CORRESPONDENCE MEMORANDUM

STATE OF WISCONSIN

DATE:

August 24, 1993

TO:

Better Brite Files

FROM:

Terry Koehn - LMD

SUBJECT:

Zinc Shop Groundwater Transfer

This memorandum presents analytical results from samples collected of Zinc Shop groundwater and filter cake generated from that water. The samples were collected by City of De Pere personnel or through EPA. All of the samples were analyzed by Robert E Lee & Assoc, Inc. They were collected at various dates as noted in the tables. Samples collected from Zinc Shop water on 3/16/93 and 3/18/93 indicated the presence of cyanide which was of some concern. Concentrations in the March samples were 4.283 mg/l total cyanide (37,700 ug/l total chromium) in the influent and <0.004 mg/l total cyanide (265 ug/l total chromium) in the effluent which were discussed in a memorandum dated April 14, 1993.

Filter Cake	Concentration	Units
Chromium (total)	65,700.	mg/kg
Cyanide (total)	63.	mg/kg
Zinc	523.	mg/kg
Total Solids	39.8	%

Sampled 4/6/93 (Job#1015090)

Influent (untreated)	Concentration	Units
Cyanide (total)	0.874	mg/l
Cyanide (amenable)	<0.004	mg/l

Sampled 3/24/93 (Job# 1014863)

Effluent (treated)	Concentration	Units
Chromium (total)	1220.	ug/l
Cyanide (total)	< 0.004	mg/l
Cyanide (amenable)	< 0.004	mg/l

Sampled 3/24/93 (Job# 1014896)

Influent (untreated - from sump)	Concentration	Units
Chromium (total)	32,400.	ug/l
Cyanide (total)	0.743	mg/l
Cyanide (amenable)	0.364	mg/l
Cyanide (reactive)	<0.02	mg/l
Zinc	2740.	ug/l

Sampled 3/29/93 (Job# 1014944 - Sampled by EPA)

Influent (untreated)	Concentration	Units
Cadmium	660.	ug/l
Chromium (total)	95,900.	ug/l
Cyanide (total)	11.7	mg/l
Cyanide (amenable)	1.10	mg/l
Zinc	33,700.	ug/l

Sampled 3/31/93 (Job# 1015034)

Effluent (treated)	Concentration	Units
Cadmium	5.	ug/l
Chromium (total)	111.	ug/l
Cyanide (total)	<0.004	mg/l
Cyanide (amenable)	<0.004	mg/l
Zinc	43.	ug/l

Sampled 4/2/93 (Job# 1015034 - noted as 3/31/93 on lab sheet)

Influent (untreated)	Concentration	Units
Chromium (total)	66,800.	ug/l
Zinc	95.	ug/l

Sampled 5/6/93 (Job# 1015718)

Effluent (treated)	Concentration	Units
Chromium (total)	635.	ug/l
Zinc	6.	ug/l

Sampled 5/6/93 (Job# 1015718)

Influent (untreated)	Concentration Units	
Cadmium	<3. / <3.	ug/l
Chromium (total)	60,000. / 58,400.	ug/l
Cyanide (total)	0.878	mg/l
Cyanide (amenable)	< 0.878	mg/l
Zinc	70. / 59.	ug/l

Sampled 6/23/93 Original and Duplicate Concentrations (Job# 1016672)

Effluent (treated)	Concentration	Units
Cadmium	<3.	ug/l
Chromium (total)	1160.	ug/l
Cyanide (total)	0.094	mg/l
Cyanide (amenable)	< 0.094	mg/l
Zinc	5.	ug/l

Sampled 6/23/93 (Job# 1016672)

Three of the influent samples indicated cyanide concentrations (0.874 & 0.743 & 0.878 mg/l) significantly lower than the sample collected on 3/18/93 (4.283 mg/l). However, the influent sample from 3/31/93 again detected an elevated concentration (11.7 mg/l). This elevated cyanide concentration indicates that continued sampling is needed to determine if

cyanide is going to remain a concern. Amenable cyanide was detected in two of the influent samples (0.364 & 1.10 mg/l).

Cyanide was detected in only one of the effluent samples (0.094 mg/l). It was also identified in the systems filter cake (63 mg/kg). This suggests that a significant portion of the cyanide is probably associated with particulate matter and is being removed from the water prior to discharge.

Air monitoring has not detected cyanide in the pretreatment plant.

Chromium concentrations in the influent ranged from 32,400 to 95,900 ug/l. In the effluent it ranged from 111 to 1,220 ug/l.

Water discharge limits have continued to be met for both cyanide and chromium.

cc:

G. Edelstein SW/3

D. Rossberg LMD

K. Bro

WDOH

D. Linnear

U.S. EPA Region V

W. Nied

U.S. EPA Region V

D. Benner

City of De Pere

1 ... Sludge 03/25/93

TO

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

CUSTOMER---> 000404 - De Pere Wastewater Treatment Plant

REPORT DATE> JOB NUMBER> BATCH>	1015090	PROJECT> Better LOCATION-> Better SAMPLED> 04/06/	Brite	
Sample # Sample	Id	Result	Analyzed	Ву
CHROMIUM		,		
1 Sludge	03/25/93	65700 mg/kg	04/20/93	DB
CYANIDE				
1 Sludge	03/25/93	63.0 mg/kg	04/13/93	DJB
TOTAL SOLIDS				
1 Sludge	03/25/93	39.8	04/07/93	SRW
ZINC				

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mg/kg ... 04/20/93 ... DB

APR 23 1993

DE PERE WASTEWATER TREATMENT PLANT

[END OF BATCH: 1]

DE PERE WASTEWATER TREATMENT PLANT 315 LEONARD STREET DE PERE, WISCONSIN 54115

Fax. No.: (414) 339-4048 TELECOPY COVER LETTER

, · · · · · · · · · · · · · · · · · · ·	Dated: <u>4123133</u>
70: Terry Kocha	
FIRM/COMPANY: Wisconsin Did	
FROM: Q1 Ka-Jostes	
For your information.	For your approval.
	Per your request.
RE: Peralte of malyair of Better Brite, sludg	•
COMMENTS: Called Benner 4/26/93 Segrepte	
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ROBERT E. LEE & ASSOCIATES, INC. Wisconsin Certification No: 405043870

CUSTOMER=====> 000404 - De Pere REPORT DATE==> 04/06/93 JOB NUMBER===> 1014896 BATCH======> 1	Wastewater Treatmen PROJECT===> Better LOCATION===> De Per SAMPLED===> 03/24/	Brite e WWTP
Sample # Sample Id	Result	Analyzed By
	-	
CYANIDE		
1 Treated 03-24-93	< 0.004 mg/1	03/31/93 DJB
	,	
CYANIDE-AMENABLE		

1 ... Treated 03-24-93

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<0.004 mg/l ... 04/02/93 ... DJB

APR 0 8 1993

DE PERE WASTEWATER
TREATMENT PLANT

TO

CUSTOMER > 000404 - De Pere Wastewater Treatment Plant REPORT DATE > 04/06/93 PROJECT > Better Brite JOB NUMBER > 1014896 LOCATION > De Pere WWTP BATCH > 1 SAMPLED > 03/24/93

Sample #	Sample Id	Result	Analyzed	By
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CYANIDE				
. 1	Treated 03-24-93		03/31/93	DJB
		•		
CYANIDE-AMENI	ABLE			
1	Treated 03-24-93	<0.004 mg/l	04/02/93	DJB

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APR 0 8 1993

DE PERE WASTEWATER TREATMENT PLANT

[END OF BATCH: 1]

1 ... Treated

1220 ug/l ... 04/05/93 ... DB

TO

3

VC

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

CUSTOMER O00404 - De Pere Wastewater Treatment Plant REPORT DATE 04/06/93 PROJECT Better Brite JOB NUMBER 1014896 LOCATION De Pere WWTP BATCH SAMPLED 03/24/93

Sample # Sample Id Result Analyzed By
CHROMIUM

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DE PERE WASTEWATER TREATMENT PLANT

[END OF BATCH: 2]

DE PERE WASTEWATER TREATMENT PLANT 315 LEONARD STREET DE PERE, WISCONSIN 54115

Fax. No.: (414) 339-4048

TELECOPY COVER LETTER

•	Dated: ulales
TO: Treny Konha	A 1 Mark 1 and interpretable company of the company
FIRM/COMPANY: WONE	
FROM: AL Karloslee	
Y For your information.	For your approval.
Your comments, please.	Per your request.
RE: Additional Better Bride results.	
COMMENTS:	
Total Number of Pages (including cover s	heet): 3
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ROBERT E. LEE & ASSOCIATES, INC. Wisconsin Certification No: 405043870

CUSTOMER====>	000404 - De Per	e Wastewater Treatment Plant	
REPORT DATE===>	04/05/93	PROJECT===> Cyanide	
JOB NUMBER===>	1014863	LOCATION ===> De Pere WWTP	
BATCH=====>	1	SAMPLED====> 03/24/93	
		• •	

Sample #	Sample Id	Res	ult	4	Analyzed By
CYANIDE	*				
. 1	. Untreated		0.874	mg/l	03/31/93 DJB
		•			
CYANIDE-AME	NABLE				
1	. Untreated		<0.004	mg/l	04/02/93 DJB

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DE PERE WASTEWATER TREATMENT PLANT

De

DE PERE WASTEWATER TREATMENT PLANT 315 LEONARD STREET DE PERE, WISCONSIN 54115

Fax. No.: (414) 339-4048

TELECOPY COVER LETTER

•	Dated: <u>Ulplas</u>
TO: Terry Kooling	
FIRM/COMPANY: LANDUE	gypen men men sampen general men per hall til Men de så at de til statistical light til statistical light og gran fra standard men sampen sen en sampen general statistical light til statistical light til statistical light og gran fra standard men sampen sampen sen en
FROM: At Kardosles	
X For your information.	For your approval.
Your comments, please.	Per your request.
RE: Additional expands analysis results COMMENTS:	The second secon
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ABORATORY SERVICES P.J. BOX 2100, 2825 S. WEBSTER AVE.

GREEN BAY, WI 54306-2100 TEL NO: (414) 336-6338 FAX NO: (414) 336-9141

Wisconsin Certification No: 405043870

ERRY Koehr

Viedel Environmental Date Received: 03/29/93 Date of Samples: 03/29/93 Report Date: 04/06/93

Client Project: Better Brite Plating Client Project Number: Better Brite Plating REL Job Number: 1014944 Batch: 1

THE FOLLOWING DATA HAS BEEN REVIEWED AND MEETS THE QA/QC REQUIREMENTS FOR BLANKS, STANDARDS, DUPLICATE ANALYSES AND SPIKED SAMPLES.

ug/l ANALYZED mg/l ANALYZED mg/l ANALYZED mg/l ANALYZED mg/l YPO	TEST PARAMETER	CH	ROMIUM	CY	YANIDE	CYANIDE	-AMENABLE	REACTIV	E CYANIDE
ug/l ANALYZED mg/l ANALYZED mg/l ANALYZED mg/l ANALYZED mg/l ANALYZED mg/l ANALYZED mg/l ANALYZED	WONR NUMBER ANALYZED BY ANALYTICAL METHOD	DEEN 6	00122 A BELLIN	DOU	00720 G BASTEN	8 0000	1208 BASTEN	DOUG	None BASTEN
38Z \$ump 02 32400 04/05/73 0.74 3 03/31/93 0.364 04/02/93 ND 03/31,	SAMPLE NAME		and the same of th			-107-	ANALYZED		DATE ANALYZED
	882 Sump 02	32400	04/05/73	0.743	03/31/93	0.364	04/02/93	ND	03/31/93
						• •			
X .									

COMMENTS:

ND = COMPOUND NOT DETECTED

MDL = METHOD DETECTION LIMIT WITH NO DILUT

D = DETECTED BUT BELOW MOL

* = MDL CHANGED DUE TO DILUTION

ANALYTICAL METHODS

[1] TEST METHODS FOR EVALUATING SOLID WASTE, SW-846
[2] METHODS OF CHEMICAL ANALYSIS OF WATER AND WASTES
[3] STANDARD METHODS, FOR THE EXAMINATION OF WATER & WASTES, 16th Ed.

ATTEST

ROBERT E. LEE & ASSOCIATES, INC. LABORATORY SERVICES
P.O. BOX 2100, 2825 S. WEBSTER AVE.
GREEN BAY, WI 54306-2100
TEL NO: (414) 336-6338
FAX NO: (414) 336-9141
Wisconsin Certification No: 405043870

Client: Riedel Environmental
Date Received: 03/29/93
Date of Samples: 03/29/93
Report Date: 04/06/93
Client Project: Better Brite Plating
Client Project Number: Better Brite Plating
REL Job Number:1014944 Batch: 1

THE FOLLOWING DATA HAS BEEN REVIEWED AND MEETS THE QA/QC REQUIREMENTS FOR BLANKS, STANDARDS, DUPLICATE ANALYSES AND SPIKED SAMPLES.

TEST PARAMETER	ŽII	NC .							
MOL WONR NUMBER ANALYZED BY ANALYTICAL METHOD EXTRACTED/DIGESTED	2 ug 002 Drena 6010	g/l 275 BELLIN D [1]							
SAMPLE NAME	RESULT ug/l	DATE ANALYZED	RESULT	DATE ANALYZED	2	RESULT	DATE ANALYZED	RESUL	T DATE ANALYZED
882 Sump 02	2740	04/05/93							
									•
				1 (

COMMENTS:

ND = COMPOUND NOT DETECTED

MDL = METHOD DETECTION LIMIT WITH NO DILUTION

D = DETECTED BUT BELOW MOL

* = MDL CHANGED DUE TO DILUTION

ANALYTICAL METHODS

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ATTEST	!	

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

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Sample #		Sam	ole I	đ			Re	sult			Analyzed		Ву
CHROMIUM					:	-	-						
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CYANIDE					:								
1	• • •	BBZ	Sump	02	! i · !			0.743	mg/l	• • •	03/31/93		DJB
CYANIDE-1	AMENA	BLE			!					*	* ",		
1	• • •	BBZ	Sump	02	165			0.364	mg/l)	04/02/93	• • •	DJB
REACTIVE	CYAN	IDE											
-1	•••	BBZ	gump	02				<0.02	mg/l		03/31/93	• • •	DJB
ZINC													
1		BRZ	Summ	02				2740	1107]		04/05/93		DB



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

TO

CUSTOMER>	000404 - De	Pere	Wastewater Tr	ceatment Plant
REPORT DATE ==>	04/20/93		PROJECT>	Better Brite
JOB NUMBER>	1015034		LOCATION===>	Better Brite
BATCH	1		SAMPLED>	03/31/93

Sample #	Sample Id	Result		Analyzed By
CADMIUM	WANTER BY THE STATE OF THE STAT	And the state of t	тображна <u>ния уч</u> убуб-Анаулганиуса	Altidoximizacy y M. 4- Explorational trace year 44 Kand optimizations
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CHRONIUM				, ·
	Untreated Treated	95900 111	ug/1	04/14/93 DB 04/14/93 DB
CYANIDE				
	Untreated Treated		mg/1 mg/1	04/06/93 DJB 04/06/93 DJB
CYANIDE-AMEN	ABLE			
	Untreated Treated		mg/l	04/13/93 DJB 04/13/93 DJB
zinc				
	Untreated Treated	33700 43	ug/l ug/l	04/15/93 DB 04/15/93 DB

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DE PERE WASTEWATER TREATMENT PLANT

[END OF BATCH: 1]

DE PERE WASTEWATER TREATMENT PLANT 315 LEONARD STREET DE PERE, WISCONSIN 54115

TO

Fax. No.: (414) 339-4048

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FIRM/COMPANY: Wiscons in Dept of Notwest Person	EST		nenny-AAAAA SIISSIII Juga		dynatysissyspania susa
FROM: AI Kardoske					
	,				
> For your information.		For	your	approval.	
Your comments, please.	sibomelinopomi-ry	Per	your	request.	

RE: Bette Brite - Lande Street
· · ·
COMMENTS: Latest data an treatment. Please note that the treated"
sample was actually collected an 4/2/93, not 3/31/93 - that was the
collection date for the untreated sample
Total Number of Pages (including cover sheet): 2
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ROBERT E. LEE & ASSOCIATES, INC. Wisconsin Certification No: 405043870

TO

CUSTOMER>	000404 - De	Pere	Wastewater Tr	ceatment Plant
REPORT DATE->	05/19/93		PROJECT>	Better Brite
JOB NUMBER	1015718		LOCATION>	De Fere WWTP
BATCH	1		SAMPLED===>	05/06/93

BATCH====>		 >	1 SAMPLED>		· 05/06/93							
	Sample	争		Sample	Id	Resu.	lt		ä	Analyzed	Ву	
	AND DESCRIPTION OF THE PERSON NAMED IN COLUMN	-			Marie Control of the		and the same of the same		**			
	CHROMI	ME										
	4				ed Influent Effluent		66800 635			05/17/93 05/17/93		
	ZINC											
					ed Influent Effluent		95 6	ug/1 ug/1		05/17/93 05/17/93		

DE PERE WASTEWATER TREATMENT PLANT 315 LEONARD STREET DE PERE, WISCONSIN 54115

TO

Fax. No.: (414) 339-4048 TELECOPY COVER LETTER

Dated:_ <u>ulz</u>	1/4.3
TO: Terry Kachen	The state of the s
FIRM/COMPANY: 1-115000510 DNE	
FROM: At Kandastee	
·	
For your information For your approv	al.
Your comments, please Per your reques	it.
RE: Latest Better Brite results	,
COMMENTS: Which site? Prob Zinc	
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ROBERT E. LEE & ASSOCIATES, INC. Wisconsin Certification No: 405043870

CUSTOMER----> 000404 - De Pere Wastewater Treatment Plant

REPORT DATE-> 07/06/93 JOB NUMBER-> 1016672 BATCH> 1		Batter Brite 6th St. 6th Street Transfer 06/23/93	F
Sample # Sample Id	Result	Analyzed	ВУ
CADMIUM	Aldred Spring and Aldred Spring Sprin	gy-fig-fils-filsementhressenhessungster	Ministry
1 Untreated #1 2 Untreated #2 3 Treated	<3 <3 <3	ug/l 06/30/93 ug/l 06/30/93 ug/l 06/30/93	EWW
CHROMIUM	*		
1 Untreated #1 2 Untreated #2 3 Treated		ug/l 06/30/93 ug/l 06/30/93 ug/l 06/30/93	· · · ENW
ZINC			
1 Untreated #1 2 Untreated #2 3 Treated	70 59 5	ug/1 06/30/93 ug/1 06/30/93 ug/1 06/30/93	EWW

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JUL 0 9 1993

DE PERE WASTEWATER TREATMENT PLANT

TO

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

CUSTOMER—>> REPORT DATE—>> JOB NUMBER—>> BATCH—>>	1016672	PROJECT>	Better Brite 6th St. 6th Street Transfer
min d Commin		Descript de	Amalusad

Sample #		Sample Id		Result			Analyzed		By
	Appendix and the second	Editoria de la companya de la compa	-	A test description of the last	NAME OF TAXABLE PARTY.	-	and the second s		Mondeman
	CYANIDE								
		Untreated Treated		0.878 0.094	mg/l mg/l	***	06/30/93 06/30/93	* * *	atd
CYANIDE-AMENABLE									
		Untreated Treated		<0.878 <0.094	mg/l		06/30/93 06/30/93		

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JUL 0 9 1993

DE PERE WASTEWATER TREATMENT PLANT

[END OF BATCH: 2]

7-12-93

DE PERE WASTEWATER TREATMENT PLANT 315 LEONARD STREET DE PERE, WISCONSIN 54115

Fax. No.: (414) 339-4048

TELECOPY COVER LETTER

	Dated: 7/12/93
TO: Terry Kachn	
FIRM/COMPANY: L. L. SNE	
FROM: Al Kardonsker	
For your information. Fo	r your approval.
Your comments, please.	r your request.
RE: Analysis - 6th street transfer to Lande Str	the state of the s
COMMENTS: lactudes a duplicate sampling of up	traded unter-
	aydigi atag gang magang gang gang gang persebense salam sankeran panaman anan ana ana ana ana ana ana anke da d
AAASSA AAAA AAAAA AAAAA AAAAA AAAAA AAAAA AAAA	And publications and the state of the state
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DE PERE WASTEWATER TREATMENT PLANT 315 LEONARD STREET

DE PERE, WISCONSIN 54115

TO

Fax. No.: (414) 339-4048
TELECOPY COVER LETTER

	Dated: <u>8 23 93</u>
To: Terry Kochn	
FIRM/COMPANY: WDNR	
FROM: A) Kardaskee	
For your information.	For your approval.
λ	per your request.
RE: Better Brite Data	
COMMENTS:	
	AND AND ADDRESS OF THE PARTY OF
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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 414-339-4048 Fax:

Customer Number: 000404

Lab Number: 93REL000391 Sample ID: BB POND 793-1

Matrix

: LIQUID

Chain Number: 4190

Report Date: 08/09/1993 Sample Date : 07/26/1993

٠	NETHOD	PARAMETER MANE	RESULT	units	DEN.	DATE	BY
	LAA-ADAAL-ON MARKETTAN DOCUMENT		Carlo State Annual State	The second secon	THE RESERVE THE PERSON NAMED IN	and and distributed the same of the same o	
	EPA 200.7	TOTAL EHROMIUM ICP	29	UG/L	5.0000	08/02/1993	ENN

Wisconsin Certification No: 405043870

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

RECEIVED

AUG 2 3 1993

LMD SOLID WASTE

REPORT DATE=====> 08/20/1993

CHAIN OF CUSTODY #==> 5145

CUSTOMER======> 000404

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

414-339-4094

CONTACT======> Al Kardoskee

PROJECT=======> BETTER BRITE

RECEIVED======> 08/10/1993

SAMPLED=======> 08/06/1993

COMMENTS:

cc: Terry Koehn

DEPARTMENT OF NATURAL RESOURCES

P O BOX 10448

Green Bay, WI 54307-0448

ATTEST

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: 93REL001236

Sample ID : BB8601 Matrix : LIQUID Chain Number: 5145

Report Date: 08/20/1993 Sample Date: 08/06/1993

METHOD	PARAMETER NAME	RESULT	UNITS	MDL	DATE	BY	
SW846-6010	TOTAL CHROMIUM ICP	14	UG/L	5.0000	08/12/1993	DLB	

ATTEST:

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: Phone: Al Kardoskee

414-339-4094

Fax:

414-339-4048

Customer Number: 000404

Lab Number: 93REL001237

Sample ID: BB8602 Matrix

Chain Number:

5145 Report Date:

Sample Date:

08/20/1993 08/06/1993

: LIQUID

METHOD	PARAMETER NAME	RESULT	UNITS	MDL	DATE	ВҮ
SW846-6010	TOTAL CHROMIUM ICP	<5	UG/L	5.0000	08/12/1993	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: 93REL001238

Sample ID : BB8603 Matrix : LIQUID Chain Number: 5145

Report Date: 08/20/1993 Sample Date: 08/06/1993

METHOD	PARAMETER NAME	RESULT	UNITS	MDL	DATE	ВУ
sw846-6010	TOTAL CHROMIUM ICP	<5	UG/L	5.0000	08/12/1993	DLB

ATTEST:

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

- CERTIFICATE OF ANALYSIS -

To: De Pere Wastewater Treatment Plant

315 Leonard Street

Attn: Phone: Al Kardoskee

De Pere WI 54115

Fax:

414-339-4094 414-339-4048

Customer Number: 000404

Lab Number: 93REL001239

Chain Number:

5145

Sample ID: BB8604 Matrix : LIQUID

Report Date : Sample Date :

08/20/1993 08/06/1993

METHOD	PARAMETER NAME	RESULT	UNITS	MDL	DATE	вү
SW846-6010	TOTAL CHROMIUM ICP	6	UG/L	5.0000	08/12/1993	DLB

S = Sulfuric Acid



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

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S = Sulfuric Acid



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

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CORRESPONDENCE MEMORANDUM

STATE OF WISCONSIN

DATE:

April 14, 1993

TO:

Better Brite Files

FROM:

Terry Koehn - LMD

SUBJECT:

Zinc Shop Groundwater Transfer

EPA Emergency Response completed construction of the enlarged groundwater collection sump, except for capping, in March 1993. The sump should provide a significantly increased volume of contaminated groundwater from the site. Construction of the sump may also have changed the hydraulic conditions at the site, as compared to the periodic use of the sump previously constructed, and potentially the characteristics of the collected water. The following table presents analytical results from samples collected from groundwater transferred from the Zinc Shop to the Chrome Shop on March 16, 1993. The first sample (Untreated) represents influent, the second sample (treated) effluent from the pretreatment plant for the same transfer. The analyses were performed by Robert E. Lee and Assoc., Inc.

Influent (Untreated)	Concentration	Units
Cadmium (total)	6.	ug/l
Chromium (total)	37700.	ug/l
Cyanide (total)	4.283	mg/l
Cyanide (amenable)	0.036	mg/l
Zinc (total)	738.	ug/l

(Job#1014721, Sampled 3/16/93)

What provide you want for the first of the f		
Effluent (Treated)	Concentration	Units
Chromium (total)	265.	ug/l
Cyanide (total)	<0.004 *	mg/l
Cyanide (amenable)	< 0.004	mg/l
Zinc (total)	7.	ug/l

^{*} Qualified Result - Spike failure due to matrix interferences (Job# 1014772, Sampled 3/18/93 - No Cadmium Analysis)

Review of the results suggests that cyanide, as well as chromium and zinc, is being removed during the pretreatment process, although the process is not designed to

specifically address cyanide. The reduction in the cyanide level, between the influent and the effluent, may be caused by the release of HCN from the treatment process or possibly by its inclusion in the filter cake. The low amount of amenable cyanide detected in the untreated sample lessens the possibility of measurable quantities of HCN being released during the treatment process, and supports the theory that a considerable portion of the total cyanide present is associated with solid particles and is being removed with the filter cake.

The presence of cyanide in the water being transferred for treatment brought up several questions/concerns related to worker safety, water discharge limits, air release limits and residual waste characteristics. Discussion of these questions/concerns follow:

Due to the fact that the first step in the pretreatment process is the addition of sulfuric acid to the contaminated water and the potential for generation of HCN, the primary concern was the safety of the operators. An initial review of the potential for developing air quality problems associated with cyanide in the pretreatment building does not suggest a threat. The two exhaust fans, one directly over the tank and a second for the building in general, should vent any HCN generated from the building. A cyanide detection meter (Compure 4100 SN Monotox, 1 ppm detection limit) has been obtained through EPA and is being used when treating water from the Zinc Shop. To date cyanide has not been detected in the plant using the meter. Monitoring will be continued until the situation is better understood. The operators have been directed to make sure that the vent fans are operating when treating Zinc Shop water and that they should avoid placing their face/head near the opening to the reaction tank.

The City of De Pere's discharge limit for cyanide (total) is currently 1.9 mg/l. A limit of 0.9 mg/l is proposed to take effect in May or June 1993. The batch of water from which the above samples were collected met the current discharge limits. Sampling of additional batches is being performed to confirm compliance.

A cursory discussion with WDNR's Air Management Program (E. Ingerersen) did not suggest that potential cyanide emissions (based on an assumed 10 mg/l CN concentration) from the pretreatment plant would represent a potential exceedence of standards. It may be prudent to more fully evaluate emissions from the pretreatment plant if concentrations remain elevated.

Additionally, the possibility of a change in the chemical characteristics of the filter cake produced from the facility should be addressed. This question is not anticipated to represent a problem, however, a sample of the sludge is being collected for analysis.

To date these questions have not presented a concern, as groundwater samples from the site did not indicate significant levels of cyanide and the quantity of water from the Zinc Shop was minimal. The cyanide concentrations, observed in monitoring wells from 1987 through 1989, ranged from <0.01 mg/l to 0.23 mg/l. A sample collected directly from the sump (1991) on February 19, 1992 detected 0.598 mg/l cyanide (total).

Influent and effluent samples have been collected from several subsequent batchs of water from the Zinc Shop. Analytical results are not yet available. Results of these analyses will be used to determine if further steps are required.

cc: G. Edelstein SW/3

D. Rossberg LMD K. Bro WDOH

D. Linnear U.S. EPA Region V

W. Nied U.S. EPA Region V

D. Benner City of De Pere

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

TO

CUSTOMER> 000404 - De Pere REPORT DATE> 03/22/93 JOB NUMBER> 1014721 BATCH> 1	Wastewater Treatment Plant PROJECT===> Better Brite/6th St LOCATION==> Better Brite/6th Street SAMPLED===> 03/16/93	
Sample # Sample Id	Result Analyzed By	Y.
CADMIUM		
1 Untreated	6 ug/1 03/18/93 E	W
CHROMIUM		
1 Untreated	37700 ug/l 03/18/93 E	W
CYANIDE		
1 Untreated	4.283 mg/l 03/19/93 D	TB
CYANIDE-AMENABLE		
1 Untreated	.0.036 mg/1 03/19/93 DX	TB
ZINC		
1 Untreated	738 ug/l 03/18/93 E	NN

DE PERE WASTEWATER TREATMENT PLANT 315 LEONARD STREET DE PERE, WISCONSIN 54115

Fax. No.: (414) 337-4048 TELECOPY COYER LETTER

	Dated: 3/24/93	pundana
	70: Treey Kocha	weete
	FIRM/COMPANY, WOUR	teamor
	FROM: BIKE-dooler	-
	X For your information For your approval.	
	Your comments, please. Per your request.	
	REI Analysis of transfer from 6th Street site to Lande Street	partecipan
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	Total Number of Pages (including cover sheet): 2	mt-mm.
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	TRANSMISSION, PLEASE CALL PA AT (414) 337-4074	r o

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

CUSTOMER——>> REPORT DATE==> JOB NUMBER> BATCH>	1014772	PROJECT===>	Better Br		
Sample # Sample	Id	Result	*	Analyzed	Ву
CHROMTUM	MA A. A SET ARTICONSTRUCTION OF THE	Alletta bereite er en		enterment assumption of types and the state of the state	Will the same of t
· 1 Treate	ď	265	ug/1	. 03/26/93	DB
CYANIDE					
1 Treate	d	<0.004(11)	mg/1	. 03/25/93	DJB
CYANIDE-AMENABLE					
1 Treate	d	<0.004	mg/l	. 03/25/93	DJB
ZINC					
1 Treate	ud.	7	ug/l	. 03/26/93	DB

RECEIVED

APR 0 1 1993

DE PERE WASTEWATER TREATMENT PLANT

TO

Wisconsin Certification No: 405043870

Attn: Terry Koehn

2825 S. Webster Ave. P.O. Box 2100 Green Bay, WI 54306-2100 414(33)6-6338 FAX 414/338-9141

REPORT DATE --> 03/30/93

JOB NUMBER ---> 1014772.

CUSTOMER > 000404

De Pere Wastewater Treatment Plant 315 Leonard St. De Pere, WI 54115

(414) 339-4094

CONTACT====> Al Kardoskee

PROJECT ====> Better Brite/6th St.

RECEIVED----> 03/18/93

SAMPLED===> 03/18/93

COMMENTS:

For Cyanide analysis: Spike failure due to matrix interferences, possibly metal complexes.



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APR 0 1 1993

DE PERE WASTEWATER TREATMENT PLANT

TO

H++n Terry Koehn

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

1/13/92

то

DE PERE WASTEWATER TREATMENT PLANT 315 LEONARD STREET DE PERE, WISCONSIN 54115

Fax. No.: (414) 339-4048 TELECOPY COVER LETTER

•	Dated: <u>Ulzles</u>
To: Tesny Koehn	
FIRM/COMPANY: Wisconsin DNE	
FROM: At Kardonkee	
A PANAL STATE OF THE PARAL STATE	
For your information.	For your approval.
Your comments, please.	Per your request.
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RE: Better Brits Treated Discharge R	25,145
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ROBERT E. LEE & ASSOCIATES, INC. Wisconsin Certification No: 405043870

CUSTOMER=====> 000404 - De Pere Wastewater Treatment Plant

REPORT DATE===> 03/30/93 JOB NUMBER===> 1014772 BATCH======> 1	PROJECT===> LOCATION==> SAMPLED===>	Better B	rite/6th Street	:
Sample # Sample Id	Result	*.	Analyzed	Ву
CHROMIUM				
1 Treated	265	ug/l .	03/26/93	DB
CYANIDE				
1 Treated	<0.004(11)	mg/l .	03/25/93	DJB
CYANIDE-AMENABLE				
1 Treated	<0.004	mg/l .	03/25/93	DJB
ZINC				
1 Treated	7	ug/l .	03/26/93	DB

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DE PERE WASTEWATER TREATMENT PLANT



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==> 03/30/93

JOB NUMBER ===> 1014772.

CUSTOMER ====> 000404

De Pere Wastewater Treatment Plant 315 Leonard St. De Pere, WI 54115

(414) 339-4094

CONTACT=====> Al Kardoskee

PROJECT =====> Better Brite/6th St.

RECEIVED=====> 03/18/93

SAMPLED=====> 03/18/93

COMMENTS:

For Cyanide analysis: Spike failure due to matrix interferences, possibly metal complexes.

ATTEST:

RECEIVED

APR 0 1 1993

DE PERE WASTEWATER TREATMENT PLANT