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12 September 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 August 2024**

Dear Ms. Hussain

This letter presents a summary of the August 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 August 2024. PW4 can currently only pump at 1.3 litres per second (L/s). LANXESS suspects this is due to a buildup of carbon fines in the UA Carbon Tower which has 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 has discontinued using regenerated carbon and has switched to virgin carbon for the foreseeable future to reduce the carbon fines in the tower. PW5 continued operating at a reduced pumping rate in August 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 August 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 August 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 had to re-scheduled inspection of the pump/motor and possible video inspection. LANXESS is awaiting a future date from their contractor. The E7 average daily pumping rate was slightly less than its Target Average pumping rate in August 2024 due to one minor power outage, a significant power outage, and several Rayox train moisture alarms. The moisture alarms/leaks were investigated and repaired, and the system was restarted at its target pumping rate.

During August 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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**August 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 August 2024.

The Progress Report is organized as follows:

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## **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 for groundwater samples collected as part of the 2024 Off-Site Routine Groundwater Monitoring (R.G.M.) Program is presented in Attachment B.

Due to delays with the analytical data, the analytical results from the monthly August 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), will be provided in the October Progress Report.

## **2. Correspondence, Meetings, and Events**

August 15, 2024      July 2024 Progress Report submitted to MECP West Central Region (WCR)

## **3. CTS Monitoring and Performance**

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

The August 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).

| <b>Average Daily Pumping Rates</b>   |                                      |                |
|--|--------------------------------------|----------------|
| <b>August 2024 (Litres/second [L/s])</b>   |                                      |                |
| <b>Containment and Extraction Wells</b>  | <b>Target Average <sup>(1)</sup></b> | <b>Average</b> |
| <b>On Site Wells</b>   |                                      |                |
| PW4  | 2.9                                  | 1.4            |
| PW5  | 1.8                                  | 0.8            |
| Upper Aquifer Wells  | --                                   | 0.8            |
| <b>Off Site Wells</b>  |                                      |                |
| W3R  | 18.5                                 | 22.6           |
| W5A  | 4.5                                  | 1.4            |
| W5B  | 4.2                                  | 4.7            |
| W6A  | 0.20                                 | 0.44           |
| W6B  | 0.30                                 | 0.44           |
| W8   | 0.05                                 | 0.12           |
| W9   | 13.6                                 | 13.4           |
| E7   | 23.9                                 | 22.3           |
| Yara   | --                                   | 0.3            |
| 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 August 2024. At this time, PW4 can only pump at 1.3 L/s. LANXESS suspects this is due to a buildup of carbon fines in the UA Carbon Tower which has 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 has discontinued using regenerated carbon and has switched to virgin carbon for the foreseeable future to reduce the carbon fines in the tower. LANXESS' well contractor inspected the well on August 23, 2024 and determined that the pump performance is normal, the equipment is operating without issues, and the well screen does not appear to be plugged. LANXESS has also determined that plugging in the piping from the well to the treatment system is not an issue. 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. With PW4 operating at its current decreased pumping rate, this 1 cm differential could not be maintained. LANXESS collected groundwater samples from off-Site sentry monitoring wells OW58-13, OW165-17, CH-47E, CH-97B, CH-56B, and CH-89B on August 29, 2024. A summary of the analytical results for groundwater samples collected on August 29, 2024, and trend analysis including these results, will be provided in the October Progress Report.

PW5 continued operating at a reduced pumping rate in August 2024. The well is currently unable to maintain its Target Average pumping rate. 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 trench for PW6 was excavated the week of August 12, 2024. LANXESS' well contractor installed the pit less adapter and effluent pipeline on August 23, 2024. The communication and power lines are scheduled to be installed in September 2024. PW6 is on schedule for completion by the end of the year as previously committed to by LANXESS.

W5A continued pumping at a reduced rate in August 2024 as 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 August 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 had to re-schedule inspection of the pump/motor and possible video inspection. LANXESS is awaiting a future date from their contractor.

The E7 average daily pumping rate was slightly less than its Target Average pumping rate in August 2024 due to one minor power outage, a significant power outage, and several Rayox train moisture alarms. The moisture alarms/leaks were investigated and repaired, and the system was restarted 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 August 2024 and summarizes the effluent pH and temperature. The discharge pH was between 7.16 and 7.18 Standard Units (su), which is within the ECA discharge limit pH range of 5.5 to 9.5 su. The effluent temperature was between 13.1 and 14.9 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<sup>1</sup> met the Effluent Limits and Effluent Objectives for all indicator parameters in August 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 37.1 L/s. The total flow rate of additional treated groundwater discharged to the Creek via Shirt Factory Creek (at storm water outfall 0800) was 9.3 L/s. The total flow rate of the combined treated groundwater discharged to the Creek (SS+890 discharge plus Shirt Factory Creek discharge) was 46.4 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 August 6, 2024, LANXESS collected samples from the carbon tower influent (GCI) and carbon tower effluent (GCE) for volatile organic compound (VOC) and base/neutral and acid extractable compound (BNA) analyses. Table A.4 (Attachment A) presents the GCI and GCE analytical results.

On August 6, 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

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<sup>1</sup> 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.

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 August 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) Toxicity**

LANXESS collected a groundwater sample from the GE SS+890 discharge outfall on July 9, 2024 and submitted the sample for *Ceriodaphnia dubia* chronic toxicity analyses. The laboratory results indicate that the groundwater sample was not chronically toxic to *Ceriodaphnia dubia*. The toxicity results have been included in Attachment A.

**f) 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.

**Summary of Efforts Made and Results Achieved**

During August 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 August 2024.

**5. E7 AOP**

The average E7 pumping rate (22.3 L/s) was slightly less than its recommended Target Average pumping rate (23.9 L/s) during August 2024 due to two power outages and several moisture alarms within the Rayox trains. The influent sample collected on August 13, 2024 contained NDMA at a concentration of 0.02 micrograms per litre (µg/L). NDMA was not detected in the effluent sample collected on August 13, 2024 (reporting detection limit [RDL] = 0.01 µg/L).

**6. Environmental Audit**

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

**7. Remediation of Former Operating Pond Area**

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

**8. Additional Work/Studies**

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

**Table 1**  
**Monitoring Program Summary**  
**LANXESS Canada Co./Cie**  
**Elmira, Ontario**

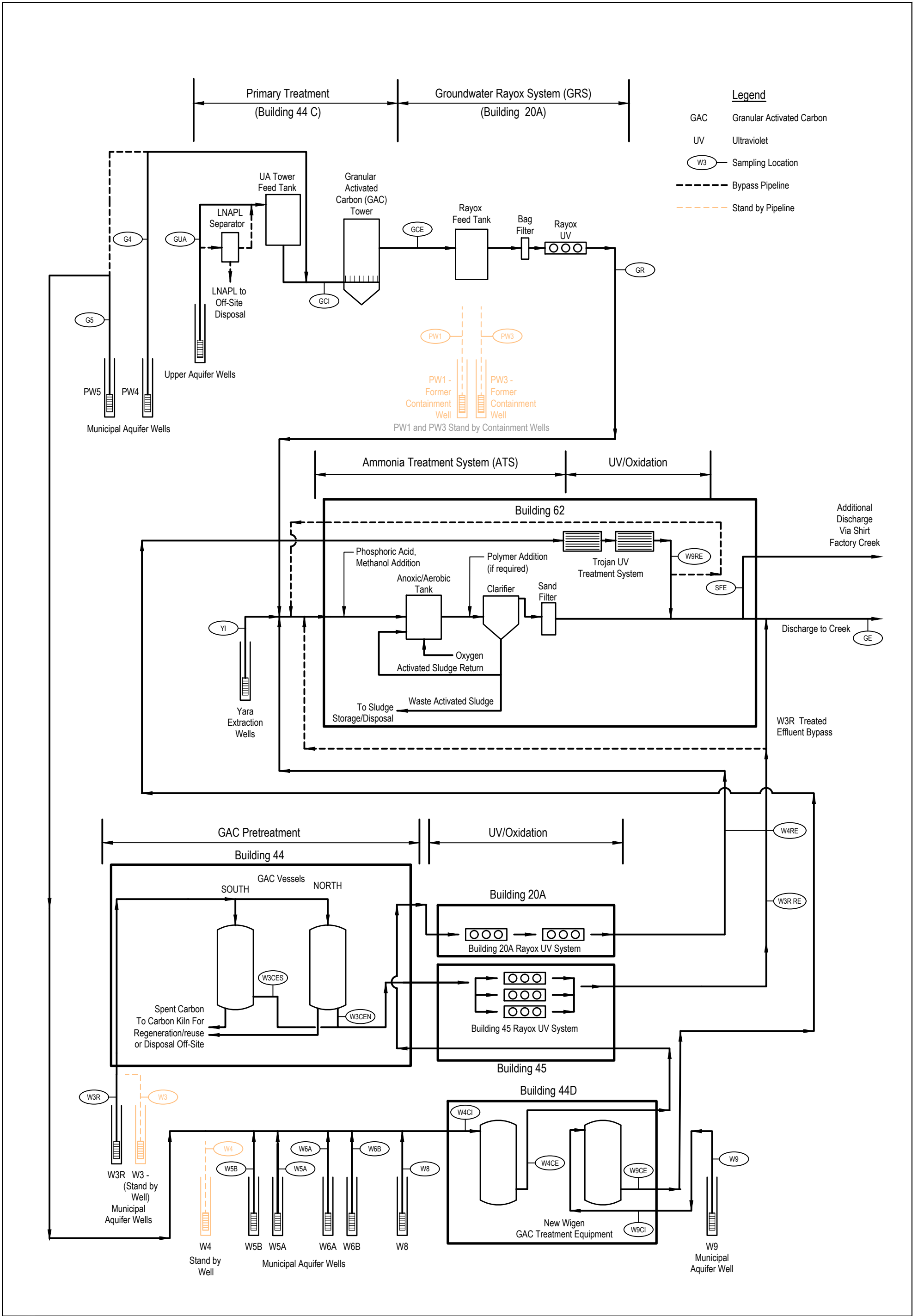
| <b>Media and Sampling Program</b>   | <b>Parameters</b>   | <b>Frequency</b>      | <b>August 2024 Results Location</b> |
|---|---|-----------------------|-------------------------------------|
| <b>Treatment System</b>   |   |                       |                                     |
| Off-Site 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           | -                                   |
| <b>Surface Water</b>  |   |                       |                                     |
| Environmental Appeal Board (EAB) Sampling   | Select VOCs, semi-volatile organic compounds (SVOCs), pesticides, general chemistry | Monthly               | -                                   |
| 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)  | -                                   |
| <b>Groundwater</b>  |   |                       |                                     |
| Groundwater Elevation Monitoring Program (GEMP)   | Elevation   | Semi-annual           | -                                   |
| Upper Municipal Aquifer (MU) Sentry Well Monitoring Program                               | n-Nitrosodimethylamine (NDMA), chlorobenzene  | Semi-annual           | -                                   |
| 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                | -                                   |
| Off-Site Sentry Well Monitoring Program   | NDMA +/- chlorobenzene  | Annual                | Attachment B                        |
| Off-Site Plume Monitoring Program   | NDMA +/- chlorobenzene  | Biennial (Odd Years)  | -                                   |

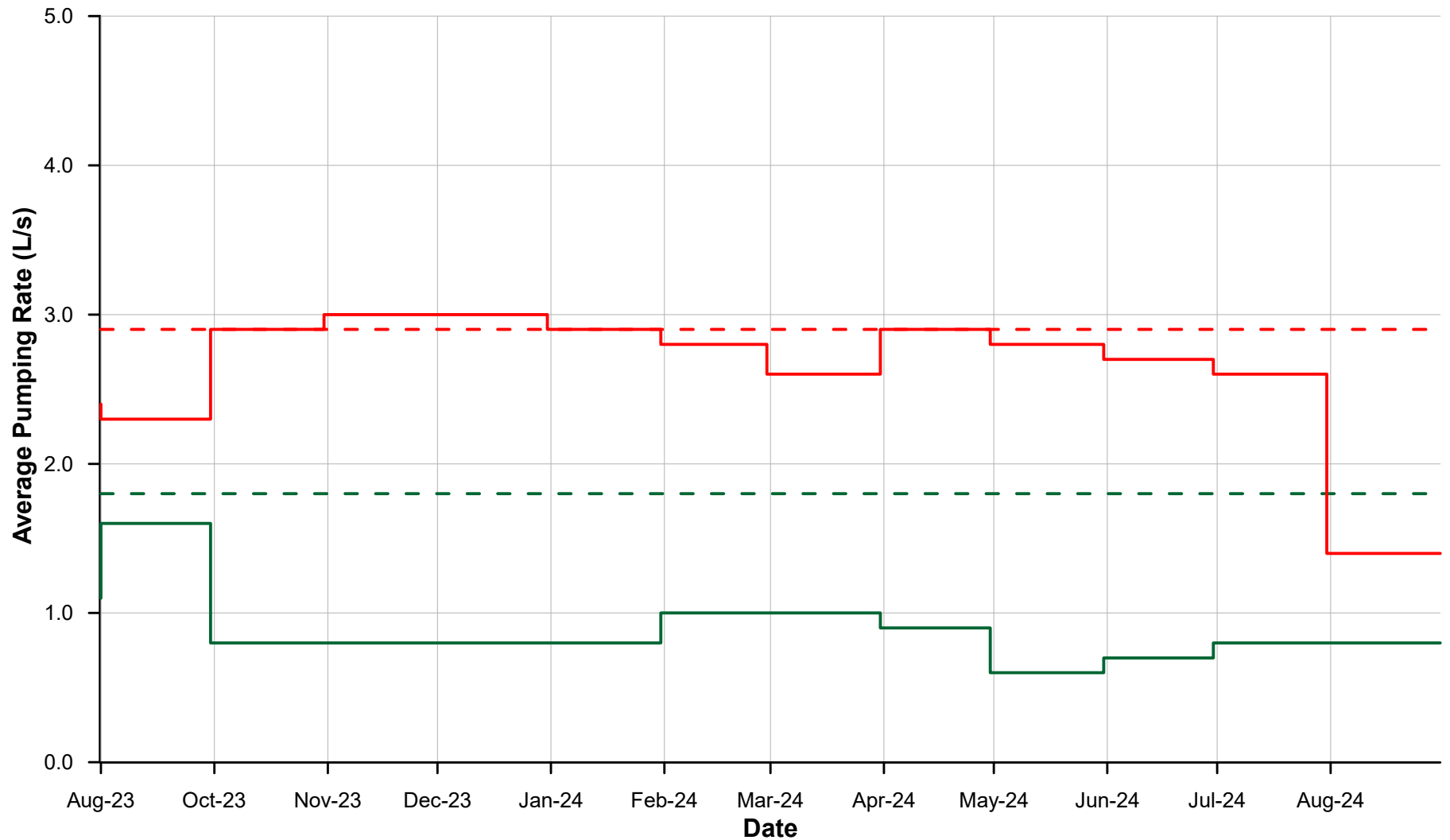
# **Attachment A**

**Analytical Results**

**Collection and Treatment System**







- PW4
- - - Target PW4
- PW5
- - - Target PW5

**ON-SITE EXTRACTION WELL AVERAGE VS. TARGET PUMPING RATES**

LANXESS CANADA CO./CIE

Elmira, Ontario

figure A.2

\*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.



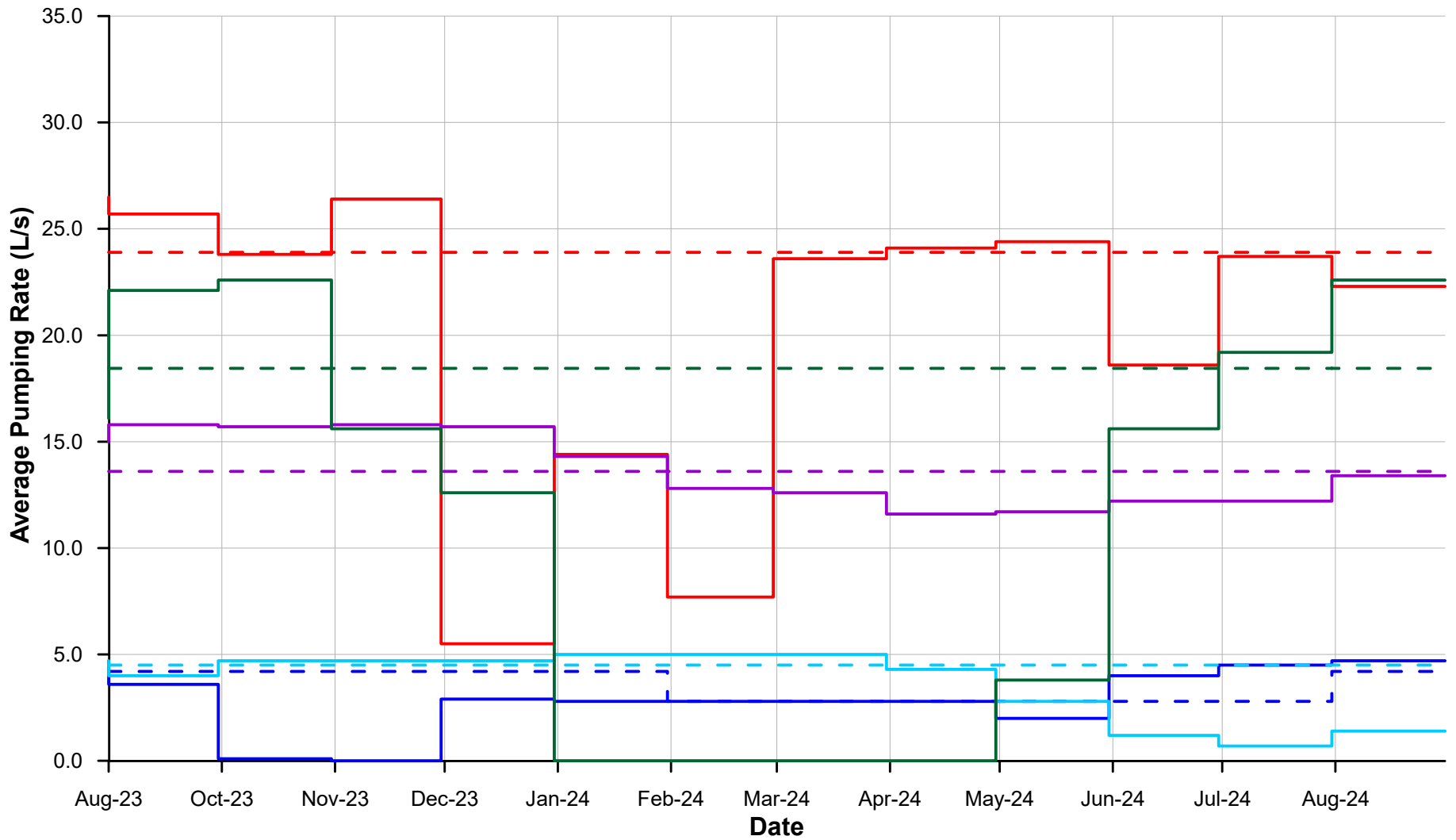


figure A.3a  
**OFF-SITE EXTRACTION WELL AVERAGE VS. TARGET PUMPING RATES**  
 LANXESS CANADA CO./CIE  
 Elmira, Ontario



\*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.

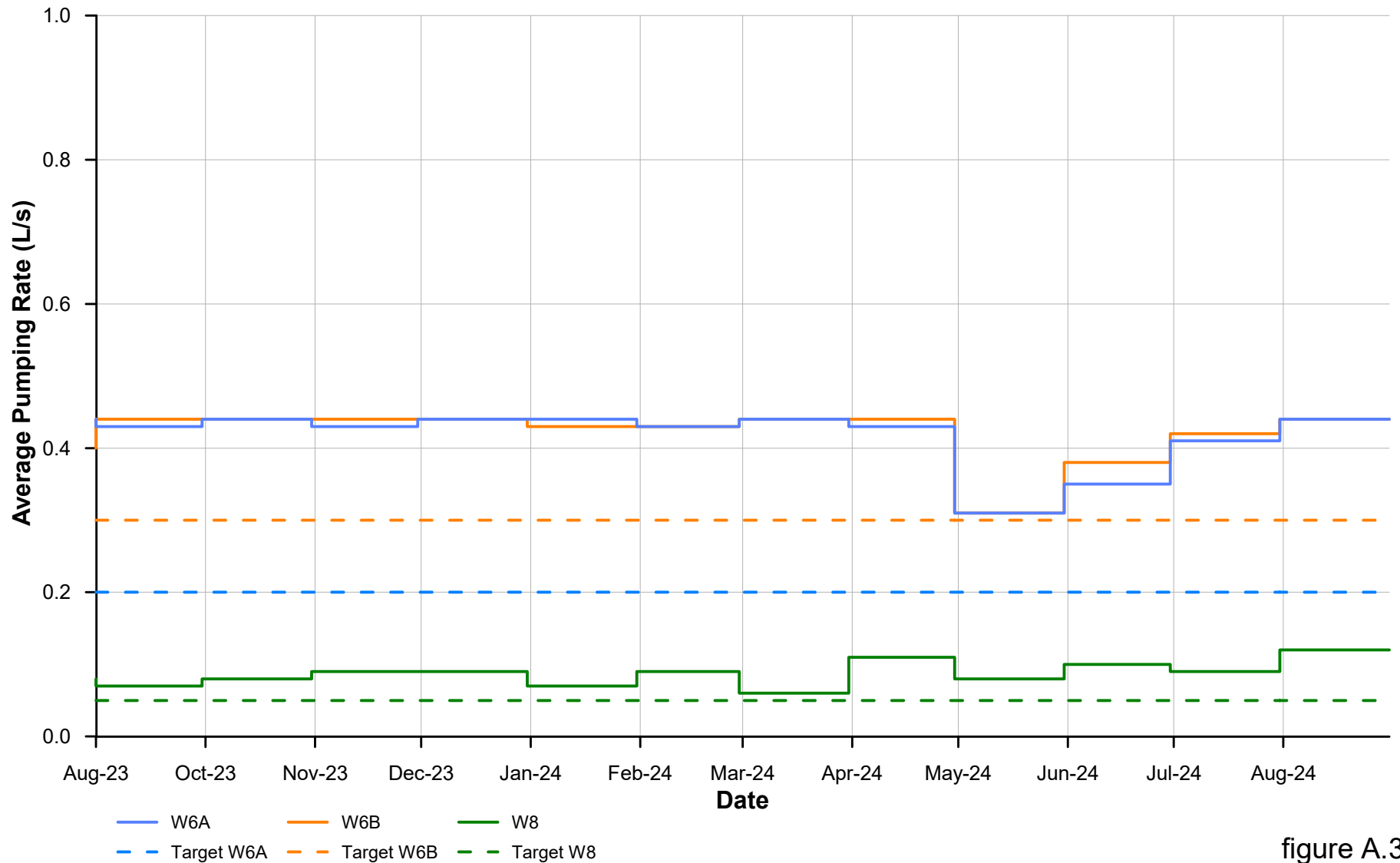


figure A.3b  
 OFF-SITE EXTRACTION WELL AVERAGE  
 VS. TARGET PUMPING RATES  
 LANXESS CANADA CO./CIE  
 Elmira, Ontario

\*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 - August 2024  
LANXESS Canada Co./Cie  
Elmira, Ontario**

**ON-SITE GROUNDWATER CONTAINMENT AND TREATMENT SYSTEM**

August 8      Shut down at 12:00 for cleaning of the feed tank, and restarted August 9, 2024 at 07:40  
August 30      Shut down at 22:00 due to a power outage, and restarted at 22:15

**OFF-SITE GROUNDWATER COLLECTION AND TREATMENT SYSTEM**

**W3R Groundwater Rayox System**

August 13      Shut down at 08:20 for scheduled maintenance, and restarted at 13:30  
August 15      Shut down at 13:45 to backwash the Building 44C W3R south carbon adsorber, and restarted at 14:30  
August 22      Shut down at 11:00 to backwash the Building 44C W3R north carbon adsorber, and restarted at 11:30  
August 30      Shut down at 22:00 due to a power outage, and restarted August 31, 2024 at 10:45

**W5A/W5B/W6A/W6B/W8 Groundwater Rayox System <sup>[1]</sup>**

August 8      Shut down at 12:00 for cleaning of the feed tank, and restarted at 16:10  
August 30      Shut down at 22:00 due to a power outage, and restarted at 22:15

**W9 Groundwater Trojan UV/Oxidation System**

August 30      Shut down at 22:00 due to a power outage, and restarted August 31, 2024 at 02:45

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 <sup>[1]</sup>  
August 2024  
LANXESS Canada Co./Cie  
Elmira, Ontario**

| Sample Date | Parameter <sup>[2]</sup> <sup>[3]</sup>             | Untreated Influent | Primary Treatment |         |         |             |        |        |             |             | Secondary Treatment |             |          |          | Tertiary Treatment |               | Combined Discharge Effluent <sup>[4]</sup> | Combined Discharge Effluent |           |                               |
|-------------|---|--------------------|-------------------|---------|---------|-------------|--------|--------|-------------|-------------|---------------------|-------------|----------|----------|--------------------|---------------|--|-----------------------------|-----------|-------------------------------|
|             |   |                    | W3R               | 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 <sup>[5]</sup> |
| 6-Aug-24    | Ammonia-N (mg/L)                                    | 0.222 J            |                   |         |         |             |        |        |             |             |                     |             |          |          | 0.190 J            | 0.140 J       | 0.150                                      | 0.84 <sup>[6]</sup>         | 0.84      | 0.62                          |
| 6-Aug-24    | Total Phosphorus (mg/L)                             |                    |                   |         |         |             |        |        |             |             |                     |             |          |          | 0.0042 J           | 0.102 J       | 0.082                                      | 0.5                         | 0.5       | --                            |
| 6-Aug-24    | BOD <sub>5</sub> (mg/L)                             |                    |                   |         |         |             |        |        |             |             |                     |             |          |          | ND(2.0) UJ         | ND(2.0) UJ    | ND(2.0)                                    | 15                          | 15        | --                            |
| 6-Aug-24    | Total Cyanide (µg/L)                                |                    |                   |         |         |             |        |        |             |             |                     |             |          |          | ND(2) UJ           | ND(2) UJ      | ND(2)                                      | 14                          | 14        | ND(5)                         |
| 6-Aug-24    | Formaldehyde (µg/L)                                 |                    |                   |         |         |             |        |        |             |             |                     |             |          |          | ND(2.0) UJ         | ND(2.0) UJ    | ND(2.0)                                    | 24                          | 24        | ND(5)                         |
| 6-Aug-24    | pH (s.u.)   |                    |                   |         |         |             |        |        |             |             |                     |             |          |          | 7.18               | 7.16          | 7.16                                       | 5.5 - 9.5                   | 5.5 - 9.5 | --                            |
| 6-Aug-24    | Temperature (°C)                                    |                    |                   |         |         |             |        |        |             |             |                     |             |          |          | 13.1               | 14.9          | 14.5                                       | <25                         | <25       | --                            |
| 6-Aug-24    | Chlorobenzene (µg/L)                                | 25.9 J             | ND(0.20) UJ       | 0.88 J  | 42.9 J  | ND(0.20) UJ | 20.0 J | 1.07 J | 1800 J      | 2.22 J      | 0.43 J              | ND(0.20) UJ | 0.44 J   | 2.34 J   | 0.38 J             | 0.28 J        | 0.43                                       | 10                          | 9.9       | ND(0.5)                       |
| 20-Aug-24   | Chlorobenzene (µg/L)                                |                    |                   |         |         |             |        |        |             |             | 0.90                | ND(0.20)    | 0.80     | 4.84     | 0.60               | 0.54          |  |                             |           |                               |
| 6-Aug-24    | Toluene (µg/L)                                      |                    |                   |         |         |             |        |        | 74.7 J      | ND(0.20) UJ |                     |             |          |          | 0.82 J             | 0.20 J        | 0.32                                       | 5                           | 5.0       | ND(0.4)                       |
| 6-Aug-24    | 1,1-Dichloroethane (µg/L)                           |                    |                   |         |         |             |        |        | ND(0.20) UJ | ND(0.20) UJ |                     |             |          |          | ND(0.20) UJ        | ND(0.20) UJ   | ND(0.20)                                   | 10                          | 10        | ND(1)                         |
| 6-Aug-24    | g-BHC (Lindane) (µg/L)                              |                    |                   |         |         |             |        |        |             |             |                     |             |          |          | ND(0.0030) UJ      | ND(0.0030) UJ | ND(0.0030)                                 | 0.14                        | 0.14      | ND(0.003)                     |
| 6-Aug-24    | n-Nitrosodimethylamine (NDMA) (µg/L) <sup>[7]</sup> | 0.51               |                   |         |         |             |        |        |             |             | ND(0.01)            | ND(0.01)    | ND(0.01) | ND(0.01) | ND(0.01)           | ND(0.01)      | ND(0.01)                                   | 0.14                        | 0.14      | ND(0.01)                      |
| 20-Aug-24   | NDMA (µg/L) <sup>[7]</sup>                          |                    |                   |         |         |             |        |        |             |             | ND(0.01)            | ND(0.01)    | ND(0.01) | ND(0.01) | ND(0.01)           | ND(0.01)      |  |                             |           |                               |
| 6-Aug-24    | n-Nitrosodiethylamine (NDEA) (µg/L) <sup>[7]</sup>  | ND(0.06)           |                   |         |         |             |        |        |             |             | 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)                      |
| 20-Aug-24   | NDEA (µg/L) <sup>[7]</sup>                          |                    |                   |         |         |             |        |        |             |             | ND(0.06)            | ND(0.06)    | ND(0.06) | ND(0.06) | ND(0.06)           | ND(0.06)      |  |                             |           |                               |
| 6-Aug-24    | Nitrosomorpholine (NMOR) (µg/L) <sup>[7]</sup>      | ND(0.06)           |                   |         |         |             |        |        |             |             | ND(0.06)            | ND(0.06)    | ND(0.06) | ND(0.06) | ND(0.06)           | ND(0.06)      | ND(0.06)                                   | 4                           | 4.0       | ND(0.06)                      |
| 20-Aug-24   | NMOR (µg/L) <sup>[7]</sup>                          |                    |                   |         |         |             |        |        |             |             | ND(0.06)            | ND(0.06)    | ND(0.06) | ND(0.06) | ND(0.06)           | ND(0.06)      |  |                             |           |                               |
| 6-Aug-24    | Benzothiazole (µg/L)                                |                    |                   |         |         |             |        |        | 112 J       | ND(2.0) UJ  |                     |             |          |          | ND(2.0) UJ         | ND(2.0) UJ    | ND(2.0)                                    | 4                           | 4.0       | ND(2)                         |
| 6-Aug-24    | Carboxin (µg/L)                                     |                    |                   |         |         |             |        |        | 102 J       | 0.977 J     |                     |             |          |          | ND(0.100) UJ       | ND(0.100) UJ  | ND(0.100)                                  | 7                           | 6.9       | ND(2)                         |

SS+890 Discharge (GE) Flow Rate 37.1 L/s  
 Shirt Factory Creek Discharge (SFE) Flow Rate 9.3 L/s  
 Total Combined Discharge Effluent Flow 46.4 L/s

Table A.2

**Combined On-Site and Off-Site Groundwater Containment and Treatment System**  
**Analytical Results <sup>[1]</sup>**  
**August 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 Extraction Well W3R Influent.  
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 Shift 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.
- 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.
- J+ The result is an estimated quantity, but the result may be biased high.

Table A.3

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

| Date           | On-Site<br>Flow Rate <sup>[1]</sup> | Off-Site<br>Flow Rate <sup>[2]</sup> | ATS Influent<br>Flow Rate <sup>[3]</sup> | W3R Bypass<br>Flow Rate | W9 Bypass<br>Flow Rate | SS+890 Discharge<br>Flow Rate | Shirt Factory<br>Creek Discharge<br>Flow Rate | Total Combined<br>Discharge Effluent<br>Flow Rate <sup>[4]</sup> |
|----------------|-------------------------------------|--------------------------------------|--|-------------------------|------------------------|-------------------------------|---|--|
|                | (L/s)                               | (L/s)                                | (L/s)                                    | (L/s)                   | (L/s)                  | (L/s)                         | (L/s)   | (L/s)  |
| 8/1/2024       | 2.4                                 | 44.1                                 | 9.3                                      | 23.7                    | 13.9                   | 38.2                          | 8.7   | 46.9   |
| 8/2/2024       | 2.4                                 | 44.1                                 | 9.3                                      | 23.7                    | 13.9                   | 38.0                          | 8.8   | 46.8   |
| 8/3/2024       | 2.4                                 | 43.3                                 | 9.2                                      | 22.9                    | 13.9                   | 36.8                          | 9.1   | 46.0   |
| 8/4/2024       | 2.4                                 | 44.1                                 | 9.1                                      | 23.7                    | 13.9                   | 37.9                          | 8.7   | 46.6   |
| 8/5/2024       | 2.4                                 | 45.5                                 | 10.5                                     | 23.7                    | 13.9                   | 37.3                          | 10.7  | 48.0   |
| 8/6/2024       | 2.6                                 | 40.0                                 | 9.3                                      | 19.6                    | 13.9                   | 37.6                          | 5.2   | 42.7   |
| 8/7/2024       | 2.7                                 | 38.3                                 | 10.0                                     | 17.3                    | 13.9                   | 34.7                          | 6.5   | 41.2   |
| 8/8/2024       | 1.4                                 | 44.8                                 | 8.8                                      | 23.7                    | 13.9                   | 37.9                          | 8.4   | 46.4   |
| 8/9/2024       | 1.9                                 | 46.6                                 | 11.2                                     | 23.7                    | 13.9                   | 37.5                          | 11.2  | 48.7   |
| 8/10/2024      | 2.4                                 | 46.6                                 | 11.8                                     | 23.7                    | 13.9                   | 37.6                          | 11.7  | 49.3   |
| 8/11/2024      | 2.1                                 | 46.6                                 | 11.5                                     | 23.7                    | 13.9                   | 37.4                          | 11.7  | 49.1   |
| 8/12/2024      | 2.2                                 | 46.0                                 | 11.0                                     | 23.7                    | 13.9                   | 37.7                          | 10.9  | 48.6   |
| 8/13/2024      | 2.2                                 | 41.5                                 | 11.7                                     | 18.6                    | 13.9                   | 34.6                          | 9.5   | 44.1   |
| 8/14/2024      | 2.1                                 | 45.3                                 | 10.3                                     | 23.7                    | 13.9                   | 37.7                          | 10.1  | 47.8   |
| 8/15/2024      | 2.1                                 | 43.6                                 | 9.1                                      | 23.2                    | 13.9                   | 38.0                          | 8.2   | 46.2   |
| 8/16/2024      | 2.1                                 | 44.4                                 | 9.4                                      | 23.7                    | 13.9                   | 38.2                          | 8.7   | 46.9   |
| 8/17/2024      | 2.1                                 | 44.9                                 | 11.6                                     | 21.9                    | 13.9                   | 36.8                          | 10.7  | 47.4   |
| 8/18/2024      | 2.1                                 | 46.7                                 | 11.7                                     | 23.7                    | 13.9                   | 37.7                          | 11.6  | 49.2   |
| 8/19/2024      | 2.1                                 | 46.6                                 | 11.6                                     | 23.7                    | 13.9                   | 37.6                          | 11.4  | 49.1   |
| 8/20/2024      | 2.1                                 | 46.0                                 | 11.1                                     | 23.7                    | 13.7                   | 37.8                          | 10.7  | 48.5   |
| 8/21/2024      | 2.1                                 | 45.7                                 | 10.9                                     | 23.7                    | 13.6                   | 37.9                          | 10.3  | 48.2   |
| 8/22/2024      | 2.1                                 | 45.3                                 | 11.1                                     | 23.2                    | 13.4                   | 37.9                          | 9.9   | 47.7   |
| 8/23/2024      | 2.0                                 | 45.3                                 | 10.7                                     | 23.7                    | 13.3                   | 37.7                          | 9.9   | 47.6   |
| 8/24/2024      | 2.1                                 | 45.5                                 | 11.1                                     | 23.7                    | 13.2                   | 37.6                          | 10.3  | 47.9   |
| 8/25/2024      | 2.1                                 | 44.6                                 | 10.4                                     | 23.7                    | 13.0                   | 37.7                          | 9.3   | 47.0   |
| 8/26/2024      | 2.1                                 | 43.7                                 | 9.6                                      | 23.7                    | 12.9                   | 37.9                          | 8.2   | 46.1   |
| 8/27/2024      | 2.1                                 | 44.6                                 | 10.6                                     | 23.7                    | 12.7                   | 37.5                          | 9.5   | 47.0   |
| 8/28/2024      | 2.1                                 | 42.8                                 | 9.0                                      | 23.7                    | 12.6                   | 37.9                          | 7.3   | 45.2   |
| 8/29/2024      | 2.1                                 | 42.5                                 | 8.9                                      | 23.7                    | 12.1                   | 37.1                          | 7.5   | 44.6   |
| 8/30/2024      | 2.1                                 | 41.9                                 | 10.9                                     | 21.6                    | 11.5                   | 34.8                          | 9.2   | 44.0   |
| 8/31/2024      | <u>2.1</u>                          | <u>32.2</u>                          | <u>10.4</u>                              | <u>13.0</u>             | <u>11.0</u>            | <u>29.5</u>                   | <u>4.9</u>                                    | <u>34.4</u>  |
| <b>Average</b> | <b>2.2</b>                          | <b>44.0</b>                          | <b>10.4</b>                              | <b>22.6</b>             | <b>13.4</b>            | <b>37.1</b>                   | <b>9.3</b>                                    | <b>46.4</b>  |
| <b>Minimum</b> | <b>1.4</b>                          | <b>32.2</b>                          | <b>8.8</b>                               | <b>13.0</b>             | <b>11.0</b>            | <b>29.5</b>                   | <b>4.9</b>                                    | <b>34.4</b>  |
| <b>Maximum</b> | <b>2.7</b>                          | <b>46.7</b>                          | <b>11.8</b>                              | <b>23.7</b>             | <b>13.9</b>            | <b>38.2</b>                   | <b>11.7</b>                                   | <b>49.3</b>  |

## 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**  
**August 2024**  
**LANXESS Canada Co./Cie**  
**Elmira, Ontario**

| <b>Sample Location:</b>                                   | <b>UA500I</b> | <b>UA500CE</b> | <b>UA560I</b> | <b>UA560CE</b> | <b>GCI</b>  | <b>GCE</b>  |
|---|---------------|----------------|---------------|----------------|-------------|-------------|
| <b>Sample Date:</b>                                       | 8/6/2024      | 8/6/2024       | 8/6/2024      | 8/6/2024       | 8/6/2024    | 8/6/2024    |
| <b>Parameter [µg/L]</b>                                   |               |                |               |                |             |             |
| <b>Volatile Organic Compounds (VOCs)</b>                  |               |                |               |                |             |             |
| Benzene   | 15.1 J        | ND(0.20) UJ    | 15.2 J        | ND(0.20) UJ    | 9.36 J      | ND(0.20) UJ |
| Chlorobenzene   | 767 J         | 0.30 J         | 508 J         | ND(0.20) UJ    | 1880 J      | 2.22 J      |
| 1,1-Dichloroethane  | ND(0.20) UJ   | ND(0.20) UJ    | ND(0.20) UJ   | ND(0.20) UJ    | ND(0.20) UJ | ND(0.20) UJ |
| Ethylbenzene  | 67.2 J        | ND(0.20) UJ    | 50.3 J        | ND(0.20) UJ    | 13.7 J      | ND(0.20) UJ |
| Toluene   | 1170 J        | 0.84 J         | 9570 J        | ND(0.20) UJ    | 74.7 J      | ND(0.20) UJ |
| m/p-Xylenes <sup>[1]</sup>                                | 108 J         | ND(0.40) UJ    | 128 J         | ND(0.40) UJ    | 10.8 J      | ND(0.40) UJ |
| o-Xylene <sup>[1]</sup>                                   | 72.0 J        | ND(0.20) UJ    | 72.7 J        | ND(0.20) UJ    | 7.77 J      | ND(0.20) UJ |
| <b>Base/Neutral and Acid Extractable Compounds (BNAs)</b> |               |                |               |                |             |             |
| Aniline   | 826 J         | ND(2.0) UJ     | 1620 J        | ND(2.0) UJ     | 64.5 J      | ND(2.0) UJ  |
| Benzothiazole   | 1210 J        | ND(2.0) UJ     | 15.1 J        | ND(2.0) UJ     | 112 J       | ND(2.0) UJ  |
| Carboxin (Oxathiin)                                       | 1880 J        | 1.98 J         | 1190 J        | ND(0.100) UJ   | 102 J       | 0.977 J     |
| 2-Chlorophenol  | 6.90 J        | ND(0.30) UJ    | ND(0.30) UJ   | ND(0.30) UJ    | 3.05 J      | ND(0.30) UJ |
| 2-Mercaptobenzothiazole                                   | 2910 J        | ND(20) UJ      | ND(20) UJ     | ND(20) UJ      | 280 J       | ND(20) UJ   |
| 2,4-Dichlorophenol  | 37.8 J+       | ND(0.20) UJ    | 0.25 J+       | ND(0.20) UJ    | 0.51 J+     | ND(0.20) UJ |
| 2,6-Dichlorophenol  | 3.56 J        | ND(0.20) UJ    | ND(0.20) UJ   | ND(0.20) UJ    | 0.22 J      | ND(0.20) UJ |
| 2,4,5-Trichlorophenol                                     | 5.00 J        | ND(0.20) UJ    | ND(0.20) UJ   | ND(0.20) UJ    | ND(0.20) UJ | ND(0.20) UJ |
| 2,4,6-Trichlorophenol                                     | 17.2 J        | ND(0.20) UJ    | ND(0.20) UJ   | ND(0.20) UJ    | ND(0.20) UJ | ND(0.20) UJ |

**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.  |
| 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.     |
| 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.<br>No separate analysis for Total Xylenes.   |

Table A.5

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

| <b>Start Date</b> | <b>Description</b>  | <b>Work Type</b> |
|-------------------|---|------------------|
| 06/25/2024        | Dig Trench from PW5 to PW6                                      | General          |
| 08/01/2024        | Monthly E7 North Compressor Inspection                          | General          |
| 08/01/2024        | Monthly E7 South Compressor Inspection                          | General          |
| 08/06/2024        | Check 62-AIT-901 (62PM-13) - Nitrification Tank pH              | Instrumentation  |
| 08/06/2024        | Check 62-AIT-904 (62-ICP-904) - Nitrification Tank Dissolved O2 | Instrumentation  |
| 08/08/2024        | Repair Multiple Lamps on W3R Building #45 Rayox                 | Electrical       |
| 08/08/2024        | North Aeration Pump Kicked Out                                  | Electrical       |
| 08/12/2024        | Replace Lamp in Rayox A - Lamp 4 Over Hours                     | Electrical       |
| 08/12/2024        | Check Rayox A Effluent Discharge Pump                           | Electrical       |
| 08/12/2024        | Rayox Issues - Building #20A                                    | Instrumentation  |
| 08/19/2024        | Check 62-LSHH-969 (62TA-02) - Building #62 North Sump           | Instrumentation  |
| 08/21/2024        | Troubleshoot Rayox B Alarms                                     | Instrumentation  |
| 08/30/2024        | Repair UA+500 Carbon Drum Leak                                  | Piping           |

Work Order : 255257

Sample Number : 83068

**SAMPLE IDENTIFICATION**

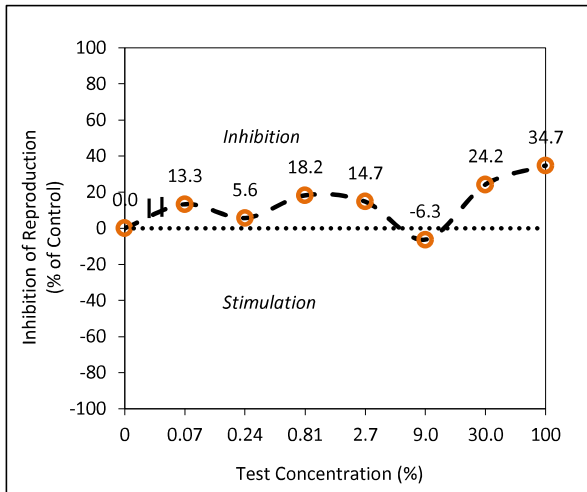
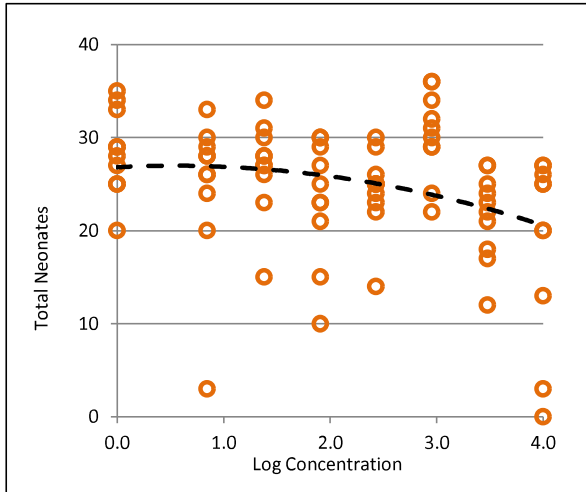
|                      |                        |                          |            |
|----------------------|------------------------|--------------------------|------------|
| Company :            | LANXESS Canada Co./Cie | Sampling Date :          | 2024-07-09 |
| Location :           | Elmira ON              | Sampling Time :          | 08:30      |
| Substance :          | GE 070924              | Date Received :          | 2024-07-09 |
| Sampling Method :    | Grab                   | Time Received :          | 12:00      |
| Sampled By :         | A. Norris              | Temperature at Receipt : | 11 °C      |
| Sample Description : | Clear, colourless      | Date Tested :            | 2024-07-09 |

Test Method : Test of Reproduction and Survival using the Cladoceran *Ceriodaphnia dubia*. Environment Canada, Conservation and Protection. Ottawa, Ontario. Report EPS 1/RM/21, 2nd ed. (February 2007).

**6-DAY TEST RESULTS**

| Effect              | Value | 95% Confidence Limits | Statistical Method                          |
|---------------------|-------|-----------------------|---|
| IC25 (Reproduction) | 32.8% | 12.2% – 74.0%         | Linear Interpolation (Toxstat) <sup>d</sup> |
| LC50                | >100% | –                     | –   |

The results reported relate only to the sample tested and as received.



**COMMENTS**

- All test validity criteria as specified in the test method cited above were satisfied.
- Statistical analysis for the IC25 (Reproduction) endpoint could not be conducted using Non-Linear Regression, because a suitable model could not be identified. Therefore, test results were calculated using Linear Interpolation (Toxstat)<sup>d</sup>. In test concentrations where hormesis was observed (9.0%), data was replaced with control values for the purposes of statistical analysis, as recommended by Environment Canada (2005).

Approved By :



Victoria (Tori) Carleton  
 I am approving this document  
 Nautilus Environmental  
 2024-09-09 16:28-04:00

Project Manager

Work Order : 255257

Sample Number : 83068

**TEST ORGANISM**

|                        |                              |                                   |                                |
|------------------------|------------------------------|-----------------------------------|--------------------------------|
| Test Organism :        | <i>Ceriodaphnia dubia</i>    | Range of Age (at start of test) : | 09:35 h - 21:35 h              |
| Organism Batch :       | Cd24-07                      | Mean Brood Organism Mortality :   | 0% (previous 7 days)           |
| Organism Origin :      | Single in-house mass culture | Brood Organism Mean Young :       | 23.1 (first three broods)      |
| Test Organism Origin : | Individual in-house cultures | Mean Young per Brood Organism :   | 13.8 (3rd or subsequent brood) |
| Ephippia in Culture :  | None                         |                                   |                                |

No organisms exhibiting unusual appearance, behaviour, or undergoing unusual treatment were used in the test.

**TEST CONDITIONS**

|                       |                                |                             |                         |
|-----------------------|--------------------------------|-----------------------------|-------------------------|
| Test Type :           | Static renewal                 | Control/Dilution Water :    | Well water <sup>2</sup> |
| Renewal Method :      | Transferred to fresh solutions | Test Volume per Replicate : | 15 mL                   |
| Renewal Frequency :   | ≤ 24 hours                     | Test Vessel :               | 20 mL glass vial        |
| Sample Filtration :   | None                           | Depth of Test Solution :    | 4 cm                    |
| Test Aeration :       | None                           | Organisms per Replicate :   | 1                       |
| pH Adjustment :       | None                           | Number of Replicates :      | 10                      |
| Hardness Adjustment : | None                           | Test Method Deviation(s) :  | None                    |

<sup>2</sup>no additional chemicals

**REFERENCE TOXICANT DATA**

|                          |   |                          |                                      |
|--------------------------|---|--------------------------|--------------------------------------|
| Toxicant :               | Sodium Chloride                           | Analyst(s) :             | ASK, XD                              |
| Date Tested :            | 2024-07-25                                | Test Duration :          | 6 days                               |
| IC25 (Reproduction) :    | 1.16 g/L                                  | LC50 :                   | 2.21 g/L                             |
| 95% Confidence Limits :  | 0.98 - 1.25 g/L                           | 95% Confidence Limits :  | 2.00 - 2.43 g/L                      |
| Statistical Method :     | Linear Interpolation (CETIS) <sup>a</sup> | Statistical Method :     | Spearman-Kärber (CETIS) <sup>a</sup> |
| Historical Mean IC25 :   | 1.04 g/L                                  | Historical Mean LC50 :   | 2.10 g/L                             |
| Warning Limits (± 2SD) : | 0.50 - 2.15 g/L                           | Warning Limits (± 2SD) : | 1.50 - 2.95 g/L                      |

The reference toxicity test was performed under the same experimental conditions as those used with the test sample.

**CUMULATIVE DAILY MORTALITY DATA**

| Date                  | Test Day | Test Concentration (%) |      |      |      |     |   |    |     |
|-----------------------|----------|------------------------|------|------|------|-----|---|----|-----|
|                       |          | Control                | 0.07 | 0.24 | 0.81 | 2.7 | 9 | 30 | 100 |
| 2024-07-10            | 1        | 0                      | 0    | 0    | 0    | 0   | 0 | 0  | 0   |
| 2024-07-11            | 2        | 0                      | 0    | 0    | 0    | 0   | 0 | 0  | 0   |
| 2024-07-12            | 3        | 0                      | 0    | 0    | 0    | 0   | 0 | 0  | 0   |
| 2024-07-13            | 4        | 0                      | 10   | 0    | 0    | 0   | 0 | 0  | 10  |
| 2024-07-14            | 5        | 0                      | 10   | 0    | 0    | 0   | 0 | 0  | 10  |
| 2024-07-15            | 6        | 0                      | 10   | 0    | 0    | 0   | 0 | 0  | 10  |
| Total Mortality (%) : |          | 0                      | 10   | 0    | 0    | 0   | 0 | 0  | 10  |

**REFERENCES**
<sup>a</sup> CETIS™, © 2000-2022. v2.1.4.0 x64. Comprehensive Environmental Toxicity Information System. Tidepool Scientific Software, LLC, McKinleyville, CA 95519 [Program on disk and printed User's Guide].

<sup>b</sup> Grubbs, F.E., 1969. Procedures for detecting outlying observations in samples. *Technometrics*, 11 :1-21.

<sup>d</sup> West, Inc. and D. Gully. 1996. Toxstat Release 3.5. Western Ecosystems Technology. Cheyenne, WY, U.S.A.

Work Order : 255257  
 Sample Number : 83068

**SURVIVAL AND REPRODUCTION**

Test Initiation Date : 2024-07-09  
 Initiated By : JN (AS)  
 Initiation Time : 15:35  
 Test Completion Date : 2024-07-15

| Control      | Day | Replicate |           |           |           |           |           |           |           |           |           | Mean Young (±SD) | Analyst(s)         |          |
|--------------|-----|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------------|--------------------|----------|
|              |     | 1         | 2         | 3         | 4         | 5         | 6         | 7         | 8         | 9         | 10        |                  |                    |          |
| 2024-07-10   | 1   | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0                | 0                  | AS       |
| 2024-07-11   | 2   | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0                | 0                  | JN (AS)  |
| 2024-07-12   | 3   | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 6         | 0         | 0                | 0.6                | ASK (AS) |
| 2024-07-13   | 4   | 4         | 5         | 4         | 7         | 4         | 5         | 3         | 8         | 0         | 3         | 0                | 4.3                | ET (SV)  |
| 2024-07-14   | 5   | 11        | 11        | 10        | 8         | 11        | 10        | 14        | 9         | 14        | 7         | 0                | 10.5               | ET (SV)  |
| 2024-07-15   | 6   | 13        | 13        | 13        | 14        | 10        | 10        | 17        | 16        | 15        | 10        | 0                | 13.1               | JN (AS)  |
| <b>Total</b> |     | <b>28</b> | <b>29</b> | <b>27</b> | <b>29</b> | <b>25</b> | <b>25</b> | <b>34</b> | <b>33</b> | <b>35</b> | <b>20</b> |                  | <b>28.5 (±4.6)</b> |          |

| 2.7%         | Day | Replicate |           |           |           |           |           |           |           |                       |           | Mean Young (±SD) |                    |
|--------------|-----|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------------------|-----------|------------------|--------------------|
|              |     | 1         | 2         | 3         | 4         | 5         | 6         | 7         | 8         | 9                     | 10        |                  |                    |
| 2024-07-10   | 1   | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0                     | 0         | 0                | 0                  |
| 2024-07-11   | 2   | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0                     | 0         | 0                | 0                  |
| 2024-07-12   | 3   | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0                     | 2         | 6                | 0.8                |
| 2024-07-13   | 4   | 5         | 5         | 5         | 4         | 6         | 3         | 5         | 4         | 0                     | 0         | 0                | 3.7                |
| 2024-07-14   | 5   | 11        | 11        | 10        | 7         | 9         | 10        | 10        | 11        | 8                     | 12        | 0                | 9.9                |
| 2024-07-15   | 6   | 13        | 9         | 11        | 11        | 10        | 11        | 10        | 8         | 4                     | 12        | 0                | 9.9                |
| <b>Total</b> |     | <b>29</b> | <b>25</b> | <b>26</b> | <b>22</b> | <b>25</b> | <b>24</b> | <b>25</b> | <b>23</b> | <b>14<sup>3</sup></b> | <b>30</b> |                  | <b>24.3 (±4.4)</b> |

| 0.07%        | Day | Replicate |           |           |           |           |           |           |           |           |                      | Mean Young (±SD) |                    |
|--------------|-----|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----------------------|------------------|--------------------|
|              |     | 1         | 2         | 3         | 4         | 5         | 6         | 7         | 8         | 9         | 10                   |                  |                    |
| 2024-07-10   | 1   | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0                    | 0                | 0                  |
| 2024-07-11   | 2   | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0                    | 0                | 0                  |
| 2024-07-12   | 3   | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 5         | 0                    | 0                | 0.5                |
| 2024-07-13   | 4   | 4         | 4         | 7         | 6         | 5         | 6         | 4         | 6         | 0         | 3 x                  | 0                | 4.5                |
| 2024-07-14   | 5   | 16        | 9         | 13        | 9         | 11        | 12        | 10        | 14        | 13        | 0                    | 0                | 10.7               |
| 2024-07-15   | 6   | 13        | 11        | 0         | 11        | 10        | 11        | 14        | 8         | 12        | 0                    | 0                | 9                  |
| <b>Total</b> |     | <b>33</b> | <b>24</b> | <b>20</b> | <b>26</b> | <b>26</b> | <b>29</b> | <b>28</b> | <b>28</b> | <b>30</b> | <b>3<sup>3</sup></b> |                  | <b>24.7 (±8.4)</b> |

| 9%           | Day | Replicate |           |           |           |           |           |           |           |           |           | Mean Young (±SD) |                    |
|--------------|-----|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------------|--------------------|
|              |     | 1         | 2         | 3         | 4         | 5         | 6         | 7         | 8         | 9         | 10        |                  |                    |
| 2024-07-10   | 1   | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0                | 0                  |
| 2024-07-11   | 2   | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0                | 0                  |
| 2024-07-12   | 3   | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 4         | 0         | 0                | 0.4                |
| 2024-07-13   | 4   | 7         | 6         | 5         | 5         | 5         | 5         | 5         | 7         | 0         | 4         | 0                | 4.9                |
| 2024-07-14   | 5   | 12        | 10        | 9         | 12        | 8         | 13        | 14        | 12        | 13        | 12        | 0                | 11.5               |
| 2024-07-15   | 6   | 17        | 14        | 8         | 12        | 11        | 16        | 13        | 17        | 14        | 13        | 0                | 13.5               |
| <b>Total</b> |     | <b>36</b> | <b>30</b> | <b>22</b> | <b>29</b> | <b>24</b> | <b>34</b> | <b>32</b> | <b>36</b> | <b>31</b> | <b>29</b> |                  | <b>30.3 (±4.6)</b> |

| 0.24%        | Day | Replicate |           |           |           |           |           |           |           |                       |           | Mean Young (±SD) |                    |
|--------------|-----|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------------------|-----------|------------------|--------------------|
|              |     | 1         | 2         | 3         | 4         | 5         | 6         | 7         | 8         | 9                     | 10        |                  |                    |
| 2024-07-10   | 1   | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0                     | 0         | 0                | 0                  |
| 2024-07-11   | 2   | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0                     | 0         | 0                | 0                  |
| 2024-07-12   | 3   | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0                     | 5         | 0                | 0.5                |
| 2024-07-13   | 4   | 6         | 4         | 4         | 6         | 7         | 6         | 7         | 5         | 3                     | 0         | 0                | 4.8                |
| 2024-07-14   | 5   | 11        | 13        | 12        | 13        | 13        | 8         | 14        | 11        | 6                     | 13        | 0                | 11.4               |
| 2024-07-15   | 6   | 11        | 11        | 7         | 8         | 11        | 12        | 13        | 11        | 6                     | 12        | 0                | 10.2               |
| <b>Total</b> |     | <b>28</b> | <b>28</b> | <b>23</b> | <b>27</b> | <b>31</b> | <b>26</b> | <b>34</b> | <b>27</b> | <b>15<sup>3</sup></b> | <b>30</b> |                  | <b>26.9 (±5.1)</b> |

| 30%          | Day | Replicate |           |           |           |           |           |           |           |           |           | Mean Young (±SD) |                    |
|--------------|-----|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------------|--------------------|
|              |     | 1         | 2         | 3         | 4         | 5         | 6         | 7         | 8         | 9         | 10        |                  |                    |
| 2024-07-10   | 1   | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0                | 0                  |
| 2024-07-11   | 2   | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0                | 0                  |
| 2024-07-12   | 3   | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 3         | 5         | 4                | 1.2                |
| 2024-07-13   | 4   | 6         | 6         | 4         | 6         | 6         | 5         | 6         | 0         | 0         | 0         | 0                | 3.9                |
| 2024-07-14   | 5   | 10        | 11        | 10        | 13        | 11        | 11        | 15        | 12        | 13        | 6         | 0                | 11.2               |
| 2024-07-15   | 6   | 11        | 10        | 11        | 5         | 0         | 7         | 0         | 7         | 0         | 2         | 0                | 5.3                |
| <b>Total</b> |     | <b>27</b> | <b>27</b> | <b>25</b> | <b>24</b> | <b>17</b> | <b>23</b> | <b>21</b> | <b>22</b> | <b>18</b> | <b>12</b> |                  | <b>21.6 (±4.8)</b> |

| 0.81%        | Day | Replicate |           |           |           |           |           |           |           |           |           | Mean Young (±SD) |                    |
|--------------|-----|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------------|--------------------|
|              |     | 1         | 2         | 3         | 4         | 5         | 6         | 7         | 8         | 9         | 10        |                  |                    |
| 2024-07-10   | 1   | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0                | 0                  |
| 2024-07-11   | 2   | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0                | 0                  |
| 2024-07-12   | 3   | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 5         | 5         | 0         | 0                | 1                  |
| 2024-07-13   | 4   | 3         | 4         | 6         | 2         | 3         | 5         | 7         | 0         | 0         | 4         | 0                | 3.4                |
| 2024-07-14   | 5   | 12        | 9         | 9         | 8         | 11        | 11        | 12        | 14        | 10        | 10        | 0                | 10.6               |
| 2024-07-15   | 6   | 10        | 10        | 0         | 0         | 9         | 11        | 11        | 10        | 15        | 7         | 0                | 8.3                |
| <b>Total</b> |     | <b>25</b> | <b>23</b> | <b>15</b> | <b>10</b> | <b>23</b> | <b>27</b> | <b>30</b> | <b>29</b> | <b>30</b> | <b>21</b> |                  | <b>23.3 (±6.6)</b> |

| 100%         | Day | Replicate |           |           |          |           |           |           |           |          |           | Mean Young (±SD) |                     |
|--------------|-----|-----------|-----------|-----------|----------|-----------|-----------|-----------|-----------|----------|-----------|------------------|---------------------|
|              |     | 1         | 2         | 3         | 4        | 5         | 6         | 7         | 8         | 9        | 10        |                  |                     |
| 2024-07-10   | 1   | 0         | 0         | 0         | 0        | 0         | 0         | 0         | 0         | 0        | 0         | 0                | 0                   |
| 2024-07-11   | 2   | 0         | 0         | 0         | 0        | 0         | 0         | 0         | 0         | 0        | 0         | 0                | 0                   |
| 2024-07-12   | 3   | 0         | 0         | 0         | 0        | 0         | 0         | 0         | 0         | 0        | 0         | 0                | 0                   |
| 2024-07-13   | 4   | 8         | 5         | 6         | 0 x      | 4         | 5         | 6         | 6         | 2        | 5         | 0                | 4.7                 |
| 2024-07-14   | 5   | 11        | 11        | 7         | 0        | 10        | 11        | 12        | 11        | 0        | 10        | 0                | 8.3                 |
| 2024-07-15   | 6   | 8         | 9         | 0         | 0        | 6         | 9         | 9         | 9         | 1        | 5         | 0                | 5.6                 |
| <b>Total</b> |     | <b>27</b> | <b>25</b> | <b>13</b> | <b>0</b> | <b>20</b> | <b>25</b> | <b>27</b> | <b>26</b> | <b>3</b> | <b>20</b> |                  | <b>18.6 (±10.0)</b> |

NOTES : •All young produced by a test organism during its fourth and subsequent broods were discarded and not included in the above counts. The presence of two or more neonates in any test chamber, during any given day of the test, constitutes a brood.

<sup>3</sup> Outlier according to Grubbs Test<sup>b</sup>. Outlying data points were not excluded from statistical analysis, since they could not be attributed to error.

x = test organism mortality

\* = accidental test organism mortality

-- = 4th brood (see 'NOTES')

Test Data Reviewed By :                     KP                    

Date :                     2024-08-13

Work Order : 255257

Sample Number : 83068

**WATER CHEMISTRY DATA**

|                                  |  | Day 0 - 1                       | Day 1 - 2     | Day 2 - 3       | Day 3 - 4        | Day 4 - 5        | Day 5 - 6        |                 |
|----------------------------------|--|---------------------------------|---------------|-----------------|------------------|------------------|------------------|-----------------|
| Date :                           |  | 2024-07-09                      | 2024-07-10    | 2024-07-11      | 2024-07-12       | 2024-07-13       | 2024-07-14       |                 |
| <b>Initial Chemistry (100 %)</b> | Sub-sample Used                                | 1                               | 1             | 1               | 2                | 2                | 3                |                 |
|                                  | Temperature (°C)                               | 25                              | 24            | 24              | 24               | 24               | 24               |                 |
|                                  | Dissolved O <sub>2</sub> (mg/L)                | 7.7                             | 8.2           | 8.5             | 8.2              | 8.6              | 8.4              |                 |
|                                  | Dissolved O <sub>2</sub> (% Sat.) <sup>4</sup> | 98                              | 105           | 107             | 102              | 107              | 106              |                 |
|                                  | pH   | 7.2                             | 7.4           | 7.6             | 7.4              | 7.5              | 7.5              |                 |
|                                  | Conductivity (µmhos/cm)                        | 1453                            | 1425          | 1436            | 1447             | 1444             | 1438             |                 |
|                                  | Pre-aeration Time (min) <sup>5</sup>           | 0                               | 20            | 20              | 20               | 20               | 20               |                 |
|                                  | Analyst(s)                                     | Initial Final                   | AL (AS) AS    | AA (AS) JN (AS) | JN (AS) ASK (AS) | ASK (AS) ET (SV) | ASK (SV) ET (SV) | ET (SV) JN (AS) |
| <b>Control</b>                   | Temperature (°C)                               | Initial Final                   | 25 25         | 25 25           | 25 24            | 24 24            | 25 24            |                 |
|                                  | Dissolved O <sub>2</sub> (% Sat.) <sup>4</sup> | Initial                         | 101           | 101             | 102              | 101              | 101              | 101             |
|                                  | Dissolved O <sub>2</sub> (mg/L)                | Initial Final                   | 8.0 7.1       | 7.9 7.2         | 8.0 7.1          | 8.1 7.2          | 8.1 7.0          | 8.1 7.2         |
|                                  | pH   | Initial Final                   | 8.3 8.1       | 8.3 8.2         | 8.4 8.1          | 8.4 8.2          | 8.3 8.2          | 8.4 8.1         |
|                                  | Conductivity (µmhos/cm)                        | Initial                         | 478           | 479             | 476              | 475              | 463              | 488             |
|                                  | Hardness (mg/L as CaCO <sub>3</sub> )          |                                 | 220           | -               | -                | -                | -                | -               |
|                                  | <b>0.07 %</b>                                  | Temperature (°C)                | Initial Final | 25 25           | 25 25            | 25 24            | 24 24            | 25 24           |
|                                  |  | Dissolved O <sub>2</sub> (mg/L) | Initial Final | 7.9 6.9         | 7.9 6.9          | 8.1 6.9          | 7.5 7.1          | 8.0 6.9         |
| pH                               |  | Initial Final                   | 8.2 8.1       | 8.3 8.2         | 8.3 8.1          | 8.2 8.2          | 8.3 8.1          | 8.4 8.1         |
| Conductivity (µmhos/cm)          |  | Initial                         | 482           | 477             | 480              | 479              | 458              | 497             |
| <b>9 %</b>                       |  | Temperature (°C)                | Initial Final | 25 25           | 25 25            | 25 24            | 24 24            | 25 24           |
|                                  |  | Dissolved O <sub>2</sub> (mg/L) | Initial Final | 7.8 6.9         | 7.9 7.1          | 8.0 7.2          | 7.8 7.1          | 8.0 7.0         |
|                                  | pH   | Initial Final                   | 8.0 8.2       | 8.2 8.3         | 8.2 8.2          | 8.2 8.2          | 8.2 8.2          | 8.3 8.2         |
|                                  | Conductivity (µmhos/cm)                        | Initial                         | 572           | 577             | 566              | 578              | 558              | 581             |
| <b>100 %</b>                     | Temperature (°C)                               | Initial Final                   | 25 25         | 25 25           | 25 24            | 24 24            | 25 24            |                 |
|                                  | Dissolved O <sub>2</sub> (mg/L)                | Initial Final                   | 8.0 6.2       | 8.0 6.1         | 8.1 6.6          | 8.0 7.0          | 8.2 6.8          | 8.3 6.8         |
|                                  | pH   | Initial Final                   | 7.3 7.7       | 7.6 7.9         | 7.7 8.2          | 7.8 8.3          | 7.7 8.2          | 7.6 8.3         |
|                                  | Conductivity (µmhos/cm)                        | Initial                         | 1446          | 1452            | 1442             | 1446             | 1445             | 1442            |
|                                  | Hardness (mg/L as CaCO <sub>3</sub> )          |                                 | 580           | -               | -                | -                | -                | -               |

"—" = not measured/not required

<sup>4</sup> adjusted for temperature and barometric pressure

<sup>5</sup> ≤100 bubbles/minute

 Test Data Reviewed By :          KP

 Date : 2024-08-13

**CHAIN OF CUSTODY RECORD**



Ask for Mark O'Neil

255267

P.O. Number: 90000537X

Field Sampler Name (print): Allan Norris

Signature: *[Signature]*

Affiliation: LAMXESS CANADA

Sample Storage (prior to shipping): ICE PACK

Chain of Custody Relinquished by: *[Signature]*

Date/Time Shipped: JUL 9/24 12:30

Shipping Address: AquaTox Testing & Consulting Inc.  
B-11 Nicholas Beaver Road  
Fusliot, Ontario Canada N0B 2J0

Phone: (519) 763-4412 Fax: (519) 763-4416

Client: LAMXESS CANADA CO./CIE

25 ERB ST  
ELMIRA ON  
N3B 2J3

Phone: 519 669 1671  
Fax: 519 669 3273

Contact: MICHELLE YANTZI

| Sample Identification     |   | Aquatox Sample Number | Analytes Requested               |                  |                                   |                        |                                  |                                    |              |                    |                           |                              | Sample Method and Volume |           |  |
|---------------------------|---|-----------------------|----------------------------------|------------------|-----------------------------------|------------------------|----------------------------------|------------------------------------|--------------|--------------------|---------------------------|------------------------------|--------------------------|-----------|--|
| Date Collected (m/m/yyyy) | Time Collected (e.g. 14:00, 24 hr sample) |                       | Random Trout Bleed Concentration | Random Trout LCO | Daphnia magna Bleed Concentration | Lymphocyte magna (LCO) | Fathead Minnow Survival & Growth | Centropomus dolo Survival & Growth | Reproduction | Lemna major Growth | Immunohistochemical (IHC) | Other (please specify below) | Class                    | Composite | # of Containers and Volumes (e.g. 2 x 1L, 3 x 10L, etc.) |
| 2024-07-09                | 08:30                                     | 83008.11              |                                  |                  |                                   |                        |                                  |                                    |              |                    |                           |                              |                          |           | 3 x 5L   |
|                           |   |                       |                                  |                  |                                   |                        |                                  |                                    |              |                    |                           |                              |                          |           |  |
|                           |   |                       |                                  |                  |                                   |                        |                                  |                                    |              |                    |                           |                              |                          |           |  |
|                           |   |                       |                                  |                  |                                   |                        |                                  |                                    |              |                    |                           |                              |                          |           |  |

For Lab Use Only

Request #: SN

Date: 2024-07-09

Time: 18:00

Sample Location:

Storage Location:

Please list any special requests or instructions:

CHRONIC TOXICITY

\*grab as per bladder label. SN 2024-07-09

\*\*Testing required for Ceriodaphnia only as per client email (02 024-07-09)

# **Attachment B**

**Analytical Results**

**Off-Site Routine Groundwater Monitoring  
Program**



Table B.1

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

| Sample Location:              | CH-14                 | CH-16A                | CH-20A                | CH-20B                | CH-30B                | CH-50A                | CH-50B                |
|-------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Sample ID:                    | GW-4432-081324-AB-026 | GW-4432-080724-AB-002 | GW-4432-081324-AB-019 | GW-4432-081324-AB-020 | GW-4432-080724-AB-006 | GW-4432-081524-AB-032 | GW-4432-081424-AB-031 |
| Sample Date:                  | 8/13/2024             | 8/7/2024              | 8/13/2024             | 8/13/2024             | 8/7/2024              | 8/15/2024             | 8/14/2024             |
| Sample Type:                  | Original              | Original              | Original              | Original              | Original              | Original              | Original              |
| Parameters                    | Units                 |                       |                       |                       |                       |                       |                       |
| <b>Field Parameters</b>       |                       |                       |                       |                       |                       |                       |                       |
| Conductivity                  | mS/cm                 | 1.18                  | 1.29                  | 0.868                 | 1.17                  | 0.673                 | 1.23                  |
| pH                            | s.u.                  | 7.52                  | 7.08                  | 7.40                  | 7.40                  | 7.83                  | 7.59                  |
| Temperature                   | Deg C                 | 14.72                 | 11.54                 | 12.73                 | 12.75                 | 11.41                 | 14.53                 |
| Turbidity                     | NTU                   | 0.0                   | 9.4                   | 70.9                  | 39.2                  | 6.5                   | 47.6                  |
| <b>Semi-Volatiles</b>         |                       |                       |                       |                       |                       |                       |                       |
| n-Nitrosodimethylamine (NDMA) | µg/L                  | ND(0.00570)           | ND(0.0142)            | ND(0.00380)           | ND(0.00495)           | ND(0.00230)           | ND(0.00450)           |
| <b>Volatiles</b>              |                       |                       |                       |                       |                       |                       |                       |
| Chlorobenzene                 | µg/L                  | --                    | --                    | --                    | --                    | --                    | --                    |

Notes:  
 ND(RDL) Not detected at the associated reporting detection limit.  
 J Estimated concentration.  
 -- The parameter was not analyzed for.

Table B.1

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

| Sample Location:              | CH-54A                | CH-72A                | CH-72B                | CH-75E-P3             | CH-80C-P3             | CH-88A                | CH-90A                |
|-------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Sample ID:                    | GW-4432-080924-AB-018 | GW-4432-080924-AB-016 | GW-4432-080924-AB-017 | GW-4432-081324-AB-025 | GW-4432-081324-AB-021 | GW-4432-081424-AB-030 | GW-4432-081424-AB-028 |
| Sample Date:                  | 8/9/2024              | 8/9/2024              | 8/9/2024              | 8/13/2024             | 8/13/2024             | 8/14/2024             | 8/14/2024             |
| Sample Type:                  | Original              | Original              | Original              | Original              | Original              | Original              | Original              |
| <b>Parameters</b>             | <b>Units</b>          |                       |                       |                       |                       |                       |                       |
| <b>Field Parameters</b>       |                       |                       |                       |                       |                       |                       |                       |
| Conductivity                  | mS/cm                 | 1.48                  | 0.947                 | 0.752                 | 0.687                 | 2.13                  | 1.29                  |
| pH                            | s.u.                  | 7.48                  | 7.42                  | 7.61                  | 7.80                  | 7.26                  | 7.35                  |
| Temperature                   | Deg C                 | 14.72                 | 12.93                 | 13.55                 | 15.46                 | 12.69                 | 9.99                  |
| Turbidity                     | NTU                   | 6.0                   | 9.8                   | 8.0                   | 14.7                  | 0.0                   | 21.2                  |
| <b>Semi-Volatiles</b>         |                       |                       |                       |                       |                       |                       |                       |
| n-Nitrosodimethylamine (NDMA) | µg/L                  | ND(0.00540)           | ND(0.00580)           | ND(0.00450)           | ND(0.00310)           | ND(0.00300)           | ND(0.00500)           |
| <b>Volatiles</b>              |                       |                       |                       |                       |                       |                       |                       |
| Chlorobenzene                 | µg/L                  | --                    | --                    | --                    | --                    | --                    | --                    |

Notes:  
 ND(RDL) Not detected at the associated reporting detection limit.  
 J Estimated concentration.  
 -- The parameter was not analyzed for.

Table B.1

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

| Sample Location:              | CH-90C                | CRA9A                 | CRA10                 | CRA10B                | MOE1E                 | OW57-32(R)            | OW57-32(R)            |
|-------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Sample ID:                    | GW-4432-081424-AB-029 | GW-4432-081424-AB-027 | GW-4432-080824-AB-011 | GW-4432-080824-AB-012 | GW-4432-081524-AB-033 | GW-4432-080824-AB-007 | GW-4432-080824-AB-008 |
| Sample Date:                  | 8/14/2024             | 8/14/2024             | 8/8/2024              | 8/8/2024              | 8/15/2024             | 8/8/2024              | 8/8/2024              |
| Sample Type:                  | Original              | Original              | Original              | Original              | Original              | Original              | Field Duplicate       |
| Parameters                    | Units                 |                       |                       |                       |                       |                       |                       |
| <b>Field Parameters</b>       |                       |                       |                       |                       |                       |                       |                       |
| Conductivity                  | mS/cm                 | 1.48                  | 1.52                  | 0.824                 | 1.89                  | 1.87                  | 1.36                  |
| pH                            | s.u.                  | 7.39                  | 7.18                  | 7.25                  | 7.32                  | 7.34                  | 7.23                  |
| Temperature                   | Deg C                 | 9.48                  | 10.30                 | 10.93                 | 10.95                 | 18.44                 | 13.41                 |
| Turbidity                     | NTU                   | 7.6                   | >1000                 | 2.6                   | 12.0                  | 4.9                   | 16.7                  |
| <b>Semi-Volatiles</b>         |                       |                       |                       |                       |                       |                       |                       |
| n-Nitrosodimethylamine (NDMA) | µg/L                  | ND(0.00450)           | ND(0.00650)           | ND(0.00675)           | ND(0.00540)           | ND(0.00360)           | 0.0456                |
| <b>Volatiles</b>              |                       |                       |                       |                       |                       |                       |                       |
| Chlorobenzene                 | µg/L                  | --                    | --                    | ND(0.20)              | --                    | --                    | 0.57                  |

Notes:  
 ND(RDL) Not detected at the associated reporting detection limit.  
 J Estimated concentration.  
 -- The parameter was not analyzed for.

Table B.1

2024 Off-Site Routine Groundwater Monitoring  
 August 2024 Analytical Results  
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| Sample Location:              | OW104d                | OW161-P3              | OW161-P3              | OW166-25              | OW166-39              | OW172-33              | OW173-30              |             |
|-------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-------------|
| Sample ID:                    | GW-4432-080824-AB-010 | GW-4432-081324-AB-022 | GW-4432-081324-AB-023 | GW-4432-080824-AB-013 | GW-4432-080824-AB-014 | GW-4432-080724-AB-003 | GW-4432-080824-AB-015 |             |
| Sample Date:                  | 8/8/2024              | 8/13/2024             | 8/13/2024             | 8/8/2024              | 8/8/2024              | 8/7/2024              | 8/8/2024              |             |
| Sample Type:                  | Original              | Original              | Feld Duplicate        | Original              | Original              | Original              | Original              |             |
| Parameters                    | Units                 |                       |                       |                       |                       |                       |                       |             |
| <b>Field Parameters</b>       |                       |                       |                       |                       |                       |                       |                       |             |
| Conductivity                  | mS/cm                 | 1.68                  | 1.06                  | 1.06                  | 1.19                  | 0.798                 | 1.32                  | 1.56        |
| pH                            | s.u.                  | 7.25                  | 7.45                  | 7.45                  | 7.49                  | 7.52                  | 7.78                  | 7.55        |
| Temperature                   | Deg C                 | 14.40                 | 14.65                 | 14.65                 | 13.75                 | 15.12                 | 14.41                 | 14.09       |
| Turbidity                     | NTU                   | 23.3                  | 0.0                   | 0.0                   | 12.3                  | 52.0                  | 23.9                  | 39.5        |
| <b>Semi-Volatiles</b>         |                       |                       |                       |                       |                       |                       |                       |             |
| n-Nitrosodimethylamine (NDMA) | µg/L                  | 0.0260                | ND(0.00300)           | ND(0.00360)           | ND(0.00770)           | ND(0.00360)           | 0.0522                | ND(0.00630) |
| <b>Volatiles</b>              |                       |                       |                       |                       |                       |                       |                       |             |
| Chlorobenzene                 | µg/L                  | 5.14                  | --                    | --                    | ND(0.20)              | ND(0.20)              | --                    | --          |

Notes:  
 ND(RDL) Not detected at the associated reporting detection limit.  
 J Estimated concentration.  
 -- The parameter was not analyzed for.

Table B.1

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

| Sample Location:              |       | OW176-24              | OW177-21              | OW186-49              |
|-------------------------------|-------|-----------------------|-----------------------|-----------------------|
| Sample ID:                    |       | GW-4432-080724-AB-004 | GW-4432-080724-AB-005 | GW-4432-080724-AB-001 |
| Sample Date:                  |       | 8/7/2024              | 8/7/2024              | 8/7/2024              |
| Sample Type:                  |       | Original              | Original              | Original              |
| Parameters                    | Units |                       |                       |                       |
| <b>Field Parameters</b>       |       |                       |                       |                       |
| Conductivity                  | mS/cm | 1.81                  | 1.74                  | 0.991                 |
| pH                            | s.u.  | 7.58                  | 7.54                  | 6.93                  |
| Temperature                   | Deg C | 12.97                 | 12.43                 | 12.28                 |
| Turbidity                     | NTU   | 13.5                  | 16.0                  | 3.9                   |
| <b>Semi-Volatiles</b>         |       |                       |                       |                       |
| n-Nitrosodimethylamine (NDMA) | µg/L  | ND(0.0120)            | 0.0170                | 3.27 J                |
| <b>Volatiles</b>              |       |                       |                       |                       |
| Chlorobenzene                 | µg/L  | --                    | --                    | --                    |

Notes:

- ND(RDL) Not detected at the associated reporting detection limit.
- J Estimated concentration.
- The parameter was not analyzed for.