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# 2025 Annual Compliance and Performance Report

Reporting Period: January 1 – December 31, 2025

Licence Number: NSPFL-13.00/2034

Licence Condition: 3.2

# SRB Technologies (Canada) Inc.

# 2025 Annual Compliance and Performance Report

Submission date: March 31, 2026

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# Executive Summary

SRB Technologies (Canada) Incorporated (SRBT) is pleased to provide this compliance and performance report to the Canadian Nuclear Safety Commission (CNSC) as part of our licensed activities.

Our facility continues to process tritium safely, responsibly and efficiently, and we are proud of the level of performance and improvements achieved during 2025.

Two reportable events took place, both of which fell within the Safety and Compliance Area of Packaging and Transport; otherwise, no other nuclear safety-related events or significant safety-related issues occurred, and the safety of workers, the public and the environment was maintained at all times.

Internal safety targets for Radiation Protection, Conventional Health and Safety, and Environmental Protection were met with one exception – a staff member incurred a lost-time injury in 2025, the first time such an incident occurred since 2017.

During the year, SRBT processed 20,523,027 GBq of tritium into self-luminous light sources and safety devices. The ratio of the amount of tritium released to atmosphere compared to the amount of tritium processed was determined to be 0.095% at year's end, meeting our annual internal target of 0.110%.

Tritium oxide releases to atmosphere fell significantly in 2025 in comparison to the year previous, with 8,171 GBq of oxide being released (vs. 13,628 GBq in 2024).

The total amount of tritium (elemental + oxide) released to the environment through the gaseous effluent pathway also decreased (19,566 GBq) compared with the previous year (45,868 GBq).

The average weekly rate of gaseous tritium releases met our internal target for 2025; on the average, 376 GBq of tritium was released weekly, versus our internal target of less than 600 GBq per week. A total of 0.35 GBq of water-soluble tritium was released to municipal sewer during the year, well below the annual limit of 200 GBq.

SRBT fully complied with licenced limits relating to annual tritium releases via effluent pathways, with significant margin.

Once again in 2025, no SRBT employee exceeded 1 mSv of effective dose for the year – a value that represents the dose limit to the public. As well, no action levels were exceeded with respect to radiation doses. This is a testament to the continued diligence of our workers in maintaining radiation exposures as low as reasonably achievable.

The conservatively-calculated dose to the most-exposed member of the public remains far less than 1% of the prescribed annual limit of 1 mSv, as derived from direct sampling and monitoring of the local environment. Groundwater tritium concentrations continue to respond favorably to modified and optimized processing practices.

No significant safety-related events occurred relating to conventional health and safety, fire protection, security or waste management.

In 2025, CNSC staff performed two inspections at the facility, resulting in a total of two notices of non-compliance and three recommendations being raised, all of which were identified by CNSC staff as low safety significance that did not pose an immediate or unreasonable risk to the health and safety of persons or the environment.

Our Financial Guarantee for future decommissioning remains funded in excess of the current Commission-accepted value. The Financial Guarantee does not rely on insurance, letters of credit or third-party resources in order to ensure funding availability for future decommissioning of the facility; the funds are held in escrow for access via a Financial Agreement with the Commission.

We continue to improve and implement a successful and effective Public Information Program, and are striving to work towards a collaborative and open relationship with Indigenous communities in the area.

The year 2025 was a successful and safe year of operation for SRBT. Continual improvement in compliance and safety is an ongoing mission, and we will always strive to reduce our operational impact on the environment, and to optimize safety and the effective doses to our workers and the public.

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# Acronyms and Abbreviations

| | |
|---|---|
| ACR | Annual Compliance Report / Annual Compliance and Performance Report |
| AFCI | Annual Facility Condition Inspection |
| AOPFN | Algonquins of Pikwakanagan First Nation |
| Bq | Becquerel<br>• MBq → megabecquerel<br>• GBq → gigabecquerel<br>• TBq → terabecquerel |
| BSI | British Standards Institute |
| CCR | Code Compliance Review |
| CLC | Canada Labour Code |
| CLW | Clearance Level Waste |
| CNL | Canadian Nuclear Laboratories |
| CNSC | Canadian Nuclear Safety Commission |
| CSA | Canadian Standards Association |
| CSM | Conceptual Site Model |
| CVC | Compliance Verification Criteria |
| DAC | Derived Air Concentration |
| DCF | Dose Coefficient Factor |
| ECR | Engineering Change Request |
| EffMP | Effluent Monitoring Program |
| EMP | Environmental Monitoring Program |
| EMS | Environmental Management System |
| ERA | Environmental Risk Assessment |
| FASC | Facility Access Security Clearance |
| FG | Financial Guarantee |

# Acronyms and Abbreviations (continued)

| | |
|---|---|
| FHA | Fire Hazard Assessment |
| FPP | Fire Protection Program |
| FRNA | Fire Response Needs Assessment |
| FSP | Fire Safety Plan |
| GMP / GWMP | Groundwater Monitoring Program |
| HT | Elemental Tritium |
| HTO | Tritium Oxide |
| IAEA | International Atomic Energy Agency |
| IATA | International Air Transportation Agency |
| IEMP | Independent Environmental Monitoring Program |
| ISO | International Organization for Standardization |
| LCH | Licence Conditions Handbook |
| LLW | Low-Level Waste |
| LSC | Liquid Scintillation Counting |
| LTI | Lost Time Incident |
| MDA | Minimum Detectable Activity |
| MW | Monitoring Well |
| NCR | Non-Conformance Report |
| NEW | Nuclear Energy Worker |
| NIST | National Institute of Standards and Technology |
| NSCA | Nuclear Safety and Control Act |
| NSPFL | Nuclear Substance Processing Facility Licence |
| OBT | Organically Bound Tritium |
| OFI | Opportunity for Improvement |

# Acronyms and Abbreviations (continued)

| | |
|---|---|
| OLC | Operating Limits and Conditions |
| PAS | Passive Air Sampler |
| PDP | Preliminary Decommissioning Plan |
| PFD | Pembroke Fire Department |
| PLC | Professional Loss Control |
| PTNSR | Packaging and Transport of Nuclear Substances Regulations (2015) |
| PUTT | Pyrophoric Uranium Tritium Trap |
| QA | Quality Assurance |
| QC | Quality Control |
| RDU | Remote Display Unit |
| REGDOC | Regulatory Document |
| RPD | Relative Percent Difference |
| RRP | Regulatory Reporting Program |
| RW | Residential Well |
| SAR | Safety Analysis Report |
| SAT | Systematic Approach to Training |
| SCA | Safety and Control Area |
| SI | Système international d'unités |
| SRBT | SRB Technologies (Canada) Incorporated |
| Sv | Sievert<br>• mSv → millisievert<br>• µSv → microsievert |
| T2 | Molecular Tritium Gas |
| TDG | Transportation of Dangerous Goods |
| TNA | Training Needs Analysis |

# Acronyms and Abbreviations (continued)

| | |
|---|---|
| UL | Underwriters Laboratories |
| VLLW | Very Low-Level Waste |
| WHSC | Workplace Health and Safety Committee |
| WMP | Waste Management Program |
| WSIB | Workplace Safety and Insurance Board |

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# 1. INTRODUCTION

## 1.1 General Introduction

For the period of January 1 – December 31, 2025, SRB Technologies (Canada) Inc. (SRBT) operated a tritium processing facility in Pembroke, Ontario, under Nuclear Substance Processing Facility Licence NSPFL-13.00/2034[1], issued by the Canadian Nuclear Safety Commission (CNSC).

The facility was operated in compliance with the regulatory requirements of the *Nuclear Safety and Control Act* (NSCA), our operating licence, and all other applicable federal, provincial and municipal regulations throughout the review period. As well, no new CNSC-licensed activities were implemented since the previous annual compliance and performance report.

Compliance was ensured by the continued implementation of our Management System and associated programs and procedures, coupled with a high level of independent internal and external oversight through audit, inspection and self-assessment activities.

During this period, there were no exceedances of action levels, nor licence / regulatory limits associated with our operating licence. Two reportable events took place as defined in section 35 of the *Packaging and Transport of Nuclear Substances Regulations (2015)*.

The SRBT operating licence includes conditions that require SRBT to prepare and submit an annual compliance report (ACR). This requirement is currently defined as part of the compliance verification criteria (CVC) in the Licence Conditions Handbook (LCH)[2] relating to condition 3.2 of NSPFL-13.00/2034, which states:

> ***Annual Reporting***
>
> *The licensee shall submit an annual compliance report by March 31 of each year, covering the operation for the 12-month period from January 1 to December 31 of the previous year that meets the requirements of section 3 of REGDOC-3.1.2.*

The purpose of this report is to provide the required information in order to meet the requirements of conditions 3.2 of Licence NSPFL-13.00/2034, and the CVC in the associated LCH.

The information is reported in a format which meets the requirements of CNSC Regulatory Document 3.1.2, *Reporting Requirements, Volume I: Non-Power Reactor Class I Nuclear Facilities and Uranium Mines and Mills*[3]*,* SRBT's Regulatory Reporting Program, and in consideration of regulatory feedback and comments regarding previous ACRs submitted in the past.

## 1.2 Facility Operation – Compliance Highlights and Significant Events

SRBT conducted its licenced activities safely and compliantly throughout 2025.

### 1.2.1 Tritium Processing

In 2025, SRBT conducted 3,938 tritium processing operations (light source filling), with a total of 20,523,027 GBq of tritium being processed into gaseous tritium light sources.

Please refer to section 1.4, ‘Production or Utilization’ for additional details on tritium processing in 2025.

### 1.2.2 Distribution of Self-luminous Safety Products

In 2025, 698 shipments of our self-luminous safety products were made to customers in 16 different countries, including Canada.

Please refer to section 4.8, ‘SCA – Packaging and Transport of Nuclear Substances’ for additional details on the distribution of our products in 2025.

### 1.2.3 Acceptance of Expired Products

In 2025, a total of 11,264 expired (or otherwise removed from service) self-luminous safety ‘EXIT’ type signs were accepted by SRBT from Canadian and American sources, representing a total activity of 1,697.36 TBq of tritium. In 2024, 12,111 signs were processed representing 1,718.33 TBq of tritium.

These signs were disassembled safely and the light sources removed. A very small number of these signs were evaluated as having light sources that could be reused in other self-luminous devices. Lights that could not be repurposed were packaged and shipped to a licenced radioactive waste management service provider.

As well, an additional 92.88 TBq of tritium was accepted from international origins (i.e. other than Canada and the United States) in the form of expired tritium illuminated devices, such as aircraft signs, dials, gauges and other smaller equipment. These were also processed for shipment to a licenced waste management facility.

Please refer to section 4.5, ‘SCA – Waste Management’ and section 4.8, ‘SCA – Packaging and Transport of Nuclear Substances’ for additional details on the acceptance of expired self-luminous safety signs in 2025.

### 1.2.4 External Oversight

During the year, there were a total of ten major inspections or audits conducted by stakeholders and external parties on our operations.

CNSC staff conducted compliance inspections on two occasions in 2025; an inspection focused on Environmental Protection was conducted in July[4], and an inspection focused on Management Systems was conducted in November[5]. A total of two (2) notices of non-compliance, and three (3) recommendations were put forth as a result of these inspections, all of which were deemed to be of low safety significance.

British Standards Institute (BSI) Management Systems, on behalf of the International Organization for Standardization (ISO), conducted a major audit in October 2025, which concluded that SRBT continues to effectively manage our operations in a fashion that ensures the elements of the scope of our certification with ISO 9001 are effectively addressed, and confirmed our continued certification.

One major customer of SRBT products conducted an independent audit of our operations in October 2025, while Underwriters Laboratories (UL) completed four quarterly audits as planned.

Additional details on the above noted external oversight of SRBT operations can be found in section 2.1, ‘SCA – Management System’.

Two focused facility inspections were conducted relating to fire protection. Both the Pembroke Fire Department (PFD) and Professional Loss Control (PLC) inspected the facility in 2025.

Details on fire protection-related inspections and audits can be found in section 4.4, ‘SCA – Emergency Management and Fire Protection’.

### 1.2.5 Internal Oversight

Eight internal compliance audits were conducted through the year, focused on all aspects of our operations and our organization. A total of twelve non-conformance reports and fourteen opportunities for improvement were identified as a result of these activities, all of which have been addressed (or are in the process of being addressed) by the responsible managers.

Additional details on internal oversight of SRBT operations can be found in section 2.1, ‘SCA – Management System’.

### 1.2.6 Reported Events

Event reporting is governed internally by the SRBT Regulatory Reporting Program.

In 2025, SRBT experienced two events that met the regulatory criteria for unplanned event reporting, both of which were reported pursuant to the definition of a ‘dangerous occurrence’ in the *Packaging and Transport of Nuclear Substances Regulations (2015)*. Neither of these events presented a safety-significant risk to workers, members of the public, or the environment. Actions taken to address the root causes of these events have proven to be effective.

Additional details on these events are provided in section 2.3.3 of this report, and the reports submitted to CNSC staff are available on SRBT’s website[6,7].

### 1.2.7 Operational Challenges

SRBT experienced one significant operational challenge in 2025.

The unpredictable impact of the application of new and changing tariffs on Canadian exports to the United States of America led to challenges in how SRBT managed its exports, manufacturing operations and financial resources.

Fiscally-conservative decisions helped manage the considerable uncertainties introduced by this situation. These challenges did not impact safety or regulatory performance.

### 1.2.8 Summary of Significant Modifications

No significant modifications were implemented in the facility which pertain to our licensed activities in 2025, and there were no changes to the self-luminous safety light production capacity of the facility. All minor and non-safety significant modifications to structures, systems and components were conducted in accordance with our change control processes.

Please refer to section 3.2, ‘SCA – Physical Design’, for more information regarding notable facility modifications carried out in 2025.

### 1.2.9 Summary of Organizational Structure and Key Personnel

At the conclusion of 2025, SRBT employed 38 employees and managers. No structural changes to the organization were implemented in 2025.

Please refer to section 2.1, ‘SCA – Management System’ for details regarding SRBT’s organizational structure in 2025.

### 1.3 Summary of Compliance with Licence and OLCs

Throughout 2025, SRBT complied with the conditions of our operating licence[1], and possessed, transferred, used, processed, managed, stored and disposed of all nuclear substances and radiation devices related to and arising from the operation of the facility in compliance with regulatory requirements.

Specifically:

- All required programs have been implemented and maintained,
- The CNSC was notified as required of changes to the programs, processes and documents referenced in the management system / licensing basis,
- All required records have been established and maintained pursuant to the operating licence, the Nuclear Safety and Control Act and its regulations,
- With one exception, all pertinent notifications were made, and written reports filed, within prescribed periods,
    - The required preliminary report for an event that occurred in June was not filed within the prescribed period. Details on this error can be found in section 2.3.3 of this report.
- A decommissioning strategy continues to be maintained for future use,
- A financial guarantee continues to be fully funded and maintained, for future decommissioning,
- Cost recovery fees were paid on time and in full, and
- Limits on releases of tritium to the atmosphere and sewer, and radiation dose limits to the public and SRBT nuclear energy workers were not exceeded.

SRBT also remained in compliance with requirements of all other federal and provincial regulations as pertaining to the operation of the facility, including the Canada Labour Code and associated regulations, as well as provincial regulations with respect to the management of hazardous materials and waste.

The following summary report is provided respecting SRBT compliance with the Operating Limits and Conditions (OLC) established within our Safety Analysis Report[8] (SAR) throughout the course of 2025.

Each applicable OLC is repeated below, with a statement of compliance.

### 1.3.1 Tritium Possession Limit

| |
|---|
| SRBT is authorized by licence to possess up to 6,000 TBq of tritium in any form. |

SRBT possessed less than 6,000 TBq of tritium at all times during 2025.

Please refer to section 2.3, ‘SCA – Operating Performance’ for more details.

### 1.3.2 Tritium Processing – Precipitation

| |
|---|
| Tritium processing shall not occur during measurable periods of precipitation, as detected by the precipitation detection system or equivalent. |

Tritium processing operations were only conducted during periods where measurable precipitation was not occurring during 2025.

Processing operations were ceased and equipment placed into a safe state when precipitation events occurred during operating hours.

### 1.3.3 Tritium Releases to Atmosphere – Tritium Oxide

| |
|---|
| SRBT shall not release in excess of 6.72E+13 Bq of tritium oxide to atmosphere in any year. |

The total amount of tritium oxide (HTO) released to atmosphere in 2025 was equal to 8.17E+12 Bq (8,171 GBq), representing 12.2% of this licenced limit.

Please refer to section 4.3 ‘SCA – Environmental Protection’ for more details.

### 1.3.4 Tritium Releases to Atmosphere – Tritium Oxide + Elemental

| |
|---|
| SRBT shall not release in excess of 4.48E+14 Bq of total tritium as tritium oxide and tritium gas to atmosphere in any year. |

The total amount of combined HTO and elemental tritium (HT) released to atmosphere in 2025 was equal to 1.96E+13 Bq (19,566 GBq), representing 4.4% of this licenced limit.

Please refer to section 4.3 ‘SCA – Environmental Protection’ for more details.

### 1.3.5 Minimum Differential Pressure Measurements for Tritium Processing

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|---|
| Tritium processing operations shall not occur unless the following differential pressures are achieved, as measured by the gauges on each of the active ventilation system stacks:<br>• Rig Stack: 0.27 inches of water column<br>• Bulk Stack: 0.38 inches of water column<br>These measurements correspond to an average effective stack height of 27.8 metres, assuming a wind speed of 2.2 m/s. |

At no time did tritium processing occur during 2025 when the noted differential pressures were not being achieved, as measured daily prior to operations commencing.

### 1.3.6 Tritium Releases to Sewer – Water-soluble Tritium

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|---|
| SRBT shall not release in excess of 2.00E+11 Bq of water-soluble tritium to the municipal sewer system in any year. |

The total amount of water-soluble tritium released to the municipal sewer in 2025 was equal to 3.5E+08 Bq (0.35 GBq), representing just under 0.2% of this licenced limit.

Please refer to section 4.3 ‘SCA – Environmental Protection’ for more details.

### 1.3.7 PUTT Filling Cycles

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|---|
| Any pyrophoric uranium tritium trap (PUTT) base is limited to 30 complete bulk splitter filling cycles, after which it is no longer permitted to be used for further tritium processing. |

All tritium processing in 2025 was conducted using PUTTs that had been cycled 30 times or less on the bulk splitter.

### 1.3.8 PUTT / Bulk Container Tritium Loading Limit

| |
|---|
| PUTTs are limited to less than 111,000 GBq of tritium loading at any time.<br>Bulk containers are limited as follows:<br>• SRBT shall request no more than 925,000 GBq per bulk container when submitting a purchase order to an approved supplier of tritium gas.<br>• No bulk container shall exceed 1,000,000 GBq of tritium loading at any time. |

In 2025, no PUTT was loaded with more than 111,000 GBq of tritium, and no bulk container was used in the facility in excess of the 1,000,000 GBq loading limit.

### 1.3.9 Bulk Container Heating Limit

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|---|
| Bulk tritium containers are limited to a heating temperature of approximately 550°C, as measured by the thermocouple placed between the heating band and the container surface.<br>Brief and small exceedances of this value are tolerable so long as they are not sustained, and the temperature is returned below this value as soon as possible. |

Bulk tritium container heating operations were conducted in compliance with this limit throughout 2025.

### 1.3.10 On-site Depleted Uranium Inventory

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|---|
| The on-site physical inventory of depleted uranium (virgin, in use and decommissioned bases) is limited to 10 kg. |

The on-site inventory of depleted uranium did not exceed 10 kg in 2025.

Please refer to section 2.3, ‘SCA – Operating Performance’ for more details on inventory controls of depleted uranium in 2025.

## 1.4 Tritium Processing and Possession

### 1.4.1 Tritium Processing

In 2025, a total of 20,523,027 GBq of tritium was processed. This represents a decrease of approximately 19.7% from the 2024 value of 25,562,136 GBq.

The following table is presented to illustrate the five-year history of tritium processing at SRBT.

**TABLE 1: TRITIUM PROCESSED: FIVE-YEAR TREND**

| YEAR | 2021 | 2022 | 2023 | 2024 | 2025 |
|---|---|---|---|---|---|
| **TRITIUM PROCESSED (GBq)** | 29,392,257 | 26,940,372 | 23,202,623 | 25,562,136 | 20,523,027 |

### 1.4.2 Tritium Possession

SRBT is restricted by licence to possess no more than 6,000 TBq of tritium in any form at the facility at any time.

Throughout 2025, this possession limit was not exceeded. The maximum tritium activity possessed at any time during 2025 was 3,783 TBq in December. The monthly average inventory of tritium in the facility was 2,903 TBq.

At all times, unsealed source material was stored on tritium traps or in the handling volumes of tritium processing equipment.

The monthly data of tritium activity on site during calendar year 2025 can be found in **Appendix A** of this report.

### 1.5 Changes in Management System Documentation

In 2025, SRBT revised a number of key program-level management system documents associated with our licensing basis, following the change control provisions of our Licence Conditions Handbook[2].

These documents were each submitted to CNSC staff for review and acceptance, including:

- Regulatory Reporting Program,
- Fire Protection Program,
- Fire Safety Plan,
- Preliminary Decommissioning Plan,
- Hazard Prevention Program,
- Fire Response Needs Analysis (initial version), and
- Fire Hazards Assessment and Code Compliance Review

In 2025, a total of 39 Engineering Change Requests were generated to control the revision and review of programs, procedures or forms, or to manage other changes in the facility structures, systems and components.

Specific details on the changes in documentation can be found in section 2.1, ‘SCA – Management System’.

# 2. MANAGEMENT SCAs

## 2.1 SCA – Management System

Throughout 2025, the SRBT Management System was effectively and thoroughly implemented, ensuring that our nuclear substance processing facility operations continued to meet the requirements detailed in our LCH[2], including key elements such as organization and responsibilities, capability of personnel, use of experience, work planning and control, process and change control, independent verification, non-conformance and corrective action.

A total of 50 non-conformance reports (NCR) and 56 opportunities for improvement (OFI) were raised in different areas of the company operations.

As of the end of 2025, 33 out of the 50 NCRs raised in 2025 had been addressed, reviewed for effectiveness and closed. The remaining 17 NCRs are still in progress due to the fact that they were raised in the later part of the year, or due to relative longer timeframes for the actions that are to be taken to resolve the issues identified.

For OFIs, 26 out of the 56 raised in 2025 have been addressed, reviewed for effectiveness and closed. The remaining 30 OFIs were either raised later in the year, and/or were assigned target completion due dates that have not yet been reached, and will be reviewed as per normal processes as they are addressed.

SRBT affirms that corrective actions and opportunities for improvement have been effective at resolving problems and promoting the concept of continual improvement within our management system in 2025.

Organizational Management Reviews were conducted in early 2025 by all program owners and responsible managers, including benchmarking and self-assessment activities. These reviews were focused on the 2024 calendar year. Reports were submitted to the Executive Assistant in preparation for the annual Management Review.

On September 16th, 17th and 18th, the annual Management Review was conducted by way of a series of one-on-one meetings between key members of the Executive Committee and each of the individual program owners and responsible managers.

The results of benchmarking and self-assessment activities performed for the previous calendar year were reviewed and discussed, and areas where improvements could be made in the various company safety programs were highlighted.

The management system was found to be effective at meeting the current requirements of the NSCA, associated regulations and the conditions of the operating licence, as well as ISO 9001:2015, and customer requirements.

The 2025 Organizational Management Reviews are scheduled to take place in the second quarter of 2026, followed by Senior Management meetings to discuss the outputs of the reviews with responsible managers, and the identification of any opportunities for improvements, actions required to mitigate risks, and compliance or performance issues.

### 2.1.1 Staffing and Organization

At the beginning of 2025, SRBT total staff complement stood at 39 employees.

Two new employees were hired during the year, and three employees left the employ of the company in 2025, two of whom retired.

As of the end of 2025, the total working staff complement stood at 38 employees.

The organizational chart in Figure 1 represents the structure of the company, as of the end of 2025, that ensures SRBT meets *the Nuclear Safety and Control Act*, regulations and conditions of our operating licence.

Sixteen administrative employees and twenty-two production / technician-level employees work at SRBT at the conclusion of the year.

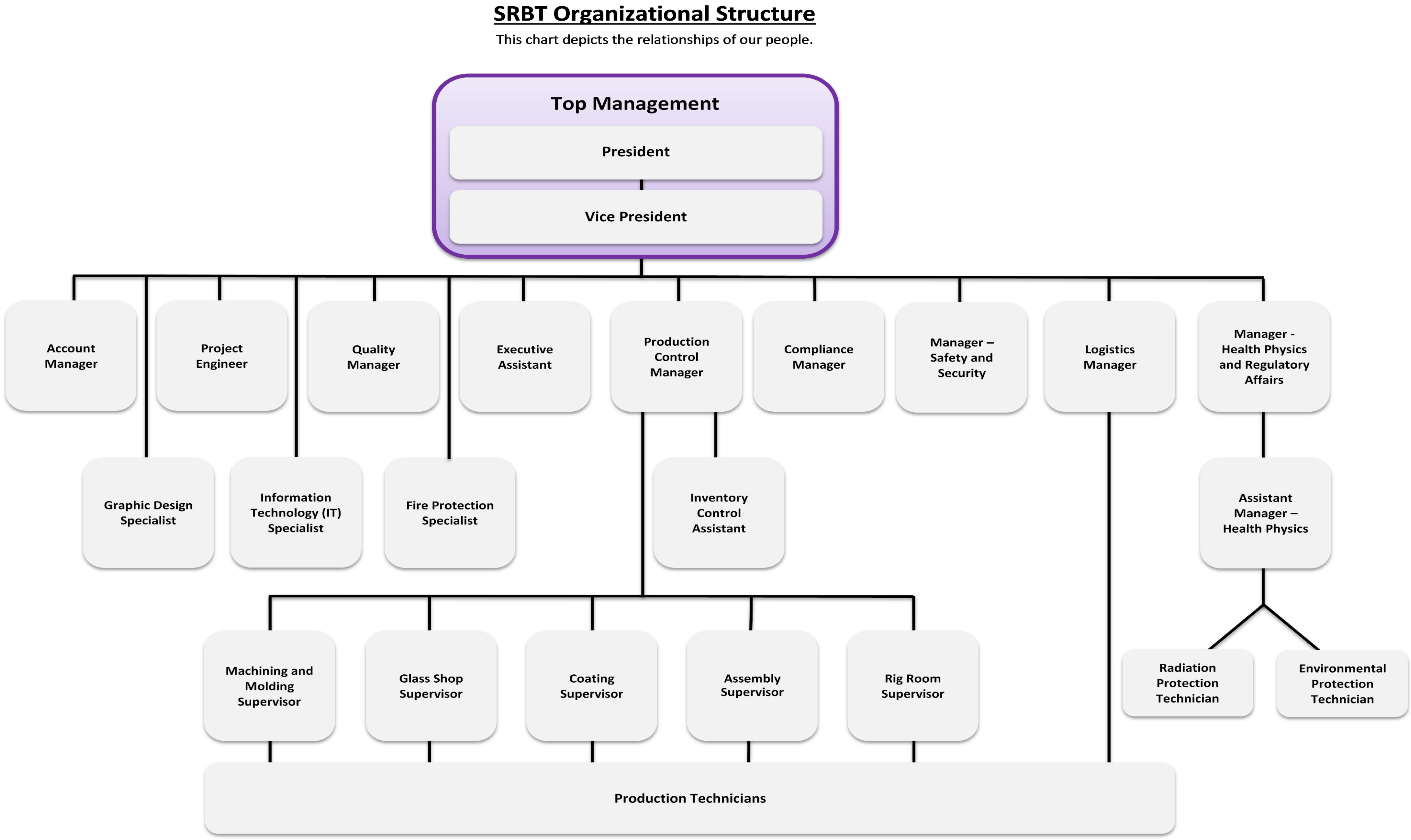
Administrative employees include the two members of Senior Management:

- President has the overall responsibility for the facility and ensures that all licensing requirements are met.
- Vice President assumes the full duties of the President in his absence or otherwise assists the President in his duties.

At the conclusion of 2025, the administrative employees also include nine individuals at the Organizational Management level:

- Quality Manager is mainly responsible for ensuring the quality of products and the satisfaction of customers. They also provide input ensuring that our management system meets the requirements of the ISO 9001 standard.
- Logistics Manager is mainly responsible for the shipment, receipt and inventory control of radioactive materials, as well as import and export activities.
- Executive Assistant is mainly responsible for providing administrative support to the President, and for ensuring meeting minutes are recorded.
- Production Control Manager is mainly responsible for all company purchasing and production planning activities, and the distribution of work packages.

FIGURE 1: ORGANIZATIONAL CHART



- Project Engineer is mainly responsible for developing and maintaining product specifications and manufacturing procedures, product research and development, and oversight of the change control process.
- Account Manager is mainly responsible for all company accounting activities.
- Manager – Safety and Security is mainly responsible for ensuring staff health and safety and ensuring compliance with the health and safety provisions of the *Canada Labour Code,* the *Canada Occupational Health and Safety Regulations*, and support for the Security Program.
- Compliance Manager is mainly responsible for performing independent internal audits and further ensuring facility compliance with external and internal requirements.
- Manager of Health Physics and Regulatory Affairs is mainly responsible for oversight of all company Health Physics activities, as well as communicating with CNSC staff on regulatory matters.

Five employees provide program oversight and/or directly assist individuals at the management support level,

- Graphic Design Specialist is responsible for coordinating changes to the company website, and for the design and development of public information products and sales literature.
- Information Technology Specialist manages and maintains the facility computer network and provides a wide range of technical and engineering support.
- Fire Protection Specialist ensures that facility fire safety procedures are implemented, and for coordinating with the PFD for drills, inspection and training. This individual is also responsible for the day-to-day management of maintenance activities in the facility.
- Inventory Control Assistant oversees the receipt of all materials, including quality evaluation where applicable, and for general stores and materials.
- Assistant Manager – Health Physics is responsible for the day-to-day implementation of company Health Physics-related programs and processes, including coordinating the activities of technician-level resources assigned to the department.

At the technician level, there are two technician-level organizational positions within the Health Physics department:

- Environmental Protection Technician is primarily responsible for performing duties relating to environmental protection and monitoring.
- Radiation Protection Technician performs duties relating primarily to radiation protection.

Twenty production-focused employees include five Production Supervisors:

- Glass Shop Supervisor is responsible for all the activities within the Glass Shop Department.
- Coating Supervisor is responsible for all the activities within the Coating Department.
- Rig Room Supervisor is responsible for all the activities within the Rig Room Department.
- Assembly Supervisor is responsible for all the activities within the Assembly Department.
- Machining and Molding Supervisor is responsible for all the activities within the Machining and Molding Department.

These supervisors oversee the work of fifteen Production Technicians, who are responsible for performing production activities in accordance with company manufacturing procedures.

### 2.1.2 Committees

In 2025, committees have continued to be instrumental in the development and refinement of company programs and procedures, identifying new safety initiatives and ensuring continuing effective communication at all organizational levels.

Committees use meeting results as an opportunity for improvement and make recommendations accordingly. In 2025, a total of 70 committee meetings took place at the company compared to 71 in 2024, 80 in 2023, and 73 in 2022.

Committee meetings continue to be a key force to improve all aspects of our operations, and safety in general.

See Table 2 for a breakdown of the meetings held in 2025.

**TABLE 2: COMMITTEE MEETINGS**

| COMMITTEE | NUMBER OF MEETINGS |
|---|---:|
| PRODUCTION COMMITTEE | 33 |
| WORKPLACE HEALTH AND SAFETY COMMITTEE | 10 |
| OTHER COMMITTEE/ STAFF MEETINGS | 6 |
| HEALTH PHYSICS COMMITTEE | 4 |
| TRAINING COMMITTEE | 3 |
| FIRE PROTECTION COMMITTEE | 3 |
| MAINTENANCE COMMITTEE | 3 |
| MITIGATION COMMITTEE | 2 |
| PUBLIC INFORMATION COMMITTEE | 2 |
| EXECUTIVE COMMITTEE | 2 |
| WASTE MANAGEMENT COMMITTEE | 1 |
| SAFETY CULTURE COMMITTEE | 1 |
| **TOTAL** | **70** |

### 2.1.3 Review of Quality Assurance and Management System Effectiveness

The SRBT management system is subject to both focused periodic reviews, as well as continuous review and improvement.

An internal audit of the SRBT management system is conducted annually. In 2025, this audit yielded no safety-significant findings.

Based upon the following factors, and the information presented in this report, it is concluded that the SRBT management system has been effective throughout the year:

- A very low frequency of lost-time injuries or incidents occurring in 2025,
- All workplace injuries were relatively minor in nature,
- Highest worker dose for 2025 is less than 1% of the regulatory limit,
- Maximum calculated public dose remains less than 1% of the regulatory limit for persons who are not nuclear energy workers,
- Continued low ratio of tritium released vs. processed,
- Gaseous tritium oxide releases for the year represented 12.2% of authorized limits, while combined oxide and elemental tritium releases represented 4.4% of authorized limits,
- Tritium releases via liquid effluent represented less than 0.2% of authorized limits,
- All conditions of our facility operating licence were met throughout the year,
- Very few CNSC-identified compliance issues from multiple inspections, with all findings identified by CNSC staff as being of low safety significance,
- Continued improvement of several key programs and processes, and
- Continuous registered certification to the latest revision of the ISO 9001 standard.

### 2.1.4 Internally Conducted Audits

#### 2.1.4.1 Internal Audits of Internal Programs and Processes

The goal of SRBT's internal auditing process is to ensure that all licensed activities and company safety programs and procedures are being adhered to. Internal audits are often specifically focused on the same Safety and Control Areas (SCA) applied by the CNSC. The Compliance Manager implemented an audit schedule for 2025 that touched on several aspects of our operations.

Internal audits were conducted in the following areas of our operations:

- Accounting
- Maintenance
- Management System
- Materials and Production Control
- Radiation Protection and Dosimetry Service
- Shipping and Nuclear Substances Inventory Control
- Environmental Protection – Groundwater Protection
- Health and Safety

Internal audits resulted in 12 non-conformance reports and 14 opportunities for improvement being identified in 2025. Actions have been established and tracked in each case in order to drive compliance and continuous improvement.

For 2026, a total of eight internal audits are included on the approved schedule.

#### 2.1.4.2 Internal Audits of External Suppliers

In 2025, three external supplier audits were planned and carried out to ensure the acceptability of the management systems of key suppliers of goods and services.

These audits were completed through the Supplier Quality Audit Questionnaire process. No findings were identified through the conduct of these audits.

### 2.1.5 Externally Conducted Audits

During the year, there were a total of ten major inspections or audits conducted by stakeholders and external parties on our operations.

#### 2.1.5.1 CNSC Inspections (2)

CNSC staff conducted compliance inspections at SRBT on two occasions in 2025.

In July, CNSC staff conducted a two-day compliance inspection focused on the SCA of Environmental Protection.

The inspection resulted in two notices of non-compliance and one recommendation being raised[4], all of which were identified by CNSC staff as low safety significance that did not pose an immediate or unreasonable risk to the health and safety of persons or the environment.

SRBT responded to CNSC staff[9] by implementing specific actions to remedy identified non-compliances, which were acknowledged by members of the inspection team in October.

In November, CNSC staff conducted a four-day compliance inspection focused on the SCA of Management Systems.

The inspection resulted in two recommendations being put forth by CNSC staff[5]. SRBT acknowledged these recommendations[10] and have initiated actions to accept and incorporate them into our programs and procedures as appropriate.

#### 2.1.5.2 ISO Certification Audits (1)

On behalf of the International Organization for Standardization (ISO), BSI Management Systems conducted an audit of SRBT operations related to the quality management system on October 28 and 29, 2025, as part of the maintenance of SRBT’s ISO 9001 certification.

Through the audit, SRBT was successful in maintaining continued certification. Two minor nonconformities were identified.

#### 2.1.5.3 Customer-Led Audits (1)

In October 2025, an external audit was executed by a major customer of our commercial safety signs. The audit was a product-focused quality audit of our facility. No findings were identified through this audit.

#### 2.1.5.4 Underwriters Laboratories (4)

Underwriters Laboratories (UL) provides safety-related certification, validation, testing, inspection, auditing, advising and training services to a wide range of clients, including manufacturers.

UL performs quarterly visits of our facility. These visits are unannounced, and provide assurance that our UL-listed products are manufactured using the materials, procedures and testing parameters required under the specific UL listing.

In 2025, UL performed inspections on March 12, May 6, August 19 and October 14. No variations were identified as a result of these inspections.

#### 2.1.5.5 Fire Protection Inspections (2)

Two focused facility inspections were conducted in 2025 relating to fire protection by parties other than SRBT.

An external fire protection consultant (PLC) visited the facility in August to perform a facility inspection. The scope of the inspection included multiple N393 compliance requirements, including an annual facility condition inspection (AFCI), a fire hazard assessment (FHA) / code compliance review (CCR), and a fire response needs analysis (FRNA).

The AFCI report resulted in one open finding and three new findings from the 2025 facility inspection. All of these findings were labelled as “minor in nature” and corrected in a timely manner following the delivery of the AFCI report.

The Pembroke Fire Department inspected the facility in December, with no violations being identified during the inspection.

Details on these inspections can be found in section 4.4, ‘SCA – Emergency Management and Fire Protection’.

### 2.1.6 Benchmarking and Self-assessments

In 2025, individuals responsible for specific programs and procedures at SRBT regularly looked at process problems, corrective actions as well as trending and used this information to benchmark elsewhere in or out of the organization in order to improve the effectiveness of these programs and procedures and to help define where improvements could be made.

Benchmarking against other similar CNSC licensees is encouraged. Documents describing the performance of similar CNSC licensees are made available for review, including:

- Commission Member Documents
- Proceedings, Including Reasons for Decision
- Documents from other licensees, including annual compliance reports

Self-assessments are also performed by Organizational Managers to identify, correct and prevent problems that hinder the achievement of the company's vision, mission, goals, values and policy and to assess the adequacy and effectiveness of the Quality Management System.

Self-assessments were performed by review of:

- Analysis and trending of performance data against historical data
- Input from stakeholders (public, contractors, regulators, etc.)
- Workplace inspections or observations
- Routine communications with staff to determine whether expectations are understood
- Training and coaching results
- Corrective and preventive actions raised throughout the organization
- Internal audit results

Both Benchmarking and Self-assessment reports formed key inputs into the annual Management Review meetings conducted in September.

The scope of these meetings was to fully and critically review our operations, to develop actions to address identified issues and risks, and to take advantage of opportunities for improvement.

The 2025 Management Review cycle is scheduled to be completed in the first half of 2026.

### 2.1.7 Programs and Procedures

#### 2.1.7.1 Programs and Major Licensing Documents

In 2025, a number of key licensing basis documents and management system programs were revised in line with SRBT's mission of continuous improvement.

These revised documents were submitted to CNSC staff, and subsequently implemented in compliance with the change processes described in SRBT's Licence Condition Handbook[2]. These included the following:

- The **Regulatory Reporting Program (RRP)** was revised twice in 2025:
  - RRP Rev. E was submitted to CNSC staff on January 8, 2025, and were subsequently implemented on February 10, 2025 once the 30-day advance notice period had ended[11].
  - RRP Rev. F was submitted to CNSC staff on August 14, 2025, and were subsequently implemented on September 14, 2025 once the 30-day advance notice period had ended[12].
- The **Fire Protection Program (FPP)** and **Fire Safety Plan (FSP)** were both revised twice in 2025:
  - FPP Rev. H and FSP Rev. G were submitted to CNSC staff on January 22, 2025, and were subsequently implemented on February 22, 2025 once the 30-day advance notice period had ended[13].
  - CNSC staff then provided comments to SRBT stemming from their review of these revised documents on May 9, 2025[14].
  - In order to address the comments provided, SRBT elected to revise the FPP and FSP once more.
  - FPP Rev. I and FSP Rev. H were submitted to CNSC staff on July 31, 2025, and were subsequently implemented on August 31, 2025 once the 30-day advance notice period had ended[15].

- On June 20, 2025, an addendum to the revised draft of the **Preliminary Decommissioning Plan (PDP)** was submitted to CNSC staff[16], in response to feedback and comments received on April 24, 2025[17] pertaining to the original submission by SRBT on November 29, 2024[18].
    - Additional comments were received from CNSC staff on October 8, 2025, concerning the draft PDP and addendum, and associated cost estimate for decommissioning[19].
    - A virtual meeting was held between SRBT and CNSC staff on December 3, 2025, to discuss remaining gaps in the PDP, and to develop an action strategy to eliminate them and gain regulatory acceptance of the plan.
    - SRBT committed to submitting a revised PDP to CNSC staff by April 2026[20], with the intent of receiving final acceptance of the plan and the associated cost estimate, followed by renewal of the Financial Guarantee and associated financial agreements, for consideration and regulatory decision-making by the Canadian Nuclear Safety Commission.
    - See section 5.2 of this report for a complete description of the regulatory correspondence and interactions surrounding this licensing-basis document.
- Revision H of the **Hazard Prevention Program** was submitted to CNSC staff on July 31, 2025, and was subsequently implemented on August 31, 2025 once the 30-day advance notice period had ended[21].
- On November 14, 2025, SRBT submitted a **Fire Response Needs Analysis (FRNA)** to CNSC staff, in accordance with clause 11.2.1 of Canadian Standards Association (CSA) standard N393:22[22].
- On December 15, 2025, SRBT submitted a revised **Fire Hazards Assessment (FHA)** and **Code Compliance Review (CCR)** report to CNSC staff, in accordance with clauses 4.5.1.3 and 6.2.3 of CSA standard N393:22[23].

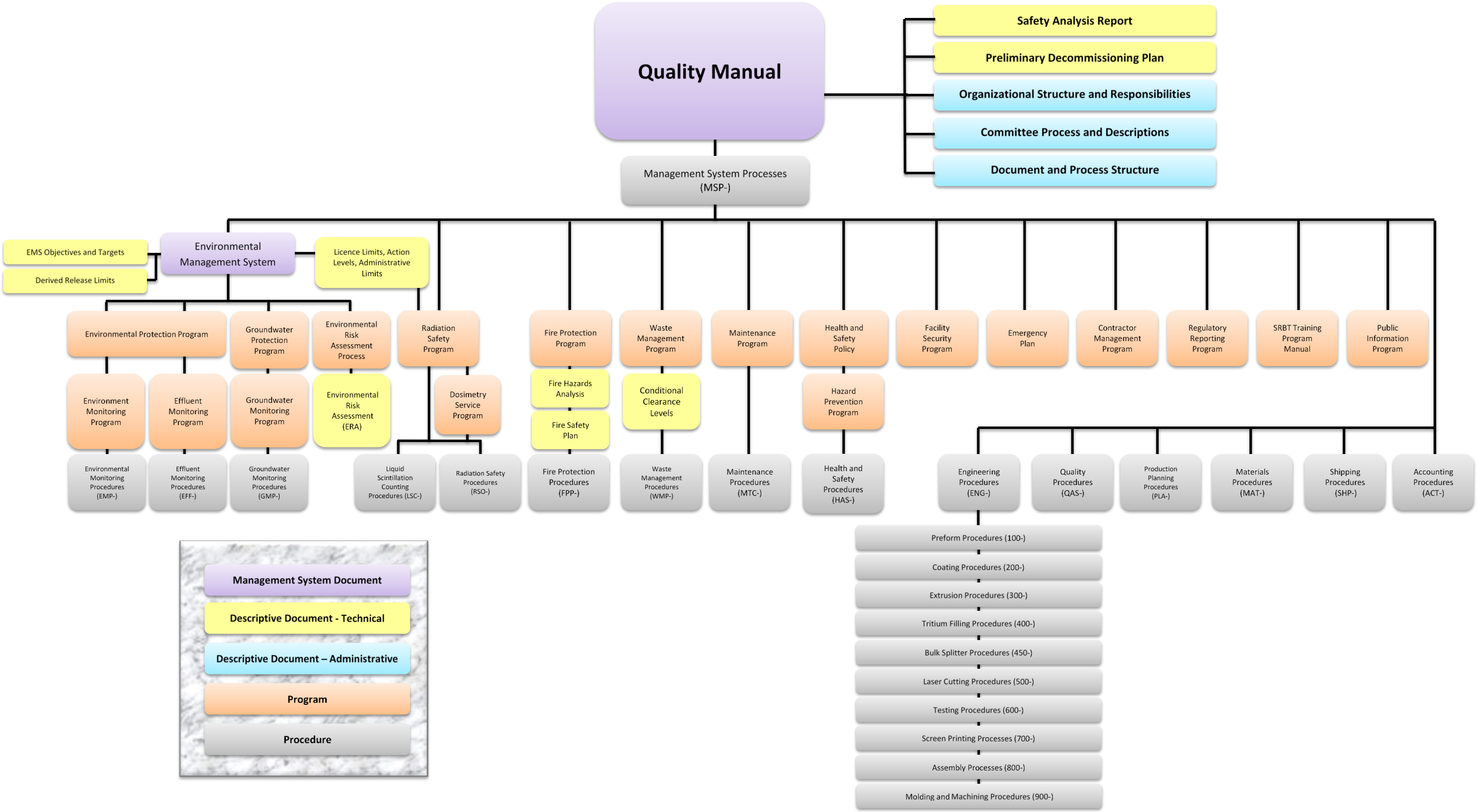
#### 2.1.7.2 SRBT Management System Document Hierarchy

Figure 2 illustrates the Management System document hierarchy in place as of the end of 2025:

**FIGURE 2: MANAGEMENT SYSTEM DOCUMENTS**

## SRBT Management System Document Structure

This chart depicts the relationships of our key descriptive documents, programs, processes and procedures



#### 2.1.7.3 Management System Changes

In 2025, a total of 39 Engineering Change requests (ECR) were filed relating to procedural or program changes in the SRBT management system.

The breakdown of program-related ECRs filed in 2025 is presented in Table 3 below:

**TABLE 3: PROCEDURAL ECR SUMMARY**

| PROGRAM / AREA | NUMBER OF ECRs |
|---|---:|
| ENVIRONMENTAL PROTECTION | 8 |
| HEALTH AND SAFETY | 6 |
| MATERIALS | 5 |
| RADIATION SAFETY | 3 |
| ENGINEERING | 3 |
| QUALITY | 3 |
| SHIPPING | 3 |
| MANAGEMENT SYSTEM | 3 |
| FIRE PROTECTION | 2 |
| WASTE MANAGEMENT | 2 |
| HEALTH PHYSICS | 1 |
| **TOTAL** | **39** |

Note that where appropriate, one ECR may encompass more than one procedural improvement.

Procedural or programmatic changes were implemented for a variety of purposes. Many improvements have been incorporated as a result of the continuing oversight provided by SRBT's internal audit processes, as well as a dedicated managerial focus on improvement initiatives in each area.

## 2.2 SCA – Human Performance Management

Throughout the course of 2025, SRBT ensured the programs that manage human performance were implemented effectively, and the interfaces between these programs and other aspects of our management system were maintained and executed. At all times a sufficient number of qualified workers were available to carry out licenced activities in a safe manner, and in accordance with regulatory requirements and SRBT safety programs.

At the outset of 2025, SRBT employed a total of 39 staff members. Two new employees were hired in 2025, while three left the company, two of whom retired. At the end of 2025 there are a total of 38 employees working at SRBT.

The overall performance of the human performance program implemented by SRBT continued to be satisfactory throughout 2025, and several improvements made will serve to continually increase its effectiveness.

### 2.2.1 Training

#### 2.2.1.1 Annual All-Staff Training Session

Traditionally, once per calendar year, SRBT shuts down all manufacturing operations in order to conduct an all-day, all-staff training session.

The agenda for this training typically incorporates a wide variety of aspects of our operations. The majority of the day is dedicated to a refresher course in radiation protection, specifically focused on the unique type of radiological hazard present at SRBT.

This training was conducted on December 10, 2025, and was focused on information with respect to anticipated health effects from radiation exposure, tritium, proper handling of tritium throughout the facility, and equipment for personal radiation protection purposes. All trainees successfully challenged the associated written test for this training.

As well, training segments focused on Conventional Health and Safety, Fire Safety and Emergency Preparedness, Supervisory Awareness Program, and the SRBT Management System were also conducted with all staff.

A training session was held focused on providing staff with information on how to avoid distractions in the workplace. This session stemmed from the action level exceedance event that occurred in 2024, where an operational error during tritium processing was found to have distraction as a contributing cause.

Finally, a survey on Safety Culture was administered to all staff by the Safety Culture Committee, the results of which will help to continue to maintain and improve a healthy safety culture at the facility.

Based on course evaluation data, the annual all-staff training session provides an excellent opportunity for workers to refresh their training and knowledge on several of the safety-related aspects of working at SRBT.

#### 2.2.1.2 Fire Extinguisher Training

Fire extinguisher training is typically conducted annually for all SRBT employees. The PFD provided this training in December 2025.

#### 2.2.1.3 Fire Protection Specialist Training

The Fire Protection Specialist continues to serve as a Firefighter 1 certified volunteer firefighter for a local fire department, and receives fire protection training from this department.

#### 2.2.1.4 TDG Training

Transportation of Dangerous Goods (TDG) training for Shipping department staff is scheduled every two years. The training is conducted by an outside agency with expertise in the transport of dangerous goods.

A TDG training session was conducted on February 12, 2025. Three employees successfully underwent this training at that time, and were TDG-certified.

In line with the schedule of this training, the next TDG training session will be held in February 2027.

#### 2.2.1.5 Health and Safety Training

SRBT employees attended annual training in December 2025 that included training on Workplace Hazardous Materials Information Systems, training for the new SRBT Disability and Accessibility policy, and refresher training on the SRBT Harassment and Violence Prevention policy.

The Manager – Safety and Security also completed a CCOHS training course on the Accessibility for Ontarians with Disabilities Act.

### 2.2.2 Systematic Approach to Training Program

SRBT continues to implement a systematic approach to training (SAT) as part of our overall training program, and the Training Committee actively ensures that the processes described in the SRBT Training Program Manual are managed effectively and improved on an ongoing basis.

Three meetings of the Training Committee were held in 2025, with the annual program evaluation being held in March, the annual SAT-analysis review taking place in May, and the annual review of the qualification of SAT-based trainers being conducted in October.

There were four instances where a new activity, substance or equipment was brought to the Training Committee for a categorization decision during the year. Two of these were established to be Category 1, non-SAT based training, while two were established to be Category 2, falling within the scope of SAT-based training.

Qualification management processes continue to ensure that SAT-qualified staff members maintain their skills through frequency of performance requirements, and that the qualification of SAT-based trainers continues to be evaluated periodically.

Refresher training modules were provided on several occasions, including the annual refresher training for certain infrequently performed work tasks that score high on the difficulty and importance scale (as part of SAT-based task analysis).

The training needs analysis (TNA) process was implemented on six occasions:

- A revision to the procedure that governs how shipments containing nuclear substances are received and accepted at the facility.
- A revision to a shipping procedure stemming from the first of two reportable events that took place in 2025.
- The planned acquisition and use of a new bandsaw in the milling department.
- The planned acquisition and use of a new vacuum molding machine in the molding department.
- An analysis of the human performance related factors associated with the second of two reportable events that took place in 2025.
- As a component part of the development of a work plan for the dismantlement of disused tritium processing equipment in the Rig Room.

The frequent use of this documented TNA process has been very helpful at ensuring a level of appropriate training is provided to SRBT staff when required, and in achieving and maintaining a low rate of significant human performance-related issues.

The following table compiles information on the number of qualified workers assigned tasks that are trained in accordance with a SAT-based method at the end of 2025:

**TABLE 4: WORKER QUALIFICATION IN SAT-BASED ACTIVITIES**

| SAT WORK ACTIVITY | FULLY QUALIFIED WORKERS | WORKERS PROGRESSING TOWARD FULL QUALIFICATION |
|---|---|---|
| SAT-HP-01:<br>ADVANCED HEALTH PHYSICS INSTRUMENTATION | 2 | 1 |
| SAT-HP-02:<br>LIQUID EFFLUENT MANAGEMENT AND CONTROL | 3 | 0 |
| SAT-HP-03:<br>WEEKLY STACK MONITORING | 3 | 0 |
| SAT-HP-04:<br>BIOASSAY AND DOSIMETRY | 3 | 0 |
| SAT-OP-01:<br>TRITIUM PROCESSING – FILLING AND SEALING LIGHT SOURCES | 4 | 2 |
| SAT-OP-02:<br>BULK SPLITTER OPERATIONS | 4 | 1 |
| SAT-OP-03:<br>HANDLING PUTTS | 3 | 2 |
| SAT-SHP-01:<br>IMPORT AND EXPORT PROCESSES | 4 | 0 |
| SAT-FPP-020:<br>HOT WORKS | 5 | 0 |

## 2.3 SCA – Operating Performance

SRBT has continued to operate the facility safely and in compliance with our operating licence[1] throughout 2025. Our programs and processes have continued to evolve to meet or exceed regulatory requirements and expectations, with safety as an overriding priority in all aspects of our licensed activities.

A summary of compliance with operational limits and conditions can be found under section 1.3 of this report, while a summary of annual production / utilization data can be found in section 1.4 of this report.

A description of the internal and external audits conducted relating to licensed activities can be found under sections 2.1.4 and 2.1.5 of this report.

### 2.3.1 Ratio of Tritium Released to Processed

In 2025, our team continued to strive to minimize the amount of tritium released to the environment for every unit of tritium processed – we refer to this as the 'released to processed' ratio. This ratio is an excellent indicator of the overall effectiveness of our emission reduction initiatives.

The following table illustrates how this ratio has trended over the past five years.

**TABLE 5: TRITIUM RELEASED TO PROCESSED RATIO: FIVE-YEAR TREND**

| DESCRIPTION | 2021 | 2022 | 2023 | 2024 | 2025 |
|---|---|---|---|---|---|
| TOTAL TRITIUM RELEASED TO ATMOSPHERE (GBq/YEAR) | 28,729 | 26,590 | 20,520 | 45,868 | 19,566 |
| TRITIUM PROCESSED (GBq/YEAR) | 29,392,257 | 26,940,372 | 23,202,623 | 25,562,136 | 20,523,027 |
| **RELEASED / PROCESSED (%)** | **0.098%** | **0.099%** | **0.088%** | **0.179%** | **0.095%** |

The 2025 target of 0.11% released vs. processed ratio weekly average was achieved.

### 2.3.2 Objectives and Targets

SRBT performance against key objectives and targets for 2025 is tabled below:

**TABLE 6: 2025 PERFORMANCE TARGETS AND METRICS**

| DESCRIPTION | 2025 TARGET | 2025 PERFORMANCE |
|---|---:|---:|
| MAXIMUM DOSE TO NUCLEAR ENERGY WORKER | ≤ 0.50 mSv | 0.38 mSv |
| AVERAGE DOSE TO NUCLEAR ENERGY WORKER | ≤ 0.050 mSv | 0.030 mSv |
| COLLECTIVE WORKER DOSE | ≤ 2.50 p-mSv | 1.17 p·mSv |
| CALCULATED DOSE TO MEMBER OF THE PUBLIC | ≤ 0.0040 mSv | 0.0015 mSv |
| WEEKLY AVERAGE TRITIUM RELEASES TO ATMOSPHERE | ≤ 600 GBq / week | 376 GBq |
| RATIO OF TRITIUM EMISSIONS VS. PROCESSED | ≤ 0.11 | 0.095% |
| TOTAL TRITIUM EMISSIONS LIQUID EFFLUENT PATHWAY | ≤ 5 GBq | 0.35 GBq |
| ACTION LEVEL EXCEEDANCES ENVIRONMENTAL | ≤ 1 | 0 |
| ACTION LEVEL EXCEEDANCES RADIATION PROTECTION | ≤ 1 | 0 |
| CONTAMINATION CONTROL FACILITY-WIDE PASS RATE | ≥ 95.5% | 98.37% |
| LOST TIME INCIDENTS | 0 | 1 |
| MINOR INJURIES REPORTABLE TO WSIB | ≤ 5 | 2 |
| MINOR INCIDENTS / FIRST AID INJURIES (NON-REPORTABLE) | ≤ 15 | 9 |

Target values are set at the outset of each calendar year by various committees. Program data is tracked and trended throughout the year in order to ensure that appropriate measures can be taken in an effort to ensure a high level of safety performance and target achievement.

Where targets are missed, the factors and causes are researched by the responsible Committee, and specific actions are documented and tracked to improve performance where feasible.

In some cases, production considerations can result in effects that were not anticipated when the annual targets were originally set. As well, non-routine events such as action level exceedances can also influence target achievement.

### 2.3.3 Reportable Events

Two reportable events occurred during 2025, in both cases associated with the shipment of packages containing nuclear substances.

Reportable Event 1 – June 2025

On June 19, SRBT was notified by a consignee receiving a palletized Class 7 shipment that it had shown evidence of a low rate escape of tritium gas from a package included in the pallet. It was reported that after piercing the plastic wrapping that covered all packages on the pallet, a measurement of “6 DAC” was obtained. No tritium was measured at the base of the palletized shipment.

The shipment had been received and accepted on June 18, and contained sixteen (16) Type ‘A’ packages, and two (2) Excepted packages.

SRBT contacted the consignee by phone to discuss the specific circumstances of the event. It was determined that the consignee had taken reasonable actions to resolve the problem safely, and that there was no significant risk to persons or the environment stemming from this event.

After reviewing the shipment details, SRBT concluded that the probable cause of the fugitive airborne tritium within the plastic wrap was most likely attributable to the breakage of a light inside of one of the Type ‘A’ packages during transport, or upon delivery to the consignee. There was no evidence of leakage prior to the shipment taking place.

The reported measurement obtained by the consignor of 6 DAC suggests that the airborne concentration of material in the small space beneath the plastic wrapping was on the order of approximately 2.22 MBq/$m^3$ (2.22E+06 Bq/$m^3$, or, 60 µCi/$m^3$ in non-SI units) of elemental tritium gas.

Based upon the dose coefficients described in CSA N288.1:20, *Guidelines for modelling radionuclide environmental transport, fate and exposure associated with normal operation of nuclear facilities*, an adult person inhaling elemental tritium is postulated to receive an effective dose of 2.0E-15 Sv per Bq inhaled.

As per N288.1:20, based on a 95th percentile breathing rate of 8,400 $m^3$ per year, a nuclear energy worker continually exposed to the reported concentration of elemental tritium gas over the course of a twelve-hour workday (approximately 11.5 $m^3$ of inhaled air) would thus receive an effective dose of 0.051 µSv.

This conservatively-calculated effective dose estimate demonstrates that the likelihood of any safety-significant effects on the environment, or the health and safety of persons occurring was extremely low.

SRBT implemented process improvements in the way that palletized packages are prepared and arranged prior to shipments, and there has been no recurrence of a similar event since.

This event was reportable to the Commission as per the reporting requirements of the *Packaging and Transport of Nuclear Substances Regulations (2015)* (PTNSR) with respect to a dangerous occurrence (as defined by PTNSR 35 (b) and (d)) that involved SRB Technologies (Canada) Inc. as a consignor.

A full report on this event was provided to CNSC staff on July 18, and was posted to the SRBT website[6].

The event was reported to CNSC staff by the consignee; however, the requirement for SRBT to also report the event was not recognized immediately after becoming aware of the problem. As such, the information provided in a preliminary report was not submitted to the Commission until the full report was submitted on July 18.

Corrective actions were also taken to ensure that the reportability of this type of event is correctly identified once SRBT becomes aware of such an occurrence in the future.

<u>Reportable Event 2 – October 2025</u>

On October 7, it was identified that an empty Type B(U) package had been shipped by SRBT while missing a cork insert required for the return shipment, as per the package design requirements. The shipment had taken place that morning, and later that day it was identified that the insert remained at the facility.

It was determined that the cork insert not being included in the package constituted a failure to comply with the provision of a package certificate, in that the preparation for shipment of the package was not in accordance with Foreign Certificate No. GB/3605D/B(U) (Issue 8), Clause 2.1. The consignee was notified that the cork insert was missing, and confirmed shortly after that the shipment had been received without incident.

SRBT implemented process improvements to ensure that such packages are prepared in full accordance with the certificate, and verified as such by an independent worker. There has been no recurrence of a similar event since.

This event was reportable to the Commission as per the reporting requirements of the *Packaging and Transport of Nuclear Substances Regulations (2015)* (PTNSR) with respect to a dangerous occurrence (as defined by PTNSR 35 (b) and (d)) that involved SRB Technologies (Canada) Inc. as a consignor.

A full report on this event was provided to CNSC staff on October 17, and was posted to the SRBT website[7].

The causes of both of these events have been thoroughly investigated, and several actions taken to prevent recurrence of any similar events in the future. Please refer to the full reports posted SRBT's website for a complete description of all aspects of these events.

### 2.3.4 Inventory Control Measures

#### 2.3.4.1 Tritium

SRBT has continuously possessed, transferred, used, processed, managed and stored all nuclear substances related to the operation of our facility in compliance with the requirements of our licence. A number of inventory control measures are in place to ensure that tritium on site does not exceed the possession limit prescribed by our operating licence.

The maximum amount of tritium possessed by SRBT at any one time during 2025 was 3,783 TBq, which represents approximately 63% of the facility possession limit. The average monthly inventory on site was 2,904 TBq.

Tritium on site is found in:

- Bulk containers and tritium traps,
- New light sources,
- New product that contain light sources,
- Work in progress,

- Waste,
- Expired light sources taken out of product,
- Products that contain expired light sources, and
- Non-conforming product.

Refer to **Appendix A** for additional details on tritium inventory in 2025.

#### 2.3.4.2 Depleted Uranium

SRBT possessed a reported 8.743 kg of depleted uranium in metallic form at the beginning of 2025.

This material is used in tritium ‘traps’ as storage media for tritium gas on our processing equipment, a well-understood and widely-used strategy for manipulating and storing tritium in its gaseous, elemental state.

By using depleted uranium in this fashion, we can ensure that the quantity of gaseous tritium being used during any given processing operation is restricted. This helps to ensure that the consequences of any unplanned event are minimized with respect to radiation and environmental protection, by ensuring that any release of tritium is limited.

In July, the material on hand underwent an annual physical inventory process. All materials were accounted for, and unused material reweighed. The recorded mass of material was confirmed to be correct, and no inventory change or adjustment was made.

At the conclusion of 2025, the mass of depleted uranium on site is 8.743 kg. A limit of 10 kg of this material in inventory is applied as part of the operating limits and conditions in the SAR.

The breakdown of this inventory at the conclusion of 2025 is as follows:

**TABLE 7: DEPLETED URANIUM INVENTORY BREAKDOWN AT THE END OF 2025**

| QTY | DESCRIPTION | DEPLETED URANIUM IN EACH (GRAMS) | TOTAL DEPLETED URANIUM (GRAMS) |
|---|---|---|---|
| 1 | LOOSE FORM – CONTAINER 1 | N/A | 921 |
| 1 | LOOSE FORM – CONTAINER 2 | N/A | 4,844 |
| 9 | ACTIVE P.U.T.T. | 30 +/- 5 grams | 294 |
| 24 | NON-ACTIVE P.U.T.T. | 30 +/- 5 grams | 764 |
| 6 | AMERSHAM CONTAINERS | 320 | 1,920 |
| | | **TOTAL** | **8,743** |

### 2.3.5 Liquid Scintillation Quality Assurance and Control

#### 2.3.5.1 Routine Performance Testing

As a component of SRBT's Dosimetry Services Licence, Routine Performance Testing is performed on both liquid scintillation counters on a quarterly basis, as required by CNSC REGDOC-2.7.2, *Dosimetry, Volume II, Technical and Management System Requirements for Dosimetry Services*[24].

These quality assurance tests are performed to demonstrate that liquid scintillation counting assays in support of the dosimetry service are operated in a predictable and consistent way.

This testing was carried out every 3 months as required throughout 2025 on each of the two 'TriCarb 2910' units, with no failures reported.

#### 2.3.5.2 Weekly LSC Performance Check

SRBT quality assurance requirements for liquid scintillation counting include weekly instrument performance checks using National Institute of Standards and Technology (NIST) traceable standards of a blank, H-3 and C-14 standards.

All tests have been performed on both TriCarb 2910 Liquid Scintillation Counting (LSC) units, and included an assessment of the instrument efficiency for tritium measurement, the figure of merit, the tritium background measurement, and a chi-square test. An instrument must meet acceptability criteria on a weekly basis, or the unit is removed from service pending corrective maintenance or actions.

#### 2.3.5.3 Assay Quality Control Tests

Reference standards traceable to NIST are prepared in-house, and are analyzed and checked against quality control acceptance criteria with every batch of liquid scintillation counting samples being analyzed.

All tests were performed as required with every assay throughout 2025, in order to ensure quality control of LSC laboratory processes.

# 3. FACILITY AND EQUIPMENT SCAs

## 3.1 SCA – Safety Analysis

The overall safety case for SRBT continues to be effectively validated and maintained through the implementation of our management system.

Preventive measures and strategies for potential hazards are built into our programs and processes. Key safety processes include independent verification, frequent internal audit and oversight, and management by designated committees.

Operating practices and management system processes in 2025 have continued to be conducted in full alignment with the latest version of SRBT's SAR[8]. There were no significant changes to the facility or our operations that had any direct bearing on the safety analysis in 2025.

Please refer to section 1.3 of the report for a complete assessment of SRBT compliance against the Operating Limits and Conditions in the SAR[8].

## 3.2 SCA – Physical Design

As a manufacturing company, SRBT owns and operates several pieces of equipment, many of which constitute structures, systems and components which have a bearing on safety and our licensed activities.

Such equipment includes the active ventilation systems and associated emissions monitoring equipment, fire detection and suppression systems, tritium processing rigs, tritium-in-air monitors, and liquid scintillation counters.

The overall facility design is also a key aspect of our operations, and must be managed and controlled safely. The SRBT change control process helps to ensure that modifications are controlled, reviewed, accepted, and recorded using an Engineering Change Request.

Modifications to structures, systems and components associated with our licensed activities are conducted in accordance with these change control processes and overall management system.

No significant changes in physical design of production- or safety-related facility systems or components took place in 2025. There were no changes to the self-luminous tritium light source production capacity of the facility.

All minor and non-safety significant modifications to structures, systems and components were conducted in accordance with our change control processes.

## 3.3 SCA – Fitness for Service

All equipment, including all safety-related equipment, is kept in a condition that is fit for service through the implementation of the Maintenance Program. The facility and equipment associated with the facility were effectively maintained and operated within all manufacturer requirements.

Note that, although the Maintenance Program incorporates several program elements associated with nuclear power plants as best practice (such as critical spares, master equipment lists, etc.), aging management is not an element that is formally included as a specific strategy.

Documented maintenance meetings were initiated and held by the Maintenance Committee throughout 2025. As part of management review processes, an annual review of 2025 activities will be conducted in 2026, including data pertaining to equipment failures, maintenance activity success rates, non-conformances, procedural revisions, and audit findings.

Maintenance records are kept on file including completed work orders of preventative maintenance activities. A maintenance schedule is created and managed by the Fire Protection Specialist, which effectively captures all safety-significant planned preventative maintenance activities, whether performed by SRBT personnel or an approved contractor, and includes inspections as required by the Maintenance Program.

As well, corrective maintenance was tracked, trended and reviewed to assess the performance of equipment, and to identify any preventative activities which may improve performance.

Preventative maintenance was scheduled and performed in 2025 on key facility equipment as per **Appendix B and C** of this report.

### 3.3.1 Ventilation

The ventilation of the facility is such that the air from the facility flows to the area with greatest negative pressure in Zone 3 which has the highest potential for tritium contamination where all tritium processing takes place. This area and part of Zone 2 are kept at high negative pressure with the use of two air handling units which provide a total airflow of approximately 10,000 cubic feet per minute.

The air handling units are connected to a series of galvanized stainless-steel ducts. In addition to providing ventilation for the facility these air handling units also provide local ventilation to a number of fume hoods which are used to perform activities that have a potential for tritium contamination and exposure.

All ventilation systems were maintained fit for service throughout 2025. Corrective and preventative maintenance was identified and performed according to the requirements of the Maintenance Program and operational procedures. Key equipment is maintained either on a quarterly or semi-annually basis, with technical equipment maintenance being performed by fully licensed and certified heating, ventilation and air conditioning contract providers.

A listing of the ventilation equipment maintained in 2025 can be found in **Appendix C** of this report.

### 3.3.2 Stack Flow Performance

Stack maintenance is performed by a third party, in order to ensure effective performance of the ventilation system and minimize airflow reductions from the beginning to the end of the maintenance cycle to ensure accuracy of results.

Pitot tubes that were installed in the stacks are maintained by a third party to ensure stack airflows are at design requirements. This essentially allows for daily stack flow verification in addition to more detailed annual stack flow verification performed by a third party.

The annual stack flow performance verification was performed on September 17, 2025 by a third party. The inspection confirmed that the stacks continue to perform to design requirements. SRBT continues to monitor and trend the results of the annual stack performance verification.

### 3.3.3 Liquid Scintillation Counters

The two TriCarb 2910 LSC units were subjected to an annual preventive maintenance procedure on May 1, 2025. No significant concerns or issues were identified during the maintenance activity.

There was one instance where corrective maintenance was performed on the LSC units, which took place on October 9, 2025. More frequent vial jamming issues had developed on one of the counters, a problem that was resolved satisfactorily by the corrective maintenance work of the third-party technician.

Both systems will continue to be preventively maintained and calibrated on an annual basis by a qualified service representative from the manufacturer of the equipment, to ensure their functionality, accuracy and reliability.

### 3.3.4 Portable Tritium-in-Air Monitors

Portable tritium-in-air monitors are maintained and made available throughout the facility. The portable units are used to investigate potential sources of tritium leakage, and for personnel protection. As of the end of 2025, SRBT owns a total of eleven portable monitors.

Seven of these monitors are typically deployed for routine use at the facility (two in Zone 1, two in Zone 2 and three in Zone 3), while two are kept stored as spares, and one is kept on standby at the Pembroke Fire Hall as part of an emergency preparedness kit. An additional unit is used by our sister company in North Carolina.

As required by our Radiation Safety Program, all in-service tritium-in-air monitors were calibrated and maintained at least once during 2025, with all records of the maintenance kept on file.

### 3.3.5 Stationary Tritium-in-Air Monitors

The ambient air in selected key areas of the facility is continuously monitored using stationary tritium-in-air monitors. As of the end of 2025, SRBT owns a total of ten stationary monitors.

Five of these monitors are typically deployed for continuous workplace airborne tritium monitoring at the facility.

Three of these five monitors are strategically located in Zone 3; one in the Rig Room where gaseous tritium light sources are filled and sealed; one in the Laser Room where a laser is used to cut and seal small gaseous tritium light sources, and light sources are inspected; and one in the Tritium Laboratory where tritium is transferred from bulk supply containers to filling containers.

One stationary tritium-in-air monitor is located in Zone 2 in the Assembly Area, where gaseous tritium light sources are pre-packed in preparation for shipping or installed into device housings.

One stationary tritium-in-air monitor is located in the Shipping area in order to provide an early warning signal of a problem should a light or device be damaged during packaging activities.

Two other units are used for real-time monitoring and recording of tritium released as gaseous effluent. All in-service monitors operate 24 hours a day to ensure that any upset conditions are identified and addressed quickly.

Two units are available as spares if needed. As well, one additional unit is used by our sister company in North Carolina.

As required by our Radiation Safety Program, all tritium-in-air monitors were calibrated and preventively maintained at least once during 2025. All facility monitors functioned effectively and continuously throughout the year, with all records of maintenance retained on file.

### 3.3.6 Stack Monitoring Equipment

Stack monitoring equipment is incorporated for each of two main air-handling units. For each air-handling unit, the monitoring equipment includes:

- A tritium-in-air monitor connected to a real-time recording device,
- An alarming remote display unit (RDU) in Zone 3,
- A bubbler system for discriminately collecting HTO and HT in the sampled stream of effluent,
- A flow measurement device with elapsed time, flow rate and volume of the sampled stream of effluent, and
- A dedicated back-up power supply servicing the monitors, bubbler systems and flow meters, capable of providing several hours of uninterrupted power to the equipment during a power failure.

Each tritium-in-air monitor is connected to a real-time recording device (electronic datalogger), and was calibrated and preventively maintained as required in 2025.

The tritium monitors, datalogger and RDUs are included in calibration verification activities on a quarterly basis.

Bubbler systems (and spare systems) were also maintained throughout the year, with a bi-monthly maintenance cycle being implemented on all in-service stack monitoring equipment.

### 3.3.7 Stack Monitoring Verification Activities

The annual verification activity for the stack monitoring systems was completed over a four-week period, ending on March 4. Independent third-party measurements provided validation that SRBT systems and processes continue to effectively measure weekly gaseous tritium emissions.

### 3.3.8 Weather Station

Maintenance of the weather station is scheduled to be performed as per the manufacturer’s recommendation, every two years, with batteries being replaced every four years.

On August 1, the periodic download of weather station data showed that the weather station had ceased logging and transmitting data as of June 20.

Further investigation established that the company that previously supported the service was purchased by a different company, and that the ‘U30’ datalogger unit would no longer transmit via wireless / wi-fi connection.

The new company offering service recommended upgrading to a datalogger that transmitted via cellular network to a cloud-based server. SRBT ordered and received a new datalogger unit in late August, and planned for installation and commissioning before the arrival of winter.

On October 14, the new datalogger was installed on the weather station, and verified as functional.

At that time, the preventive maintenance activity on the weather station was also completed in line with the maintenance schedule; however, the weather station battery replacement was deferred as the unit was evaluated as serviceable.

The weather station functioned as expected until October 20, when downloaded data began to show a series of sensor errors.

In consultation with technical support personnel with the new company that services this equipment, it was established that the station’s temperature / relative humidity / dewpoint sensor had likely failed.

Since the station sensors are electrically arranged in series, when one sensor has a fault, all sensors cease reporting data. As such, no usable weather data has been gathered since October 2025.

In response, a completely new set of weather station sensors and solar panels have been ordered and received, for installation in Spring 2026.

The lack of data from the on-site weather station is not a safety-significant issue, as the data is only used in support of environmental analyses that rely on local weather patterns (such as the Derived Release Limits).

Routine maintenance activities for the weather station will resume once the system is back online and operational.

### 3.3.9 Air Compressor

Process tasks at SRBT require the use of a compressed air system. The air compressor is subject to quarterly preventative maintenance activities, and semi-annual belt changes, all of which were carried out throughout 2025. During periods of high usage rates, additional maintenance is performed on the compressor as an extra precaution to ensure ideal performance.

During preventative maintenance of the main compressor motor, the backup compressor is brought online to minimize production downtime. Once the maintenance is completed on the main compressor, the backup is then inspected and maintained by the contractors to ensure it will perform as intended should any problems arise with the main compressor.

# 4. CORE CONTROL PROCESSES SCAs

## 4.1 SCA – Radiation Protection

### 4.1.1 Dosimetry Services

Pursuant to our Dosimetry Service Licence[25], SRBT assesses the radiation dose to its employees and to contract workers who may have exposure to tritium.

SRBT implements a dedicated Dosimetry Service Program in support of compliance with the requirements of this licence. The assessment of dose to personnel, due to tritium uptake, is performed in accordance with CNSC REGDOC-2.7.2, *Dosimetry, Volume II, Technical and Management System Requirements for Dosimetry Services*[24].

All dosimetry results were submitted on a quarterly basis to Health Canada in a timely fashion for input into the National Dose Registry. A final annual report was also submitted as required.

SRBT participated in the annual Tritium Urinalysis Performance Test sponsored by the National Calibration Reference Centre for Bioassay, Radiation Surveillance and Health Assessment Division, Radiation Protection Bureau of Health Canada. The participation is a regulatory requirement for Dosimetry Service Providers.

SRBT received the Certificate of Achievement for successful participation in the Tritium Urinalysis Performance Test from the National Calibration Reference Centre for Bioassay and In Vivo Monitoring for the year 2025[26].

As required by the licence, SRBT has submitted the 2025 Annual Compliance Report to CNSC staff for the Dosimetry Service Licence[27], which was accepted without any request for clarification or further information[28].

### 4.1.2 Staff Radiation Exposures and Trends

All SRBT staff members are classified as Nuclear Energy Workers and participate in the dosimetry program.

Those who work in Zones 1 and 2 provide bioassay samples for tritium concentration assessment on a bi-weekly frequency due to the very low probability of uptake of tritium. Those assigned to work in Zone 3 provide bioassay samples on a weekly frequency due to the higher probability of chronic uptake of tritium.

There were no occurrences of any personnel contamination events in 2025.

The maximum effective dose received by any person employed by SRBT in 2025 was 0.38 mSv, a value which is well within the regulatory limit for a nuclear energy worker of 50.0 mSv per calendar year.

The average effective dose for all staff was calculated to be 0.030 mSv, while the collective dose for all workers was measured as 1.17 person·mSv.

The tables found in **Appendix D** of this report provide the radiological dose data for workers at SRBT for 2025, as well as a comparison of dosimetry results for the preceding five years.

### 4.1.3 Action Levels for Dose and Bioassay Level

Dose and bioassay tritium concentration action levels are defined in SRBT's *Licence Limits, Action Levels and Administrative Limits* document.

The current radiation protection-related action levels are as follows:

**TABLE 8: ACTION LEVELS FOR RADIATION PROTECTION**

| PERSON | PERIOD | ACTION LEVEL |
|---|---|---|
| NUCLEAR ENERGY WORKER | QUARTER OF A YEAR | 0.50 mSv |
| | 1 YEAR | 1.50 mSv |
| | 5 YEAR | 4.00 mSv |
| PREGNANT NUCLEAR ENERGY WORKER | BALANCE OF THE PREGNANCY | 0.10 mSv |
| PERSON WHO IS NOT A NUCLEAR ENERGY WORKER | 1 YEAR | 0.01 mSv |

| PARAMETER | ACTION LEVEL |
|---|---|
| BIOASSAY RESULT – ANY SAMPLE | 400 Bq/ml |

In 2025 there were no exceedances of an action level for dose or bioassay tritium concentration at SRBT.

### 4.1.4 Administrative Limits for Dose and Bioassay Level

Dose and bioassay tritium concentration administrative limits are also defined in SRBT's *Licence Limits, Action Levels and Administrative Limits* document.

Radiation protection-related administrative limits are as follows:

**TABLE 9: ADMINISTRATIVE LIMITS FOR RADIATION PROTECTION**

| PERSON | PERIOD | ACTION LEVEL |
|---|---|---|
| NUCLEAR ENERGY WORKER | QUARTER OF A YEAR | 0.40 mSv |
| | 1 YEAR | 1.20 mSv |
| | 5 YEAR | 3.20 mSv |
| PREGNANT NUCLEAR ENERGY WORKER | BALANCE OF THE PREGNANCY | 0.08 mSv |
| PERSON WHO IS NOT A NUCLEAR ENERGY WORKER | 1 YEAR | 0.008 mSv |

| PARAMETER | ACTION LEVEL |
|---|---|
| BIOASSAY RESULT – ANY SAMPLE | 320 Bq/ml |

In 2025 there were no exceedances of an administrative limit for dose or bioassay tritium concentration at SRBT.

### 4.1.5 Contractor Dose

In 2025, SRBT did not employ contract staff to perform work that presented a significant radiological hazard.

Seven screening bioassay samples were obtained and measured from contracted tradespersons who provided maintenance support in areas other than Zone 1.

None of these samples exceeded our internal screening criteria requiring the calculation of effective dose.

To summarize, no contractor received a recordable dose due to activities performed at the SRBT facility in 2025.

### 4.1.6 Discussion of Significance of Dose Control Data

A tabular summary of effective dose metrics for 2025 is provided in **Appendix D.**

#### 4.1.6.1 Maximum Dose

The maximum effective dose to any staff member in 2025 was 0.38 mSv. This individual works in Zone 3 and performs tritium processing operations in Zone 3 as their primary duty.

In 2024, the maximum dose to a staff member was 0.52 mSv; the 2025 value of 0.38 mSv thus represents a 27% decrease in the maximum dose to a worker from the previous year.

The maximum individual dose to any SRBT employee during the recently concluded five-year regulatory dosimetry period (January 1, 2021 – December 31, 2025) was 1.88 mSv (0.31 mSv in 2021 + 0.28 mSv in 2022 + 0.39 mSv in 2023 + 0.52 mSv in 2024 + 0.38 mSv in 2025).

The maximum dose data supports the conclusion that the Radiation Safety Program and the Health Physics Team are achieving a high level of performance, and that workers are properly and adequately trained in safely conducting activities that may pose a radiation hazard.

SRBT continuously strives to lower the maximum dose to workers by using several strategies, including training, contamination monitoring, frequent and routine use of portable tritium-in-air monitors during processing operations, and the continuous oversight of the Health Physics Team during key activities on the shop floor.

The maximum worker dose over the past five years is trended in Figure 3 for comparison, and a distribution chart for all annual worker dose is provided in Figure 4.

**FIGURE 3: MAXIMUM ANNUAL WORKER DOSE (2021-2025)**

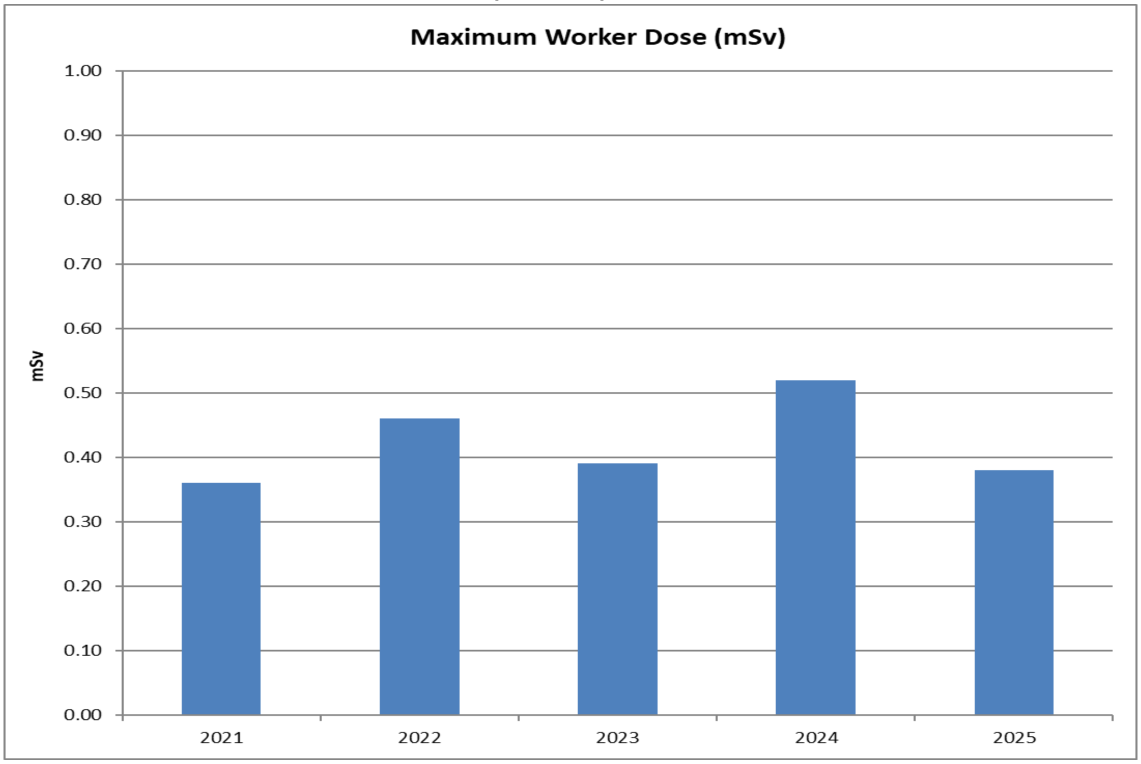
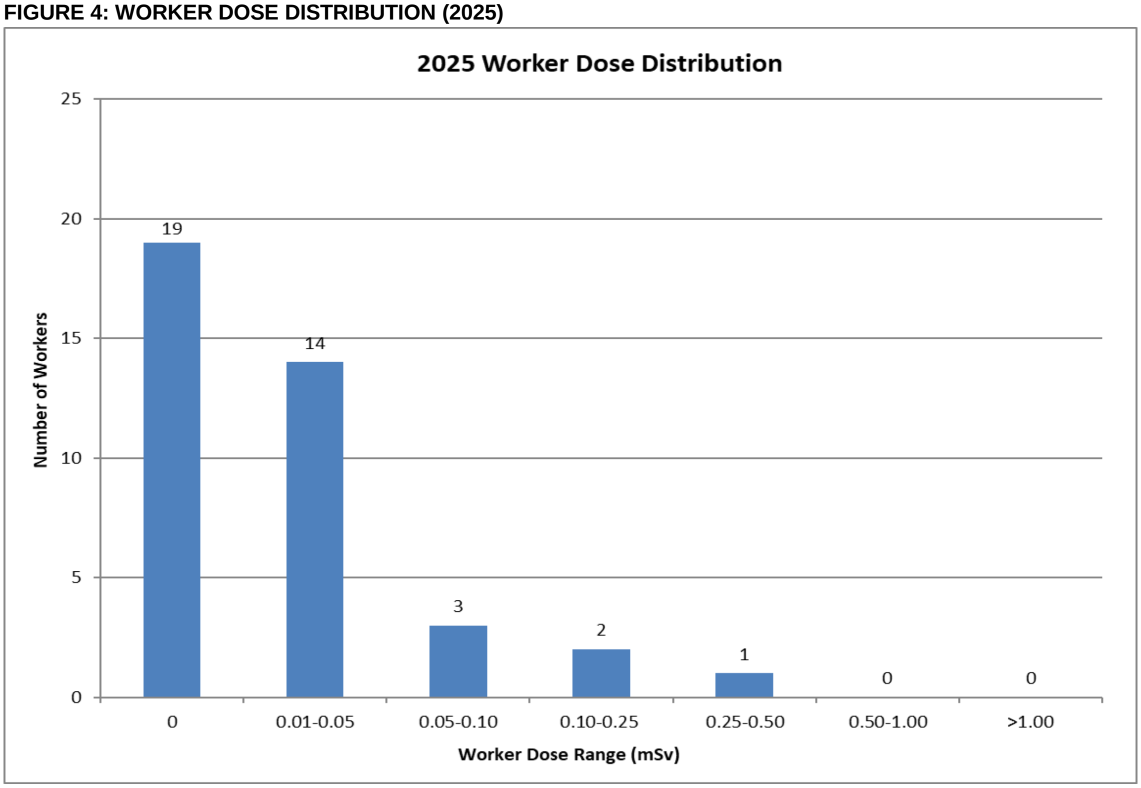



**FIGURE 4: WORKER DOSE DISTRIBUTION (2025)**



#### 4.1.6.2 Average Dose

The average dose to workers at SRBT in 2025, including those workers whose dose value was zero, was 0.030 mSv. In 2024, the average dose to workers was 0.067 mSv.

A total of 19 workers incurred effective doses of less than 0.01 mSv in 2025 (i.e. zero dose). Taking into consideration only ‘non-zero’ doses, the average effective dose was 0.056 mSv in 2025.

The average dose to all nuclear energy workers (NEW) at SRBT over the past five years is trended in Figure 5 for comparison.

**FIGURE 5: AVERAGE ANNUAL WORKER DOSE – ALL NEW (2021-2025)**

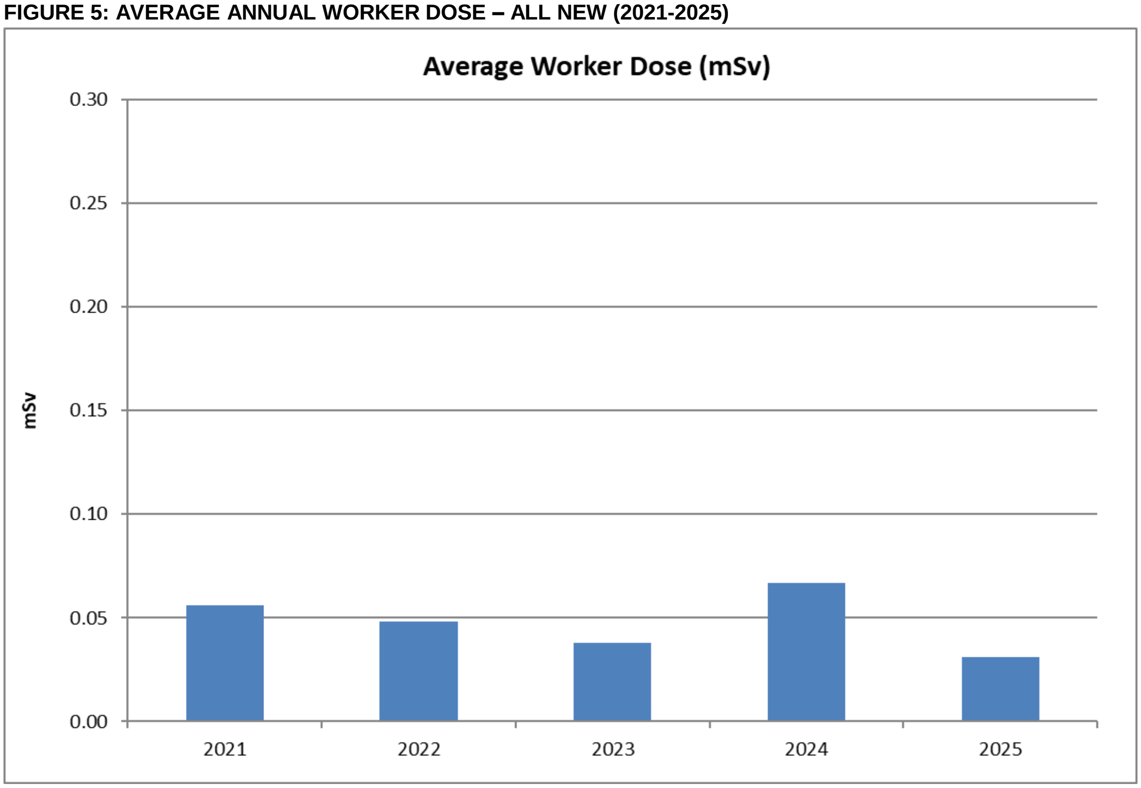
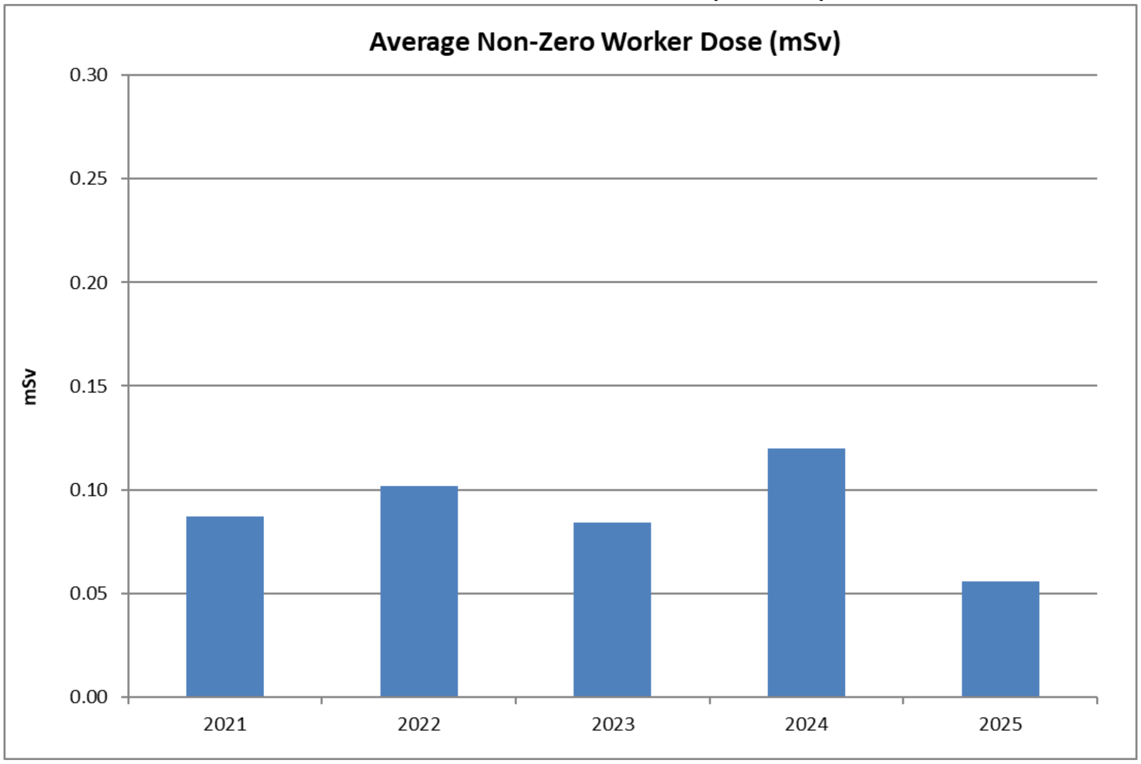


Figure 6 illustrates the average dose for those workers who received 'non-zero' doses.

**FIGURE 6: AVERAGE ANNUAL WORKER DOSE – NON-ZERO DOSES (2021-2025)**

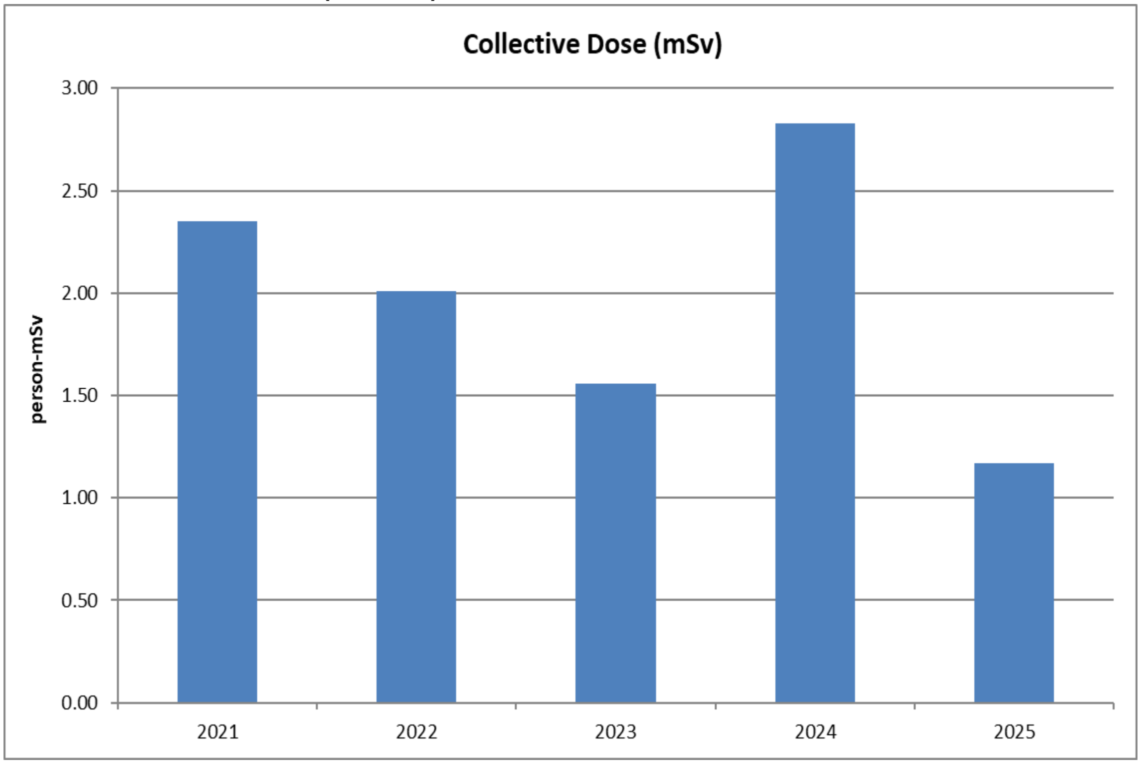


#### 4.1.6.3 Collective Dose

The collective dose to all workers at SRBT in 2025 was 1.17 person·mSv. In 2024, the collective dose was 2.83 person·mSv.

The collective dose to all workers at SRBT over the past five years is trended in Figure 7 for comparison.

**FIGURE 7: COLLECTIVE DOSE (2021-2025)**




#### 4.1.6.4 Dose to Members of the Public

The effective dose to members of the public is discussed extensively in section 4.3.5 of this report.

#### 4.1.7 Contamination Control and Facility Radiological Conditions

Tritium contamination control is maintained by assessment of non-fixed tritium contamination levels throughout the facility by means of swipe method and liquid scintillation counting of the swipe material. SRBT has in place the following administrative surface contamination limits:

**TABLE 10: ADMINISTRATIVE LIMITS FOR SURFACE CONTAMINATION**

| ZONE | SURFACES | ADMINISTRATIVE SURFACE CONTAMINATION LIMITS |
|---|---|---|
| 1 | ALL SURFACES | 4.0 $Bq/cm^2$ |
| 2 | ALL SURFACES | 4.0 $Bq/cm^2$ |
| 3 | ALL SURFACES | 40.0 $Bq/cm^2$ |

An overview of contamination monitoring results for 2025 has been tabulated and is included in **Appendix E** of this report.

A total of 8,112 routine contamination assessments were performed in 2025:

- 612 routine assessments were performed in Zone 1, resulting in a pass rate of 96.73% of assessments being measured below the administrative level of 4 $Bq/cm^2$.
- 1,716 routine assessments were performed in Zone 2 resulting in a pass rate of 98.08% of assessments being measured below the administrative level of 4 $Bq/cm^2$.
- 5,784 routine assessments were performed in Zone 3 resulting in a pass rate of 98.63% of assessments being measured below the administrative level of 40 $Bq/cm^2$.

Contamination assessment results are reported to departmental supervisors, and areas that exceed administrative levels are highlighted for decontamination.

A comparison of routine contamination data trends over the last five years is presented in the table below:

**TABLE 11: PASS RATE FOR CONTAMINATION ASSESSMENTS: FIVE-YEAR TRENDS**

| ZONE | 2021 | 2022 | 2023 | 2024 | 2025 |
|---|---|---|---|---|---|
| 1 | 97.1% | 98.2% | 97.2% | 95.4% | 96.7% |
| 2 | 97.5% | 98.0% | 97.0% | 95.9% | 98.1% |
| 3 | 95.6% | 97.0% | 96.8% | 95.6% | 98.6% |

Overall, routine contamination measurements conducted throughout the facility in 2025 fell below the administrative limits 98.37% of the time, achieving the internal target of a pass rate of ≥ 95.5%.

No routinely monitored areas failed to meet the applicable acceptance criteria less than 70% of the time when assessed over a full calendar quarter:

The Health Physics Team continues to track and trend all facility contamination control data throughout the year, with a focused quarterly review to identify areas for improvement.

With respect to the monitoring of airborne tritium contamination throughout the facility, SRBT’s Radiation Safety Program includes several processes that measure and control airborne tritium hazards in our facility:

- Stationary tritium-in-air monitors are strategically located throughout the facility, with audible alarms triggered at conservative tritium concentrations.
- All staff are trained in the use of portable tritium-in-air monitors for self-protection purposes; these are also strategically located in the facility for quick use when needed.
- A series of passive air samplers are distributed throughout the facility, allowing for weekly averaging of tritium concentrations in key areas.
- The Health Physics Team logs all stationary tritium-in-air monitor alarm events, in order to track and trend frequency of occurrence, to facilitate radiological assessments and/or investigations, and to drive improvements in process safety.

Airborne contamination data is routinely assessed and trended by the Health Physics Team in order to identify any areas of concerns or trends. A comparison of the number of tritium-in-air monitor alarms in each zone over the last five years is presented in the table below:

**TABLE 12: ZONE ALARMS: FIVE-YEAR TREND**

| ZONE | 2021 | 2022 | 2023 | 2024 | 2025 |
|---|---:|---:|---:|---:|---:|
| 1 | 3 | 2 | 1 | 2 | 2 |
| 2 | 52 | 31 | 27 | 36 | 21 |
| 3 | 17 | 12 | 5 | 11 | 6 |
| **All** | **72** | **45** | **33** | **49** | **29** |

The frequency of airborne contamination alarms decreased in 2025 when compared to 2024; a total of 29 alarms were experienced throughout the facility in 2025, compared to 49 during the previous year.

### 4.1.8 Discussion on the Effectiveness of Radiation Protection Program

Based upon the following factors and the overall evidence presented in this report, it is concluded that the SRBT's radiation protection program has been effective throughout the year.

Key points:

- The highest worker dose was 0.38 mSv, or 0.76% of the regulatory limit of 50 mSv.
- Every SRBT NEW incurred an effective dose of far less than 1 mSv.
- Collective dose and average dose also remain low in relation to production levels.
- All effective dose targets were met.
- Contamination control data demonstrates a high level of control and a low rate of contamination in excess of administrative limits. The internal target of a pass-rate of 95.5% or greater was achieved.
- There were no personnel contamination events at the facility.
- The frequency of airborne contamination events continued to remain low.
- Radiation protection equipment issues are minimal, with a continuing investment in equipment upkeep resulting in an excellent track record of fitness for service.
- Radiation protection training results demonstrate that staff has a good appreciation and knowledge of how to protect themselves from hazards.

### 4.1.9 Radiation Protection Performance Targets

As described in the 2024 annual compliance report, the occupational dose targets for 2025 were set as 0.50 mSv (maximum dose to staff member), 0.050 mSv (average dose to all staff) and 2.50 p-mSv (collective dose).

All dose targets were achieved in 2025.

SRBT projects that in 2026, the maximum and average doses to workers should continue to remain low and relatively stable.

With these considerations, the occupational dose targets for calendar year 2026 have been established as:

- Maximum dose: ≤ 0.50 mSv (no change).
- Average dose: ≤ 0.045 mSv (decreased by 0.005 mSv).
- Collective dose: ≤ 2.25 p-mSv (decreased by 0.25 p-mSv).
- Action level exceedances: No more than 1 instance (no change).

The 2025 target for contamination control was also achieved. The target of greater than 95.5% of all routine contamination assessments meeting acceptance criteria facility-wide was met (actual rate achieved = 98.37%).

For 2026, a target of 96% of all assessments meeting the acceptance criteria has been set, representing an increase of 0.5%.

#### 4.1.10 Summary of Radiation Protection Training and Effectiveness

All new staff members receive introductory training in radiation safety, even if they are not expected to handle nuclear substances as part of their responsibilities.

In 2025, two new employees were hired and were provided with this initial training that is required for declaration as a NEW; each passed the associated test and were declared as NEWs.

On December 10, 2025, SRBT held its annual all-staff training session, which includes a comprehensive training presentation specifically regarding radiation protection concepts and requirements, specifically tailored to the type of hazard at SRBT. Open dialogue is always encouraged with a question-and-answer session, and a closed-book written test is provided to all participants.

All trainees successfully achieved better than the benchmark grade of 75% on the multiple-choice test administered at the conclusion of the radiation safety training session. All incorrect answers on the test were discussed in detail with each employee individually, in order to ensure full understanding following the completion of the training.

#### 4.1.11 Summary of Radiation Protection Equipment Performance

In 2025, all equipment associated with radiation protection at SRBT performed acceptably, and all key maintenance activities, such as instrument calibration, were performed as required.

Radiation protection equipment includes liquid scintillation counters, portable tritium-in-air monitors, stationary tritium-in-air monitors and portable radiation detectors (‘RadEye’ type alpha/beta/gamma detectors).

There was one instance of corrective maintenance required for the liquid scintillation counters or tritium-in-air monitors in 2025, to investigate issues with sample vial jamming. The problem was addressed to the satisfaction of the Health Physics Team.

The rate of the need for corrective maintenance on all radiation protection equipment remains acceptable, and SRBT owns and maintains spare instruments that remain ready to be put into service should the need arise.

#### 4.1.12 Summary of Radiation Protection Improvements

SRBT’s Radiation Safety Program provides an effective level of radiological protection to our workers, and continues to be improved over time.

In 2025, the following improvements were implemented:

- The Radiation Safety Program was revised to allow for management discretion if an employee misses the scheduled annual radiation safety training session in any given year, and to update presented schematics of facility ventilation systems.
- A benchtop ionizer was procured and installed in the Liquid Scintillation Counting laboratory, to reduce interfering static electricity effects during measurement and analysis of samples.
- Housekeeping procedures in the laboratory were also revised to better suit the equipment set-up.
- A revised procedure on reporting dose data to the National Dose Registry via online data submission through the new Health Canada portal was implemented, and has been successful to date.
- Data presentation and analysis during meetings of the Health Physics Team continues to be effective, and improved over time.

## 4.2 SCA – Conventional Health and Safety

### 4.2.1 Jurisdiction

SRBT is subject to federal jurisdiction thus, the *Canada Labour Code Part II* (CLC Part II) and the *Canada Occupational Health and Safety Regulations*.

### 4.2.2 Conventional Health and Safety Program

Being under federal jurisdiction in 2025, the Health and Safety Policy for the SRBT facility was compliant with the requirements of the CLC Part II, and the *Canada Occupational Health and Safety Regulations*.

### 4.2.3 Workplace Health and Safety Committee

In accordance with section 135 (1) of the CLC Part II, SRBT maintains a Workplace Health and Safety Committee (WHSC).

The Committee is comprised of four representatives. Under section 135(10) of the CLC Part II the Committee is required to meet no less than nine times per year.

The Committee met a total of 10 times in 2025, with all meeting minutes kept on file.

### 4.2.4 Inspections, Audits and Reviews

The following inspections, audits and reviews were conducted in 2025:

- Twelve monthly facility-wide safety inspections, conducted by members of the WHSC. These inspections identified only minor issues that were corrected.
- An internal audit of the SRBT Health and Safety program was conducted in 2025, resulting in two non-conformances being identified, both of which are under review to be addressed. The next scheduled internal audit of the program is scheduled to be completed in 2026.

#### 4.2.5 Minor Incidents

There were 11 minor incidents that met internal reporting criteria in 2025, of which 9 were first aid injuries, and 2 being minor injuries requiring a visit to the hospital.

A breakdown of the type of minor incidents occurring in 2025 is provided:

- Minor cuts – 5
- Chemical incident – 2
- Slip or trip – 2
- Burn – 1
- Falling object – 1

Both minor injuries were reported to the Workplace Safety and Insurance Board as required.

#### 4.2.6 Lost Time Incidents

In 2025, one lost time incidents (LTI) occurred due to an injury from a box of material that fell on a worker’s wrist after losing grip when removing the box from a shelf.

One working day was lost due to the incident. The employee returned to work the following day.

The lost time incident was reported to both ESDC and the Workplace Safety and Insurance Board as required. A workplace investigation of the incident and ESDC Form Lab 1070 were also completed and submitted to ESDC as required.

The following table summarizes the frequency of occurrence of LTIs over the past five years:

**TABLE 13: LOST TIME INCIDENTS: FIVE-YEAR TREND**

| DESCRIPTION | 2021 | 2022 | 2023 | 2024 | 2025 |
|---|---:|---:|---:|---:|---:|
| LOST TIME INCIDENTS | 0 | 0 | 0 | 0 | 1 |

#### 4.2.7 Health and Safety Performance Targets

SRBT sets programmatic targets that are tracked by responsible safety committees throughout the year. Actions are taken that are intended to help the organization reach safety goals / objectives / targets, as well as when they may be missed.

In 2025, SRBT set the following targets for the area of Conventional Health and Safety:

- Zero lost time incidents (experienced one – target missed).
- Less than or equal to 5 workplace injuries classified as reportable to Workplace Safety and Insurance Board (experienced two – target achieved).
- No more than 15 minor incidents (11 were recorded – target achieved).

These three conventional health and safety targets remain unchanged for 2026.

Although a lost-time in occurred for the first time since 2017, the WHSC concludes that the program continues to be effective at preventing workplace injuries at the facility.

#### 4.2.8 Reporting

In accordance with section 15.10 (1) of Part XV of the *Canada Occupational Health and Safety Regulations,* the Employer's Annual Hazardous Occurrence Report was submitted to Employment and Social Development Canada prior to March 1, 2025, as required.

In accordance with section 9 of the *Policy Committees, Work Place Committees and Health and Safety Representatives Regulations*, the Work Place Committee Report was submitted to the Regional Safety Officer at Canada Labour prior to March 1, 2025, as required.

#### 4.2.9 Health and Safety Training

All SRBT employees attended annual training in December 2025 that included training on Workplace Hazardous Materials Information Systems, training for the new SRBT Disability and Accessibility Policy, and refresher training on Harassment and Violence Prevention Policy.

The Manager – Safety and Security also completed a CCOHS training course on the Accessibility for Ontarians with Disabilities Act.

#### 4.2.10 Health and Safety Initiatives and Improvements

In 2025, the following health and safety initiatives and improvements were implemented:

- Manager - Safety & Security received training on the Accessibility for Ontarians with Disabilities Act (AODA).
- Creation of SRBT Disability and Accessibility policy. Staff received training on new policy.
- Harassment and Violence Prevention policy 3yr review was completed by the committee.
- Staff received refresher training on Harassment and Violence Prevention policy.

### 4.3 SCA – Environmental Protection

This section of the report will provide environmental protection compliance information, including results from environmental, effluent and groundwater monitoring, an assessment of compliance with any licence limits, historical trending where appropriate, and quality assurance/quality control results for the monitoring.

As part of SRBT's overall Environmental Protection Program, and as an input into the design of the environmental, effluent and groundwater monitoring programs, a conceptual site model (CSM) can provide a valuable representation of the factors and elements that are considered for monitoring within the boundaries of the program.

SRBT has been in operation since 1990, and has performed extensive monitoring of effluent, the environment and groundwater over the course of operations since then. In 2007, a comprehensive analysis was performed of the operations of the facility (including historical practices) in order to identify the sources of tritium that could affect the environment and the groundwater.

As well, in 2008 the significant environmental aspects of facility operation were initially established, and have been reviewed periodically since then in order to identify if there are other processes or operations that have been introduced that could lead to an impact on the environment.

These analyses, coupled with decades of operational experience, results in the establishment of a simplified CSM that shows the significant pathways and environmental interactions pertaining to the release of the sole radiological contaminant of potential concern – tritium.

A pictographic representation of these source – receptor pathways is provided below in Figure 8, and should be consulted when considering the information provided in the next three subsections of this report.

On April 22, 2021, CNSC staff accepted SRBT's Environmental Risk Assessment[29] (ERA), after comments and feedback had been addressed by SRBT[30].

The ERA complies with the requirements of CSA Standard N288.6-12, *Environmental risk assessments for Class I nuclear facilities and uranium mines and mills*.

Human and ecological conceptual models of tritium interactions with the environment near the site are described within the ERA, and are included in Figures 9, 10, 11 and 12. Species included are conservatively representative of the local flora and fauna.

FIGURE 8: CONCEPTUAL SITE MODEL

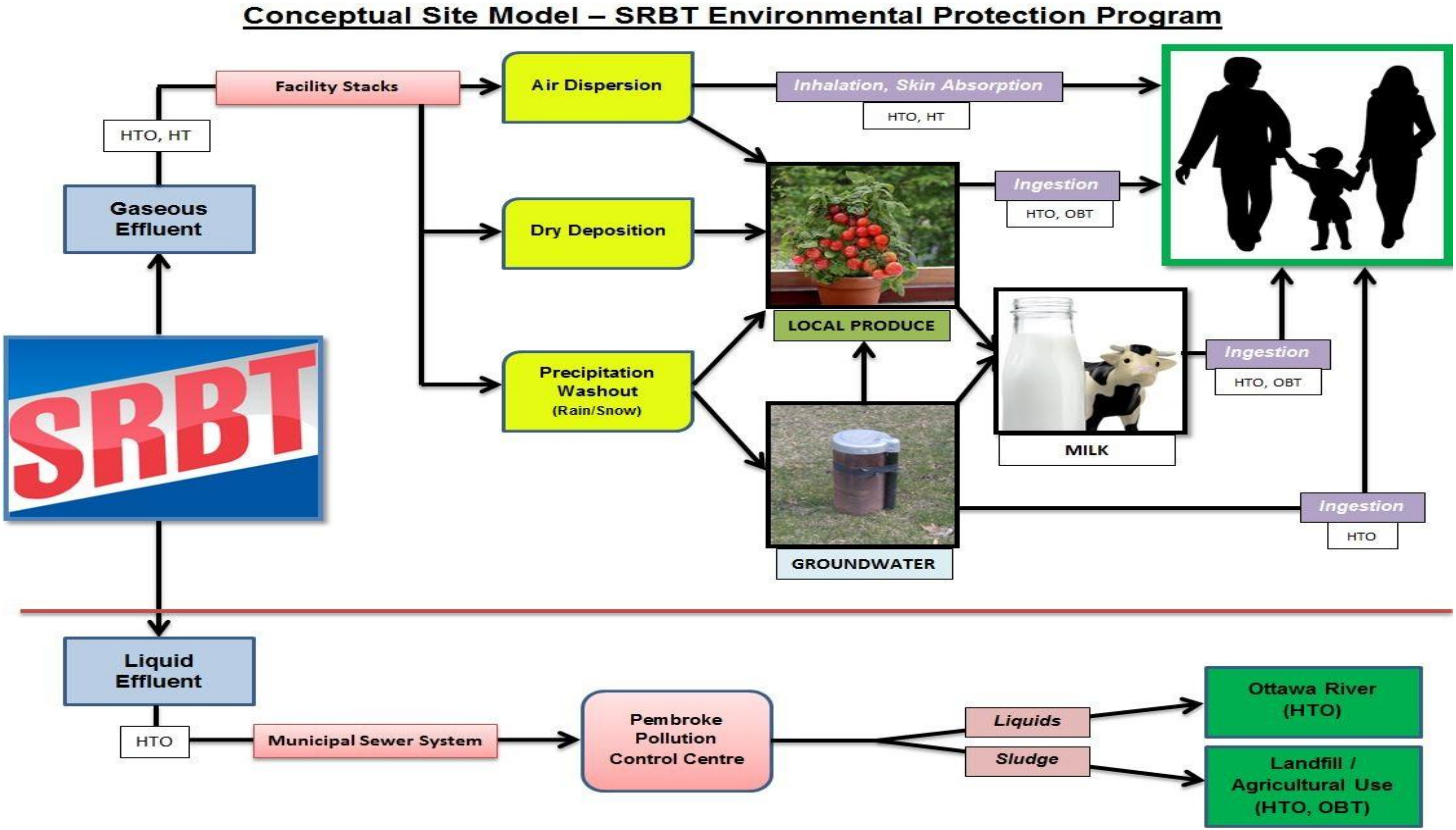


**FIGURE 9: HUMAN EXPOSURE PATHWAYS (HTO/T2, GASEOUS SOURCES)**

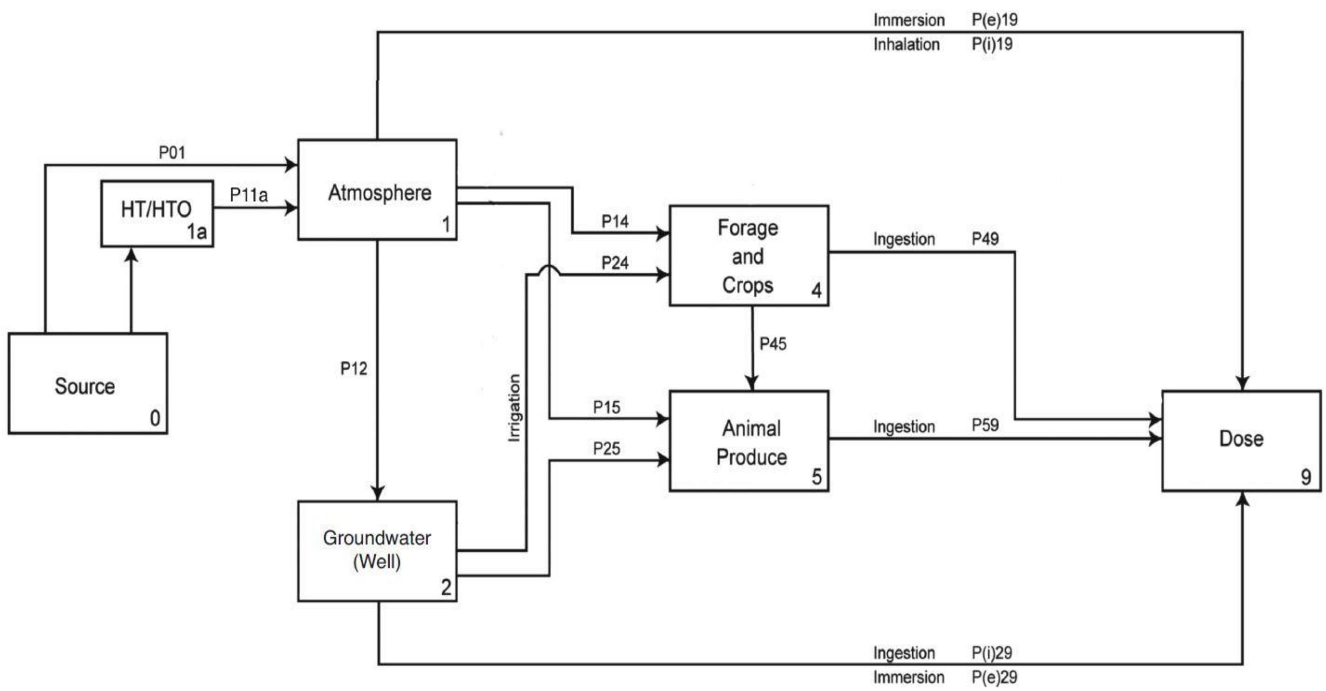



**FIGURE 10: HUMAN EXPOSURE PATHWAYS (HTO/T2, LIQUID SOURCES)**

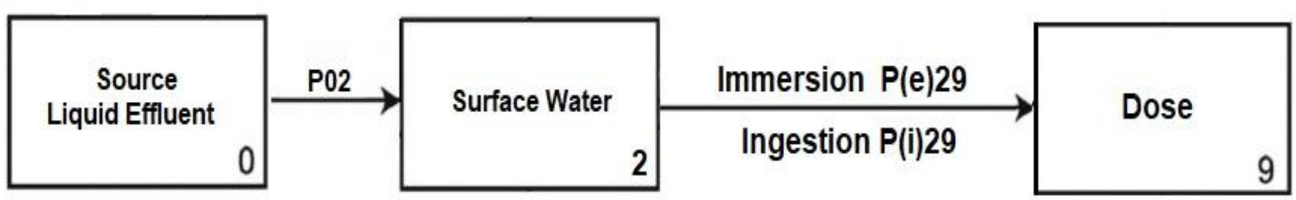


**FIGURE 11: CONCEPTUAL ECOLOGICAL MODEL - TERRESTRIAL**

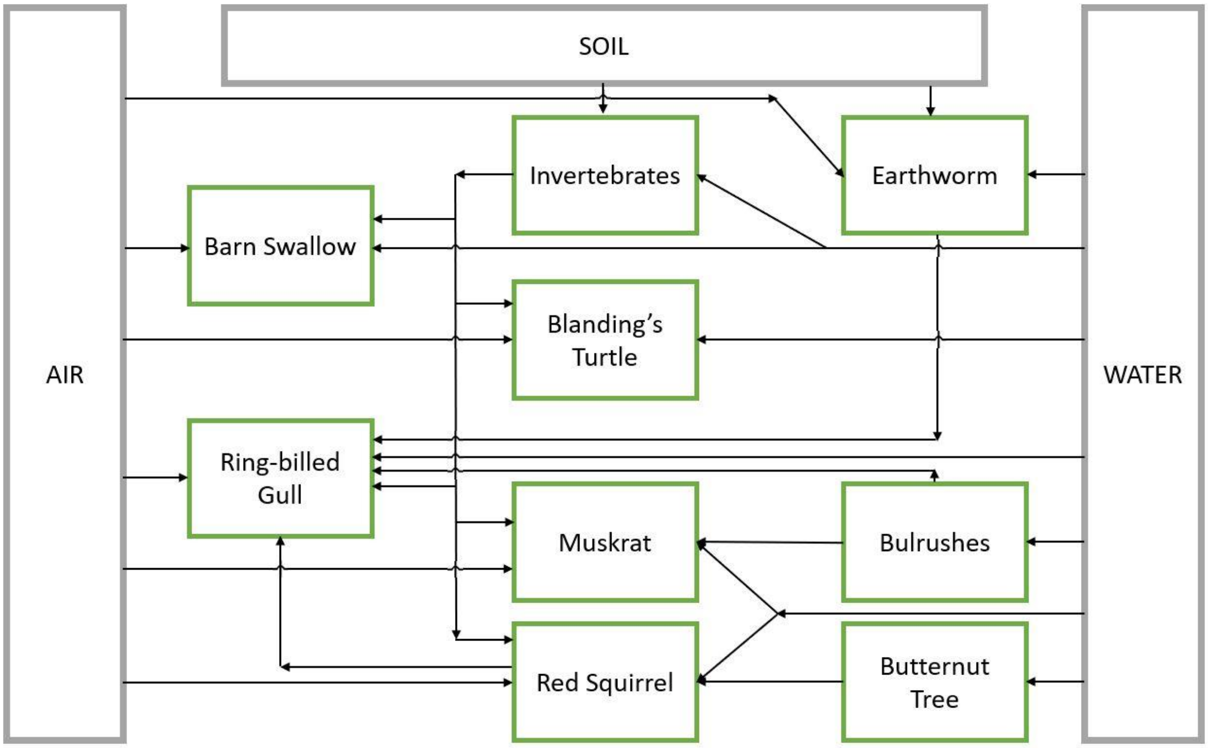
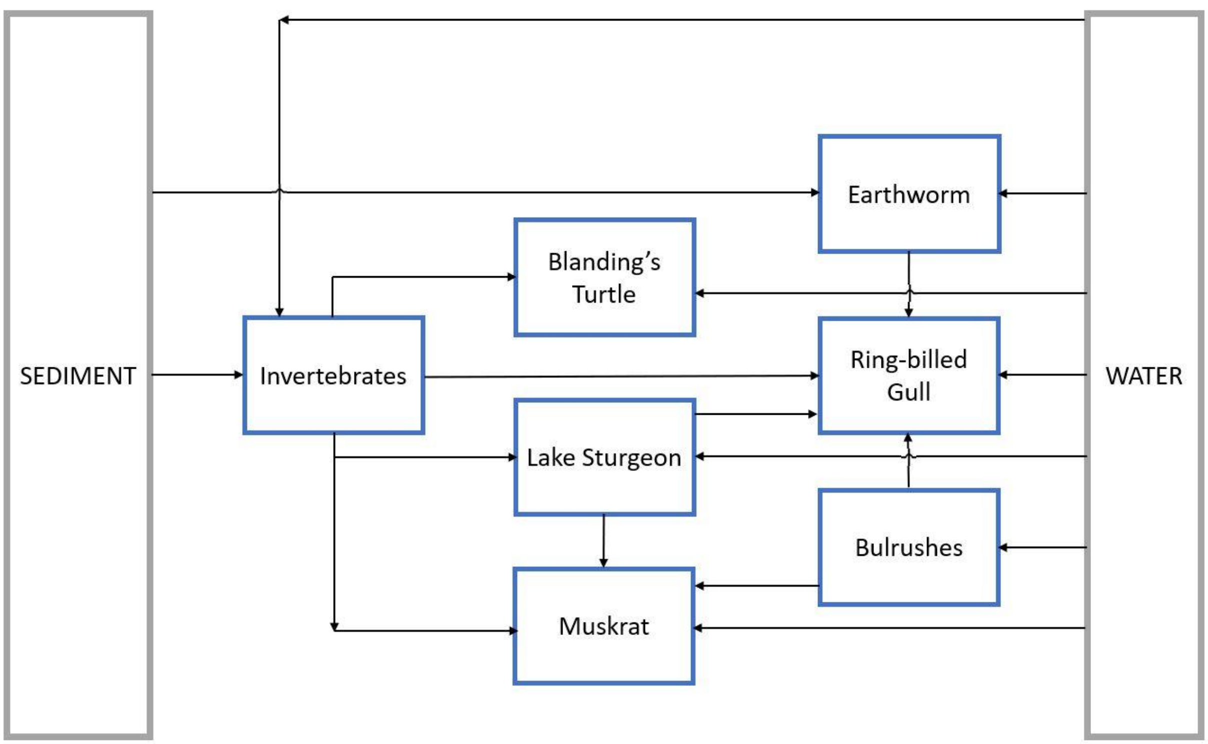



**FIGURE 12: CONCEPTUAL ECOLOGICAL MODEL – AQUATIC / RIPARIAN**



As part of ensuring compliance with the reporting requirements of several N288-series of standards, SRBT has committed to ensuring that the information required by each applicable in-force standard to be reported annually pertaining to the Environmental Monitoring Program (EMP), Effluent Monitoring Program (EffMP) and Groundwater Monitoring Program (GMP) is included our annual compliance report.

A summary of the requirements of each of the applicable standards is provided here.

*N288.4-10 (R2015): Environmental monitoring programs at Class I nuclear facilities and uranium mines and mills:* section 11.2.2 – “The report shall include”:

**TABLE 14: REPORTING REQUIREMENTS (N288.4-10)**

| | REQUIREMENT | REPORT SECTION |
|---|---|---|
| a | The results of the EMP, including measurements of the monitored hazardous and/or nuclear substances, physical stressors, and physical and biological parameters, including their statistical analyses (i.e. assessment of changes through space and time). | 4.3.1<br>**Appendices F through M** |
| | Radiation doses calculated as doses to receptors where this is required. | 4.3.5<br>**Appendix R** |
| | An assessment of the EMP results compared with the previous performance indicator targets. | 4.3<br>Reference is made to previous years for performance indication. |
| | Documentation and justification of any deviations from field sampling, and analytical and data management procedures. | 4.3.1.9<br>4.3.1.10 |
| b | A summary and assessment of the field and laboratory QA/QC results including any non-conformances. | 4.3.1.11 |
| c | A summary of the audit and review results and subsequent corrective actions. | 4.3.7 |
| d | A summary of any proposed modifications to the EMP. | 4.3.8 |
| e | Documentation, assessment and review of any supplementary studies that have been initiated, completed, or both. | 4.3.1.12 |

*N288.5-11 (R2016): Effluent monitoring programs at Class I nuclear facilities and uranium mines and mills:* section 11.2.2 – "The report shall include the results of the effluent monitoring program, including at least":

**TABLE 15: REPORTING REQUIREMENTS (N288.5-11)**

| | REQUIREMENT | REPORT SECTION |
|---|---|---|
| a | The amount or concentration of radioactive nuclear substances and hazardous substances released, as required to demonstrate compliance with regulatory limits and performance with respect to any other release target (e.g., action levels). | 4.3.2<br>Action levels and other targets: 4.3.2.2, 4.3.2.4 and 4.3.2.5<br>**Appendices O and P** |
| b | The characteristics of the effluents. | 4.3.2 |
| c | The results of any toxicity testing conducted (if required). | Not applicable |
| d | A summary and assessment of the field and laboratory QA/QC results, including any non-conformance. | 4.3.2.6 |
| e | A statement of uncertainties inherent in the monitoring results and any dose estimates derived from them. | 4.3.2.7<br>Dose estimates are derived using EMP data |
| f | A summary of the audit and review results and subsequent corrective actions. | 4.3.7 |
| g | A summary of any proposed modifications to the effluent monitoring program. | 4.3.8 |
| h | Documentation, assessment, and review of any supplementary studies that have been initiated or completed, or both. | 4.3.2.8 |

*N288.7-15: Groundwater protection programs at Class I nuclear facilities and uranium mines and mills:* section 11.1 – “A facility should prepare annual monitoring reports documenting the GWMP, which include the following”:

**TABLE 16: REPORTING REQUIREMENTS (N288.7-15)**

| | REQUIREMENT | REPORT SECTION |
|---|---|---|
| a | The results of the GWMP including<br>i) completeness of monitoring activities (identify if all planned activities were accomplished);<br>ii) measurements of the monitored substances, biological, and hydrogeological parameters based on program objectives; and<br>iii) data analysis and interpretations. | 4.3.3<br>**Appendix N** |
| b | Relevant groundwater and hydrogeological characteristics. | 4.3.3<br>**Appendix Q** |
| c | Doses calculated for the identified receptors (if doses have been calculated to aid in interpreting GWMP results). | Not applicable:<br>GMP data does not contribute to dose calculations (residential wells fall within scope of EMP) |
| d | A summary and assessment of the field and laboratory QA results, including any non-conformances. | 4.3.3.3 |
| e | A statement of uncertainties inherent in the monitoring results and any dose estimates derived from them (where applicable). | 4.3.3.4<br>4.3.5 |
| f | Documentation of any supplementary studies that have been initiated, completed, or both (with references to the original studies). | 4.3.3.5 |
| g | An overall statement of data quality and discussion of results in terms of data performance and acceptance criteria. | 4.3.3.6 |
| h | Discussion of monitoring results in terms of program objectives and the conceptual site model. | 4.3.3.7 |
| Note 1 | A summary of any audits performed, their results, and any corrective actions taken as a result of the audit’s findings may also be included in the reporting. | 4.3.7 |

### 4.3.1 Environmental Monitoring

SRB Technologies (Canada) Inc. implements a comprehensive EMP that provides data for site-specific determination of tritium concentrations along the various pathways of exposure to the public due to the activities of the operations.

#### 4.3.1.1 Passive Air Monitoring

A total of 40 passive air samplers (PAS) are deployed in the environment near the SRBT facility.

Air at each location is sampled over the course of a month, and an average air concentration for that period is derived based on the concentration of tritium in the sampling liquid, and known air sample exchange rates.

Thirty-five of these samplers are located within a two-kilometer radius from the SRBT facility, in eight sectors, ranging in stepped distances of 250, 500, 1,000, and 2,000 meters. The remaining five samplers are much further from the facility, and are intended to assess areas not expected to be impacted by routine SRBT processing operations.

Several duplicate samplers are included for quality assurance purposes. A number of samplers are also located specifically to provide data for assessment of the defined critical group members.

EMP PAS results for 2025 can be found in the table in **Appendix F** of this report, along with maps of the position of each sampler in the array. The table shows the average HTO concentrations for the samplers located in each of the eight compass sectors for the given sampling period.

Monthly minimum detectable activities achieved throughout the year averaged 0.72 Bq/m$^3$, with a maximum of 0.80 Bq/m$^3$ for any given sampling month.

Average tritium oxide in air concentrations for each month of 2025 are graphically represented for each of the eight compass sectors, and for each sampled distance from the facility, in **Appendix G** of this report.

The PAS array represents the tritium exposure pathways for inhalation and skin absorption; results are used in the calculations for effective dose to representative persons (members of the public) for 2025.

Tritium oxide emissions, overall tritium emissions (oxide + elemental), and the sum of the average concentrations of all passive air samplers each decreased compared to the previous year.

The sum of the average concentration for all passive air samplers in 2025 was 65.42 Bq/$m^3$, which reflects a decrease from the value of this metric observed in 2024 (87.36 Bq/$m^3$).

These measurements correlate well with the decrease in gaseous tritium oxide releases that took place over the course of 2025 (8,171 GBq), compared with releases from 2024 (13,628 GBq).

#### 4.3.1.2 Precipitation Monitoring

Eight precipitation monitors are installed near existing air monitoring stations that are located approximately 250 m from the facility. Precipitation is collected as an aggregate sample over the course of each month, and then analyzed for tritium concentration.

Typically, SRBT's analysis of precipitation samples results in a minimum detectable activity (MDA) of between 19 - 21 Bq/L, a value which can identify significant concentrations of tritium in precipitation, and provides the resolution needed to determine the level of risk to the public and the environment.

Results in 2025 ranged between values that were below the MDA (30.5% of all samples obtained), up to a maximum of 582 Bq/L (sampler 22P for the Aug. 6, 2025 – Sep. 3, 2025 sample).

The average tritium concentration for all eight precipitation monitors in 2025 was 62 Bq/L.

Table 17 summarizes the five-year trends for the average and maximum concentrations of collected precipitation samples for each calendar year:

**TABLE 17: PRECIPITATION MONITORING: FIVE-YEAR TREND**

| DESCRIPTION | 2021 | 2022 | 2023 | 2024 | 2025 |
|---|---|---|---|---|---|
| AVERAGE CONCENTRATION DURING YEAR (Bq/L) | 46 | 36 | 38 | 62 | 62 |
| MAXIMUM CONCENTRATION DURING YEAR (Bq/L) | 560 | 682 | 227 | 370 | 582 |

The geographic distribution of the sample collectors, coupled with any given meteorological conditions during and shortly after tritium processing, is expected to yield some variations in the data year-to-year.

Precipitation monitoring results for 2025, along with maps showing locations, and five-year trends for each sampling location, can be found in **Appendix H** of this report.

#### 4.3.1.3 Muskrat River Monitoring

Samples of the Muskrat River downstream from SRBT are collected and analyzed monthly, in duplicate, as part of the EMP.

Typically, SRBT's analysis of Muskrat River samples results in an MDA of around 10 Bq/L, a value which can identify significant or abnormal concentrations of tritium in the river, and provides the resolution needed to determine the level of risk to the public and the environment.

All obtained samples of the river water in 2025 fell below the MDA for tritium concentration.

Muskrat River monitoring results are trended in **Appendix I** of this report, along with a map showing the location where the sampling is routinely performed.

#### 4.3.1.4 Downspout Runoff Monitoring

Tritium concentrations are measured in all facility downspouts. The samples were collected periodically by SRBT for tritium concentration assessment. Runoff from downspouts was collected during two precipitation events during 2025, with a total of 18 samples being assessed.

The complete set of data for 2025 can be found in **Appendix J**, along with a map of the sample points around the building housing the facility.

The average tritium concentration for all downspouts / facility runoff samples in 2025 was 257 Bq/L; in 2024, this value was 120 Bq/L. Excluding sample results that were less than the MDA the average result in 2025 was 772 Bq/L.

The highest value measured was from light rainfall draining through downspout 4 on August 28 at 1200h (2,339 Bq/L), while the lowest values measured were 12 individual measurements that were less than the MDA. (between 39-41 Bq/L).

Table 18 summarizes the five-year trends for the average and maximum concentrations of collected downspout runoff samples for each calendar year:

**TABLE 18: DOWNSPOUT RUNOFF MONITORING: FIVE-YEAR TREND**

| DESCRIPTION | 2021 | 2022 | 2023 | 2024 | 2025 |
|---|---:|---:|---:|---:|---:|
| AVERAGE CONCENTRATION DURING YEAR (Bq/L) | 58 | 182 | 662 | 120 | 257 |
| MAXIMUM CONCENTRATION DURING YEAR (Bq/L) | 678 | 1,118 | 10,483 | 411 | 2,339 |

Downspout monitoring was originally initiated as part of the efforts to characterize sources of tritium impacting the groundwater aquifer beneath the SRBT facility in the mid-2000s.

The practice of monitoring the water that is shed from the building rooftop drainage systems represents only a very brief snapshot in time of the conditions at the time of sampling.

There is no significant environmental risk from tritium present in downspout water, as demonstrated by the continuing decrease in groundwater tritium concentrations over the past several years.

It is important to recognize that there are several independent factors that influence the measured tritium concentration in any given sample, including:

- Significant rainfall after periods of time with elevated gaseous tritium-oxide releases tend to result in higher downspout concentrations being measured.
- How long it has been since a significant rainfall event has occurred – drier periods with high rates of tritium processing, followed by a significant rainfall tend to result in higher measured concentrations.
- The overlap between the time the rainfall event began and was detected, and the time it took to put tritium processing operations into a safe state. On occasion, quick onset of a heavy rainfall event can result in probable deposition from entrainment of any released tritium as processing operations are shut down.
- The time between the onset of precipitation and the act of obtaining the samples – the longer amount of time between these events, the lower the concentration of tritium is expected to be.
- Higher rainfall rates can lead to lower concentrations due to the sheer volume of water being drained; however, higher rates of rain can also cause rooftop ponding which will entrain surface tritium that may not have otherwise been taken up by a less intense rainfall.
- Weather factors during processing can influence deposition patterns. Rainfall that occurs quickly after periods of processing where west to east wind patterns dominate have a greater impact on downspout results, as opposed to other wind directions, since the active ventilation system effluent plume will drift over the facility.

#### 4.3.1.5 Produce Monitoring

Produce from two local residential / non-commercial gardens were sampled in 2025, and a locally-grown product was also obtained through a commercial storefront.

Produce samples were analyzed by a third-party laboratory to establish free-water tritium concentration, as well as an assessment of organically-bound tritium (OBT) in specific samples (produce sample minimum detectable activity = approximately 1.4 Bq/L of sample water measured; MDA per kilogram dependent on water content ratio of a given sample type).

The official results were compiled and reported to the participating members of the public, and are also posted on our website. This data is used in the calculations for annual estimated dose to the public for 2025.

The average free water tritium concentration in all produce offered by local residents and non-commercial sources in 2025 was 9.52 Bq/kg, compared to the 2024 value of 57 Bq/kg.

The maximum measured value in 2025 was 22.71 Bq/kg fresh weight, measured in a sample of grapes; this measurement represents less than 0.3% of the SRBT benchmark value, as well as the CNSC Independent Environmental Monitoring Program screening value for free water tritium in fresh produce.

The average free water tritium concentration in locally-grown produce offered by commercial entities was measured as 1.65 Bq/kg in a sample of rhubarb.

For OBT, samples of tomatoes from two non-commercial locations were measured at concentrations ranging from 0.00 – 0.23 Bq OBT/kg fresh weight, while commercially-obtained rhubarb exhibited no detectable OBT.

Produce monitoring results and maps showing produce sampling locations for calendar year 2025 can be found in **Appendix K** of this report, along with graphs comparing the five-year trends of each location.

It is noteworthy that most nearby historically sampled residential and commercial locations have ceased growing produce. SRBT will continue to explore alternate and appropriately representative sampling locations for this material.

#### 4.3.1.6 Milk Monitoring

Milk from both a local producer and from a local distributor is sampled every six months. The samples were collected and analyzed for tritium concentration by a qualified third-party laboratory. The data is used in the calculations for critical group annual estimated dose each year.

Tritium concentrations in milk remained very low, with measurements ranging between 2-4 Bq/L in all samples. The average of all milk samples obtained in 2025 was 2.95 Bq/L.

Milk monitoring results for 2025 can be found in **Appendix L** of this report.

#### 4.3.1.7 Weather Data

A weather station near the facility collects data on a continuous basis; however, for much of the second half of 2025, the weather station was not functional. In response, a completely new set of weather station sensors and solar panels have been ordered and received, for installation in Spring 2026.

For details on the performance of the weather station in 2025, please see section 3.3.8 of this report.

Weather data is primarily used as part of the continuous meteorological characterization of the site over time, in support of the maintenance of Derived Release Limits and Environmental Risk Assessment documents.

See weather data for 2025 in **Appendix M**.

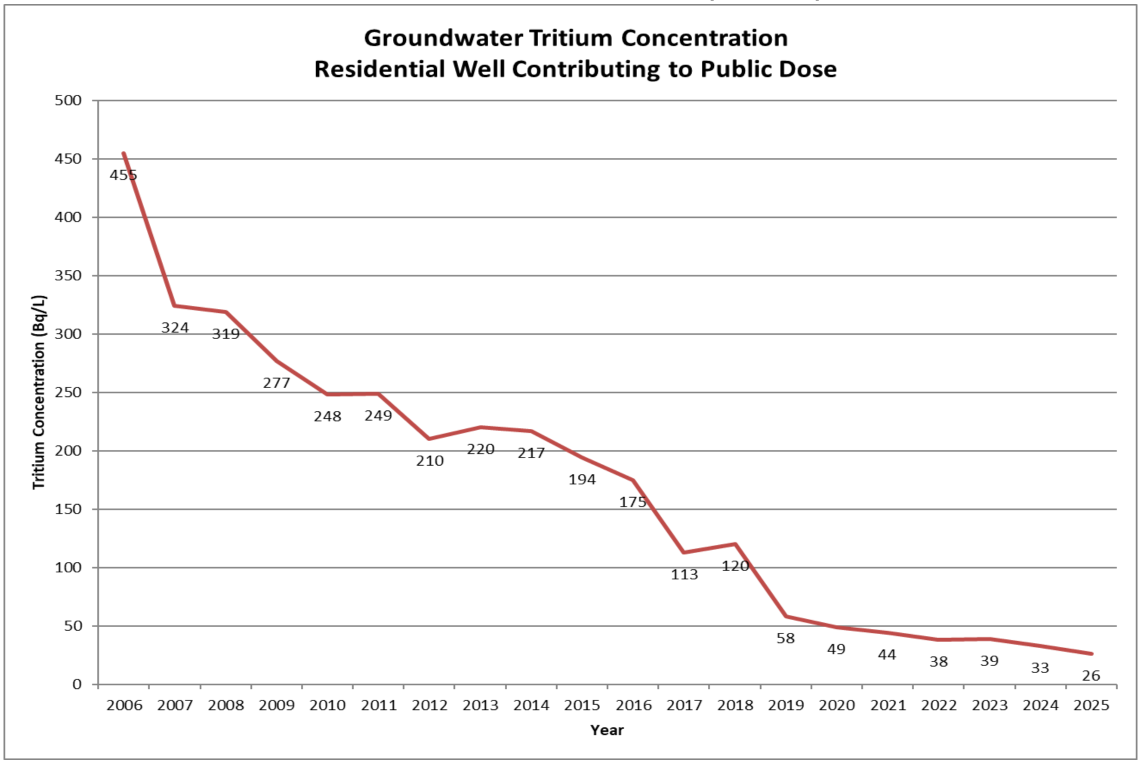
#### 4.3.1.8 Residential Drinking Water

Several nearby local residences permit SRBT to acquire samples of drinking water during the year, to provide additional data for our program. A qualified, independent third-party laboratory collects and analyzes residential drinking water samples (MDA = approximately 3 – 4 Bq/L).

In 2025, the highest average residential well tritium concentration value was measured as 26 Bq/L (both RW-2 and RW-3), a value that is well below the Ontario Drinking Water Quality Standard of 7,000 Bq/L.

Figure 13 illustrates the trend in maximum sampled tritium concentration in all sampled residential wells, since the program of monitoring began in 2006.

**FIGURE 13: RESIDENTIAL WELL TRITIUM CONCENTRATION TREND (2006-2025)**




Derived public dose values attributed to residential well water consumption have decreased since the inception of the monitoring program as a direct result of our efforts to minimize our environmental impact.

Residential well monitoring results for 2025 can be found in **Appendix N** of this report.

### 4.3.1.9 Deviations from Field Sampling Procedures

In 2025, there were no noted occurrences of deviations from field sampling procedures.

SRBT performs field sampling activities in accordance with internal procedures for the following sample types:

- EMP passive air sampling
- Precipitation
- Muskrat River
- Facility downspouts

Qualified independent service providers continue to sample and/or analyze the following sample types:

- Produce
- Milk
- Residential drinking water
- Sludge cake from the Pembroke Pollution Control Centre

#### 4.3.1.10 Deviations from Analytical and Data Management Procedures

In 2025, there were no noted occurrences of deviations from analytical and data management procedures.

SRBT routinely analyzes the following sample types, in accordance with internal procedures:

- EMP passive air sampling
- Precipitation
- Muskrat River
- Facility downspouts

Qualified independent service providers continue to analyze the following sample types:

- Produce
- Milk
- Residential drinking water
- Sludge cake from the Pembroke Pollution Control Centre

SRBT manages all EMP data in accordance with controlled procedures; there were no deviations from these procedures in 2025.

#### 4.3.1.11 Field and Laboratory QA/QC Results and Non-conformances

Field and laboratory EMP operations include several quality assurance and quality control (QA/QC) activities. Field QA/QC activities include duplicate sampling of five passive air sampler stations, duplicate lab analysis of a precipitation sample, duplicate sampling of the Muskrat River, and the use of trip / method blanks for samples obtained in the field.

Laboratory QA/QC activities include duplicate samples and blanks, as well as laboratory reference standards. Sample QC is tested using spike recovery and relative percent difference (RPD) tests.

The following table illustrates the five-year trend in pertinent QA/QC acceptance criteria data for the EMP:

**TABLE 19: EMP QUALITY CONTROL DATA: FIVE-YEAR TREND**

| CALENDAR YEAR | 2021 | 2022 | 2023 | 2024 | 2025 |
|---|---|---|---|---|---|
| BENCHMARK VALUE EXCEEDANCES | 0 | 0 | 0 | 0 | 0 |
| DUPLICATE RPD EXCEEDANCES | 7 | 1 | 7 | 10 | 11 |
| REFERENCE STANDARD ACCURACY EXCEEDANCES | 0 | 0 | 0 | 0 | 0 |
| BLANK SAMPLE COUNT RATE > MAX ACCEPTABLE | 0 | 0 | 0 | 0 | 0 |
| SAMPLE ACQUISITION SUCCESS RATE | 98.6% | 99.5% | 99.2% | 98.9% | 99.4% |
| QC CHECK PASS RATE | 99.2% | 99.9% | 99.2% | 98.9% | 98.7% |

In 2025, 625 of 629 (99.4%) planned, routine environmental samples were successfully obtained.

The four samples that were not obtained included two passive air samples and one precipitation sample were spoiled while deployed in the field, while one residential well sample was not obtained as no one was home and the outside tap was not accessible / functioning.

A total of 843 of 854 (98.9%) EMP acceptance criteria / QC checks / benchmark value comparisons passed their check. Most importantly, no measured EMP sample exceeded established benchmark values in 2025.

The eleven checks that did not initially meet established criteria all related to the derivation of an RPD greater than 40% between two duplicate sample results for passive air sampling. In each case, the values of activity were re-assessed to confirm if a deviation was present, and the results dispositioned.

Average concentrations at these locations were assigned conservatively for each sampling period where occurred.

#### 4.3.1.12 Supplementary Studies

No supplementary studies relating to environmental sampling and monitoring were conducted in 2025.

### 4.3.2 Effluent Monitoring

SRBT monitors two main effluent streams from the facility for tritium as part of our EffMP.

Tritium releases via the gaseous effluent pathway (active ventilation) are monitored in real time using ‘bubbler’ capture systems, with integrated measurements being conducted weekly to determine total emissions and verify compliance with licence limits and action levels.

Liquid effluent is retained in batches and analyzed for tritium concentration prior to being released to sewer.

#### 4.3.2.1 Gaseous Effluent

In 2025, SRBT operated well within release limits to atmosphere that are described in the Licence Conditions Handbook[2] associated with NSPFL-13.00/2034.

A summary of the releases of tritium oxide and total tritium in 2025 is tabled below:

**TABLE 20: GASEOUS EFFLUENT DATA (2025)**

| NUCLEAR SUBSTANCE AND FORM | ANNUAL LIMIT (GBq) | 2025 RELEASED (GBq) | % LIMIT | WEEKLY AVERAGE (GBq) | HIGHEST WEEKLY RELEASE (GBq) |
|---|---|---|---|---|---|
| TRITIUM AS TRITIUM OXIDE (HTO) | 67,200 | 8,171 | 12.2% | 157 | 281 *(Aug. 19-26)* |
| TOTAL TRITIUM AS TRITIUM OXIDE (HTO) AND TRITIUM GAS (HT) | 448,000 | 19,566 | 4.4% | 376 | 1,035 *(Feb. 11-18)* |

Please refer to **Appendix O** for a complete data set on tritium releases to atmosphere in 2025.

Details on the past five years of gaseous effluent data are provided in the following table for ease of trend analysis:

**TABLE 21: GASEOUS EFFLUENT: FIVE-YEAR TREND**

| NUCLEAR SUBSTANCE AND FORM | 2021 (GBq) | 2022 (GBq) | 2023 (GBq) | 2024 (GBq) | 2025 (GBq) |
|---|---|---|---|---|---|
| TRITIUM OXIDE (HTO) | 8,387 | 8,816 | 6,540 | 13,628 | 8,171 |
| TOTAL TRITIUM AS TRITIUM OXIDE (HTO) AND TRITIUM GAS (HT) | 28,729 | 26,590 | 20,520 | 45,868 | 19,566 |

When analyzing the operation's performance at reducing emissions it is important to assess the releases to atmosphere against the amount of tritium the facility processed. This provides an indication of how effective emission reduction initiatives have been successful in reducing emissions.

The following table defines the ratio of tritium released to atmosphere against tritium processed in the past five years:

**TABLE 22: TRITIUM RELEASED TO ATMOSPHERE vs PROCESSED: FIVE-YEAR TREND**

| YEAR | TRITIUM RELEASED TO ATMOSPHERE (GBq/YEAR) | TRITIUM PROCESSED (GBq/YEAR) | % RELEASED TO PROCESSED |
|---|---|---|---|
| 2021 | 28,729 | 29,392,257 | 0.098% |
| 2022 | 26,590 | 26,940,372 | 0.099% |
| 2023 | 20,520 | 23,202,623 | 0.088% |
| 2024 | 45,868 | 25,562,136 | 0.179% |
| 2025 | 19,566 | 20,523,027 | 0.095% |

#### 4.3.2.2 Gaseous Effluent Performance Targets

SRBT established an annual total tritium emission target at the beginning of 2025 of ≤ 600 GBq / week (averaged over the year), a target which was achieved (376 GBq / week).

A target for the ratio of tritium released to atmosphere vs. tritium processed was set as 0.11%, a target that was also achieved.

For 2026, these targets have been adjusted to ≤ 575 GBq / week (reduced by 25 GBq / week) and 0.105% (reduced by 0.005%), respectively.

#### 4.3.2.3 Liquid Effluent

In 2025, SRBT operated well within release limit to sewer that are described in the Licence Conditions Handbook[2] associated with NSPFL-13.00/2034.

**TABLE 23: LIQUID EFFLUENT DATA (2025)**

| NUCLEAR SUBSTANCE AND FORM | LIMIT (GBq/YEAR) | RELEASED (GBq/YEAR) | % OF LIMIT |
|---|---|---|---|
| TRITIUM – WATER SOLUBLE | 200 | 0.35 | 0.18% |

Total liquid effluent releases in 2025 decreased when compared to 2024 values (0.35 GBq in 2025 vs. 1.78 GBq in 2024). This can be attributed to a lower rate of manufacturing, and associated submersion leak-testing of miniature light sources that typically contribute to tritium in collected liquid effluents.

Details on the past five years of liquid effluent data are provided in the table below for ease of trend analysis:

**TABLE 24: LIQUID EFFLUENT: FIVE-YEAR TREND**

| NUCLEAR SUBSTANCE AND FORM | 2021 (GBq) | 2022 (GBq) | 2023 (GBq) | 2024 (GBq) | 2025 (GBq) |
|---|---|---|---|---|---|
| TRITIUM – WATER SOLUBLE | 3.07 | 1.49 | 0.68 | 1.78 | 0.35 |

Please refer to **Appendix P** for a complete data set of liquid effluent releases to sewer in calendar year 2025.

#### 4.3.2.4 Liquid Effluent Performance Target

SRBT established an annual total tritium-to-sewer release target at the beginning of 2025 of ≤ 5 GBq total for the year, a target that was achieved (0.35 GBq for the year).

For 2026, this target has been adjusted to 3 GBq (reduced by 2 GBq).

#### 4.3.2.5 Action Level Exceedances

In 2025, there were no instances of an action level exceedance related to gaseous or liquid effluent monitoring at SRBT.

#### 4.3.2.6 Summary of Field and Laboratory QA/QC

Effluent monitoring activities include several procedural steps that ensure acceptable quality assurance and control, including duplicate / triplicate sample acquisition and measurement, the use of process blanks, and the measurement of known reference standards as part of the assay of activity in collected sample media.

All EffMP QA/QC results obtained in 2025 were acceptable with no identified non-conformances.

#### 4.3.2.7 Statement of Uncertainties Inherent in Monitoring Results

Uncertainties associated with effluent monitoring at SRBT may be present at several points in the process.

For gaseous effluent, such uncertainties include: sampling representativeness, total airflow collected, catalytic efficiency of HT to HTO conversion, capture efficiency of sample media, standard measurement errors associated with liquid scintillation counting, sample acquisition errors such as volume of drawn sample for analysis, and errors in stack flow rate and differential pressure measurement.

For liquid effluent, such uncertainties include: sample volume, liquid effluent volume, standard measurement errors associated with liquid scintillation counting, and sample acquisition errors such as volume of drawn sample for analysis.

In order to ensure that the uncertainties inherent in monitoring results are kept acceptably low, SRBT ensures that a third-party laboratory conducts independent verification procedures of effluent monitoring processes on an annual basis. The acceptance criterion for deviation between the final assessed measurements is +/-30%.

For the intercomparison exercise completed in 2025, a single data point measured in excess of this criterion and was dispositioned in accordance with internal procedures; however, the overall weekly emissions profile of both species of gaseous tritium releases through the active ventilation systems were confirmed to be well within the final acceptance criteria.

The QA/QC processes associated with SRBT effluent monitoring contribute to the confidence in the results. As well, the data gathered from the EMP is assessed against the data from the gaseous effluent monitoring process on a frequent basis to verify that results are relatively consistent with each other.

The inherent uncertainties associated with effluent monitoring are well within acceptable bounds when contrasted against the measured releases, and the licenced limits and derived release limits for gaseous tritium releases by each pathway.

#### 4.3.2.8 Supplementary Studies

In 2025, no supplementary studies were conducted relating to effluent monitoring at SRBT.

#### 4.3.2.9 Hazardous Substance Releases

In 2025, SRBT continued to operate the facility under a Certificate of Approval (Air), number 5310-4NJQE2, issued by the Ontario Ministry of the Environment in accordance with section 9 of the Ontario Environmental Protection Act.

No hazardous non-radiological substances are released from the facility through either gaseous or liquid effluent pathways in any significant quantity.

#### 4.3.3 Groundwater Monitoring

SRBT implements and maintains a comprehensive Groundwater Monitoring Program (GMP) as part of our Groundwater Protection Program.

Dedicated, engineered sampling wells are used to establish tritium concentrations in the groundwater each month at various depths and in differing geologic strata. Variations are trended over time to measure the response of historical contamination of the local aquifer.

Since the program was established, groundwater measurements and trends have been in very good agreement with established hydrogeological modelling predictions.

While most of the released tritium in the air is dispersed, some of it will reach the soil through dry and wet deposition. Infiltrated precipitation brings tritium into the groundwater below it.

The deposition of tritium on and around the facility from air emissions and resulting soil moisture and standing water are the sole direct contributor to tritium found in groundwater. Groundwater is affected by the percolation of soil moisture and standing water from the surface.

Tritium concentrations in groundwater are expected to gradually decrease once all historical emissions have flushed through the system and/or decayed with some influence of higher concentrations in nearby wells from lateral underground water flow.

This continues to be confirmed by routine monitoring of the existing network of wells. The rate at which this decrease occurs is dependent on the level and speed of recharge of the groundwater on and around the SRBT facility.

#### 4.3.3.1 Groundwater Tritium Concentration

Groundwater monitoring well results for 2025 can be found in **Appendix N** of this report.

**MW06-10:** The highest average tritium concentration in any well remains in monitoring well MW06-10 which is directly beneath the area where the active ventilation stacks are located. As of the end of 2025, this represents the only well where tritium concentration exceeds the Ontario Drinking Water Guideline value of 7,000 Bq/L.

The average concentration of tritium measured in MW06-10 in 2025 was 22,213 Bq/L, a value that is lower than the average measured in 2024 (23,701 Bq/L).

A graph trending the average annual concentration of tritium in MW06-10 since commissioning of the well is provided in Figure 14, while the five-year trend is highlighted in Figure 15 in red, along with trends of the maximum (green) and minimum (blue) monthly measurements each year.

**FIGURE 14: MW06-10 AVERAGE TRITIUM CONCENTRATION TREND (2006-2025)**

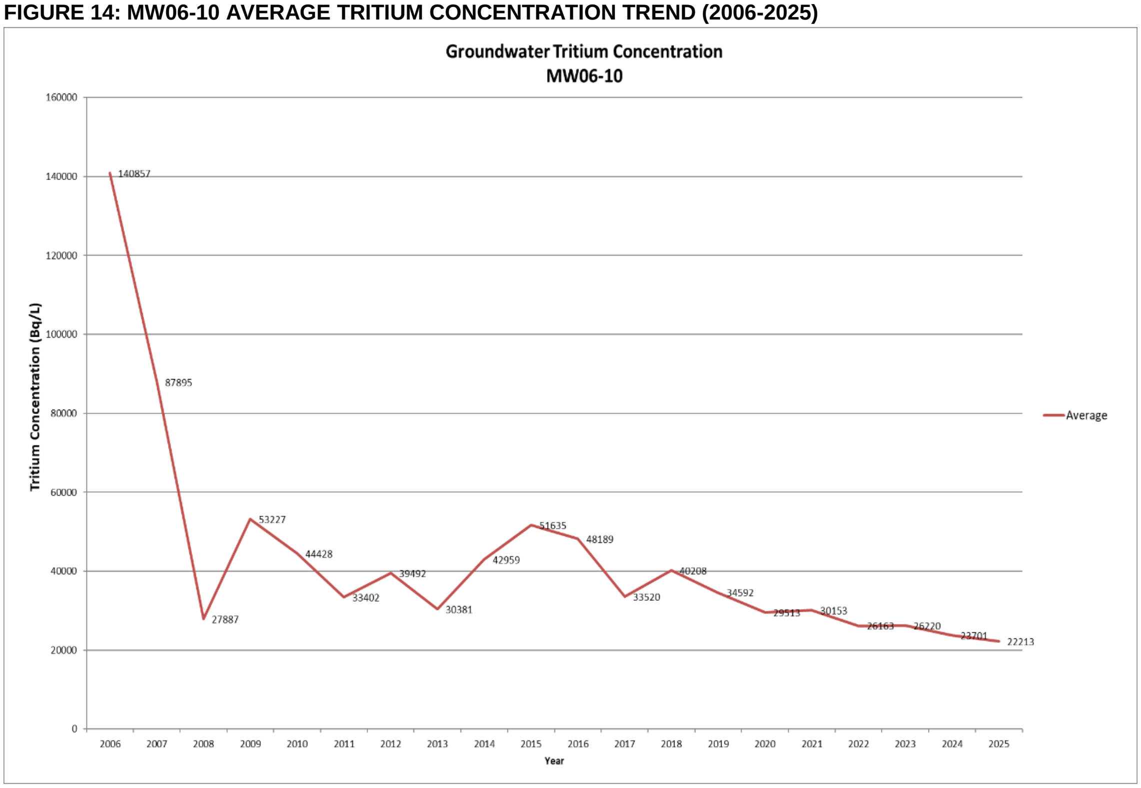
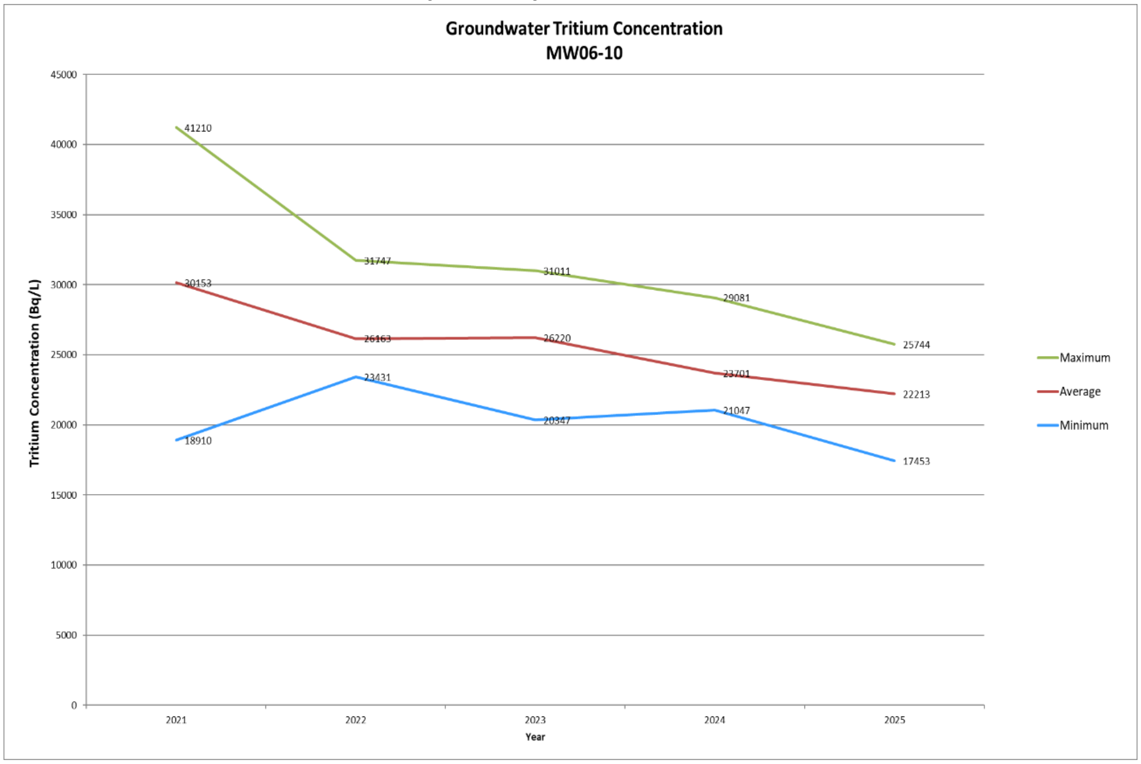


**FIGURE 15: MW06-10 FIVE-YEAR TREND (2021-2025)**




**MW07-13:** The average concentration of MW07-13 continues to fall; in 2025 the average measurement was 1,274 Bq/L. This well exhibits the highest average tritium concentration of any monitoring well, other than MW06-10.

This well was the last monitoring well to have been measured above the provincial drinking water guideline value of 7,000 Bq/L (April 2018), other than MW06-10. The concentration of tritium at this location has continued to consistently trend downward over time.

A graph trending the average annual concentration of tritium in MW07-13 since commissioning of the well is Figure 16, while the five-year trend is highlighted in Figure 17 in red, along with trends of the maximum (green) and minimum (blue) monthly measurements each year.

**FIGURE 16: MW07-13 AVERAGE TRITIUM CONCENTRATION TREND (2007-2025)**

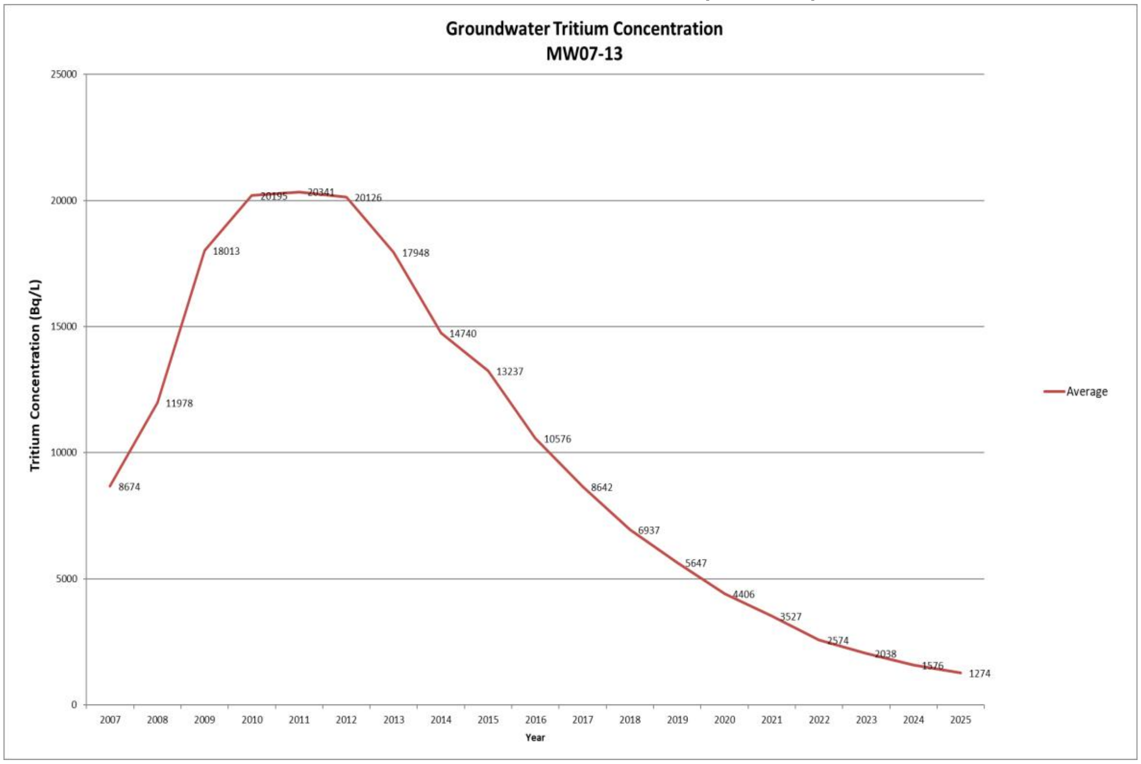
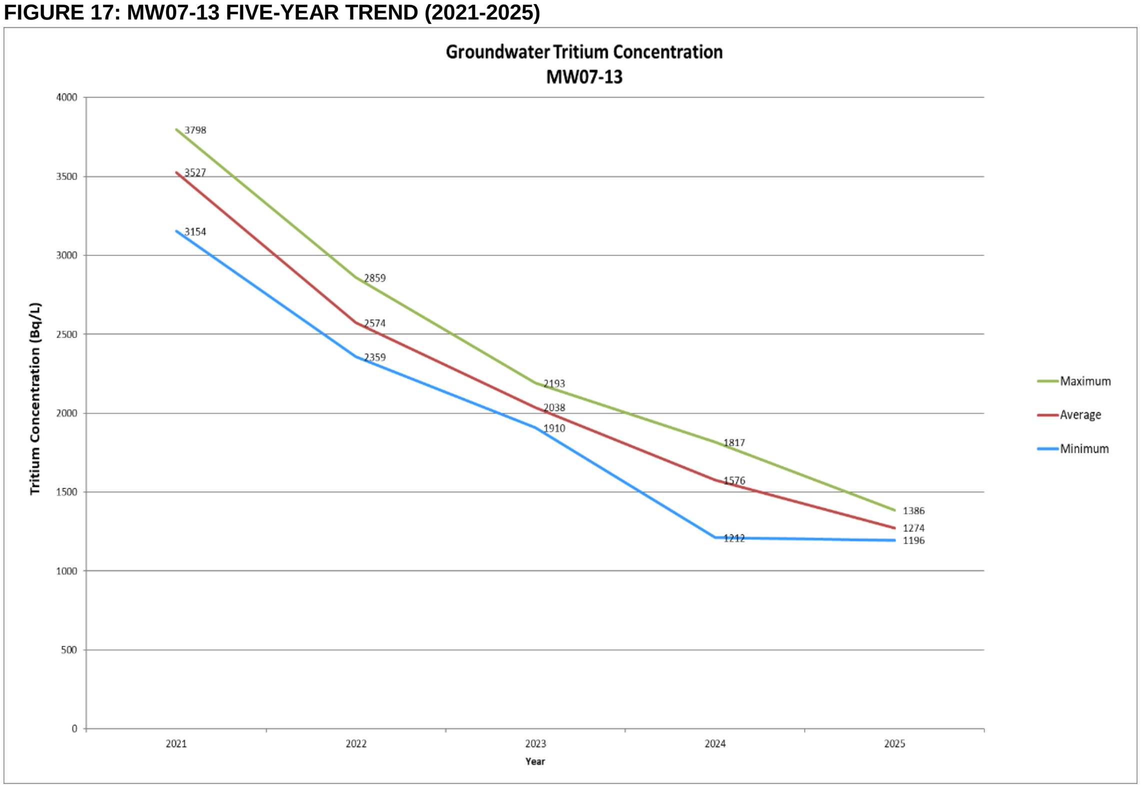



**FIGURE 17: MW07-13 FIVE-YEAR TREND (2021-2025)**




Looking back over the past several years, tritium concentrations in all monitoring wells have continued to decline.

The average annual concentration across all dedicated monitoring wells in 2025 is 32.6% of the average measured in 2015. Well MW07-26 has shown the greatest change (93.4% decrease compared to 2015 conditions), while MW07-12 exhibited the smallest change (18.8% decrease).

In 2025, all 29 SRBT-installed groundwater monitoring wells exhibited an average tritium concentration that was lower than the previous year.

Table 25 compares the annualized average tritium concentration of the 29 dedicated, SRBT-installed groundwater monitoring wells for eleven years, between 2015 through 2025.

Comparisons are made in the columns on the right-hand side of the table using a three-colour gradient, where green indicates decreasing concentrations, white indicating stable, and red indicating a relative increase for the years being compared. Darker shades of green and red indicate greater relative decreases or increases for any specific comparison.

**TABLE 25: AVERAGE TRITIUM CONCENTRATION IN MONITORING WELLS**

| Well ID | 2025 | 2024 | 2023 | 2022 | 2021 | 2020 | 2019 | 2018 | 2017 | 2016 | 2015 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | (Annualized average tritium Bq/L) | | | | | | | | | | |
| MW06-1 | 334 | 474 | 424 | 456 | 651 | 762 | 1,045 | 1,334 | 1,946 | 2,753 | 4,338 |
| MW06-2 | 396 | 469 | 489 | 609 | 736 | 877 | 1,031 | 1,160 | 1,166 | 1,467 | 1,965 |
| MW06-3 | 87 | 140 | 141 | 166 | 199 | 244 | 367 | 469 | 683 | 1,029 | 1,218 |
| MW06-8 | 387 | 455 | 475 | 507 | 550 | 579 | 679 | 724 | 780 | 848 | 906 |
| MW06-9 | 810 | 940 | 1,044 | 1,127 | 1,366 | 1,527 | 1,774 | 1,952 | 2,224 | 2,476 | 2,731 |
| MW06-10 | 22,213 | 23,701 | 26,220 | 26,163 | 30,153 | 29,513 | 34,592 | 40,208 | 33,520 | 48,189 | 51,635 |
| MW07-11 | 656 | 699 | 759 | 811 | 858 | 924 | 1,053 | 1,122 | 1,099 | 1,344 | 1,521 |
| MW07-12 | 376 | 419 | 438 | 416 | 435 | 422 | 425 | 468 | 467 | 469 | 463 |
| MW07-13 | 1,274 | 1,576 | 2,038 | 2,574 | 3,527 | 4,406 | 5,647 | 6,937 | 8,642 | 10,576 | 13,237 |
| MW07-15 | 784 | 923 | 990 | 1,004 | 1,076 | 1,262 | 1,399 | 1,505 | 1,617 | 1,810 | 1,680 |
| MW07-16 | 455 | 559 | 624 | 685 | 897 | 1,003 | 1,240 | 1,433 | 1,649 | 1,879 | 2,188 |
| MW07-17 | 173 | 229 | 237 | 267 | 296 | 272 | 338 | 359 | 335 | 602 | 780 |
| MW07-18 | 394 | 490 | 649 | 842 | 1,102 | 1,494 | 2,000 | 2,192 | 2,739 | 3,690 | 5,491 |
| MW07-19 | 483 | 575 | 650 | 665 | 959 | 1,198 | 1,468 | 1,889 | 1,926 | 2,500 | 3,222 |
| MW07-20 | 174 | 207 | 222 | 244 | 296 | 326 | 438 | 498 | 571 | 670 | 775 |
| MW07-21 | 242 | 263 | 289 | 351 | 363 | 393 | 545 | 778 | 879 | 1,009 | 1,121 |
| MW07-22 | 491 | 546 | 611 | 639 | 729 | 783 | 921 | 974 | 1,023 | 1,131 | 1,171 |
| MW07-23 | 705 | 812 | 908 | 1,013 | 1,147 | 1,252 | 1,443 | 1,572 | 1,743 | 1,929 | 2,206 |
| MW07-24 | 937 | 1,107 | 1,226 | 1,340 | 1,511 | 1,644 | 1,839 | 1,928 | 2,022 | 2,206 | 2,314 |
| MW07-26 | 129 | 209 | 238 | 291 | 421 | 514 | 697 | 904 | 1,190 | 1,491 | 1,941 |
| MW07-27 | 759 | 1,027 | 1,131 | 1,439 | 1,696 | 1,994 | 2,683 | 3,136 | 3,589 | 4,292 | 4,869 |
| MW07-28 | 312 | 378 | 444 | 520 | 670 | 705 | 843 | 1,017 | 1,063 | 1,311 | 1,446 |
| MW07-29 | 474 | 531 | 667 | 760 | 1,075 | 1,485 | 2,058 | 2,415 | 2,472 | 3,395 | 3,950 |
| MW07-31 | 192 | 214 | 255 | 240 | 325 | 182 | 352 | 407 | 186 | 440 | 756 |
| MW07-32 | 53 | 63 | 44 | 42 | 54 | 59 | 75 | 70 | 76 | 155 | 128 |
| MW07-34 | 537 | 618 | 753 | 908 | 1,153 | 1,297 | 1,526 | 1,889 | 2,291 | 2,822 | 3,312 |
| MW07-35 | 736 | 912 | 1,076 | 1,297 | 1,550 | 1,898 | 2,256 | 2,637 | 3,015 | 3,448 | 3,945 |
| MW07-36 | 824 | 1,027 | 1,112 | 1,105 | 1,154 | 1,468 | 1,716 | 2,008 | 2,109 | 2,618 | 2,892 |
| MW07-37 | 589 | 658 | 658 | 677 | 717 | 763 | 821 | 830 | 871 | 989 | 1,009 |
| **AVERAGE** | **1,240** | **1,387** | **1,545** | **1,626** | **1,920** | **2,043** | **2,458** | **2,856** | **2,824** | **3,708** | **4,249** |

| Well ID | 2025/2024 | 2025/2023 | 2025/2022 | 2025/2021 | 2025/2020 | 2025/2019 | 2025/2018 | 2025/2017 | 2025/2016 | 2025/2015 |
|---|---|---|---|---|---|---|---|---|---|---|
| | (%) | | | | | | | | | |
| MW06-1 | 70.5 | 78.8 | 73.4 | 51.4 | 43.9 | 32.0 | 25.1 | 17.2 | 12.1 | 7.7 |
| MW06-2 | 84.3 | 80.9 | 65.0 | 53.7 | 45.1 | 38.4 | 34.1 | 34.0 | 27.0 | 20.1 |
| MW06-3 | 62.4 | 61.6 | 52.5 | 43.8 | 35.7 | 23.7 | 18.6 | 12.7 | 8.5 | 7.1 |
| MW06-8 | 85.2 | 81.5 | 76.4 | 70.4 | 66.9 | 57.1 | 53.5 | 49.7 | 45.7 | 42.8 |
| MW06-9 | 86.2 | 77.6 | 71.9 | 59.3 | 53.1 | 45.7 | 41.5 | 36.4 | 32.7 | 29.7 |
| MW06-10 | 93.7 | 84.7 | 84.9 | 73.7 | 75.3 | 64.2 | 55.2 | 66.3 | 46.1 | 43.0 |
| MW07-11 | 93.9 | 86.5 | 80.9 | 76.5 | 71.0 | 62.3 | 58.5 | 59.7 | 48.8 | 43.1 |
| MW07-12 | 89.6 | 85.8 | 90.3 | 86.3 | 89.1 | 88.5 | 80.3 | 80.4 | 80.1 | 81.1 |
| MW07-13 | 80.9 | 62.5 | 49.5 | 36.1 | 28.9 | 22.6 | 18.4 | 14.7 | 12.0 | 9.6 |
| MW07-15 | 84.9 | 79.2 | 78.0 | 72.8 | 62.1 | 56.0 | 52.1 | 48.5 | 43.3 | 46.7 |
| MW07-16 | 81.5 | 72.9 | 66.5 | 50.7 | 45.4 | 36.7 | 31.8 | 27.6 | 24.2 | 20.8 |
| MW07-17 | 75.4 | 72.8 | 64.8 | 58.4 | 63.6 | 51.1 | 48.2 | 51.6 | 28.7 | 22.2 |
| MW07-18 | 80.5 | 60.7 | 46.8 | 35.8 | 26.4 | 19.7 | 18.0 | 14.4 | 10.7 | 7.2 |
| MW07-19 | 83.9 | 74.2 | 72.6 | 50.4 | 40.3 | 32.9 | 25.6 | 25.1 | 19.3 | 15.0 |
| MW07-20 | 83.9 | 78.2 | 71.1 | 58.7 | 53.2 | 39.7 | 34.9 | 30.4 | 25.9 | 22.4 |
| MW07-21 | 92.2 | 83.8 | 68.9 | 66.6 | 61.6 | 44.4 | 31.1 | 27.5 | 24.0 | 21.6 |
| MW07-22 | 89.9 | 80.4 | 76.8 | 67.3 | 62.6 | 53.3 | 50.4 | 48.0 | 43.4 | 41.9 |
| MW07-23 | 86.8 | 77.6 | 69.6 | 61.5 | 56.3 | 48.8 | 44.8 | 40.4 | 36.5 | 31.9 |
| MW07-24 | 84.7 | 76.5 | 70.0 | 62.0 | 57.0 | 51.0 | 48.6 | 46.4 | 42.5 | 40.5 |
| MW07-26 | 61.9 | 54.4 | 44.5 | 30.7 | 25.1 | 18.6 | 14.3 | 10.9 | 8.7 | 6.7 |
| MW07-27 | 73.9 | 67.2 | 52.8 | 44.8 | 38.1 | 28.3 | 24.2 | 21.2 | 17.7 | 15.6 |
| MW07-28 | 82.5 | 70.3 | 59.9 | 46.5 | 44.2 | 37.0 | 30.7 | 29.3 | 23.8 | 21.6 |
| MW07-29 | 89.2 | 71.0 | 62.3 | 44.1 | 31.9 | 23.0 | 19.6 | 19.2 | 13.9 | 12.0 |
| MW07-31 | 89.7 | 75.1 | 79.9 | 58.9 | 105.3 | 54.5 | 47.0 | 103.0 | 43.5 | 25.3 |
| MW07-32 | 83.0 | 120.0 | 126.5 | 96.6 | 89.0 | 70.0 | 75.5 | 69.1 | 33.9 | 41.1 |
| MW07-34 | 86.9 | 71.2 | 59.1 | 46.5 | 41.4 | 35.2 | 28.4 | 23.4 | 19.0 | 16.2 |
| MW07-35 | 80.7 | 68.4 | 56.7 | 47.4 | 38.8 | 32.6 | 27.9 | 24.4 | 21.3 | 18.6 |
| MW07-36 | 80.2 | 74.1 | 74.5 | 71.4 | 56.1 | 48.0 | 41.0 | 39.1 | 31.5 | 28.5 |
| MW07-37 | 89.5 | 89.5 | 87.0 | 82.1 | 77.2 | 71.7 | 71.0 | 67.6 | 59.6 | 58.4 |
| **AVERAGE** | **89.5** | **89.7** | **85.3** | **72.2** | **67.9** | **56.4** | **48.6** | **49.1** | **37.4** | **32.6** |
| | | | | *Average aquifer concentrations have decreased 70.8% since 2015.* | | | | | | 70.8 |

Several factors can influence the concentration of tritium in any given well, including the rate of precipitation accumulation, contaminant dispersion patterns, and the lateral and vertical migration of historical contaminant plumes. Measured concentrations may also be reflective of operational conditions from many years ago.

#### 4.3.3.2 Groundwater Level Measurements

The water levels are measured in monitoring wells prior to purge and sampling. Analysis of this data shows consistent trends from year to year when comparing season to season.

A compilation of groundwater level measurements for 2025 can be found in **Appendix Q** of this report.

#### 4.3.3.3 Summary of Field and Laboratory QA/QC

Field and laboratory operations pertaining to groundwater monitoring include several quality assurance and quality control activities.

Quality control activities include duplicate sampling of certain wells, duplicate laboratory subsampling, and the use of trip / method blanks during sampling campaigns.

As well, several quality control checks are performed as part of the liquid scintillation counting procedures employed by both the third party and SRBT.

In 2025, 109 samples of groundwater were successfully obtained and analyzed, representing 94% of the samples attempted. On five occasions a sample was not obtained due to the well being dry, and on two occasions, due to being frozen. There were no failures of field or laboratory quality control checks for GMP data during 2025.

SRBT's Groundwater Monitoring Program requires the completion of an inter-laboratory testing exercise on an annual basis. This exercise is typically completed during the June sampling period.

Five groundwater monitoring wells were sampled by SRBT in duplicate in June, and were subsequently analyzed for tritium concentration by both SRBT and a qualified, independent laboratory.

The results obtained fell well within the acceptance criteria of +/-20% relative difference, adding confidence in the quality and accuracy of the data generated by the program.

#### 4.3.3.4 Statement of Uncertainties Inherent in Monitoring Results

Uncertainties associated with SRBT groundwater monitoring may be present at certain points in the process.

The main uncertainties relate to standard measurement errors associated with liquid scintillation counting, and sample acquisition errors such as volume of drawn sample for analysis.

In order to provide assurance of accuracy and precision, SRBT conducts an annual intercomparison sampling and analysis activity with our primary contracted third party in June, as required by the GMP.

Five wells were sampled and measured by SRBT concurrently with the third party, with good agreement between the results obtained in-house and those obtained by the contracted service provider.

The inherent uncertainties associated with groundwater monitoring are well within acceptable bounds when contrasted against the tritium concentrations that may present an unacceptable risk to the public.

#### 4.3.3.5 Supplementary Studies

In 2025, one supplementary study was conducted relating to groundwater monitoring at SRBT.

As part of the sale of the commercial building next door to the SRBT facility, the potential buyer conducted groundwater monitoring with three newly installed monitoring wells.

Although the focus of the study was on historical hydrocarbons suspected to be in the groundwater, the potential buyer and their environmental services contractor engaged with SRBT to facilitate sampling and analysis of the new wells for tritium concentration.

Samples from all three newly installed monitoring wells were obtained by SRBT on January 31, 2025, with the assistance from the environmental services contractor.

Tritium concentrations in the wells were measured to be 420, 175, and 249 Bq/L (net), values that were evaluated against SRBT wells nearby (MW07-27, -35 and -36), as well as the information in the SRBT Groundwater Study Reports published between 2006-2008. The results of the study are supportive of the models and predictions therein.

#### 4.3.3.6 Data Quality, Performance and Acceptance Criteria

Overall, the quality of data gathered as part of SRBT groundwater monitoring activities is successful in ensuring a high level of performance in monitoring, and in demonstrating that acceptance criteria (such as the limits on dose to the public) continue to be met.

All trip blanks, field duplicates, laboratory duplicates and quality control checks during liquid scintillation counting met performance criteria throughout 2025.

#### 4.3.3.7 Program Objectives and Conceptual Site Model

The main objective of the GMP implemented by SRBT is to provide information to assess risks from site-affected groundwater to human health and the environment, ultimately to determine if the risk to the environment and the public from SRBT operations remains acceptably low.

Only one well monitored on a regular basis exceeds the Ontario Drinking Water Guideline value of 7,000 Bq/L. This well is a dedicated, engineered groundwater monitoring well very near to the facility within a secured area, and is not available to be used as a source of water consumption.

With respect to the conceptual site model, the highest average concentration of potable groundwater obtained from a residential well continues to show a generally stable or decreasing trend over time (see discussion in section 4.3.1.8 earlier in this report).

SRBT concludes that the comprehensive array of groundwater monitoring activities conducted continue to meet program objectives, and adheres to the conceptual site model developed as part of the Environmental Management System, as illustrated earlier in this report in Figure 8.

### 4.3.4 Other Monitoring

On occasion SRBT conducts monitoring of other environmental media in order to provide continued assurance of the safety of our operations.

#### 4.3.4.1 Soil Monitoring

No soil monitoring was conducted in 2025.

#### 4.3.4.2 Sludge Monitoring

In March and September 2025, SRBT collected routine samples of sludge cake from the Pembroke Pollution Control Centre.

These samples are analyzed for the concentration of tritium in the free water contained within (expressed in Bq/L), as well as for organically-bound tritium in the dry mass of material (expressed in Bq/kg).

Sludge data does not factor into the calculation of public dose; however, given previously expressed stakeholder interest, SRBT has integrated sludge cake monitoring as part of the routine EMP activities.

All sludge samples are analyzed by an independent laboratory. The averaged annual results obtained for the past five years are tabled below.

**TABLE 26: SLUDGE MONITORING: FIVE-YEAR TREND**

| NUCLEAR SUBSTANCE AND FORM | 2021 | 2022 | 2023 | 2024 | 2025 |
|---|---|---|---|---|---|
| FREE-WATER TRITIUM (Bq/L) | 30 | 44 | 11 | 21 | 8 |
| OBT FRESH WEIGHT (Bq/kg) | 167 | 468 | 93 | 97 | 48 |

### 4.3.5 Public Dose

The calculation methods used to determine the dose to the representative persons as defined in the SRBT EMP are described in the program and in procedure EMP-014, *Interpretation and Reporting Requirements for EMP Data.*

All data and tables relating to the calculation of the dose to the public can be found in **Appendix R**.

For 2025, the dose has been calculated using the effective dose coefficients found in Canadian Standards Association (CSA) Guideline N288.1-14[31].

**TABLE 27: CSA GUIDELINE N288.1-14 EFFECTIVE DOSE COEFFICIENTS FOR H-3**

| AGE GROUP | EFFECTIVE DOSE COEFFICIENT – INHALATION (HTO) (μSv/Bq) | EFFECTIVE DOSE COEFFICIENT – INGESTION (HTO) (μSv/Bq) | EFFECTIVE DOSE COEFFICIENT – INGESTION (OBT) (μSv/Bq) |
|---|---:|---:|---:|
| INFANT | 8.0E-5 | 5.3E-5 | 1.3E-4 |
| CHILD | 3.8E-5 | 2.5E-5 | 6.3E-5 |
| ADULT | 3.0E-5 | 2.0E-5 | 4.6E-5 |

NOTE: The dose coefficients listed for inhalation account for skin absorption, as per Table C.1 of N288.1-14.

The dose assessed for the group of representative persons is a summation of:

- Tritium uptake from inhalation and absorption through skin at the place of residence and/or the place of work, ($P_{(i)19}$ and $P_{(e)19}$), and
- Tritium uptake due to consumption of well water ($P_{29}$), and
- Tritium uptake due to consumption of produce ($P_{49}$), and
- Tritium uptake due to consumption of dairy products ($P_{59}$).

**<u>Dose due to inhalation</u>**

The closest residence to SRBT is located by passive air sampler NW250 approximately 240 meters from the point of release. The 2025 average concentration of tritium oxide in air at passive air sampler NW250 has been determined to be **2.90 Bq/m$^3$**.

Three passive air samplers are located close to the SRBT facility and represent the tritium oxide in air ($P_{(i)19}$ and $P_{(e)19}$) concentrations for the representative person (adult worker) at samplers 1, 2, and 13.

The sampler indicating the highest tritium oxide in air concentration is used to calculate the $P_{19}$ dose values to a person while at work. The highest average result for 2025 between these samplers is **5.22 Bq/m³** at PAS # 1.

Inhalation rates for each of the three age groups from N288.1-14[32] are as follows:

**TABLE 28: CSA GUIDELINE N288.1-14 INHALATION RATES**

| AGE GROUP | INHALATION RATE ($m^3/a$) |
|---|---|
| INFANT | 2,740 |
| CHILD | 7,850 |
| ADULT | 8,400 |

Inhalation dose to adult workers is calculated using the inhalation rates found in CSA Guideline N288.1-14[32], and assuming 2,080 hours (23.744%) of work per year with 6,680 hours (76.256%) at home (a total of 8,760 hours per year).

### $P_{(i)19}$: Adult worker dose due to HTO inhaled at residence

The average value for tritium oxide in air for the sampler taken as representing the place of residence for the defined representative person equals 2.90 $Bq/m^3$.

$$P_{(i)19r} = [H\text{-}3_{air}]\ (Bq/m^3) \times \text{Resp. Rate}\ (m^3/a) \times \text{Occupancy Factor} \times DCF_{H3}\ (\mu Sv/Bq)$$
$$= 2.90\ Bq/m^3 \times 8{,}400\ m^3/a \times 0.76256 \times 3.0E\text{-}05\ \mu Sv/Bq$$
$$= 0.557\ \mu Sv/a$$

### $P_{(i)19}$: Adult worker dose due to HTO inhaled at work

Taking the highest concentration between Passive Air Samplers #1, #2, and #13 is Passive Air Samplers #1 at 5.22 $Bq/m^3$.

$$P_{(i)19w} = [H\text{-}3_{air}]\ (Bq/m^3) \times \text{Resp. Rate}\ (m^3/a) \times \text{Occupancy Factor} \times DCF_{H3}\ (\mu Sv/Bq)$$
$$= 5.22\ Bq/m^3 \times 8{,}400\ m^3/a \times 0.23744 \times 3.0E\text{-}05\ \mu Sv/Bq$$
$$= 0.312\ \mu Sv/a.$$

### $P_{(i)19}$: Adult resident dose due to HTO inhaled at residence

The average value for tritium oxide in air for the sampler representing the place of residence for the defined representative person equals 2.90 $Bq/m^3$:

$$P_{(i)19} = [H\text{-}3_{air}]\ (Bq/m^3) \times \text{Resp. Rate}\ (m^3/a) \times DCF_{H3}\ (\mu Sv/Bq)$$
$$= 2.90\ Bq/m^3 \times 8{,}400\ m^3/a \times 3.0E\text{-}05\ \mu Sv/Bq$$
$$= 0.731\ \mu Sv/a$$

**$P_{(i)19}$: Infant resident dose due to HTO inhaled at residence**

The average value for tritium oxide in air for the sampler representing the place of residence for the defined representative person equals 2.90 Bq/$m^3$:

$P_{(i)19}$ = [$H\text{-}3_{air}$] (Bq/$m^3$) x Resp. Rate ($m^3$/a) x $DCF_{H3}$ (μSv/Bq)
= 2.90 Bq/$m^3$ x 2,740 $m^3$/a x 8.0E-05 μSv/Bq
= 0.636 μSv/a

**$P_{(i)19}$: Child resident dose due to HTO inhaled at residence**

The average value for tritium oxide in air for the sampler representing the place of residence for the defined representative person equals 2.90 Bq/$m^3$:

$P_{(i)19}$ = [$H\text{-}3_{air}$] (Bq/$m^3$) x Resp. Rate ($m^3$/a) x $DCF_{H3}$ (μSv/Bq)
= 2.90 Bq/$m^3$ x 7,850 $m^3$/a x 3.8E-05 μSv/Bq
= 0.865 μSv/a

**Dose due to skin absorption**

The dose due to skin absorption is wholly accounted for by the application of the inhalation dose conversion factors applied above. Please see CSA N288.1-14, Table C.1 footnotes for details on dose conversion factors and how they account for skin absorption.

**Dose due to consumption of well water**

The tritium uptake due to consumption of well water is calculated by taking the average tritium concentration of the water sampled.

Using the following annual consumption rates (at the 95$^{th}$ percentile) derived from information found in CSA Guideline N288.1-14[33]:

TABLE 29: CSA GUIDELINE N288.1-14 WATER CONSUMPTION RATES

| AGE GROUP | WELL WATER CONSUMPTION RATE (L/a) |
|---|---:|
| INFANT | 305.7 |
| CHILD | 482.1 |
| ADULT | 1,081.1 |

In 2025, the highest average concentration in a residential well used as the sole source of the drinking water was equal to 26 Bq/L (measured at both RW-2 and RW-3). This value will therefore be used in the calculation of the public dose.

**$P_{29}$: Adult dose due to consumption of well water**

$P_{29}$ = $[H\text{-}3]_{well}$ x M x 2.0E-05 μSv/Bq;
= [26 Bq/L] x 1,081.1 L/a x 2.0E-05 μSv/Bq
= 0.562 μSv/a

**$P_{29}$: Infant dose due to consumption of well water**

$P_{29}$ = $[H\text{-}3]_{well}$ x M x 5.3E-05 μSv/Bq;
= [26 Bq/L] x 305.7 L/a x 5.3E-05 μSv/Bq
= 0.421 μSv/a

**$P_{29}$: Child dose due to consumption of well water**

$P_{29}$ = $[H\text{-}3]_{well}$ x M x 2.5E-05 μSv/Bq;
= [26 Bq/L] x 482.1 L/a x 2.5E-05 μSv/Bq
= 0.313 μSv/a

**Dose due to consumption of produce**

The tritium uptake due to consumption of produce, both locally purchased and home grown is calculated by taking the average tritium concentration of produce purchased from the local market and assuming the consumption of 70% of the annual total of produce from this source, and by taking the average tritium concentration from local gardens and assuming the consumption of 30% of the annual total of produce from this source.

These fractions are based upon the site-specific survey previously conducted by SRBT, which determined that the home-grown fraction of plant products consumed by residents in the surrounding area was approximately 30% - a slightly higher value than that recommended in the generic guidance of N288.1-14 (20-25%).

Using the following annual consumption rates for produce derived using information found in CSA Guideline N288.1-14[34]:

**TABLE 30: CSA GUIDELINE N288.1-14 PRODUCE CONSUMPTION RATES**

| AGE GROUP | FRUIT CONSUMPTION RATE (Kg/a) | ABOVE-GROUND VEGETABLES CONSUMPTION RATE (Kg/a) | ROOT VEGETABLES CONSUMPTION RATE (Kg/a) | TOTAL CONSUMPTION RATE (Kg/a) |
|---|---|---|---|---|
| INFANT | 76.6 | 36.1 | 12.1 | 124.8 |
| CHILD | 124.4 | 97.6 | 43.2 | 265.2 |
| ADULT | 149.2 | 192.3 | 71.8 | 413.3 |

The average tritium concentration in local produce purchased from the sampled commercial market in 2025 was **1.65 Bq/kg**, while the average concentration in produce from local residential or non-commercial gardens was **9.52 Bq/kg**.

### $P_{49}$: Adult dose due to consumption of produce (HTO)

$P_{49HTO}$ = $[[H_{prod,market}] + [H_{prod,res}]]$ x 2.0E-05 µSv/Bq
= $[[H\text{-}3_{veg}]$ (Bq/kg) x (kg) x 0.7] + $[H\text{-}3_{veg}]$ (Bq/kg) x (kg) x 0.3]] x 2.0E-5 µSv/Bq
= [[1.65 Bq/kg x 413.3 kg/a x 0.7] + [9.52 Bq/kg x 413.3 kg/a x 0.3]] x 2.0E-05 µSv/Bq
= 0.033 µSv/a

### $P_{49}$: Infant dose due to consumption of produce (HTO)

$P_{49HTO}$ = $[[H_{prod,market}] + [H_{prod,res}]]$ x 5.3E-05 µSv/Bq
= $[[H\text{-}3_{veg}]$ (Bq/kg) x (kg) x 0.7] + $[H\text{-}3_{veg}]$ (Bq/kg) x (kg) x 0.3]] x 5.3E-5 µSv/Bq
= [[1.65 Bq/kg x 124.8 kg/a x 0.7] + [9.52 Bq/kg x 124.8 kg/a x 0.3]] x 5.3E-05 µSv/Bq
= 0.027 µSv/a

### $P_{49}$: Child dose due to consumption of produce (HTO)

$P_{49HTO}$ = $[[H_{prod,market}] + [H_{prod,res}]]$ x 2.5E-05 µSv/Bq
= $[[H\text{-}3_{veg}]$ (Bq/kg) x (kg) x 0.7] + $[H\text{-}3_{veg}]$ (Bq/kg) x (kg) x 0.3]] x 2.5E-5 µSv/Bq
= [[1.65 Bq/kg x 265.2 kg/a x 0.7] + [9.52 Bq/kg x 265.2 kg/a x 0.3]] x 2.5E-05 µSv/Bq
= 0.027 µSv/a

In 2025, SRBT directly monitored OBT concentrations in tomatoes in residential gardens, as well as from rhubarb from the commercial market source.

The average OBT concentration from the residential produce was measured as 0.12 Bq/kg, while for the commercial produce, no detectable activity was measured by the independent third-party laboratory providing the analysis.

### $P_{49}$: Adult dose due to consumption of produce (OBT)

$P_{49OBT}$ = [[$H_{prod,market}$] + [$H_{prod,res}$]] x 4.6E-05 μSv/Bq
= [[H-$3_{veg}$] (Bq/kg) x (kg) x 0.7] + [H-$3_{veg}$] (Bq/kg) x (kg) x 0.3]] x 4.6E-5 μSv/Bq
= [[0.0 Bq/kg x 413.3 kg/a x 0.7] + [0.12 Bq/kg x 413.3 kg/a x 0.3]] x 4.6E-05 μSv/Bq
= 0.001 μSv/a

### $P_{49}$: Infant dose due to consumption of produce (OBT)

$P_{49OBT}$ = [[$H_{prod,market}$] + [$H_{prod,res}$]] x 1.3E-4 μSv/Bq
= [[H-$3_{veg}$] (Bq/kg) x (kg) x 0.7] + [H-$3_{veg}$] (Bq/kg) x (kg) x 0.3]] x 1.3E-4 μSv/Bq
= [[0.0 Bq/kg x 124.8 kg/a x 0.7] + [0.12 Bq/kg x 124.8 kg/a x 0.3]] x 1.3E-4 μSv/Bq
= 0.001 μSv/a

### $P_{49}$: Child dose due to consumption of produce (OBT)

$P_{49OBT}$ = [[$H_{prod,market}$] + [$H_{prod,res}$]] x 6.3E-5 μSv/Bq
= [[H-$3_{veg}$] (Bq/kg) x (kg) x 0.7] + [H-$3_{veg}$] (Bq/kg) x (kg) x 0.3]] x 6.3E-5 μSv/Bq
= [[0.0 Bq/kg x 265.2 kg/a x 0.7] + [0.12 Bq/kg x 265.2 kg/a x 0.3]] x 6.3E-5 μSv/Bq
= 0.001 μSv/a

Total dose due to consumption of produce:

### $P_{49}$: Adult dose due to consumption of produce (HTO + OBT)

$P_{49}$ = $P_{49HTO}$ + $P_{49OBT}$
= 0.033 μSv/a + 0.001 μSv/a
= 0.034 μSv/a

### $P_{49}$: Infant dose due to consumption of produce (HTO + OBT)

$P_{49}$ = $P_{49HTO}$ + $P_{49OBT}$
= 0.027 μSv/a + 0.001 μSv/a
= 0.028 μSv/a

### $P_{49}$: Child dose due to consumption of produce (HTO + OBT)

$P_{49}$ = $P_{49HTO}$ + $P_{49OBT}$
= 0.027 μSv/a + 0.001 μSv/a
= 0.028 μSv/a

## Dose due to consumption of local milk

The tritium uptake due to consumption of milk, from a local producer and distributor is calculated by taking the average tritium concentration of the milk sampled. Using the following annual milk consumption rates derived using information found in CSA Guideline N288.1-14[35]:

**TABLE 31: CSA GUIDELINE N288.1-14 MILK CONSUMPTION RATES**

| AGE GROUP | MILK CONSUMPTION RATE (kg/a) |
|---|---|
| INFANT | 340.0 |
| CHILD | 319.6 |
| ADULT | 188.5 |

The average concentration in milk in 2025 was measured as 2.95 Bq/L; adjusting for the density of milk, a specific activity of 2.95 Bq/L x 0.97 L/kg = **2.86 Bq/kg** is calculated.

### $P_{59}$: Adult dose due to consumption of milk

$P_{59}$ = $[H\text{-}3]_{dairy}$ x M x 2.0E-05 µSv/Bq;
= [2.86 Bq/kg] x 188.5 kg/a x 2.0E-05 µSv/Bq
= 0.011 µSv/a

### $P_{59}$: Infant dose due to consumption of milk

$P_{59}$ = $[H\text{-}3]_{dairy}$ x M x 5.3E-05 µSv/Bq;
= [2.86 Bq/kg] x 340.0 kg/a x 5.3E-05 µSv/Bq
= 0.052 µSv/a

### $P_{59}$: Child dose due to consumption of milk

$P_{59}$ = $[H\text{-}3]_{dairy}$ x M x 5.3E-05 µSv/Bq;
= [2.86 Bq/kg] x 319.6 kg/a x 2.5E-05 µSv/Bq
= 0.023 µSv/a

## Representative persons annual dose due to tritium uptake based on EMP

Based on the EMP results and the coefficients and parameters taken or derived from N288.1-14[31-35], the highest annual dose ($P_{total}$) due to tritium uptake from inhalation and skin absorption, consumption of local produce, local milk and well water equates to a conservatively-calculated maximum of **1.476 μSv** in 2025. For comparison, in 2024, this dose was calculated to be 2.630 μSv.

**TABLE 32: 2025 REPRESENTATIVE PERSONS ANNUAL DOSE BASED ON EMP**

| DOSE CONTRIBUTOR | | ADULT WORKER ANNUAL DOSE (μSv) | ADULT RESIDENT ANNUAL DOSE (μSv) | INFANT RESIDENT ANNUAL DOSE (μSv) | CHILD RESIDENT ANNUAL DOSE (μSv) |
|---|---|---|---|---|---|
| DOSE DUE TO INHALATION and ABSORPTION AT WORK | $P_{(I)19}$ | 0.312 | | | |
| DOSE DUE TO INHALATION and ABSORPTION AT RESIDENCE | $P_{(I)19}$ | 0.557 | 0.731 | 0.636 | 0.865 |
| DOSE DUE TO CONSUMPTION OF WELL WATER | $P_{29}$ | 0.562 | 0.562 | 0.421 | 0.313 |
| DOSE DUE TO CONSUMPTION OF PRODUCE | $P_{49}$ | 0.034 | 0.034 | 0.028 | 0.028 |
| DOSE DUE TO CONSUMPTION OF MILK | $P_{59}$ | 0.011 | 0.011 | 0.052 | 0.023 |
| 2025 PUBLIC DOSE | $P_{TOTAL}$ | **1.476** | 1.338 | 1.137 | 1.229 |

### Statement of Uncertainties in Calculation of Public Dose:

All parameters taken from N288.1-14 are at the 95th percentile where available, which is a very conservative assumption. Actual ingestion and inhalation rates are likely to be lower for most of the population. Actual doses to persons are likely to be significantly lower than calculated doses presented here as a result.

**Statement of Compliance with Regulatory Limit:**

Based upon the analysis of the data from both the environmental and effluent monitoring programs, the maximum effective dose imparted in 2025 by SRBT, to persons who are not categorized as Nuclear Energy Workers (conservatively calculated as 1.476 µSv, or approximately 0.0015 mSv), falls well below the prescribed limit of 1 mSv. SRBT complies with this regulatory requirement.

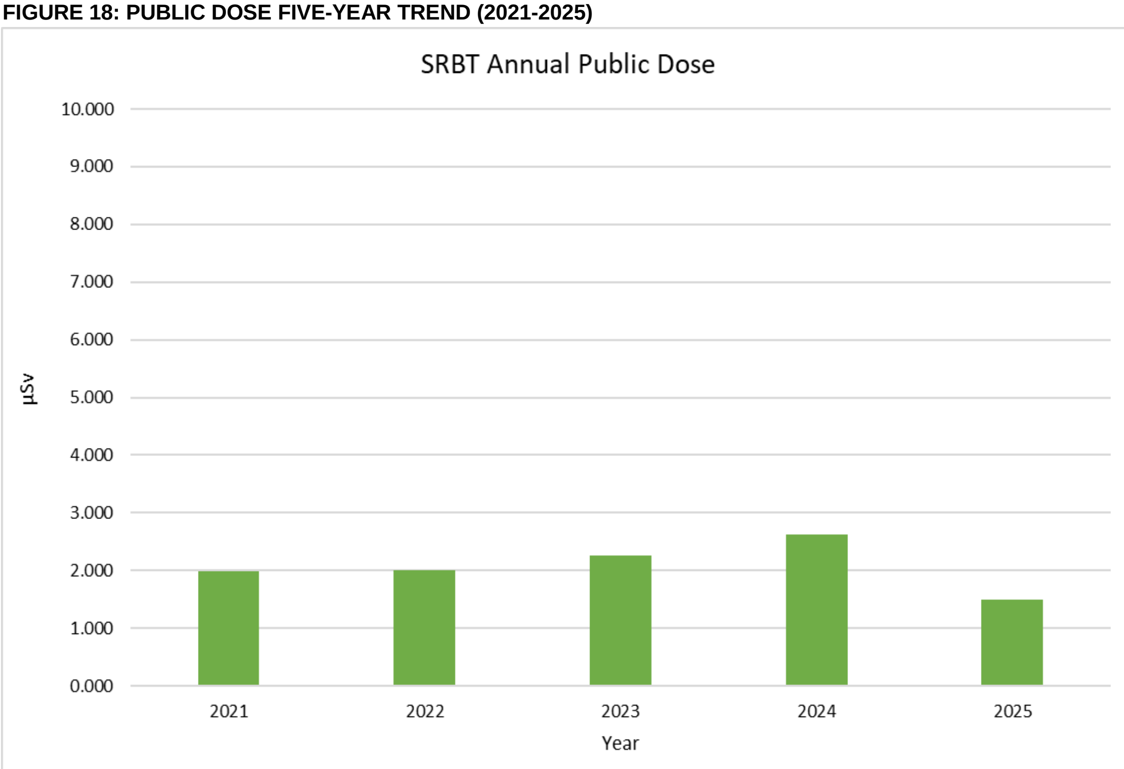
**Public Dose Trends**

The calculated effective dose of 1.476 µSv to the most-exposed representative person is lower but comparable with the calculated effective doses over the past five years.

Many nearby residential gardens that have historically been reliable for sampling purposes have no longer been maintained by residents. As a result, the nearest available samples are geographically more distant from the facility than in previous years, leading to a marginally lower effective dose due to residential produce consumption.

The five-year trend for the effective dose to members of the public is illustrated below in Figure 18, with the data compared on an axis with a maximum value of 10 µSv (i.e. 1% of the regulatory limit) to facilitate trending.

**FIGURE 18: PUBLIC DOSE FIVE-YEAR TREND (2021-2025)**



### 4.3.6 Public Dose Performance Target

SRBT established public dose target at the beginning of 2025 of 4 µSv, a target that was achieved (1.476 µSv).

For 2026, this target remains unchanged.

### 4.3.7 Program Effectiveness

The suite of SRBT environmental protection programs have continued to be effective in measuring tritium in the environment and at ensuring the prevention of unreasonable risk to the environment.

The Environmental Monitoring Program continues to be effectively implemented and improved over time.

Our passive air sampling array is effective and provides a picture of the full extent of tritium concentrations in air resulting from the emissions from the facility, and in turn providing real data to accurately estimate the dose to representative persons resulting from the emissions from the facility.

Tritium concentrations in residential wells, and in milk and produce that are consumed by residents living near the facility are measured. This data is effective at providing the full extent of tritium concentrations in human food and potable water sources resulting from the emissions from the facility, and in turn providing data to reliably estimate the dose to representative persons resulting from the emissions from the facility.

The Effluent Monitoring Program continues to be implemented very effectively, achieving the defined objectives of the program, including confirming the adequacy of controls on releases from the source, providing high-quality data, and demonstrating adherence to licence limits.

The Groundwater Monitoring Program was highly effective at providing data on the full extent of tritium concentrations in groundwater resulting from the emissions from the facility, and demonstrating the effectiveness of operational changes that have taken place over the last several years.

#### 4.3.8 Program Review and Audit Summary

All major elements of the Environmental Management System are scheduled to be audited at least once every three years.

As part of this cycle, both the Environmental Risk Assessment process and Groundwater Monitoring Program were internally audited in December.

One non-conformance was identified where it was noted that the resultant recommendations stemming from the in-force version of the Environmental Risk Assessment report (2021), although addressed, were not tracked by formal OFIs, as required by process. This will be rectified with the next version of the ERA report.

One opportunity for improvement was identified where the described time of year that the groundwater intercomparison exercise is typically conducted (cited as taking place in May each year in the GMP) could be revised to reflect that it now takes place during the June sampling campaign.

All programs under the EMS were subject to a full review, including comprehensive self-assessment and benchmarking, in the first quarter of 2025. The results of these review exercises were included as input into the annual facility management review process, as per SRBT procedure MSP-008, *Management Review*.

#### 4.3.9 Proposed Modifications to EMS Programs

In 2026, SRBT intends to review the serviceability and status of each of the 29 groundwater monitoring wells, as a committed action resulting from a notice of non-conformance issued as part of the Environmental Protection inspection conducted by CNSC staff in July.

Each well will be assessed for the condition of the protective outer casing, the ability of securing the outer casing, the vertical and horizontal stability of the outer casing, the depth of the well (top of inner casing to bottom of well), the height of inner casing relative to ground, and the well identification labelling.

Once all well conditions are understood, each well will be assessed against the original groundwater monitoring reports, the objectives of the monitoring program, and the trends in monitoring data at each well, in order to determine if the well requires maintenance or repair, or (if sampling can be ceased while still maintaining the objectives of the program), if it is feasible for it to be decommissioned. The GMP will be updated to reflect these modifications.

## 4.4 SCA – Emergency Management and Fire Protection

As most potential hazards associated with the facility would result from fire, emergency management and response for the facility are addressed by an extensive Fire Protection Program supported by an Emergency Plan.

### 4.4.1 Fire Protection

Various measures were taken at the facility in 2025 to improve and maintain fire safety. These activities included but were not limited to the following:

- A qualified third-party contractor completed a Facility Condition Inspection, and issued a detailed report.
- A qualified third-party completed a Fire Hazard Assessment and Code Compliance Review, and issued a detailed report.
- A qualified third-party completed a Fire Response Needs Analysis. A facility inspection was conducted along with a meeting between the third-party contractor and the on-duty Captain of the Pembroke Fire Department. A detailed report was provided following these activities.
- Fire safety training for all SRBT employees was conducted in December during the annual all-staff safety training sessions.
- The PFD completed an inspection of the SRBT facility.
- Continued enhanced training for one Fire Protection committee member; and
- Facility familiarization training was provided to members of the Pembroke Fire Department in four sessions, and included information pertaining to tritium, emergency response, and potential radiological hazards.

#### 4.4.1.1 Fire Protection Committee

In 2025, three formal Fire Protection Committee meetings were held which resulted in the implementation of several improvements for fire protection and life safety at the facility. All Fire Protection Committee meeting minutes are kept on file.

#### 4.4.1.2 Fire Protection Program, Fire Safety Plan and Procedures

In early 2025, revisions of the Fire Protection Program and Fire Safety Plan were finalized and submitted to the CNSC for approval.

Following discussions with CNSC staff, the latest revision of the N393-22 compliant Fire Protection Program and Fire Safety Plan were implemented late in the first quarter of 2025.

#### 4.4.1.3 Fire Hazards Assessment and Code Compliance Review

SRBT maintains a Fire Hazards Assessment (FHA) and Code Compliance Review (CCR), in accordance with CSA standard N393:22, *Fire protection for facilities that process, handle, or store nuclear substances*.

In 2025, a qualified third-party performed an inspection of the SRBT facility to confirm conditions, including fire hazards, fire protection features, facility design, construction and operational use of the facility, all of which were determined to be acceptable for the FHA and CCR.

A detailed report was provided following the facility inspection. The report concluded the performance goals, objectives and criteria of the N393 standard have been satisfied at the SRBT facility. The CCR identified one deviation that was corrected in a timely manner.

The FHA and CCR are reviewed and revised on a five-year cycle, and are next due for review in 2030.

#### 4.4.1.4 Independent Audit of the Fire Protection Program

An independent audit of the Fire Protection Program was last conducted in 2024, in accordance with the requirements of CSA standard N393.

This audit is next due to be completed in 2027.

#### 4.4.1.5 Maintenance of the Sprinkler System

In 2025, quarterly and annual maintenance was performed on the sprinkler system by a third party. In addition, a weekly check of various valves and line pressures were performed by trained SRBT staff.

#### 4.4.1.6 Fire Protection Equipment Inspections

In 2025, in-house routine inspection, testing and maintenance was performed on all fire protection and life safety equipment at the SRBT facility on a daily, weekly, monthly and annual basis by trained staff.

Qualified third-party contractors also performed routine inspection, testing and maintenance of fire protection and life safety equipment at the SRBT facility. Annual inspection, testing and maintenance include fire extinguishers, emergency lighting, the fire panel and sprinkler system.

#### 4.4.1.7 Fire Extinguisher Training

Fire extinguisher training is typically conducted annually for all SRBT employees. The PFD provided this training in December 2025.

#### 4.4.1.8 Fire Protection Committee Member Training

The Fire Protection Specialist continues to serve as a Firefighter 1 certified volunteer firefighter for a local fire department, and receives fire protection training from this department.

#### 4.4.1.9 Fire Alarm Drills

A total of six in-house fire alarm drills were conducted in 2025, including a drill that tested fire response and mutual aid activation on December 17, 2025.

Following each fire drill, a member of the Fire Protection Committee visits each department to discuss the drill.

If any employee has comments or concerns regarding the drill they are provided with a Fire Alarm Drill Report to complete. Each report was reviewed by the Fire Protection Committee, and actions were taken as required to enhance fire and life safety at the facility.

#### 4.4.1.10 Fire Protection Consultant Inspection

In August, a qualified third party was contracted to complete a Facility Condition Inspection, in order to meet the requirements of CSA standard N393, *Fire protection for facilities that process, handle, or store nuclear substances*.

The scope of the inspection was to evaluate the SRBT facility for compliance with the applicable inspection, testing and maintenance requirements of our operating licence. The following codes and standards were reviewed for applicability to the specific systems at SRBT:

- NFCC-2020, *National Fire Code of Canada*
- NBCC-2020, *National Building Code of Canada*
- CSA standard N393:22, *Fire protection for facilities that process, handle, or store nuclear substances*

Following the inspection, PLC prepared and issued an Annual Facility Condition Inspection (AFCI) report, which included four findings. The findings have been addressed.

#### 4.4.1.11 Pembroke Fire Department Inspection

The PFD conducted a facility inspection to confirm compliance with the Ontario Fire Code in December. No violations were identified.

### 4.4.2 Emergency Preparedness

SRBT ensures that we are prepared for an emergency at our facility. Staff, equipment and infrastructure are in place and ready to respond to an emergency in accordance with documented procedures.

#### 4.4.2.1 Emergency Plan

The SRBT Emergency Plan has been developed based on the probability and potential severity of emergency scenarios associated with the operation of the facility.

The plan includes preparing for, responding to, and recovering from the effects of accidental radiological and/or hazardous substance releases from the SRBT facility.

The plan was last revised in 2017, and remains up-to-date for the facility's current state. A revision to the plan is scheduled to be completed in 2026.

#### 4.4.2.2 Emergency Exercises

SRBT did not conduct an emergency exercise in 2025. A full-scale emergency exercise was last conducted on October 26, 2021.

Section 7.10.1.1 of the SRBT Emergency Plan requires that an emergency exercise be conducted at least once every five years. The next full-scale emergency exercise at SRBT is expected to be conducted in 2026, pursuant to the requirements of the Emergency Plan and our operating licence.

## 4.5 SCA – Waste Management

SRBT implements a Waste Management Program (WMP) that is aligned with the applicable requirements and guidelines in the following CSA Standards:

- CNSC REGDOC-2.11.1, *Waste Management, Volume I: Management of Radioactive Waste*
- CSA N292.0:19, *General principles for the management of radioactive waste and irradiated fuel*
- CSA N292.3-14, *Management of low- and intermediate-level radioactive waste*
- CSA N292.5-11 (R2016), *Guideline for the exemption or clearance from regulatory control of materials that contain, or potentially contain, nuclear substances*
- CSA N292.8:21, *Characterization of radioactive waste and irradiated fuel*

### 4.5.1 Radioactive Consignments – Waste

Ten shipments of low-level waste (LLW) were made to Canadian Nuclear Laboratories (CNL) in 2025.

A total of 123 packages of expired gaseous tritium light sources, 4 drums of surface-contaminated materials, and 23 packages of crushed stub glass were generated and safely transferred to CNL for further management in 2025.

Four drums of waste liquid scintillation counting vials were also generated and transferred in two shipments to EnergySolutions for further management in 2025.

A total volume of 4.84 $m^3$ of LLW in 154 packages was generated and shipped to waste management service providers in 2025.

Table 33 is provided below as a summary of the low-level waste material that was generated and routed to licenced waste management facilities for further management in 2025.

**TABLE 33: RADIOACTIVE WASTE CONSIGNMENTS (2025)**

| | Date of Shipment | Waste Description | Number of Packages | Waste Description | Total Weight (Kgs) | Total Activity H-3 (TBq) |
|---|---|---|---|---|---|---|
| CNL | Feb. 18, 2025 | LLW | 12 | Expired light sources | 48 | 159.01 |
| | | | 4 | Crushed stub glass | 84 | 0.04 |
| | | | 0 | Drums of LLW | 0 | 0.00 |
| | Mar. 11, 2025 | LLW | 10 | Expired light sources | 40 | 159.04 |
| | | | 0 | Crushed stub glass | 0 | 0.00 |
| | | | 1 | Drums of LLW | 70 | 0.01 |
| | Apr. 15, 2025 | LLW | 11 | Expired light sources | 44 | 127.88 |
| | | | 4 | Crushed stub glass | 84 | 0.04 |
| | | | 0 | Drums of LLW | 0 | 0.00 |
| | May 21, 2025 | LLW | 9 | Expired light sources | 36 | 110.51 |
| | | | 3 | Crushed stub glass | 63 | 0.03 |
| | | | 1 | Drums of LLW | 70 | 0.01 |
| | Jun. 18, 2025 | LLW | 16 | Expired light sources | 64 | 181.07 |
| | | | 2 | Crushed stub glass | 42 | 0.02 |
| | | | 0 | Drums of LLW | 0 | 0.00 |
| | Jul. 16, 2025 | LLW | 15 | Expired light sources | 60 | 221.17 |
| | | | 2 | Crushed stub glass | 42 | 0.02 |
| | | | 0 | Drums of LLW | 0 | 0.00 |
| | Aug. 20, 2025 | LLW | 15 | Expired light sources | 60 | 187.10 |
| | | | 2 | Crushed stub glass | 42 | 0.02 |
| | | | 1 | Drums of LLW | 70 | 0.01 |
| | Sep. 17, 2025 | LLW | 8 | Expired light sources | 32 | 111.92 |
| | | | 2 | Crushed stub glass | 42 | 0.02 |
| | | | 1 | Drums of LLW | 70 | 0.01 |
| | Oct. 22, 2025 | LLW | 14 | Expired light sources | 56 | 195.02 |
| | | | 2 | Crushed stub glass | 42 | 0.02 |
| | | | 0 | Drums of LLW | 0 | 0.00 |
| | Nov. 19, 2025 | LLW | 13 | Expired light sources | 52 | 220.84 |
| | | | 2 | Crushed stub glass | 42 | 0.02 |
| | | | 0 | Drums of LLW | 0 | 0.00 |
| ENERGY SOLN'S | Mar. 5, 2025 | LLW | 2 | Drums of LLW | 209 | 0.01 |
| | Sep. 25, 2025 | LLW | 2 | Drums of LLW | 209 | 0.01 |
| **TOTALS** | | | | | **1673** | **1673.83** |

### 4.5.2 Management of Radioactive Waste

Radioactive waste was generated and managed on-site, and inventory records of the waste were maintained throughout the year, as per the WMP.

#### 4.5.2.1 Low-level Waste Interim Storage

Low-level waste is any waste assessed as possessing activity levels that exceeds conditional clearance limits (for tritium), or in excess of the exemption quantities established in the *Nuclear Substances and Radiation Devices Regulations* (for all other radionuclides). Typical examples of such wastes are tritium-contaminated equipment or components, crushed glass, contaminated filters, broken lights, and material used to decontaminate surfaces.

As required by the WMP, LLW was collected in dedicated receptacles, assessed and ultimately placed into approved containers in the Waste Storage Room within Zone 3. Once sufficient material was collected, it was prepared for transfer to a licensed waste handling facility (CNL), using approved processes.

**TABLE 34: INTERIM STORAGE OF LOW-LEVEL WASTE**

| AMOUNT IN STORAGE AT YEAR END 2024 | AMOUNT GENERATED THROUGHOUT 2025 | TRANSFERRED OFF SITE 2025 | AMOUNT IN STORAGE AT YEAR END 2025 |
|---|---|---|---|
| 1 x 200 L drum | 5 x 200 L drums | 4 x 200 L drums | 2 x 200 L drum |
| 0.01 TBq | 0.05 TBq | 0.04 TBq | 0.02 TBq |

As well, five drums of liquid scintillation counting vials were managed and stored in 2025, four of which were transferred to EnergySolutions for further management. One drum remained in interim storage for disposal once filled in early 2026.

#### 4.5.2.2 Clearance-level Waste

Waste materials in Zone 2 and 3 that may be minimally contaminated and are likely to meet accepted clearance criteria are classified as very low-level waste (VLLW). This classification is temporary, as ultimately VLLW is assessed radiologically, and routed through one of three accepted disposal pathways – either as LLW or as clearance-level waste (CLW).

Examples of such materials include paper towels, gloves, disposable lab coats, shoe covers, and other such materials that are collected in dedicated receptacles in the active areas of the facility. These materials are routed to landfill after they have been conditionally cleared.

As well, any metal that can be recycled once conditionally cleared is routed to a local metal recycling depot.

Finally, any cleared items that also have hazardous characteristics are routed via a local hazardous waste depot under an industrial, commercial and institutional small quantity waste generator agreement. Some examples of such materials are batteries, aerosol containers, fluorescent light tubes, paints and solvents, and empty propane cylinders

A total of 75 clearance assessment reports were completed in 2025, representing a total mass of approximately 1,423,710 grams of material, and a total activity of approximately 15,224 MBq.

The approved WMP clearance criteria is set at 0.15 MBq/g, up to a maximum of 5,000,000 grams of cleared material per pathway.

All cleared waste met these conditions in 2025, with an average specific activity of 0.011 MBq/gram (average of 7% of CLW specific activity limit).

The mass and activity of CLW assessed in 2025 is tabulated below:

**TABLE 35: CLEARANCE-LEVEL WASTE (2025)**

| TYPE OF MATERIAL | PATHWAY | MASS (g) | ACTIVITY (MBq) | MBq/g |
|---|---|---|---|---|
| GENERAL WASTE | LANDFILL | 1,173,070 | 14,995 | 0.013 |
| METAL | RECYCLER | 137,400 | 229 | 0.002 |
| HAZARDOUS WASTE | HAZARDOUS WASTE DEPOT | 122,240 | 0 | 0.000 |
| | **TOTAL** | **1,432,710** | **15,224** | **0.011** |

#### 4.5.2.3 Subject Waste

SRBT routinely manages and ships two types of non-radiological ‘subject’ waste at the facility.

Phosphorescent (zinc sulfide) powder (classified as a mild environmental contaminant) is collected and shipped to a licenced hazardous waste management contractor. In addition, waste liquids from the 3-D printing process are also collected and shipped when they are generated.

This waste is picked up quarterly, and managed by a qualified service provider in accordance with the requirements of the Ontario Ministry of Environment and Climate Change.

In 2025, 239 kg of zinc sulfide powder, and 27 kg of 3-D printing waste were safely disposed of through this program.

#### 4.5.2.4 Waste Minimization

SRBT continues to minimize the generation of radioactive waste materials as part of our overall approach to waste management.

The Waste Management Committee met once in 2025 to review and discuss initiatives that could ultimately minimize the amount of radioactive waste routed to licenced waste management facilities. As well, initiatives for the reduction of conventional waste materials and energy usage were also discussed.

Continued segregation of material prior to bringing items into active zones remains effective at reducing waste materials that require management.

The implementation of Conditional Clearance Levels for waste materials has continued to be successful in reducing the amount of waste material that is needlessly disposed of as radioactive waste.

#### 4.5.2.5 Expired Product Management

SRBT continues to offer return and disposal services to customers who possess expired tritium-illuminated devices, such as ‘EXIT’ signs.

In 2025, a total of 11,264 expired (or otherwise removed from service) self-luminous safety ‘EXIT’ type signs were accepted by SRBT from Canadian and American sources, representing a total activity of 1,697.36 TBq of tritium.

For comparison, in 2024, 12,111 signs were processed representing 1,718.33 TBq of tritium.

As well, an additional 92.88 TBq of tritium was accepted from international origins (i.e. other than Canada and the United States) in the form of expired tritium illuminated devices, such as aircraft signs, dials, gauges and other smaller equipment. These were also processed for shipment to a licenced waste management facility.

Expired signs are disassembled safely and the light sources removed, in order to ensure that the volume of low-level radioactive waste that is generated is minimized.

The expired lights are then packaged and shipped to a licenced radioactive waste management service provider.

A small number of these signs were evaluated as being fit for service in other applications, or having light sources that could be reused in other self-luminous devices.

This practice is the only re-use of the lights and the tritium associated with these lights, and would represent a very small fraction of the total light sources managed.

### 4.6 SCA – Security

SRBT implements an accepted Facility Security Program for the facility, in accordance with CNSC regulatory requirements and expectations.

SRBT did not experience any security-related events in 2025.

New staff members are required to qualify for a Facility Access Security Clearance (FASC), even if they are not expected to handle nuclear substances as part of their responsibilities.

Individuals and contractors that visit the facility are required to also have an FASC or be escorted at all times by a staff member with a valid FASC.

All staff receive both initial and annual refresher training in SRBT's Supervisory Awareness Program, for the purposes of ensuring compliance with section 8 of the *Nuclear Security Regulations.*

Maintenance of the physical facility security system is performed by a qualified, independent third party at least every 6 months.

## 4.7 SCA – Safeguards and Non-proliferation

SRBT possesses, uses, stores and manages a small quantity of depleted uranium under International Atomic Energy Agency (IAEA) exemption approval certificate EU\01\CN-2\D\ZZ00211.

This material is used as storage media for tritium gas on our processing equipment, a well-understood and widely-used strategy for manipulating and storing tritium in its gaseous, elemental state.

By using depleted uranium in this fashion, we can ensure that the quantity of gaseous tritium being used during any given processing operation is restricted. This helps to ensure that the consequences of any unplanned event are minimized with respect to radiation and environmental protection, by ensuring that any release of tritium is limited.

A limit of 10 kg of this material in inventory is applied as part of the operating limits and conditions in the SAR.

SRBT possessed a reported 8.743 kg of depleted uranium in metallic form at the beginning of 2025. A physical inventory in July 2025 confirmed that this inventory of material did not change nor require adjustment. The mass of depleted uranium on site remains as 8.743 kg.

## 4.8 SCA – Packaging and Transport of Nuclear Substances

SRBT prepared, packaged and shipped all manufactured products containing nuclear substances in accordance with the *Packaging and Transport of Nuclear Substances Regulations.*

For the purpose of packaging and offering for transport, shipments of product designated as dangerous goods, SRBT must comply with the requirements of:

- CNSC
- International Atomic Energy Agency (IAEA)
- International Air Transport Association (IATA)
- Transport Canada

The procedures used at SRBT are based on regulations and practices found in the following publications:

- Packaging and Transport of Nuclear Substances Regulations
- IAEA Safety Standards Series - No. SSR-6
- IATA Dangerous Goods Regulations
- The TDG Compliance Manual: Clear Language Edition (Carswell)

Staff members involved with the packaging, offering for transport and receipt of dangerous goods are given TDG training in accordance with the applicable regulations and are issued certificates by the employer.

### 4.8.1 Outgoing Shipments

In total, 698 consignments were safely shipped to various customers located in 16 countries around the world, including Canada.

Table 36 compares the number of outgoing shipments of our products over the past five years.

**TABLE 36: OUTGOING SHIPMENTS OF PRODUCT: FIVE-YEAR TREND**

| YEAR | 2021 | 2022 | 2023 | 2024 | 2025 |
|---|---:|---:|---:|---:|---:|
| NUMBER OF SHIPMENTS* | 811 | 761 | 739 | 670 | 698 |
| NUMBER OF COUNTRIES | 28 | 21 | 15 | 19 | 16 |

*Note – SRBT often ships single palletized shipments of safety signs to the US which subsequently get broken down into multiple sub-consignments. These types of shipments are counted as a single consignment for the purposes of this table.

All outgoing shipments of manufactured products to customers were conducted in compliance with all regulatory requirements pertaining to the transport of dangerous goods and / or nuclear substances. Packages were assessed for surface contamination prior to being offered for transport as required by SRBT procedures.

Information pertaining to the number of monthly outgoing shipments containing radioactive material for 2025 can be found in **Appendix S** of this report.

### 4.8.2 Incoming Shipments

In total, 230 consignments of radioactive shipments were received from various customers and suppliers located in 9 countries around the world, including Canada.

Of these, 215 consignments consisted of returned, expired ‘EXIT’ signs that are to have the expired lights removed and sent for future management at a licenced waste management facility. These returns held a total activity of 1,839 TBq of tritium.

Table 37 compares the number of incoming shipments of radioactive products that have been made over the past five years.

**TABLE 37: INCOMING SHIPMENTS OF PRODUCT: FIVE-YEAR TREND**

| YEAR | 2021 | 2022 | 2023 | 2024 | 2025 |
|---|---|---|---|---|---|
| NUMBER OF SHIPMENTS | 165 | 161 | 187 | 212 | 230 |
| NUMBER OF COUNTRIES | 10 | 9 | 12 | 8 | 9 |

All incoming shipments were received safely and in acceptable condition. Incoming packages containing expired signs are assessed for gaseous tritium leakage upon receipt.

Information pertaining to the number of monthly received shipments containing radioactive material for 2025 can be found in **Appendix T** of this report.

### 4.8.3 Reportable Events

In 2025, SRBT experienced two events that met the regulatory criteria for unplanned event reporting, both of which were reported pursuant to the definition of a ‘dangerous occurrence’ in the Packaging and Transport of Nuclear Substances Regulations (2015).

Neither of these events presented a safety-significant risk to workers, members of the public, or the environment. Actions taken to address the root causes of these events have proven to be effective.

Additional details on these events are provided in section 2.3.3 of this report, and the reports submitted to CNSC staff are available on SRBT’s website[6,7].

# 5. OTHER MATTERS OF REGULATORY INTEREST

## 5.1 Public Information and Disclosure

This section of the report will provide public information initiatives taken in 2025.

### 5.1.1 Direct Interaction with the Public

Historically, almost all public inquiries occur during re-licensing. In 2025, there was one public local inquiry received.

On March 24, 2025, the County of Renfrew contacted SRBT, requesting a tour of the facility and a better understanding of the facility and its operations, as they had purchased the building next door to SRBT. On April 24, 2025, five (5) representatives of the County of Renfrew received a full facility tour.

In 2025, water was sampled from a number of wells belonging to the public, in line with our Environmental Monitoring Program. Sampling for tritium concentrations were performed twice in 2025, in March and September.

Participating members of the public are provided with a report of their sample results, along with the anticipated radioactive exposure due to tritium from consuming either the water or produce. We provide members of the public a comparison of this exposure against the CNSC limit and against radioactive exposure from other known sources, such as cosmic radiation, x-rays, etc. No questions or comments were received in 2025.

Plant tours have proven to be a useful tool for SRBT to reach the public. In 2025, we provided plant tours to 13 members of the general public (compared to 20 in 2024, and 19 in 2023) who had expressed interest in our facility.

In 2025 we provided plant tours to local representatives of:

- Renfrew County Community Futures Development Corporation,
- The County of Renfrew,
- The City of Pembroke,
- Canadian Nuclear Laboratories, and
- Pembroke Fire Department.

In 2025 as part of conducting our business in Pembroke we have also provided plant tours to local employee representatives of our existing and prospective suppliers of goods and/or services, including:

- Baker Tilly
- Fuelled Networks, and
- Professional Loss Control (PLC)

**TABLE 38: FACILITY TOURS (2025)**

| | **2025** |
|---|---|
| GENERAL PUBLIC | 13 |
| LOCAL INSTITUTIONS | 5 |
| LOCAL SUPPLIERS | 3 |
| **TOTAL** | **21** |

A public meeting of the CNSC was held on February 26, 2025 regarding CNSC staff's Regulatory Oversight Report for 2023.

A public meeting of the CNSC is scheduled to take place between March 24-26, 2026 regarding CNSC staff's Regulatory Oversight Report for 2024.

In 2025, SRBT made presentations to members of the public:

- The President of SRBT is a member and chair of the Community Improvement Plan, attending meetings and discussing SRBT on occasion. The Mayor of Pembroke is also on the Committee.
- The President of SRBT is also a member and chair of the Ontario River Energy Solutions, attending meetings and discussing SRBT on occasion. Pembroke's Deputy Mayor is also a member of this committee.
- The President of SRBT is a member and vice chair of the Ottawa River Power Corporation, attending meetings and discussing SRBT on occasion. Two Pembroke City Councillors are also members of this committee.

### 5.1.2 Program Revision

SRBT's Public Information Program continues to demonstrate SRBT's commitment to openness and transparency.

### 5.1.3 Public Information Committee

The Public Information Committee held two formal meetings in 2025, focused on new revisions of the Groundwater brochure, general brochure and pamphlet, the Cultural Awareness Training for five new employees in 2024, public perception of SRBT, public survey, annual compliance report and benchmarking and self-assessment.

### 5.1.4 Website and Social Media

SRBT continues to operate a website at www.srbt.com, which continues to provide current environmental monitoring data, information about tritium, content on emergency preparedness, the safe transport of tritium to the facility and products from the facility, how to safely dispose of products, and both our Operating Licence and LCH.

The main page provides a number of possible information sources for the public on tritium and radiation exposure.

The following information and documentation were added to our website in 2025:

- CNSC Compliance Inspection Report 2024-02,
- Updated pamphlet and brochures,
- SRBT Annual Compliance Report, 2024
- Updated environmental and groundwater monitoring results,
- CNSC Independent Environmental Monitoring Program (IEMP) Report 2024
- Updated the Packaging and Transport section
- Preliminary Decommissioning Plan – November 2024
- Reportable Event of June 16, 2025
- CNSC Compliance Inspection Report 2025-01,
- Reportable Event of October 7, 2025, and
- CNSC staff’s Regulatory Oversight Report, 2024

With respect to social media, SRBT also maintains Facebook, Instagram, ‘X’, LinkedIn, Reddit and TikTok accounts, all of which are updated periodically.

Our Facebook account has a total of 1,116 followers, with a total of 17 posts in 2025 for a total of 232 likes. The account has received no reviews and 0 page likes in 2025.

SRBT's Instagram account has a total of 376 followers, with a total of 7 posts in 2025. The account received an average of 10 likes per post in 2025.

SRBT's 'X' account has a total of 87 followers. A total of 5 posts has been made in 2025, receiving 3 likes and 154 views.

SRBT's LinkedIn account has a total of 84 followers and has posted a total of 5 posts in 2025 receiving a total of 234 impressions.

SRBT's Reddit account has two followers and has 4 posts with 26 views in 2025.

SRBT's TikTok account has 44 followers and has 5 posts in 2025 with a total of 47 likes.

#### 5.1.5 Community Support

SRBT continues to support the local community by providing support to various organizations and causes.

During the Christmas season, SRBT once again supported the Christmas Angels gift collection for children in the area, aimed at supporting families who couldn't afford gifts at Christmas.

SRBT is a member of the Upper Ottawa Valley Chamber of Commerce and the Canadian Nuclear Association. The Assistant Manager – Health Physics is a member of the Advisory Committee for the Applied Nuclear Science and Radiation Safety program at Algonquin College.

SRBT sponsors a local softball team, a local hockey team, a local youth basketball club, a local ball hockey league and a local beach volleyball team. SRBT was also a gold-level sponsor for local memorial hockey and softball tournament.

SRBT supports the Pembroke Fire Department Chili Fest which raises money to support local charities, two local fishing derbies, and the Alice and Fraser Horse Association.

SRBT also supports the Renfrew County Regional Science and Technology Fair, a local benefit dance, and a fundraiser in support of the Children's Hospital of Eastern Ontario.

SRBT is a member of the Canadian Council for Indigenous Business.

### 5.1.6 Indigenous Engagement

In 2025, SRBT undertook or attempted the following communication and engagement activities with the Algonquins of Pikwakanagan First Nation (AOPFN) community:

- On February 13, 2025 SRBT sent an e-mail to the AOPFN[36] after careful review of AOPFN's submission[37] for the February 26, 2025 meeting discussing the Regulatory Oversight Report for calendar year 2023. The specific topic discussed was AOPFN's concern regarding waste transportation communications.
    - SRBT provided thorough detail of our waste management and waste transport processes, including digital images of the types of packages of waste that are routinely transported between the facility and the waste management service provider.
    - SRBT also offered to begin communicating with the AOPFN so as to make the community aware of SRBT's waste shipments when they take place.
- On March 28, 2025, having received no response to our message of February 13, 2025, SRBT sent a follow up e-mail regarding AOPFN's concerns with waste transportation communications[38].
- On May 7, 2025, having received no response to our message of March 28, 2025, SRBT sent a second follow up e-mail regarding AOPFN's concerns with waste transportation communications[39].
    - This message was acknowledged as having been received, with the intent to follow up internally and respond back to SRBT[40].
    - No further response was received in 2025.
- On May 22, 2025, SRBT provided AOPFN with the final analytical results of the collaborative environmental monitoring activities that were conducted on November 1, 2024 in and around the Pikwakanagan Community[41].
    - The full results were tabulated and contextualized against SRBT benchmark values for various sample types.
    - Results were also compared with CNSC screening values applied as part of the Independent Environmental Monitoring Program (IEMP).

- No response or feedback on this information was received from the AOPFN community.

### 5.1.7 Media Coverage

SRBT is not aware of any significant media coverage received in 2025.

### 5.1.8 Public Opinion Analysis

No public feedback was received in 2025 through polling, surveys, or by direct communication from individuals or groups.

## 5.2 Preliminary Decommissioning Plan and Financial Guarantee

The SRBT Preliminary Decommissioning Plan (PDP) last underwent a significant revision in 2019, and was accepted by CNSC staff on February 3, 2020[42], while the Commission accepted SRBT's revised Financial Guarantee (FG) amount of $727,327.00 on December 8, 2020[43].

The SRBT FG is a fully-funded cash fund held in escrow, and does not rely on any letters of credit, bonds, insurance or other expressed commitments. Interest accrued on the funds deposited remain held in escrow over time; as a result, at the end of 2025 the FG is over-funded to $803,796.91, a level that exceeds the required amount by $76,469.91.

As required by clause 16 of the associated Financial Security and Access Arrangement, Revision 3, dated February 4, 2020, SRBT has provided CNSC staff with certification of the fair market value of our financial guarantee annually since the arrangement was established. The value as of October 31, 2025 was certified on January 5, 2026.

Details on our current PDP and FG, and the CNSC's hearing and decision on these aspects of our licensing basis are available on our website.

As noted in SRBT's Annual Compliance Report for 2024[44], on November 29, 2024, a revision of the SRBT PDP was submitted to CNSC staff[18]. The PDP had been revised to update all cost estimates, and to align with applicable requirements and guidance from CSA standard N294:19, *Decommissioning of Facilities Containing Nuclear Substances*, and CNSC Regulatory Document 2.11.2, *Decommissioning.*

On April 24, 2025, SRBT received CNSC staff feedback[17] on this submission, which included a series of requests that SRBT revise or provide an addendum to the plan to address a number of findings. As well, clarifications were requested of SRBT on several aspects of the plan, its contents, and the facility in general. Certain recommendations were also tabled for SRBT's consideration.

SRBT elected to document an addendum to the previously submitted version of the PDP, in order to address all key findings of CNSC staff, to provide the requested clarifications, and to acknowledge the recommendations for consideration in future revisions of the plan.

This was completed and submitted to CNSC staff on June 20, 2025[16], along with a commitment to initiate the financial, legal and regulatory processes to modify our fully-funded and updated Financial Guarantee for the purposes of future decommissioning of the SRBT facility, in line with the revised and updated present-day cost estimate.

CNSC staff provided a response to SRBT's June 2025 submission on October 8, 2025[19], where it was noted that CNSC staff still had questions and requested additional clarification on six outstanding aspects of the PDP as tabled.

On October 17, 2025, SRBT requested a virtual meeting between CNSC staff's review team, and SRBT management, focused on resolving all outstanding items associated with the PDP and associated value of the financial guarantee[45]. This meeting was originally scheduled to take place on October 31, 2025; however, the meeting was required to be rescheduled to a later date[46].

Before the meeting was rescheduled, additional information from the CNSC specialist overseeing the technical review of the PDP was provided to SRBT by email on November 17, 2025[47], where additional clarification on the concerns surrounding estimated inflation-adjusted rates for decommissioning labour costs were identified as a critical component to be revised for acceptance of the plan.

SRBT provided a response by email on November 21, 2025[48], where additional context on the documented rates was offered, along with additional information on previously submitted versions of the drafted plan, and the value of the financial guarantee.

The previously scheduled meeting was conducted virtually on December 3, 2025, and proved to be effective in developing an agreed-upon path forward for the outstanding gaps and concerns with the drafted plan and financial guarantee. SRBT confirmed our commitment[20] to the following actions as a result of this meeting:

- Providing evidence of the return rate of the investment product in which SRBT's current financial guarantee is held (completed);
- Integrating modern, local labour rates for construction / non-technical / administrative / complex activities in the estimation of costs for all PDP activities, resulting in a more accurate overall estimate of the costs associated with decommissioning the facility (action due to CNSC staff by April 30, 2026).
- Consulting with SRBT's legal services on furnishing CNSC staff with either a draft financial guarantee / escrow agreement with a placeholder dollar value to CNSC staff for review in advance of PDP / cost estimate acceptance, or a letter from SRBT stating clearly that the content of the current agreements will not change, other than the value itself, allowing an assessment of the acceptability of that instrument for purpose (action due to CNSC staff by April 30, 2026).

SRBT fully expects these actions to be completed, and that the PDP as drafted at that time will be accepted by CNSC staff for the purposes of presentation to the Canadian Nuclear Safety Commission for a regulatory decision on the acceptability of the associated financial guarantee at a future proceeding of the Commission.

# 6. IMPROVEMENT PLANS AND FORECAST

## 6.1 Emission Reduction Initiatives

SRBT continues to explore ways toward reducing tritium emissions from the facility in all forms, as per our continuing commitment to environmental protection and the ‘as low as reasonably achievable’ philosophy. The Mitigation Committee is primarily focused on these goals.

In 2026, SRBT intends to install two additional filling stations for gaseous tritium light sources in the Rig Room, with design considerations aimed at ensuring gaseous releases of tritium to the active ventilation systems are minimized. Upon completion of commissioning and turnover to operations, six of the eight available filling stations will be fully operational and available.

By making more filling stations available to qualified production technicians, a greater level of assurance of manufacturing continuity will be realized, while decreasing production pressures on the filling rigs currently in use. Additional capacity for production during high customer demand will also be of benefit to the organization.

## 6.2 Safety Performance Targets for 2026

For the coming year, our safety committees, in consultation with SRBT Senior Management, have approved a set of performance targets which will be tracked and reported on as part of the 2026 ACR.

The following table documents the safety performance targets for SRBT in 2026:

**TABLE 39: SAFETY AND PERFORMANCE TARGETS FOR 2026**

| **PARAMETER** | **2026 TARGET** |
|---|---:|
| MAXIMUM WORKER DOSE | ≤ 0.50 mSv |
| AVERAGE WORKER DOSE | ≤ 0.045 mSv |
| COLLECTIVE WORKER DOSE | ≤ 2.25 p-mSv |
| CALCULATED DOSE TO MEMBER OF THE PUBLIC | ≤ 0.0040 mSv |
| TOTAL TRITIUM EMISSIONS TO ATMOSPHERE (PER WEEK AVERAGE) | ≤ 575 GBq / week |
| RATIO – TRITIUM EMISSIONS VS. PROCESSED | ≤ 0.105% |
| TOTAL TRITIUM EMISSIONS – LIQUID EFFLUENT PATHWAY | ≤ 3 GBq |
| ACTION LEVEL EXCEEDANCES – ENVIRONMENTAL | ≤ 1 |
| ACTION LEVEL EXCEEDANCES – RADIATION PROTECTION | ≤ 1 |
| CONTAMINATION CONTROL – FACILITY-WIDE PASS / FAIL RATE | ≥ 96% |
| LOST TIME INCIDENTS | 0 |
| MINOR INJURIES REPORTABLE TO WSIB | ≤ 5 |
| MINOR INCIDENTS / FIRST AID INJURIES (NON-REPORTABLE) | ≤ 15 |

## 6.3 Planned Modifications and Foreseen Changes

In 2026, SRBT intends to install two additional filling stations for gaseous tritium light sources in the Rig Room, with design considerations aimed at ensuring gaseous releases of tritium to the active ventilation systems are minimized. Upon completion of commissioning and turnover to operations, six of the eight available filling stations will be fully operational and available.

By making more filling stations available to qualified production technicians, a greater level of assurance of manufacturing continuity will be realized, while decreasing production pressures on the filling rigs currently in use. Additional capacity for production during high customer demand will also be of benefit to the organization.

As well, in 2026, SRBT intends to review the serviceability and status of each of the 29 groundwater monitoring wells, as a committed action resulting from a notice of non-conformance issued as part of the Environmental Protection inspection conducted by CNSC staff in July.

Each well will be assessed for the condition of the protective outer casing, the ability of securing the outer casing, the vertical and horizontal stability of the outer casing, the depth of the well (top of inner casing to bottom of well), the height of inner casing relative to ground, and the well identification labelling.

Once all well conditions are understood, each well will be assessed against the original groundwater monitoring reports, the objectives of the monitoring program, and the trends in monitoring data at each well, in order to determine if the well requires maintenance or repair, or (if sampling can be ceased while still maintaining the objectives of the program), if it is feasible for it to be decommissioned. The GMP will be updated to reflect these modifications.

The next version of the SRBT Environmental Risk Assessment is scheduled to be submitted to CNSC staff in April 2026. As well, SRBT also intends to revise its Emergency Plan document in advance of a full-scale emergency exercise, to be conducted in October 2026.

# 7. CONCLUDING REMARKS

Throughout the year, the management and staff of SRBT complied with all regulatory requirements and the conditions of our operating licence.

Our management system remains effective at achieving our operational and safety-related goals, and ensuring effective control of our operations. We continue to adjust and improve our processes in support of the safe and effective operation of our facility, and we continue to use operating experience to continuously improve the system.

Our facility remains within its designed safety basis, and continues to be fit for service. Key structures, systems and components have continued to be maintained diligently and effectively throughout 2025 through the implementation of our Maintenance Program.

Exposures to ionizing radiation to both workers and members of the public continue to remain low, and are far less than the regulatory limits prescribed.

The local environment has remained protected, and the already low level of impact of our operations continues to be reduced over time, as we continue to implement best practices each and every day. Licence limits for our nuclear substance effluent streams continue to be respected with significant margin.

Our conventional health and safety program has continued to ensure our workers are safe, and the security of the facility and all nuclear substances was maintained at all times.

The facility remains well protected from fire hazards, and we have maintained an accepted plan should an emergency condition arise.

Our Public Information Program fully satisfies the requirements of the CNSC. We continue to look for new ways to reach out into our local community in a positive and constructive fashion, and to provide information and data that is of interest to stakeholders and Indigenous communities.

Our website continues to provide the public with a wealth of easy-to-access information on our operations and our safety programs, including a very wide variety of environmental data and safety analyses.

We continue to effectively manage all forms of waste generated by our operations, and continue to look to minimize the amount of waste that must be managed and controlled.

Our decommissioning responsibilities are documented and accepted, and our financial guarantee is fully funded. Although we plan on operating the facility for at least the next two decades, if not longer, having a complete, self-funded financial guarantee is an important consideration with respect to our regulatory standing, as well as our commitment of being a good community partner.

Safety and excellence in operations shall always remain as the number one overall priority in everything we do, and 2025 was a direct reflection of the success at achieving these goals.

We will always continue to improve our operations and minimize our impact on people and the environment as our company continues to sustainably grow over the coming years.

# 8. REFERENCES


[1] Nuclear Substance Processing Facility Licence NSPFL-13.00/2034, valid from July 1, 2022 to June 30, 2034. Link

[2] Licence Conditions Handbook – SRB Technologies (Canada) Inc. Nuclear Substance Processing Facility Licence NSPFL-13.00/2034 (CNSC e-Doc 6668496 (Rev. 0)). Link

[3] CNSC REGDOC-3.1.2, Version 1.1, *Reporting Requirements, Volume I: Non-Power Reactor Class I Nuclear Facilities and Uranium Mines and Mills*. Link

[4] CNSC Compliance Inspection Report SRBT-2025-01, September 19, 2025. Link

[5] CNSC Compliance Inspection Report SRBT-2025-02, January 29, 2026. Link

[6] Letter from J. MacDonald (SRBT) to A. O'Connor (CNSC), *PTNSR (2015) Consignor Full Report – Event of June 19, 2025,* dated July 18, 2025. Link

[7] Letter from J. MacDonald (SRBT) to A. O'Connor (CNSC), *Full Report – PTNSR Dangerous Occurrence Event of October 7, 2025,* dated October 17, 2025. Link

[8] SRBT Safety Analysis Report – Revision 5. Link

[9] Letter from J. MacDonald (SRBT) to C. Crann (CNSC), *Response to Inspection Report SRBT-2025-01*, dated October 17, 2025.

[10] Email from J. MacDonald (SRBT) to A. O'Connor and G. Munezero (CNSC), *RE: CNSC Final Compliance Inspection Report no. SRBT-2025-02 Management Systems Inspection, November 4-7, 2025*, dated January 30, 2026.

[11] Letter from J. MacDonald (SRBT) to A. O'Connor (CNSC), *Revised Regulatory Reporting Program*, dated January 8, 2025.

[12] Letter from J. MacDonald (SRBT) to A. O'Connor (CNSC), *Revised Regulatory Reporting Program*, dated August 14, 2025.

[13] Letter from J. MacDonald (SRBT) to A. McAllister (CNSC), *Submission of Revised Fire Protection Program and Fire Safety Plan*, dated January 22, 2025.

[14] Letter from A. O'Connor (CNSC) to J. MacDonald (SRBT), *CNSC Staff Review of SRBT's Fire Protection Program and Fire Safety Plan,* dated May 9, 2025 (e-Doc 7478806).

[15] Letter from J. MacDonald (SRBT) to A. O'Connor (CNSC), *Submission of Revised Fire Protection Program (Revision I) and Fire Safety Plan (Revision H)*, dated July 31, 2025.

[16] Letter from J. MacDonald (SRBT) to A. O'Connor (CNSC), *Submission of June 2025 Addendum to SRBT Preliminary Decommissioning Plan – 2024,* dated June 20, 2025.

[17] Letter from A. O'Connor (CNSC) to J. MacDonald (SRBT), *Review of SRBT's Preliminary Decommissioning Plan,* dated April 24, 2025 (e-Doc 7507142).

[18] Letter from J. MacDonald (SRBT) to A. O'Connor (CNSC), *Submission of SRBT Preliminary Decommissioning Plan - 2024,* dated November 29, 2024.

[19] Letter from A. O'Connor (CNSC) to J. MacDonald (SRBT), *Review of SRBT's Preliminary Decommissioning Plan,* dated October 8, 2025.

[20] Email from J. MacDonald (SRBT) to A. O'Connor (CNSC), *SRBT PDP/FG Meeting Actions*, dated December 3, 2025.

[21] Letter from J. MacDonald (SRBT) to A. O'Connor (CNSC), *Revised Hazard Prevention Program,* dated July 31, 2025.

[22] Letter from J. MacDonald (SRBT) to A. O'Connor (CNSC), *Submission – Results of SRBT Fire Response Needs Analysis,* dated November 14, 2025.

[23] Letter from J. MacDonald (SRBT) to A. O'Connor (CNSC), *Submission of Revised Fire Hazards Assessment and Code Compliance Review for SRBT,* dated December 15, 2025.

[24] CNSC REGDOC-2.7.2, Volume II, *Dosimetry, Volume II: Technical and Management System Requirements for Dosimetry Services.* Link

[25] CNSC Dosimetry Service Licence 11341-3-28.6 (expiry May 31, 2028).

[26] Letter from M. Tremblay (Health Canada) to J. MacDonald (SRBT), *Certificate of Achievement,* dated June 20, 2025.

[27] Email and attached report from J. MacDonald (SRBT) to acr-rac@cnsc-ccsn.gc.ca, *2025 Annual Compliance Report – 11341-3-28.6 – SRB Technologies (Canada) Ltd.,* dated January 10, 2026.

[28] Email from D. Hunton (CNSC) to J. MacDonald (SRBT), *RE: 2025 Annual Compliance Report – 11341-3-28.6 – SRB Technologies (Canada) Ltd.,* dated January 19, 2026.

[29] Letter from L. Posada (CNSC) to S. Levesque (SRBT), *CNSC Staff Follow-up Review of SRB Technologies (Canada) Inc.'s Environmental Risk Assessment,* dated April 22, 2021 (e-Doc 6539968).

[30] Letter from S. Levesque (SRBT) to L. Posada (CNSC), *SRBT Response to CNSC Staff Comments on ERA,* dated April 12, 2021.

[31] CSA standard N288.1-14, *Guidelines for calculating derived release limits for radioactive material in airborne and liquid effluents for normal operation of nuclear facilities*

[32] CSA standard N288.1-14, *Guidelines for calculating derived release limits for radioactive material in airborne and liquid effluents for normal operation of nuclear facilities*, Tables C.1, C.2.

[33] CSA standard N288.1-14, *Guidelines for calculating derived release limits for radioactive material in airborne and liquid effluents for normal operation of nuclear facilities*, Table 19.

[34] CSA standard N288.1-14, *Guidelines for calculating derived release limits for radioactive material in airborne and liquid effluents for normal operation of nuclear facilities*, Table 21.

[35] CSA standard N288.1-14, *Guidelines for calculating derived release limits for radioactive material in airborne and liquid effluents for normal operation of nuclear facilities*, Table G.9c.

[36] Email from J. MacDonald (SRBT) to S. Benoit (AOPFN), *AOPFN and SRBT – Waste Transport Communications,* dated February 13, 2025.

[37] Commission Member Document (CMD) 25-M10.2, *The Algonquins of Pikwakanagan First Nation's Submission on Regulatory Oversight Report for Uranium and Nuclear Substance Processing Facilities in Canada: 2023,* dated January 10, 2025. Link

[38] Email from J. MacDonald (SRBT) to S. Benoit (AOPFN), *RE: AOPFN and SRBT – Waste Transport Communications,* dated March 28, 2025.

[39] Email from J. MacDonald (SRBT) to S. Benoit and A. Two-Axe Kohoko (AOPFN), *RE: AOPFN and SRBT – Waste Transport Communications,* dated May 7, 2025.

[40] Email from A. Carle (AOPFN) to J. MacDonald (SRBT), *RE: AOPFN and SRBT – Waste Transport Communications,* dated May 7, 2025.

[41] Email with attachments from J. MacDonald (SRBT) to A. Two-Axe Kohoko and A. Carle (AOPFN), *Results of SRBT Samples in Pikwakanagan Community – Nov. 1, 2024,* dated May 22, 2025.

[42] Letter from L. Posada (CNSC) to S. Levesque (SRBT), *CNSC Staff Review of SRB Technologies (Canada) Inc.'s Revised Preliminary Decommissioning Plan – 2019,* dated February 3, 2020 (CNSC e-Doc 6111181).

[43] CNSC Record of Decision DEC 20-H105. Link

[44] SRBT 2024 Annual Compliance and Performance Report, March 31, 2025. Link

[45] Email from J. MacDonald (SRBT) to A. O'Connor (CNSC), *RE: SRBT Submission of Addendum to PDP, including Clarifications and Additional Information*, dated October 17, 2025.

[46] Email from A. O'Connor (CNSC) to J. MacDonald (SRBT), *RE: SRBT Submission of Addendum to PDP, including Clarifications and Additional Information*, dated October 31, 2025.

[47] Email from A. O'Connor (CNSC) to J. MacDonald (SRBT), *RE: SRBT FG*, dated November 17, 2025.

[48] Email from J. MacDonald (SRBT) to A. O'Connor (CNSC), *RE: SRBT FG*, dated November 21, 2025.

# 9. APPENDICES

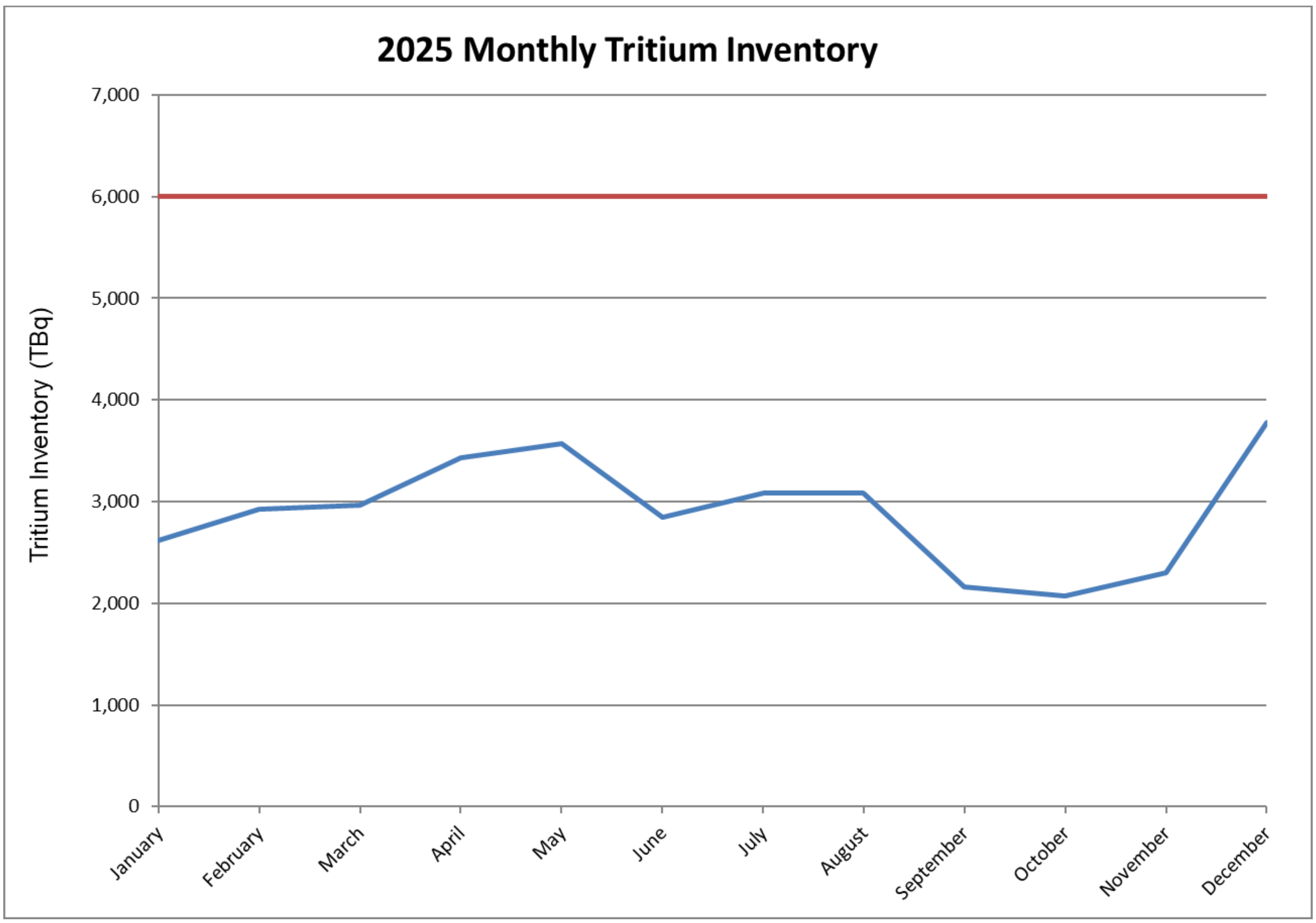
# APPENDIX A

## Tritium Inventory / Possession

# Tritium Inventory / Possession

| Month | Month-end H-3 Activity On-Site (TBq) | Percent of Licence Limit (%) |
|---|---|---|
| January | 2,620 | 43.7 |
| February | 2,925 | 48.0 |
| March | 2,967 | 49.4 |
| April | 3,431 | 57.2 |
| May | 3,568 | 59.5 |
| June | 2,847 | 47.5 |
| July | 3,081 | 51.4 |
| August | 3,082 | 51.4 |
| September | 2,164 | 36.1 |
| October | 2,077 | 34.6 |
| November | 2,298 | 38.3 |
| December | 3,783 | 63.1 |
| **2025 Monthly Average** | **2,904** | **48.4** |

*Note: Tritium possession limit = 6,000 TBq.*



# APPENDIX B

## Equipment Maintenance Information

**Equipment Maintenance Information for 2025**

| | |
|---|---|
| **Semi-Annual maintenance on HVAC equipment:**<br>**Contract:** Black and McDonald | April 28, 2025<br>October 2, 2025 |
| **Quarterly maintenance on Rig & Bulk stack units:**<br>**Contract:** Black and McDonald | March 12, 2025<br>June 27, 2025<br>September 16, 2025<br>December 18, 2025 |
| **Annual stack verification by a third party on Rig & Bulk stack units:**<br>**Contract:** Tab Inspection | September 17, 2025 |
| **Sprinkler System quarterly maintenance by a third party:**<br>**Contract:** Drapeau Automatic Sprinkler Corp | March 19, 2025<br>June 24, 2025<br>September 16, 2025<br>December 8, 2025 |
| **Emergency Lighting & Fire Extinguisher annual inspection by a third party:**<br>**Contract:** Layman Fire and Safety | March 6, 2025 |
| **Fire panel annual inspection by a third party:**<br>**Contract: Layman Fire and Safety** | January 23, 2025 |
| **Sprinkler System inspection by SRBT:** | Weekly |
| **Fire Alarm Components inspection by SRBT:** | Weekly |
| **Fire Separation doors inspection by SRBT:** | Weekly |
| **Fire Extinguisher inspection by SRBT:** | Monthly |
| **Emergency Lights inspection by SRBT:** | Monthly |
| **Exit Doors inspected by SRBT:** | Weekly |
| **Quarterly maintenance carried out on the compressor:**<br>**Contract:** Valley Compressor | March 13, 2025<br>June 5, 2025<br>September 10, 2025<br>December 11, 2025 |
| **Fume Hood Inspections by SRBT:** | Monthly |
| **Tritium-in-Air Sample Collector Bubblers maintenance:** | Bi-monthly |
| **Tritium-in-Air Sample Collector Bubblers third party annual verification:**<br>**Contract:** Canadian Nuclear Laboratories | February 18<br>– March 4, 2025 |
| **Liquid Scintillation Counters third party annual maintenance:**<br>**Contract:** PerkinElmer | May 1, 2025 |

**Equipment Maintenance Information for 2025 (continued)**

| | |
|---|---|
| **Real-time Stack Monitoring system verification by SRBT:** | March 13, 2025<br>June 4, 2025<br>September 4, 2025<br>December 18, 2025 |
| **Monitoring well inspection by SRBT:** | March 18, 2025<br>June 16, 2025<br>September 17, 2025<br>December 16, 2025 |
| **Annual IT maintenance inspection by SRBT:** | September 19, 2025 |
| **Non-active air filter inspection by SRBT:** | Monthly |
| **Annual Zone Differential Pressure Test by SRBT:** | December 16, 2025 |
| **UV printer maintenance by SRBT:** | Monthly |
| **Molding machine maintenance by SRBT:** | March 26, 2025<br>June 26, 2025<br>September 8, 2025<br>December 16, 2025 |
| **3D printer maintenance by SRBT:** | March 26, 2025<br>June 25, 2025<br>September 16, 2025<br>December 16, 2025 |
| **Fork-crane maintenance by SRBT:** | Oct 29, 2025 |
| **Forklift maintenance by a third party:**<br>**Contract: Hyster** | April 14, 2025 |
| **Report of any weakening or possible major failure of any components:** | Weather station:<br>• August 1<br>• October 20 |

All ventilation systems were maintained at a high fitness for service. Corrective maintenance was performed as required. Ventilation equipment maintenance was performed under contract with a fully licensed maintenance and TSSA certified local HVAC contract provider.

All process equipment is serviced and maintained by qualified staff and through contract with companies that specialize in process control systems. All process equipment has been maintained in fully operational condition.

Corrective maintenance is performed on equipment as required, and recorded and tracked over time.

# APPENDIX C

## Ventilation Maintenance Information

**Ventilation Equipment Maintained In 2025**

| # | TYPE | ZONE SERVICED | LOCATION OF UNIT |
|---|---|---|---|
| 1 | Gas Furnace | 1 | Front office / server hallway |
| 1 | Mid efficient gas furnace | 1 | Receiving area |
| 1 | Mid efficient gas furnace & central air | 1 | Stores |
| 1 | Mid efficient gas furnace | 1 | Back bay |
| 1 | Heat Recovery unit | 1 | Receiving area |
| 1 | HRV with reheat | 2 | Coating |
| 2 | Makeup air units | 1 & 2 | Coating room |
| 3 | Unit heaters | 1 & 3 | Rig room, Glass shop, Receiving area |
| 2 | A/C wall unit | 1 | Glass shop, Receiving area |
| 4 | Exhaust fans | 1 & 2 | Coating, Assembly, Glass room, Paint Booth |
| 1 | Electric furnace with central air | 1 | Front office |
| 1 | Bulk stack air handling unit | 3 | Compound |
| 1 | Rig stack air handling unit | 3 | Compound |
| 2 | Rig and Bulk stack air handling units pitot tubes | 3 | Compound |
| 1 | Gas furnace with central air | 1 | Milling / molding |

# APPENDIX D

## Radiological Dose Data

## Radiological Dose Data

Rolling five-year effective dose data (2021 - 2025)

| ANNUAL DOSE (mSv) | 2021 | 2022 | 2023 | 2024 | 2025 | FIVE YEAR AVERAGE |
|---|---|---|---|---|---|---|
| **Maximum Dose** | 0.36 | 0.46 | 0.39 | 0.52 | 0.38 | **0.42** |
| **Average Dose (all records)** | 0.056 | 0.048 | 0.039 | 0.067 | 0.030 | **0.048** |
| **Average Dose (excluding <0.01))** | 0.090 | 0.082 | 0.084 | 0.120 | 0.056 | **0.086** |
| **Collective Dose** | 2.35 | 2.01 | 1.56 | 2.83 | 1.17 | **1.98** |

| EFFECTIVE DOSE RANGE (mSv) | 2021 | 2022 | 2023 | 2024 | 2025 | FIVE YEAR AVERAGE |
|---|---|---|---|---|---|---|
| **< 0.01 ('zero dose')** | 16 | 18 | 23 | 18 | 19 | **19** |
| **0.01 – 0.05** | 16 | 16 | 11 | 14 | 14 | **14** |
| **0.05 – 0.10** | 3 | 2 | 2 | 3 | 3 | **3** |
| **0.10 – 0.25** | 3 | 3 | 3 | 3 | 2 | **3** |
| **0.25 – 0.50** | 4 | 3 | 2 | 3 | 1 | **3** |
| **0.50 – 1.00** | 0 | 0 | 0 | 1 | 0 | **0** |
| **>1.00** | 0 | 0 | 0 | 0 | 0 | **0** |
| **Number of Workers Monitored** | 42 | 42 | 41 | 42 | 39 | **41** |

APPENDIX D

# APPENDIX E

# Contamination Assessment Data

# Contamination Assessment Data

## Q1 2025 Routine Contamination Assessment Summary - Zone 3

| Zone 3 Areas | Assessments | Pass | Pass Rate |
|---|---|---|---|
| Rig 7 Floor | 62 | 61 | 98.39% |
| Rig 7 | 62 | 62 | 100.00% |
| Rig 1 Floor | 62 | 62 | 100.00% |
| Rig 1 | 62 | 61 | 98.39% |
| Flr @ Rig 6 | 62 | 62 | 100.00% |
| Rig 6 | 62 | 62 | 100.00% |
| Floor @ Rig 8 | 62 | 61 | 98.39% |
| Rig 8 | 62 | 62 | 100.00% |
| Floor @ Rig 5 | 62 | 62 | 100.00% |
| Rig 5 | 62 | 62 | 100.00% |
| Waste Room Shelf | 54 | 54 | 100.00% |
| Table @ Porthole | 62 | 62 | 100.00% |
| Flr @ Barrier | 62 | 62 | 100.00% |
| Holding Chamber | 54 | 54 | 100.00% |
| Muffle F/H | 54 | 54 | 100.00% |
| Scint Table | 54 | 54 | 100.00% |
| Laser Room Floor | 62 | 62 | 100.00% |
| EIP Area | 62 | 62 | 100.00% |
| Laser Rm F/H | 62 | 62 | 100.00% |
| Trit Lab Flr random | 62 | 61 | 98.39% |
| Glass Crusher F/H | 54 | 52 | 96.30% |
| Bulk Fume hood | 62 | 61 | 98.39% |
| Disassy F/H | 62 | 60 | 96.77% |
| Storage Room Floor | 62 | 62 | 100.00% |
| Waste Room Floor | 8 | 8 | 100.00% |
| VLLW Receptacle @ Barrier | 8 | 8 | 100.00% |
| Wash Fumehood | 8 | 8 | 100.00% |
| Door Handles | 8 | 8 | 100.00% |
| Chairs | 8 | 8 | 100.00% |
| **TOTAL** | **1488** | **1479** | **99.40%** |

## Q1 2025 Routine Contamination Assessment Summary - Zone 2

| Zone 2 Areas | Assessments | Pass | Pass Rate |
|---|---|---|---|
| Floor at Barrier | 37 | 36 | 97.30% |
| Work Area Floors | 37 | 35 | 94.59% |
| Work Counters | 37 | 37 | 100.00% |
| Microscope Counter | 37 | 33 | 89.19% |
| Photometer Room | 37 | 37 | 100.00% |
| Light Stock Cabinet | 32 | 32 | 100.00% |
| Computer Peripheral | 32 | 31 | 96.88% |
| Welding Floor | 32 | 29 | 90.63% |
| Bubbler Fume hood | 37 | 35 | 94.59% |
| Exterior of Chemical Storage | 37 | 37 | 100.00% |
| Inspection Room Floor | 37 | 36 | 97.30% |
| Insp. Prep. Counter | 37 | 36 | 97.30% |
| WIP Cabinet | 5 | 5 | 100.00% |
| UV Room Floor | 5 | 5 | 100.00% |
| Welding Table | 5 | 5 | 100.00% |
| **TOTAL** | **444** | **429** | **96.62%** |

## Q1 2025 Routine Contamination Assessment Summary - Zone 1

| Zone 1 Areas | Assessments | Pass | Pass Rate |
|---|---|---|---|
| Lunch Room | 13 | 13 | 100.00% |
| RMA Storage Area | 11 | 10 | 90.91% |
| Z1 Portable TAM | 11 | 11 | 100.00% |
| LSC Room | 13 | 13 | 100.00% |
| RR Ante Rm | 13 | 13 | 100.00% |
| RR Barrier | 13 | 11 | 84.62% |
| Assy Barrier | 13 | 13 | 100.00% |
| Disassembly Table | 13 | 12 | 92.31% |
| Disassembly PPE | 13 | 12 | 92.31% |
| Paper Towel Dispenser | 11 | 11 | 100.00% |
| Rig Door | 13 | 13 | 100.00% |
| Shipping Floor | 13 | 13 | 100.00% |
| Office Door Handles | 2 | 2 | 100.00% |
| Shipping Counter | 2 | 2 | 100.00% |
| Main Hallway Floor | 2 | 2 | 100.00% |
| **TOTAL** | **156** | **149** | **95.51%** |

# Q2 2025 Routine Contamination Assessment Summary - Zone 3

| Zone 3 Areas | Assessments | Pass | Pass Rate |
|---|---|---|---|
| Rig 7 Floor | 60 | 60 | 100.00% |
| Rig 7 | 60 | 60 | 100.00% |
| Rig 1 Floor | 60 | 60 | 100.00% |
| Rig 1 | 60 | 60 | 100.00% |
| Flr @ Rig 6 | 60 | 60 | 100.00% |
| Rig 6 | 60 | 60 | 100.00% |
| Floor @ Rig 8 | 60 | 60 | 100.00% |
| Rig 8 | 60 | 60 | 100.00% |
| Floor @ Rig 5 | 60 | 60 | 100.00% |
| Rig 5 | 60 | 60 | 100.00% |
| Waste Room Shelf | 60 | 60 | 100.00% |
| Table @ Porthole | 60 | 60 | 100.00% |
| Flr @ Barrier | 60 | 59 | 98.33% |
| Holding Chamber | 60 | 60 | 100.00% |
| Muffle F/H | 60 | 60 | 100.00% |
| Scint Table | 60 | 60 | 100.00% |
| Laser Room Floor | 60 | 60 | 100.00% |
| EIP Area | 60 | 60 | 100.00% |
| Laser Rm F/H | 60 | 60 | 100.00% |
| Trit Lab Flr random | 60 | 59 | 98.33% |
| Glass Crusher F/H | 60 | 59 | 98.33% |
| Bulk Fume hood | 60 | 49 | 81.67% |
| Disassy F/H | 60 | 54 | 90.00% |
| Storage Room Floor | 60 | 59 | 98.33% |
| **TOTAL** | **1440** | **1419** | **98.54%** |

## Q2 2025 Routine Contamination Assessment Summary - Zone 2

| Zone 2 Areas | Assessments | Pass | Pass Rate |
|---|---|---|---|
| Floor at Barrier | 34 | 33 | 97.06% |
| Work Area Floors | 34 | 34 | 100.00% |
| Work Counters | 34 | 34 | 100.00% |
| Microscope Counter | 34 | 34 | 100.00% |
| Photometer Room | 34 | 34 | 100.00% |
| Light Stock Cabinet | 34 | 33 | 97.06% |
| Computer Peripheral | 34 | 33 | 97.06% |
| Welding Floor | 34 | 34 | 100.00% |
| Bubbler Fume hood | 34 | 31 | 91.18% |
| Exterior of Chemical Storage | 34 | 34 | 100.00% |
| Inspection Room Floor | 34 | 33 | 97.06% |
| Insp. Prep. Counter | 34 | 34 | 100.00% |
| **TOTAL** | **408** | **401** | **98.28%** |

## Q2 2025 Routine Contamination Assessment Summary - Zone 1

| Zone 1 Areas | Assessments | Pass | Pass Rate |
|---|---|---|---|
| Lunch Room | 13 | 13 | 100.00% |
| RMA Storage Area | 13 | 13 | 100.00% |
| Z1 Portable TAM | 13 | 13 | 100.00% |
| LSC Room | 13 | 13 | 100.00% |
| RR Ante Rm | 13 | 13 | 100.00% |
| RR Barrier | 13 | 13 | 100.00% |
| Assy Barrier | 13 | 13 | 100.00% |
| Disassembly Table | 13 | 11 | 84.62% |
| Disassembly PPE | 13 | 12 | 92.31% |
| Paper Towel Dispenser | 13 | 13 | 100.00% |
| Rig Door | 13 | 13 | 100.00% |
| Shipping Floor | 13 | 13 | 100.00% |
| **TOTAL** | **156** | **153** | **98.08%** |

# Q3 2025 Routine Contamination Assessment Summary - Zone 3

| Zone 3 Areas | Assessments | Pass | Pass Rate |
|---|---|---|---|
| Rig 7 Floor | 62 | 61 | 98.39% |
| Rig 7 | 62 | 62 | 100.00% |
| Rig 1 Floor | 62 | 62 | 100.00% |
| Rig 1 | 62 | 62 | 100.00% |
| Flr @ Rig 6 | 62 | 61 | 98.39% |
| Rig 6 | 62 | 62 | 100.00% |
| Floor @ Rig 8 | 62 | 62 | 100.00% |
| Rig 8 | 62 | 62 | 100.00% |
| Floor @ Rig 5 | 62 | 62 | 100.00% |
| Rig 5 | 62 | 62 | 100.00% |
| Waste Room Light Switch | 54 | 54 | 100.00% |
| Wash Fumehood | 54 | 53 | 98.15% |
| Flr @ Barrier | 62 | 62 | 100.00% |
| Transfer Table @ Barrier | 54 | 54 | 100.00% |
| Lab Coats | 54 | 54 | 100.00% |
| Computer Peripherals | 54 | 54 | 100.00% |
| Laser Room Floor | 62 | 61 | 98.39% |
| EIP Area | 62 | 62 | 100.00% |
| Laser Rm F/H | 62 | 57 | 91.94% |
| Trit Lab Flr random | 62 | 62 | 100.00% |
| Glass Crusher F/H | 62 | 59 | 95.16% |
| Bulk Fume hood | 62 | 60 | 96.77% |
| Disassy F/H | 62 | 54 | 87.10% |
| Storage Room Floor | 62 | 61 | 98.39% |
| Waste Room Shelf | 8 | 8 | 100.00% |
| Table @ Porthole | 8 | 8 | 100.00% |
| Holding Chamber | 8 | 8 | 100.00% |
| Muffle F/H | 8 | 8 | 100.00% |
| Scint Table | 8 | 8 | 100.00% |
| **TOTAL** | **1488** | **1,465** | **98.45%** |

APPENDIX E

## Q3 2025 Routine Contamination Assessment Summary - Zone 2

| Zone 2 Areas | Assessments | Pass | Pass Rate |
|---|---|---|---|
| Floor at Barrier | 37 | 36 | 97.30% |
| Work Area Floors | 37 | 37 | 100.00% |
| Work Counters | 37 | 37 | 100.00% |
| Microscope Counter | 37 | 36 | 97.30% |
| Glue In Counter | 32 | 32 | 100.00% |
| Light Stock Cabinet | 37 | 37 | 100.00% |
| Computer Peripheral | 37 | 37 | 100.00% |
| Welding Table | 32 | 31 | 96.88% |
| Bubbler Fume hood | 37 | 37 | 100.00% |
| Zone 2/3 Dark Room | 32 | 31 | 96.88% |
| Inspection Room Floor | 37 | 37 | 100.00% |
| Insp. Prep. Counter | 37 | 37 | 100.00% |
| Photometer Room | 5 | 5 | 100.00% |
| Welding Floor | 5 | 5 | 100.00% |
| Exterior of Chemical Storage | 5 | 5 | 100.00% |
| **TOTAL** | **444** | **440** | **99.10%** |

## Q3 2025 Routine Contamination Assessment Summary - Zone 1

| Zone 1 Areas | Assessments | Pass | Pass Rate |
|---|---|---|---|
| Lunch Room | 13 | 13 | 100.00% |
| RMA Storage Area | 13 | 12 | 92.31% |
| Shipping Counter | 11 | 11 | 100.00% |
| LSC Room | 13 | 13 | 100.00% |
| RR Ante Rm | 13 | 13 | 100.00% |
| RR Barrier | 13 | 11 | 84.62% |
| Assy Barrier | 13 | 13 | 100.00% |
| Disassembly Table | 13 | 13 | 100.00% |
| Disassembly PPE | 13 | 12 | 92.31% |
| Disassembly Cabinet | 11 | 10 | 90.91% |
| Main Hallway Floor | 11 | 11 | 100.00% |
| Shipping Floor | 13 | 13 | 100.00% |
| Z1 Portable TAM | 2 | 2 | 100.00% |
| Paper Towel Dispenser | 2 | 2 | 100.00% |
| Rig Door | 2 | 2 | 100.00% |
| **TOTAL** | **156** | **151** | **96.79%** |

# Q4 2025 Routine Contamination Assessment Summary - Zone 3

| Zone 3 Areas | Assessments | Pass | Pass Rate |
|---|---|---|---|
| Rig 7 Floor | 57 | 56 | 98.25% |
| Rig 7 | 57 | 56 | 98.25% |
| Rig 1 Floor | 57 | 56 | 98.25% |
| Rig 1 | 57 | 57 | 100.00% |
| Flr @ Rig 6 | 57 | 56 | 98.25% |
| Rig 6 | 57 | 57 | 100.00% |
| Floor @ Rig 8 | 57 | 57 | 100.00% |
| Rig 8 | 57 | 57 | 100.00% |
| Floor @ Rig 5 | 57 | 55 | 96.49% |
| Rig 5 | 57 | 56 | 98.25% |
| Waste Room Light Switch | 57 | 57 | 100.00% |
| Wash Fumehood | 57 | 57 | 100.00% |
| Flr @ Barrier | 57 | 57 | 100.00% |
| Transfer Table @ Barrier | 57 | 56 | 98.25% |
| Lab Coats | 57 | 57 | 100.00% |
| Computer Peripherals | 57 | 57 | 100.00% |
| Laser Room Floor | 57 | 57 | 100.00% |
| EIP Area | 57 | 57 | 100.00% |
| Laser Rm F/H | 57 | 55 | 96.49% |
| Trit Lab Flr random | 57 | 56 | 98.25% |
| Glass Crusher F/H | 57 | 53 | 92.98% |
| Bulk Fume hood | 57 | 48 | 84.21% |
| Disassy F/H | 57 | 55 | 96.49% |
| Storage Room Floor | 57 | 57 | 100.00% |
| **TOTAL** | **1368** | **1342** | **98.10%** |

APPENDIX E

## Q4 2025 Routine Contamination Assessment Summary - Zone 2

| Zone 2 Areas | Assessments | Pass | Pass Rate |
|---|---|---|---|
| Floor at Barrier | 35 | 35 | 100.00% |
| Work Area Floors | 35 | 34 | 97.14% |
| Work Counters | 35 | 35 | 100.00% |
| Microscope Counter | 35 | 34 | 97.14% |
| Glue In Counter | 35 | 35 | 100.00% |
| Light Stock Cabinet | 35 | 35 | 100.00% |
| Computer Peripheral | 35 | 35 | 100.00% |
| Welding Table | 35 | 35 | 100.00% |
| Bubbler Fume hood | 35 | 34 | 97.14% |
| Zone 2/3 Dark Room | 35 | 33 | 94.29% |
| Inspection Room Floor | 35 | 34 | 97.14% |
| Insp. Prep. Counter | 35 | 34 | 97.14% |
| **TOTAL** | **420** | **413** | **98.33%** |

## Q4 2025 Routine Contamination Assessment Summary - Zone 1

| Zone 1 Areas | Assessments | Pass | Pass Rate |
|---|---|---|---|
| Lunch Room | 12 | 12 | 100.00% |
| RMA Storage Area | 12 | 11 | 91.67% |
| Shipping Counter | 12 | 12 | 100.00% |
| LSC Room | 12 | 12 | 100.00% |
| RR Ante Rm | 12 | 12 | 100.00% |
| RR Barrier | 12 | 12 | 100.00% |
| Assy Barrier | 12 | 12 | 100.00% |
| Disassembly Table | 12 | 9 | 75.00% |
| Disassembly PPE | 12 | 12 | 100.00% |
| Disassembly Cabinet | 12 | 11 | 91.67% |
| Main Hallway Floor | 12 | 12 | 100.00% |
| Shipping Floor | 12 | 12 | 100.00% |
| **TOTAL** | **144** | **139** | **96.53%** |

Overall Facility Summary

| Facility Zone | Assessments | Pass | Pass Rate |
|---|---|---|---|
| ZONE 3 | 5784 | 5705 | 98.63% |
| ZONE 2 | 1716 | 1683 | 98.08% |
| ZONE 1 | 612 | 592 | 96.73% |
| **2025 ALL ZONES** | **8112** | **7980** | **98.37%** |

APPENDIX E

# APPENDIX F

## Monthly Average Concentrations of Tritium in Air in Environment

**2025 Environment Monitoring Program**
**Passive Air Sampling System**

| Sampler No. | Sampler ID | Location | Dist. to SRBT | Jan (Bq/m³) Jan. 8/9 - Feb. 5 | Feb Feb. 5 - Mar. 5 | Mar Mar, 5 - Apr. 2 | Apr Apr. 2 - May 7 | May May 7 - Jun. 4 | Jun Jun. 4 - Jul. 7 | Jul Jul. 7 - Aug. 6 | Aug Aug 6 - Sep 3 | Sep Sep 3 - Oct 1 | Oct Oct 1 - Oct 29 | Nov Oct 29 - Dec 3 | Dec Dec 3 - Jan 7 | Average |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | *Minimum Detectable Activity (Bq/m³)* | *0.70* | *0.77* | *0.77* | *0.57* | *0.72* | *0.71* | *0.58* | *0.76* | *0.79* | *0.78* | *0.80* | *0.63* | *0.72* |
| 1 | N250 | N 45° 48.486' W 077° 07.092' Elev. 137m | 322m | 1.93 | 0.77 | 3.07 | 1.83 | 1.46 | 0.75 | 0.80 | 0.93 | 1.96 | 0.82 | 1.60 | 1.94 | **1.49** |
| 2 | N500 | N 45° 48.572' W 077° 07.008' Elev. 134m | 493m | 0.70 | 0.77 | 2.18 | 0.66 | 4.50 | 0.71 | 0.80 | 0.76 | 1.14 | 0.79 | 0.83 | 0.91 | **1.23** |
| 3 | N1000 | N 45° 48.869' W 077° 06.997' Elev. 135m | 1040m | 0.70 | 0.77 | 0.77 | 0.57 | 0.72 | 0.71 | 0.71 | 1.71 | 0.79 | 0.78 | 0.80 | 0.63 | **0.81** |
| 4 (PAS #4) | NW250 | N 45° 48.412' W 077° 07.189' Elev. 137m | 222m | 2.26 | 5.11 | 4.43 | 2.77 | 2.93 | 2.04 | 2.11 | 3.04 | 2.75 | 3.57 | 1.66 | 2.14 | **2.90** |
| 5 | NW500 | N 45° 48.577' W 077° 07.382' Elev. 134m | 615m | 0.70 | 0.96 | 1.54 | 0.57 | 0.72 | 0.71 | 0.58 | 0.76 | 1.00 | Sample Spoiled | 0.80 | 0.86 | **0.84** |
| 6 (PAS # 8) | NW1000 | N 45° 48.754' W 077° 07.599' Elev. 130m | 1050m | 1.43 | 0.79 | 1.25 | 0.57 | 0.72 | 0.71 | 0.58 | 0.76 | 0.79 | 0.78 | 2.66 | 0.63 | **0.97** |
| 7 | NW2000 | N 45° 49.141' W 077° 08.090' Elev. 139m | 2000m | 0.70 | 0.77 | 0.77 | 0.57 | 0.72 | 0.71 | 0.60 | 0.76 | 0.79 | 0.78 | 2.91 | 0.63 | **0.89** |
| 8 | W250 | N 45° 48.300' W 077° 07.323' Elev. 138m | 297m | 1.44 | 1.68 | 2.43 | 2.00 | 2.57 | 0.86 | 1.63 | 1.21 | 5.00 | 0.78 | 0.80 | 0.63 | **1.75** |
| 9 | W500 | N 45° 48.288' W 077° 07.393' Elev. 137m | 389m | 8.96 | 0.93 | 1.46 | 0.91 | 1.57 | 0.71 | 0.63 | 0.76 | 2.32 | 0.75 | 0.83 | 0.63 | **1.71** |
| 10 | W1000 | N 45° 48.306' W 077° 07.630' Elev. 134m | 691m | 1.18 | *1.21* | 2.00 | 0.86 | 7.11 | 0.71 | 0.58 | 0.76 | 1.46 | 0.78 | 0.80 | 0.63 | **1.51** |
| 11 | SW250 | N 45° 48.247' W 077° 07.206' Elev. 140m | 183m | 0.70 | 0.82 | 0.77 | 1.09 | 2.04 | 0.71 | 1.14 | 1.50 | 4.61 | 1.39 | 0.80 | 0.63 | **1.35** |
| 12 | SW500 | N 45° 47.896' W 077° 07.307' Elev. 148m | 839m | 0.70 | 0.77 | 0.89 | 0.57 | 0.72 | 0.71 | 0.58 | 0.76 | 1.39 | 3.71 | 0.80 | 0.63 | **1.02** |
| 13 | SW1000 | N 45° 47.599' W 077° 07.543' Elev. 149m | 1470m | 0.70 | 0.77 | 0.77 | 0.57 | 0.72 | 0.71 | 0.58 | 0.76 | 0.79 | *0.78* | 0.89 | 0.63 | **0.72** |
| 14 | SW2000 | N 45° 47.408' W 077° 07.866' Elev. 155m | 2110m | 0.70 | 0.77 | 0.77 | 0.57 | 0.72 | 0.71 | 0.63 | 0.76 | 0.79 | 0.78 | 0.86 | 0.63 | **0.72** |
| 15 | S250 | N 45° 48.129' W 077° 07.014' Elev. 131m | 356m | 0.70 | 0.77 | 1.21 | 0.94 | 1.25 | 0.71 | 1.71 | 0.93 | 0.96 | 2.36 | 2.20 | 0.63 | **1.20** |
| 16 | S500 | N 45° 48.029' W 077° 07.110' Elev. 143m | 532m | 0.70 | 0.77 | 1.18 | 0.57 | 0.72 | 0.71 | 0.94 | 0.00 | 0.79 | 0.78 | 0.80 | 0.63 | **0.72** |
| 17 (PAS # 12) | S1000 | N 45° 46.466' W 077° 07.441' Elev. 158m | 1450m | 0.70 | 0.82 | 0.77 | 0.57 | 0.72 | 0.71 | 0.58 | 0.76 | 0.79 | 0.78 | 0.80 | 0.63 | **0.72** |
| 18 | SE250 | N 45° 48.189' W 077° 06.874' Elev. 132m | 365m | 7.78 | 2.96 | 3.25 | 1.51 | 1.21 | 0.71 | 2.74 | 2.36 | 2.21 | 2.93 | 3.49 | 1.71 | **2.74** |
| 19 | SE500 | N 45° 48.108' W 077° 06.783' Elev. 123m | 554m | 2.63 | 1.68 | 1.96 | 1.34 | 0.89 | 0.75 | 1.37 | 0.82 | 1.61 | 4.18 | 2.34 | 1.31 | **1.74** |
| 20 | SE1000 | N 45° 47.894' W 077° 06.501' Elev. 120m | 1090m | 0.86 | 0.77 | 1.71 | 0.57 | 0.72 | 0.71 | 0.77 | 0.76 | 0.79 | 0.78 | 1.14 | 0.63 | **0.85** |
| 21 | SE2000 | N 45° 47.505' W 077° 05.978' Elev. 137m | 2080m | 2.68 | 0.77 | 1.11 | 0.57 | 0.72 | 0.71 | 0.58 | 0.76 | 0.79 | 0.78 | 1.83 | 0.63 | **0.99** |
| 22 | E250 | N 45° 80.564' W 077° 11.556' Elev. 131m | 220m | 0.81 | 3.75 | 2.21 | 2.00 | 0.72 | 4.61 | 1.91 | 8.14 | 1.64 | 1.46 | 17.63 | 0.66 | **3.80** |
| 23 | E500 | N 45° 48.333' W 077° 06.693' Elev. 132m | 520m | 0.70 | 4.82 | 1.21 | 0.57 | 0.72 | 0.96 | 0.83 | 1.18 | 1.11 | 0.78 | 1.14 | 0.89 | **1.24** |
| 24 | E1000 | N 45° 48.303' W 077° 06.260' Elev. 143m | 1080m | 0.70 | 1.57 | 1.07 | 0.57 | 0.72 | 0.71 | 0.58 | 0.76 | 0.79 | 0.78 | 0.80 | 0.63 | **0.81** |
| 25 | NE250 | N 45° 48.371' W 077° 06.964' Elev. 124m | 198m | 4.48 | 2.71 | 3.93 | 3.03 | 1.39 | 5.79 | 8.03 | 8.00 | 1.57 | 3.68 | 2.74 | 1.40 | **3.90** |
| 26 | NE500 | N 45° 48.421' W 077° 06.732' Elev. 131m | 508m | 0.70 | 0.77 | 1.04 | 0.57 | 0.72 | 1.21 | 1.00 | 0.93 | 0.79 | 4.79 | 2.06 | 0.94 | **1.29** |
| 27 | NE1000 | N 45° 48.683' W 077° 06.441' Elev. 148m | 1100m | 0.70 | 0.77 | 0.93 | 0.57 | 0.72 | 0.71 | 0.60 | 0.96 | 0.79 | 1.18 | 0.80 | 0.63 | **0.78** |
| 28 | NE2000 | N 45° 49.116' W 077° 05.843' Elev. 156m | 2200m | 0.70 | 0.77 | 0.77 | 0.66 | 0.72 | 0.71 | 0.58 | 0.76 | 0.79 | 0.78 | 0.80 | 0.69 | **0.73** |
| (PAS #1) | | N 45° 48.287' W 077° 07.123' Elev. 129m | 94.1m | 0.93 | 1.68 | 2.86 | 3.63 | 11.00 | 6.43 | 6.49 | 6.64 | 11.11 | 10.46 | 0.80 | 0.63 | **5.22** |
| (PAS #2) | | N 45° 48.325' W 077° 07.132' Elev. 132m | 52.8m | 1.59 | 2.32 | 6.50 | 4.57 | 11.14 | 1.04 | 7.80 | 5.96 | 8.43 | 3.11 | 0.83 | 1.89 | **4.60** |
| (PAS #13) | | N 45° 48.262' W 077° 07.093' Elev. 132m | 61.5m | 6.85 | 0.77 | 2.82 | 1.97 | 6.36 | 4.46 | 5.11 | 3.54 | 11.11 | 2.64 | 1.60 | 0.63 | **3.99** |
| 4-2 | NW250 | N 45° 48.412' W 077° 07.189' Elev. 137m | 222m | 2.00 | 3.93 | 3.61 | 2.17 | 2.46 | 1.82 | 1.83 | 2.25 | 2.11 | 2.61 | 1.20 | 1.91 | **2.33** |
| 11-2 | SW250 | N 45° 48.247' W 077° 07.206' Elev. 140m | 183m | 0.70 | 0.77 | 0.77 | 1.00 | 1.96 | 0.71 | 1.09 | 1.18 | 4.00 | 1.21 | 0.80 | 0.63 | **1.24** |
| 18-2 | SE250 | N 45° 48.189' W 077° 06.874' Elev. 132m | 365m | 5.26 | 2.79 | 3.04 | 1.37 | 1.07 | 0.71 | 2.14 | 1.75 | 2.11 | 2.75 | 2.91 | 1.49 | **2.28** |
| 25-2 | NE250 | N 45° 48.371' W 077° 06.964' Elev. 124m | 198m | 1.74 | 2.54 | 2.75 | 2.71 | 1.07 | 4.39 | 3.11 | 6.04 | 0.77 | 2.86 | 1.66 | 0.66 | **2.53** |
| Maika (PAS # 10) | SW | N 45° 46.367' W 077° 11.447' Elev. 149m | 6690m | 1.96 | 0.77 | 0.96 | 0.57 | 0.72 | 0.71 | 0.58 | 0.76 | 0.79 | 0.78 | 0.80 | 0.63 | **0.84** |
| Maika | Duplicate | N 45° 46.367' W 077° 11.447' Elev. 149m | 6690m | 0.70 | 0.77 | 0.89 | 0.57 | 0.72 | 0.71 | 0.58 | 0.76 | 0.79 | 0.78 | 0.80 | 0.63 | **0.73** |
| Fitzpatrick | SE | N 45° 44.818' W 076° 59.822' Elev. 159m | 11400m | 0.70 | 0.77 | 1.29 | 0.57 | 0.72 | 0.71 | 0.58 | 0.76 | 0.79 | 0.78 | 0.80 | 0.63 | **0.76** |
| Petawawa | NW | N 45° 51.497' W 077° 12.828' Elev. 149m | 9480m | 0.70 | 0.77 | 0.77 | 0.57 | 0.72 | 0.71 | 0.58 | 0.76 | 0.79 | 0.78 | 0.80 | 0.63 | **0.72** |
| Farm | NE | N 45° 53.071' W 076° 56.768' Elev. 142m | 16000m | 0.70 | 0.77 | 1.36 | 0.57 | 0.72 | 0.71 | 1.06 | 0.76 | Sample Spoiled | 0.78 | 0.80 | 0.63 | **0.81** |
| Results shaded in blue are below minimum detectable activity | | | Sum | 71.47 | 59.24 | 73.07 | 48.42 | 77.82 | 54.28 | 65.12 | 73.51 | 83.80 | 72.07 | 69.41 | 35.15 | 65.42 |

# APPENDIX G

## Wind Direction Information

# 2025 Windrose PAS Data

Passive Air Sampling Data (Results in Bq/m3)

**1st Quarter**

| Direction | January 250 M | January 500 M | January 1000 M | January 2000 M | February 250 M | February 500 M | February 1000 M | February 2000 M | March 250 M | March 500 M | March 1000 M | March 2000 M |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| North | 1.93 | 0.70 | 0.70 | | 0.77 | 0.77 | 0.77 | | 3.07 | 2.18 | 0.77 | |
| North West | 2.26 | 0.70 | 1.43 | 0.70 | 5.11 | 0.96 | 0.79 | 0.77 | 4.43 | 1.54 | 1.25 | 0.77 |
| West | 1.44 | 8.96 | 1.18 | | 1.68 | 0.93 | 1.21 | | 2.43 | 1.46 | 2.00 | |
| Southwest | 0.70 | 0.70 | 0.70 | 0.70 | 0.82 | 0.77 | 0.77 | 0.77 | 0.77 | 0.89 | 0.77 | 0.77 |
| South | 0.70 | 0.70 | 0.70 | | 0.77 | 0.77 | 0.82 | | 1.21 | 1.18 | 0.77 | |
| South East | 7.78 | 2.63 | 0.86 | 2.68 | 2.96 | 1.68 | 0.77 | 0.77 | 3.25 | 1.96 | 1.71 | 1.11 |
| East | 0.81 | 0.70 | 0.70 | | 3.75 | 4.82 | 1.57 | | 2.21 | 1.21 | 1.07 | |
| North East | 4.48 | 0.70 | 0.70 | 0.70 | 2.71 | 0.77 | 0.77 | 0.77 | 3.93 | 1.04 | 0.93 | 0.77 |

**2nd Quarter**

| Direction | April 250 M | April 500 M | April 1000 M | April 2000 M | May 250 M | May 500 M | May 1000 M | May 2000 M | June 250 M | June 500 M | June 1000 M | June 2000 M |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| North | 1.83 | 0.66 | 0.57 | | 1.46 | 4.50 | 0.72 | | 0.75 | 0.71 | 0.71 | |
| North West | 2.77 | 0.57 | 0.57 | 0.57 | 2.93 | 0.72 | 0.72 | 0.72 | 2.04 | 0.71 | 0.71 | 0.71 |
| West | 2.00 | 0.91 | 0.86 | | 2.57 | 1.57 | 7.11 | | 0.86 | 0.71 | 0.71 | |
| Southwest | 1.09 | 0.57 | 0.57 | 0.57 | 2.04 | 0.72 | 0.72 | 0.72 | 0.71 | 0.71 | 0.71 | 0.71 |
| South | 0.94 | 0.57 | 0.57 | | 1.25 | 1.25 | 0.72 | | 0.71 | 0.71 | 0.71 | |
| South East | 1.51 | 1.34 | 0.57 | 0.57 | 1.21 | 0.89 | 0.72 | 0.72 | 0.71 | 0.75 | 0.71 | 0.71 |
| East | 2.00 | 0.57 | 0.57 | | 0.72 | 0.72 | 0.72 | | 4.61 | 0.96 | 0.71 | |
| North East | 3.03 | 0.57 | 0.57 | 0.66 | 1.39 | 0.72 | 0.72 | 0.72 | 5.79 | 1.21 | 0.71 | 0.71 |

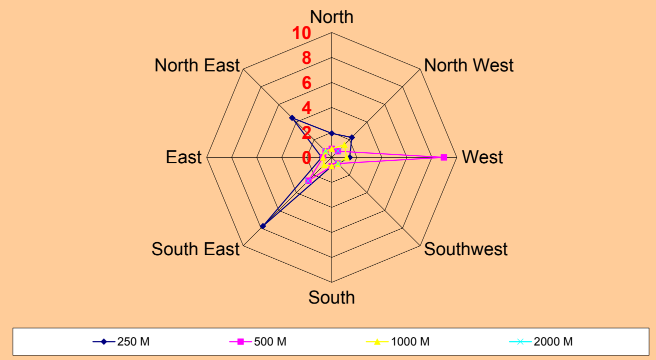
**3rd Quarter**

| Direction | July 250 M | July 500 M | July 1000 M | July 2000 M | August 250 M | August 500 M | August 1000 M | August 2000 M | September 250 M | September 500 M | September 1000 M | September 2000 M |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| North | 0.80 | 0.80 | 0.71 | | 0.93 | 0.76 | 1.71 | | 1.96 | 1.14 | 0.79 | |
| North West | 2.11 | 0.58 | 0.58 | 0.60 | 3.04 | 0.76 | 0.76 | 0.76 | 2.75 | 1.00 | 0.79 | 0.79 |
| West | 1.63 | 0.63 | 0.58 | | 1.21 | 0.76 | 0.76 | | 5.00 | 2.32 | 1.46 | |
| Southwest | 1.14 | 0.58 | 0.58 | 0.63 | 1.50 | 0.76 | 0.76 | 0.76 | 4.61 | 1.39 | 0.79 | 0.79 |
| South | 1.71 | 0.94 | 0.58 | | 0.93 | 0.00 | 0.76 | | 0.96 | 0.79 | 0.79 | |
| South East | 2.74 | 1.37 | 0.77 | 0.58 | 2.36 | 0.82 | 0.76 | 0.76 | 2.21 | 1.61 | 0.79 | 0.79 |
| East | 1.91 | 0.83 | 0.58 | | 8.14 | 1.18 | 0.76 | | 1.64 | 1.11 | 0.79 | |
| North East | 8.03 | 1.00 | 0.60 | 0.58 | 8.00 | 0.93 | 0.96 | 0.76 | 1.57 | 0.79 | 0.79 | 0.79 |

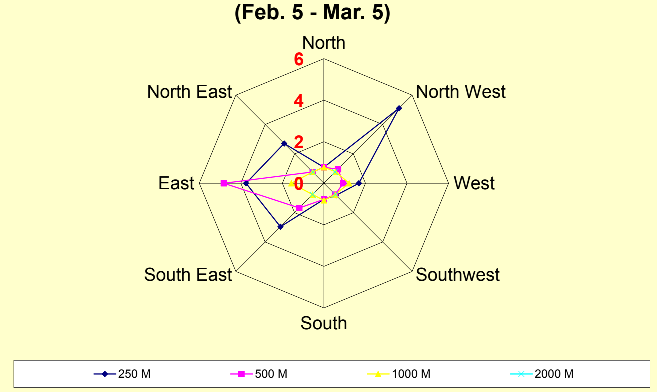
**4th Quarter**

| Direction | October 250 M | October 500 M | October 1000 M | October 2000 M | November 250 M | November 500 M | November 1000 M | November 2000 M | December 250 M | December 500 M | December 1000 M | December 2000 M |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| North | 0.82 | 0.79 | 0.78 | | 1.60 | 0.83 | 0.80 | | 1.94 | 0.91 | 0.63 | |
| North West | 3.57 | Sample S | 0.78 | 0.78 | 1.66 | 0.80 | 2.66 | 2.91 | 2.14 | 0.86 | 0.63 | 0.63 |
| West | 0.78 | 0.75 | 0.78 | | 0.80 | 0.83 | 0.80 | | 0.63 | 0.63 | 0.63 | |
| Southwest | 1.39 | 3.71 | 0.78 | 0.78 | 0.80 | 0.80 | 0.89 | 0.86 | 0.63 | 0.63 | 0.63 | 0.63 |
| South | 2.36 | 0.78 | 0.78 | | 2.20 | 0.80 | 0.80 | | 0.63 | 0.63 | 0.63 | |
| South East | 2.93 | 4.18 | 0.78 | 0.78 | 3.49 | 2.34 | 1.14 | 1.83 | 1.71 | 1.31 | 0.63 | 0.63 |
| East | 1.46 | 0.78 | 0.78 | | 17.63 | 1.14 | 0.80 | | 0.66 | 0.89 | 0.63 | |
| North East | 3.68 | 4.79 | 1.18 | 0.78 | 2.74 | 2.06 | 0.80 | 0.80 | 1.40 | 0.94 | 0.63 | 0.69 |

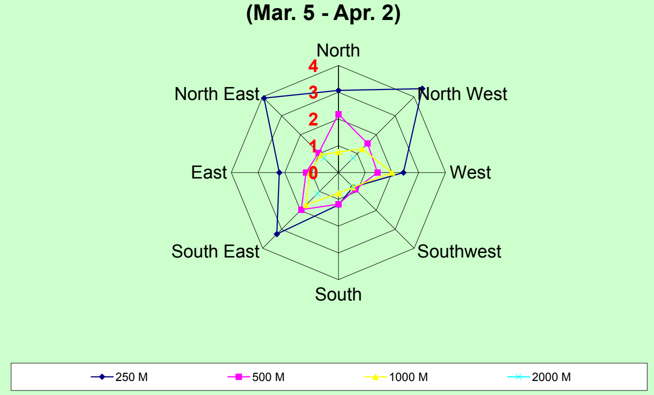
**January**
**(Jan. 8 & 9 - Feb. 5, 2025)**



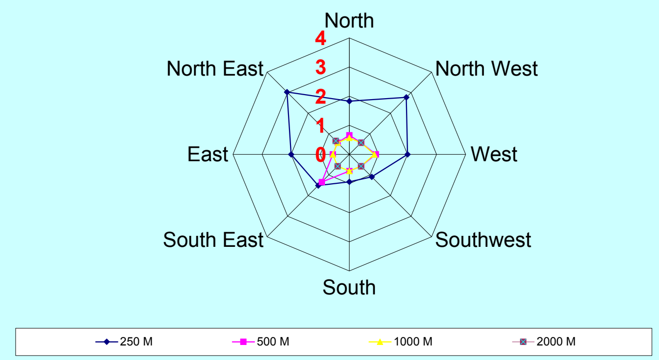

**February**
**(Feb. 5 - Mar. 5)**



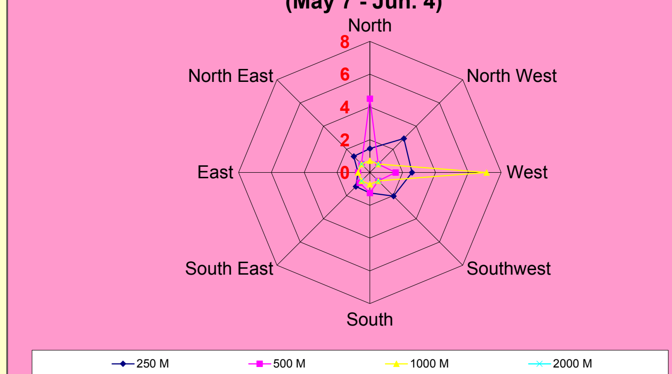

**March**
**(Mar. 5 - Apr. 2)**



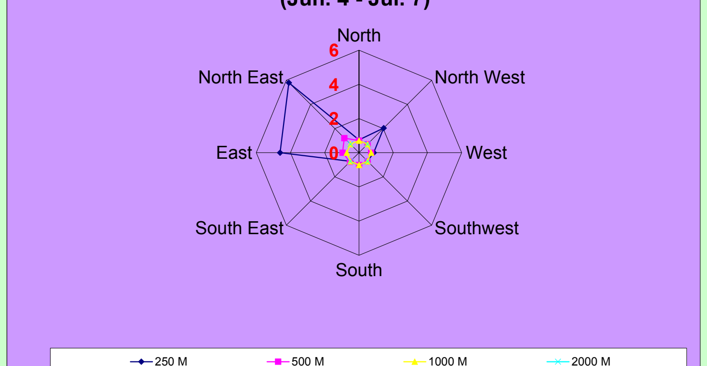

**April**
**(Apr. 2 - May 7)**



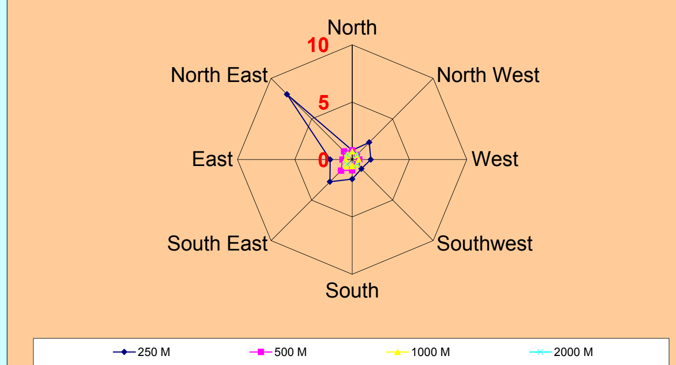

**May**
**(May 7 - Jun. 4)**



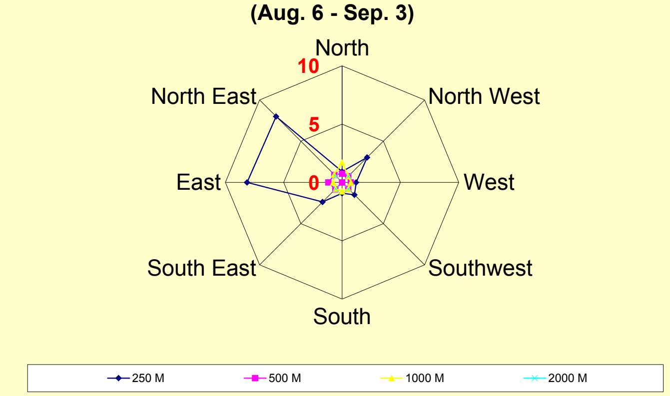

**June**
**(Jun. 4 - Jul. 7)**



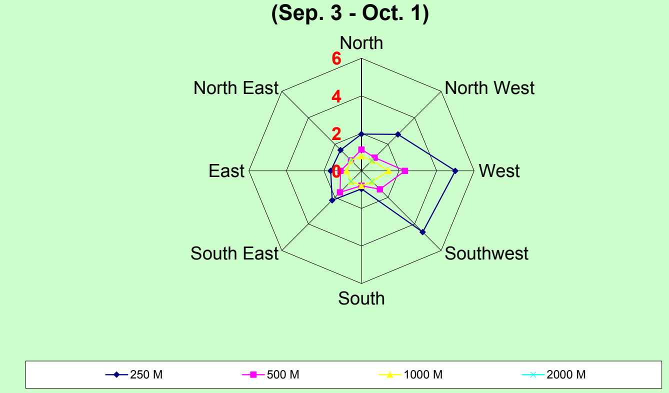

**July**
**(Jul. 7 - Aug. 6)**



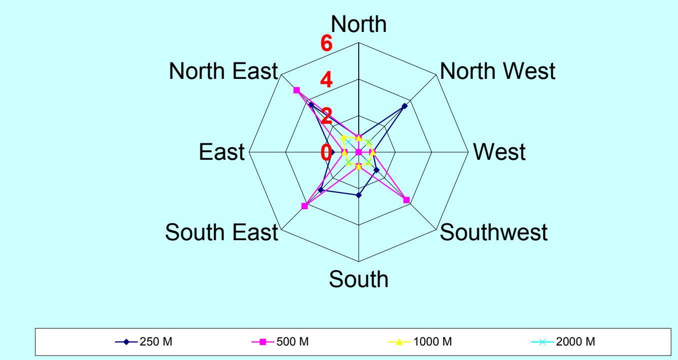

**August**
**(Aug. 6 - Sep. 3)**



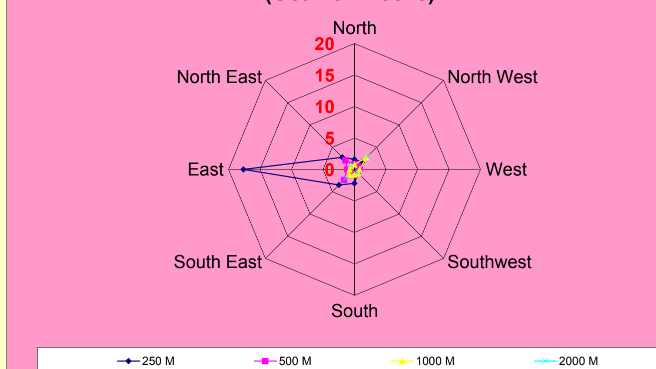

**September**
**(Sep. 3 - Oct. 1)**



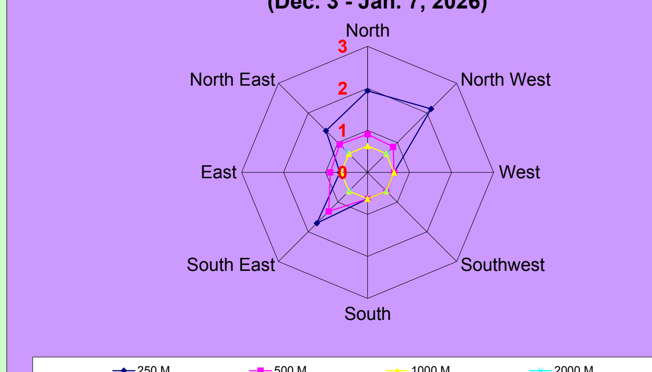

**October**
**(Oct. 1 - Oct. 29)**




**November**
**(Oct. 29 - Dec. 3)**




**December**
**(Dec. 3 - Jan. 7, 2026)**




APPENDIX G

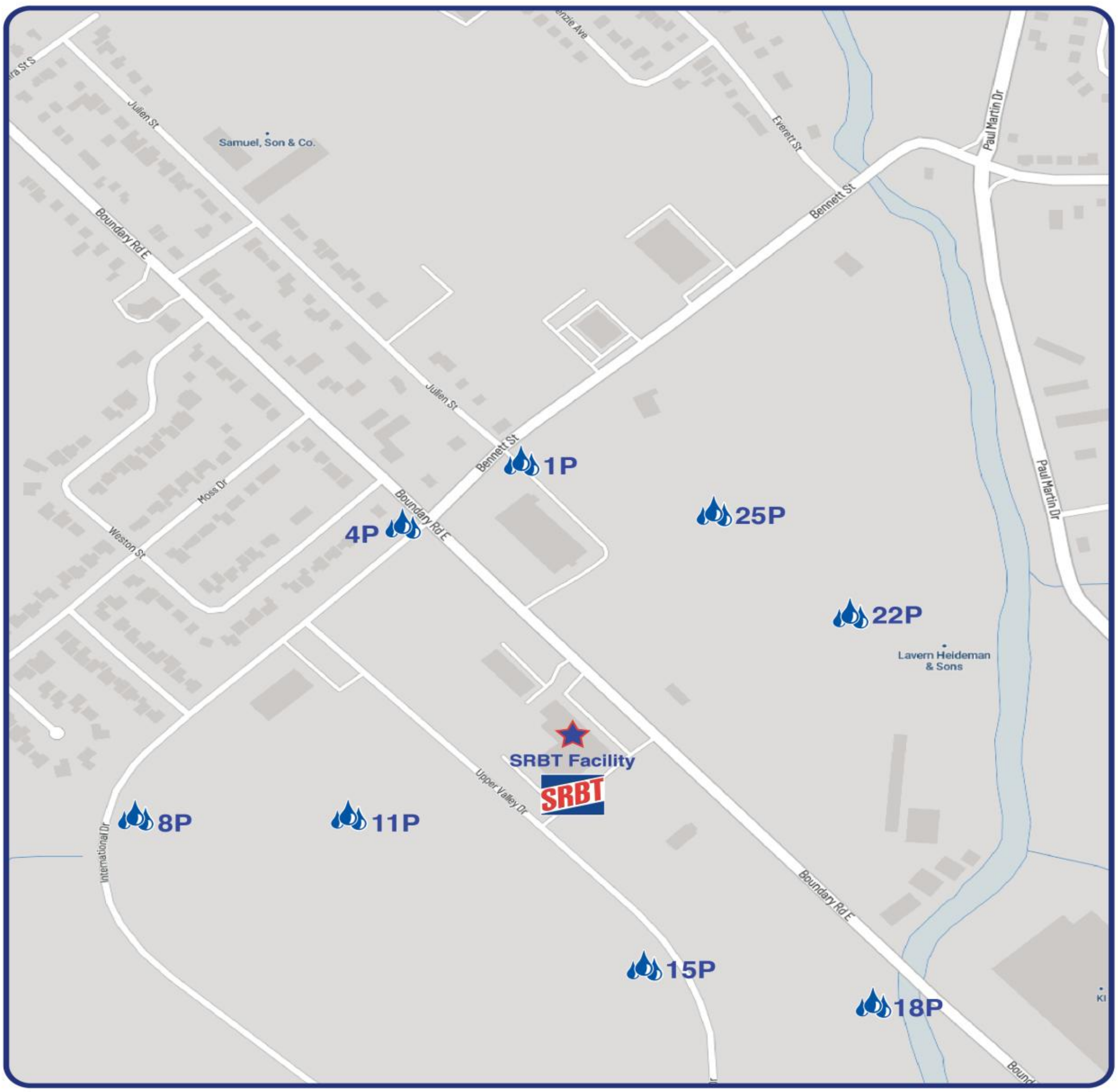
# APPENDIX H

## Precipitation Monitoring Data

## Precipitation Monitoring Data

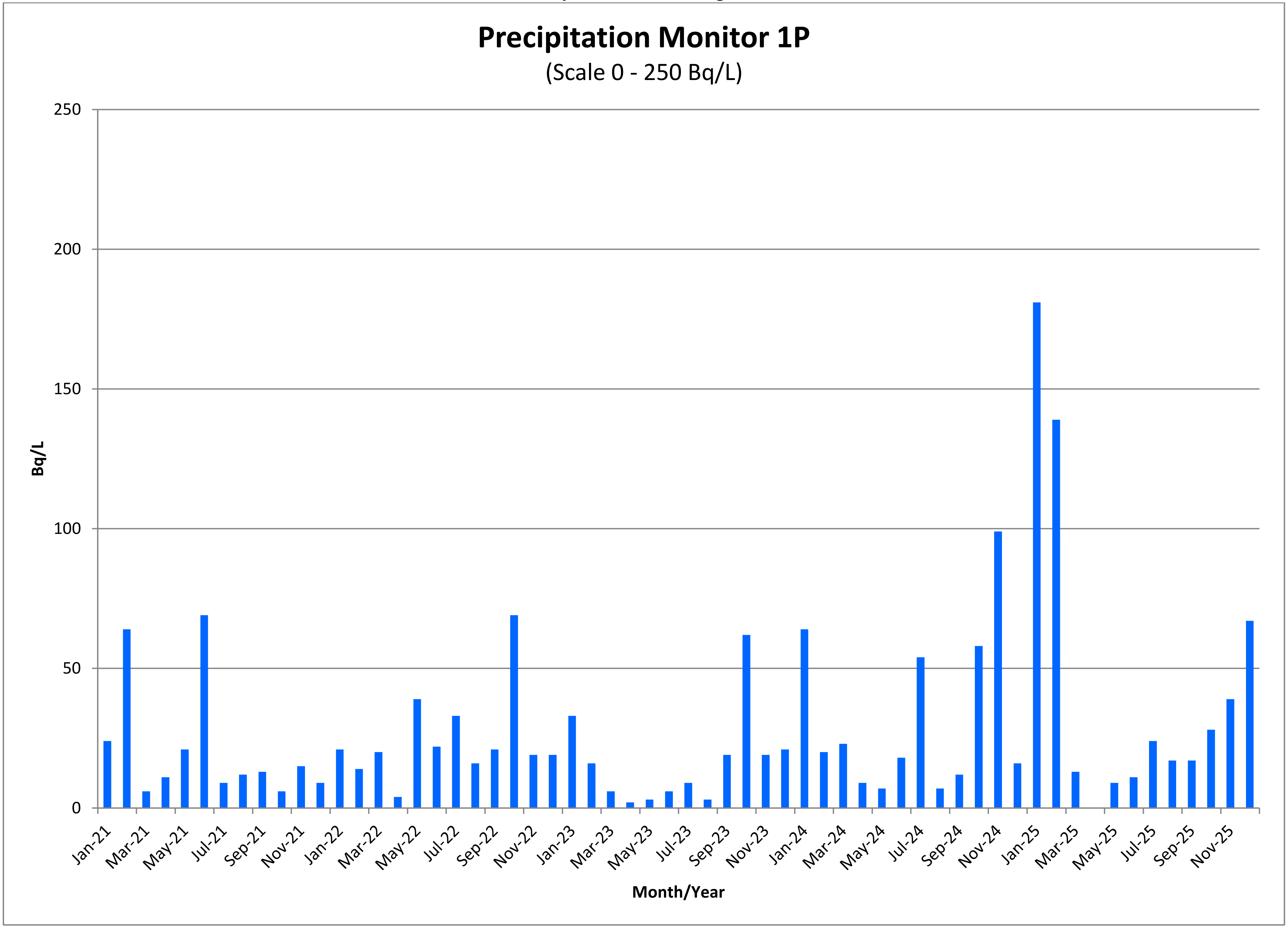
| PRECIPITATION SAMPLERS | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1P | 4P | 8P | 11P | 15P | 18P | 22P | 25P | AVG |
| Sample Collection - Date Range | Bq/L | | | | | | | | |
| Jan. 8, 2025 - Feb. 5, 2025 | 181 | 153 | 166 | 33 | 48 | 335 | 134 | 87 | 142 |
| Feb. 5, 2025 - Mar. 5, 2025 | 139 | 306 | 70 | 17 | 17 | 145 | 36 | 6 | 92 |
| Mar. 5, 2025 - Apr. 2, 2025 | 13 | 129 | 102 | 33 | 7 | 52 | 58 | 26 | 53 |
| Apr. 2, 2025 - May 7, 2025 | Spoiled | 32 | 20 | 11 | 18 | 47 | 9 | 4 | 20 |
| May 7, 2025 - Jun. 4, 2025 | 9 | 30 | 68 | 30 | 22 | 21 | 17 | 15 | 27 |
| Jun. 4, 2025 - Jul. 7, 2025 | 11 | 14 | 58 | 23 | 11 | 16 | 21 | 17 | 21 |
| Jul. 7, 2025 - Aug. 6, 2025 | 24 | 82 | 1 | 19 | 31 | 48 | 147 | 25 | 47 |
| Aug. 6, 2025 - Sep. 3, 2025 | 17 | 54 | 23 | 15 | 41 | 24 | 582 | 95 | 106 |
| Sep. 3, 2025 - Oct. 1, 2025 | 17 | 90 | 76 | 8 | 11 | 125 | 41 | 75 | 55 |
| Oct. 1, 2025 - Oct. 29, 2025 | 28 | 175 | 8 | 20 | 47 | 125 | 60 | 61 | 66 |
| Oct. 29, 2025 - Dec. 3, 2025 | 39 | 112 | 31 | 16 | 21 | 58 | 60 | 27 | 46 |
| Dec. 3, 2025 - Jan. 7, 2026 | 67 | 77 | 48 | 7 | 10 | 289 | 41 | 58 | 75 |
| AVERAGE | 50 | 105 | 56 | 19 | 24 | 107 | 101 | 41 | 62 |

Results shaded in blue are <minimum detectable activity (MDA)



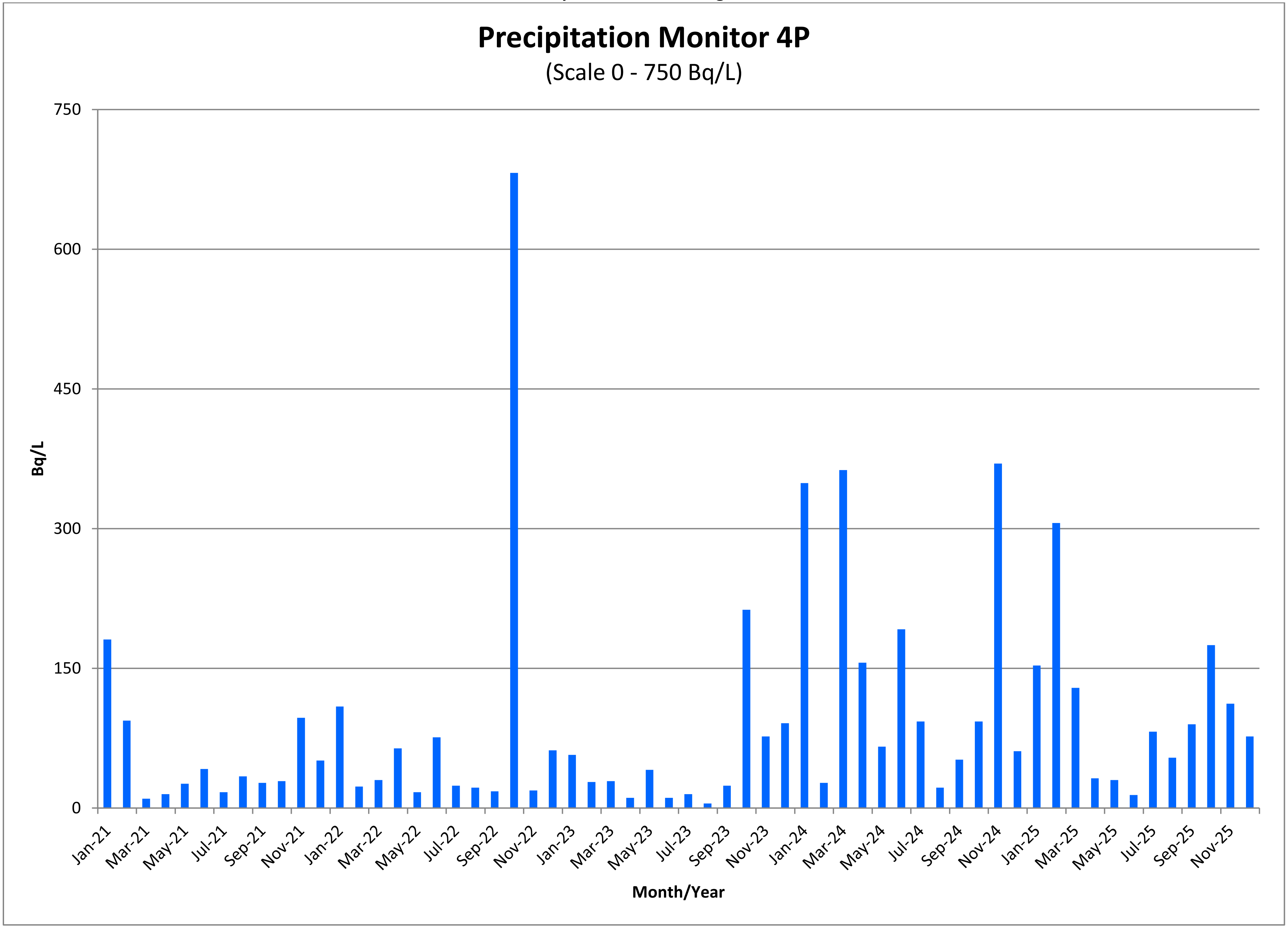

Precipitation Sampling Stations

Precipitation Monitoring Data

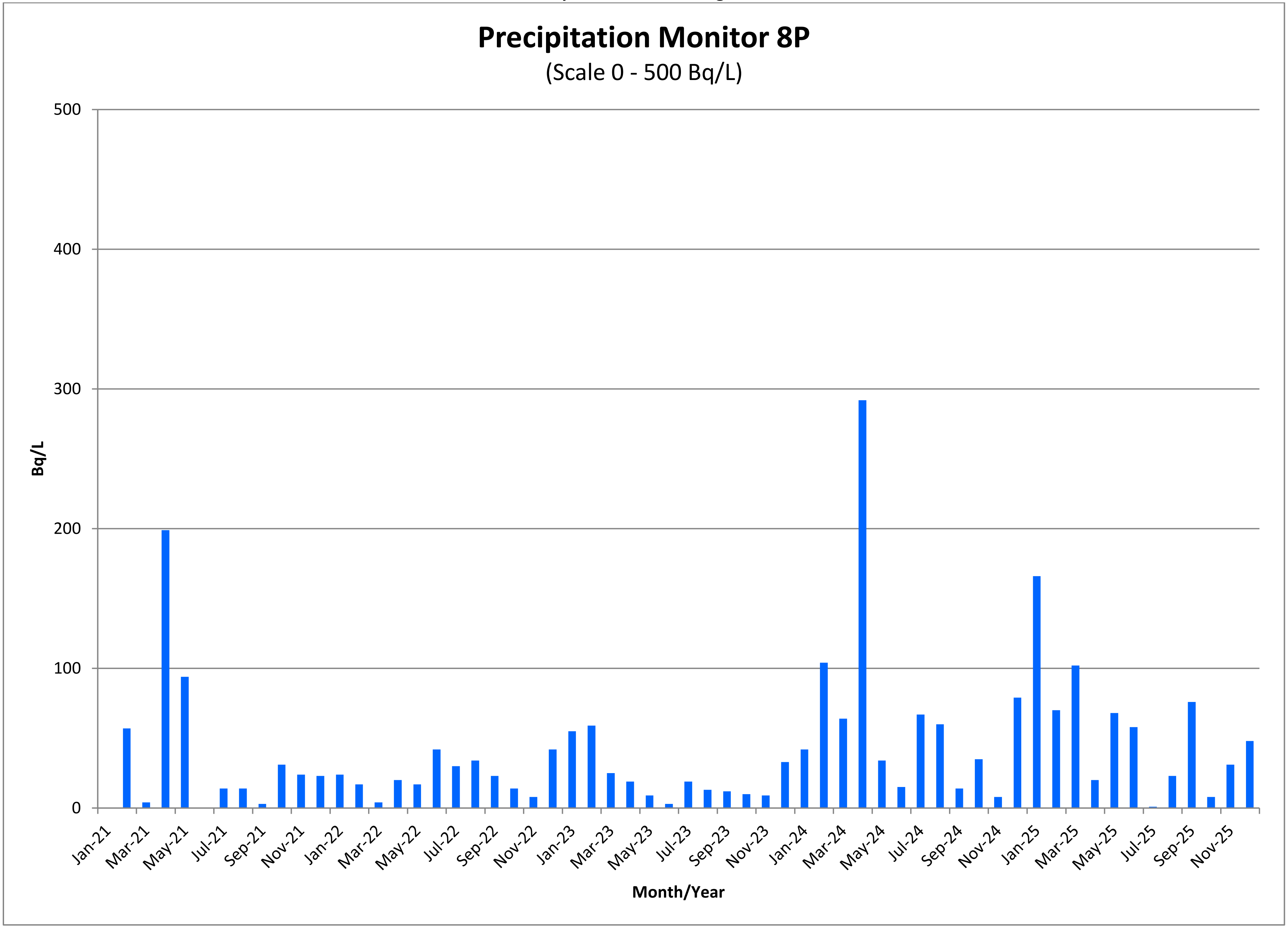



APPENDIX H

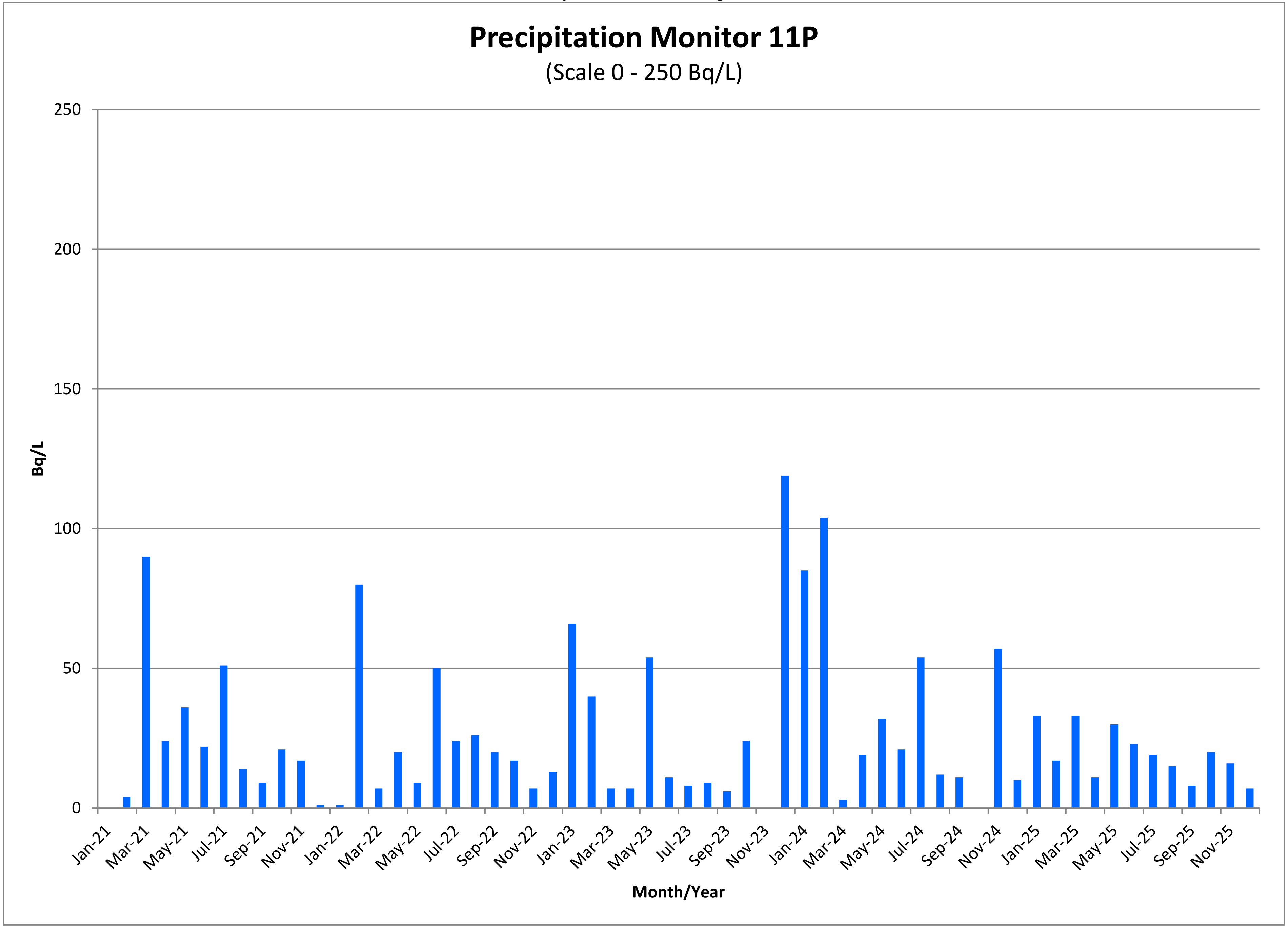
Precipitation Monitoring Data




APPENDIX H

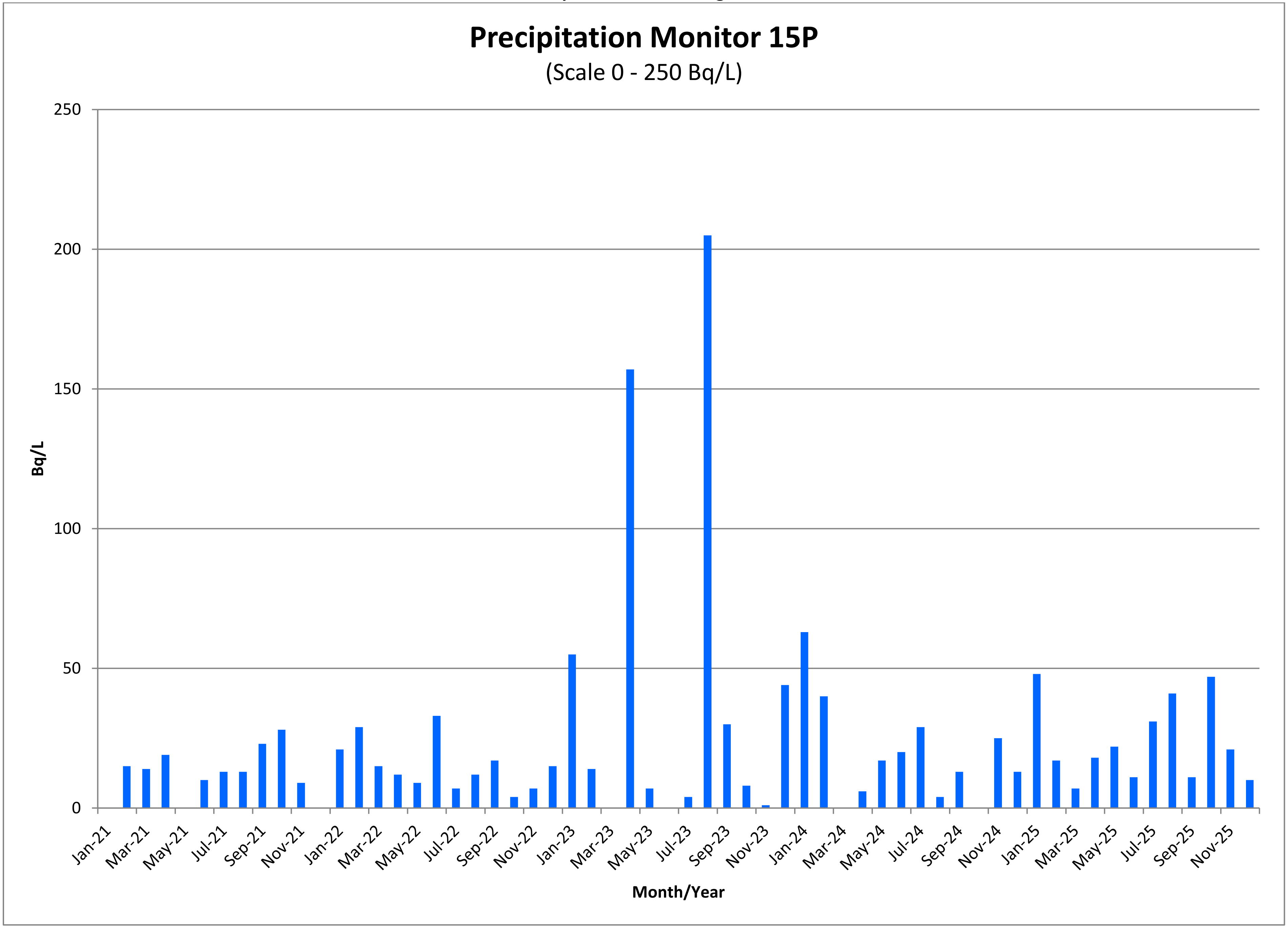

Precipitation Monitor 8P
(Scale 0 - 500 Bq/L)
Bq/L
0
100
200
300
400
500
Jan-21
Mar-21
May-21
Jul-21
Sep-21
Nov-21
Jan-22
Mar-22
May-22
Jul-22
Sep-22
Nov-22
Jan-23
Mar-23
May-23
Jul-23
Sep-23
Nov-23
Jan-24
Mar-24
May-24
Jul-24
Sep-24
Nov-24
Jan-25
Mar-25
May-25
Jul-25
Sep-25
Nov-25
Month/Year

Precipitation Monitoring Data



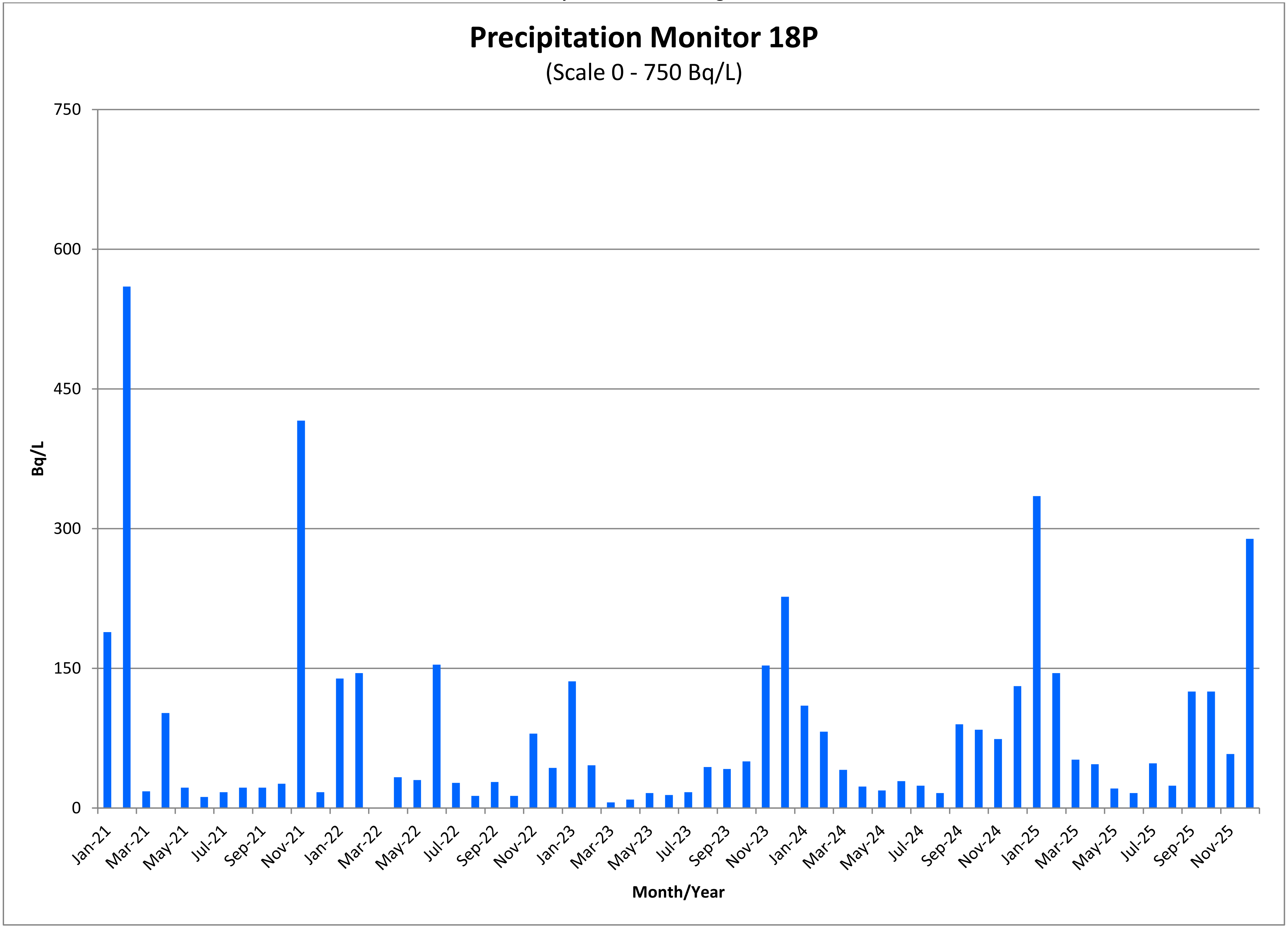

APPENDIX H

Precipitation Monitoring Data

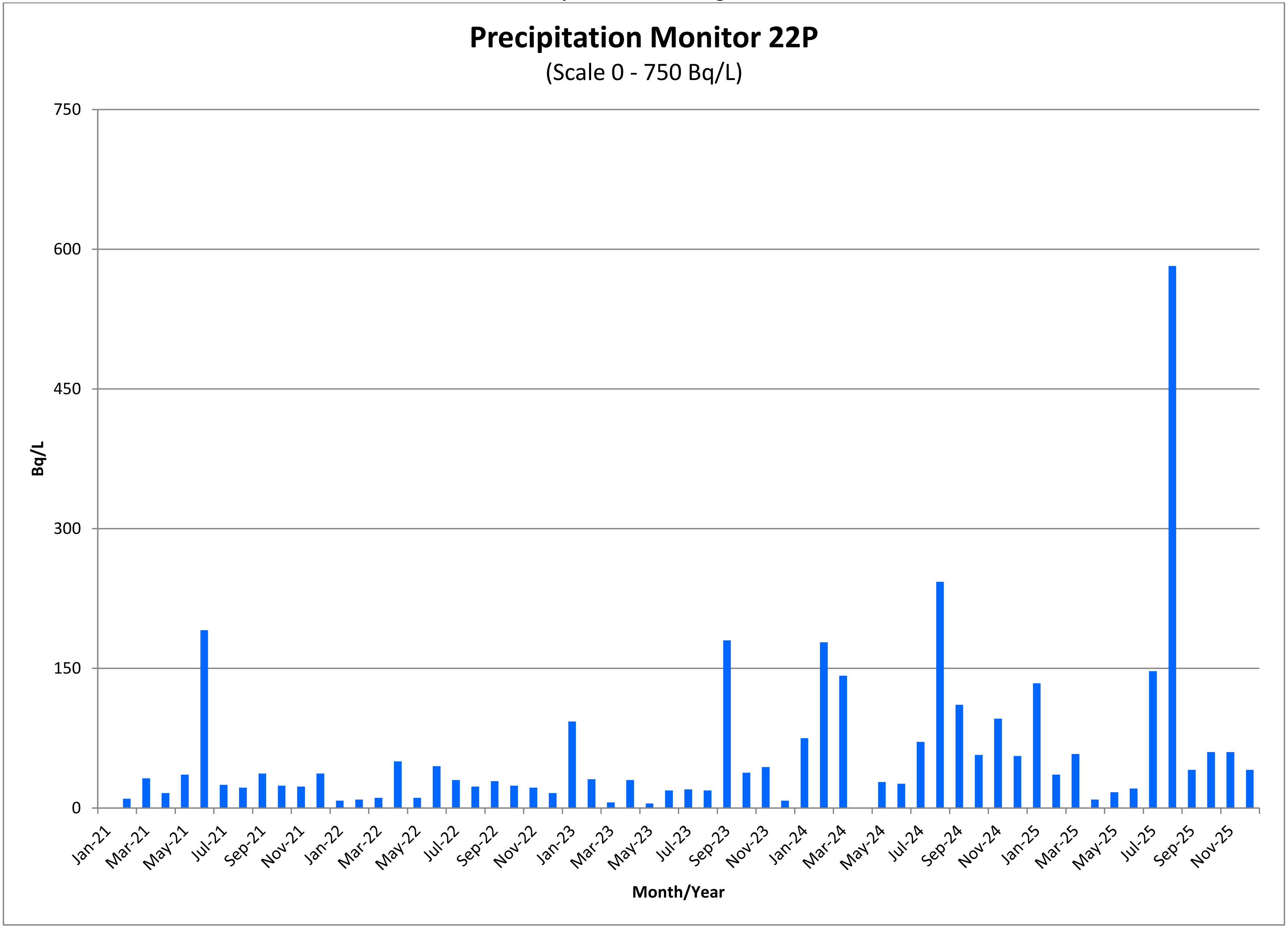



APPENDIX H

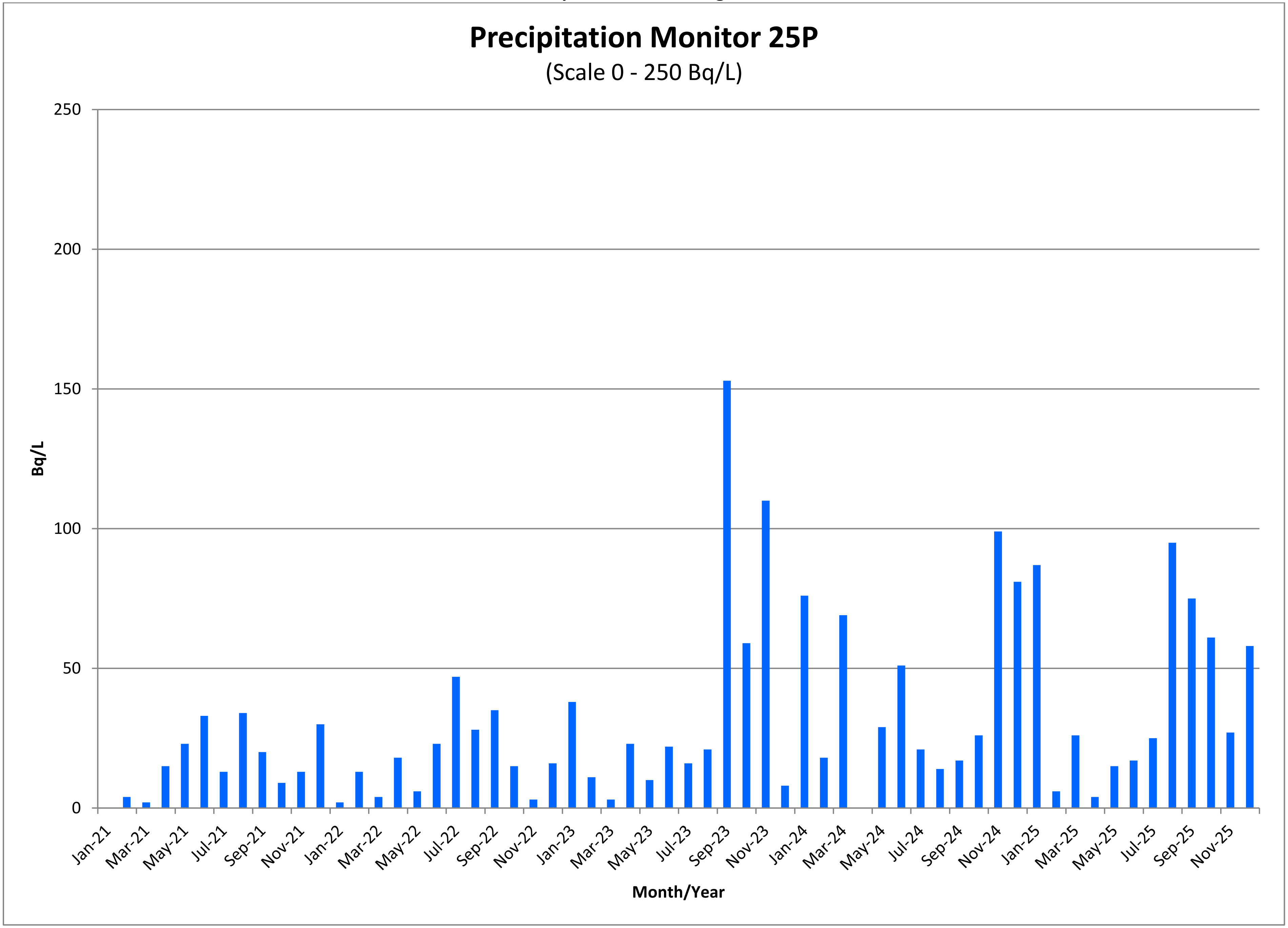
Precipitation Monitoring Data




APPENDIX H


Precipitation Monitor 22P
(Scale 0 - 750 Bq/L)
750
600
450
300
150
0
Bq/L
Jan-21
Mar-21
May-21
Jul-21
Sep-21
Nov-21
Jan-22
Mar-22
May-22
Jul-22
Sep-22
Nov-22
Jan-23
Mar-23
May-23
Jul-23
Sep-23
Nov-23
Jan-24
Mar-24
May-24
Jul-24
Sep-24
Nov-24
Jan-25
Mar-25
May-25
Jul-25
Sep-25
Nov-25
Month/Year

Precipitation Monitoring Data

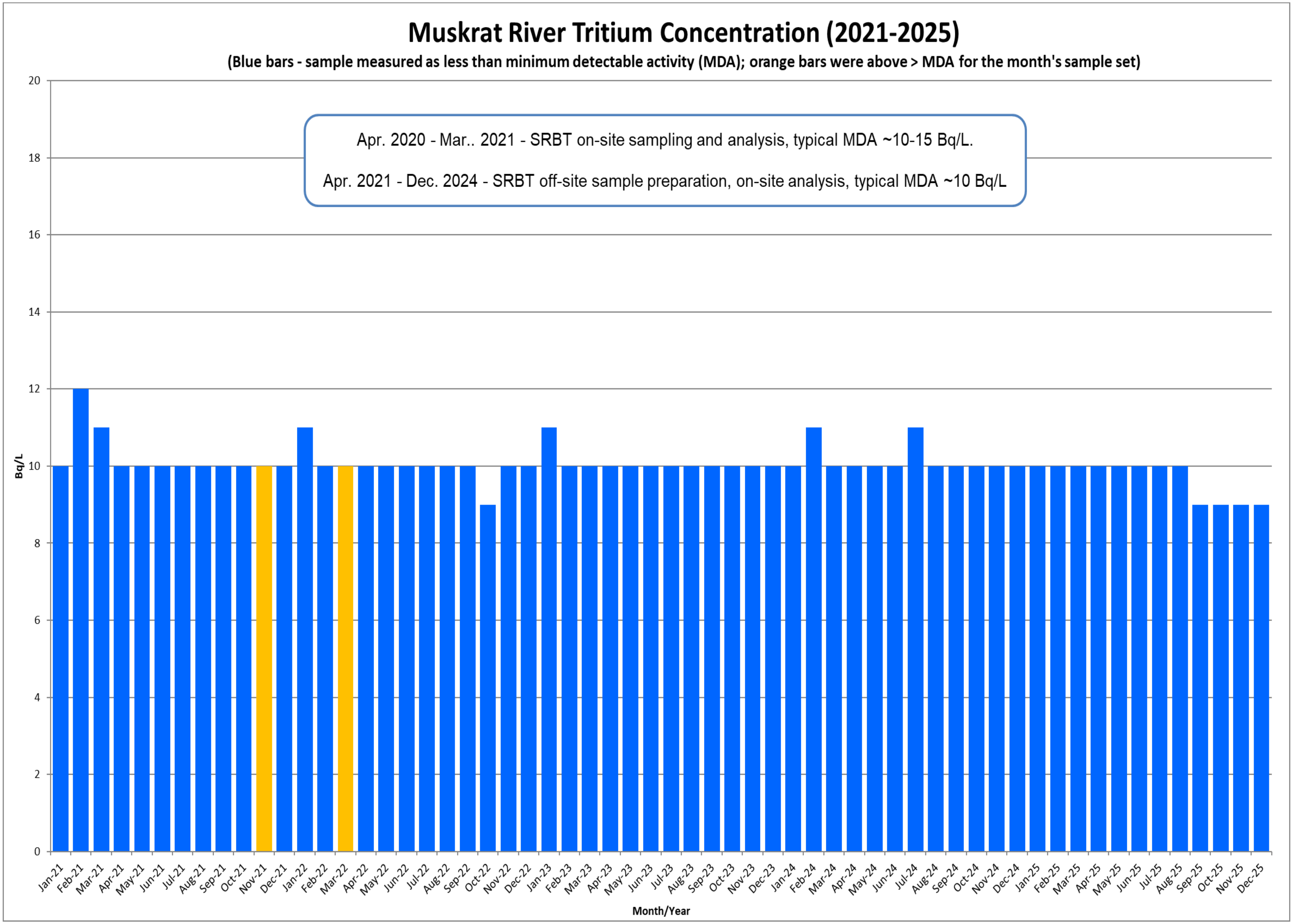



APPENDIX H

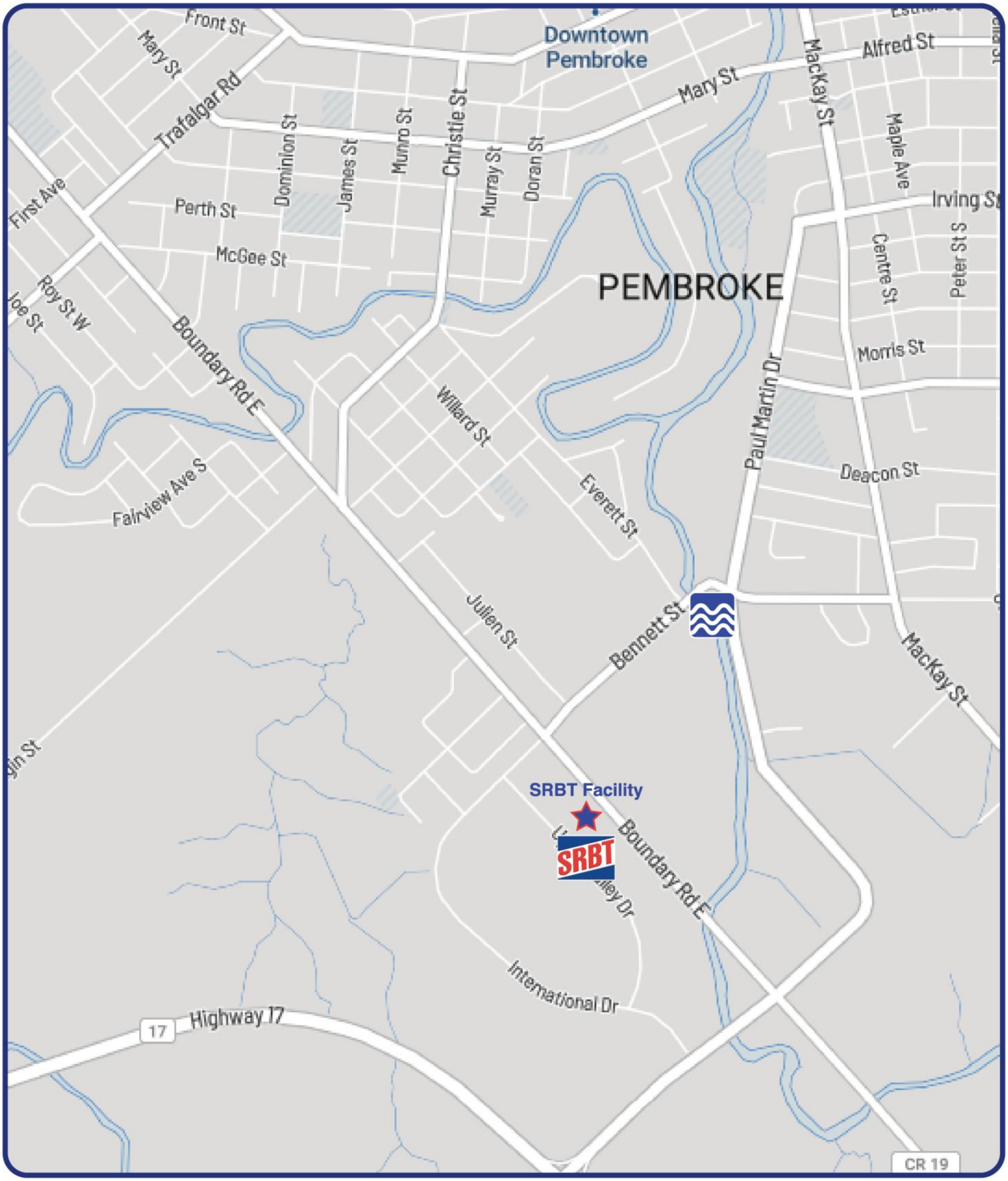
# APPENDIX I

# River Water Monitoring Data

# River Water Monitoring Data



**River Water Monitoring Data**




River Water Sampling Point

# APPENDIX J

## Downspout / Facility Runoff Monitoring Data

## Downspout / Facility Runoff Monitoring Data

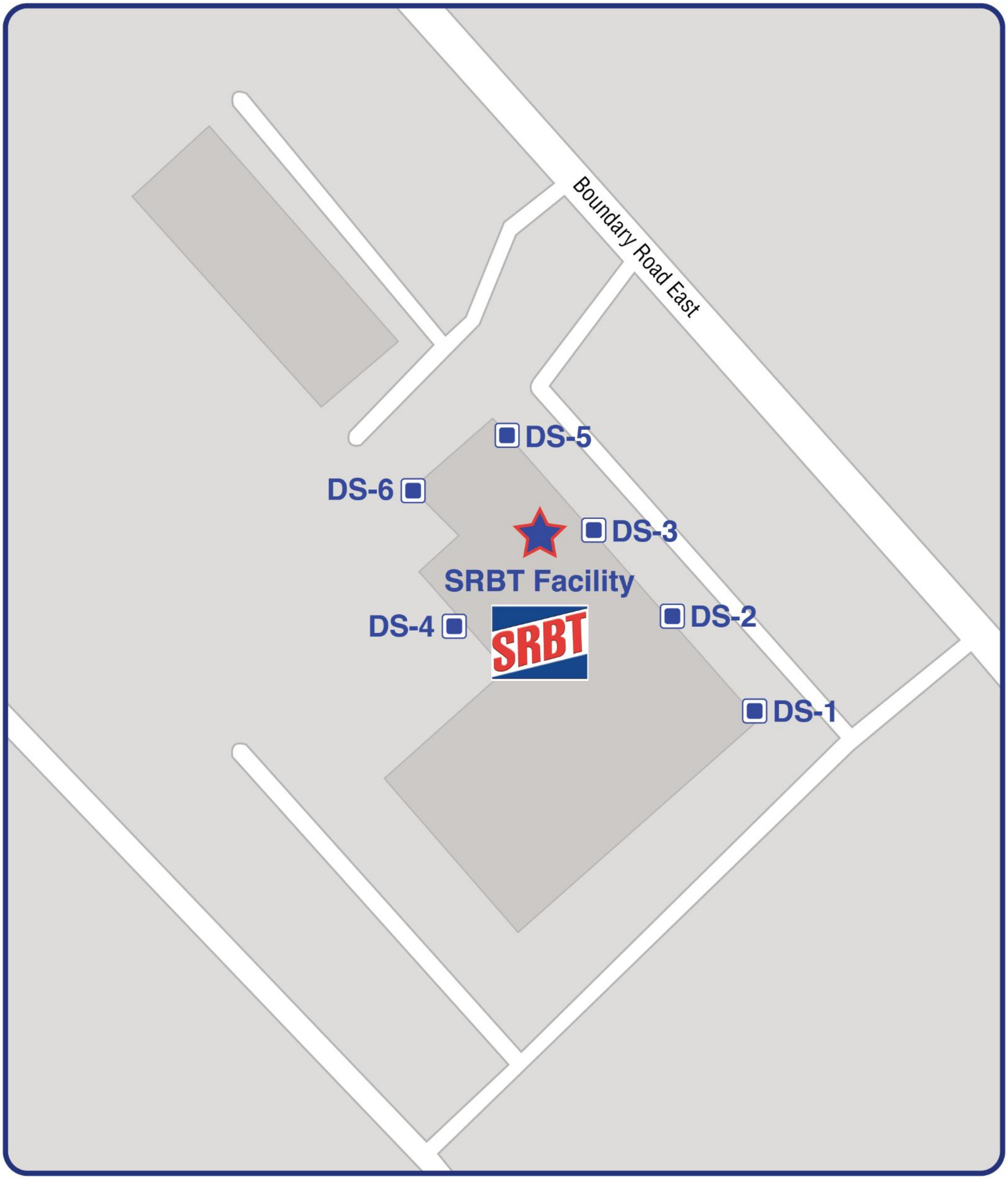
| 2025 - Tritium Concentration in Facility Downspout / Runoff Water (Bq/L) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Date** | **Time** | **DS-1** | **DS-2** | **DS-3** | **DS-4** | **DS-5** | **DS-6** | **MDA** |
| May 16 (moderate rain) | 1000h | <MDA | <MDA | <MDA | <MDA | <MDA | <MDA | 41 |
| Aug. 28 (light rain) | 1000h | <MDA | <MDA | <MDA | <MDA | <MDA | <MDA | 39 |
| | 1200h | 201 | 1187 | 266 | 2339 | 98 | 543 | |
| Average (Bq/L) (<MDA taken to be 0) | | 67 | 396 | 89 | 780 | 33 | 181 | 40 |

---

| | |
|---|---|
| Average of all samples obtained (<MDA taken to be 0) | 257 Bq/L |
| Average of all samples obtained (<MDA taken to be MDA value) | 284 Bq/L |
| Average of samples exceeding MDA | 772 Bq/L |

**MDA = Minimum Detectable Activity*

**Downspout / Facility Runoff Monitoring Data**

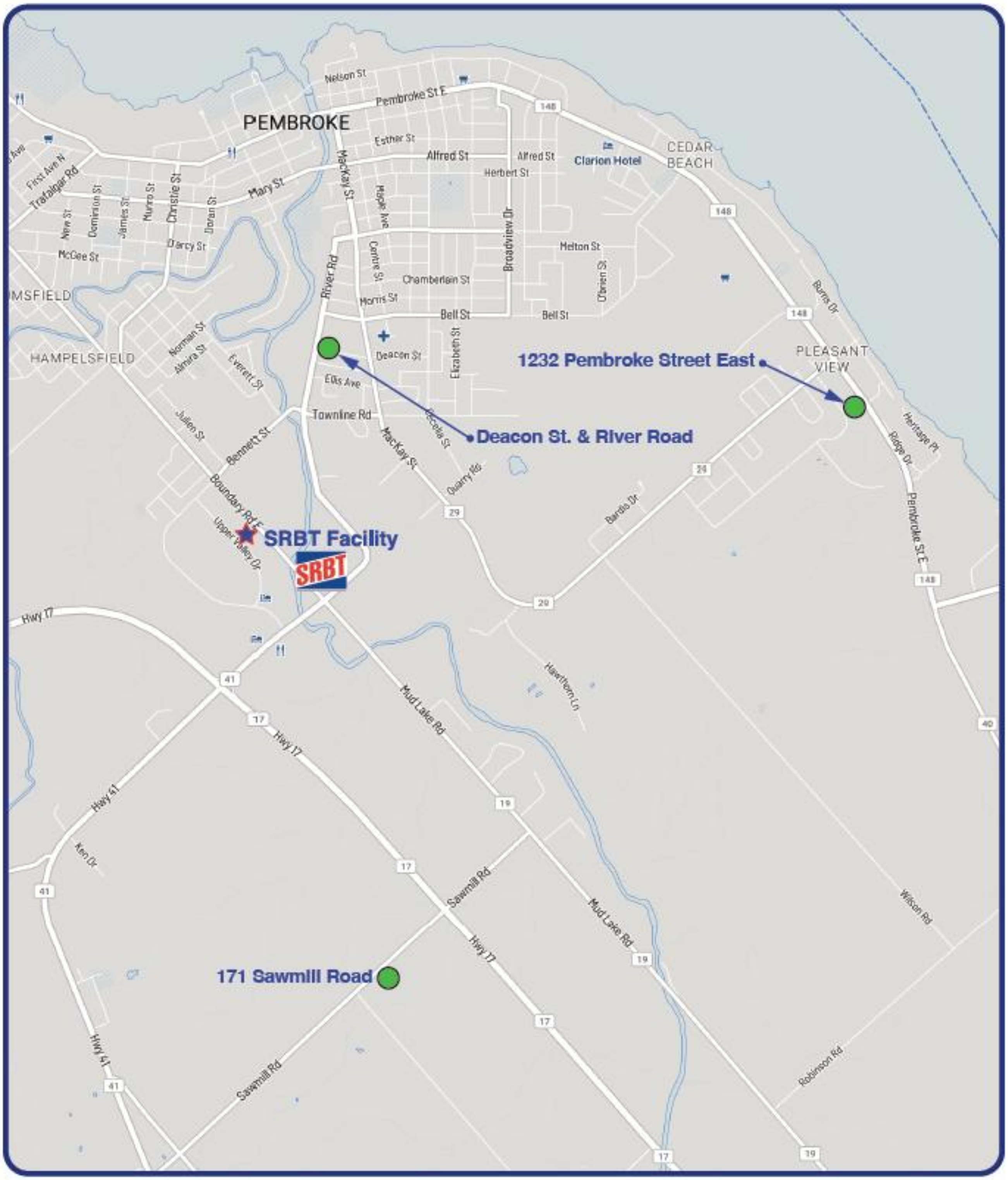



Facility Downspout Runoff Sampling Points

# APPENDIX K

## Produce Monitoring Data

# Map – SRBT Produce Sampling 2025




Produce Sample Points ●

## Produce Monitoring Data

### 2025 Residential Produce Sampling – Free-water Tritium Concentration

| Sample | Units | Result |
|---|---|---|
| Tomatoes<br>171 Sawmill Road | Bq/kg<br>Fresh weight | 5.01 |
| Beets<br>171 Sawmill Road | Bq/kg<br>Fresh weight | 4.15 |
| Cucumbers<br>171 Sawmill Road | Bq/kg<br>Fresh weight | 6.82 |
| Beans<br>171 Sawmill Road | Bq/kg<br>Fresh weight | 9.55 |
| Chard<br>171 Sawmill Road | Bq/kg<br>Fresh weight | 6.71 |
| Tomatoes<br>Deacon St. + River Rd. | Bq/kg<br>Fresh weight | 10.43 |
| Carrots<br>Deacon St. + River Rd. | Bq/kg<br>Fresh weight | 10.80 |
| Grapes<br>Deacon St. + River Rd. | Bq/kg<br>Fresh weight | 22.71 |

### 2025 Residential Produce Sampling – Organically-bound Tritium (OBT) Concentration

| Sample | Units | Result |
|---|---|---|
| Tomatoes<br>171 Sawmill Road | OBT Bq/kg<br>Fresh weight | Non-detectable |
| Tomatoes<br>Deacon St. + River Rd. | OBT Bq/kg<br>Fresh weight | 0.23 |

### 2025 Commercial Produce Sampling – Free-water Tritium Concentration

| Sample | Units | Result |
|---|---|---|
| Rhubarb - Pembroke<br>1232 Pembroke St. E | Bq/kg<br>Fresh weight | 1.65 |

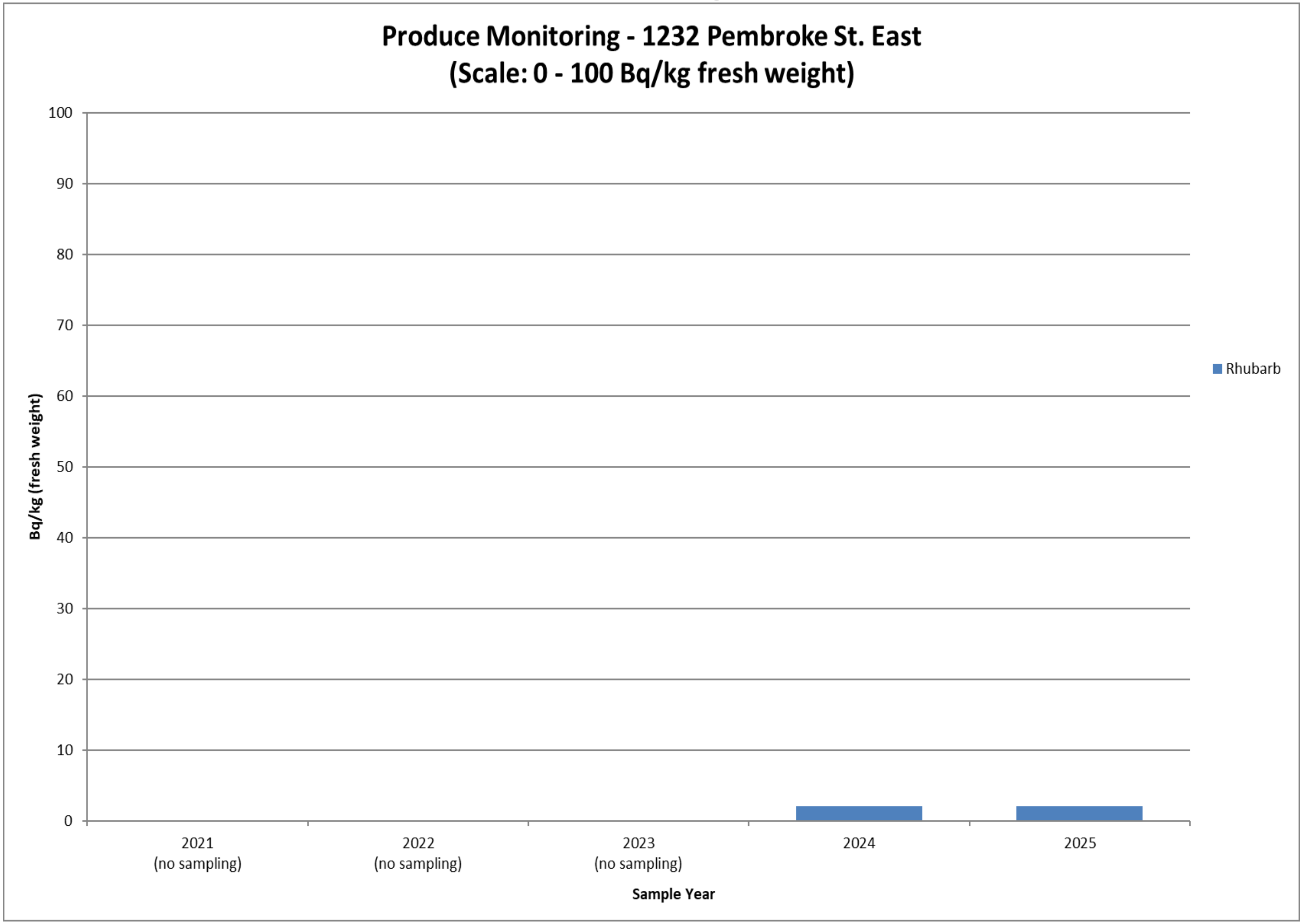
### 2025 Commercial Produce Sampling – Organically-bound Tritium (OBT) Concentration

| Sample | Units | Result |
|---|---|---|
| Rhubarb - Pembroke<br>1232 Pembroke St. E | OBT Bq/kg<br>Fresh weight | Non-detectable |

# Produce Sampling Data Trends

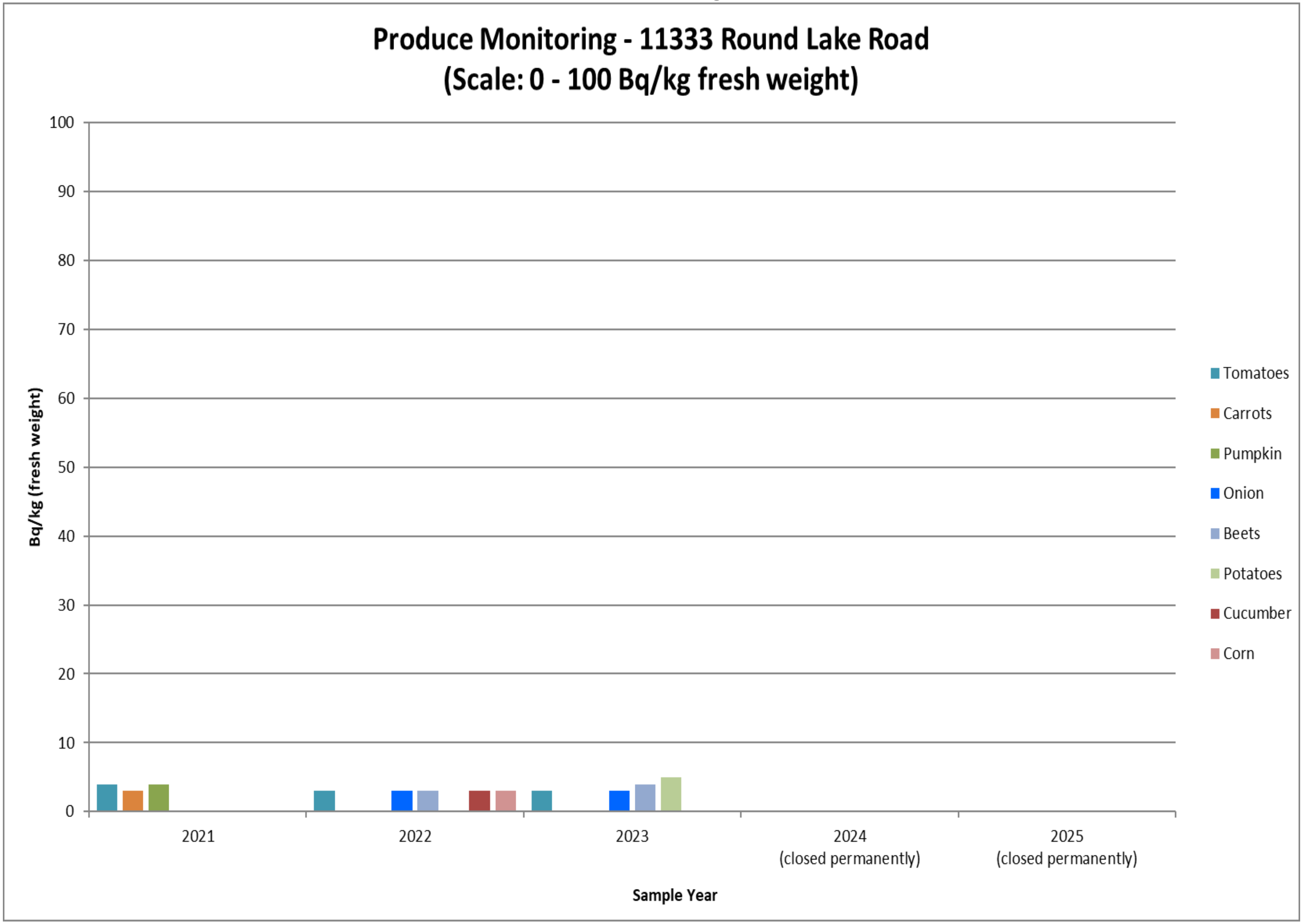
# 2021 - 2025

Produce Monitoring Data



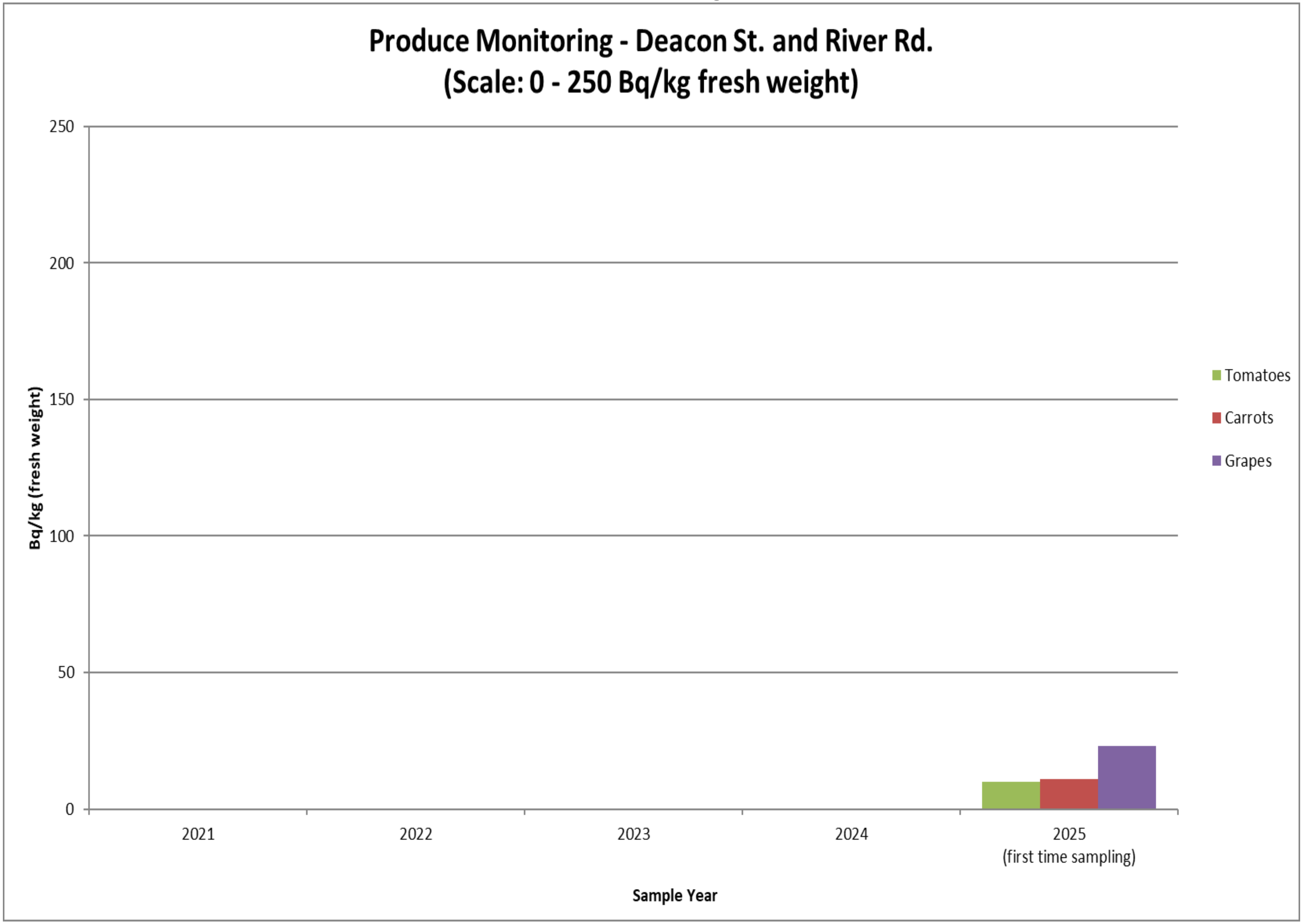

APPENDIX K

**Produce Monitoring Data**

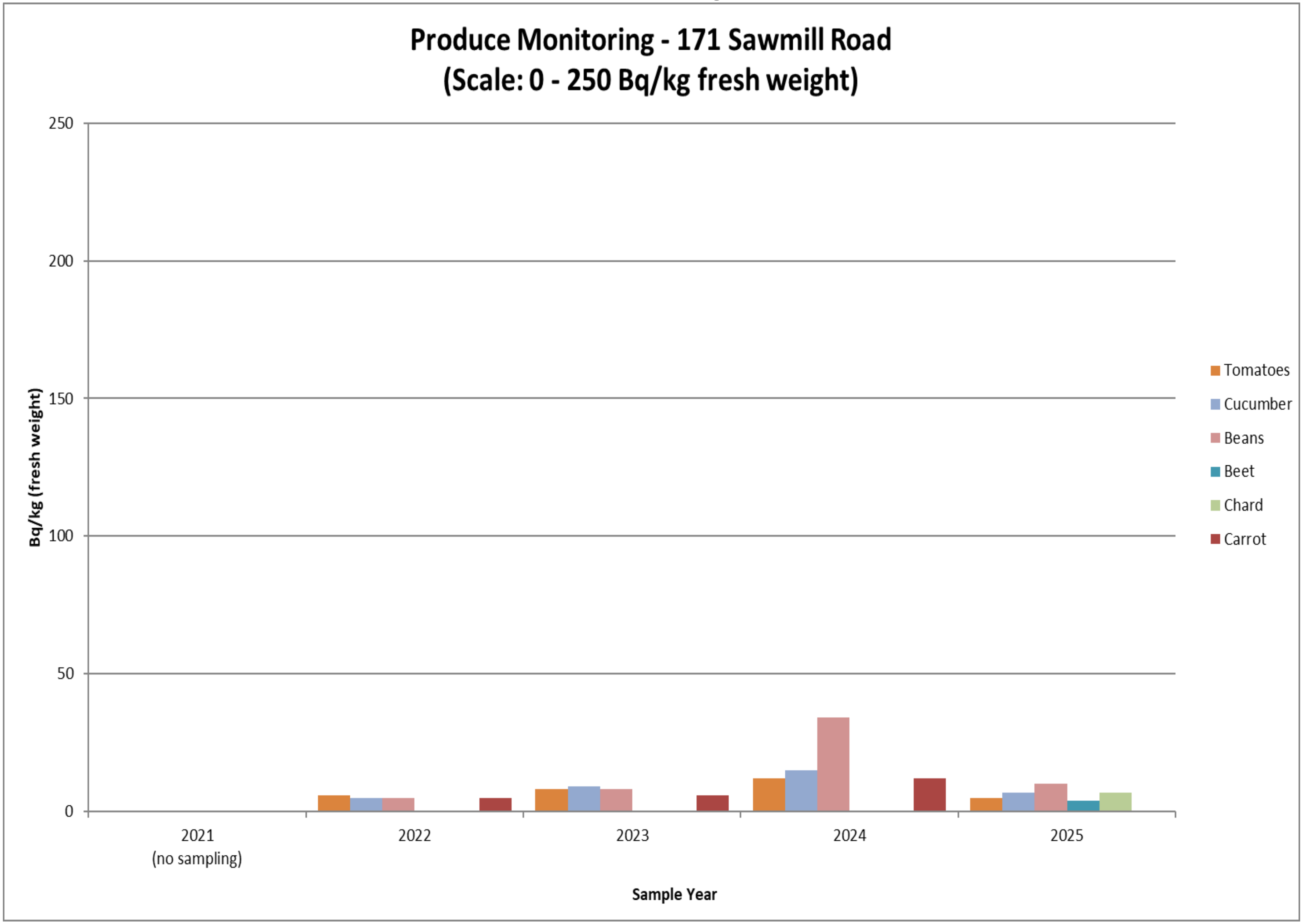



APPENDIX K

**Produce Monitoring Data**

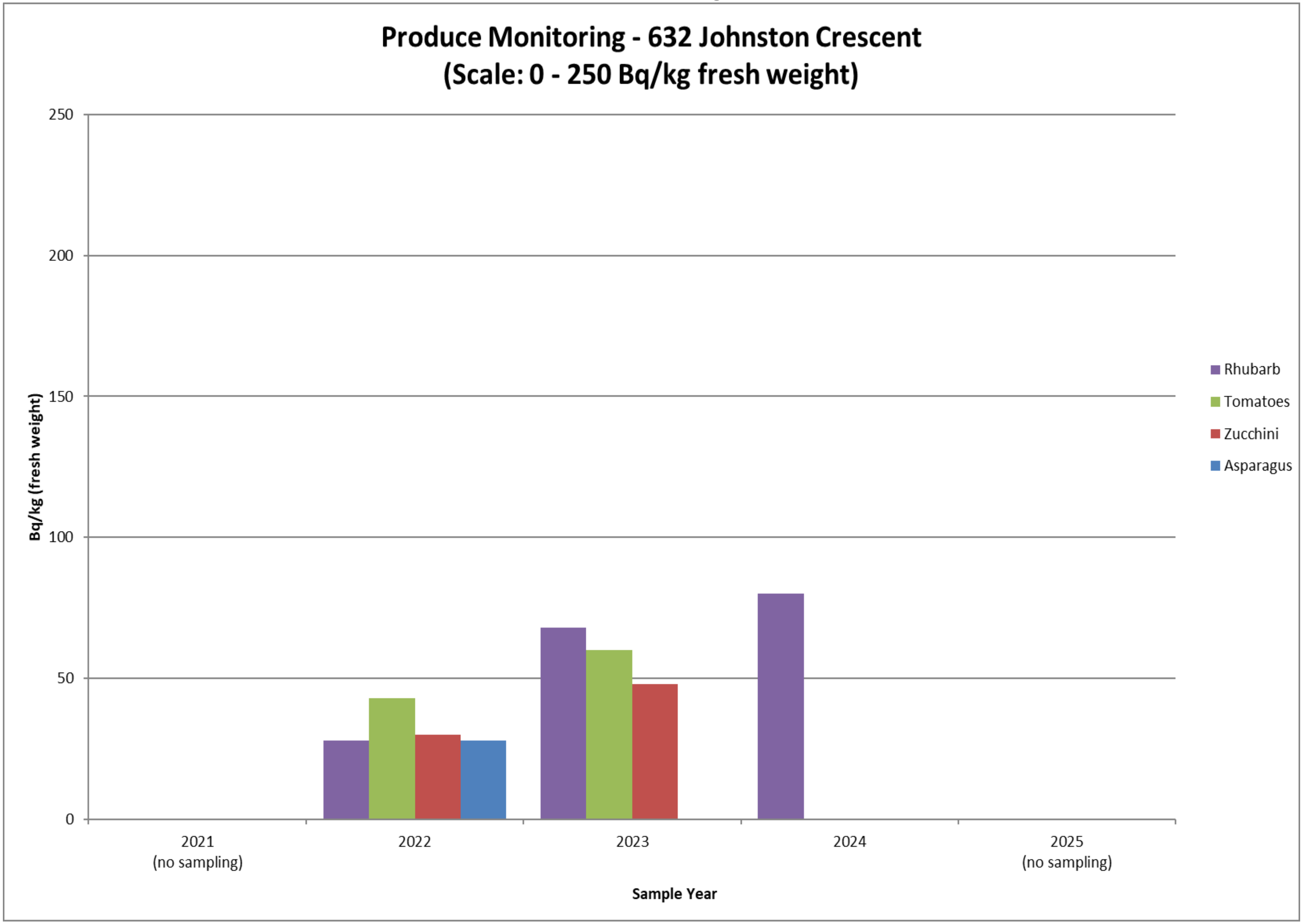


Produce Monitoring Data



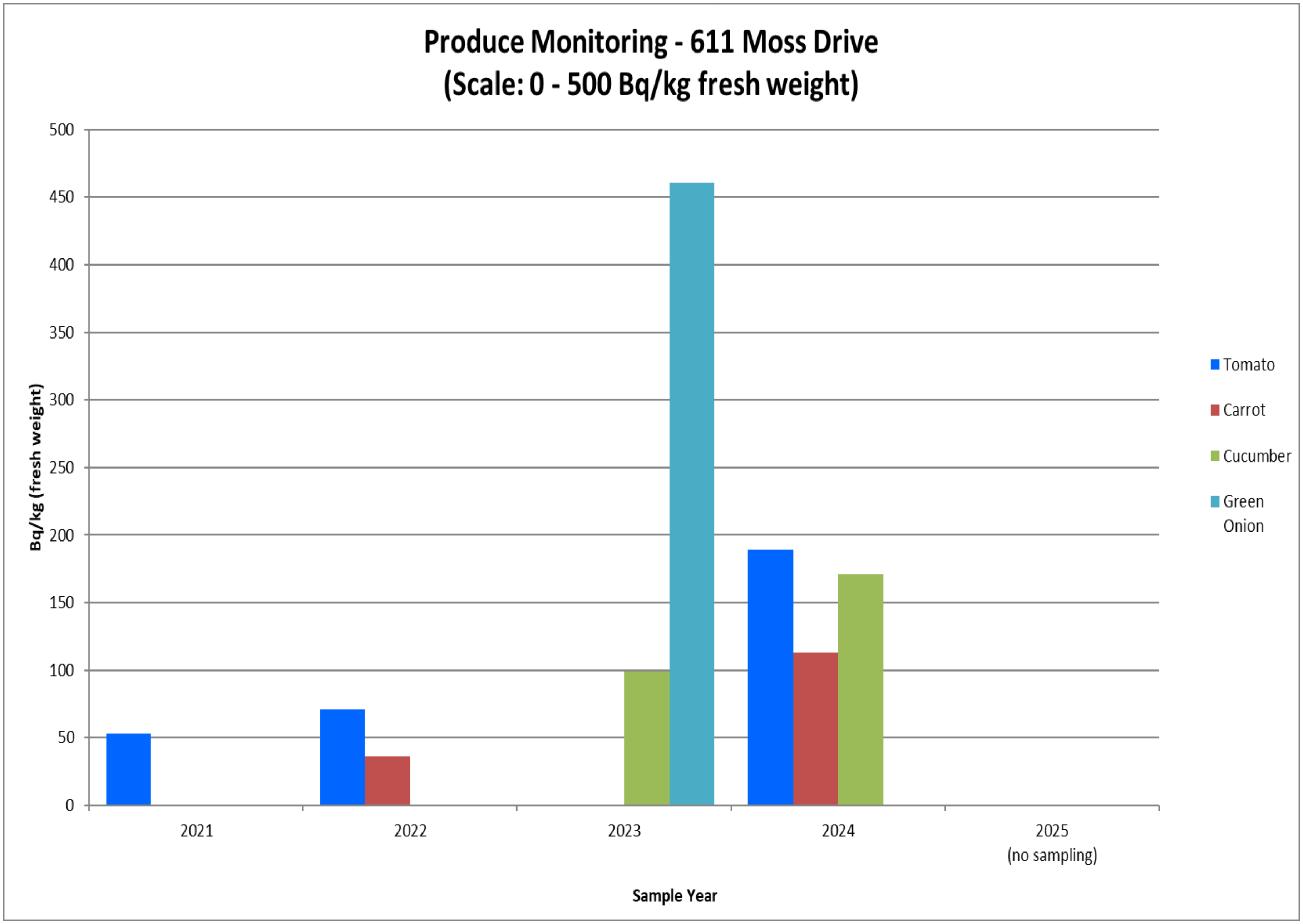

APPENDIX K

## Produce Monitoring Data



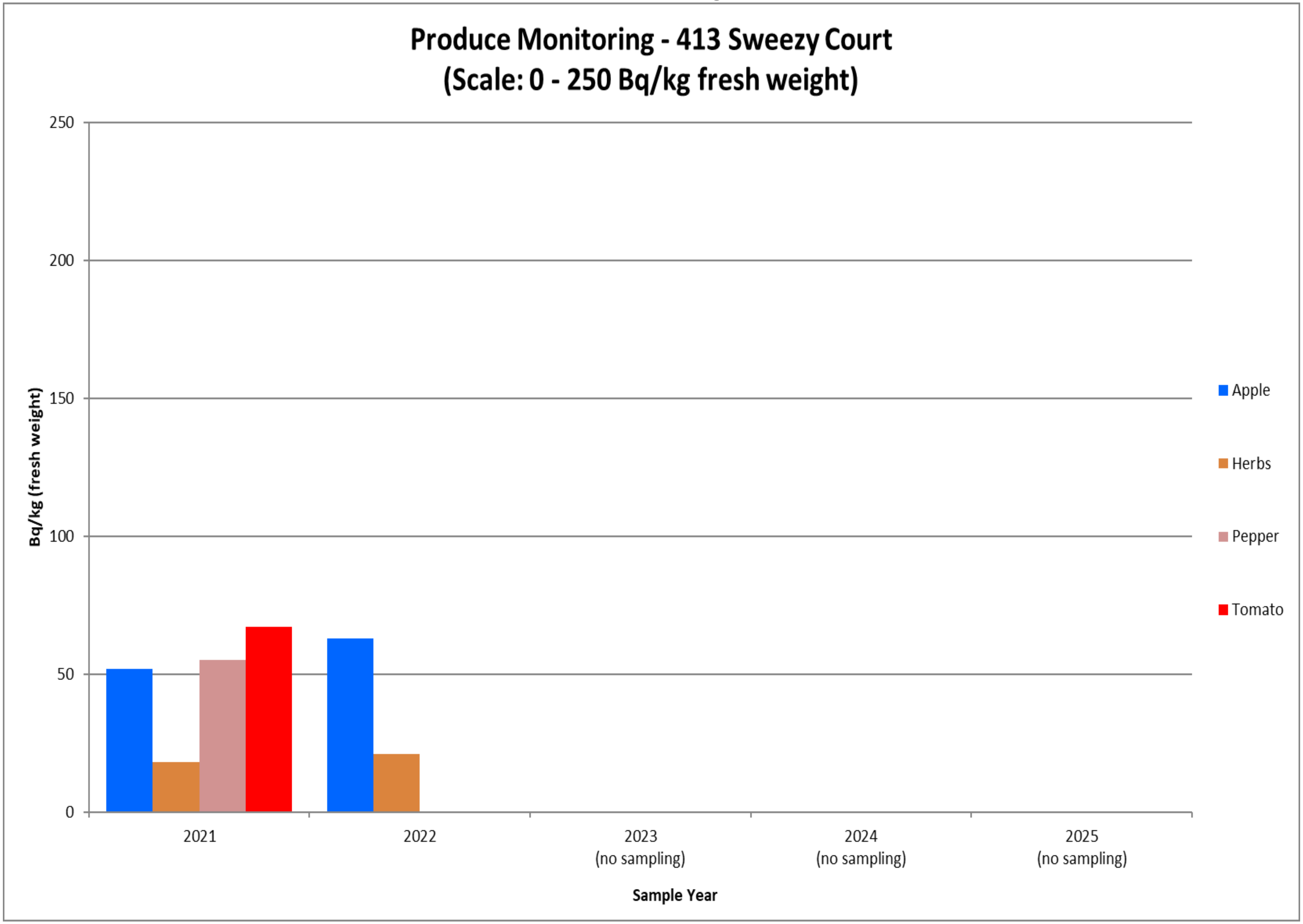

APPENDIX K

**Produce Monitoring Data**

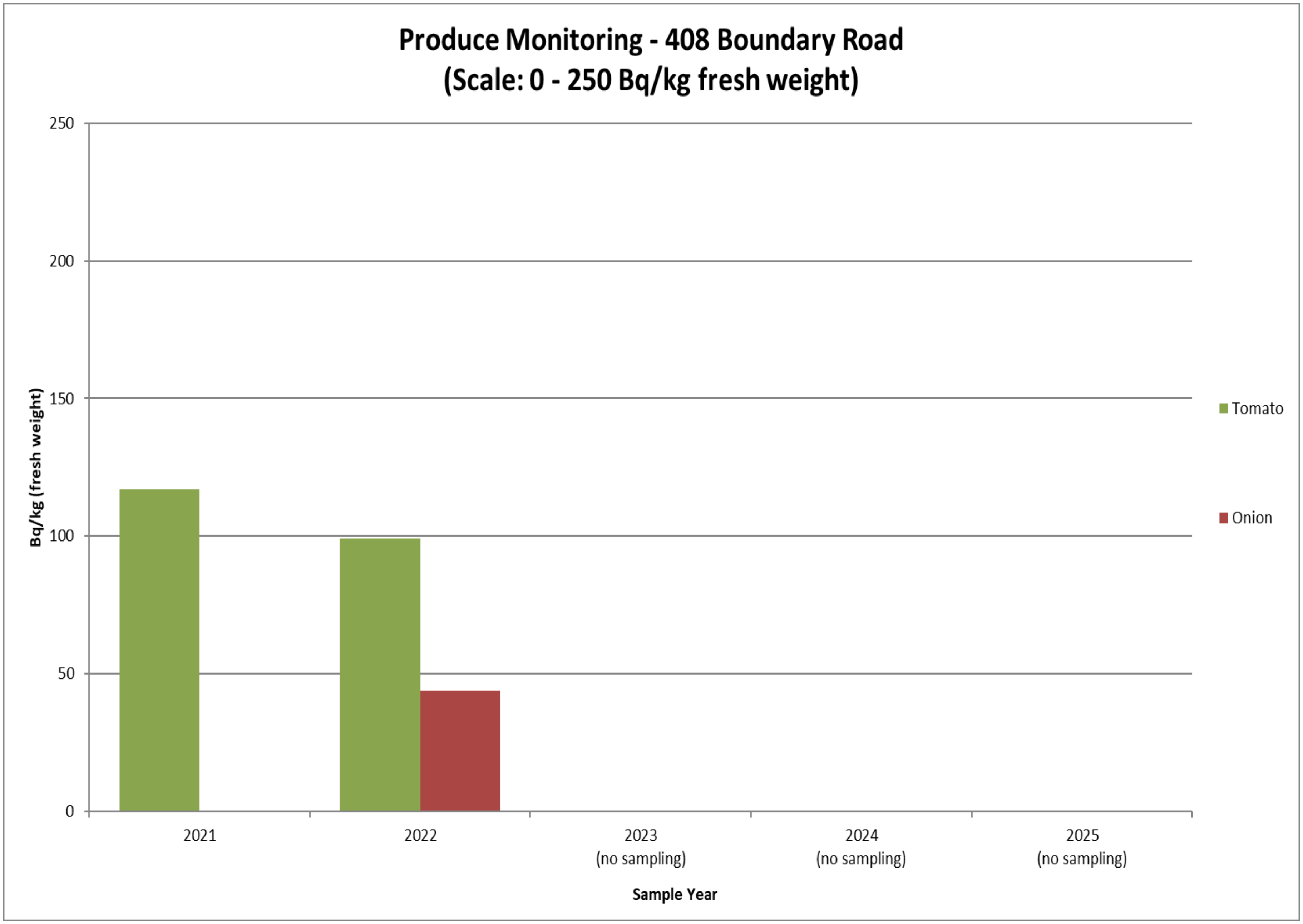



APPENDIX K

## Produce Monitoring Data

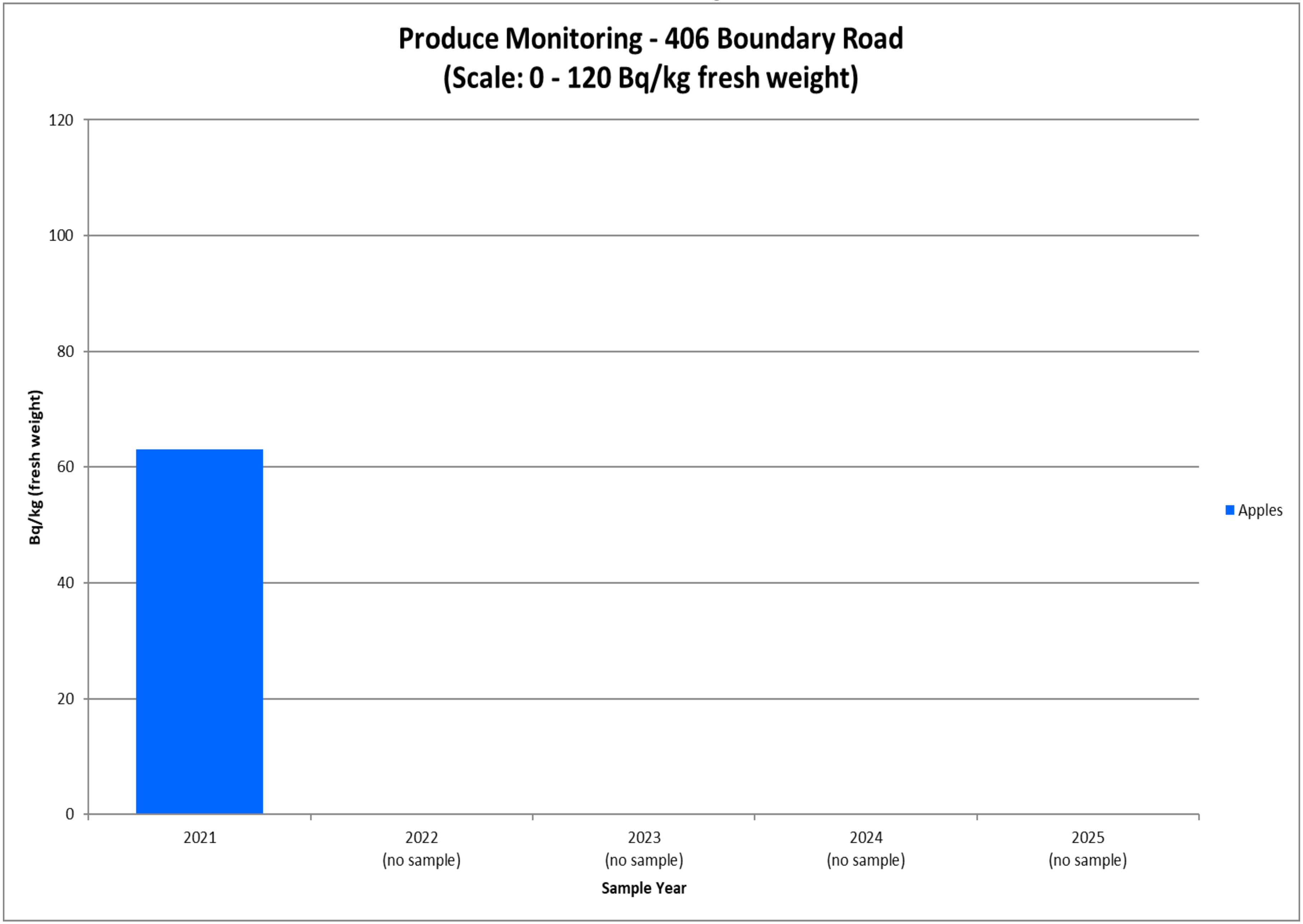


**Produce Monitoring Data**




APPENDIX K

**Produce Monitoring Data**



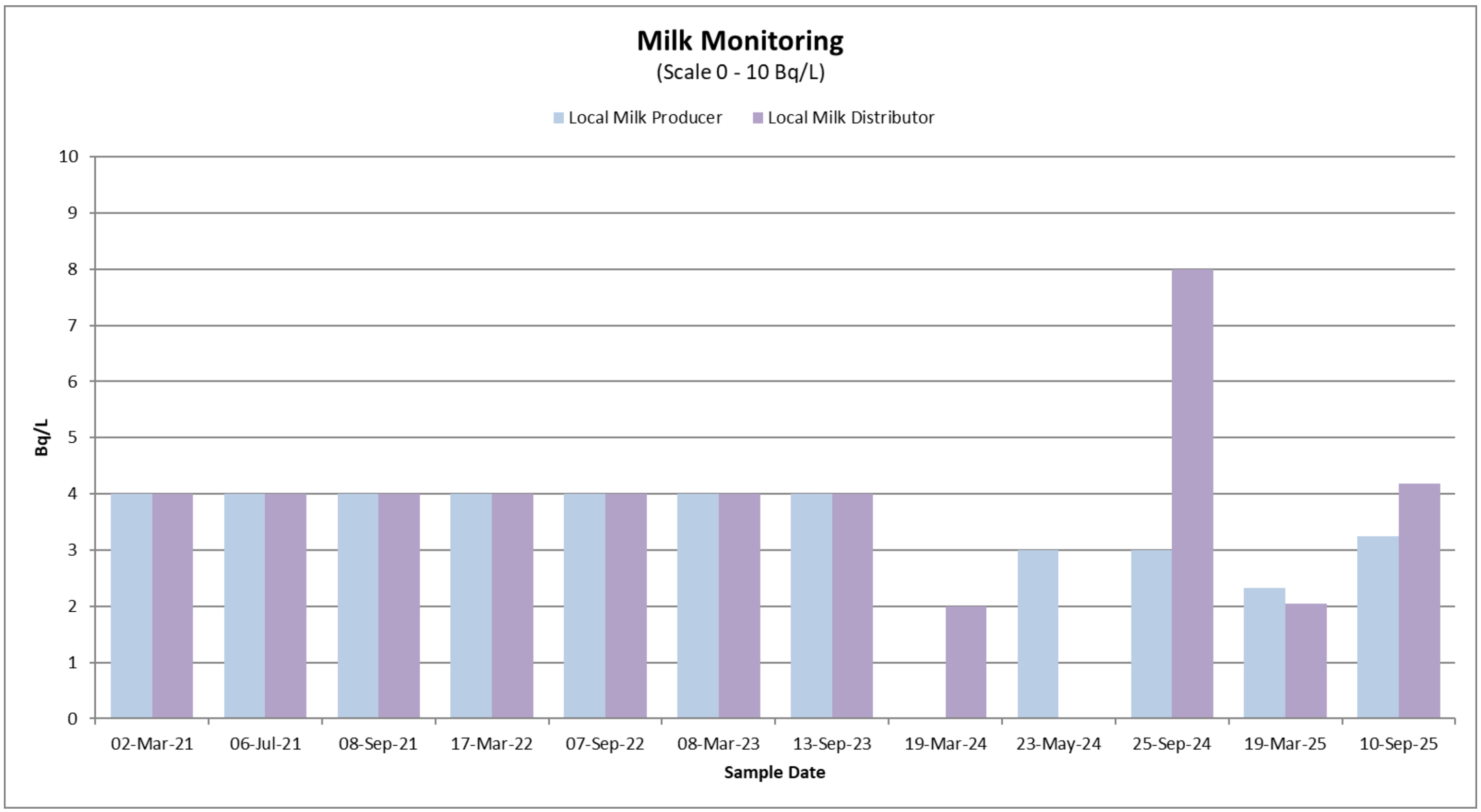

APPENDIX K

# APPENDIX L

# Milk Monitoring Data

# Milk Monitoring Data

| MILK MONITORING | | |
|---|---|---|
| Results shaded in blue are <MDA (minimum detectable activity) | | |
| | **LOCAL MILK PRODUCER** | **LOCAL MILK DISTRIBUTOR** |
| | **Bq/L** | **Bq/L** |
| 02-Mar-21 | 4 | 4 |
| 06-Jul-21 | 4 | 4 |
| 08-Sep-21 | 4 | 4 |
| 17-Mar-22 | 4 | 4 |
| 07-Sep-22 | 4 | 4 |
| 08-Mar-23 | 4 | 4 |
| 13-Sep-23 | 4 | 4 |
| 19-Mar-24 | | 2 |
| 23-May-24 | 3 | |
| 25-Sep-24 | 3 | 8 |
| 19-Mar-25 | 2.33 | 2.05 |
| 10-Sep-25 | 3.25 | 4.18 |




APPENDIX L

# APPENDIX M

# Weather Data

| WEATHER DATA SUMMARY (2021 - 2025) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Month | Precip Counts, # (TOTAL) | Wind Speed, m/s (AVG) | Gust Speed, m/s (AVG) | Wind Direction, ø (AVG) | Temp, °C (AVG) | RH, % (AVG) | DewPt, °C (AVG) | Average wind sector (NSEW) | Total precipitation (rain eq. mm) |
| January-2021 | 66 | 0.1 | 0.9 | | -7.2 | 83.1 | -9.6 | | 13 |
| February-2021 | 121 | 0.3 | 1.2 | | -8.1 | 75.6 | -11.8 | | 24 |
| March-2021 | Weather Station taken offline for investigation, corrective maintenance and component replacement. | | | | | | | | |
| April-2021 | | | | | | | | | |
| May-2021 | | | | | | | | | |
| June-2021 | | | | | | | | | |
| July-2021 | | | | | | | | | |
| August-2021 | | | | | | | | | |
| September-2021 | | | | | | | | | |
| October-2021 | 271 | 2.7 | 4.2 | 201.9 | 10.9 | 83.8 | 8.1 | SSW | 54 |
| November-2021 | 102 | 3.1 | 4.7 | 225.2 | 0.9 | 79.4 | -2.5 | SW | 20 |
| December-2021 | 253 | 4.0 | 6.1 | 209.2 | -4.5 | 79.4 | -7.6 | SSW | 51 |
| January-2022 | 80 | 3.4 | 5.0 | 223.1 | -13.8 | 77.7 | -17.0 | SW | 16 |
| February-2022 | 36 | 3.5 | 5.3 | 222.7 | -13.6 | 78.4 | -16.6 | SW | 7 |
| March-2022 | 198 | 3.8 | 5.8 | 186.9 | -1.1 | 72.0 | -5.8 | SSW | 40 |
| April-2022 | 401 | 4.3 | 6.6 | 192.0 | 6.2 | 66.3 | -0.5 | SSW | 80 |
| May-2022 | 116 | 3.5 | 5.5 | 48.9 | 17.7 | 75.1 | 12.7 | NE | 23 |
| June-2022 | 100 | 3.2 | 5.1 | 151.8 | 16.0 | 63.0 | 7.6 | SSE | 20 |
| July-2022 | Precipitation counting malfunction | 2.8 | 4.8 | 153.6 | 20.6 | 71.0 | 14.7 | SSE | Precipitation counting malfunction |
| August-2022 | | 2.6 | 4.3 | 214.0 | 19.9 | 77.4 | 15.4 | SW | |
| September-2022 | | 2.7 | 4.4 | 210.6 | 14.8 | 83.6 | 11.8 | SSW | |
| October-2022 | | 2.6 | 4.1 | 189.7 | 8.6 | 79.5 | 4.9 | SSW | |
| November-2022 | | 3.9 | 6.0 | 218.9 | 3.0 | 73.2 | -1.7 | SW | |
| December-2022 | 359 | 3.4 | 5.1 | 200.2 | -2.4 | 84.2 | -4.8 | SSW | 72 |
| January-2023 | 89 | 2.9 | 4.4 | 224.2 | -7.1 | 84.7 | -9.3 | SW | 18 |
| February-2023 | 134 | 3.3 | 5.1 | 203.2 | -7.2 | 76.8 | -10.7 | SSW | 27 |
| March-2023 | 348 | 3.8 | 6.0 | 227.4 | -1.2 | 71.7 | -5.9 | SW | 70 |
| April-2023 | 509 | 3.3 | 5.2 | 197.7 | 8.2 | 67.6 | 1.8 | SSW | 102 |
| May-2023 | 184 | 3.1 | 5.2 | 228.0 | 13.7 | 56.1 | 3.9 | SW | 37 |
| June-2023 | 596 | 2.7 | 4.3 | 207.3 | 18.4 | 73.3 | 13.0 | SSW | 119 |
| July-2023 | 598 | 2.4 | 4.0 | 221.4 | 20.5 | 78.4 | 16.2 | SW | 120 |
| August-2023 | 244 | 2.8 | 4.5 | 238.4 | 18.2 | 81.0 | 14.6 | SW | 49 |
| September-2023 | 149 | 2.0 | 3.3 | 228.5 | 16.3 | 80.1 | 12.4 | SW | 30 |
| October-2023 | 430 | 3.2 | 5.0 | 230.6 | 8.9 | 84.9 | 6.4 | SW | 86 |
| November-2023 | 91 | 3.4 | 5.3 | 229.2 | 0.0 | 80.6 | -3.1 | SW | 18 |
| December-2023 | 181 | 2.6 | 4.0 | 202.8 | -2.6 | 85.9 | -4.7 | SSW | 36 |
| January-2024 | 86 | 3.0 | 4.6 | 206.4 | -6.8 | 83.3 | -9.2 | SSW | 17 |
| February-2024 | 49 | 3.2 | 4.8 | 208.7 | -2.8 | 77.1 | -6.4 | SSW | 10 |
| March-2024 | 142 | 4.5 | 6.9 | 232.8 | 1.2 | 64.3 | -5.4 | SW | 28 |
| April-2024 | 234 | 3.8 | 6.0 | 199.2 | 7.0 | 71.7 | 1.6 | SSW | 47 |
| May-2024 | 200 | 3.1 | 5.0 | 202.7 | 16.3 | 69.4 | 10.1 | SSW | 40 |
| June-2024 | 604 | 3.2 | 5.3 | 231.0 | 18.5 | 76.3 | 13.9 | SW | 121 |
| July-2024 | 237 | 2.5 | 4.1 | 226.0 | 21.5 | 76.9 | 16.9 | SW | 47 |
| August-2024 | 839 | 2.8 | 4.5 | 239.2 | 19.0 | 78.4 | 14.8 | SW | 168 |
| September-2024 | 577 | 2.5 | 4.0 | 202.4 | 16.6 | 82.7 | 13.3 | SSW | 115 |
| October-2024 | 270 | 3.1 | 4.9 | 223.9 | 8.5 | 77.3 | 4.4 | SW | 54 |
| November-2024 | 200 | 3.3 | 5.1 | 233.2 | 2.0 | 80.5 | -1.3 | SW | 40 |
| December-2024 | 274 | 3.6 | 5.5 | 223.6 | -6.6 | 84.3 | -8.8 | SW | 55 |
| January-2025 | 14 | 3.4 | 5.2 | 229.7 | -10.4 | 78.1 | -13.6 | SW | 3 |
| February-2025 | 85 | 3.7 | 5.6 | 227.5 | -8.8 | 77.6 | -12.1 | SW | 17 |
| March-2025 | 206 | 4.0 | 6.1 | 214.1 | -0.5 | 71.2 | -5.4 | SW | 41 |
| April-2025 | 455 | 4.0 | 6.3 | 224.8 | 6.5 | 68.7 | 0.5 | SW | 91 |
| May-2025 | 447 | 3.6 | 5.8 | 211.7 | 13.2 | 69.8 | 7.0 | SW | 89 |
| June-2025 | Weather Station ceased communicating. Transmitting equipment obsolete and taken off-line by vendor after company sale and merger. Replacement and upgrading of all station components scheduled to be completed in 2026. | | | | | | | | |
| July-2025 | | | | | | | | | |
| August-2025 | | | | | | | | | |
| September-2025 | | | | | | | | | |
| October-2025 | | | | | | | | | |
| November-2025 | | | | | | | | | |
| December-2025 | | | | | | | | | |

# APPENDIX N

## Groundwater Monitoring Data

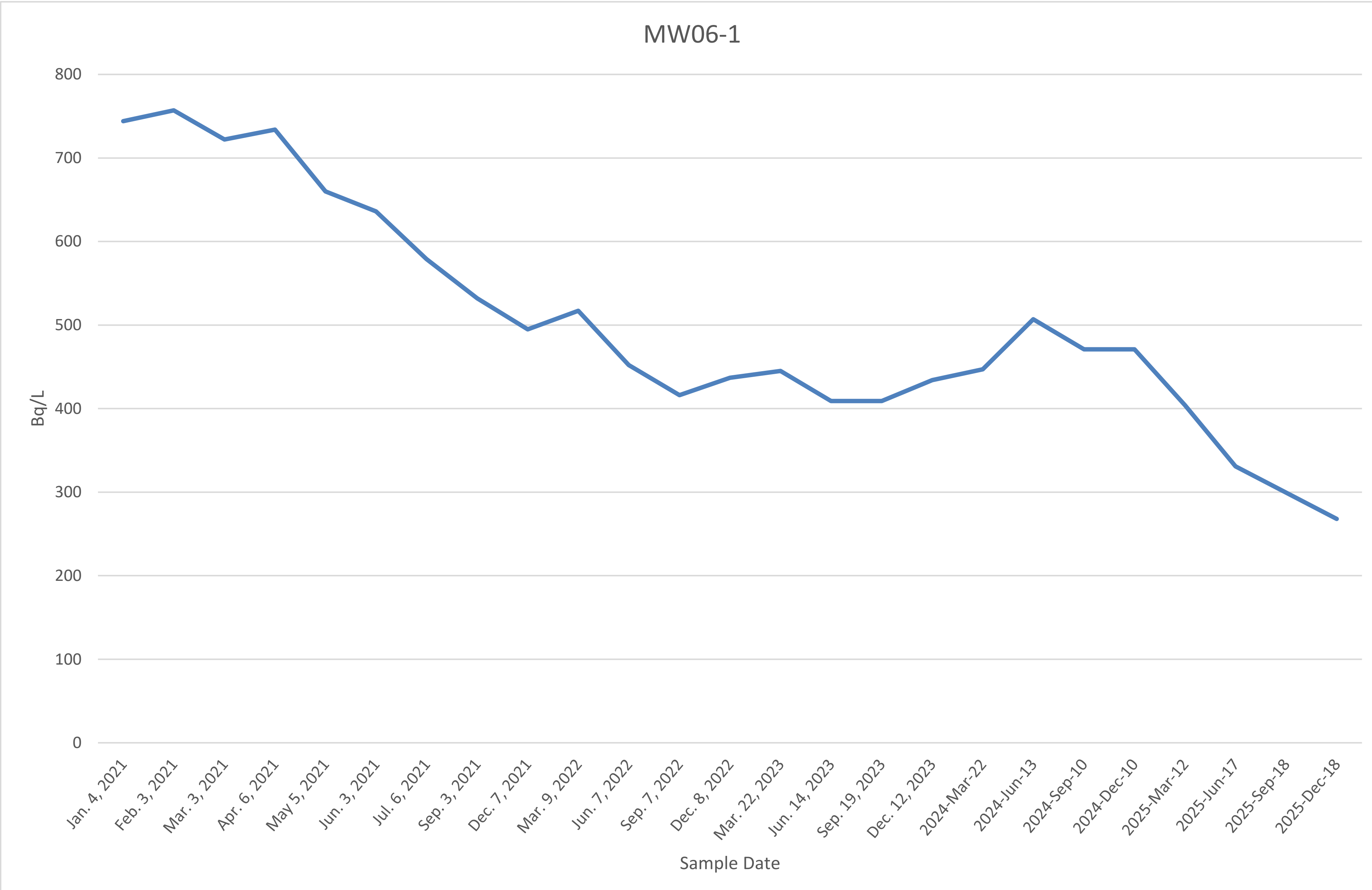
# Groundwater Monitoring Data - 2025

| Well I.D. | Description (location, profile) | | Distance from Stacks (m) | 2025-03-12 (Bq/L) | 2025-06-17 (Bq/L) | 2025-09-18 (Bq/L) | 2025-12-18 (Bq/L) | 2025 Avg. (Bq/L) |
|---|---|---|---|---|---|---|---|---|
| ***Engineered Sampling Wells*** | | | | | | | | |
| MW06-1 | SRB SITE | IN SOIL | 50 | 404 | 331 | dry | 268 | **334** |
| MW06-2 | SRB SITE | IN SOIL | 75 | 429 | 377 | 381 | 396 | **396** |
| MW06-3 | SRB SITE | IN SOIL | 50 | 78 | 96 | dry | dry | **87** |
| MW06-8 | SRB SITE | IN SOIL | 55 | 393 | 393 | 386 | 377 | **387** |
| MW06-9 | SRB SITE | IN SOIL | 25 | 859 | 810 | 789 | 782 | **810** |
| MW06-10 | SRB SITE | SURFACE OF BEDROCK | 0 | 17,453 | 19,933 | 25,722 | 25,744 | **22,213** |
| MW07-11 | SRB SITE | SURFACE OF BEDROCK | 75 | 695 | 642 | 627 | 661 | **656** |
| MW07-12 | SRB SITE | SURFACE OF BEDROCK | 55 | 383 | 384 | 385 | 350 | **376** |
| MW07-13 | SRB SITE | SURFACE OF BEDROCK | 50 | 1,386 | 1,287 | 1,228 | 1,196 | **1,274** |
| MW07-15 | SRB SITE | SURFACE OF BEDROCK | 25 | 812 | 709 | 792 | 822 | **784** |
| MW07-16 | SRB SITE | SURFACE OF BEDROCK | 15 | 476 | 446 | 449 | 450 | **455** |
| MW07-17 | SRB SITE | DEEPER BEDROCK | 15 | 197 | 162 | 152 | 180 | **173** |
| MW07-18 | SRB SITE | SURFACE OF BEDROCK | 10 | 391 | 317 | 403 | 466 | **394** |
| MW07-19 | SRB SITE | SURFACE OF BEDROCK | 20 | 537 | 412 | 513 | 469 | **483** |
| MW07-20 | SUPERIOR PROPANE PROPERTY | SURFACE OF BEDROCK | 90 | 178 | 169 | dry | frozen | **174** |
| MW07-21 | SUPERIOR PROPANE PROPERTY | SURFACE OF BEDROCK | 110 | 221 | 207 | 311 | 229 | **242** |
| MW07-22 | SRB SITE | SURFACE OF BEDROCK | 70 | 501 | 486 | 485 | frozen | **491** |
| MW07-23 | SRB SITE | SURFACE OF BEDROCK | 90 | 738 | 711 | 692 | 678 | **705** |
| MW07-24 | HARRINGTON PROPERTY | SURFACE OF BEDROCK | 115 | 996 | 942 | 916 | 895 | **937** |
| MW07-26 | SRB SITE | SURFACE OF BEDROCK | 50 | 143 | 129 | 115 | 130 | **129** |
| MW07-27 | CITY PROPERTY | SURFACE OF BEDROCK | 55 | 888 | 671 | 651 | 827 | **759** |
| MW07-28 | CITY PROPERTY | DEEPER BEDROCK | 55 | 301 | 325 | 299 | 322 | **312** |
| MW07-29 | SRB SITE | DEEPER BEDROCK | 10 | 394 | 310 | 542 | 648 | **474** |
| MW07-31 | SRB SITE | DEEPER BEDROCK | 70 | 178 | 152 | 197 | 239 | **192** |
| MW07-32 | HARRINGTON PROPERTY | DEEPER BEDROCK | 115 | 63 | 42 | <MDA (38) | <MDA(36) | **53** |
| MW07-34 | SRB SITE | SHALLOW BEDROCK | 10 | 524 | 534 | 486 | 602 | **537** |
| MW07-35 | CITY PROPERTY | SHALLOW BEDROCK | 55 | 796 | 714 | 711 | 721 | **736** |
| MW07-36 | CITY PROPERTY | SHALLOW BEDROCK | 80 | 861 | 575 | dry | 1,035 | **824** |
| MW07-37 | SRB SITE | SHALLOW BEDROCK | 60 | 650 | 577 | 558 | 571 | **589** |
| ***Residential and Business Wells*** | | | | | | | | |
| RW-2 | 185 MUD LAKE ROAD | | 1,100 | 22 | | 29 | | **26** |
| RW-3 | 183 MUD LAKE ROAD | | 1,100 | ***No sample*** | | 26 | | **26** |
| RW-5 | 171 SAWMILL ROAD | | 2,300 | 6 | | 5 | | **6** |
| RW-6 | 40987 HWY 41 | | 1,400 | 4 | | 4 | | **4** |
| RW-7 | 40925 HWY 41 | | 1,600 | 4 | | 5 | | **5** |
| B-1 | VALLEY POOL SERVICE OFFICE | | 160 | 640 | | 568 | | **604** |
| B-2 | SUPERIOR PROPANE TRUCK WASH | | 250 | 364 | | 337 | | **351** |

Groundwater Monitoring Data - 2025

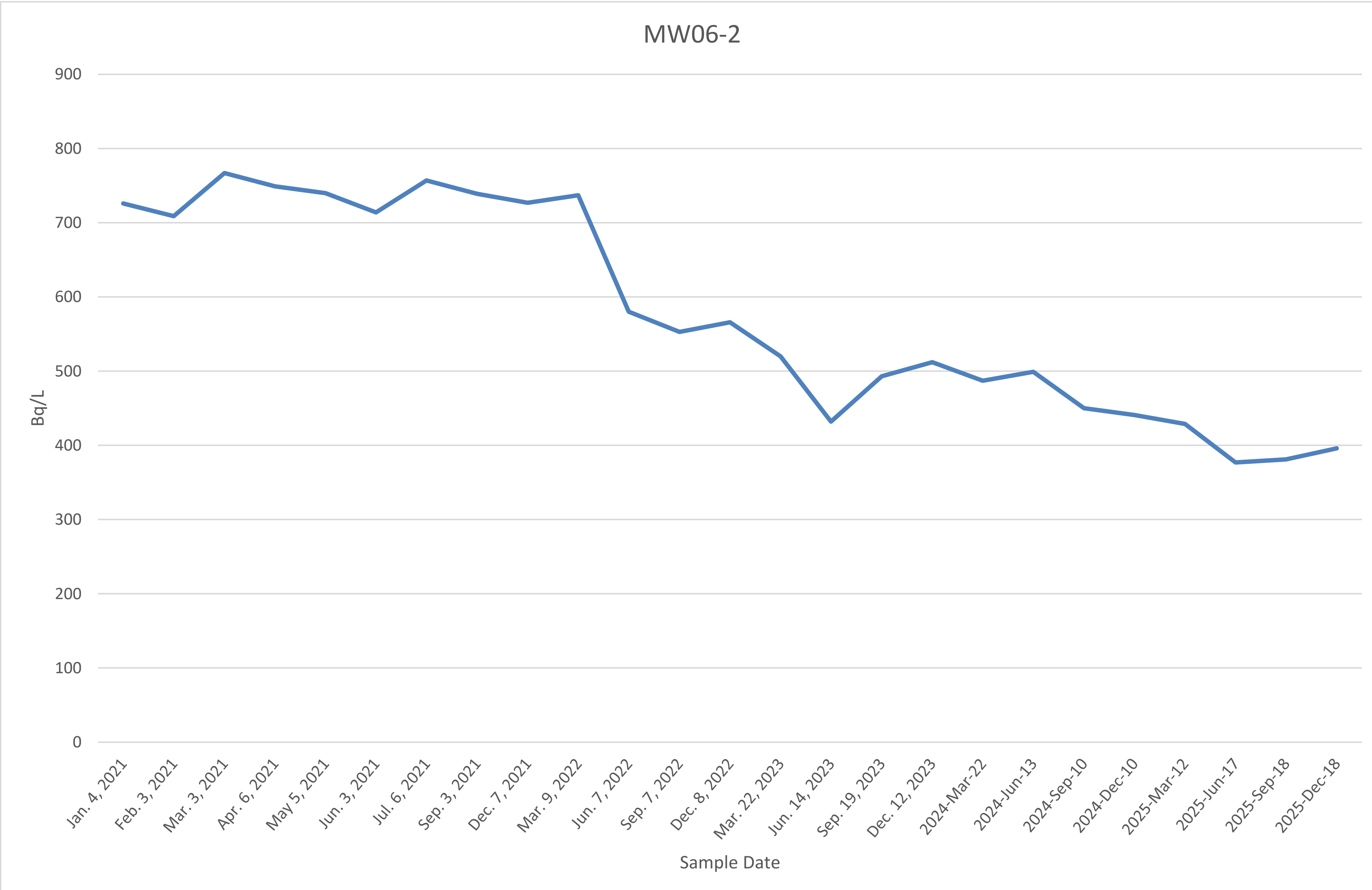
| Well ID | 2025 | 2024 | 2023 | 2022 | 2021 | 2020 | 2019 | 2018 | 2017 | 2016 | 2015 | 2025/2024 | 2025/2023 | 2025/2022 | 2025/2021 | 2025/2020 | 2025/2019 | 2025/2018 | 2025/2017 | 2025/2016 | 2025/2015 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (Annualized average tritium Bq/L) | | | | | | | | | | | (%) | | | | | | | | | |
| MW06-1 | 334 | 474 | 424 | 456 | 651 | 762 | 1,045 | 1,334 | 1,946 | 2,753 | 4,338 | 70.5 | 78.8 | 73.4 | 51.4 | 43.9 | 32.0 | 25.1 | 17.2 | 12.1 | 7.7 |
| MW06-2 | 396 | 469 | 489 | 609 | 736 | 877 | 1,031 | 1,160 | 1,166 | 1,467 | 1,965 | 84.3 | 80.9 | 65.0 | 53.7 | 45.1 | 38.4 | 34.1 | 34.0 | 27.0 | 20.1 |
| MW06-3 | 87 | 140 | 141 | 166 | 199 | 244 | 367 | 469 | 683 | 1,029 | 1,218 | 62.4 | 61.6 | 52.5 | 43.8 | 35.7 | 23.7 | 18.6 | 12.7 | 8.5 | 7.1 |
| MW06-8 | 387 | 455 | 475 | 507 | 550 | 579 | 679 | 724 | 780 | 848 | 906 | 85.2 | 81.5 | 76.4 | 70.4 | 66.9 | 57.1 | 53.5 | 49.7 | 45.7 | 42.8 |
| MW06-9 | 810 | 940 | 1,044 | 1,127 | 1,366 | 1,527 | 1,774 | 1,952 | 2,224 | 2,476 | 2,731 | 86.2 | 77.6 | 71.9 | 59.3 | 53.1 | 45.7 | 41.5 | 36.4 | 32.7 | 29.7 |
| MW06-10 | 22,213 | 23,701 | 26,220 | 26,163 | 30,153 | 29,513 | 34,592 | 40,208 | 33,520 | 48,189 | 51,635 | 93.7 | 84.7 | 84.9 | 73.7 | 75.3 | 64.2 | 55.2 | 66.3 | 46.1 | 43.0 |
| MW07-11 | 656 | 699 | 759 | 811 | 858 | 924 | 1,053 | 1,122 | 1,099 | 1,344 | 1,521 | 93.9 | 86.5 | 80.9 | 76.5 | 71.0 | 62.3 | 58.5 | 59.7 | 48.8 | 43.1 |
| MW07-12 | 376 | 419 | 438 | 416 | 435 | 422 | 425 | 468 | 467 | 469 | 463 | 89.6 | 85.8 | 90.3 | 86.3 | 89.1 | 88.5 | 80.3 | 80.4 | 80.1 | 81.1 |
| MW07-13 | 1,274 | 1,576 | 2,038 | 2,574 | 3,527 | 4,406 | 5,647 | 6,937 | 8,642 | 10,576 | 13,237 | 80.9 | 62.5 | 49.5 | 36.1 | 28.9 | 22.6 | 18.4 | 14.7 | 12.0 | 9.6 |
| MW07-15 | 784 | 923 | 990 | 1,004 | 1,076 | 1,262 | 1,399 | 1,505 | 1,617 | 1,810 | 1,680 | 84.9 | 79.2 | 78.0 | 72.8 | 62.1 | 56.0 | 52.1 | 48.5 | 43.3 | 46.7 |
| MW07-16 | 455 | 559 | 624 | 685 | 897 | 1,003 | 1,240 | 1,433 | 1,649 | 1,879 | 2,188 | 81.5 | 72.9 | 66.5 | 50.7 | 45.4 | 36.7 | 31.8 | 27.6 | 24.2 | 20.8 |
| MW07-17 | 173 | 229 | 237 | 267 | 296 | 272 | 338 | 359 | 335 | 602 | 780 | 75.4 | 72.8 | 64.8 | 58.4 | 63.6 | 51.1 | 48.2 | 51.6 | 28.7 | 22.2 |
| MW07-18 | 394 | 490 | 649 | 842 | 1,102 | 1,494 | 2,000 | 2,192 | 2,739 | 3,690 | 5,491 | 80.5 | 60.7 | 46.8 | 35.8 | 26.4 | 19.7 | 18.0 | 14.4 | 10.7 | 7.2 |
| MW07-19 | 483 | 575 | 650 | 665 | 959 | 1,198 | 1,468 | 1,889 | 1,926 | 2,500 | 3,222 | 83.9 | 74.2 | 72.6 | 50.4 | 40.3 | 32.9 | 25.6 | 25.1 | 19.3 | 15.0 |
| MW07-20 | 174 | 207 | 222 | 244 | 296 | 326 | 438 | 498 | 571 | 670 | 775 | 83.9 | 78.2 | 71.1 | 58.7 | 53.2 | 39.7 | 34.9 | 30.4 | 25.9 | 22.4 |
| MW07-21 | 242 | 263 | 289 | 351 | 363 | 393 | 545 | 778 | 879 | 1,009 | 1,121 | 92.2 | 83.8 | 68.9 | 66.6 | 61.6 | 44.4 | 31.1 | 27.5 | 24.0 | 21.6 |
| MW07-22 | 491 | 546 | 611 | 639 | 729 | 783 | 921 | 974 | 1,023 | 1,131 | 1,171 | 89.9 | 80.4 | 76.8 | 67.3 | 62.6 | 53.3 | 50.4 | 48.0 | 43.4 | 41.9 |
| MW07-23 | 705 | 812 | 908 | 1,013 | 1,147 | 1,252 | 1,443 | 1,572 | 1,743 | 1,929 | 2,206 | 86.8 | 77.6 | 69.6 | 61.5 | 56.3 | 48.8 | 44.8 | 40.4 | 36.5 | 31.9 |
| MW07-24 | 937 | 1,107 | 1,226 | 1,340 | 1,511 | 1,644 | 1,839 | 1,928 | 2,022 | 2,206 | 2,314 | 84.7 | 76.5 | 70.0 | 62.0 | 57.0 | 51.0 | 48.6 | 46.4 | 42.5 | 40.5 |
| MW07-26 | 129 | 209 | 238 | 291 | 421 | 514 | 697 | 904 | 1,190 | 1,491 | 1,941 | 61.9 | 54.4 | 44.5 | 30.7 | 25.1 | 18.6 | 14.3 | 10.9 | 8.7 | 6.7 |
| MW07-27 | 759 | 1,027 | 1,131 | 1,439 | 1,696 | 1,994 | 2,683 | 3,136 | 3,589 | 4,292 | 4,869 | 73.9 | 67.2 | 52.8 | 44.8 | 38.1 | 28.3 | 24.2 | 21.2 | 17.7 | 15.6 |
| MW07-28 | 312 | 378 | 444 | 520 | 670 | 705 | 843 | 1,017 | 1,063 | 1,311 | 1,446 | 82.5 | 70.3 | 59.9 | 46.5 | 44.2 | 37.0 | 30.7 | 29.3 | 23.8 | 21.6 |
| MW07-29 | 474 | 531 | 667 | 760 | 1,075 | 1,485 | 2,058 | 2,415 | 2,472 | 3,395 | 3,950 | 89.2 | 71.0 | 62.3 | 44.1 | 31.9 | 23.0 | 19.6 | 19.2 | 13.9 | 12.0 |
| MW07-31 | 192 | 214 | 255 | 240 | 325 | 182 | 352 | 407 | 186 | 440 | 756 | 89.7 | 75.1 | 79.9 | 58.9 | 105.3 | 54.5 | 47.0 | 103.0 | 43.5 | 25.3 |
| MW07-32 | 53 | 63 | 44 | 42 | 54 | 59 | 75 | 70 | 76 | 155 | 128 | 83.0 | 120.0 | 126.5 | 96.6 | 89.0 | 70.0 | 75.5 | 69.1 | 33.9 | 41.1 |
| MW07-34 | 537 | 618 | 753 | 908 | 1,153 | 1,297 | 1,526 | 1,889 | 2,291 | 2,822 | 3,312 | 86.9 | 71.2 | 59.1 | 46.5 | 41.4 | 35.2 | 28.4 | 23.4 | 19.0 | 16.2 |
| MW07-35 | 736 | 912 | 1,076 | 1,297 | 1,550 | 1,898 | 2,256 | 2,637 | 3,015 | 3,448 | 3,945 | 80.7 | 68.4 | 56.7 | 47.4 | 38.8 | 32.6 | 27.9 | 24.4 | 21.3 | 18.6 |
| MW07-36 | 824 | 1,027 | 1,112 | 1,105 | 1,154 | 1,468 | 1,716 | 2,008 | 2,109 | 2,618 | 2,892 | 80.2 | 74.1 | 74.5 | 71.4 | 56.1 | 48.0 | 41.0 | 39.1 | 31.5 | 28.5 |
| MW07-37 | 589 | 658 | 658 | 677 | 717 | 763 | 821 | 830 | 871 | 989 | 1,009 | 89.5 | 89.5 | 87.0 | 82.1 | 77.2 | 71.7 | 71.0 | 67.6 | 59.6 | 58.4 |
| **AVERAGE** | **1,240** | **1,387** | **1,545** | **1,626** | **1,920** | **2,043** | **2,458** | **2,856** | **2,824** | **3,708** | **4,249** | **89.5** | **89.7** | **85.3** | **72.2** | **67.9** | **56.4** | **48.6** | **49.1** | **37.4** | **32.6** |
| | | | | | | | | | | | | | | | *Average aquifer concentrations have decreased 70.8% since 2015.* | | | | | | **70.8** |

**Groundwater Monitoring Data**




APPENDIX N

**Groundwater Monitoring Data**

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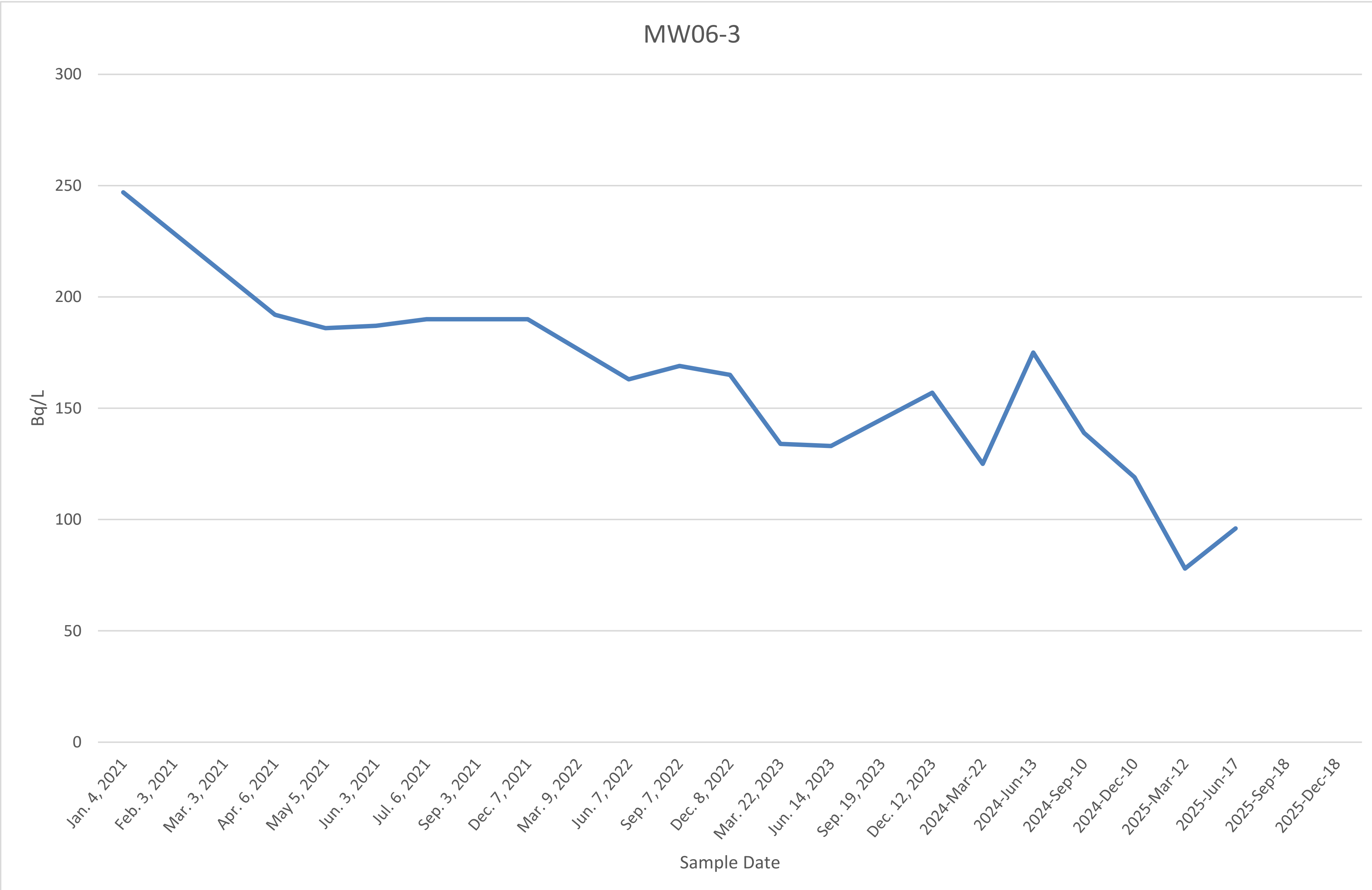


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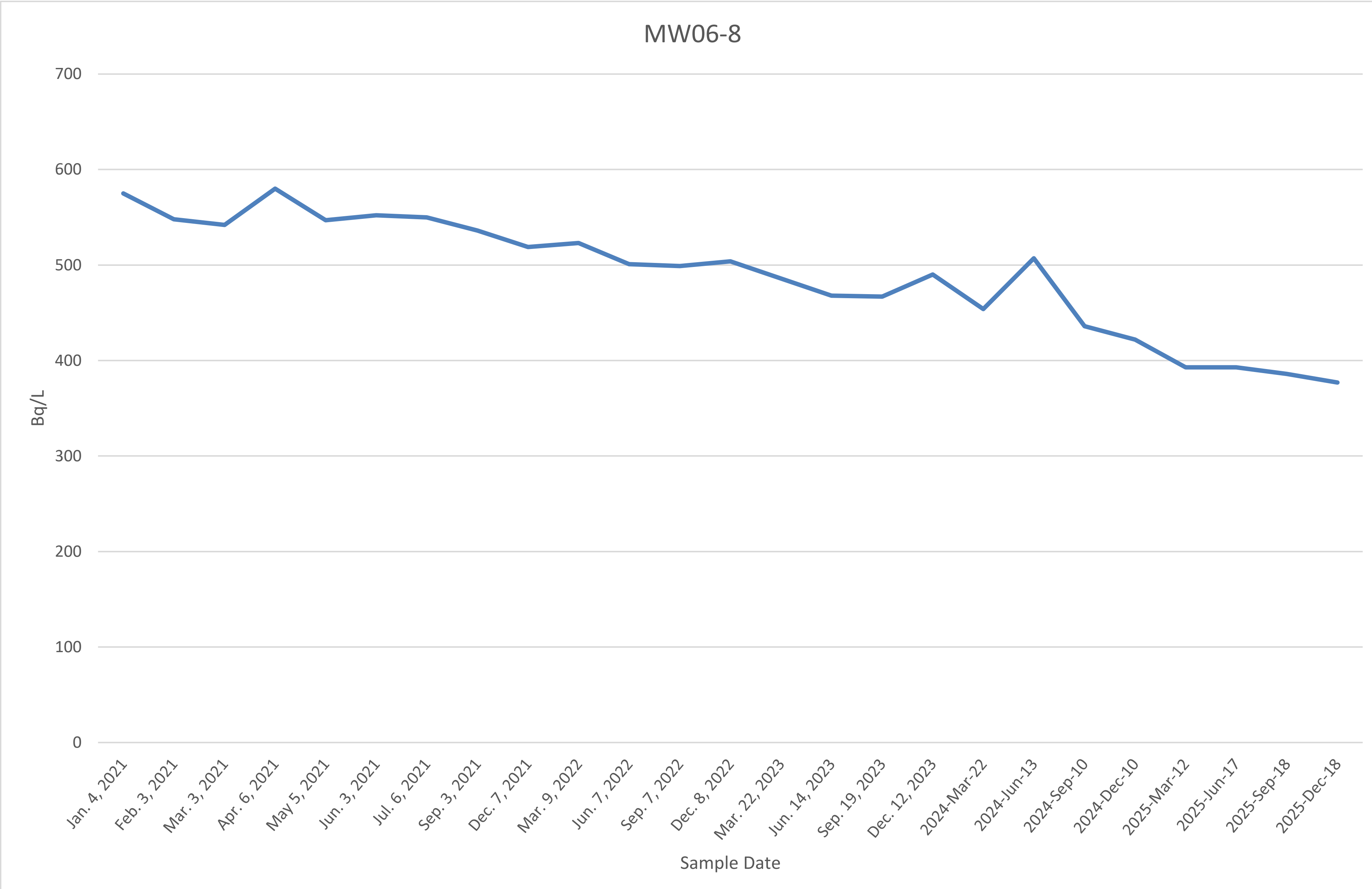


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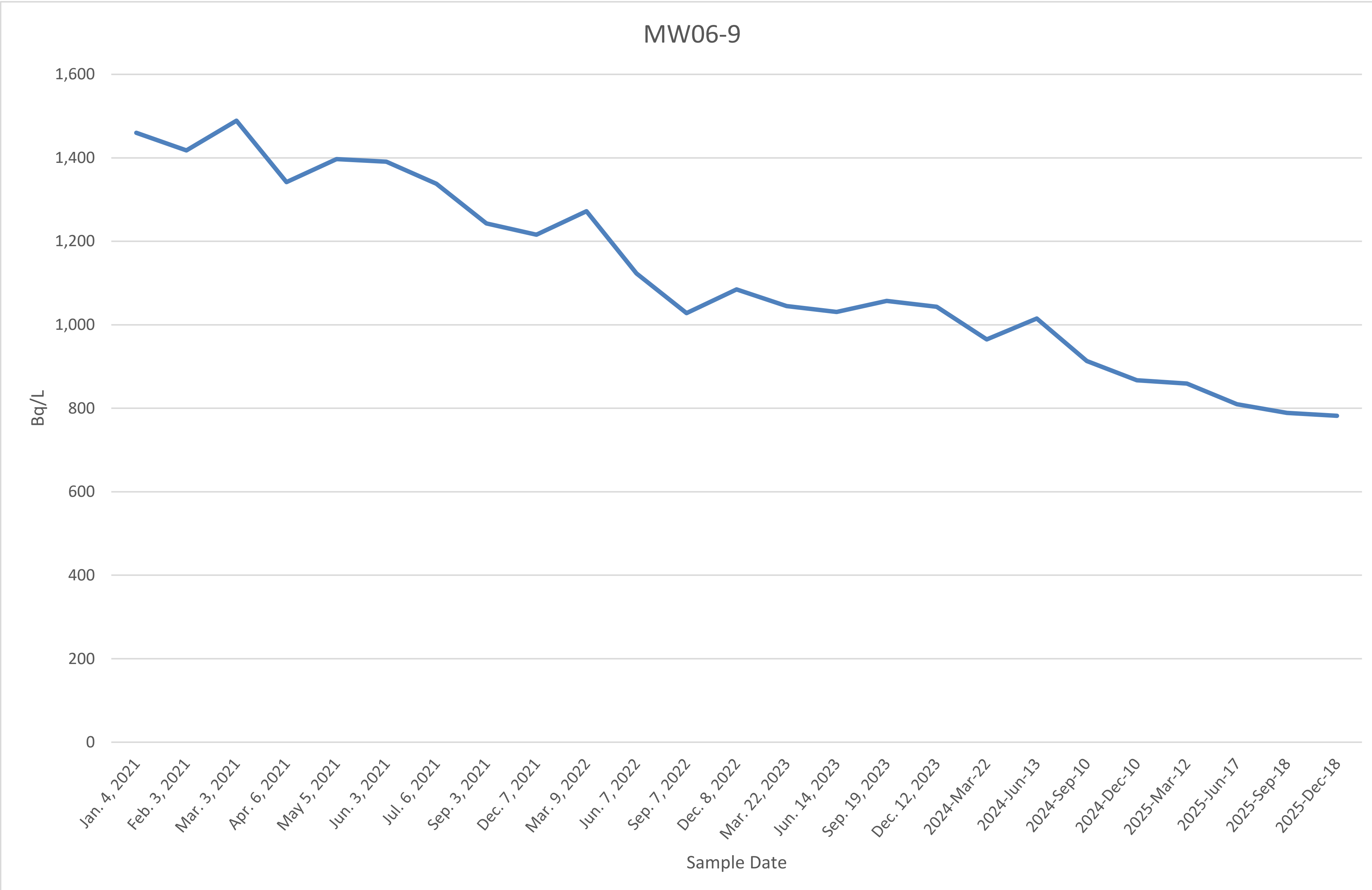


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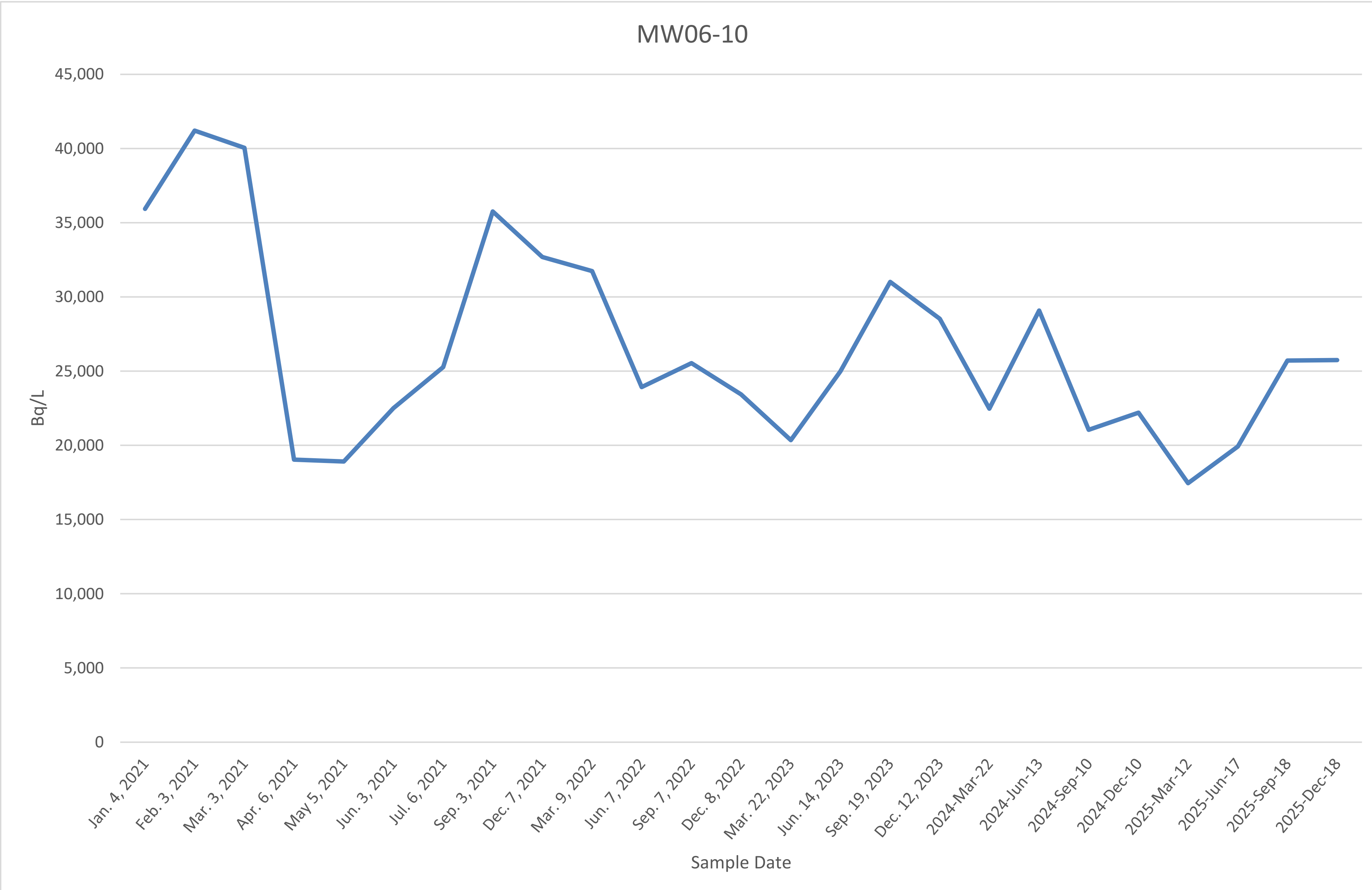


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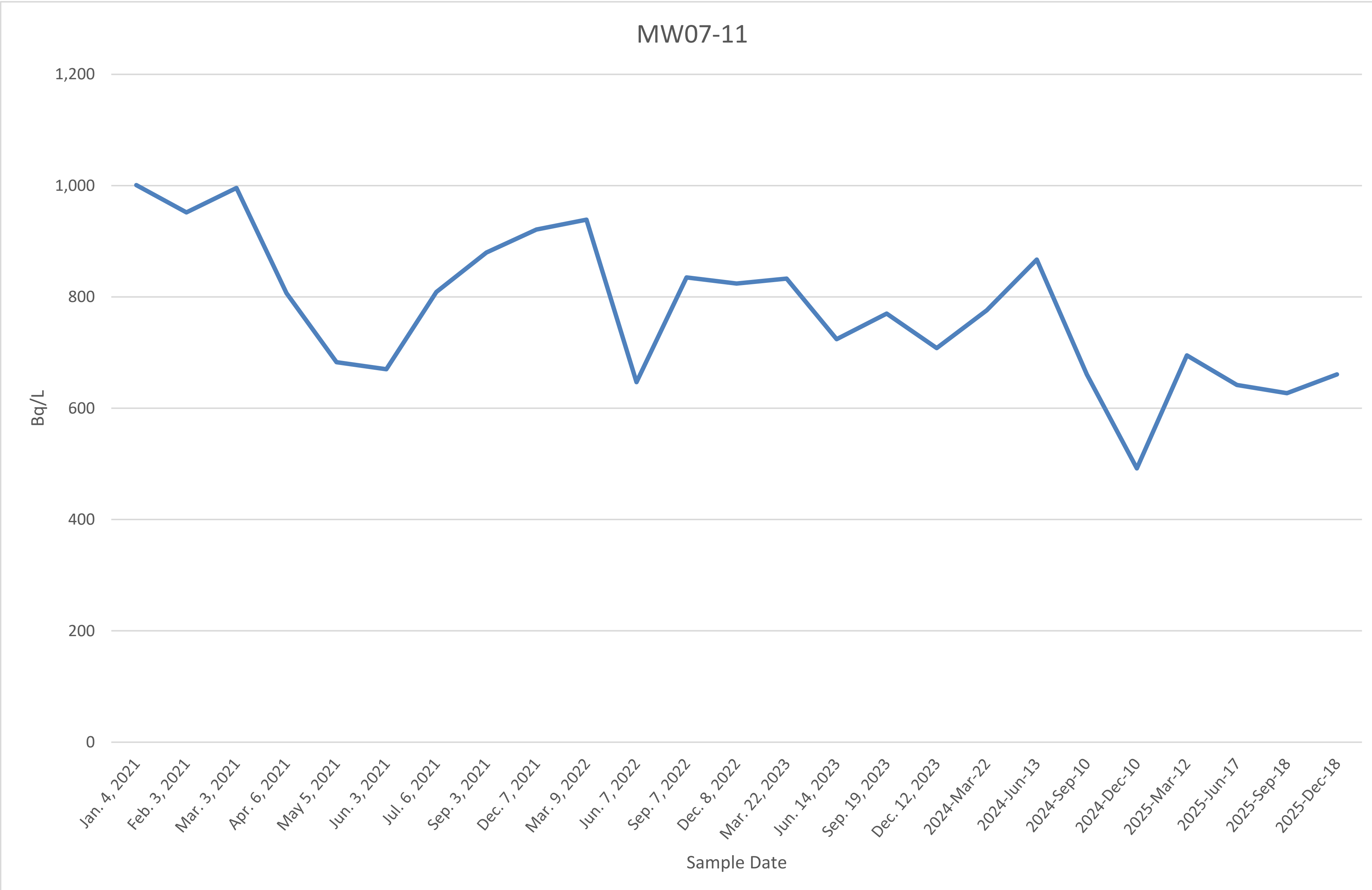


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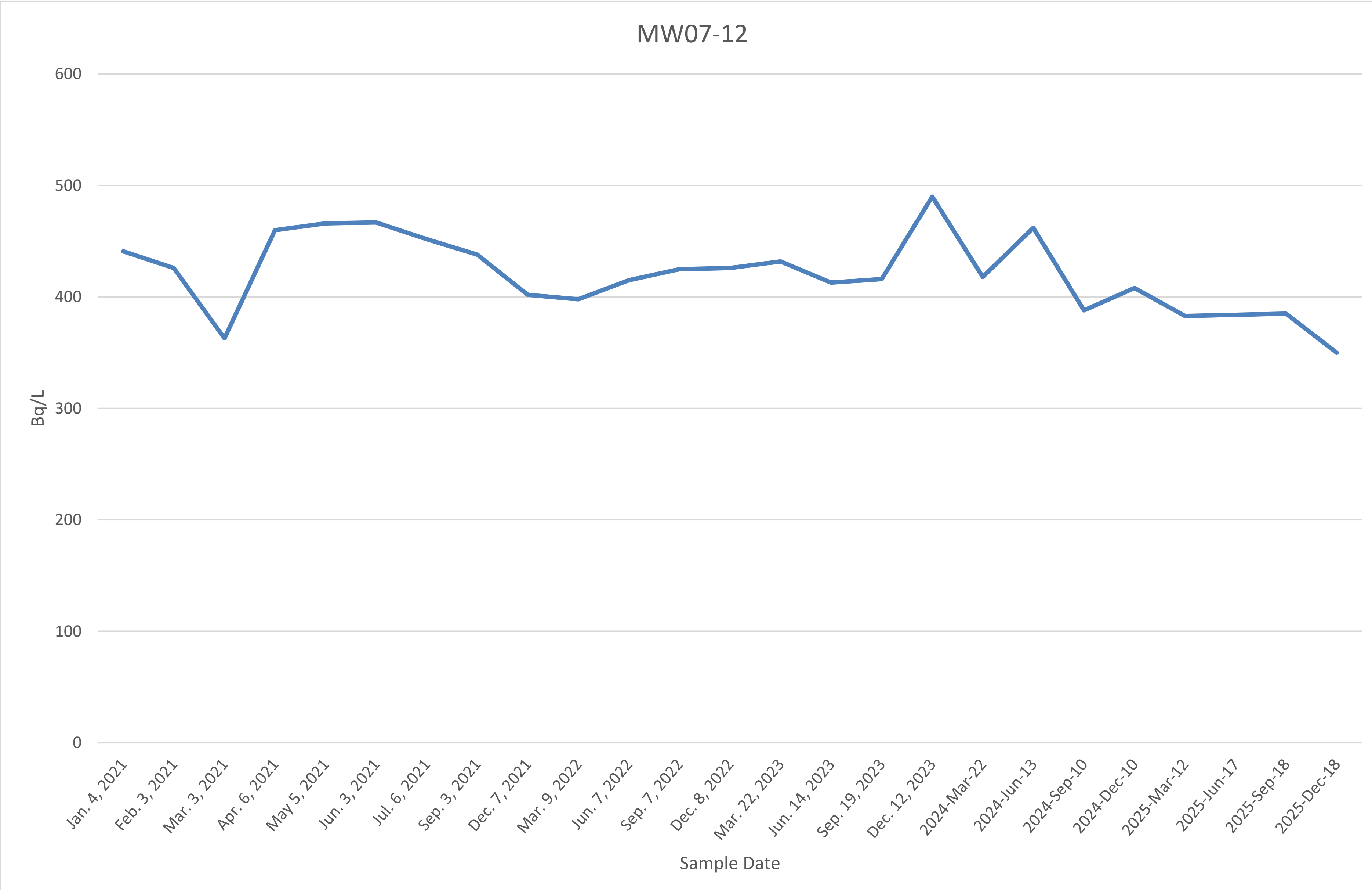


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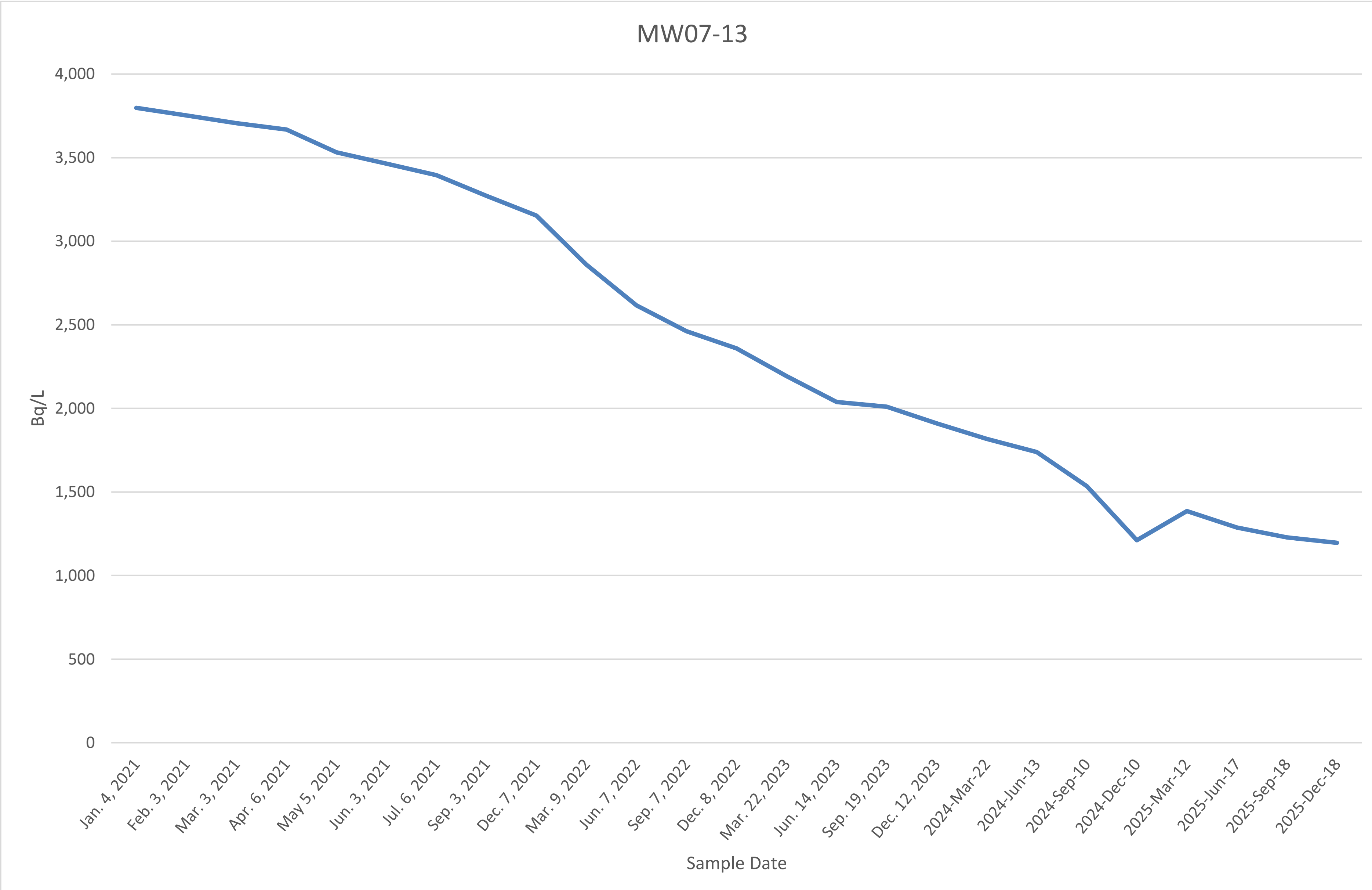


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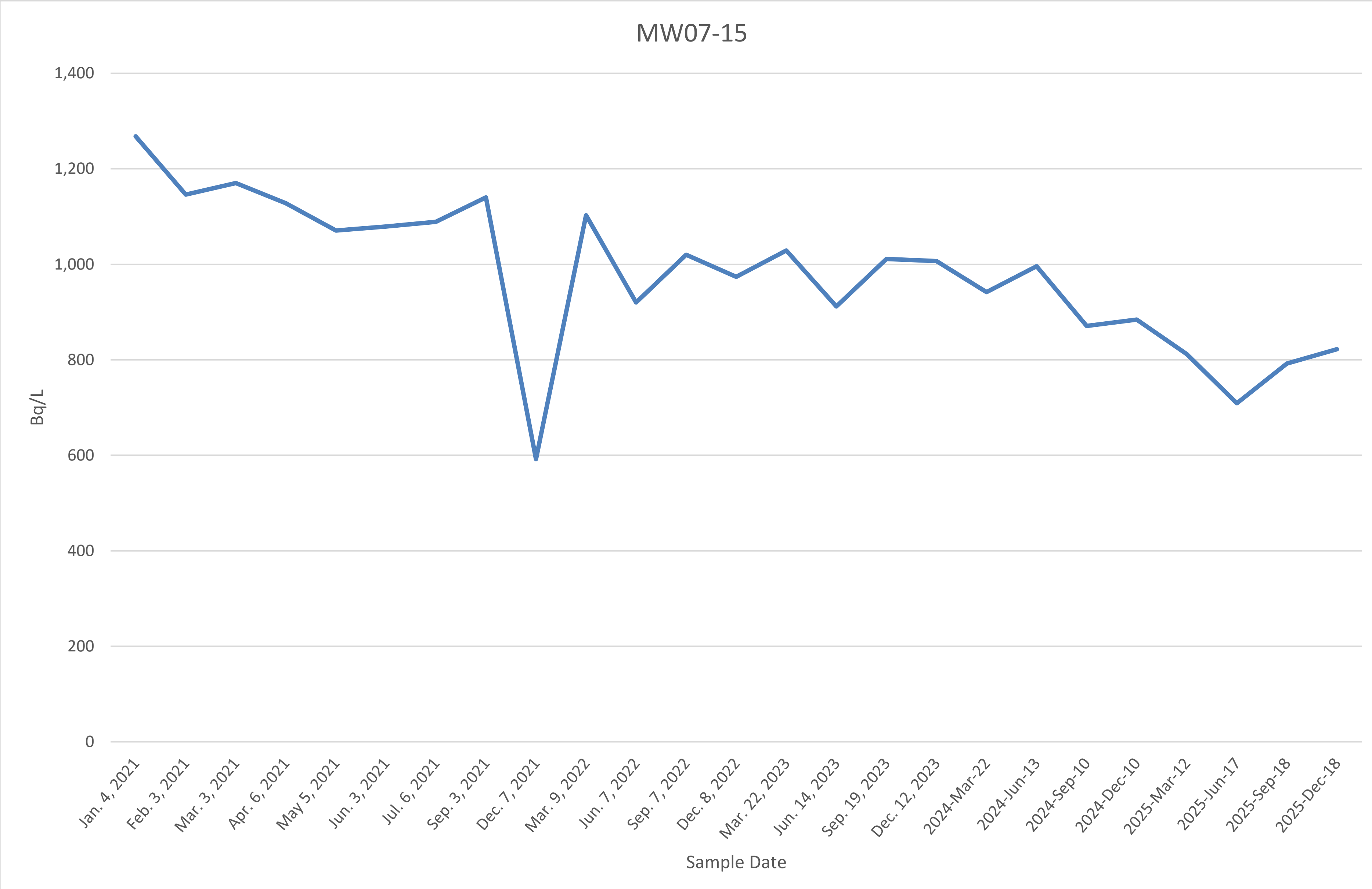


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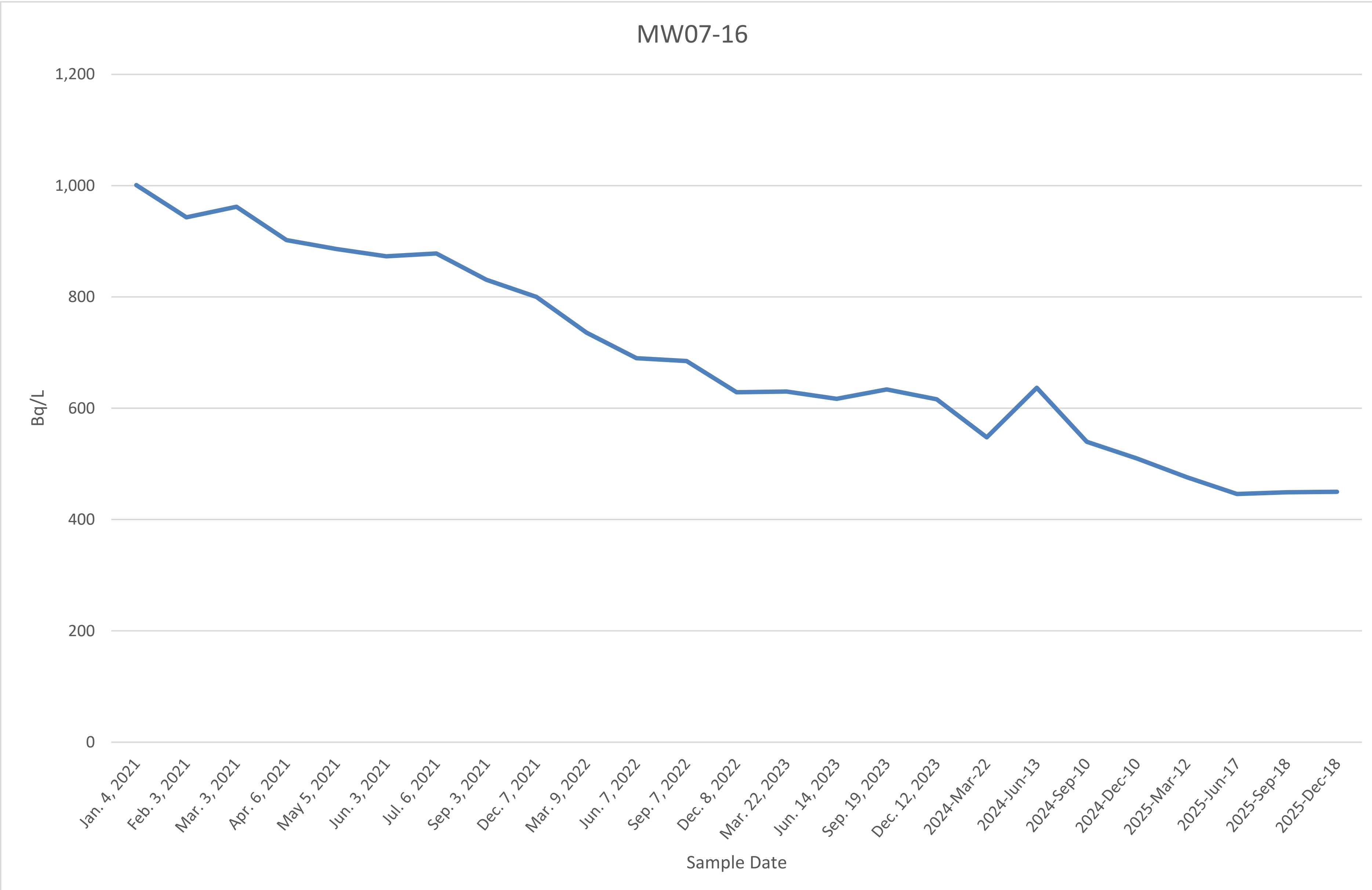


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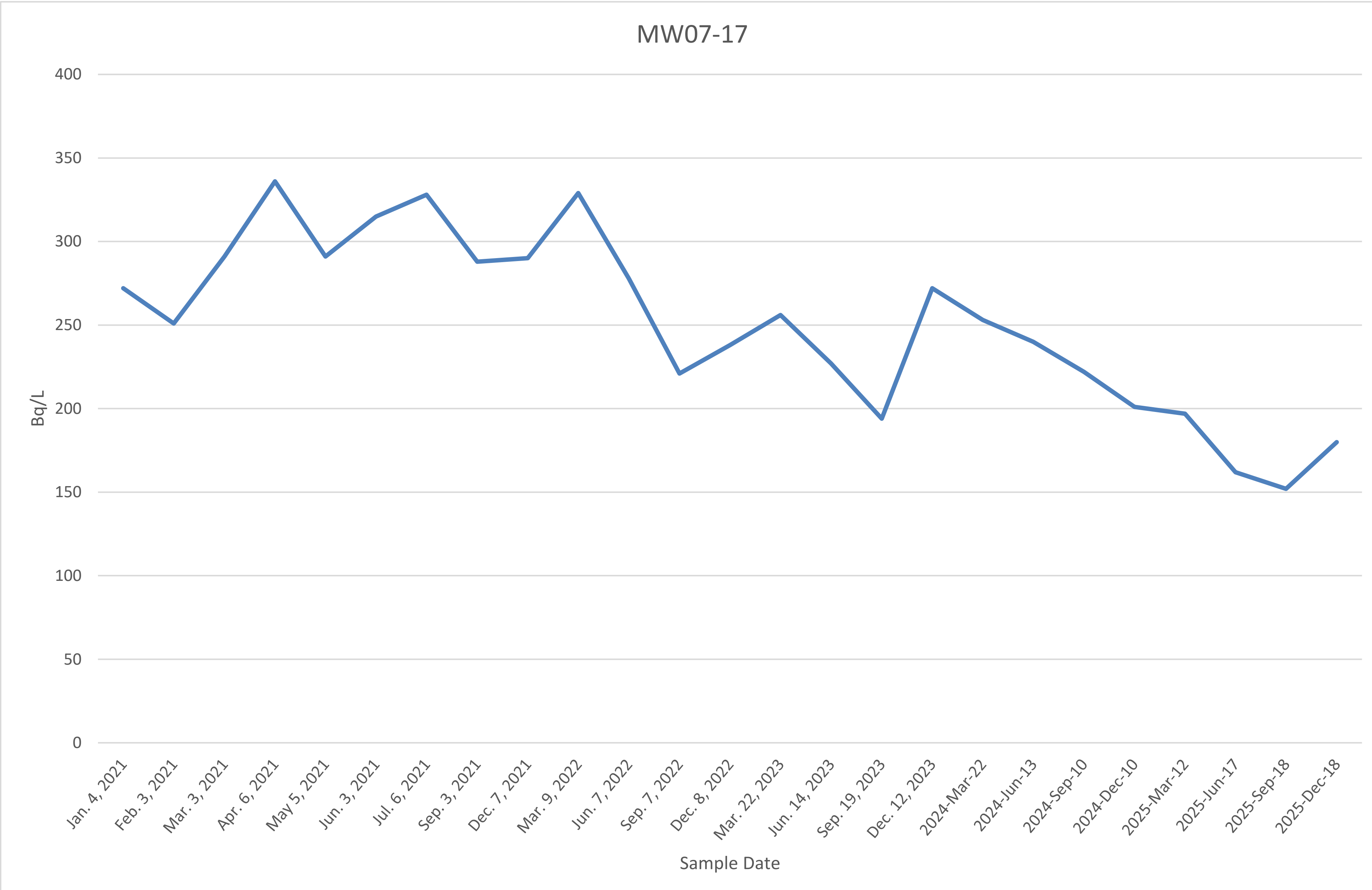


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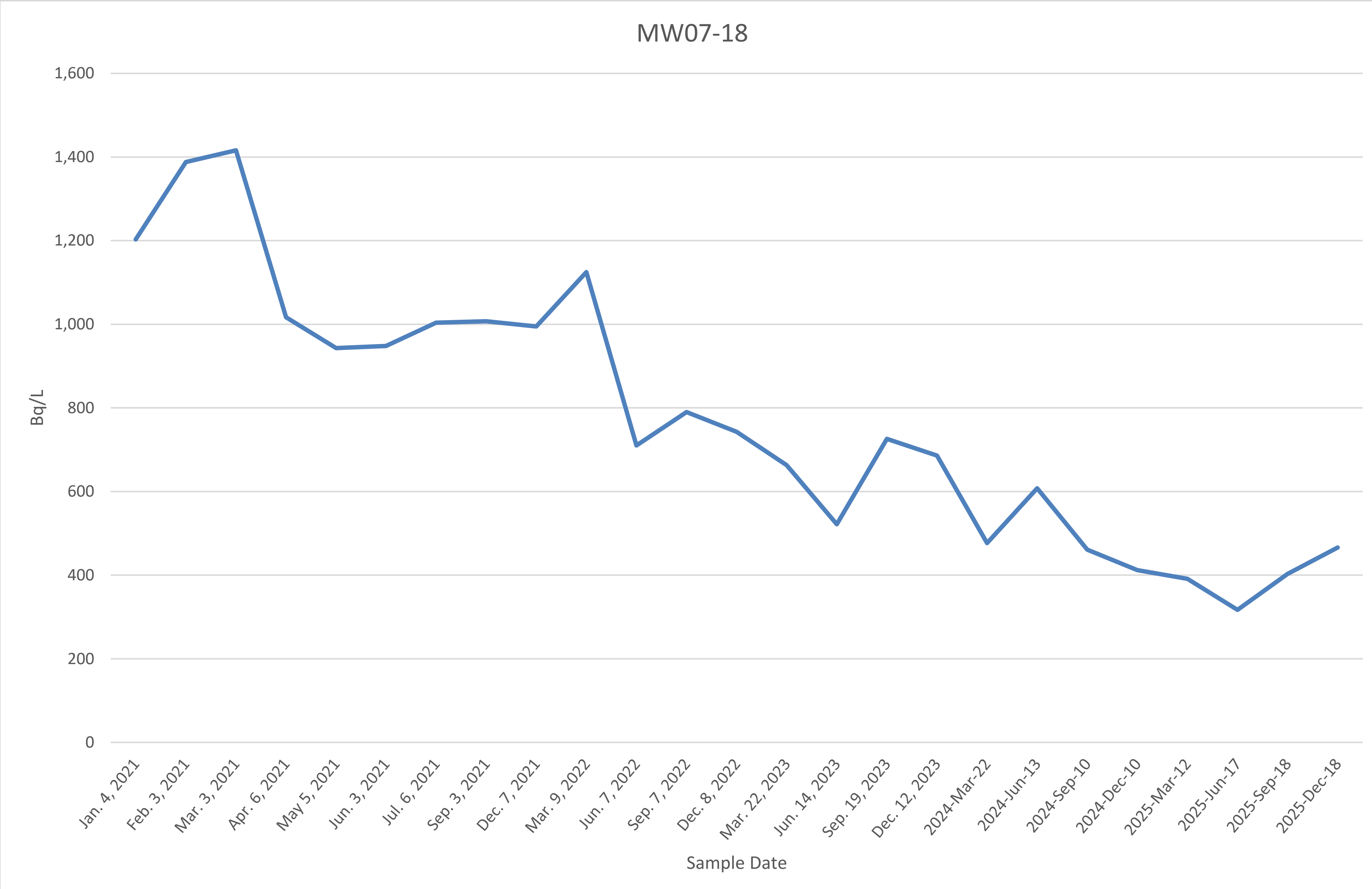


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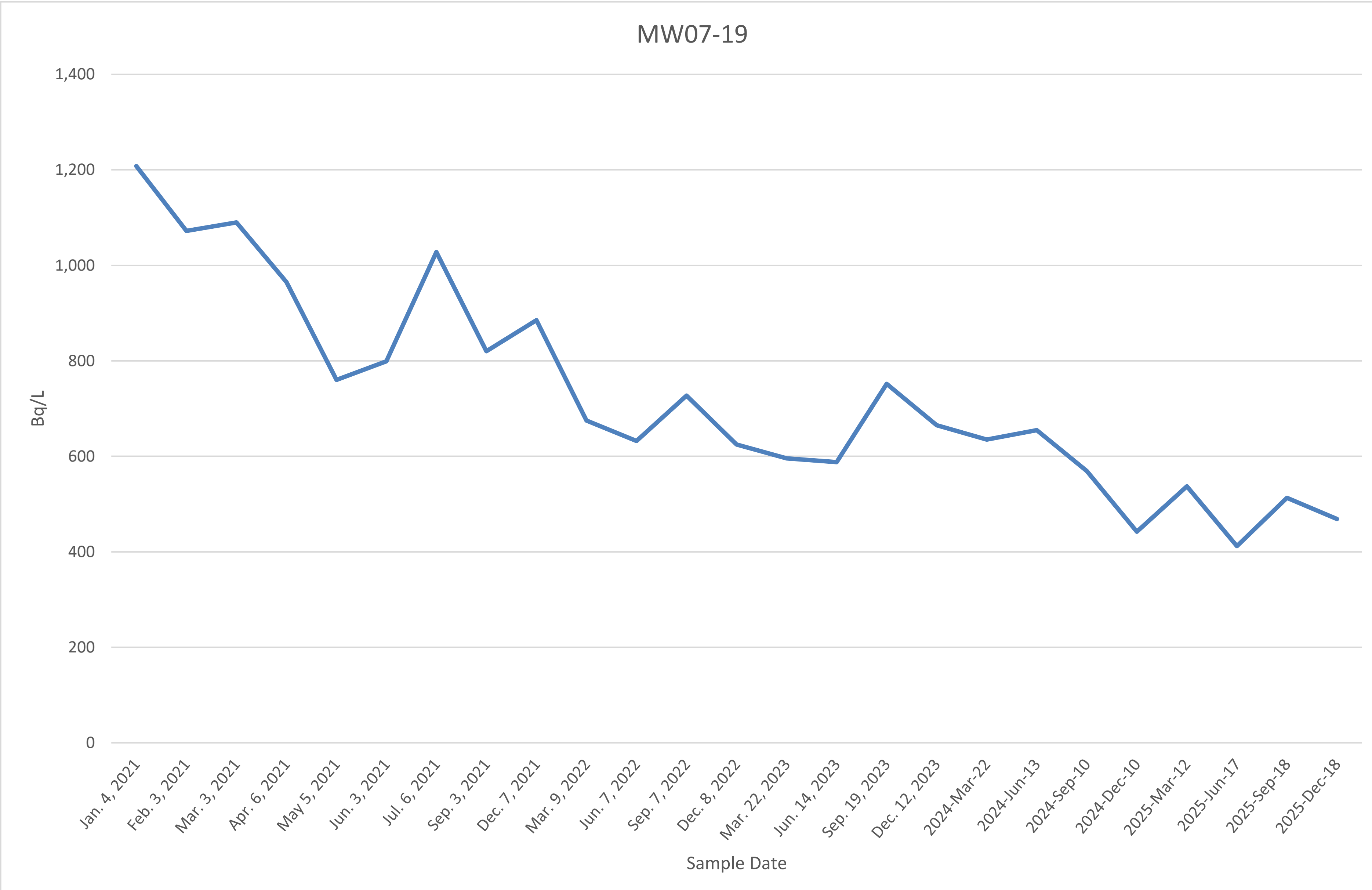


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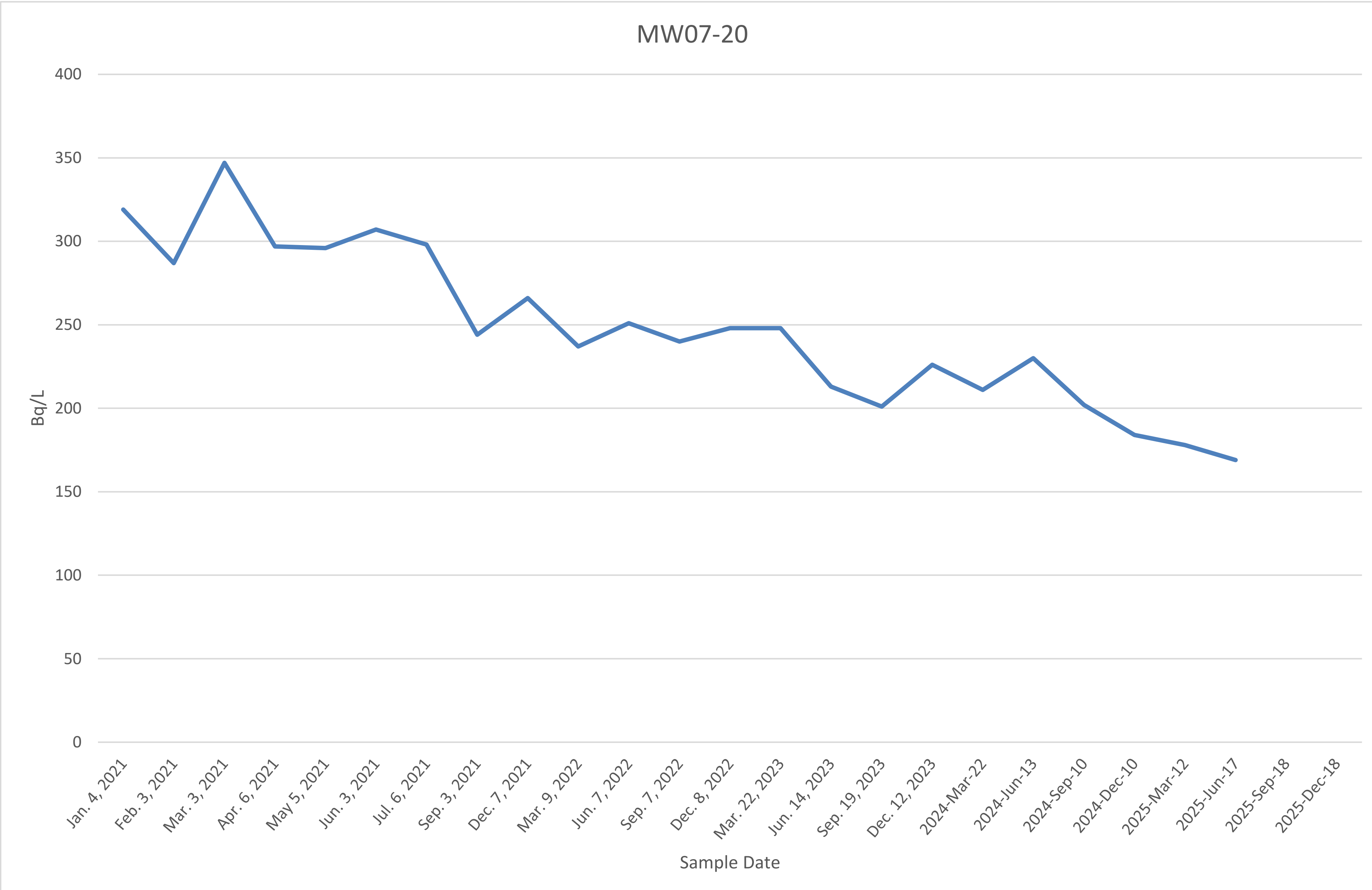


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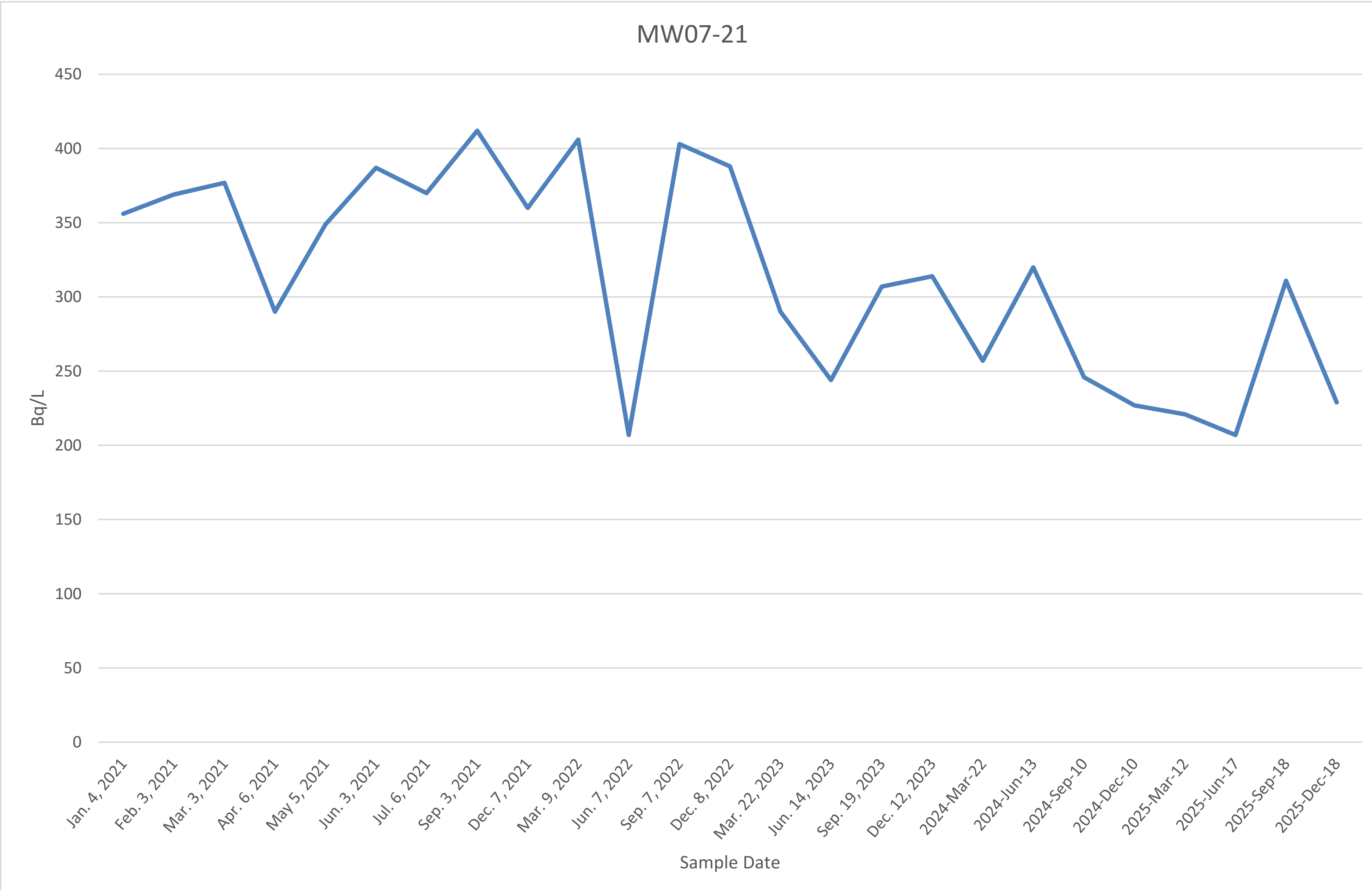


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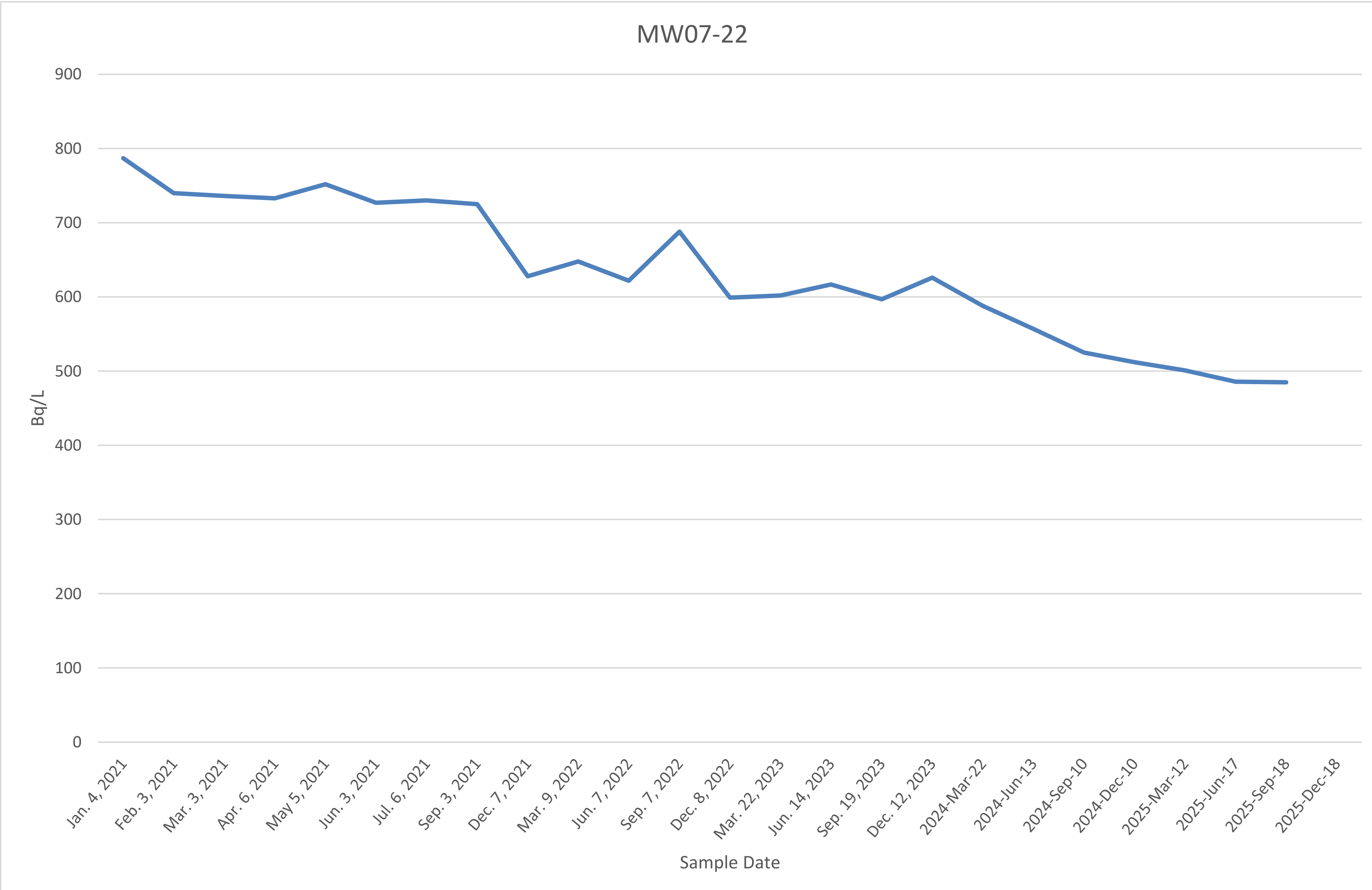


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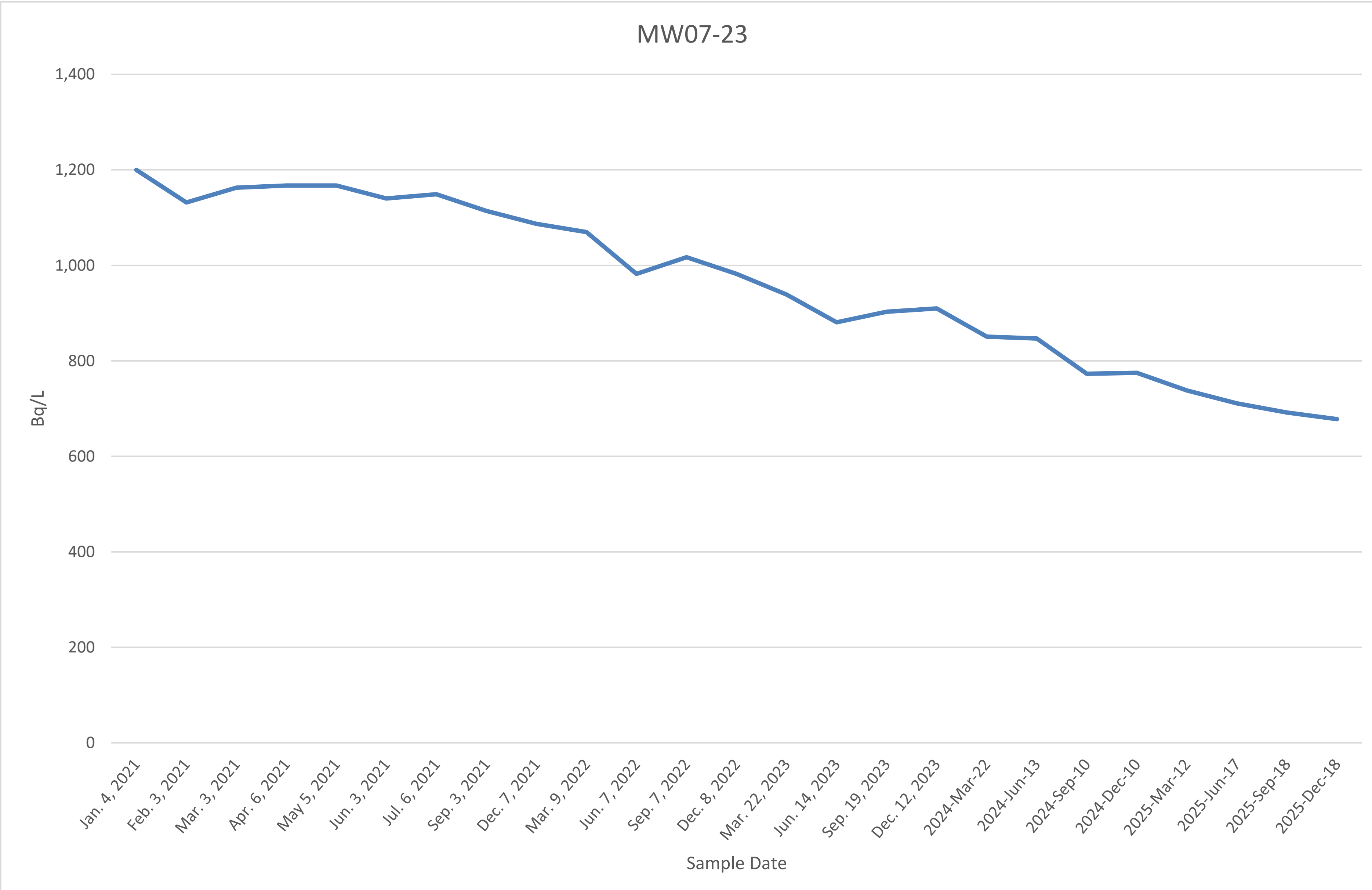

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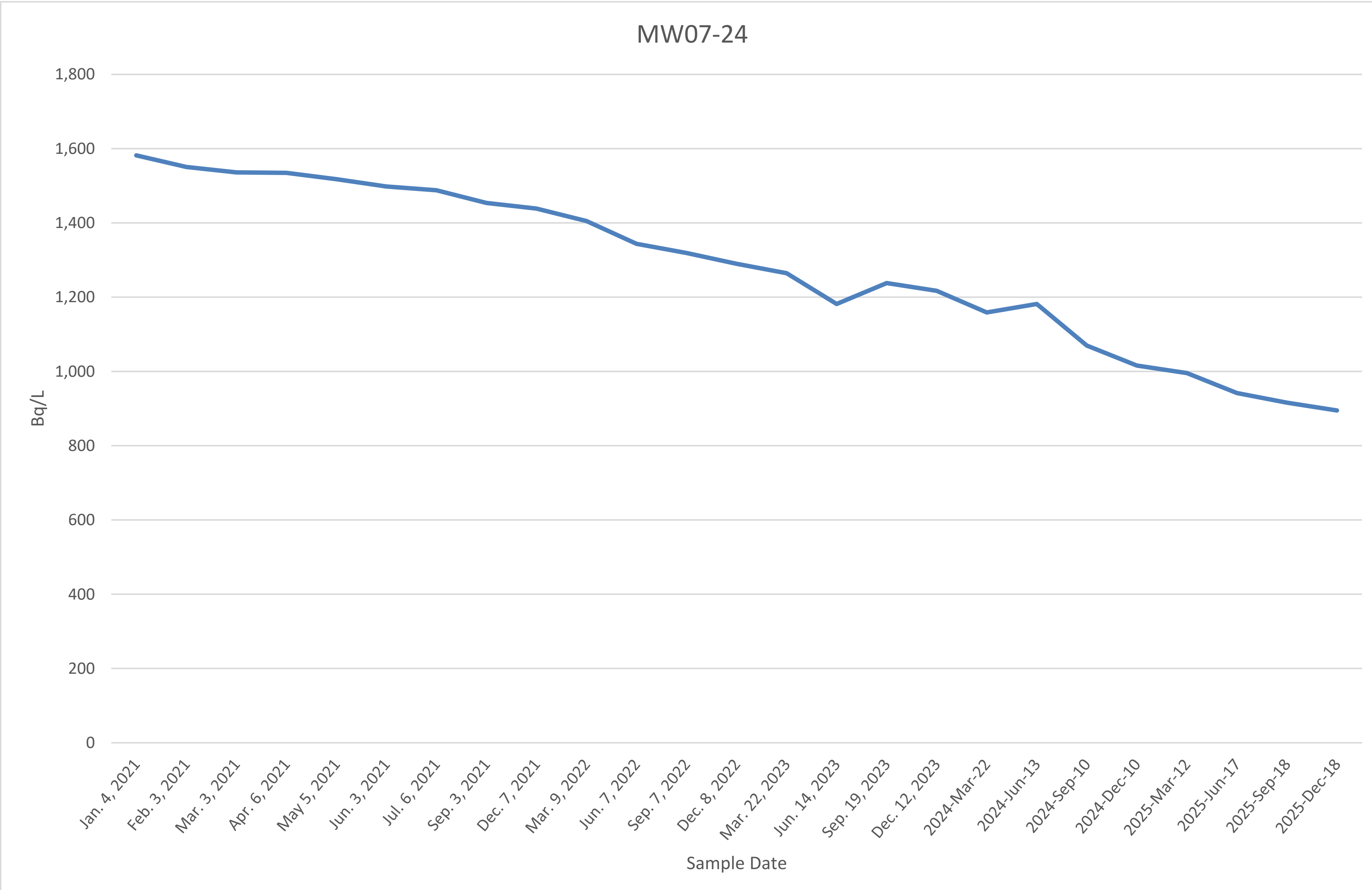


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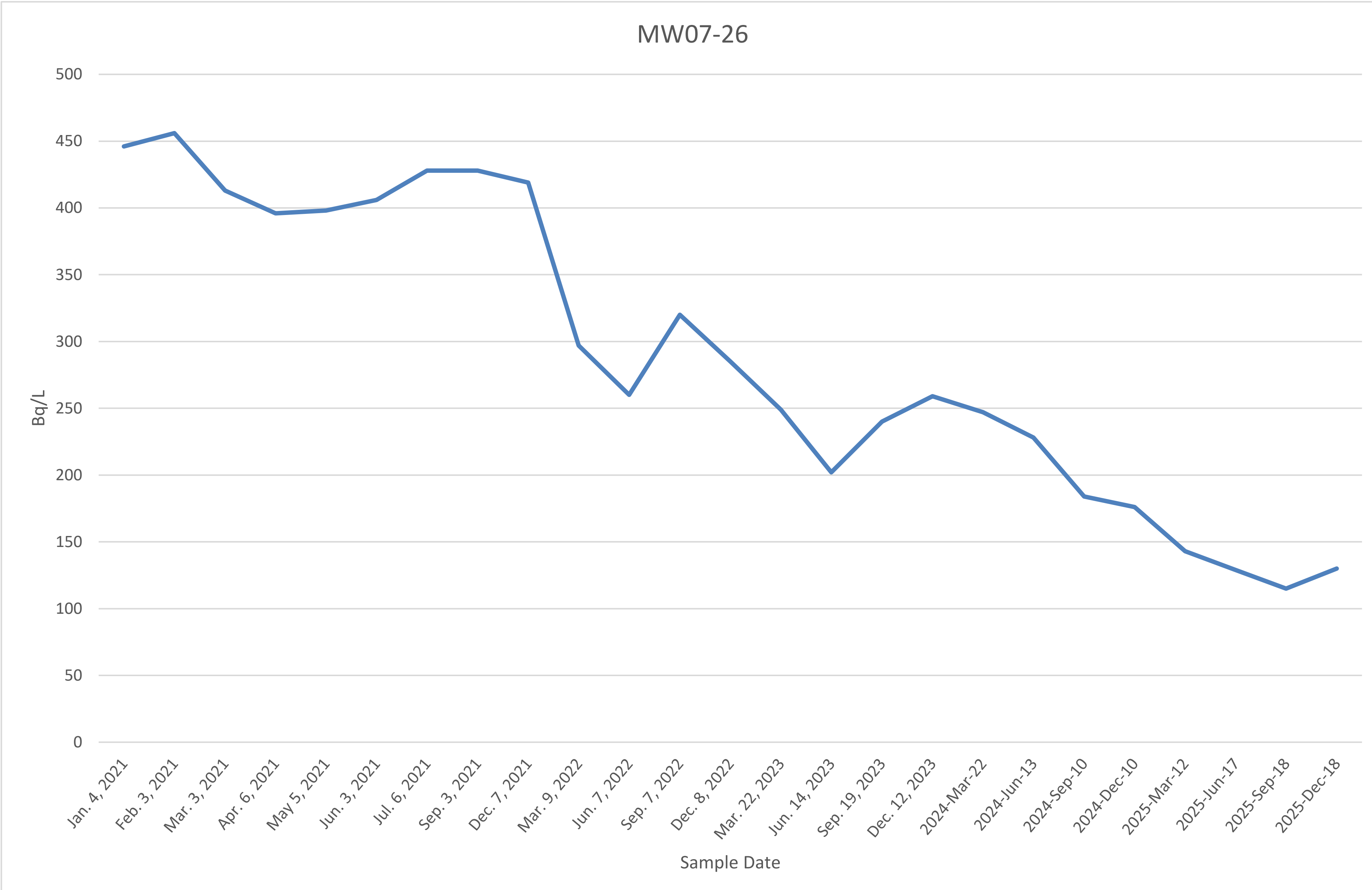


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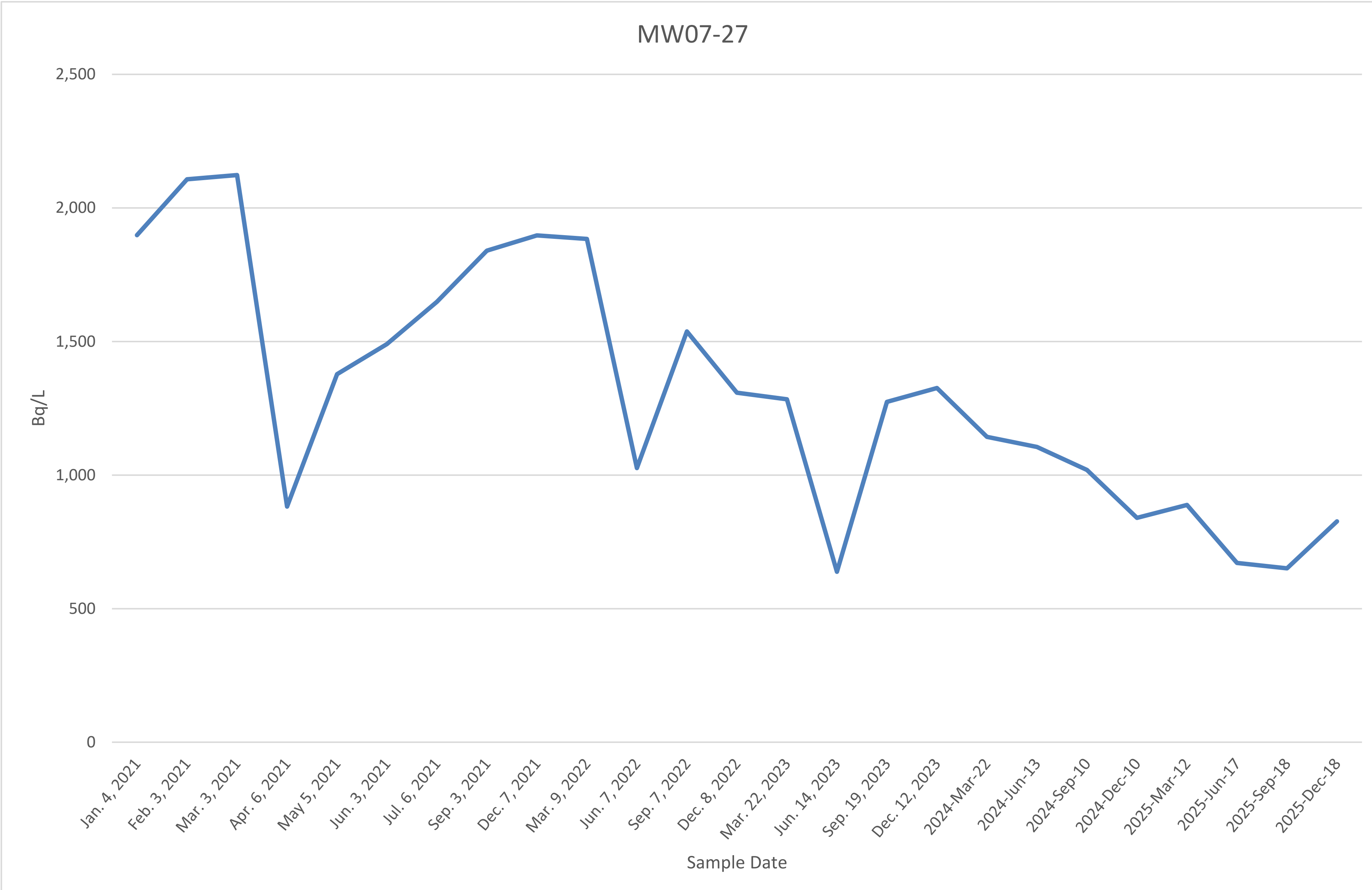


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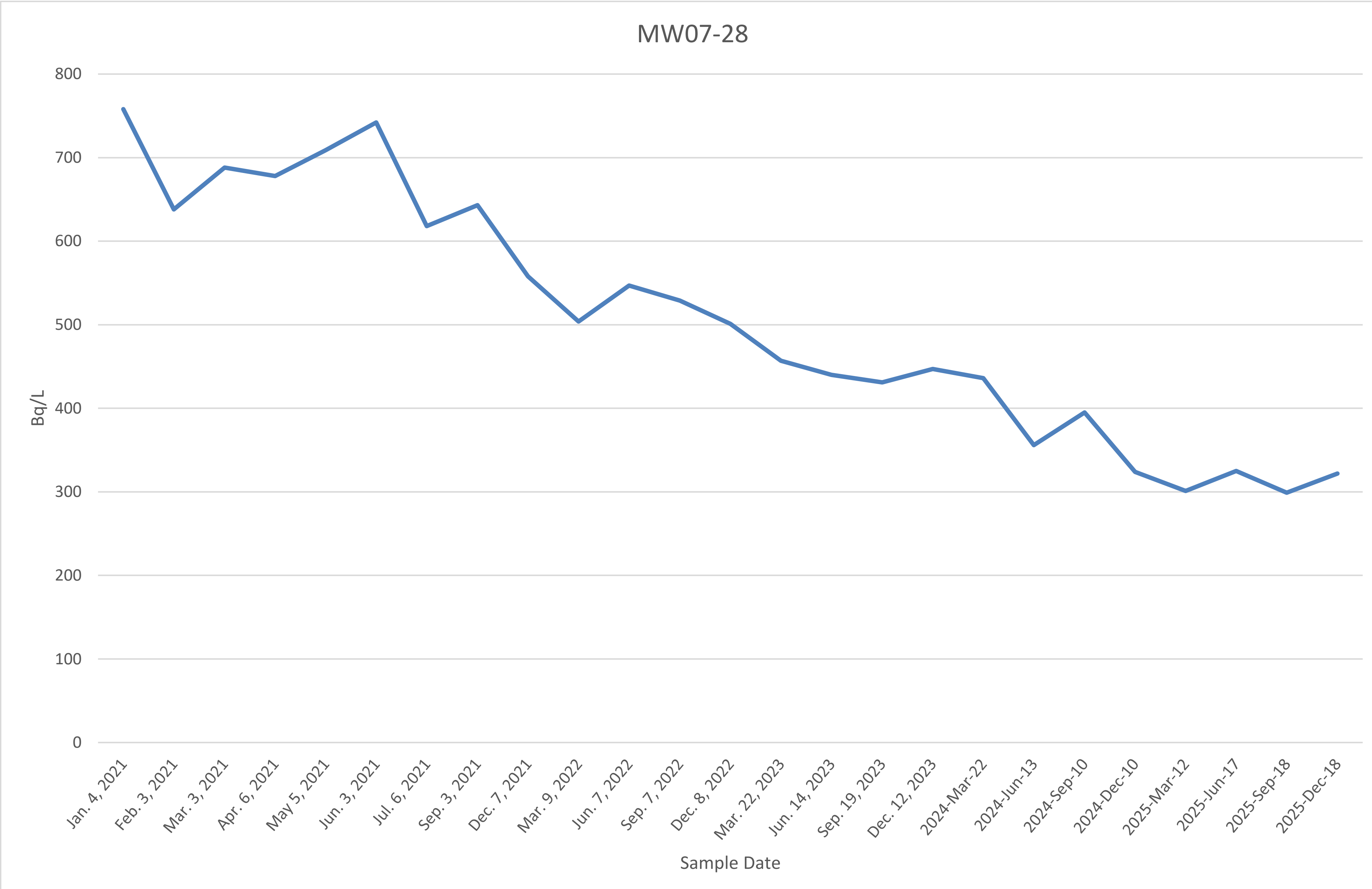


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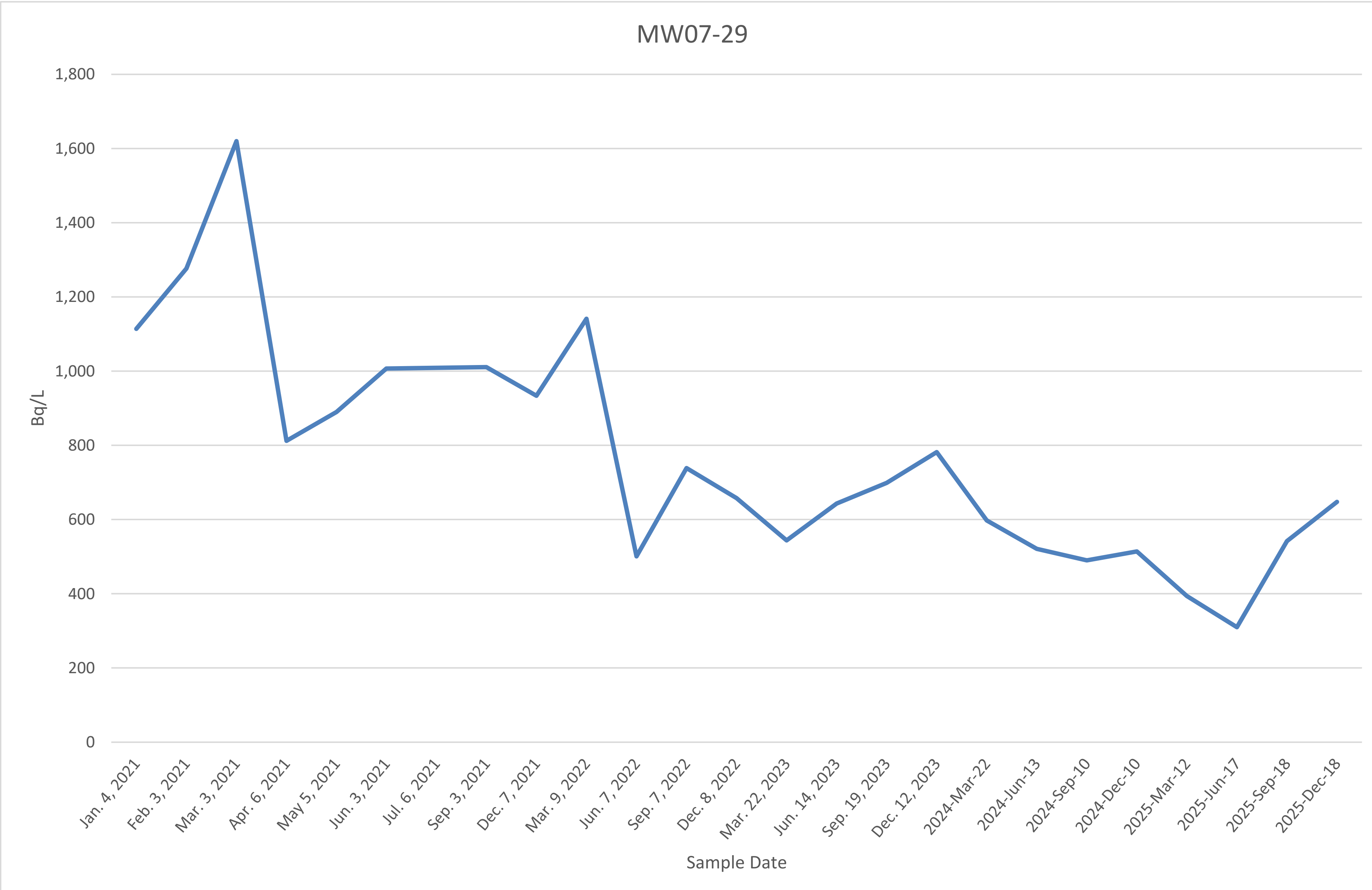

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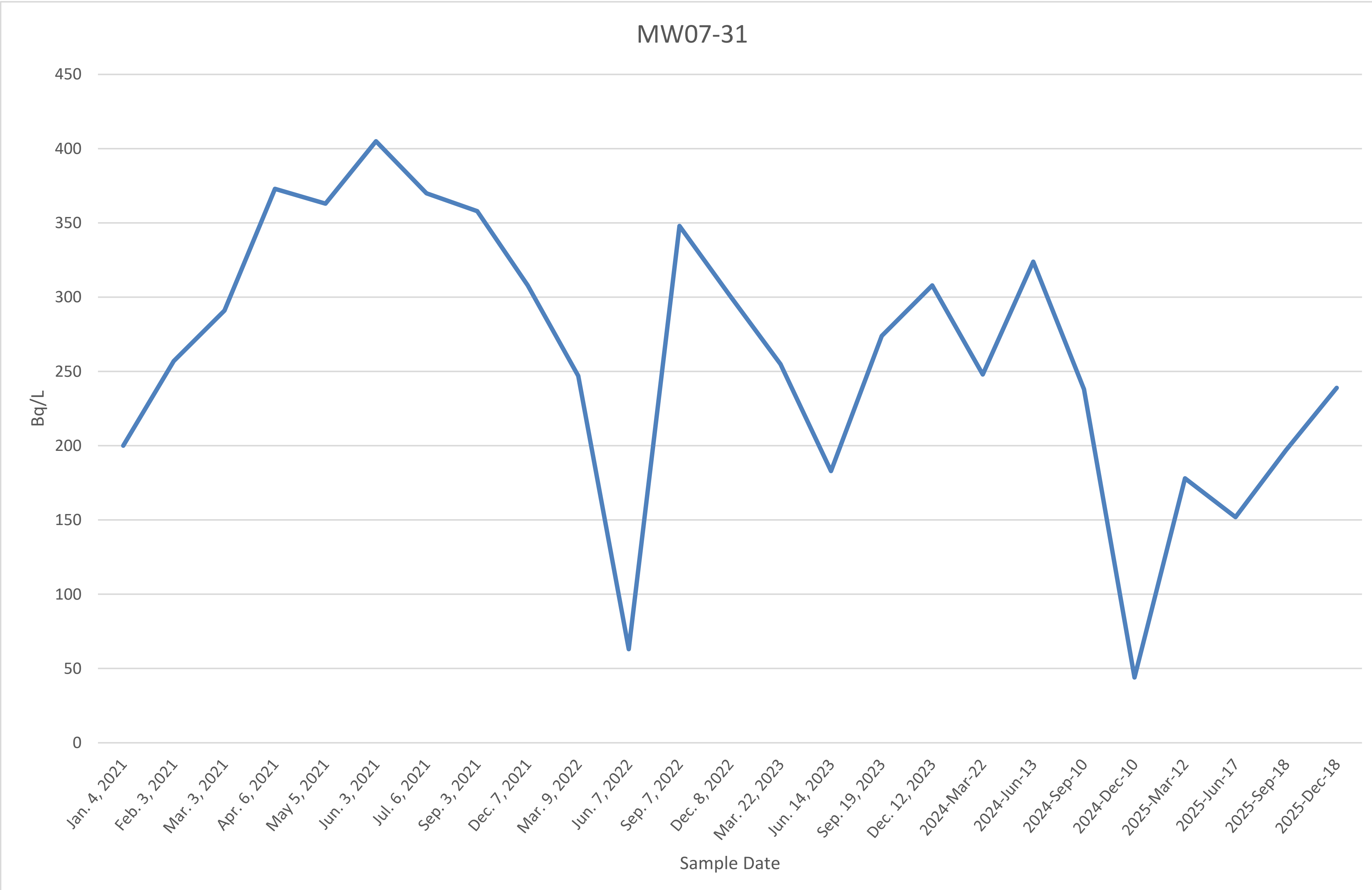


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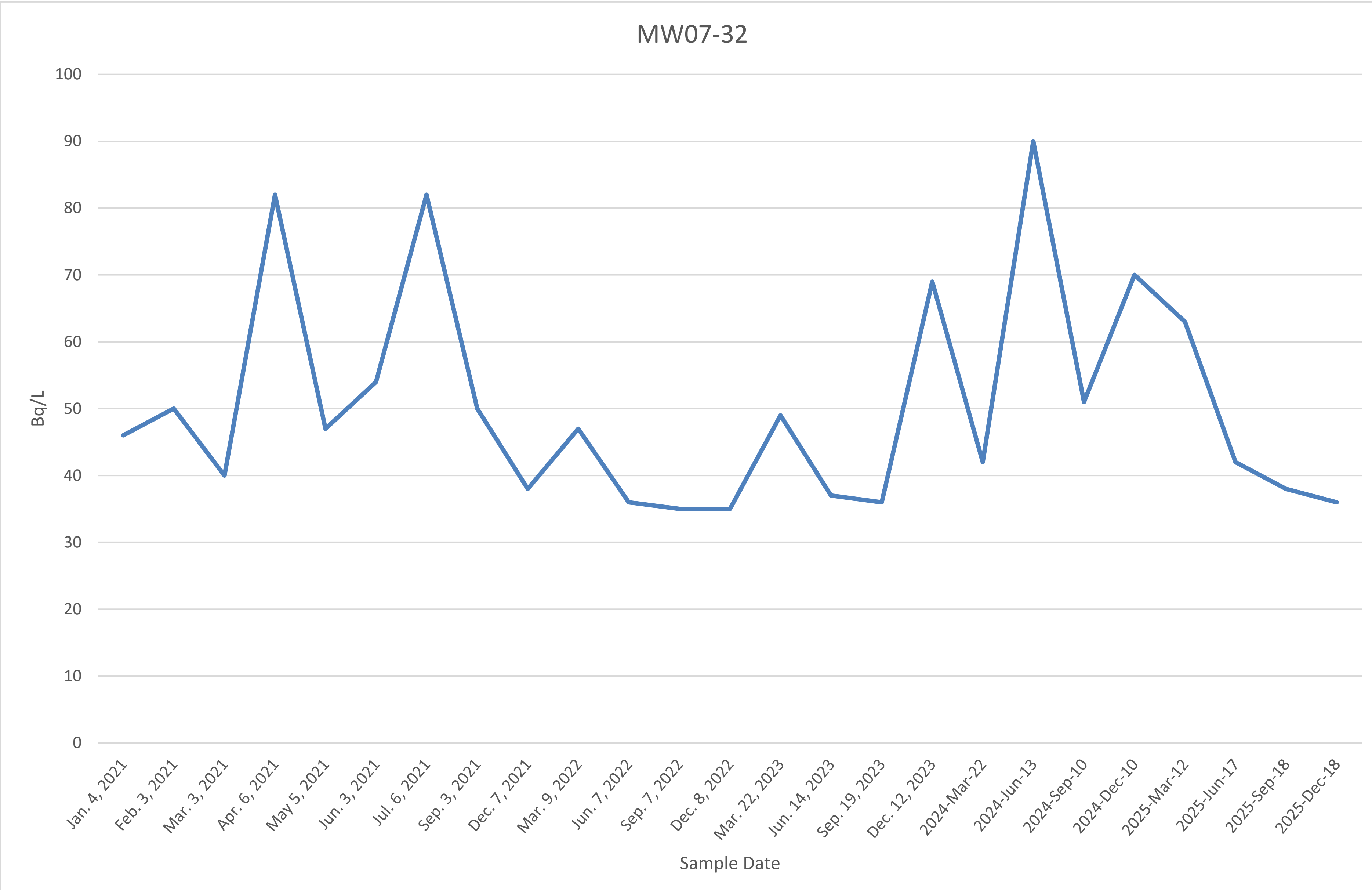


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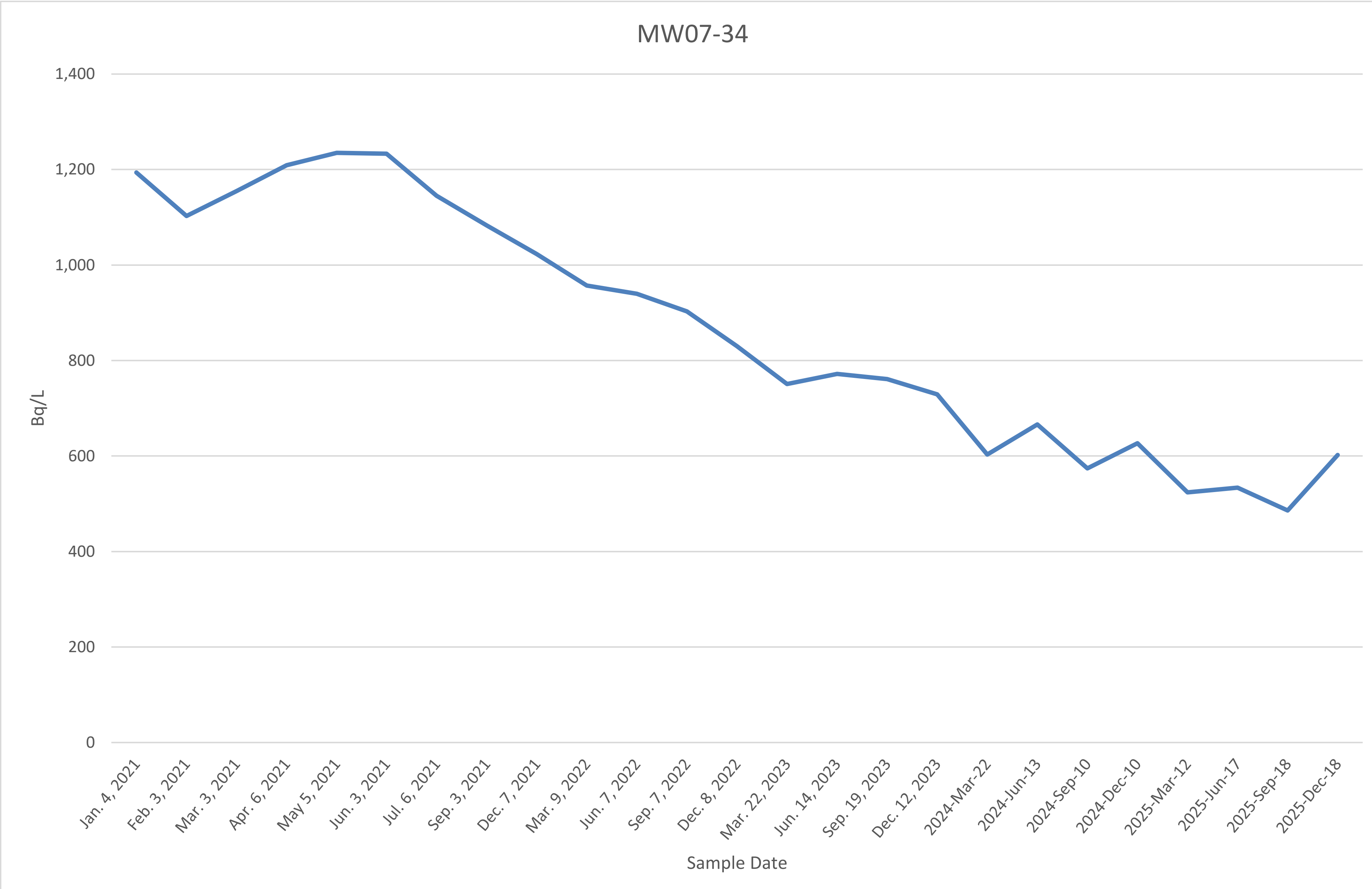


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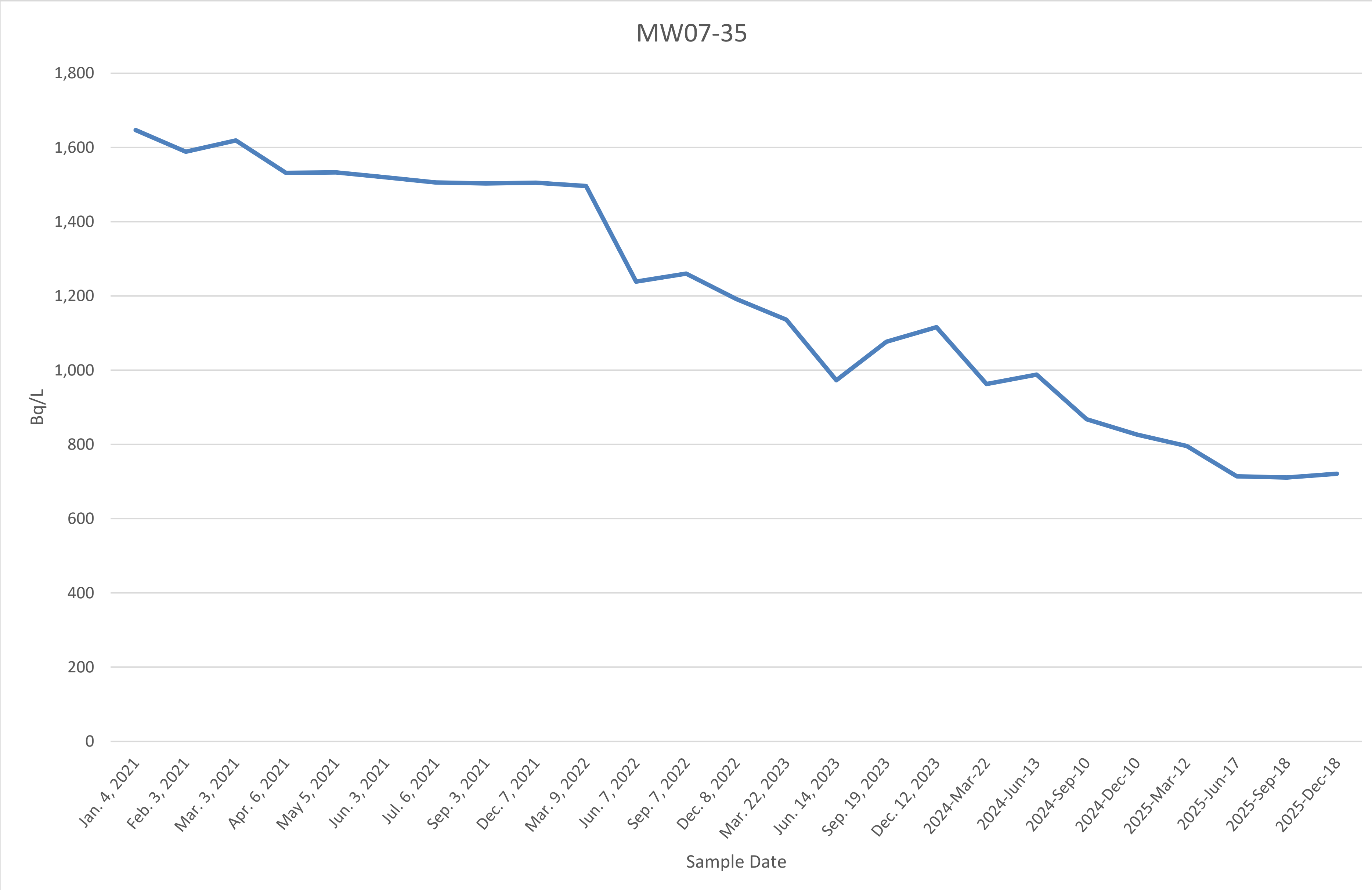


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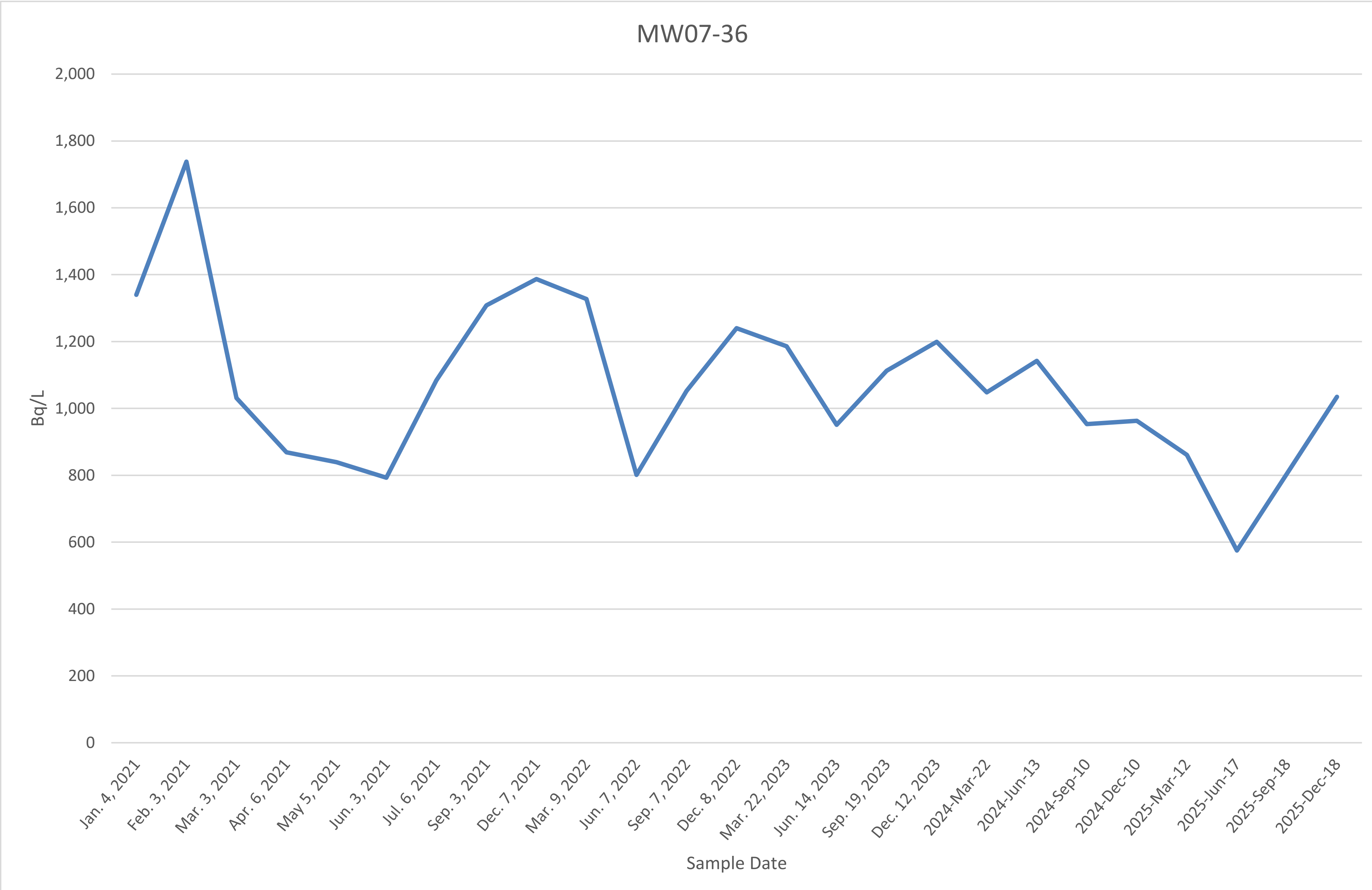
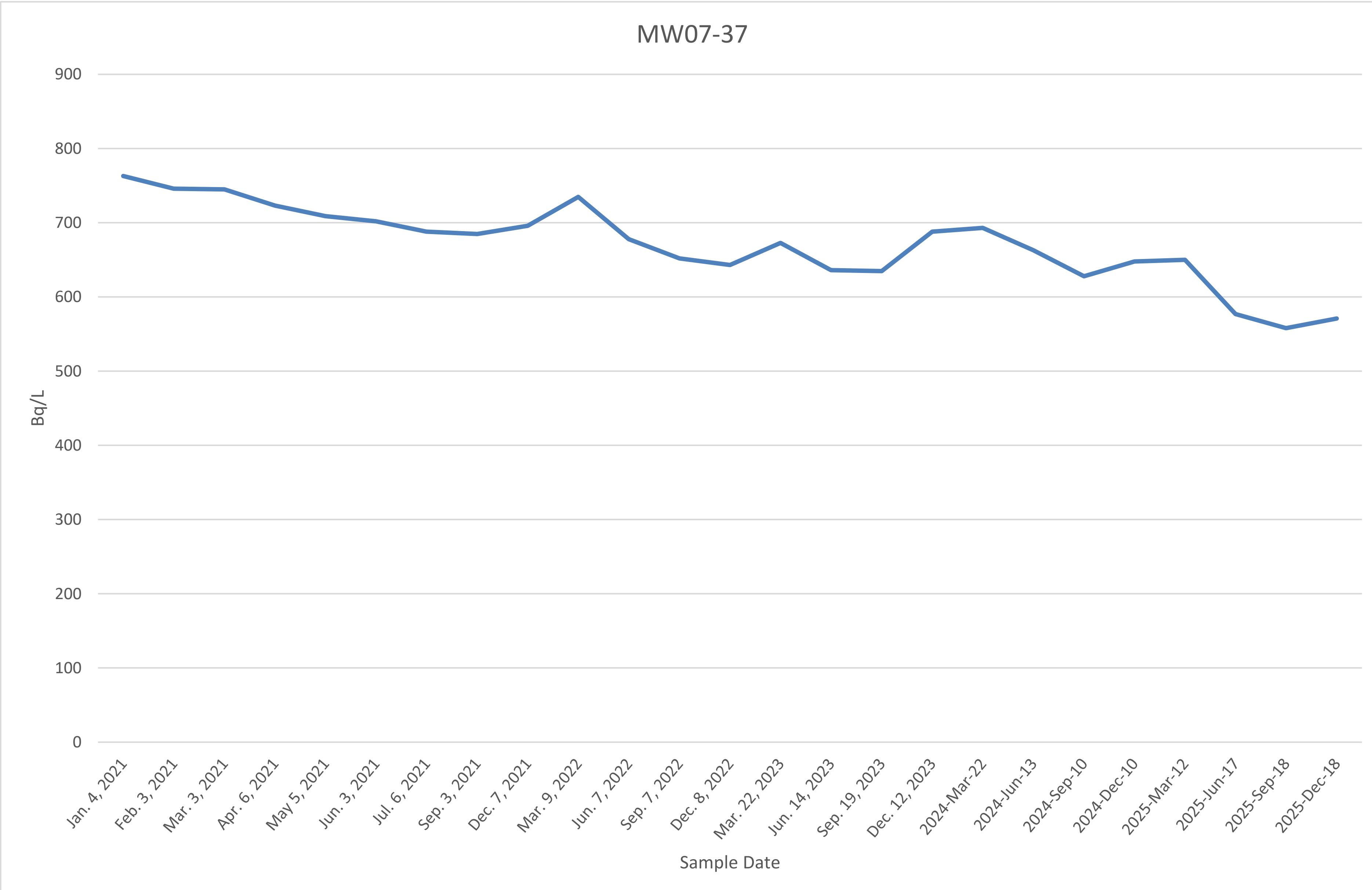



APPENDIX N

## Groundwater Monitoring Data




APPENDIX N

# APPENDIX O

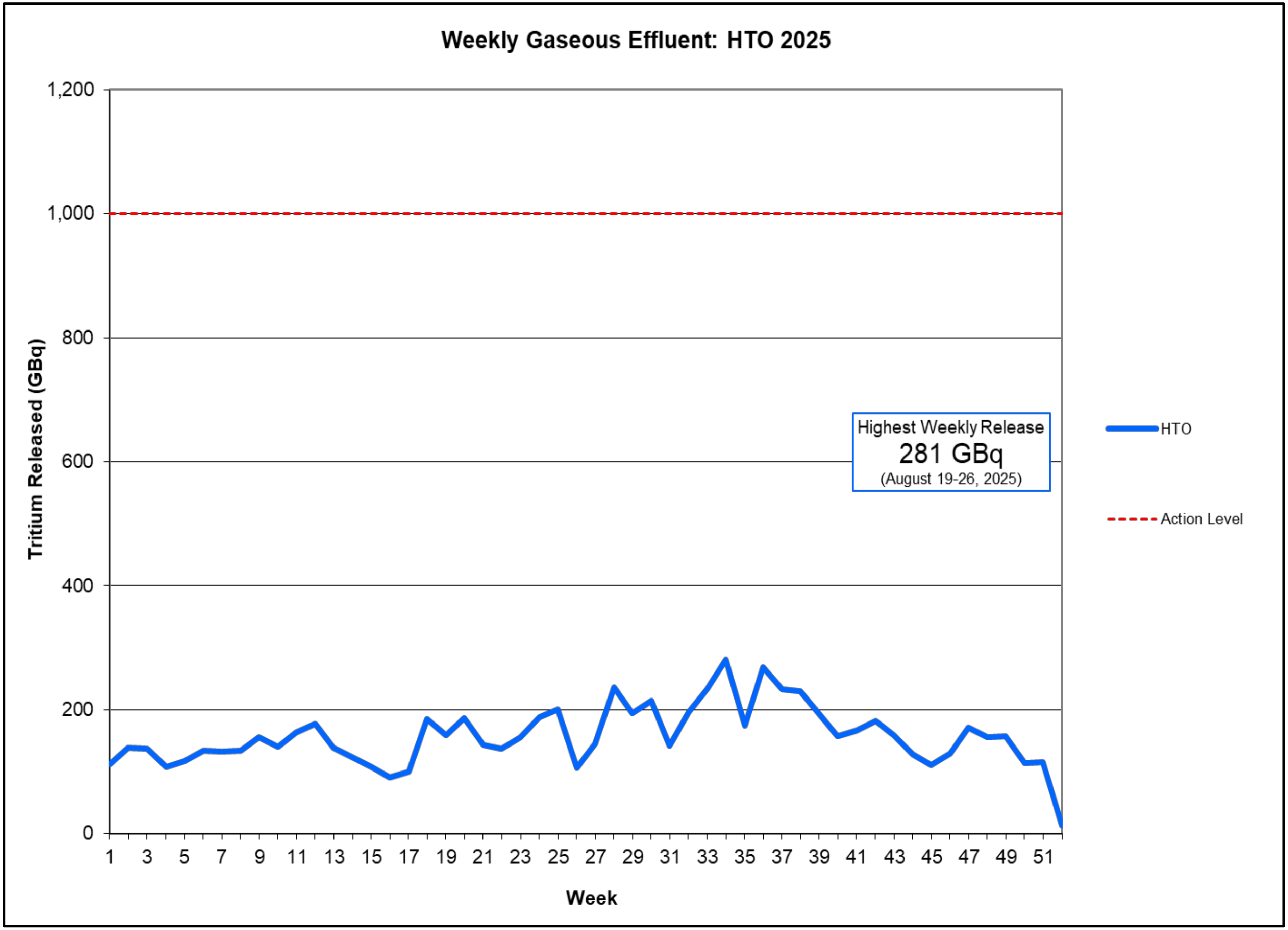
# Gaseous Effluent Data

# Gaseous Effluent Data

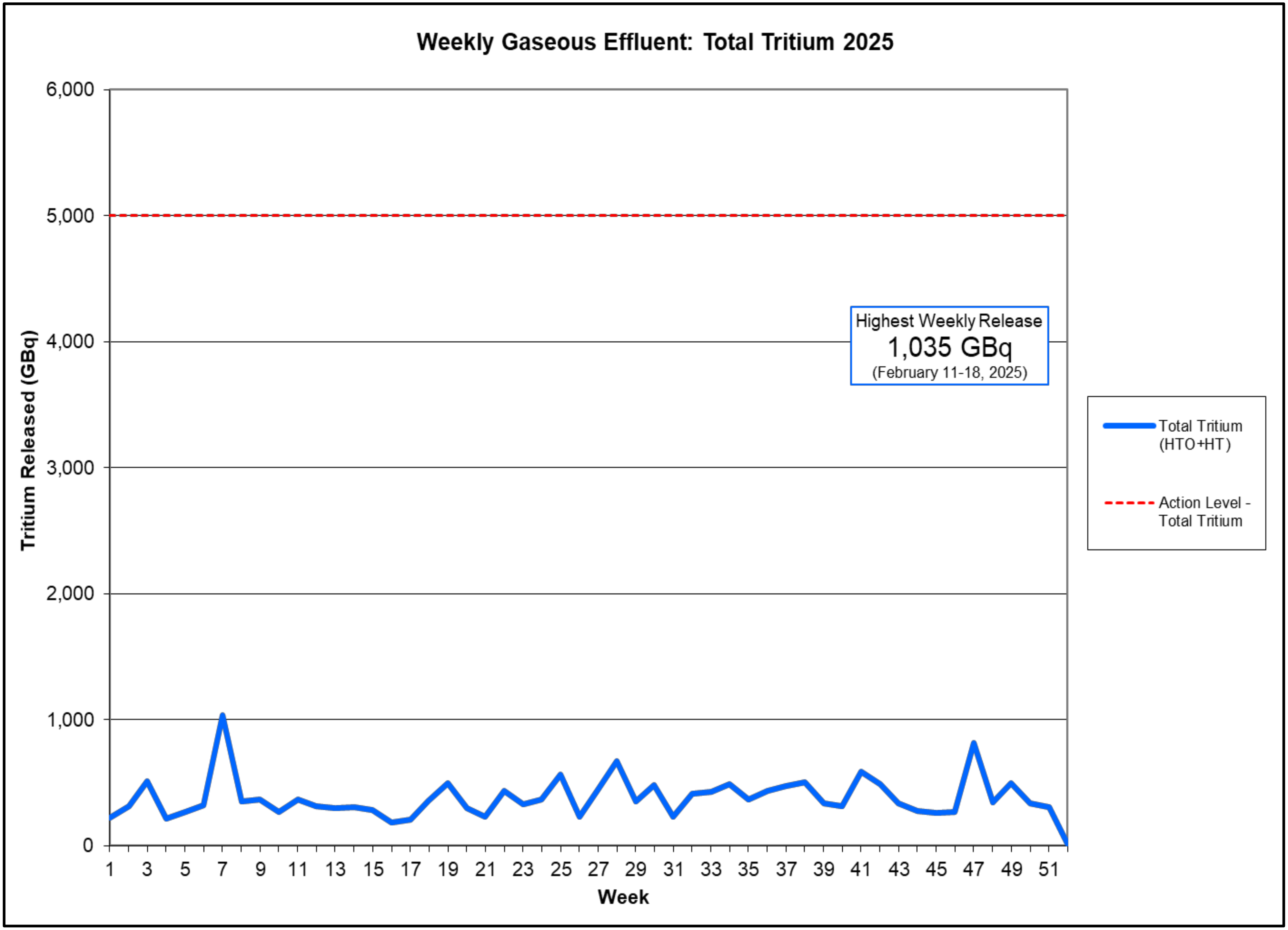
| 2025 Gaseous Effluent Data | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Week | Date | | H-3 in Air (GBq) | | | (GBq) | | % 2021 SRBT DRL (12 hr. TJF Data) | | | | Weekly Action Levels | |
| | Initial | Final | HTO | HT | Total | ∑(HTO) | ∑(HTO + HT) | 1 year old | 10 year old | Adult Resident | Adult Worker | HTO (840 GBq) | HTO+HT (7,753 GBq) |
| 1 | 2024-12-31 | 2025-01-07 | 111.73 | 109.89 | 221.62 | 111.73 | 221.62 | 0.04 | 0.05 | 0.04 | 0.11 | 13% | 3% |
| 2 | 2025-01-07 | 2025-01-14 | 139.00 | 174.66 | 313.66 | 250.73 | 535.28 | 0.05 | 0.06 | 0.05 | 0.13 | 17% | 4% |
| 3 | 2025-01-14 | 2025-01-21 | 136.42 | 376.35 | 512.77 | 387.15 | 1048.05 | 0.05 | 0.06 | 0.06 | 0.14 | 16% | 7% |
| 4 | 2025-01-21 | 2025-01-28 | 108.03 | 104.00 | 212.03 | 495.18 | 1260.08 | 0.04 | 0.05 | 0.04 | 0.10 | 13% | 3% |
| 5 | 2025-01-28 | 2025-02-04 | 117.58 | 150.92 | 268.50 | 612.76 | 1528.58 | 0.04 | 0.05 | 0.05 | 0.11 | 14% | 3% |
| 6 | 2025-02-04 | 2025-02-11 | 134.67 | 182.77 | 317.44 | 747.43 | 1846.02 | 0.05 | 0.06 | 0.05 | 0.13 | 16% | 4% |
| 7 | 2025-02-11 | 2025-02-18 | 132.08 | 902.98 | 1035.06 | 879.51 | 2881.08 | 0.06 | 0.07 | 0.06 | 0.15 | 16% | 13% |
| 8 | 2025-02-18 | 2025-02-25 | 133.62 | 215.86 | 349.48 | 1013.13 | 3230.56 | 0.05 | 0.06 | 0.05 | 0.13 | 16% | 5% |
| 9 | 2025-02-25 | 2025-03-04 | 155.60 | 208.87 | 364.47 | 1168.73 | 3595.03 | 0.06 | 0.07 | 0.06 | 0.15 | 19% | 5% |
| 10 | 2025-03-04 | 2025-03-11 | 139.56 | 125.68 | 265.24 | 1308.29 | 3860.27 | 0.05 | 0.06 | 0.05 | 0.13 | 17% | 3% |
| 11 | 2025-03-11 | 2025-03-18 | 162.67 | 200.19 | 362.86 | 1470.96 | 4223.13 | 0.06 | 0.07 | 0.06 | 0.16 | 19% | 5% |
| 12 | 2025-03-18 | 2025-03-25 | 176.94 | 136.73 | 313.67 | 1647.90 | 4536.80 | 0.06 | 0.07 | 0.07 | 0.17 | 21% | 4% |
| 13 | 2025-03-25 | 2025-04-01 | 138.52 | 156.27 | 294.79 | 1786.42 | 4831.59 | 0.05 | 0.06 | 0.05 | 0.13 | 16% | 4% |
| 14 | 2025-04-01 | 2025-04-08 | 123.19 | 184.03 | 307.22 | 1909.61 | 5138.81 | 0.05 | 0.05 | 0.05 | 0.12 | 15% | 4% |
| 15 | 2025-04-08 | 2025-04-15 | 107.49 | 176.91 | 284.40 | 2017.10 | 5423.21 | 0.04 | 0.05 | 0.04 | 0.10 | 13% | 4% |
| 16 | 2025-04-15 | 2025-04-22 | 91.03 | 95.18 | 186.21 | 2108.13 | 5609.42 | 0.03 | 0.04 | 0.03 | 0.09 | 11% | 2% |
| 17 | 2025-04-22 | 2025-04-29 | 100.60 | 106.28 | 206.88 | 2208.73 | 5816.30 | 0.04 | 0.04 | 0.04 | 0.10 | 12% | 3% |
| 18 | 2025-04-29 | 2025-05-06 | 184.41 | 171.69 | 356.10 | 2393.14 | 6172.40 | 0.07 | 0.08 | 0.07 | 0.18 | 22% | 5% |
| 19 | 2025-05-06 | 2025-05-13 | 158.91 | 333.47 | 492.38 | 2552.05 | 6664.78 | 0.06 | 0.07 | 0.06 | 0.16 | 19% | 6% |
| 20 | 2025-05-13 | 2025-05-20 | 186.03 | 110.77 | 296.80 | 2738.08 | 6961.58 | 0.07 | 0.08 | 0.07 | 0.18 | 22% | 4% |
| 21 | 2025-05-20 | 2025-05-27 | 142.91 | 90.14 | 233.05 | 2880.99 | 7194.63 | 0.05 | 0.06 | 0.05 | 0.13 | 17% | 3% |
| 22 | 2025-05-27 | 2025-06-03 | 136.85 | 300.43 | 437.28 | 3017.84 | 7631.91 | 0.05 | 0.06 | 0.05 | 0.13 | 16% | 6% |
| 23 | 2025-06-03 | 2025-06-10 | 156.32 | 175.60 | 331.92 | 3174.16 | 7963.83 | 0.06 | 0.07 | 0.06 | 0.15 | 19% | 4% |
| 24 | 2025-06-10 | 2025-06-17 | 188.50 | 175.75 | 364.25 | 3362.66 | 8328.08 | 0.07 | 0.08 | 0.07 | 0.18 | 22% | 5% |
| 25 | 2025-06-17 | 2025-06-24 | 200.54 | 364.15 | 564.69 | 3563.20 | 8892.77 | 0.07 | 0.09 | 0.08 | 0.20 | 24% | 7% |
| 26 | 2025-06-24 | 2025-07-01 | 106.27 | 123.84 | 230.11 | 3669.47 | 9122.88 | 0.04 | 0.05 | 0.04 | 0.10 | 13% | 3% |
| 27 | 2025-07-01 | 2025-07-08 | 144.40 | 297.56 | 441.96 | 3813.87 | 9564.84 | 0.05 | 0.06 | 0.06 | 0.14 | 17% | 6% |
| 28 | 2025-07-08 | 2025-07-15 | 236.12 | 433.92 | 670.04 | 4049.99 | 10234.88 | 0.09 | 0.10 | 0.09 | 0.23 | 28% | 9% |
| 29 | 2025-07-15 | 2025-07-22 | 194.88 | 152.87 | 347.75 | 4244.87 | 10582.63 | 0.07 | 0.08 | 0.07 | 0.18 | 19% | 7% |
| 30 | 2025-07-22 | 2025-07-29 | 214.94 | 262.00 | 476.94 | 4459.81 | 11059.57 | 0.08 | 0.09 | 0.08 | 0.21 | 21% | 10% |
| 31 | 2025-07-29 | 2025-08-05 | 142.15 | 88.22 | 230.37 | 4601.96 | 11289.94 | 0.05 | 0.06 | 0.05 | 0.13 | 14% | 5% |
| 32 | 2025-08-05 | 2025-08-12 | 196.06 | 219.66 | 415.72 | 4798.02 | 11705.66 | 0.07 | 0.08 | 0.08 | 0.19 | 20% | 8% |
| 33 | 2025-08-12 | 2025-08-19 | 233.74 | 192.87 | 426.61 | 5031.76 | 12132.27 | 0.08 | 0.10 | 0.09 | 0.22 | 23% | 9% |
| 34 | 2025-08-19 | 2025-08-26 | 280.75 | 205.33 | 486.08 | 5312.51 | 12618.35 | 0.10 | 0.12 | 0.11 | 0.27 | 28% | 10% |
| 35 | 2025-08-26 | 2025-09-02 | 174.92 | 193.14 | 368.06 | 5487.43 | 12986.41 | 0.06 | 0.07 | 0.07 | 0.17 | 17% | 7% |
| 36 | 2025-09-02 | 2025-09-09 | 268.32 | 166.97 | 435.29 | 5755.75 | 13421.70 | 0.09 | 0.11 | 0.10 | 0.25 | 27% | 9% |
| 37 | 2025-09-09 | 2025-09-16 | 233.49 | 239.11 | 472.60 | 5989.24 | 13894.30 | 0.08 | 0.10 | 0.09 | 0.22 | 23% | 9% |
| 38 | 2025-09-16 | 2025-09-23 | 230.48 | 269.81 | 500.29 | 6219.72 | 14394.59 | 0.08 | 0.10 | 0.09 | 0.22 | 23% | 10% |
| 39 | 2025-09-23 | 2025-09-30 | 192.75 | 142.66 | 335.41 | 6412.47 | 14730.00 | 0.07 | 0.08 | 0.07 | 0.18 | 19% | 7% |
| 40 | 2025-09-30 | 2025-10-07 | 157.43 | 154.03 | 311.46 | 6569.90 | 15041.46 | 0.06 | 0.07 | 0.06 | 0.15 | 16% | 6% |
| 41 | 2025-10-07 | 2025-10-14 | 166.36 | 417.92 | 584.28 | 6736.26 | 15625.74 | 0.06 | 0.07 | 0.07 | 0.17 | 17% | 12% |
| 42 | 2025-10-14 | 2025-10-21 | 182.46 | 309.40 | 491.86 | 6918.72 | 16117.60 | 0.07 | 0.08 | 0.07 | 0.18 | 18% | 10% |
| 43 | 2025-10-21 | 2025-10-28 | 158.06 | 176.87 | 334.93 | 7076.78 | 16452.53 | 0.06 | 0.07 | 0.06 | 0.15 | 16% | 7% |
| 44 | 2025-10-28 | 2025-11-04 | 128.29 | 146.56 | 274.85 | 7205.07 | 16727.38 | 0.05 | 0.05 | 0.05 | 0.12 | 13% | 5% |
| 45 | 2025-11-04 | 2025-11-11 | 110.53 | 152.98 | 263.51 | 7315.60 | 16990.89 | 0.04 | 0.05 | 0.04 | 0.11 | 11% | 5% |
| 46 | 2025-11-11 | 2025-11-18 | 129.04 | 137.21 | 266.25 | 7444.64 | 17257.14 | 0.05 | 0.05 | 0.05 | 0.12 | 13% | 5% |
| 47 | 2025-11-18 | 2025-11-25 | 171.35 | 640.93 | 812.28 | 7615.99 | 18069.42 | 0.07 | 0.08 | 0.07 | 0.18 | 17% | 16% |
| 48 | 2025-11-25 | 2025-12-02 | 155.94 | 190.87 | 346.81 | 7771.93 | 18416.23 | 0.06 | 0.07 | 0.06 | 0.15 | 16% | 7% |
| 49 | 2025-12-02 | 2025-12-09 | 157.53 | 335.31 | 492.84 | 7929.46 | 18909.07 | 0.06 | 0.07 | 0.06 | 0.16 | 16% | 10% |
| 50 | 2025-12-09 | 2025-12-16 | 113.40 | 223.50 | 336.90 | 8042.86 | 19245.97 | 0.04 | 0.05 | 0.05 | 0.11 | 11% | 7% |
| 51 | 2025-12-16 | 2025-12-23 | 115.17 | 187.79 | 302.96 | 8158.03 | 19548.93 | 0.04 | 0.05 | 0.05 | 0.11 | 12% | 6% |
| 52 | 2025-12-23 | 2025-12-30 | 12.93 | 4.28 | 17.21 | 8170.96 | 19566.14 | 0.00 | 0.01 | 0.00 | 0.01 | 1% | 0% |
| | Annual Total | | 8170.96 | 11395.18 | 19566.14 | | | Average % DRL | | | | | |
| | Weekly Average | | 157.13 | 219.14 | 376.27 | | | 0.06 | 0.07 | 0.06 | 0.15 | | |
| % Annual Release Limit: | | | | Limit (Bq/a) | % Limit (2021) | | | Projected Dose (uSv/a) | | | | | |
| | | | HTO | 6.72E+13 | 12.16 | | | 0.57 | 0.67 | 0.61 | 1.52 | | |
| | | | HTO + HT | 4.48E+14 | 4.37 | | | 1 year old | 10 year old | Adult Resident | Adult Worker | | |
| Derived Weekly HTO Release/Emission Limit (GBq/week) | | | | | | | | 2.90E+05 | 2.45E+05 | 2.71E+05 | 1.08E+05 | | |
| Derived Weekly HT Release/ Emission Limit (GBq/week) | | | | | | | | 7.24E+06 | 6.83E+06 | 6.90E+06 | 3.63E+06 | | |

APPENDIX O

## Gaseous Effluent Data



## Gaseous Effluent Data



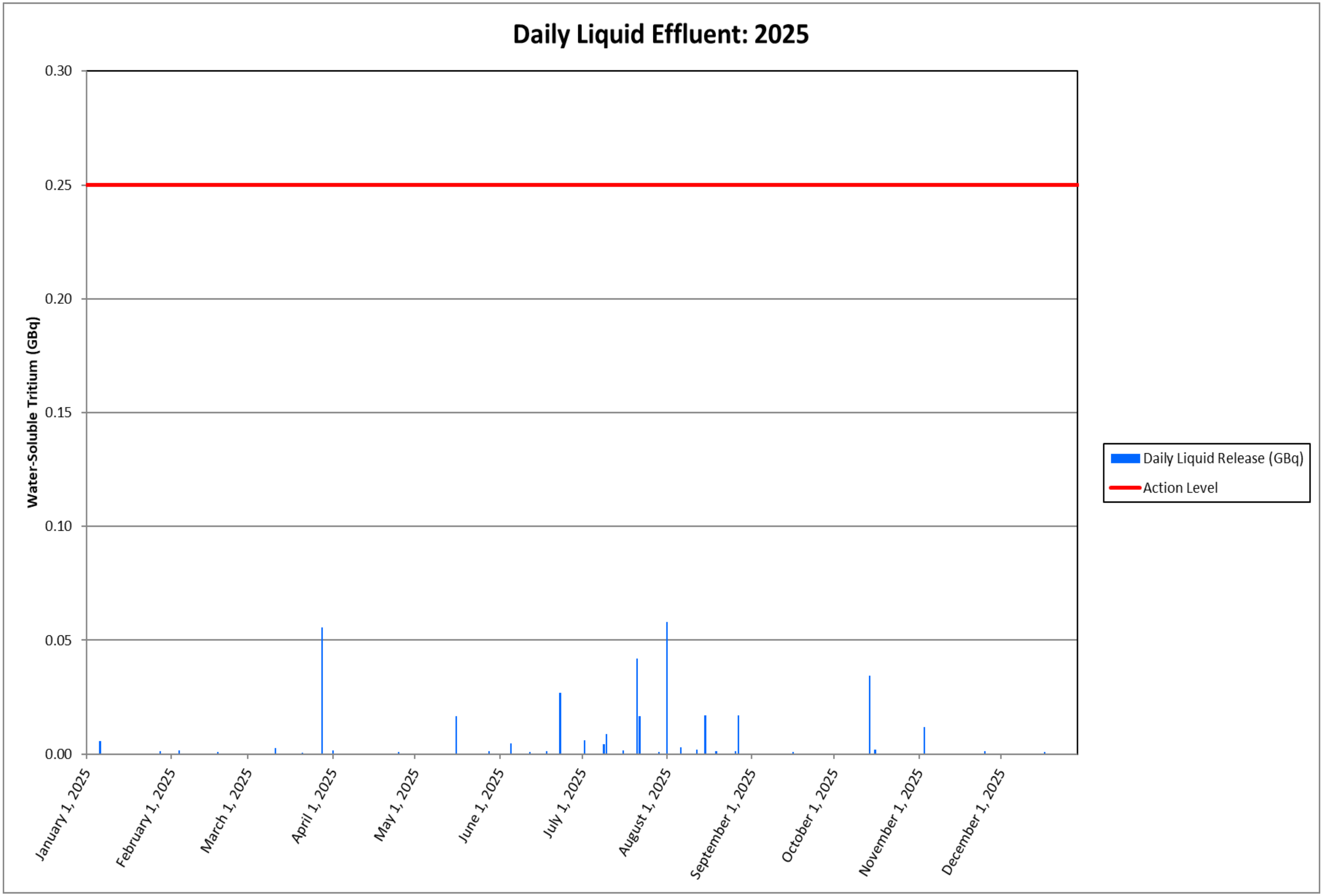
# APPENDIX P

# Liquid Effluent Data

## Liquid Effluent Data

| ANNUAL LIQUID EFFLUENT TRACKING TABLE | | |
|---|---|---|
| Year = 2025 | | |
| WEEK ENDING | WEEKLY RELEASE (Bq) | WEEK |
| 5-Jan-25 | 0 | 1 |
| 12-Jan-25 | 5,526,693 | 2 |
| 19-Jan-25 | 0 | 3 |
| 26-Jan-25 | 0 | 4 |
| 2-Feb-25 | 1,095,500 | 5 |
| 9-Feb-25 | 1,479,060 | 6 |
| 16-Feb-25 | 0 | 7 |
| 23-Feb-25 | 734,533 | 8 |
| 2-Mar-25 | 0 | 9 |
| 9-Mar-25 | 0 | 10 |
| 16-Mar-25 | 2,463,993 | 11 |
| 23-Mar-25 | 384,400 | 12 |
| 30-Mar-25 | 55,524,667 | 13 |
| 6-Apr-25 | 1,665,320 | 14 |
| 13-Apr-25 | 0 | 15 |
| 20-Apr-25 | 0 | 16 |
| 27-Apr-25 | 922,667 | 17 |
| 4-May-25 | 0 | 18 |
| 11-May-25 | 0 | 19 |
| 18-May-25 | 16,687,247 | 20 |
| 25-May-25 | 0 | 21 |
| 1-Jun-25 | 1,271,560 | 22 |
| 8-Jun-25 | 4,563,340 | 23 |
| 15-Jun-25 | 957,820 | 24 |
| 22-Jun-25 | 1,268,240 | 25 |
| 29-Jun-25 | 27,030,400 | 26 |
| 6-Jul-25 | 6,130,467 | 27 |
| 13-Jul-25 | 13,299,854 | 28 |
| 20-Jul-25 | 1,668,853 | 29 |
| 27-Jul-25 | 58,480,227 | 30 |
| 3-Aug-25 | 58,807,327 | 31 |
| 10-Aug-25 | 2,764,500 | 32 |
| 17-Aug-25 | 18,820,600 | 33 |
| 24-Aug-25 | 1,358,987 | 34 |
| 31-Aug-25 | 17,915,760 | 35 |
| 7-Sep-25 | 0 | 36 |
| 14-Sep-25 | 0 | 37 |
| 21-Sep-25 | 1,039,000 | 38 |
| 28-Sep-25 | 0 | 39 |
| 5-Oct-25 | 0 | 40 |
| 12-Oct-25 | 0 | 41 |
| 19-Oct-25 | 36,226,106 | 42 |
| 26-Oct-25 | 0 | 43 |
| 2-Nov-25 | 0 | 44 |
| 9-Nov-25 | 11,780,480 | 45 |
| 16-Nov-25 | 0 | 46 |
| 23-Nov-25 | 0 | 47 |
| 30-Nov-25 | 1,371,160 | 48 |
| 7-Dec-25 | 0 | 49 |
| 14-Dec-25 | 0 | 50 |
| 21-Dec-25 | 980,500 | 51 |
| 28-Dec-25 | 0 | 52 |
| **Annual Total (Bq)** | 352,219,261 | |
| **Annual Total (GBq)** | 0.35 | |
| **Limit (GBq)** | 200 | |
| **% of limit** | **0.18** | |

## Liquid Effluent Data



# APPENDIX Q

## Groundwater Monitoring Well Level Data

## Groundwater Monitoring Well Level Data

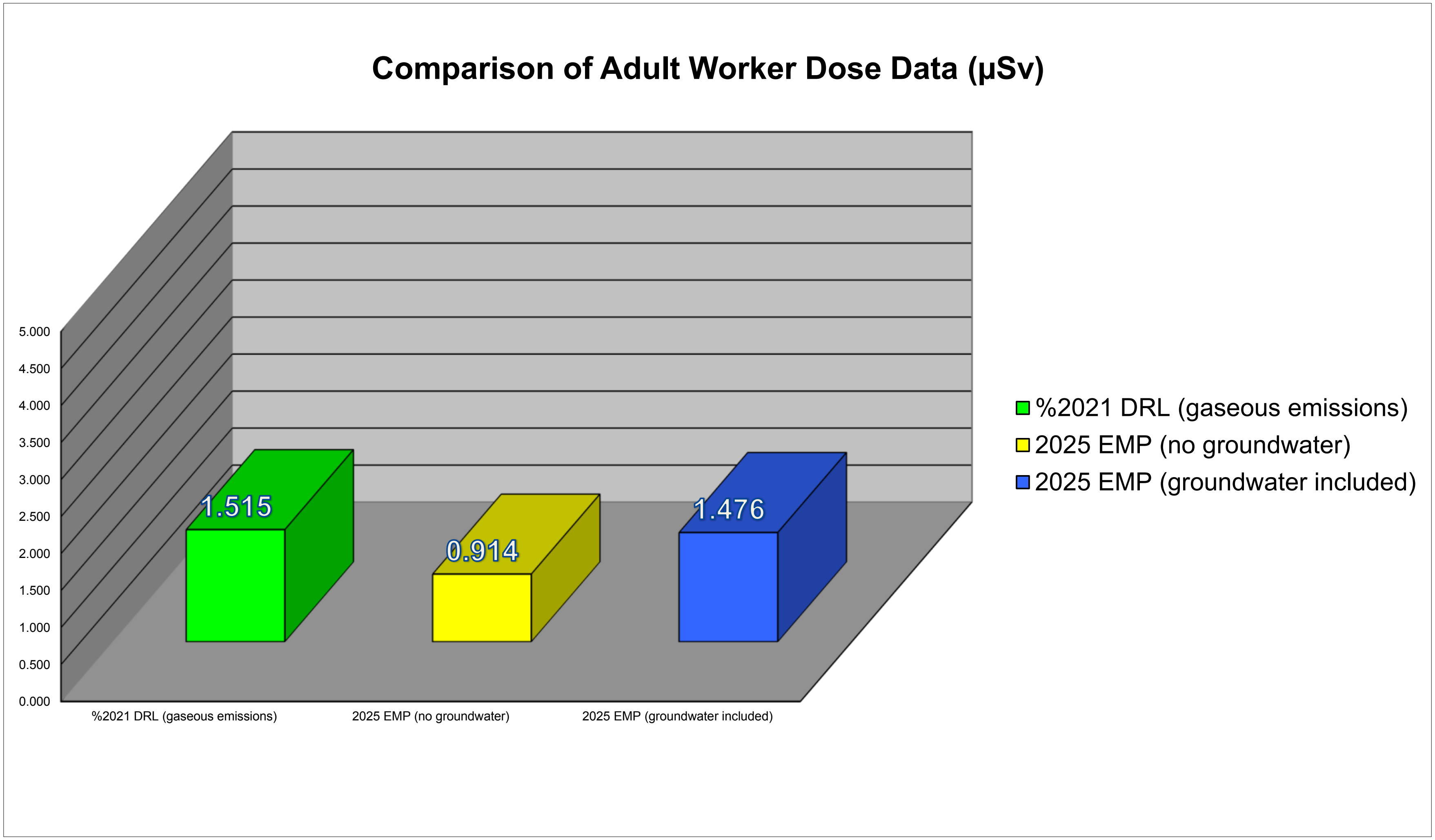
| Well ID | Well Location and Characteristics | | | | | | | 2025 Well Level Measurements (masl) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Easting | Northing | TOP Elevation (m) | GS Elevation (m) | Well Diameter (m) | Well Depth (m) | Stick-up (m) | Mar. 17 | Jun. 16 | Sep. 17 | Dec. 16 |
| MW06-1 | 335449 | 5074615 | 130.99 | 130.17 | 0.051 | 5.165 | 0.820 | 128.63 | 128.68 | 125.86 | 126.78 |
| MW06-2 | 335478 | 5074578 | 130.03 | 129.24 | 0.051 | 5.330 | 0.788 | 127.53 | 127.59 | 126.58 | 126.62 |
| MW06-3 | 335363 | 5074535 | 133.06 | 132.32 | 0.051 | 6.130 | 0.767 | 129.84 | 128.51 | 127.06 | 127.03 |
| MW06-8 | 335464 | 5074590 | 130.30 | 129.58 | 0.032 | 6.700 | 0.720 | 126.97 | 127.25 | 125.54 | 125.74 |
| MW06-9 | 335401 | 5074605 | 131.15 | 129.86 | 0.032 | 5.930 | 1.290 | 127.96 | 128.72 | 126.78 | 126.95 |
| MW06-10 | 335408 | 5074506 | 131.32 | 130.24 | 0.032 | 7.770 | 1.077 | 128.90 | 128.23 | 126.11 | 126.27 |
| MW07-11 | 335478 | 5074576 | 130.06 | 129.15 | 0.032 | 7.215 | 0.905 | 127.03 | 127.26 | 125.70 | 125.88 |
| MW07-12 | 335465 | 5074588 | 130.41 | 129.58 | 0.032 | 7.450 | 0.835 | 127.01 | 127.24 | 125.44 | 125.64 |
| MW07-13 | 335448 | 5074616 | 130.92 | 130.03 | 0.032 | 6.615 | 0.893 | 127.25 | 127.23 | 124.77 | 125.37 |
| MW07-15 | 335403 | 5074605 | 130.84 | 129.93 | 0.032 | 7.230 | 0.910 | 128.76 | 128.28 | 125.96 | 126.23 |
| MW07-16 | 335393 | 5074599 | 130.98 | 130.16 | 0.032 | 7.050 | 0.822 | 128.77 | 128.17 | 125.88 | 126.08 |
| MW07-17 | 335392 | 5074599 | 131.08 | 130.16 | 0.051 | 14.610 | 0.915 | 122.52 | 123.49 | 121.01 | 120.92 |
| MW07-18 | 335387 | 5074595 | 131.23 | 130.37 | 0.032 | 7.250 | 0.868 | 129.08 | 128.20 | 125.96 | 126.13 |
| MW07-19 | 335378 | 5074587 | 131.61 | 130.79 | 0.032 | 7.400 | 0.815 | 129.20 | 128.35 | 126.03 | 126.21 |
| MW07-20 | 335296 | 5074616 | 130.70 | 129.85 | 0.032 | 7.820 | 0.850 | 126.30 | 126.07 | 123.78 | 124.12 |
| MW07-21 | 335522 | 5074584 | 129.51 | 128.78 | 0.032 | 7.580 | 0.730 | 126.00 | 125.20 | 123.22 | 123.66 |
| MW07-22 | 335472 | 5074584 | 130.25 | 129.05 | 0.032 | 7.465 | 1.200 | 126.88 | 127.11 | 125.41 | 125.72 |
| MW07-23 | 335492 | 5074560 | 130.04 | 129.29 | 0.032 | 5.905 | 0.750 | 127.21 | 127.51 | 126.20 | 126.39 |
| MW07-24 | 335519 | 5074530 | 129.03 | 128.22 | 0.032 | 6.525 | 0.810 | 126.50 | 126.53 | 125.40 | 125.73 |
| MW07-26 | 335357 | 5074567 | 132.42 | 131.85 | 0.032 | 7.310 | 0.570 | 129.52 | 128.12 | 125.61 | 125.75 |
| MW07-27 | 335354 | 5074611 | 132.89 | 132.02 | 0.032 | 8.330 | 0.870 | 128.55 | 127.79 | 125.10 | 125.37 |
| MW07-28 | 335352 | 5074612 | 132.71 | 132.04 | 0.032 | 14.400 | 0.670 | 122.69 | 123.53 | 121.09 | 121.05 |
| MW07-29 | 335384 | 5074592 | 131.09 | 130.57 | 0.032 | 13.000 | 0.520 | 122.66 | 123.51 | 121.10 | 121.01 |
| MW07-31 | 335471 | 5074583 | 130.16 | 129.38 | 0.032 | 13.240 | 0.780 | 121.59 | 122.31 | 119.88 | 119.51 |
| MW07-32 | 335517 | 5074530 | 128.86 | 128.23 | 0.032 | 13.090 | 0.630 | 121.63 | 122.29 | 119.87 | 119.52 |
| MW07-34 | 335393 | 5074591 | 131.12 | 130.71 | 0.032 | 9.110 | 0.410 | 127.54 | 127.15 | 124.86 | 125.11 |
| MW07-35 | 335354 | 5074613 | 132.89 | 132.16 | 0.032 | 9.390 | 0.730 | 128.07 | 127.48 | 124.99 | 125.24 |
| MW07-36 | 335338 | 5074629 | 133.10 | 132.31 | 0.032 | 9.330 | 0.790 | 126.85 | 126.47 | 124.52 | 124.83 |
| MW07-37 | 335468 | 5074589 | 130.06 | 129.47 | 0.032 | 8.590 | 0.590 | 127.16 | 127.41 | 125.69 | 125.88 |

# APPENDIX R

## Public Dose Data

**Public Dose Data**
**ADULT WORKER**

| Dose Calculation | 2025 µSv |
|---|---|
| %2021 DRL (gaseous emissions) | 1.515 |
| 2025 EMP (no groundwater) | 0.914 |
| 2025 EMP (groundwater included) | 1.476 |



## Public Dose Data
## ADULT WORKER

**Stack Emissions**

| | 2025 Emissions as %2021 SRBT DRL | |
|---|---|---|
| | ADULT WORKER | |
| **Sampling Week End** | **% weekly DRL** | **(uSv)** |
| 2025-01-07 | 0.11 | 0.0205 |
| 2025-01-14 | 0.13 | 0.0257 |
| 2025-01-21 | 0.14 | 0.0263 |
| 2025-01-28 | 0.10 | 0.0198 |
| 2025-02-04 | 0.11 | 0.0217 |
| 2025-02-11 | 0.13 | 0.0249 |
| 2025-02-18 | 0.15 | 0.0283 |
| 2025-02-25 | 0.13 | 0.0249 |
| 2025-03-04 | 0.15 | 0.0288 |
| 2025-03-11 | 0.13 | 0.0255 |
| 2025-03-18 | 0.16 | 0.0300 |
| 2025-03-25 | 0.17 | 0.0322 |
| 2025-04-01 | 0.13 | 0.0255 |
| 2025-04-08 | 0.12 | 0.0229 |
| 2025-04-15 | 0.10 | 0.0201 |
| 2025-04-22 | 0.09 | 0.0167 |
| 2025-04-29 | 0.10 | 0.0185 |
| 2025-05-06 | 0.18 | 0.0337 |
| 2025-05-13 | 0.16 | 0.0301 |
| 2025-05-20 | 0.18 | 0.0337 |
| 2025-05-27 | 0.13 | 0.0259 |
| 2025-06-03 | 0.13 | 0.0260 |
| 2025-06-10 | 0.15 | 0.0288 |
| 2025-06-17 | 0.18 | 0.0345 |
| 2025-06-24 | 0.20 | 0.0376 |
| 2025-07-01 | 0.10 | 0.0196 |
| 2025-07-08 | 0.14 | 0.0273 |
| 2025-07-15 | 0.23 | 0.0443 |
| 2025-07-22 | 0.18 | 0.0355 |
| 2025-07-29 | 0.21 | 0.0397 |
| 2025-08-05 | 0.13 | 0.0258 |
| 2025-08-12 | 0.19 | 0.0361 |
| 2025-08-19 | 0.22 | 0.0426 |
| 2025-08-26 | 0.27 | 0.0511 |
| 2025-09-02 | 0.17 | 0.0322 |
| 2025-09-09 | 0.25 | 0.0487 |
| 2025-09-16 | 0.22 | 0.0428 |
| 2025-09-23 | 0.22 | 0.0425 |
| 2025-09-30 | 0.18 | 0.0351 |
| 2025-10-07 | 0.15 | 0.0288 |
| 2025-10-14 | 0.17 | 0.0318 |
| 2025-10-21 | 0.18 | 0.0341 |
| 2025-10-28 | 0.15 | 0.0291 |
| 2025-11-04 | 0.12 | 0.0236 |
| 2025-11-11 | 0.11 | 0.0205 |
| 2025-11-18 | 0.12 | 0.0237 |
| 2025-11-25 | 0.18 | 0.0339 |
| 2025-12-02 | 0.15 | 0.0288 |
| 2025-12-09 | 0.16 | 0.0298 |
| 2025-12-16 | 0.11 | 0.0214 |
| 2025-12-23 | 0.11 | 0.0215 |
| 2025-12-30 | 0.01 | 0.0023 |
| **Sum (uSv)** | | **1.515** |
| **Ave. (%DRL)** | **0.15** | |
| **Annual Dose Est.** | **1.515 uSv/a** | |

## Public Dose Data
## ADULT WORKER
## EMP Factors for Dose

| Pathways Analysis of Dose to the Public | | | |
|---|---|---|---|
| | | per annum | |
| Atmospheric HTO inhalation, immersion | P(i)19, P(e)19 | 0.869 | |
| Surface HTO ingestion | P(i)29 | 0.562 | |
| Surface HTO immersion | P(e)29 | 0.000 | |
| External soil exposure | P39 | 0.000 | |
| Forage & crop ingestion | P49 | 0.034 | |
| Animal produce ingestion | P59 | 0.011 | |
| Aquatic animal ingestion | P69 | 0.000 | |
| Aquatic plant ingestion | P79 | 0.000 | |
| External sediment exposure | P89 | 0.000 | |
| **Total (uSv)** | | **1.476** | **uSv/a** |
| **Total without $P_{29}$ (uSv)** | | **0.914** | **uSv/a** |

## Public Dose Data
## ADULT WORKER
## EMP Factors for Dose P19

P19 is the transfer pathway of exposure to HTO from compartment 1 (Atmosphere) to 9 (dose)
P(i)19 is the pathway of exposure due to inhalation of HTO, and also implicitly captures skin absorption dose P(e)19 as per CSA N288.1-14 Table C.1.

Formula:
*P(i)19 (uSv) = [HTO]air (Bq/m3) x Inhalation (m3) x DCF (uSv/Bq)*

**Calculation:**

| PAS # (#) | P(i)19 (uSv) | [HTO]air (Bq/m$^3$) | Volume (m$^3$) | (uSv/Bq) | (uSv/a) | (uSv/a) | (uSv/a) | Maximum (uSv/a) |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.312 | 5.220 | 1994.496 | 3.000E-05 | 0.312 | | | |
| 2 | 0.275 | 4.600 | 1994.496 | 3.000E-05 | | 0.275 | | |
| 3 | 0.000 | | | 3.000E-05 | | | | |
| 4 | 0.557 | 2.900 | 6405.504 | 3.000E-05 | 0.557 | 0.557 | 0.557 | |
| 5 | 0.000 | | | 3.000E-05 | | | | |
| 6 | 0.000 | | | 3.000E-05 | | | | |
| 7 | 0.000 | | | 3.000E-05 | | | | |
| 8 | 0.000 | | | 3.000E-05 | | | | |
| 9 | 0.000 | | | 3.000E-05 | | | | |
| 10 | 0.000 | | | 3.000E-05 | | | | |
| 11 | 0.000 | | | 3.000E-05 | | | | |
| 12 | 0.000 | | | 3.000E-05 | | | | |
| 13 | 0.239 | 3.990 | 1994.496 | 3.000E-05 | | | 0.239 | |
| | | | **P(i)19** | **Sum** | **0.869** | **0.832** | **0.796** | **0.869** uSv/a |

# Public Dose Data
# ADULT WORKER
# EMP Factors for Dose P29

P29 is the transfer pathway of exposure to HTO from compartment 2 (Surface Water) to 9 (Dose)
P(i)29 is the pathway of exposure due to ingestion of HTO
P(e)29 is the pathway of exposure due to immersion in HTO

Formula:
*P(i)29 = [HTO] (Bq/L) x Ingestion (L) x DCF (uSv/Bq)*

| Well | P(i)29 (uSv/a) | [HTO]well (Bq/L) | Ingestion (L/a) | DCF (uSv/Bq) |
|---|---|---|---|---|
| 2 | 0.551 | 25.5 | 1081.1 | 2.00E-05 |
| 3 | 0.562 | 26.0 | 1081.1 | 2.00E-05 |
| 5 | 0.119 | 5.5 | 1081.1 | 2.00E-05 |
| 6 | 0.086 | 4.0 | 1081.1 | 2.00E-05 |
| 7 | 0.097 | 4.5 | 1081.1 | 2.00E-05 |
| **Avg P(i)29** | **0.283** | **uSv/annum** | | |

| Date | Well 2 (Bq/L) | Well 3 (Bq/L) | Well 5 (Bq/L) | Well 6 (Bq/L) | Well 7 (Bq/L) |
|---|---|---|---|---|---|
| March 12, 2025 | 22 | No sample | 6 | 4 | 4 |
| September 18, 2025 | 29 | 26 | 5 | 4 | 5 |
| **Average** | **25.5** | **26.0** | **5.5** | **4.0** | **4.5** |

| | |
|---|---|
| Well 2 | 185 Mud Lake Road |
| Well 3 | 183 Mud Lake Road |
| Well 5 | 171 Sawmill Road |
| Well 6 | 40987 Highway 41 |
| Well 7 | 40925 Highway 41 |

| | | | |
|---|---|---|---|
| Well 3 | **P(i)29** | **0.562** | **uSv/a** |
| | **P(e)29** | **0.000** | **uSv/a** |
| | **P29** | **0.562** | **uSv/a** |

P(e)29 is the pathway of exposure to HTO due to immersion in surface water, and is negligible.

**Public Dose Data**
**ADULT WORKER**
**EMP Factors for Dose P49**

P49 is the pathway for exposure to HTO due to ingestion of forage and crops.

| Produce Sample Results (Bq free water tritium / kg fresh weight) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Source** | **1232 Pembroke Street East** | | **Residences** | | | | | | | | |
| **Type** | **Rhubarb** | **Average** | **LOCATION** | **Tomatoes** | **Beets** | **Cucumbers** | **Beans** | **Chard** | **Carrots** | **Grapes** | **Average** |
| **FWT** | 1.65 | 1.65 | 171 SAWMILL ROAD | 5.01 | 4.15 | 6.82 | 9.55 | 6.71 | | | 6.45 |
| | | | DEACON ST. & RIVER RD. | 10.43 | | | | | 10.80 | 22.71 | 14.65 |
| **Average FWT - Commercial** | | **1.65** | **Average FWT - Residential** | 7.72 | 4.15 | 6.82 | 9.55 | 6.71 | 10.80 | 22.71 | **9.52** |

| Produce Sample Results (Bq organically bound tritium / kg fresh weight) | | | | | |
|---|---|---|---|---|---|
| **Source** | **1232 Pembroke Street East** | | **Residences** | | |
| **Type** | **Rhubarb** | **Average** | **LOCATION** | **Tomatoes** | **Average** |
| **OBT** | 0.00 | 0.00 | 171 SAWMILL ROAD | 0.00 | 0.00 |
| | | | DEACON ST. & RIVER RD. | 0.23 | 0.23 |
| **Average OBT - Commercial** | | **0.00** | **Average OBT - Residential** | 0.12 | **0.12** |

| Produce Consumption | | | | | | |
|---|---|---|---|---|---|---|
| **100%=** | **413.300** | **kg/a** | **[HTO] (Bq/kg)** | **(Bq/a)** | **[OBT] (Bq/kg)** | **(Bq/a)** |
| 70% | 289.310 | **kg/a** | 1.65 | 477.36 | 0.00 | 0.00 |
| 30% | 123.990 | **kg/a** | 9.52 | 1180.38 | 0.12 | 14.26 |

*P49 = [HTO or OBT]produce (Bq/kg) x Produce Ingested (kg/mo) x DCF (uSv/Bq)*

| P49 (uSv/a) | [HTO] pro (Bq/a) | DCF (uSv/Bq) | [OBT] pro (Bq/a) | DCF (uSv/Bq) |
|---|---|---|---|---|
| **0.034** | **1657.75** | 2.00E-05 | **14.26** | 4.60E-05 |

| | | |
|---|---|---|
| P49 | **0.034** | uSv/a |

## Public Dose Data
## ADULT WORKER
## EMP Factors for Dose P59

P59 is the exposure to HTO due to ingestion of animal produce.

| Local Producer | |
|---|---|
| | (Bq/L) |
| 1 | 2.33 |
| 2 | 3.25 |
| Average | **2.79** |

| Local Distributor | |
|---|---|
| | (Bq/L) |
| 1 | 2.05 |
| 2 | 4.18 |
| Average | **3.12** |

| | | |
|---|---|---|
| TOTAL AVERAGE | **2.95** | Bq/L |

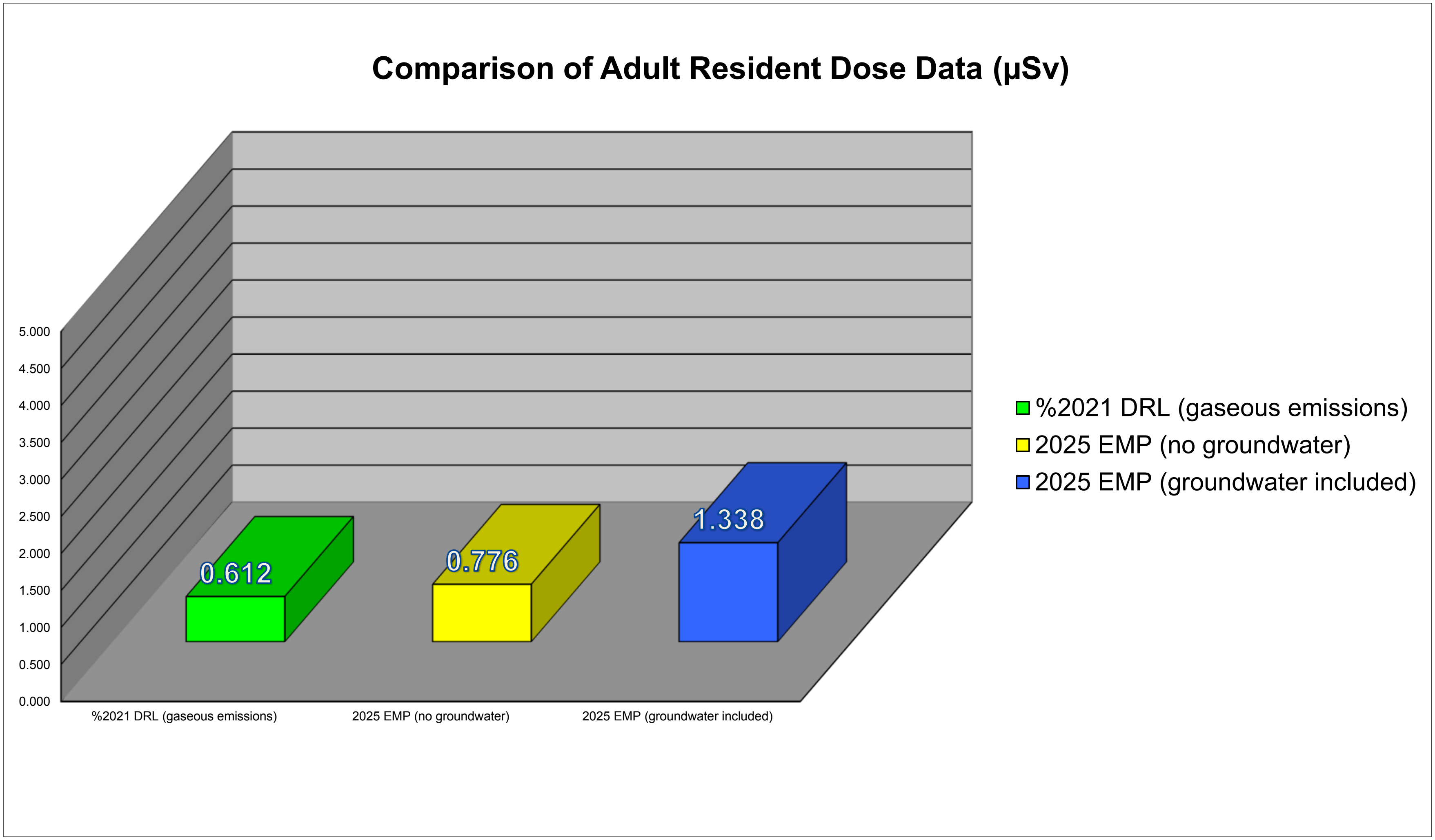
| Milk Density Adjustment | | |
|---|---|---|
| Milk Average (Bq/L) x Milk density (L/kg) | | |
| **Bq/L** | **L/kg** | **Bq/kg** |
| **2.95** | 0.97 | **2.86** |

| Consumption kg/da x da/a = kg/a | | |
|---|---|---|
| **(kg/da)** | **(da/a)** | **(kg/a)** |
| 0.516 | 365.25 | **188.5** |

| *P59 = [HTO]animal produce (Bq/kg) x Ingestion (kg) x DCF* | | | |
|---|---|---|---|
| **P59** | **[HTO]** | **Ingested** | **DCF** |
| **(uSv/a)** | **(Bq/kg)** | **(kg/a)** | **(uSv/Bq)** |
| **0.011** | **2.86** | **188.5** | 2.00E-05 |

**Public Dose Data**
**ADULT RESIDENT**

| Dose Calculation | 2025 µSv |
|---|---|
| %2021 DRL (gaseous emissions) | 0.612 |
| 2025 EMP (no groundwater) | 0.776 |
| 2025 EMP (groundwater included) | 1.338 |



## Public Dose Data
## ADULT RESIDENT

**Stack Emissions**

| | 2025 Emissions as %2021 SRBT DRL | |
|---|---|---|
| | ADULT RESIDENT | |
| **Sampling Week End** | **% weekly DRL** | **(uSv)** |
| 2025-01-07 | 0.04 | 0.0082 |
| 2025-01-14 | 0.05 | 0.0104 |
| 2025-01-21 | 0.06 | 0.0107 |
| 2025-01-28 | 0.04 | 0.0080 |
| 2025-02-04 | 0.05 | 0.0088 |
| 2025-02-11 | 0.05 | 0.0101 |
| 2025-02-18 | 0.06 | 0.0119 |
| 2025-02-25 | 0.05 | 0.0101 |
| 2025-03-04 | 0.06 | 0.0116 |
| 2025-03-11 | 0.05 | 0.0103 |
| 2025-03-18 | 0.06 | 0.0121 |
| 2025-03-25 | 0.07 | 0.0129 |
| 2025-04-01 | 0.05 | 0.0103 |
| 2025-04-08 | 0.05 | 0.0093 |
| 2025-04-15 | 0.04 | 0.0081 |
| 2025-04-22 | 0.03 | 0.0067 |
| 2025-04-29 | 0.04 | 0.0074 |
| 2025-05-06 | 0.07 | 0.0136 |
| 2025-05-13 | 0.06 | 0.0122 |
| 2025-05-20 | 0.07 | 0.0135 |
| 2025-05-27 | 0.05 | 0.0104 |
| 2025-06-03 | 0.05 | 0.0105 |
| 2025-06-10 | 0.06 | 0.0116 |
| 2025-06-17 | 0.07 | 0.0139 |
| 2025-06-24 | 0.08 | 0.0152 |
| 2025-07-01 | 0.04 | 0.0079 |
| 2025-07-08 | 0.06 | 0.0111 |
| 2025-07-15 | 0.09 | 0.0180 |
| 2025-07-22 | 0.07 | 0.0143 |
| 2025-07-29 | 0.08 | 0.0160 |
| 2025-08-05 | 0.05 | 0.0103 |
| 2025-08-12 | 0.08 | 0.0145 |
| 2025-08-19 | 0.09 | 0.0171 |
| 2025-08-26 | 0.11 | 0.0205 |
| 2025-09-02 | 0.07 | 0.0130 |
| 2025-09-09 | 0.10 | 0.0195 |
| 2025-09-16 | 0.09 | 0.0172 |
| 2025-09-23 | 0.09 | 0.0171 |
| 2025-09-30 | 0.07 | 0.0141 |
| 2025-10-07 | 0.06 | 0.0116 |
| 2025-10-14 | 0.07 | 0.0130 |
| 2025-10-21 | 0.07 | 0.0138 |
| 2025-10-28 | 0.06 | 0.0117 |
| 2025-11-04 | 0.05 | 0.0095 |
| 2025-11-11 | 0.04 | 0.0083 |
| 2025-11-18 | 0.05 | 0.0095 |
| 2025-11-25 | 0.07 | 0.0139 |
| 2025-12-02 | 0.06 | 0.0116 |
| 2025-12-09 | 0.06 | 0.0121 |
| 2025-12-16 | 0.05 | 0.0087 |
| 2025-12-23 | 0.05 | 0.0087 |
| 2025-12-30 | 0.00 | 0.0009 |
| **Sum (uSv)** | | **0.612** |
| **Ave. (%DRL)** | **0.06** | |
| **Annual Dose Est.** | **0.612 uSv/a** | |

**Public Dose Data**
**ADULT RESIDENT**
**EMP Factors for Dose**

| Pathways Analysis of Dose to the Public | | per annum | |
|---|---|---|---|
| Atmospheric HTO inhalation, immersion | P(i)19, P(e)19 | 0.731 | |
| Surface HTO ingestion | P(i)29 | 0.562 | |
| Surface HTO immersion | P(e)29 | 0.000 | |
| External soil exposure | P39 | 0.000 | |
| Forage & crop ingestion | P49 | 0.034 | |
| Animal produce ingestion | P59 | 0.011 | |
| Aquatic animal ingestion | P69 | 0.000 | |
| Aquatic plant ingestion | P79 | 0.000 | |
| External sediment exposure | P89 | 0.000 | |
| **Total (uSv)** | | **1.338** | **uSv/a** |
| **Total without $P_{29}$ (uSv)** | | **0.776** | **uSv/a** |

# Public Dose Data
# ADULT RESIDENT
# EMP Factors for Dose P19

P19 is the transfer pathway of exposure to HTO from compartment 1 (Atmosphere) to 9 (dose)
P(i)19 is the pathway of exposure due to inhalation of HTO, and also implicitly captures skin absorption dose P(e)19 as per CSA N288.1-14 Table C.1.

Formula:
*P(i)19 (uSv) = [HTO]air (Bq/m3) x Inhalation (m3) x DCF (uSv/Bq)*

**Calculation:**

| PAS # (#) | P(i)19 (uSv) | [HTO]air (Bq/m$^3$) | Volume (m$^3$) | (uSv/Bq) | (uSv/a) | (uSv/a) | (uSv/a) | Maximum (uSv/a) |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.000 | | | 3.000E-05 | | | | |
| 2 | 0.000 | | | 3.000E-05 | | | | |
| 3 | 0.000 | | | 3.000E-05 | | | | |
| 4 | 0.731 | 2.900 | 8400.000 | 3.000E-05 | 0.731 | 0.731 | 0.731 | |
| 5 | 0.000 | | | 3.000E-05 | | | | |
| 6 | 0.000 | | | 3.000E-05 | | | | |
| 7 | 0.000 | | | 3.000E-05 | | | | |
| 8 | 0.000 | | | 3.000E-05 | | | | |
| 9 | 0.000 | | | 3.000E-05 | | | | |
| 10 | 0.000 | | | 3.000E-05 | | | | |
| 11 | 0.000 | | | 3.000E-05 | | | | |
| 12 | 0.000 | | | 3.000E-05 | | | | |
| 13 | 0.000 | | | 3.000E-05 | | | | |
| | | | **P(i)19** | **Sum** | **0.731** | **0.731** | **0.731** | **0.731** uSv/a |

# Public Dose Data
# ADULT RESIDENT
# EMP Factors for Dose P29

P29 is the transfer pathway of exposure to HTO from compartment 2 (Surface Water) to 9 (Dose)
P(i)29 is the pathway of exposure due to ingestion of HTO
P(e)29 is the pathway of exposure due to immersion in HTO

Formula:
*P(i)29 = [HTO] (Bq/L) x Ingestion (L) x DCF (uSv/Bq)*

| Well | P(i)29 (uSv/a) | [HTO]well (Bq/L) | Ingestion (L/a) | DCF (uSv/Bq) |
|---|---|---|---|---|
| 2 | 0.551 | 25.5 | 1081.1 | 2.00E-05 |
| 3 | 0.562 | 26.0 | 1081.1 | 2.00E-05 |
| 5 | 0.119 | 5.5 | 1081.1 | 2.00E-05 |
| 6 | 0.086 | 4.0 | 1081.1 | 2.00E-05 |
| 7 | 0.097 | 4.5 | 1081.1 | 2.00E-05 |
| **Avg P(i)29** | **0.283** | **uSv/annum** | | |

| Date | Well 2 (Bq/L) | Well 3 (Bq/L) | Well 5 (Bq/L) | Well 6 (Bq/L) | Well 7 (Bq/L) |
|---|---|---|---|---|---|
| March 12, 2025 | 22 | No sample | 6 | 4 | 4 |
| September 18, 2025 | 29 | 26 | 5 | 4 | 5 |
| **Average** | **25.5** | **26.0** | **5.5** | **4.0** | **4.5** |

| | |
|---|---|
| Well 2 | 185 Mud Lake Road |
| Well 3 | 183 Mud Lake Road |
| Well 5 | 171 Sawmill Road |
| Well 6 | 40987 Highway 41 |
| Well 7 | 40925 Highway 41 |

| | | | |
|---|---|---|---|
| Well 3 | **P(i)29** | **0.562** | **uSv/a** |
| | **P(e)29** | **0.000** | **uSv/a** |
| | **P29** | **0.562** | **uSv/a** |

P(e)29 is the pathway of exposure to HTO due to immersion in surface water, and is negligible.

**Public Dose Data**
**ADULT RESIDENT**
**EMP Factors for Dose P49**

P49 is the pathway for exposure to HTO due to ingestion of forage and crops.

| Produce Sample Results (Bq free water tritium / kg fresh weight) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Source** | **1232 Pembroke Street East** | | **Residences** | | | | | | | | |
| **Type** | **Rhubarb** | **Average** | **LOCATION** | **Tomatoes** | **Beets** | **Cucumbers** | **Beans** | **Chard** | **Carrots** | **Grapes** | **Average** |
| **FWT** | 1.65 | 1.65 | 171 SAWMILL ROAD | 5.01 | 4.15 | 6.82 | 9.55 | 6.71 | | | 6.45 |
| | | | DEACON ST. & RIVER RD. | 10.43 | | | | | 10.80 | 22.71 | 14.65 |
| **Average FWT - Commercial** | | **1.65** | **Average FWT - Residential** | 7.72 | 4.15 | 6.82 | 9.55 | 6.71 | 10.80 | 22.71 | **9.52** |

| Produce Sample Results (Bq organically bound tritium / kg fresh weight) | | | | | |
|---|---|---|---|---|---|
| **Source** | **1232 Pembroke Street East** | | **Residences** | | |
| **Type** | **Rhubarb** | **Average** | **LOCATION** | **Tomatoes** | **Average** |
| **OBT** | 0.00 | 0.00 | 171 SAWMILL ROAD | 0.00 | 0.00 |
| | | | DEACON ST. & RIVER RD. | 0.23 | 0.23 |
| **Average OBT - Commercial** | | **0.00** | **Average OBT - Residential** | 0.12 | **0.12** |

| Produce Consumption | | | | | | |
|---|---|---|---|---|---|---|
| **100%=** | **413.300** | **kg/a** | **[HTO] (Bq/kg)** | **(Bq/a)** | **[OBT] (Bq/kg)** | **(Bq/a)** |
| 70% | 289.310 | **kg/a** | 1.65 | 477.36 | 0.00 | 0.00 |
| 30% | 123.990 | **kg/a** | 9.52 | 1180.38 | 0.12 | 14.26 |

*P49 = [HTO or OBT]produce (Bq/kg) x Produce Ingested (kg/mo) x DCF (uSv/Bq)*

| **P49 (uSv/a)** | **[HTO] pro (Bq/a)** | **DCF (uSv/Bq)** | **[OBT] pro (Bq/a)** | **DCF (uSv/Bq)** |
|---|---|---|---|---|
| **0.034** | **1657.75** | 2.00E-05 | **14.26** | 4.60E-05 |

| | | |
|---|---|---|
| **P49** | **0.034** | **uSv/a** |

# Public Dose Data
# ADULT RESIDENT
# EMP Factors for Dose P59

P59 is the exposure to HTO due to ingestion of animal produce.

| Local Producer | |
|---|---|
| | (Bq/L) |
| 1 | 2.33 |
| 2 | 3.25 |
| Average | **2.79** |

| Local Distributor | |
|---|---|
| | (Bq/L) |
| 1 | 2.05 |
| 2 | 4.18 |
| Average | **3.12** |

| | | |
|---|---|---|
| TOTAL AVERAGE | **2.95** | Bq/L |

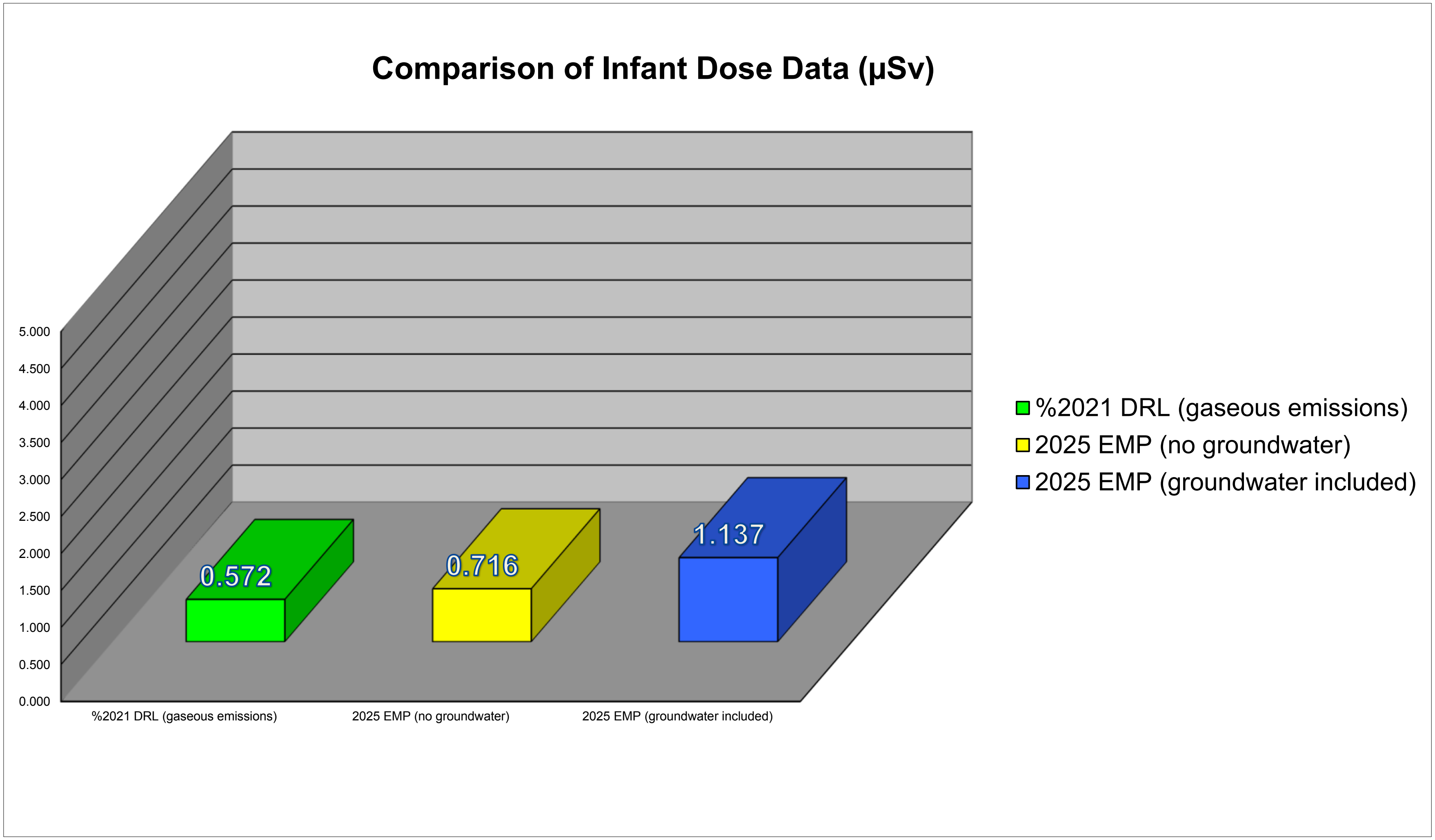
| Milk Density Adjustment | | |
|---|---|---|
| Milk Average (Bq/L) x Milk density (L/kg) | | |
| **Bq/L** | **L/kg** | **Bq/kg** |
| **2.95** | 0.97 | **2.86** |

| Consumption kg/da x da/a = kg/a | | |
|---|---|---|
| **(kg/da)** | **(da/a)** | **(kg/a)** |
| 0.516 | 365.25 | **188.5** |

| *P59 = [HTO]animal produce (Bq/kg) x Ingestion (kg) x DCF* | | | |
|---|---|---|---|
| **P59** | **[HTO]** | **Ingested** | **DCF** |
| **(uSv/a)** | **(Bq/kg)** | **(kg/a)** | **(uSv/Bq)** |
| **0.011** | **2.86** | **188.5** | 2.00E-05 |

**Public Dose Data**
**INFANT**

| Dose Calculation | 2025 µSv |
|---|---|
| %2021 DRL (gaseous emissions) | 0.572 |
| 2025 EMP (no groundwater) | 0.716 |
| 2025 EMP (groundwater included) | 1.137 |



## Public Dose Data
## INFANT

**Stack Emissions**

| | 2025 Emissions as %2021 SRBT DRL | |
|---|---|---|
| | INFANT | |
| **Sampling Week End** | **% weekly DRL** | **(uSv)** |
| 2025-01-07 | 0.04 | 0.0077 |
| 2025-01-14 | 0.05 | 0.0097 |
| 2025-01-21 | 0.05 | 0.0100 |
| 2025-01-28 | 0.04 | 0.0074 |
| 2025-02-04 | 0.04 | 0.0082 |
| 2025-02-11 | 0.05 | 0.0094 |
| 2025-02-18 | 0.06 | 0.0112 |
| 2025-02-25 | 0.05 | 0.0094 |
| 2025-03-04 | 0.06 | 0.0109 |
| 2025-03-11 | 0.05 | 0.0096 |
| 2025-03-18 | 0.06 | 0.0113 |
| 2025-03-25 | 0.06 | 0.0121 |
| 2025-04-01 | 0.05 | 0.0096 |
| 2025-04-08 | 0.05 | 0.0087 |
| 2025-04-15 | 0.04 | 0.0076 |
| 2025-04-22 | 0.03 | 0.0063 |
| 2025-04-29 | 0.04 | 0.0070 |
| 2025-05-06 | 0.07 | 0.0127 |
| 2025-05-13 | 0.06 | 0.0114 |
| 2025-05-20 | 0.07 | 0.0126 |
| 2025-05-27 | 0.05 | 0.0097 |
| 2025-06-03 | 0.05 | 0.0099 |
| 2025-06-10 | 0.06 | 0.0108 |
| 2025-06-17 | 0.07 | 0.0130 |
| 2025-06-24 | 0.07 | 0.0143 |
| 2025-07-01 | 0.04 | 0.0074 |
| 2025-07-08 | 0.05 | 0.0104 |
| 2025-07-15 | 0.09 | 0.0168 |
| 2025-07-22 | 0.07 | 0.0133 |
| 2025-07-29 | 0.08 | 0.0149 |
| 2025-08-05 | 0.05 | 0.0097 |
| 2025-08-12 | 0.07 | 0.0136 |
| 2025-08-19 | 0.08 | 0.0160 |
| 2025-08-26 | 0.10 | 0.0192 |
| 2025-09-02 | 0.06 | 0.0121 |
| 2025-09-09 | 0.09 | 0.0182 |
| 2025-09-16 | 0.08 | 0.0161 |
| 2025-09-23 | 0.08 | 0.0160 |
| 2025-09-30 | 0.07 | 0.0132 |
| 2025-10-07 | 0.06 | 0.0108 |
| 2025-10-14 | 0.06 | 0.0121 |
| 2025-10-21 | 0.07 | 0.0129 |
| 2025-10-28 | 0.06 | 0.0110 |
| 2025-11-04 | 0.05 | 0.0089 |
| 2025-11-11 | 0.04 | 0.0077 |
| 2025-11-18 | 0.05 | 0.0089 |
| 2025-11-25 | 0.07 | 0.0131 |
| 2025-12-02 | 0.06 | 0.0108 |
| 2025-12-09 | 0.06 | 0.0113 |
| 2025-12-16 | 0.04 | 0.0081 |
| 2025-12-23 | 0.04 | 0.0081 |
| 2025-12-30 | 0.00 | 0.0009 |
| **Sum (uSv)** | | **0.572** |
| **Ave. (%DRL)** | **0.06** | |
| **Annual Dose Est.** | **0.572 uSv/a** | |

## Public Dose Data
## INFANT
## EMP Factors for Dose

| Pathways Analysis of Dose to the Public | | |
|---|---|---|
| | | per annum |
| Atmospheric HTO inhalation, immersion | P(i)19, P(e)19 | 0.636 |
| Surface HTO ingestion | P(i)29 | 0.421 |
| Surface HTO immersion | P(e)29 | 0.000 |
| External soil exposure | P39 | 0.000 |
| Forage & crop ingestion | P49 | 0.028 |
| Animal produce ingestion | P59 | 0.052 |
| Aquatic animal ingestion | P69 | 0.000 |
| Aquatic plant ingestion | P79 | 0.000 |
| External sediment exposure | P89 | 0.000 |
| **Total (uSv)** | | **1.137 uSv/a** |
| **Total without $P_{29}$ (uSv)** | | **0.716 uSv/a** |

# Public Dose Data
# INFANT
# EMP Factors for Dose P19

P19 is the transfer pathway of exposure to HTO from compartment 1 (Atmosphere) to 9 (dose)
P(i)19 is the pathway of exposure due to inhalation of HTO, and also implicitly captures skin absorption dose P(e)19 as per CSA N288.1-14 Table C.1.

Formula:
*P(i)19 (uSv) = [HTO]air (Bq/m3) x Inhalation (m3) x DCF (uSv/Bq)*

**Calculation:**

| PAS # (#) | P(i)19 (uSv) | [HTO]air (Bq/m$^3$) | Volume (m$^3$) | (uSv/Bq) | (uSv/a) | (uSv/a) | (uSv/a) | Maximum (uSv/a) |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.000 | | | 8.000E-05 | | | | |
| 2 | 0.000 | | | 8.000E-05 | | | | |
| 3 | 0.000 | | | 8.000E-05 | | | | |
| 4 | 0.636 | 2.900 | 2740.000 | 8.000E-05 | 0.636 | 0.636 | 0.636 | |
| 5 | 0.000 | | | 8.000E-05 | | | | |
| 6 | 0.000 | | | 8.000E-05 | | | | |
| 7 | 0.000 | | | 8.000E-05 | | | | |
| 8 | 0.000 | | | 8.000E-05 | | | | |
| 9 | 0.000 | | | 8.000E-05 | | | | |
| 10 | 0.000 | | | 8.000E-05 | | | | |
| 11 | 0.000 | | | 8.000E-05 | | | | |
| 12 | 0.000 | | | 8.000E-05 | | | | |
| 13 | 0.000 | | | 8.000E-05 | | | | |
| | | | **P(i)19** | **Sum** | **0.636** | **0.636** | **0.636** | **0.636** uSv/a |

## Public Dose Data
## INFANT
## EMP Factors for Dose P29

P29 is the transfer pathway of exposure to HTO from compartment 2 (Surface Water) to 9 (Dose)
P(i)29 is the pathway of exposure due to ingestion of HTO
P(e)29 is the pathway of exposure due to immersion in HTO

Formula:
*P(i)29 = [HTO] (Bq/L) x Ingestion (L) x DCF (uSv/Bq)*

| Well | P(i)29 (uSv/a) | [HTO]well (Bq/L) | Ingestion (L/a) | DCF (uSv/Bq) |
|---|---|---|---|---|
| 2 | 0.413 | 25.5 | 305.7 | 5.30E-05 |
| 3 | 0.421 | 26.0 | 305.7 | 5.30E-05 |
| 5 | 0.089 | 5.5 | 305.7 | 5.30E-05 |
| 6 | 0.065 | 4.0 | 305.7 | 5.30E-05 |
| 7 | 0.073 | 4.5 | 305.7 | 5.30E-05 |
| **Avg P(i)29** | **0.212** | **uSv/annum** | | |

| Date | Well 2 (Bq/L) | Well 3 (Bq/L) | Well 5 (Bq/L) | Well 6 (Bq/L) | Well 7 (Bq/L) |
|---|---|---|---|---|---|
| March 12, 2025 | 22 | No sample | 6 | 4 | 4 |
| September 18, 2025 | 29 | 26 | 5 | 4 | 5 |
| **Average** | **25.5** | **26.0** | **5.5** | **4.0** | **4.5** |

| | |
|---|---|
| Well 2 | 185 Mud Lake Road |
| Well 3 | 183 Mud Lake Road |
| Well 5 | 171 Sawmill Road |
| Well 6 | 40987 Highway 41 |
| Well 7 | 40925 Highway 41 |

| | | | |
|---|---|---|---|
| Well 3 | **P(i)29** | **0.421** | **uSv/a** |
| | **P(e)29** | **0.000** | **uSv/a** |
| | **P29** | **0.421** | **uSv/a** |

P(e)29 is the pathway of exposure to HTO due to immersion in surface water, and is negligible.

**Public Dose Data**
**INFANT**
**EMP Factors for Dose P49**

P49 is the pathway for exposure to HTO due to ingestion of forage and crops.

| Produce Sample Results (Bq free water tritium / kg fresh weight) | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Source** | **1232 Pembroke Street East** | | **Residences** | | | | | | | | | |
| **Type** | **Rhubarb** | **Average** | **LOCATION** | **Tomatoes** | **Beets** | **Cucumbers** | **Beans** | **Chard** | **Carrots** | **Grapes** | **Average** |
| **FWT** | 1.65 | 1.65 | 171 SAWMILL ROAD | 5.01 | 4.15 | 6.82 | 9.55 | 6.71 | | | 6.45 |
| | | | DEACON ST. & RIVER RD. | 10.43 | | | | | 10.80 | 22.71 | 14.65 |
| **Average FWT - Commercial** | | **1.65** | **Average FWT - Residential** | 7.72 | 4.15 | 6.82 | 9.55 | 6.71 | 10.80 | 22.71 | **9.52** |

| Produce Sample Results (Bq organically bound tritium / kg fresh weight) | | | | | |
|---|---|---|---|---|---|
| **Source** | **1232 Pembroke Street East** | | **Residences** | | |
| **Type** | **Rhubarb** | **Average** | **LOCATION** | **Tomatoes** | **Average** |
| **OBT** | 0.00 | 0.00 | 171 SAWMILL ROAD | 0.00 | 0.00 |
| | | | DEACON ST. & RIVER RD. | 0.23 | 0.23 |
| **Average OBT - Commercial** | | **0.00** | **Average OBT - Residential** | 0.12 | **0.12** |

| Produce Consumption | | | | | | |
|---|---|---|---|---|---|---|
| **100%=** | **124.800** | **kg/a** | **[HTO] (Bq/kg)** | **(Bq/a)** | **[OBT] (Bq/kg)** | **(Bq/a)** |
| 70% | 87.360 | **kg/a** | 1.65 | 144.14 | 0.00 | 0.00 |
| 30% | 37.440 | **kg/a** | 9.52 | 356.43 | 0.12 | 4.31 |

*P49 = [HTO or OBT]produce (Bq/kg) x Produce Ingested (kg/mo) x DCF (uSv/Bq)*

| **P49 (uSv/a)** | **[HTO] pro (Bq/a)** | **DCF (uSv/Bq)** | **[OBT] pro (Bq/a)** | **DCF (uSv/Bq)** |
|---|---|---|---|---|
| **0.028** | **500.57** | 5.30E-05 | **4.31** | 1.30E-04 |

| | | |
|---|---|---|
| **P49** | **0.028** | **uSv/a** |

## Public Dose Data
## INFANT
## EMP Factors for Dose P59

P59 is the exposure to HTO due to ingestion of animal produce.

| Local Producer | |
|---|---|
| | (Bq/L) |
| 1 | 2.33 |
| 2 | 3.25 |
| Average | 2.79 |

| Local Distributor | |
|---|---|
| | (Bq/L) |
| 1 | 2.05 |
| 2 | 4.18 |
| Average | 3.12 |

| TOTAL AVERAGE | 2.95 | Bq/L |
|---|---|---|

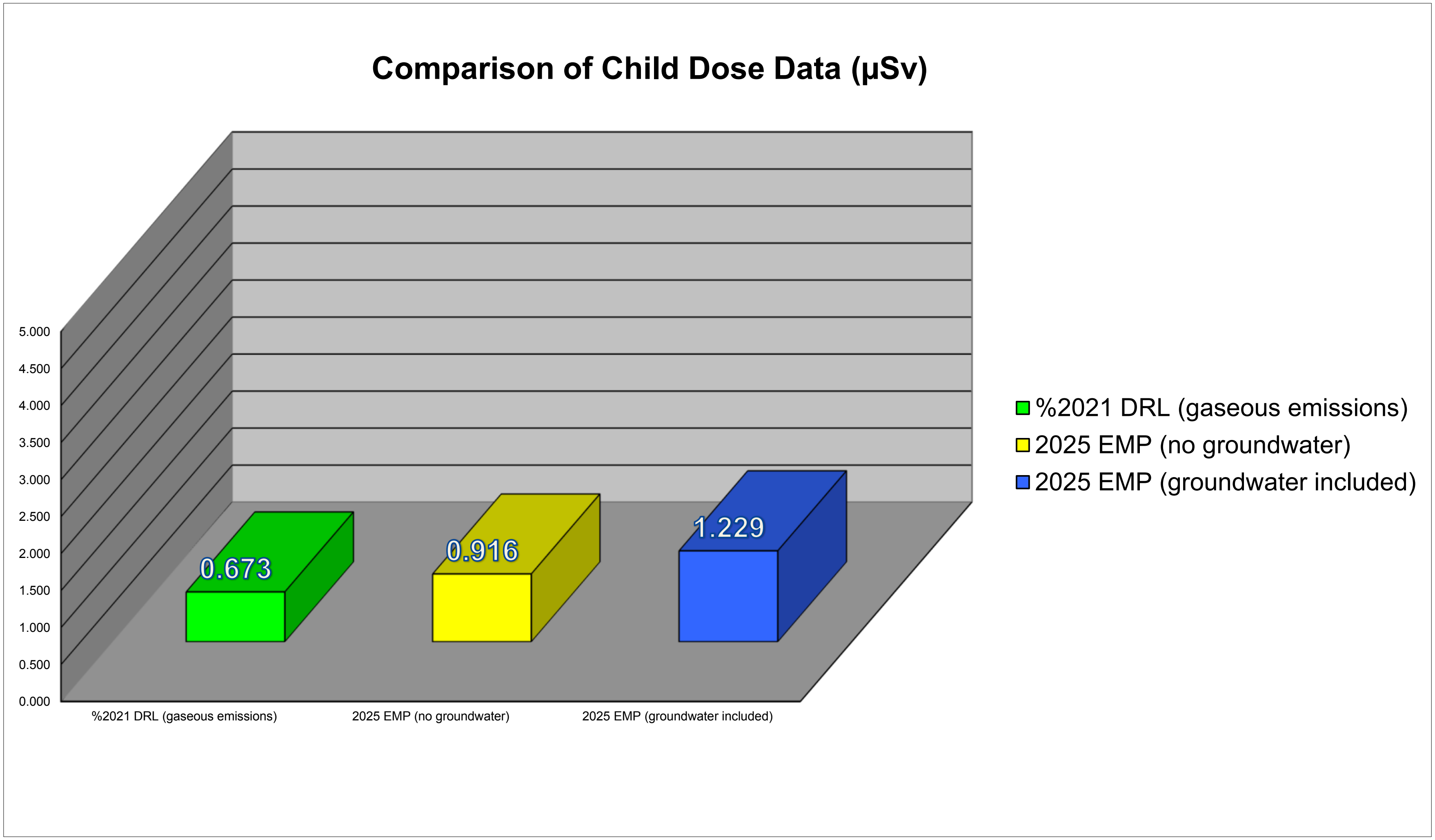
| Milk Density Adjustment | | |
|---|---|---|
| Milk Average (Bq/L) x Milk density (L/kg) | | |
| **Bq/L** | **L/kg** | **Bq/kg** |
| 2.95 | 0.97 | 2.86 |

| Consumption<br>kg/da x da/a = kg/a | | |
|---|---|---|
| **(kg/da)** | **(da/a)** | **(kg/a)** |
| 0.931 | 365.25 | 340.0 |

| *P59 = [HTO]animal produce (Bq/kg) x Ingestion (kg) x DCF* | | | |
|---|---|---|---|
| **P59** | **[HTO]** | **Ingested** | **DCF** |
| **(uSv/a)** | **(Bq/kg)** | **(kg/a)** | **(uSv/Bq)** |
| 0.052 | 2.86 | 340.0 | 5.30E-05 |

**Public Dose Data**
**CHILD**

| Dose Calculation | 2025 µSv |
|---|---|
| %2021 DRL (gaseous emissions) | 0.673 |
| 2025 EMP (no groundwater) | 0.916 |
| 2025 EMP (groundwater included) | 1.229 |



## Public Dose Data
## CHILD

**Stack Emissions**

| | 2025 Emissions as %2021 SRBT DRL | |
|---|---|---|
| | CHILD | |
| **Sampling Week End** | **% weekly DRL** | **(uSv)** |
| 2025-01-07 | 0.05 | 0.0091 |
| 2025-01-14 | 0.06 | 0.0114 |
| 2025-01-21 | 0.06 | 0.0118 |
| 2025-01-28 | 0.05 | 0.0088 |
| 2025-02-04 | 0.05 | 0.0097 |
| 2025-02-11 | 0.06 | 0.0111 |
| 2025-02-18 | 0.07 | 0.0129 |
| 2025-02-25 | 0.06 | 0.0111 |
| 2025-03-04 | 0.07 | 0.0128 |
| 2025-03-11 | 0.06 | 0.0113 |
| 2025-03-18 | 0.07 | 0.0133 |
| 2025-03-25 | 0.07 | 0.0143 |
| 2025-04-01 | 0.06 | 0.0113 |
| 2025-04-08 | 0.05 | 0.0102 |
| 2025-04-15 | 0.05 | 0.0089 |
| 2025-04-22 | 0.04 | 0.0074 |
| 2025-04-29 | 0.04 | 0.0082 |
| 2025-05-06 | 0.08 | 0.0150 |
| 2025-05-13 | 0.07 | 0.0134 |
| 2025-05-20 | 0.08 | 0.0149 |
| 2025-05-27 | 0.06 | 0.0115 |
| 2025-06-03 | 0.06 | 0.0116 |
| 2025-06-10 | 0.07 | 0.0128 |
| 2025-06-17 | 0.08 | 0.0153 |
| 2025-06-24 | 0.09 | 0.0168 |
| 2025-07-01 | 0.05 | 0.0087 |
| 2025-07-08 | 0.06 | 0.0122 |
| 2025-07-15 | 0.10 | 0.0198 |
| 2025-07-22 | 0.08 | 0.0157 |
| 2025-07-29 | 0.09 | 0.0176 |
| 2025-08-05 | 0.06 | 0.0114 |
| 2025-08-12 | 0.08 | 0.0160 |
| 2025-08-19 | 0.10 | 0.0189 |
| 2025-08-26 | 0.12 | 0.0226 |
| 2025-09-02 | 0.07 | 0.0143 |
| 2025-09-09 | 0.11 | 0.0215 |
| 2025-09-16 | 0.10 | 0.0190 |
| 2025-09-23 | 0.10 | 0.0189 |
| 2025-09-30 | 0.08 | 0.0155 |
| 2025-10-07 | 0.07 | 0.0128 |
| 2025-10-14 | 0.07 | 0.0142 |
| 2025-10-21 | 0.08 | 0.0152 |
| 2025-10-28 | 0.07 | 0.0129 |
| 2025-11-04 | 0.05 | 0.0105 |
| 2025-11-11 | 0.05 | 0.0091 |
| 2025-11-18 | 0.05 | 0.0105 |
| 2025-11-25 | 0.08 | 0.0153 |
| 2025-12-02 | 0.07 | 0.0128 |
| 2025-12-09 | 0.07 | 0.0133 |
| 2025-12-16 | 0.05 | 0.0095 |
| 2025-12-23 | 0.05 | 0.0096 |
| 2025-12-30 | 0.01 | 0.0010 |
| **Sum (uSv)** | | **0.673** |
| **Ave. (%DRL)** | **0.07** | |
| **Annual Dose Est.** | **0.673 uSv/a** | |

APPENDIX R

# Public Dose Data
# CHILD
# EMP Factors for Dose

| Pathways Analysis of Dose to the Public | | | |
|---|---|---|---|
| | | per annum | |
| Atmospheric HTO inhalation, immersion | P(i)19, P(e)19 | 0.865 | |
| Surface HTO ingestion | P(i)29 | 0.313 | |
| Surface HTO immersion | P(e)29 | 0.000 | |
| External soil exposure | P39 | 0.000 | |
| Forage & crop ingestion | P49 | 0.028 | |
| Animal produce ingestion | P59 | 0.023 | |
| Aquatic animal ingestion | P69 | 0.000 | |
| Aquatic plant ingestion | P79 | 0.000 | |
| External sediment exposure | P89 | 0.000 | |
| **Total** | **(uSv)** | **1.229** | **uSv/a** |
| **Total without $P_{29}$** | **(uSv)** | **0.916** | **uSv/a** |

APPENDIX R

# Public Dose Data
# CHILD
# EMP Factors for Dose P19

P19 is the transfer pathway of exposure to HTO from compartment 1 (Atmosphere) to 9 (dose)
P(i)19 is the pathway of exposure due to inhalation of HTO, and also implicitly captures skin absorption dose P(e)19 as per CSA N288.1-14 Table C.1.

Formula:
*P(i)19 (uSv) = [HTO]air (Bq/m3) x Inhalation (m3) x DCF (uSv/Bq)*

**Calculation:**

| PAS # (#) | P(i)19 (uSv) | [HTO]air (Bq/m$^3$) | Volume (m$^3$) | (uSv/Bq) | (uSv/a) | (uSv/a) | (uSv/a) | Maximum (uSv/a) | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.000 | | | 3.800E-05 | | | | | |
| 2 | 0.000 | | | 3.800E-05 | | | | | |
| 3 | 0.000 | | | 3.800E-05 | | | | | |
| 4 | 0.865 | 2.900 | 7850.000 | 3.800E-05 | 0.865 | 0.865 | 0.865 | | |
| 5 | 0.000 | | | 3.800E-05 | | | | | |
| 6 | 0.000 | | | 3.800E-05 | | | | | |
| 7 | 0.000 | | | 3.800E-05 | | | | | |
| 8 | 0.000 | | | 3.800E-05 | | | | | |
| 9 | 0.000 | | | 3.800E-05 | | | | | |
| 10 | 0.000 | | | 3.800E-05 | | | | | |
| 11 | 0.000 | | | 3.800E-05 | | | | | |
| 12 | 0.000 | | | 3.800E-05 | | | | | |
| 13 | 0.000 | | | 3.800E-05 | | | | | |
| | | | **P(i)19** | **Sum** | **0.865** | **0.865** | **0.865** | **0.865** | **uSv/a** |

## Public Dose Data
## CHILD
## EMP Factors for Dose P29

P29 is the transfer pathway of exposure to HTO from compartment 2 (Surface Water) to 9 (Dose)
P(i)29 is the pathway of exposure due to ingestion of HTO
P(e)29 is the pathway of exposure due to immersion in HTO

Formula:
*P(i)29 = [HTO] (Bq/L) x Ingestion (L) x DCF (uSv/Bq)*

| Well | P(i)29 (uSv/a) | [HTO]well (Bq/L) | Ingestion (L/a) | DCF (uSv/Bq) |
|---|---|---|---|---|
| 2 | 0.307 | 25.5 | 482.1 | 2.50E-05 |
| 3 | 0.313 | 26.0 | 482.1 | 2.50E-05 |
| 5 | 0.066 | 5.5 | 482.1 | 2.50E-05 |
| 6 | 0.048 | 4.0 | 482.1 | 2.50E-05 |
| 7 | 0.054 | 4.5 | 482.1 | 2.50E-05 |
| **Avg P(i)29** | **0.158** | **uSv/annum** | | |

| Date | Well 2 (Bq/L) | Well 3 (Bq/L) | Well 5 (Bq/L) | Well 6 (Bq/L) | Well 7 (Bq/L) |
|---|---|---|---|---|---|
| March 12, 2025 | 22 | No sample | 6 | 4 | 4 |
| September 18, 2025 | 29 | 26 | 5 | 4 | 5 |
| **Average** | **25.5** | **26.0** | **5.5** | **4.0** | **4.5** |

| | |
|---|---|
| Well 2 | 185 Mud Lake Road |
| Well 3 | 183 Mud Lake Road |
| Well 5 | 171 Sawmill Road |
| Well 6 | 40987 Highway 41 |
| Well 7 | 40925 Highway 41 |

| | | | |
|---|---|---|---|
| Well 3 | **P(i)29** | **0.313** | **uSv/a** |
| | **P(e)29** | **0.000** | **uSv/a** |
| | **P29** | **0.313** | **uSv/a** |

P(e)29 is the pathway of exposure to HTO due to immersion in surface water, and is negligible.

**Public Dose Data**
**CHILD**
**EMP Factors for Dose P49**

P49 is the pathway for exposure to HTO due to ingestion of forage and crops.

**Produce Sample Results (Bq free water tritium / kg fresh weight)**

| Source | 1232 Pembroke Street East | | Residences | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Type | Rhubarb | Average | LOCATION | Tomatoes | Beets | Cucumbers | Beans | Chard | Carrots | Grapes | Average |
| FWT | 1.65 | 1.65 | 171 SAWMILL ROAD | 5.01 | 4.15 | 6.82 | 9.55 | 6.71 | | | 6.45 |
| | | | DEACON ST. & RIVER RD. | 10.43 | | | | | 10.80 | 22.71 | 14.65 |
| Average FWT - Commercial | | 1.65 | Average FWT - Residential | 7.72 | 4.15 | 6.82 | 9.55 | 6.71 | 10.80 | 22.71 | 9.52 |

**Produce Sample Results (Bq organically bound tritium / kg fresh weight)**

| Source | 1232 Pembroke Street East | | Residences | | |
|---|---|---|---|---|---|
| Type | Rhubarb | Average | LOCATION | Tomatoes | Average |
| OBT | 0.00 | 0.00 | 171 SAWMILL ROAD | 0.00 | 0.00 |
| | | | DEACON ST. & RIVER RD. | 0.23 | 0.23 |
| Average OBT - Commercial | | 0.00 | Average OBT - Residential | 0.12 | 0.12 |

**Produce Consumption**

| 100%= | 265.200 | kg/a | [HTO] (Bq/kg) | (Bq/a) | [OBT] (Bq/kg) | (Bq/a) |
|---|---|---|---|---|---|---|
| 70% | 185.640 | kg/a | 1.65 | 306.31 | 0.00 | 0.00 |
| 30% | 79.560 | kg/a | 9.52 | 757.41 | 0.12 | 9.15 |

*P49 = [HTO or OBT]produce (Bq/kg) x Produce Ingested (kg/mo) x DCF (uSv/Bq)*

| P49 (uSv/a) | [HTO] pro (Bq/a) | DCF (uSv/Bq) | [OBT] pro (Bq/a) | DCF (uSv/Bq) |
|---|---|---|---|---|
| 0.028 | 1063.72 | 2.50E-05 | 9.15 | 6.30E-05 |

| P49 | 0.028 | uSv/a |
|---|---|---|

## Public Dose Data
## CHILD
## EMP Factors for Dose P59

P59 is the exposure to HTO due to ingestion of animal produce.

| Local Producer | |
|---|---|
| | (Bq/L) |
| 1 | 2.33 |
| 2 | 3.25 |
| Average | **2.79** |

| Local Distributor | |
|---|---|
| | (Bq/L) |
| 1 | 2.05 |
| 2 | 4.18 |
| Average | **3.12** |

| TOTAL AVERAGE | **2.95** | Bq/L |
|---|---|---|

| Milk Density Adjustment<br>Milk Average (Bq/L) x Milk density (L/kg) | | |
|---|---|---|
| **Bq/L** | **L/kg** | **Bq/kg** |
| **2.95** | 0.97 | **2.86** |

| Consumption<br>kg/da x da/a = kg/a | | |
|---|---|---|
| **(kg/da)** | **(da/a)** | **(kg/a)** |
| 0.875 | 365.25 | **319.6** |

| *P59 = [HTO]animal produce (Bq/kg) x Ingestion (kg) x DCF* | | | |
|---|---|---|---|
| **P59** | **[HTO]** | **Ingested** | **DCF** |
| **(uSv/a)** | **(Bq/kg)** | **(kg/a)** | **(uSv/Bq)** |
| **0.023** | **2.86** | **319.6** | 2.50E-05 |

# APPENDIX S

## Summary of Outgoing Shipments Containing Radioactive Material

## Summary of Outgoing Shipments Containing Radioactive Material

| Month | Number of Shipments |
|---|---|
| January | 68 |
| February | 49 |
| March | 78 |
| April | 69 |
| May | 60 |
| June | 56 |
| July | 52 |
| August | 62 |
| September | 67 |
| October | 53 |
| November | 47 |
| December | 37 |
| **TOTAL** | **698** |
| *Average per month* | *58* |

## Distribution of Outgoing Shipments

| Country | Number of Shipments |
|---|---|
| United States | 379 |
| Canada | 273 |
| United Kingdom | 10 |
| South Korea | 7 |
| Netherlands | 11 |
| Singapore | 3 |
| Germany | 3 |
| Mexico | 1 |
| Bulgaria | 1 |
| Switzerland | 3 |
| China | 1 |
| France | 1 |
| Brazil | 1 |
| India | 1 |
| Turkey | 2 |
| Saudi Arabia | 1 |

# APPENDIX T

## Summary of Incoming Shipments Containing Radioactive Material

# Summary of Incoming Shipments Containing Radioactive Material

| Month | Number of Shipments |
|---|---|
| January | 15 |
| February | 22 |
| March | 25 |
| April | 15 |
| May | 25 |
| June | 31 |
| July | 24 |
| August | 19 |
| September | 17 |
| October | 17 |
| November | 7 |
| December | 13 |
| **TOTAL** | **230** |
| *Average per month* | *19* |

# Distribution of Incoming Shipments

| Country | Number of Shipments |
|---|---|
| United States | 189 |
| Canada | 28 |
| Switzerland | 5 |
| Singapore | 1 |
| Japan | 1 |
| Qatar | 1 |
| United Kingdom | 1 |
| Germany | 3 |
| Netherlands | 1 |