



**CIVIL & ENVIRONMENTAL  
ENGINEERING, SURVEYING**

July 12, 2023

**Wisconsin Department of Natural Resources**

Attn: BJ LeRoy  
1027 West St. Paul Avenue  
Milwaukee, WI 53233



**Subject:**

Schmalz Unlicensed Dump  
W7258 Firelane 2  
Town of Harrison, Calumet County, WI 54952  
WDNR BRRTS #02-08-000169

**Dear BJ:**

The following is a summary of re-development and sampling activities at the Schmalz Unlicensed Dump site. The approved scope of work included redevelopment of monitoring well MW5, and collection of two (2) rounds of groundwater samples for total dissolved chromium.

Monitoring well development and the initial sampling event were conducted on March 23, 2023. Based on the volume of water in the well casing and filter pack, a total of thirty (30) gallons of water was removed from the well. Development was conducted by surging with a stainless steel bailer and purging with a submersible pump. The development form is included in Attachment A. Purge water was disposed of at the Wausau Waterworks wastewater treatment plant. Disposal documentation is in Attachment B.

Sampling was conducted using low-flow techniques with a peristaltic pump through a flow cell with constant field measurements for temperature, conductivity, dissolved oxygen, pH and redox potential. Samples were collected once readings stabilized. Samples were field filtered with a 0.45 micron filter, followed by a 0.10 micron filter. Field notes are included in Attachment C.

The results of sampling are summarized on the attached relevant portion of Table 1 for MW5. The previous sampling event was conducted on October 31, 2017, the results from which were 237 ug/L chromium. The results of REI sampling were 213 and 194 ug/L on March 23 and June 13, 2023 respectively. The complete laboratory reports are in Attachment D.

Thank you for allowing REI to assist you with this project. Please contact me at (715) 675-9784 or [adelforge@REIengineering.com](mailto:adelforge@REIengineering.com) if you have questions or would like to discuss this further.



**RESPONSIVE. EFFICIENT. INNOVATIVE.**

4080 N. 20th Avenue Wausau, WI 54401  
715-675-9784 [REIengineering.com](http://REIengineering.com)

WDNR  
Attn: BJ LeRoy  
July 12, 2023

Sincerely,  
REI Engineering, Inc.



Andrew R. Delforge, P.G.  
Senior Hydrogeologist



**RESPONSIVE. EFFICIENT. INNOVATIVE.**

4080 N. 20th Avenue Wausau, WI 54401  
715-675-9784 REIengineering.com

Analytical Results for MW-5  
Schmalz Dump Superfund Site

TABLE 1 (continued)

PARAMETER	UNITS	Aug-93	Nov-93	Feb-94	Jun-94	4/21/1998	7/21/1998	11/2/1998	9/9/2003	10/12/2004	7/30/2008	11/18/2009										
			Duplicate			Duplicate	Duplicate	LF-NF Duplicate LF-F Duplicate	LF-F Duplicate	Duplicate	Duplicate	Duplicate										
<b>Metals, dissolved</b>																						
Arsenic	ug/l	< 3.0	< 100	< 100	< 100	< 100	2	2.9	3.3	1.5	3.9	2.8	2.5	5.1	-	-	3.1	3.4	15	14	<5.0	<5.0
Barium	ug/l	350	370	370	310	320	460	470	460	450	550	520	540	550	482	486	496	491	470	466	459	450
Cadmium	ug/l	< 10	<10	<10	<10	< 10	0.02	0.04	0.2	0.08	0.17	0.25	0.06	<0.04	<0.05	<0.05	0.08	0.05	<0.5	<0.5	<0.5	<0.5
Chromium	ug/l	<b>340</b>	<b>210</b>	<b>200</b>	<b>190</b>	<b>200</b>	<b>160</b>	<b>170</b>	<b>170</b>	<b>170</b>	<b>180</b>	<b>170</b>	<b>170</b>	<b>170</b>	<b>182</b>	<b>180</b>	<b>236</b>	<b>223</b>	<b>450</b>	<b>421</b>	<b>379</b>	<b>357</b>
Lead	ug/l	<50	< 50	< 50	< 50	< 50	< 0.4	< 0.4	<0.8	< 0.8	<0.8	< 0.8	<0.8	< 0.8	<1.0	<1.0	<1.0	<1.0	<3.0	<3.0	<3.0	<3.0
Mercury	ug/l	<0.20	< 0.20	< 0.20	< 0.20	< 0.20	NA	NA	NA	NA	NA	NA	NA	NA	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Selenium	ug/l	<3	< 100	< 100	< 100	< 100	6	2	3	<1	< 1	< 1	< 1	< 1	-	-	<1.0	<1.0	<10	<10	<10	<10
Silver	ug/l	<10	<10	<10	<10	< 10	0.2	0.3	< 0.2	< 0.2	< 0.2*	< 0.2*	< 0.2	< 0.2	<0.1	<0.1	<0.1	<0.1	4	4	<2.0	<2.0
<b>Common Anions</b>																						
Fluoride	mg/l	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloride	mg/l	60	65	65	59	56	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrite as N	mg/l	< 0.36	<0.36	< 0.36	< 0.36	<0.45	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromide	mg/l	0.18	0.19	0.2	0.17	0.36	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrate as N	mg/l	< 0.028	< 0.025	< 0.025	< 0.025	< 0.025	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate	mg/l	<b>430</b>	<b>400</b>	<b>400</b>	<b>350</b>	<b>360</b>	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>PCBs</b>																						
PCB 1016	ug/l	< 0.50	< 0.50	< 0.50	<0.50	< 0.50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB 1221	ug/l	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB 1232	ug/l	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB 1242	ug/l	< 0.50	< 0.50	< 0.50	< 0.50	<0.50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB 1248	ug/l	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB 1254	ug/l	< 0.50	< 0.50	<0.50	< 0.50	< 0.50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB 1260	ug/l	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>Pesticides</b>	ug/l	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>Miscellaneous</b>																						
TOX	ug/l	109	206	73.2	99	42.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOC	mg/l	182	316	247	360	259	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TSS	mg/l	34	140	24	7	23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	mg/l	< 0.020	< 0.020	< 0.020	< 0.020	0.0384	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

LF-NF=Low Flow Sampling Technique and Not Filtered  
 LF-F=Low Flow Sampling Technique and Filtered  
 \* Matrix Spike QC Exceeded  
 - =Not avail. at print  
 NA =Not Analyzed  
 ND =Not Detected> PQL  
 PQL =Practical Quantitation Limit  
 NS = No Standard  
 Bold Type =NR 140 PAL Exceedance  
 Bold Italic Type =NR 140 ES Exceedance  
 \* =See NR 140 for Pesticide Standards

Note:  
 The shaded portion of the table was re-created from hard copy using optical character recognition (OCR).  
 The OCR output was manually reformatted and checked  
 Mike Stiefvater 5-August-2008

TABLE 1 (continued)

11/2/2010		11/22/2011		11/20/2012		10/31/2017		3/23/2023	6/13/2023	Chart	NR 140 PAL	NR 140 ES
Duplicate		Duplicate		Duplicate		Duplicate						
<5.0	<5.0	11	11	<5.0	<5.0	<5.0	<5.0	NA	NA		5	50
<b>447</b>	<b>454</b>	<b>431</b>	<b>434</b>	<b>500</b>	<b>477</b>	271	293	NA	NA		400	2000
<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	16.8	18.8	NA	NA		0.5	5
<b>432</b>	<b>461</b>	<b>447</b>	<b>463</b>	<b>452</b>	<b>415</b>	<b>211</b>	<b>237</b>	<b>213</b>	<b>194</b>		10	100
<3.0	<3.0	<3	<3	<3.0	<3.0	<3.0	<3.0	NA	NA		1.5	15
<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	NA	NA		0.2	2
<b>55</b>	<b>53</b>	<b>27</b>	<b>13</b>	<b>15</b>	<b>17</b>	<b>18</b>	<b>11.7</b>	NA	NA		10	50
<2.0	<2.0	<2	<2	6	6	5.71	6.25	NA	NA		10	50
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NS	NS
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		125	250
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		0.2	1
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NS	NS
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		2	10
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		125	250
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		0.003	0.03
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		0.003	0.03
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		0.003	0.03
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		0.003	0.03
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		0.003	0.03
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		0.003	0.03
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		*	*
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NS	NS
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NS	NS
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NS	NS
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		1.2	6

**ATTACHMENT A**

**MONITORING WELL DEVELOPMENT FORM**

**(4400-113B)**



Route to: Watershed/Wastewater  Waste Management   
Remediation/Redevelopment  Other  \_\_\_\_\_

Facility/Project Name	County Name	Well Name	
Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number	DNR Well ID Number

1. Can this well be purged dry?  Yes  No

2. Well development method
- surged with bailer and bailed  4 1
  - surged with bailer and pumped  6 1
  - surged with block and bailed  4 2
  - surged with block and pumped  6 2
  - surged with block, bailed and pumped  7 0
  - compressed air  2 0
  - bailed only  1 0
  - pumped only  5 1
  - pumped slowly  5 0
  - Other \_\_\_\_\_  \_\_\_\_\_

3. Time spent developing well \_\_\_\_\_ min.

4. Depth of well (from top of well casing) \_\_\_\_\_ ft.

5. Inside diameter of well \_\_\_\_\_ in.

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

7. Volume of water removed from well \_\_\_\_\_ gal.

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

9. Source of water added \_\_\_\_\_

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

17. Additional comments on development:

11. Depth to Water Before Development After Development

(from top of well casing) a. \_\_\_\_\_ ft. \_\_\_\_\_ ft.

Date b. \_\_\_\_/\_\_\_\_/\_\_\_\_ \_\_\_\_/\_\_\_\_/\_\_\_\_  
m m d d y y y y m m d d y y y y

Time c. \_\_\_\_:\_\_\_\_  a.m.  p.m. \_\_\_\_:\_\_\_\_  a.m.  p.m.

12. Sediment in well \_\_\_\_\_ inches \_\_\_\_\_ inches  
bottom

13. Water clarity Clear  1 0 Clear  2 0  
Turbid  1 5 Turbid  2 5  
(Describe) (Describe)

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

14. Total suspended \_\_\_\_\_ mg/l \_\_\_\_\_ mg/l  
solids

15. COD \_\_\_\_\_ mg/l \_\_\_\_\_ mg/l

16. Well developed by: Name (first, last) and Firm

First Name: \_\_\_\_\_ Last Name: \_\_\_\_\_

Firm: \_\_\_\_\_

Name and Address of Facility Contact /Owner/Responsible Party  
First Last  
Name: \_\_\_\_\_ Name: \_\_\_\_\_

Facility/Firm: \_\_\_\_\_

Street: \_\_\_\_\_

City/State/Zip: \_\_\_\_\_

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

Signature: Ch Kel

Print Name: \_\_\_\_\_

Firm: \_\_\_\_\_

## **ATTACHMENT B**

# **PURGE WATER DISPOSAL DOCUMENTATION**



Date: 8-8-07

### SPECIAL DISCHARGE FORM GROUNDWATER CLEANUP PROJECTS

This form is intended to document the discharge of contaminated groundwater or process waters into the Wausau Wastewater Treatment Facility. Sewerage Utility billing for this discharge will be directly to the party listed below.

Source of Water: Monitoring Well purge water  
Up to 500 gallons, no Free product, no  
strong or volatile odors

Party Responsible for Utility Charges:  
Dave Larsen  
REI Engineering Inc.  
4080 N 20th Ave

Approved By: [Signature]  
Wausau Sewerage Utility

T# \_\_\_\_\_  
Date \_\_\_\_\_ GL# \_\_\_\_\_  
P# \_\_\_\_\_ BG# \_\_\_\_\_  
Approved By \_\_\_\_\_

**TO BE COMPLETED BY WASTE HAULER**

Name of Waste Hauler: REI Engineering, Inc  
Date 3/27/23

Approximate quantity of water discharged: 355 Gallons

Date of Discharge: 3/27/23

Time of Discharge: \_\_\_\_\_

By submitting this form, the hauler will not be billed for this load. Special Discharge Request has been completed to obtain authorization for this discharge but please notify treatment plant operator if water contains oil, grease, solids, or sediments, has a strong odor or otherwise appears unsuitable for discharge into the treatment plant.

**THIS FORM TO BE SUBMITTED TO SEWERAGE UTILITY BY WASTE HAULER AT TIME OF DISCHARGE**

<u>6M 4495</u>	<u>1A-71019</u>		<u>200 gal</u>	<u>\$ 84.00</u>
<u>BT mays</u>	<u>9321A</u>	<u>BG1 PHE</u>	<u>45 gal</u>	<u>\$ 18.90</u>
<u>Schmalz Dump</u>	<u>10635</u>		<u>30 gal</u>	<u>\$ 12.60</u>
<u>Kink trip 656</u>	<u>5614A</u>	<u>DG 4</u>	<u>80 gal</u>	<u>\$ 33.00</u>



Date: 8-8-07

### SPECIAL DISCHARGE FORM GROUNDWATER CLEANUP PROJECTS

This form is intended to document the discharge of contaminated groundwater or process waters into the Wausau Wastewater Treatment Facility. Sewerage Utility billing for this discharge will be directly to the party listed below.

Source of Water: Monitoring Well purge water  
Up to 500 gallons, no free product, no strong or volatile odors

Party Responsible for Utility Charges:  
Dave Larsen  
REI Engineering Inc.  
4080 N 20th Ave

Approved By: [Signature]  
Wausau Sewerage Utility

T# \_\_\_\_\_  
Date \_\_\_\_\_ GL# \_\_\_\_\_  
P# \_\_\_\_\_ BG# \_\_\_\_\_  
Approved By \_\_\_\_\_

**TO BE COMPLETED BY WASTE HAULER**

Name of Waste Hauler: REI Engineering, Inc  
Date 6-19-23

Approximate quantity of water discharged: 1166 Gallons

Date of Discharge: 6/19/23

Time of Discharge: \_\_\_\_\_

By submitting this form, the hauler will not be billed for this load. Special Discharge Request has been completed to obtain authorization for this discharge but please notify treatment plant operator if water contains oil, grease, solids, or sediments, has a strong odor or otherwise appears unsuitable for discharge into the treatment plant.

**THIS FORM TO BE SUBMITTED TO SEWERAGE UTILITY BY WASTE HAULER AT TIME OF DISCHARGE**

<u>10635</u>	<u>Schwartz Dump</u>		<u>1 gallons</u>
<u>1A-13486</u>	<u>Fast Break</u>		<u>250 gallons</u>
<u>8056</u>	<u>BOS garage</u>	<u>BG15 PH III</u>	<u>35 gallons</u>
<u>6134B</u>	<u>Phillips Platiny</u>		<u>215 gallons</u>
<u>9.321A</u>	<u>ST MARY'S</u>	<u>BG1 PH B</u>	<u>40 gallons</u>
<u>1A-73375</u>	<u>Gilm 4512</u>		<u>300 gallons</u>
<u>1A-73396</u>	<u>The Lakefront Buss</u>		<u>50 gallons</u>
<u>6529A</u>	<u>Boat house</u>		<u>275 gallons</u>

# **ATTACHMENT C**

## **FIELD NOTES**



Schnitzke Pump

3/13/23

10635 - Well Dev. + Sample

Cloudy, 40°

1345. REI onsite. Ann Crest to  
downer run-5 + collect GW  
sample.

See field sheets.  
Complete development of  
Commerce Co - Flow  
Sampling.

REI onsite.

REI      1 GW Sample  
(Total 1)

30 Gallons Purge And

Truck stuck in field. REI  
Tyler Faber onsite to pull out  
truck.

906 396 0290



Well Development Field Sheet

Project: \_\_\_\_\_  
 Project Number: \_\_\_\_\_  
 Date: \_\_\_\_\_  
 Field Tech: \_\_\_\_\_

2

Well ID	MW-5								
Well Depth (ft BTOC)	24.80								
Well Diameter (in)	8"								
Borehole Diameter (in)	2								
Start Depth to Water (ft BTOC)	3.52								
Start Time	1415								
Can Well Be Pured Dry	X								
Surged (Times)									
Volume Purged (gal)	30								
Stop Depth to Water (ft BTOC)	24.80								
Stop Time	1500								
Turbidity	N								
Color	C								
Odor	N								
Sediment (in)	-								
Method	P/S								
Comments	Cap off 1515								





Low-Flow Minimal Drawdown Procedure Field Sheet

Project: Schultz Pond  
 Project Number: 10635  
 Date: 6/13/23  
 Sampler: CSE  
 Well ID: MW-5  
 Multi-meter: YSI Pro Plus  
 Water Level: Solinst 101 P2 Water Level Meter  
 Pump: Geopump Peristaltic  
 Pump Intake Depth: \_\_\_\_\_ (ft bls)  
 Tubing Length (l): \_\_\_\_\_ (ft) Tubing Diameter: \_\_\_\_\_ (in)

Well Diameter: 2 (in)  
 Well Depth (D): \_\_\_\_\_ (ft BTOC)  
 Depth to Water (d): 4.89 (ft BTOC)  
 Depth to Product: \_\_\_\_\_ (ft BTOC)  
 Water Column: (D-d)= \_\_\_\_\_ (ft)  
 Well Volume (V<sup>w</sup>): \_\_\_\_\_ (gal) x3= \_\_\_\_\_ (gal)  
 (Water Column x Multiplier)  
 Stabilized Water Depth (s): \_\_\_\_\_ (ft BTOC)  
 Pump Start Drawdown (S): (d-s)= \_\_\_\_\_ (ft)  
 Drawdown Volume (m): \_\_\_\_\_ (gal)  
 Tubing Volume (T): \_\_\_\_\_ (gal)  
 Minimum Purge (M): (m+T)= \_\_\_\_\_ (gal)

Measurements begin after water level has stabilized in well.

Time	Depth to Water (ft BTOC)	Purge Volume (gal)	Flow Rate (gal/min)	pH	Temp (°F)	Specific Cond (µS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Visual Appearance
1220	4.89	.1L	1.4L	6.92	49.3	7058	-86.7	0.76		
1223		.2		6.92	49.3	7077	-84.4	2.0		
1226		.3		6.92	49.7	7078	-87.6	3.1		
1229		.4		6.92	49.1	7076	-88.1	0.14		
1232		.5		6.92	49.2	7077	-91.7	0.24		

Stabilization is achieved when three (3) consecutive readings of field indicator parameters collected in three (3) to five (5) minute intervals meet the following criteria:

Stabilization:	<0.3 ft	<3xV <sup>w</sup>	-	± 0.1	± 3%	± 3%	± 10mV	± 10% <sup>2</sup>	10% <sup>3</sup>
----------------	---------	-------------------	---	-------	------	------	--------	--------------------	------------------

- <sup>1</sup> - Pump flow rate must be able to turn over one (1) flow cell volume between measurement. Flow cell - 250mL.
- <sup>2</sup> - 10% for values greater than 0.5 mg/L, three (3) Dissolved Oxygen measurements less than 0.5 mg/L can be considered stabilized.
- <sup>3</sup> - 10% for values greater than 5 NTU, three (3) Turbidity measurements less than 5 NTU can be considered stabilized.

Purge until all parameters stabilize or after three (3) Well Volumes are removed for Low-Flow Minimal Drawdown Procedure

Total Volume Purged (P): \_\_\_\_\_ (gal) Final Average Flow Rate: (P/T) \_\_\_\_\_ (gal/min)  
 Purge Time (T) \_\_\_\_\_ (min) - Flow rate generally between 100 mL/min to 500 mL/min.  
 Sample Time: 1245 - Flow rate can range between 50 mL/min to 1,000 mL/min.  
 QC Sample Collected: \_\_\_\_\_  
 Repairs Completed: \_\_\_\_\_  
 Repairs Needed: \_\_\_\_\_

Analysis

_____ VOC (EPA 8260)	_____ VOC DW (EPA 524.2)	_____ Total Metals
_____ PVOC+N (EPA8260)	_____ Nitrate/Nitrite	_____ Dissolved Metals - Field Filtered
_____ PAH (EPA 8270)	_____ Sulfate	_____ pH - Field Filtered
_____ GRO	_____ Chloride	_____ PFAS
_____ DRO	_____ TSS	<u>X</u> Total Dissolved C <sub>2</sub>

Comments:

Stabilization and purge criteria established by EPA Low-Flow (Minimal Drawdown) Groundwater Sampling Procedures. Puls, R.P. & Barcelona, M.J. EPA/540/S-95/504, April 1996.

Schultz Pond 6/13/23  
 10635 - Well Sampling Rain, 65°F  
 1140 - REI onsite - Chase Creek to low flow sample MW-5 for total dissolved C<sub>2</sub> @ 1245

1310 - Complete sampling see field sheet. REI onsite.

1 REI 1 Ge Sample (Total dissolved C<sub>2</sub>)

< 1 gal purge H<sub>2</sub>O

Rate in the Rain

**ATTACHMENT D**

**LABORATORY ANALYTICAL REPORTS**



March 28, 2023

Chase Kresl  
REI

RE: Project: 10635 SCHMALZ DUMP  
Pace Project No.: 40259854

Dear Chase Kresl:

Enclosed are the analytical results for sample(s) received by the laboratory on March 25, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Green Bay

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

Sincerely,



Brian Basten  
brian.basten@pacelabs.com  
(920)469-2436  
Project Manager

Enclosures

cc: Kaylin Felix, REI



## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



## CERTIFICATIONS

Project: 10635 SCHMALZ DUMP

Pace Project No.: 40259854

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### **Pace Analytical Services Green Bay**

1241 Bellevue Street, Green Bay, WI 54302

Florida/NELAP Certification #: E87948

Illinois Certification #: 200050

Kentucky UST Certification #: 82

Louisiana Certification #: 04168

Minnesota Certification #: 055-999-334

New York Certification #: 12064

North Dakota Certification #: R-150

South Carolina Certification #: 83006001

Texas Certification #: T104704529-21-8

Virginia VELAP Certification ID: 11873

Wisconsin Certification #: 405132750

Wisconsin DATCP Certification #: 105-444

USDA Soil Permit #: P330-21-00008

Federal Fish & Wildlife Permit #: 51774A

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## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
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### SAMPLE SUMMARY

Project: 10635 SCHMALZ DUMP

Pace Project No.: 40259854

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Lab ID	Sample ID	Matrix	Date Collected	Date Received
40259854001	MW-5	Water	03/23/23 15:15	03/25/23 09:00

### REPORT OF LABORATORY ANALYSIS

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without the written consent of Pace Analytical Services, LLC.

### SAMPLE ANALYTE COUNT

Project: 10635 SCHMALZ DUMP  
Pace Project No.: 40259854

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Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
40259854001	MW-5	EPA 6010D	SIS	1	PASI-G

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PASI-G = Pace Analytical Services - Green Bay

### REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: 10635 SCHMALZ DUMP

Pace Project No.: 40259854

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**Sample: MW-5**                      **Lab ID: 40259854001**    Collected: 03/23/23 15:15    Received: 03/25/23 09:00    Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010D MET ICP, Dissolved</b>									
Analytical Method: EPA 6010D Pace Analytical Services - Green Bay									
Chromium, Dissolved	<b>213</b>	ug/L	10.0	2.5	1		03/27/23 18:56	7440-47-3	

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: 10635 SCHMALZ DUMP  
Pace Project No.: 40259854

QC Batch: 440911	Analysis Method: EPA 6010D
QC Batch Method: EPA 6010D	Analysis Description: ICP Metals, Trace, Dissolved
	Laboratory: Pace Analytical Services - Green Bay

Associated Lab Samples: 40259854001

METHOD BLANK: 2531797 Matrix: Water

Associated Lab Samples: 40259854001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chromium, Dissolved	ug/L	<2.5	10.0	03/27/23 18:13	

LABORATORY CONTROL SAMPLE: 2531798

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chromium, Dissolved	ug/L	250	256	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2531799 2531800

Parameter	Units	2531799		2531800		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		40259747001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result							MSD Result
Chromium, Dissolved	ug/L	<5.1	500	500	514	518	103	104	75-125	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

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## QUALIFIERS

Project: 10635 SCHMALZ DUMP

Pace Project No.: 40259854

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### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

LOD - Limit of Detection adjusted for dilution factor, percent moisture, initial weight and final volume.

LOQ - Limit of Quantitation adjusted for dilution factor, percent moisture, initial weight and final volume.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

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 at or above the adjusted LOD.

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.

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 10635 SCHMALZ DUMP  
Pace Project No.: 40259854

---

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40259854001	MW-5	EPA 6010D	440911		

### REPORT OF LABORATORY ANALYSIS

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**Sample Condition Upon Receipt Form (SCUR)**

Project #: \_\_\_\_\_

Client Name: RCI

**WO#: 40259854**

Courier:  CS Logistics  Fed Ex  Speedee  UPS  Walco  
 Client  Pace Other: \_\_\_\_\_



Tracking #: 3522411-1

Custody Seal on Cooler/Box Present:  yes  no Seals intact:  yes  no

Custody Seal on Samples Present:  yes  no Seals intact:  yes  no

Packing Material:  Bubble Wrap  Bubble Bags  None  Other \_\_\_\_\_

Thermometer Used SR - 121 Type of Ice:  Wet  Blue  Dry  None  Meltwater Only

Cooler Temperature Uncorr 2.5 / Corr. 2.0

Temp Blank Present:  yes  no

Biological Tissue is Frozen:  yes  no

Person examining contents:  
 Date: 3/18/23 Initials: RA  
 Labeled By Initials: 86

Temp should be above freezing to 6°C.  
 Biota Samples may be received at ≤ 0°C if shipped on Dry Ice.

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	5.
- DI VOA Samples frozen upon receipt	<input type="checkbox"/> Yes <input type="checkbox"/> No	Date/Time:
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6.
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	7.
Sufficient Volume:		8.
For Analysis: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No MS/MSD: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9.
Correct Type: <u>Pace Green Bay, Pace IR, Non-Pace</u>	<u>R.A 3/29/23</u>	
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	10.
Filtered volume received for Dissolved tests	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	11.
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes date/time/ID/Analysis Matrix: <u>W</u>		
Trp Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution: \_\_\_\_\_ If checked, see attached form for additional comments

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

PM Review is documented electronically in LIMs. By releasing the project, the PM acknowledges they have reviewed the sample logir

June 23, 2023

Chase Kresl  
REI

RE: Project: 10635 SCHMALZ DUMP  
Pace Project No.: 40263650

Dear Chase Kresl:

Enclosed are the analytical results for sample(s) received by the laboratory on June 15, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Green Bay

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

Sincerely,



Brian Basten  
brian.basten@pacelabs.com  
(920)469-2436  
Project Manager

Enclosures

cc: Kaylin Felix, REI



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: 10635 SCHMALZ DUMP

Pace Project No.: 40263650

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### **Pace Analytical Services Green Bay**

1241 Bellevue Street, Green Bay, WI 54302

Florida/NELAP Certification #: E87948

Illinois Certification #: 200050

Kentucky UST Certification #: 82

Louisiana Certification #: 04168

Minnesota Certification #: 055-999-334

New York Certification #: 12064

North Dakota Certification #: R-150

South Carolina Certification #: 83006001

Texas Certification #: T104704529-21-8

Virginia VELAP Certification ID: 11873

Wisconsin Certification #: 405132750

Wisconsin DATCP Certification #: 105-444

USDA Soil Permit #: P330-21-00008

Federal Fish & Wildlife Permit #: 51774A

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: 10635 SCHMALZ DUMP

Pace Project No.: 40263650

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Lab ID	Sample ID	Matrix	Date Collected	Date Received
40263650001	MW-5	Water	06/13/23 12:45	06/15/23 08:00

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: 10635 SCHMALZ DUMP  
Pace Project No.: 40263650

---

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
40263650001	MW-5	EPA 6010D	SIS	1	PASI-G

---

PASI-G = Pace Analytical Services - Green Bay

### REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: 10635 SCHMALZ DUMP

Pace Project No.: 40263650

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**Sample: MW-5**                      **Lab ID: 40263650001**    Collected: 06/13/23 12:45    Received: 06/15/23 08:00    Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010D MET ICP, Dissolved</b>									
Analytical Method: EPA 6010D Pace Analytical Services - Green Bay									
Chromium, Dissolved	<b>194</b>	ug/L	100	25.3	10		06/22/23 11:21	7440-47-3	

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: 10635 SCHMALZ DUMP  
Pace Project No.: 40263650

QC Batch: 447948	Analysis Method: EPA 6010D
QC Batch Method: EPA 6010D	Analysis Description: ICP Metals, Trace, Dissolved
	Laboratory: Pace Analytical Services - Green Bay

Associated Lab Samples: 40263650001

METHOD BLANK: 2572236 Matrix: Water

Associated Lab Samples: 40263650001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chromium, Dissolved	ug/L	<2.5	10.0	06/22/23 10:52	

LABORATORY CONTROL SAMPLE: 2572237

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chromium, Dissolved	ug/L	250	254	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2572238 2572239

Parameter	Units	40263692001		2572239		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result							
Chromium, Dissolved	ug/L	<0.0025 mg/L	250	250	258	259	103	104	75-125	0	20	

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## QUALIFIERS

Project: 10635 SCHMALZ DUMP

Pace Project No.: 40263650

---

### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

LOD - Limit of Detection adjusted for dilution factor, percent moisture, initial weight and final volume.

LOQ - Limit of Quantitation adjusted for dilution factor, percent moisture, initial weight and final volume.

DL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

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 at or above the adjusted LOD.

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

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TNI - The NELAC Institute.

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 10635 SCHMALZ DUMP  
Pace Project No.: 40263650

---

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40263650001	MW-5	EPA 6010D	447948		

### REPORT OF LABORATORY ANALYSIS

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### Sample Condition Upon Receipt Form (SCUR)

Project #:

Client Name: REI

WO#: **40263650**

Courier:  CS Logistics  Fed Ex  Speedee  UPS  ~~Waltco~~  
 Client  Pace Other: \_\_\_\_\_



Tracking #: 35916425

Custody Seal on Cooler/Box Present:  yes  no Seals intact:  yes  no

Custody Seal on Samples Present:  yes  no Seals intact:  yes  no

Packing Material:  Bubble Wrap  Bubble Bags  None  Other

Thermometer Used SR - 120 Type of Ice:  Wet  Blue Dry  None  Meltwater Only

Cooler Temperature Uncorr. 4.0 / Corr. 4.0

Temp Blank Present:  yes  no Biological Tissue is Frozen:  yes  no

Person examining contents:  
 Date: 6/15/23 Initials: mt  
 Labeled By Initials: BN

Temp should be above freezing to 6°C.  
 Biota Samples may be received at ≤ 0°C if shipped on Dry Ice.

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	5.
- DI VOA Samples frozen upon receipt	<input type="checkbox"/> Yes <input type="checkbox"/> No	Date/Time:
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6.
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	7.
Sufficient Volume:		8.
For Analysis: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No MS/MSD: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A		
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9.
Correct Type: <u>Pace Green Bay</u> , Pace IR, Non-Pace		
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	10.
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes date/time/ID/Analysis Matrix: <u>W</u>		
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution: \_\_\_\_\_ If checked, see attached form for additional comments   
 Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
 Comments/ Resolution: \_\_\_\_\_

PM Review is documented electronically in LIMs. By releasing the project, the PM acknowledges they have reviewed the sample log  
 Page 2 of 2