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Our ref: 11192137-LTR-60

15 October 2024

Ms. Lubna Hussain
Director, West Central Region
Ontario Ministry of the Environment
119 King Street West, 12th floor
Hamilton, ON
L8P 4Y7

LANXESS Canada Co./Cie (LANXESS) Progress Report September 2024

Dear Ms. Hussain

This letter presents a summary of the September 2024 LANXESS Progress Report.

The following noteworthy items regarding the Combined Groundwater Collection and Treatment System (CTS) are discussed in the report text.

The average monthly pumping rates of PW4, PW5, W5A, W9, and E7 were less than their Target Average pumping rates during September 2024. The PW4 pumping rate was reduced to 1.3 litres per second (L/s) during the first half of the month due to a buildup of carbon fines in the UA Carbon Tower which had resulted in plugging of the tower screens and pore spaces within the granular activated carbon in the tower. LANXESS discontinued the use of regenerated carbon and has switched to virgin carbon for the foreseeable future to reduce the carbon fines in the tower and has completed additional carbon change outs within the tower. Additionally, on September 19, 2024, LANXESS backflushed all screens on the UA tower, which allowed additional flow from PW4. PW5 continued operating at a reduced pumping rate in September 2024. Despite not meeting the Target Average pumping rate, hydraulic monitoring data indicate PW5 currently generates an effective groundwater capture zone. LANXESS is in the process of connecting the new replacement well PW6 to the existing treatment system infrastructure and is working towards bringing the well online. The pumping rate of W5A was below its Target Average pumping rate in September 2024. The well is unable to maintain its pumping rate; LANXESS will schedule inspection and rehabilitation of the well, subject to contractor availability. W9 continued pumping at a reduced rate during September 2024. The well pump is running at maximum capacity, therefore, LANXESS believes that the decreased pumping rate is due to an issue with the pump/motor and/or decreased well efficiency. LANXESS has scheduled inspection of the pump/motor and possible video inspection for the week of October 7, 2024. The E7 average daily pumping rate was less than its Target Average pumping rate in September 2024 due to issues with the wipers on Train B. Train B repeatedly shut down between September 12 and September 25, 2024 due to pump pressure alarms on the main pump PLC. LANXESS' Rayox contractor investigated the issue and determined that the Train B wipers and the solenoid valve that runs the Train B wipers were not operating correctly. These were replaced and Train B was restarted on September 25, 2024 at its target pumping rate.

During September 2024, the CTS operated within the Effluent Limits and within the Effluent Objectives for all compounds.

Please refer to the detailed information in the Progress Report for further information on these items.

Regards

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AB/kf/60

Encl.

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September 2024

Progress Report
LANXESS Canada Co./Cie
Elmira, Ontario

GHD has prepared this report on behalf of LANXESS Canada Co./Cie (LANXESS) and submitted it to the Ontario Ministry of the Environment, Conservation and Parks (MECP). This report complies with the administrative reporting requirements of the November 4, 1991 Control Order (Control Order), the Amended Environmental Compliance Approval (ECA) No. 0831-BX6JGD (Combined On-Site and Off-Site Groundwater Collection and Treatment Systems [CTS]), and Certificate of Approval (C of A) No. 4-0025-94-976 (E7/E9 Treatment Facility).

Unless otherwise stated, all data included in this report were collected in September 2024.

The Progress Report is organized as follows:

1. Monitoring and Analytical Data

A summary of the LANXESS monitoring programs is provided in Table 1.

A summary of the analytical results for the CTS is presented in Attachment A.

A summary of the analytical results from the monthly August 2024 Environmental Appeal Board (EAB) monitoring of discharges to surface water through storm water outfalls 0200, 0400 and 0800, and the storm water drainage system (SWS), is included in Attachment B. Attachment B is not required under the Control Order but is provided for review. Due to delays with the analytical data, the analytical results from the monthly September EAB monitoring will be provided in the October Progress Report.

A summary of the analytical results for groundwater samples collected as part of the 2024 Off-Site Routine Groundwater Monitoring (R.G.M.) Program is presented in Attachment C.

LANXESS collected confirmatory volatile organic compound (VOC) samples from monitoring well OW127-4 in September 2024. This well is part of the Creek Bank Groundwater Monitoring Program. A summary of the analytical results for groundwater samples collected as part of the confirmatory sampling event in September 2024 is presented in Attachment D.

LANXESS collected monthly groundwater samples from the Upper Municipal Aquifer (MU) sentry wells on August 29, 2024 and September 19, 2024, and results are presented in Attachment E.

2. Correspondence, Meetings, and Events

September 12, 2024	August 2024 Progress Report submitted to MECP West Central Region (WCR)
September 12, 2024	Technical Remediation Advisory Committee (TRAC) Meeting

3. CTS Monitoring and Performance

A schematic process flow diagram of the CTS is provided on Figure A.1 (Attachment A).

The September 2024 average pumping rates for the CTS containment wells PW4 and PW5, the CTS extraction wells W3R, W5A, W5B, W6A, W6B, W8 and W9, the Upper Aquifer Containment System (UA CS) wells, and E7, as compared to the target average pumping rates, are listed below, and shown graphically on Figures A.2 and A.3 (Attachment A).

Average Daily Pumping Rates		
September 2024 (Litres/second [L/s])		
Containment and Extraction Wells	**Target Average (1)**	**Average**
On Site Wells		
PW4	2.9	1.5
PW5	1.8	1.6
Upper Aquifer Wells	--	0.6
Off Site Wells		
W3R	18.5	21.5
W5A	4.5	1.8
W5B	4.2	4.3
W6A	0.20	0.36
W6B	0.30	0.40
W8	0.05	0.09
W9	13.6	9.7
E7	23.9	20.9
Yara	--	0.2

Notes:

(1) As wells and treatment system components require periodic downtime for maintenance, the Target Average pumping rate is set at 90% of the set point rate. GHD recommends that LANXESS maintain the target pumping rates greater than or equal to these rates.

With the exceptions discussed below, the containment and extraction wells, including the UA CS wells, are operating as intended.

The PW4 average monthly pumping rate was less than its Target Average pumping rate in September 2024. The PW4 pumping rate was reduced to 1.3 L/s during the first half of the month. This was due to a buildup of carbon fines in the UA Carbon Tower which had resulted in plugging of the tower screens and pore spaces within the granular activated carbon in the tower. Additional fines were inadvertently added to the UA Carbon Tower in late July 2024 when the carbon was replaced and backwashed in the W4 Carbon Adsorber. LANXESS discontinued the use of regenerated carbon and has switched to virgin carbon for the foreseeable future to reduce the carbon fines in the tower and has completed additional carbon change outs within the tower. Additionally, on September 19, 2024, LANXESS backflushed all screens on the UA tower, which allowed additional flow from PW4. During the plant-wide annual hydro shutdown, on September 21, 2024, carbon fines within the system plugged the Rayox A UV system. Additional downtime was required to clean out the Rayox system and feed tank. PW4 was restarted on September 26, 2024 at its target pumping rate.

As detailed in ECA No. 0831-BX6JGD, LANXESS shall measure and maintain on-site containment at the western site boundary between monitoring wells OW58-13 and OW105d. If the water level in on-Site monitoring well OW62-17 is not at least 1 centimetre (cm) lower than the water level in off Site monitoring

well CH-47E, LANXESS shall adjust pumping rates to maintain containment, and if containment is not attained within five working days (or in the event of routine maintenance, equipment repair, or circumstances beyond LANXESS' control, the elevation differential required need not be maintained for periods of time up to two weeks), LANXESS will initiate monthly groundwater sampling for chlorobenzene and n-nitrosodimethylamine (NDMA) analyses, collected from six off-Site sentry monitoring wells. While PW4 was operating at a reduced pumping rate, this 1 cm differential could not be maintained. LANXESS collected groundwater samples from off-Site MU sentry monitoring wells OW58-13, OW165-17, CH-47E, CH-97B, CH-56B, and CH-89B on August 29, 2024 and on September 19, 2024. Tables E.1 and E.2 (Attachment E) provide the MU sentry well results. Figures E.1 through E.6 (Attachment E) present the NDMA and chlorobenzene results for March 2008 through September 2024. GHD completed statistical analyses on the MU sentry well data to identify trends in the concentrations of NDMA and chlorobenzene in groundwater samples collected from these wells. The following table summarizes the trend analysis results:

Trend Analysis Results		
Monitoring Wells	**NDMA Trends**	**Chlorobenzene Trends**
OW58-13	>50% ND	100% ND
OW165-17	>50% ND	>50% ND
CH-89B	>50% ND	>50% ND
CH-47E	**Decreasing Trend**	**Decreasing Trend**
CH-56B	**Decreasing Trend**	**Decreasing Trend**
CH-97B	>50% ND	>50% ND

GHD did not complete the trend analysis for the OW58-13, OW165-17, CH-89B, and CH-97B data sets because the majority of the results were non-detect and the statistical model is not valid for data sets where the chemical of interest was not detected in the majority of the samples. GHD identified statistically significant decreasing trends in NDMA and chlorobenzene concentrations over time in the groundwater samples collected from MU sentry wells CH-47E and CH-56B. The decreasing trends and the persistence of the non-detect results for NDMA and chlorobenzene in the groundwater samples from OW58-13, OW165-17, CH-89B and CH-97B provide an independent line of evidence that the on-Site MU containment wells continue to achieve hydraulic containment of the most heavily impacted groundwater beneath the southwest portion of the Site in 2024. LANXESS will complete the semi-annual sampling as part of the MU Sentry Well Monitoring Program in October 2024 and provide similar trend analyses in the October Progress Report.

PW5 continued operating at a reduced pumping rate in September 2024. The well is currently unable to maintain its Target Average pumping rate. PW6 is being installed as a replacement well to maintain the Target Average pumping rate. PW6 is on schedule for completion by the end of the year as previously committed to by LANXESS.The PW5 Target Average pumping rate is an internal operational guideline LANXESS uses when operating extraction/containment wells, which includes a significant safety factor. Despite not meeting the Target Average pumping rate, hydraulic monitoring data indicate PW5 currently generates an effective groundwater capture zone. LANXESS is in the process of connecting new replacement well PW6 to the existing treatment system infrastructure and is working towards bringing the well online. The communication and power lines are scheduled to be installed in October 2024.

W5A continued pumping at a reduced rate (between 2.2 L/s and 2.5 L/s) in September 2024 as the well is unable to maintain its target pumping rate (4.5 L/s). LANXESS will schedule inspection and rehabilitation of the well, subject to contractor availability.

W9 continued pumping at a reduced rate during September 2024. The well pump is running at maximum capacity, therefore, LANXESS believes that the decreased pumping rate is due to an issue with the pump/motor and/or decreased well efficiency. Due to delays with contractor availability, LANXESS has scheduled inspection of the pump/motor and possible video inspection for the week of October 7, 2024. Additionally, W9 was shut down from September 23, 2024 through September 26, 2024 to complete the annual service and maintenance on the Trojan UV system.

The E7 average daily pumping rate was less than its Target Average pumping rate in September 2024 due to issues with the wipers on Train B. Train B repeatedly shut down between September 12 and September 25, 2024 due to pump pressure alarms on the main pump PLC. LANXESS' Rayox contractor investigated the issue and determined that the Train B wipers and the solenoid valve that runs the Train B wipers were not operating correctly. These were replaced and Train B was restarted on September 25, 2024 at its target pumping rate.

a) Bypass or Upset Conditions

The bypass or upset conditions encountered in the CTS are summarized in Table A.1 (Attachment A).

b) Data Summary and Interpretation

Table A.2 (Attachment A) presents the analytical results for the CTS samples collected in September 2024 and summarizes the effluent pH and temperature. The discharge pH was between 7.22 and 7.32 Standard Units (su), which is within the ECA discharge limit pH range of 5.5 to 9.5 su. The effluent temperature was between 13.8 and 14.4 degrees Celsius (°C), which is less than the discharge limit of 25°C.

The ATS removed ammonia to concentrations that were less than those required by the ECA.

The Combined Discharge Effluent[1] met the Effluent Limits and Effluent Objectives for all indicator parameters in September 2024.

Table A.3 (Attachment A) summarizes the effluent discharge flow rates. The total flow rate of treated groundwater discharged to the Creek via SS+890 was 34.5 L/s. The total flow rate of additional treated groundwater discharged to the Creek via Shirt Factory Creek (at storm water outfall 0800) was 6.7 L/s. The total flow rate of the combined treated groundwater discharged to the Creek (SS+890 discharge plus Shirt Factory Creek discharge) was 41.2 L/s, which was less than the discharge Effluent Limit of 92.2 L/s.

c) Supplementary Data

As part of the ongoing monitoring of on-Site carbon treatment performance, on September 3, 2024, LANXESS collected samples from the carbon tower influent (GCI) and carbon tower effluent (GCE) for VOC and base/neutral and acid extractable compound (BNA) analyses. Table A.4 (Attachment A) presents the GCI and GCE analytical results.

On September 3, 2024, LANXESS collected samples from the influent to and treated effluent from the portable carbon adsorbers installed to pre-treat groundwater from UA CS wells U+500 and U+560. ECA No. 0831-BX6JGD does not require the collection of groundwater samples from UA CS wells; however, LANXESS has been collecting these samples on a voluntary basis to monitor and improve the performance of the on-Site granular activated carbon (GAC) Tower. LANXESS analyzed the samples for VOCs and BNAs. Table A.4 (Attachment A) presents the analytical results for the influent and pre-treated effluent samples from the U+500 and U+560 containment wells.

d) Routine Maintenance

Routine maintenance tasks completed on the CTS in September 2024 are summarized in Table A.5 (Attachment A). These activities are completed by LANXESS personnel as part of on-going preventative maintenance and system inspections. These maintenance activities do not typically cause a system bypass or shutdown and are not required by the Control Order or ECA. This information is being provided to demonstrate LANXESS' commitment to proactively maintain the CTS and ensure continued operations.

e) Receiver Water Quality Data

As per Amended ECA No-0831-BX6JGD, the receiver water quality monitoring program has been reduced from monthly to once every three (3) months. LANXESS will complete the next quarterly routine monitoring event in October 2024.

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[1] The Combined Discharge Effluent value was calculated by multiplying the average flow rates by the concentration of the analytes at the SS+890 GE outfall and the additional effluent discharge location via Shirt Factory Creek.

Summary of Efforts Made and Results Achieved

During September 2024, the CTS operated within the Effluent Limits and within the Effluent Objectives for all compounds.

4. Remedial Action Plan

There are no new activities to report for this item in September 2024.

5. E7 AOP

The average E7 pumping rate (20.9 L/s) was less than its recommended Target Average pumping rate (23.9 L/s) during September 2024 due to issues with the Train B wipers and associated solenoid valve. The influent sample collected on September 23, 2024 contained NDMA at a concentration of 0.01 micrograms per litre (µg/L). NDMA was not detected in the effluent sample collected on September 23, 2024 (reporting detection limit [RDL] = 0.01 µg/L).

6. Environmental Audit

There are no new activities to report for this item in September 2024.

7. Remediation of Former Operating Pond Area

There are no new activities to report for this item in September 2024.

8. Additional Work/Studies

There are no new activities to report for this item in September 2024.

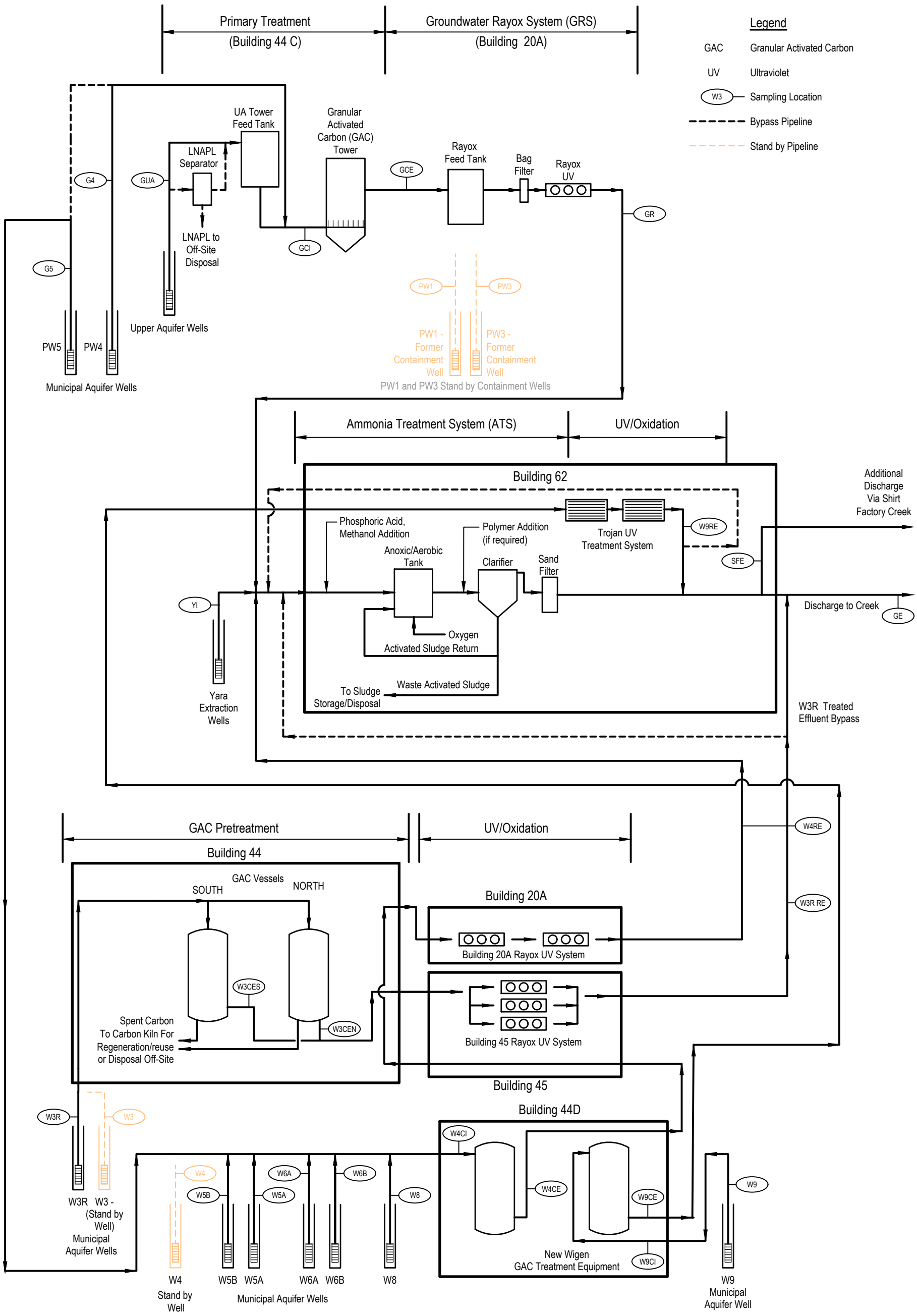
Table 1

Monitoring Program Summary
LANXESS Canada Co./Cie
Elmira, Ontario

Media and Sampling Program	Parameters	Frequency	September 2024 Results Location
Treatment System			
Off-Site Groundwater Collection and Treatment System (Off-Site CTS) Influent	Offsite Broad Scan (Schedule D)	Annual	-
On-Site Groundwater Collection and Treatment System (On-Site CTS) Influent	Effluent Broad Scan (Schedule C)	Annual	-
Combined On-Site and Off-Site Groundwater Collection and Treatment Systems (CTS) Effluent	Indicator parameters	Monthly	Attachment A
	Effluent Broad Scan (Schedule C)	Quarterly	-
CTS Effluent - Acute Toxicity	Not applicable	Quarterly	-
CTS Effluent - Chronic Toxicity	Not applicable	Semi-annual	-
Surface Water			
Environmental Appeal Board (EAB) Sampling	Select VOCs, semi-volatile organic compounds (SVOCs), pesticides, general chemistry	Monthly	Attachment B
Primary Surface Water Quality Monitoring	Indicator parameters	Quarterly	-
	Effluent Broad Scan (Schedule C)	Quarterly	-
Secondary Surface Water Quality Monitoring	Indicator parameters	Quarterly	-
	Effluent Broad Scan (Schedule C)	Quarterly	-
Upper Aquifer Hydraulic Containment Requirement	Schedule E	As required	-
Receiver Biomonitoring Program – Clams	See Biomonitoring Reports	Biennial (Even Years)	-
Receiver Biomonitoring Program – Benthic		Biennial (Odd Years)	-
Groundwater			
Groundwater Elevation Monitoring Program (GEMP)	Elevation	Semi-annual	-
Upper Municipal Aquifer (MU) Sentry Well Monitoring Program	n-Nitrosodimethylamine (NDMA), chlorobenzene	Semi-annual	Attachment E
NAPL Monitoring Program (NMP)	Elevation	Annual	-
Creek Bank Groundwater Monitoring Program – Spring Round	NDMA, chlorobenzene	Annual	-
Creek Bank Groundwater Monitoring Program – Summer Round	Selected pesticides and volatile organic compounds (VOCs)	Annual	Attachment D
Off-Site Sentry Well Monitoring Program	NDMA +/- chlorobenzene	Annual	Attachment C
Off-Site Plume Monitoring Program	NDMA +/- chlorobenzene	Biennial (Odd Years)	-

Attachment A

Analytical Results
Collection and Treatment System



LANXESS CANADA CO./CIE
ELMIRA, ONTARIO

Project No. **11192137**
Date **October 2024**

TREATMENT SYSTEM PROCESS FLOW SCHEMATIC

FIGURE A.1

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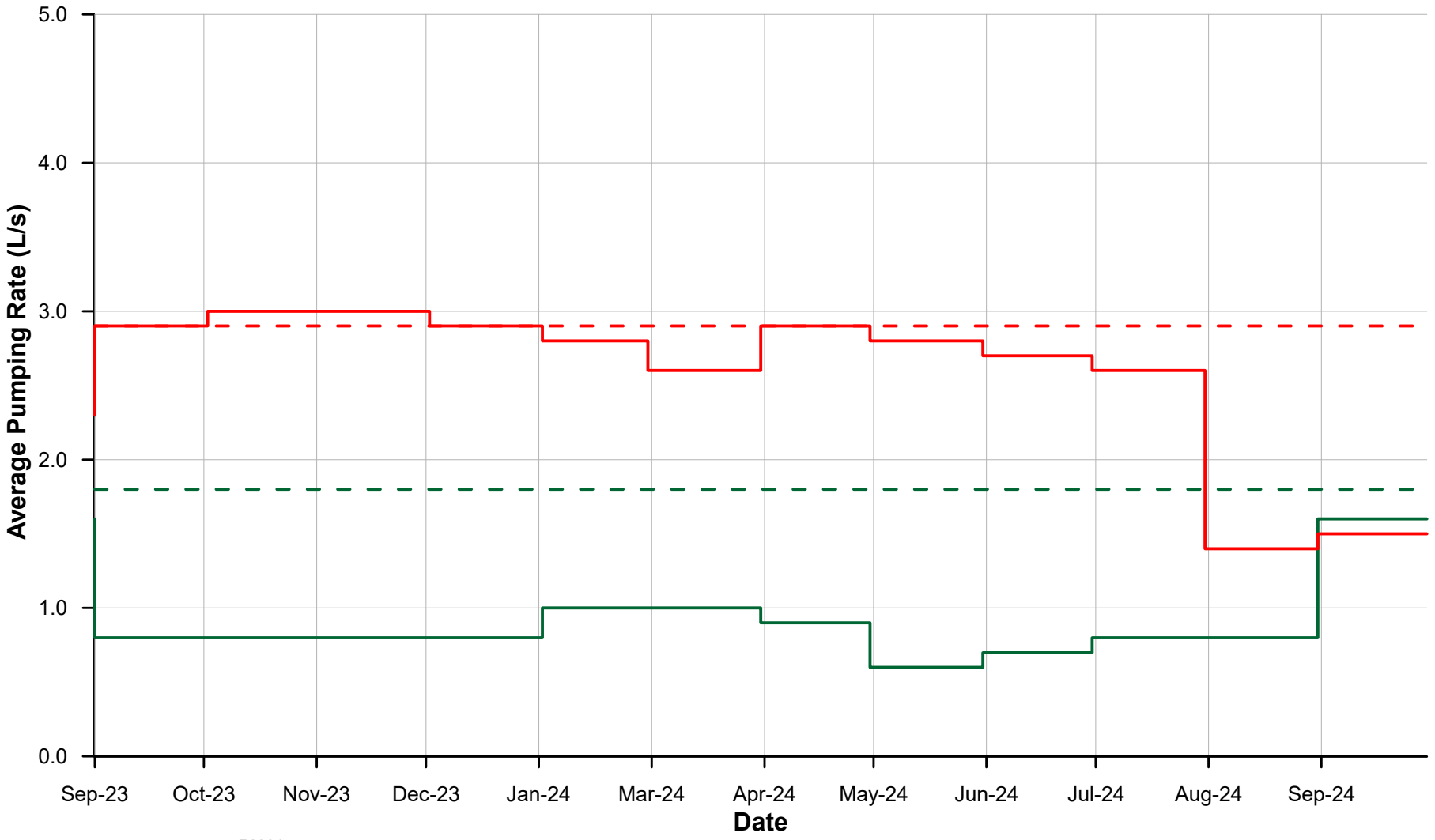


figure A.2

ON-SITE EXTRACTION WELL AVERAGE VS. TARGET PUMPING RATES

LANXESS CANADA CO./CIE

Elmira, Ontario

*Note: Target pumping rates were updated based on the average daily pumping rates recommended in the 2015 Model Check Point Analysis (GHD, June 2016). The Target Average pumping rates are 90% of the recommended daily Set Point pumping rates since the wells and treatment system components require periodic downtime for maintenance.

11192137(DIRE060)GIS-OT003 Oct 02, 2024

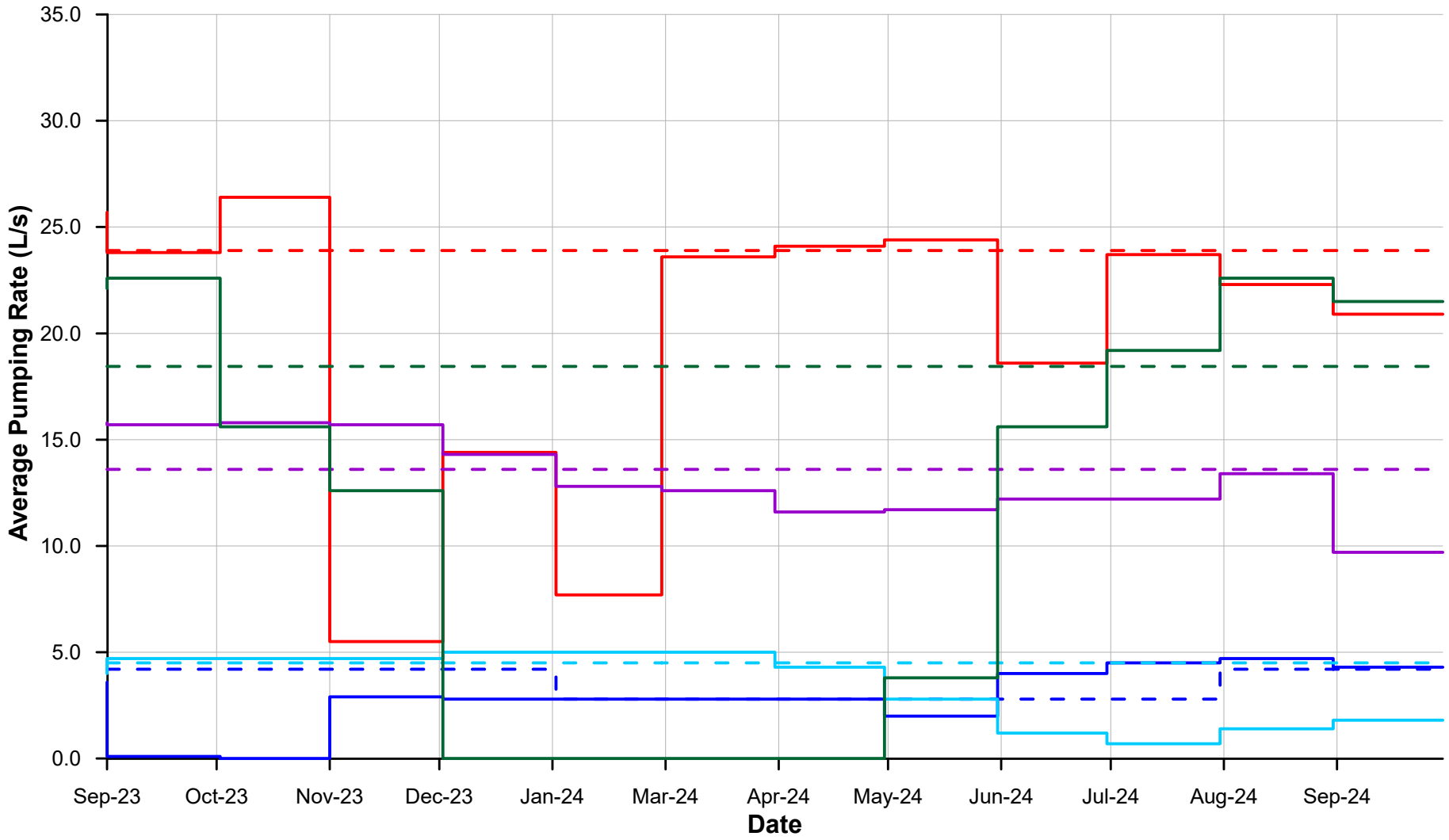


figure A.3a
OFF-SITE EXTRACTION WELL AVERAGE VS. TARGET PUMPING RATES
LANXESS CANADA CO./CIE
Elmira, Ontario

*Note: Target pumping rates were updated based on the average daily pumping rates recommended in the 2015 Model Check Point Analysis (GHD, June 2016). The Target Average pumping rates are 90% of the recommended daily Set Point pumping rates since the wells and treatment system components require periodic downtime for maintenance.

11192137(DIRE060)GIS-OT004 Oct 02, 2024

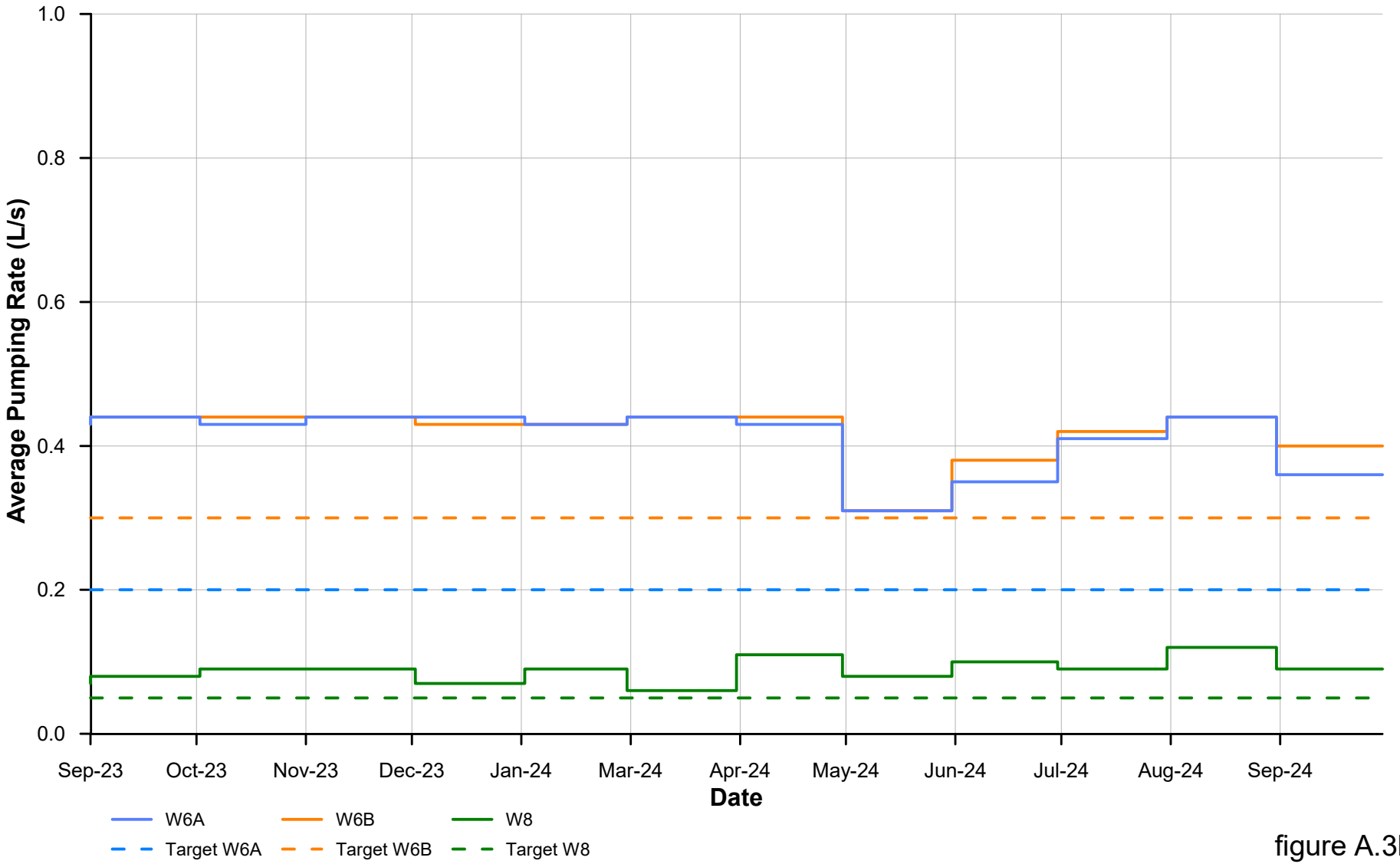


figure A.3b
OFF-SITE EXTRACTION WELL AVERAGE VS. TARGET PUMPING RATES
LANXESS CANADA CO./CIE
Elmira, Ontario

*Note: Target pumping rates were updated based on the average daily pumping rates recommended in the 2015 Model Check Point Analysis (GHD, June 2016). The Target Average pumping rates are 90% of the recommended daily Set Point pumping rates since the wells and treatment system components require periodic downtime for maintenance.

LANXESS has reduced the W6A and W6B target average pumping rates as a result of reduced well capacity.

Table A.1

Performance - Combined On-Site and Off-Site Groundwater Collection and Treatment System
Bypass/Upset Conditions - September 2024
LANXESS Canada Co./Cie
Elmira, Ontario

ON-SITE GROUNDWATER CONTAINMENT AND TREATMENT SYSTEM

September 21	Shut down at 04:45 for annual plant-wide hydro shut down, plus additional downtime due to plugging of the Rayox system, and restarted September 26, 2024 at 13:30

OFF-SITE GROUNDWATER COLLECTION AND TREATMENT SYSTEM

W3R Groundwater Rayox System

September 21	Shut down at 04:45 for annual plant-wide hydro shut down, and restarted at 17:25
September 24	Shut down at 20:50 for Rayox lamp replacement, and restarted September 26, 2024 at 18:40
September 27	Shut down at 05:30 for scheduled maintenance, and restarted at 11:25

W5A/W5B/W6A/W6B/W8 Groundwater Rayox System [1]

September 21	Shut down at 04:45 for annual plant-wide hydro shut down, and restarted September 22, 2024 at 05:25
September 22	Shut down at 10:00 due to plugging of Rayox A, and restarted at 11:35
September 25	Shut down at 10:20 for cleaning of the Rayox A feed tank, and restarted September 26, 2024 at 16:00

W9 Groundwater Trojan UV/Oxidation System

September 21	Shut down at 04:45 for annual plant-wide hydro shut down, and restarted September 22, 2024 at 06:30
September 22	Shut down at 10:00 due to plugging of Rayox A, and restarted at 12:00
September 23	Shut down at 10:25 to complete the annual service on the Trojan UV system, and restarted September 26, 2024 at 18:15
September 30	Shut down at 10:35 due to a critical alarm on the Trojan system, and restarted October 2, 2024 at 12:30

Note:

[1] Groundwater pumped by PW5 is treated in the W5A/W5B/W6A/W6B/W8 Groundwater Rayox System and PW5 is, therefore, shut down when the W4/W5A/W5B/W6A/W6B/W8 system is shut down.

Table A.2

Combined On-Site and Off-Site Groundwater Containment and Treatment System
Analytical Results [1]
September 2024
LANXESS Canada Co./Cie
Elmira, Ontario

Sample Date	Parameter [2] [3]	Primary Treatment								Secondary Treatment				Tertiary Treatment		Combined Discharge Effluent[4]	Combined Discharge Effluent		
		W3R CEN	W3R CES	W4 CI	W4 CE	W9 CI	W9 CE	GCI	GCE	W3R RE	W4 RE	W9 RE	GR	SFE	GE		Limit	Adjusted Limit [5]	Objective
3-Sep-24	Ammonia-N (mg/L)													0.123	0.143	0.140	0.84[6]	0.84	0.62
3-Sep-24	Total Phosphorus (mg/L)													0.0487	0.138	0.123	0.5	0.5	--
3-Sep-24	BOD_5 (mg/L)													ND(2.0)	ND(2.0)	ND(2.0)	15	15	--
3-Sep-24	Total Cyanide (µg/L)													ND(2)	ND(2)	ND(2)	14	14	ND(5)
3-Sep-24	Formaldehyde (µg/L)													ND(2.0)	ND(2.0)	ND(2.0)	24	24	ND(5)
3-Sep-24	pH (s.u.)													7.32	7.22	7.24	5.5 - 9.5	5.5 - 9.5	--
3-Sep-24	Temperature (°C)													13.8	14.4	14.3	<25	<25	--
3-Sep-24	Chlorobenzene (µg/L)	1.46	2.74	68.2	ND(0.20)	20	2.26	1520	33.6	0.72	ND(0.20)	1.06	8.56	0.89	0.44	0.47	10	11.2	ND(0.5)
17-Sep-24	Chlorobenzene (µg/L)									0.84	ND(0.20)	0.35	33.0	0.29	0.46				
3-Sep-24	Toluene (µg/L)							135	0.77					0.79	ND(0.20)	0.21	5	5.6	ND(0.4)
3-Sep-24	1,1-Dichloroethane (µg/L)							ND(0.20)	ND(0.20)					ND(0.20)	ND(0.20)	ND(0.20)	10	10	ND(1)
3-Sep-24	g-BHC (Lindane) (µg/L)													ND(0.0030)	ND(0.0030)	ND(0.0030)	0.14	0.16	ND(0.003)
3-Sep-24	n-Nitrosodimethylamine (NDMA) (µg/L)[7]									ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	0.14	0.16	ND(0.01)
17-Sep-24	NDMA (µg/L)[7]									ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)				
3-Sep-24	n-Nitrosodiethylamine (NDEA) (µg/L)[7]									ND(0.06)	ND(0.06)	ND(0.06)	ND(0.06)	ND(0.06)	ND(0.06)	ND(0.06)	4	4	ND(0.06)
17-Sep-24	NDEA (µg/L)[7]									ND(0.06)	ND(0.06)	ND(0.06)	ND(0.06)	ND(0.06)	ND(0.06)				
3-Sep-24	Nitrosomorpholine (NMOR) (µg/L)[7]									ND(0.06)	ND(0.06)	ND(0.06)	0.09	ND(0.06)	ND(0.06)	ND(0.06)	4	4.5	ND(0.06)
17-Sep-24	NMOR (µg/L)[7]									ND(0.06)	ND(0.06)	ND(0.06)	ND(0.06)	ND(0.06)	ND(0.06)				
3-Sep-24	Benzothiazole (µg/L)							97.2	ND(2.0)					ND(2.0)	ND(2.0)	ND(2.0)	4	4.5	ND(2)
3-Sep-24	Carboxin (µg/L)							98.2	0.219					ND(0.100)	ND(0.100)	ND(0.100)	7	7.8	ND(2)

SS+890 Discharge (GE) Flow Rate	34.5 L/s
Shirt Factory Creek Discharge (SFE) Flow Rate	6.7 L/s
Total Combined Discharge Effluent Flow	41.2 L/s

Table A.2

Combined On-Site and Off-Site Groundwater Containment and Treatment System
Analytical Results [1]
September 2024
LANXESS Canada Co./Cie
Elmira, Ontario

Notes:

[1]	All samples analyzed by ALS Canada Ltd. unless otherwise noted.		
[2]	"Parameters" are the parameters identified in ECA No. 0831-BX6JGD.		
[3]	The Sample Locations are coded as follows:		
W3R CEN	W3R North Carbon Adsorber Effluent.	W3R CES	W3R South Carbon Adsorber Effluent.
W4CI	W4 Carbon Adsorber Influent. The influent may include influent from W5A, W5B, W6A, W6B, W8 and PW5.		
W4CE	W4 Carbon Adsorber Effluent. The effluent may include effluent from W5A, W5B, W6A, W6B, W8 and PW5.		
W9CI	W9 Carbon Adsorber Influent.	W9CE	W9 Carbon Adsorber Effluent.
GCI	On-Site Carbon Tower Influent.	GCE	On-Site Carbon Tower Effluent.
W3R RE	Effluent from the W3R UV system.		
W4 RE	Effluent from the W4 UV system prior to treatment through the ATS. The effluent may include effluent from W5A, W5B, W6A, W6B, W8 and PW5.		
W9 RE	Effluent from the W9 Trojan UV/oxidation system.	GR	On-Site Groundwater Rayox Effluent.
SFE	Additional Effluent Discharge via Shirt Factory Creek.	GE	Effluent Discharge to Canagaguige Creek.
[4]	The Combined Discharge Effluent value is a calculated value determined by using average flow data from GE Effluent Discharge via SS+880 and Additional Effluent Discharge via Shift Factory Creek and monthly sample results from GE and SFE.		
[5]	Adjusted Effluent Requirements are applicable to monthly average discharge flows greater than 46.0 L/s.		
[6]	Total Ammonia Discharge Effluent Limit value is the greater of: calculated concentration, or 0.84 mg/L (May-October) or 2.4 mg/L (November-April) as per ECA No. 0831-BX6JGD.		
[7]	Samples analyzed by the LANXESS lab, Elmira Ontario.		
ND(RDL)	Not detected at the associated reporting detection limit.		

Table A.3

Combined On-Site and Off-Site Groundwater Collection and Treatment System Flow Rates
September 2024
LANXESS Canada Co./Cie
Elmira, Ontario

Date	On-Site Flow Rate [1] (L/s)	Off-Site Flow Rate [2] (L/s)	ATS Influent Flow Rate [3] (L/s)	W3R Bypass Flow Rate (L/s)	W9 Bypass Flow Rate (L/s)	SS+890 Discharge Flow Rate (L/s)	Shirt Factory Creek Discharge Flow Rate (L/s)	Total Combined Discharge Effluent Flow Rate [4] (L/s)
9/1/2024	2.1	44.9	11.6	23.7	12.2	38.3	9.1	47.4
9/2/2024	2.1	44.6	11.4	23.7	12.0	38.1	9.0	47.1
9/3/2024	2.1	44.4	11.4	23.7	11.8	38.2	8.6	46.8
9/4/2024	2.1	44.1	11.3	23.7	11.6	37.7	8.9	46.5
9/5/2024	2.1	42.1	9.4	23.7	11.5	38.1	6.5	44.5
9/6/2024	2.1	41.6	9.0	23.7	11.3	38.3	5.7	44.0
9/7/2024	2.1	41.4	9.0	23.7	11.2	38.4	5.4	43.9
9/8/2024	2.1	41.2	9.0	23.7	11.0	38.0	5.7	43.7
9/9/2024	2.1	41.1	8.9	23.7	10.9	38.2	5.3	43.4
9/10/2024	2.1	42.9	10.8	23.7	10.7	37.8	7.4	45.2
9/11/2024	2.1	43.3	11.4	23.7	10.6	37.9	7.8	45.7
9/12/2024	2.1	42.9	11.2	23.7	10.5	37.6	7.7	45.3
9/13/2024	2.1	42.3	10.7	23.7	10.4	37.7	7.0	44.7
9/14/2024	2.1	42.6	11.1	23.7	10.2	37.6	7.4	45.0
9/15/2024	2.1	42.5	11.1	23.7	10.1	37.7	7.2	44.9
9/16/2024	2.1	41.7	10.3	22.9	10.8	36.8	7.2	44.0
9/17/2024	2.6	44.3	10.8	23.7	12.6	37.6	9.5	47.1
9/18/2024	2.9	45.8	12.6	23.7	12.6	37.5	11.4	48.9
9/19/2024	3.3	45.7	12.9	23.7	12.6	37.4	11.8	49.1
9/20/2024	3.3	43.2	11.0	23.7	12.0	37.3	9.3	46.7
9/21/2024	1.2	16.8	2.6	10.6	4.8	16.6	1.5	18.1
9/22/2024	0.0	38.0	6.1	23.7	8.4	33.8	4.3	38.1
9/23/2024	0.0	38.3	9.3	23.7	5.5	35.4	3.1	38.5
9/24/2024	0.0	28.8	9.3	19.7	0.0	28.9	0.1	29.0
9/25/2024	0.0	3.9	4.1	0.0	0.0	4.1	0.0	4.1
9/26/2024	1.5	11.7	4.5	5.3	3.4	10.6	2.6	13.2
9/27/2024	3.3	39.8	12.5	18.1	12.6	35.6	7.5	43.1
9/28/2024	3.2	45.4	12.4	23.7	12.6	38.9	9.7	48.7
9/29/2024	3.2	45.4	12.4	23.7	12.6	38.6	10.0	48.6
9/30/2024	3.3	38.1	12.6	23.7	5.3	37.2	4.4	41.6
Average	**2.1**	**39.0**	**10.0**	**21.5**	**9.7**	**34.5**	**6.7**	**41.2**
Minimum	**0.0**	**3.9**	**2.6**	**0.0**	**0.0**	**4.1**	**0.0**	**4.1**
Maximum	**3.3**	**45.8**	**12.9**	**23.7**	**12.6**	**38.9**	**11.8**	**49.1**

Notes:

L/s Litres per second
[1] The ECA requires that the influent flow rate to the on-Site Treatment System be less than 5 L/s.
[2] The ECA requires that the influent flow rate to the off-Site Treatment System be less than 87.2 L/s.
[3] The ECA requires that the influent flow rate to the Ammonia Treatment System be less than 46 L/s.
[4] The ECA requires that the monthly average effluent discharge flow rate be less than 92.2 L/s.

Table A.4

Supplementary Sample Analytical Results
September 2024
LANXESS Canada Co./Cie
Elmira, Ontario

Sample Location:	**UA500I**	**UA500CE**	**UA560I**	**UA560CE**	**GCI**	**GCE**
Sample Date:	**9/3/2024**	**9/3/2024**	**9/3/2024**	**9/3/2024**	**9/3/2024**	**9/3/2024**
Parameter [µg/L]						
Volatile Organic Compounds (VOCs)						
Benzene	22.8	1.96	25.6	ND(0.20)	9.8	ND(0.20)
Chlorobenzene	1130	45.1	646	ND(0.20)	1520	33.6
1,1-Dichloroethane	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)
Ethylbenzene	109	3.98	66.3	ND(0.20)	17.6	ND(0.20)
Toluene	10100	404	12400	0.51	135	0.77
m/p-Xylenes [1]	199	6.35	143	ND(0.40)	10.9	ND(0.40)
o-Xylene [1]	129	4.69	93.9	ND(0.20)	9.62	ND(0.20)
Base/Neutral and Acid Extractable Compounds (BNAs)						
Aniline	2010	193	2960	ND(2.0)	75.2	ND(2.0)
Benzothiazole	1400	65.5	31.8	ND(2.0)	97.2	ND(2.0)
Carboxin (Oxathiin)	2000	98.5	1580	ND(0.100)	98.2	0.219
2-Chlorophenol	17.5	1.16	0.42	ND(0.30)	5.01	ND(0.30)
2-Mercaptobenzothiazole	3300	128	ND(50)	ND(20)	232	ND(20)
2,4-Dichlorophenol	86.3 J+	3.98 J+	0.42	ND(0.20)	0.34	ND(0.20)
2,6-Dichlorophenol	9.55	0.62	0.26	ND(0.20)	0.24	ND(0.20)
2,4,5-Trichlorophenol	36.3	1.39	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)
2,4,6-Trichlorophenol	11.3	0.69	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)

Notes:

UA500I	Influent to the installed UA500R portable carbon drum.
UA500CE	Effluent from the installed UA500R portable carbon drum.
UA560I	Influent to the installed UA560 portable carbon drum.
UA560CE	Effluent from the installed UA560 portable carbon drum.
GCI	Carbon Tower Influent.
GCE	Carbon Tower Effluent.
ND(RDL)	Not detected at the associated reporting detection limit.
J+	The result is an estimated quantity, but the result may be biased high.
[1]	Samples analyzed for m,p-Xylenes and o-Xylene only.
	No separate analysis for Total Xylenes.

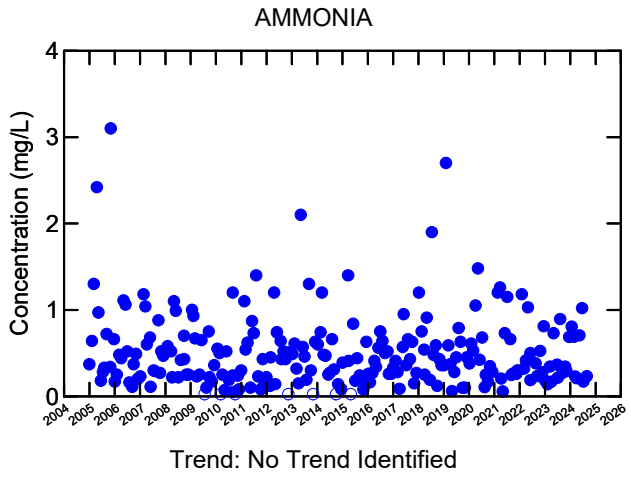
Table A.5

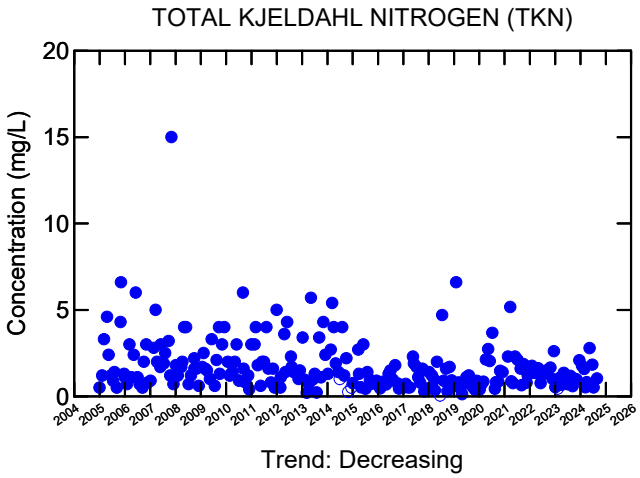
Maintenance Summary
On-Site and Off-Site Groundwater Collection and Treatment System
September 2024
LANXESS Canada Co./Cie
Elmira, Ontario

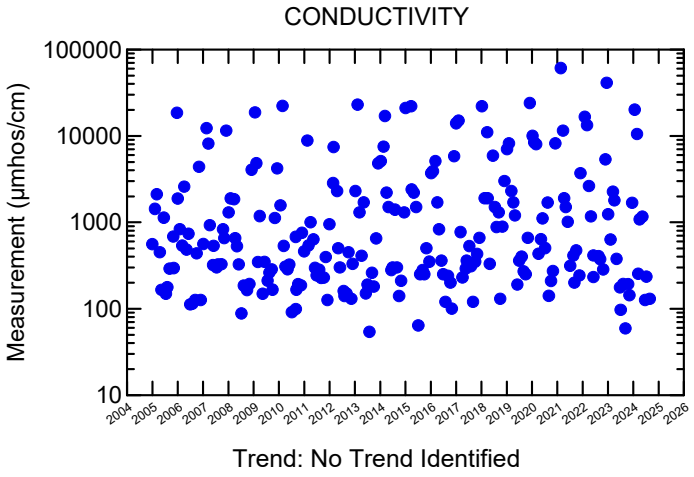
Start Date	Description	Work Type
09/03/2024	Check 44-PG-201 (44PM-45) - UA+500 Carbon System Pressure	Instrumentation
09/03/2024	Check 44-PG-202 (44PM-45) - UA+560 Carbon System Pressure	Instrumentation
09/03/2024	Check 62-PG-204 (62PM-23) - North Clarifier RAS Pump Pressure Guage	Instrumentation
09/03/2024	Check 62-PG-205 (62PM-23) - South Clarifier RAS Pump Pressure Guage	Instrumentation
09/03/2024	Check 62-PG-206 (62PM-23) - North Aeration Pump Pressure	Instrumentation
09/03/2024	Check 62-PG-201 (62PM-23) - South Aeration Pump Pressure	Instrumentation
09/04/2024	Check/Replace Bearings on North Aeration Pump	Mechanical
09/05/2024	Check 62-AIT-901 (62PM-13) - Nitrification Tank pH	Instrumentation
09/05/2024	Check 62-AIT-904 (62-ICP-904) - Nitrification Tank Dissolved O2	Instrumentation
09/05/2024	Check 62-AIT-790 (62PM-26) - Creek Water pH Transmitter	Instrumentation
09/05/2024	Rayox A Wipers #4 & #6 Sticking	Electrical
09/18/2024	Check 20-LT-322B (20PM-059) - W6B Well Level Transmitter	Instrumentation
09/18/2024	E7/E9 Rayox B Shutting Down on Pressure	Electrical
09/18/2024	Check 62-AIT-841 (62PM-02) - Nitrification Tank Anoxic pH	Instrumentation
09/18/2024	Check 62-AIT-844 (62PM-01) - Nitrification Tank Dissolved O2	Instrumentation
09/18/2024	Check 62-AIT-842 (62PM-10) - Nitrification Tank Anoxic ORP	Instrumentation
09/18/2024	Check 62-AIT-843 (62PM-04) - Nitrification Tank Aeration pH	Instrumentation
09/18/2024	Check 44-LT-302 (44PM-55) - W8 Well Level Transmitter	Instrumentation
09/18/2024	Check 44-LT-312 (44PM-056) - W9 Well Level Transmitter	Instrumentation
09/24/2024	Add Camlock Fitting to Bldg. #44D Backwash Tank Sump Line	Piping
09/25/2024	Open Bldg. #20A Rayox Feed Tank For Cleaning	Mechanical
09/30/2024	Check 62-TT-790 (62PM-25) - Creek Water pH Transmitter	Instrumentation

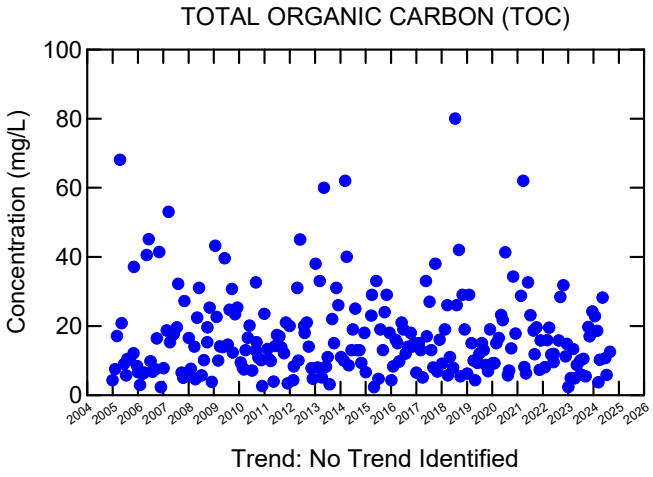
Attachment B

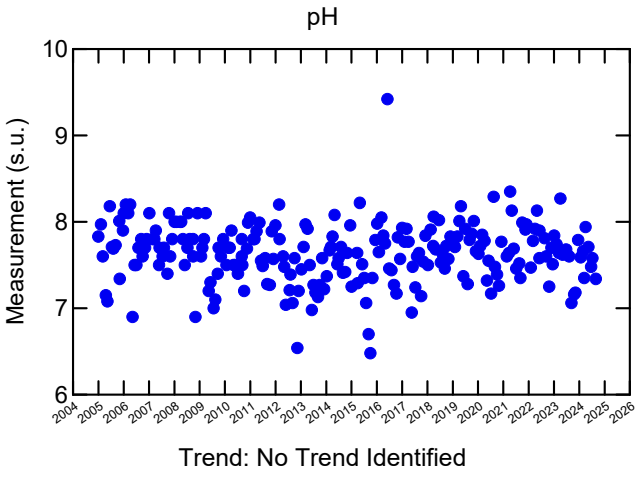
EAB Data











Legend:

- Detected Result
- Non-detect (plotted at one half the detection limit)

Notes:

Any detection limits elevated above target detection limit and/or detected values were not included in the trend analysis.

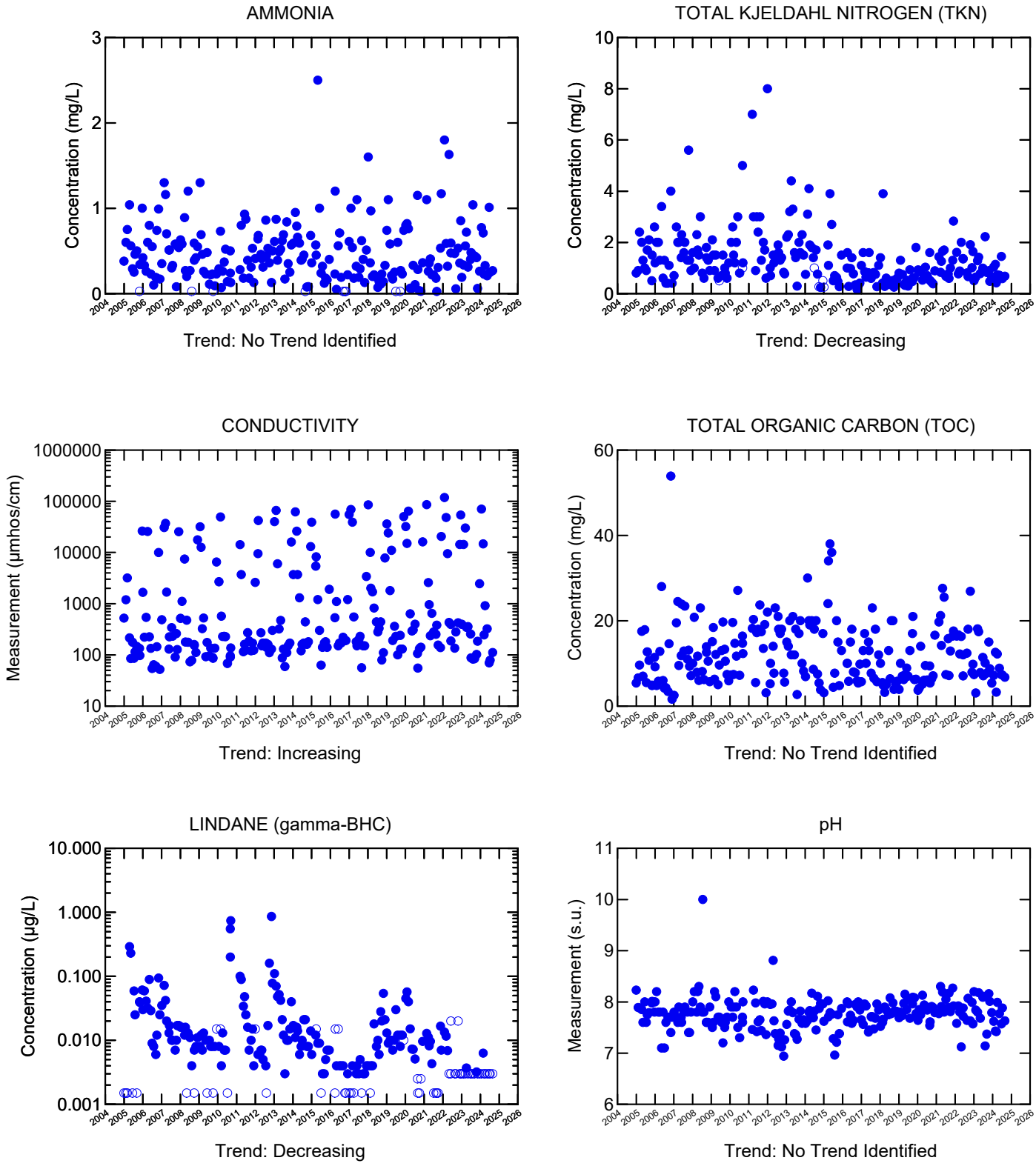
No Trend: trend analysis did not detect a significant trend above 95 percent confidence.

LANXESS Canada Co./Cie
Elmira, Ontario

ANALYTE CONCENTRATION vs. TIME
STORM WATER OUTFALL 0200

Project No. **11192137-38**
Date: **Oct 3, 2024**

FIGURE B.1



Legend:

- Detected Result
- Non-detect (plotted at one half the detection limit)

Notes:

Any detection limits elevated above target detection limit and/or detected values were not included in the trend analysis.

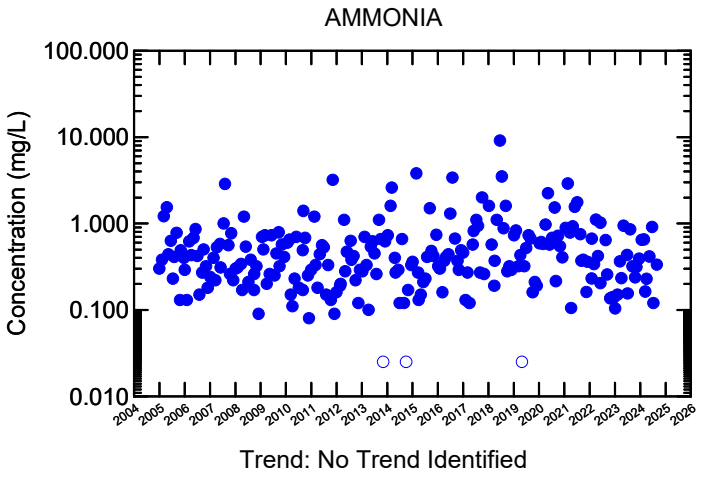
No Trend: trend analysis did not detect a significant trend above 95 percent confidence.

LANXESS Canada Co./Cie
Elmira, Ontario

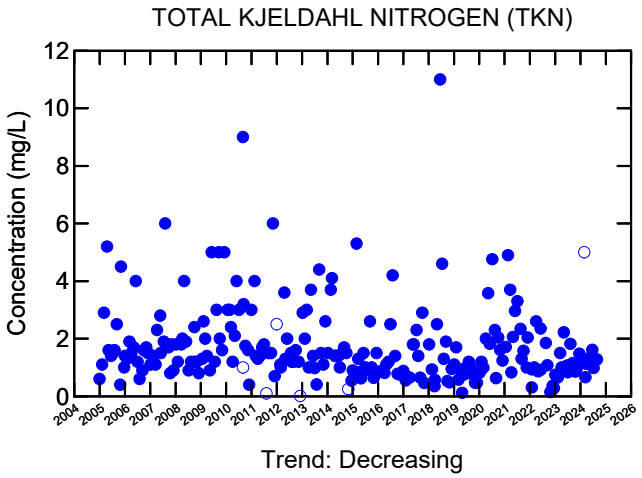
ANALYTE CONCENTRATION vs. TIME
STORM WATER OUTFALL 0400

Project No. **11192137-38**
Date: **Oct 3, 2024**

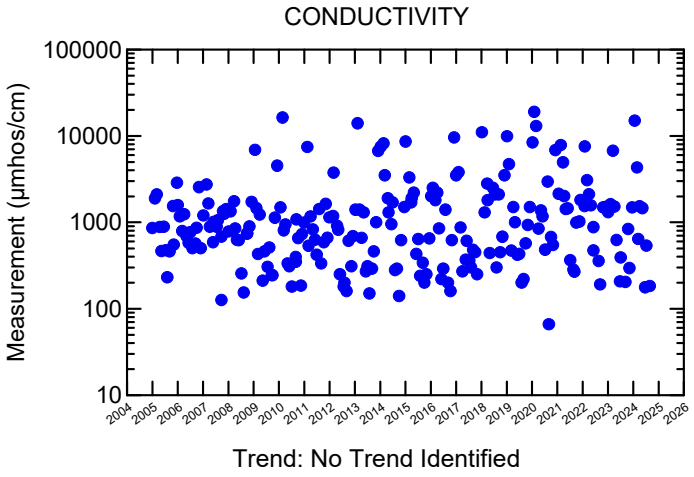
FIGURE B.2



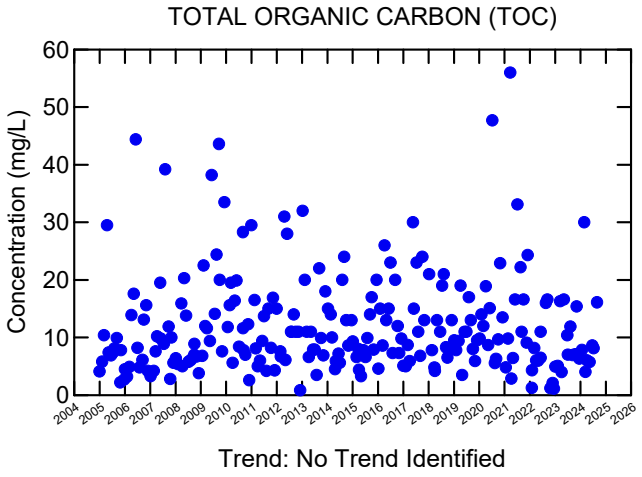
Trend: No Trend Identified



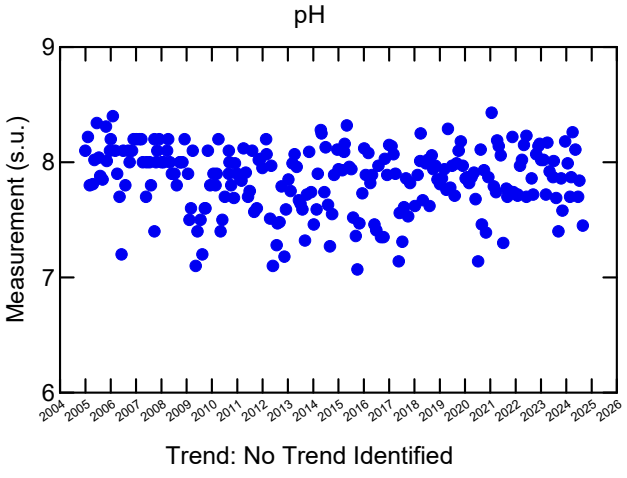
Trend: Decreasing



Trend: No Trend Identified



Trend: No Trend Identified



Trend: No Trend Identified

Legend:

- Detected Result
- Non-detect (plotted at one half the detection limit)

Notes:

Any detection limits elevated above target detection limit and/or detected values were not included in the trend analysis.

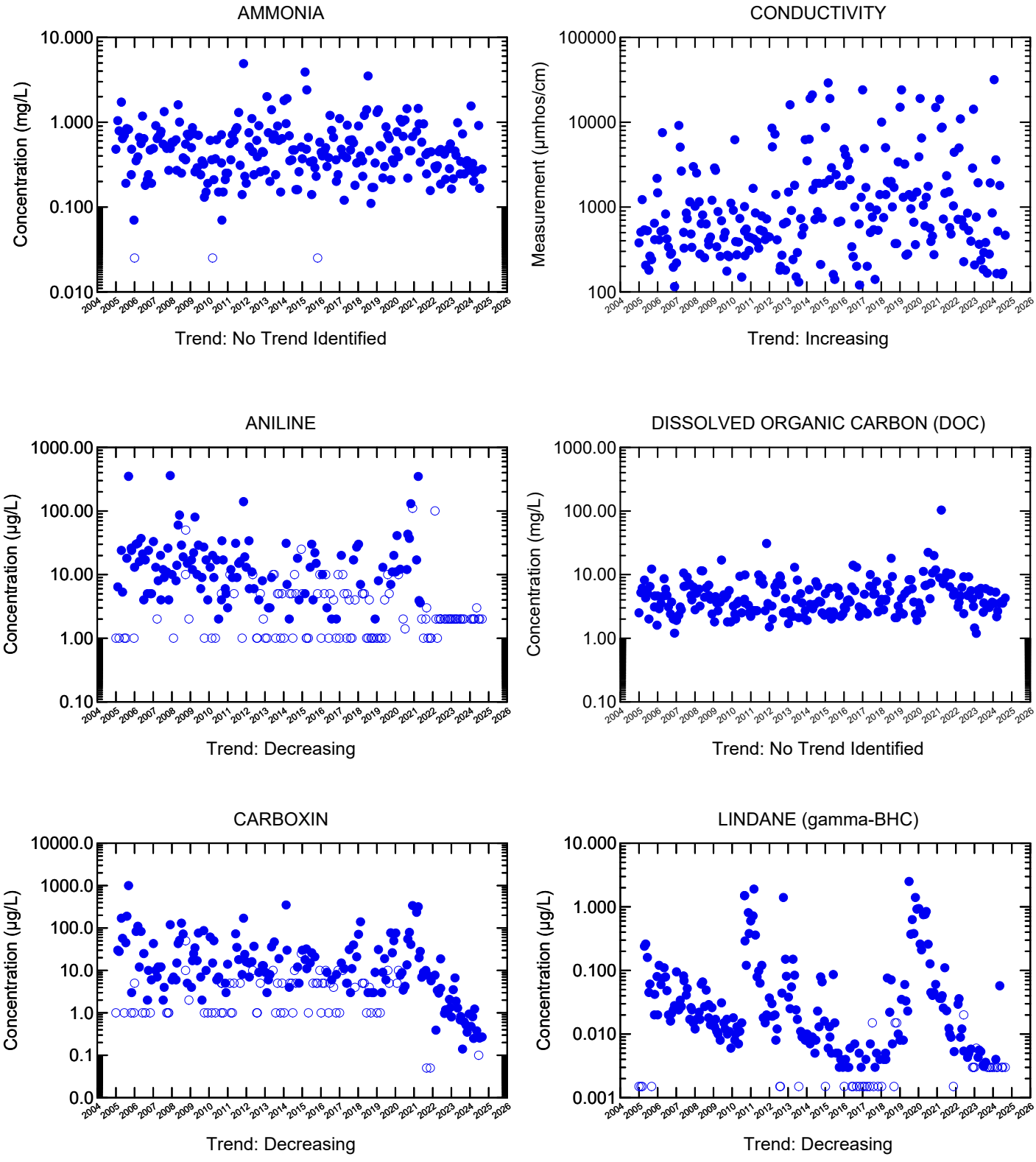
No Trend: trend analysis did not detect a significant trend above 95 percent confidence.

LANXESS Canada Co./Cie
Elmira, Ontario

ANALYTE CONCENTRATION vs. TIME
STORM WATER OUTFALL 0800

Project No. **11192137-38**
Date: **Oct 3, 2024**

FIGURE B.3



Legend:

- Detected Result
- Non-detect (plotted at one half the detection limit)

Notes:

Any detection limits elevated above target detection limit and/or detected values were not included in the trend analysis.

No Trend: trend analysis did not detect a significant trend above 95 percent confidence.

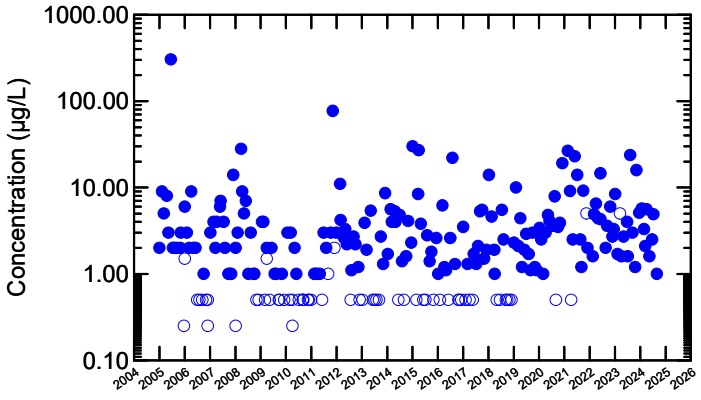
LANXESS Canada Co./Cie
Elmira, Ontario

ANALYTE CONCENTRATION vs. TIME
STORM WATER SEWER

Project No. **11192137-38**
Date: **Oct 3, 2024**

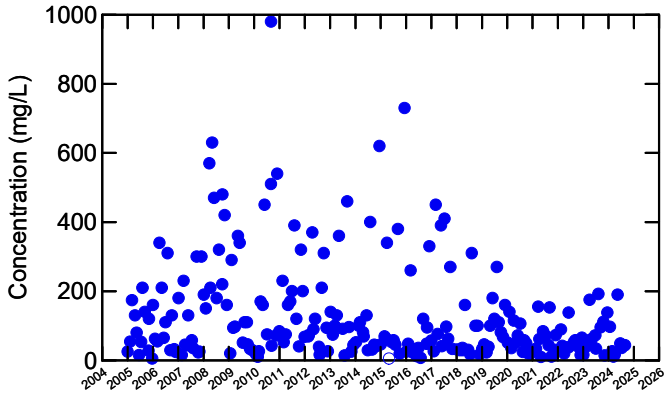
FIGURE B.4

PHENOLICS (TOTAL)



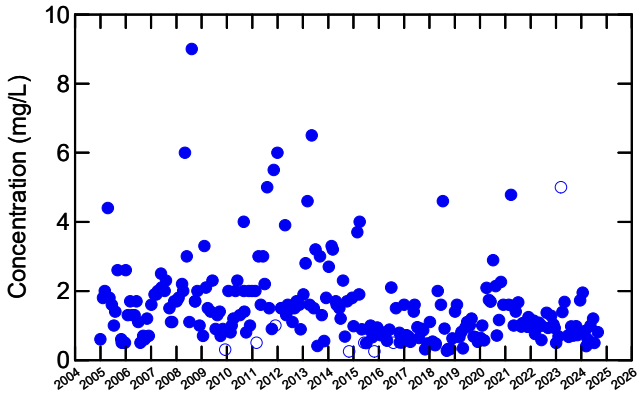
Trend: Increasing

TOTAL SUSPENDED SOLIDS (TSS)



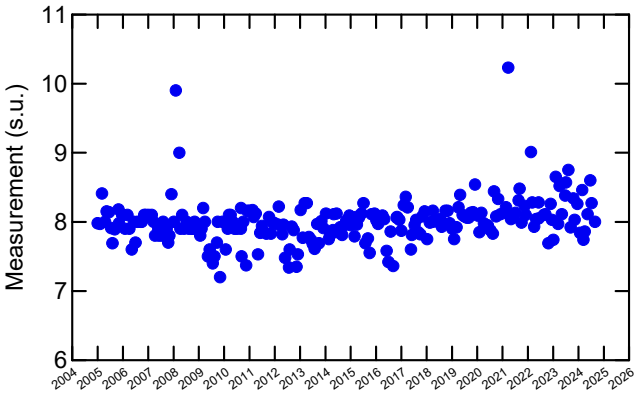
Trend: Decreasing

TOTAL KJELDAHL NITROGEN (TKN)



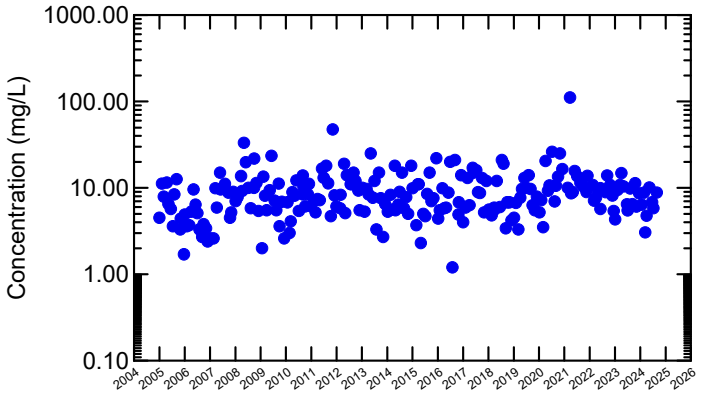
Trend: Decreasing

pH



Trend: Increasing

TOTAL ORGANIC CARBON (TOC)



Trend: Increasing

Legend:

- Detected Result
- Non-detect (plotted at one half the detection limit)

Notes:

Any detection limits elevated above target detection limit and/or detected values were not included in the trend analysis.

No Trend: trend analysis did not detect a significant trend above 95 percent confidence.

LANXESS Canada Co./Cie
Elmira, Ontario

ANALYTE CONCENTRATION vs. TIME
STORM WATER SEWER

Project No. **11192137-38**
Date: **Oct 3, 2024**

FIGURE B.5

Table B.1

Environmental Appeal Board (EAB)
Analytical Results - August 2024
LANXESS Canada Co./Cie
Elmira, Ontario

Sample Location:		**Storm Water Sewer**	**Storm Water Outfall 0200**	**Storm Water Outfall 0400**	**Storm Water Outfall 0800**
Sample ID:		**SWS 083024**	**0200 083024**	**0400 083024**	**0800 083024**
Sample Date:		**8/30/2024**	**8/30/2024**	**8/30/2024**	**8/30/2024**
Parameters	**Units**				
General Chemistry					
Ammonia-N	mg/L	0.280	0.233	0.268	0.334
Conductivity	umhos/cm	465	130	111	183
Cyanide (total)	mg/L	ND(0.0020)	0.0022	0.0034	0.0020
Dissolved organic carbon (DOC) (dissolved)	mg/L	4.28 J	--	--	--
pH, lab	s.u.	8.00	7.34	7.63	7.45
Phenolics (total)	mg/L	0.0010	--	--	--
Sulfide	mg/L	0.043	0.024	ND(0.018)	0.021
Total kjeldahl nitrogen (TKN)	mg/L	0.807	1.03	0.679	1.28
Total organic carbon (TOC)	mg/L	8.83	12.5	6.74	16.1
Total suspended solids (TSS)	mg/L	43.7 J	--	--	--
Herbicides					
2,4,5-TP (Silvex)	µg/L	ND(0.500)	ND(0.500)	ND(0.500)	ND(0.500)
2,4-DB	µg/L	ND(0.500)	ND(0.500)	ND(0.500)	ND(0.500)
2,4-Dichlorophenoxyacetic acid (2,4-D)	µg/L	ND(0.500)	ND(0.500)	ND(0.500)	3.00
Pesticides					
gamma-BHC (lindane)	µg/L	ND(0.0030)	ND(0.0030)	ND(0.0030)	ND(0.0030)
Semi-Volatiles					
2-Mercaptobenzothiazole	µg/L	ND(20)	ND(20)	ND(20)	ND(20)
Aniline	µg/L	ND(2.0) UJ	ND(2.0) UJ	ND(2.0) UJ	ND(2.0) UJ
Benzothiazole	µg/L	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)
Carboxin	µg/L	0.270	ND(0.100)	ND(0.100)	ND(0.100)
N-Nitrosodiethylamine	µg/L	ND(0.06) UJ	ND(0.06) UJ	ND(0.06) UJ	ND(0.06) UJ
N-Nitrosodimethylamine	µg/L	ND(0.01) UJ	ND(0.01) UJ	ND(0.01) UJ	ND(0.01) UJ
N-Nitrosodi-n-butylamine	µg/L	ND(0.06) UJ	ND(0.06) UJ	ND(0.06) UJ	ND(0.06) UJ
N-Nitrosodiphenylamine	µg/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
N-Nitrosodiphenylamine + Diphenylamine	µg/L	ND(0.40)	ND(0.40)	ND(0.40)	ND(0.40)
Nitrosomorpholine	µg/L	ND(0.06) UJ	ND(0.06) UJ	ND(0.06) UJ	ND(0.06) UJ
Volatiles					
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/L	ND(20)	ND(20)	ND(20)	ND(20)
Ethylbenzene	µg/L	ND(0.20)	ND(0.20)	0.20	ND(0.20)
m&p-Xylenes	µg/L	ND(0.40)	ND(0.40)	0.99	ND(0.40)
o-Xylene	µg/L	ND(0.20)	ND(0.20)	0.46	ND(0.20)
Toluene	µg/L	ND(0.20)	ND(0.20)	ND(0.20)	0.31
Misc					
Oil and grease	mg/L	ND(5.0)	--	--	--

Notes:

ND(RDL)	Not detected at the associated reporting detection limit.
UJ	The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
--	The parameter was not analyzed for.

Attachment C

Analytical Results
Off-Site Routine Groundwater Monitoring Program

Table C.1

2024 Off-Site Routine Groundwater Monitoring
August 2024 Analytical Results
LANXESS Canada Co./Cie
Elmira, Ontario

Sample Location:		**OW15d**	**OW15i**	**OW16d**	**OW16i**
Sample ID:		**GW-4432-081924-AB-035**	**GW-4432-081924-AB-036**	**GW-4432-081924-AB-037**	**GW-4432-081924-AB-038**
Sample Date:		**8/19/2024**	**8/19/2024**	**8/19/2024**	**8/19/2024**
Sample Type:		**Original**	**Original**	**Original**	**Original**
Parameters	**Units**				
Field Parameters					
Conductivity	mS/cm	1.69	0.783	1.79	1.86
pH	s.u.	7.39	7.64	7.64	7.60
Temperature	Deg C	10.34	10.18	10.89	10.64
Turbidity	NTU	60.5	11.2	>1000	46.2
Semi-Volatiles					
n-Nitrosodimethylamine (NDMA)	µg/L	ND(0.00360)	0.0307	ND(0.00270)	0.142
Volatiles					
Chlorobenzene	µg/L	--	--	ND(0.20)	--

Notes:

ND(RDL) Not detected at the associated reporting detection limit.
J+ The result is an estimated quantity, but the result may be biased high.
-- The parameter was not analyzed for.

2024 Off-Site Routine Groundwater Monitoring
August 2024 Analytical Results
LANXESS Canada Co./Cie
Elmira, Ontario

Sample Location:		**OW16i**	**OW69-13**	**OW174-48**	**OW175-21**
Sample ID:		**GW-4432-081924-AB-039**	**GW-4432-081924-AB-041**	**GW-4432-081224-AN-105**	**GW-4432-081224-AN-104**
Sample Date:		**8/19/2024**	**8/19/2024**	**8/12/2024**	**8/12/2024**
Sample Type:		**Field Duplicate**	**Original**	**Original**	**Original**
Parameters	**Units**				
Field Parameters					
Conductivity	mS/cm	1.86	0.885	1.05	0.747
pH	s.u.	7.60	7.94	7.39	7.51
Temperature	Deg C	10.64	12.79	14.64	12.28
Turbidity	NTU	46.2	3.2	130	29.8
Semi-Volatiles					
n-Nitrosodimethylamine (NDMA)	µg/L	0.150	0.0327	ND(0.00310)	ND(0.00390)
Volatiles					
Chlorobenzene	µg/L	--	--	--	--

Notes:

ND(RDL) Not detected at the associated reporting detection limit.
J+ The result is an estimated quantity, but the result may be biased high.
-- The parameter was not analyzed for.

2024 Off-Site Routine Groundwater Monitoring
August 2024 Analytical Results
LANXESS Canada Co./Cie
Elmira, Ontario

Sample Location:		**OW175-37**	**OW175-44**	**OW175-44**	**OW191-26**
Sample ID:		**GW-4432-081224-AN-103**	**GW-4432-081224-AN-100**	**GW-4432-081224-AN-101**	**GW-4432-081924-AB-034**
Sample Date:		**8/12/2024**	**8/12/2024**	**8/12/2024**	**8/19/2024**
Sample Type:		**Original**	**Original**	**Field Duplicate**	**Original**
Parameters	**Units**				
Field Parameters					
Conductivity	mS/cm	1.48	2.10	2.10	1.27
pH	s.u.	7.39	7.29	7.29	7.03
Temperature	Deg C	13.12	13.34	13.34	10.06
Turbidity	NTU	124	0.0	0.0	26.5
Semi-Volatiles					
n-Nitrosodimethylamine (NDMA)	µg/L	0.662 J+	0.130 J+	0.134 J+	ND(0.00360)
Volatiles					
Chlorobenzene	µg/L	--	--	--	--

Notes:

ND(RDL) Not detected at the associated reporting detection limit.
J+ The result is an estimated quantity, but the result may be biased high.
-- The parameter was not analyzed for.

Attachment D

Analytical Results
Creek Bank Groundwater Monitoring Program

Table D.1

2024 Creek Bank Groundwater Monitoring Program
September 2024 Analytical Data
LANXESS Canada Co./Cie
Elmira, Ontario

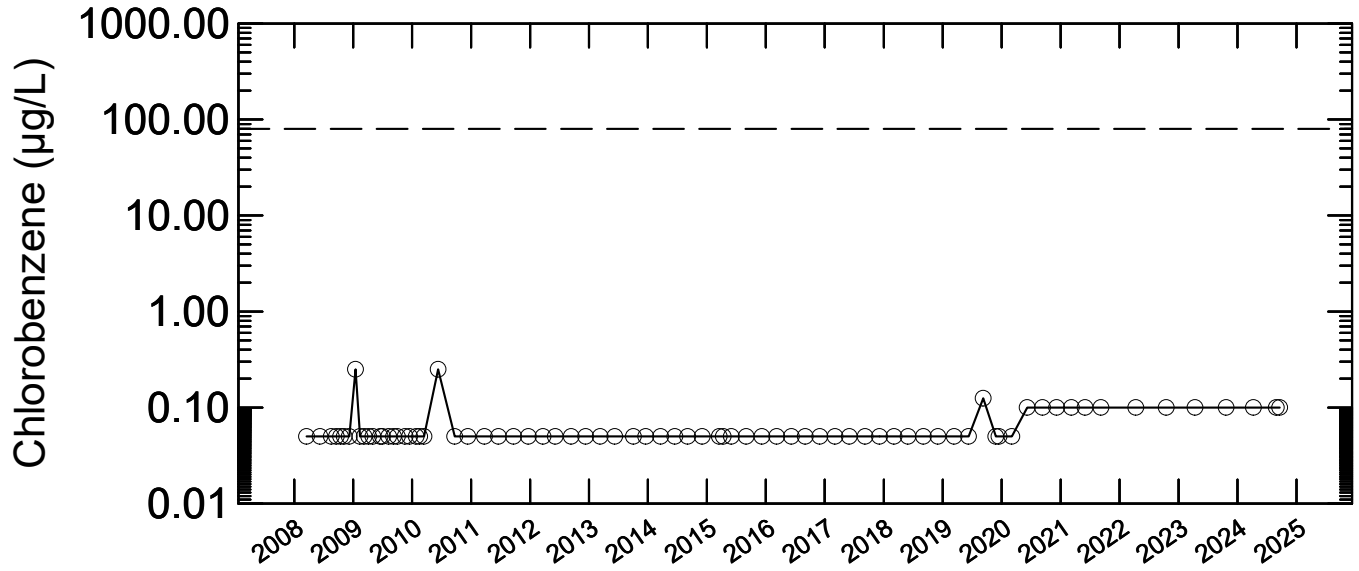
Sample Location:			**OW127-4**
Sample ID:		**Ontario**	**GW-5380-0905024-AB-001**
Sample Date:		**Table 8 [1]**	**9/5/2024**
Sample Type:			**Original**
Parameters	**Units**		
Field Parameters			
Conductivity	mS/cm	-	6.68
Dissolved oxygen (DO)	mg/L	-	1.57
Oxidation reduction potential (ORP)	millivolts	-	-83
pH	s.u.	-	7.14
Temperature	Deg C	-	17.35
Turbidity	NTU	-	1.5
Volatiles			
Benzene	µg/L	5	3.74
Chlorobenzene	µg/L	30	32.1
Chloroform (Trichloromethane)	µg/L	2.4	ND(1.00)
1,2-Dichlorobenzene	µg/L	3	0.62
1,3-Dichlorobenzene	µg/L	59	ND(0.50)
1,4-Dichlorobenzene	µg/L	1	0.76
1,1-Dichloroethane	µg/L	5	ND(0.20)
1,2-Dichloroethane	µg/L	1.6	ND(0.50)
1,1-Dichloroethylene	µg/L	1.6	ND(0.50)
cis-1,2-Dichloroethylene	µg/L	1.6	ND(0.50)
trans-1,2-Dichloroethylene	µg/L	1.6	ND(0.50)
1,2-Dichloropropane	µg/L	5	ND(0.50)
Ethylbenzene	µg/L	2.4	ND(0.20)
1,1,1,2-Tetrachloroethane	µg/L	1.1	ND(0.50)
1,1,2,2-Tetrachloroethane	µg/L	1	ND(0.50)
Tetrachloroethylene	µg/L	1.6	ND(0.50)
Toluene	µg/L	22	ND(0.20)
1,1,1-Trichloroethane	µg/L	200	ND(0.50)
1,1,2-Trichloroethane	µg/L	4.7	ND(0.50)
Trichloroethylene	µg/L	1.6	ND(0.20)
Vinyl Chloride	µg/L	0.5	ND(0.50)
m&p-Xylenes	µg/L	300	ND(0.40)
o-Xylene	µg/L	300	ND(0.20)

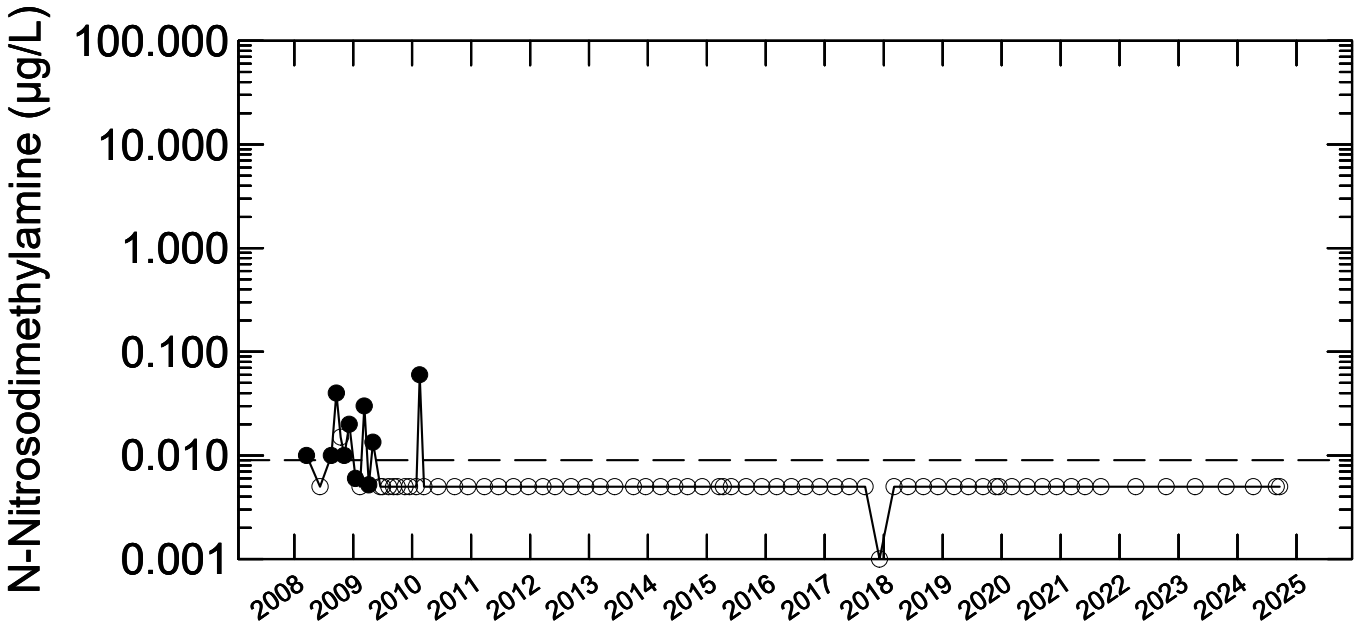
Note:

ND(RDL)	Not detected at the associated reporting detection limit.
[1]	Table 8 Generic Site Condition Standards for Use within 30 meters of a Water Body in a Potable Groundwater Condition . "Rationale for the Development of Soil and Ground Water Standards for Use at Contaminated Sites in Ontario", Standards Development Branch, Ontario Ministry of the Environment, April 15, 2011.
-	No Table 8 Standard specified.
32.1	Concentration greater than associated Table 8 Standard.

Attachment E

Analytical Results
MU Sentry Well Monitoring Program





Legend:

● Detected Result

○ Non-detect

— — Ontario Drinking Water Standard

Note:

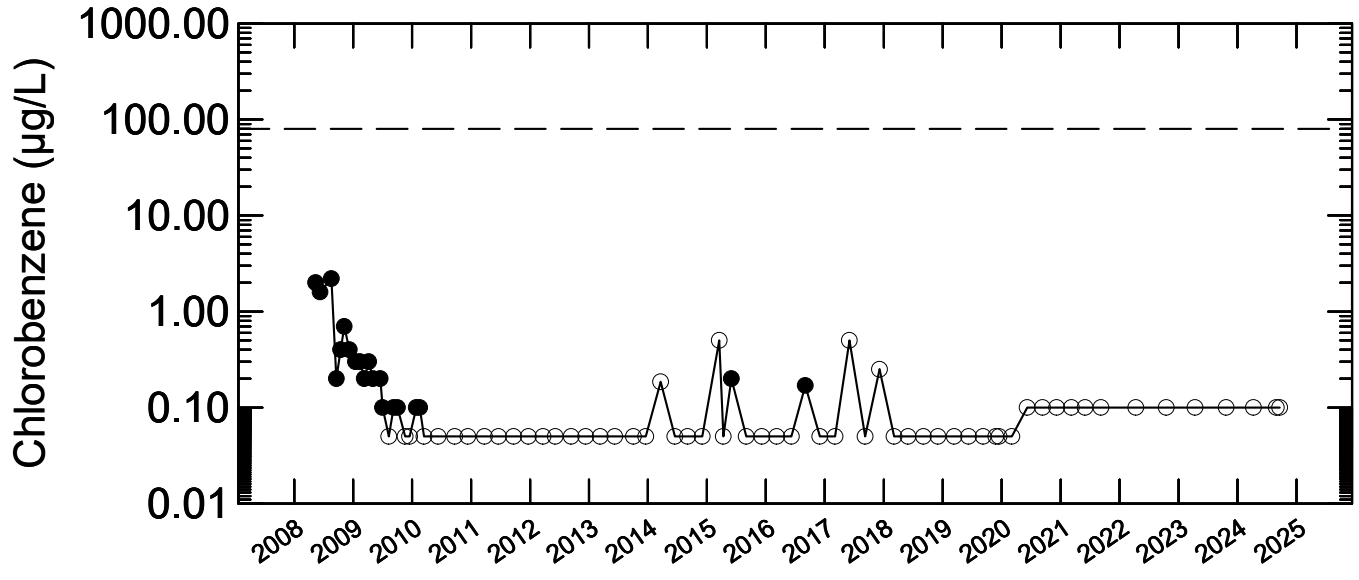
Non-detects are shown as one half the laboratory detection limit

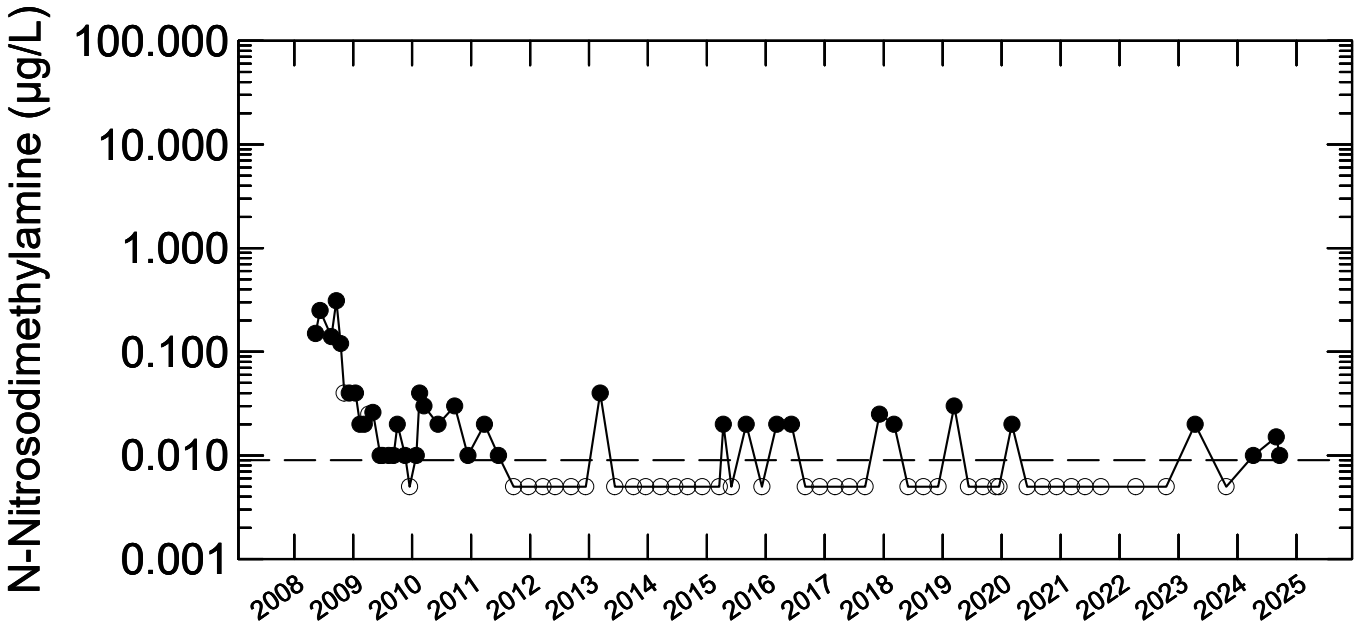
Evaluation of Groundwater Analytical Data
Lanxess Canada Co./Cie
Elmira, Ontario

MU SENTRY WELL OW58-13

Project No. **11192137**
Date: **Oct 1, 2024**

FIGURE E.1





Legend:

● Detected Result

○ Non-detect

— — Ontario Drinking Water Standard

Note:

Non-detects are shown as one half the laboratory detection limit

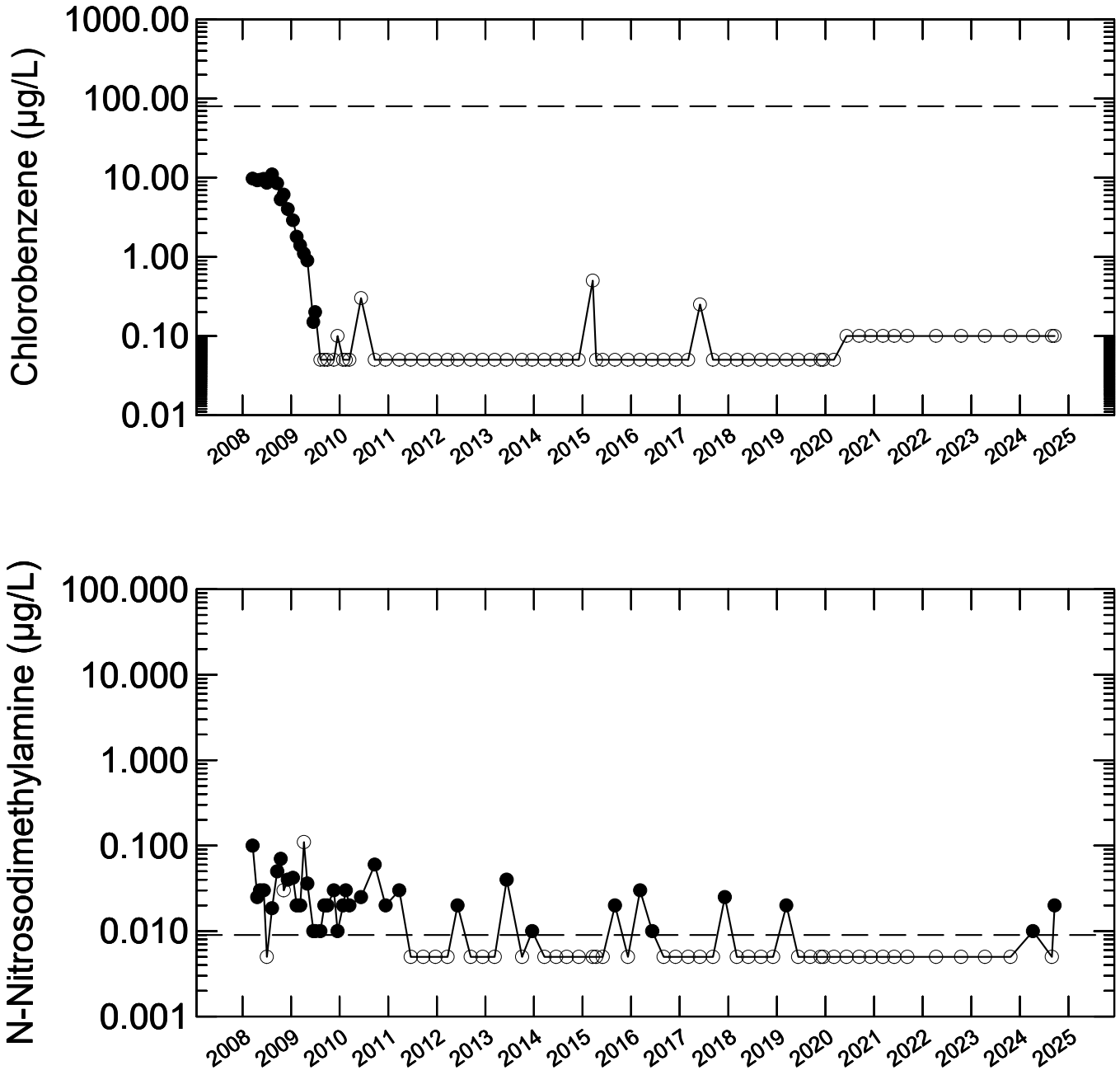
GHD

Evaluation of Groundwater Analytical Data
Lanxess Canada Co./Cie
Elmira, Ontario

MU SENTRY WELL OW165-17

Project No. **11192137**
Date: **Oct 1, 2024**

FIGURE E.2



Legend:

● Detected Result

○ Non-detect

— — Ontario Drinking Water Standard

Note:

Non-detects are shown as one half the laboratory detection limit

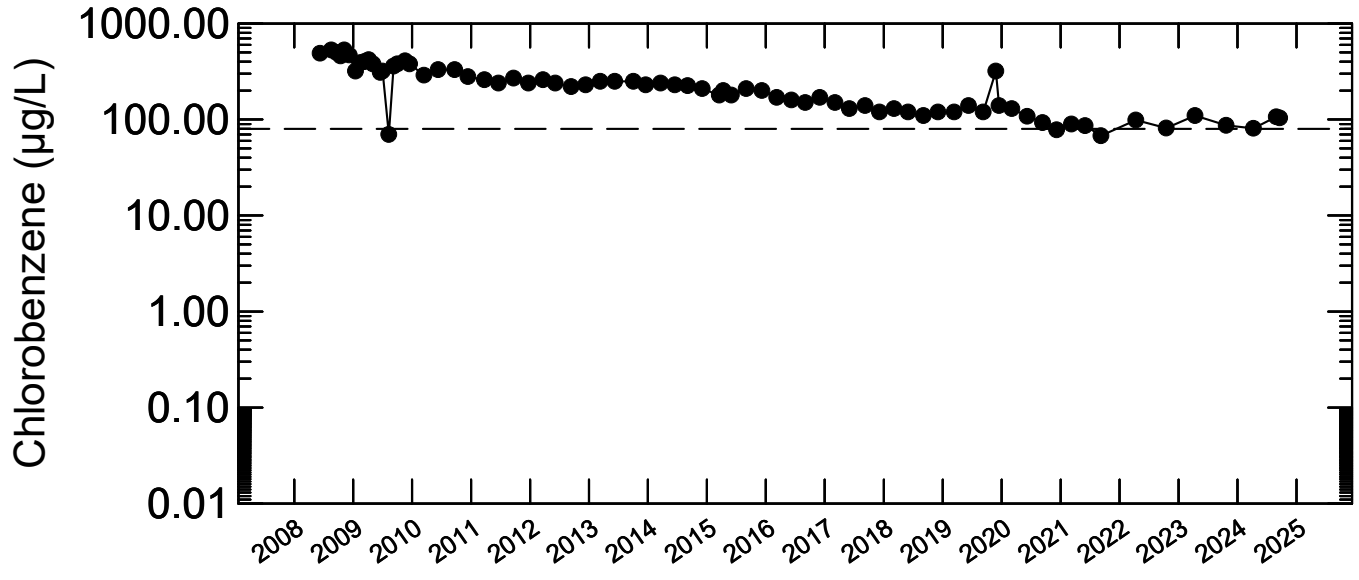
GHD

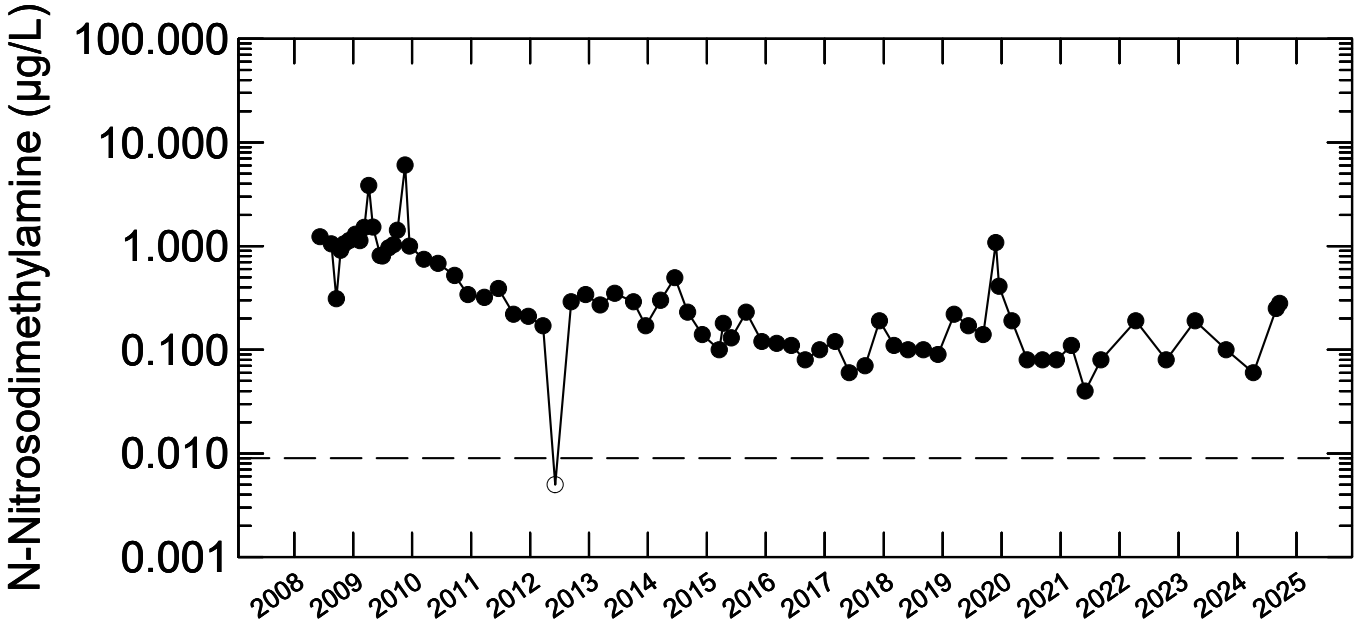
Evaluation of Groundwater Analytical Data
Lanxess Canada Co./Cie
Elmira, Ontario

MU SENTRY WELL CH-89B

Project No. **11192137**
Date: **Oct 1, 2024**

FIGURE E.3





Legend:

● Detected Result

○ Non-detect

— — Ontario Drinking Water Standard

Note:

Non-detects are shown as one half the laboratory detection limit

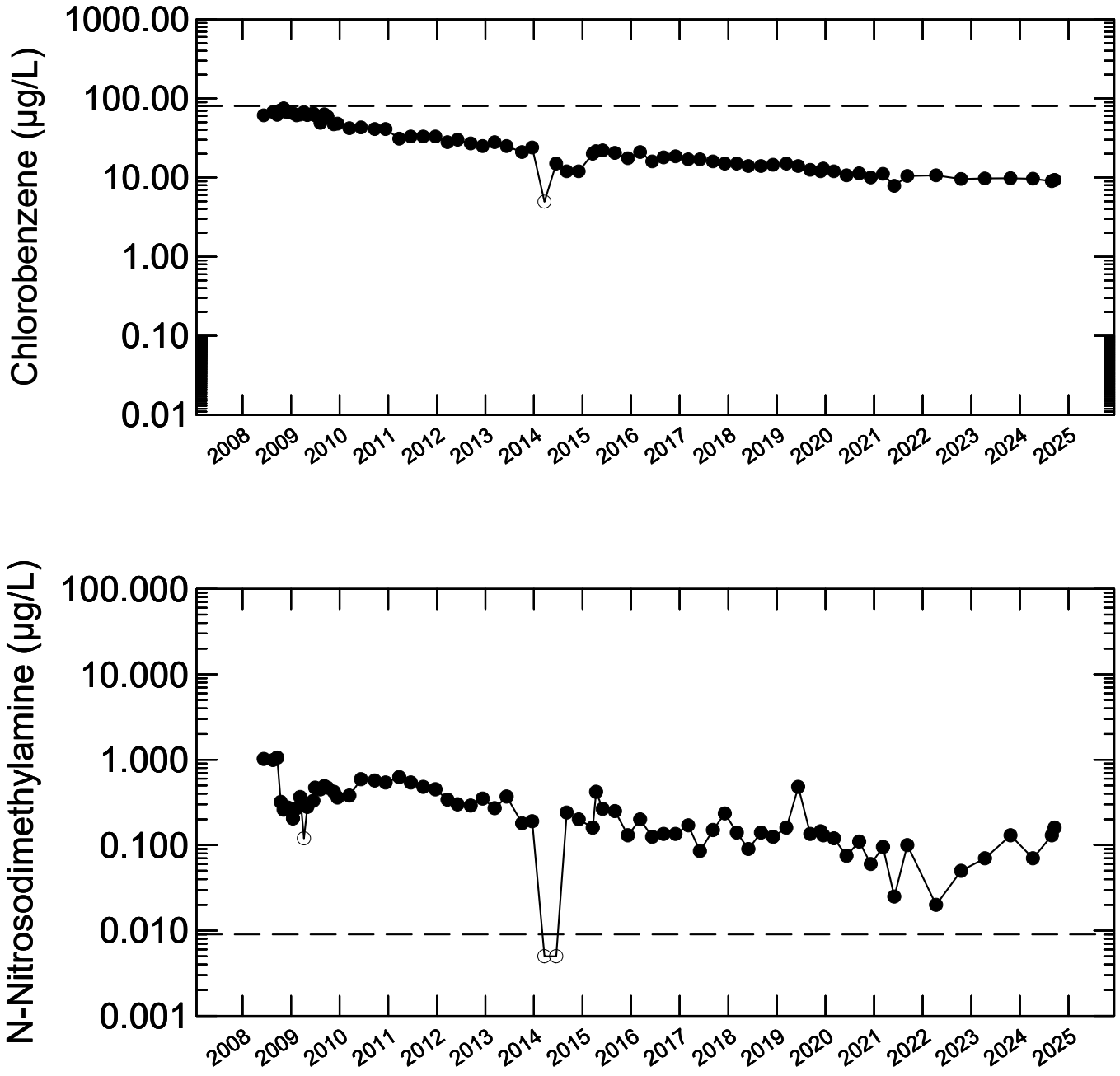
GHD

Evaluation of Groundwater Analytical Data
Lanxess Canada Co./Cie
Elmira, Ontario

MU SENTRY WELL CH-47E

Project No. **11192137**
Date: **Oct 1, 2024**

FIGURE E.4



Legend:

● Detected Result

○ Non-detect

— — Ontario Drinking Water Standard

Note:

Non-detects are shown as one half the laboratory detection limit

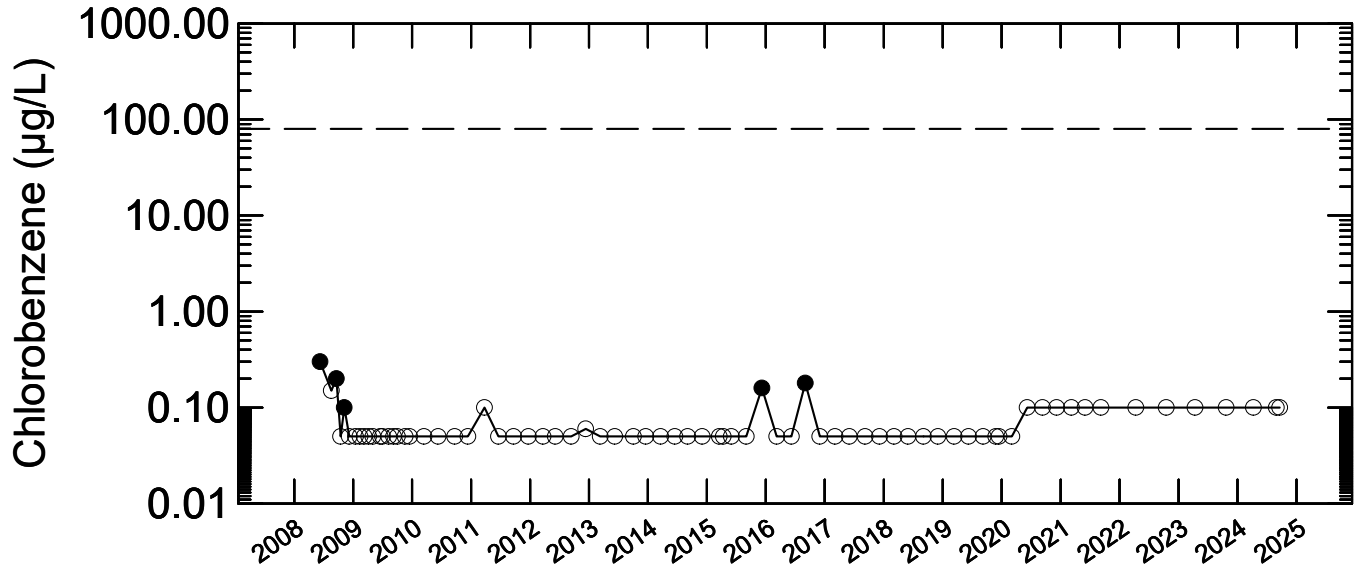
GHD

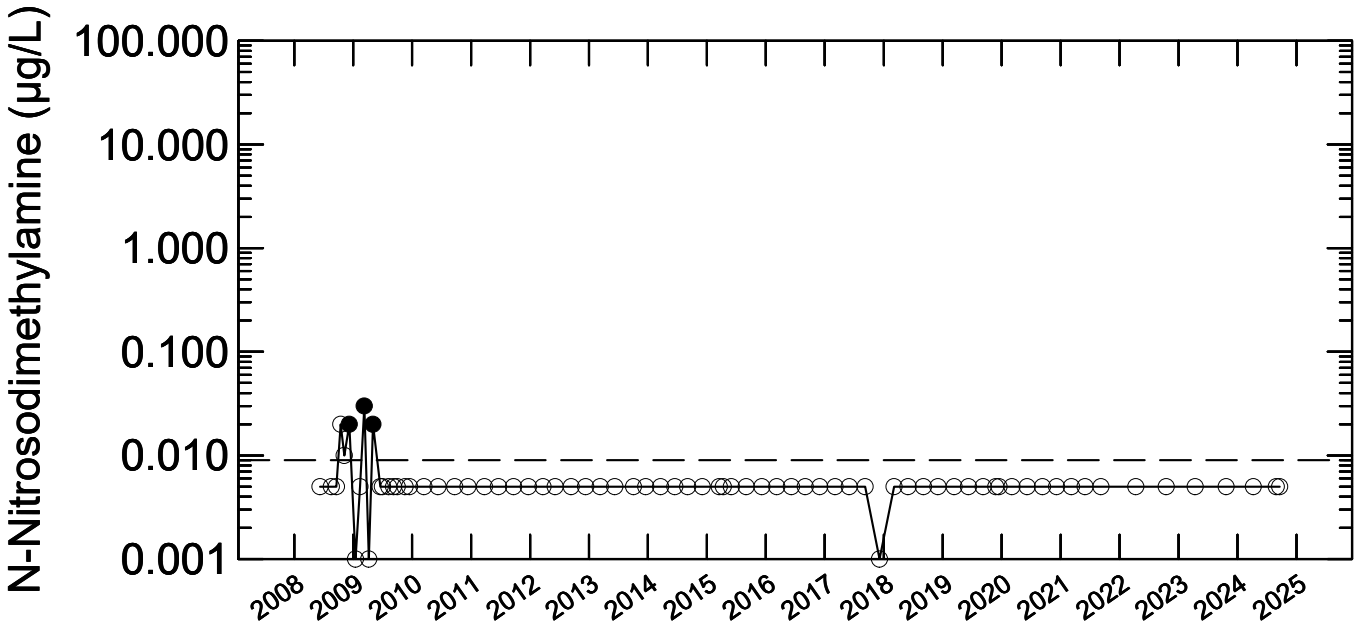
Evaluation of Groundwater Analytical Data
Lanxess Canada Co./Cie
Elmira, Ontario

MU SENTRY WELL CH-56B

Project No. **11192137**
Date: **Oct 1, 2024**

FIGURE E.5





Legend:

● Detected Result

○ Non-detect

— — Ontario Drinking Water Standard

Note:

Non-detects are shown as one half the laboratory detection limit

GHD

Evaluation of Groundwater Analytical Data
Lanxess Canada Co./Cie
Elmira, Ontario

MU SENTRY WELL CH-97B

Project No. **11192137**
Date: **Oct 1, 2024**

FIGURE E.6

Table E.1

Sentry Well Analytical Results - Chlorobenzene
LANXESS Canada Co./Cie
Elmira, Ontario

	Sample Location[1][2]					
	OW58-13	OW165-17	CH-89B	CH-47E	CH-56B	CH-97B
Aquifer Designation	**MU**	**MU**	**MU**	**MU**	**MU**	**MU**
Sample Date						
6-Mar-17	ND (0.1)	ND (0.1)	ND (0.1)	150	17 / 17	ND (0.1)
2-Jun-17	ND (0.1)	ND (1.0)	ND (0.5)	130	17 / 17	ND (0.1)
8-Sep-17	ND (0.1)	ND (0.1)	ND (0.1)	140	16 / 16	ND (0.1)
6-Dec-17	ND (0.1)	ND (0.5)	ND (0.1)	120	15 / 15	ND (0.1)
6-Mar-18	ND (0.1)	ND (0.1)	ND (0.1)	130	15 / 15	ND (0.1)
1-Jun-18	ND (0.1)	ND (0.1)	ND (0.1)	120	14 / 14	ND (0.1)
4-Sep-18	ND (0.1)	ND (0.1)	ND (0.1)	110	14 / 14	ND (0.1)
3-Dec-18	ND (0.1)	ND (0.1)	ND (0.1)	120	14 / 15	ND (0.1)
13-Mar-19	ND (0.1)	ND (0.1)	ND (0.1)	120	15 / 15	ND (0.1)
10-Jun-19	ND (0.1)	ND (0.1)	ND (0.1)	140	14 / 14	ND (0.1)
9-Sep-19	ND (0.25)	ND (0.1)	ND (0.1)	120	13 / 12	ND (0.1)
26-Nov-19	ND (0.1)	ND (0.1)	ND (0.1)	320	12 / 12	ND (0.1)
16-Dec-19	ND (0.1)	ND (0.1)	ND (0.1)	140	13 / 13	ND (0.1)
15-Jan-20	--	--	--	140 / 140	--	--
5-Mar-20	ND (0.1)	ND (0.1)	ND (0.1)	130	12 / 12	ND (0.1)
8-Jun-20	ND (0.2)	ND (0.2)	ND (0.2)	108	10.5 / 10.8	ND (0.2)
11-Sep-20	ND (0.2)	ND (0.2)	ND (0.2)	92.7	11.3 / 11.2	ND (0.2)
7-Dec-20	ND (0.2)	ND (0.2)	ND (0.2)	78.0	10.2 / 9.82	ND (0.2)
9-Mar-21	ND (0.2)	ND (0.2)	ND (0.2)	89.7	11.0 / 11.3	ND (0.2)
2-Jun-21	ND (0.2)	ND (0.2)	ND (0.2)	86.3	7.97 / 7.75	ND (0.2)
8-Sep-21	ND (0.2)	ND (0.2)	ND (0.2)	67.8	9.88 / 11.1	ND (0.2)
12-Apr-22	ND (0.2)	ND (0.2)	ND (0.2)	98.8	10.7 / 10.6	ND (0.2)
17-Oct-22	ND (0.2)	ND (0.2)	ND (0.2)	81.4	9.52 / 9.66	ND (0.2)
14-Apr-23	ND (0.2)	ND (0.2)	ND (0.2)	110	9.74 / 9.76	ND (0.2)
23-Oct-23	ND (0.2)	ND (0.2)	ND (0.2)	87.0	9.82 / 9.77	ND (0.2)
9-Apr-24	ND (0.2)	ND (0.2)	ND (0.2)	80.9	9.76 / 9.55	ND (0.2)
29-Aug-24	ND (0.2)	ND (0.2)	ND (0.2)	107	9.03 / 9.00	ND (0.2)
19-Sep-24	ND (0.2)	ND (0.2)	ND (0.2)	104	9.26 / 9.38	ND (0.2)

Notes:

9.8 / 9.7	Result / Duplicate Result
ND(RDL)	Not detected (ND) at the associated reporting detection limit (RDL).
[1]	From March 2008 until March 2020, samples analysed by Bureau Veritas (formerly Maxxam Analytics Inc.) unless otherwise noted. From June 2020 onward, samples analyzed by ALS Canada Ltd, unless otherwise noted.
[2]	Sample results are in micrograms per litre (µg/L) unless otherwise noted.
--	The parameter was not analyzed for.

Table E.2

Sentry Well Analytical Results - NDMA
LANXESS Canada Co./Cie
Elmira, Ontario

	Sample Location[1][2]					
	OW58-13	**OW165-17**	**CH-89B**	**CH-47E**	**CH-56B**	**CH-97B**
Aquifer Designation	**MU**	**MU**	**MU**	**MU**	**MU**	**MU**
Sample Date						
6-Mar-17	ND (0.01)	ND (0.01)	ND (0.01)	0.12	0.19 / 0.15	ND (0.01)
2-Jun-17	ND (0.01)	ND (0.01)	ND (0.01)	0.06	0.08 / 0.09	ND (0.01)
8-Sep-17	ND (0.01)	ND (0.01)	ND (0.01)	0.07	0.10 J / 0.20 J	ND (0.01)
6-Dec-17	ND (0.002)[4]	0.025[4]	0.025[4]	0.19[4]	0.23[4] / 0.24[4]	ND (0.002)[4]
6-Mar-18	ND (0.01)	0.02	ND (0.01)	0.11	0.14 / 0.14	ND (0.01)
1-Jun-18	ND (0.01)	ND (0.01)	ND (0.01)	0.10	0.09 / 0.09	ND (0.01)
4-Sep-18	ND (0.01)	ND (0.01)	ND (0.01)	0.10	0.12 / 0.16	ND (0.01)
3-Dec-18	ND (0.01)	ND (0.01)	ND (0.01)	0.09	0.13 / 0.12	ND (0.01)
13-Mar-19	ND (0.01)	0.03	0.02	0.22	0.18 / 0.14	ND (0.01)
10-Jun-19	ND (0.01)	ND (0.01)	ND (0.01)	0.17	0.15 J / 0.81 J	ND (0.01)
9-Sep-19	ND (0.01)	ND (0.01)	ND (0.01)	0.14	0.14 / 0.13	ND (0.01)
26-Nov-19	ND (0.01)	ND (0.01)	ND (0.01)	1.08	0.14 / 0.15	ND (0.01)
16-Dec-19	ND (0.01)	ND (0.01)	ND (0.01)	0.41	0.12 / 0.14	ND (0.01)
15-Jan-20	--	--	--	0.36 / 0.36	--	--
5-Mar-20	ND (0.01)	0.02	ND (0.01)	0.19	0.12 / 0.12	ND (0.01)
8-Jun-20	ND (0.01)	ND (0.01)	ND (0.01)	0.08	0.08 / 0.07	ND (0.01)
11-Sep-20	ND (0.01)	ND (0.01)	ND (0.01)	0.08	0.11 / 0.11	ND (0.01)
7-Dec-20	ND (0.01)	ND (0.01)	ND (0.01)	0.08	0.06 / 0.06	ND (0.01)
9-Mar-21	ND (0.01)	ND (0.01)	ND (0.01)	0.11	0.09 / 0.10	ND (0.01)
2-Jun-21	ND (0.01)	ND (0.01)	ND (0.01)	0.04	0.03 / 0.02	ND (0.01)
8-Sep-21	ND (0.01)	ND (0.01)	ND (0.01)	0.08	0.10 / 0.10	ND (0.01)
12-Apr-22	ND (0.01)	ND (0.01)	ND (0.01)	0.19	0.02 / 0.02	ND (0.01)
17-Oct-22	ND (0.01)	ND (0.01)	ND (0.01)	0.08	0.05 / 0.05	ND (0.01)
14-Apr-23	ND (0.01)	0.02	ND (0.01)	0.19	0.08 / 0.06	ND (0.01)
23-Oct-23	ND (0.01)	ND (0.01)	ND (0.01)	0.10	0.13 / 0.13	ND (0.01)
9-Apr-24	ND (0.01)	0.01	0.01	0.06	0.07 / 0.07	ND (0.01)
29-Aug-24	ND (0.01)	0.0151[5]	ND (0.01)	0.25	0.14 / 0.12	ND (0.01)
19-Sep-24	ND (0.01)	0.01	0.02	0.28	0.16 / 0.16	ND (0.01)

Notes:

9.8 / 9.7	Result / Duplicate Result.
0.03 | 0.042	Result | Split Sample Result (different laboratories reporting).
ND(RDL)	Not detected (ND) at the associated reporting detection limit (RDL).
[1]	Samples analyzed by LANXESS Technology Centre, Ontario, unless otherwise noted.
[2]	Sample results are in micrograms per litre (µg/L) unless otherwise noted.
[3]	Split samples analyzed by Bureau Veritas (formerly Maxxam Analytics Inc.)
[4]	Samples analyzed by Bureau Veritas (formerly Maxxam Analytics Inc.)
[5]	Sample analyzed by ALS Canada Ltd.
--	The parameter was not analyzed for.
J	Estimated concentration.