19/05
Lab Sample Number : 862206-003

INORGANICS

Test	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
Cyanide, Total	0.26	0.0037	0.012		1	mg/L		08/10/05	EPA 335.4	EPA 335.4

Pace Analytical Services, Inc.

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436

Analytical Report Number: 862206

Client : DEPERE WWTP
Project Name : BETTER BRITE
Project Number :
Field ID : TREATED

Matrix Type : GROUNDWATER
Collection Date : 08/02/05
Report Date : 08/19/05
Lab Sample Number : 862206-004

INORGANICS

Test		Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
Cyanide, Total	<	0.0037	0.0037	0.012		1	mg/L		08/10/05	EPA 335.4	EPA 335.4

Pace Analytical Services, Inc.

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436
Fax: 920-469-8827

Lab Number	TestGroupID	Field ID	Comment
852208-002	M-ZN-W	TREATED	A - Analyte is detected in the method blank at a concentration of 1.0 ug/L.

Keld — 7-11-05

Enclosed ARE the
Better-Brite Results
For 2004, and for
2005 to date.
Also included is a
new key for the Bldg
door lock. We had to
replace it last week.

Bob

En Chem

A Division of Pace Analytical Services, Inc.

Analytical Report Number: 857897

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436

Client : DEPERE WWTP
Project Name : BETTER BRITE
Project Number :
Field ID : UNTREATED 10:51

Matrix Type : WASTEWATER
Collection Date : 04/06/05
Report Date : 04/18/05
Lab Sample Number : 857897-001

INORGANICS

Test	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
Chromium	11000	32	110		50	ug/L		04/12/05	SW846 3010A	SW846 6010B
Zinc	140	1.0	3.4		1	ug/L		04/11/05	SW846 3010A	SW846 6010B

En Chem
A Division of Pace Analytical Services, Inc.

Analytical Report Number: 857897

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436

Client : DEPERE WWTP
Project Name : BETTER BRITE
Project Number :
Field ID : UNTREATED 10:52

Matrix Type : WASTEWATER
Collection Date : 04/06/05
Report Date : 04/18/05
Lab Sample Number : 857897-002

INORGANICS

Test	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
Cyanide, Total	0.18	0.0037	0.012		1	mg/L		04/15/05	EPA 335.4	EPA 335.4

En Chem
A Division of Pace Analytical Services, Inc.

Analytical Report Number: 857897

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436

Client : DEPERE WWTP
Project Name : BETTER BRITE
Project Number :
Field ID : TREATED 14:51

Matrix Type : WASTEWATER
Collection Date : 04/06/05
Report Date : 04/18/05
Lab Sample Number : 857897-003

INORGANICS

Test	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
Chromium	570	0.65	2.2		1	ug/L		04/12/05	SW846 3010A	SW846 6010B
Zinc	4.8	1.0	3.4		1	ug/L		04/11/05	SW846 3010A	SW846 6010B

En Chem

A Division of Pace Analytical Services, Inc.

Analytical Report Number: 857897

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436

Client : DEPERE WWTP
Project Name : BETTER BRITE
Project Number :
Field ID : TREATED 14:52

Matrix Type : WASTEWATER
Collection Date : 04/06/05
Report Date : 04/18/05
Lab Sample Number : 857897-004

INORGANICS

Test	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
Cyanide, Total	0.12	0.0037	0.012		1	mg/L		04/15/05	EPA 335.4	EPA 335.4

En Chem
A Division of Pace Analytical Services, Inc.

Analytical Report Number: 855988

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436

Client : DEPERE WWTP
Project Name : BETTER BRITE
Project Number :
Field ID : UNTREATED

Matrix Type : WASTEWATER
Collection Date : 02/07/05
Report Date : 02/11/05
Lab Sample Number : 855988-001

INORGANICS

Test	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
Chromium	15000	0.65	2.2		1	ug/L		02/08/05	SW846 3010A	SW846 6010B
Zinc	48	1.0	3.4		1	ug/L		02/08/05	SW846 3010A	SW846 6010B
Cyanide, Total	0.22	0.0037	0.012		1	mg/L		02/10/05	EPA 335.4	EPA 335.4

En Chem

A Division of Pace Analytical Services, Inc.

Analytical Report Number: 855988

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436

Client : DEPERE WWTP
Project Name : BETTER BRITE
Project Number :
Field ID : TREATED

Matrix Type : WASTEWATER
Collection Date : 02/07/05
Report Date : 02/11/05
Lab Sample Number : 855988-002

INORGANICS

Test	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
Chromium	510	0.65	2.2		1	ug/L		02/08/05	SW846 3010A	SW846 6010B
Zinc	2.5	1.0	3.4		1	ug/L	QA	02/08/05	SW846 3010A	SW846 6010B
Cyanide, Total	0.11	0.0037	0.012		1	mg/L		02/10/05	EPA 335.4	EPA 335.4

En Chem
A Division of Pace Analytical Services, Inc.

Analytical Report Number: 854236

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436

Client : DEPERE WWTP
Project Name : BETTER BRITE
Project Number :
Field ID : UNTREATED-1

Matrix Type : WATER
Collection Date : 12/01/04
Report Date : 12/20/04
Lab Sample Number : 854236-001

INORGANICS

Test	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
Chromium	13000	0.65	2.2		1	ug/L		12/16/04	SW846 3010A	SW846 6010B
Zinc	90	1.0	3.4		1	ug/L		12/17/04	SW846 3010A	SW846 6010B

En Chem
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Analytical Report Number: 854236

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436

Client : DEPERE WWTP
Project Name : BETTER BRITE
Project Number :
Field ID : UNTREATED-2

Matrix Type : WATER
Collection Date : 12/01/04
Report Date : 12/20/04
Lab Sample Number : 854236-002

INORGANICS

Test	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
Cyanide, Total	0.13	0.0037	0.012		1	mg/L		12/14/04	EPA 335.4	EPA 335.4

En Chem

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Analytical Report Number: 854236

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436

Client : DEPERE WWTP
Project Name : BETTER BRITE
Project Number :
Field ID : TREATED-1

Matrix Type : WATER
Collection Date : 12/01/04
Report Date : 12/20/04
Lab Sample Number : 854236-003

INORGANICS

Test	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
Chromium	480	0.65	2.2		1	ug/L		12/16/04	SW846 3010A	SW846 6010B
Zinc	6.2	1.0	3.4		1	ug/L		12/17/04	SW846 3010A	SW846 6010B

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Analytical Report Number: 854236

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436

Client : DEPERE WWTP
Project Name : BETTER BRITE
Project Number :
Field ID : TREATED-2

Matrix Type : WATER
Collection Date : 12/01/04
Report Date : 12/20/04
Lab Sample Number : 854236-004

INORGANICS

Test	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
Cyanide, Total	0.098	0.0037	0.012		1	mg/L		12/14/04	EPA 335.4	EPA 335.4

En Chem Inc.

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436

Analytical Report Number: 849541

Client : DEPERE WWTP
Project Name : BETTER BRITE
Project Number :
Field ID : UNTREATED

Matrix Type : WATER
Collection Date : 08/04/04
Report Date : 08/11/04
Lab Sample Number : 849541-001

INORGANICS

Test	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
Chromium	15000	0.65	2.2		1	ug/L		08/09/04	SW846 3010A	SW846 6010B
Zinc	62	1.0	3.4		1	ug/L	A	08/09/04	SW846 3010A	SW846 6010B
Cyanide, Total	0.31	0.0016	0.0055		1	mg/L		08/09/04	EPA 335.4	EPA 335.4

En Chem Inc.

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436

Analytical Report Number: 849541

Client : DEPERE WWTP
Project Name : BETTER BRITE
Project Number :
Field ID : TREATED

Matrix Type : WATER
Collection Date : 08/04/04
Report Date : 08/11/04
Lab Sample Number : 849541-002

INORGANICS

Test	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
Chromium	530	0.65	2.2		1	ug/L		08/09/04	SW846 3010A	SW846 6010B
Zinc	1.6	1.0	3.4		1	ug/L	QA	08/09/04	SW846 3010A	SW846 6010B
Cyanide, Total	0.079	0.0016	0.0055		1	mg/L		08/09/04	EPA 335.4	EPA 335.4

.En Chem Inc.

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436

Analytical Report Number: 845741

Client : DEPERE WWTP
Project Name :
Project Number :
Field ID : UNTREATED

Matrix Type : WATER
Collection Date : 04/20/04
Report Date : 05/04/04
Lab Sample Number : 845741-001

INORGANICS

Test	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
Chromium	15000	0.92	3.1		1	ug/L		04/27/04	SW846 3015	EPA 200.7
Zinc	59	3.8	13		1	ug/L		04/28/04	SW846 3015	EPA 200.7
Cyanide, Total	0.35	0.0016	0.0053		1	mg/L		04/26/04	EPA 335.4	EPA 335.4

.En Chem Inc.

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436

Analytical Report Number: 845741

Client : DEPERE WWTP
Project Name :
Project Number :
Field ID : TREATED

Matrix Type : WATER
Collection Date : 04/20/04
Report Date : 05/04/04
Lab Sample Number : 845741-002

INORGANICS

Test	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
Chromium	550	0.92	3.1		1	ug/L		04/27/04	SW846 3015	EPA 200.7
Zinc	13	3.8	13		1	ug/L		04/28/04	SW846 3015	EPA 200.7
Cyanide, Total	0.21	0.0016	0.0053		1	mg/L		04/26/04	EPA 335.4	EPA 335.4

En Chem Inc.

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436

Analytical Report Number: 843876

Client : DEPERE WWTP
Project Name : BETTER BRITE
Project Number :
Field ID : UNTREATED

Matrix Type : WASTEWATER
Collection Date : 02/25/04
Report Date : 03/04/04
Lab Sample Number : 843876-001

INORGANICS

Test	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
Chromium	18000	2.2	7.2		5	ug/L		03/01/04	EPA 200.7 RE	EPA 200.7
Zinc	51	18	61		5	ug/L	Q	03/01/04	EPA 200.7 RE	EPA 200.7

En Chem Inc.

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436

Analytical Report Number: 843876

Client : DEPERE WWTP
Project Name : BETTER BRITE
Project Number :
Field ID : TREATED

Matrix Type : WASTEWATER
Collection Date : 02/25/04
Report Date : 03/04/04
Lab Sample Number : 843876-002

INORGANICS

Test	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
Chromium	930	0.44	1.4		1	ug/L		03/01/04	EPA 200.7 RE	EPA 200.7
Zinc	19	3.6	12		1	ug/L		03/01/04	EPA 200.7 RE	EPA 200.7

En Chem Inc.

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436

Analytical Report Number: 843876

Client : DEPERE WWTP
Project Name : BETTER BRITE
Project Number :
Field ID : UNTREATED

Matrix Type : WASTEWATER
Collection Date : 02/25/04
Report Date : 03/04/04
Lab Sample Number : 843876-003

INORGANICS

Test	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
Cyanide, Total	0.47	0.0016	0.0053		1	mg/L		03/03/04	EPA 335.4	EPA 335.4

En Chem Inc.

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436

Analytical Report Number: 843876

Client : DEPERE WWTP
Project Name : BETTER BRITE
Project Number :
Field ID : TREATED

Matrix Type : WASTEWATER
Collection Date : 02/25/04
Report Date : 03/04/04
Lab Sample Number : 843876-004

INORGANICS

Test	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
Cyanide, Total	0.11	0.0016	0.0053		1	mg/L	A	03/03/04	EPA 335.4	EPA 335.4

DE PERE WASTEWATER TREATMENT PLANT
315 LEONARD STREET
DE PERE, WI 54115
PHONE # (920) 339-4094
FAX # (920) 339-4048

FAX

TO: Keld Lauridsen
FROM: Bob Kennedy
COMPANY: WDNR
DATE: 4-16-03
FAX NUMBER: 492-5859
TOTAL NO. OF PAGES INCLUDING COVER: 15
RE: Better - Brule Results

_____ For your information.
_____ For your approval.
_____ Your comments, please.
__X__ Per your request.

Keld -
I am sending all Results from June 2000 to present. If you want hard copy just let me know. No samples were analyzed July 99 to June 2000, as that was Lande St. remediation and Facility Relocation. Any questions, just call.

Bob

If you do not receive all of the pages, of if there is any other problem with this transmission, please call ____________ at (920) 339-4094.

En Chem Inc.
Green Bay, WI 54302
920-469-2436
800-7-ENCHEM
Fax: 920-469-8927

- Analytical Report -

Project Name : BETTER BRITE
Project Number :
Field ID : UNTREATED
Lab Sample Number : 830941-001
WI DNR LAB ID : 405132760

Client : DEPERE WWTP
Report Date : 2/11/03
Collection Date : 1/29/03
Matrix Type : WATER

Inorganic Results

Test	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method	Analyst
Chromium	6900	2.3	7.3		ug/L		02/06/03	SW846 3010A	SW846 6010B	DLB
Zinc	66	6.2	20		ug/L	A	02/07/03	SW846 3010A	SW846 6010B	DLB
Cyanide, total	0.100	0.0014	0.0045		mg/L		02/03/03	EPA 335.4	EPA 335.4	DAW

En Chem Inc.
Green Bay, WI 54302
920-469-2436
800-7-ENCHEM
Fax: 920-469-8627

- Analytical Report -

Project Name : BETTER BRITE
Project Number :
Field ID : TREATED
Lab Sample Number : 630941-002
WI DNR LAB ID : 405132760
Client : DEPERE WWTP
Report Date : 2/11/03
Collection Date : 1/29/03
Matrix Type : WATER

Inorganic Results

Test	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method	Analyst
Chromium	360	0.93	3.0		ug/L		02/06/03	SW846 3010A	SW846 6010B	DLB
Zinc	3.6	2.5	5.0		ug/L	QA	02/07/03	SW846 3010A	SW846 6010B	DLB
Cyanide, total	0.083	0.0070	0.022		mg/L		02/03/03	EPA 335.4	EPA 335.4	DAW

En.Chem Inc.

t Bell Street
Green Bay, WI 54302
920-469-2436
800-7-ENCHEM
Fax: 920-469-8627

- Analytical Report -

Project Name : BETTER BRITE
Project Number :
Field ID : UNTREATED
Lab Sample Number : 828394-001
WI DNR LAB ID : 405132750

Client : DEPERE WWTP
Report Date : 1/21/03
Collection Date : 11/12/02
Matrix Type : WATER

Inorganic Results

Test	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method	Analyst
Chromium	17000	4.7	15		ug/L		01/02/03	SW846 3010A	SW846 6010B	dlb
Zinc	130	7.5	24		ug/L	A	01/02/03	SW846 3010A	SW846 6010B	dlb
Cyanide, total	0.19	0.0027	0.0086		mg/L		11/21/02	EPA 335.4	EPA 335.4	*NL

En Chem Inc.
1 Bellevue Street
Green Bay, WI 54302
920-469-2436
800-7-ENCHEM
Fax: 920-469-8827

- Analytical Report -

Project Name : BETTER BRITE
Project Number :
Field ID : TREATED
Lab Sample Number : 828394-002
WI DNR LAB ID : 405132750
Client : DEPERE WWTP
Report Date : 1/21/03
Collection Date : 11/12/02
Matrix Type : WATER

Inorganic Results

Test		Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method	Analyst
Chromium		690	0.93	3.0		ug/L	AC	01/02/03	SW846 3010A	SW846 6010B	dlb
Zinc	<	15	15	48		ug/L	C	01/13/03	SW846 3010A	SW846 6010B	dlb
Cyanide, total		0.0030	0.0027	0.0086		mg/L	Q	11/21/02	EPA 335.4	EPA 335.4	*NL

En Chem, Inc.

AL KARDOSKEE
DE PERE WASTE WATER TREATMENT, CITY OF
315 LEONARD STREET
DE PERE, WI 54115

Project # NONE
Project Name BETTER BRITE
Invoice # E42914

Report Date *03-Sep-02*

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code
Lab Code 5042914A						**Sample Type** Water			
Sample ID UNTREATED						**Sample Date** 8/21/2002			
Inorganic									
General									
Cyanide, Total	0.33	mg/L	0.001	0.005	1	8/30/2002	9012A	DAW	1
Metals									
Chromium, Total	26800	ug/L	600	2050	50	8/28/2002	6010B	JLA	1
Zinc, Total	120 "J"	ug/L	90	280	10	8/28/2002	6010B	JLA	1
Lab Code 5042914B						**Sample Type** Water			
Sample ID TREATED						**Sample Date** 8/21/2002			
Inorganic									
General									
Cyanide, Total	< 0.0014	mg/L	0.001	0.005	1	8/30/2002	9012A	DAW	1
Metals									
Chromium, Total	709	ug/L	12	41	1	8/28/2002	6010B	JLA	1
Zinc, Total	< 9	ug/L	9	28	1	8/28/2002	6010B	JLA	1

LOD Limit of Detection "J" Flag: Analyte detected between LOD and LOQ LOQ Limit of Quantitation

Code	*Comment*
1	All laboratory QC requirements were met for this sample.

Authorized Signature Stu Heinz

U.S. Analytical Lab

AL KARDOSKEE
DE PERE WASTE WATER TREATMENT. CITY OF
315 LEONARD STREET
DE PERE. WI 54115

Project # NONE
Project Name BETTER BRITE
Invoice # E39835

Report Date *16-May-02*

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code
Lab Code 5039835A						**Sample Type** Water			
Sample ID UNTREATED						**Sample Date** 5/6/2002			
Inorganic									
General									
Cyanide, Total	0.29	mg/L	0.001	0.005	1	5/14/2002	9012A	DAW	1
Metals									
Chromium, Total	15	mg/L	0.3	1.025	25	5/9/2002	6010B	JLA	1
Zinc, Total	0.085	mg/L	0.009	0.028	1	5/9/2002	6010B	JLA	1
Lab Code 5039835B						**Sample Type** Water			
Sample ID TREATED						**Sample Date** 5/6/2002			
Inorganic									
General									
Cyanide, Total	0.25	mg/L	0.001	0.005	1	5/14/2002	9012A	DAW	1
Metals									
Chromium, Total	0.73	mg/L	0.012	0.041	1	5/9/2002	6010B	JLA	1
Zinc, Total	< 0.009	mg/L	0.009	0.028	1	5/9/2002	6010B	JLA	1

LOD Limit of Detection "J" Flag: Analyte detected between LOD and LOQ LOQ Limit of Quantitation

Code	*Comment*
1	All laboratory QC requirements were met for this sample.

Authorized Signature

AL KORDOSKEE
DE PERE WASTE WATER TREATMENT. CITY OF
315 LEONARD STREET
DE PERE. WI 54115

Project # NONE
Project Name BETTER BRITE
Invoice # E37592

Report Date *06-Mar-02*

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code
Lab Code 5037592A						**Sample Type** Water			
Sample ID UNTREATED						**Sample Date** 2/22/02			
Inorganic									
General									
Cyanide	0.170	mg/l	0.003	0.009	1	2/28/02	9012A	DAW	1
Metals									
Chromium	35	mg/l	0.55	1.85	50	2/27/02	6010B	DLB	1
Zinc	0.15 "J"	mg/l	0.105	0.345	5	2/27/02	6010B	DLB	1
Lab Code 5037592B						**Sample Type** Water			
Sample ID TREATED						**Sample Date** 2/22/02			
Inorganic									
General									
Cyanide	0.140	mg/l	0.003	0.009	1	2/28/02	9012A	DAW	1
Metals									
Chromium	2.2	mg/l	0.033	0.111	3	2/27/02	6010B	DLB	1
Zinc	0.027 "J"	mg/l	0.021	0.069	1	2/27/02	6010B	DLB	1

LOD Limit of Detection "J" Flag: Analyte detected between LOD and LOQ LOQ Limit of Quantitation

Code	*Comment*
1	All laboratory QC requirements were met for this sample.

Authorized Signature

03-11-2002 RCVD

11/08/2001 9:13:45

Robert E. Lee & Associates, Inc

Wisconsin Certification Number: 405043670

Certificate of Analysis Report

De Pere Wastewater Treatment Plant
315 Leonard St

De Pere, WI 54115
Project Number: NONE
Project Name: BETTER BRITE

Attn: Al Kardoskee
Phone: (920)339-4094
Fax: (920)339-4048
Client ID: 000404
Chain: 88906
Report Date: 11/08/2001

01REL018407	**10/29/2001**	**UNTREATED**					
SW-846-3010A	Metal Preparation	Complete				11/06/2001	DLB
SW-846-6010B	Total Chromium ICP	25100	ug/L	94	313	11/07/2001	DLB
SW-846-6010B	Total Zinc ICP	128	ug/L	4.5	15	11/06/2001	DLB
SW-846-9012A	Cyanide-Total	0.17	mg/L	0.0010	0.0033	11/02/2001	CLS
01REL018408	**10/30/2001**	**TREATED**					
SW-846-3010A	Metal Preparation	Complete				11/06/2001	DLB
SW-846-6010B	Total Chromium ICP	849	ug/L	9.4	31	11/07/2001	DLB
SW-846-6010B	Total Zinc ICP	21	ug/L	4.5	15	11/06/2001	DLB
SW-846-9012A	Cyanide-Total	<0.001	mg/L	0.0010	0.0033	11/02/2001	CLS

8/06/2001 8:45:35

Robert E. Lee & Associates, Inc

Wisconsin Certification Number: 405043870
Certificate of Analysis Report

De Pere Wastewater Treatment Plant
315 Leonard St

De Pere, WI 54115
Project Number: NONE
Project Name: BETTER BRITE

Attn: Al Kardoskee
Phone: (920)339-4094
Fax: (920)339-4048
Client ID: 000404
Chain: 62088
Report Date: 8/06/2001

01REL012443 7/30/2001 UNTREATED

SW-846-3010A	Metal Preparation	Complete					7/31/2001	DLB
SW-846-6010B	Total Chromium ICP	27300	ug/L		940	3130	8/01/2001	DLB
SW-846-6010B	Total Zinc ICP	118	ug/L		4.5	15	8/02/2001	DLB
SW-846-9012A	Cyanide-Total	0.33	mg/L	2	0.0010	0.0033	8/03/2001	CLS

01REL012444 7/30/2001 TREATED

SW-846-3010A	Metal Preparation	Complete					7/31/2001	DLB
SW-846-6010B	Total Chromium ICP	1840	ug/L		9.4	31	8/01/2001	DLB
SW-846-6010B	Total Zinc ICP	28	ug/L		4.5	15	8/02/2001	DLB
SW-846-9012A	Cyanide-Total	0.016	mg/L	5	0.0010	0.0033	8/03/2001	CLS

AUG 0 8 RECD

5/15/2001 9:15:22

Robert E. Lee & Associates, Inc

Wisconsin Certification Number: 405043870
Certificate of Analysis Report

De Pere Wastewater Treatment Plant
315 Leonard St

De Pere, WI 54115
Project Number: NONE
Project Name: BETTER BRITE

Attn: Al Kardoskee
Phone: (920)339-4094
Fax: (920)339-4046
Client ID: 000404
Chain: 62080
Report Date: 5/15/2001

01REL006914	**5/02/2001**	**UNTREATED**					
SW-846-3010A	Metal Preparation	Complete				5/10/2001	DLB
SW-846-6010B	Total Chromium ICP	23200	ug/L	84	313	5/14/2001	DLB
SW-846-6010B	Total Zinc ICP	67	ug/L	4.5	15	5/14/2001	DLB
SW-846-9012A	Cyanide-Total	0.51	mg/L	0.0010	0.0033	5/11/2001	CLS
01REL006915	**5/02/2001**	**TREATED**					
SW-846-3010A	Metal Preparation	Complete				5/10/2001	DLB
SW-846-6010B	Total Chromium ICP	1050	ug/L	9.4	31	5/14/2001	DLB
SW-846-6010B	Total Zinc ICP	22	ug/L	4.5	15	5/14/2001	DLB
SW-846-9012A	Cyanide-Total	0.044	mg/L	0.0010	0.0033	5/11/2001	CLS

2/12/2001 8:51:18

Robert E. Lee & Associates, Inc

Wisconsin Certification Number: 405043870
Certificate of Analysis Report

De Pere Wastewater Treatment Plant
315 Leonard St

De Pere, WI 54115
Project Number: NONE
Project Name: BETTER BRITE

Attn: Al Kardoskee
Phone: (920)339-4094
Fax: (920)339-4048
Client ID: 000404
Chain: 62073
Report Date: 2/12/2001

01REL001691	**2/05/2001**	**UNTREATED**					
SW-846-3010A	Metal Preparation	Complete				2/08/2001	DLB
SW-846-6010B	Total Chromium ICP	35100	ug/L	680	2270	2/09/2001	DLB
SW-846-6010B	Total Zinc ICP	150	ug/L	4.6	15	2/09/2001	DLB
SW-846-9012A	Cyanide-Total	0.23	mg/L	0.0010	0.0033	2/09/2001	CLS
01REL001692	**2/06/2001**	**TREATED**					
SW-846-3010A	Metal Preparation	Complete				2/08/2001	DLB
SW-846-6010B	Total Chromium ICP	1100	ug/L	6.8	23	2/09/2001	DLB
SW-846-6010B	Total Zinc ICP	18	ug/L	4.6	15	2/09/2001	DLB
SW-846-9012A	Cyanide-Total	0.023	mg/L	0.0010	0.0033	2/09/2001	CLS

1/03/2001 9:27:59

Robert E. Lee & Associates, Inc

Wisconsin Certification Number: 405043870
Certificate of Analysis Report

De Pere Wastewater Treatment Plant
315 Leonard St

De Pere, WI 54115
Project Number: NONE
Project Name: BETTER BRITE

Attn: Al Kardoskee
Phone: (920)339-4094
Fax: (920)339-4048
Client ID: 000404
Chain: 62070
Report Date: 1/03/2001

00REL022617	**12/20/2000**	**UNTREATED**						
SW-846-3010A	Metal Preparation	Complete					12/26/2000	DLB
SW-846-6010B	Total Chromium ICP	29500	ug/L		680	2270	12/26/2000	DLB
SW-846-6010B	Total Zinc ICP	237	ug/L		4.6	15	12/26/2000	DLB
SW-846-9012A	Cyanide-Total	0.21	mg/L		0.0010	0.0033	12/27/2000	CLS
00REL022618	**12/20/2000**	**TREATED**						
SW-846-3010A	Metal Preparation	Complete					12/26/2000	DLB
SW-846-6010B	Total Chromium ICP	809	ug/L		6.8	23	12/26/2000	DLB
SW-846-6010B	Total Zinc ICP	10	ug/L	13	4.6	15	12/26/2000	DLB
SW-846-9012A	Cyanide-Total	<0.001	mg/L		0.0010	0.0033	12/27/2000	CLS

JAN 0 4 RECD

9/12/2000 8:59:48

Robert E. Lee & Associates, Inc

Wisconsin Certification Number: 405043870
Certificate of Analysis Report

De Pere Wastewater Treatment Plant
315 Leonard St

De Pere, WI 54115
Project Number: NONE
Project Name: BETTER BRITE

Attn: Al Kardoskee
Phone: (920)339-4094
Fax: (920)339-4048
Client ID: 000404
Chain: 62058
Report Date: 9/12/2000

00REL014676	**8/29/2000**	**BETTER BRITE UNTREATED**					
EPA-335.4	Cyanide-Total	0.32	mg/L	0.0010	0.0033	9/11/2000	CLS
SW-846-3010A	Metal Preparation	Complete				8/31/2000	DAW
SW-846-6010B	Total Chromium ICP	23300	ug/L	170	567	9/07/2000	DLB
SW-846-6010B	Total Zinc ICP	263	ug/L	4.6	15	9/07/2000	DLB
00REL014677	**8/29/2000**	**BETTER BRITE TREATED**					
EPA-335.4	Cyanide-Total	0.038	mg/L	0.0010	0.0033	9/11/2000	CLS
SW-846-3010A	Metal Preparation	Complete				8/31/2000	DAW
SW-846-6010B	Total Chromium ICP	1100	ug/L	6.8	23	9/07/2000	DLB
SW-846-6010B	Total Zinc ICP	19	ug/L	4.6	15	9/07/2000	DLB

SEP 14 RECD

6/14/2000 8:36:33

Robert E. Lee & Associates, Inc

Wisconsin Certification Number: 405043870
Certificate of Analysis Report

De Pere Wastewater Treatment Plant
315 Leonard St

De Pere, WI 54115
Project Number: NONE
Project Name: BETTER BRITE

Attn: Al Kardoskee
Phone: (920)339-4094
Fax: (920)339-4048
Client ID: 000404
Chain: 62048
Report Date: 6/14/2000

00REL009212	**6/01/2000**	**UNTREATED**					
SW-846-3010A	Metal Preparation	Complete				6/07/2000	DLB
SW-846-6010B	Total Chromium ICP	17700	ug/L	136	453	6/07/2000	DLB
SW-846-6010B	Total Zinc ICP	126	ug/L	4.6	15	6/07/2000	DLB
SW-846-9012A	Cyanide-Total	0.45	mg/L	0.0010	0.0033	6/13/2000	CLS
00REL009213	**6/01/2000**	**TREATED**					
SW-846-3010A	Metal Preparation	Complete				6/07/2000	DLB
SW-846-6010B	Total Chromium ICP	2190	ug/L	6.8	23	6/07/2000	DLB
SW-846-6010B	Total Zinc ICP	23	ug/L	4.6	15	6/07/2000	DLB
SW-846-9012A	Cyanide-Total	0.08	mg/L	0.0010	0.0033	6/13/2000	CLS

JUN 16 RECD

CITY OF DE PERE

Wastewater Treatment Facility
315 Leonard Street
De Pere, WI 54115
920/339-4094
Fax No: 920/339-4048
e-mail: depere@netnet.net

July 21, 1999

John Sager
Wisconsin Department of Natural Resources
Lake Michigan District Headquarters
P.O. Box 10448
Green Bay, WI 54307-0448

Dear Mr. Sager:

I have been advised that you have replaced Keld Lauridsen as the recipient of analytical results from sampling programs at the Better Brite treatment facility. Enclosed, please find a laboratory report from Robert E. Lee and Associates containing the most recent results.

All samples were collected on 7/6/99. Please note that the laboratory has flagged two results. The total zinc results for both the Lande Groundwater and Better Brite Treated samples were below the practical quantitation limit.

If you need any additional information, please contact me.

Sincerely,

Albert R. Kardoskee, Jr.
Quality Control Supervisor/Chemist

Dept. of Natural Resources\Sager\99-07-21.DOC

Robert E. Lee & Associates, Inc.
Wisconsin Certification Number: 405043870
Certificate of Analysis Report

De Pere Wastewater Treatment Plant
315 Leonard St

De Pere WI 54115
Project Number: NONE
Project Name: BETTER BRITE

Attn.: Al Kardoskee
Phone: (920)339-4094
Fax: (920)339-4048
Client ID: 000404
Chain: 58119
Report Date: 7/19/1999

Method	Parameter Name	Result	Units	Flag	MDL	PQL	Anls Date	Analyst
Lab No.	Collect Date	Sample ID						
99REL011914	**7/06/1999**	**LANDE GROUNDWATER**						
	Metal Preparation	Complete					7/15/1999	DLB
SW-846-6010B	Total Chromium ICP	138000	ug/L		700	2330	7/15/1999	DLB
SW-846-6010B	Total Zinc ICP	12	ug/L	13	4.8	16	7/15/1999	DLB
99REL011915	**7/06/1999**	**SIXTH GROUNDWATER**						
	Metal Preparation	Complete					7/15/1999	DLB
SW-846-6010B	Total Chromium ICP	63200	ug/L		70	233	7/15/1999	DLB
SW-846-6010B	Total Zinc ICP	37	ug/L		4.8	16	7/15/1999	DLB
SW-846-9012A	Cyanide-Total	0.54	mg/L		0.0010	0.0033	7/09/1999	CLS
99REL011916	**7/06/1999**	**BETTER BRITE UNTREATED**						
	Metal Preparation	Complete					7/15/1999	DLB
SW-846-6010B	Total Chromium ICP	79900	ug/L		70	233	7/15/1999	DLB
SW-846-6010B	Total Zinc ICP	36	ug/L		4.8	16	7/15/1999	DLB
SW-846-9012A	Cyanide-Total	0.38	mg/L		0.0010	0.0033	7/09/1999	CLS
99REL011917	**7/06/1999**	**BETTER BRITE TREATED**						
	Metal Preparation	Complete					7/15/1999	DLB
SW-846-6010B	Total Chromium ICP	1120	ug/L		7.0	23	7/15/1999	DLB
SW-846-6010B	Total Zinc ICP	5.7	ug/L	13	4.8	16	7/15/1999	DLB
SW-846-9012A	Cyanide-Total	0.017	mg/L		0.0010	0.0033	7/09/1999	CLS

JUL 20 RECD

Robert E. Lee & Associates, Inc.

Quality Control Report - Description of Flags

Flag	Section	Description
13	L	The reported result is less than the practical quantitation limit (PQL).

CITY OF DE PERE

Wastewater Treatment Facility
315 Leonard Street
De Pere, WI 54115
920/339-4094
Fax No: 920/339-4048
e-mail: depere@netnet.net

May 6, 1999

Keld Lauridsen
Wisconsin Department of Natural Resources
Lake Michigan District Headquarters
P.O. Box 10448
Green Bay, WI 54307-0448

Dear Mr. Lauridsen:

Summarizing our telephone conversation of earlier this morning: the quarterly sampling of the various Better Brite groundwater samples has included analysis for total cadmium in all samples. The results of analysis have continually shown the cadmium concentration to be below the method detection limit.

Based on this historical record, it would be expected that future cadmium analyses would continue to yield similar results. Realizing this, we agreed that it would be appropriate to discontinue analysis for cadmium in all future sampling sessions. As a result of our discussion, I will delete the cadmium analysis beginning with the samples to be collected in the third quarter of this year.

Please contact me if you have any questions or concerns.

Sincerely,

Albert R. Kardoskee, Jr.
Quality Control Supervisor/Chemist

Dept. of Natural Resources\Lauridsen\99-05-06.DOC

CITY OF DE PERE

Wastewater Treatment Facility
315 Leonard Street
De Pere, WI 54115
920/339-4094
Fax No: 920/339-4048
e-mail: depere@netnet.net

April 30, 1999

Keld Lauridsen
Wisconsin Department of Natural Resources
Lake Michigan District Headquarters
P.O. Box 10448
Green Bay, WI 54307-0448

Dear Mr. Lauridsen:

Enclosed, please find a laboratory report from Robert E. Lee and Associates containing analytical results for the most recent sampling at the Better Brite treatment facility.

All samples were collected on 4/12/99. Please note that the laboratory has placed two flags on the Better Brite Treated samples. The total cyanide analysis failed QC limits for spike recovery, and the results for total zinc were below the practical quantitation limit.

If you need any additional information, please contact me.

Sincerely,

Albert R. Kardoskee, Jr.
Quality Control Supervisor/Chemist

Dept: of Natural Resources\Lauridsen\99-04-30.DOC

5/6/99 @ 8^45

TALKED TO AL KARDOSHEE, CITY OF DA PINES WATER TREATMENT FACILITY. I SUGGESTED TO DISCONTINUE TO SAMPLE FOR CADMIUM. HAVE NOT HAD ANY DETECTS FOR A LONG TIME. AL WILL SEND LETTER TO DEP.

KBL

Robert E. Lee & Associates, Inc.
Wisconsin Certification Number: 405043870
Certificate of Analysis Report

De Pere Wastewater Treatment Plant
315 Leonard St

De Pere WI 54115
Project Number: NONE
Project Name: BETTER BRITE

Attn.: Al Kardoskee
Phone: (920)339-4094
Fax: (920)339-4048
Client ID: 000404
Chain: 58114
Report Date: 4/26/1999

Method	Parameter Name	Result	Units	Flag	MDL	PQL	Anls Date	Analyst
Lab No.	**Collect Date**	**Sample ID**						
99REL005743	**4/12/1999**	**LANDE GROUNDWATER**						
	Metal Preparation	Complete					4/16/1999	DLB
SW-846-6010B	Total Cadmium ICP	<4.1	ug/L		4.1	14	4/21/1999	DLB
SW-846-6010B	Total Chromium ICP	212000	ug/L		700	2330	4/21/1999	DLB
SW-846-6010B	Total Zinc ICP	35	ug/L		4.8	16	4/23/1999	DAW
99REL005744	**4/12/1999**	**SIXTH GROUNDWATER**						
SW-846-9012A	Cyanide-Total	1.1	mg/L		0.010	0.033	4/16/1999	CLW
	Metal Preparation	Complete					4/16/1999	DLB
SW-846-6010B	Total Cadmium ICP	<4.1	ug/L		4.1	14	4/21/1999	DLB
SW-846-6010B	Total Chromium ICP	64600	ug/L		70	233	4/21/1999	DLB
SW-846-6010B	Total Zinc ICP	27	ug/L		4.8	16	4/23/1999	DAW
99REL005745	**4/12/1999**	**BETTER BRITE UNTREATED**						
SW-846-9012A	Cyanide-Total	0.26	mg/L		0.0010	0.0033	4/16/1999	CLW
	Metal Preparation	Complete					4/16/1999	DLB
SW-846-6010B	Total Cadmium ICP	<4.1	ug/L		4.1	14	4/21/1999	DLB
SW-846-6010B	Total Chromium ICP	69300	ug/L		70	233	4/21/1999	DLB
SW-846-6010B	Total Zinc ICP	19	ug/L		4.8	16	4/23/1999	DAW
99REL005746	**4/12/1999**	**BETTER BRITE TREATED**						
SW-846-9012A	Cyanide-Total	0.005	mg/L	5	0.0010	0.0033	4/16/1999	CLW
	Metal Preparation	Complete					4/16/1999	DLB
SW-846-6010B	Total Cadmium ICP	<4.1	ug/L		4.1	14	4/21/1999	DLB
SW-846-6010B	Total Chromium ICP	2160	ug/L		7.0	23	4/21/1999	DLB
SW-846-6010B	Total Zinc ICP	7.0	ug/L	13	4.8	16	4/23/1999	DAW

Robert E. Lee & Associates, Inc.

Quality Control Report - Description of Flags

Flag	Section	Description
13	L	The reported result is less than the practical quantitation limit (PQL).
5	L	The reported spike recovery for this sample failed the acceptable quality control limits for spike analysis.

CITY OF DE PERE

Wastewater Treatment Facility
315 Leonard Street
De Pere, WI 54115
920/339-4094
Fax No: 920/339-4048
e-mail: depere@netnet.net

February 10, 1999

Keld Lauridsen
Wisconsin Department of Natural Resources
Lake Michigan District Headquarters
P.O. Box 10448
Green Bay, WI 54307-0448

Dear Mr. Lauridsen:

Enclosed, please find reports from Robert E. Lee and Associates containing analytical results for the most recent sampling at the Better Brite facility.

Untreated samples were collected on 1/21/99, while the treated samples were taken on 1/28/99. Please note that the results for total cyanide and total zinc in the Better Brite Treated samples were flagged as being below the practical quantitation limit for those analyses.

If you need any additional information, please contact me.

Sincerely,

Albert R. Kardoskee, Jr.
Quality Control Supervisor/Chemist

Dept. of Natural Resources\Lauridsen\99-02-10.DOC

Robert E. Lee & Associates, Inc.
Wisconsin Certification Number: 405043870
Certificate of Analysis Report

De Pere Wastewater Treatment Plant
315 Leonard Street

De Pere WI 54115
Project Number: NONE
Project Name: BETTER BRITE

Attn.: Al Kardoskee
Phone: (920)339-4094
Fax: (920)339-4048
Client ID: 000404
Chain: 41009
Report Date: 1/28/1999

Method	Parameter Name	Result	Units	Flag	MDL	PQL	Anls Date	Analyst
Lab No.	**Collect Date**	**Sample ID**						
99REL000861	**1/21/1999**	**LANDE GROUNDWATER**						
	Metal Preparation	Complete					1/26/1999	DLB
SW-846-6010B	Total Cadmium ICP	<4.1	ug/L		4.1	14	1/26/1999	DLB
SW-846-6010B	Total Chromium ICP	124000	ug/L		700	2330	1/26/1999	DLB
SW-846-6010B	Total Zinc ICP	402	ug/L		4.8	16	1/26/1999	DLB
99REL000862	**1/21/1999**	**SIXTH GROUNDWATER**						
SW-846-9012A	Cyanide-Total	0.37	mg/L		0.0010	0.0033	1/22/1999	CLW
	Metal Preparation	Complete					1/26/1999	DLB
SW-846-6010B	Total Cadmium ICP	<4.1	ug/L		4.1	14	1/26/1999	DLB
SW-846-6010B	Total Chromium ICP	80500	ug/L		70	233	1/26/1999	DLB
SW-846-6010B	Total Zinc ICP	72	ug/L		4.8	16	1/26/1999	DLB
99REL000863	**1/21/1999**	**BETTER BRITE UNTREATED**						
SW-846-9012A	Cyanide-Total	0.23	mg/L		0.0010	0.0033	1/22/1999	CLW
	Metal Preparation	Complete					1/26/1999	DLB
SW-846-6010B	Total Cadmium ICP	<4.1	ug/L		4.1	14	1/26/1999	DLB
SW-846-6010B	Total Chromium ICP	110000	ug/L		700	2330	1/26/1999	DLB
SW-846-6010B	Total Zinc ICP	28	ug/L		4.8	16	1/26/1999	DLB

JAN 29 RECD

Robert E. Lee & Associates, Inc.
Wisconsin Certification Number: 405043870
Certificate of Analysis Report

De Pere Wastewater Treatment Plant
315 Leonard Street

De Pere WI 54115
Project Number: NONE
Project Name: BETTER BRITE

Attn.: Al Kardoskee
Phone: (920)339-4094
Fax: (920)339-4048
Client ID: 000404
Chain: 41010
Report Date: 2/08/1999

Method	Parameter Name	Result	Units	Flag	MDL	PQL	Anls Date	Analyst
Lab No:	Collect Date	Sample ID						
99REL001190	**1/28/1999**	**BETTER BRITE TREATED**						
SW-846-9012A	Cyanide-Total	0.003	mg/L	13	0.0010	0.0033	2/05/1999	CLW
	Metal Preparation	Complete					2/01/1999	DLB
SW-846-6010B	Total Cadmium ICP	<4.1	ug/L		4.1	14	2/01/1999	DLB
SW-846-6010B	Total Chromium ICP	2690	ug/L		7.0	23	2/01/1999	DLB
SW-846-6010B	Total Zinc ICP	11	ug/L	13	4.8	16	2/01/1999	DLB

FEB 10 RECD

Robert E. Lee & Associates, Inc.

Quality Control Report - Description of Flags

Flag	Section	Description
13	L	The reported result is less than the practical quantitation limit (PQL).

CITY OF DE PERE

Wastewater Treatment Facility
315 Leonard Street
De Pere, WI 54115
920/339-4094
Fax No: 920/339-4048
e-mail: depere@netnet.net

August 19, 1998

Keld Lauridsen
Wisconsin Department of Natural Resources
Lake Michigan District Headquarters
P.O. Box 10448
Green Bay, WI 54307-0448

Dear Mr. Lauridsen:

Enclosed, please find reports of lab results for the most recent sampling at the Better Brite facility.

Untreated samples were collected on 7/31/98, while the treated samples were taken on 8/12/98. Please note that results for total zinc and total cyanide in the Better Brite Treated samples were below the practical quantitation limit.

If you need any additional information, please contact me.

Sincerely,

Albert R. Kardoskee, Jr.
Quality Control Supervisor/Chemist

Dept. of Natural Resources\Lauridsen\98-08-19.DOC

ROBERT E. LEE & ASSOCIATES, INC.
Wisconsin Certification NO: 405043870

- CERTIFICATE OF ANALYSIS -

De Pere Wastewater Treatment Plant
315 Leonard Street
De Pere WI 54115

Attn: Al Kardoskee
Phone: 920-339-4094
Fax: 920-339-4048

Customer Number: 000404
Project Number: NONE
Project Name : BETTER BRITE
Chain Number : 58105
Report Date : 08/11/1998

SAMPLE_ID / PARAM NAME	LAB# / RESULT	COLLECT DATE / UNITS	MDL	MATRIX / METHOD	ANALYST	ANALYZED DATE
LANDE GROUNDWATER	98REL013553	07/31/1998		GW		
METAL PREPARATION				SW846-3010	DLB	08/06/1998
TOTAL CADMIUM ICP	<4.1	UG/L	4.1	SW846-6010A	DLB	08/07/1998
TOTAL CHROMIUM ICP	128000	UG/L	700	SW846-6010A	DLB	08/10/1998
TOTAL ZINC ICP	22	UG/L	4.8	SW846-6010A	DLB	08/07/1998
SIXTH GROUNDWATER	98REL013554	07/31/1998		GW		
METAL PREPARATION				SW846-3010	DLB	08/06/1998
TOTAL CADMIUM ICP	<4.1	UG/L	4.1	SW846-6010A	DLB	08/07/1998
TOTAL CHROMIUM ICP	81500	UG/L	700	SW846-6010A	DLB	08/10/1998
TOTAL ZINC ICP	110	UG/L	4.8	SW846-6010A	DLB	08/07/1998
CYANIDE-TOTAL	0.94	MG/L	0.002	SW846-9012	CLW	08/07/1998
BETTER BRITE UNTREATED	98REL013555	07/31/1998		GW		
METAL PREPARATION				SW846-3010	DLB	08/06/1998
TOTAL CADMIUM ICP	<4.1	UG/L	4.1	SW846-6010A	DLB	08/07/1998
TOTAL CHROMIUM ICP	74200	UG/L	700	SW846-6010A	DLB	08/10/1998
TOTAL ZINC ICP	20	UG/L	4.8	SW846-6010A	DLB	08/07/1998
CYANIDE-TOTAL	0.78	MG/L	0.002	SW846-9012	CLW	08/07/1998

LANDA GW:
COLLECTED FROM DISCHARGE FROM INSIDE "SUMP" AT CHROMA SHOP.
SIXTH GW:
COLLECTED FROM VAC TRUCK LOADING INTO HOLDING TANKS AT CHROMA SHOP.
UNTREATED:
COLLECTED OUT OF TREATMENT TANK AFTER BRINGING A LOAD IN FROM SIXTH ST.
TREATED:
DISCHARGE TO SANITARY.

AUG 12 RECD

ROBERT E. LEE & ASSOCIATES, INC.
Wisconsin Certification NO: 405043870

- CERTIFICATE OF ANALYSIS -

De Pere Wastewater Treatment Plant
315 Leonard Street
De Pere WI 54115

Attn: Al Kardoskee
Phone: 920-339-4094
Fax: 920-339-4048

Customer Number: 000404

Lab Number: 98REL014190
Sample ID : BETTER BRITE TREATED
Matrix : WW

Chain Number: 58106
Report Date : 08/17/1998
Sample Date : 08/13/1998

METHOD	PARAMETER NAME	RESULT	UNITS	MDL	DATE	BY
EPA-200.7	METAL PREPARATION (TOTAL)				08/13/1998	DLB
EPA-200.7	TOTAL CADMIUM ICP	<4.1	UG/L	4.1	08/14/1998	DLB
EPA-200.7	TOTAL CHROMIUM ICP	934	UG/L	7	08/14/1998	DLB
EPA-200.7	TOTAL ZINC ICP	13(13)	UG/L	4.8	08/14/1998	DLB
EPA-335.4	CYANIDE-TOTAL	0.001(13)	MG/L	0.001	08/14/1998	CLW

ROBERT E LEE & ASSOCIATES, INC.

Laboratory Services

Figures in parentheses after the analytical result indicate that a quality control violation has occurred or a special comment is needed. Please see the key below to determine the proper qualifier.

1. The result reported was included in an analytical batch in which the duplicate analysis failed the acceptable quality control limits.

2. The result reported was included in an analytical batch in which the spike analysis failed the acceptable quality control limits.

3. The result reported was included in an analytical batch in which the check standard failed the acceptable quality control limits.

4. The reported duplicate value for this sample failed the acceptable quality control limits for duplicate analysis.

5. The reported spike recovery for this sample failed the acceptable quality control limits for spike analysis.

6. The result reported was influenced by a sample interference in the analytical method.

7. Sample analyzed after holding time had expired.

8. The 5-day BOD result is reported as an "estimate" since the dilution was inadequate.

9. Sample received after holding time had expired.

10. The reported result is preliminary.

11. See the sample comments section of the report.

12. The result for this sample may be compromised due to the amount of time that passed between sample collection and sample analysis. It is recommended that no more than 24 hours pass between sample collection and sample analysis.

13. The reported result is less than the practical quantitation limit (PQL).

CITY OF DE PERE

Wastewater Treatment Facility
315 Leonard Street
De Pere, WI 54115
920/339-4094
Fax No: 920/339-4048
e-mail: depere@netnet.net

October 15, 1998

Keld Lauridsen
Wisconsin Department of Natural Resources
Lake Michigan District Headquarters
P.O. Box 10448
Green Bay, WI 54307-0448

Dear Mr. Lauridsen:

Enclosed, please find reports of lab results for the most recent sampling at the Better Brite facility.

Untreated samples were collected on 10/7/98, while the treated samples were taken on 10/8/98. Please note that the result for total zinc in the Better Brite Treated sample was below the practical quantitation limit.

If you need any additional information, please contact me.

Sincerely,

Albert R. Kardoskee, Jr.
Quality Control Supervisor/Chemist

Dept. of Natural Resources\Lauridsen\98-10-15.00C

Robert E. Lee & Associates, Inc.
Wisconsin Certification Number: 405043870
Certificate of Analysis Report

De Pere Wastewater Treatment Plant
315 Leonard Street

De Pere WI 54115
Project Number: NONE
Project Name: BETTER BRITE

Attn.: Al Kardoskee
Phone: (920)339-4094
Fax: (920)339-4048
Client ID: 000404
Chain: 41000
Report Date: 10/13/1998

Method	Parameter Name	Result	Units	Flag	MDL	PQL	Anls Date	Analyst
Lab No	**Collect Date**	**Sample ID**						
98REL018655	**10/07/1998**	**LANDE GROUNDWATER**						
SW-846-6010B	Total Zinc ICP	132	ug/L		4.8	16	10/12/1998	DLB
SW-846-6010B	Total Chromium ICP	296000	ug/L		700	2330	10/12/1998	DLB
SW-846-6010B	Total Cadmium ICP	<4.1	ug/L		4.1	14	10/12/1998	DLB
	Metal Preparation						10/12/1998	DLB
98REL018656	**10/07/1998**	**SIXTH GROUNDWATER**						
SW-846-9012A	Cyanide-Total	0.43	mg/L		0.0010	0.0033	10/09/1998	CLW
SW-846-6010B	Total Zinc ICP	11	ug/L	13	4.8	16	10/12/1998	DLB
SW-846-6010B	Total Chromium ICP	66700	ug/L		70	233	10/12/1998	DLB
SW-846-6010B	Total Cadmium ICP	<4.1	ug/L		4.1	14	10/12/1998	DLB
	Metal Preparation						10/12/1998	DLB
98REL018657	**10/07/1998**	**BETTER BRITE UNTREATED**						
SW-846-9012A	Cyanide-Total	0.32	mg/L		0.0010	0.0033	10/09/1998	CLW
SW-846-6010B	Total Zinc ICP	22	ug/L		4.8	16	10/12/1998	DLB
SW-846-6010B	Total Chromium ICP	72500	ug/L		70	233	10/12/1998	DLB
SW-846-6010B	Total Cadmium ICP	<4.1	ug/L		4.1	14	10/12/1998	DLB
	Metal Preparation						10/12/1998	DLB
98REL018658	**10/08/1998**	**BETTER BRITE TREATED**						
	Metal Preparation						10/12/1998	DLB
SW-846-6010B	Total Cadmium ICP	<4.1	ug/L		4.1	14	10/12/1998	DLB
SW-846-6010B	Total Chromium ICP	1240	ug/L		7.0	23	10/12/1998	DLB
SW-846-6010B	Total Zinc ICP	5.2	ug/L	13	4.8	16	10/12/1998	DLB
SW-846-9012A	Cyanide-Total	0.10	mg/L		0.0010	0.0033	10/09/1998	CLW

OCT 15 RECD

Robert E. Lee & Associates, Inc.

Quality Control Report - Description of Flags

Flag	Section	Description
13	L	The reported result is less than the practical quantitation limit (PQL).

City of De Pere

WASTEWATER TREATMENT PLANT

315 Leonard St. • De Pere, Wisconsin 54115-2324 • Phone: (414) 339-4094 • FAX# 339-4048

February 28, 1998

Keld Lauridsen
Wisconsin Department of Natural Resources
Lake Michigan District Headquarters
P.O. Box 10448
Green Bay, WI 54307-0448

Dear Mr. Lauridsen:

I have been informed that you are our new contact for the Better Brite groundwater treatment program. Greetings! Enclosed, please find reports of lab results for the most recent sampling at that facility.

All samples were collected on 4/6/98. To summarize the sample naming system: groundwater samples collected at the Lande St. and Sixth St. sites are labeled as "Sixth Groundwater" and "Lande Groundwater". The mixed groundwater ready for treatment is labeled "Better Brite Untreated", while the treated water as discharged to the sanitary sewer is labeled "Better Brite Treated". Please note that results for total cadmium in the Lande Groundwater sample and for total zinc in the Better Brite Treated sample were below the practical quantitation limit. I have attached a copy of the qualification key to the analytical reports.

If you need any additional information, please contact me.

Sincerely,

Albert R. Kardoskee, Jr.
Quality Control Supervisor/Chemist

Dept. of Natural Resources\Lauridsen\98-04-24.DOC

ROBERT E. LEE & ASSOCIATES, INC.
Wisconsin Certification NO: 405043870

- CERTIFICATE OF ANALYSIS -

De Pere Wastewater Treatment Plant
315 Leonard Street
De Pere WI 54115

Attn: Al Kardoskee
Phone: 920-339-4094
Fax: 920-339-4048

Customer Number: 000404
Project Number: NONE
Chain Number : 40990
Project Name : BETTER BRITE
Report Date : 04/21/1998

SAMPLE_ID / PARAM NAME	LAB# / RESULT	COLLECT DATE / UNITS	MDL	MATRIX / METHOD	ANALYST	ANALYZED DATE
LANDE GROUNDWATER	98REL005098	04/06/1998		WW		
METAL PREPARATION (TOTAL)				EPA-200.7	DLB	04/13/1998
TOTAL CADMIUM ICP	4.2(13)	UG/L	4.1	EPA-200.7	DLB	04/15/1998
TOTAL CHROMIUM ICP	338000	UG/L	3500	EPA-200.7	DLB	04/17/1998
TOTAL ZINC ICP	32	UG/L	4.8	EPA-200.7	DLB	04/15/1998
SIXTH GROUNDWATER	98REL005099	04/06/1998		WW		
METAL PREPARATION (TOTAL)				EPA-200.7	DLB	04/13/1998
TOTAL CADMIUM ICP	<4.1	UG/L	4.1	EPA-200.7	DLB	04/15/1998
TOTAL CHROMIUM ICP	53500	UG/L	3500	EPA-200.7	DLB	04/17/1998
TOTAL ZINC ICP	18	UG/L	4.8	EPA-200.7	DLB	04/15/1998
CYANIDE-TOTAL	1.4	MG/L	0.005	EPA-335.4	CLW	04/20/1998
BETTER BRITE UNTREATED	98REL005100	04/06/1998		WW		
METAL PREPARATION (TOTAL)				EPA-200.7	DLB	04/13/1998
TOTAL CADMIUM ICP	<4.1	UG/L	4.1	EPA-200.7	DLB	04/15/1998
TOTAL CHROMIUM ICP	65000	UG/L	3500	EPA-200.7	DLB	04/17/1998
TOTAL ZINC ICP	22	UG/L	4.8	EPA-200.7	DLB	04/15/1998
CYANIDE-TOTAL	0.77	MG/L	0.002	EPA-335.4	CLW	04/20/1998

ROBERT E. LEE & ASSOCIATES, INC.
Wisconsin Certification NO: 405043870

- CERTIFICATE OF ANALYSIS -

De Pere Wastewater Treatment Plant
315 Leonard Street
De Pere WI 54115

Attn: Al Kardoskee
Phone: 920-339-4094
Fax: 920-339-4048

Customer Number: 000404

Lab Number: 98REL005097
Sample ID : BETTER BRITE TREATED
Matrix : WW

Chain Number: 40991
Report Date : 04/21/1998
Sample Date : 04/06/1998

METHOD	PARAMETER NAME	RESULT	UNITS	MDL	DATE	BY
EPA-200.7	METAL PREPARATION (TOTAL)				04/13/1998	DLB
EPA-200.7	TOTAL CADMIUM ICP	<4.1	UG/L	4.1	04/15/1998	DLB
EPA-200.7	TOTAL CHROMIUM ICP	1420	UG/L	35	04/17/1998	DLB
EPA-200.7	TOTAL ZINC ICP	13(13)	UG/L	4.8	04/15/1998	DLB
EPA-335.4	CYANIDE-TOTAL	0.07	MG/L	0.001	04/13/1998	CLW

ROBERT E LEE & ASSOCIATES, INC.

Laboratory Services

Figures in parentheses after the analytical result indicate that a quality control violation has occurred or a special comment is needed. Please see the key below to determine the proper qualifier.

1. The result reported was included in an analytical batch in which the duplicate analysis failed the acceptable quality control limits.

2. The result reported was included in an analytical batch in which the spike analysis failed the acceptable quality control limits.

3. The result reported was included in an analytical batch in which the check standard failed the acceptable quality control limits.

4. The reported duplicate value for this sample failed the acceptable quality control limits for duplicate analysis.

5. The reported spike recovery for this sample failed the acceptable quality control limits for spike analysis.

6. The result reported was influenced by a sample interference in the analytical method.

7. Sample analyzed after holding time had expired.

8. The 5-day BOD result is reported as an "estimate" since the dilution was inadequate.

9. Sample received after holding time had expired.

10. The reported result is preliminary.

11. See the sample comments section of the report.

12. The result for this sample may be compromised due to the amount of time that passed between sample collection and sample analysis. It is recommended that no more than 24 hours pass between sample collection and sample analysis.

13. The reported result is less than the practical quantitation limit (PQL).

City of De Pere
WASTEWATER TREATMENT PLANT
315 Leonard St. • De Pere, Wisconsin 54115-2324 • Phone: (414) 339-4094 • FAX# 339-4048

February 12, 1998

Kristin Nell
Wisconsin Department of Natural Resources
Lake Michigan District Headquarters
P.O. Box 10448
Green Bay, WI 54307-0448

Dear Kristin:

Enclosed, please find reports containing the lab results for the most recent sampling at the Better Brite groundwater treatment facility. All of the samples were collected on 2/3/98. Please note that the result for total cyanide in the Better Brite treated sample was reported with a QC violation qualification for a spike recovery on that sample. I have attached a copy of the qualification key to that analytical report.

If you need any additional information, please contact me.

Sincerely,

Albert R. Kardoskee, Jr.
Quality Control Supervisor/Chemist

Dept. of Natural Resources\Nell\98-02-12.DOC

ROBERT E. LEE & ASSOCIATES, INC.
Wisconsin Certification NO: 405043870

- CERTIFICATE OF ANALYSIS -

De Pere Wastewater Treatment Plant
315 Leonard Street
De Pere WI 54115

Attn: Al Kardoskee
Phone: 414-339-4094
Fax: 414-339-4048

Customer Number: 000404
Project Number: NONE
Project Name : BETTER BRITE
Chain Number : 40984
Report Date : 02/09/1998

SAMPLE_ID / PARAM NAME	LAB# / RESULT	COLLECT DATE / UNITS	MDL	MATRIX / METHOD	ANALYST	ANALYZED DATE
LANDE GROUNDWATER	98REL001548	02/03/1998		GW		
METAL PREPARATION				SW846-3010	GLB	02/05/1998
TOTAL CADMIUM ICP	<2.5	UG/L	2.5	SW846-6010A	DLB	02/05/1998
TOTAL CHROMIUM ICP	251000	UG/L	700	SW846-6010A	DLB	02/06/1998
TOTAL ZINC ICP	72	UG/L	4.8	SW846-6010A	DLB	02/05/1998
SIXTH GROUNDWATER	98REL001549	02/03/1998		GW		
METAL PREPARATION				SW846-3010	GLB	02/05/1998
TOTAL CADMIUM ICP	<2.5	UG/L	2.5	SW846-6010A	DLB	02/05/1998
TOTAL CHROMIUM ICP	93500	UG/L	700	SW846-6010A	DLB	02/06/1998
TOTAL ZINC ICP	33	UG/L	4.8	SW846-6010A	DLB	02/05/1998
CYANIDE-TOTAL	0.450	MG/L	0.001	SW846-9012	CLW	02/06/1998
BETTER BRITE UNTREATED	98REL001550	02/03/1998		GW		
METAL PREPARATION				SW846-3010	GLB	02/05/1998
TOTAL CADMIUM ICP	<2.5	UG/L	2.5	SW846-6010A	DLB	02/05/1998
TOTAL CHROMIUM ICP	132000	UG/L	700	SW846-6010A	DLB	02/06/1998
TOTAL ZINC ICP	26	UG/L	4.8	SW846-6010A	DLB	02/05/1998
CYANIDE-TOTAL	0.124	MG/L	0.001	SW846-9012	CLW	02/06/1998

ROBERT E. LEE & ASSOCIATES, INC.
Wisconsin Certification NO: 405043870

- CERTIFICATE OF ANALYSIS -

De Pere Wastewater Treatment Plant
315 Leonard Street
De Pere WI 54115

Attn: Al Kardoskee
Phone: 414-339-4094
Fax: 414-339-4048

Customer Number: 000404

Lab Number: 98REL001545
Sample ID : BETTER BRITE TREATED
Matrix : WW

Chain Number: 40985
Report Date : 02/10/1998
Sample Date : 02/03/1998

METHOD	PARAMETER NAME	RESULT	UNITS	MDL	DATE	BY
EPA-200.7	METAL PREPARATION (TOTAL)				02/05/1998	GLB
EPA-200.7	TOTAL CADMIUM ICP	<2.5	UG/L	2.5	02/05/1998	DLB
EPA-200.7	TOTAL CHROMIUM ICP	1210	UG/L	7	02/06/1998	DLB
EPA-200.7	TOTAL ZINC ICP	21	UG/L	4.8	02/05/1998	DLB
EPA-335.4	CYANIDE-TOTAL	<0.001(5)	MG/L	0.001	02/06/1998	CLW

ROBERT E LEE & ASSOCIATES, INC.

Laboratory Services

Figures in parentheses after the analytical result indicate that a quality control violation has occurred or a special comment is needed. Please see the key below to determine the proper qualifier.

1. The result reported was included in an analytical batch in which the duplicate analysis failed the acceptable quality control limits.

2. The result reported was included in an analytical batch in which the spike analysis failed the acceptable quality control limits.

3. The result reported was included in an analytical batch in which the check standard failed the acceptable quality control limits.

4. The reported duplicate value for this sample failed the acceptable quality control limits for duplicate analysis.

5. The reported spike recovery for this sample failed the acceptable quality control limits for spike analysis.

6. The result reported was influenced by a sample interference in the analytical method.

7. Sample analyzed after holding time had expired.

8. The 5-day BOD result is reported as an "estimate" since the dilution was inadequate.

9. Sample received after holding time had expired.

10. The reported result is preliminary.

11. See the sample comments section of the report.

12. The result for this sample may be compromised due to the amount of time that passed between sample collection and sample analysis. It is recommended that no more than 24 hours pass between sample collection and sample analysis.

13. The reported result is less than the practical quantitation limit (PQL).

City of De Pere

WASTEWATER TREATMENT PLANT

315 Leonard St. • De Pere, Wisconsin 54115-2324 • Phone: (414) 339-4094 • FAX# 339-4048

October 29, 1997

Kristin Nell
Wisconsin Department of Natural Resources
Lake Michigan District Headquarters
P.O. Box 10448
Green Bay, WI 54307-0448

Dear Kristin:

Enclosed, please find reports which contain the lab results for the most recent sampling at the Better Brite groundwater treatment facility. All of the samples were collected on 10/15/97.

If you need any additional information, please contact me.

Sincerely,

Al Kardoskee

Albert R. Kardoskee, Jr.
Quality Control Supervisor/Chemist

\NELL\97-10-29.WRI

ROBERT E. LEE & ASSOCIATES, INC.
Wisconsin Certification NO: 405043870

- CERTIFICATE OF ANALYSIS -

De Pere Wastewater Treatment Plant
315 Leonard Street
De Pere WI 54115

Attn: Al Kardoskee
Phone: 414-339-4094
Fax: 414-339-4048

Customer Number: 000404
Chain Number : 40972
Report Date : 10/23/1997

Project Number: NONE
Project Name : BETTER BRITE

SAMPLE_ID / PARAM NAME	LAB# / RESULT	COLLECT DATE / UNITS	MDL	MATRIX / METHOD	ANALYST	ANALYZED DATE
LANDE GROUNDWATER	97REL017197	10/15/1997		GW		
METAL PREPARATION	COMPLETE			SW846-3010	DLB	10/20/1997
TOTAL ZINC ICP	41	UG/L	4.8	SW846-6010A	DLB	10/21/1997
TOTAL CADMIUM ICP	<2.5	UG/L	2.5	SW846-6010A	DLB	10/20/1997
TOTAL CHROMIUM ICP	359000	UG/L	700	SW846-6010A	DLB	10/21/1997
SIXTH GROUNDWATER	97REL017198	10/15/1997		GW		
METAL PREPARATION				SW846-3010	DLB	10/20/1997
TOTAL ZINC ICP	77	UG/L	4.8	SW846-6010A	DLB	10/21/1997
TOTAL CADMIUM ICP	<2.5	UG/L	2.5	SW846-6010A	DLB	10/20/1997
TOTAL CHROMIUM ICP	74600	UG/L	70	SW846-6010A	DLB	10/21/1997
CYANIDE-TOTAL	0.766	MG/L	0.002	SW846-9012	CLW	10/17/1997
BETTER BRITE UNTREATED	97REL017199	10/15/1997		GW		
METAL PREPARATION				SW846-3010	DLB	10/20/1997
TOTAL ZINC ICP	19	UG/L	4.8	SW846-6010A	DLB	10/21/1997
TOTAL CADMIUM ICP	<2.5	UG/L	2.5	SW846-6010A	DLB	10/20/1997
TOTAL CHROMIUM ICP	103000	UG/L	700	SW846-6010A	DLB	10/21/1997
CYANIDE-TOTAL	0.304	MG/L	0.001	SW846-9012	CLW	10/17/1997

ROBERT E. LEE & ASSOCIATES, INC.
Wisconsin Certification NO: 405043870

- CERTIFICATE OF ANALYSIS -

De Pere Wastewater Treatment Plant
315 Leonard Street
De Pere WI 54115

Attn: Al Kardoskee
Phone: 414-339-4094
Fax: 414-339-4048

Customer Number: 000404

Lab Number: 97REL017200
Sample ID : BETTER BRITE TREATED
Matrix : WW

Chain Number: 40973
Report Date : 10/23/1997
Sample Date : 10/15/1997

METHOD	PARAMETER NAME	RESULT	UNITS	MDL	DATE	BY
EPA-200.7	METAL PREPARATION (TOTAL)				10/20/1997	DLB
EPA-200.7	TOTAL ZINC ICP	22	UG/L	4.8	10/21/1997	DLB
EPA-335.4	CYANIDE-TOTAL	0.014	MG/L	0.001	10/17/1997	CLW
EPA-200.7	TOTAL CADMIUM ICP	<2.5	UG/L	2.5	10/20/1997	DLB
EPA-200.7	TOTAL CHROMIUM ICP	832	UG/L	7	10/21/1997	DLB

City of De Pere

WASTEWATER TREATMENT PLANT

315 Leonard St. • De Pere, Wisconsin 54115-2324 • Phone: (414) 339-4094 • FAX# 339-4048

August 26, 1997

Kristin Nell
Wisconsin Department of Natural Resources
Lake Michigan District Headquarters
P.O. Box 10448
Green Bay, WI 54307-0448

Dear Kristin:

Enclosed, please find reports detailing the results of the most recent sampling at the Better Brite groundwater treatment facility. All of the samples were collected on 8/13/97.

If you need any additional information, please contact me.

Sincerely,

Albert R. Kardoskee, Jr.
Quality Control Supervisor/Chemist

\WELL\97-08-26.WRI

ROBERT E. LEE & ASSOCIATES, INC.
Wisconsin Certification NO: 405043870

- CERTIFICATE OF ANALYSIS -

De Pere Wastewater Treatment Plant
315 Leonard Street
De Pere WI 54115

Attn: Al Kardoskee
Phone: 414-339-4094
Fax: 414-339-4048

Customer Number: 000404
Chain Number : 40967
Report Date : 08/22/1997

Project Number: NONE
Project Name : BETTER BRITE

SAMPLE_ID / PARAM NAME	LAB# / RESULT	COLLECT DATE / UNITS	MDL	MATRIX / METHOD	ANALYST	ANALYZED DATE
LANDE GROUNDWATER	97REL012765	08/13/1997		WW		
METAL PREPARATION (TOTAL)				EPA-200.7	ADT	08/18/1997
TOTAL CADMIUM ICP	2.8(13)	UG/L	2.5	EPA-200.7	DLB	08/20/1997
TOTAL CHROMIUM ICP	364000	UG/L	350	EPA-200.7	DLB	08/19/1997
TOTAL ZINC ICP	96	UG/L	24	EPA-200.7	DLB	08/19/1997
SIXTH GROUNDWATER	97REL012766	08/13/1997		WW		
METAL PREPARATION (TOTAL)				EPA-200.7	ADT	08/18/1997
TOTAL CADMIUM ICP	<2.5	UG/L	2.5	EPA-200.7	DLB	08/20/1997
TOTAL CHROMIUM ICP	74500	UG/L	350	EPA-200.7	DLB	08/19/1997
TOTAL ZINC ICP	166	UG/L	24	EPA-200.7	DLB	08/19/1997
CYANIDE-TOTAL	0.705	MG/L	0.002	EPA-335.4	CLW	08/15/1997
BETTER BRITE UNTREATED	97REL012767	08/13/1997		WW		
METAL PREPARATION (TOTAL)				EPA-200.7	ADT	08/18/1997
TOTAL CADMIUM ICP	2.9(13)	UG/L	2.5	EPA-200.7	DLB	08/20/1997
TOTAL CHROMIUM ICP	110000	UG/L	350	EPA-200.7	DLB	08/19/1997
TOTAL ZINC ICP	111	UG/L	24	EPA-200.7	DLB	08/19/1997
CYANIDE-TOTAL	0.385	MG/L	0.001	EPA-335.4	CLW	08/15/1997

ROBERT E. LEE & ASSOCIATES, INC.
Wisconsin Certification NO: 405043870

- CERTIFICATE OF ANALYSIS -

De Pere Wastewater Treatment Plant
315 Leonard Street
De Pere WI 54115

Attn: Al Kardoskee
Phone: 414-339-4094
Fax: 414-339-4048

Customer Number: 000404

Lab Number: 97REL012764
Sample ID : BETTER BRITE TREATED
Matrix : WW

Chain Number: 40968
Report Date : 08/22/1997
Sample Date : 08/13/1997

METHOD	PARAMETER NAME	RESULT	UNITS	MDL	DATE	BY
EPA-200.7	METAL PREPARATION (TOTAL)				08/18/1997	ADT
EPA-200.7	TOTAL CADMIUM ICP	<2.5	UG/L	2.5	08/20/1997	DLB
EPA-200.7	TOTAL CHROMIUM ICP	2590	UG/L	35	08/19/1997	DLB
EPA-200.7	TOTAL ZINC ICP	43(13)	UG/L	24	08/19/1997	DLB
EPA-335.4	CYANIDE-TOTAL	0.036	MG/L	0.001	08/15/1997	CLW

ROBERT E LEE & ASSOCIATES, INC.

Laboratory Services

Figures in parentheses after the analytical result indicate that a quality control violation has occurred or a special comment is needed. Please see the key below to determine the proper qualifier.

1. The result reported was included in an analytical batch in which the duplicate analysis failed the acceptable quality control limits.

2. The result reported was included in an analytical batch in which the spike analysis failed the acceptable quality control limits.

3. The result reported was included in an analytical batch in which the check standard failed the acceptable quality control limits.

4. The reported duplicate value for this sample failed the acceptable quality control limits for duplicate analysis.

5. The reported spike recovery for this sample failed the acceptable quality control limits for spike analysis.

6. The result reported was influenced by a sample interference in the analytical method.

7. Sample analyzed after holding time had expired.

8. The 5-day BOD result is reported as an "estimate" since the dilution was inadequate.

9. Sample received after holding time had expired.

10. The reported result is preliminary.

11. See the sample comments section of the report.

12. The result for this sample may be compromised due to the amount of time that passed between sample collection and sample analysis. It is recommended that no more than 24 hours pass between sample collection and sample analysis.

13. The reported result is less than the practical quantitation limit (PQL).

City of De Pere

WASTEWATER TREATMENT PLANT

315 Leonard St. • De Pere, Wisconsin 54115-2324 • Phone: (414) 339-4094 • FAX# 339-4048

April 17, 1997

Kristin Nell
Wisconsin Department of Natural Resources
Lake Michigan District Headquarters
P.O. Box 10448
Green Bay, WI 54307-0448

Dear Kristin:

Enclosed, please find reports detailing the results of the most recent sampling at the Better Brite groundwater treatment facility. The untreated samples were collected on 4/2/97, and the treated samples were collected on 4/3/97.

If you need any additional information, please contact me.

Sincerely,

Albert R. Kardoskee, Jr.
Quality Control Supervisor/Chemist

\NELL\97-04-17.WRI

ROBERT E. LEE & ASSOCIATES, INC.
Wisconsin Certification NO: 405043870

- CERTIFICATE OF ANALYSIS -

De Pere Wastewater Treatment Plant
315 Leonard Street
De Pere WI 54115

Attn: Al Kardoskee
Phone: 414-339-4094
Fax: 414-339-4048

Customer Number: 000404
Project Number: NONE
Project Name : BETTER BRITE
Chain Number : 40958
Report Date : 04/14/1997

SAMPLE_ID / PARAM NAME	LAB# / RESULT	COLLECT DATE / UNITS	MDL	MATRIX / METHOD	ANALYST	ANALYZED DATE
LANDE GROUNDWATER	97REL004610	04/02/1997		GW		
METAL PREPARATION				SW846-3010	ADT	04/07/1997
TOTAL ZINC ICP	15	UG/L	3.8	SW846-6010A	DLB	04/08/1997
TOTAL CADMIUM ICP	<2.5	UG/L	2.5	SW846-6010A	DLB	04/08/1997
TOTAL CHROMIUM ICP	207000	UG/L	650	SW846-6010A	DLB	04/08/1997
SIXTH GROUNDWATER	97REL004611	04/02/1997		GW		
METAL PREPARATION				SW846-3010	ADT	04/07/1997
TOTAL ZINC ICP	32	UG/L	3.8	SW846-6010A	DLB	04/08/1997
CYANIDE-TOTAL	1.7	MG/L	0.004	SW846-9012	CLW	04/11/1997
TOTAL CADMIUM ICP	<2.5	UG/L	2.5	SW846-6010A	DLB	04/08/1997
TOTAL CHROMIUM ICP	69900	UG/L	650	SW846-6010A	DLB	04/08/1997
BETTER BRITE UNTREATED	97REL004612	04/02/1997		GW		
METAL PREPARATION				SW846-3010	ADT	04/07/1997
TOTAL ZINC ICP	50	UG/L	3.8	SW846-6010A	DLB	04/08/1997
CYANIDE-TOTAL	0.914	MG/L	0.002	SW846-9012	CLW	04/11/1997
TOTAL CADMIUM ICP	<2.5	UG/L	2.5	SW846-6010A	DLB	04/08/1997
TOTAL CHROMIUM ICP	96400	UG/L	650	SW846-6010A	DLB	04/08/1997

ROBERT E. LEE & ASSOCIATES, INC.
Wisconsin Certification NO: 405043870

- CERTIFICATE OF ANALYSIS -

De Pere Wastewater Treatment Plant
315 Leonard Street
De Pere WI 54115

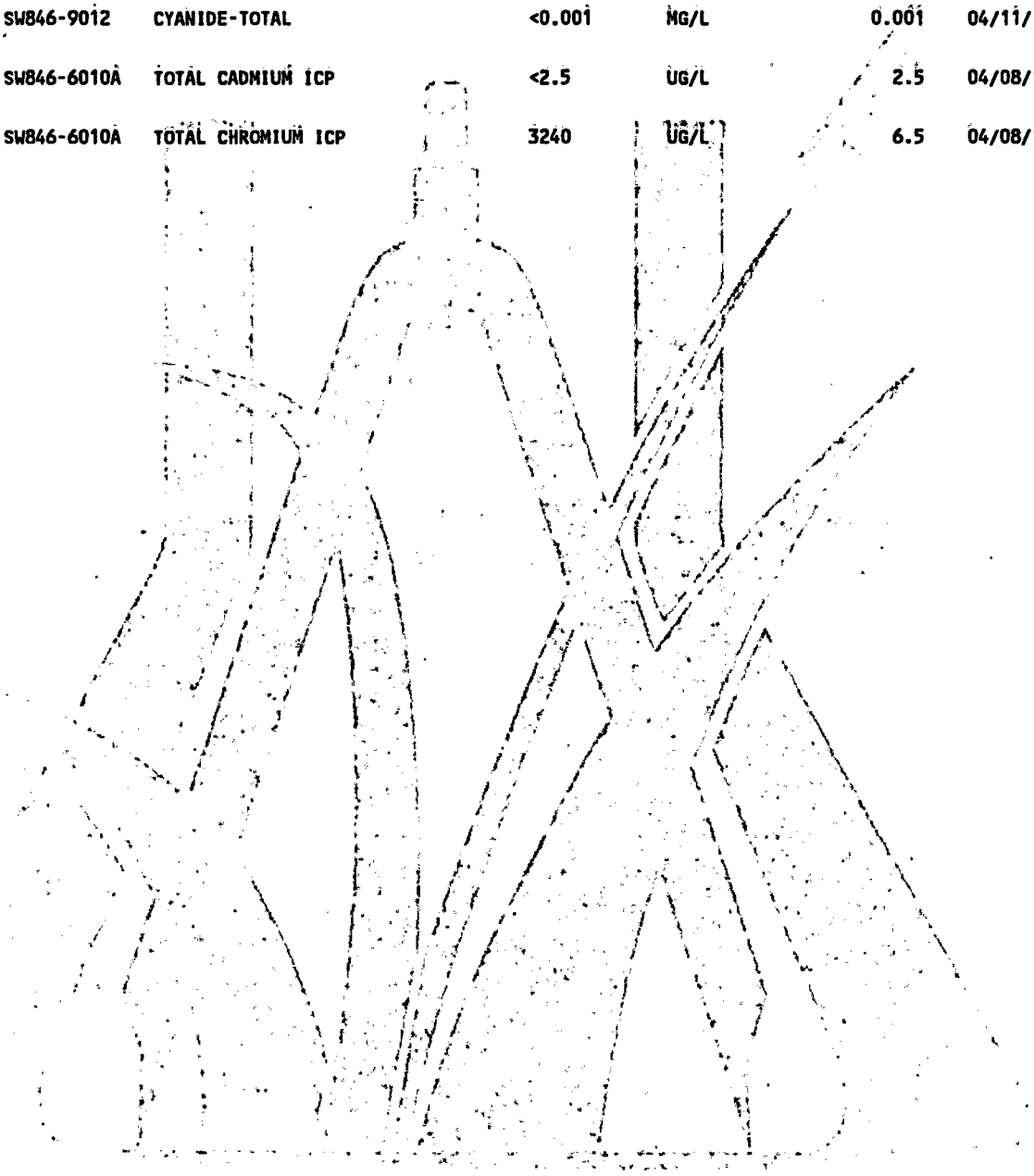
Attn: Al Kardoskee
Phone: 414-339-4094
Fax: 414-339-4048

Customer Number: 000404

Lab Number: 97REL004609
Sample ID : BETTER BRITE TREATED
Matrix : GW

Chain Number: 40959
Report Date : 04/14/1997
Sample Date : 04/03/1997

METHOD	PARAMETER NAME	RESULT	UNITS	MDL	DATE	BY
SW846-3010	METAL PREPARATION				04/07/1997	ADT
SW846-6010A	TOTAL ZINC ICP	13	UG/L	3.8	04/08/1997	DLB
SW846-9012	CYANIDE-TOTAL	<0.001	MG/L	0.001	04/11/1997	CLW
SW846-6010A	TOTAL CADMIUM ICP	<2.5	UG/L	2.5	04/08/1997	DLB
SW846-6010A	TOTAL CHROMIUM ICP	3240	UG/L	6.5	04/08/1997	DLB



City of De Pere

WASTEWATER TREATMENT PLANT

315 Leonard St. • De Pere, Wisconsin 54115-2324 • Phone: (414) 339-4094 • FAX# 339-4048

January 30, 1997

Kathy Erdmann
Wisconsin Department of Natural Resources
Lake Michigan District Headquarters
P.O. Box 10448
Green Bay, WI 54307-0448

Dear Kathy:

Enclosed, please find reports containing the results of the most recent sampling at the Better Brite groundwater treatment facility. The untreated samples were collected on 1/13/97, and the treated samples were collected on 1/14/97.

If you need any additional information, please contact me.

Sincerely,

Albert R. Kardoskee, Jr.
Quality Control Supervisor/Chemist

\ERDMANN\97-01-30.WRI

ROBERT E. LEE & ASSOCIATES, INC.
Wisconsin Certification NO: 405043870

- CERTIFICATE OF ANALYSIS -

De Pere Wastewater Treatment Plant
315 Leonard Street
De Pere WI 54115

Attn: Al Kardoskee
Phone: 414-339-4094
Fax: 414-339-4048

Customer Number: 000404
Project Number: NONE
Project Name : BETTER BRITE
Chain Number : 40951
Report Date : 01/28/1997

SAMPLE_ID / PARAM NAME	LAB# / RESULT	COLLECT DATE / UNITS	MDL	MATRIX / METHOD	ANALYST	ANALYZED DATE
LANDE GROUNDWATER	97REL000489	01/13/1997		GW		
TOTAL ZINC ICP	40	UG/L	3.8	SW846-6010A	DLB	01/16/1997
METAL PREPARATION				SW846-3010	ADT	01/15/1997
TOTAL CADMIUM ICP	<2.5	UG/L	2.5	SW846-6010A	DLB	01/15/1997
TOTAL CHROMIUM ICP	459000	UG/L	650	SW846-6010A	DLB	01/15/1997
SIXTH GROUNDWATER	97REL000490	01/13/1997		GW		
TOTAL ZINC ICP	28	UG/L	3.8	SW846-6010A	DLB	01/16/1997
CYANIDE-TOTAL	0.426	MG/L	0.002	SW846-9012	CLW	01/24/1997
METAL PREPARATION				SW846-3010	ADT	01/15/1997
TOTAL CADMIUM ICP	<2.5	UG/L	2.5	SW846-6010A	DLB	01/15/1997
TOTAL CHROMIUM ICP	103000	UG/L	650	SW846-6010A	DLB	01/15/1997
BETTER BRITE UNTREATED	97REL000491	01/13/1997		GW		
TOTAL ZINC ICP	73	UG/L	3.8	SW846-6010A	DLB	01/16/1997
CYANIDE-TOTAL	0.391	MG/L	0.001	SW846-9012	CLW	01/24/1997
METAL PREPARATION				SW846-3010	ADT	01/15/1997
TOTAL CADMIUM ICP	<2.5	UG/L	2.5	SW846-6010A	DLB	01/15/1997
TOTAL CHROMIUM ICP	147000	UG/L	650	SW846-6010A	DLB	01/15/1997

ROBERT E. LEE & ASSOCIATES, INC.
Wisconsin Certification NO: 405043870

- CERTIFICATE OF ANALYSIS -

De Pere Wastewater Treatment Plant
315 Leonard Street
De Pere WI 54115

Attn: Al Kardoskee
Phone: 414-339-4094
Fax: 414-339-4048

Customer Number: 000404

Lab Number: 97REL000488
Sample ID : BETTER BRITE TREATED
Matrix : GW

Chain Number: 40953
Report Date : 01/28/1997
Sample Date : 01/14/1997

METHOD	PARAMETER NAME	RESULT	UNITS	MDL	DATE	BY
SW846-9012	CYANIDE-TOTAL	0.070	MG/L	0.001	01/24/1997	CLW
SW846-3010	METAL PREPARATION				01/15/1997	ADT
SW846-6010A	TOTAL CADMIUM ICP	<2.5	UG/L	2.5	01/15/1997	DLB
SW846-6010A	TOTAL CHROMIUM ICP	1580	UG/L	6.5	01/15/1997	DLB
SW846-6010A	TOTAL ZINC ICP	11	UG/L	3.8	01/16/1997	DLB

City of De Pere

WASTEWATER TREATMENT PLANT

315 Leonard St. • De Pere, Wisconsin 54115-2324 • Phone: (414) 339-4094 • FAX# 339-4048

November 6, 1996

Kathy Erdmann
Wisconsin Department of Natural Resources
Lake Michigan District Headquarters
P.O. Box 10448
Green Bay, WI 54307-0448

Dear Kathy:

Enclosed, please find the laboratory results of the most recent sampling at the Better Brite groundwater treatment facility. The untreated samples were collected on 10/22/96, and the treated samples were collected on 10/23/96.

If you need any additional information, please contact me.

Sincerely,

Albert R. Kardoskee, Jr.
Quality Control Supervisor/Chemist

\ERDMANN\96-11-06.WRI

ROBERT E. LEE & ASSOCIATES, INC.
Wisconsin Certification NO: 405043870

- CERTIFICATE OF ANALYSIS -

De Pere Wastewater Treatment Plant
315 Leonard Street
De Pere WI 54115

Attn: Al Kardoskee
Phone: 414-339-4094
Fax: 414-339-4048

Customer Number: 000404
Project Number: NONE
Project Name : BETTER BRITE
Chain Number : 33936
Report Date : 11/01/1996

SAMPLE_ID / PARAM NAME	LAB# / RESULT	COLLECT DATE / UNITS	MDL	MATRIX / METHOD	ANALYST	ANALYZED DATE
LANDE GROUNDWATER	96REL020405	10/22/1996		WW		
METAL PREPARATION (TOTAL)				EPA-200.7	SMS	10/24/1996
TOTAL CADMIUM ICP	<2.5	UG/L	2.5	EPA-200.7	DLB	10/29/1996
TOTAL CHROMIUM ICP	692000	UG/L	650	EPA-200.7	DLB	10/29/1996
TOTAL ZINC ICP	11300	UG/L	380	EPA-200.7	DLB	10/29/1996
SIXTH GROUNDWATER	96REL020406	10/22/1996		WW		
METAL PREPARATION (TOTAL)				EPA-200.7	SMS	10/24/1996
TOTAL CADMIUM ICP	<2.5	UG/L	2.5	EPA-200.7	DLB	10/29/1996
TOTAL CHROMIUM ICP	77700	UG/L	650	EPA-200.7	DLB	10/29/1996
TOTAL ZINC ICP	54	UG/L	3.8	EPA-200.7	DLB	10/29/1996
CYANIDE-TOTAL	0.462	MG/L	0.001	EPA-335.4	CLW	10/25/1996
BETTER BRITE UNTREATED	96REL020407	10/22/1996		WW		
METAL PREPARATION (TOTAL)				EPA-200.7	SMS	10/24/1996
TOTAL CADMIUM ICP	<2.5	UG/L	2.5	EPA-200.7	DLB	10/29/1996
TOTAL CHROMIUM ICP	236000	UG/L	650	EPA-200.7	DLB	10/29/1996
TOTAL ZINC ICP	68	UG/L	3.8	EPA-200.7	DLB	10/29/1996
CYANIDE-TOTAL	0.205	MG/L	0.001	EPA-335.4	CLW	10/25/1996

ROBERT E. LEE & ASSOCIATES, INC.
Wisconsin Certification NO: 405043870

- CERTIFICATE OF ANALYSIS -

De Pere Wastewater Treatment Plant
315 Leonard Street
De Pere WI 54115

Attn: Al Kardoskee
Phone: 414-339-4094
Fax: 414-339-4048

Customer Number: 000404

Lab Number: 96REL020403
Sample ID : BETTER BRITE TREATED
Matrix : WW

Chain Number: 33675
Report Date : 11/01/1996
Sample Date : 10/23/1996

METHOD	PARAMETER NAME	RESULT	UNITS	MDL	DATE	BY
EPA-200.7	METAL PREPARATION (TOTAL)				10/24/1996	SMS
EPA-200.7	TOTAL CADMIUM ICP	<2.5	UG/L	2.5	10/29/1996	DLB
EPA-200.7	TOTAL CHROMIUM ICP	1670	UG/L	6.5	10/29/1996	DLB
EPA-200.7	TOTAL ZINC ICP	15	UG/L	3.8	10/29/1996	DLB
EPA-335.4	CYANIDE-TOTAL	0.008	MG/L	0.001	10/25/1996	CLW

City of De Pere

WASTEWATER TREATMENT PLANT

315 Leonard St. • De Pere, Wisconsin 54115-2324 • Phone: (414) 339-4094 • FAX# 339-4048

August 19, 1996

Kathy Erdmann
Wisconsin Department of Natural Resources
Lake Michigan District Headquarters
P.O. Box 10448
Green Bay, WI 54307-0448

Dear Kathy:

Enclosed, please find a copy of the laboratory report for the most recent sampling at the Better Brite groundwater treatment facility. The untreated samples were collected on 7/22/96, and the treated samples were collected on 7/23/96.

If you need any additional information, please contact me.

Sincerely,

Albert R. Kardoskee, Jr.
Quality Control Supervisor/Chemist

\ERDMANN\96-08-19.WRI

ROBERT E. LEE & ASSOCIATES, INC.
Wisconsin Certification NO: 405043870

- CERTIFICATE OF ANALYSIS -

De Pere Wastewater Treatment Plant
315 Leonard Street
De Pere WI 54115

Attn: Al Kardoskee
Phone: 414-339-4094
Fax: 414-339-4048

Customer Number: 000404
Project Number: NONE
Project Name : BETTER BRITE
Chain Number : 24236
Report Date : 08/06/1996

SAMPLE_ID / PARAM NAME	LAB# / RESULT	COLLECT DATE / UNITS	MDL	MATRIX / METHOD	ANALYST	ANALYZED DATE
LANDE GROUNDWATER	96REL013392	07/22/1996		WW		
TOTAL CADMIUM ICP	<2.5	UG/L	2.5	EPA-200.7	DLB	08/02/1996
TOTAL CHROMIUM ICP	444000	UG/L	650	EPA-200.7	DLB	08/01/1996
TOTAL ZINC ICP	630	UG/L	3.8	EPA-200.7	DLB	08/02/1996
METAL PREPARATION (TOTAL)				EPA-200.7	GLB	07/24/1996
SIXTH GROUNDWATER	96REL013393	07/22/1996		WW		
TOTAL CADMIUM ICP	3.5	UG/L	2.5	EPA-200.7	DLB	08/02/1996
TOTAL CHROMIUM ICP	60700	UG/L	65	EPA-200.7	DLB	08/01/1996
TOTAL ZINC ICP	157	UG/L	3.8	EPA-200.7	DLB	08/02/1996
METAL PREPARATION (TOTAL)				EPA-200.7	GLB	07/24/1996
CYANIDE-TOTAL	0.510	MG/L	0.002	EPA-335.3	DAW	07/26/1996
BETTER BRITE UNTREATED	96REL013394	07/22/1996		WW		
TOTAL CADMIUM ICP	<2.5	UG/L	2.5	EPA-200.7	DLB	08/02/1996
TOTAL CHROMIUM ICP	82300	UG/L	65	EPA-200.7	DLB	08/01/1996
TOTAL ZINC ICP	64	UG/L	3.8	EPA-200.7	DLB	08/02/1996
METAL PREPARATION (TOTAL)				EPA-200.7	GLB	07/24/1996
CYANIDE-TOTAL	0.476	MG/L	0.002	EPA-335.3	DAW	07/26/1996

ROBERT E. LEE & ASSOCIATES, INC.
Wisconsin Certification NO: 405043870

- CERTIFICATE OF ANALYSIS -

De Pere Wastewater Treatment Plant
315 Leonard Street
De Pere WI 54115

Attn: Al Kardoskee
Phone: 414-339-4094
Fax: 414-339-4048

Customer Number: 000404

Lab Number: 96REL013395
Sample ID : BETTER BRITE TREATED
Matrix : WW

Chain Number: 24237
Report Date : 08/06/1996
Sample Date : 07/23/1996

METHOD	PARAMETER NAME	RESULT	UNITS	MDL	DATE	BY
EPA-200.7	TOTAL CADMIUM ICP	<2.5	UG/L	2.5	08/02/1996	DLB
EPA-200.7	TOTAL CHROMIUM ICP	733	UG/L	65	08/01/1996	DLB
EPA-200.7	TOTAL ZINC ICP	12	UG/L	3.8	08/02/1996	DLB
EPA-200.7	METAL PREPARATION (TOTAL)				07/24/1996	GLB
EPA-335.3	CYANIDE-TOTAL	0.001	MG/L	0.001	07/26/1996	DAW

City of De Pere

WASTEWATER TREATMENT PLANT

315 Leonard St. • De Pere, Wisconsin 54115-2324 • Phone: (414) 339-4094 • FAX# 339-4048

February 5, 1996

Kathy Erdmann
Wisconsin Department of Natural Resources
Lake Michigan District Headquarters
P.O. Box 10448
Green Bay, WI 54307-0448

Dear Kathy:

Enclosed, please find copies of the laboratory results of the most recent sampling at the Better Brite groundwater treatment facility. The untreated samples were taken on 1/18/96, while the samples of the treated discharge were taken on 1/22/96.

If you need any additional information, please contact me.

Sincerely,

Albert R. Kardoskee, Jr.
Quality Control Supervisor/Chemist

\ERDMANN\96-02-05.WRI

ROBERT E. LEE & ASSOCIATES, INC.
Wisconsin Certification NO: 405043870

- CERTIFICATE OF ANALYSIS -

De Pere Wastewater Treatment Plant
315 Leonard Street
De Pere WI 54115

Attn: Al Kardoskee
Phone: 414-339-4094
Fax: 414-339-4048

Customer Number: 000404
Project Number: NONE
Project Name : BETTER BRITE
Chain Number : 24223
Report Date : 01/31/1996

SAMPLE_ID / PARAM NAME	LAB# / RESULT	COLLECT DATE / UNITS	MDL	MATRIX / METHOD	ANALYST	ANALYZED DATE
LANDE GROUNDWATER	96REL001004	01/18/1996		GW		
TOTAL CADMIUM ICP	<3	UG/L	3	EPA-200.7	DLB	01/29/1996
TOTAL CHROMIUM ICP	680000	UG/L	7	EPA-200.7	DLB	01/29/1996
TOTAL ZINC ICP	530	UG/L	3	EPA-200.7	DLB	01/29/1996
METAL PREPARATION (TOTAL)				EPA-200.7	DLB	01/24/1996
SIXTH GROUNDWATER	96REL001005	01/18/1996		GW		
TOTAL CADMIUM ICP	<3	UG/L	3	EPA-200.7	DLB	01/29/1996
TOTAL CHROMIUM ICP	76000	UG/L	7	EPA-200.7	DLB	01/29/1996
TOTAL ZINC ICP	25	UG/L	3	EPA-200.7	DLB	01/29/1996
METAL PREPARATION (TOTAL)				EPA-200.7	DLB	01/24/1996
CYANIDE-TOTAL	0.495	MG/L	0.001	EPA-335.3	DAW	01/25/1996
BETTER BRITE UNTREATED	96REL001006	01/18/1996		GW		
TOTAL CADMIUM ICP	<3	UG/L	3	EPA-200.7	DLB	01/29/1996
TOTAL CHROMIUM ICP	270000	UG/L	7	EPA-200.7	DLB	01/29/1996
TOTAL ZINC ICP	82	UG/L	3	EPA-200.7	DLB	01/29/1996
METAL PREPARATION (TOTAL)				EPA-200.7	DLB	01/24/1996
CYANIDE-TOTAL	0.478	MG/L	0.001	EPA-335.3	DAW	01/25/1996

ROBERT E. LEE & ASSOCIATES, INC.
Wisconsin Certification NO: 405043870

- CERTIFICATE OF ANALYSIS -

De Pere Wastewater Treatment Plant
315 Leonard Street
De Pere WI 54115

Attn: Al Kardoskee
Phone: 414-339-4094
Fax: 414-339-4048

Customer Number: 000404

Lab Number: 96REL001002
Sample ID : BETTER BRITE TREATED
Matrix : GW

Chain Number: 24224
Report Date : 01/31/1996
Sample Date : 01/22/1996

METHOD	PARAMETER NAME	RESULT	UNITS	MDL	DATE	BY
EPA-335.3	CYANIDE-TOTAL	0.198	MG/L	0.001	01/25/1996	DAW
EPA-200.7	TOTAL ZINC ICP	19	UG/L	3	01/29/1996	DLB
EPA-200.7	METAL PREPARATION (TOTAL)				01/24/1996	DLB
EPA-200.7	TOTAL CADMIUM ICP	<3	UG/L	3	01/29/1996	DLB
EPA-200.7	TOTAL CHROMIUM ICP	2300	UG/L	7	01/29/1996	DLB

City of De Pere

WASTEWATER TREATMENT PLANT

315 Leonard St. • De Pere, Wisconsin 54115-2324 • Phone: (414) 339-4094 • FAX# 339-4048

May 10, 1996

Kathy Erdmann
Wisconsin Department of Natural Resources
Lake Michigan District Headquarters
P.O. Box 10448
Green Bay, WI 54307-0448

Dear Kathy:

Enclosed, please find a copy of the laboratory report for the most recent sampling at the Better Brite groundwater treatment facility. All of the samples were collected on 4/18/96.

If you need any additional information, please contact me.

Sincerely,

Albert R. Kardoskee, Jr.
Quality Control Supervisor/Chemist

\ERDMANN\96-05-10.WRI

ROBERT E. LEE & ASSOCIATES, INC.
Wisconsin Certification NO: 405043870

- CERTIFICATE OF ANALYSIS -

De Pere Wastewater Treatment Plant
315 Leonard Street
De Pere WI 54115

Attn: Al Kardoskee
Phone: 414-339-4094
Fax: 414-339-4048

Customer Number: 000404
Project Number: NONE
Project Name : BETTER BRITE
Chain Number : 24229
Report Date : 05/01/1996

SAMPLE_ID / PARAM NAME	LAB# / RESULT	COLLECT DATE / UNITS	MDL	MATRIX / METHOD	ANALYST	ANALYZED DATE
LANDE GROUNDWATER	96REL006149	04/18/1996		WW		
TOTAL CADMIUM ICP	6.8	UG/L	2.5	EPA-200.7	DLB	04/26/1996
TOTAL CHROMIUM ICP	509000	UG/L	650	EPA-200.7	DLB	04/26/1996
TOTAL ZINC ICP	27	UG/L	3.8	EPA-200.7	DLB	04/26/1996
METAL PREPARATION (TOTAL)				EPA-200.7	DLB	04/25/1996
SIXTH GROUNDWATER	96REL006150	04/18/1996		WW		
TOTAL CADMIUM ICP	3.6	UG/L	2.5	EPA-200.7	DLB	04/26/1996
TOTAL CHROMIUM ICP	114000	UG/L	650	EPA-200.7	DLB	04/26/1996
TOTAL ZINC ICP	57	UG/L	3.8	EPA-200.7	DLB	04/26/1996
METAL PREPARATION (TOTAL)				EPA-200.7	DLB	04/25/1996
CYANIDE-TOTAL	0.77	MG/L	0.001	EPA-335.3	DAW	04/30/1996
BETTER BRITE UNTREATED	96REL006151	04/18/1996		WW		
TOTAL CADMIUM ICP	<2.5	UG/L	2.5	EPA-200.7	DLB	04/26/1996
TOTAL CHROMIUM ICP	173000	UG/L	650	EPA-200.7	DLB	04/26/1996
TOTAL ZINC ICP	45	UG/L	3.8	EPA-200.7	DLB	04/26/1996
METAL PREPARATION (TOTAL)				EPA-200.7	DLB	04/25/1996
CYANIDE-TOTAL	1.0	MG/L	0.001	EPA-335.3	DAW	04/30/1996
BETTER BRITE TREATED	96REL006152	04/18/1996		GW		
TOTAL CADMIUM ICP	<2.5	UG/L	2.5	EPA-200.7	DLB	04/26/1996
TOTAL CHROMIUM ICP	1690	UG/L	6.5	EPA-200.7	DLB	04/26/1996
TOTAL ZINC ICP	16	UG/L	3.8	EPA-200.7	DLB	04/26/1996
METAL PREPARATION (TOTAL)				EPA-200.7	DLB	04/25/1996
CYANIDE-TOTAL	0.22	MG/L	0.001	EPA-335.3	DAW	04/30/1996

City of De Pere

WASTEWATER TREATMENT PLANT

315 Leonard St. • De Pere, Wisconsin 54115-2324 • Phone: (414) 339-4094 • FAX# 339-4048

September 5, 1995

Kathy Erdmann
Wisconsin Department of Natural Resources
Lake Michigan District Headquarters
P.O. Box 10448
Green Bay, WI 54307-0448

Dear Kathy:

Please find enclosed a copy of the report of results of the most recent sampling at the Better Brite groundwater treatment facility. This series of samples was taken on 8/14/95 and 8/15/95. The sample naming convention remains the same as has been used in the past. Those named "Lande Street groundwater" and "Sixth Street groundwater" are untreated samples collected from each source. The samples named "Better Brite Untreated" are the mixture of groundwaters from both sources, ready for treatment, while the samples named "Better Brite Treated" are of the mixed groundwaters following treatment and ready for discharge.

If you have any questions or require any additional information, please contact me.

Sincerely,

Albert R. Kardoskee, Jr.
Quality Control Supervisor/Chemist

\ERDMANN\95-09-05.WRI

ROBERT E. LEE & ASSOCIATES; INC.
Wisconsin Certification NO: 405043870

- CERTIFICATE OF ANALYSIS -

De Pere Wastewater Treatment Plant
315 Leonard Street
De Pere WI 54115

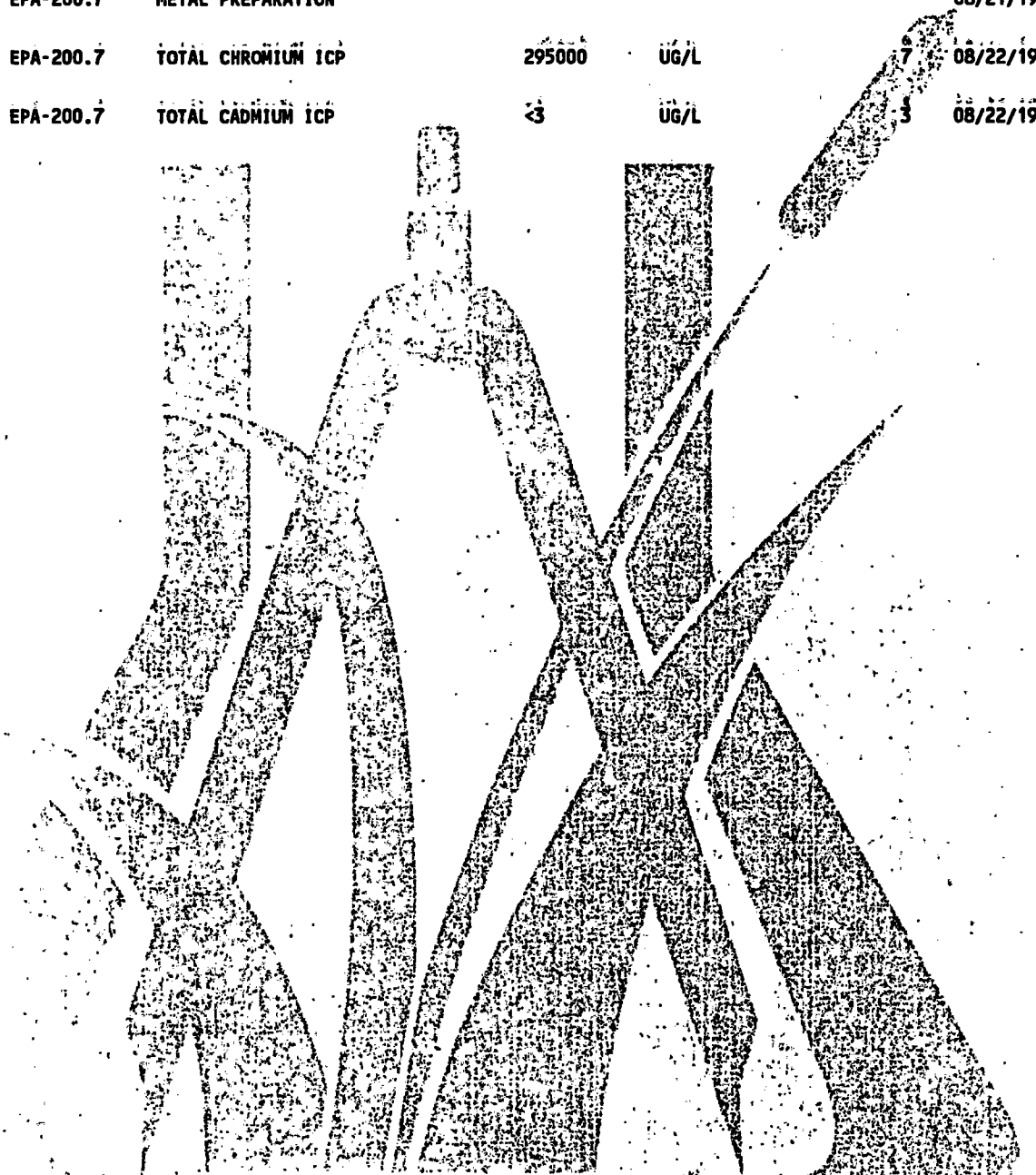
Attn: Al Kardoskee
Phone: 414-339-4094
Fax: 414-339-4048

Customer Number: 000404

Lab Number: 95REL015932
Sample ID : LANDE GROUNDWATER
Matrix : GW

Chain Number: 24211
Report Date : 08/30/1995
Sample Date : 08/14/1995

METHOD	PARAMETER NAME	RESULT	UNITS	MDL	DATE	BY
EPA-200.7	TOTAL ZINC ICP	59	UG/L	3	08/22/1995	DLB
EPA-200.7	METAL PREPARATION				08/21/1995	DLB
EPA-200.7	TOTAL CHROMIUM ICP	295000	UG/L	7	08/22/1995	DLB
EPA-200.7	TOTAL CADMIUM ICP	<3	UG/L	3	08/22/1995	DLB



ROBERT E. LEE & ASSOCIATES, INC.
Wisconsin Certification NO: 405043870

- CERTIFICATE OF ANALYSIS -

De Pere Wastewater Treatment Plant
315 Leonard Street
De Pere WI 54115

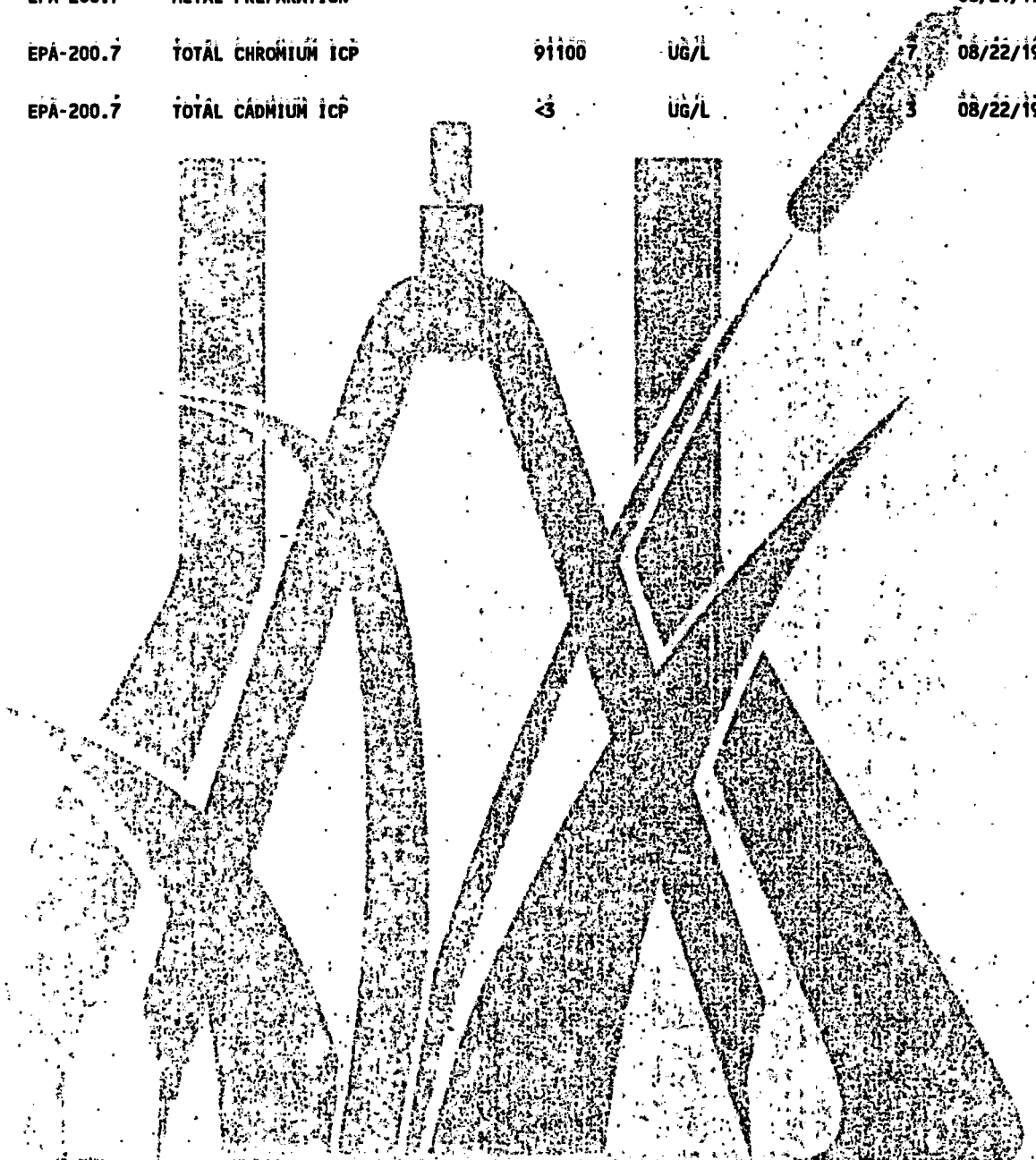
Attn: Al Kardoskee
Phone: 414-339-4094
Fax: 414-339-4048

Customer Number: 000404

Lab Number: 95REL015933
Sample ID : SIXTH GOUNDWATER
Matrix : GW

Chain Number: 24211
Report Date : 08/30/1995
Sample Date : 08/14/1995

METHOD	PARAMETER NAME	RESULT	UNITS	MDL	DATE	BY
EPA-200.7	TOTAL ZINC ICP	31	UG/L	3	08/22/1995	DLB
EPA-200.7	METAL PREPARATION				08/21/1995	DLB
EPA-200.7	TOTAL CHROMIUM ICP	91100	UG/L	7	08/22/1995	DLB
EPA-200.7	TOTAL CADMIUM ICP	<3	UG/L	3	08/22/1995	DLB



ROBERT E: LEE & ASSOCIATES, INC.
Wisconsin Certification NO: 405043870

- CERTIFICATE OF ANALYSIS -

De Pere Wastewater Treatment Plant
315 Leonard Street
De Pere WI 54115

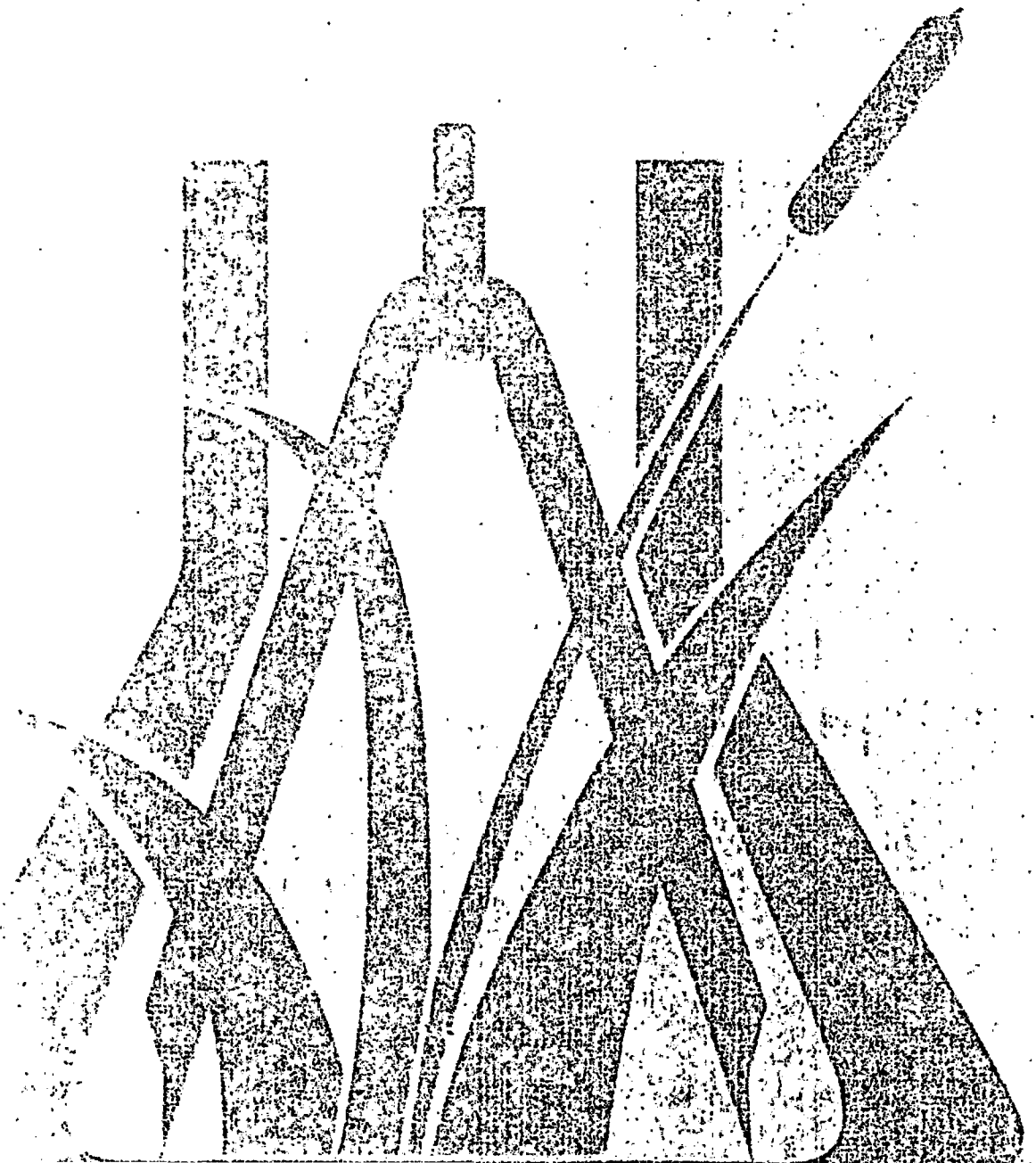
Attn: Al Kardoskee
Phone: 414-339-4094
Fax: 414-339-4048

Customer Number: 000404

Lab Number: 95REL015934
Sample ID : SIXTH GROUNDWATER
Matrix : GW

Chain Number: 24211
Report Date : 08/30/1995
Sample Date : 08/14/1995

METHOD	PARAMETER NAME	RESULT	UNITS	MDL	DATE	BY
EPA-335.3	CYANIDE-TOTAL	0.820	MG/L	0.001	08/25/1995	DAW



ROBERT E. LEE & ASSOCIATES; INC.
Wisconsin Certification NO: 405043870

- CERTIFICATE OF ANALYSIS -

De Pere Wastewater Treatment Plant
315 Leonard Street
De Pere WI 54115

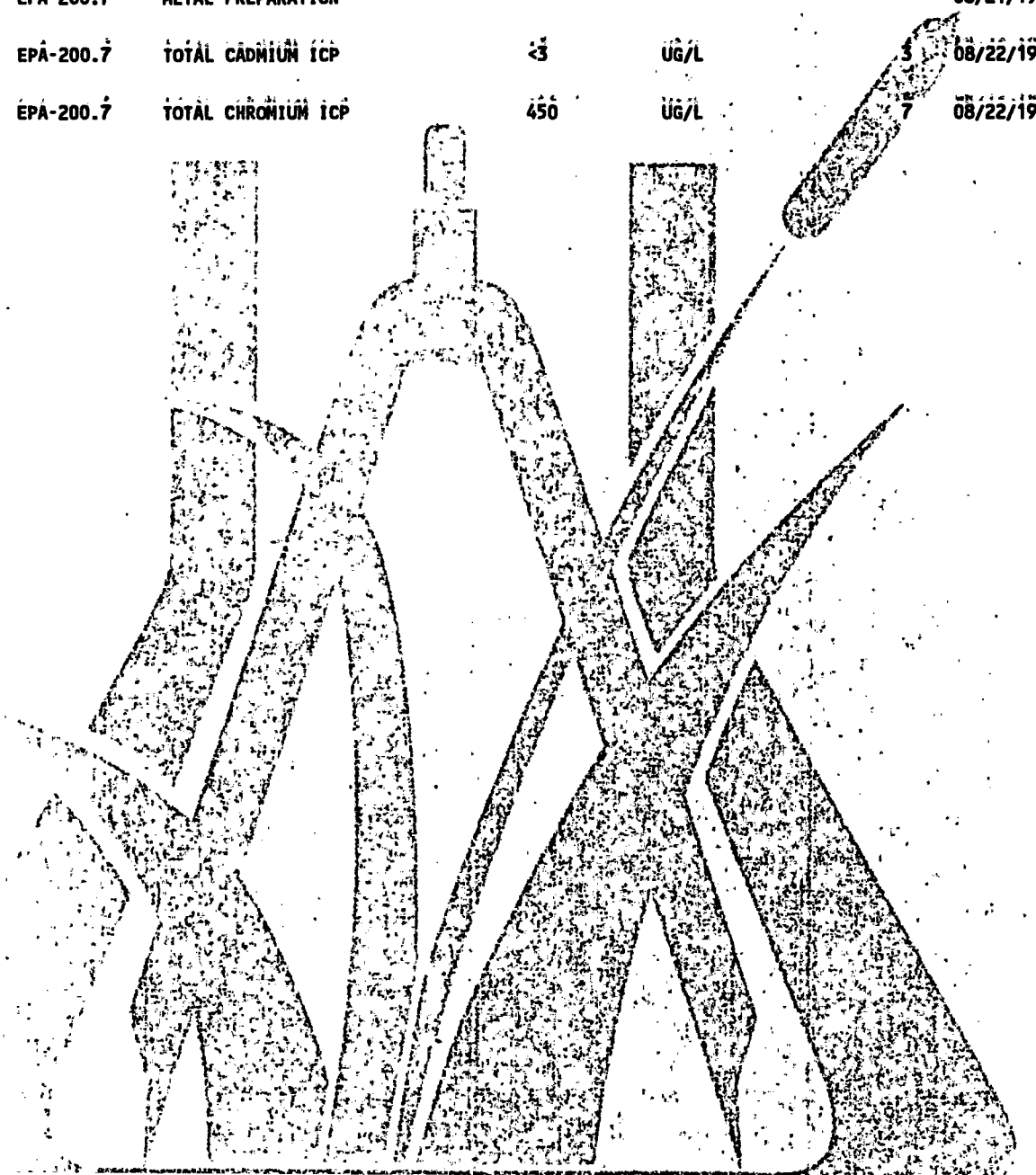
Attn: Al Kardoskee
Phone: 414-339-4094
Fax: 414-339-4048

Customer Number: 000404

Lab Number: 95REL015937
Sample ID : BETTER BRITE TREATED
Matrix : GW

Chain Number: 24211
Report Date : 08/30/1995
Sample Date : 08/15/1995

METHOD	PARAMETER NAME	RESULT	UNITS	MDL	DATE	BY
EPA-200.7	TOTAL ZINC ICP	17	UG/L	3	08/22/1995	DLB
EPA-200.7	METAL PREPARATION				08/21/1995	DLB
EPA-200.7	TOTAL CADMIUM ICP	<3	UG/L	3	08/22/1995	DLB
EPA-200.7	TOTAL CHROMIUM ICP	450	UG/L	7	08/22/1995	DLB



ROBERT E. LEE & ASSOCIATES, INC.
Wisconsin Certification NO: 405043870

- CERTIFICATE OF ANALYSIS -

De Pere Wastewater Treatment Plant
315 Leonard Street
De Pere WI 54115

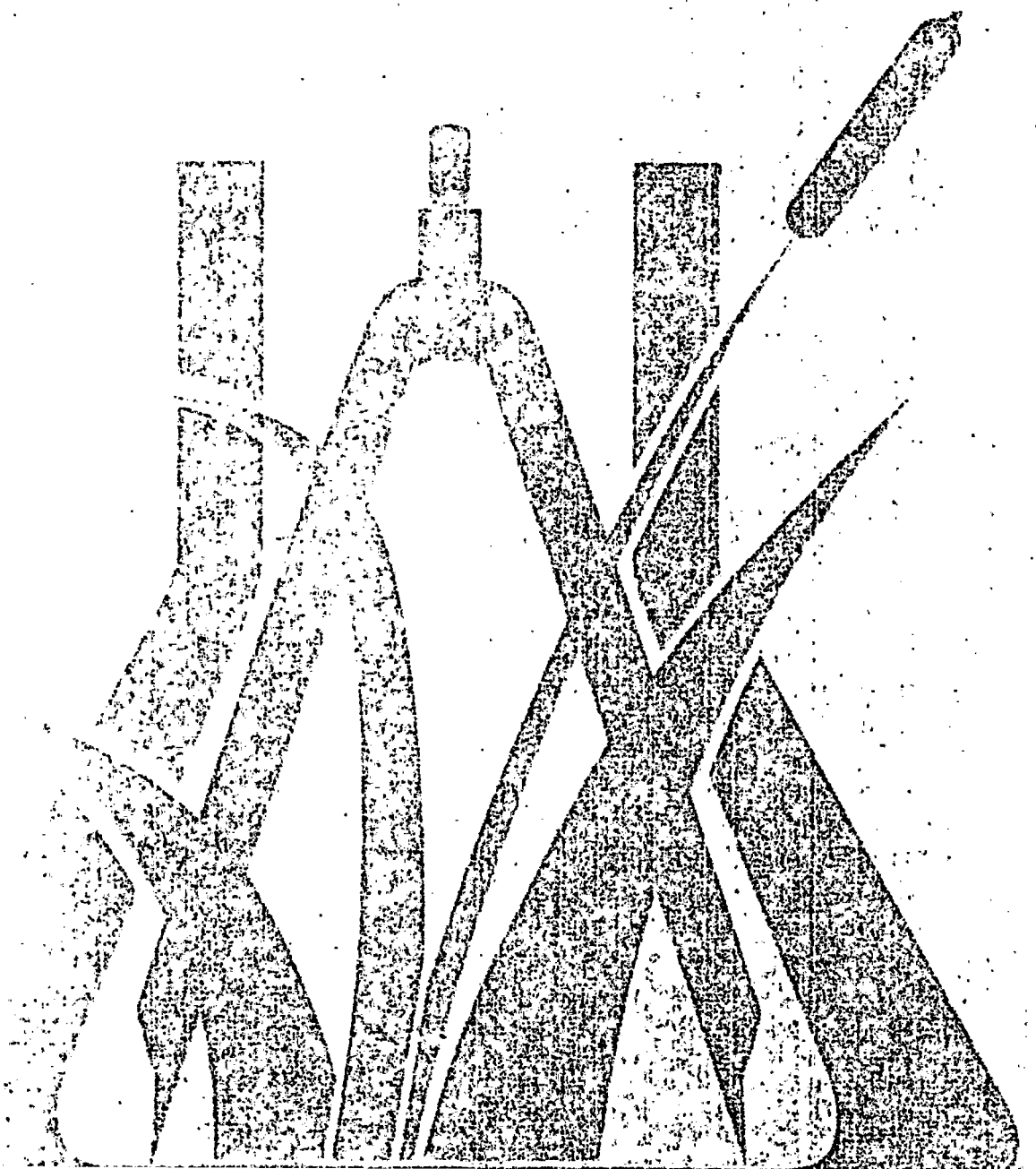
Attn: Al Kardoskee
Phone: 414-339-4094
Fax: 414-339-4048

Customer Number: 000404

Lab Number: 95REL015938
Sample ID : BETTER BRITE TREATED
Matrix : GW

Chain Number: 24211
Report Date : 08/30/1995
Sample Date : 08/15/1995

METHOD	PARAMETER NAME	RESULT	UNITS	MDL	DATE	BY
EPA-335.3	CYANIDE-TOTAL	<0.001	MG/L	0.001	08/25/1995	DAW



ROBERT E. LEE & ASSOCIATES, INC.
Wisconsin Certification NO: 405043870

- CERTIFICATE OF ANALYSIS -

De Pere Wastewater Treatment Plant
315 Leonard Street
De Pere WI 54115

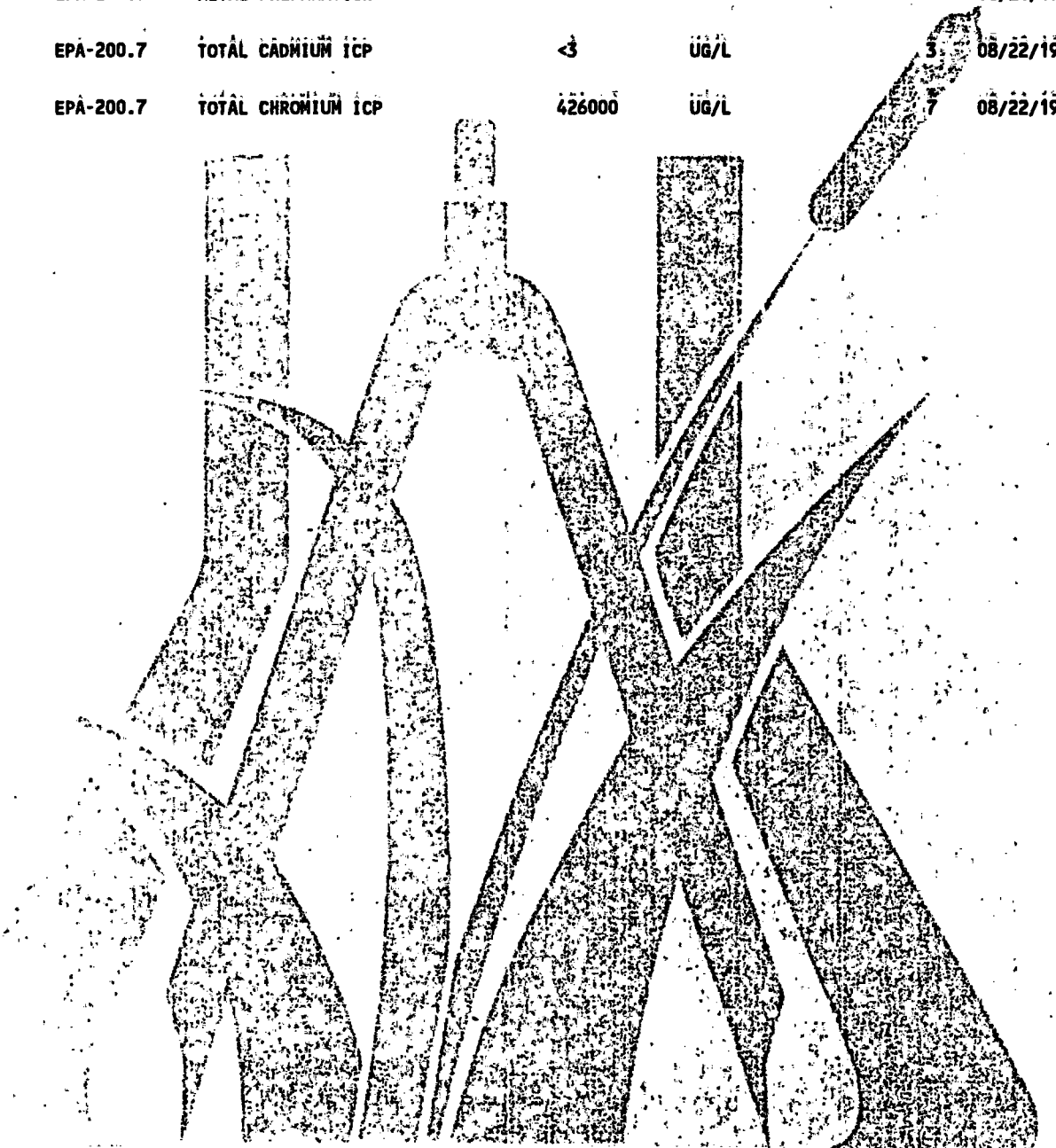
Attn: Al Kardoskee
Phone: 414-339-4094
Fax: 414-339-4048

Customer Number: 000404

Lab Number: 95REL015935
Sample ID : BETTER BRITE UNTREATED
Matrix : GW

Chain Number: 24211
Report Date : 08/30/1995
Sample Date : 08/15/1995

METHOD	PARAMETER NAME	RESULT	UNITS	MDL	DATE	BY
EPA-200.7	TOTAL ZINC ICP	214	UG/L	3	08/22/1995	DLB
EPA-200.7	METAL PREPARATION				08/21/1995	DLB
EPA-200.7	TOTAL CADMIUM ICP	<3	UG/L	3	08/22/1995	DLB
EPA-200.7	TOTAL CHROMIUM ICP	426000	UG/L	7	08/22/1995	DLB



ROBERT E. LEE & ASSOCIATES, INC.
Wisconsin Certification NO: 405043870

- CERTIFICATE OF ANALYSIS -

De Pere Wastewater Treatment Plant
315 Leonard Street
De Pere WI 54115

Attn: Al Kardoskee
Phone: 414-339-4094
Fax: 414-339-4048

Customer Number: 000404

Lab Number: 95REL015936
Sample ID : BETTER BRITE UNTREATED
Matrix : GW

Chain Number: 24211
Report Date : 08/30/1995
Sample Date : 08/14/1995

METHOD	PARAMETER NAME	RESULT	UNITS	MDL	DATE	BY
EPA-335.3	CYANIDE-TOTAL	0.512	MG/L	0.001	08/25/1995	DAW

City of De Pere

WASTEWATER TREATMENT PLANT

315 Leonard St. • De Pere, Wisconsin 54115-2324 • Phone: (414) 339-4094 • FAX# 339-4048

April 20, 1995

Kathy Erdmann
Wisconsin Department of Natural Resources
Lake Michigan District Headquarters
P.O. Box 10448
Green Bay, WI 54307-0448

Dear Kathy:

Enclosed, please find copies of the analytical data obtained from the analysis of the most recent samples taken from the Better Brite groundwater treatment facility. These samples were taken on 4/6/95 and 4/7/95. The sample naming convention remains the same as has been used in the past. Those named "Lande Street groundwater" and "Sixth Street groundwater" are untreated samples collected from each source. The samples named "Better Brite Untreated" are the mixture of groundwaters from both sources, ready for treatment, while the samples named "Better Brite Treated" are of the mixed groundwaters following treatment and ready for discharge.

If you need any additional information, please let me know.

Sincerely,

Albert R. Kardoskee, Jr.
Quality Control Supervisor/Chemist

\ERDMANN\95-04-20.WRI

ROBERT E. LEE & ASSOCIATES, INC.
Wisconsin Certification NO: 405043870

- CERTIFICATE OF ANALYSIS -

De Pere Wastewater Treatment Plant
315 Leonard Street
De Pere WI 54115

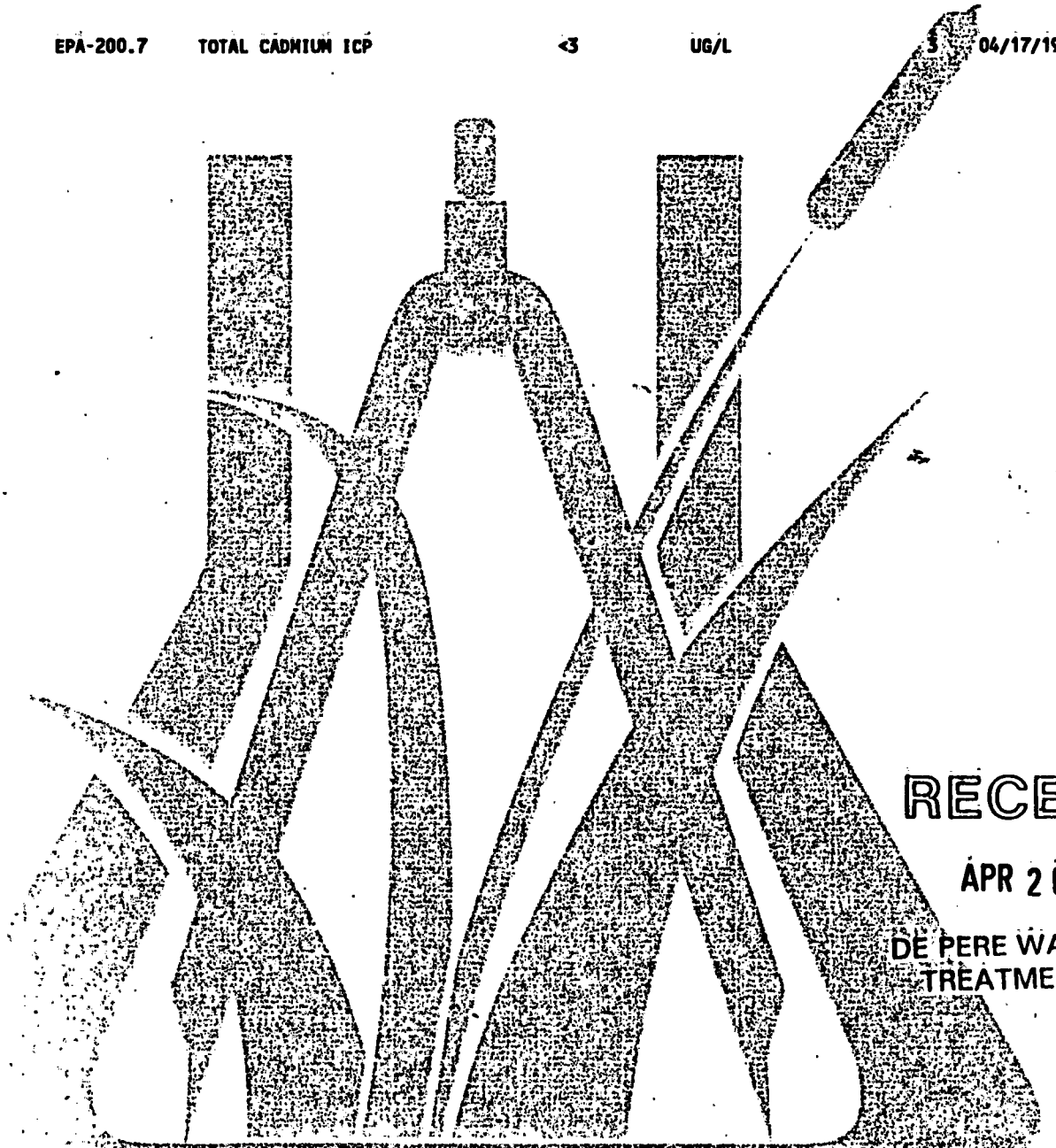
Attn: Al Kardoskee
Phone: 414-339-4094
Fax: 414-339-4048

Customer Number: 000404

Lab Number: 95REL005826
Sample ID : LANDE GROUNDWATER
Matrix : LIQUID

Chain Number: 24195
Report Date : 04/18/1995
Sample Date : 04/06/1995

METHOD	PARAMETER NAME	RESULT	UNITS	MDL	DATE	BY
EPA-200.7	TOTAL ZINC ICP	108	UG/L	3	04/17/1995	EWW
EPA-200.7	TOTAL CHROMIUM ICP	760000	UG/L	7	04/17/1995	EWW
EPA-200.7	TOTAL CADMIUM ICP	<3	UG/L	3	04/17/1995	EWW



RECEIVED
APR 20 1995
DE PERE WASTEWATER
TREATMENT PLANT

ROBERT E. LEE & ASSOCIATES, INC.
Wisconsin Certification NO: 405043870

- CERTIFICATE OF ANALYSIS -

De Pere Wastewater Treatment Plant
315 Leonard Street
De Pere WI 54115

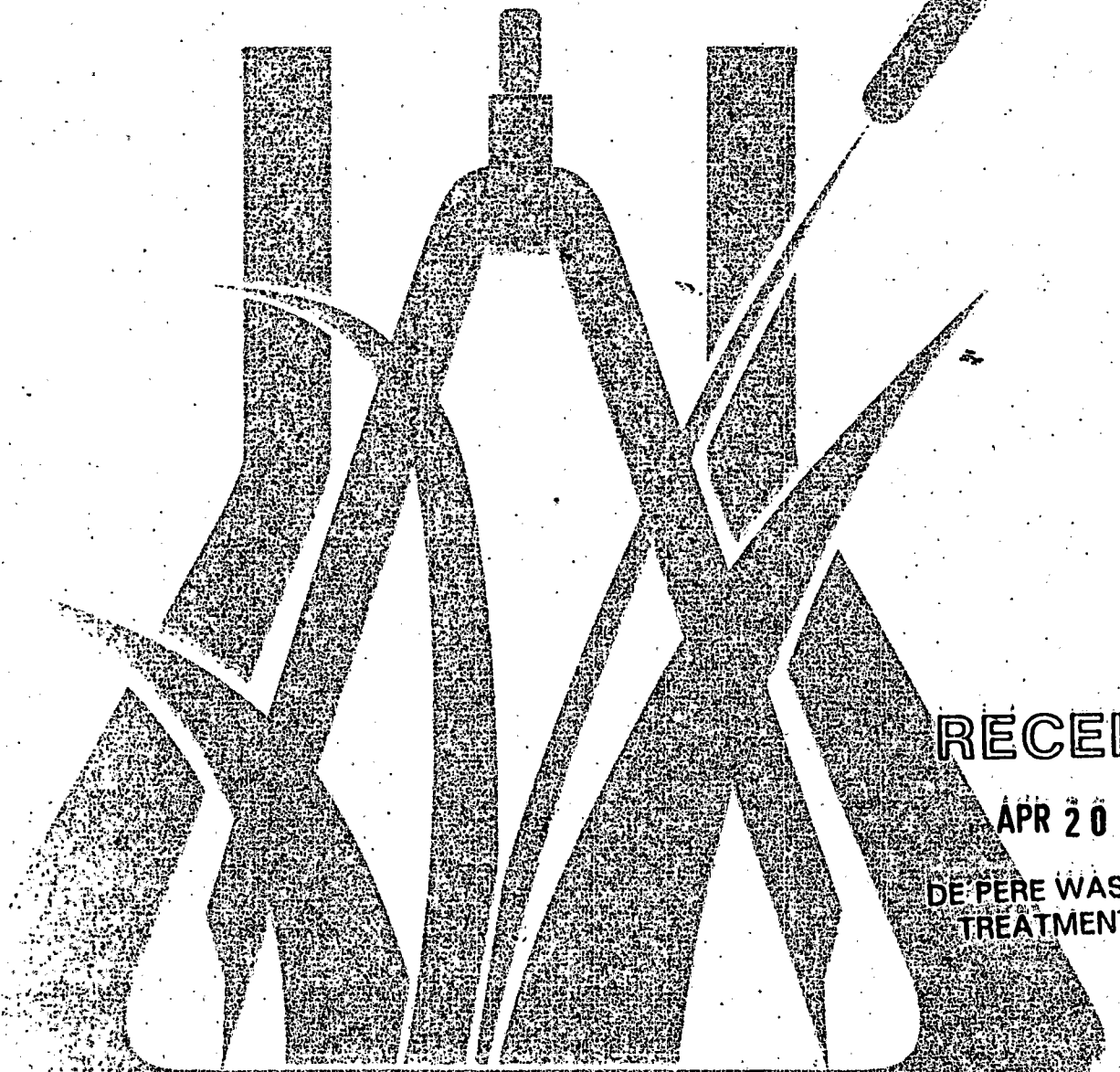
Attn: Al Kardoskee
Phone: 414-339-4094
Fax: 414-339-4048

Customer Number: 000404

Lab Number: 95REL005827
Sample ID : SIXTH GROUNDWATER
Matrix : LIQUID

Chain Number: 24195
Report Date : 04/18/1995
Sample Date : 04/06/1995

METHOD	PARAMETER NAME	RESULT	UNITS	MDL	DATE	BY
EPA-200.7	TOTAL ZINC ICP	584	UG/L	3	04/17/1995	EWW
EPA-335.2	CYANIDE-TOTAL	0.719	MG/L	0.002	04/12/1995	DJD
EPA-200.7	TOTAL CHROMIUM ICP	70000	UG/L	7	04/17/1995	EWW
EPA-200.7	TOTAL CADMIUM ICP	<3	UG/L	3	04/17/1995	EWW



ROBERT E. LEE & ASSOCIATES, INC.
Wisconsin Certification NO: 405043870

- CERTIFICATE OF ANALYSIS -

De Pere Wastewater Treatment Plant
315 Leonard Street
De Pere WI 54115

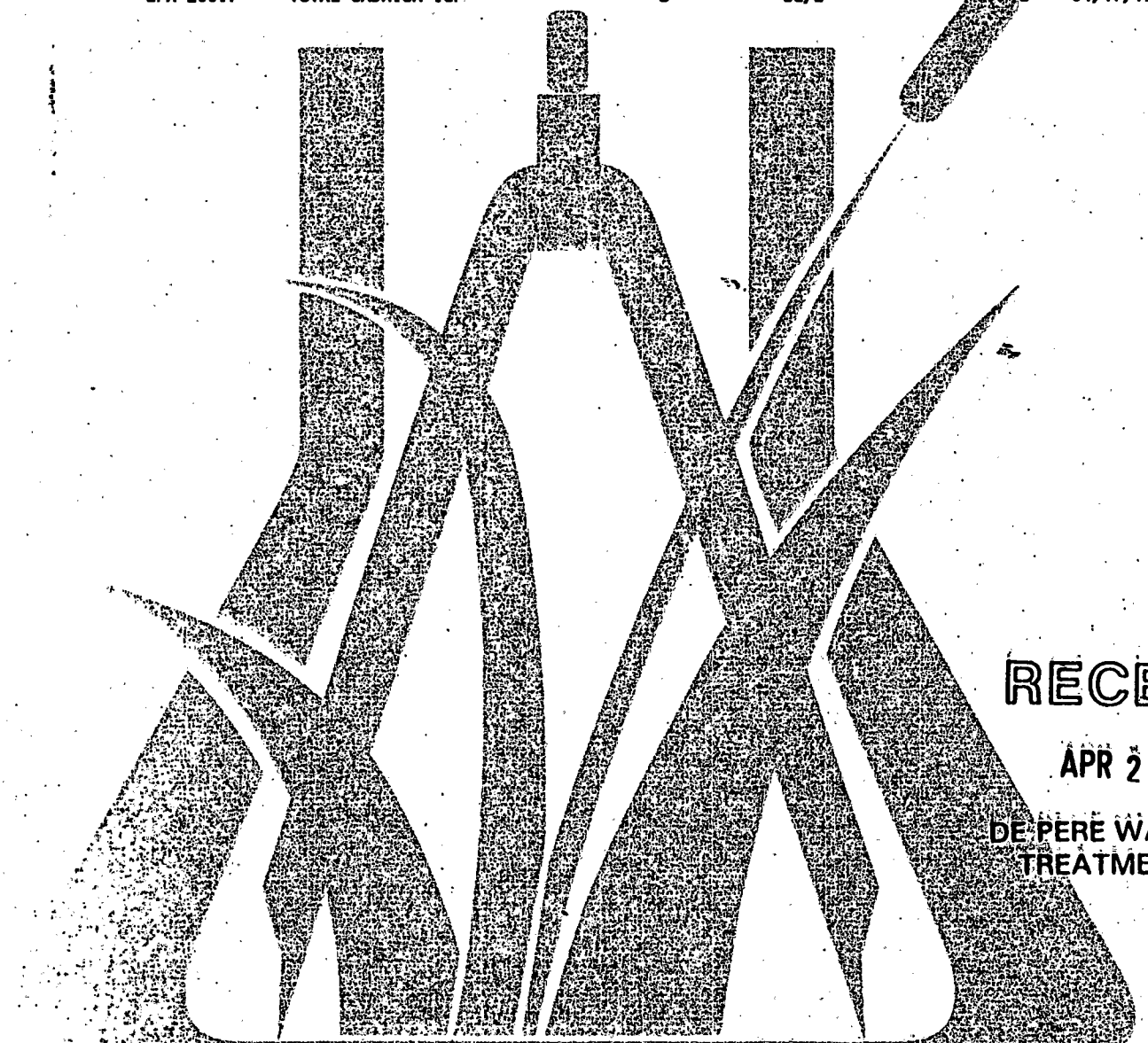
Attn: Al Kardoskee
Phone: 414-339-4094
Fax: 414-339-4048

Customer Number: 000404

Lab Number: 95REL005828
Sample ID : BETTER BRITE UNTREATED
Matrix : LIQUID

Chain Number: 24195
Report Date : 04/18/1995
Sample Date : 04/06/1995

METHOD	PARAMETER NAME	RESULT	UNITS	MDL	DATE	BY
EPA-200.7	TOTAL ZINC ICP	34	UG/L	3	04/17/1995	EWW
EPA-335.2	CYANIDE-TOTAL	0.378	MG/L	0.002	04/12/1995	DJD
EPA-200.7	TOTAL CHROMIUM ICP	220000	UG/L	7	04/17/1995	EWW
EPA-200.7	TOTAL CADMIUM ICP	<3	UG/L	3	04/17/1995	EWW



Robert E. Lee & Associates, Inc.
Engineering, Surveying, Laboratory Services
2825 S. Webster Ave. • Box 2100 • Green Bay, WI 54306-2100
Office 414.336.6338 • FAX 414.336.9141

WISCONSIN DNR CERTIFICATION #405043870

CHAIN OF CUSTODY RECORD

COC # 24195

Client: De Pere WWTP

Project Name: Better Brite | Project Number:

Project Address:

Telephone: | Fax:

PO #: | Quote #:

Environmental Program:
☐ LUST ☐ SDWA ☒ WPDES ☐ RCRA ☐ OTHER

Requested Turnaround Time
☒ Normal ☐ Rush
Date Needed:
Rushes accepted only w/prior notification

Check Delivery Method
☒ In Person ☐ Mail
☐ Common Courier ☐ Courier Service
☐ Other

Sampler: Ron McCracken

Sample ID	Date	Time		Comp	Grab	Filtered Y/N	Sample Description	Sample Type (Matrix): DW, GW, WW, Soil, Oil, Sludge, Air, Other	No. of Containers	Preservation Type (see key below)	Analyses Requested: Total Cd, Cr, Zn	Total cyanide	REL Sample No.	Remarks:
Lande Groundwater	4/6/94	11:15	(A) P		X	N		GW	1	N	X		95.005826	
Sixth "	4/6/94	11:05	(A) P		X	N		GW	1	N	X		005827	
Sixth "	4/6/95	11:00	(A) P		X	N		GW	1	O		X	~~005825~~	TN 4/7
Better Brite Untreated	4/6/95	9:35	A P		X	N		GW	1	N	X		005828	
" " "	4/6/95	9:40	(A) P		X	N		GW	1	O		X	~~005826~~	TN 4/7
			A P											
			A P											
			A P											
			A P											
			A P											
			A P											
			A P											

Report To: Al Kaodaskee
Company: De Pere WWTP
Address: 315 Leonard St
De Pere WI 54115
Telephone: 339-4094
Fax: 339-4048

Invoice To: SAME
Company:
Address:

Telephone:
Fax:

RECEIVED
APR 20 1995
DE PERE WASTEWATER TREATMENT PLANT

Relinquished By	Date	Time	Received By	Date	Time
1) Ronald McCracken	4-7-95	9:15 (A) P			A/P
2)		A/P			A/P
3)		A/P			A/P
Received by Lab M. Suhen	4/7/95	0915			A = AM P = PM

Laboratory Receiving Notes
Temperature of Contents: ON ICE °C
Custody Seal Intact ✓
Sample Condition ✓
Sample pH

TO ENSURE PROPER HANDLING OF SAMPLES PLEASE COMPLETE SHADED AREAS

Preservation Key
N = Nitric Acid
H = Hydrochloric Acid
M = Methanol
O = Sodium Hydroxide
U = Unpreserved
S = Sulfuric Acid

ROBERT E. LEE & ASSOCIATES, INC.
Wisconsin Certification NO: 405043870

- CERTIFICATE OF ANALYSIS -

De Pere Wastewater Treatment Plant
315 Leonard Street
De Pere WI 54115

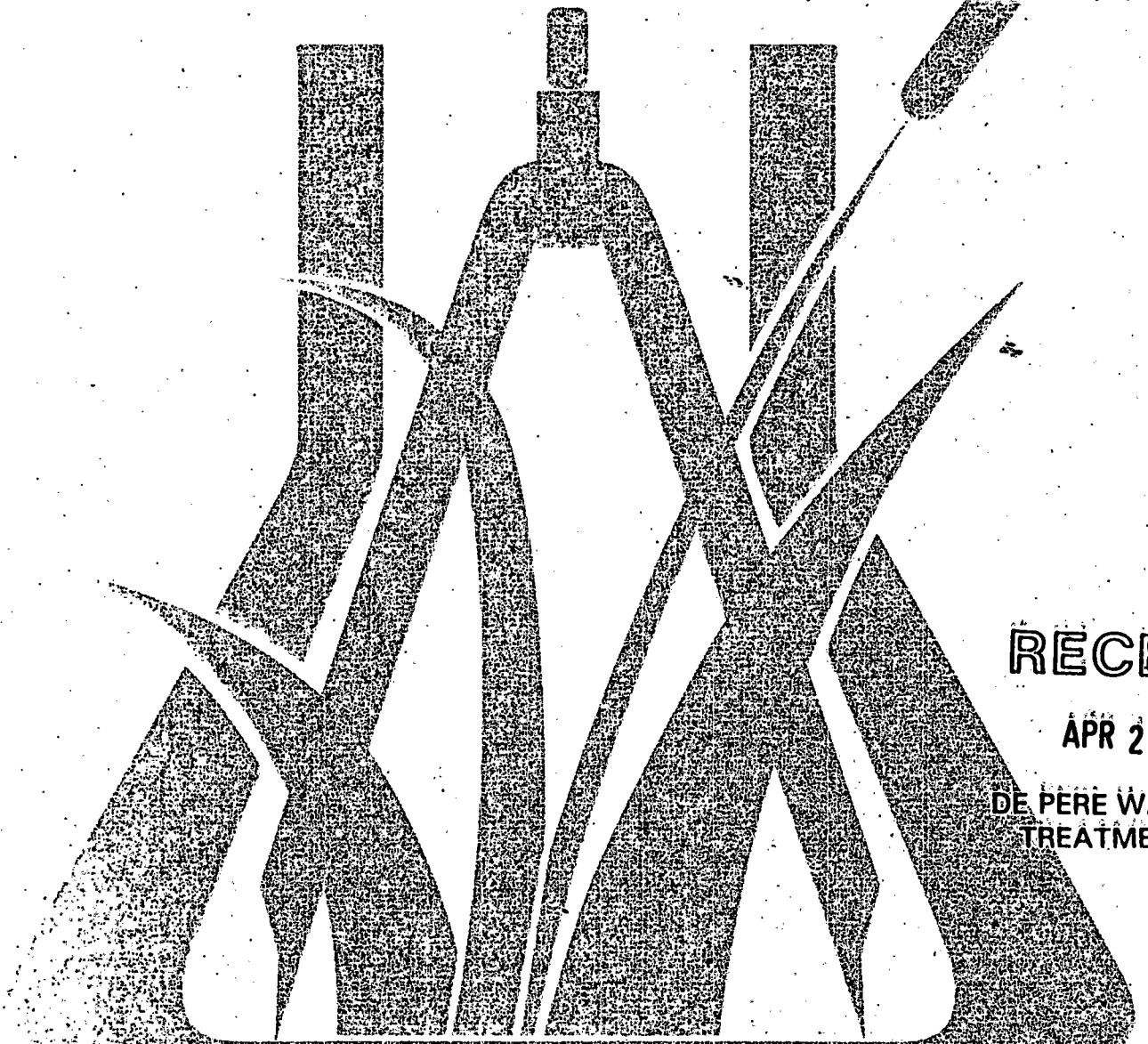
Attn: Al Kardoskee
Phone: 414-339-4094
Fax: 414-339-4048

Customer Number: 000404

Lab Number: 95REL005829
Sample ID : BETTER BRITE TREATED
Matrix : LIQUID

Chain Number: 24196
Report Date : 04/18/1995
Sample Date : 04/07/1995

METHOD	PARAMETER NAME	RESULT	UNITS	MDL	DATE	BY
EPA-213.2	TOTAL CADMIUM GFAA	<0.1	UG/L	0.1	04/12/1995	JAJ
EPA-218.2	TOTAL CHROMIUM GFAA	2000	UG/L	0.4	04/12/1995	JAJ
EPA-200.7	TOTAL ZINC ICP	13	UG/L	3	04/17/1995	EWW
EPA-335.2	CYANIDE-TOTAL	0.340	MG/L	0.002	04/12/1995	DJD



Robert E. Lee & Associates, Inc.

Engineering, Surveying, Laboratory Services
2825 S. Webster Ave. • Box 2100 • Green Bay, WI 54306-2100
Office 414.336.6338 • FAX 414.336.9141

WISCONSIN DNR CERTIFICATION #405043870

CHAIN OF CUSTODY RECORD

COC # 24196

Client: De Pere WWTP

Project Name: Better Brite | Project Number:

Project Address:

Telephone: | Fax:

PO #: | Quote #:

Environmental Program:
☐ LUST ☐ SDWA ☒ WPDES ☐ RCRA ☐ OTHER

Requested Turnaround Time
☒ Normal ☐ Rush

Date Needed:
Rushes accepted only w/prior notification

Check Delivery Method
☒ In Person ☐ Mail
☐ Common Courier ☐ Courier Service
☐ Other

Sampler: Robert Kennedy

Report To: Al Karboskee
Company: De Pere WWTP
Address: 315 Leonard St.
De Pere, WI 54115
Telephone: 339-4094
Fax: 339-4048

Invoice To: SAME
Company:
Address:

Telephone:
Fax:

Sample ID	Date	Time	A/P	Comp	Grab	Filtered Y/N	Sample Description	Sample Type (Matrix): DW, GW, WW, Soil, Oil, Sludge, Air, Other	No. of Containers	Preservation Type (see key below)	Analyses Requested: Total Cd, Cr, Zn	Total cyanide	REL Sample No.	Remarks:
Better Brite Treated	4/7/95	2:00	A P		X	N		WW	1	N	X		95-005829	
" " "	4/7/95	1:58	A P		X	N		WW	1	O		X		
			A P											
			A P											
			A P											
			A P											
			A P											
			A P											
			A P											
			A P											
			A P											
			A P											

RECEIVED
APR 20 1995
DE PERE WASTEWATER TREATMENT PLANT

Relinquished By	Date	Time	Received By	Date	Time
1) Ronald McCracken	4-7-95	9:15 A/P			A/P
2)		A/P			A/P
3)		A/P			A/P
Received by Lab M. Suhn	4/7/95	0915			A = AM P = PM

Laboratory Receiving Notes
Temperature of Contents: ON ICE °C
Custody Seal Intact ✓
Sample Condition ✓
Sample pH —

Preservation Key
N = Nitric Acid
H = Hydrochloric Acid
M = Methanol
O = Sodium Hydroxide
U = Unpreserved
S = Sulfuric Acid

TO ENSURE PROPER HANDLING OF SAMPLES PLEASE COMPLETE SHADED AREAS

City of De Pere

WASTEWATER TREATMENT PLANT

315 Leonard St. • De Pere, Wisconsin 54115-2324 • Phone: (414) 339-4094 • FAX# 339-4048

February 22, 1995

Kathy Erdmann
Wisconsin Department of Natural Resources
Lake Michigan District Headquarters
P.O. Box 10448
Green Bay, WI 54307-0448

Dear Kathy:

Enclosed, please find copies of the data obtained in the analysis of samples taken from the Better Brite groundwater treatment facility in February. The sample naming convention remains the same as has been used in the past. Those named "Lande Street groundwater" and "Sixth Street groundwater" are untreated samples collected from each source. The samples named "Better Brite Untreated" are the mixture of groundwaters from both sources, ready for treatment, while the samples named "Better Brite Treated" are of the mixed groundwaters following treatment and ready for discharge.

If I can provide any additional information, please let me know.

Sincerely,

Albert R. Kardoskee, Jr.
Quality Control Supervisor/Chemist

\ERDMANN\95-02-22.WRI

ROBERT E. LEE & ASSOCIATES, INC.
Wisconsin Certification NO: 405043870

- CERTIFICATE OF ANALYSIS -

De Pere Wastewater Treatment Plant
315 Leonard Street
De Pere WI 54115

Attn: Al Kardoskee
Phone: 414-339-4094
Fax: 414-339-4048

Customer Number: 000404

Lab Number: 95REL001733
Sample ID : LANDE GROUNDWATER
Matrix : LIQUID

Chain Number: 14285
Report Date : 02/09/1995
Sample Date : 02/02/1995

METHOD	PARAMETER NAME	RESULT	UNITS	MDL	DATE	BY
EPA-200.7	TOTAL CADMIUM ICP	<3	UG/L	3	02/08/1995	EWW
EPA-200.7	TOTAL CHROMIUM ICP	587000	UG/L	7	02/08/1995	EWW
EPA-200.7	TOTAL ZINC ICP	236	UG/L	3	02/08/1995	EWW

ROBERT E. LEE & ASSOCIATES, INC.
Wisconsin Certification NO: 405043870

- CERTIFICATE OF ANALYSIS -

De Pere Wastewater Treatment Plant
315 Leonard Street
De Pere WI 54115

Attn: Al Kardoskee
Phone: 414-339-4094
Fax: 414-339-4048

Customer Number: 000404

Lab Number: 95REL001734
Sample ID : SIXTH GROUNDWATER
Matrix : LIQUID

Chain Number: 14285
Report Date : 02/09/1995
Sample Date : 02/02/1995

METHOD	PARAMETER NAME	RESULT	UNITS	MDL	DATE	BY
EPA-200.7	TOTAL CADMIUM ICP	<3	UG/L	3	02/08/1995	EWW
EPA-200.7	TOTAL CHROMIUM ICP	147000	UG/L	7	02/08/1995	EWW
EPA-200.7	TOTAL ZINC ICP	44	UG/L	3	02/08/1995	EWW

ROBERT E. LEE & ASSOCIATES, INC.
Wisconsin Certification NO: 405043870

- CERTIFICATE OF ANALYSIS -

De Pere Wastewater Treatment Plant
315 Leonard Street
De Pere WI 54115

Attn: Al Kardoskee
Phone: 414-339-4094
Fax: 414-339-4048

Customer Number: 000404

Lab Number: 95REL001735
Sample ID : SIXTH GROUNDWATER
Matrix : LIQUID

Chain Number: 14285
Report Date : 02/09/1995
Sample Date : 02/02/1995

METHOD	PARAMETER NAME	RESULT	UNITS	MDL	DATE	BY
EPA-335.2	CYANIDE-TOTAL	0.634	MG/L	0.002	02/06/1995	DJD

ROBERT E. LEE & ASSOCIATES, INC.
Wisconsin Certification NO: 405043870

- CERTIFICATE OF ANALYSIS -

De Pere Wastewater Treatment Plant
315 Leonard Street
De Pere WI 54115

Attn: Al Kardoskee
Phone: 414-339-4094
Fax: 414-339-4048

Customer Number: 000404

Lab Number: 95REL001736
Sample ID : BETTER BRITE UNTREATED
Matrix : LIQUID

Chain Number: 14285
Report Date : 02/09/1995
Sample Date : 02/02/1995

METHOD	PARAMETER NAME	RESULT	UNITS	MDL	DATE	BY
EPA-200.7	TOTAL CADMIUM ICP	<3	UG/L	3	02/08/1995	EWW
EPA-200.7	TOTAL CHROMIUM ICP	252000	UG/L	7	02/08/1995	EWW
EPA-200.7	TOTAL ZINC ICP	102	UG/L	3	02/08/1995	EWW

ROBERT E. LEE & ASSOCIATES, INC.
Wisconsin Certification NO: 405043870

- CERTIFICATE OF ANALYSIS -

De Pere Wastewater Treatment Plant
315 Leonard Street
De Pere WI 54115

Attn: Al Kardoskee
Phone: 414-339-4094
Fax: 414-339-4048

Customer Number: 000404

Lab Number: 95REL001737
Sample ID : BETTER BRITE UNTREATED
Matrix : LIQUID

Chain Number: 14285
Report Date : 02/09/1995
Sample Date : 02/02/1995

METHOD	PARAMETER NAME	RESULT	UNITS	MDL	DATE	BY
EPA-335.2	CYANIDE-TOTAL	0.420	MG/L	0.002	02/06/1995	DJD

Robert E. Lee & Associates, Inc.
Engineering, Surveying, Laboratory Services
2825 S. Webster Ave. • Box 2100 • Green Bay, WI 54306-2100
Office 414.336.6338 • FAX 414.336.9141

Chain of Custody

14285-9

Company Name: De Pere WWTP	
Project Name: Better Brite	Project No.:
Quote No.:	P.O. No.:

ENVIRONMENTAL PROGRAM:

WPDES: X LUST

RCRA: OTHER

SDWA: OTHER

Sampled By: Ron McCracken

Report To:	Al Kaedekee
Company:	De Pere WWTP
Address:	315 Leonard St.
	De Pere, WI 54115
Telephone No.:	339-4094
Fax No.:	339-4048
Invoice To:	SAME
Company:	
Address:	
Telephone No.:	
Fax No.:	

SAMPLE ID No.	Date	Time	Comp	Grab	Filtered	Unfiltered	#/Containers	Preservation	Analyses Requested: Total Cd, Cr, Zn	Total cyanide	Remarks	REL Sample No.
Landa Groundwater	2/2/95	11:00 A/P		X		X	1	N	X		LIQ	95-001733
Sixth Groundwater	"	10:50 A/P		X		X	1	N	X			1734
" "	"	10:45 A/P		X		X	1	O		X		1735
Better Brite Untreated	"	11:25 A/P		X		X	1	N	X			1736
"	"	11:30 A/P		X		X	1	O		X		1737
Better Brite Treated		A/P		X		X	1	N	X		Dict included - will submit at later date.	
"		A/P		X		X	1	O		X		
		A/P										
		A/P										
		A/P										
		A/P										
		A/P										
		A/P										

Relinquished By	Date	Time	Received By	Date	Time
1) RONALD MCCRACKEN	2-3-95	11:25 A/P			A/P
2)		A/P			A/P
3)		A/P			A/P
Received by Lab: Robert White	2-3-95	11:25A			A = AM P = PM

Temperature of Contents: on ice °C
Condition of Seals: —
Condition of Contents: —
Sample pH

Distribution: Original and yellow copies accompany sample shipment to laboratory; pink copy to client, original copy returned to client with results.

N = Nitric Acid
H = Hydrochloric Acid
M = Methanol
O = Sodium Hydroxide
U = Unpreserved
S = Sulfuric Acid

I/P 93' - 001

TO ENSURE PROPER HANDLING OF SAMPLES PLEASE COMPLETE SHADED AREAS ONLY

ROBERT E. LEE & ASSOCIATES, INC.
Wisconsin Certification NO: 405043870

- CERTIFICATE OF ANALYSIS -

De Pere Wastewater Treatment Plant
315 Leonard Street
De Pere WI 54115

Attn: Al Kardoskee
Phone: 414-339-4094
Fax: 414-339-4048

Customer Number: 000404

Lab Number: 95REL002012
Sample ID : BETTER BRITE TREATED
Matrix : LIQUID

Chain Number: 14287
Report Date : 02/17/1995
Sample Date : 02/08/1995

METHOD	PARAMETER NAME	RESULT	UNITS	MDL	DATE	BY
EPA-213.2	TOTAL CADMIUM GFAA	<0.1	UG/L	0.1	02/14/1995	JAJ
EPA-218.2	TOTAL CHROMIUM GFAA	500	UG/L	0.4	02/14/1995	JAJ
EPA-200.7	TOTAL ZINC ICP	15	UG/L	3	02/14/1995	DLB

ROBERT E. LEE & ASSOCIATES, INC.
Wisconsin Certification NO: 405043870

- CERTIFICATE OF ANALYSIS -

De Pere Wastewater Treatment Plant
315 Leonard Street
De Pere WI 54115

Attn: Al Kardoskee
Phone: 414-339-4094
Fax: 414-339-4048

Customer Number: 000404

Lab Number: 95REL002013
Sample ID : BETTER BRITE TREATED
Matrix : LIQUID

Chain Number: 14287
Report Date : 02/17/1995
Sample Date : 02/08/1995

METHOD	PARAMETER NAME	RESULT	UNITS	MDL	DATE	BY
EPA-335.2	CYANIDE-TOTAL	0.079	MG/L	0.002	02/10/1995	DJD

Robert E. Lee & Associates, Inc.
Engineering, Surveying, Laboratory Services
2825 S. Webster Ave. • Box 2100 • Green Bay, WI 54306-2100
Office 414.336.6338 • FAX 414.336.9141

Chain of Custody

14287

Company Name: De Pere WWTP
Project Name: Better Brite | Project No.:
Quote No.: | P.O. No.:

ENVIRONMENTAL PROGRAM:
WPDES: X | LUST
RCRA: | OTHER
SDWA: | OTHER

Sampled By: Ron McCracken

Report To: Al Kardoskee
Company: De Pere WWTP
Address: 315 Leonard St.
De Pere WI 54115
Telephone No.: 339-4094
Fax No.: 339-4048
Invoice To: SAME
Company:
Address:
Telephone No.:
Fax No.:

Analyses Requested (Note special detection limits or methods)

ID No.	Date	Time	A/P	Comp	Grab	Filtered	Unfiltered	#/Containers	Preservation	Total: Cd, Cr, Zn	Total cyanide								Remarks	REL Sample No.
Better Brite Treated	2/8/95	12:40	A		X		X	1	N	X									Liquid	95 002012
"	2/8/95	12:30	A		X		X	1	O		X									002013
			A P																	
			A P																	
			A P																	
			A P																	
			A P																	
			A P																	
			A P																	
			A P																	
			A P																	

	Relinquished By	Date	Time	Received By	Date	Time
1)	[signature]	2-8-95	11:14 A/P			A/P
2)			A/P			A/P
3)			A/P			A/P
Received by Lab	[signature]	2-8-95	11:14A			

A = AM P = PM

Temperature of Contents: 14 °C
Condition of Seals: —
Condition of Contents: —
Sample pH —

N = Nitric Acid
H = Hydrochloric Acid
M = Methanol
O = Sodium Hydroxide
U = Unpreserved
S = Sulfuric Acid

Distribution: Original and yellow copies accompany sample shipment to laboratory; pink copy to client, original copy returned to client with results.

I/P 93' - 001

TO ENSURE PROPER HANDLING OF SAMPLES PLEASE COMPLETE SHADED AREAS ONLY

City of De Pere

WASTEWATER TREATMENT PLANT

315 Leonard St. • De Pere, Wisconsin 54115-2324 • Phone: (414) 339-4094 • FAX# 339-4048

December 5, 1994

Kathy Erdmann
Wisconsin Department of Natural Resources
Lake Michigan District Headquarters
P.O. Box 10448
Green Bay, WI 54307-0448

Dear Kathy:

enclosed, please find copies of the results of analysis of samples taken from the Better Brite groundwater treatment facility in November. The sample naming convention remains the same as has been used in the past. Those named "Lande Street groundwater" and "Sixth Street groundwater" are untreated samples collected from each source. The samples named "Better Brite Untreated" are the mixture of groundwaters from both sources, ready for treatment, while the samples named "Better Brite Treated" are of the mixed groundwaters following treatment and ready for discharge.

If I can provide any additional information, please let me know.

Sincerely,

Albert R. Kardoskee, Jr.
Quality Control Supervisor/Chemist

\ERDMANN\12-05-94.WRI

Robert E. Lee & Associates, Inc.
Engineering, Surveying, Laboratory Services

Wisconsin Certification No: 405043870

2825 S. Webster Ave.
P.O. Box 2100
Green Bay, WI 54306-2100
414/336-6338
FAX 414/336-9141

REPORT DATE=========> 11/29/1994

CHAIN OF CUSTODY #==> 14245

CUSTOMER==========> 000404

De Pere Wastewater Treatment Plant
315 Leonard Street
De Pere WI 54115

414-339-4094

CONTACT==========> Al Kardoskee

PROJECT NO.=========> NONE

PROJECT NAME=======> BETTER BRITE

RECEIVED==========> 11/11/1994

SAMPLED==========> 11/10/1994

COMMENTS:

ATTEST: Andrew Wenzel IV

ROBERT E. LEE & ASSOCIATES, INC.
Wisconsin Certification NO: 405043870

- CERTIFICATE OF ANALYSIS -

De Pere Wastewater Treatment Plant
315 Leonard Street
De Pere WI 54115

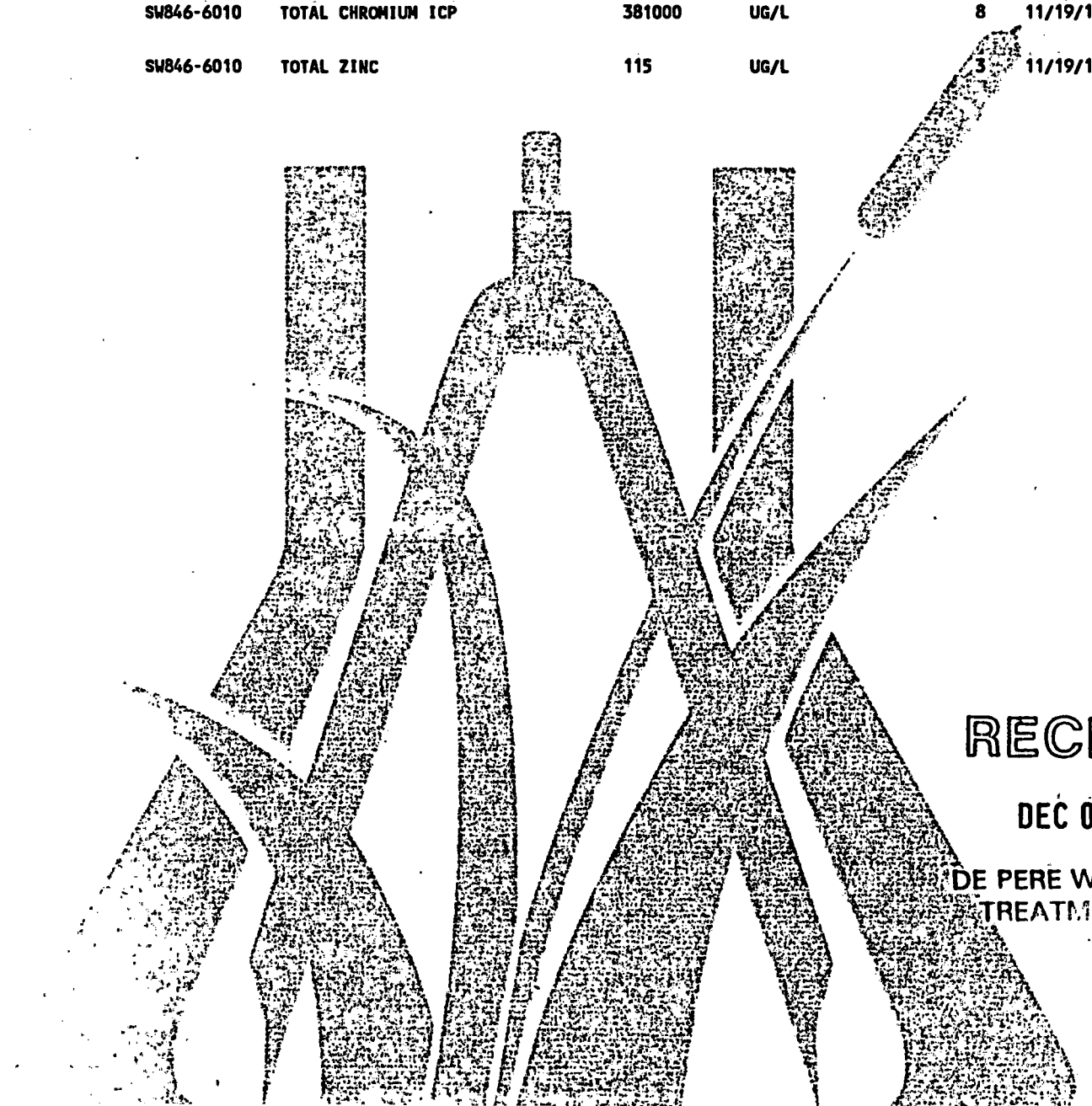
Attn: Al Kardoskee
Phone: 414-339-4094
Fax: 414-339-4048

Customer Number: 000404

Lab Number: 94REL021892
Sample ID : LANDE GROUNDWATER
Matrix : LIQUID

Chain Number: 14245
Report Date : 11/29/1994
Sample Date : 11/11/1994

METHOD	PARAMETER NAME	RESULT	UNITS	MDL	DATE	BY
SW846-6010	TOTAL CADMIUM ICP	<4	UG/L	4	11/19/1994	DLB
SW846-6010	TOTAL CHROMIUM ICP	381000	UG/L	8	11/19/1994	DLB
SW846-6010	TOTAL ZINC	115	UG/L	3	11/19/1994	DLB



ROBERT E. LEE & ASSOCIATES, INC.
Wisconsin Certification NO: 405043870

- CERTIFICATE OF ANALYSIS -

De Pere Wastewater Treatment Plant
315 Leonard Street
De Pere WI 54115

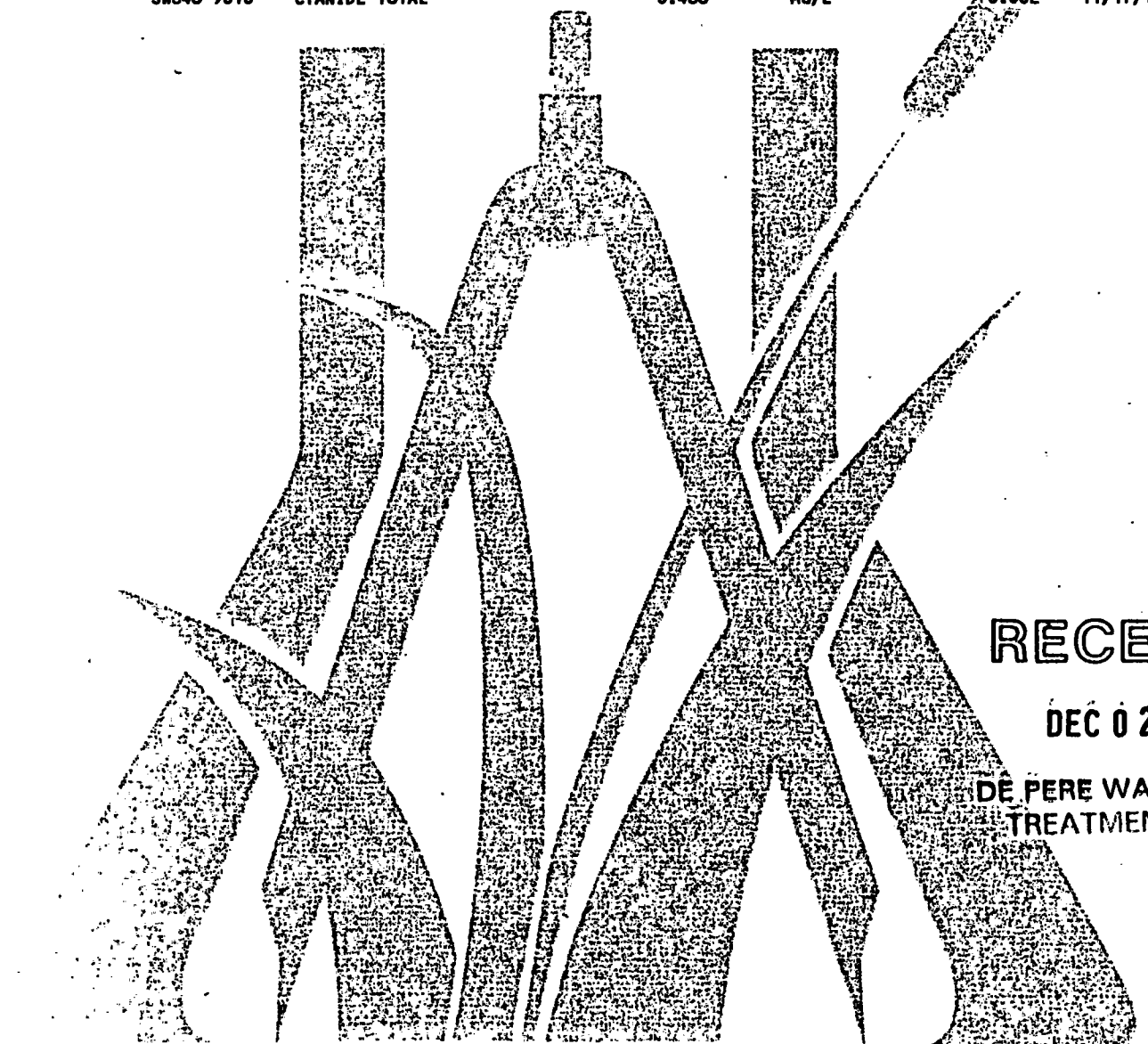
Attn: Al Kardoskee
Phone: 414-339-4094
Fax: 414-339-4048

Customer Number: 000404

Lab Number: 94REL021893
Sample ID : SIXTH GROUNDWATER
Matrix : LIQUID

Chain Number: 14245
Report Date : 11/29/1994
Sample Date : 11/10/1994

METHOD	PARAMETER NAME	RESULT	UNITS	MDL	DATE	BY
SW846-6010	TOTAL CADMIUM ICP	18	UG/L	4	11/19/1994	DLB
SW846-6010	TOTAL CHROMIUM ICP	131000	UG/L	8	11/19/1994	DLB
SW846-6010	TOTAL ZINC	2060	UG/L	3	11/19/1994	DLB
SW846-9010	CYANIDE-TOTAL	0.488	MG/L	0.002	11/17/1994	DJD



ROBERT E. LEE & ASSOCIATES, INC.
Wisconsin Certification NO: 405043870

- CERTIFICATE OF ANALYSIS -

De Pere Wastewater Treatment Plant
315 Leonard Street
De Pere WI 54115

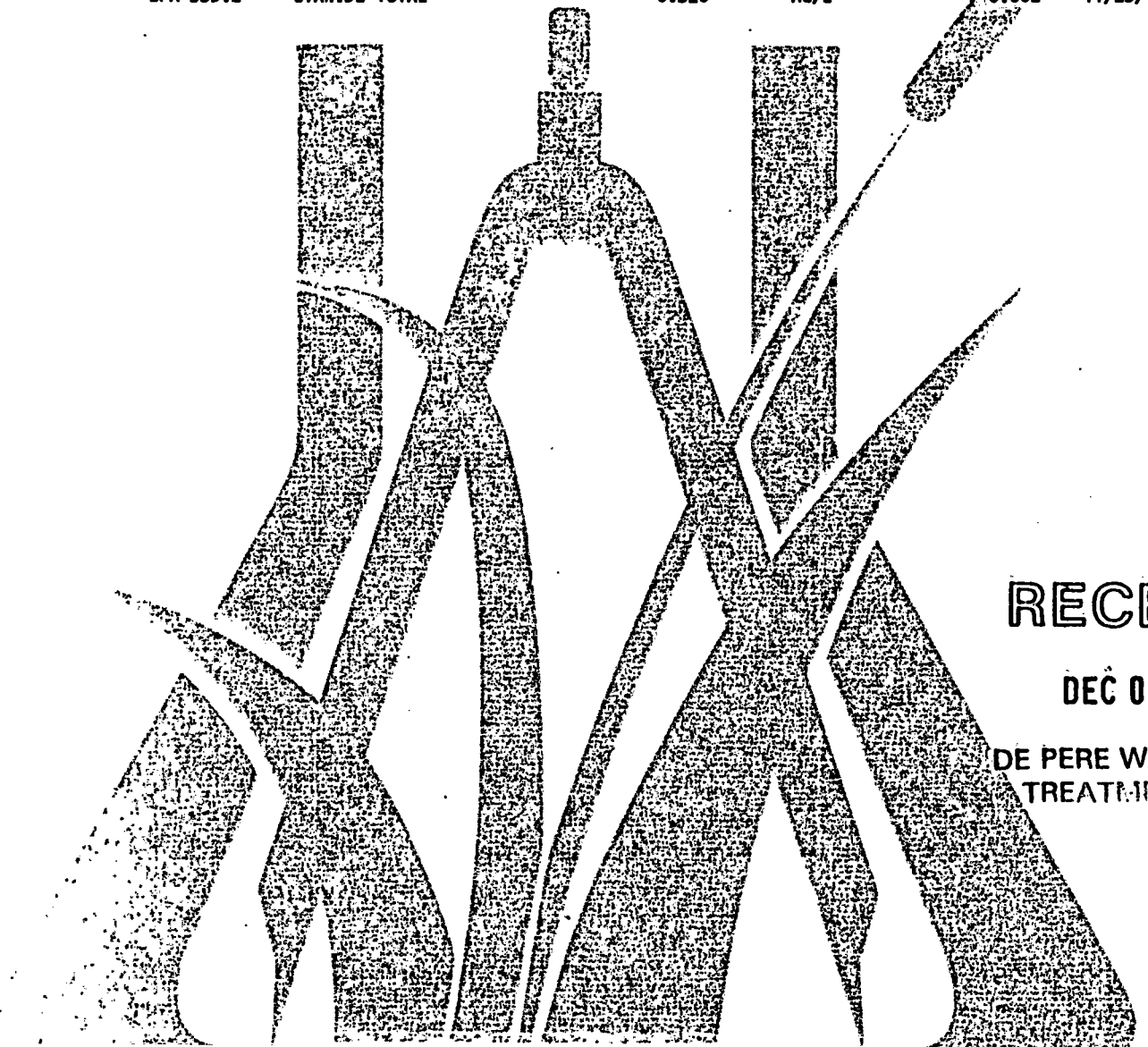
Attn: Al Kardoskee
Phone: 414-339-4094
Fax: 414-339-4048

Customer Number: 000404

Lab Number: 94REL021894
Sample ID : BETTER BRITE UNTREATED
Matrix : LIQUID

Chain Number: 14245
Report Date : 11/29/1994
Sample Date : 11/10/1994

METHOD	PARAMETER NAME	RESULT	UNITS	MDL	DATE	BY
EPA-200.7	TOTAL CADMIUM ICP	<4	UG/L	4	11/19/1994	DLB
EPA-200.7	TOTAL CHROMIUM ICP	216000	UG/L	8	11/19/1994	DLB
EPA-200.7	TOTAL ZINC	125	UG/L	3	11/19/1994	DLB
EPA-335.2	CYANIDE-TOTAL	0.320	MG/L	0.002	11/23/1994	DJD



ROBERT E. LEE & ASSOCIATES, INC.
Wisconsin Certification NO: 405043870

- CERTIFICATE OF ANALYSIS -

De Pere Wastewater Treatment Plant
315 Leonard Street
De Pere WI 54115

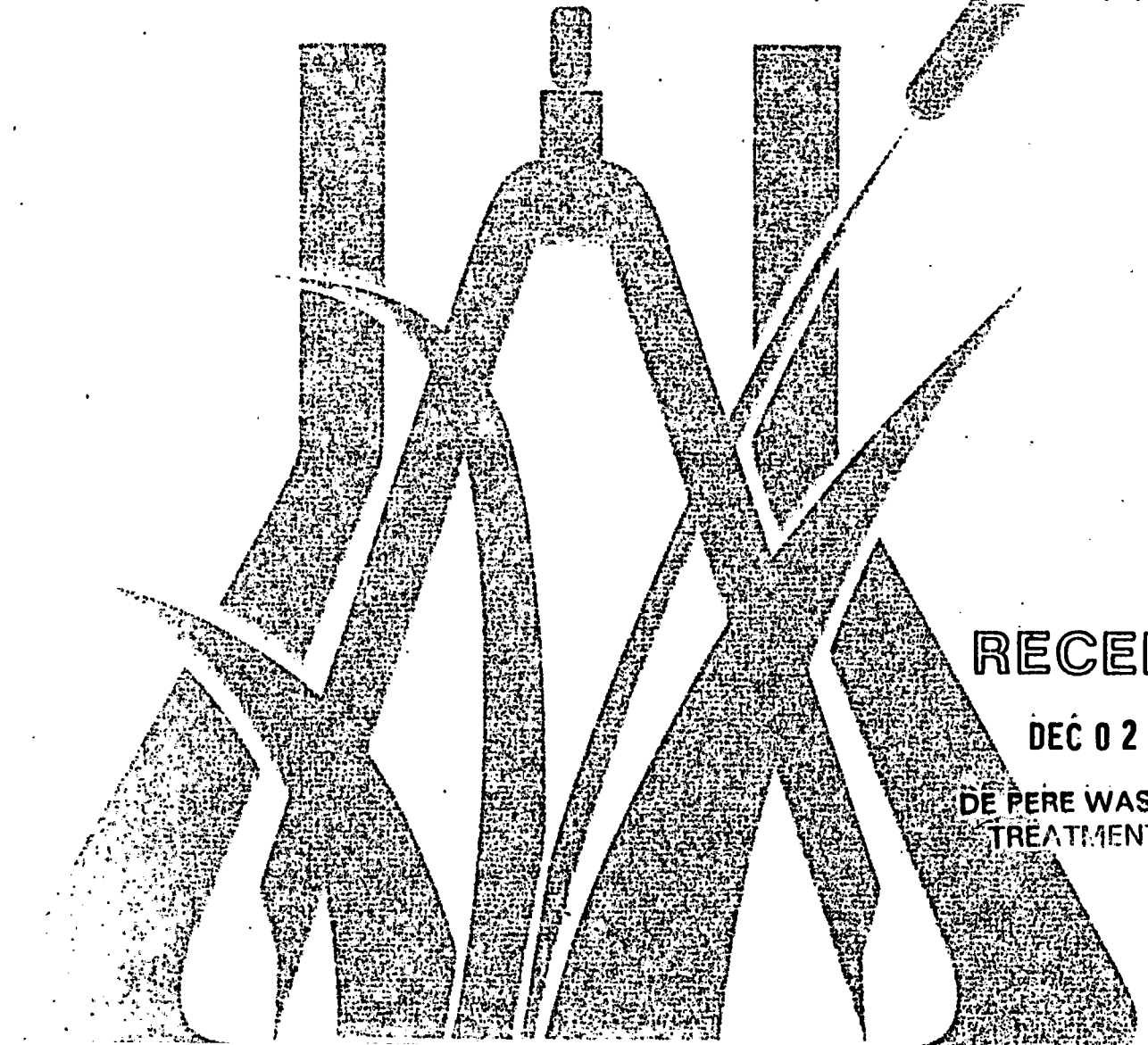
Attn: Al Kardoskee
Phone: 414-339-4094
Fax: 414-339-4048

Customer Number: 000404

Lab Number: 94REL021895
Sample ID : BETTER BRITE TREATED
Matrix : LIQUID

Chain Number: 14245
Report Date : 11/29/1994
Sample Date : 11/10/1994

METHOD	PARAMETER NAME	RESULT	UNITS	MDL	DATE	BY
EPA-200.7	TOTAL CADMIUM ICP	<4	UG/L	4	11/19/1994	DLB
EPA-200.7	TOTAL CHROMIUM ICP	1030	UG/L	8	11/19/1994	DLB
EPA-200.7	TOTAL ZINC	7	UG/L	3	11/19/1994	DLB
EPA-335.2	CYANIDE-TOTAL	<0.002	MG/L	0.002	11/23/1994	DJD



Robert E. Lee & Associates, Inc.
Engineering, Surveying, Laboratory Services
2825 S. Webster Ave. • Box 2100 • Green Bay, WI 54306-2100
Office 414.336.6338 • FAX 414.336.9141

Chain of Custody

NOV 11-11 14245

Company Name: De Pere WWTP
Project Name: Better Brite | Project No.:
Quote No.: | P.O. No.:

ENVIRONMENTAL PROGRAM:
WPDES: X | LUST
RCRA: | OTHER
SDWA: | OTHER

Sampled By: R. McCracken / M. Strenski

SAMPLE ID No.	Date	Time	Comp	Grab	Filtered	Unfiltered	# Containers	Preservation	Total: Cd, Cr, Zn	Total cyanide	Remarks	REL Sample No.
Landa Groundwater	11/11/94	2:15 A/P		X			1	N	X		Liquid	21892
Sixth Groundwater	11/10/94	11:30 A/P		X			1	N	X			21893
"	"	11:30 A/P		X			1	O		X		
Better Brite Untreated	"	11:40 A/P		X			1	N	X			21894
"	"	11:40 A/P		X			1	O		X		
Better Brite Treated	"	9:11 A/P		X			1	N	X			21895
"	"	9:10 A/P		X			1	O		X		
		A/P										
		A/P										
		A/P										
		A/P										
		A/P										
		A/P										

Analyses Requested (Note special detection limits or methods)

Report To: Al Kordaskea
Company: De Pere WWTP
Address: 315 Leonard St.
De Pere, WI 54115
Telephone No.: 339-4094
Fax No.: 339-4048
Invoice To: SAME
Company:
Address:
Telephone No.:
Fax No.:

RECEIVED
DEC 02 1994

Relinquished By	Date	Time	Received By	Date	Time
1) Michael R Strenski	11/11/94	3:37 A/P	DE PERE WASTEWATER TREATMENT PLANT		A/P
2)		A/P			A/P
3)		A/P			A/P
Received by Lab	11/11/94	1537			A = AM P = PM

Temperature of Contents: 0°C
Condition of Seals: ✓
Condition of Contents: ✓
Sample pH: ✓

Distribution: Original and yellow copies accompany sample shipment to laboratory; pink copy to client, original copy returned to client with results.

N = Nitric Acid | O = Sodium Hydroxide
H = Hydrochloric Acid | U = Unpreserved
M = Methanol | S = Sulfuric Acid

I/P 93' - 001

TO ENSURE PROPER HANDLING OF SAMPLES PLEASE COMPLETE SHADED AREAS ONLY

City of De Pere

WASTEWATER TREATMENT PLANT

315 Leonard St. • De Pere, Wisconsin 54115-2324 • Phone (414) 339-4094 • FAX# 339-4048

August 30, 1994

Kathy Erdmann
Wisconsin Department of Natural Resources
Lake Michigan District Headquarters
P.O. Box 10448
Green Bay, WI 54307-0448

Dear Kathy:

Following our phone conversations yesterday, I realized that I had earlier this month received the analytical results for samples taken in July at the Better Brite sites. I had made photocopies of that data to send to you, but the copies somehow ended up in an incorrect file instead. I am enclosing those copies with this letter. Please note that the same convention was used for these samples as had been used in April. Those named "Lande Groundwater" and "Sixth Groundwater" are untreated samples collected from each source. The samples named "Better Brite Untreated" are the mixture of groundwaters from both sources, while the samples named "Better Brite Treated" are of the mixed groundwaters following treatment and ready for discharge.

If I can provide any additional information, please let me know.

Sincerely,

Albert R. Kardoskee, Jr.
Quality Control Supervisor/Chemist

\ERDMANN\08-30-94.WRI

ROBERT E. LEE & ASSOCIATES, INC.
Wisconsin Certification NO: 405043870

- CERTIFICATE OF ANALYSIS -

To: De Pere Wastewater Treatment Plant
315 Leonard Street
De Pere WI 54115

Attn: Al Kardoskee
Phone: 414-339-4094
Fax: 414-339-4048

Customer Number: 000404

Lab Number: 94REL012957
Sample ID : LANDE GROUNDWATER
Matrix : LIQUID

Chain Number: 2036
Report Date : 07/29/1994
Sample Date : 07/14/1994

METHOD	PARAMETER NAME	RESULT	UNITS	MDL	DATE	BY
EPA-200.7	TOTAL CADMIUM ICP	<4	UG/L	4	07/21/1994	DLB
EPA-200.7	TOTAL CHROMIUM ICP	624000	UG/L	8	07/21/1994	DLB
EPA-200.7	TOTAL ZINC	86	UG/L	3	07/21/1994	DLB

ROBERT E. LEE & ASSOCIATES, INC.
Wisconsin Certification NO: 405043870

- CERTIFICATE OF ANALYSIS -

To: De Pere Wastewater Treatment Plant
315 Leonard Street
De Pere WI 54115

Attn: Al Kardoskee
Phone: 414-339-4094
Fax: 414-339-4048

Customer Number: 000404

Lab Number: 94REL012958
Sample ID : SIXTH GROUNDWATER
Matrix : LIQUID

Chain Number: 2036
Report Date : 07/29/1994
Sample Date : 07/15/1994

METHOD	PARAMETER NAME	RESULT	UNITS	MDL	DATE	BY
EPA-200.7	TOTAL CADMIUM ICP	<4	UG/L	4	07/21/1994	DLB
EPA-200.7	TOTAL CHROMIUM ICP	134000	UG/L	8	07/21/1994	DLB
EPA-200.7	TOTAL ZINC	358	UG/L	3	07/21/1994	DLB

ROBERT E. LEE & ASSOCIATES, INC.
Wisconsin Certification NO: 405043870

- CERTIFICATE OF ANALYSIS -

To: De Pere Wastewater Treatment Plant
315 Leonard Street
De Pere WI 54115

Attn: Al Kardoskee
Phone: 414-339-4094
Fax: 414-339-4048

Customer Number: 000404

Lab Number: 94REL012959
Sample ID : SIXTH GROUNDWATER
Matrix : LIQUID

Chain Number: 2036
Report Date : 07/29/1994
Sample Date : 07/15/1994

METHOD	PARAMETER NAME	RESULT	UNITS	MDL	DATE	BY
EPA-335.2	CYANIDE-TOTAL	1.01	MG/L	0.004	07/28/1994	DJD

ROBERT E. LEE & ASSOCIATES, INC.
Wisconsin Certification NO: 405043870

- CERTIFICATE OF ANALYSIS -

To: De Pere Wastewater Treatment Plant
315 Leonard Street
De Pere WI 54115

Attn: Al Kardoskee
Phone: 414-339-4094
Fax: 414-339-4048

Customer Number: 000404

Lab Number: 94REL012960
Sample ID : BETTER BRITE UNTREATED
Matrix : LIQUID

Chain Number: 2036
Report Date : 07/29/1994
Sample Date : 07/15/1994

METHOD	PARAMETER NAME	RESULT	UNITS	MDL	DATE	BY
EPA-200.7	TOTAL CADMIUM ICP	<4	UG/L	4	07/21/1994	DLB
EPA-200.7	TOTAL CHROMIUM ICP	357000	UG/L	8	07/21/1994	DLB
EPA-200.7	TOTAL ZINC	67	UG/L	3	07/21/1994	DLB

ROBERT E. LEE & ASSOCIATES, INC.
Wisconsin Certification NO: 405043870

- CERTIFICATE OF ANALYSIS -

To: De Pere Wastewater Treatment Plant
315 Leonard Street
De Pere WI 54115

Attn: Al Kardoskee
Phone: 414-339-4094
Fax: 414-339-4048

Customer Number: 000404

Lab Number: 94REL012961
Sample ID : BETTER BRITE UNTREATED
Matrix : LIQUID

Chain Number: 2036
Report Date : 07/29/1994
Sample Date : 07/15/1994

METHOD	PARAMETER NAME	RESULT	UNITS	MDL	DATE	BY
EPA-335.2	CYANIDE-TOTAL	0.400	MG/L	0.004	07/28/1994	DJD

ROBERT E. LEE & ASSOCIATES, INC.
Wisconsin Certification NO: 405043870

- CERTIFICATE OF ANALYSIS -

To: De Pere Wastewater Treatment Plant
315 Leonard Street
De Pere WI 54115

Attn: Al Kardoskee
Phone: 414-339-4094
Fax: 414-339-4048

Customer Number: 000404

Lab Number: 94REL012962
Sample ID : BETTER BRITE TREATED
Matrix : LIQUID

Chain Number: 2036
Report Date : 07/29/1994
Sample Date : 07/15/1994

METHOD	PARAMETER NAME	RESULT	UNITS	MDL	DATE	BY
EPA-200.7	TOTAL CADMIUM ICP	<4	UG/L	4	07/21/1994	DLB
EPA-200.7	TOTAL CHROMIUM ICP	649	UG/L	8	07/21/1994	DLB
EPA-200.7	TOTAL ZINC	<3	UG/L	3	07/21/1994	DLB

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Wisconsin Certification NO: 405043870

- CERTIFICATE OF ANALYSIS -

To: De Pere Wastewater Treatment Plant
315 Leonard Street
De Pere WI 54115

Attn: Al Kardoskee
Phone: 414-339-4094
Fax: 414-339-4048

Customer Number: 000404

Lab Number: 94REL012963
Sample ID : BETTER BRITE TREATED
Matrix : LIQUID

Chain Number: 2036
Report Date : 07/29/1994
Sample Date : 07/15/1994

METHOD	PARAMETER NAME	RESULT	UNITS	MDL	DATE	BY
EPA-335.2	CYANIDE-TOTAL	0.013	MG/L	0.004	07/28/1994	DJD

Robert E. Lee & Associates, Inc.
Engineering, Surveying, Laboratory Services
2825 S. Webster Ave. • Box 2100 • Green Bay, WI 54306-2100
Office 414.336.6338 • FAX 414.336.9141

2036

Chain of Custody

Company Name: De Pere WWTP	
Project Name: Better Brite	Project No.:
Quote No.:	P.O. No.:

ENVIRONMENTAL PROGRAM:

CWA: WPDES x NR219 ______ SLUDGE ______

RCRA: MW ______ SW ______ DISPOSAL ______

SDWA: PECFA ______ OTHER ______

Sampled By: M. Streski / R Kennedy

Analyses Requested
(Note special detection limits or methods)

Report To: [illegible]	
Company: De Pere WWTP	
Address: [illegible]	
Telephone No.: [illegible]	
Invoice To: SAME	
Company:	
Address:	
Telephone No.:	

Accelerated Turnaround Requested ______
(Subject to Additional Charge)

Result By: ____ / ____ / ____
Month Day Year
(Date must be Accepted and Approved by Laboratory)

SAMPLE ID No.	Date	Time	Comp	Grab	Sample Description	Number of Containers	Preservation*	Total [illegible]	Total [illegible]	Remarks	REL Sample No.
Lande Groundwater	7/14/94	11:15A		x	Untreated groundwater	1	N	x		liquid	94-12957
Sixth Groundwater	7/15/94	4:52A		x	"	1	N	x			12958
"	"	9:54A		x	"	1	O		x		12959
Better Brite Untreated	"	10:05A		x	"	1	N	x			12960
"	"	10:03A		x	"	1	O		x		12961
Better Brite Treated	"	4:13A		x	Treated groundwater	1	N	x			12962
"	"	4:11A		x	"	1	O		x		12963

	Relinquished By	Date	Time	Received By	Date	Time
1)	[signature]	7-18-94	9:52 AM	[signature]	7/18/94	0952
2)						
3)						
4)						

Temperature of Contents: on ice °C
Condition of Seals: ✓
Condition of Contents: ✓
Sample pH: ✓

N = Nitric Acid O = Sodium Hydroxide
H = Hydrochloric Acid U = Unpreserved
S = Sulfuric Acid

Distribution: Original and yellow copies accompany sample shipment to laboratory; pink copy to client, original copy returned to client with results.

I/P 93' - 001

TO ENSURE PROPER HANDLING OF SAMPLES PLEASE COMPLETE THIS ENTIRE FORM

City of De Pere

WASTEWATER TREATMENT PLANT

315 Leonard St. • De Pere, Wisconsin 54115-2324 • Phone: (414) 339-4094 • FAX# 339-4048

May 13, 1994

Kathy Erdmann
Wisconsin Department of Natural Resources
Lake Michigan District Headquarters
P.O. Box 10448
Green Bay, WI 54307-0448

Dear Kathy:

I am enclosing copies of the results of analysis of samples taken from the Better Brite groundwater treatment facility in April. Please note the following naming convention used for the different samples: those named "Lande Street groundwater" and "Sixth Street groundwater" are untreated samples collected from each source. The samples named "Better Brite Untreated" are the mixture of groundwaters from both sources, ready for treatment, while the samples named "Better Brite Treated" are of the mixed groundwaters following treatment and ready for discharge.

If I can provide any additional information, please let me know.

Sincerely,

Albert R. Kardoskee, Jr.
Quality Control Supervisor/Chemist

\ERDMANN\05-13-94.WRI

Robert E. Lee & Associates, Inc.
Engineering, Surveying, Laboratory Services

Wisconsin Certification No: 405043870

2825 S. Webster Ave.
P.O. Box 2100
Green Bay, WI 54306-2100
414/336-6338
FAX 414/336-9141

REPORT DATE=========> 05/09/1994

CHAIN OF CUSTODY #==> 2029

CUSTOMER==========> 000404

De Pere Wastewater Treatment Plant
315 Leonard Street
De Pere WI 54115

414-339-4094

CONTACT==========> Al Kardoskee

PROJECT NO:=======> NONE

PROJECT NAME======> BETTER BRITE

RECEIVED==========> 04/26/1994

SAMPLED==========> 04/26/1994

COMMENTS:

RECEIVED
MAY 12 1994
DE PERE WASTEWATER
TREATMENT PLANT

ATTEST: Andrew Wenzel for

ROBERT E. LEE & ASSOCIATES, INC.
Wisconsin Certification NO: 405043870

- CERTIFICATE OF ANALYSIS -

To: De Pere Wastewater Treatment Plant
315 Leonard Street
De Pere WI 54115

Attn: Al Kardoskee
Phone: 414-339-4094
Fax: 414-339-4048

Customer Number: 000404

Lab Number: 94REL005590
Sample ID : LANDE ST. GROUNDWATER
Matrix : LIQUID

Chain Number: 2029
Report Date : 05/09/1994
Sample Date : 04/26/1994

METHOD	PARAMETER NAME	RESULT	UNITS	MDL	DATE	BY
SW846-6010	TOTAL ZINC	26	UG/L	3	04/28/1994	DLB
SW846-6010	TOTAL CADMIUM ICP	<4	UG/L	4	04/28/1994	DLB
SW846-6010	TOTAL CHROMIUM ICP	435000	UG/L	8	04/28/1994	DLB

ROBERT E. LEE & ASSOCIATES, INC.
Wisconsin Certification NO: 405043870

- CERTIFICATE OF ANALYSIS -

To: De Pere Wastewater Treatment Plant
315 Leonard Street
De Pere WI 54115

Attn: Al Kardoskee
Phone: 414-339-4094
Fax: 414-339-4048

Customer Number: 000404

Lab Number: 94REL005591
Sample ID : SIXTH ST. GROUNDWATER
Matrix : LIQUID

Chain Number: 2029
Report Date : 05/09/1994
Sample Date : 04/26/1994

METHOD	PARAMETER NAME	RESULT	UNITS	MDL	DATE	BY
SW846-6010	TOTAL ZINC	24	UG/L	3	04/28/1994	DLB
EPA-335.2	CYANIDE-TOTAL	1.55	MG/L	0.004	05/06/1994	DJD
SW846-6010	TOTAL CADMIUM ICP	<4	UG/L	4	04/28/1994	DLB
SW846-6010	TOTAL CHROMIUM ICP	92200	UG/L	8	04/28/1994	DLB

ROBERT E. LEE & ASSOCIATES, INC.
Wisconsin Certification NO: 405043870

- CERTIFICATE OF ANALYSIS -

To: De Pere Wastewater Treatment Plant
315 Leonard Street
De Pere WI 54115

Attn: Al Kardoskee
Phone: 414-339-4094
Fax: 414-339-4048

Customer Number: 000404

Lab Number: 94REL005592
Sample ID : BETTER BRITE UNTREATED
Matrix : LIQUID

Chain Number: 2029
Report Date : 05/09/1994
Sample Date : 04/26/1994

METHOD	PARAMETER NAME	RESULT	UNITS	MDL	DATE	BY
SW846-6010	TOTAL ZINC	59	UG/L	3	04/28/1994	DLB
EPA-335.2	CYANIDE-TOTAL	1.18	MG/L	0.004	05/06/1994	DJD
SW846-6010	TOTAL CADMIUM ICP	4	UG/L	4	04/28/1994	DLB
SW846-6010	TOTAL CHROMIUM ICP	215000	UG/L	8	04/28/1994	DLB

RECEIVED
MAY 12 1994
DE PERE WASTEWATER
TREATMENT PLANT

Robert E. Lee & Associates, Inc.
Engineering, Surveying, Laboratory Services
2825 S. Webster Ave. • Box 2100 • Green Bay, WI 54306-2100
Office 414.336.6338 • FAX 414.336.9141

2029

Chain of Custody

Company Name: De Pere WWTP
Project Name: Better Brite | Project No.:
Quote No.: | P.O. No.:

ENVIRONMENTAL PROGRAM:
CWA: WPDES X NR219 SLUDGE
RCRA: MW SW DISPOSAL
SDWA: PECFA OTHER
Sampled By:

Analyses Requested (Note special detection limits or methods)

Report To: Al Kordaskee
Company: De Pere WWTP
Address: 315 Leonard St.
Telephone No.: 339-4094
Invoice To: SAME
Company:
Address:
Telephone No.:
Accelerated Turnaround Requested (Subject to Additional Charge)
Result By: / / Month Day Year
(Date must be Accepted and Approved by Laboratory)

SAMPLE ID No.	Date	Time	Comp	Grab	Sample Description	Number of Containers	Preservation*	Total Cd, Cr, Zn	Total Cyanide	Remarks	REL Sample No.
Lande St. Groundwater	4/26/94	0945		X	Untreated groundwater	1	N	X			94-5590
Sixth St. Groundwater	4/26/94	0955		X	"	1	N	X			5591
"	"	0957		X	"	1	O		X		1
Better Brite Untreated	"	1045		X	Untreated mixed	1	N	X			5592
"	"	1045		X	"	1	O		X		1

RECEIVED
MAY 12 1994
DE PERE WASTEWATER TREATMENT

	Relinquished By	Date	Time	Received By	Date	Time
1)	[signature]	4/26/94	11:15 AM	[signature]	4/26/94	1157
2)						
3)						
4)						

Temperature of Contents: 10°C
Condition of Seals: V
Condition of Contents: V
Sample pH 2 7 12

N = Nitric Acid O = Sodium Hydroxide
H = Hydrochloric Acid U = Unpreserved
S = Sulfuric Acid

Distribution: Original and yellow copies accompany sample shipment to laboratory; pink copy to client, original copy returned to client with results.

I/P 93' - 001

TO ENSURE PROPER HANDLING OF SAMPLES PLEASE COMPLETE THIS ENTIRE FORM

Robert E. Lee & Associates, Inc.
Engineering, Surveying, Laboratory Services

2825 S. Webster Ave.
P.O. Box 2100
Green Bay, WI 54306-2100
414/336-6338
FAX 414/336-9141

Wisconsin Certification No: 405043870

REPORT DATE=========> 05/09/1994

CHAIN OF CUSTODY #==> 2030

CUSTOMER============> 000404

De Pere Wastewater Treatment Plant
315 Leonard Street
De Pere WI 54115

414-339-4094

CONTACT=============> Al Kardoskee

PROJECT NO.=========> NONE

PROJECT NAME========> BETTER BRITE

RECEIVED============> 04/27/1994

SAMPLED=============> 04/27/1994

COMMENTS:

RECEIVED
MAY 12 1994
DE PERE WASTEWATER
TREATMENT PLANT

ATTEST: Andrew Wenzel /ams

ROBERT E. LEE & ASSOCIATES, INC.
Wisconsin Certification NO: 405043870

- CERTIFICATE OF ANALYSIS -

To: De Pere Wastewater Treatment Plant
315 Leonard Street
De Pere WI 54115

Attn: Al Kardoskee
Phone: 414-339-4094
Fax: 414-339-4048

Customer Number: 000404

Lab Number: 94REL005692
Sample ID : BETTER BRITE TREATED
Matrix : LIQUID

Chain Number: 2030
Report Date : 05/09/1994
Sample Date : 04/27/1994

METHOD	PARAMETER NAME	RESULT	UNITS	MDL	DATE	BY
EPA-335.2	CYANIDE-TOTAL	0.496	MG/L	0.004	05/06/1994	DJD
EPA-200.7	TOTAL CADMIUM ICP	<4	UG/L	4	05/05/1994	DLB
EPA-200.7	TOTAL CHROMIUM ICP	1380	UG/L	8	05/05/1994	DLB
EPA-200.7	TOTAL ZINC	<3	UG/L[a]	3	05/05/1994	DLB

2030

Robert E. Lee & Associates, Inc.
Engineering, Surveying, Laboratory Services
2825 S. Webster Ave. • Box 2100 • Green Bay, WI 54306-2100
Office 414.336.6338 • FAX 414.336.9141

Chain of Custody

Company Name: De Pere WWTP
Project Name: Better Brite
Project No.:
Quote No.:
P.O. No.:

Report To: Al Kardeskee
Company: De Pere WWTP
Address: 315 Leonard St
Telephone No.: 339-4094
Invoice To: SAME
Company:
Address:
Telephone No.:

ENVIRONMENTAL PROGRAM:
CWA: WPDES X NR219 ___ SLUDGE ___
RCRA: MW ___ SW ___ DISPOSAL ___
SDWA: PECFA ___ OTHER ___

Sampled By: R. Kennedy

Accelerated Turnaround Requested ___
(Subject to Additional Charge)
Result By: ___ / ___ / ___ (Month Day Year)
(Date must be Accepted and Approved by Laboratory)

Analyses Requested (Note special detection limits or methods)

SAMPLE ID No.	Date	Time	Comp	Grab	Sample Description	Number of Containers	Preservation*	Total Cd, Cr, Zn	Total cyanide	Remarks	REL Sample No.
Better Brite Treated	4/27/94	11:55A		x	Treated mixed	1	N	x			94-5692
"	"	11:57A		x	"	1	O		x		

RECEIVED
MAY 12 1994
DE PERE WASTEWATER TREATMENT PLANT

	Relinquished By	Date	Time	Received By	Date	Time
1)	[signature]	4-27-94	12:26p	[signature]	4/27/94	1224
2)						
3)						
4)						

Temperature of Contents: 10 °C
Condition of Seals: ✓
Condition of Contents: ✓
Sample pH: <2 >12

N = Nitric Acid O = Sodium Hydroxide
H = Hydrochloric Acid U = Unpreserved
S = Sulfuric Acid

Distribution: Original and yellow copies accompany sample shipment to laboratory; pink copy to client, original copy returned to client with results.

I/P 93' - 001

TO ENSURE PROPER HANDLING OF SAMPLES PLEASE COMPLETE THIS ENTIRE FORM

City of De Pere

WASTEWATER TREATMENT PLANT
216 Leonard St. • De Pere, Wisconsin 54115-2324 • Phone: (414) 339-4094 • FAX# 339-4048

April 21, 1994

Kathy Erdmann
Wisconsin Department of Natural Resources
Lake Michigan District Headquarters
P.O. Box 10448
Green Bay, WI 54307-0448

Dear Kathy:

Enclosed, please find copies of the report sheets containing the results of analysis of the most recent samples taken from the Better Brite groundwater treatment facility. We are currently planning to collect another set of samples next week, provided that enough groundwater has accumulated. As soon as results are available from those samples, I will send a copy of them to you.

If I can provide any additional information, please let me know.

Sincerely,

Albert R. Kardoskee, Jr.
Quality Control Supervisor/Chemist

\ERDMANN\04-22-94.WRI

ROBERT E. LEE & ASSOCIATES, INC.
Wisconsin Certification NO: 405043870

- CERTIFICATE OF ANALYSIS -

To: De Pere Wastewater Treatment Plant
315 Leonard Street
De Pere WI 54115

Attn: Al Kardoskee
Phone: 414-339-4094
Fax: 414-339-4048

Customer Number: 000404

Lab Number: 94REL000240
Sample ID : 069596/069597
Matrix : LIQUID

Chain Number: 2018
Report Date : 01/17/1994
Sample Date : 01/04/1994

METHOD	PARAMETER NAME	RESULT	UNITS	MDL	DATE	BY
EPA 200.7	TOTAL CADMIUM ICP	<20	UG/L	20	01/12/1994	EWW
EPA 200.7	TOTAL CHROMIUM ICP	394000	UG/L	8	01/12/1994	EWW
EPA 200.7	TOTAL ZINC	830	UG/L	3	01/14/1994	EWW
EPA-335.2	CYANIDE-TOTAL	0.230	MG/L	0.004	01/12/1994	DJB

ROBERT E. LEE & ASSOCIATES, INC.
Wisconsin Certification NO: 405043870

- CERTIFICATE OF ANALYSIS -

To: De Pere Wastewater Treatment Plant
315 Leonard Street
De Pere WI 54115

Attn: Al Kardoskee
Phone: 414-339-4094
Fax: 414-339-4048

Customer Number: 000404

Lab Number: 94REL000241
Sample ID : 069598/069599
Matrix : LIQUID

Chain Number: 2018
Report Date : 01/17/1994
Sample Date : 01/04/1994

METHOD	PARAMETER NAME	RESULT	UNITS	MDL	DATE	BY
EPA 200.7	TOTAL CADMIUM ICP	<4	UG/L	4	01/12/1994	EWW
EPA 200.7	TOTAL CHROMIUM ICP	595	UG/L	8	01/12/1994	EWW
EPA 200.7	TOTAL ZINC	3	UG/L	3	01/12/1994	EWW
EPA-335.2	CYANIDE-TOTAL	0.067	MG/L	0.004	01/12/1994	DJB

2018

Robert E. Lee & Associates, Inc.
Engineering, Surveying, Laboratory Services
2825 S. Webster Ave. • Box 2100 • Green Bay, WI 54306-2100
Office 414.336.6338 • FAX 414.336.9141

Chain of Custody

Company Name: De Pere WWTP
Project Name: Beaver Brook | Project No.:
Quote No.: | P.O. No.:

ENVIRONMENTAL PROGRAM:
CWA: WPDES ✓ NR219 ____ SLUDGE ____
RCRA: MW ____ SW ____ DISPOSAL ____
SDWA: PECFA ____ OTHER ____
Sampled By: M. Strenski / R Kennedy

Analyses Requested (Note special detection limits or methods)

Report To: Al Kaschinske
Company: De Pere WWTP
Address: 315 Lewis St.
Telephone No.: 339-4094
Invoice To: SAME
Company:
Address:
Telephone No.:
Accelerated Turnaround Requested ____ (Subject to Additional Charge)
Result By: ____ / ____ / ____ (Month / Day / Year)
(Date must be Accepted and Approved by Laboratory)

SAMPLE ID No.	Date	Time	Comp	Grab	Sample Description	Number of Containers	Preservation	Total Cd, Cr, Zn	Total Cyanide	Remarks	REL Sample No.
069596	1/6/94	12:55A		X	untreated groundwater	1	N	X			94RELD00240
069597	"	12:56A		X	"	1	O		X		↓
069598	"	9:58P		X	treated groundwater	1	N	X			241
069599	"	10:01P		X	"	1	O		X		↓

Relinquished By	Date	Time	Received By	Date	Time
1) Michael R Strenski	1-7-94	10:17am	Duchac, M.	1/7/94	1017
2)					
3)					
4)					

Temperature of Contents: ICE °C
Condition of Seals: ✓
Condition of Contents: ✓
Sample pH: ____

N = Nitric Acid O = Sodium Hydroxide
H = Hydrochloric Acid U = Unpreserved
S = Sulfuric Acid

Distribution: Original and yellow copies accompany sample shipment to laboratory; pink copy to client, original copy returned to client with results.

I/P 93' - 001

TO ENSURE PROPER HANDLING OF SAMPLES PLEASE COMPLETE THIS ENTIRE FORM

CORRESPONDENCE MEMORANDUM

STATE OF WISCONSIN

DATE: March 4, 1994

TO: Paul Kozol - SW/3

FROM: Terry Koehn - LMD

SUBJECT: **Better Brite Project - Pretreatment Plant Operation Analytical Results**

Samples of water are collected from the Better Brite Chrome Shop pretreatment plant basically on a quarterly basis. Results from samples collected September 29 and October 1, 1993 are presented in the table below. These samples represent contaminated water prior to treatment. On-site testing of the treated water (prior to discharge) from each batch continues to be performed.

The analyses were performed by Robert E. Lee & Associates. Results are presented below:

Sample Results

Sample #	Date Sampled	Parameter	Result	Unit
Zinc-929-CNA [1]	09/29/93	Amenable Cyanide	65	ug/l
Zinc-929-CN	09/29/93	Total Cyanide	1.821	mg/l
Zinc-929-MA	09/29/93	Total Chromium	565,000	ug/l
Zinc-929-MA	09/29/93	Total Zinc	28	ug/l
Zinc-929-MA	09/29/93	Total Cadmium	<3	ug/l
Zinc-929-MB [2]	09/29/93	Total Chromium	704,000	ug/l
Zinc-929-MB	09/29/93	Total Zinc	46	ug/l
Zinc-929-MB	09/29/93	Total Cadmium	<3	ug/l
Lande Street [3]	10/01/93	Total Chromium	234,000	ug/l
Lande Street	10/01/93	Total Zinc	29	ug/l
Lande Street	10/01/93	Total Cadmium	<4	ug/l

[1] Samples Zinc-929-CNA, Zinc-929-CN, Zinc-929-MA and Zinc-929-MB were collected directly from the Zinc Shop Sump
[2] Sample Zinc-929-MB is a duplicate of sample Zinc-929-MA
[3] Sample, Lande Street, was collected from the Lande Street pretreatment facility and represents a mixture of water from both the Zinc Shop site and from the Chrome Shop site

Laboratory analysis sheets are attached. Please contact Mike Kersten from the City of De Pere POTW (414-339-4094) regarding future sampling events. If you have any questions regarding the above please give me a call.

cc: D. Rossberg LMD - SW
D. Linnear U.S. EPA Region V
D. Benner City of De Pere
w/o att.

ROBERT E. LEE & ASSOCIATES, INC.
Wisconsin Certification NO: 405043870

- CERTIFICATE OF ANALYSIS -

To: De Pere Wastewater Treatment Plant
315 Leonard Street
De Pere WI 54115

Attn: Al Kardoskee
Phone: 414-339-4094
Fax: 414-339-4048

Customer Number: 000404

Lab Number: 93REL004286
Sample ID : ZINC-929-CNA
Matrix : LIQUID

Chain Number: 3310
Report Date : 10/21/1993
Sample Date : 09/29/1993

METHOD	PARAMETER NAME	RESULT	UNITS	MDL	DATE	BY
EPA-335.1	CYANIDE-AMENABLE TO CHLORINATION	65	UG/L	4	10/13/1993	DJB

ROBERT E. LEE & ASSOCIATES, INC.
Wisconsin Certification NO: 405043870

- CERTIFICATE OF ANALYSIS -

To: De Pere Wastewater Treatment Plant
315 Leonard Street
De Pere WI 54115

Attn: Al Kardoskee
Phone: 414-339-4094
Fax: 414-339-4048

Customer Number: 000404

Lab Number: 93REL004287
Sample ID : ZINC-929-CN
Matrix : LIQUID

Chain Number: 3310
Report Date : 10/21/1993
Sample Date : 09/29/1993

METHOD	PARAMETER NAME	RESULT	UNITS	MDL	DATE	BY
EPA-335.2	CYANIDE-TOTAL	1.821	MG/L	0.004	10/06/1993	DJB

ROBERT E. LEE & ASSOCIATES, INC.
Wisconsin Certification NO: 405043870

- CERTIFICATE OF ANALYSIS -

To: De Pere Wastewater Treatment Plant
315 Leonard Street
De Pere WI 54115

Attn: Al Kardoskee
Phone: 414-339-4094
Fax: 414-339-4048

Customer Number: 000404

Lab Number: 93REL004288
Sample ID : ZINC-929-MA
Matrix : LIQUID

Chain Number: 3310
Report Date : 10/21/1993
Sample Date : 09/29/1993

METHOD	PARAMETER NAME	RESULT	UNITS	MDL	DATE	BY
EPA 200.7	TOTAL CHROMIUM ICP	565000	UG/L	5	10/01/1993	DLB
EPA 200.7	TOTAL ZINC	28	UG/L	2	10/01/1993	DLB
EPA 200.7	TOTAL CADMIUM ICP	<3	UG/L	3	10/01/1993	DLB

ROBERT E. LEE & ASSOCIATES, INC.
Wisconsin Certification NO: 405043870

- CERTIFICATE OF ANALYSIS -

To: De Pere Wastewater Treatment Plant
315 Leonard Street
De Pere WI 54115

Attn: Al Kardoskee
Phone: 414-339-4094
Fax: 414-339-4048

Customer Number: 000404

Lab Number: 93REL004289
Sample ID : ZINC-929-MB
Matrix : LIQUID

Chain Number: 3310
Report Date : 10/21/1993
Sample Date : 09/29/1993

METHOD	PARAMETER NAME	RESULT	UNITS	MDL	DATE	BY
EPA 200.7	TOTAL CHROMIUM ICP	704000	UG/L	5	10/01/1993	DLB
EPA 200.7	TOTAL ZINC	46	UG/L	2	10/01/1993	DLB
EPA 200.7	TOTAL CADMIUM ICP	<3	UG/L	3	10/01/1993	DLB

Robert E. Lee & Associates, Inc.
Engineering, Surveying, Laboratory Services
2825 S. Webster Ave. • Box 2100 • Green Bay, WI 54306-2100
Office 414.336.6338 • FAX 414.336.9141

3310

Chain of Custody

Company Name: City of De Pere WWTP - WDNR
Project Name: Betten Biute | Project No.: –
Quote No.: | P.O. No.:

ENVIRONMENTAL PROGRAM:
CWA: WPDES _____ NR219 _____ SLUDGE _____
RCRA: MW _____ SW _____ DISPOSAL _____
SDWA: PECFA _____ OTHER _____
Sampled By:

Analyses Requested (Note special detection limits or methods)

Report To: Dave Benner - City of DePere
Company: Terry Koehn - WDNR
Address:
Telephone No.: 414-492-5869
Invoice To: City of DePere
Company: Attn D. Benner
Address:
Telephone No.:
Accelerated Turnaround Requested _____ (Subject to Additional Charge)
Result By: ___/___/___ Month Day Year
(Date must be Accepted and Approved by Laboratory)

SAMPLE ID No.	Date	Time	Comp	Grab	Sample Description	Number of Containers	Preservation*	Total Cyanide	Amenable Cyanide	Total Cr, Zn, Cd	Remarks	REL Sample No.
Zinc-929-CNA	9-29-93	3:10		X	Sump Water	1			X		Yellow Color	93101704286
Zinc-929-CN	9-29-93	3:10		X	"	1	X	X			"	4287
Zinc-929-MA	9-29-93	3:10		X	"	1	X			X	Orange Color	4288
Zinc-929-MB	9-29-93	3:10		X	"	1	X			X	"	4289

Relinquished By	Date	Time	Received By	Date	Time
1) Terry Koehn	9-29-93	4:45 PM	Juliet Hill	9/29/93	16:45
2)					
3)					
4)					

Temperature of Contents: Next Same day °C
Condition of Seals: U
Condition of Contents: U
Sample pH _____

N = Nitric Acid O = Sodium Hydroxide
H = Hydrochloric Acid U = Unpreserved
S = Sulfuric Acid

Distribution: Original and yellow copies accompany sample shipment to laboratory; pink copy to client, original copy returned to client with results.

I/P 93' - 001

TO ENSURE PROPER HANDLING OF SAMPLES PLEASE COMPLETE THIS ENTIRE FORM

Robert E. Lee & Associates, Inc.
Engineering, Surveying, Laboratory Services

2825 S. Webster Ave.
P.O. Box 2100
Green Bay, WI 54306-2100
414/336-6338
FAX 414/336-9141

Wisconsin Certification No: 405043870

REPORT DATE=========> 10/21/1993

CHAIN OF CUSTODY #==> 3310

CUSTOMER==========> 000404

De Pere Wastewater Treatment Plant
315 Leonard Street
De Pere WI 54115

414-339-4094

CONTACT==========> Al Kardoskee

PROJECT==========> BETTER BRITE

RECEIVED==========> 09/29/1993

SAMPLED==========> 09/29/1993

COMMENTS:

cc: Terry Koehn
Department of Natural Resources

ATTEST:

Robert E. Lee & Associates, Inc.
Engineering, Surveying, Laboratory Services
2825 S. Webster Ave. • Box 2100 • Green Bay, WI 54306-2100
Office 414.336.6338 • FAX 414.336.9141

3310

Chain of Custody

Company Name: City of De Pere WWTP - WDNR
Project Name: Better Brite
Project No.: –
Quote No.:
P.O. No.:

ENVIRONMENTAL PROGRAM:
CWA: WPDES ______ NR219 ______ SLUDGE ______
RCRA: MW ______ SW ______ DISPOSAL ______
SDWA: PECFA ______ OTHER ______
Sampled By:

Analyses Requested (Note special detection limits or methods)

Report To: Dave Bennett - City of DePere
Company: Terry Koehn - WDNR
Address:
Telephone No.: 414-492-5869
Invoice To: City of DePere
Company: Attn: D. Bennett
Address:
Telephone No.:
Accelerated Turnaround Requested ______ (Subject to Additional Charge)
Result By: ___ / ___ / ___ Month Day Year
(Date must be Accepted and Approved by Laboratory)

SAMPLE ID No.	Date	Time	Comp	Grab	Sample Description	Number of Containers	Preservation*	Total Cyanide	Amenable Cyanide	Total Cr, Zn, Cd							Remarks	REL Sample No.
Zinc-929-CNA	9-29-93	3:10		X	Sump Water	1			X								Yellow Color	
Zinc-929-CN	9-29-93	3:10		X	↓	1	X	X									"	
Zinc-929-MA	9-29-93	3:10		X	↓	1	X			X							Orange Color	
Zinc-929-MB	9-29-93	3:10		X		1	X			X							"	

	Relinquished By	Date	Time	Received By	Date	Time
1)	Terry Koehn	9-29-93	4:45 PM	[illegible]	[illegible]	[illegible]
2)						
3)						
4)						

Temperature of Contents: ______ °C
Condition of Seals: L
Condition of Contents: L
Sample pH ______

Distribution: Original and yellow copies accompany sample shipment to laboratory; pink copy to client, original copy returned to client with results.

N = Nitric Acid
O = Sodium Hydroxide
H = Hydrochloric Acid
U = Unpreserved
S = Sulfuric Acid

I/P 93' - 001

TO ENSURE PROPER HANDLING OF SAMPLES PLEASE COMPLETE THIS ENTIRE FORM

ROBERT E. LEE & ASSOCIATES, INC.
Wisconsin Certification NO: 405043870

- CERTIFICATE OF ANALYSIS -

To: De Pere Wastewater Treatment Plant
315 Leonard Street
De Pere WI 54115

Attn: Al Kardoskee
Phone: 414-339-4094
Fax: 414-339-4048

Customer Number: 000404

Lab Number: 93REL004459
Sample ID : LANDE STREET
Matrix : LIQUID

Chain Number: 5222
Report Date : 10/13/1993
Sample Date : 10/01/1993

METHOD	PARAMETER NAME	RESULT	UNITS	MDL	DATE	BY
EPA 200.7	TOTAL CHROMIUM ICP	234000	UG/L	8.0000	10/07/1993	DLB
EPA 200.7	TOTAL CADMIUM ICP	<4	UG/L	4.0000	10/07/1993	DLB
EPA 200.7	TOTAL ZINC	29	UG/L	3.0000	10/12/1993	DLB

DE PERE WASTEWATER TREATMENT PLANT
315 LEONARD STREET
DE PERE, WISCONSIN 54115

Fax. No.: (414) 339-4048

TELECOPY COVER LETTER

Dated: 10/18/93

TO: Terry Koehn

FIRM/COMPANY: Wisconsin DNR

FROM: Al Kaszubski

x For your information. ____ For your approval.

____ Your comments, please. ____ Per your request.

RE: Better Brite - Lonie Street

COMMENTS: Results of most resent sampling from collection system

Total Number of Pages (including cover sheet): 2

IF YOU DO NOT RECEIVE ALL PAGES OR HAVE ANY PROBLEM RECEIVING THIS TRANSMISSION, PLEASE CALL Al AT (414) 339-4094.

ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

B.B.Cr

REGION 5
230 South Dearborn Str
Chicago, Illinois 60604

CHAIN OF CUSTODY RECORD

PROJ. NO.	PROJECT NAME
ZT1051	EWI0126FAA - CHROME

SAMPLERS: (Signature) Raghu Nagam

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS 4 OZ	TOTAL CHROME TREATMENT CHROME & TOTAL CHROMIUM
TS-1	9/12/92	1020	✓		SOUTH OF CONCRETE PAD 10' DEPTH	1	1
TS-2	9/12/92	1100	✓		SOUTH OF CONCRETE PAD 16'	1	1
TEST PIT 2-1	9/12/92	1205	✓		WEST OF FENCE - CONRATH 2-3'	1	1
TEST PIT 2-2	9/12/92	1215	✓		WEST OF FENCE - CONRATH 8.5'	1	1
TEST PIT 2-3	9/12/92	1225	✓		WEST OF FENCE - CONRATH 10.5	1	1
TEST PIT 3-1	9/12/92	1305	✓		NEIGHBOR (FISHER) - N OF CONRATH 4'	1	1
TEST PIT 3-2	9/12/92	1315	✓		NEIGHBOR - N OF CONRATH 10.5'	1	1
TEST PIT 4-1	9/12/92	1510	✓		WEST OF TREATMENT BLDG 9.5'	1	1
TEST PIT 4-3	9/12/92	1515	✓		WEST OF TREATMENT BLDG 12'	1	1
TEST PIT 4-4	9/12/92	1545	✓		WEST OF TREATMENT BLDG 17'	1	1
TEST PIT 4-2	9/12/92	1100	✓		WEST OF TREATMENT BLDG. 9.5'	1	1
	DUPLICATE TEST PIT 4-2.						

REMARKS

U.S.EPA CONTACT: WALTER NEID
(312) 886-4466.

IT CONTACT: PAUL KEFALIER
1800 372-3727

METHOD FOR Cr+6 → 7197
SW846
→ COLORIMETRIC

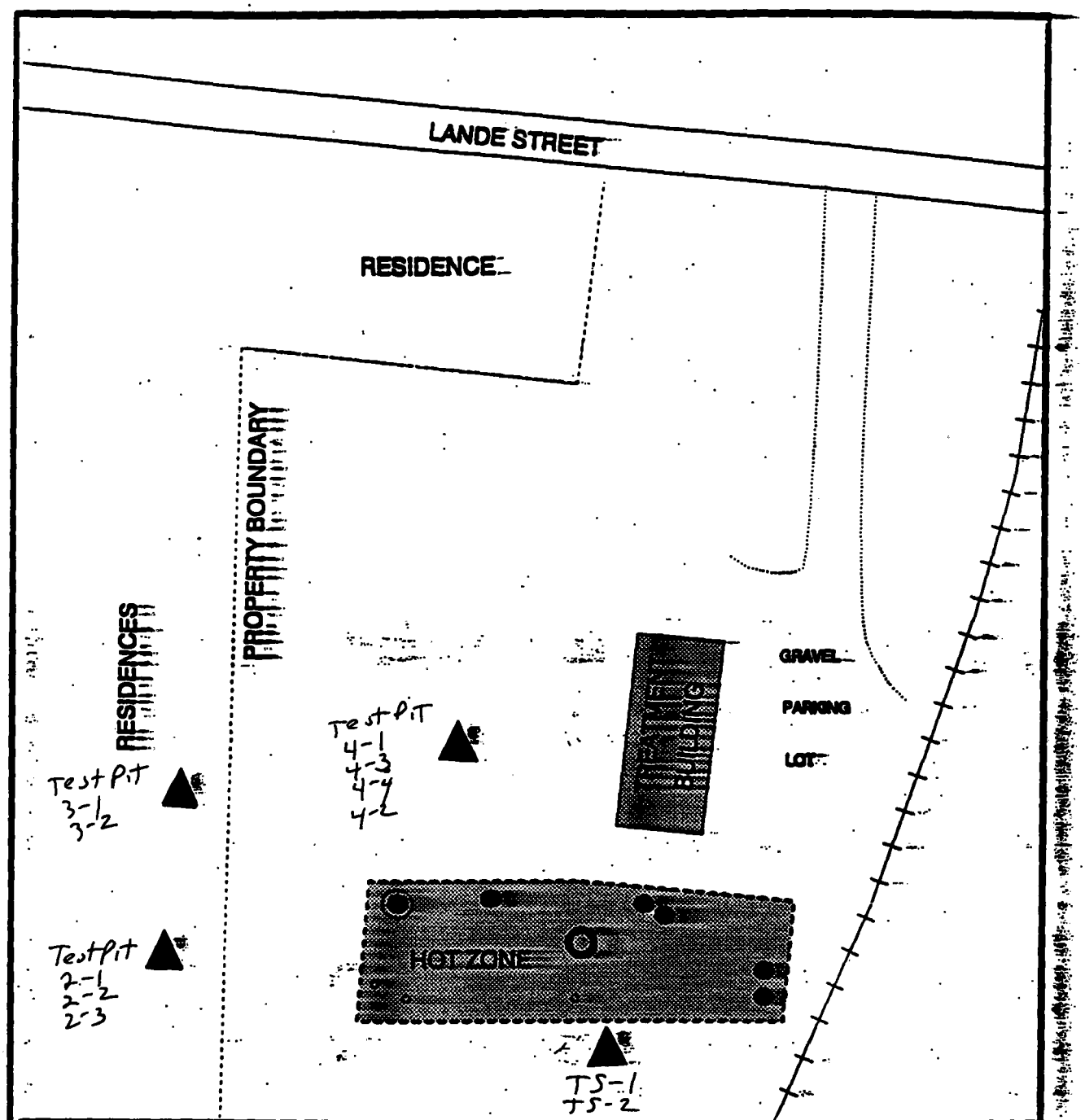
240
9/29
ROBERT E LEE

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Raghu Nagam	9/12/92 1655	Tom Nelson			
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	
		D. Tollner	9/14/92 805	HAND DELIVERED TO ROBERT E LEE & ASSOCIATES 2825 S WEBSTER AV. GREEN BAY ATTN: SHELDON STONE	

Distribution: White — Accompanies Shipment; Pink — Coordinator Field Files; Yellow — Laboratory File

TOTAL P.06

5- 04545



LEGEND

- RECOVERY WELL
- FRENCH DRAIN COLLECTION SUMP
- MONITORING WELL
- PROPOSED SAMPLING LOCATIONS

TITLE: EXTENT OF CONTAMINATION	FIGURE #: 2
SITE: BETTER BRITE CHROME	SCALE: NONE
CITY: DE PERE STATE: WISCONSIN	PAN: EWI0071FAA
D.O.E:	TDD#: T05-9010-023

Robert E. Lee & Associates, Inc.
Engineering, Surveying, Laboratory Services

Wisconsin Certification No: 405043870

2825 S. Webster Ave.
P.O. Box 2100
Green Bay, WI 54306-2100
414336-6338
FAX 414336-9141

REPORT DATE----> 09/29/92

JOB NUMBER----> 1011603

CUSTOMER----> 100100

IT Environmental Programs
11499 Chester Road
Cincinatti, OH
45246

(800) 372-3727

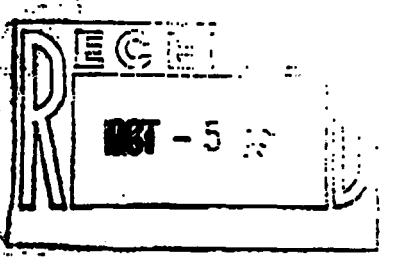
CONTACT----> Paul Kefaufer

PROJECT----> ZT1051

RECEIVED----> 09/14/92

SAMPLED----> 09/12/92

COMMENTS:



ATTEST:

ROBERT E. LEE & ASSOCIATES
Wisconsin Certification No: 405043870

CUSTOMER=======> 100100 - International Technology Corporation
REPORT DATE====> 09/29/92 PROJECT=====> ZT1051
JOB NUMBER=====> 1011603 LOCATION====> EWI0126FAA-Chrome
BATCH==========> 1 SAMPLED=====> 09/12/92

Sample #	Sample Id	Result		Analyzed	By
CHROMIUM					
1	TS-1	498	mg/kg	09/23/92	EWW
2	TS-2	754	mg/kg	09/23/92	EWW
3	Test Pit 2-1	81.9	mg/kg	09/23/92	EWW
4	Test Pit 2-2	69.0	mg/kg	09/23/92	EWW
5	Test Pit 2-3	48.6	mg/kg	09/23/92	EWW
6	Test Pit 3-1	34.8	mg/kg	09/23/92	EWW
7	Test Pit 3-2	21.6	mg/kg	09/23/92	EWW
8	Test Pit 4-1	23.8	mg/kg	09/23/92	EWW
9	Test Pit 4-3	20.1	mg/kg	09/23/92	EWW
10	Test Pit 4-4	24.0	mg/kg	09/23/92	EWW
11	Test Pit 4-2	44.6	mg/kg	09/23/92	EWW
HEXAVALENT CHROMIUM					
1	TS-1	473	mg/kg	09/15/92	JAJ
2	TS-2	1010	mg/kg	09/15/92	JAJ
3	Test Pit 2-1	9.88	mg/kg	09/15/92	JAJ
4	Test Pit 2-2	28.4	mg/kg	09/15/92	JAJ
5	Test Pit 2-3	0.67	mg/kg	09/15/92	JAJ
6	Test Pit 3-1	<0.038	mg/kg	09/15/92	JAJ
7	Test Pit 3-2	<0.038	mg/kg	09/16/92	JAJ
8	Test Pit 4-1	0.057	mg/kg	09/16/92	JAJ
9	Test Pit 4-3	<0.038	mg/kg	09/16/92	JAJ
10	Test Pit 4-4	<0.038	mg/kg	09/16/92	JAJ
11	Test Pit 4-2	<0.038	mg/kg	09/16/92	JAJ
TOTAL SOLIDS					
1	TS-1	82.8	%	09/17/92	SRW
2	TS-2	86.5	%	09/17/92	SRW
3	Test Pit 2-1	80.0	%	09/17/92	SRW
4	Test Pit 2-2	85.1	%	09/17/92	SRW
5	Test Pit 2-3	83.4	%	09/17/92	SRW
6	Test Pit 3-1	79.4	%	09/17/92	SRW
7	Test Pit 3-2	84.2	%	09/17/92	SRW
8	Test Pit 4-1	79.0	%	09/17/92	SRW
9	Test Pit 4-3	86.2	%	09/17/92	SRW
10	Test Pit 4-4	83.9	%	09/17/92	SRW

[CONTINUED]

ROBERT E. LEE & ASSOCIATES
Wisconsin Certification No: 405043870

CUSTOMER=======> 100100 - International Technology Corporation
REPORT DATE====> 09/29/92 PROJECT=====> ZT1051
JOB NUMBER=====> 1011603 LOCATION====> EWI0126FAA-Chrome
BATCH==========> 2 SAMPLED=====> 09/12/92

Sample #	Sample Id	Result		Analyzed	By
CHROMIUM					
1	TS-1	19800	ug/l	09/23/92	EWW
2	TS-2	31600	ug/l	09/23/92	EWW
3	Test Pit 2-1	426	ug/l	09/23/92	EWW
4	Test Pit 2-2	928	ug/l	09/23/92	EWW
5	Test Pit 2-3	<10	ug/l	09/23/92	EWW
6	Test Pit 3-1	<10	ug/l	09/23/92	EWW
7	Test Pit 3-2	<10	ug/l	09/23/92	EWW
8	Test Pit 4-1	<10	ug/l	09/23/92	EWW
9	Test Pit 4-3	<10	ug/l	09/23/92	EWW
10	Test Pit 4-4	<10	ug/l	09/23/92	EWW
11	Test Pit 4-2	<10	ug/l	09/23/92	EWW
TCLP-METALS					
1	TS-1	Date	Set-up	09/16/92	CAR
2	TS-2	Date	Set-up	09/16/92	CAR
3	Test Pit 2-1	Date	Set-up	09/16/92	CAR
4	Test Pit 2-2	Date	Set-up	09/16/92	CAR
5	Test Pit 2-3	Date	Set-up	09/16/92	CAR
6	Test Pit 3-1	Date	Set-up	09/16/92	CAR
7	Test Pit 3-2	Date	Set-up	09/16/92	CAR
8	Test Pit 4-1	Date	Set-up	09/16/92	CAR
9	Test Pit 4-3	Date	Set-up	09/16/92	CAR
10	Test Pit 4-4	Date	Set-up	09/16/92	CAR
11	Test Pit 4-2	Date	Set-up	09/16/92	CAR

[END OF BATCH: 2]

ROBERT E. LEE & ASSOCIATES
Wisconsin Certification No: 405043870

CUSTOMER=======> 100100 - International Technology Corporation
REPORT DATE====> 09/29/92 PROJECT=====> ZT1051
JOB NUMBER=====> 1011603 LOCATION====> EWI0126FAA-Chrome
BATCH==========> 1 SAMPLED=====> 09/12/92

Sample #	Sample Id	Result	Analyzed	By
TOTAL SOLIDS (Continued)				
11	Test Pit 4-2	77.8 %	09/17/92	SRW

[END OF BATCH: 1]

F 1-23-92

WISCONSIN
DEPT. OF NATURAL RESOURCES

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Carroll D. Besadny
Secretary

Lake Michigan District Headquarters
Box 10448, 1125 N. Military Avenue
Green Bay, Wisconsin 54307-0448
MAIN# 414-492-5800/FAX# 414-492-5913

January 22, 1992

File Ref: 3300
WUWN: EC581

Brian & Carol Maes
1026 S. 7th St.
De Pere, WI 54115

Dear Mr. & Mrs. Maes:

This letter confirms the November 4, 1991, sampling of your private well located in the SE¼ NW¼ of Section 28, Township of Lawrence, Brown County. Sampling was done to monitor your water quality because you are near the Better Brite Chrome and Zinc Shops Superfund site.

The State Laboratory of Hygiene reports the results as follows:

TESTS	RESULTS	DRINKING WATER STANDARD
Volatile Organic Chemicals	No Detect	--
Inorganic Elements		
Cadmium	No Detect	--
Chromium	No Detect	--
Cyanide	No Detect	--
Zinc	20	5,000

* Note: Concentrations are reported in ug/l = micrograms per liter = ppb = parts per billion

All results are within acceptable limits.

Copies of lab results are enclosed for your reference. If you have any questions, feel free to call me at (414) 492-5891.

Sincerely,

Liz Heinen

Liz Heinen, R.S.
Water Supply Specialist

LH:cm
Enc.
cc: Private Water Supply - WS/2
Private Water Supply - LMD
VOC File
Terry Koehn - SF/LMD
Gary Edelstein - SW/3
Al Baeten, Water Superintendent, City of De Pere, 925 S. 6th St., De Pere, WI 54115
Kenneth Bro, Wisc. Dept. of Health, P.O. Box 309, Madison, WI 54307-0309
David Lennear, U.S. EPA - Region 5, 77 W. Jackson Blvd., Chicago, IL 60604

State Laboratory of Hygiene
University of Wisconsin Center for Health Sciences
465 Henry Mall, Madison, WI 53706
R.H. Laessig, Ph.D., Director S.L. Inhorn, M.D., Medical Director

---

Environmental Science Section (608) 262-2797 DNR LAB ID 113133790
Organic chemistry (#4 of 3 on 11/19/91, unseen)

Id: EC581 Point/Well/..: Field #: MAES Route: WS40
Collection Date: 11/04/91 Time: 14:30 County: 05 (Brown)
From: BRIAN & CAROL MAES, 1026 S. 7TH STREET., DE PERE
Description: KITCHEN HARD WATER TAP
To: LIZ HEINEN Type: Miscellaneous
DNR - LMD Source: Private
GREEN BAY
Account number: WS046 Collected by: SUE BEAUMIER
Date Received: 11/05/91 Labslip #: OC001926 Reported: 11/18/91

---- test: GCMS VOC SCAN BY HEADSPACE - WATER

BENZENE	<1.0	UG/L
BROMOBENZENE	<4.0	UG/L
BROMODICHLOROMETHANE	<1.0	UG/L
BROMOFORM	<5.0	UG/L
BROMOMETHANE	<1.0	UG/L
CARBON DISULFIDE	<5.0	UG/L
CARBON TETRACHLORIDE	<2.0	UG/L
CHLOROBENZENE	<2.0	UG/L
CHLOROETHANE	<2.0	UG/L
2-CHLOROETHYL VINYL ETHER	<4.0	UG/L
CHLOROFORM	<1.0	UG/L
O-CHLOROTOLUENE	<1.0	UG/L
P-CHLOROTOLUENE	<1.0	UG/L
DIBROMOMETHANE	<2.0	UG/L
DIBROMOCHLOROMETHANE	<2.0	UG/L
1,2-DIBROMO-3-CHLOROPROPANE	<7.0	UG/L
1,2-DICHLOROBENZENE	<2.0	UG/L
1,3-DICHLOROBENZENE	<2.0	UG/L
1,4-DICHLOROBENZENE	<2.0	UG/L
1,1-DICHLOROETHANE	<1.0	UG/L
1,2-DICHLOROETHANE	<1.0	UG/L
1,2-DICHLOROETHYLENE, CIS	<1.0	UG/L
1,1-DICHLOROETHYLENE	<1.0	UG/L
1,2-DICHLOROETHYLENE, TRANS	<1.0	UG/L
1,3-DICHLOROPROPANE	<1.0	UG/L
1,1-DICHLOROPROPENE	<2.0	UG/L
1,2-DICHLOROPROPANE	<1.0	UG/L
2,2-DICHLOROPROPANE	<2.0	UG/L
1,3-DICHLOROPROPENE, CIS	<2.5	UG/L
1,3-DICHLOROPROPENE, TRANS	<2.5	UG/L

State Laboratory of Hygiene
University of Wisconsin Center for Health Sciences
465 Henry Mall, Madison, WI 53706
R.H. Laessig, Ph.D., Director S.L. Inhorn, M.D., Medical Director

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Environmental Science Section (608) 262-2797 DNR LAB ID 113133790
... continuing Labslip # OC001926, Field # MAES

ETHYLBENZENE	<1.0	UG/L
ETHYLENE DIBROMIDE	<1.0	UG/L
METHYLETHYLKETONE (MEK)	<12.0	UG/L
METHYLENE CHLORIDE	<5.0	UG/L
STYRENE	<2.0	UG/L
1,1,1,2-TETRACHLOROETHANE	<3.0	UG/L
1,1,2,2-TETRACHLOROETHANE	<3.0	UG/L
TETRACHLOROETHYLENE	<1.0	UG/L
TETRAHYDROFURAN (THF)	<200.	UG/L
TOLUENE	<1.0	UG/L
1,2,4-TRICHLOROBENZENE	<1.0	UG/L
1,1,1-TRICHLOROETHANE	<1.0	UG/L
1,1,2-TRICHLOROETHANE	<2.0	UG/L
TRICHLOROETHYLENE	<1.0	UG/L
TRICHLOROFLUOROMETHANE	<1.0	UG/L
TRICHLOROTRIFLUOROETHANE	<3.0	UG/L
1,2,3-TRICHLOROPROPANE	<2.0	UG/L
VINYL CHLORIDE	<1.0	UG/L
XYLENES	<2.0	UG/L
METHYL TERTIARY BUTYL ETHER	<10.	UG/L
GCMS PREP : WATER	C	

State Laboratory of Hygiene
University of Wisconsin Center for Health Sciences
465 Henry Mall, Madison, WI 53706
R.H. Laessig, Ph.D., Director S.L. Inhorn, M.D., Medical Director

---

Environmental Science Section (608) 262-3458 DNR LAB ID 113133790
Inorganic chemistry (#18 of 39 on 01/13/92, unseen)

Id: EC581 Point/Well/..: Field #: MACS Route: WS40
Collection Date: 11/04/91 Time: 13:30 County: 05 (Brown)
From: BRIAN & CAROL MACS 1026 S. 7TH ST. DEPERE KITCHEN HARD WATER TAP
To: HEINEN Type: Miscellaneous
DNR Source: Private
GREEN BAY
Account number: WS001 Collected by: BEAUMIER
Date Received: 11/05/91 Labslip #: IC046036 Reported: 01/10/92

CADMIUM, AA FURNACE	<0.2	UG/L
CHROMIUM, AA FURNACE	<3	UG/L
CYANIDE	<0.01	MG/L
ZINC, ICP	20.	UG/L

detected between 10 (LOD) and 40 (LOQ) UG/L

1/10/18

State Laboratory of Hygiene
University of Wisconsin Center for Health Sciences
465 Henry Mall, Madison, WI 53706
R.H. Laessig, Ph.D., Director S.L. Inhorn, M.D., Medical Director

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Environmental Science Section (608) 262-2797 DNR LAB ID 113133790
Organic chemistry (#12 of 7 on 11/20/91, unseen)

Id: EC581 Point/Well/..: Field #: MAES Route: WS40
Collection Date: 11/04/91 Time: 14:30 County: 05 (Brown)
From: BRIAN & CAROL MAES, 1026 S. 7TH STREET., DE PERE
Description: KITCHEN HARD WATER TAP
To: LIZ HEINEN Type: Miscellaneous
DNR - LMD Source: Private
GREEN BAY
Account number: WS046 Collected by: SUE BEAUMIER
Date Received: 11/05/91 Labslip #: OC001926 Reported: 11/18/91

---- test: GCMS VOC SCAN BY HEADSPACE - WATER

BENZENE	<1.0	UG/L
BROMOBENZENE	<4.0	UG/L
BROMODICHLOROMETHANE	<1.0	UG/L
BROMOFORM	<5.0	UG/L
BROMOMETHANE	<1.0	UG/L
CARBON DISULFIDE	<5.0	UG/L
CARBON TETRACHLORIDE	<2.0	UG/L
CHLOROBENZENE	<2.0	UG/L
CHLOROETHANE	<2.0	UG/L
2-CHLOROETHYL VINYL ETHER	<4.0	UG/L
CHLOROFORM	<1.0	UG/L
O-CHLOROTOLUENE	<1.0	UG/L
P-CHLOROTOLUENE	<1.0	UG/L
DIBROMOMETHANE	<2.0	UG/L
DIBROMOCHLOROMETHANE	<2.0	UG/L
1,2-DIBROMO-3-CHLOROPROPANE	<7.0	UG/L
1,2-DICHLOROBENZENE	<2.0	UG/L
1,3-DICHLOROBENZENE	<2.0	UG/L
1,4-DICHLOROBENZENE	<2.0	UG/L
1,1-DICHLOROETHANE	<1.0	UG/L
1,2-DICHLOROETHANE	<1.0	UG/L
1,2-DICHLOROETHYLENE, CIS	<1.0	UG/L
1,1-DICHLOROETHYLENE	<1.0	UG/L
1,2-DICHLOROETHYLENE, TRANS	<1.0	UG/L
1,3-DICHLOROPROPANE	<1.0	UG/L
1,1-DICHLOROPROPENE	<2.0	UG/L
1,2-DICHLOROPROPANE	<1.0	UG/L
2,2-DICHLOROPROPANE	<2.0	UG/L
1,3-DICHLOROPROPENE, CIS	<2.5	UG/L
1,3-DICHLOROPROPENE, TRANS	<2.5	UG/L

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Environmental Science Section (608) 262-2797 DNR LAB ID 113133790
... continuing Labslip # OC001926, Field # MAES

ETHYLBENZENE	<1.0	UG/L
ETHYLENE DIBROMIDE	<1.0	UG/L
METHYLETHYLKETONE (MEK)	<12.0	UG/L
METHYLENE CHLORIDE	<5.0	UG/L
STYRENE	<2.0	UG/L
1,1,1,2-TETRACHLOROETHANE	<3.0	UG/L
1,1,2,2-TETRACHLOROETHANE	<3.0	UG/L
TETRACHLOROETHYLENE	<1.0	UG/L
TETRAHYDROFURAN (THF)	<200.	UG/L
TOLUENE	<1.0	UG/L
1,2,4-TRICHLOROBENZENE	<1.0	UG/L
1,1,1-TRICHLOROETHANE	<1.0	UG/L
1,1,2-TRICHLOROETHANE	<2.0	UG/L
TRICHLOROETHYLENE	<1.0	UG/L
TRICHLOROFLUOROMETHANE	<1.0	UG/L
TRICHLOROTRIFLUOROETHANE	<3.0	UG/L
1,2,3-TRICHLOROPROPANE	<2.0	UG/L
VINYL CHLORIDE	<1.0	UG/L
XYLENES	<2.0	UG/L
METHYL TERTIARY BUTYL ETHER	<10.	UG/L
GCMS PREP : WATER	C	

TO: Robert Kanaeskas
Hydro-Search, Inc

FROM: Terry Koehn WDNR-LMD

SUBJECT–MESSAGE

Better Brite

Please find attached a copy of a letter sent to B. Maes. This pertains to sample results from a private well on 7th St in De Pere

REPLY

SIGNED T Koehn DATE 1-28-92

cc: D. Rossberg LMD-SW

SENDER RETAIN THIS COPY

SIGNED _____ DATE _____

CORRESPONDENCE/MEMORANDUM

State of Wisconsin

DATE: 7-22-93

TO: Bob Barnum

FROM: Kathy Erdmann

SUBJECT: Request for Potable Well Sample(s) Near Environmental Release Site

Attached is a map identifying specific locations where potable water supply well(s) may be potentially impacted. Following is information pertaining to the case and parameters to be analysed for.

Lead Investigator T Koehn Date samples desired In August ?

Case I.D Number ~ Case Name Better Brite

SE 1/4 NW 1/4 Section 28 T 23 N R 20 E

Township Lawrence County Brown

Type of analysis requested VOC Scan

Cr Cd Zn CN

List owner names (if known) of wells to be sampled and key to corresponding location on attached topo or plat map.

A. Brian and Carol Maes
B. 1026 S 7th St De Pere WI 54115
414 - 337-0661
C.
D.

Time Code (circle one) LUST - LU901 ERR - SW200-20 Budget Number SW12 LMH SW344

Groundwater Impacted? Yes X Potential ___ Unknown ___ (1 block From Well)

If yes - how many wells identified? — GW Gradient: W (Toward Home)

Comments: Last Sampled (By Beaumier/Heinen) Nov 4, 1991
- A scheduled sampling may be in the works.

TKoehn LMD
G. Edelstein SW/3

cc: (sample results - please include addresses for all cc's)

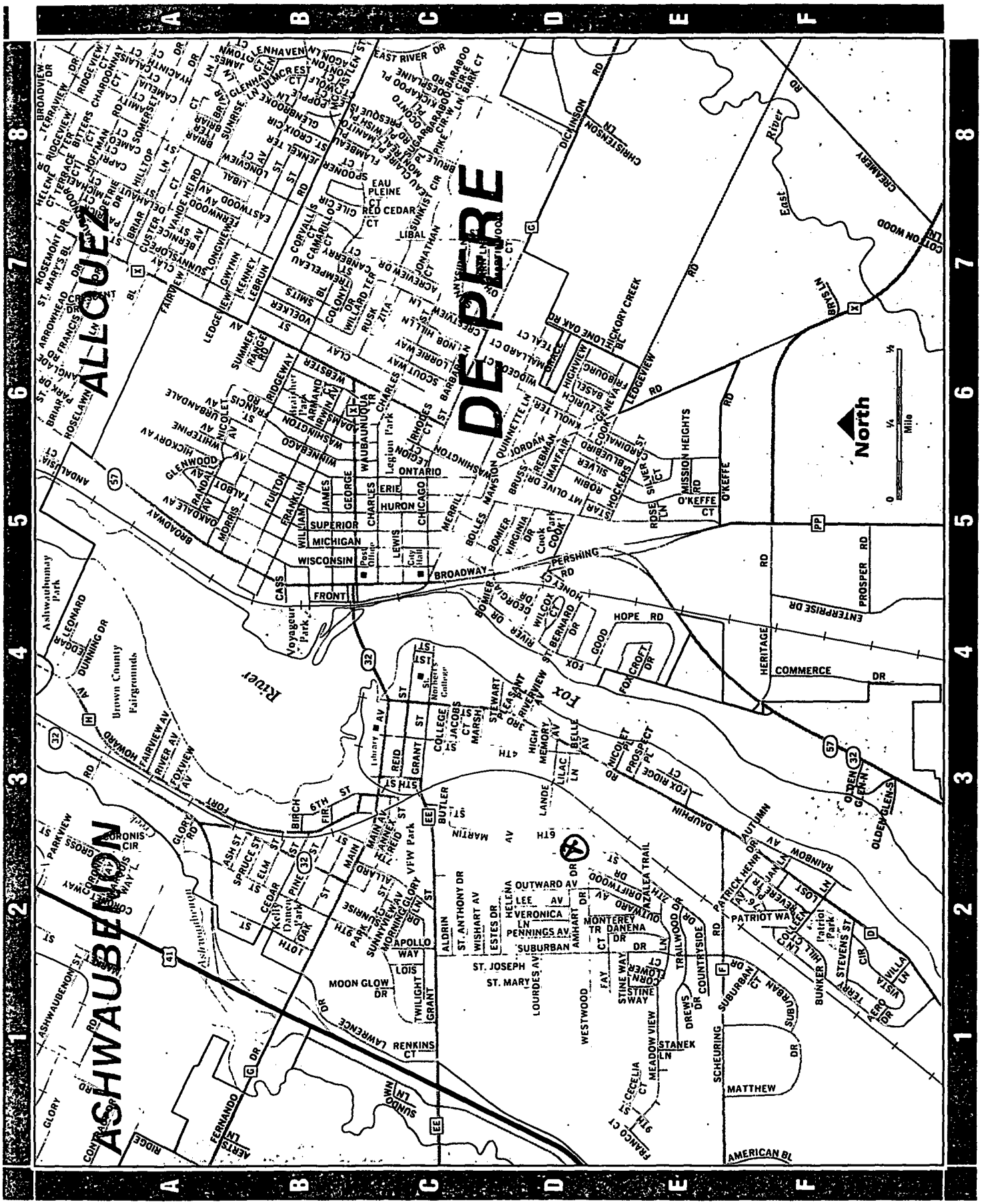
Al Baeten Water Superintendent
City of De Pere
925 S. 6th St
De Pere WI 54115

David Linnear
U.S. EPA Region 5 HSRW-6J
77 W. Jackson Blvd
Chicago IL 60604

Kenneth Buo Wis Dept of Health
P.O. 307
Madison WI 53701-0309

Printed on Recycled Paper

De Pe e



FROM: Liz Heinen LMD-WS

TO: Terry Koehn LMD-SCO

SUBJECT—MESSAGE

Bottom Bribe-Well Sample

I understand you now have a form to fill out for such requests. SO:

Here is one for your use.

Any questions please call

REPLY

SIGNED Terry Koehn DATE 12-19-91

RETURN THIS COPY TO SENDER

SIGNED _____ DATE _____

CORRESPONDENCE/MEMORANDUM STATE OF WISCONSIN

te: 4400 File Ref:

: Robert P. Barnum

om: Bruce G. Urben

bject: Environmental Release With the Potential For Impacting Potable Wells

When: November, 1991

Who: Brian Maes

Where: 1026 S 7th St DePere WI

Map Attached: Yes_____ No X

What: VOC scan - Cr Cd Zn

Assigned Lead Investigator: Terry Kodrn

Potential Impacts: Private well apx 1 block from Better Brite.

Groundwater Impacted: Yes X Potential_____ Unknown_____

# of Nearby Wells Identified: 1 GW Gradient: Toward Home (West)

Requested Action by Water Supply: (Please identify needed sample locations on map if attached)

Collect a water sample

Time code to be used: LUST - LU901 ERR - SW200-20

Budget number to be used: SWC1 UMH SW344

Solid Waste Follow-up:

Better Brite RI/FS

cc: (Please include addresses for all cc's)

Al Baeten Water Superintendent
City of DePere
925 S. Sixth St
DePere, WI 54115

Kenneth Bro Wis. Dept of Health
P.O. Box 309
Madison, WI
53701-0309

Gary Edelstein SW/3

David Linnear
U.S. EPA Region V
77 West Jackson Blvd
Chicago IL 60604
HSRW-6J

Department of Natural Resources

Form 4800-4 2-87

☐ if New Facility

Bill to: ☒ Solid Waste ☐ Hazardous Waste ☐ Wastewater ☐ Water Supply ☐ Spills ☐ Other _____

I.D. Number NA

Point/Well # NA

Field No. BB-WYP

County # 05

Route Code WS4D

I.D. Name Better Brite WD 56002 0118

P.O. or City De Pere

Collection Date 11/26/91 Time: 16:00

Sample Location 1040 S Sixth

Description Wyprzinski Sump Water

Send Report To:
Terry Koehn
WDNR-LMD
1125 N. Military Ave
Green Bay WI 54307

Account Number SW001

Collected By Terry Koehn

Phone (414) 492-5869

Check all appropriate:

☐ F Filtered ☐ R RCRA

☐ S Split ☐ E Enforcement ☐ B Field Blank

☐	MW	Monitoring Well	☐	EF	Effluent - OW Waste
☐	LY	Lysimeter	☐	IF	Influent
☐	LE	Leachate	☐	SO	Soil
☐	SE	Sediment	☐	OI	Oil
☐	SU	Surface Water	☐	SL	Sludge
☐	PW	Private Well	☒	OT	Other

Depth to Groundwater	72002	
Water Elevation (MSL)	00842 247	
Temperature (°C)	00010 131	
Cond-fld (Uncorrected)		
Cond-fld (uMHOS/CM@25°C)	00872 115	
Ph-Field (su)	00400 096	
BOD estimate		

Compliance Sample? ☐ Yes ☐ No

☐ Alkalinity (as CaCO)	T D	
☐ Ammonia-N	T D	
☐ Arsenic (As)	T D	
☐ Barium (Ba)	T D	
☐ BOD_5 Day	T D	
☐ Boron (B)	T D	
☐ Cadmium (C)	T D	
☐ Calcium (Ca)	T D	
☐ COD	T D	
☐ Cond-Lab(uMHOS)@25°C	T	
☐ Chloride (Cl)	T D	
☒ Chromium (Cr)	T D	
☐ Chromium Hex	T D	
☐ Copper (Cu)	T D	
☐ Flouride (F)	T D	
☐ Hardness (as $CaCO_3$)	T D	
☐ Iron (Fe)	T D	
☐ Lead (Pb)	T D	
☐ Magnesium (Mg)	T D	
☐ Manganese (mn)	T D	
☐ Mercury (Hg)	T D	
☐ $NO_3 + NO_2$ (as N)	T D	
☐ Kjeldahl-N	T D	
☐ pH - Lab (su)	T D	
☐ Selenium (Se)	T D	
☐ Sodium (Na)	T D	
☐ Sulfate (SO_4)	T D	
Total Solids	T	
☐ Total Dis. Solids	T D	
☒ Zinc (Zn)	T D	

Analyses for SOLIDS are reported in mg/Kg. NON-SOLIDS are reported in mg/L or ug/L depending on parameter and whether Total or Dissolved.

Comments or add. parameters

*Cyanide Total - Cyanide Spl Allowed to Become Known - If Not Appropriate to Run for Screening Purpose's Please Discard.

R.H. Laessig, PhD., Director
Wisconsin State Laboratory of Hygiene
Madison, Wisconsin 53706

Date Received And Sample No. _____

Date Reported _____

Mark D.
Olejniczak
Realty, Inc.

PLEASE DELIVER THE FOLLOWING PAGES TO:

TO: Terry Koehn

LOCATION/DEPARTMENT:

FACSIMILE NUMBER: 492-5913

FROM: Jeanne Flatley

WE ARE TRANSMITTING A TOTAL OF 4 PAGES INCLUDING THIS COVER LETTER.

COMMENTS:

Response Letter
Sent 10-22-91
cc

DATE: 10-21-91

TIME: 4:20 P.M

OUR FACSIMILE NUMBER IS (414) 436-7771

IF THIS FAX DOES NOT ARRIVE IN A READABLE FORM OR YOU ARE MISSING PAGES, PLEASE CALL AT (414) 432-1007.

375 W. St. Joseph St., Green Bay, WI 54301 (414) 432-1007

Robert E. Lee & Associates
Engineering, Surveying, Laboratory Services

Wisconsin Certification No: 405043870

2625 S. Webster Ave.
PO Box 2100
Green Bay, WI 54306-2100
414/336-6338
FAX 414/336 9141

REPORT DATE===> 10/17/91

JOB NUMBER====> 1005351

CUSTOMER======> 100100

Olejniczak Realty/Jeanne Flatley
375 W. St. Joseph St.
Green Bay, WI 54301

CONTACT=======> Jeanne Flatley

PROJECT=======> 418 Lilac La. DePere

RECEIVED======> 10/04/91

SAMPLED=======> 10/04/91

COMMENTS:

ATTEST:

ROBERT E. LEE & ASSOCIATES
Wisconsin Certification No: 405043870

CUSTOMER======> 100100 - Olejniczak Realty/Jeanne Flatley
REPORT DATE===> 10/17/91 PROJECT====> 418 Lilac La. DePere
JOB NUMBER====> 1005351 LOCATION===> 418 Lilac Lane DePere
BATCH=========> 1 SAMPLED====> 10/04/91

Sample #	Sample Id	Result	Analyzed	By
CHROMIUM				
1	S-01	<1 mg/l	10/16/91	JAJ

CLP Det Lmt 10 µg/L (0.01 mg/L)
ES 50 µg/L

[END OF BATCH: 1]

ROBERT E. LEE & ASSOCIATES
Wisconsin Certification No: 405043870

CUSTOMER======> 100100 - Olejniczak Realty/Jeanne Flatley
REPORT DATE===> 10/17/91 PROJECT====> 418 Lilac La. DePere
JOB NUMBER====> 1005351 LOCATION===> 418 Lilac Lane
BATCH=========> 2 SAMPLED====> 10/04/91

Sample #	Sample Id	Result		Analyzed	By
CHROMIUM					
1 ...	S-02	11.7	mg/kg ...	10/14/91 ...	EW
		CLP Det Lmt 2 mg/kg			
TOTAL SOLIDS					
1 ...	S-02	89.3	% ...	10/09/91 ...	SH

[END OF BATCH: 2]

DNR OFFICE MEMO
Form 9500-43 Rev. 5-89

To Terry Koehn - SW	Date 4/3	Time
From Chris Ferrian - WS		
Of		
Phone 492-5897	Received by	

☐ Please Call ☐ Returning Your Call ☐ Will Call Again ☐ Called to See You

☐ Comment
☐ For Your Information
☐ See Me
☐ Take Action
☐ Approve
☐ Sign
☐ Revise
☐ Prepare Reply For My Signature
☐ Reply Direct
☐ Per Your Request
☐ Code
☐ Route to:
☐ Return
☐ File

This water sample you took came over my reject file. It didn't have a PWS ID or sample type. If it's a public water supply sample, I need those things. →

Gets a private
Water Sample, let me
know that too so I
can pull it off the
public file. The State
Lab people enter these.

THANKS

```
Q5820018           WI D.N.R. PUBLIC WATER SUPPLY DATA SYSTEM          UPDATE
                       CORRECT REJECTED CHEM/RAD SAMPLES              PAGE 1
Öááááááááááááááááááááááááááááá¢                                 SAMPLE
°        PWS ID:              °                                  COLL ID: 62436
°                             âááááááááááááááááááááááááááááááôááááááááááááááááááá¢
°      LAB TYPE: O                                              ° ROUTE CODE: WS40 °
°                                                               âááááááááááááááááááá¢
°   SAMPLE DATE: 19910930    SAMPLE TIME: 1045           LAB SEQ #: OC001523    °
° REPORTED DATE: 19911008    CERT LAB ID: 113133790                             °
°                                                                               °
°   WHERE TAKEN: D             WHY TAKEN: M              SAMPLE TYPE:           °
°                                                                               °
°    WI WELL ID:               COLLECTED BY: KOEHN                              °
°                                                                               °
°   LOCATION ADDRESS: GERALD RASMUSSEN, RASMUSSEN SUMP WATER, 320 S SIXTH       °
°   LOCATION DESCRIP: SUMP WATER                                                °
âááááááááááááááááááááááááááááááááááááôáááááááááááááááááááááááááááááááááááááááááá¢
                                     ° LAST CHANGED ON: 19911015  BY: N582M01S  °
                                     âáááááááááááááááááááááááááááááááááááááááááá¡
       DO = Save Changes                  NEXT SCRN = View Results
      PF4 = Prev Screen/No Save            INS HERE = Change Route Code

Enter correct PWS_ID - Press FIND to Search for ID by PWS_NAME.
Count: *1                                                              <Replace>
```

DNR OFFICE MEMO
Form 9500-43 Rev. 5-89

To	Date	Time
Terry Koehn	10/21	

From
Rick Stoll

Of

Phone	Received by

☐ Please Call ☐ Returning Your Call ☐ Will Call Again ☐ Called to See You

☐ Comment
☒ For Your Information
☐ See Me
☐ Take Action
☐ Approve
☐ Sign
☐ Revise
☐ Prepare Reply For My Signature
☐ Reply Direct
☒ Per Your Request
☐ Code
☐ Route to:

☐ Return
☐ File

By the way I just read your October 18, 1991 letter to Mr. Linnear.

Nice job. I think it explains our position quite well.

R.S.

Response Letter Sent 10-22-91

State Laboratory of Hygiene
University of Wisconsin Center for Health Sciences
465 Henry Mall, Madison, WI 53706
R.H. Laessig, Ph.D., Director S.L. Inhorn, M.D., Medical Director

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Environmental Science Section (608) 262-3458 DNR LAB ID 113133790
Inorganic chemistry (#12 of 21 on 10/18/91, unseen)

Id: Point/Well/..: Field #: RAS-01 Route: WS40
Collection Date: 09/30/91 Time: 10:45 County: 05 (Brown)
From: GERALD RASMUSSEN 320 S. SIXTH DE PERE RASMUSSEN SUMP WATER
Description: 1 WEEK TURNAROUND ADEQUATE PER RICK STOLL & GEORGE BOWMAN
To: STOLL
DNR Source: Non potable well
GREEN BAY
Account number: WS001 Collected by: KOEHN
Date Received: 10/01/91 Labslip #: IC035331 Reported: 10/17/91

CHROMIUM, AA FURNACE	<3	UG/L	.003 mg/L
CYANIDE	<0.01	MG/L	

CORRESPONDENCE/MEMORANDUM

State of Wisconsin

DATE: October 15, 1991 FILE REF: 3310

TO: Terry Koehn - LMD/SW

FROM: Robert Baumeister - WS/2
Robert Barnum - LMD/WS

SUBJECT: Installation of a Sandstone Monitoring Well for the Better Brite Site at De Pere, Wisconsin

The Bureau of Water Supply remains opposed to the installation of a sandstone monitoring well as part of the interim action at the Better Brite site.

Information obtained from "Hydrogeology and Ground-Water Use and Quantity, Brown County, Wisconsin", Information Circular No. 57, U.S. Geological Survey, indicates that, while the upper portion of the Sinnipee Group (Galena-Platteville dolomite) may act as a portion of the upper water-table aquifer, the lower portion of the Sinnipee Group because of its lack of weathering becomes a confining bed. Additionally, based on calculations performed by the Bureau of Water Supply staff, the time of travel in the sandstone aquifer between the monitoring well and the municipal well would be in the range of months and, depending on the sampling frequency of the monitoring well, the lead time for reaction to the contamination would be small.

Therefore, it is the Bureau of Water Supply's opinion that the risk, however small, of contamination of the sandstone aquifer by improper monitoring well construction outweighs the benefit of the additional warning time that may be obtained by constructing the monitoring well. In lieu of constructing the monitoring well the Bureau would recommend increasing the monitoring frequency of the municipal well.

v:\9111\ws9koehn.lhb

TO: Terry Koehn

FROM: Rick Stock

SUBJECT–MESSAGE

Better Brite Zinc

— VOC Rasmussen :

No detects, Lab ~~rep~~ report copy for your file.

Please copy me and Liz w/ a copy of the letter you send the Rasmussens regarding this sample result. Thanks

cc. Liz Apfel - WS CMD

REPLY

SIGNED R.C. Stock DATE 10-9-91

Responce Letter
Sent 10-22-91
VC

SIGNED _____ DATE _____

State Laboratory of Hygiene
University of Wisconsin Center for Health Sciences
465 Henry Mall, Madison, WI 53706
R.H. Laessig, Ph.D., Director S.L. Inhorn, M.D., Medical Director

---

Environmental Science Section (608) 262-2797 DNR LAB ID 113133790
Organic chemistry (#5 of 4 on 10/09/91, unseen)

Id: Point/Well/..: Field #: RAS01 Route: WS40
Collection Date: 09/30/91 Time: 10:45 County: 05 (Brown)
From: GERALD RASMUSSEN, RASMUSSEN SUMP WATER, 320 S SIXTH
Description: SUMP WATER
To: RICK STOLL
LMD WATER SUPPLY Source: Other
GREEN BAY
Account number: WS046 Collected by: KOEHN
Date Received: 10/01/91 Labslip #: OC001523 Reported: 10/08/91

---- test: GCMS VOC SCAN BY HEADSPACE - WATER

1	BENZENE	<1.0	UG/L
2	BROMOBENZENE	<4.0	UG/L
3	BROMODICHLOROMETHANE	<1.0	UG/L
4	BROMOFORM	<5.0	UG/L
5	BROMOMETHANE	<1.0	UG/L
6	CARBON DISULFIDE	<5.0	UG/L
7	CARBON TETRACHLORIDE	<2.0	UG/L
8	CHLOROBENZENE	<2.0	UG/L
9	CHLOROETHANE	<2.0	UG/L
10	2-CHLOROETHYL VINYL ETHER	<4.0	UG/L
11	CHLOROFORM	<1.0	UG/L
12	O-CHLOROTOLUENE	<1.0	UG/L
13	P-CHLOROTOLUENE	<1.0	UG/L
14	DIBROMOMETHANE	<2.0	UG/L
15	DIBROMOCHLOROMETHANE	<2.0	UG/L
16	1,2-DIBROMO-3-CHLOROPROPANE	<7.0	UG/L
17	1,2-DICHLOROBENZENE	<2.0	UG/L
18	1,3-DICHLOROBENZENE	<2.0	UG/L
19	1,4-DICHLOROBENZENE	<2.0	UG/L
20	1,1-DICHLOROETHANE	<1.0	UG/L
21	1,2-DICHLOROETHANE	<1.0	UG/L
22	1,2-DICHLOROETHYLENE, CIS	<1.0	UG/L
23	1,1-DICHLOROETHYLENE	<1.0	UG/L
24	1,2-DICHLOROETHYLENE, TRANS	<1.0	UG/L
25	1,3-DICHLOROPROPANE	<1.0	UG/L
26	1,1-DICHLOROPROPENE	<2.0	UG/L
27	1,2-DICHLOROPROPANE	<1.0	UG/L
28	2,2-DICHLOROPROPANE	<2.0	UG/L
29	1,3-DICHLOROPROPENE, CIS	<2.5	UG/L
30	1,3-DICHLOROPROPENE, TRANS	<2.5	UG/L

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Environmental Science Section (608) 262-2797 DNR LAB ID 113133790
... continuing Labslip # OC001523, Field # RAS01

31	ETHYLBENZENE	<1.0	UG/L
32	ETHYLENE DIBROMIDE	<1.0	UG/L
33	METHYLETHYLKETONE (MEK)	<12.0	UG/L
34	METHYLENE CHLORIDE	<5.0	UG/L
35	STYRENE	<2.0	UG/L
36	1,1,1,2-TETRACHLOROETHANE	<3.0	UG/L
37	1,1,2,2-TETRACHLOROETHANE	<3.0	UG/L
6 36	TETRACHLOROETHYLENE	<1.0	UG/L
39	TETRAHYDROFURAN (THF)	<200.	UG/L
40	TOLUENE	<1.0	UG/L
41	1,2,4-TRICHLOROBENZENE	<1.0	UG/L
0 42	1,1,1-TRICHLOROETHANE	<1.0	UG/L
43	1,1,2-TRICHLOROETHANE	<2.0	UG/L
0 44	TRICHLOROETHYLENE	<1.0	UG/L
45	TRICHLOROFLUOROMETHANE	<1.0	UG/L
46	TRICHLOROTRIFLUOROETHANE	<3.0	UG/L
47	1,2,3-TRICHLOROPROPANE	<2.0	UG/L
48	VINYL CHLORIDE	<1.0	UG/L
49	XYLENES	<2.0	UG/L
50	METHYL TERTIARY BUTYL ETHER	<10.	UG/L

GCMS PREP : WATER C

ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

OHM

REGION 5
230 South Dearborn Street
Chicago, Illinois 60604

CHAIN OF CUSTODY RECORD

PROJ. NO.	PROJECT NAME
Z T1051	9010-023 / EW1007.1FAA

SAMPLERS: (Signature)
R. Nagam

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	METALS	REMARKS
MW1	3/6/91	1605			Zinc Shop	1	1	* PLEASE ADD HNO3 PRESERVATIVE
MW1A	3/6/91	1545			Zinc Shop	1	1	TO THESE SAMPLES.
SW11	3/7/91	0955			Zinc Shop	1	1	
101	3/7/91	1720			TREATMENT FACILITY	1	1	
101A	3/7/91	1220			TREATMENT FACILITY	1	1	
104A	3/7/91	1710	BLOCK		TREATMENT FACILITY	1	1	
102A	3/7/91	1555	BLOCK		TREATMENT FACILITY	1	1	
103	3/7/91	1640			TREATMENT FACILITY	1	1	
DUP	3/7/91				TREATMENT FACILITY	1	1	
105B	3/7/91	1735			TREATMENT FACILITY	1	1	
MW5	3/8/91	1030			TREATMENT FACILITY	1	1	
MW7	3/8/91	1045			TREATMENT FACILITY	1	1	
BLANK	3/8/91	0944			-	1	1	

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
R. Nagam	3/8/91 1345				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	
		Mary Unger	3/8/91 1:45pm	HAND DELIVERED BY R NAGAM & R BUGG OF TAT TO MARY OF ROBERT E. LEE & ASSOCIATES CONSULTING ENGINEERS 2925 WEBSTER AVE GREEN BAY WI	

Distribution: White — Accompanies Shipment; Pink — Coordinator Field Files; Yellow — Laboratory File

5- 04771

ROBERT E. LEE & ASSOCIATES
Wisconsin Certification No: 405043870

CUSTOMER=======> 001422 - IT Environmental Programs, INC.
REPORT DATE====> 04/19/91 PROJECT=====> 9010-023
JOB NUMBER=====> 1002230 LOCATION====> OHM
BATCH==========> 1 SAMPLED=====> 03/06/91

Sample #	Sample Id	Result		Analyzed	By
ARSENIC					
1	MW-1	<0.0014	mg/l	04/08/91	EW
2	MW-1A	<0.0014	mg/l	04/08/91	EW
3	SUM-11	<0.0014	mg/l	04/08/91	EW
4	101	0.0031	mg/l	04/08/91	EW
5	101A	<0.0014	mg/l	04/08/91	EW
6	104A	<0.0014	mg/l	04/08/91	EW
7	102A	<0.0014	mg/l	04/08/91	EW
8	103	<0.0014	mg/l	04/08/91	EW
9	DUP	<0.0014	mg/l	04/08/91	EW
10	105B	<0.0014	mg/l	04/08/91	EW
11	MW-5	<0.0014	mg/l	03/25/91	EW
12	MW-7	<0.0014	mg/l	03/25/91	EW
13	Blank	<0.0014	mg/l	03/25/91	EW
BARIUM					
1	MW-1	0.016	mg/l	03/22/91	AW
2	MW-2	0.070	mg/l	03/22/91	AW
3	SUM-11	0.025	mg/l	03/22/91	AW
4	101	0.006	mg/l	03/22/91	AW
5	101A	0.051	mg/l	03/22/91	AW
6	104A	0.067	mg/l	03/22/91	AW
7	102A	0.034	mg/l	03/22/91	AW
8	103	0.008	mg/l	03/22/91	AW
9	DUP	0.041	mg/l	03/22/91	AW
10	105B	0.049	mg/l	03/22/91	AW
11	MW-5	0.051	mg/l	03/22/91	AW
12	MW-7	0.029	mg/l	03/22/91	AW
13	Blank	0.007	mg/l	04/05/91	AW
CADMIUM					
1	MW-1	<0.002	mg/l	03/22/91	AW
2	MW-2	<0.002	mg/l	03/22/91	AW
3	SUM-11	<0.002	mg/l	03/22/91	AW
4	101	<0.002	mg/l	03/22/91	AW
5	101A	<0.002	mg/l	03/22/91	AW
6	104A	<0.002	mg/l	03/22/91	AW

[CONTINUED]

ROBERT E. LEE & ASSOCIATES
Wisconsin Certification No: 405043870

CUSTOMER=======> 001422 - IT Environmental Programs, INC.
REPORT DATE====> 04/19/91 PROJECT=====> 9010-023
JOB NUMBER=====> 1002230 LOCATION====> OHM
BATCH==========> 1 SAMPLED=====> 03/06/91

Sample #	Sample Id	Result		Analyzed	By
CADMIUM (Continued)					
7	102A	<0.002	mg/l	03/22/91	AW
8	103	0.004	mg/l	03/22/91	AW
9	DUP	0.004	mg/l	03/22/91	AW
10	105B	0.004	mg/l	03/22/91	AW
11	MW-5	0.004	mg/l	03/22/91	AW
12	MW-7	<0.002	mg/l	03/22/91	AW
13	Blank	<0.006	mg/l	03/27/91	AW
CHROMIUM					
1	MW-1	5.45	mg/l	03/22/91	AW
2	MW-2	73.2	mg/l	03/22/91	AW
3	SUM-11 SUMP H_2O	135	mg/l	03/22/91	AW
4	101	0.01	mg/l	03/22/91	AW
5	101A	<0.06	mg/l	03/22/91	AW
6	104A	<0.06	mg/l	03/22/91	AW
7	102A	0.27	mg/l	03/22/91	AW
8	103	12.0	mg/l	03/22/91	AW
9	DUP	<0.06	mg/l	03/22/91	AW
10	105B	33.3	mg/l	03/22/91	AW
11	MW-5	0.32	mg/l	03/22/91	AW
12	MW-7	6.79	mg/l	03/22/91	AW
13	Blank	<0.06	mg/l	03/27/91	AW
LEAD					
1	MW-1	<0.06	mg/l	03/22/91	AW
2	MW-2	<0.06	mg/l	03/22/91	AW
3	SUM-11	<0.06	mg/l	03/22/91	AW
4	101	<0.06	mg/l	03/22/91	AW
5	101A	<0.06	mg/l	03/22/91	AW
6	104A	<0.06	mg/l	03/22/91	AW
7	102A	<0.06	mg/l	03/22/91	AW
8	103	<0.06	mg/l	03/22/91	AW
9	DUP	<0.06	mg/l	03/22/91	AW
10	105B	<0.06	mg/l	03/22/91	AW
11	MW-5	<0.06	mg/l	03/22/91	AW
12	MW-7	<0.06	mg/l	03/22/91	AW

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ROBERT E. LEE & ASSOCIATES
Wisconsin Certification No: 405043870

CUSTOMER=======> 001422 - IT Environmental Programs, INC.
REPORT DATE====> 04/19/91 PROJECT=====> 9010-023
JOB NUMBER=====> 1002230 LOCATION====> OHM
BATCH==========> 1 SAMPLED=====> 03/06/91

Sample #	Sample Id	Result		Analyzed	By
LEAD (Continued)					
13	Blank	<0.06	mg/l	03/27/91	AW
MERCURY					
1	MW-1	<0.0002	mg/l	03/15/91	EW
2	MW-2	<0.0002	mg/l	03/15/91	EW
3	SUM-11	<0.0002	mg/l	03/15/91	EW
4	101	<0.0002	mg/l	03/15/91	EW
5	101A	<0.0002	mg/l	03/15/91	EW
6	104A	<0.0002	mg/l	03/15/91	EW
7	102A	<0.0002	mg/l	03/15/91	EW
8	103	<0.0002	mg/l	03/15/91	EW
9	DUP	<0.0002	mg/l	03/15/91	EW
10	105B	<0.0002	mg/l	03/15/91	EW
11	MW-5	<0.0002	mg/l	03/15/91	EW
12	MW-7	<0.0002	mg/l	03/15/91	EW
13	Blank	<0.0002	mg/l	03/15/91	EW
SELENIUM					
1	MW-1	<0.003	mg/l	04/19/91	AW
2	MW-2	<0.003	mg/l	04/19/91	AW
3	SUM-11	0.016	mg/l	04/19/91	AW
4	101	0.006	mg/l	04/19/91	AW
5	101A	<0.003	mg/l	04/19/91	AW
6	104A	<0.003	mg/l	04/19/91	AW
7	102A	<0.003	mg/l	04/19/91	AW
8	103	<0.003	mg/l	04/19/91	AW
9	DUP	<0.003	mg/l	04/19/91	AW
10	105B	<0.003	mg/l	04/19/91	AW
11	MW-5	<0.003	mg/l	04/19/91	AW
12	MW-7	<0.003	mg/l	04/19/91	AW
13	Blank	<0.003	mg/l	04/19/91	AW
SILVER					
1	MW-1	<0.006	mg/l	03/22/91	AW

[CONTINUED]

ROBERT E. LEE & ASSOCIATES
Wisconsin Certification No: 405043870

CUSTOMER======> 001422 - IT Environmental Programs, INC.
REPORT DATE===> 04/19/91 PROJECT====> 9010-023
JOB NUMBER====> 1002230 LOCATION===> OHM
BATCH=========> 1 SAMPLED====> 03/06/91

Sample #	Sample Id	Result		Analyzed	By
SILVER (Continued)					
2	MW-2	<0.006	mg/l	03/22/91	AW
3	SUM-11	<0.006	mg/l	03/22/91	AW
4	101	<0.006	mg/l	03/22/91	AW
5	101A	<0.006	mg/l	03/22/91	AW
6	104A	<0.006	mg/l	03/22/91	AW
7	102A	<0.006	mg/l	03/22/91	AW
8	103	<0.006	mg/l	03/22/91	AW
9	DUP	<0.006	mg/l	03/22/91	AW
10	105B	<0.006	mg/l	03/22/91	AW
11	MW-5	<0.006	mg/l	03/22/91	AW
12	MW-7	<0.006	mg/l	03/22/91	AW
13	Blank	<0.006	mg/l	03/27/91	AW

[END OF BATCH: 1]

UNREVIEWED

REPORT OF TEST RESULTS

ATEC Project Number 21-08049

Date: May 15, 1990

Client: Roy F. Weston, Inc.
SPER Division
111 N. Canal Street, Suite 855
Chicago, IL 60606

Sample Identification: 90-WT-09
Sample Taken By: Client
Sample Matrix: Soil
Date Sampled: May 4, 1990
Date Received: May 8, 1990
Date Analyzed: May 9 and 11, 1990
Analyst: AJB, KEB, EV
Verified By: JDD
ATEC Lab Number: 9005063

Parameter (units in mg/kg unless noted)	Sample I.D. S-76	S-77	S-78	Quantitation Limit	SW 846 Analytical Method No.
Total Cyanide	<1.0	<1.0	<1.0	1.0	9012
Reactive Cyanide	<10	<10	<10	10	7.3.3.2

Respectfully submitted,
ATEC Associates, Inc.

John P. Ewanger
Environmental/Analytical Testing Division

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Lake Michigan District Headquarters
1125 North Military Avenue
P.O. Box 10448
Green Bay, Wisconsin 54307-0448

Date: 9-12-91

Please Deliver the Following Pages:

TO:

Name: Judy Fassbender

Bureau/Agency: HSI

Fax Number: 414-792-1310

FROM:

Name: Terry Koehn

Phone Number: 414-492-5869

Fax Number: 414-492-5913

Pages to follow (excluding cover sheet): 7

Any problems phone Connie Schramm at 414-492-5809

Please note the following:

Comments/message:

1) Pretreatment Plant Process Records from J. Craig

2) Emergency Response Grab Water Sampling Results (BBC indicates Chrome Shop)

T Koehn

ROBERT E. LEE & ASSOCIATES
Wisconsin Certification No: 405043870

CUSTOMER----> 001422 - IT Environmental Programs, INC.
REPORT DATE---> 04/19/91 PROJECT----> 9010-023
JOB NUMBER----> 1002230 LOCATION----> OHM
BATCH----------> 1 SAMPLED----> 03/06/91

ple #	Sample Id	Result		Analyzed	By
SENIC					
1	MW-1	All <0.0014			
2	MW-2				
3	SUM-11				
4	101	0.0031	mg/l	04/08/91	EW
5	101A	<0.0014	mg/l	04/08/91	EW
6	104A	<0.0014	mg/l	04/08/91	EW
7	102A	<0.0014	mg/l	04/08/91	EW
8	103	<0.0014	mg/l	04/08/91	EW
9	DUP	<0.0014	mg/l	04/08/91	EW
10	105B	<0.0014	mg/l	04/08/91	EW
11	MW-5	<0.0014	mg/l	03/25/91	EW
12	MW-7	<0.0014	mg/l	03/25/91	EW
13	Blank	<0.0014	mg/l	03/25/91	EW
ARIUM					
1	MW-1	0.016	mg/l	03/22/91	AW
2	MW-2	0.070	mg/l	03/22/91	AW
3	SUM-11	0.025	mg/l	03/22/91	AW
4	101	0.006	mg/l	03/22/91	AW
5	101A	0.051	mg/l	03/22/91	AW
6	104A	0.067	mg/l	03/22/91	AW
7	102A	0.034	mg/l	03/22/91	AW
8	103	0.008	mg/l	03/22/91	AW
9	DUP	0.04X	mg/l	03/22/91	AW
10	105B	0.049	mg/l	03/22/91	AW
11	MW-5	0.051	mg/l	03/22/91	AW
12	MW-7	0.029	mg/l	03/22/91	AW
13	Blank	0.007	mg/l	04/05/91	AW
ADMIUM					
1	MW-1	<0.002	mg/l	03/22/91	AW
2	MW-2	<0.002	mg/l	03/22/91	AW
3	SUM-11	<0.002	mg/l	03/22/91	AW
4	101	<0.002	mg/l	03/22/91	AW
5	101A	<0.002	mg/l	03/22/91	AW
6	104A	<0.002	mg/l	03/22/91	AW

ROBERT E. LEE & ASSOCIATES
Wisconsin Certification No: 405043870

CUSTOMER=====> 001422 - IT Environmental Programs, INC.
REPORT DATE===> 04/19/91 PROJECT=====> 9010-023
JOB NUMBER====> 1002230 LOCATION=====> OHM
BATCH=========> 1 SAMPLED=====> 03/06/91

mple #	Sample Id	Result		Analyzed	BY
DMIUM	(Continued)				
7	102A	<0.002	mg/l	03/22/91	AW
8	103	0.004	mg/l	03/22/91	AW
9	DUP	0.004	mg/l	03/22/91	AW
10	105B	0.004	mg/l	03/22/91	AW
11	MW-5	0.004	mg/l	03/22/91	AW
12	MW-7	<0.002	mg/l	03/22/91	AW
13	Blank	<0.006	mg/l	03/27/91	AW
ROMIUM					
1	MW-1	5.45	mg/l	03/22/91	AW
2	MW-2	73.2	mg/l	03/22/91	AW
3	SOW-11	135	mg/l	03/22/91	AW
4	101	0.01	mg/l	03/22/91	AW
5	101A	<0.06	mg/l	03/22/91	AW
6	104A	<0.06	mg/l	03/22/91	AW
7	102A	0.27	mg/l	03/22/91	AW
8	103	12.0	mg/l	03/22/91	AW
9	DUP	<0.06	mg/l	03/22/91	AW
10	105B	33.3	mg/l	03/22/91	AW
11	MW-5	0.32	mg/l	03/22/91	AW
12	MW-7	6.79	mg/l	03/22/91	AW
13	Blank	<0.06	mg/l	03/27/91	AW
EAD					
1	MW-1	<0.06	mg/l	03/22/91	AW
2	MW-2	<0.06	mg/l	03/22/91	AW
3	SOW-11	<0.06	mg/l	03/22/91	AW
4	101	<0.06	mg/l	03/22/91	AW
5	101A	<0.06	mg/l	03/22/91	AW
6	104A	<0.06	mg/l	03/22/91	AW
7	102A	<0.06	mg/l	03/22/91	AW
8	103	<0.06	mg/l	03/22/91	AW
9	DUP	<0.06	mg/l	03/22/91	AW
10	105B	<0.06	mg/l	03/22/91	AW
11	MW-5	<0.06	mg/l	03/22/91	AW
12	MW-7	<0.06	mg/l	03/22/91	AW

3-27-91

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ROBERT E. LEE & ASSOCIATES
Wisconsin Certification No: 405043870

CUSTOMER----------> 001422 - IT Environmental Programs, INC.
REPORT DATE-----> 04/19/91 PROJECT-----> 9010-023
JOB NUMBER------> 1002230 LOCATION----> OHM
BATCH-----------> 1 SAMPLED-----> 03/06/91

mple #	Sample Id	Result		Analyzed	By
AD (Continued)					
13	Blank	<0.06	mg/l	03/27/91	AW
ERCURY					
1	MW-1	<0.0002	mg/l	03/15/91	EW
2	MW-2	<0.0002	mg/l	03/15/91	EW
3	SUM-11	<0.0002	mg/l	03/15/91	EW
4	101	<0.0002	mg/l	03/15/91	EW
5	101A	<0.0002	mg/l	03/15/91	EW
6	104A	<0.0002	mg/l	03/15/91	EW
7	102A	<0.0002	mg/l	03/15/91	EW
8	103	<0.0002	mg/l	03/15/91	EW
9	DUP	<0.0002	mg/l	03/15/91	EW
10	105B	<0.0002	mg/l	03/15/91	EW
11	MW-5	<0.0002	mg/l	03/15/91	EW
12	MW-7	<0.0002	mg/l	03/15/91	EW
13	Blank	<0.0002	mg/l	03/15/91	EW
ELENIUM					
1	MW-1	<0.003	mg/l	04/19/91	AW
2	MW-2	<0.003	mg/l	04/19/91	AW
3	SUM-11	0.016	mg/l	04/19/91	AW
4	101	0.006	mg/l	04/19/91	AW
5	101A	<0.003	mg/l	04/19/91	AW
6	104A	<0.003	mg/l	04/19/91	AW
7	102A	<0.003	mg/l	04/19/91	AW
8	103	<0.003	mg/l	04/19/91	AW
9	DUP	<0.003	mg/l	04/19/91	AW
10	105B	<0.003	mg/l	04/19/91	AW
11	MW-5	<0.003	mg/l	04/19/91	AW
12	MW-7	<0.003	mg/l	04/19/91	AW
13	Blank	<0.003	mg/l	04/19/91	AW
LVER					
1	MW-1	<0.006	mg/l	03/22/91	AW

ROBERT E. LEE & ASSOCIATES
Wisconsin Certification No: 405043870

CUSTOMER=====> 001422 - IT Environmental Programs, INC.
REPORT DATE====> 04/19/91 PROJECT=====> 9010-023
JOB NUMBER=====> 1002230 LOCATION=====> OEM
BATCH=========> 1 SAMPLED=====> 03/06/91

SILVER (Continued)

Each <0.006

Sample #	Sample Id	Result		Analyzed	By
~~2 ...~~	~~MW-2~~	~~<0.006~~	~~mg/l~~	~~03/22/91~~	~~AW~~
~~3 ...~~	~~SLUDGE~~	~~<0.006~~	~~mg/l~~	~~03/22/91~~	~~AW~~
4 ...	101	<0.006	mg/l	... 03/22/91 ...	AW
5 ...	101A	<0.006	mg/l	... 03/22/91 ...	AW
6 ...	104A	<0.006	mg/l	... 03/22/91 ...	AW
7 ...	102A	<0.006	mg/l	... 03/22/91 ...	AW
8 ...	103	<0.006	mg/l	... 03/22/91 ...	AW
9 ...	DUP	<0.006	mg/l	... 03/22/91 ...	AW
10 ...	105B	<0.006	mg/l	... 03/22/91 ...	AW
11 ...	MW-5	<0.006	mg/l	... 03/22/91 ...	AW
12 ...	MW-7	<0.006	mg/l	... 03/22/91 ...	AW
13 ...	Blank	<0.006	mg/l	... 03/27/91 ...	AW

BBC (samples 4–12)

Water Levels
(From Top of PVC)

MW-1 – 16.0 ft
MW-2 – 4.0
102A – 2.7
102 – Dry
103 – 18.5
104A – 4.0
101 – 52.0
101A – 4.0
105B – 2.0
MW7 – 4.0 (13 ft Deep)
MW5 – 3.0

Old Wells (Btu Brite) at chrome shop

From Bill Sass TAT
9-11-91

DATE	BATCH #	START TIME	END TIME	HACK CHROMIUM RESULTS IN PPM	SLUDGE VOLUME	ESTIMATED GALLONS ADDED TO HOLDING TANK
11/30/90	1	9:00	12:30	less than 2	1 drum	2,000 gallon
12/2/90	2	4:30	6:30	2	1 drum	2,000 gallons
12/3/90	3	7:30	12:00	1	1 drum	1,000 gallons
12/5/90	4	11:30	3:15	3	1 drum	1,000 gallons
12/7/90	5	2:30	4:30	2	1 drum	2,000 gallons
12/11/90	6	7:00	10:00	1	1 drum	1,000 gallons
12/14/90	7	7:00	10:00	1	1 drum	1,000 gallons
12/17/90	8	9:30	2:10	1	1 drum	1,000 gallons
1/3/91	1	7:30	3:00	1	1/2 drum	3,000 gallons
1/5/91	2	10:00	12:30	less than 1	1 drum	1,000 gallons
1/6/91	3	9:00	3:30	1	1 drum	2,000 gallons
1/8/91	4	2:00	6:00	1	1 drum	1,000 gallons
1/10/91	5	1:00	4:30	1	1 1/2 drums	1,000 gallons
1/16/91	6	2:00	4:45	1	1 1/2 drums	1,000 gallons
1/21/91	7	7:30	5:00	1	1 1/2 drums	800 gallons
1/28/91	8	1:00	5:00	1	1 1/2 drums	800 gallons
2/11/91	9	8:30	11:00	1	1 drum	800 gallons
2/19/91	10	12:30	5:00	1	1 1/2 drums	500 gallons
3/1/91	11	8:30	11:30	1	1 1/2 drums	700 gallons
3/2/91	12	12:00	3:15	1	1 1/2 drums	1,000 gallons
3/3/91	13	10:45	10:00	1	1 drum	500 gallons
3/5/91	14	4:00	6:00	2	1 drum	700 gallons
3/8/91	15	1:00	3:30	2	1 drum	500 gallons
3/9/91	16	1:00	3:30	2	1 drum	500 gallons
3/10/91	17	2:00	6:15	1	1/2 drum	500 gallons
3/11/91	18	2:00	4:30	1	1/2 drum	500 gallons
3/12/91	19	3:00	5:30	1	1/2 drum	500 gallons
3/14/91	20	5:00	7:30	1	1 drum	600 gallons
3/18/91	21	10:00	1:00	1	1 drum	500 gallons
3/19/91	22	10:30	12:30	1	1/2 drum	500 gallons
3/20/91	23	2:00	11:30	1	1/2 drum	500 gallons
3/21/91	24	6:30	8:30	1	1/2 drum	500 gallons
3/21/91	25	2:45	5:15	1	1/2 drum	500 gallons
3/22/91	26	1:30	4:00	1	1/2 drum	500 gallons
3/23/91	27	5:15	7:30	1	1/2 drum	500 gallons
3/24/91	28	3:50	5:30	1	1/2 drum	500 gallons
3/25/91	29	12:15	3:30	1	1/2 drum	500 gallons
3/26/91	30	10:00	12:30	1	1/2 drum	500 gallons
3/27/91	31	7:15	10:00	1	1/2 drum	500 gallons
4/4/91	32	7:00	9:15	1	1 drum	600 gallons
4/5/91	33	7:30	9:30	1	1/2 drum	500 gallons

DATE	BATCH #	TIME	TIME	RESULTS IN PPM		TO HOLDING TANK
4/6/92	34	7:00	4:15	1	1/2 drum	500 gallons
4/9/91	35	10:30	1:00	1	1/2 drum	700 gallons
4/10/91	36	7:00	9:30	1	1 drum	500 gallons
4/11/91	37	6:30	8:30	1	1 drum	500 gallons
4/22/91	38	10:00	11:50	1	1/2 drum	500 gallons
4/23/91	39	6:30	8:30	1	1/2 drum	500 gallons
4/24/91	40	6:15	8:15	1	1/2 drum	500 gallons
4/25/91	41	6:16	8:10	1	1/2 drum	500 gallons
4/26/91	42	6:00	8:15	2	1/2 drum	500 gallons
4/27/91	43	6:15	8:30	1	1/2 drum	500 gallons
4/28/91	44	6:30	9:00	1	1/2 drum	500 gallons
4/29/91	45	6:15	8:30	1	1 drum	500 gallons
5/13/91	46	10:00	1:30	1	1 1/2 drums	700 gallons
5/14/91	47	11:00	2:00	2	1 drum	700 gallons
5/16/91	48	6:30	9:00	1	1 drum	700 gallons
5/17/91	49	9:30	12:00	1	1 drum	600 gallons
5/21/91	50	7:00	3:00	1	1 drum	600 gallons
6/3/91	51	10:45	1:00	1	1 1/2 drums	600 gallons
6/4/91	52	1:45	4:00	1	1 drum	500 gallons
6/6/91	53	1:00	4:15	1	1 drum	600 gallons
6/7/91	54	2:00	4:15	1	1 drum	600 gallons
6/19/91	55	11:30	4:30	2	1 1/2 drums	800 gallons
6/22/91	56	7:00	9:30	1	1 drum	800 gallons
6/28/91	57	6:00	8:30	1	1 drum	800 gallons
6/28/91	58	6:00	8:00	2	1 drum	700 gallons
7/22/91	59	12:30	3:00	1	1 1/2 drums	600 gallons
7/24/91	60	4:00	6:00	1	1 1/2 drums	700 gallons
8/19/91	61	10:00	1:05	1	1 1/2 drums	900 gallons
8/20/91	62	12:15	3:15	1	1 1/2 drums	800 gallons
8/22/91	63	6:30	9:30	1	1 1/2 drums	800 gallons
8/23/91	64	10:15	12:30	1	1/2 drum	5500 gallons

ZINC SHOP TRANSFER

2/12/91	2,500 gallons
3/8/91	2,700 gallons
4/8/91	4,500 gallons
4/25/91	5,000 gallons
5/17/91	4,000 gallona
6/6/91	3,500 gallons
6/27/91	3,500 gallons
7/24/91	4,200 gallons
8/23/91	3,000 gallons

James R. Craig
Better Brite Chromium
Depre, Wisconsin

Department of Natural Resources

INORGANICS
Form 4800-4 2-87

☐ if New Facility
Bill to: ☐ Solid Waste ☐ Hazardous Waste ☐ Wastewater ☒ Water Supply ☐ Spills ☐ Other

I.D. Number _____ Point/Well # ____ Field No. RAS-01 County # 05 Route Code WS40

I.D. Name Gerald Rasmussen P.O. or City De Pere

Collection Date 09/30/91 (M M D D Y Y) Time: 10:45 (H H M M) Sample Location 320 S. Sixth

Description Rasmussen Sump Water

Send Report To:
Rick Stoll
LMD Water Supply
Green Bay

Account Number _____

Collected By Koehn

Phone (414) 492-5996

Check all appropriate:
☐ F Filtered ☐ R RCRA
☐ S Split ☐ E Enforcement ☐ B Field Blank

☐ MW Monitoring Well ☐ EF Effluent - OW Waste
☐ LY Lysimeter ☐ IF Influent
☐ LE Leachate ☐ SO Soil
☐ SE Sediment ☐ OI Oil
☐ SU Surface Water ☐ SL Sludge
☐ PW Private Well ☒ OT Other

Depth to Groundwater	72002	
Water Elevation (MSL)	00842 247	
Temperature (°C)	00010 131	
Cond-fld (Uncorrected)		
Cond-fld (uMHOS/CM@25°C)	00872 115	
Ph-Field (su)	00400 096	
BOD estimate		

Compliance Sample? ☐ Yes ☐ No

☐ Alkalinity (as CaCO)	T D	
☐ Ammonia-N	T D	
☐ Arsenic (As)	T D	
☐ Barium (Ba)	T D	
☐ BOD_5 Day	T D	
☐ Boron (B)	T D	
☐ Cadmium (C)	T D	
☐ Calcium (Ca)	T D	
☐ COD	T D	
☐ Cond-Lab(uMHOS)@25°C		
☐ Chloride (Cl)	T D	
☒ Chromium (Cr)	T D	
☐ Chromium Hex	T D	
☐ Copper (Cu)	T D	
☐ Flouride (F)	T D	
☐ Hardness (as $CaCO_3$)	T D	
☐ Iron (Fe)	T D	
☐ Lead (Pb)	T D	
☐ Magnesium (Mg)	T D	
☐ Manganese (mn)	T D	
☐ Mercury (Hg)	T D	
☐ $NO_3 + NO_2$ (as N)	T D	
☐ Kjeldahl-N	T D	
☐ pH - Lab (su)	T D	
☐ Selenium (Se)	T D	
☐ Sodium (Na)	T D	
☐ Sulfate (SO_4)	T D	
Total Solids	T	
☐ Total Dis. Solids	T D	
☐ Zinc (Zn)	T D	

Comments or add. parameters
☒ Cyanide Total

☒ One Week Turnaround Adequate
As Per Conversation
Between Rick Stoll and
George Bowman

Analyses for SOLIDS are reported in mg/Kg. NON-SOLIDS are reported in mg/L or ug/L depending on parameter and whether Total or Dissolved.

R.H. Laessig, PhD., Director
Wisconsin State Laboratory of Hygiene
Madison, Wisconsin 53706

Date Received And Sample No. _____

Date Reported _____

Department of Natural Resources

VOCS
Form 4800-5 Rev. 12-87

☐ if New Facility

Bill to: ☐ Solid Waste ☐ Hazardous Waste ☐ Wastewater ☒ Water Supply ☐ Spills ☐ Other _____

I.D. Number _____ Point/ Well # _____ Field No. RAS01 County # 05 Route Code WS40

I.D. Name Gerald - Rasmussen P.O. or City 320 S Sixth

Collection Date 09/30/91 (MM/DD/YY) Time: 10:45 (HH:MM) Sample Location Rasmussen Sump Water

Description Sump Water

Send Report To:
Rick Stoll
LMD Water Supply
Green Bay

Account Number _____

Collected By Koehn

Phone (414) 492-5896

Check any appropriate:

☐ S Split ☐ E Enforcement ☐ B Field Blank ☐ S Surface Source ☐ T Treated

__ MW Monitoring Well __ EF Effluent __ OW Waste
__ LY Lysimeter __ IF Influent
__ LE Leachate __ SO Soil
__ SE Sediment __ OI Oil
__ SU Surface Water __ SL Sludge
__ PW Private Well X OT Other

Analysis Type:
X G GC/MS Screen and Quantification
S GC/MS Screen
__ O Parameter Specific
(NOTE: if followup enter previous sample no.) _____

Water System Type (Water Supply Use ONLY)
__ M Community-Municipal
__ O Community-OTM
__ N Non-community
__ P Private
X X Non-potable

Sample Type:
__ D (SDWA) Compliance Sample
__ C (SDWA) Check
__/__/__ (Initial Sample Date)
__ W Raw Water __ ✓ if New Well
__ I Miscellaneous Distribution

__ Free Chlorine Residual (Field) __.__ mg/L
__ Free Chlorine Residual (Lab) __.__ mg/L

Detection limits (ug/L) are indicated by [ ]	Detected	ug/L
__ Benzene [1.0]	__ 025	___.__
__ Bromobenzene [4.0]	__ 046	___.__
__ Bromodichloromethane [1.0]**	__ 051	___.__
__ Bromoform [5.0]**	__ 053	___.__
__ Bromomethane [1.0]	__ 055	___.__
__ Carbon Disulfide [5.0]	__ 071	___.__
__ Carbon Tetrachloride [2.0]	__ 073	___.__
__ Chlorobenzene [2.0]	__ 083	___.__
__ Chloroethane [2.0]	__ 087	___.__
__ 2-Chloroethylvinyl ether [4.0]	__ 093	___.__
__ Chloroform [1.0]**	__ 095	___.__
__ 0-Chlorotoluene [1.0]	__ 108	___.__
__ P-Chlorotoluene [1.0]	__ 110	___.__
__ Dibromomethane [2.0]	__ 146	___.__
__ Dibromochloromethane [2.0]**	__ 147	___.__
__ 1,2-Dibromo-3-Chloropropane [7.0]	__ 148	___.__
__ 1,2-Dichlorobenzene [2.0]	__ 153	___.__
__ 1,3-Dichlorobenzene [2.0]	__ 155	___.__
__ 1,4-Dichlorobenzene [2.0]	__ 157	___.__
__ 1,1-Dichloroethane [1.0]	__ 165	___.__
__ 1,2-Dichloroethane [1.0]	__ 167	___.__
__ 1,2-Dichloroethylene, cis [1.0]	__ 168	___.__
__ 1,1-Dichloroethylene [1.0]	__ 169	___.__
__ 1,2-Dichloroethylene, trans [1.0]	__ 170	___.__
__ 1,3-Dichloropropane [1.0]	__ 178	___.__
__ 1,1-Dichloropropene [2.0]	__ 180	___.__
__ 1,2-Dichloropropane [1.0]	__ 181	___.__
__ 2,2-Dichloropropane [2.0]	__ 182	___.__
__ 1,3-Dichloropropene, cis [2.5]	__ 183	___.__
__ 1,3-Dichloropropene, trans [2.5]	__ 185	___.__
__ Ethylbenzene [1.0]	__ 233	___.__
__ Ethylene Dibromide [1.0]	__ 236	___.__
__ Methylethylketone (MEK) [12]	__ 319	___.__
__ Methylene Chloride [5.0]	__ 325	___.__
__ Styrene [2.0]	__ 393	___.__
__ 1,1,1,2-Tetrachloroethane [3.0]	__ 396	___.__
__ 1,1,2,2-Tetrachloroethane [3.0]	__ 397	___.__
__ Tetrachloroethylene [1.0]	__ 399	___.__
__ Tetrahydrofuran (THF) [200]	__ 401	___.__
__ Toluene [1.0]	__ 411	___.__
__ 1,2,4-Trichlorobenzene [1.0]	__ 419	___.__
__ 1,1,1-Trichloroethane [1.0]	__ 421	___.__
__ 1,1,2-Trichloroethane [2.0]	__ 423	___.__
__ Trichloroethylene [1.0]	__ 425	___.__
__ Trichlorofluoromethane [1.0]	__ 427	___.__
__ Trichlorotrifluoroethane [3.0]	__ 428	___.__
__ 1,2,3-Trichloropropane [2.0]	__ 432	___.__
__ Vinyl Chloride [1.0]	__ 434	___.__
__ Xylenes [2.0]	__ 437	___.__
** Total Trihalomethanes	__	___.__

☐ NO Detects

Date Received And Sample No. _____

Date Reported _____

R.H. Laessig, PhD., Director
Wisconsin State Laboratory of Hygiene
Madison, Wisconsin 53706

FROM: Rich Stoll LWD/WS

TO: Terry Koehn LWD

SUBJECT–MESSAGE

— Rasmussen Sump Water Sample forms

- Sent To Lab 9-30-91

SIGNED T Koehn DATE 9-30-91

REPLY

RETURN THIS COPY TO SENDER

SIGNED ______ DATE ______

Department of Natural Resources

INORGANICS
Form 4800-4 2-87

☐ if New Facility
Bill to: ☒ Solid Waste ☐ Hazardous Waste ☐ Wastewater ☐ Water Supply ☐ Spills ☐ Other

I.D. Number NA
Point/ Well # NA
Field No. F-01
County # 05
Route Code SW40

I.D. Name Better Brite - WID-560010118
P.O. or City De Pere

Collection Date 08/15/91 (MM/DD/YY) Time: 11:28 (HH:MM)
Sample Location Fishers - Outside East Wall
1031 S. 6th St

Description Soil Spl - 4ft to 5ft Deep

Send Report To:
Terry Koehn
WDNR-LMD
1125 N. Military Ave
P.O. Box 10448
Green Bay WI 54307-0448

Account Number SW001

Collected By Terry Koehn

Phone (414) 492-5869

Check all appropriate:
☐ F Filtered ☐ R RCRA
☐ S Split ☐ E Enforcement ☐ B Field Blank

☐ MW Monitoring Well	☐ EF Effluent - OW Waste
☐ LY Lysimeter	☐ IF Influent
☐ LE Leachate	☒ SO Soil
☐ SE Sediment	☐ OI Oil
☐ SU Surface Water	☐ SL Sludge
☐ PW Private Well	☐ OT Other

Depth to Groundwater	72002	
Water Elevation (MSL)	00842 247	
Temperature (°C)	00010 131	
Cond-fld (Uncorrected)		
Cond-fld (uMHOS/CM@25°C)	00872 115	
Ph-Field (su)	00400 096	
BOD estimate		

Compliance Sample? ☐ Yes ☐ No

☐ Alkalinity (as CaCO)	T D	
☐ Ammonia-N	T D	
☐ Arsenic (As)	T D	
☐ Barium (Ba)	T D	
☐ BOD_5 Day	T D	
☐ Boron (B)	T D	
☐ Cadmium (C)	T D	
☐ Calcium (Ca)	T D	
☐ COD	T D	
☐ Cond-Lab(uMHOS)@25°C	T	
☐ Chloride (Cl)	T D	
☒ Chromium (Cr) Total	T D	
☐ Chromium Hex	T D	
☐ Copper (Cu)	T D	
☐ Flouride (F)	T D	
☐ Hardness (as $CaCO_3$)	T D	
☐ Iron (Fe)	T D	
☐ Lead (Pb)	T D	
☐ Magnesium (Mg)	T D	
☐ Manganese (mn)	T D	
☐ Mercury (Hg)	T D	
☐ $NO_3 + NO_2$ (as N)	T D	
☐ Kjeldahl-N	T D	
☐ pH - Lab (su)	T D	
☐ Selenium (Se)	T D	
☐ Sodium (Na)	T D	
☐ Sulfate (SO_4)	T D	
Total Solids	T	
☐ Total Dis. Solids	T D	
☐ Zinc (Zn)	T D	

Analyses for SOLIDS are reported in mg/Kg. NON-SOLIDS are reported in mg/L or ug/L depending on parameter and whether Total or Dissolved.

Comments or add. parameters

R.H. Laessig, PhD., Director
Wisconsin State Laboratory of Hygiene
Madison, Wisconsin 53706

Date Received And Sample No.

Date Reported

SOIL/SEDIMENT SAMPLING
Field Data Sheet

Site Name: Below Bridge - Fisher Home

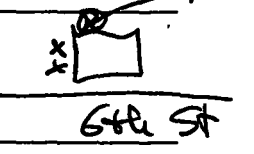
Samplers Name(s): Koehn + Shaw

Sample Number: [redacted] F01

Date of Sampling: 8/15/91 Time of Sampling: 11:28

Sample Type: Soil ( ) Sediment ( ) Other: 4ft-5ft
Grab ( ) Composite (X) F-01

Sample Location:



General:

Distance To Feature: 1½ ft from east side of house
5 ft south of NE corner

Sample Description:

Color: reddish

Texture: sandy clay reddish - some mottling

(sand, silt, clay, gravel, cobbles, observable layers)

Moisture Content: Damp Depth to Saturation: NA

Observed Staining/Mottling: —

Depth of Sample: 4-5 ft No. of Locations: 1

Location Spacing: NA Sample Mixing: Yes

Air Monitoring at Sample Site:

General Odor: None PID/FID Reading: -neg-

Site Observations:

Vegetation Stress: no

Debris/Trash: no

Other: 4 inch Blk topsoil - 4"-3½' sand+gravel - clay at 4' - damp + mottled

Sampling Equipment/Composition:

Hand Auger	(X)	Stainless
Push Bar	( )	
Trowel	(X)	"
Spoon	(X)	"
Mixing Bowl	(X)	"
Tongue Depress.	( )	
Other		

Photography:
At Time of Sampling ( )
Film ASA: —
Photo #s : —
Directions: —

Backfill of Boring/Material: ( ) yes - Native Material

Department of Natural Resources

INORGANICS
Form 4800-4 2-87

☐ if New Facility
Bill to: ☒ Solid Waste ☐ Hazardous Waste ☐ Wastewater ☐ Water Supply ☐ Spills ☐ Other _____

I.D. Number UA_____ Point/Well # UA_ Field No. E-02 County # 05 Route Code S440

I.D. Name Better Brite-WID-560010118 P.O. or City De Pere

Collection Date 08/15/91 Time: 12:00 Sample Location Fishers - Outside South Wall 1031 S. 6th St

Description Soil Sample - 4ft to 5ft Deep

Send Report To:
Terry Koehn
WDNR - LMD
1125 N Military Ave
P.O. 10448
Green Bay WI 54307-0448

Account Number S W001

Collected By Terry Koehn

Phone (414) 492-5869

Check all appropriate:
☐ F Filtered ☐ R RCRA
☐ S Split ☐ E Enforcement ☐ B Field Blank

☐ MW	Monitoring Well	☐ EF Effluent - OW Waste
☐ LY	Lysimeter	☐ IF Influent
☐ LE	Leachate	☒ SO Soil
☐ SE	Sediment	☐ OI Oil
☐ SU	Surface Water	☐ SL Sludge
☐ PW	Private Well	☐ OT Other

Depth to Groundwater	72002	
Water Elevation (MSL)	00842 247	
Temperature (°C)	00010 131	
Cond-fld (Uncorrected)		
Cond-fld (uMHOS/CM@25°C)	00872 115	
Ph-Field (su)	00400 096	
BOD estimate		

Compliance Sample? ☐ Yes ☐ No

☐ Alkalinity (as CaCO)	T D		☐ Lead (Pb)	T D	
☐ Ammonia-N	T D		☐ Magnesium (Mg)	T D	
☐ Arsenic (As)	T D		☐ Manganese (mn)	T D	
☐ Barium (Ba)	T D		☐ Mercury (Hg)	T D	
☐ BOD_5 Day	T D		☐ $NO_3 + NO_2$ (as N)	T D	
☐ Boron (B)	T D		☐ Kjeldahl-N	T D	
☐ Cadmium (C)	T D		☐ pH - Lab (su)	T D	
☐ Calcium (Ca)	T D		☐ Selenium (Se)	T D	
☐ COD	T D		☐ Sodium (Na)	T D	
☐ Cond-Lab(uMHOS)@25°C	T		☐ Sulfate (SO_4)	T D	
☐ Chloride (Cl)	T D		Total Solids	T	
☒ Chromium (Cr) Total	T D		☐ Total Dis. Solids	T D	
☐ Chromium Hex	T D		☐ Zinc (Zn)	T D	
☐ Copper (Cu)	T D				
☐ Flouride (F)	T D				
☐ Hardness (as $CaCO_3$)	T D				
☐ Iron (Fe)	T D				

Comments or add. parameters

Analyses for SOLIDS are reported in mg/Kg. NON-SOLIDS are reported in mg/L or ug/L depending on parameter and whether Total or Dissolved.

R.H. Laessig, PhD., Director
Wisconsin State Laboratory of Hygiene
Madison, Wisconsin 53706

Date Received And Sample No. _____

Date Reported _____

SOIL/SEDIMENT SAMPLING
Field Data Sheet

Site Name: Better Bride - Fisher Home

Samplers Name(s): Kocko & Shaw

Sample Number: F02

Date of Sampling: 8/15/90 Time of Sampling: 12:00

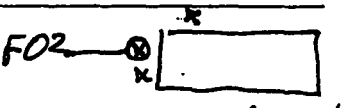
Sample Type: Soil ( ) Sediment ( ) Other: —
Grab ( ) Composite (X) —

Sample Location:

General: East end of north side of home and window

Distance To Feature: 1½ ft from foundation

Sample Description:



Color: reddish -

Texture: sand-clay & clay

(sand, silt, clay, gravel, cobbles, observable layers)

Moisture Content: Damp Depth to Saturation: NA

Observed Staining/Mottling: —

Depth of Sample: 4-5 ft No. of Locations: one

Location Spacing: NA Sample Mixing: Yes

Air Monitoring at Sample Site:

General Odor: None PID/FID Reading: neg -

Site Observations:

Vegetation Stress: none

Debris/Trash: none

Other: 4" blk dirt - 4" → 3½' sand-some gravel - 4-5' clay

Sampling Equipment/Composition:

Hand Auger	(X)	Stainless
Push Bar	( )	
Trowel	(X)	11
Spoon	(X)	11
Mixing Bowl	(X)	11
Tongue Depress.	( )	
Other		

Photography:
At Time of Sampling ( )
Film ASA: —
Photo #s : —
Directions: —

Backfill of Boring/Material: (X) Native Material

Department of Natural Resources

INORGANICS
Form 4800-4 2-87

☐ If New Facility
Bill to: ☒ Solid Waste ☐ Hazardous Waste ☐ Wastewater ☐ Water Supply ☐ Spills ☐ Other

I.D. Number NA | Point/Well # NA | Field No. E-03 | County # 05 | Route Code SW40

I.D. Name Better Brite WID-560010118 | P.O. or City De Pere

Collection Date 08/15/91 | Time: 12:25 | Sample Location Fishers - Outside North Wall 1031 S. 6th St.

Description Soil Sample 4ft to 5ft Deep

Send Report To:
Terry Koehn
WDNR-LMD
1125 N. Military Ave.
P.O. Box 10448
Green Bay WI 54307-0448

Account Number SW001

Collected By Terry Koehn

Phone (414) 492-5869

Check all appropriate:
☐ F Filtered ☐ R RCRA
☐ S Split ☐ E Enforcement ☐ B Field Blank

☐ MW Monitoring Well	☐ EF Effluent - OW Waste
☐ LY Lysimeter	☐ IF Influent
☐ LE Leachate	☒ SO Soil
☐ SE Sediment	☐ OI Oil
☐ SU Surface Water	☐ SL Sludge
☐ PW Private Well	☐ OT Other

Depth to Groundwater	72002	
Water Elevation (MSL)	00842 247	
Temperature (°C)	00010 131	
Cond-fld (Uncorrected)		
Cond-fld (uMHOS/CM@25°C)	00872 115	
Ph-Field (su)	00400 096	
BOD estimate		

Compliance Sample? ☐ Yes ☐ No

	T/D	
☐ Alkalinity (as CaCO)	T D	
☐ Ammonia-N	T D	
☐ Arsenic (As)	T D	
☐ Barium (Ba)	T D	
☐ BOD_5 Day	T D	
☐ Boron (B)	T D	
☐ Cadmium (C)	T D	
☐ Calcium (Ca)	T D	
☐ COD	T D	
☐ Cond-Lab(uMHOS)@25°C		
☐ Chloride (Cl)	T D	
☒ Chromium (Cr) Total	T D	
☐ Chromium Hex	T D	
☐ Copper (Cu)	T D	
☐ Flouride (F)	T D	
☐ Hardness (as $CaCO_3$)	T D	
☐ Iron (Fe)	T D	
☐ Lead (Pb)	T D	
☐ Magnesium (Mg)	T D	
☐ Manganese (mn)	T D	
☐ Mercury (Hg)	T D	
☐ $NO_3 + NO_2$ (as N)	T D	
☐ Kjeldahl-N	T D	
☐ pH - Lab (su)	T D	
☐ Selenium (Se)	T D	
☐ Sodium (Na)	T D	
☐ Sulfate (SO_4)	T D	
Total Solids	T	
☐ Total Dis. Solids	T D	
☐ Zinc (Zn)	T D	

Comments or add. parameters

Analyses for SOLIDS are reported in mg/Kg. NON-SOLIDS are reported in mg/L or ug/L depending on parameter and whether Total or Dissolved.

R.H. Laessig, PhD., Director
Wisconsin State Laboratory of Hygiene
Madison, Wisconsin 53706

Date Received And Sample No.

Date Reported

SOIL/SEDIMENT SAMPLING
Field Data Sheet

Site Name: Better Brite – Fisher Home

Samplers Name(s): Koehr + Shaw

Sample Number: F03

Date of Sampling: 8/15/91 **Time of Sampling:** 12:25

Sample Type: Soil ( ) Sediment ( ) Other: —
Grab ( ) Composite (X) —

Sample Location:

General: ~~Be~~ North side of home – west end near basement window

Distance To Feature: 1½ north of foundation – Center basement window

Sample Description:

F03 x x
6th ST

Color: —

Texture: —

Silty clay – some reddish tones
(sand, silt, clay, gravel, cobbles, observable layers)

Moisture Content: dry Depth to Saturation: NA

Observed Staining/Mottling: —

Depth of Sample: 4-5 ft No. of Locations: 1

Location Spacing: NA Sample Mixing: Yes

Air Monitoring at Sample Site:

General Odor: None PID/FID Reading: negative

Site Observations:

Vegetation Stress: No

Debris/Trash: No

Other: 4" blk dirt 4" - 4' sand some gravel 4'-5' silty clay

Sampling Equipment/Composition:

Hand Auger	(X)	Stainless
Push Bar	( )	—
Trowel	(X)	"
Spoon	(X)	"
Mixing Bowl	(X)	"
Tongue Depress.	( )	—
Other		—

Photography:
At Time of Sampling ( )
Film ASA: —
Photo #s : —
Directions: —

Backfill of Boring/Material: (X) Native Material

9-27-91

State Laboratory of Hygiene
University of Wisconsin Center for Health Sciences
465 Henry Mall, Madison, WI 53706
R.H. Laessig, Ph.D., Director S.L. Inhorn, M.D., Medical Director

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Environmental Science Section (608) 262-3458 DNR LAB ID 113133790
Inorganic chemistry (#4 of 17 on 09/27/91, unseen)

Id: Point/Well/..: Field #: F-01 Route: SW40
Collection Date: 08/15/91 Time: 11:28 County: 05 (Brown)
From: BETTER BRITE WID-560010118 DEPERE FISHERS OUTSIDE EAST WALL
Description: 1031 S 6TH ST SOIL SPL 4FT TO 5FT DEEP
To: KOEHN
DNR Source: Soil
GREEN BAY
Account number: SW001 Collected by: KOEHN
Date Received: 08/21/91 Labslip #: IC021470 Reported: 09/26/91

CHROMIUM DRY WT, ICP	21.	MG/KG
DIGESTION 750.1, RCRA SOLIDS, AND AS & SE ON ICP	DIG MET	
SAMPLE PREP/HAND II	SIEVE	

F 9-27-91

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Environmental Science Section (608) 262-3458 DNR LAB ID 113133790
Inorganic chemistry (#5 of 17 on 09/27/91, unseen)

Id: Point/Well/..: Field #: F-02 Route: SW40
Collection Date: 08/15/91 Time: 12:00 County: 05 (Brown)
From: BETTER BRITE WID-560010118 DEPERE FISHERS OUTSIDE NORTH WALL
Description: 1031 S 6TH ST SOIL SAMPLE 4FT TO 5FT DEEP
To: KOEHN
DNR Source: Soil
GREEN BAY
Account number: SW001 Collected by: KOEHN
Date Received: 08/21/91 Labslip #: IC021471 Reported: 09/26/91

CHROMIUM DRY WT, ICP	20.	MG/KG
DIGESTION 750.1, RCRA SOLIDS, AND AS & SE ON ICP	DIG MET	
SAMPLE PREP/HAND II	SIEVE	

R 9-27-91

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Environmental Science Section (608) 262-3458 DNR LAB ID 113133790
Inorganic chemistry (#6 of 17 on 09/27/91, unseen)

Id: Point/Well/..: Field #: F-03 Route: SW40
Collection Date: 08/15/91 Time: 12:25 County: 05 (Brown)
From: BETTER BRITE WID-560010118 DEPERE FISHERS OUTSIDE NORTH WALL
Description: 1031 S 6TH ST SOIL SAMPLE 4FT TO 5FT DEEP
To: KOEHN
DNR Source: Soil
GREEN BAY
Account number: SW001 Collected by: KOEHN
Date Received: 08/21/91 Labslip #: IC021472 Reported: 09/26/91

CHROMIUM DRY WT, ICP	25.	MG/KG
DIGESTION 750.1, RCRA SOLIDS, AND AS & SE ON ICP	DIG MET	
SAMPLE PREP/HAND II	SIEVE	

STATE OF WISCONSIN
REPLY MESSAGE
FORM AD-16

INSTRUCTIONS TO SENDER:
REMOVE YELLOW COPY FOR YOUR FILE.
SEND REMAINDER OF FORM INTACT WITH CARBONS TO PERSON ADDRESSED.

TO: Dave Benner
De Pere Wastewater Treatment Plant
315 Leonard St
De Pere, WI 54115

FROM: Terry Koehn
WDNR - LMD

SUBJECT-MESSAGE

File-Better Brite
Sites 050109

Better Brite

For your reference, please note attached report on the pretreatment plant from S. Faryan.

REPLY

SIGNED T Koehn DATE 12-12-91

cc: G. Edelstein with ~~Att~~ SW/3
R. Kannavskas
Hydro-Search, Inc. with Att.

SIGNED _____ DATE _____

A WATER TREATMENT SYSTEM FOR REMOVAL OF CHROMIUM FROM GROUNDWATER AT BETTER BRITE CHROME DEPERE, WISCONSIN

Prepared by:

Steve Faryan,
On-Scene Coordinator,
U.S. Environmental Protection Agency,
Region V

and

William Sass,
Ecology and Environment, Inc.,
Technical Assistance Team,
Region V

ABSTRACT

In 1986 the Emergency Response Section of the U.S. EPA, Region V conducted a Removal Action at the Better Brite Chrome site. Drums, tanks, and vats were removed and disposed of. Leakage from in-ground chromium plating pits led to groundwater contamination. In 1987, the WDNR conducted a hydrological study of the site. In 1988, Emergency Response was called back to the site due to surface water contamination of back yards adjacent to the site. A drain field was installed on site to collect the chromium-contaminated water and channel it to the City of DePere sewer system. After evaluation of various treatment technologies and designs, EPA constructed a batch-type reduction/precipitation water treatment system to remove chromium. The system was chosen because of three key points. It can handle intermittent pumping from a collection system consisting of a drain field as well as a recovery well. The system also reduces chromium from its hexavalent form to the less toxic trivalent form. And finally, disposal of the waste product, sludge cake, was cheaper than the larger volumes of liquids that would need disposal with the other systems considered. The actual system is a batch-type system designed to treat up to 6,000 gallons per day from a recovery system. It uses sodium bisulfite at a pH of 3 to reduce hexavalent chromium to trivalent. Precipitation of the chromium is achieved with sodium hydroxide in addition to anionic polymer as a flocculating agent. The sludge is dewatered using a plate-and-frame filter press. The system proved to be both effective and economical.

I. BACKGROUND

The Better Brite site is located at 519 Lande Street in DePere, Brown County, Wisconsin (Figure 1). The population of DePere is 14,892. The 1.5 acre site is situated in a residential area approximately one quarter mile west of the Fox River. Better Brite is bordered on the south, west, and northwest by residences, on the north by a residence and Lande Street, and on the west by railroad tracks (Figure 2).

The site operated as a chrome plating facility from 1970 until 1985. During this time 20,000 to 60,000 gallons of plating solution leaked from in-ground plating vessels. The owner of Better Brite Inc., Everett Hintz, filed for bankruptcy in October of 1985.

According to Wisconsin Department of Natural Resources (WDNR) on-site sampling results in 1985, total chromium levels in groundwater were as high as 3,800 parts per million (ppm). Subsequent on-site sampling (Figure 3) by the WDNR and Technical Assistance Team (TAT) confirmed the presence of chromium levels as high as 1,200 ppm in groundwater (Table 1).

A 1986 removal action by the Emergency Response Branch of the U.S. EPA eliminated the threats posed by on-site drums, tanks and vats containing hazardous materials. The U.S. EPA removed over 83 tons of contaminated soil, 9,270 gallons of chromic acid, 3,600 gallons of base/neutral liquids, 550 gallons of cyanide solution, 150 pounds of cyanide sludge, and 500 gallons of flammable liquid, all of which were treated or disposed of in accordance with U.S. EPA's Off-Site Policy. The project totaled $123,392 of which $104,070 was for extramural clean-up contractor costs.

The U.S. EPA Emergency Response Branch responded to the site again in the spring of 1988 at the request of the WDNR. Chromium-contaminated water was ponding in the adjacent neighbors' backyards, causing hexavalent chromium to deposit in soils and gardens on their property. The OSC authorized the pumping of the water to the City of Depere's sanitary sewer system as an interim measure to alleviate the ponding problem. A french drain system that collects the contaminated groundwater and discharges it into the City of DePere's sewer system was constructed at the site as a more permanent measure. Wastewater treatment plant records indicate that the collection sump's effluent periodically exceeded the city's 7 ppm chromium pretreatment standard. The U.S. EPA Region V Water Division had requested that a pretreatment system be installed to treat the runoff in compliance with the city's pretreatment standard. Later in 1988, the plating operations building and concrete foundation were removed and clay capped.

II. EVALUATION OF TREATMENT TECHNOLOGIES

Four different treatment technologies were evaluated for removal of

heavy metals from the groundwater and surface water at the Better Brite chrome facility. All of these systems utilize treatment processes designed for use in the plating industry to lower the metal concentration in plating waste discharge. The choice of methods was based on the following:

- o Initial concentration of metals in the groundwater
- o Expected flow rate from the collection systems
- o Required discharge concentrations
- o Continuous flow or intermittent flow from the collection systems
- o Costs, including start-up, operation, and maintenance

The groundwater and surface water collection systems were predicted to collect an average of 2,000 gallons of contaminated water per day during summer and winter, and more than 5,000 gallons per day during spring and fall. Therefore, system design had to consider different recovery rates as well as chromium concentrations for different seasons. The concentration of hexavalent chromium in the water was 1,200 ppm when the system was designed. The treatment system also needed to reduce the chromium content of the water to below the City of DePere's pre-treatment standard of 7 ppm. Other parameters such as pH and total dissolved solids also had to comply with the City's discharge standards. Costs were estimated for the start up and operation of the system for a period of at least 5 years.

Initially, four treatment technologies that could meet the treatment requirements for discharge to the City of DePere's sewer system were evaluated. These included chemical reduction/precipitation, electrodialysis, ion exchange, and reverse osmosis.

Reverse Osmosis

Using reverse osmosis, contaminated water is purified by filtration under high pressures through a semipermeable membrane. Between 50% and 90% of the inorganic salts are rejected by the membrane. One of the drawbacks of this method is the high cost to operate the system under high pressures (100-250 psi). Another drawback to this system is that a high total dissolved solids content in the treated liquid can cause scaling on the semipermeable membrane. Reverse osmosis systems are typically operated under continuous flow and are used more frequently in purification of drinking water and in polishing of treated effluent at plating facilities. These systems can be made fully automated and do not require an operator.

The approximate cost for start-up of the reverse osmosis unit appropriate for use at Better Brite is $50,000 to $75,000. Annual

operation costs are approximately $75,000.

Ion Exchange

The principle behind the ion exchange method is the exchange of an ion with a high ion exchange selectivity for an ion with a lower selectivity. Ion exchange units are used as water softeners in homes because they remove sodium, potassium, iron and other elements from drinking water. In the case of chromium, the trivalent and hexavalent chromium ions require two separate ion exchange resins to remove the contaminants. Typically, sodium ions are used to regenerate the resins for further treatment. The regenerate liquid is a concentrated chromium solution which must be sent to a treatment facility for further reduction and precipitation.

The approximate cost of a single manual 20 gallon per minute (gpm) unit is $ 50,000. Advantages and disadvantages of this system are as follows:

Advantages:

- Portable
- Removes the toxic compounds from solution
- Waste solutions are concentrated; therefore, less volume for disposal
- Can be fully automated

Disadvantages:

- If there is a high concentration of metals in the treated water, frequent recharging of the resin is required
- Other metals, including lead, compete with chromium for a spot on the resin. Lead is especially difficult to remove from the resin.

Electrodialysis

Ion exchangers are used in membrane form in the electrodialysis method. An electric current provides the potential to remove the ions from the water and transmit them through the membrane. If the concentration of the ions in the solution is low, though, this will be a very expensive and time consuming method of removing the metals. The cleaner the water, the more resistance to the current, which increases the cost of operation. This system works very well for highly concentrated plating solutions. The metal can be recovered from the electrodes and is very high grade and can be reclaimed or recycled.

FIGURE 1

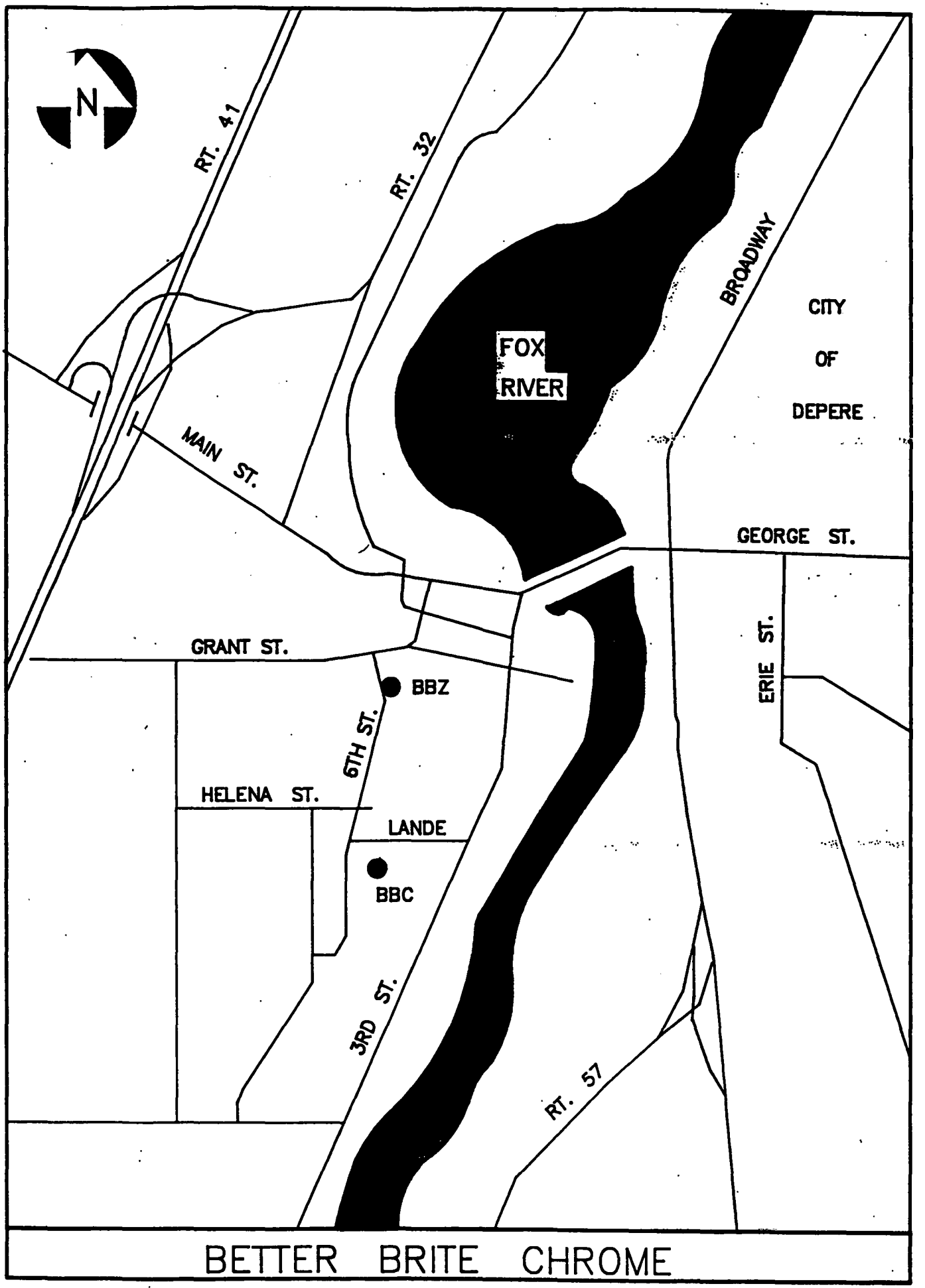

N
RT. 41
RT. 32
BROADWAY
CITY
OF
DEPERE
FOX
RIVER
MAIN ST.
GEORGE ST.
GRANT ST.
ERIE ST.
BBZ
6TH ST.
HELENA ST.
LANDE
BBC
3RD ST.
RT. 57
BETTER BRITE CHROME

FIGURE 2

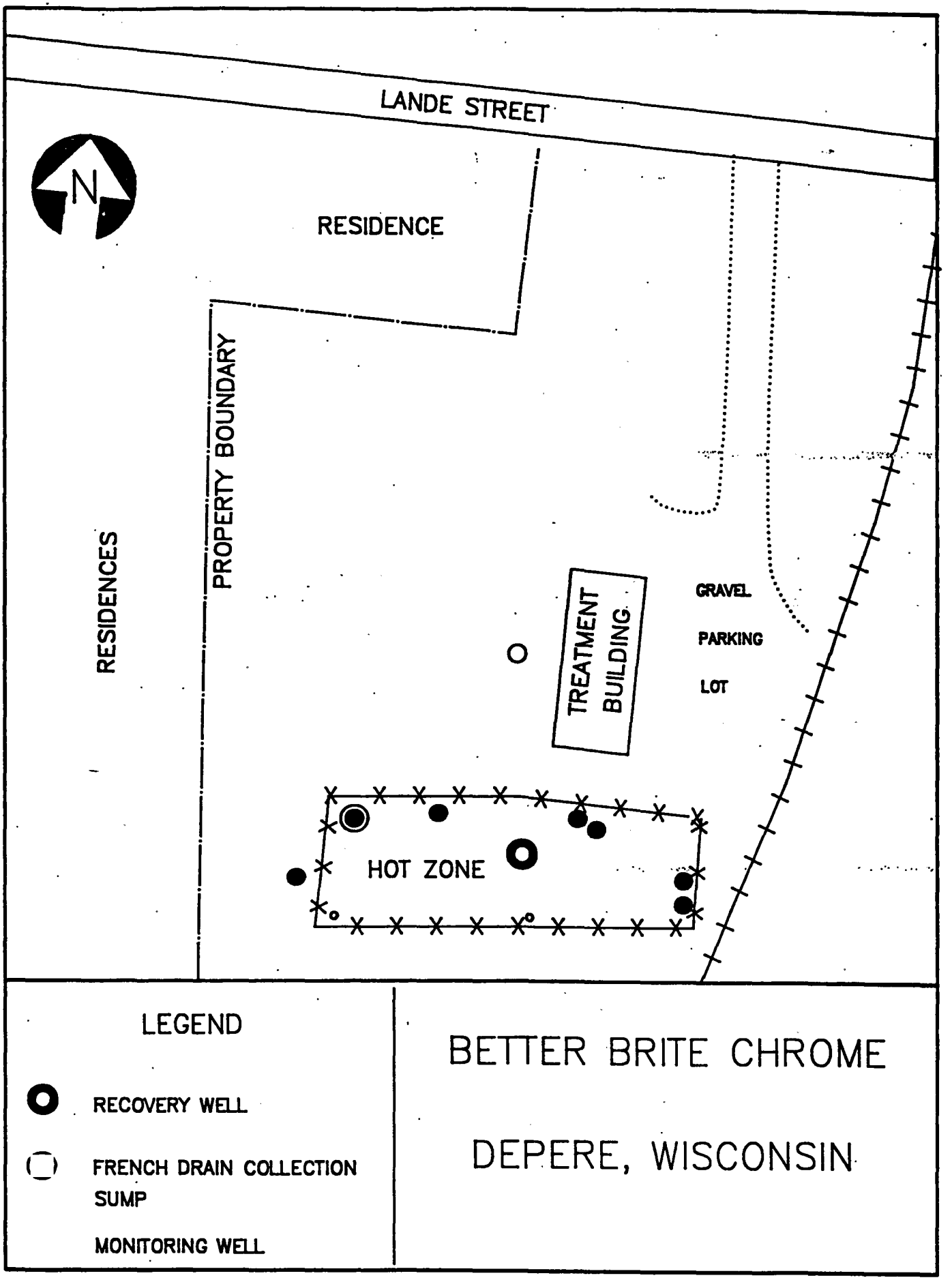
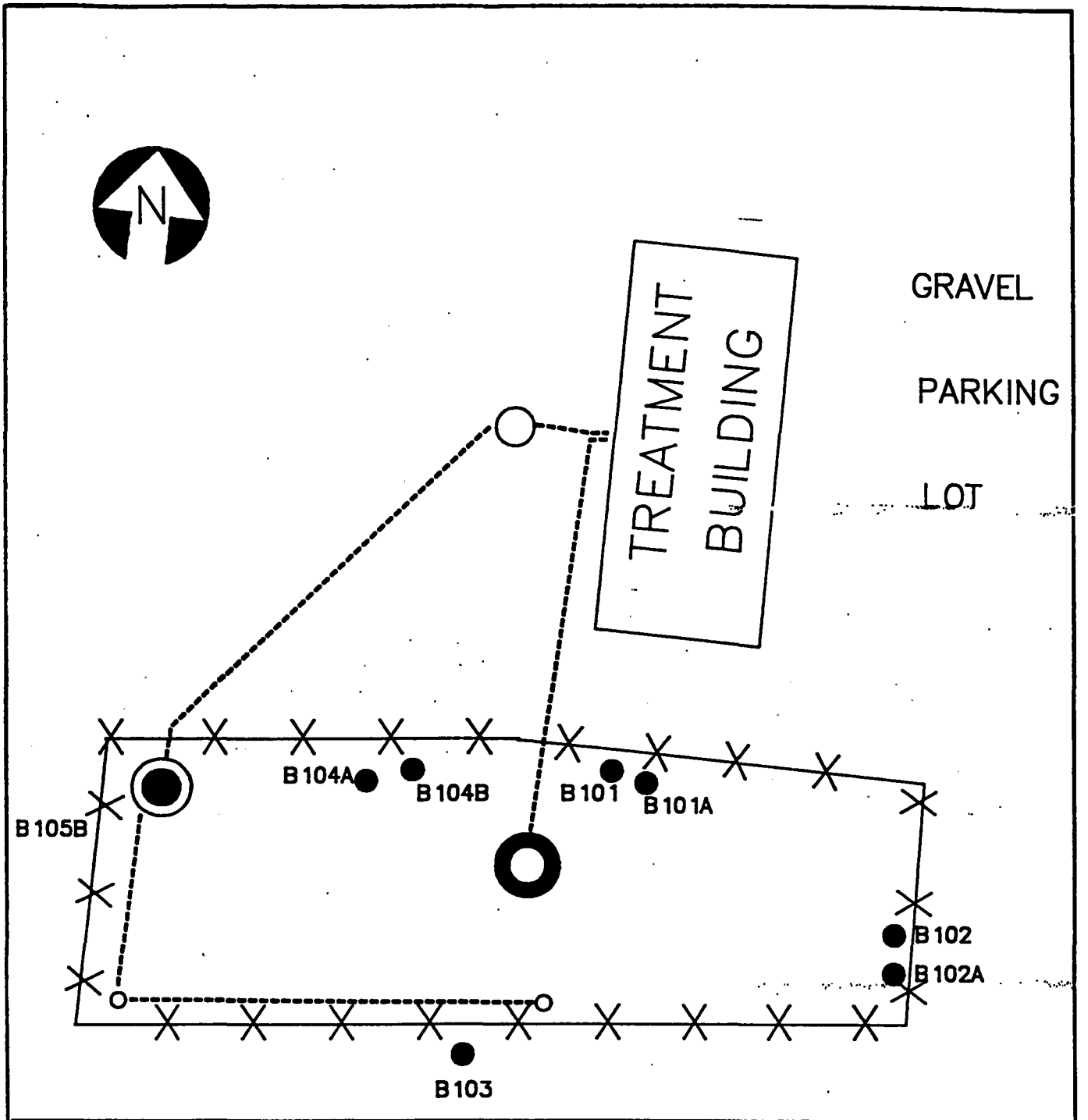

LANDE STREET
N
RESIDENCE
PROPERTY BOUNDARY
RESIDENCES
TREATMENT BUILDING
GRAVEL PARKING LOT
HOT ZONE
LEGEND
RECOVERY WELL
FRENCH DRAIN COLLECTION SUMP
MONITORING WELL
BETTER BRITE CHROME
DEPERE, WISCONSIN

FIGURE 3



LEGEND

MONITORING WELL

FRENCH DRAIN

PUMP LINES

BETTER BRITE CHROME

DEPERE, WISCONSIN

TABLE 1

GROUNDWATER SAMPLE ANALYSIS FROM BETTER BRITE CHROME AND ZINC SITES

ZINC SITE - Sampled 6-12-87

	Cd (ug/l)	Cr (ug/l)	Pb (ug/l)	Zn (ug/l)	Cyanide (mg/l)	Field Temp. (°C)	Field pH (su)	Uncorrected Field Conductivity (umhos/cm)	Corrected Field Conductivity (umhos/cm-25°C)
W-1	1.5	<100	<3	<20	<0.01	25	7.64	350	350
W-1A	2.6	180,000	5	26	0.08	21	7.10	2100	2266
W-2	0.8	2,300	<3	<20	<0.01	21	--	490	529
W-2A	2.1	310,000	<3	31	0.07	19	6.33	2600	2938
W-3	0.7	2,300	<3	68	<0.01	20	7.75	300	331
W-3A	2.2	40,000	17	<20	0.17	20	--	5000	5521

CHROME SITE - Sampled 8-13-87

B-101	<0.2	44	<3	<20	<0.01	17.5	11.16	875	1023
B-101A	1.4	<3	<3	<20	<0.01	20.5	7.32	775	846
B-102	<0.2	120	<3	<20	<0.01	16.5	10.33	1000	1197
B-102A	0.9	<3	<3	<20	<0.01	19.5	7.25	875	977
B-103	<0.2	6600	<3	<20	<0.01	20.5	10.34	500	546
B-104A	1.8	15	<3	<20	<0.01	20	7.11	975	1077
B-105B	1.1	62000	<3	<20	<0.01	21.5	7.43	1000	1067

Preventive Action Limit	1	5	5	2.5	92 ug/l
Enforcement Standard	10	50	50	5	460 ug/l

Start-up costs for electrodialysis at Better Brite are between $75,000 and $100,000. Annual operation costs were not calculated because it appears that this system would not work well at concentrations of chrome found at Better Brite.

Chemical Reduction/Precipitation

This method involves the chemical reduction of hexavalent chromium to trivalent chromium using sodium metabisulfite. The reaction is colorimetric and changes from a yellow-orange solution to a blue solution during the reduction. This reaction takes place at a pH of 3. After reduction of hexavalent chromium to its trivalent form, the chromium is precipitated as chromium hydroxide at a pH of 8.5 using sodium hydroxide. The precipitate is settled with an anionic polymer flocculating agent. Settling tanks are used to segregate the solids from the liquid. The clear liquid is decanted from the top and discharged. A plate and frame filter press is used to dewater the sludge.

The approximate cost of the 5,000 gallon per day unit discussed in this paper was $125,000 for construction (Figure 4). In addition, a building and a groundwater collection system were installed for $30,000. The advantages and disadvantages of this system are as follows:

Advantages:

- Proven technology
- Can achieve treatment standards of 1 ppm
- Reduces toxicity and volume of waste
- Readily available
- Operation and maintenance relatively inexpensive

Disadvantages:

- Expensive start-up costs
- Bulky and sizeable equipment
- Need and operator to man the system

The chemical reduction/precipitation was chosen to treat the chromium contaminated water at the Better Brite facility for a number of key reasons. First, the system reduces the toxicity of the waste by changing the hexavalent chromium (a known carcinogen) to the trivalent form of chromium (an essential element found even in multi vitamins). Second, the chromium hydroxide sludge formed during the process is relatively small in volume compared to the waste being treated. In the operation at Better Brite for every 5,000 gallons of water treated, one drum of sludge is formed. The

FIGURE 5
BETTER BRITE CHROME RECOVERY WELL

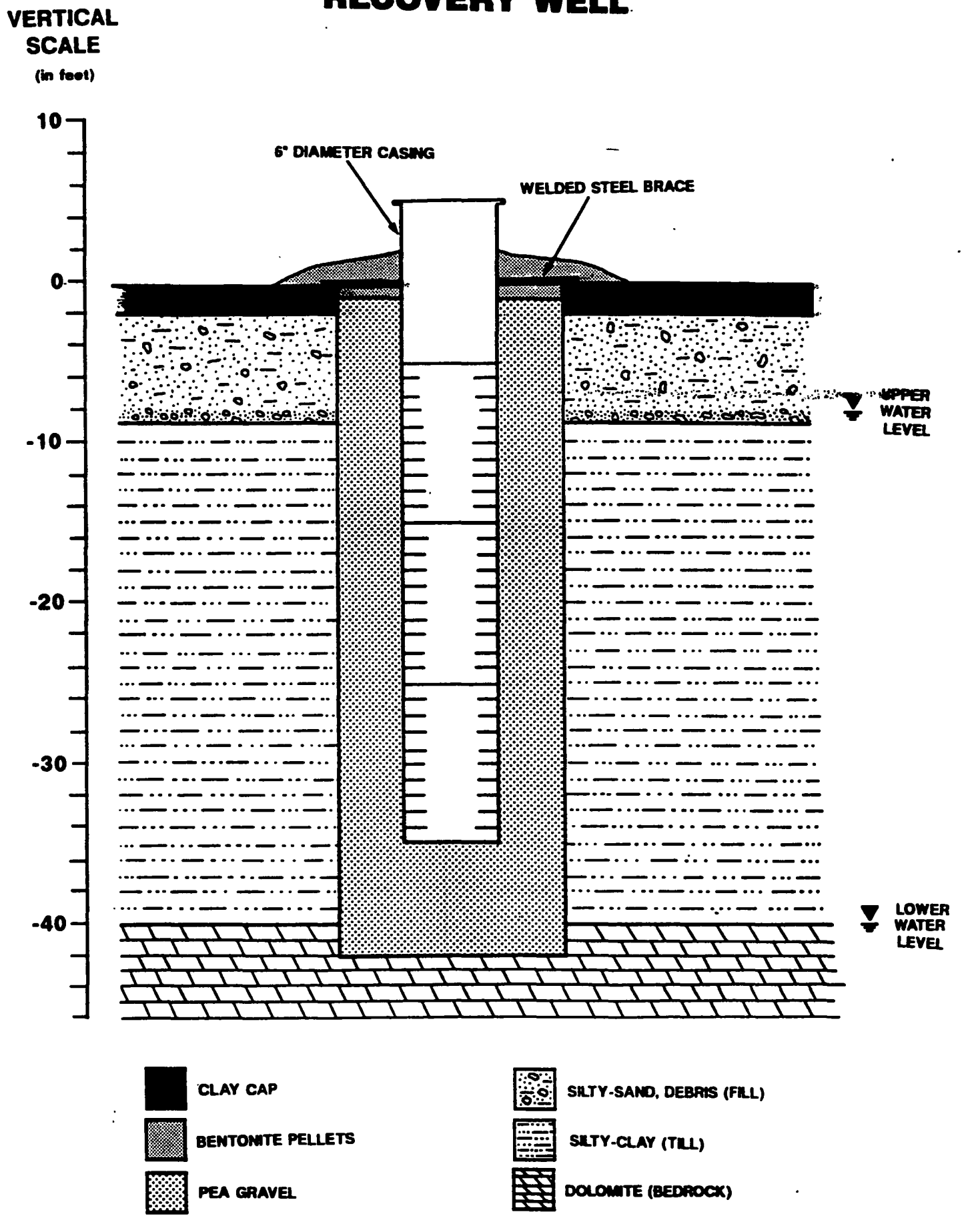
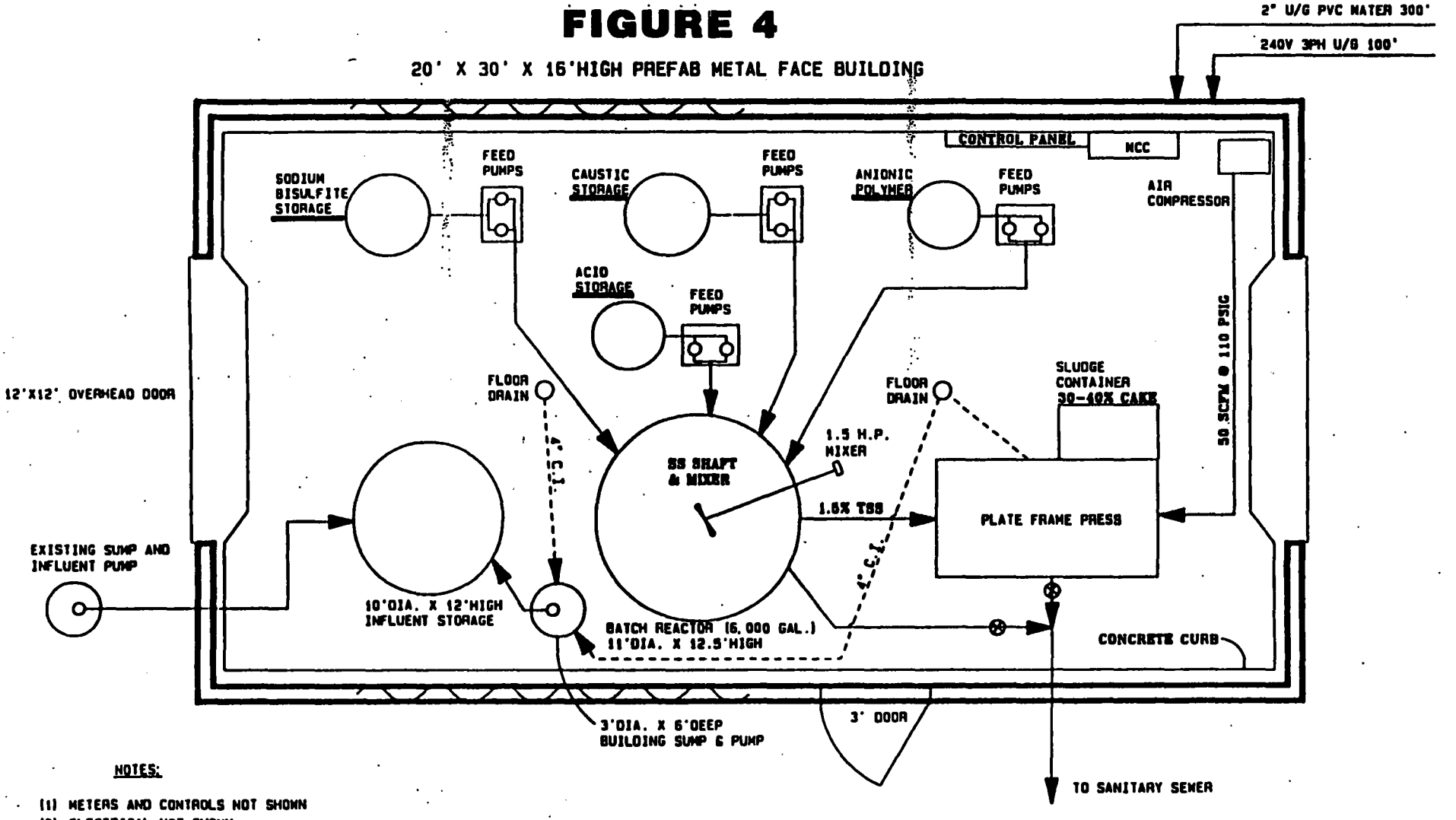


FIGURE 4

20' X 30' X 16'HIGH PREFAB METAL FACE BUILDING



NOTES:

(1) METERS AND CONTROLS NOT SHOWN
(2) ELECTRICAL NOT SHOWN
(3) CONTROL SYSTEM NOT SHOWN

PLAN VIEW OF PRELIMINARY CONCEPTUAL DESIGN
FOR CHROME TREATMENT SYSTEM

A treatability study was conducted on a 1 gallon sample of the material to determine the optimum chemical addition to complete the chromium reduction/precipitation. The treatability study was also performed to determine if any chelating agents are present which would interfere with the chemical treatment process. The presence of chelating agents such as NTA or EDTA would interfere with the precipitation of heavy metals by keeping heavy metals in solution. The net result of the presence of chelating agents is that the treatment system will not achieve the treatment standards for discharging the effluent.

IV. CONSTRUCTION

Construction of the chrome treatment system was subcontracted by Emergency Response Cleanup Services (ERCS) contractor to Industrial Municipal Contractors, Inc. (IMC). Because the contract exceeded $25,000, EPA approval under the Consent to Subcontract policy was obtained. Under this policy a damages clause was added to the contract, fining the contractor $100 per day for each day the completion/start-up of the system exceeded the due date. This clause effectively persuaded IMC to return to the system on several occasions to make repairs/adjustments to the system.

V. OPERATION

Costs

Operational costs of the Better Brite treatment system are expected to be between $40,000 and $50,000 per year. These costs will include operator, maintenance, and disposal costs. It also assumes that during the winter and dry seasons, water recovery will decrease to only two or three batches each week. Since start-up in the early part of November 1990, approximately 175,000 gallons of water have been processed.

Procedures

A typical 6,000 gallon batch can be completed in approximately eight hours. The limiting factor is usually related to the settling/dewatering process. When the sludge is slow to settle and adheres to the reactor tank cone, the dewatering process can take 6 or more hours.

The addition of treatment chemicals is accomplished by the activation of the proper diaphragm feed pumps with a toggle switch on the control panel. Each chemical feed switch is controlled by a timer that allows for both the addition of the chemical and susequent mixing. An amber indicator light signals the completion of each cycle. When the treatment chemical and flocculant steps are completed, settling prior to dewatering takes from 30 minutes to an hour and a half. For each batch, 6 to 10 gallons each of sulfuric acid, sodium bisulfite solution, and caustic soda are

used. Approximately 5 gallons of flocculant are used for each treatment batch.

In addition to treatment of water at the Better Brite chrome facility, the treatment system also treats water from the zinc facility three blocks to the north. The zinc facility, which had the same owner/operator as the chrome-facility, has chromium contamination similar to the chrome facility. Approximately 4,000 gallons are removed from a collection trench with a vacuum truck every one to three weeks and transported to the chrome facility for treatment.

Problems/Solutions

Various problems and difficulties have occurred since the start-up of the Better Brite chromium treatment system. Some of the problems occurred because of design flaws, while others occurred because of uncontrollable changes in water recovery rate and chromium content in the water.

One major item overlooked in the design of the system was the omission of a method of keeping the pH and oxidation reduction potential (ORP) probes from drying out during periods when the reactor tank is empty or the sludge is being dewatered. After approximately one month of operation, the pH probes began to malfunction. The probes were rejuvenated following instructions of the manufacturer. Eventually, the problem of keeping the probes wet was solved by installing inverted PVC caps at the end of each probe. However, there have been recurring problems with both pH and ORP probes not related to drying out. It appears that the probes will need routine cleaning with nonabrasive cleansers to remove material built up on the bulbs.

Another major problem involves sludge dewatering. Once the sludge has settled into the cone of the reactor tank and pumping into the filter press has started, the sludge does not always continue to fall into the center of the cone and the press pump pushes only water through. When the system is unmanned for any length of time, this situation can add a considerable amount to the already large volume of water being recycled through the system. In order to remedy this problem the operator must occasionally activate the reaction mixer to allow resettling of the sludge. This process is time consuming and often breaks the floc into smaller fragments, increasing settling time even more.

Also related to dewatering problems is the large volume of sludge generated. Original estimates from bench scale tests calculated the volume of sludge from each batch to be approximately 2 cubic feet. This estimate did not take into account the large amount of sediment that is added to the system from the collection systems, especially the recovery well. As a result, the operators were forced to fill the filter press twice for each batch. Recently, however, the press was expanded to a capacity of 4 cubic feet with the addition of plates.

Both the holding tank and the reactor tank in the treatment system are equipped with high water level alarm switches to disengage the pumps that feed it directly. The switch in the holding tanks shuts down the collection system and the one in the reactor tank shuts off the transfer pump from the holding tank. The filtrate from the filter press is drained into the floor sump in the treatment building. The sump pump sends its water to the holding tank. Originally, there was no alarm switch to disengage the pump feeding the filter press. After an incident involving the overflow of the holding tank caused by the continuous flow of water from the filter press, the high water alarm switch was adjusted to shut down the filter press as well as the collection system.

One health and safety issue, which is related to both the chemical treatment and to the inadequate size of the treatment building, is the evolution of sulfur dioxide during the chemical addition. During the first few weeks of operation, sulfur dioxide levels in the building, measured using Draeger tubes, often exceeded Permissible Exposure Limits (PEL) for sulfur dioxide. At this time the operator either departed from the building until the end of the chemical addition cycle or he opened the overhead door. Recently, the existing exhaust fan located near the ceiling of the building was expanded to effectively remove the sulfur dioxide.

There was considerable variation in water recovery rates at Better Brite. During the initial weeks (November, 1990) of operation of the chrome treatment system, the recovery system provided at least one 5,000 gallon batch per day. As the ground froze and the area received little precipitation, the recovery systems provided only two to three batches of water per week. During February and March, 1991 thawing of the ground as well as heavy rains caused a dramatic increase in water recovery. The recovery well pump cycled regularly during the day while the french drain sump pump ran almost continuously.

The original design of the recovery well called for a pitless adaptor for the well pump plumbing. However, the plumbing was installed to exit the well casing approximately 18 inches above ground and then enter a trench graded toward the treatment building. once at the building, the one inch diameter line entered the building through a wall immediately next to the two inch line from the french drain collection sump. An insulated wooden box was constructed around both the recovery well and the exposed lines entering the building. The well box was equipped with an electric heater, however, it did not appear to be possible to properly insulate the two lines entering the building. To remedy this situation, the two lines were installed underground to enter through the building floor sump. The recovery well line now empties into the sump, while the french drain sump pumps directly into the holding tank. One final measure taken to prevent the freezing of the one inch diameter recovery well line was to mound approximately 2 feet of clay and 4 inches of hay on top of the trench containing the line.

Other problems in the construction of the treatment system included the poor selection and placement of the air compressor running the pumps, the use of incompatible materials at certain points in the system, and the change in tank specifications. The air compressor selected was a loud, inexpensive model that was installed adjacent to the areas where the operator works. Tygon was selected as the sulfuric acid feed line from the drum to the feed pump. After only several days the tubing turned dark and brittle and had to be replaced by polyethylene tubing. The compression fitting connecting the feeder tubing to the same pump was composed of a material that completely dissolved during a weekend, causing a small quantity of acid to spill onto the floor. The reactor tank specifications, changed by the contractor, were to include sight glasses along the side of the tank and three decant valves above the tank's cone. The changes to the tank specifications excluded the sight glasses and placed one of the decant valves too low in the cone. These problems have all caused inconvenience to the operator.

VI. SLUDGE DISPOSAL

A large volume of sludge cake is generated from the treatment of the chromium contaminated groundwater at the Better Brite site. During spring and autumn it is expected that as many as 3 to 5 55-gallon drums of sludge will be produced each week. Two disposal options being considered are transportation to a recycler or fixation and landfilling. These options were considered in order to reduce costs that would occur with disposal at a hazardous waste facility.

The option of transportation of the sludge to a recycler was first considered with the discovery of The International Metals Reclamation Company, Inc. (INMETCO), Ellwood City, Pennsylvania. INMETCO will accept the sludge for recycling into a stainless steel product. Their total cost is $195 per 55-gallon drum, which includes drum disposal. Acceptance of the sludge at another recycler, Recon Teck, Newman, Illinois is pending analysis by the facility.

The second disposal option considered for the Better Brite chrome sludge is fixation. When the sludge is mixed with portland cement at a ratio of 20% to 25% cement by volume, the TCLP chromium is less than 1 mg/L. See Attachment A for details of the procedure.

VII. CONCLUSION

Chemical reduction/precipitation is a cost effective means of treating hexavalent chromium waste. This method complies with Superfund legislation which stipulates both a reduction in toxicity and volume of waste to be disposed. This method is very effective for treating ground water, plating solutions, and could be used in combination with a leaching bed or soils washing system to strip chromium from contaminated soils.

CHROMIUM HYDROXIDE SLUDGE FIXATION
BETTER BRITE CHROMIUM SITE
DEPERE, WISCONSIN

INTRODUCTION

The Better Brite Chromium site located at 519 Lande Street in DePere, Wisconsin was a former chromium plating facility. The shop initiated chrome plating activities in the early 1970s. Operations ceased in 1985 after the owner filed for bankruptcy. The building, plating wastes, and tanks have since been removed. However, there is considerable shallow aquifer chromium contamination that resulted from spills and leaks during past plating operations.

During 1990, the U.S. EPA installed a recovery well in a highly contaminated portion of the site. The treatment system also handles one batch of water from the Better Brite Zinc shop on 6th Street biweekly.A batch-type chromium treatment system was constructed to reduce hexavalent chromium in the contaminated groundwater to its trivalent form. Water to be treated is received from the recovery well and an already existing French drain recovery system. The chromium is removed by precipitation as an insoluble hydroxide, flocculation settling, and filtration through a sludge press.

The chromium treatment plant has been in operation at Better Brite since the beginning of November, 1990. Between 3 and 5 55-gallon drums of chromium hydroxide sludge cake have been generated at the site weekly. Currently, the drums of sludge are being stored on site. Disposal of the sludge cake would require transportation to a hazardous waste facility. This large volume over a several year time period would result in considerable expense for transportation and disposal.

One alternative to reducing disposal costs is to fix the chromium sludge so that Toxicity Characteristic Leaching Procedure (TCLP) levels for chromium are below the maximum concentration of contaminants (5 mg/L) as stated in 40 CFR 261.3. By achieving leachable chromium levels of < 5 mg/L, the solidified sludge could be disposed of at a municipal landfill. The following is a description of methods and results of chromium hydroxide sludge fixation tests conducted by the U.S. EPA and Technical Assistance Team.

MATERIALS AND METHODS

Test 1. Determination of a chromium fixation agent.
Each of four samples (approximately 2 pounds each) of sludge cake were mixed by hand kneading with one of the following agents: portland cement, barn lime, hydrated lime, and kiln

dust. A proportion of 25 to 30% (volume fixation agent/total fixed sludge volume) fixation agent was used in each case. The mixtures were allowed to cure in plastic buckets for one week before approximately an 8 ounce chunk of each sample was placed in individual glass jars and taken to Robert E. Lee & Associates (RLA) analytical laboratory in Green Bay for TCLP chromium analysis with a two-week turnaround time.

Test 2. Determination of optimal portland cement proportions. Three 2-pound samples of sludge cake were mixed with 15, 20, and 25% (by volume) portions of portland cement by hand kneading in a plastic bucket. Approximate 8-ounce portions of the samples were placed in glass jars and allowed to cure for 5 days. Samples were taken to RLA in Green Bay for TCLP chromium analysis with the request of a two-week turnaround time.

Test 3. Determination of full-scale mixing methods.

A. Cement mixer

Five shovel fulls of sludge, one shovel full of play sand, and approximately 32 ounces of tap water were placed in a 2.5 cubic foot capacity electric rotating-type cement mixer and allowed to mix for approximately 2 minutes. Two shovel fulls of portland cement were added to the mixture and allowed to mix for 5 minutes. After mixing, the treated sludge was poured onto a sheet of plastic and allowed to cure for 24 hours. An approximate 8 ounce sample of the cured, treated sludge was placed in a glass jar and taken to RLA for TCLP chromium analysis. A two week turnaround time was requested.

B. Paddle-type mixer

Three shovel fulls of sludge, one shovel full of portland cement and approximately 16 ounces of tap water were added to an electric paddle-type mortar mixer. The mixer was allowed to run for 15 minutes. After mixing, the treated sludge was poured onto a sheet of plastic and allowed to cure overnight. An approximate 8 ounce sample of the cured, treated sludge was placed in a glass jar and delivered to RLA for TCLP metals analysis.

RESULTS

Analytical results of the three tests are shown in Tables 1, 2, and 3. In Test 1, at equal proportions of sludge to fixation agent, the sample fixed with portland cement yielded the best results with a TCLP chromium level of 1.06 mg/L (Table 1). In Test 2, portland cement at 20% yielded the optimal TCLP levels at 0.37 mg/L (Table 2). The cement mixed at 25% gave similar results (0.39 mg/L). Table 3 shows that mixing sludge with cement yields a TCLP chromium result below MCL whether a rotating cement mixer or a paddle mixer is used.

Table 4 shows results of TCLP metals analysis of a sludge batch treated with 25% portland cement using a paddle mixer. Chromium was present at 0.32 mg/L.

TABLE 1
TCLP CHROMIUM ANALYTICAL RESULTS*
FOR SLUDGE TREATED WITH VARIOUS FIXATION AGENTS
BETTER BRITE CHROMIUM SITE
DEPERE, WISCONSIN

Fixation Agent	Analytical Result
Barn lime (20-30%, v/v)	96.7 mg/L
Hydrated lime (20-30%, v/v)	4.29 mg/L
Kiln dust (20-30%, v/v)	5.78 mg/L
Portland cement (20-30%,v/v)	1.06 mg/L

* All samples analyzed by Robert E. Lee & Associates, Green Bay, Wisconsin.

TABLE 2
TCLP CHROMIUM ANALYTICAL RESULTS*
FOR SLUDGE TREATED WITH VARIOUS PROPORTIONS
PORTLAND CEMENT
BETTER BRITE CHROMIUM SITE
DEPERE, WISCONSIN

Portland cement percentage (v/v)	Analytical result
15%	3.41 mg/L
20%	0.37 mg/L
25%	0.39 mg/L

* All samples analyzed by Robert E. Lee & Associates, Green Bay, Wisconsin.

TABLE 3
A COMPARISON OF TCLP CHROMIUM RESULTS*
OF CHROMIUM HYDROXIDE SLUDGE FIXED
WITH PORTLAND CEMENT USING TWO MIXING METHODS
BETTER BRITE CHROMIUM SITE
DEPERE, WISCONSIN

Mixing method	Analytical result
Cement mixer	0.40 mg/L
Paddle mixer	0.32 mg/L

* Samples were analyzed by Robert E. Lee & Associates, Green Bay, Wisconsin.

TABLE 4
TCLP METALS ANALYTICAL RESULTS*
FOR SLUDGE TREATED WITH
25% PORTLAND CEMENT USING A PADDLE MIXER
BETTER BRITE CHROMIUM SITE
DEPERE, WISCONSIN

Metal	Analytical Result
Arsenic	ND
Barium	1.46 mg/L
Cadmium	ND
Chromium	0.32 mg/L
Lead	0.36 mg/L
Mercury	0.0004 mg/L
Selenium	ND
Silver	ND

* Sample analyzed by Robert E. Lee & Associates, Green Bay, Wisconsin.

ND = Not detected at method detection limits.

DISCUSSION

It appears, from the results of the first test, that portland cement worked best of the agents tested in reducing leachability in the chromium hydroxide sludge cake. Test 2 showed that the portland cement can achieve optimal fixing ability at 20 to 25%. Mixing of the cement with the sludge was best achieved using a paddle-type mortar mixer. This method provided a more homogeneous mixing of the cement and sludge on a larger-scale test. When chromium hydroxide sludge is mixed with a paddle mixed with portland cement at proportions between 20 and 25%, leachability of the sludge is reduced so that TCLP for chromium is less than 1 mg/L.

Due to transportation and disposal costs of untreated sludge, treatment with portland cement at proportions between 20 and 25% using a paddle mixer appears to be an adequate and economical means of disposal of the Better Brite sludge.

CORRESPONDENCE MEMORANDUM

STATE OF WISCONSIN

DATE: January 29, 1992

TO: Better Brite Files

FROM: Terry Koehn - LMD

SUBJECT: **Better Brite Project - Zinc Shop Groundwater Analytical Results**

A review of groundwater quality data at the Zinc Shop is thought to be necessary as we are anticipating transporting and treating this groundwater at the pretreatment plant, located at the Chrome Shop. Thus, this brief review of analytical results associated with the Zinc Shop groundwater was completed. The collection of a sample of groundwater directly from the sump is planned, to prepare for future shipments of water.

The most recent analytical results I have noted for groundwater from the Zinc Shop were from samples collected by U.S. EPA's TAT on March 6, 1991. Sample SUM-11 was reportedly collected directly from the groundwater collection sump. Samples MW-1 and MW-2 were collected from monitoring wells on the property. At this time I am unsure which monitoring wells these samples represent. The results of the analyses performed by Robert E. Lee & Associates (Report Date 4-19-91) are as follows:

Sample Number:	SUM-11	MW-1	MW-2
Arsenic	<0.0014	<0.0014	<0.0014
Barium	0.025	0.016	0.070
Cadmium	<0.002	<0.002	<0.002
Chromium	135.	5.45	73.2
Lead	<0.06	<0.06	<0.06
Mercury	<0.0002	<0.0002	<0.0002
Selenium	0.016	<0.003	<0.003
Silver	<0.006	<0.006	<0.006

All values in units of mg/l

A sample of groundwater from the Zinc Shop, after pretreatment, was collected by U.S. EPA's TAT on November 9, 1990 and analyzed by Robert E. Lee and Associates (Report Date 12-4-90). A copy of these results is attached and several values for parameters of interest are listed below:

Sample Name: Zinc Shop Decant

Arsenic	<0.0007
Barium	0.0598
Cadmium	0.0001
Chromium	0.89
Cyanide	0.102
Lead	<0.002
Mercury	<0.0002
Zinc	0.129

All values in units of mg/l

Although this represents only a single comparison of before and after treatment, using samples collected at significantly different times, it does appear that chromium concentrations are sufficiently reduced by the pretreatment process.

Specific analytical results pertaining to groundwater quality at the Zinc Shop are included in the Site Evaluation Report prepared by Hydro-Search, Inc. A brief overview of the results from monitoring well samples collected during the past few years is as follows:

Monitoring Well Results 1987 (ERF Investigation)

Cadmium	0.7 to 2.6 ug/l (0.0026 mg/l)
Chromium	<100 to 310,000 ug/l (310 mg/l)
Cyanide	<0.01 to 0.17 mg/l
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Zinc	<20 to 68 ug/l (0.068 mg/l)

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Barium	52 to 262 ug/l (0.262 mg/l)
Chromium	14,000 to 295,000 ug/l (295 mg/l)
Cyanide	59.4 to 227.9 ug/l (0.228 mg/l)
Zinc	29 to 158 ug/l (0.158 mg/l)

(Other inorganic values available - lead and cadmium values not reported)

Monitoring Well Results 1989 (ERF Investigation)

Cadmium	<20 to 20 ug/l (0.02 mg/l)
Chromium	160 to 48,000 ug/l (48 mg/l)
Cyanide	0.08 to 0.23 mg/l
Lead	<100 ug/l (all < 0.1 mg/l)
Zinc	<20 to 24 ug/l (0.024 mg/l)

Detections of volatile organic compounds have also been observed in groundwater collected from monitoring wells. The compounds observed in 1987 are 1,1,1-trichloroethane, tetrachlorethane, 1,1-dichloroethane, 1,1-dichloroethylene, and trichloroethylene. The maximum concentration of these VOC's (sum) observed in a single well was 789 ug/l (0.789 mg/l) with 1,1,1-trichloroethane dominating. The same compounds were detected in 1989 sampling. The maximum concentration of these VOC's (sum) observed in a single well (1989) was 456 ug/l (0.456 mg/l) with 1,1,1-trichloroethane again dominating. The 1988 Superfund Site Inspection, sampling detected acetone (possibly a lab contaminant), 1,1-dichloroethane, 1,1-dichloroethene, 1,1,1-trichloroethane, and carbon tetrachloride. The maximum concentration of these VOC's (sum) observed in a single well (1988) was 581 ug/l (0.591 mg/l) with 1,1,1-trichloroethane again dominating.

As expected and confirmed by the above, chromium is the contaminant of greatest concern in the Zinc Shop groundwater. The chromium values can generally be expected to exceed 100 mg/l. The zinc values are, from the above review, not expected to regularly exceed 1.0 mg/l. VOC's are also not expected to exceed 1.0 mg/l in the groundwater. Cyanide appears to generally be at concentrations less than 0.5 mg/l in the groundwater.

cc: G. Edelstein SW/3
C. Khazae SW/3

ROBERT E. LEE & ASSOCIATES, INC.
LABORATORY SERVICES
2825 S. WEBSTER AVE., P.O. BOX 2100
GREEN BAY, WI 54306
TEL NO.: (414) 336-6338
FAX NO.: (414) 336-9141
WISCONSIN CERTIFICATION NO: 405043870

REPORT DATE===> 12/04/90

JOB NUMBER====> 1001122

CUSTOMER======> 001422

PEI Associates
11499 Chester Rd.
Cincinnati, OH 45246
FAX: -513-782-4663

(800) 372-3727

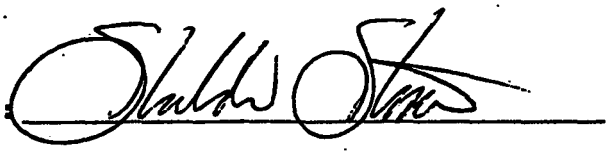
CONTACT=======> William Sass

PROJECT=======> Zinc shop decant

RECEIVED======> 11/09/90

SAMPLED=======> 11/09/90

COMMENTS:
Samples received with acid and/or alkali preservatives. Could not analyze for hexavalent chromium.

ATTEST: 

REPORT DATE===> 12/04/90
JOB NUMBER====> 1001122
BATCH=========> 1

PROJECT====> Zinc shop decant
LOCATION===> Zinc Shop Decant

SAMPLE #	SAMPLE ID	RESULT		DATE COMP	BY
ALUMINUM					
1	Zinc shop decant	.32	mg/l	11/27/90	BR
ARSENIC					
1	Zinc shop decant	<.0007	mg/l	11/21/90	EW
BARIUM					
1	Zinc shop decant	.0598	mg/l	11/15/90	AW
BERYLLIUM					
1	Zinc shop decant	.0018	mg/l	11/15/90	AW
CADMIUM					
1	Zinc shop decant	.0001	mg/l	11/15/90	AW
CALCIUM					
1	Zinc shop decant	90.8	mg/l	11/20/90	EW
CHROMIUM					
1	Zinc shop decant	.89	mg/l	11/12/90	EW
COBALT					
1	Zinc shop decant	.004	mg/l	11/26/90	BR
COPPER					
1	Zinc shop decant	.134	mg/l	11/21/90	EW
CYANIDE					
1	Zinc shop decant	.102	mg/l	11/13/90	MU
HEXAVALENT CHROMIUM					
1	Zinc shop decant		mg/l		

[CONTINUED]

REPORT DATE===> 12/04/90
JOB NUMBER====> 1001122
BATCH=========> 1

PROJECT====> Zinc shop decant
LOCATION===> Zinc Shop Decant

SAMPLE #	SAMPLE ID	RESULT		DATE COMP	BY
IRON					
1	Zinc shop decant	1.25	mg/l	11/16/90	EW
LEAD					
1	Zinc shop decant	<.002	mg/l	11/21/90	BR
MAGNESIUM					
1	Zinc shop decant	118	mg/l	11/20/90	EW
MANGANESE					
1	Zinc shop decant	.0066	mg/l	11/29/90	BR
MERCURY					
1	Zinc shop decant	<.0002	mg/l	11/15/90	EW
NICKEL					
1	Zinc shop decant	.053	mg/l	11/21/90	AW
POTASIUM					
1	Zinc shop decant	13.1	mg/l	11/19/90	EW
SELENIUM					
1	Zinc shop decant	<.003	mg/l	12/03/90	BR
SILVER					
1	Zinc shop decant	.02	mg/l	11/20/90	AW
SODIUM					
1	Zinc shop decant	2530	mg/l	11/19/90	EW
THALLIUM					
1	Zinc shop decant	.24	mg/l	11/21/90	AW

REPORT DATE===> 12/04/90
JOB NUMBER====> 1001122
BATCH=========> 1

PROJECT====> Zinc shop decant
LOCATION===> Zinc Shop Decant

SAMPLE #	SAMPLE ID	RESULT		DATE COMP	BY
VANADIUM					
1	Zinc shop decant	1.05	mg/l	11/28/90	BR
ZINC					
1	Zinc shop decant	.129	mg/l	11/12/90	EW

CORRESPONDENCE MEMORANDUM

STATE OF WISCONSIN

DATE: September 15, 1993

TO: Better Brite Files

FROM: Terry Koehn - LMD

SUBJECT: **Chrome Shop Surface Water Samples**

This memorandum presents analytical results from samples collected of surface water at the Chrome Shop. The samples were collected on 7/26/93 and 8/6/93 from five separate locations and were analyzed by Robert E Lee & Assoc, Inc. for total chromium. The locations from which the samples were collected are described below and indicated on the attached map. The samples were collected within two days of rainfall events.

Surface Water Sample Number	Sampling Date	Total Chromium Concentration (ug/l)
BB-Pond-793-1	7/26/93	29.
BB-86-01	8/6/93	14.
BB-86-02	8/6/93	<5.
BB-86-03	8/6/93	<5.
BB-86-04	8/6/93	6.

None of the samples were filtered and all of them were preserved with nitric acid prior to transport to the laboratory. The sample bottles were filled using sample bottles to dip water from the "puddles". All of the "puddles" from which the samples were obtained were less than 3 inches deep. No obvious discoloration was observed in any of the samples.

Sample BB-Pond-793-1 was collected from a shallow depression immediately to the south-south east of the collection sump, within the currently fenced area.

Sample BB-86-01 was collected from a shallow puddle near the location of monitoring well MW-5, (1041 S. 6th St.). The area was covered by new sediment from excavation activities.

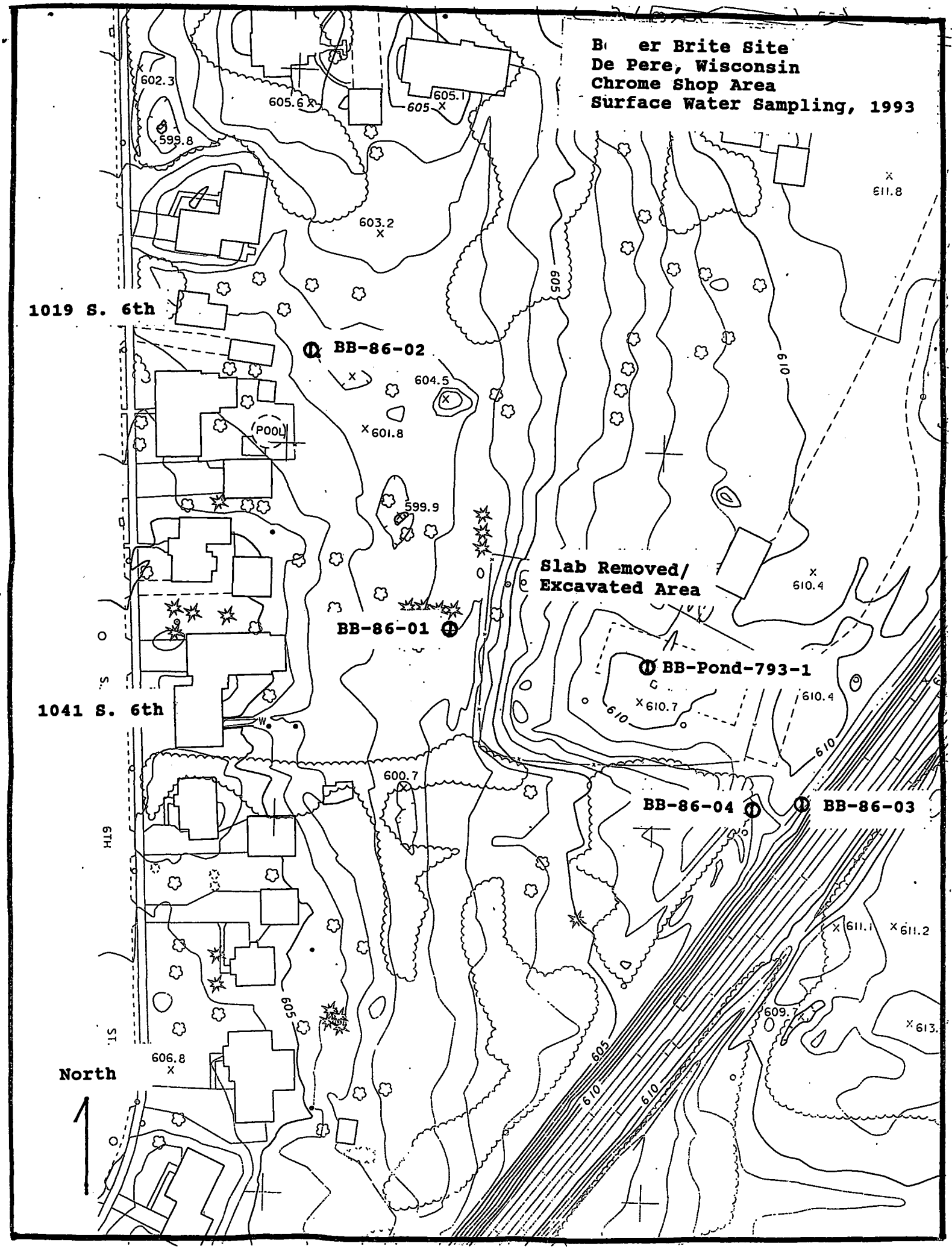
Sample BB-86-02 was collected from a shallow puddle in the backyard of 1019 S. 6th St. (near the south property line shared with 1025 S. 6th St.). It was obtained from a depression in the yard approximately 2 feet from a surface drainage intake. The area was grass covered.

Sample BB-86-03 was collected from the ditch along the west side of the railroad tracks, along the south boundary of the Better Brite property. The water in the ditch was flowing to the south.

Sample BB-86-04 was collected to the south of the slope which drains the southeast corner of the Better Brite property. This sample was obtained above the point where this drainage converges with the ditch parallelling the railroad tracks (south of sample BB-86-03).

Photographs of the sampling sites are also attached.

cc: G. Edelstein SW/3
D. Rossberg LMD (w/o photos)
K. Bro WDOH
D. Linnear U.S. EPA Region V
W. Nied U.S. EPA Region V
D. Benner City of De Pere (w/o photos)
J. Fassbender Hydro-Search
with att.


B er Brite Site
De Pere, Wisconsin
Chrome Shop Area
Surface Water Sampling, 1993
1019 S. 6th
1041 S. 6th
BB-86-02
BB-86-01
BB-Pond-793-1
BB-86-04
BB-86-03
Slab Removed/
Excavated Area
POOL
602.3
605.6
605.1
605
599.8
603.2
611.8
604.5
601.8
599.9
610.4
610.7
600.7
611.1
611.2
609.7
613.
606.8
605
610
North
6TH
ST.

FIELD PHOTOGRAPHY LOG SHEET

Date: 8-6-93

Time: ~

Direction: N NNE NE ENE
(E) ESE SE SSE
S SSW SW WSW
W WNW NW NNW

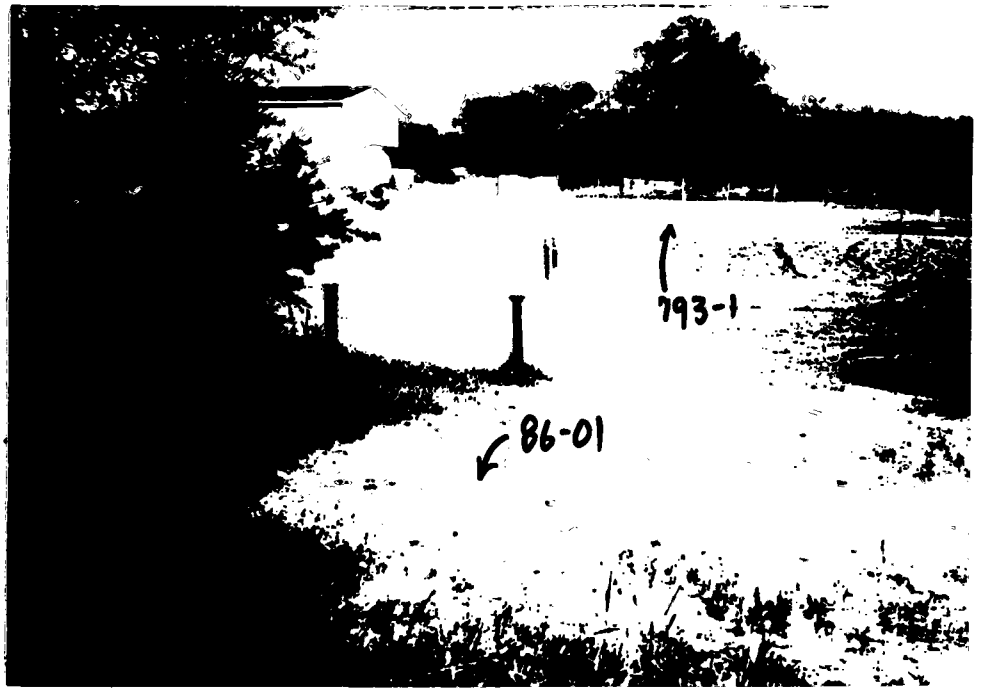
Weather: _____

Site Name: _____
Better Brite, De Pere

Site #: _____

Photographed By:
Terry Koehn

Sample# (If Applicable):
BB-86-01



Description:
Sample Location for BB-Pond-793-1 in Background (Inside Fenced Area)

-- -- -- -- -- -- -- --

FIELD PHOTOGRAPHY LOG SHEET

Date: 8-6-93

Time: ~

Direction: N NNE NE ENE
(E) ESE SE SSE
S SSW SW WSW
W WNW NW NNW

Weather: _____

Site Name: _____
Better Brite, De Pere

Site #: _____

Photographed By:
Terry Koehn

Sample# (If Applicable):
BB-86-01

Description:

FIELD PHOTOGRAPH. LOG SHEET

Date: 8-6-93

Time: —

Direction: N NNE NE ENE
E ESE SE SSE
S SSW SW WSW
(W) WNW NW NNW

Weather: _____

_____

Site Name: _____

__Better Brite, De Pere

Site #: _____

Photographed By:

__Terry Koehn _____

Sample# (If Applicable):

BB-86-02

Description:

_____

_____

-- -- -- -- -- -- -- --

FIELD PHOTOGRAPHY LOG SHEET

Date: 8-6-93

Time: —

Direction: N NNE NE ENE
E ESE SE SSE
S SSW SW WSW
W (WNW) NW NNW

Weather: _____

_____

Site Name: _____

__Better Brite, De Pere

Site #: _____

Photographed By:

__Terry Koehn _____

Sample# (If Applicable):

BB-86-02

Description:

_____

_____

FIELD PHOTOGRAPH. LOG SHEET

Date: 8-6-93

Time: —

Direction: N NNE NE ENE
E ESE SE SSE
S SSW SW (WSW)
W WNW NW NNW

Weather: _____

_____

Site Name: _____

__Better Brite, De Pere

Site #: _____

Photographed By:

__Terry Koehn _____

Sample# (If Applicable):

BB-86-03

Description:

_____

_____

-- -- -- -- -- -- -- --

FIELD PHOTOGRAPHY LOG SHEET

Date: 8-6-93

Time: —

Direction: N NNE NE ENE
E ESE SE SSE
S SSW SW (WSW)
W WNW NW NNW

Weather: _____

_____

Site Name: _____

__Better Brite, De Pere

Site #: _____

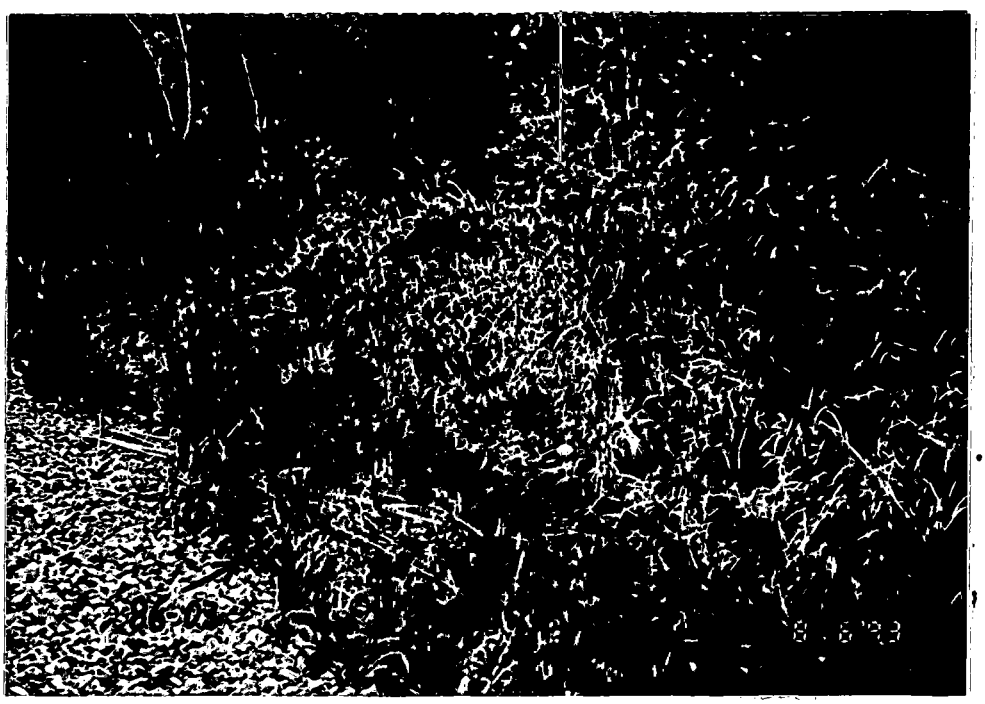
Photographed By:

__Terry Koehn _____

Sample# (If Applicable):

BB-86-03

Description:



_____

_____

FIELD PHOTOGRAPHY LOG SHEET

Date: 8-6-93

Time: ~

Direction: N NNE NE ENE
E ESE SE SSE
S SSW SW WSW
(W) WNW NW NNW

Weather: _____

Site Name: _____

__Better Brite, De Pere

Site #: _____

Photographed By:

__Terry Koehn

Sample# (If Applicable):

BB-86-04

Description:

FIELD PHOTOGRAPHY LOG SHEET

Date: 8-6-93

Time: ~

Direction: N NNE NE ENE
E ESE SE SSE
S SSW SW WSW
(W) WNW NW NNW

Weather: _____

Site Name: _____

__Better Brite, De Pere

Site #: _____

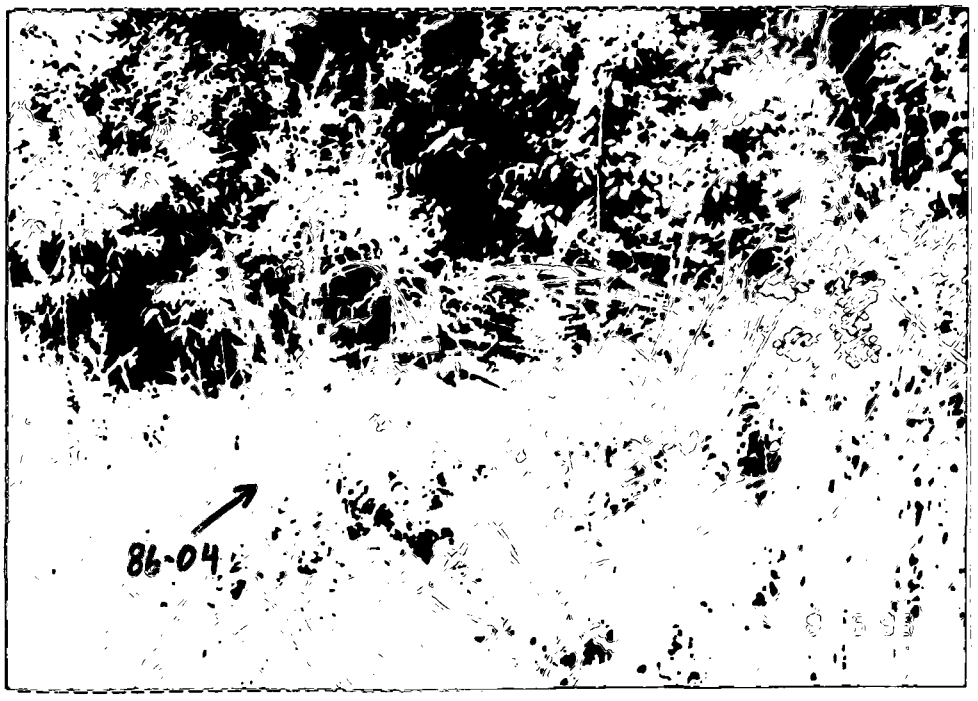
Photographed By:

__Terry Koehn

Sample# (If Applicable):

BB-86-04

Description:



State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

WISCONSIN
DEPT. OF NATURAL RESOURCES

Carroll D. Besadny
Secretary

Lake Michigan District Headquarters
1125 N. Military Avenue
P.O. Box 10448
Green Bay, WI 54307-0448
TELEPHONE # (414)492-5869
TELEFAX # (414)492-5913

April 24, 1992

File Ref: WIT-560010118
WID-006132088
Brown Co./SFND

Mr. Paul Kefauver
IT Corporation
11499 Chester Road
Cincinnati, OH 45246

Re: **Zinc Shop Analytical Data**
Better Brite Site - De Pere, Wisconsin

Dear Mr. Kefauver:

As we discussed, please find enclosed copies of the following material related to the groundwater quality at the Better Brite Zinc Shop:

A) Analytical results from a sample collected from the Zinc Shop sump on February 19, 1992 (Robert E. Lee & Assoc. Report Date 3-5-92). As you will note the chromium concentration of this sample was relatively low (25.4 ppm).

B) Memorandum to Files (T.Koehn to Better Brite Files) dated January 29, 1992 reviewing groundwater quality at the Zinc Shop.

As we will have to manifest shipments of the groundwater when transporting it to the Chrome Shop this information should be made available for the Emergency Response Contact Number.

If you have any questions, please feel free to call me at (414) 492-5869.

Sincerely,

Terry Koehn
Project Manager

cc: G. Edelstein WDNR - SW/3 w/att
D. Linnear U.S. EPA Region V ""
R. Karnauskas Hydro-Search, Inc. ""
D. Benner City of De Pere ""
S. Faryan U.S. EPA Region V/EERB ""

CORRESPONDENCE MEMORANDUM

STATE OF WISCONSIN

DATE: January 29, 1992

TO: Better Brite Files

FROM: Terry Koehn - LMD

SUBJECT: **Better Brite Project - Zinc Shop Groundwater Analytical Results**

A review of groundwater quality data at the Zinc Shop is thought to be necessary as we are anticipating transporting and treating this groundwater at the pretreatment plant, located at the Chrome Shop. Thus, this brief review of analytical results associated with the Zinc Shop groundwater was completed. The collection of a sample of groundwater directly from the sump is planned, to prepare for future shipments of water.

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Mercury	<0.0002	<0.0002	<0.0002
Selenium	0.016	<0.003	<0.003
Silver	<0.006	<0.006	<0.006

All values in units of mg/l

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Lead	<100 ug/l (all < 0.1 mg/l)
Zinc	<20 to 24 ug/l (0.024 mg/l)

Detections of volatile organic compounds have also been observed in groundwater collected from monitoring wells. The compounds observed in 1987 are 1,1,1-trichloroethane, tetrachlorethane, 1,1-dichloroethane, 1,1-dichloroethylene, and trichloroethylene. The maximum concentration of these VOC's (sum) observed in a single well was 789 ug/l (0.789 mg/l) with 1,1,1-trichloroethane dominating. The same compounds were detected in 1989 sampling. The maximum concentration of these VOC's (sum) observed in a single well (1989) was 456 ug/l (0.456 mg/l) with 1,1,1-trichloroethane again dominating. The 1988 Superfund Site Inspection, sampling detected acetone (possibly a lab contaminant), 1,1-dichloroethane, 1,1-dichloroethene, 1,1,1-trichloroethane, and carbon tetrachloride. The maximum concentration of these VOC's (sum) observed in a single well (1988) was 581 ug/l (0.591 mg/l) with 1,1,1-trichloroethane again dominating.

As expected and confirmed by the above, chromium is the contaminant of greatest concern in the Zinc Shop groundwater. The chromium values can generally be expected to exceed 100 mg/l. The zinc values are, from the above review, not expected to regularly exceed 1.0 mg/l. VOC's are also not expected to exceed 1.0 mg/l in the groundwater. Cyanide appears to generally be at concentrations less than 0.5 mg/l in the groundwater.

cc: G. Edelstein SW/3
C. Khazae SW/3

ROBERT E. LEE & ASSOCIATES, INC.
LABORATORY SERVICES
2825 S. WEBSTER AVE., P.O. BOX 2100
GREEN BAY, WI 54306
TEL NO.: (414) 336-6338
FAX NO.: (414) 336-9141
WISCONSIN CERTIFICATION NO: 405043870

REPORT DATE===> 12/04/90

JOB NUMBER====> 1001122

CUSTOMER======> 001422

PEI Associates
11499 Chester Rd.
Cincinnati, OH 45246
FAX: -513-782-4663

(800) 372-3727

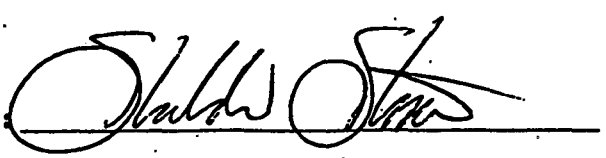
CONTACT=======> William Sass

PROJECT=======> Zinc shop decant

RECEIVED======> 11/09/90

SAMPLED=======> 11/09/90

COMMENTS:
Samples received with acid and/or alkali preservatives. Could not analyze for hexavalent chromium.

ATTEST: 

REPORT DATE===> 12/04/90
JOB NUMBER====> 1001122
BATCH=========> 1

PROJECT====> Zinc shop decant
LOCATION===> Zinc Shop Decant

SAMPLE #	SAMPLE ID	RESULT		DATE COMP	BY
ALUMINUM					
1	Zinc shop decant	.32	mg/l	11/27/90	BR
ARSENIC					
1	Zinc shop decant	<.0007	mg/l	11/21/90	EW
BARIUM					
1	Zinc shop decant	.0598	mg/l	11/15/90	AW
BERYLLIUM					
1	Zinc shop decant	.0018	mg/l	11/15/90	AW
CADMIUM					
1	Zinc shop decant	.0001	mg/l	11/15/90	AW
CALCIUM					
1	Zinc shop decant	90.8	mg/l	11/20/90	EW
CHROMIUM					
1	Zinc shop decant	.89	mg/l	11/12/90	EW
COBALT					
1	Zinc shop decant	.004	mg/l	11/26/90	BR
COPPER					
1	Zinc shop decant	.134	mg/l	11/21/90	EW
CYANIDE					
1	Zinc shop decant	.102	mg/l	11/13/90	MU
HEXAVALENT CHROMIUM					
1	Zinc shop decant		mg/l		

REPORT DATE===> 12/04/90
JOB NUMBER====> 1001122
BATCH=========> 1

PROJECT====> Zinc shop decant
LOCATION===> Zinc Shop Decant

SAMPLE #	SAMPLE ID	RESULT		DATE COMP	BY
IRON					
1	Zinc shop decant	1.25	mg/l	11/16/90	EW
LEAD					
1	Zinc shop decant	<.002	mg/l	11/21/90	BR
MAGNESIUM					
1	Zinc shop decant	118	mg/l	11/20/90	EW
MANGANESE					
1	Zinc shop decant	.0066	mg/l	11/29/90	BR
MERCURY					
1	Zinc shop decant	<.0002	mg/l	11/15/90	EW
NICKEL					
1	Zinc shop decant	.053	mg/l	11/21/90	AW
POTASIUM					
1	Zinc shop decant	13.1	mg/l	11/19/90	EW
SELENIUM					
1	Zinc shop decant	<.003	mg/l	12/03/90	BR
SILVER					
1	Zinc shop decant	.02	mg/l	11/20/90	AW
SODIUM					
1	Zinc shop decant	2530	mg/l	11/19/90	EW
THALLIUM					
1	Zinc shop decant	.24	mg/l	11/21/90	AW

REPORT DATE===> 12/04/90
JOB NUMBER====> 1001122
BATCH=========> 1

PROJECT====> Zinc shop decant
LOCATION===> Zinc Shop Decant

SAMPLE #	SAMPLE ID	RESULT		DATE COMP	BY
VANADIUM					
1	Zinc shop decant	1.05	mg/l	11/28/90	BR
ZINC					
1	Zinc shop decant	.129	mg/l	11/12/90	EW

3-12-92

ROBERT E. LEE & ASSOCIATES
Wisconsin Certification No: 405043870

CUSTOMER======> 000404 - De Pere Wastewater Treatment Plant
REPORT DATE===> 03/05/92 PROJECT====> Sump
JOB NUMBER====> 1007330 LOCATION===> Sump
BATCH=========> 1 SAMPLED====> 02/19/92

Sample #	Sample Id	Result		Analyzed	By
ARSENIC					
1	Zinc Sump	<0.001	mg/l	02/24/92	JJ
CADMIUM					
1	Zinc Sump	<0.002	mg/l	02/21/92	EW
CHROMIUM					
1	Zinc Sump	25.4	mg/l	02/21/92	EW
CYANIDE					
1	Zinc Sump	0.598	mg/l	03/02/92	RG
LEAD					
1	Zinc Sump	<0.05	mg/l	02/21/92	EW
VOLATILE ORGANICS LIQUIDS					
1	Zinc Sump	Attached		02/26/92	TS
ZINC					
1	Zinc Sump	0.040	mg/l	02/21/92	EW

[END OF BATCH: 1]

ROBERT E. LEE & ASSOCIATES
LABORATORY SERVICES
2825 S. WEBSTER AVE. P.O. BOX 2100
GREEN BAY, WIS 54306
TELEPHONE NUMBER: (414) 336 - 6338
WISCONSIN CERTIFICATION NUMBER: 405043870

METHOD 8021. VOLATILE ORGANIC COMPOUNDS IN WATER BY PURGE AND TRAP CAPILLARY COLUMN GAS CHROMATOGRAPHY WITH PHOTOIONIZATION AND ELECTROLYTIC CONDUCTIVITY DETECTORS IN SERIES

CLIENT: DE PERE WASTEWATER TREATMENT PLANT
DATE RECEIVED: 02/19/92
DATE ANALYZED: 02/26/92
REPORT DATE: 03/03/92
ANALYZED BY: J. DURANCEAU

PROJECT: SUMP
PROJECT NUMBER: UNKNOWN
REL JOB NUMBER: 1007330
SAMPLE DILUTION: 3:5
SAMPLE: ZINC SUMP

ANALYTE	MDL UG/L	RESULT UG/L
BENZENE	0.6	ND
BROMOCHLOROMETHANE	2.6	ND
BROMODICHLOROMETHANE	1.0	ND
BROMOFORM	2.2	ND
BROMOBENZENE	4.0	ND
BROMOMETHANE	1.2	ND
n-BUTYLBENZENE	5.6	ND
tert-BUTYLBENZENE	5.8	ND
sec-BUTYLBENZENE	3.8	ND
CARBON TETRACHLORIDE	1.3	ND
CHLOROETHANE	2.8	ND
CHLOROMETHANE	2.9	ND
4-CHLOROTOLUENE	3.7	ND
2-CHLOROTOLUENE	2.9	ND
CHLOROBENZENE	3.7	ND
CHLOROFORM	1.7	ND
DIBROMOCHLOROMETHANE	1.2	ND
1,2-DIBROMO-3-CHLOROPROPANE	2.8	ND
1,2-DIBROMOETHANE	6.0	ND
DIBROMOMETHANE	1.0	ND
DICHLORODIFLUOROMETHANE	2.7	ND
1,4-DICHLOROBENZENE	3.2	ND
1,2-DICHLOROBENZENE	2.9	ND
1,3-DICHLOROBENZENE	3.5	ND
1,3-DICHLOROPROPANE	3.3	ND
1,2-DICHLOROPROPANE	3.7	ND
2,2-DICHLOROPROPANE	2.2	ND
1,1-DICHLOROETHANE	1.7	ND
1,1-DICHLOROPROPENE	1.9	ND
1,2-DICHLOROETHANE	2.2	ND

ANALYTE	MDL UG/L	RESULT UG/L
trans-1,2-DICHLOROETHENE	2.4	ND
cis-1,2-DICHLOROETHENE	2.0	ND
1,1-DICHLOROETHENE	1.9	ND
ETHYLBENZENE	1.5	ND
EDB (ETHYLENEDIBROMIDE)	3.9	ND
HEXACHLOROBUTADIENE	1.7	ND
p-ISOPROPYLTOLUENE	3.6	ND
ISOPROPYLBENZENE	3.6	ND
METHYLENE CHLORIDE	1.5	ND
MTBE	1.3	ND
NAPHTHALENE	4.7	ND
n-PROPYLBENZENE	3.4	ND
STYRENE	3.6	ND
1,1,1,2-TETRACHLOROETHANE	4.5	ND
1,1,2,2-TETRACHLOROETHANE	2.4	ND
TETRACHLOROETHYLENE	1.8	ND
TRICHLOROFLUOROMETHANE	1.5	ND
1,2,3-TRICHLOROBENZENE	3.5	ND
1,2,4-TRICHLOROBENZENE	1.3	ND
1,1,1-TRICHLOROETHANE	1.4	ND
TRICHLOROETHYLENE	3.1	ND
1,1,2-TRICHLOROETHANE	3.1	ND
1,2,3-TRICHLOROPROPANE	3.0	ND
1,3,5-TRIMETHYLBENZENE	3.4	ND
1,2,4-TRIMETHYLBENZENE	3.5	ND
TOLUENE	2.0	ND
VINYL CHLORIDE	2.3	ND
m,p-XYLENE	1.5	ND
o-XYLENE	1.0	ND

* 2-BROMO-1-CHLOROPROPANE SURROGATE STANDARD..... 55%
* 1,4-DICHLOROBUTANE SURROGATE STANDARD..... 55%

ND = COMPOUND NOT DETECTED
MDL = METHOD DETECTION LIMIT WITH NO DILUTION

D = COMPOUND DETECTED BUT BELOW MDL
* SURROGATE STANDARD PERCENT RECOVERY

ATTEST

ROBERT E. LEE AND ASSOCIATES

CLIENT: DE PERE WWTP
REL JOB NUMBER: 1007330

SAMPLES RECEIVED: 02/19/92
PROJECT NUMBER: NONE

NARRATIVE

This set of samples consisted of a water sample. The sample was collected February 19, 1992.

The samples were analyzed for volatile organic compounds on February 26, 1992 following SW-846 method 8021.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analysis:

1. Method blank was free of contamination.
2. Duplicates were within laboratory limits.
3. Surrogates were not within laboratory limits. The analyst felt that the poor surrogate recovery was due to a matrix interference.
4. Matrix spike was within laboratory limits.
5. Initial calibration criteria were met for all analytes.
6. Continuing calibration criteria were met for all analytes.

Sheldon Stone
Laboratory Manager

CORRESPONDENCE MEMORANDUM

STATE OF WISCONSIN

DATE: January 29, 1992

TO: Better Brite Files

FROM: Terry Koehn - LMD

SUBJECT: **Better Brite Project - Zinc Shop Groundwater Analytical Results**

A review of groundwater quality data at the Zinc Shop is thought to be necessary as we are anticipating transporting and treating this groundwater at the pretreatment plant, located at the Chrome Shop. Thus, this brief review of analytical results associated with the Zinc Shop groundwater was completed. The collection of a sample of groundwater directly from the sump is planned, to prepare for future shipments of water.

The most recent analytical results I have noted for groundwater from the Zinc Shop were from samples collected by U.S. EPA's TAT on March 6, 1991. Sample SUM-11 was reportedly collected directly from the groundwater collection sump. Samples MW-1 and MW-2 were collected from monitoring wells on the property. At this time I am unsure which monitoring wells these samples represent. The results of the analyses performed by Robert E. Lee & Associates (Report Date 4-19-91) are as follows:

Sample Number:	SUM-11	MW-1	MW-2
Arsenic	<0.0014	<0.0014	<0.0014
Barium	0.025	0.016	0.070
Cadmium	<0.002	<0.002	<0.002
Chromium	135.	5.45	73.2
Lead	<0.06	<0.06	<0.06
Mercury	<0.0002	<0.0002	<0.0002
Selenium	0.016	<0.003	<0.003
Silver	<0.006	<0.006	<0.006

All values in units of mg/l

A sample of groundwater from the Zinc Shop, after pretreatment, was collected by U.S. EPA's TAT on November 9, 1990 and analyzed by Robert E. Lee and Associates (Report Date 12-4-90). A copy of these results is attached and several values for parameters of interest are listed below:

Sample Name: Zinc Shop Decant

Arsenic	<0.0007
Barium	0.0598
Cadmium	0.0001
Chromium	0.89
Cyanide	0.102
Lead	<0.002
Mercury	<0.0002
Zinc	0.129

All values in units of mg/l

Although this represents only a single comparison of before and after treatment, using samples collected at significantly different times, it does appear that chromium concentrations are sufficiently reduced by the pretreatment process.

Specific analytical results pertaining to groundwater quality at the Zinc Shop are included in the Site Evaluation Report prepared by Hydro-Search, Inc. A brief overview of the results from monitoring well samples collected during the past few years is as follows:

Monitoring Well Results 1987 (ERF Investigation)

Cadmium	0.7 to 2.6 ug/l (0.0026 mg/l)
Chromium	<100 to 310,000 ug/l (310 mg/l)
Cyanide	<0.01 to 0.17 mg/l
Lead	<3 to 17 ug/l (0.017 mg/l)
Zinc	<20 to 68 ug/l (0.068 mg/l)

Monitoring Well Results 1988 (Superfund Investigation)

Barium	52 to 262 ug/l (0.262 mg/l)
Chromium	14,000 to 295,000 ug/l (295 mg/l)
Cyanide	59.4 to 227.9 ug/l (0.228 mg/l)
Zinc	29 to 158 ug/l (0.158 mg/l)

(Other inorganic values available - lead and cadmium values not reported)

Monitoring Well Results 1989 (ERF Investigation)

Cadmium	<20 to 20 ug/l (0.02 mg/l)
Chromium	160 to 48,000 ug/l (48 mg/l)
Cyanide	0.08 to 0.23 mg/l
Lead	<100 ug/l (all < 0.1 mg/l)
Zinc	<20 to 24 ug/l (0.024 mg/l)

Detections of volatile organic compounds have also been observed in groundwater collected from monitoring wells. The compounds observed in 1987 are 1,1,1-trichloroethane, tetrachlorethane, 1,1-dichloroethane, 1,1-dichloroethylene, and trichloroethylene. The maximum concentration of these VOC's (sum) observed in a single well was 789 ug/l (0.789 mg/l) with 1,1,1-trichloroethane dominating. The same compounds were detected in 1989 sampling. The maximum concentration of these VOC's (sum) observed in a single well (1989) was 456 ug/l (0.456 mg/l) with 1,1,1-trichloroethane again dominating. The 1988 Superfund Site Inspection, sampling detected acetone (possibly a lab contaminant), 1,1-dichloroethane, 1,1-dichloroethene, 1,1,1-trichloroethane, and carbon tetrachloride. The maximum concentration of these VOC's (sum) observed in a single well (1988) was 581 ug/l (0.591 mg/l) with 1,1,1-trichloroethane again dominating.

As expected and confirmed by the above, chromium is the contaminant of greatest concern in the Zinc Shop groundwater. The chromium values can generally be expected to exceed 100 mg/l. The zinc values are, from the above review, not expected to regularly exceed 1.0 mg/l. VOC's are also not expected to exceed 1.0 mg/l in the groundwater. Cyanide appears to generally be at concentrations less than 0.5 mg/l in the groundwater.

cc: G. Edelstein SW/3
C. Khazae SW/3

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WISCONSIN CERTIFICATION NO: 405043870

REPORT DATE===> 12/04/90

JOB NUMBER====> 1001122

CUSTOMER======> 001422

PEI Associates
11499 Chester Rd.
Cincinnati, OH 45246
FAX: -513-782-4663

(800) 372-3727

CONTACT=======> William Sass

PROJECT=======> Zinc shop decant

RECEIVED======> 11/09/90

SAMPLED=======> 11/09/90

COMMENTS:
Samples received with acid and/or alkali preservatives. Could not analyze for hexavalent chromium.

ATTEST:

REPORT DATE===> 12/04/90
JOB NUMBER====> 1001122
BATCH=========> 1

PROJECT====> Zinc shop decant
LOCATION===> Zinc Shop Decant

SAMPLE #	SAMPLE ID	RESULT		DATE COMP	BY
ALUMINUM					
1	Zinc shop decant	.32	mg/l	11/27/90	BR
ARSENIC					
1	Zinc shop decant	<.0007	mg/l	11/21/90	EW
BARIUM					
1	Zinc shop decant	.0598	mg/l	11/15/90	AW
BERYLLIUM					
1	Zinc shop decant	.0018	mg/l	11/15/90	AW
CADMIUM					
1	Zinc shop decant	.0001	mg/l	11/15/90	AW
CALCIUM					
1	Zinc shop decant	90.8	mg/l	11/20/90	EW
CHROMIUM					
1	Zinc shop decant	.89	mg/l	11/12/90	EW
COBALT					
1	Zinc shop decant	.004	mg/l	11/26/90	BR
COPPER					
1	Zinc shop decant	.134	mg/l	11/21/90	EW
CYANIDE					
1	Zinc shop decant	.102	mg/l	11/13/90	MU
HEXAVALENT CHROMIUM					
1	Zinc shop decant		mg/l		

[CONTINUED]

REPORT DATE===> 12/04/90
JOB NUMBER====> 1001122
BATCH=========> 1

PROJECT====> Zinc shop decant
LOCATION===> Zinc Shop Decant

SAMPLE #	SAMPLE ID	RESULT		DATE COMP	BY
IRON					
1	Zinc shop decant	1.25	mg/l	11/16/90	EW
LEAD					
1	Zinc shop decant	<.002	mg/l	11/21/90	BR
MAGNESIUM					
1	Zinc shop decant	118	mg/l	11/20/90	EW
MANGANESE					
1	Zinc shop decant	.0066	mg/l	11/29/90	BR
MERCURY					
1	Zinc shop decant	<.0002	mg/l	11/15/90	EW
NICKEL					
1	Zinc shop decant	.053	mg/l	11/21/90	AW
POTASIUM					
1	Zinc shop decant	13.1	mg/l	11/19/90	EW
SELENIUM					
1	Zinc shop decant	<.003	mg/l	12/03/90	BR
SILVER					
1	Zinc shop decant	.02	mg/l	11/20/90	AW
SODIUM					
1	Zinc shop decant	2530	mg/l	11/19/90	EW
THALLIUM					
1	Zinc shop decant	.24	mg/l	11/21/90	AW

REPORT DATE===> 12/04/90
JOB NUMBER====> 1001122
BATCH=========> 1

PROJECT====> Zinc shop decant
LOCATION===> Zinc Shop Decant

SAMPLE #	SAMPLE ID	RESULT		DATE COMP	BY
VANADIUM					
1	Zinc shop decant	1.05	mg/l	11/28/90	BR
ZINC					
1	Zinc shop decant	.129	mg/l	11/12/90	EW