U.S. Compliance Corporation

January 10, 2014

RECEIVED

JAN 14 2014

WATER ENFORCEMENT & COMPLIANCE ASSURANCE BRANCH, EPA, REGION 5

U.S. Environmental Protection Agency Region 5
Water Enforcement and Compliance Branch
Attn: James Coleman
WUC-15J
77 West Jackson Boulevard
Chicago, IL 60604

RE: The Libman Company
220 North Sheldon
Arcola, IL 61910
Permit No: 2010-EP-0625

Dear James Coleman:

Enclosed, please find the Semi-Annual Wastewater Analytical Results for The Libman Company. The samples were taken on 12/09/2013 and the facility was slightly above the limit for TTO.

As of the beginning of the new year, The Libman Company is no longer using the iron phosphate in the wash process and has replaced this system with a new green technology. Without the use of the iron phosphate, the facility will no longer have a categorical discharge. Thus, the site is looking into terminating their industrial discharge permit.

If you have any questions or concerns in regards to this report, please feel free to contact me at U.S. Compliance Corporation or by email at jprimozich@uscompliance.com.

Sincerely,

Jessica Primozich

Jessica Primozich
Environmental Specialist

Enclosures

cc: Mark Wathen, The Libman Company
ILEPA, Field Operations
IL EPA, Compliance Assurance Section

U.S. Compliance Corporation
520 Third Street • Suite 100 • Excelsior, MN 55331 • Phone 952.252.3000 • Fax 952.252.3001
www.uscompliance.com

The Libman Company

Semi-Annual Monitoring Report Certification Statement

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Name: Mark Watkins

Title: EHS Manager

Signature: [illegible]

Date: 1/13/14

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

January 06, 2014

Mr. Myles Peterson
US COMPLIANCE
520 Third Street, Suite 100
Excelsior, MN 55331

RE: Project: LIBMAN
Pace Project No.: 10251856

Dear Mr. Peterson:
Enclosed are the analytical results for sample(s) received by the laboratory on December 10, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Diane J. Anderson

Diane J. Anderson

diane.anderson@pacelabs.com
Project Manager

Enclosures

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CERTIFICATIONS

Project: LIBMAN
Pace Project No.: 10251856

Minnesota Certification IDs
1700 Elm Street SE Suite 200, Minneapolis, MN 55414
A2LA Certification #: 2926.01
Alabama Dept of Environmental Management #40770
Alaska Certification #: UST-078
Alaska Certification #MN00064
Arizona Certification #: AZ-0014
Arkansas Certification #: 88-0680
California Certification #: 01155CA
Colorado Certification #Pace
Connecticut Certification #: PH-0256
EPA Region 8 Certification #: Pace
EPA Region 5 #WD-15J
Florida/NELAP Certification #: E87605
Georgia Certification #: 959
Hawaii Certification #Pace
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification#C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky Dept of Envi. Protection - DW #90062
Louisiana Certification #: 03086
Louisiana Certification #: LA080009
Maine Certification #: 2007029
Maryland Certification #: 322
Michigan DEQ Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: Pace
Montana Certification #: MT CERT0092
Nebraska Certification #: Pace
Nevada Certification #: MN_00064
New Jersey Certification #: MN-002
New York Certification #: 11647
North Carolina Certification #: 530
North Dakota Certification #: R-036
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon Certification #: MN200001
Oregon Certification #: MN300001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification
Tennessee Certification #: 02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia/DCLS Certification #: 002521
Virginia/VELAP Certification #: 460163
Washington Certification #: C754
West Virginia Certification #: 382
Wisconsin Certification #: 999407970

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SAMPLE SUMMARY

Project: LIBMAN
Pace Project No.: 10251856

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10251856001	LIBMAN	Water	12/09/13 01:20	12/10/13 11:40

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SAMPLE ANALYTE COUNT

Project: LIBMAN
Pace Project No.: 10251856

Lab ID	Sample ID	Method	Analysts	Analytes Reported
10251856001	LIBMAN	EPA 8081	XV1	23
		EPA 8082	KL1	11
		EPA 200.7	IP	7
		EPA 625	ACH1	74
		EPA 624	EB2	73
		SM 4500-H+B	AAD	1
		SM 4500-CN-E	PH1	1

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ANALYTICAL RESULTS

Project: LIBMAN
Pace Project No.: 10251856

Sample: LIBMAN Lab ID: **10251856001** Collected: 12/09/13 01:20 Received: 12/10/13 11:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8081 GCS Pesticides	Analytical Method: EPA 8081 Preparation Method: EPA 3510							
Aldrin	**0.72**	ug/L	0.52	10	12/16/13 07:17	12/27/13 01:03	309-00-2	
alpha-BHC	ND	ug/L	0.52	10	12/16/13 07:17	12/27/13 01:03	319-84-6	
beta-BHC	ND	ug/L	0.52	10	12/16/13 07:17	12/27/13 01:03	319-85-7	
delta-BHC	ND	ug/L	0.52	10	12/16/13 07:17	12/27/13 01:03	319-86-8	
gamma-BHC (Lindane)	ND	ug/L	0.52	10	12/16/13 07:17	12/27/13 01:03	58-89-9	
Chlordane (Technical)	ND	ug/L	5.2	10	12/16/13 07:17	12/27/13 01:03	57-74-9	
alpha-Chlordane	ND	ug/L	0.52	10	12/16/13 07:17	12/27/13 01:03	5103-71-9	
gamma-Chlordane	ND	ug/L	0.52	10	12/16/13 07:17	12/27/13 01:03	5103-74-2	
4,4'-DDD	ND	ug/L	1.0	10	12/16/13 07:17	12/27/13 01:03	72-54-8	
4,4'-DDE	ND	ug/L	1.0	10	12/16/13 07:17	12/27/13 01:03	72-55-9	
4,4'-DDT	ND	ug/L	1.0	10	12/16/13 07:17	12/27/13 01:03	50-29-3	
Dieldrin	ND	ug/L	1.0	10	12/16/13 07:17	12/27/13 01:03	60-57-1	
Endosulfan II	ND	ug/L	1.0	10	12/16/13 07:17	12/27/13 01:03	33213-65-9	
Endosulfan sulfate	ND	ug/L	1.0	10	12/16/13 07:17	12/27/13 01:03	1031-07-8	
Endrin	ND	ug/L	1.0	10	12/16/13 07:17	12/27/13 01:03	72-20-8	
Endrin aldehyde	ND	ug/L	1.0	10	12/16/13 07:17	12/27/13 01:03	7421-93-4	
Endrin ketone	ND	ug/L	1.0	10	12/16/13 07:17	12/27/13 01:03	53494-70-5	
Heptachlor	ND	ug/L	0.52	10	12/16/13 07:17	12/27/13 01:03	76-44-8	
Heptachlor epoxide	ND	ug/L	0.52	10	12/16/13 07:17	12/27/13 01:03	1024-57-3	
Methoxychlor	ND	ug/L	5.2	10	12/16/13 07:17	12/27/13 01:03	72-43-5	
Toxaphene	ND	ug/L	15.5	10	12/16/13 07:17	12/27/13 01:03	8001-35-2	
Surrogates								
Tetrachloro-m-xylene (S)	95	%.	70-130	10	12/16/13 07:17	12/27/13 01:03	877-09-8	
Decachlorobiphenyl (S)	0	%.	70-130	10	12/16/13 07:17	12/27/13 01:03	2051-24-3	S4
8082 GCS PCB	Analytical Method: EPA 8082 Preparation Method: EPA 3510							
PCB-1016 (Aroclor 1016)	ND	ug/L	1.0	10	12/17/13 14:29	12/23/13 15:17	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/L	1.0	10	12/17/13 14:29	12/23/13 15:17	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/L	1.0	10	12/17/13 14:29	12/23/13 15:17	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/L	1.0	10	12/17/13 14:29	12/23/13 15:17	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/L	1.0	10	12/17/13 14:29	12/23/13 15:17	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/L	1.0	10	12/17/13 14:29	12/23/13 15:17	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/L	1.0	10	12/17/13 14:29	12/23/13 15:17	11096-82-5	
PCB-1262 (Aroclor 1262)	ND	ug/L	1.0	10	12/17/13 14:29	12/23/13 15:17	37324-23-5	
PCB-1268 (Aroclor 1268)	ND	ug/L	1.0	10	12/17/13 14:29	12/23/13 15:17	11100-14-4	
Surrogates								
Tetrachloro-m-xylene (S)	0	%.	39-125	10	12/17/13 14:29	12/23/13 15:17	877-09-8	D3,S4
Decachlorobiphenyl (S)	0	%.	30-125	10	12/17/13 14:29	12/23/13 15:17	2051-24-3	S4
200.7 MET ICP	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7							
Cadmium	ND	ug/L	3.0	1	12/12/13 09:32	12/13/13 15:12	7440-43-9	
Chromium	**41.2**	ug/L	10.0	1	12/12/13 09:32	12/13/13 15:12	7440-47-3	
Copper	**294**	ug/L	10.0	1	12/12/13 09:32	12/13/13 15:12	7440-50-8	
Lead	ND	ug/L	10.0	1	12/12/13 09:32	12/13/13 15:12	7439-92-1	
Nickel	**99.8**	ug/L	20.0	1	12/12/13 09:32	12/13/13 15:12	7440-02-0	
Silver	ND	ug/L	10.0	1	12/12/13 09:32	12/13/13 15:12	7440-22-4	
Zinc	**742**	ug/L	20.0	1	12/12/13 09:32	12/13/13 15:12	7440-66-6	

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
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ANALYTICAL RESULTS

Project: LIBMAN
Pace Project No.: 10251856

Sample: LIBMAN **Lab ID: 10251856001** Collected: 12/09/13 01:20 Received: 12/10/13 11:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV	Analytical Method: EPA 625 Preparation Method: EPA 625							
Acenaphthene	ND	ug/L	258	5	12/13/13 12:58	12/20/13 23:52	83-32-9	
Acenaphthylene	ND	ug/L	258	5	12/13/13 12:58	12/20/13 23:52	208-96-8	
Anthracene	ND	ug/L	258	5	12/13/13 12:58	12/20/13 23:52	120-12-7	
Benzo(a)anthracene	ND	ug/L	258	5	12/13/13 12:58	12/20/13 23:52	56-55-3	
Benzo(a)pyrene	ND	ug/L	258	5	12/13/13 12:58	12/20/13 23:52	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	258	5	12/13/13 12:58	12/20/13 23:52	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	258	5	12/13/13 12:58	12/20/13 23:52	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	258	5	12/13/13 12:58	12/20/13 23:52	207-08-9	
Benzoic acid	**1510**	ug/L	1290	5	12/13/13 12:58	12/20/13 23:52	65-85-0	
Benzyl alcohol	ND	ug/L	258	5	12/13/13 12:58	12/20/13 23:52	100-51-6	
4-Bromophenylphenyl ether	ND	ug/L	258	5	12/13/13 12:58	12/20/13 23:52	101-55-3	
Butylbenzylphthalate	ND	ug/L	258	5	12/13/13 12:58	12/20/13 23:52	85-68-7	
Carbazole	ND	ug/L	258	5	12/13/13 12:58	12/20/13 23:52	86-74-8	
4-Chloro-3-methylphenol	ND	ug/L	258	5	12/13/13 12:58	12/20/13 23:52	59-50-7	
4-Chloroaniline	ND	ug/L	1290	5	12/13/13 12:58	12/20/13 23:52	106-47-8	L2
bis(2-Chloroethoxy)methane	ND	ug/L	258	5	12/13/13 12:58	12/20/13 23:52	111-91-1	
bis(2-Chloroethyl) ether	ND	ug/L	258	5	12/13/13 12:58	12/20/13 23:52	111-44-4	
bis(2-Chloroisopropyl) ether	ND	ug/L	258	5	12/13/13 12:58	12/20/13 23:52	108-60-1	
2-Chloronaphthalene	ND	ug/L	258	5	12/13/13 12:58	12/20/13 23:52	91-58-7	
2-Chlorophenol	ND	ug/L	258	5	12/13/13 12:58	12/20/13 23:52	95-57-8	
4-Chlorophenylphenyl ether	ND	ug/L	258	5	12/13/13 12:58	12/20/13 23:52	7005-72-3	
Chrysene	ND	ug/L	258	5	12/13/13 12:58	12/20/13 23:52	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	258	5	12/13/13 12:58	12/20/13 23:52	53-70-3	
Dibenzofuran	ND	ug/L	258	5	12/13/13 12:58	12/20/13 23:52	132-64-9	
1,2-Dichlorobenzene	ND	ug/L	258	5	12/13/13 12:58	12/20/13 23:52	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	258	5	12/13/13 12:58	12/20/13 23:52	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	258	5	12/13/13 12:58	12/20/13 23:52	106-46-7	
3,3'-Dichlorobenzidine	ND	ug/L	515	5	12/13/13 12:58	12/20/13 23:52	91-94-1	L2
2,4-Dichlorophenol	ND	ug/L	258	5	12/13/13 12:58	12/20/13 23:52	120-83-2	
Diethylphthalate	ND	ug/L	258	5	12/13/13 12:58	12/20/13 23:52	84-66-2	
2,4-Dimethylphenol	ND	ug/L	258	5	12/13/13 12:58	12/20/13 23:52	105-67-9	
Dimethylphthalate	ND	ug/L	258	5	12/13/13 12:58	12/20/13 23:52	131-11-3	
Di-n-butylphthalate	ND	ug/L	258	5	12/13/13 12:58	12/20/13 23:52	84-74-2	
4,6-Dinitro-2-methylphenol	ND	ug/L	1290	5	12/13/13 12:58	12/20/13 23:52	534-52-1	
2,4-Dinitrophenol	ND	ug/L	1290	5	12/13/13 12:58	12/20/13 23:52	51-28-5	
2,4-Dinitrotoluene	ND	ug/L	258	5	12/13/13 12:58	12/20/13 23:52	121-14-2	
2,6-Dinitrotoluene	ND	ug/L	258	5	12/13/13 12:58	12/20/13 23:52	606-20-2	
Di-n-octylphthalate	ND	ug/L	258	5	12/13/13 12:58	12/20/13 23:52	117-84-0	
1,2-Diphenylhydrazine	ND	ug/L	258	5	12/13/13 12:58	12/20/13 23:52	122-66-7	
bis(2-Ethylhexyl)phthalate	ND	ug/L	258	5	12/13/13 12:58	12/20/13 23:52	117-81-7	
Fluoranthene	ND	ug/L	258	5	12/13/13 12:58	12/20/13 23:52	206-44-0	
Fluorene	ND	ug/L	258	5	12/13/13 12:58	12/20/13 23:52	86-73-7	
Hexachloro-1,3-butadiene	ND	ug/L	258	5	12/13/13 12:58	12/20/13 23:52	87-68-3	
Hexachlorobenzene	ND	ug/L	258	5	12/13/13 12:58	12/20/13 23:52	118-74-1	
Hexachlorocyclopentadiene	ND	ug/L	1290	5	12/13/13 12:58	12/20/13 23:52	77-47-4	
Hexachloroethane	ND	ug/L	258	5	12/13/13 12:58	12/20/13 23:52	67-72-1	
Indeno(1,2,3-cd)pyrene	ND	ug/L	258	5	12/13/13 12:58	12/20/13 23:52	193-39-5	

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ANALYTICAL RESULTS

Project: LIBMAN
Pace Project No.: 10251856

Sample: LIBMAN Lab ID: 10251856001 Collected: 12/09/13 01:20 Received: 12/10/13 11:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV	Analytical Method: EPA 625 Preparation Method: EPA 625							
Isophorone	ND	ug/L	258	5	12/13/13 12:58	12/20/13 23:52	78-59-1	
2-Methylnaphthalene	ND	ug/L	258	5	12/13/13 12:58	12/20/13 23:52	91-57-6	
2-Methylphenol(o-Cresol)	ND	ug/L	258	5	12/13/13 12:58	12/20/13 23:52	95-48-7	
3&4-Methylphenol	**902**	ug/L	515	5	12/13/13 12:58	12/20/13 23:52		
Naphthalene	ND	ug/L	258	5	12/13/13 12:58	12/20/13 23:52	91-20-3	
2-Nitroaniline	ND	ug/L	1290	5	12/13/13 12:58	12/20/13 23:52	88-74-4	
3-Nitroaniline	ND	ug/L	1290	5	12/13/13 12:58	12/20/13 23:52	99-09-2	L2
4-Nitroaniline	ND	ug/L	1290	5	12/13/13 12:58	12/20/13 23:52	100-01-6	
Nitrobenzene	ND	ug/L	258	5	12/13/13 12:58	12/20/13 23:52	98-95-3	
2-Nitrophenol	ND	ug/L	258	5	12/13/13 12:58	12/20/13 23:52	88-75-5	
4-Nitrophenol	ND	ug/L	1290	5	12/13/13 12:58	12/20/13 23:52	100-02-7	
N-Nitrosodimethylamine	ND	ug/L	258	5	12/13/13 12:58	12/20/13 23:52	62-75-9	
N-Nitroso-di-n-propylamine	ND	ug/L	258	5	12/13/13 12:58	12/20/13 23:52	621-64-7	
N-Nitrosodiphenylamine	ND	ug/L	258	5	12/13/13 12:58	12/20/13 23:52	86-30-6	L2
Pentachlorophenol	ND	ug/L	593	5	12/13/13 12:58	12/20/13 23:52	87-86-5	
Phenanthrene	ND	ug/L	258	5	12/13/13 12:58	12/20/13 23:52	85-01-8	
Phenol	ND	ug/L	258	5	12/13/13 12:58	12/20/13 23:52	108-95-2	
Pyrene	ND	ug/L	258	5	12/13/13 12:58	12/20/13 23:52	129-00-0	
1,2,4-Trichlorobenzene	ND	ug/L	258	5	12/13/13 12:58	12/20/13 23:52	120-82-1	
2,4,5-Trichlorophenol	ND	ug/L	1290	5	12/13/13 12:58	12/20/13 23:52	95-95-4	
2,4,6-Trichlorophenol	ND	ug/L	258	5	12/13/13 12:58	12/20/13 23:52	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	75	%.	61-125	5	12/13/13 12:58	12/20/13 23:52	4165-60-0	P3
2-Fluorobiphenyl (S)	77	%.	67-125	5	12/13/13 12:58	12/20/13 23:52	321-60-8	
Terphenyl-d14 (S)	85	%.	64-125	5	12/13/13 12:58	12/20/13 23:52	1718-51-0	
Phenol-d6 (S)	91	%.	30-137	5	12/13/13 12:58	12/20/13 23:52	13127-88-3	
2-Fluorophenol (S)	85	%.	30-125	5	12/13/13 12:58	12/20/13 23:52	367-12-4	
2,4,6-Tribromophenol (S)	87	%.	52-125	5	12/13/13 12:58	12/20/13 23:52	118-79-6	
624 MSV	Analytical Method: EPA 624							
Acetone	**263**	ug/L	100	5		12/23/13 22:07	67-64-1	
Allyl chloride	ND	ug/L	20.0	5		12/23/13 22:07	107-05-1	
Benzene	ND	ug/L	5.0	5		12/23/13 22:07	71-43-2	
Bromobenzene	ND	ug/L	5.0	5		12/23/13 22:07	108-86-1	
Bromochloromethane	ND	ug/L	5.0	5		12/23/13 22:07	74-97-5	
Bromodichloromethane	ND	ug/L	5.0	5		12/23/13 22:07	75-27-4	
Bromoform	ND	ug/L	20.0	5		12/23/13 22:07	75-25-2	
Bromomethane	ND	ug/L	20.0	5		12/23/13 22:07	74-83-9	
2-Butanone (MEK)	ND	ug/L	25.0	5		12/23/13 22:07	78-93-3	
n-Butylbenzene	ND	ug/L	5.0	5		12/23/13 22:07	104-51-8	
sec-Butylbenzene	ND	ug/L	5.0	5		12/23/13 22:07	135-98-8	
tert-Butylbenzene	ND	ug/L	5.0	5		12/23/13 22:07	98-06-6	
Carbon tetrachloride	ND	ug/L	5.0	5		12/23/13 22:07	56-23-5	
Chlorobenzene	ND	ug/L	5.0	5		12/23/13 22:07	108-90-7	
Chloroethane	ND	ug/L	5.0	5		12/23/13 22:07	75-00-3	
2-Chloroethylvinyl ether	ND	ug/L	50.0	5		12/23/13 22:07	110-75-8	
Chloroform	ND	ug/L	5.0	5		12/23/13 22:07	67-66-3	

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ANALYTICAL RESULTS

Project: LIBMAN
Pace Project No.: 10251856

Sample: LIBMAN Lab ID: **10251856001** Collected: 12/09/13 01:20 Received: 12/10/13 11:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624 MSV	Analytical Method: EPA 624							
Chloromethane	ND	ug/L	20.0	5		12/23/13 22:07	74-87-3	
2-Chlorotoluene	ND	ug/L	5.0	5		12/23/13 22:07	95-49-8	
4-Chlorotoluene	ND	ug/L	5.0	5		12/23/13 22:07	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	20.0	5		12/23/13 22:07	96-12-8	
Dibromochloromethane	ND	ug/L	5.0	5		12/23/13 22:07	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	5.0	5		12/23/13 22:07	106-93-4	
Dibromomethane	ND	ug/L	20.0	5		12/23/13 22:07	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	5.0	5		12/23/13 22:07	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	5.0	5		12/23/13 22:07	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	5.0	5		12/23/13 22:07	106-46-7	
Dichlorodifluoromethane	ND	ug/L	5.0	5		12/23/13 22:07	75-71-8	
1,1-Dichloroethane	ND	ug/L	5.0	5		12/23/13 22:07	75-34-3	
1,2-Dichloroethane	ND	ug/L	5.0	5		12/23/13 22:07	107-06-2	
1,1-Dichloroethene	ND	ug/L	5.0	5		12/23/13 22:07	75-35-4	
cis-1,2-Dichloroethene	**5.6**	ug/L	5.0	5		12/23/13 22:07	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	5		12/23/13 22:07	156-60-5	
Dichlorofluoromethane	ND	ug/L	5.0	5		12/23/13 22:07	75-43-4	
1,2-Dichloropropane	ND	ug/L	20.0	5		12/23/13 22:07	78-87-5	
1,3-Dichloropropane	ND	ug/L	5.0	5		12/23/13 22:07	142-28-9	
2,2-Dichloropropane	ND	ug/L	20.0	5		12/23/13 22:07	594-20-7	
1,1-Dichloropropene	ND	ug/L	5.0	5		12/23/13 22:07	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	20.0	5		12/23/13 22:07	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	20.0	5		12/23/13 22:07	10061-02-6	
Diethyl ether (Ethyl ether)	ND	ug/L	20.0	5		12/23/13 22:07	60-29-7	
Ethylbenzene	ND	ug/L	5.0	5		12/23/13 22:07	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	5.0	5		12/23/13 22:07	87-68-3	
Isopropylbenzene (Cumene)	ND	ug/L	5.0	5		12/23/13 22:07	98-82-8	
p-Isopropyltoluene	ND	ug/L	5.0	5		12/23/13 22:07	99-87-6	
Methylene Chloride	ND	ug/L	20.0	5		12/23/13 22:07	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	25.0	5		12/23/13 22:07	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	5.0	5		12/23/13 22:07	1634-04-4	
Naphthalene	ND	ug/L	20.0	5		12/23/13 22:07	91-20-3	
n-Propylbenzene	ND	ug/L	5.0	5		12/23/13 22:07	103-65-1	
Styrene	ND	ug/L	5.0	5		12/23/13 22:07	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	5.0	5		12/23/13 22:07	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	5.0	5		12/23/13 22:07	79-34-5	
Tetrachloroethene	ND	ug/L	5.0	5		12/23/13 22:07	127-18-4	
Tetrahydrofuran	ND	ug/L	50.0	5		12/23/13 22:07	109-99-9	
Toluene	ND	ug/L	5.0	5		12/23/13 22:07	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	5.0	5		12/23/13 22:07	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	5.0	5		12/23/13 22:07	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	5.0	5		12/23/13 22:07	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	5.0	5		12/23/13 22:07	79-00-5	
Trichloroethene	**33.0**	ug/L	2.0	5		12/23/13 22:07	79-01-6	
Trichlorofluoromethane	ND	ug/L	5.0	5		12/23/13 22:07	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	20.0	5		12/23/13 22:07	96-18-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	5.0	5		12/23/13 22:07	76-13-1	

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ANALYTICAL RESULTS

Project: LIBMAN
Pace Project No.: 10251856

Sample: LIBMAN **Lab ID: 10251856001** Collected: 12/09/13 01:20 Received: 12/10/13 11:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624 MSV	Analytical Method: EPA 624							
1,2,4-Trimethylbenzene	ND	ug/L	5.0	5		12/23/13 22:07	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	5.0	5		12/23/13 22:07	108-67-8	
Vinyl chloride	ND	ug/L	2.0	5		12/23/13 22:07	75-01-4	
Xylene (Total)	ND	ug/L	15.0	5		12/23/13 22:07	1330-20-7	
m&p-Xylene	ND	ug/L	10.0	5		12/23/13 22:07	179601-23-1	
o-Xylene	ND	ug/L	5.0	5		12/23/13 22:07	95-47-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	105	%.	75-125	5		12/23/13 22:07	17060-07-0	F1,HS
Toluene-d8 (S)	98	%.	75-125	5		12/23/13 22:07	2037-26-5	
4-Bromofluorobenzene (S)	103	%.	75-125	5		12/23/13 22:07	460-00-4	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	**6.6**	Std. Units	0.10	1		12/18/13 10:53		H6
SM4500CN-E Cyanide	Analytical Method: SM 4500-CN-E							
Cyanide	ND	ug/L	10.0	1		12/20/13 20:27	57-12-5	

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QUALITY CONTROL DATA

Project: LIBMAN
Pace Project No.: 10251856

QC Batch: MPRP/43718 | Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 | Analysis Description: 200.7 MET
Associated Lab Samples: 10251856001

METHOD BLANK: 1593437 | Matrix: Water
Associated Lab Samples: 10251856001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Cadmium	ug/L	ND	3.0	12/13/13 13:28	
Chromium	ug/L	ND	10.0	12/13/13 13:28	
Copper	ug/L	ND	10.0	12/13/13 13:28	
Lead	ug/L	ND	10.0	12/13/13 13:28	
Nickel	ug/L	ND	20.0	12/13/13 13:28	
Silver	ug/L	ND	10.0	12/13/13 13:28	
Zinc	ug/L	ND	20.0	12/13/13 13:28	

LABORATORY CONTROL SAMPLE: 1593438

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cadmium	ug/L	1000	968	97	85-115	
Chromium	ug/L	1000	969	97	85-115	
Copper	ug/L	1000	946	95	85-115	
Lead	ug/L	1000	943	94	85-115	
Nickel	ug/L	1000	975	97	85-115	
Silver	ug/L	500	467	93	85-115	
Zinc	ug/L	1000	987	99	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1593439 1593440

Parameter	Units	10251309003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cadmium	ug/L	ND	1000	1000	982	960	98	96	70-130	2	30	
Chromium	ug/L	ND	1000	1000	983	957	98	95	70-130	3	30	
Copper	ug/L	627	1000	1000	1650	1620	102	100	70-130	1	30	
Lead	ug/L	ND	1000	1000	956	931	95	93	70-130	3	30	
Nickel	ug/L	ND	1000	1000	955	927	95	92	70-130	3	30	
Silver	ug/L	ND	500	500	468	455	93	90	70-130	3	30	
Zinc	ug/L	2190	1000	1000	3140	3070	95	88	70-130	2	30	

MATRIX SPIKE SAMPLE: 1593441

Parameter	Units	10251922001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Cadmium	ug/L	ND	1000	1000	100	70-130	
Chromium	ug/L	ND	1000	992	99	70-130	
Copper	ug/L	24.3	1000	1020	100	70-130	
Lead	ug/L	ND	1000	980	98	70-130	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: LIBMAN
Pace Project No.: 10251856

MATRIX SPIKE SAMPLE: 1593441

Parameter	Units	10251922001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nickel	ug/L	ND	1000	999	100	70-130	
Silver	ug/L	ND	500	467	92	70-130	
Zinc	ug/L	51.8	1000	1080	103	70-130	

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QUALITY CONTROL DATA

Project: LIBMAN
Pace Project No.: 10251856

QC Batch: MSV/26007 | Analysis Method: EPA 624
QC Batch Method: EPA 624 | Analysis Description: 624 MSV
Associated Lab Samples: 10251856001

METHOD BLANK: 1600950 | Matrix: Water
Associated Lab Samples: 10251856001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	12/23/13 14:33	
1,1,1-Trichloroethane	ug/L	ND	1.0	12/23/13 14:33	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	12/23/13 14:33	
1,1,2-Trichloroethane	ug/L	ND	1.0	12/23/13 14:33	
1,1,2-Trichlorotrifluoroethane	ug/L	ND	1.0	12/23/13 14:33	
1,1-Dichloroethane	ug/L	ND	1.0	12/23/13 14:33	
1,1-Dichloroethene	ug/L	ND	1.0	12/23/13 14:33	
1,1-Dichloropropene	ug/L	ND	1.0	12/23/13 14:33	
1,2,3-Trichlorobenzene	ug/L	ND	1.0	12/23/13 14:33	
1,2,3-Trichloropropane	ug/L	ND	4.0	12/23/13 14:33	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	12/23/13 14:33	
1,2,4-Trimethylbenzene	ug/L	ND	1.0	12/23/13 14:33	
1,2-Dibromo-3-chloropropane	ug/L	ND	4.0	12/23/13 14:33	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	12/23/13 14:33	
1,2-Dichlorobenzene	ug/L	ND	1.0	12/23/13 14:33	
1,2-Dichloroethane	ug/L	ND	1.0	12/23/13 14:33	
1,2-Dichloropropane	ug/L	ND	4.0	12/23/13 14:33	
1,3,5-Trimethylbenzene	ug/L	ND	1.0	12/23/13 14:33	
1,3-Dichlorobenzene	ug/L	ND	1.0	12/23/13 14:33	
1,3-Dichloropropane	ug/L	ND	1.0	12/23/13 14:33	
1,4-Dichlorobenzene	ug/L	ND	1.0	12/23/13 14:33	
2,2-Dichloropropane	ug/L	ND	4.0	12/23/13 14:33	
2-Butanone (MEK)	ug/L	ND	5.0	12/23/13 14:33	
2-Chloroethylvinyl ether	ug/L	ND	10.0	12/23/13 14:33	
2-Chlorotoluene	ug/L	ND	1.0	12/23/13 14:33	
4-Chlorotoluene	ug/L	ND	1.0	12/23/13 14:33	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	5.0	12/23/13 14:33	
Acetone	ug/L	ND	20.0	12/23/13 14:33	
Allyl chloride	ug/L	ND	4.0	12/23/13 14:33	
Benzene	ug/L	ND	1.0	12/23/13 14:33	
Bromobenzene	ug/L	ND	1.0	12/23/13 14:33	
Bromochloromethane	ug/L	ND	1.0	12/23/13 14:33	
Bromodichloromethane	ug/L	ND	1.0	12/23/13 14:33	
Bromoform	ug/L	ND	4.0	12/23/13 14:33	
Bromomethane	ug/L	ND	4.0	12/23/13 14:33	
Carbon tetrachloride	ug/L	ND	1.0	12/23/13 14:33	
Chlorobenzene	ug/L	ND	1.0	12/23/13 14:33	
Chloroethane	ug/L	ND	1.0	12/23/13 14:33	
Chloroform	ug/L	ND	1.0	12/23/13 14:33	
Chloromethane	ug/L	ND	4.0	12/23/13 14:33	
cis-1,2-Dichloroethene	ug/L	ND	1.0	12/23/13 14:33	
cis-1,3-Dichloropropene	ug/L	ND	4.0	12/23/13 14:33	
Dibromochloromethane	ug/L	ND	1.0	12/23/13 14:33	

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QUALITY CONTROL DATA

Project: LIBMAN
Pace Project No.: 10251856

METHOD BLANK: 1600950 Matrix: Water
Associated Lab Samples: 10251856001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Dibromomethane	ug/L	ND	4.0	12/23/13 14:33	
Dichlorodifluoromethane	ug/L	ND	1.0	12/23/13 14:33	
Dichlorofluoromethane	ug/L	ND	1.0	12/23/13 14:33	
Diethyl ether (Ethyl ether)	ug/L	ND	4.0	12/23/13 14:33	
Ethylbenzene	ug/L	ND	1.0	12/23/13 14:33	
Hexachloro-1,3-butadiene	ug/L	ND	1.0	12/23/13 14:33	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	12/23/13 14:33	
m&p-Xylene	ug/L	ND	2.0	12/23/13 14:33	
Methyl-tert-butyl ether	ug/L	ND	1.0	12/23/13 14:33	
Methylene Chloride	ug/L	ND	4.0	12/23/13 14:33	
n-Butylbenzene	ug/L	ND	1.0	12/23/13 14:33	
n-Propylbenzene	ug/L	ND	1.0	12/23/13 14:33	
Naphthalene	ug/L	ND	4.0	12/23/13 14:33	
o-Xylene	ug/L	ND	1.0	12/23/13 14:33	
p-Isopropyltoluene	ug/L	ND	1.0	12/23/13 14:33	
sec-Butylbenzene	ug/L	ND	1.0	12/23/13 14:33	
Styrene	ug/L	ND	1.0	12/23/13 14:33	
tert-Butylbenzene	ug/L	ND	1.0	12/23/13 14:33	
Tetrachloroethene	ug/L	ND	1.0	12/23/13 14:33	
Tetrahydrofuran	ug/L	ND	10.0	12/23/13 14:33	
Toluene	ug/L	ND	1.0	12/23/13 14:33	
trans-1,2-Dichloroethene	ug/L	ND	1.0	12/23/13 14:33	
trans-1,3-Dichloropropene	ug/L	ND	4.0	12/23/13 14:33	
Trichloroethene	ug/L	ND	0.40	12/23/13 14:33	
Trichlorofluoromethane	ug/L	ND	1.0	12/23/13 14:33	
Vinyl chloride	ug/L	ND	0.40	12/23/13 14:33	
Xylene (Total)	ug/L	ND	3.0	12/23/13 14:33	
1,2-Dichloroethane-d4 (S)	%.	96	75-125	12/23/13 14:33	
4-Bromofluorobenzene (S)	%.	102	75-125	12/23/13 14:33	
Toluene-d8 (S)	%.	97	75-125	12/23/13 14:33	

LABORATORY CONTROL SAMPLE & LCSD: 1600951 1601193

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	21.1	20.4	105	102	75-125	3	20	
1,1,1-Trichloroethane	ug/L	20	23.2	21.6	116	108	75-125	7	20	
1,1,2,2-Tetrachloroethane	ug/L	20	21.2	20.5	106	103	75-125	3	20	
1,1,2-Trichloroethane	ug/L	20	20.7	20.1	104	101	75-125	3	20	
1,1,2-Trichlorotrifluoroethane	ug/L	20	18.2	16.9	91	85	51-134	7	20	
1,1-Dichloroethane	ug/L	20	21.4	20.0	107	100	74-125	7	20	
1,1-Dichloroethene	ug/L	20	21.9	19.8	110	99	74-125	10	20	
1,1-Dichloropropene	ug/L	20	21.9	20.4	109	102	73-125	7	20	
1,2,3-Trichlorobenzene	ug/L	20	19.6	18.8	98	94	75-125	4	20	
1,2,3-Trichloropropane	ug/L	20	20.3	19.5	101	97	75-125	4	20	
1,2,4-Trichlorobenzene	ug/L	20	19.1	18.5	95	92	75-125	3	20	

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QUALITY CONTROL DATA

Project: LIBMAN
Pace Project No.: 10251856

LABORATORY CONTROL SAMPLE & LCSD: 1600951 1601193

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,2,4-Trimethylbenzene	ug/L	20	19.2	18.4	96	92	73-125	4	20	
1,2-Dibromo-3-chloropropane	ug/L	50	51.8	48.8	104	98	72-125	6	20	
1,2-Dibromoethane (EDB)	ug/L	20	20.9	21.1	105	106	75-125	9	20	
1,2-Dichlorobenzene	ug/L	20	18.6	18.3	93	91	75-125	2	20	
1,2-Dichloroethane	ug/L	20	19.6	19.2	98	96	75-125	2	20	
1,2-Dichloropropane	ug/L	20	21.4	20.6	107	103	75-125	4	20	
1,3,5-Trimethylbenzene	ug/L	20	19.5	18.5	98	92	75-125	6	20	
1,3-Dichlorobenzene	ug/L	20	18.5	18.1	93	91	75-125	2	20	
1,3-Dichloropropane	ug/L	20	19.9	19.5	100	97	75-125	2	20	
1,4-Dichlorobenzene	ug/L	20	18.0	17.8	90	89	74-125	9	20	
2,2-Dichloropropane	ug/L	20	24.4	22.3	122	112	70-131	9	20	
2-Butanone (MEK)	ug/L	100	95.3	88.7	95	89	61-125	7	20	
2-Chloroethylvinyl ether	ug/L	50	45.3	46.2	91	92	38-150	2	20	
2-Chlorotoluene	ug/L	20	19.2	18.4	96	92	71-125	4	20	
4-Chlorotoluene	ug/L	20	19.5	18.6	97	93	72-125	4	20	
4-Methyl-2-pentanone (MIBK)	ug/L	100	102	96.5	102	97	68-125	6	20	
Acetone	ug/L	100	112	101	112	101	75-125	10	20	
Allyl chloride	ug/L	20	22.5	20.5	113	102	75-128	10	20	
Benzene	ug/L	20	19.5	18.5	97	92	74-125	5	20	
Bromobenzene	ug/L	20	19.2	18.7	96	94	75-125	2	20	
Bromochloromethane	ug/L	20	21.7	20.3	109	102	75-125	7	20	
Bromodichloromethane	ug/L	20	22.2	21.5	111	108	75-125	3	20	
Bromoform	ug/L	20	21.1	21.0	106	105	75-125	7	20	
Bromomethane	ug/L	20	14.0	16.2	70	81	40-150	14	20	
Carbon tetrachloride	ug/L	20	24.8	22.0	124	110	75-125	12	20	
Chlorobenzene	ug/L	20	19.5	18.8	97	94	75-125	4	20	
Chloroethane	ug/L	20	21.5	19.9	108	100	68-128	8	20	
Chloroform	ug/L	20	21.7	20.5	108	102	75-125	6	20	
Chloromethane	ug/L	20	18.3	17.5	91	87	59-126	4	20	
cis-1,2-Dichloroethene	ug/L	20	20.8	19.5	104	97	75-125	7	20	
cis-1,3-Dichloropropene	ug/L	20	22.2	21.4	111	107	75-125	4	20	
Dibromochloromethane	ug/L	20	22.6	22.0	113	110	75-125	3	20	
Dibromomethane	ug/L	20	21.2	20.8	106	104	75-125	2	20	
Dichlorodifluoromethane	ug/L	20	16.2	15.1	81	75	43-135	7	20	
Dichlorofluoromethane	ug/L	20	20.9	19.6	104	98	72-125	6	20	
Diethyl ether (Ethyl ether)	ug/L	20	20.0	19.6	100	98	75-125	2	20	
Ethylbenzene	ug/L	20	19.2	18.4	96	92	75-125	4	20	
Hexachloro-1,3-butadiene	ug/L	20	20.3	19.9	102	99	68-127	2	20	
Isopropylbenzene (Cumene)	ug/L	20	19.9	19.3	100	96	75-125	3	20	
m&p-Xylene	ug/L	40	40.1	38.6	100	97	74-125	4	20	
Methyl-tert-butyl ether	ug/L	20	20.9	20.0	104	100	75-125	5	20	
Methylene Chloride	ug/L	20	20.6	19.6	103	98	74-125	5	20	
n-Butylbenzene	ug/L	20	19.6	18.4	98	92	71-125	6	20	
n-Propylbenzene	ug/L	20	19.5	18.5	97	92	73-125	5	20	
Naphthalene	ug/L	20	19.9	19.3	100	96	73-125	3	20	
o-Xylene	ug/L	20	19.8	19.2	99	96	74-125	3	20	
p-Isopropyltoluene	ug/L	20	19.5	18.4	98	92	73-125	6	20	
sec-Butylbenzene	ug/L	20	19.9	18.6	99	93	71-125	6	20	

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(612)607-1700

QUALITY CONTROL DATA

Project: LIBMAN
Pace Project No.: 10251856

LABORATORY CONTROL SAMPLE & LCSD: 1600951 1601193

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Styrene	ug/L	20	20.0	19.7	100	98	75-125	2	20	
tert-Butylbenzene	ug/L	20	19.8	18.5	99	92	73-125	7	20	
Tetrachloroethene	ug/L	20	20.3	19.4	102	97	72-125	4	20	
Tetrahydrofuran	ug/L	200	201	192	100	96	67-125	4	20	
Toluene	ug/L	20	19.6	18.9	98	94	75-125	4	20	
trans-1,2-Dichloroethene	ug/L	20	23.4	21.1	117	105	72-126	10	20	
trans-1,3-Dichloropropene	ug/L	20	21.7	21.4	109	107	75-125	1	20	
Trichloroethene	ug/L	20	20.2	18.7	101	94	75-125	8	20	
Trichlorofluoromethane	ug/L	20	20.9	18.5	105	92	71-125	12	20	
Vinyl chloride	ug/L	20	21.0	19.4	105	97	69-128	8	20	
Xylene (Total)	ug/L	60	59.8	57.8	100	96	74-125	3	20	
1,2-Dichloroethane-d4 (S)	%.				100	99	75-125			
4-Bromofluorobenzene (S)	%.				102	102	75-125			
Toluene-d8 (S)	%.				101	103	75-125			

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QUALITY CONTROL DATA

Project: LIBMAN
Pace Project No.: 10251856

QC Batch: OEXT/23925 | Analysis Method: EPA 625
QC Batch Method: EPA 625 | Analysis Description: 625 MSS
Associated Lab Samples: 10251856001

METHOD BLANK: 1594560 | Matrix: Water
Associated Lab Samples: 10251856001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	10.0	12/19/13 20:37	
1,2-Dichlorobenzene	ug/L	ND	10.0	12/19/13 20:37	
1,2-Diphenylhydrazine	ug/L	ND	10.0	12/19/13 20:37	
1,3-Dichlorobenzene	ug/L	ND	10.0	12/19/13 20:37	
1,4-Dichlorobenzene	ug/L	ND	10.0	12/19/13 20:37	
2,4,5-Trichlorophenol	ug/L	ND	50.0	12/19/13 20:37	
2,4,6-Trichlorophenol	ug/L	ND	10.0	12/19/13 20:37	
2,4-Dichlorophenol	ug/L	ND	10.0	12/19/13 20:37	
2,4-Dimethylphenol	ug/L	ND	10.0	12/19/13 20:37	
2,4-Dinitrophenol	ug/L	ND	50.0	12/19/13 20:37	
2,4-Dinitrotoluene	ug/L	ND	10.0	12/19/13 20:37	
2,6-Dinitrotoluene	ug/L	ND	10.0	12/19/13 20:37	
2-Chloronaphthalene	ug/L	ND	10.0	12/19/13 20:37	
2-Chlorophenol	ug/L	ND	10.0	12/19/13 20:37	
2-Methylnaphthalene	ug/L	ND	10.0	12/19/13 20:37	
2-Methylphenol(o-Cresol)	ug/L	ND	10.0	12/19/13 20:37	
2-Nitroaniline	ug/L	ND	50.0	12/19/13 20:37	
2-Nitrophenol	ug/L	ND	10.0	12/19/13 20:37	
3&4-Methylphenol	ug/L	ND	20.0	12/19/13 20:37	
3,3'-Dichlorobenzidine	ug/L	ND	20.0	12/19/13 20:37	
3-Nitroaniline	ug/L	ND	50.0	12/19/13 20:37	
4,6-Dinitro-2-methylphenol	ug/L	ND	50.0	12/19/13 20:37	
4-Bromophenylphenyl ether	ug/L	ND	10.0	12/19/13 20:37	
4-Chloro-3-methylphenol	ug/L	ND	10.0	12/19/13 20:37	
4-Chloroaniline	ug/L	ND	50.0	12/19/13 20:37	
4-Chlorophenylphenyl ether	ug/L	ND	10.0	12/19/13 20:37	
4-Nitroaniline	ug/L	ND	50.0	12/19/13 20:37	
4-Nitrophenol	ug/L	ND	50.0	12/19/13 20:37	
Acenaphthene	ug/L	ND	10.0	12/19/13 20:37	
Acenaphthylene	ug/L	ND	10.0	12/19/13 20:37	
Anthracene	ug/L	ND	10.0	12/19/13 20:37	
Benzo(a)anthracene	ug/L	ND	10.0	12/19/13 20:37	
Benzo(a)pyrene	ug/L	ND	10.0	12/19/13 20:37	
Benzo(b)fluoranthene	ug/L	ND	10.0	12/19/13 20:37	
Benzo(g,h,i)perylene	ug/L	ND	10.0	12/19/13 20:37	
Benzo(k)fluoranthene	ug/L	ND	10.0	12/19/13 20:37	
Benzoic acid	ug/L	ND	50.0	12/19/13 20:37	
Benzyl alcohol	ug/L	ND	10.0	12/19/13 20:37	
bis(2-Chloroethoxy)methane	ug/L	ND	10.0	12/19/13 20:37	
bis(2-Chloroethyl) ether	ug/L	ND	10.0	12/19/13 20:37	
bis(2-Chloroisopropyl) ether	ug/L	ND	10.0	12/19/13 20:37	
bis(2-Ethylhexyl)phthalate	ug/L	ND	10.0	12/19/13 20:37	
Butylbenzylphthalate	ug/L	ND	10.0	12/19/13 20:37	

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QUALITY CONTROL DATA

Project: LIBMAN
Pace Project No.: 10251856

METHOD BLANK: 1594560 Matrix: Water
Associated Lab Samples: 10251856001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Carbazole	ug/L	ND	10.0	12/19/13 20:37	
Chrysene	ug/L	ND	10.0	12/19/13 20:37	
Di-n-butylphthalate	ug/L	ND	10.0	12/19/13 20:37	
Di-n-octylphthalate	ug/L	ND	10.0	12/19/13 20:37	
Dibenz(a,h)anthracene	ug/L	ND	10.0	12/19/13 20:37	
Dibenzofuran	ug/L	ND	10.0	12/19/13 20:37	
Diethylphthalate	ug/L	ND	10.0	12/19/13 20:37	
Dimethylphthalate	ug/L	ND	10.0	12/19/13 20:37	
Fluoranthene	ug/L	ND	10.0	12/19/13 20:37	
Fluorene	ug/L	ND	10.0	12/19/13 20:37	
Hexachloro-1,3-butadiene	ug/L	ND	10.0	12/19/13 20:37	
Hexachlorobenzene	ug/L	ND	10.0	12/19/13 20:37	
Hexachlorocyclopentadiene	ug/L	ND	50.0	12/19/13 20:37	
Hexachloroethane	ug/L	ND	10.0	12/19/13 20:37	
Indeno(1,2,3-cd)pyrene	ug/L	ND	10.0	12/19/13 20:37	
Isophorone	ug/L	ND	10.0	12/19/13 20:37	
N-Nitroso-di-n-propylamine	ug/L	ND	10.0	12/19/13 20:37	
N-Nitrosodimethylamine	ug/L	ND	10.0	12/19/13 20:37	
N-Nitrosodiphenylamine	ug/L	ND	10.0	12/19/13 20:37	
Naphthalene	ug/L	ND	10.0	12/19/13 20:37	
Nitrobenzene	ug/L	ND	10.0	12/19/13 20:37	
Pentachlorophenol	ug/L	ND	23.0	12/19/13 20:37	
Phenanthrene	ug/L	ND	10.0	12/19/13 20:37	
Phenol	ug/L	ND	10.0	12/19/13 20:37	
Pyrene	ug/L	ND	10.0	12/19/13 20:37	
2,4,6-Tribromophenol (S)	%.	84	52-125	12/19/13 20:37	
2-Fluorobiphenyl (S)	%.	76	67-125	12/19/13 20:37	
2-Fluorophenol (S)	%.	72	30-125	12/19/13 20:37	
Nitrobenzene-d5 (S)	%.	67	61-125	12/19/13 20:37	
Phenol-d6 (S)	%.	76	30-137	12/19/13 20:37	
Terphenyl-d14 (S)	%.	89	64-125	12/19/13 20:37	

LABORATORY CONTROL SAMPLE & LCSD: 1594561 1594562

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	40.3	37.7	81	75	59-125	7	20	
1,2-Dichlorobenzene	ug/L	50	36.7	34.6	73	69	53-125	6	20	
1,2-Diphenylhydrazine	ug/L	50	43.2	40.9	86	82	69-125	5	20	
1,3-Dichlorobenzene	ug/L	50	35.8	33.4	72	67	51-125	7	20	
1,4-Dichlorobenzene	ug/L	50	36.2	33.6	72	67	52-125	8	20	
2,4,5-Trichlorophenol	ug/L	50	43.7J	43.4J	87	87	68-125		20	
2,4,6-Trichlorophenol	ug/L	50	42.0	42.5	84	85	68-125	1	20	
2,4-Dichlorophenol	ug/L	50	40.5	40.7	81	81	67-125	6	20	
2,4-Dimethylphenol	ug/L	50	29.5	38.6	59	77	32-125	27	20	R1
2,4-Dinitrophenol	ug/L	50	39.3J	40.3J	79	81	30-142		20	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: LIBMAN
Pace Project No.: 10251856

LABORATORY CONTROL SAMPLE & LCSD: 1594561 1594562

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
2,4-Dinitrotoluene	ug/L	50	42.9	42.4	86	85	69-125	1	20	
2,6-Dinitrotoluene	ug/L	50	43.3	43.3	87	87	69-125	.08	20	
2-Chloronaphthalene	ug/L	50	41.1	41.4	82	83	69-125	.7	20	
2-Chlorophenol	ug/L	50	39.5	37.3	79	75	58-125	6	20	
2-Methylnaphthalene	ug/L	50	42.1	41.8	84	84	67-125	.9	20	
2-Methylphenol(o-Cresol)	ug/L	50	38.0	38.6	76	77	56-125	2	20	
2-Nitroaniline	ug/L	50	43.3J	43J	87	86	63-125		20	
2-Nitrophenol	ug/L	50	41.0	40.4	82	81	55-125	1	20	
3&4-Methylphenol	ug/L	50	39.7	39.2	79	78	59-125	1	20	
3,3'-Dichlorobenzidine	ug/L	50	16.2J	5.3J	32	11	30-150		20	L0
3-Nitroaniline	ug/L	50	29.1J	11.9J	58	24	30-150		20	L0
4,6-Dinitro-2-methylphenol	ug/L	50	41.6J	42.3J	83	85	30-150		20	
4-Bromophenylphenyl ether	ug/L	50	42.0	42.0	84	84	71-125	.09	20	
4-Chloro-3-methylphenol	ug/L	50	41.8	42.4	84	85	69-125	1	20	
4-Chloroaniline	ug/L	50	16.1J	ND	32	8	30-150		20	L0
4-Chlorophenylphenyl ether	ug/L	50	41.7	41.9	83	84	72-125	.4	20	
4-Nitroaniline	ug/L	50	36.8J	30.2J	74	60	30-138		20	
4-Nitrophenol	ug/L	50	42.3J	42.7J	85	85	62-125		20	
Acenaphthene	ug/L	50	41.6	41.9	83	84	68-125	.8	20	
Acenaphthylene	ug/L	50	41.1	41.0	82	82	69-125	.3	20	
Anthracene	ug/L	50	41.7	41.3	83	83	71-125	1	20	
Benzo(a)anthracene	ug/L	50	41.8	41.7	84	83	73-125	.1	20	
Benzo(a)pyrene	ug/L	50	41.0	40.9	82	82	71-125	.4	20	
Benzo(b)fluoranthene	ug/L	50	42.7	42.5	85	85	73-125	.3	20	
Benzo(g,h,i)perylene	ug/L	50	42.1	41.8	84	84	72-125	.7	20	
Benzo(k)fluoranthene	ug/L	50	43.5	43.2	87	86	72-125	.6	20	
Benzoic acid	ug/L	50	40.9J	43.1J	82	86	30-125		20	
Benzyl alcohol	ug/L	50	41.2	39.2	82	78	64-125	5	20	
bis(2-Chloroethoxy)methane	ug/L	50	40.1	40.0	80	80	64-125	.3	20	
bis(2-Chloroethyl) ether	ug/L	50	41.1	38.2	82	76	53-125	7	20	
bis(2-Chloroisopropyl) ether	ug/L	50	45.4	42.6	91	85	37-125	6	20	
bis(2-Ethylhexyl)phthalate	ug/L	50	42.8	41.1	86	82	68-125	4	20	
Butylbenzylphthalate	ug/L	50	42.0	40.5	84	81	65-125	4	20	
Carbazole	ug/L	50	41.9	40.8	84	82	70-125	3	20	
Chrysene	ug/L	50	42.2	42.2	84	84	75-125	.05	20	
Di-n-butylphthalate	ug/L	50	43.0	42.2	86	84	69-125	2	20	
Di-n-octylphthalate	ug/L	50	43.0	41.9	86	84	67-125	2	20	
Dibenz(a,h)anthracene	ug/L	50	41.9	41.7	84	83	72-125	.5	20	
Dibenzofuran	ug/L	50	41.7	42.1	83	84	71-125	1	20	
Diethylphthalate	ug/L	50	42.6	42.5	85	85	73-125	.1	20	
Dimethylphthalate	ug/L	50	42.6	41.8	85	84	73-125	2	20	
Fluoranthene	ug/L	50	42.2	41.5	84	83	74-125	2	20	
Fluorene	ug/L	50	42.8	42.7	86	85	72-125	.2	20	
Hexachloro-1,3-butadiene	ug/L	50	36.6	35.0	73	70	57-125	4	20	
Hexachlorobenzene	ug/L	50	43.4	42.8	87	86	72-125	2	20	
Hexachlorocyclopentadiene	ug/L	50	23J	23.3J	46	47	30-125		20	
Hexachloroethane	ug/L	50	35.8	32.8	72	66	37-125	9	20	
Indeno(1,2,3-cd)pyrene	ug/L	50	42.0	41.5	84	83	72-125	1	20	

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QUALITY CONTROL DATA

Project: LIBMAN
Pace Project No.: 10251856

LABORATORY CONTROL SAMPLE & LCSD: 1594561 1594562

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Isophorone	ug/L	50	41.8	41.4	84	83	69-125	.9	20	
N-Nitroso-di-n-propylamine	ug/L	50	40.0	38.3	80	77	63-125	4	20	
N-Nitrosodimethylamine	ug/L	50	38.4	36.1	77	72	49-125	6	20	
N-Nitrosodiphenylamine	ug/L	50	40.7	32.8	81	66	68-125	21	20	L0,R1
Naphthalene	ug/L	50	38.9	37.6	78	75	61-125	4	20	
Nitrobenzene	ug/L	50	40.0	38.9	80	78	62-125	3	20	
Pentachlorophenol	ug/L	50	40.3	40.4	81	81	37-128	.2	20	
Phenanthrene	ug/L	50	42.6	41.8	85	84	73-125	2	20	
Phenol	ug/L	50	39.7	37.7	79	75	60-125	5	20	
Pyrene	ug/L	50	42.5	42.2	85	84	69-125	.7	20	
2,4,6-Tribromophenol (S)	%.				88	90	52-125			
2-Fluorobiphenyl (S)	%.				78	75	67-125			
2-Fluorophenol (S)	%.				74	69	30-125			
Nitrobenzene-d5 (S)	%.				72	67	61-125			
Phenol-d6 (S)	%.				78	75	30-137			
Terphenyl-d14 (S)	%.				87	85	64-125			

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QUALITY CONTROL DATA

Project: LIBMAN
Pace Project No.: 10251856

QC Batch: OEXT/23930 | Analysis Method: EPA 8081
QC Batch Method: EPA 3510 | Analysis Description: 8081 GCS Pesticides
Associated Lab Samples: 10251856001

METHOD BLANK: 1595332 | Matrix: Water
Associated Lab Samples: 10251856001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
4,4'-DDD	ug/L	ND	0.10	12/27/13 00:27	
4,4'-DDE	ug/L	ND	0.10	12/27/13 00:27	
4,4'-DDT	ug/L	ND	0.10	12/27/13 00:27	
Aldrin	ug/L	ND	0.050	12/27/13 00:27	
alpha-BHC	ug/L	ND	0.050	12/27/13 00:27	
alpha-Chlordane	ug/L	ND	0.050	12/27/13 00:27	
beta-BHC	ug/L	ND	0.050	12/27/13 00:27	
Chlordane (Technical)	ug/L	ND	0.50	12/27/13 00:27	
delta-BHC	ug/L	ND	0.050	12/27/13 00:27	
Dieldrin	ug/L	ND	0.10	12/27/13 00:27	
Endosulfan II	ug/L	ND	0.10	12/27/13 00:27	
Endosulfan sulfate	ug/L	ND	0.10	12/27/13 00:27	
Endrin	ug/L	ND	0.10	12/27/13 00:27	
Endrin aldehyde	ug/L	ND	0.10	12/27/13 00:27	
Endrin ketone	ug/L	ND	0.10	12/27/13 00:27	
gamma-BHC (Lindane)	ug/L	ND	0.050	12/27/13 00:27	
gamma-Chlordane	ug/L	ND	0.050	12/27/13 00:27	
Heptachlor	ug/L	ND	0.050	12/27/13 00:27	
Heptachlor epoxide	ug/L	ND	0.050	12/27/13 00:27	
Methoxychlor	ug/L	ND	0.50	12/27/13 00:27	
Toxaphene	ug/L	ND	1.5	12/27/13 00:27	
Decachlorobiphenyl (S)	%.	94	70-130	12/27/13 00:27	
Tetrachloro-m-xylene (S)	%.	90	70-130	12/27/13 00:27	

LABORATORY CONTROL SAMPLE & LCSD: 1595333 1595334

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
4,4'-DDD	ug/L	1	1.1	1.2	115	120	70-130	5	20	
4,4'-DDE	ug/L	1	1.1	1.1	111	113	70-130	2	20	
4,4'-DDT	ug/L	1	1.2	1.3	123	126	70-130	3	20	
Aldrin	ug/L	.5	0.52	0.52	104	105	70-130	1	20	
alpha-BHC	ug/L	.5	0.55	0.56	110	113	70-130	3	20	
alpha-Chlordane	ug/L	.5	0.52	0.52	104	105	70-130	.9	20	
beta-BHC	ug/L	.5	0.52	0.54	103	108	70-130	4	20	
delta-BHC	ug/L	.5	0.55	0.57	110	114	70-130	3	20	
Dieldrin	ug/L	1	1.0	1.0	102	104	70-130	2	20	
Endosulfan II	ug/L	1	1.0	1.1	105	106	70-130	2	20	
Endosulfan sulfate	ug/L	1	1.2	1.2	120	124	70-130	3	20	
Endrin	ug/L	1	1.1	1.1	111	115	70-130	3	20	
Endrin aldehyde	ug/L	1	1.0	1.0	104	104	70-130	.6	20	
Endrin ketone	ug/L	1	1.1	1.1	111	114	70-130	2	20	

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Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: LIBMAN
Pace Project No.: 10251856

LABORATORY CONTROL SAMPLE & LCSD: 1595333 1595334

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
gamma-BHC (Lindane)	ug/L	.5	0.55	0.57	109	114	70-130	4	20	
gamma-Chlordane	ug/L	.5	0.52	0.53	104	106	70-130	2	20	
Heptachlor	ug/L	.5	0.53	0.54	106	109	70-130	3	20	
Heptachlor epoxide	ug/L	.5	0.54	0.55	108	110	70-130	2	20	
Methoxychlor	ug/L	5	5.5	5.7	111	114	70-130	3	20	
Decachlorobiphenyl (S)	%.				98	94	70-130			
Tetrachloro-m-xylene (S)	%.				95	91	70-130			

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QUALITY CONTROL DATA

Project: LIBMAN
Pace Project No.: 10251856

QC Batch: OEXT/23951 | Analysis Method: EPA 8082
QC Batch Method: EPA 3510 | Analysis Description: 8082 GCS PCB
Associated Lab Samples: 10251856001

METHOD BLANK: 1596615 | Matrix: Water
Associated Lab Samples: 10251856001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
PCB-1016 (Aroclor 1016)	ug/L	ND	0.10	12/23/13 14:30	
PCB-1221 (Aroclor 1221)	ug/L	ND	0.10	12/23/13 14:30	
PCB-1232 (Aroclor 1232)	ug/L	ND	0.10	12/23/13 14:30	
PCB-1242 (Aroclor 1242)	ug/L	ND	0.10	12/23/13 14:30	
PCB-1248 (Aroclor 1248)	ug/L	ND	0.10	12/23/13 14:30	
PCB-1254 (Aroclor 1254)	ug/L	ND	0.10	12/23/13 14:30	
PCB-1260 (Aroclor 1260)	ug/L	ND	0.10	12/23/13 14:30	
PCB-1262 (Aroclor 1262)	ug/L	ND	0.10	12/23/13 14:30	
PCB-1268 (Aroclor 1268)	ug/L	ND	0.10	12/23/13 14:30	
Decachlorobiphenyl (S)	%.	67	30-125	12/23/13 14:30	
Tetrachloro-m-xylene (S)	%.	60	39-125	12/23/13 14:30	

LABORATORY CONTROL SAMPLE & LCSD: 1596616 1596617

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
PCB-1016 (Aroclor 1016)	ug/L	2	1.5	1.5	73	75	58-125	3	20	
PCB-1260 (Aroclor 1260)	ug/L	2	1.5	1.6	75	82	53-125	10	20	
Decachlorobiphenyl (S)	%.				69	76	30-125			
Tetrachloro-m-xylene (S)	%.				61	70	39-125			

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QUALITY CONTROL DATA

Project: LIBMAN
Pace Project No.: 10251856

QC Batch: WET/33711
QC Batch Method: SM 4500-H+B
Associated Lab Samples: 10251856001

Analysis Method: SM 4500-H+B
Analysis Description: 4500H+B pH

LABORATORY CONTROL SAMPLE: 1597045

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
pH at 25 Degrees C	Std. Units	5	5.0	100	98-102	H6

SAMPLE DUPLICATE: 1597046

Parameter	Units	10251856001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	6.6	6.6	.3	3	H6

SAMPLE DUPLICATE: 1597047

Parameter	Units	10252089012 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.2	7.3	1	3	H6

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QUALITY CONTROL DATA

Project: LIBMAN
Pace Project No.: 10251856

QC Batch: WETA/16933
QC Batch Method: SM 4500-CN-E
Analysis Method: SM 4500-CN-E
Analysis Description: SM4500CN-E Cyanide
Associated Lab Samples: 10251856001

METHOD BLANK: 1598265
Matrix: Water
Associated Lab Samples: 10251856001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Cyanide	ug/L	ND	10.0	12/20/13 21:14	

LABORATORY CONTROL SAMPLE: 1598266

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cyanide	ug/L	250	230	92	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1598267 1598268

Parameter	Units	10252104005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cyanide	ug/L	6.1J	250	250	208	213	81	83	80-120	3	30	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1598269 1598270

Parameter	Units	10252142001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cyanide	ug/L	ND	250	250	236	228	94	91	80-120	3	30	

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QUALIFIERS

Project: LIBMAN
Pace Project No.: 10251856

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

BATCH QUALIFIERS

Batch: MSSV/10129

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: MSV/26007

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: GCSV/12624

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

D3	Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
F1	The sample was analyzed at a dilution due to foaming of the sample in the purge vessel.
H6	Analysis initiated outside of the 15 minute EPA recommended holding time.
HS	Results are from sample aliquot taken from VOA vial with headspace (air bubble greater than 6 mm diameter).
L0	Analyte recovery in the laboratory control sample (LCS) was outside QC limits.
L2	Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results may be biased low.
P3	Sample extract could not be concentrated to the routine final volume, resulting in elevated reporting limits.
R1	RPD value was outside control limits.
S4	Surrogate recovery not evaluated against control limits due to sample dilution.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: LIBMAN
Pace Project No.: 10251856

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10251856001	**LIBMAN**	EPA 3510	OEXT/23930	EPA 8081	GCSV/12629
10251856001	**LIBMAN**	EPA 3510	OEXT/23951	EPA 8082	GCSV/12624
10251856001	**LIBMAN**	EPA 200.7	MPRP/43718	EPA 200.7	ICP/18397
10251856001	**LIBMAN**	EPA 625	OEXT/23925	EPA 625	MSSV/10129
10251856001	**LIBMAN**	EPA 624	MSV/26007		
10251856001	**LIBMAN**	SM 4500-H+B	WET/33711		
10251856001	**LIBMAN**	SM 4500-CN-E	WETA/16933		

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

1129

10251856

Page: of

1749261

Section A Required Client Information:

Company: Libman
Address: 220 N Sheldon St
Arcola IL 61910
Email To: mwathen@libman.com
Phone: 217-268-2155 Fax:
Requested Due Date/TAT:

Section B Required Project Information:

Report To: Myle Peterson > DM/Pace
Copy To: U.S Compliance / Pace
Purchase Order No.:
Project Name:
Project Number:

Section C Invoice Information:

Attention: Myle / AP > DM/Pace
Company Name: U.S Compliance
Address:
Pace Quote Reference:
Pace Project Manager:
Pace Profile #:

REGULATORY AGENCY: ☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER ☐ UST ☐ RCRA ☐ OTHER

Site Location STATE:

Section D Required Client Information

Matrix Codes MATRIX / CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Tissue TS; Other OT

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED Composite Start Date	Composite Start Time	Composite End/Grab Date	Composite End/Grab Time	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	071513-2BB #602214	WW	G	12-9	1:20	12-9	1:20		1	X										01
2	092313-2AFX #4318560	WW	G	12-9	1:20	12-9	1:20		1			X								
3	060713-2X #888842	WW	G	12-9	1:20	12-9	1:20		1					X						
4	100713-3AXR #307417	WW	G	12-9	1:20	12-9	1:20		1				X							
5	100713-3AXR #307407	WW	G	12-9	1:20	12-9	1:20		1				X							
6	100713-3AXR #307387	WW	G	12-9	1:20	12-9	1:20		1				X							
7	090213-1JA #329795	WW	G	12-9	1:20	12-9	1:20		1	X										
8	090213-1JA #329790	WW	G	12-9	1:20	12-9	1:20		1	X										
9	090213-1JA #329796	WW	G	12-9	1:20	12-9	1:20		1	X										
10	090213-1JA #329799	WW	G	12-9	1:20	12-9	1:20		1	X										
11	090213-1JA #329791	WW	G	12-9	1:20	12-9	1:20		1	X										
12																				

One Sample per Date + Time DM/Pace

Dioxin - Separate report.

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
3 Liter Ambers used for Dioxin on separate report. DM/Pace				[signature] Pace	12/10/13	1140	1.5	Y	N	Y

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Kevin Good

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 12/09/13

ORIGINAL

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-May-2007

Pace Analytical®

BOTTLE ORDER # 52007

5/23/2012 10:08:53 AM

Pace Analytical Services, Inc.
1700 Elm Street
Ste 200
Minneapolis, MN 55414
(612) 607-1700

Contact:	Puhl, Ben	*Ship To:*		*Return To:*	
Company:	United States Compliance	*Contact:*	Gauna, Janice	*Contact:*	
Address:	4350 Baker Rd.	*Company:*	The Libman Company	*Lab Name:*	PACE - MN
	Suite 100	*Address:*	220 North Sheldon	*Address:*	1700 Elm Street
City, St, Zip:	Minnetonka , MN, 55343		Suite 100		Ste 200
Phone:	(952) 567-5633 *Ext.*	*City, St, Zip:*	Arcola , IL , 61910	*City, St, Zip:*	Minneapolis , MN , 55414
Initiator:	Diane J. Anderson *PM:* DA1	*Phone:*	(952) 567-5633 *Ext.*	*Phone:*	(612) 607-1700 *Ext.*

Proj. Description: Libman Co Arcola Ill *Quote Number:* *Profile Number:*

Needs Bottles by: 10/25/2013 - PM *Expected Date Ret:* *Shipping Method:* FedEx

Return Shipping Labels
- ☑ *No Shipper #*
- ☐ *With Shipper #*

COC's
- ☑ *Blank #* 1
- ☐ *Preprinted*

Bottle Labels
- ☐ *Blank*
- ☐ *Pre-Printed - With Sample IDs*
- ☑ *Pre-Printed - No Sample IDs*

Bottles
- ☐ *Boxed Cases*
- ☑ *Individually Wrapped*
- ☐ *Grouped By Sample ID / Matrix*

Misc
- ☑ *Sampling Instructions*
- ☐ *Custody Seal*
- ☑ *Temp. Blanks*
- ☑ *Coolers:*
- ☐ *Extra Bubble Wrap*
- ☐ *10 mL Cut-Off Syringes*
- ☐ *Short Hold / Rush Stickers*
- ☐ *DI Water* 0 *Liter(s)*

Trip Blank ☐

Qty	Total	Matrix	Method	BottleType	LotNumber	Note
1	1	Water	pH by 4500H+pH	250mL plastic unpres.	071513-2RB	#62214
1	1	Water	Metals	250mL plastic HNO3-nitric acid	092313-2AFX	#431956
1	1	Water	Cyanide, total by SM 4500 CNC	250mL plastic NaOH-sodium hydroxide	061713-2X	#888892
1	3	Water	VOC by 624	3-40ml clear vial HCl-hydrochloric acid	100713-3AHR	#307417 #307397 #307407
1	1	Water	SVOC by 625	1L amber glass unpres.	090213-1SA	#329795
1	1	Water	Pesticides	1L amber glass unpres.	090213-1SA	#329790
1	1	Water	PCBs by 8082	1L amber glass unpres.	090213-1SA	#329796
1	2	Water	Dioxin	2-1L amber glass unpres.	090213-1SA	#329789 #329791

Notes: Ship to alternate address.
Include 12 Tips sheet.

Hazard Shipping Placard In Place : **YES**

Shipped Date: 10 24 13
Shipped By: TN
Verified By: AF

*Sample receiving hours are Monday through Friday 8:00 am to 6:00 pm and Saturday from 9:00 am to 12:00 pm unless special arrangements are made with you project manager.

*Pace Analytical reserves the right to return hazardous, toxic, or radioactive samples to you.

*Pace Analytical reserves the right to charge for unused bottles, as well as cost associated with sample storage and disposal.

*Payment term are net 30 days.

*Please include the proposal number on the chain of custody to insure proper billing.

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form**	Document Revised: 07Nov2013 Page 1 of 1
	Document No.: **F-MN-L-213-rev.08**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: Libman

Project #: WO#: 10251856

10251856

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other: _____

Tracking Number: 5812 3915 9902

Custody Seal on Cooler/Box Present? ☐ Yes ☑ No **Seals Intact?** ☐ Yes ☑ No **Optional:** Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☑ Other: PB **Temp Blank?** ☑ Yes ☐ No

Thermom. Used: ☐ 80512447 ☐ 72337080 ☑ B88A912167504 ☐ B88A9132521491 **Type of Ice:** ☑ Wet ☐ Blue ☐ None ☐ Samples on ice, cooling process has begun

Cooler Temp Read (°C): 1.3 **Cooler Temp Corrected (°C):** 1.5 **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ N/A

Temp should be above freezing to 6°C **Correction Factor:** +.2 **Date and Initials of Person Examining Contents:** JP 12-10-13

				Comments:
Chain of Custody Present?	☑ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out?	☑ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished?	☐ Yes	☑ No	☐ N/A	3.
Sampler Name and/or Signature on COC?	☐ Yes	☑ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No	☐ N/A	5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☑ No	☐ N/A	6.
Rush Turn Around Time Requested?	☐ Yes	☑ No	☐ N/A	7.
Sufficient Volume?	☑ Yes	☐ No	☐ N/A	8.
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	9.
-Pace Containers Used?	☑ Yes	☐ No	☐ N/A	
Containers Intact?	☑ Yes	☐ No	☐ N/A	10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☑ No	☑ N/A	11. JP 12-10-13
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT	☐ Yes	☑ No	☐ N/A	12. #1 COC ID: 071513-2BB #62214. Sample ID: 071513-2BB. #2: COC ID: 092313-2AFX #431956 Sample ID: 092313-2AFX. Analysis on bottles not COC
All containers needing acid/base preservation have been checked? Noncompliances are noted in 13.	☑ Yes	☐ No	☐ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☑ NaOH ☐ HCl Sample # #2: 1 of 1 #3: 1 of 1
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, HCl<2; NaOH>12)	☑ Yes	☐ No	☐ N/A	
Exceptions: VOA/Coliform, TOC, Oil and Grease, WI-DRO (water) DOC	☑ Yes	☐ No		Initial when completed: JP Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☑ Yes	☐ No	☐ N/A	14. 1 of 1 VG9H for sample 4-6
Trip Blank Present?	☐ Yes	☑ No	☐ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☑ No	☐ N/A	
Pace Trip Blank Lot # (if purchased): _____				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Myles Peterson Date/Time: 12/11/13 Phone Call Left Mess

Comments/Resolution: Re: Parameters needed? Is the bottle order correct. Samples didn't use preservable Cl2 c.

Project Manager Review: DAT **Date:** 12/11/13

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)