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To: [IDEM OLO Solid Waste Permits Submittals](#); [Fracetti, Juliana](#); [Kreke, Thomas](#)
Cc: derek.fogle@waupacafoundry.com; [Lucas, Michael T.](#); [Genthe, Douglas](#)
Subject: WFI Inc. RWS II Perry County ID: 62-06 Leachate Level and Haul Records
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Attachments: [Outlook-5avibt5i.png](#)
[06.28.2024 WFI Leachate Monitoring and Pumping Records December 2023 - May 2024.pdf](#)

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Good afternoon,

TRC is submitting the attached letter on behalf of Waupaca Foundry, Inc. RWS II facility in Perry County, IN (SW Program ID 62-06). The letter includes information on WFI's monitoring and hauling since December 2023 in accordance with the permit requirements C12 and H1.

Please review and reach out with questions as needed.

Alex Javes

Sr. Geotechnical Engineer, Team Leader
Geo-Environmental and Civil Engineering Group



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June 28, 2024

Mr. Thomas Kreke
Chief, Solid Waste Permits Section
Office of Land Quality
Indiana Department of Environmental Management
100 N. Senate Avenue
Indianapolis, IN 46204

Subject: Leachate Monitoring and Pumping Records December 2023 - May 2024
Waupaca Foundry, Inc. RWS II
Perry County
SW Program ID 62-06

Dear Mr. Kreke:

On behalf of Waupaca Foundry, Inc. (WFI), TRC Environmental Corporation (TRC) is submitting this letter to provide the Indiana Department of Environmental Management (IDEM) with results of leachate level monitoring and leachate pumping dates and volumes from December 2023 through May 2024, in accordance with requirements of the renewed permit issued March 22, 2024. The applicable permit requirements are provided below for reference.

Permit Requirements Applicable to this Submittal:

Operational Requirement C12: The permittee currently monitors the leachate level by pumping each operating day. The permittee must submit leachate hauling records to IDEM on a quarterly basis. The permittee is approved to monitor the leachate levels using a water level indicator for 6 months from December 2023 through May 2024 to measure the leachate head at frequency of every 2 weeks. The permittee must submit the leachate monitoring records and the proposed frequency as specified in the Compliance Schedule Requirement H1. The permittee must maintain the leachate level in the leachate collection sumps at or below the maximum allowed depth. The permittee must operate the leachate control system in an environmentally safe manner. The permittee must dispose leachate in compliance with all applicable local, state, and federal laws (329 IAC 10-28-16). The permittee must maintain an operating record for a period of 3 years that shows the amount of leachate pumped and disposed of from the facility.

Compliance Schedule Requirement H1: The permittee is approved to use a water level indicator for 6 months from December 2023 through May 2024 to measure the leachate head every 2 weeks. The permittee must submit by June 30, 2024, the leachate level measurement record along with the proposed leachate monitoring and pumping frequencies to IDEM for approval.

Leachate Monitoring and Pumping December 2023 – May 2024:

Flatridge Inc. is contracted by WFI to routinely pump leachate directly from the landfill sumps into haul trucks and transport leachate to Hohl Farms for approved land application. Between December 2023 and May 2024, leachate was pumped from the Phase 1 sump between 2 and 7 days per month. Leachate was pumped more frequently from the Phase 3A and 4B sumps, ranging between 8 and 14 days per month. The dates and volumes of pumping activity at each sump are provided in Attachment 1.

When onsite, the hauling contractor pumps from sump locations until dry. Drawdown rates of leachate, due to low hydraulic conductivity of byproduct, limit the volumes that can be pumped. It is typical for pumping to take multiple hours to fill a 4,500-gallon truck. TRC and WFI recognize that a fixed pumping/monitoring schedule provides benefits for reviewing and interpreting data.

From December 2023 through May 2024, WFI monitored the leachate levels in the sumps within Phases 1, 3A, and 4B at approximate 2-week intervals. WFI measured the current leachate levels using a water level indicator in the solid wall pump-out pipes that terminate in the leachate collection sumps. Calculated leachate elevations at each of the sumps are provided in the tables in Attachment 1.

Measured leachate levels in the Phase 1 and Phase 4B sumps fluctuated substantially depending on the timing of measurements relative to pumping. The holding capacity and low hydraulic conductivity of the foundry byproduct yields a slowed recharge of leachate in the sumps after pumping. When measured soon after leachate pumping, elevations indicate the sumps are dry. As sumps recharge over time, leachate levels increase and allow for more pumping to occur. Scheduling pumping events corresponding with leachate recharge is an ongoing challenge.

Leachate level measurements in the Phase 3A remain constant but are higher than desired. The sump is pumped dry during each removal event.

Proposed Leachate Monitoring/Pumping Frequencies:

IDEM is reminded that at the time of design and permitting, 329 IAC did not require a leachate collection system for this facility. To be prudent, WFI incorporated the existing leachate collection system. Operational activity in recent years has observed leachate in the sumps and WFI has responded with increased efforts to remove leachate.

As indicated in previous submittals to IDEM, the leachate volumes are believed to be high due to the byproduct's holding capacity of leachate combined with the low hydraulic conductivity characteristic. Similar to a clay liner with low hydraulic conductivity, the foundry byproduct material has a significant lag time for surface waters to permeate through the byproduct mass to the collection system. WFI has been working to remove leachate but are limited by slow recharge at the sumps and coordinating with hauling contractor's schedules. Final cover at Phases 1, 2, 3, and 4 should reduce recharge to the overall landfill. TRC expects recharging and future leachate volumes to be greatly reduced over time with continued pumping.

It is recognized that measuring leachate levels in the sumps is not representative of leachate levels across the landfill. Currently permitted leachate monitoring procedures, measure in the sumps only. As discussed above, low hydraulic conductivity greatly affects recharge in the sumps, which makes measuring representative leachate heads impractical.

WFI proposes to continue monitoring leachate levels at 2-week intervals within sump pump-out pipes. WFI proposes to maintain an ongoing schedule of pumping daily to weekly depending on seasonal rates of leachate recharge in the sumps, to allow more timely extraction and regulate the leachate level measurements.

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With more efficient and timely removal of leachate, combined with the landfill cover systems, leachate volumes should decrease over time resulting in low leachate head levels across the system.

If you have any questions regarding this additional information, please contact Alex Javes at (608) 215-8696.

Sincerely,

TRC



Alex Javes
Project Manager

Attachments: 1. Leachate Hauling Records & Elevation Data December 2023 – May 2024

cc: Juliana Fracetti – IDEM
Derek Fogle – WFI
Tyler Lucas – WFI

Attachment 1

**Leachate Hauling Records & Elevation Data
December 2023 through May 2024**

Leachate Hauling Records and Elevations - December 2023

Date	Phase 1 Sump		Leachate Level	Phase 3A Sump		Leachate Level	Phase 4B Sump		Leachate Level	Daily Total
	Gallons	Loads	Elevation	Gallons	Elevation	Gallons	Loads	Elevation	Gallons	
12/1/2023										
12/2/2023	4,500	1		40		1,960	1			6,500
12/3/2023										
12/4/2023										
12/5/2023										
12/6/2023			403.4		407.5			405.9		
12/7/2023										
12/8/2023										
12/9/2023										
12/10/2023										
12/11/2023										
12/12/2023										
12/13/2023										
12/14/2023										
12/15/2023	4,500	1		180		8,820	2			13,500
12/16/2023				270		13,230	3			13,500
12/17/2023										
12/18/2023	4,500	1		130		6,370	2			11,000
12/19/2023										
12/20/2023			404.0		407.5			403.7		
12/21/2023										
12/22/2023	4,500	1								4,500
12/23/2023										
12/24/2023										
12/25/2023										
12/26/2023	4,500	1		180		8,820	2			13,500
12/27/2023	4,500	1		56		2,744	1			7,300
12/28/2023	7,000	2		90		4,410	1			11,500
12/29/2023				90		4,410	1			4,500
12/30/2023										
12/31/2023										
	34,000	8		1,036		50,764	13			85,800

*Phase 3B and Phase 4 pumped into same load

Leachate Hauling Records and Elevations - January 2024

Date	Phase 1 Sump		Leachate Level	Phase 3A Sump		Phase 4B Sump		Leachate Level	Daily Total
	Gallons	Loads	Elevation	Gallons	Elevation	Gallons	Loads	Elevation	Gallons
1/1/2024									
1/2/2024				90		4,410	1		4,500
1/3/2024			403.7	30	407.5	1,470	1	401.8	1,500
1/4/2024				90		4,410	1		4,500
1/5/2024				60		2,940	1		3,000
1/6/2024									
1/7/2024									
1/8/2024				60		2,940	1		3,000
1/9/2024				60		2,940	1		3,000
1/10/2024			402.7	60	407.5	2,940	1	402.1	3,000
1/11/2024									
1/12/2024									
1/13/2024									
1/14/2024									
1/15/2024									
1/16/2024									
1/17/2024									
1/18/2024									
1/19/2024									
1/20/2024									
1/21/2024									
1/22/2024									
1/23/2024									
1/24/2024			403.7		407.5			406.8	
1/25/2024				210		10,290	3		10,500
1/26/2024				120		5,880	2		6,000
1/27/2024									
1/28/2024									
1/29/2024				120		5,880	2		6,000
1/30/2024				100		4,900	2		5,000
1/31/2024				180		8,820	3		9,000
	0	0		1,180		57,820	19		59,000

*Phase 3B and Phase 4 pumped into same load

Leachate Hauling Records and Elevations - February 2024

Date	Phase 1 Sump		Leachate Level	Phase 3A Sump		Phase B4 Sump		Leachate Level	Daily Total
	Gallons	Loads	Elevation	Gallons	Elevation	Gallons	Loads	Elevation	Gallons
2/1/2024				180		8,820	3		9,000
2/2/2024				180		8,820	3		9,000
2/3/2024									
2/4/2024									
2/5/2024				120		5,880	2		6,000
2/6/2024				180		8,820	3		9,000
2/7/2024	4,500	1	393.9		406.8			403.4	
2/8/2024				180		8,820	3		9,000
2/9/2024									
2/10/2024									
2/11/2024									
2/12/2024				120		5,880	2		6,000
2/13/2024									
2/14/2024				180		8,820	3		9,000
2/15/2024									
2/16/2024				180		8,820	3		9,000
2/17/2024									
2/18/2024									
2/19/2024				180		8,820	2		9,000
2/20/2024	4,500	1		45		2,205	1		6,750
2/21/2024			396.1		406.8			398.9	
2/22/2024	4,500	1		180		8,820	2		13,500
2/23/2024				270		13,230	3		13,500
2/24/2024									
2/25/2024									
2/26/2024									
2/27/2024				250		12,250	3		12,500
2/28/2024				270		13,230	3		13,500
2/29/2024			398.9		407.2			399.6	
	13,500	3		2,515		123,235	36		134,750

*Phase 3B and Phase 4 pumped into same load

Leachate Hauling Records and Elevations - March 2024

Date	Phase 1 Sump		Leachate Level	Phase 3A Sump	Leachate Level	Phase 4B Sump		Leachate Level	Daily Total
	Gallons	Loads	Elevation	Gallons	Elevation	Gallons	Loads	Elevation	Gallons
3/1/2024	9,000	2							
3/2/2024									
3/3/2024									
3/4/2024									
3/5/2024				180		8,820	2		9,000
3/6/2024				160		7,840	2		8,000
3/7/2024	9,000	2		90		4,410	1		13,500
3/8/2024									
3/9/2024									
3/10/2024									
3/11/2024									
3/12/2024				1,000		11,500	3		12,500
3/13/2024									
3/14/2024									
3/15/2024			399.9	270	407.2	13,230	3	399.2	13,500
3/16/2024									
3/17/2024									
3/18/2024									
3/19/2024									
3/20/2024	4,500	1		160		7,840	2		12,500
3/21/2024									
3/22/2024	13,500	3							
3/23/2024									
3/24/2024									
3/25/2024				270		13,230	3		13,500
3/26/2024	4,500	1		90		4,410	1		9,000
3/27/2024			399.9		407.5			402.1	
3/28/2024									
3/29/2024									
3/30/2024									
3/31/2024									
	31,500	7		2,220		71,280	17		91,500

*Phase 3B and Phase 4 pumped into same load

Leachate Hauling Records and Elevations - April 2024

Date	Phase 1 Sump		Leachate Level	Phase 3A Sump	Leachate Level	Phase 4B Sump		Leachate Level	Daily Total
	Gallons	Loads	Elevation	Gallons	Elevation	Gallons	Loads	Elevation	Gallons
4/1/2024									
4/2/2024						9,000	2		9,000
4/3/2024			402.1	1,000	407.2	10,500	3	399.6	11,500
4/4/2024	12,000	3							12,000
4/5/2024	4,500	1		90		4,410	1		9,000
4/6/2024									
4/7/2024									
4/8/2024									
4/9/2024									
4/10/2024									
4/11/2024				270		13,230	3		13,500
4/12/2024	4,500	1	398.9	180	406.8	8,820	2	399.2	13,500
4/13/2024									
4/14/2024									
4/15/2024	4,500	1		180		8,820	2		13,500
4/16/2024	13,500	3	396.7					395.8	13,500
4/17/2024				1,500		6,500	2		8,000
4/18/2024	4,500	1				4,500	1		9,000
4/19/2024									
4/20/2024									
4/21/2024									
4/22/2024									
4/23/2024									
4/24/2024				270		13,230	3		13,500
4/25/2024			399.6		406.8			397.3	
4/26/2024									
4/27/2024				90		4,410	1		4,500
4/28/2024									
4/29/2024	9000	2		90		4,410	1		13,500
4/30/2024				180		8,820	2		9,000
	52,500	12		3,850		96,650	23		153,000

*Phase 3B and Phase 4 pumped into same load

Leachate Hauling Records and Elevations - May 2024

Date	Phase 1 Sump		Leachate Level	Phase 3A Sump	Leachate Level	Phase 4B Sump		Leachate Level	Daily Total
	Gallons	Loads	Elevation	Gallons	Elevation	Gallons	Loads	Elevation	Gallons
5/1/2024				150		7,350	2		7,500
5/2/2024	8500	2							8,500
5/3/2024				180		8,820	2		9,000
5/4/2024									
5/5/2024									
5/6/2024									
5/7/2024			400.5		407.2			405.3	
5/8/2024				180		8,820	2		9,000
5/9/2024				240		11,760	3		12,000
5/10/2024	13500	3							13,500
5/11/2024									
5/12/2024									
5/13/2024	4500	1	397.0	180	406.8	8,820	2	394.5	13,500
5/14/2024	9000	2							9,000
5/15/2024									
5/16/2024			405.3		407.2			406.2	
5/17/2024				270		13,230	3		13,500
5/18/2024									
5/19/2024									
5/20/2024	4500	1	401.5	160	406.8	7,840	2	394.8	12,500
5/21/2024	11500	3							11,500
5/22/2024									
5/23/2024				140		6,860	2		7,000
5/24/2024				140		6,860	2		7,000
5/25/2024									
5/26/2024									
5/27/2024									
5/28/2024				140		6,860	2		7,000
5/29/2024									
5/30/2024				210		10,290	3		10,500
5/31/2024			402.1	140	406.8	6,860	2	393.9	7,000
	51,500	12		2,130		104,370	27		158,000

*Phase 3B and Phase 4 pumped into same load