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SRB TECHNOLOGIES (CANADA) INC.

2008 ANNUAL COMPLIANCE REPORT

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TABLE OF CONTENTS

DESCRIPTION **PAGE**

TABLE OF CONTENTS (Continued)

DESCRIPTION **PAGE**

TABLE OF CONTENTS (Continued)

DESCRIPTION **PAGE**

LIST OF APPENDICES

LIST OF TABLES

NUMBER TITLE PAGE

LIST OF FIGURES

INTRODUCTION

Since July 1, 2008 SRB Technologies (Canada) Inc. is licensed under Canadian Nuclear Safety Commission Nuclear Substance Processing Facility Operating Licence, NSPFOL-13.00/2010[1]. From January 1 to July 1, 2008 SRB Technologies (Canada) Inc. was licensed under Canadian Nuclear Safety Commission Nuclear Substance Processing Facility Possession Licence, NSPFOL-13.01/2008[2].

Condition 6.4 of Licences NSPFOL-13.00/2010[1] and NSPFOL-13.01/2008[2] read:

> ***The licensee shall prepare and submit to the Commission or a person authorized by the Commission by March 31 of each year, an annual compliance report that covers the previous calendar year's operation prepared in accordance with Appendix E to this licence.***

Appendix E of Licences NSPFOL-13.00/2010[1] and NSPFOL-13.01/2008[2] read:

> ***This Appendix outlines the information to be included in the Annual Compliance Report by licence condition of this licence.***
>
> ***The following information shall be included:***
>
> ***1. Operational review including equipment and facility performance and changes, significant events / highlights that occurred during the year.***
>
> ***2. Information on production including verification that limits specified in the licence was complied with.***
>
> ***3. Modifications including changes in organization, administration and / or procedures that may affect licensed activities.***
>
> ***4. Health physics information including operating staff radiation exposures including distributions, maxima and collective doses; review of action level or regulatory exceedance(s) if any, historical trending where appropriate.***
>
> ***5. Environmental and radiological compliance including results from environmental and radiological monitoring, assessment of compliance with licence limits, historical trending where appropriate, and quality assurance / quality control results for the monitoring.***
>
> ***6. Facility effluents including gaseous and liquid effluent releases of nuclear substances from the facility, including unplanned releases of radioactive materials and any releases of hazardous substances.***
>
> ***7. Waste management including types, volumes and activities of solid wastes produced, and the handling and storage or disposal of those wastes.***

INTRODUCTION (Continued)

8. ***Updates regarding activities pertaining to safety, fire protection, security, quality assurance, emergency preparedness, research and development, waste management, tritium mitigation and training (as applicable).***

9. ***Compliance with other federal and / or provincial Regulations.***

10. ***A summary of non-radiological health and safety activities, including information on minor incidents and lost time incidents.***

11. ***Public information initiatives.***

12. ***Forecast for coming year(s).***

PURPOSE

The purpose of this report is to meet the reporting requirements of condition 6.4 of Nuclear Licence NSPFOL-13.00/2010[1] and Licence NSPFOL-13.01/2008[2] and to provide the information detailed in Appendix E of these Licences.

METHODOLOGY

The report is structured to provide the information listed in Appendix E of Licences NSPFOL-13.00/2010[1] and NSPFOL-13.01/2008[2] as follows:

1.0 Operational review
2.0 Information on production
3.0 Modifications
4.0 Health physics information
5.0 Environmental and radiological compliance
6.0 Facility effluents
7.0 Waste management
8.0 Updates
9.0 Compliance with other Regulations.
10.0 Non-radiological health and safety activities
11.0 Public information initiatives
12.0 Forecast

1.0 OPERATIONAL REVIEW

This section of the report will provide an operational review including equipment and facility performance and changes, significant events / highlights that occurred during 2008.

1.1 SIGNIFICANT EVENTS / HIGHLIGHTS

On December 12, 2007 SRB TECHNOLOGIES (CANADA) INC. made an application[3] to the Canadian Nuclear Safety Commission (CNSC) to amend its licence to allow resumption of tritium processing at the facility.

After the decision[4] of the Commission, in January 2007, not to allow SRB to process tritium, SRB developed a corrective action plan to restore the Commission's faith in our company, to ensure protection of the public, our workers and of the environment, while allowing a return to a viable business operation.

Our plan has been diligently followed in late 2007 and early 2008 and significant improvements to the way the plant was operated up to January 2007 have been implemented. These improvements have been introduced to increase the safety and environmental performance of the facility, and to raise the level of public acceptance.

Written Submissions[5],[6],[7] filed to the Commission detailed improvements that included;

- A proposal to operate under a new lower gaseous release limit, which will increase protection of the environment and the public and is even further below the regulatory limit than previously.
- No tritium processing while any type of precipitation occurs.
- The drilling of 27 additional wells at various depths. Monitoring now includes data from a total of 55 wells.
- No operation of the reclamation unit due to concerns expressed by some members of the public.
- Continuing the current Environmental Monitoring Program, with monitoring of 40 air stations, groundwater, local milk and garden produce as well as continued analysis by a third party as requested by members of the public.
- An enhanced public information program which includes more interaction with the public and with special interest groups in particular.

As part of our application we had requested that the Commission extend the expiry of the licence by a period of 24 months from July 31, 2008 to July 31, 2010.

Following a two day public hearing held on April 3 and June 12, 2008 the CNSC announced its decision[8] to issue SRB a two-year operating licence. The licence permitting SRB to resume its processing operations.

The Commission's issuance of the operating licence provided job security for our existing workforce, ensured an ongoing revenue stream to help to continue to fund the facility's financial guarantee and allow our company to continue to make further improvements to reduce emissions and further protect the public and the environment.

The operating licence also allows SRB to honour important contracts with high national security value and for which SRB is the sole supplier.

From the date of the issuance of the licence, processing resumed incrementally with the existing staff with one former employee rehired in September 2008.

1.2 EQUIPMENT AND FACILITY PERFORMANCE

For the purpose of providing a safe working environment, the most prominent protective element of the radiation protection system is the workplace ventilation system including the safety cabinets. The facility has several air-handling units that provide supply air and exhaust air for protective workplace ventilation.

1.2.1 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 combined provide airflow of approximately 12,000 cubic feet per minute.

The air handling units are connected to a series of galvanized and 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.

These air handling units are maintained through contract maintenance and service program with local contract providers in conjunction whereby preventive maintenance is performed by qualified staff.

Ventilation equipment maintained in 2008 can be found in **Appendix A** of this report.

All ventilation systems were maintained in fully operational condition with no major system failures during 2008 to the requirements of our Maintenance Program[9] and operational procedures[10], [11]. Equipment is maintained on a quarterly or monthly basis, see equipment maintenance information in **Appendix B** of this report. Equipment maintenance was performed under contract with a fully licensed maintenance and TSSA certified local HVAC contract provider.

1.2.2 PORTABLE TRITIUM-IN-AIR MONITORS

Portable tritium-in-air monitors are also maintained in Zones 1, 2 and 3. The portable units are used to determine the source of tritium that might cause an alarm threshold to be breached.

There are four portable tritium-in-air monitors available for airborne tritium monitoring at the facility. Two in Zone 3, one in Zone 2 and one in Zone 1.

As required by our Radiation Safety Program[12] all tritium-in-air monitors were calibrated at least once during 2008, two of them were last calibrated in May 2008 and the other two were last calibrated in July 2008.

1.2.3 TRITIUM-IN-AIR ROOM MONITORS

The ambient air in Zones 2 and 3 is continuously monitored using stationary tritium-in-air monitors.

There are four stationary tritium-in-air monitors available for airborne tritium monitoring at the facility. Three 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 laser energy is used to cut and seal small gaseous tritium light sources and 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.

As required by our Radiation Safety Program[12] all tritium-in-air monitors were calibrated at least once during 2008, in November 2008.

1.2.4 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:

1. A tritium-in-air monitor connected to a real-time recording device.
2. A bubbler system for discriminately collecting HTO and HT.
3. A flow measurement device to indicate elapsed time, flow rate and volume.

As required by our procedures[13], each tritium-in-air monitor connected to a real-time recording device was calibrated at least once during 2008, in November. The recording device itself was calibrated at least every three months during 2008 for a total of 5 times in 2008.

As the calibration of a flow measurement device is only valid for one year, each device was replaced a year after being in place in April 2008.

1.2.5 LIQUID SCINTILLATION COUNTERS

Two liquid scintillation counters are maintained and calibrated on a yearly basis to ensure their functionality by a qualified service representative from the manufacturer of the equipment.

Both liquid scintillation counters were serviced as required at least once in 2008, in July 2008.

2.0 INFORMATION ON PRODUCTION

This section of the report will provide information on production including verification that limits specified in the licence was complied with.

2.1 POSSESSION LIMIT

Section IV (c) of Licence NSPFOL-13.00/2010[1] and of Licence NSPFPL-13.01/2008[2] read:

possess a maximum of 6,000 TBq of tritium in any form.

The maximum tritium activity possessed at any time during 2008 did not exceed 4,189 TBq. Tritium activity on site during 2008 can be found in **Appendix C** of this report. At all times, unsealed source material was stored on uranium getter beds or in the handling volumes of the gas filling rigs.

2.2 IMPORT AND EXPORT ACTIVITIES

In 2008, SRB applied for and received from the CNSC export licenses for countries worldwide for the purpose of exporting and supplying gaseous tritium light sources and devices containing gaseous tritium light sources to customers.

2.3 SHIPPING ACTIVITIES

In 2008, SRB prepared, packaged and shipped, in accordance with CNSC regulatory document, SOR/2000-208, Packaging and Transport of Nuclear Substances Regulations, 231 consignments to various customers located in 12 countries around the world including Canada. The number of monthly shipments containing radioactive material for 2008 can be found in **Appendix D**.

No transport incidents occurred nor were reported during 2008.

2.4 TRITIUM PROCESSED

Tritium was only processed at the facility after July 1, 2008 the effective date of the processing licence.

From the date of the issuance of the licence, processing resumed incrementally to the end of 2008 with a total of 2,356,979 GBq of tritium processed in that period.

2.5 RELEASE LIMITS TO ATMOSPHERE

Throughout the year SRB operated under release limits to atmosphere prescribed under its licence.

From January 1 to July 1, 2008 SRB operated under Nuclear Substance Processing Facility Possession Licence number NSPFPL-13.01/2008[2] and associated release limits to atmosphere.

From July 1 to December 31, 2008 SRB operated under Nuclear Substance Processing Facility Operating Licence number NSPFOL-13.00/2010[1] and associated release limits to atmosphere.

2.5.1 AIR RELEASES UNDER POSSESSION LICENCE

Appendix C of possession licence NSPFPL-13.01/2008[2] outlines release limits to atmosphere.

SRB operated under this licence and release limits between January 1 to July 1, 2008 (weeks 1 to 26).

Stack release values based on weekly sampling and analysis for tritium oxide (HTO) and elemental tritium (HT) indicate that, on average, the emissions of HTO was maintained at 1.90% and the emissions of HTO + HT was maintained at 0.13% of the license limit.

TABLE 1: AIR RELEASES UNDER POSSESSION LICENCE AGAINST LIMIT:

NUCLEAR SUBSTANCE AND FORM	LIMIT (Bq/YEAR)	LIMIT (Bq/week)	AVG RELEASE (Bq/week)	% OF LIMIT
Tritium as Tritium Oxide (HTO)	1.35 E+14	2.6 E+12	4.93 E+10	1.90%
Total Tritium as Tritium Oxide (HTO) and Tritium Gas (HT)	5.21 E+14	1.0 E+13	*6.25 E+10*	*0.63%*

** Revised on November 12, 2009, see change in italics.*

2.5.2 AIR RELEASES UNDER PROCESSING LICENCE

Appendix C of licence NSPFOL-13.00/2010[1] outlines release limits to atmosphere.

We developed a conservative release limit[14] for air emissions specifically designed to protect groundwater and in doing so would also be protective of the environment and the public in the vicinity of the SRB facility. These newly calculated values are more restrictive than the release limit in the possession licence NSPFPL-13.01/2008[2] and are consistent with the ALARA principle.

SRB operated under this licence and release limits between July 1 to December 31, 2008 (weeks 27 to 52).

Stack release values based on weekly sampling and analysis for tritium oxide (HTO) and elemental tritium (HT) indicate that, on average, the emissions of HTO was maintained at 15.35% and the emissions of HTO + HT was maintained at 17.21% of the license limit.

TABLE 2: AIR RELEASES UNDER PROCESSING LICENCE AGAINST LIMIT:

NUCLEAR SUBSTANCE AND FORM	LIMIT (Bq/YEAR)	LIMIT (Bq/week)	AVG RELEASE (Bq/week)	% OF LIMIT
Tritium as Tritium Oxide (HTO)	6.72 E+13	1.29 E+12	1.98 E+11	15.35%
Total Tritium as Tritium Oxide (HTO) and Tritium Gas (HT)	4.48 E+14	8.6 E+12	1.48 E+12	17.21%

2.5.3 TOTAL AIR RELEASES FOR 2008

Total releases for 2008 between January 1 and December 31, 2008 (weeks 1 to 52) under both licences were therefore as follows:

TABLE 3: TOTAL AIR RELEASES IN 2008:

NUCLEAR SUBSTANCE AND FORM	RELEASED (Bq/YEAR)
Tritium as Tritium Oxide (HTO)	6.43 E+12
Total Tritium as Tritium Oxide (HTO) and Tritium Gas (HT)	4.01 E+13

2.6 ACTION LEVELS FOR RELEASES TO ATMOSPHERE

Throughout the year SRB operated to the action levels for release limits to atmosphere applicable to the operations permitted under the licence.

From January 1 to July 1, 2008 SRB operated under Nuclear Substance Processing Facility Possession Licence number NSPFPL-13.01/2008[2] and the associated action levels for releases to atmosphere.

From July 1 to December 31, 2008 SRB operated under Nuclear Substance Processing Facility Operating Licence number NSPFOL-13.00/2010[1] and the associated action levels for releases to atmosphere.

2.6.1 ACTION LEVELS UNDER POSSESSION LICENCE

The SRB document titled Licence Limits, Action Levels and Administrative Limits[15] under CNSC Licence NSPFPL-13.01/2008[2] provided weekly stack emission action levels associated with the activities of the possession licence:

TABLE 4: POSSESSION LICENCE STACK EMISSION ACTION LEVELS:

NUCLEAR SUBSTANCE AND FORM	WEEKLY ACTION LEVEL (GBq)
Tritium as tritium oxide (HTO)	260
Total tritium as tritium oxide (HTO) and tritium gas (HT)	1,503

These weekly stack emission action levels were not exceeded in the period when a possession licence was in effect between January 1 and July 1, 2008.

2.6.2 ACTION LEVELS UNDER PROCESSING LICENCE

As part of its licence application[3] using Regulatory Guide G-228 on developing and using action levels we had also developed, in accordance with Subsection 6(1) of the Radiation Protection Regulations action levels for the proposed resumption of operation.

SRB assessed both the average and maximum weekly emissions during the last 21 weeks of operation and deducted the estimated emission contribution from the reclamation process which is not be operated under the new licence and identified an appropriate action level that would meet the requirements of section 6 of the Radiation Protection Regulations.

The SRB document titled Licence Limits, Action Levels and Administrative Limits[16], listed in Appendix B of Licence NSPFOL-13.00/2010[1] provides weekly stack emission action levels associated with the activities of the processing licence:

TABLE 5: PROCESSING LICENCE STACK EMISSION ACTION LEVELS:

NUCLEAR SUBSTANCE AND FORM	WEEKLY ACTION LEVEL (GBq)
Tritium as tritium oxide (HTO)	840
Total tritium as tritium oxide (HTO) and tritium gas (HT)	7,753

Only on one occasion was one of the weekly stack emission action levels exceeded during 2008. The exceedance occurred during the week of October 14 to 20, 2008 as a result of a faulty valve.

The weekly stack emission action level for “Total tritium as tritium oxide (HTO) and tritium gas (HT)“ of 7,753 GBq was exceeded with a total release of 26,712 GBq for the week, while the weekly stack emission action level for “Tritium as tritium oxide (HTO)” of 840 GBq had not been exceeded with a total release of 236 GBq for the week.

In accordance with Condition 6.3 of Licence NSPFOL-13.00/2010[1], on October 21, 2008 SRB notified Ms. Ann Erdman, Acting Director for the Processing and Research Facilities Division of the exceedance first by telephone and later that day by letter[17].

In accordance with Condition 6.3 of Licence NSPFOL-13.00/2010[1], SRB has produced a final written report[18] within 21 working days of becoming aware that one of the weekly stack emission action levels had been exceeded.

This final written report details the exceedance, the sequence of events that occurred that resulted in the exceedance as well as defining and discussing the cause and corrective actions taken.

The maximum dose to a member of the public resulting from the releases during the period of October 14 to 20, 2008 is equal to 0.2875 microsieverts (μSv). If this quantity was released every week for the entire year the maximum dose to a member of the public for the year would equal 14.95 μSv or 1.495% of the public dose limit of 1,000 μSv per year.

2.7 AIR EMISSION REDUCTION TARGET

Based on operational experience members of the "Mitigation Committee" and Production Supervisors had developed a realistic but optimistic "Emission Reduction Target" for the first year of operation should tritium processing resume.

As reported to the Commission in our written submission[5] for Hearing Day One it was decided that reducing the average weekly emissions by 10% for the first year of operation from the average weekly emissions for the last 21 weeks of operation ending in January 2007 would be an appropriate target. These emissions would also constitute approximately 34% of the total emissions in 2006.

TABLE 6: YEARLY EMISSIONS IN 2006 AGAINST PROJECTED AND TARGETED:

	2006 TOTAL YEARLY EMISSIONS	TOTAL YEARLY EMISSIONS BASED ON LAST 21 WEEKS OF OPERATION ONLY	PROJECTED YEARLY BASED ON TARGET OF 10% REDUCTION
TRITIUM RELEASED (GBq)	284,645	108,957	98,061

Since resumption of operations weekly emissions have been at 78.51% of the target set for the year. After a full year of operations, based on results achieved new targets will also be established for the second year of operation:

TABLE 7: EMISSIONS SINCE RESUMPTION AGAINST TARGET:

	EMISSIONS SINCE RESUMPTION (JUL 1 TO DEC 31, 2008)	ESTIMATED YEARLY EMISSIONS BASED ON (JUL 1 TO DEC 31, 2008)	% OF TARGET
TRITIUM RELEASED (GBq)	38,493	76,986	78.51%

2.8 RELEASE LIMIT TO SEWER

Throughout the year SRB operated under release limits to sewer prescribed under its licence.

From January 1 to July 1, 2008 SRB operated under Nuclear Substance Processing Facility Possession Licence number NSPFPL-13.01/2008[2]. From July 1 to December 31, 2008 SRB operated under Nuclear Substance Processing Facility Operating Licence number NSPFOL-13.00/2010[1].

Appendix C of these licences outlined a yearly release limit to sewer which is identical.

Sewer release values based on sampling and analysis indicate that the emissions to sewer in 2008 were 14.75% of the license limit.

TABLE 8: RELEASE LIMITS TO SEWER AGAINST RELEASES AND PERCENTAGE OF LIMIT

NUCLEAR SUBSTANCE AND FORM	LIMIT (GBq/YEAR)	RELEASED (GBq/YEAR)	% OF LIMIT
Tritium water soluble	200	29.5	14.75%

In order to further reduce the fluctuations in the environment it should be noted that SRB has established on October 30, 2008 as part of its EMS Objectives and targets[19] a maximum liquid release per day of 0.3 GBq. At no point was this target exceeded since being set on October 30, 2008.

3.0 MODIFICATIONS

This section of the report will outline modifications including changes in organization, administration and / or procedures that may affect licensed activities.

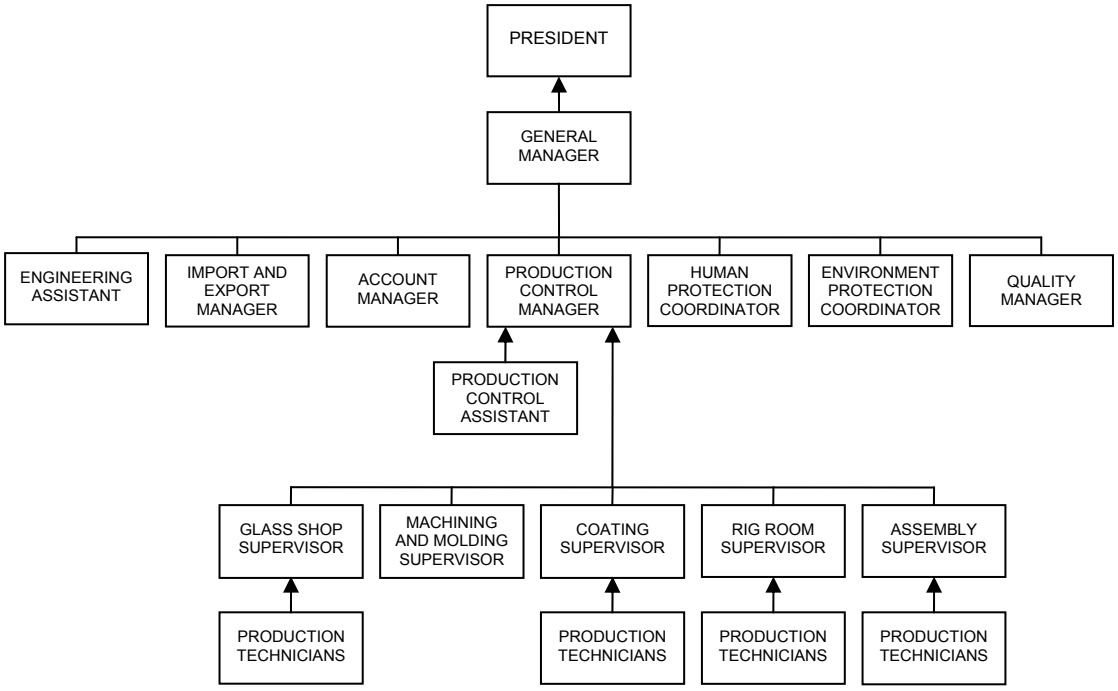
3.1 ORGANIZATION

No changes to the organization were made in 2008. Last changes in organization were made in the last few months of 2007 to address the deficiencies identified by the Organizational Study[20]. Changes were reported to CNSC Staff in a document titled Supplemental to Organizational Study[21], dated December 31, 2007.

3.1.1 ORGANIZATIONAL CHART

The following organizational chart represents the structure at the end of 2008 at the company as a result of addressing the recommendations of the Organizational Study[20].

FIGURE 1: ORGANIZATIONAL CHART



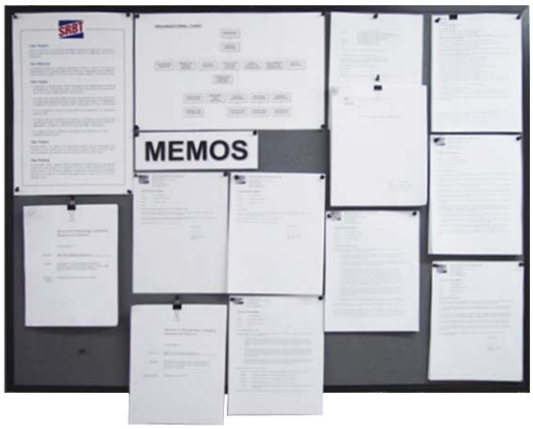
3.1.2 COMMITTEES

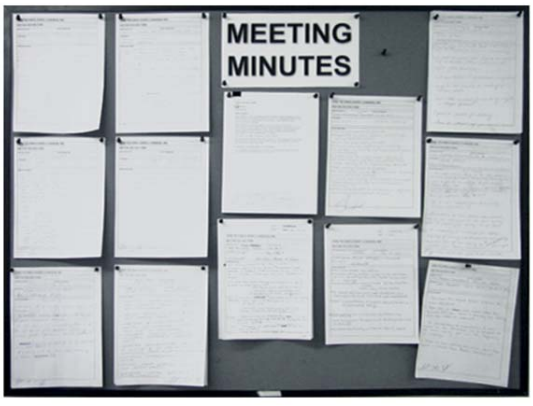
A number of Committee Meetings took place in 2008 which included discussions and developing actions as they apply to meeting the requirements of the Canadian Nuclear And Safety Control Act, Regulations and conditions of the Licence. All meeting notes are posted.

Staff at all levels are also encouraged to hold meetings when developing changes in procedures. Staff are encouraged to consider the input of all stakeholders and be conservative in their decision making to ensure the protection of workers, the public and the environment.

Meeting notes are posted on two information boards in a well traveled area of the facility.

FIGURE 2: INFORMATION BOARDS





3.1.3 VISION, MISSION, GOALS, VALUES AND POLICY

In a staff meeting held on November 17, 2008 with the involvement of all staff Senior Management have formally reviewed the company's vision, mission, goals, values and policy.

The review concluded that the existing company's governing principles were suitable for another year.

FIGURE 3: COMPANY'S GOVERNING PRINCIPLES

3.2 PROGRAMS, PROCEDURES AND ASSOCIATED DOCUMENTS

In 2008, a number of programs and procedures continue to be improved to further ensure protection of the public, the workers and the environment. Improvements continue to be made as a result of SRB staff's research and study of International Atomic Energy Agency documents, CNSC Regulatory Guides, recommendations from the International Commission on Radiological Protection, various industry standards and documents of other CNSC licensees.

Most notable changes include the incorporation of all the organizational controls, changes and improvements that have been implemented at the facility into a new Environmental Management System (EMS)[22] that meets the requirements of S-296 and the Canadian standard, CAN/CSA-ISO 14001. Following approval of the EMS by CNSC Staff, SRB also produced two other documents in support of SRB's EMS in 2008. The Significant Environmental Aspects for the operations are now listed in a dedicated document tilted EMS Significant Environmental Aspects[23] and the Objectives and Targets for the operations and are now described in a dedicated document tilted EMS Objectives and Targets[19].

In 2008 we also provided CNSC Staff with a new revision of our Contractor Management Program[24] and associated second tier procedures which are intended to address CNSC Staff comments[25] that the program needed a bit more formalization and development in certain areas.

In 2008 we also revised our Quality Manual[26] and associated second tier procedures to include more detail to further describe activities, procedures and controls that are currently in place at the facility to address CNSC Staff comments[27].

In 2008 we are also revised our Radiation Safety Program[12] to reflect improvements made to the EMS[22], Contractor Management Program[24] and Quality Manual[2].

SRB and its consultant ECOMETRIX INC. continue to revise the DRL[28] document to address minor points of clarification reported in a letter[29] from CNSC Staff dated February 28, 2008. We expect to provide a revision of this document in the Spring of 2009.

In 2008 we also submitted to CNSC Staff a document titled Review Of Hypothetical Incident Scenarios[30]. The purpose of this document was to review the existing incident scenarios for the facility and to determine if these were still applicable considering the improvements made to the safety programs and procedures and the equipment and system upgrades that have been implemented over the years. The review also ensured that the hypothetical incidents identified were credible and reflected worse case conditions.

In 2008, a new Health and Safety Policy and Procedures document[31] and Hazard Prevention Program[32] were also developed as a result of a change in jurisdiction from Provincial to Federal. The document ensures compliance with the Canada Labour Code, Part II and the Occupational Health and Safety Regulations and other associated regulations.

In 2008, a new Emergency Plan[33] consistent with the requirements of CNSC Regulatory Guide G-225, "Emergency Planning at Class I Nuclear Facilities and Uranium Mines and Mills" was also submitted for review and approved by the CNSC Staff[34].

As required in condition 10.2 of licence number NSPFOL-13.00/2010[1], in 2008, we instituted detailed procedures for wet deposition. These procedures are comprised of procedure "RSO-031 Tritium concentrations in precipitation" which will ensure that wet deposition of tritium near the facility is measured on a systematic and comprehensive basis and procedure "RSO-032 Tritium concentrations in runoff" which will ensure that tritium concentrations in run-off from the roof downspouts are also measured on a frequent and representative basis.

A number of minor changes were also made to second tier procedures to include more detail to further describe activities and controls that are currently in place at the facility.

4.0 HEALTH PHYSICS INFORMATION

This section of the report will provide health physics information including operating staff radiation exposures including distributions, maxima and collective doses; review of action level or regulatory exceedance(s) if any, historical trending where appropriate.

4.1 DOSIMETRY SERVICES

During 2008, SRB maintained a Dosimetry Service License, 11341-3-10.0, for the purpose of providing in-house dosimetry services for the staff of SRB Technologies (Canada) Inc. and contract workers performing services for SRB where there existed potential exposure for uptake of tritium.

Dosimetry results were submitted on a quarterly basis to Health Canada in a timely fashion for input to the National Dose Registry for 16 individual staff members.

SRB participated in the Annual Bioassay Intercomparison Analysis program 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.

SRB received the Certificate of Achievement for successful participation in the Tritium Urinalysis Intercomparison Program National Calibration Reference Centre for Bioassay and In Vivo Monitoring for the year 2008.

SRB also submits, to the CNSC, an annual compliance report (ACR) for Dosimetry Service License, 11341-3-10.0.

4.2 STAFF RADIATION EXPOSURE

SRB, through the Dosimetry Service License, 11341-3-10.0, assesses the radiation dose to its employees and to contract workers who may have exposure to tritium that might pose a significant uptake.

For SRB staff members, all are classified as Nuclear Energy Workers. All staff members participate in the dosimetry program. Persons 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. Persons assigned to work in Zone 3 provide bioassay samples on a weekly frequency due to the significant probability of uptake of tritium.

The assessment of dose to personnel, due to tritium uptake, is performed in accordance with the Health Canada document, 83-EHD-87, Bioassay Guideline 2, Guidelines for Tritium Bioassay.

The maximum annual dose received by any person employed by SRB is well within the regulatory limit for a nuclear energy worker, which is 50.0 mSv per calendar year. The maximum annual staff dose of 1.34 mSv with an average for all staff of only 0.16 mSv. Collective dose was also low at 2.62 mSv. The table found in **Appendix E** provides the radiological occupational annual dose data for 2008. The table provides a comparison of dosimetry results for the years 1997 to 2008. Any comparison of the dose in 2007 and 2008 to previous years is not informative or appropriate as the facility only processed tritium until January 31, 2007, and only resumed processing tritium in July of 2008.

4.3 ACTION LEVELS FOR DOSE AND BIOASSAY LEVEL

Appendix D of licence NSPFPL-13.01/2008[2] outlined action levels for effective dose to workers and for bioassay level.

TABLE 9: ACTION LEVELS FOR DOSE AND BIOASSAY LEVEL

PARAMETER	ACTION LEVEL
Effective dose for worker	5 mSv/year 2.6 mSv/quarter
Bioassay result	1,000 Bq/ml for any period

Under processing licence NSPFPL-13.01/2008[1] the actions levels are not included directly in the licence but referenced in the document titled Licence limits, action levels and administrative limits[16] dated May 16, 2008:

TABLE 10: ACTION LEVELS FOR EFFECTIVE DOSE TO WORKER

PERSON	PERIOD	ACTION LEVEL (mSv)
Nuclear energy worker	Quarter of a year	2.6
	1 year	5.0
	5 year	25.0
Pregnant nuclear energy worker	Balance of the pregnancy	3.5

TABLE 11: ACTION LEVELS FOR BIOASSAY RESULT

PARAMETER	ACTION LEVEL
Bioassay result	1,000 Bq/ml for any period

There were no instances at anytime in 2008 whereby a staff member's tritium body burden exceeded the action level of 1,000 Bq/mL.

The highest staff dose for the year was 1.34 mSv and the highest staff dose for a quarter was 0.56 mSv, therefore none of the staff members exceeded the action levels for effective dose to worker.

4.4 ADMINISTRATIVE LIMITS FOR DOSE AND BIOASSAY LEVEL

SRB has in place administrative limits for effective dose to worker and bioassay result:

TABLE 12: ADMINISTRATIVE LIMITS FOR DOSE AND BIOASSAY LEVEL

PARAMETER	ADMINISTRATIVE LEVEL
Effective dose for worker	4 mSv/year 2.0 mSv/quarter
Bioassay result	500 Bq/ml for any period in Zone 3 100 Bq/ml for any period in Zone 1 or 2

There was one instance whereby a staff member's tritium body burden exceeded the administrative level of 500 Bq/mL in 2008, but did not exceed the action level of 1,000 Bq/ml. This result of 569.71 Bq/ml occurred during the week of December 8 to 13, 2008 for an employee working in Zone 3. An Investigation Report[35] including findings and recommendations was completed accordingly.

At no time in 2008 did Zone 2 or Zone 1 staff bioassay sample results exceed the administrative limit of 100 Bq/mL.

The highest staff dose for the year was 1.34 mSv and the highest staff dose for a quarter was 0.56 mSv, therefore none of the staff members exceeded the administrative levels for effective dose to worker.

4.5 CONTAMINATION CONTROL

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. SRB has in place administrative surface contamination limits:

TABLE 13: ADMINISTRATIVE SURFACE CONTAMINATION LIMITS

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 swipe monitoring results for 2008 has been tabulated and is included in **Appendix F**.

Any comparison of the data in 2008 to that collected in 2007 is not informative or appropriate as the facility only processed tritium until January 31, 2007. The facility started processing again at the end of July 2008. As expected failures were more prominent in the area where tritium was processed.

The data collected shows that 788 swipes were taken in Zone 1 resulting in a pass rate of 97.21% bellow the administrative level of 4 Bq/cm^2.

The data collected shows that 2,387 swipes were taken in Zone 2 resulting in a pass rate of 98.83% bellow the administrative level of 4 Bq/cm^2.

The data collected shows that 3,790 swipes were taken in Zone 3 resulting in a pass rate of 76.12% bellow the administrative level of 40 Bq/cm^2.

All swipe results are reported to the area supervisors. The area supervisor would review the results to determine where extra cleaning effort is necessary.

5.0 ENVIRONMENTAL AND RADIOLOGICAL COMPLIANCE

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

5.1 ENVIRONMENTAL MONITORING PROGRAM

SRB Technologies (Canada) Inc. developed an environmental monitoring program that provides data for site-specific determination of tritium concentrations along the various pathways for exposure probabilities to the public due to the activities of the operations.

5.1.1 PASSIVE AIR SAMPLERS

A total of 40 passive air samplers are located throughout a 2 kilometer radius from the SRB facility, in 8 sectors, ranging in distance at 250, 500, 1000, and 2000 meters.

The samples were collected on a monthly basis by SRB and a contract laboratory for tritium concentration assessment by the contract laboratory. The results were reported to the members of the public and posted on the web site.

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

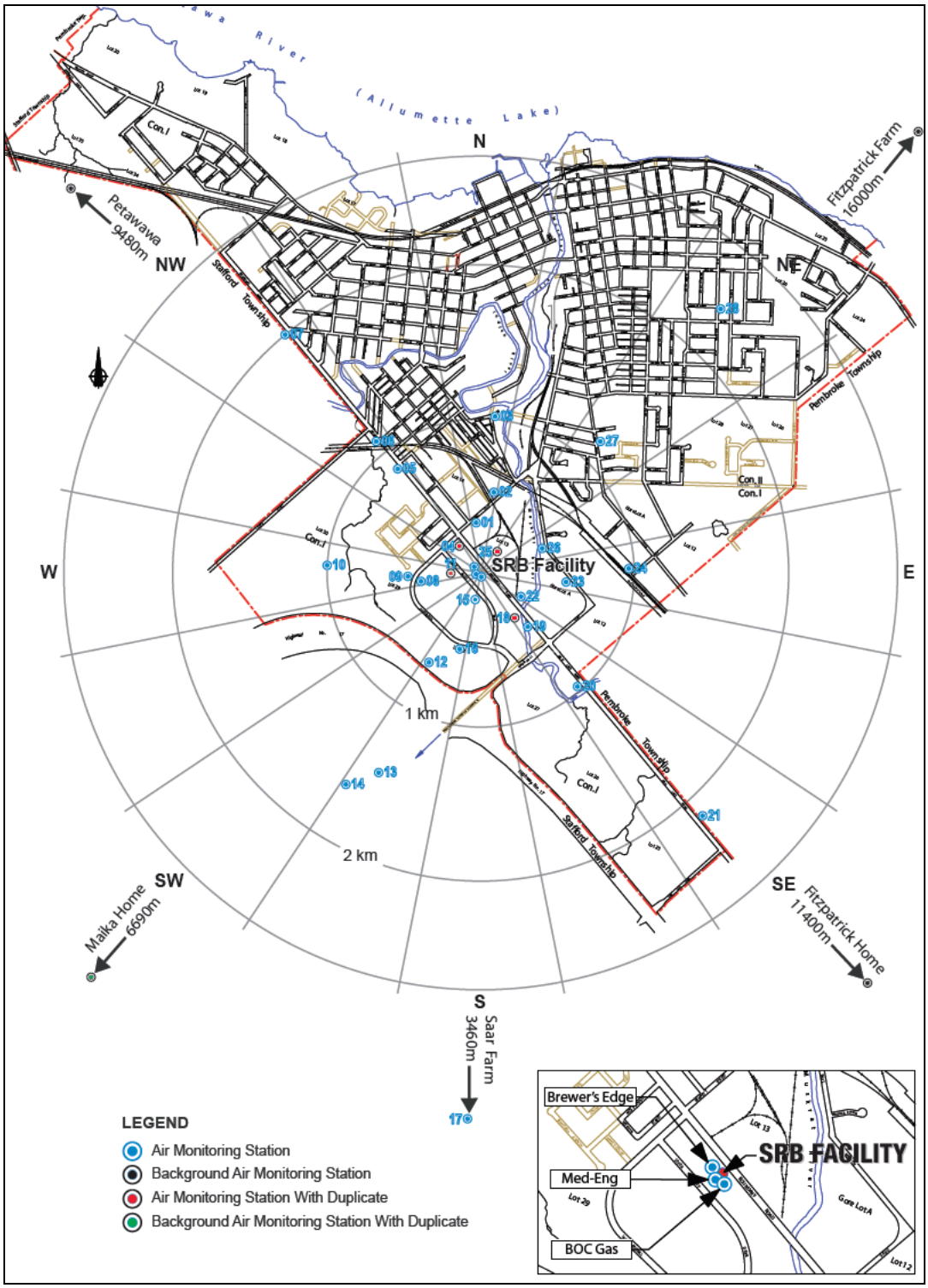
Passive air sampler results for 2008 can be found in the table on **page A1** in **Appendix G**. It was noted that 3 samplers were missing during all sample collections in 2008, PAS # 1, 2 & 13 all in December. Samplers were replaced the following month.

The table shows the HTO concentrations for the samplers located in each of the 8 compass sectors are shown. The correlation for the results of the samplers as they increase in distance from the facility is quite evident. The patterns of the lines are very similar in most cases.

Tritium oxide in air concentrations for each month of 2008 are graphically represented for each of 8 compass sectors and for each of the distances from the facility on **page A2** in **Appendix G**.

The Passive Air Samplers represent tritium exposure pathways for inhalation and skin absorption and used in the calculations for critical group annual estimated dose for 2008.

FIGURE 4: PASSIVE AIR SAMPLER LOCATIONS



5.1.2 WELL MONITORING RESULTS

Water from residential wells used as a source of drinking water by members of the public are sampled every 4 months. The samples were collected by SRB and a contract laboratory for tritium concentration assessment. The results were reported to the members of the public and posted on the web site.

Analyzing all monitoring results in 2008 from all 13 residential and business wells indicates that the concentrations in all wells are below 7,000 Bq/L. Tritium concentrations in these wells have generally been stable or have showed a slight downward trend in 2008.

The highest concentration in a well used for drinking water is in business well B-1 (1,293 Bq/L in December 2008). Concentrations have shown a steady decline in the last few months of 2008. This well is used for some limited water consumption. Although the wells with the two highest concentrations (RW-1 and B-1) are not used as a sole source of drinking water taking them in consideration assumes that the average concentration of tritium in all wells possibly used for water consumption in 2008 to be 319 Bq/L. This data is also used in the calculations for critical group annual estimated dose for 2008.

Well monitoring results and locations for 2008 can be found in **Appendix H**.

Although SRB only processed tritium starting in the month of July in 2008, several graphs were produced to compare well concentrations from year to year as groundwater can take a number of years to react to reduction in emissions.

We have a total of 55 wells that have been studied to date. Analyzing all monitoring results in 2008 indicates that the concentrations in the month of December for 6 wells (MW06-1, MW06-10, MW07-13, MW07-18, MW07-29, MW07-34) which are located on site exceed 7,000 Bq/L. As well as well (MW07-35) located just off site also slightly exceeds 7,000 Bq/L.

Concentrations in some on site wells have decreased in 2008, others have been stable and a number have increased. Largest decrease in concentration has occurred in well MW07-18.

5.1.3 PRODUCE MONITORING RESULTS

Produce from a local market and from local gardens were sampled once in 2008. The samples were collected by SRB and a contract laboratory for tritium concentration assessment by the contract laboratory. The results were reported to the members of the public and posted on the web site. This data is also used in the calculations for critical group annual estimated dose for 2008.

Produce monitoring results and locations for 2008 can be found in **Appendix I** with a graph comparing 2008, 2007 and 2006 results.

5.1.4 MILK MONITORING RESULTS

Milk from a local producer and from a local distributor is sampled every 4 months. The samples were collected by SRB and a contract laboratory for tritium concentration assessment by the contract laboratory. This data is also used in the calculations for critical group annual estimated dose for 2008.

Milk monitoring results and locations for 2008 can be found in **Appendix J.**

5.1.5 WINE MONITORING RESULT

Wine from a local producer is sampled once a year. The sample was collected by SRB and a contract laboratory for tritium concentration assessment by the contract laboratory. The results were reported to the members of the public.

Wine monitoring result for 2008 can be found in **Appendix K** with a graph comparing 2008, 2007 and 2006 results.

5.1.6 RECEIVING WATERS MONITORING RESULTS

Samples of receiving waters upstream and downstream from SRB in the Muskrat River were collected regularly. Samples were collected by SRB and a contract laboratory for tritium concentration assessment by the contract laboratory. All measurements are near the minimum detection limit and any fluctuation is difficult to observe and it is hard to draw any conclusions on a trend.

Receiving waters monitoring results for can be found in **Appendix L**.

5.1.7 SEWAGE MONITORING RESULTS

Sewage samples were taken by Pollution Control Plant staff on a daily basis and provided to a contract laboratory for tritium concentration assessment. Maximum concentration in sewage to date is below 172 Bq/L. Results indicate that concentrations take a considerable amount of time to be completely flushed out of the system to background levels in the Ottawa River and body waste from Nuclear Energy Workers who are exposed to tritium living in the Pembroke area.

In order to further reduce the fluctuations in the environment it should be noted that SRB has established on October 30, 2008 as part of its EMS Objectives and targets[19] a maximum liquid release per day of 0.3 GBq.

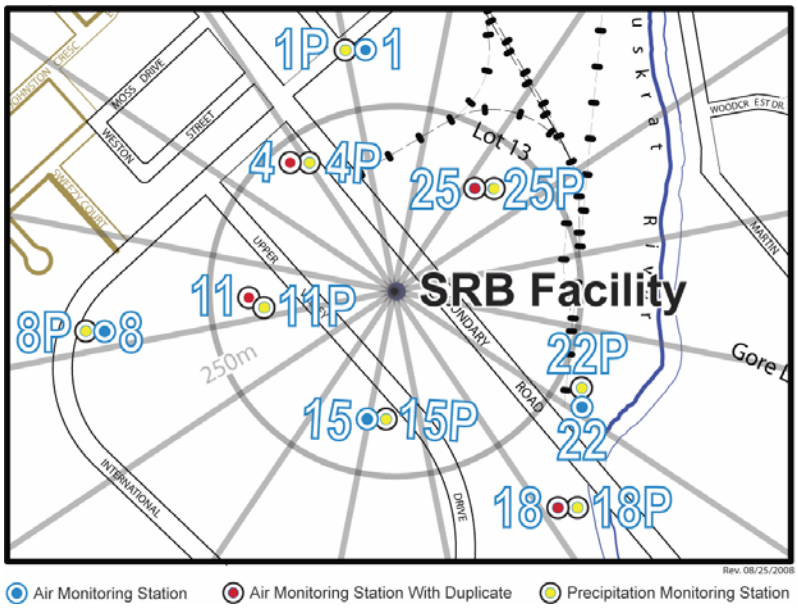
Sewage monitoring results can be found in **Appendix M**.

5.1.8 PRECIPITATION SAMPLER RESULTS

As required in condition 10.2 of licence number NSPFOL-13.00/2010[1] we supplied CNSC Staff a detailed procedure for wet deposition and weather monitoring on August 29, 2008[36]. This procedure included the installation of precipitation monitors.

In developing this procedure SRB first identified the location of the eight existing air monitoring stations that are located approximately 250 metres from the facility. SRB developed a map and a numbering system for the precipitation monitors. As with each air monitoring station each of the precipitation monitors is identified by a unique identification number. The number is the same as the identification number for the air monitoring stations in the same position but followed by the suffix "P" for precipitation.

FIGURE 5: MAP OF AIR AND PRECIPITATION MONITORING STATIONS



In developing a procedure and selecting an appropriate sampler SRB studied historical precipitation data for the closest weather stations (Petawawa A and Petawawa Nat Forestry) used by Environment Canada to determine the expected monthly precipitation.

The use of several devices was investigated. SRB also performed a field survey of all eight air monitoring locations in question to determine the best method of incorporating precipitation monitors at the same locations.

In the end our research revealed that there was no standard method of gathering precipitation nor a standard precipitation collection device. Most devices used by other licensees are customized for their own purpose.

As a result of its research and considerations SRB has decided to use relatively inexpensive plastic containers that would be used for both snow and rain and replaced on a monthly basis. The plastic container would allow the collection of approximately 360 millimeters of precipitation. During collection of the samplers, lids would be placed on the samplers and the samplers would be transferred to a lab for analysis.

We have incorporated in the procedure that samplers would be inspected periodically to ensure that samplers are not full and will allow the collection of all precipitation during the monthly cycle.

We have also included a number of precautions in the procedure to reduce the probability of cross contamination and to maintain data integrity.

On September 25, 2008 CNSC Staff approved[37] SRB's wet weather monitoring procedure which includes the use of precipitation samplers. Seven of eight intended samplers were installed and collected precipitation in November and December 2008.

Sampler 22P will only be installed in 2009 after the thaw, permission was not granted by landowner before the thaw occurred.

Results in November 2008 ranged between 56 (sampler 1P) and 270 Bq/L (sampler 15P). Results in December 2008 ranged between 43 (sampler 25P) and 240 Bq/L (sampler 4P).

Since the precipitation monitors are installed in close proximity to a passive sampler we have compared the measurements from the passive air samplers to the measurements from the precipitation. Using passive air sampler concentrations, we have calculated expected concentration in precipitation at each position. In doing these calculations we have used monthly humidity data from Petawawa A station averaged over 5 years. Comparisons shows that concentrations measured in the precipitation samplers are well within those derived from the passive air sampler measurements. In November 2008 estimated concentrations were 177% of actual and for December 2008 were 280% of actual.

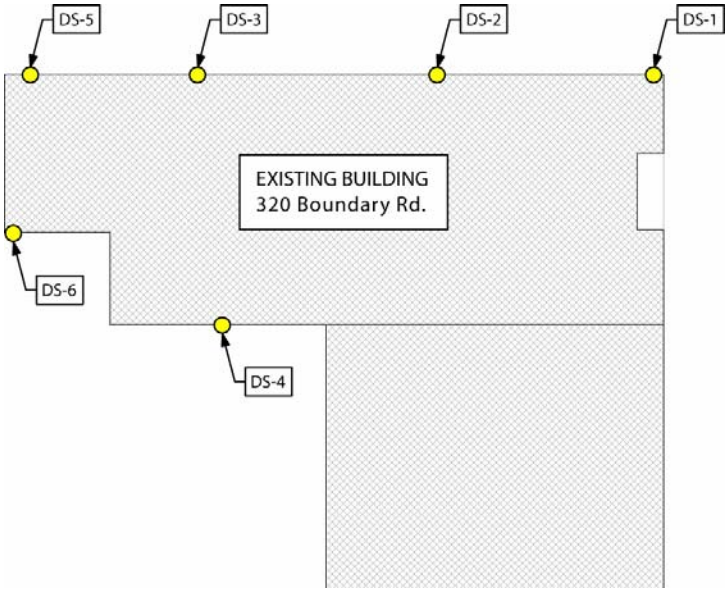
Precipitation monitoring results and comparisons can be found in **Appendix N**.

5.1.9 RUN OFF FROM DOWNSPOUTS

As required in condition 10.2 of licence number NSPFOL-13.00/2010[1] we supplied CNSC Staff a detailed procedure for wet deposition and weather monitoring on August 29, 2008[36]. This procedure included the measurement of run-off from the roof downspout.

The procedure written ensures that the Environment Protection Coordinator will routinely initiate sampling of tritium concentrations in runoff when precipitation and thaw events occur that allow a representative sample of water to be sampled from all the facility's downspouts.

FIGURE 6: BUILDING DOWNSPOUTS



A number of precautions have also been included in the procedure to reduce the probability of cross contamination and to maintain data integrity.

Since May 2006 SRB had been measuring tritium concentrations in run-off from the roof downspouts at the facility. Based on our experience to date and precipitation events we expect that this will be performed a few times during a month except in extremely cold weather where no water flows from downspouts.

On September 25, 2008 CNSC Staff approved[37] SRB's wet weather monitoring procedure which includes the measurements of runoff from the roof downspouts. Runoff from six downspouts was collected in November and December 2008. Results in November 2008 ranged between 100 and 300 Bq/L. Results in December 2008 ranged between 100 and 450 Bq/L. Other measurements were made in 2008 prior to the formal implementation and approval of the procedure.

Runoff monitoring results can be found in **Appendix O**.

5.2 PUBLIC DOSE FOR A MEMBER OF THE CRITICAL GROUP FOR 2008

The calculation method used to determine the dose to the 'Critical Group' as defined in the SRB Environment Monitoring Program is described in the EMP document[38]. The dose assessed for the Critical Group is a summation of:

a) 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

b) Tritium uptake due to consumption of well water (P_{29}), and

c) Tritium uptake due to consumption of produce (P_{49}), and

d) Tritium uptake due to consumption of dairy products (P_{59}).

5.2.1 DOSE DUE TO INHALATION

The closest residence to Passive Air Sampler NW250 is located at the intersection of Boundary Road and International Drive at approximately 240 meters from the point of release. The 2008 average concentration of tritium oxide in air at Passive Air Sampler NW250 has been determined to be 2.81 Bq/m3.

Three passive air samplers are located close to the SRB facility and represent the tritium oxide in air ($P_{(i)19}$ and $P_{(e)19}$) concentrations for the critical group member (adult worker) at samplers 1, 2, and 13. The sampler indicating the highest tritium oxide in air concentration is used to calculate the P19 dose values while at work. The highest average result for 2008 for PAS # 1, PAS # 2, and PAS # 13 is 3.04 Bq/m^3 at PAS # 13.

$P_{(i)19}$: Adult worker 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 critical group equals 2.81 Bq/m^3.

$P_{(i)19r}$ = [H-3_{air}] (Bq/m^3) x Time (h/a) x Breathing Rate (m^3/h) x DCF_{H3} (µSv/Bq)
= 2.81 Bq/m^3 x 6,680 h/a x 1.2m^3/h x 1.8E-05 µSv/Bq
= 0.405 µSv/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 number is Passive Air Samplers #13 at 3.04 Bq/m^3.

$P_{(i)19w}$ = [H-3_{air}] (Bq/m^3) x Time (h/a) x Breathing Rate (m^3/h) x DCF_{H3} (µSv/Bq)
= 3.04 Bq/m^3 x 2,080 h/a x 1.2m^3/h x 1.8E-05 µSv/Bq
= 0.14 µSv/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 critical group equals 2.81 Bq/m^3.

$P_{(i)19}$ = [H-3_{air}] (Bq/m^3) x Time (h/a) x Breathing Rate (m^3/h) x DCF_{H3} (µSv/Bq)
= 2.81 Bq/m^3 x 8,760 h/a x 1.2 m^3/h x 1.8E-05 µSv/Bq
= 0.532 µSv/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 critical group equals 2.81 Bq/m^3.

$P_{(i)19}$ = [H-3_{air}] (Bq/m^3) Breathing Rate (m^3/a) x DCF_{H3} (µSv/Bq)
= 2.81 Bq/m^3 x 1.4 E+03m^3/a x 6.4E-05 µSv/Bq
= 0.25E µSv/a

5.2.2 DOSE DUE TO SKIN ABSORPTION

$P_{(e)19}$: Adult worker dose due to skin absorption of HTO at residence

The dose due to skin absorption is equal to the dose due to inhalation.

$P_{(e)19r}$ = 0.405 µSv/a

$P_{(e)19}$: Adult worker dose due to skin absorption of HTO at work

The dose due to skin absorption is equal to the dose due to inhalation.

$P_{(e)19w}$ = 0.14 µSv/a

$P_{(e)19}$: Adult resident dose due to skin absorption of HTO at residence

The dose due to skin absorption is equal to the dose due to inhalation.

$P_{(e)19}$ = 0.532 µSv/a

$P_{(e)19}$: Infant resident dose due to skin absorption of HTO at residence

The dose due to skin absorption is equal to the dose due to inhalation.

$P_{(e)19}$ = 0.25 µSv/a

5.2.3 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. The annual consumption rate for well water is assumed to be 700 L/a for adults and 300 L/a for infants. Although the wells with the two highest concentrations (RW-1 and B-1) are not used as a sole source of drinking water taking them in consideration assumes that the average concentration of tritium in all wells possibly used for water consumption in 2008 to be 319 Bq/L, see **Appendix H**.

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

P_{29} = $[H\text{-}3]_{dairy}$ x M x 1.8E-05 µSv/Bq;
= [319 Bq/L] x 700 L/a x 1.8E-05 µSv/Bq
= 4.019 µSv/a

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

P_{29} = $[H\text{-}3]_{dairy}$ x M x 5.8E-05 µSv/Bq;
= [319 Bq/L] x 300 L/a x 5.8E-05 µSv/Bq
= 5.551 µSv/a

5.2.4 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 consuming 90% of the annual total and by taking the average tritium concentration from local gardens and consuming 10% of the annual total. The annual consumption rate for produce is assumed to be 200 kg/a for adults and 84 kg/a for infants. If we assume the average concentration in produce purchased from a market to be 40.25 Bq/L and if we assume the average concentration in produce from local gardens be 155.9 Bq/L, see **Appendix I**.

P_{49}: Adult dose due to consumption of produce

P_{49} = [[$\mathbf{H_{prod,market}}$] + [$\mathbf{H_{prod,res}}$]] x 1.8E-05 µSv/Bq
= [[$H\text{-}3_{veg}$] (Bq/kg) x (kg) x 0.9] + [$H\text{-}3_{veg}$] (Bq/kg) x (kg) x 0.10]] x 1.8E-5 µSv/Bq
= [[40.25Bq/kg x 200 kg/a x 0.9] + [155.9 Bq/kg x 200 kg/a x 0.1]] x 1.8E-05 µSv/Bq
= [[7,245 Bq/a] + [3,118 Bq/a]] x 1.8E-05 µSv/Bq
= 0.187 µSv/a

P_{49}: Infant dose due to consumption of produce

P_{49} = [[$\mathbf{H_{prod,market}}$] + [$\mathbf{H_{prod,res}}$]] x 5.8E-05 µSv/Bq
= [[$H\text{-}3_{veg}$] (Bq/kg) x (kg) x 0.9] + [$H\text{-}3_{veg}$] (Bq/kg) x (kg) x 0.10]] x 5.8E-5 µSv/Bq
= [[40.25 Bq/kg x 84 kg/a x 0.9] + [155.9 Bq/kg x 84 kg/a x 0.1]] x 5.8E-05 µSv/Bq
= [[3042.9 Bq/a] + [1,309.56 Bq/a]] x 5.8E-05 µSv/Bq
= 0.252 µSv/a

5.2.5 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. The annual consumption rate for milk is assumed to be 120 kg/a for adults and 220 kg/a for infants. The average concentration in milk being 9.67 Bq/L but adjusting for the density of milk 9.67 Bq/L x 0.97 L/kg = 9.38 Bq/kg, see **Appendix J**.

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

P_{59} = $[H\text{-}3]_{dairy}$ x M x 1.8E-05 µSv/Bq;
= [9.38 Bq/kg] x 120 kg/a x 1.8E-05 µSv/Bq
= 0.020 µSv/a

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

P_{59} = $[H\text{-}3]_{dairy}$ x M x 5.8E-05 µSv/Bq;
= [9.38 Bq/kg] x 220 kg/a x 5.8E-05 µSv/Bq
= 0.120 µSv/a

5.2.6 CRITICAL GROUP ANNUAL DOSE DUE TO TRITIUM UPTAKE

Based on the Environmental Monitoring Program[38] results the 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 maximum of 6.423 µSv for an infant resident of the critical group.

TABLE 14: CRITICAL GROUP ANNUAL DOSE DUE TO TRITIUM UPTAKE

Dose Contributor		Adult Worker Annual Dose (µSv/a)	Adult Resident Annual Dose (µSv/a)	Infant Resident Annual Dose (µSv/a)
Dose due to inhalation at work	$P_{(i)19}$	0.140	N/A	N/A
Dose due to skin absorption at work	$P_{(e)19}$	0.140	N/A	N/A
Dose due to inhalation at residence	$P_{(i)19}$	0.405	0.532	0.25
Dose due to skin absorption at residence	$P_{(e)19}$	0.405	0.532	0.25
Dose due to consumption of well water	P_{29}	4.019	4.019	5.551
Dose due to consumption of produce	P_{49}	0.187	0.187	0.252
Dose due to consumption of milk	P_{59}	0.020	0.020	0.120
Total dose due to tritium uptake	P_{total}	**5.316**	**5.29**	**6.423**

6.0 FACILITY EFFLUENTS

This section of the report will provide information on facility effluents including gaseous and liquid effluent releases of nuclear substances from the facility, including unplanned releases of radioactive materials and any releases of hazardous substances.

6.1 LIQUID EFFLUENT

As discussed in section 2.8 of this report, throughout the year SRB operated under release limits to sewer prescribed under its licence.

From January 1 to July 1, 2008 SRB operated under Nuclear Substance Processing Facility Possession Licence number NSPFPL-13.01/2008[2]. From July 1 to December 31, 2008 SRB operated under Nuclear Substance Processing Facility Operating Licence number NSPFOL-13.00/2010[1].

Appendix C of these licences outlined a yearly release limit to sewer which is identical.

Sewer release values based on sampling and analysis indicate that the emissions to sewer in 2008 were 14.75% of the license limit.

A weekly breakdown of liquid effluent monitoring results for 2008 can be found in **Appendix P** of this report.

6.2 GASEOUS EFFLUENT

As discussed in section 2.5 of this report, throughout the year SRB operated under release limits to atmosphere prescribed under its licence.

From January 1 to July 1, 2008 SRB operated under Nuclear Substance Processing Facility Possession Licence number NSPFPL-13.01/2008[2] and associated release limits to atmosphere.

From July 1 to December 31, 2008 SRB operated under Nuclear Substance Processing Facility Operating Licence number NSPFOL-13.00/2010[1] and associated release limits to atmosphere.

A weekly breakdown of air emission monitoring results for 2008 can be found in **Appendix Q** of this report.

6.2.1 HTO EMISSIONS VS PASSIVE AIR SAMPLERS

To compare the releases directly from the facility to the measurements in the passive air samplers a calculation can be performed. This was done comparing both HTO releases alone and HTO releases also assuming 2% conversion of HT releases.

2% HT + HTO releases 2008/2007 → 7,100 GBq / 6,468 GBq = 110 %

HTO releases 2008/2007 → 6,427 GBq / 5750 GBq = 112 %

PAS measurements 2008/2007 → 45.95 Bq/m3 / 34.9 Bq/m3 = 132%

In comparing these three collectively it shows that there is a good correlation between the stack monitoring performance and the passive air sampler performance.

We have also graphed HTO emissions against passive air sampler concentrations for months where processing took place in 2008. The comparison also shows good correlation, and even better correlation when 2% conversion of HT is excluded. These graphs can be found in **Appendix R** of this report.

6.2.2 DOSE FROM EMP DATA VS DOSE FROM DRL

For 2008, if we compare passive air samplers where members of the public live, samplers number 1, 4 (PAS # 4), 9, and 19. Sampler number 4 (PAS # 4) still remains highest in concentration, therefore still remains adequate to determine the dose to the public.

TABLE 15: DOSE FROM EMP DATA VS DOSE FROM DRL

Dose Contributor	Adult Worker Annual Dose (µSv/a)	Adult Resident Annual Dose (µSv/a)	Infant Resident Annual Dose (µSv/a)
Total dose based on EMP data	5.316	5.29	6.423
Total dose based on EMP data without well consumption	1.297	1.271	0.872
Total dose based on DRL	0.858	0.858	1.437

When we compare the data from the EMP one can see that the annual dose to the public based on the DRL compared is much lower than to the dose based on EMP results. If we exclude the contribution from consumption of well water the dose based on the DRL is very comparable to the dose based on EMP results.

Therefore the DRL used is therefore more accurate is estimating the dose to a member of the public when consumption of well water is excluded. SRB and its consultant ECOMETRIX INC. continue to revise the DRL[28] document to address minor points of clarification reported in a letter[29] from CNSC Staff dated February 28, 2008. We expect to provide a revision of this document in the Spring of 2009.

6.3 UNPLANNED RELEASE OF RADIOCATIVE MATERIALS

Other than routine and accidental releases arising out of tritium processing there were no unplanned releases of radioactive materials from the facility in 2008.

6.4 ANY RELEASES OF HAZARDOUS SUBSTANES

In 2008 SRB continued to make releases of hazardous substances to the air under a Certificate of Approval (Air), Number 5310-4NJQE issued by the Ontario Ministry of the Environment in accordance with Section 9 of the Ontario Environment Protection Act.

These releases are mostly associated with the screen printing process used to screen print signage used for marking escape route in airplanes and buildings.

7.0 WASTE MANAGEMENT

This section of the report will provide information on waste management including types, volumes and activities of solid wastes produced, and the handling and storage or disposal of those wastes.

7.1 WASTE MANAGEMENT PROGRAM

SRB's Waste Management Program[39] was last fully revised October 24, 2007. CNSC staff have reviewed the program and concluded that the program is satisfactory and that its implementation would not pose an unreasonable risk to the health and safety of persons or the environment. A few items still require revision, we expect to provide a revision of this document in the Summer of 2009.

7.2 RADIOACTIVE CONSIGNMENTS

In 2008 only a small amount of radioactive waste was generated. This was due to the facility not processing tritium until the later part of the year and waste minimization practices. No consignments were made.

7.3 STORAGE OF RADIOACTIVE WASTE

Radioactive waste was stored on-site and inventory records of the waste were maintained. All packaged wastes were inspected monthly for potential off-gassing and container integrity.

7.3.1 INTERIM STORAGE OF "VERY LOW-LEVEL WASTE"

Waste that is only minimally contaminated and contains activity levels of 4.0 Bq/cm² or less is considered "very low-level waste" as defined in the Waste Management Program. Examples of such waste are typically paper towel, gloves, disposable lab coats, shoe covers, etc. "Very low-level waste" was collected in various receptacles throughout Zones 2 and 3, assessed, and ultimately placed into steel drums also located within those zones. Once a drum was full, it was prepared for interim storage and transferred to the secure fenced compound area awaiting transfer to a CNSC licensed waste handling facility.

TABLE 16: INTERIM STORAGE OF "VERY LOW LEVEL WASTE"

Very Low-Level Waste container description	Amount in Storage at year end 2008 (container)	Amount Generated throughout 2008 (container)	Total Activity of Tritium (GBq)
200 Liter Steel Drums	63	6	1.98
*200 Liter Steel Drums	33	0	0.09

* Contains excavated soil from the well drilling activities performed on-site.

7.3.2 INTERIM STORAGE OF "LOW-LEVEL WASTE"

"Low-level waste" as defined in the Waste Management Program is any waste with activity levels that exceed 4.0 Bq/cm². Typical examples of such waste are tritium-contaminated equipment or components, crushed glass, filters, broken lights, clean-up material, pumps, pump oil, etc. Low-level waste was collected in various sealed receptacles (cans or re-sealable bags) assessed, and ultimately placed into a steel drum, which is located in the Waste Storage Room within Zone 3. Once a drum was full it was prepared for interim storage and placed in the Waste Storage Room awaiting transfer to a CNSC licensed waste handling facility.

TABLE 17: INTERIM STORAGE OF "LOW LEVEL WASTE"

Low-Level Waste container description	Amount in Storage at year end 2008 (container)	Amount Generated throughout 2008 (container)	Total Activity of Tritium (GBq)
* 200 Liter Steel Drums	13	4	20,100.32
** 70 Liter Steel Drums	11	0	660.00

* Contains used equipment components, crushed glass, filters, broken lights, rags, solidified pump oil etc.
** Contains only oil sealed high vacuum pumps.

7.4 HAZARDOUS MATERIAL COLLECTION

In 2008 only a very small amount of hazardous waste was generated. This was due to the facility not processing tritium until the later part of the year and waste minimization practices. There was one hazardous waste collection in January consisting of 4 x 20 L plastic drums.

7.5 HAZARDOUS MATERIAL STORAGE

Hazardous (non-radioactive) liquid waste material is produced as a result of the silk screening process and is comprised of a combination of paints and thinners. This waste is stored in 20-liter plastic containers waiting for sufficient quantity for disposal. The containers are stored in the fumehood in the silk screening area located in the assembly room in zone 2. Any storage and disposal of hazardous substances (non-radioactive) is reported to the Ontario Ministry of the Environment.

TABLE 18: HAZARDOUS MATERIAL STORAGE

Hazardous Liquid Waste	Amount in Storage at year end 2008	Amount Generated throughout 2008
20 Liter Plastic Drums	1	0

8.0 UPDATES

This section of the report will provide updates regarding activities pertaining to safety, fire protection, security, quality assurance, emergency preparedness, research and development, waste management, tritium mitigation and training (as applicable).

8.1 GROUNDWATER

Based on work and analysis mostly performed in 2006 and 2007, a Comprehensive Groundwater Report[40] was compiled by SRB's consultant Ecometrix Inc. and provided to CNSC and MOE Staff. This report[40] included:

- All groundwater and soil data that have been collected.
- All results of monitoring data with concentrations and water levels.
- Interpretation of the data in the context of tritium concentrations in groundwater at and around the SRB facility. The interpretation includes analysis of:
    - Depths to bedrock.
    - Distributions of hydraulic conductivity in bedrock and overburden.
    - Horizontal and vertical hydraulic gradients.
    - Available MOE water well logs from the surrounding area.
    - Groundwater velocities and travel times.
    - Tritium distributions in soil and groundwater.
    - Potential future impacts and other potential monitoring locations.

The report[40] confirmed that the observed concentrations of tritium in groundwater fall within the ranges expected for air dispersion of tritium emissions to the borehole locations and equilibrium exchange with soil water at those locations.

The results in the overburden clearly show that the source of tritium in soil and groundwater is from atmospheric emissions and therefore not from any release of liquid containing elevated tritium concentrations.

53 of 55 groundwater samples had tritium concentrations that were consistent with values expected from the emissions history and air concentrations at the well locations. The two groundwater samples (MW06-1 and MW07-18) were greater than those expected from air dispersion were affected by water draining from roof downspouts or from snow storage areas in which water or snow would have developed higher tritium levels in closer proximity to the stacks. MW07-18 now reflects the levels predicted and for the first few samplings might have been affected by dragdown during drilling.

Soil samples taken over time have clearly shown decreases in tritium concentrations that are directly correlated with decreases in emissions of tritium from the facility. The planned decrease in emissions together with natural decay will eliminate all tritium concentrations in groundwater in excess of the drinking water guideline within a few decades, and there is no indication of residual risk while this natural mitigation occurs.

Horizontal flow along the top of bedrock and within the shallow bedrock below the site occurs toward the east where Superior Propane is located also representing the closest direction to the Muskrat River. The largest groundwater velocity based on the geometric mean hydraulic conductivity of the bedrock (most permeable unit) and measured gradients is about 4 m/a.

The highest elevated tritium concentrations of approximately 50,000 Bq/L remains in a monitoring well located near the stack area on the SRB property. Only two water supply wells are located down gradient of the SRB site. Those supply wells are located on the Superior Propane property. The one well that is used to supply water to the office has been monitored regularly and exhibits tritium concentrations less than 1,500 Bq/L. The other well is used to supply water for truck washing and is not used for drinking purposes and has not exceeded 5,000 Bq/L. As a precautionary measure SRB has been supplying Superior Propane with bottled drinking water since October 2006 and has been sampling concentrations in the well monthly.

SRB has been monitoring all residential wells used for drinking water for more than one year and concentrations have ranged from 4 Bq/L to less than 1,500 Bq/L (depending on their location in relation to the facility), or less than 20% of the Ontario Drinking Water Standard of 7,000 Bq/L.

If an individual was to use the water from a well with a concentration of 1,500 Bq/L as a sole source of drinking water for the entire year, their dose from consuming that water would be approximately 0.025 mSv for the entire year, or approximately 2.5% of the annual public dose limit set by the Canadian Nuclear Safety Commission of 1 mSv.

A groundwater divide occurs off-site, adjacent to the southwest corner of the building. Flow at this location heads in a north to northwest direction, but does not involve groundwater originating on the SRB property. All groundwater originating on site migrates in an easterly direction toward the industrial areas adjacent to the Muskrat River.

The Muskrat River likely represents the main discharge area for shallow groundwater in the area and is about 420 meters from the SRB property along the shortest pathway. Assessment of groundwater velocities in conjunction with natural decay of tritium indicates that any discharge of groundwater, at the river, that originated at the SRB site will have tritium levels well below the Drinking Water Standard. SRB has been measuring concentrations of tritium for over two years upstream and downstream of the SRB site in the Muskrat River and all measurements are near background levels.

Groundwater with elevated tritium levels will migrate at an average horizontal velocity of 4 m/a in the shallow bedrock. At this rate, tritium concentrations will decline by natural decay to 10% of their initial values after about 160 m of travel, and will decline to 1% of initial values in 340 m of travel. Because the highest concentrations of tritium on site are about 50,000 Bq/L, the maximum concentrations at a distance of about 100 m down gradient, after about 3 half-lives (one half life for tritium is approximately 12.3 years) of travel, will be less than the drinking water guideline of 7,000 Bq/L.

The Groundwater Report[40] has confirmed that the concentrations in soil and boreholes are directly related to those in soil moisture resulting from atmospheric emissions and air dispersion. Therefore lower emissions and the cessation of operations during the occurrence of precipitation will continue to result in lower soil moisture concentrations.

The Report[40] indicates that the average lateral groundwater velocity indicates that any changes that might occur in groundwater quality would take place relatively slowly, and could be readily observed with the sampling frequency of the current monitoring program.

At this time, there is no indication of current or future risk related to groundwater with elevated tritium levels in the vicinity of the SRB facility.

Based on the information collected to date passive remediation of tritium, allowing natural decay and dispersion of the groundwater below the stacks and elsewhere on site is adequate and it would appear that no other measures need to be implemented now or in the future other than maintaining a monitoring program of wells and the mitigation of emissions as SRB has proposed.

8.2 WEATHER MONITORING

As required in condition 10.2 of licence number NSPFOL-13.00/2010[1] we supplied CNSC Staff a detailed procedure for wet deposition and weather monitoring on August 29, 2008[36]. This procedure included the installation of a weather station.

We have addressed CNSC Staff comments[37] regarding the installation of a weather station and have sent a revised proposal[41] to the CNSC for approval. Once in place the weather station will provide quantitative and site specific information for future use in modeling of atmospheric dispersion of tritium and for interpretation of environmental monitoring results.

SRB has taken the opportunity to thoroughly review industry standards regarding not only the placement of the weather station but also the selection of the weather monitoring instruments

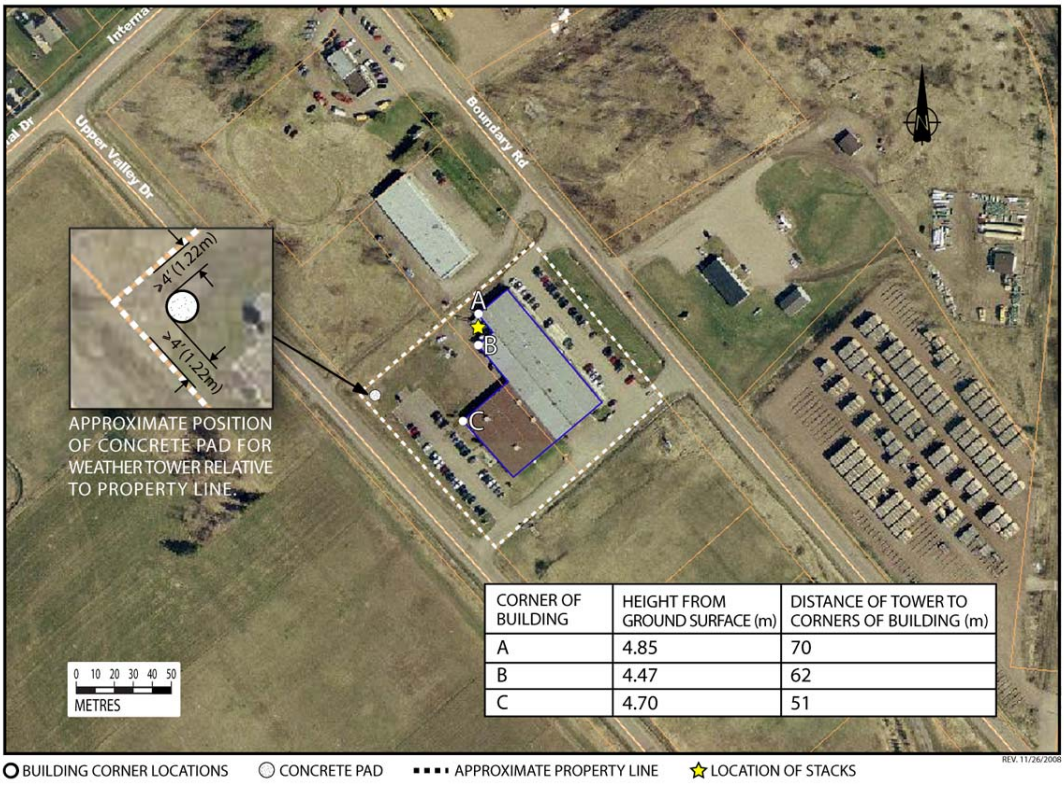
The revised proposal[41] ensures that meteorological data obtained will be representative of conditions affecting the transport and dispersion of pollutants in the “area of interest” as determined by the locations of the sources being modeled.

We also proposed to locate the tower on the SRB property for better control, security and access.

As recommended in the reference documentation we typically focused on the meteorological conditions at the release height of the source.

For wind speed and wind direction measurements, as recommended in the reference documentation we propose to locate the tower at a distance at least ten times of the height of the building.

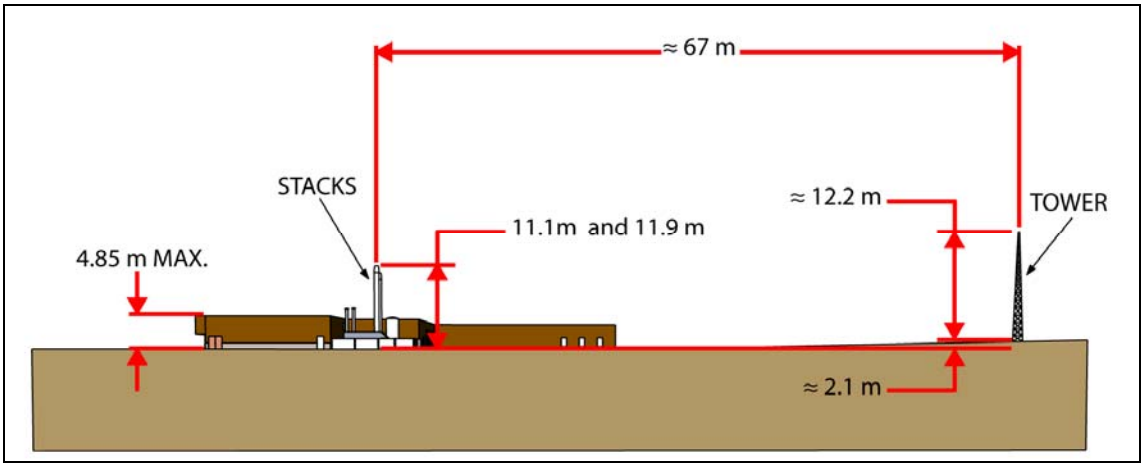
FIGURE 7: PROPOSED LOCATION OF WEATHER STATION TOWER



CORNER OF BUILDING	HEIGHT FROM GROUND SURFACE (m)	DISTANCE OF TOWER TO CORNERS OF BUILDING (m)
A	4.85	70
B	4.47	62
C	4.70	51

As depicted in Figure 8, the proposed tower location is approximately 67 meters from the location of the stacks.

FIGURE 8: PROPOSED LOCATION OF WEATHER STATION TOWER VS LOCATION OF STACKS



Wind instruments will be mounted on a boom at a distance of at least twice the diameter/diagonal of the tower facing the prevailing wind direction as recommended in the reference documentation. Selection of all instruments was reviewed against the recommendations of the reference documentation.

8.3 REVIEW OF HYPOTHETICAL INCIDENT SCENARIOS

In 2008 we also submitted to CNSC Staff a document titled Review Of Hypothetical Incident Scenarios[30].

This document has provided the results of the review of existing incident scenarios for the facility and determined if these are still applicable considering the improvements made to the safety programs and procedures and the equipment and system upgrades that have been implemented over the years of operation.

The review also ensured that the hypothetical incidents identified and analyzed reflect worse case conditions, are credible and can survive scrutiny.

The review also ensured that the parameters and calculations used in defining a dose to a receptor were conservative, reflecting of current accepted values for the industry and reflect conditions that are credible based on existing operational data.

Our review has determined that as a result of improvements and changes implemented at the facility since 2000 that a number of hypothetical accident scenarios relating to fire are no longer credible. More specifically, the hypothetical scenario resulting in the total conflagration of the building due to fire and the hypothetical scenario resulting in the collapse of the mezzanine due to fire are no longer credible as a result of the sprinkler system installation and of the many other fire protection measures implemented at the facility since 2000.

Our review has also determined that as a result of improvements and changes implemented at the facility since 2000 that the release of tritium has been significantly reduced from a number of hypothetical accident scenarios that had been identified prior to 2000. More specifically the hypothetical scenario resulting in the total release of a bulk container which can now result in a release of only 25,000 Curies from 50,000 Ci as a result of the implementation of measures to reduce the amount of tritium purchased. The reduction in possession limit from 11,000 TBq to 6,000 TBq has also reduced the release of tritium associated with the occurrence of a tornado that would result in the collapse of the building. The reduction in possession limit, resulted in a lower number of tritium filled tubes stored on site has also reduced the release of tritium associated with the occurrence of the impact of a large rogue vehicle. In all doses to a member of the public from an incident, making a number of conservative assumptions range between 0.142 and 0.222 mSv, less than the regulatory requirements for a member of the public of 1 mSv.

Responder training, and pre-fire incident plan requirements would ensure that a first responder would make use of a self contained breathing apparatus. Therefore the hypothetical scenario associated with a smoldering fire at the facility would only be expected to result in a dose to a worker rather than to a first responder as defined in assessments performed up to 2000.

A systematic review of our processes and sources has also identified two new credible hypothetical scenarios that would result, under worse conditions including total ventilation failure in doses to our staff ranging between 4.04 to 5.28 mSv, near the action level observed by SRB of 5 mSv per annum but less than the regulatory requirements for a nuclear energy worker of 50 mSv per annum.

It is believed that this review has demonstrated that all credible hypothetical worse incident scenarios have been identified and that sufficient controls are in place to mitigate the dose to a receptor as a result of these hypothetical incidents occurring. The risk from the facility are not large and the chance of a large scale incident are small.

Doses resulting from these incidents occurring are less than those of the regulatory limits for a member of the public and for a Nuclear Energy Worker.

8.4 FIRE PROTECTION

The building where SRB is located is classified as a Group F, Division 3 “Low Hazard Industrial Occupancy”.

In 2008, both the Pembroke Fire Department and Independent Consultant, Mr. Rhéaume Chaput performed fire protection inspections of the SRB facility.

8.4.1 FIRE PROTECTION PROGRAM

Our Fire Protection Program[42] is to ensure the company’s compliance with the National Fire and Building Codes and the National Fire Protection Association, NFPA-801.

The Fire Protection Program is also complemented by a Site Plan, a Fire Hazards Analysis, a Fire Systems Inspection Audit, a Pre-Incident Plan and a Fire Safety Plan.

8.4.2 INSPECTIONS FROM THE PEMBROKE FIRE DEPARTMENT

The last site inspection was performed on May 15, 2008 which resulted in two recommendations and no violations.

The recommendations which pertained to missing ceiling tiles and access panels in the ceiling have since been addressed.

8.4.3 THIRD PARTY INSPECTIONS

Independent consultant, Mr. Rhéaume Chaput performed an inspection of the facility on December 22, 2008 with the main focus ensuring SRB's compliance with the requirements of the 2005 National Building Code, 2005 National Fire Code and of National Fire Protection Association, NFPA-801, 2008 edition.

There are no outstanding recommendations from Mr. Chaput at this time.

8.4.4 STAFF TRAINING

Yearly fire extinguisher training is performed for all staff. Training was last performed on September 23, 2008 by the Pembroke Fire Department.

8.4.5 MAINTENANCE OF THE SPRINKLER SYSTEM

In 2008, quarterly maintenance was also performed on the fire sprinkler system by a third party, also locked valve were checked on a monthly basis by a member of SRB's staff.

The maintenance of the fire alarm control panel was performed by a third party to the requirements of the National Fire Code.

8.4.6 FIRE PROTECTION EQUIPMENT INSPECTIONS

In 2008 inspections of the emergency lighting and fire extinguishers, have been performed monthly.

8.5 EMERGENCY PREPAREDNESS

In 2008, a new Emergency Plan[33] consistent with the requirements of CNSC Regulatory Guide G-225, "Emergency Planning at Class I Nuclear Facilities and Uranium Mines and Mills" was also submitted for review and approved by the CNSC Staff[34].

SRB Technologies (Canada) Inc. has various components to deal with emergency situations with tritium incidents and fire scenarios which are described in the SRB document, Emergency Plan[33].

In conjunction with the Pembroke Fire Department one emergency drill was performed during the year on September 23, 2008. SRB staff members were observed as they rapidly but carefully evacuated the building and assembled in the marshalling area.

There were no recommendations from the Fire Department other than performing drills more frequently than once a year.

8.6 QUALITY ASSURANCE

In 2008 the system previously implemented in 2007 continued to ensure that results of various assessments are raised in a corrective or preventive action and subjected to a root cause analysis controlled by the Quality Department.

Over the course of 2008 a total of 23 non-conformances were raised regarding various aspects of the operations. By the end of 2008 16 of these non-conformances have been addressed in full with the other 7 expected to be addressed by the end of 2009.

Senior Management's continuous support of the Quality staff continued to have a positive impact through staff objectively identifying areas needing improvement through the use of corrective actions and opportunity for improvements.

8.6.1 AUDITS

The stringent audit plan developed by the Quality Manager for 2008 to audit all activities associated with developing, managing and implementing all company safety programs has been followed with the exception of one audit which was not completed as scheduled, for which a corrective action was raised and is currently being addressed. A total of nineteen formal internal audits were performed under this audit plan in 2008 on various departments and pertinent programs and procedures in place. These audits resulted in identifying eight non-conformances and seventeen opportunities for improvement.

An external audit of our many aspects of our operations was also performed by our ISO 9001 registrar BSI Management System on November 18, 2008 which resulted in one non-conformance and seven opportunities for improvement.

8.6.2 CHANGES IN QUALITY ASSURANCE DOCUMENTS

In 2008 we revised our Quality Manual[26] and associated second tier procedures to include more detail to further describe activities, procedures and controls that are currently in place at the facility to address CNSC Staff comments[27].

8.6.3 RESULTS OF LSC QA PROGRAM

The LSC-QA program performs an "instrument performance report" against National Institute of Standards and Technology (NIST) traceable standards.

In addition when any set of samples is analyzed a reference standard check is performed where a dedicated reference standard is analyzed as part of each set against a +/-10% acceptability criteria.

Typical "instrument performance report" and "reference standard check" plot are included in **Appendix S**. The reports show that the liquid scintillation counter performed within the specified criteria.

8.7 RESEARCH AND DEVELOPMENT

During 2008 SRB has been continuously performing research and development activities with respect to studying effects from emissions on the environment and groundwater. An overview of these efforts have been provided in section 6.2.1 and 8.1 of this report. Findings on groundwater are summarized in a Comprehensive Report[39] which was issued in January 2008.

In 2008 we also performed research to identify the best method of effectively monitoring wet deposition of tritium as outlined on sections 5.1.8 and 5.1.9 of this report.

In 2008 we also performed research to identify the best method of effectively monitoring weather parameters as outlined on section 8.2 of this report.

There have been no product research and development initiatives taken in 2008.

8.8 WASTE MANAGEMENT

Waste management activities are described in section 7 of this report.

8.9 TRITIUM MITIGATION

The most significant tritium emissions from the facility arise from the processing of tritium. As a result of the exceedance of the action level on one occasion as a result of a faulty purging valve, SRB has replaced the purging valves on all its operating rigs in 2008 with a two valve system. Not only does a second valve add another layer of protection but each valve are of a type that is less likely to fail than the type of valve that use to be in the system.

SRB continues to be in communication with other tritium processing facilities in 2008 and discussed with other possible methods of further reducing emissions.

In 2008, SRB focused on further reducing remaining sources of tritium emissions resulting from the processing of tritium by performing increased one-on-one training in addition to the extensive training provided before the resumption of operation.

8.10 TRAINING

Extensive training was performed before resumption of operation. The Plan for Resumption document[43] dated December 31, 2007 was to define the measures that would be taken before resumption of operations should an operating licence be granted.

These measures included refresher training for staff that will be involved with tritium processing activities and a requirement to formally record the activities of the refresher training outlined in the Plan for Resumption.

The Plan for Resumption[43] required that the President authorize any individual performing training and any individual being given the training.

Eight individuals were provided refresher training. The Rig Room was the only department directly affected by issuance of the operating Licence and the use of only three main processes would resume with a number of support procedures performed in conjunction with these three processes.

One-on-one training using oral assessments was the primary form of standard training that was defined in the Plan for Resumption[43] to determine whether the person understands the task.

The Plan for Resumption[43] also required that after the training on a new procedure has been completed, spot checks of the trainee be performed to ensure that all tasks were being performed to procedure. These spot checks were performed by an individual at a higher level of authority or a designated individual.

The Plan for Resumption[43] required that records be maintained for all staff including the appropriate signatures and approvals, for each step of the refresher training.

Activities of the refresher training that were specifically performed were as follows:

1) Each of the trainees including the President carefully read each procedure provided.
2) Once procedures were read each individual involved signed a record in attestation.
3) Staff who may operate or supervise the operation of the equipment, the Rig Room Supervisor, Human Protection Coordinator, Environment Protection Coordinator and General Manager familiarized themselves with the filling rig, bulk splitter and laser cutting machine, including each system of equipment, valves and switches.
4) Once a familiarization was complete each individual involved signed a record in attestation.
5) A meeting took place between the President and all trainees to discuss relevant procedures, discussions included:
    - Ensuring that appropriate staff understand the actions that they have to perform under each procedure.
    - Ensuring that appropriate staff understands the impact resulting for improperly performing or not performing any action required under the procedure.
    - Possible issues that may arise as a result of resumption of operation.
6) Once this meeting was complete each individual involved signed a record in attestation.
7) President and General Manager used closing meeting findings to develop any additional measure that needed to be implemented to address any issues that may arise as a result of resumption of the relevant procedures. A staff memo was produced to inform other staff of any additional measures taken.

All staff last received Radiation Protection Training as part of the ongoing employee-training program on December 20, 2007. The training included information with respect to natural radiation exposure, anticipated health effects from radiation exposure, tritium, proper handling of tritium throughout the facility, emissions monitoring, environmental monitoring, WHMIS introduction, fire safety, licensing, overview of other licensees and facilities, public relations, emergency and safety features within the facility and open dialogue with a question and answer session.

A written test was provided to all 15 participants. The pass criterion for the test is 75%. Results averaged 94.0% with no marks below 75%. Any wrong answer on the test was also discussed in detail as a group with all employees and with employees individually.

No new employees were hired in 2008 and therefore no indoctrination-training had to be performed. Only one employee who had previously worked at the facility was re-hired and provided in-depth refresher training.

As discussed in section 8.4.4 fire extinguisher training was performed for all staff on September 23, 2008 by the Pembroke Fire Department.

Part VI of the TDG regulations states that the certificate of training is valid for 3 years for surface transport and 2 years for transport by aircraft. No training was performed in 2008 as training was provided to two employees in 2006.

9.0 COMPLIANCE WITH OTHER REGULATIONS

This section of the report will provide information on compliance with other federal and / or provincial Regulations.

9.1 INTERNATIONAL

For the purpose of packaging and offering for transport, shipments of product designated as dangerous goods, SRB must comply with the requirements of the Transport Canada Dangerous Goods Act and Regulations, the US code of Federal Regulations 49, Transportation, IAEA Safety Standard Series, Regulations for the Safe Transport of Radioactive Material, 1996 Ed. (Revised), and IATA Dangerous Goods Regulations, most current edition. Staff members involved with the packaging, offering for transport and receipt of dangerous goods are given training in accordance with the applicable regulations and are issued certificates by the employer.

9.2 PROVINCIAL

In 2008 SRB continued to make releases of hazardous substances to the air under a Certificate of Approval (Air), Number 5310-4NJQE issued by the Ontario Ministry of the Environment in accordance with Section 9 of the Ontario Environment Protection Act.

10.0 NON-RADIOLOGICAL HEALTH AND SAFETY ACTIVITIES

This section of the report will provide a summary of non-radiological health and safety activities, including information on minor incidents and lost time incidents.

10.1 JURISDICTION

As of January 14, 2008, SRB received confirmation from Mr. Gaston Martin from Human Resources and Social Development Canada (HRSDC) that SRB is subject to Federal Jurisdiction thus, Part II of the Canada Labour Code (Occupational Health and Safety).

10.2 INDUSTRIAL HEALTH AND SAFETY PROGRAM

Being under federal jurisdiction in 2008, the industrial Health and Safety Program for the SRB facility was compliant with the requirements of the Canada Labour Code Part II (Occupational Health and Safety) and its regulations.

10.3 JOINT HEALTH AND SAFETY COMMITTEE

In accordance with Section 135(1) of the Canada Labour Code Part II (CLC Part II) SRB Technologies (Canada) Inc. maintains a Joint Work Place Health and Safety Committee.

The committee is comprised of two representatives on behalf of the workers and one representative on behalf of the employer. The representatives meet once a month or no less than 9 times per year as required under section 135(10) of the CLC Part II.

10.4 VISITS FROM HRSDC

During 2008 there were 2 facility visits by a Health and Safety Officer from HRSDC. On March 26, 2008 and June 19, 2008.

An Assurance of Voluntary Compliance (AVC) was issued during the June 19, 2008 visit which was promptly addressed and closed.

10.5 MINOR INCIDENTS AND LOST TIME INCIDENTS

During 2008 there were 0 minor incidents reported to the SRB Joint Health and Safety Committee. No individuals were taken to the outpatient department at the local hospital and no incident resulted in lost time.

TABLE 19: INCIDENT SUMMARY

Description	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.
Minor accidents involving cuts or burns:	0	0	0	0
Minor injuries such as pulled muscles, etc.	0	0	0	0
Incidents whereby persons were sent to outpatients	0	0	0	0
Lost time incident (days lost)	0	0	0	0

11.0 PUBLIC INFORMATION INITIATIVES

This section of the report will provide information public information initiatives taken in 2008.

11.1 WEBSITE

The website continues to be frequently updated to provide current information on the facility.

11.2 PUBLIC

At our facility on April 14, 2008 SRB met with Ms. Kelly O'Grady who is a member of a local interest group called The First Six Years (formerly known as Lead Environmental Awareness and Detection) and also a member of the Concerned Citizens of Renfrew County & Area (CCRC) or (CCRCA).

Ms. O'Grady asked that the results in the quarterly report recently provided be explained. SRB President Mr. Stephane Levesque and SRB Environment Protection Coordinator Ms. Katie Belec explained the results and general observations in the report to Ms. O'Grady including:

1) Passive air sampler results and wind effects
2) Well results
3) Receiving water monitoring results
4) Sewage monitoring results
5) Milk results.
6) Gaseous and liquid emissions

Ms. O'Grady sought confirmation that SRB would continue to use a third party to conduct Environmental Monitoring and sought clarification on how the activities were conducted.

Ms. O'Grady also asked for a description of how gaseous and liquid effluent monitoring is conducted, calculated and tabulated.

Based on previous information provided by SRB, Ms. O'Grady asked several questions on the shipments of radioactive waste and the shipments of the expired light sources made by SRB. Ms. O'Grady later requested additional supporting information which was provided and copied to CNSC Staff.

Ms. O'Grady also provided comments on our pamphlet stating that some of the information within the pamphlet was misleading. Mr. Levesque explained that the information in question was verified and taken from reputed third party references (International Agency for Research on Cancer, Health Physics Society and International Atomic Energy Agency (IAEA)). On the offer of SRB, Ms. O'Grady accepted to review and comment on future pamphlets.

On May 15, 2008 SRB Environment Protection Coordinator Ms. Katie Belec spent some time with Ms. O'Grady and another member of the public Ms. Beatrice Biederman to demonstrate the well purging and sampling process. A number of questions were asked by Ms. Biederman and O'Grady and answers were provided by Ms. Belec.

As part of the current licence we sample the water in a number of wells belonging to the public every 4 months for tritium concentration. On a yearly basis we also sample produce from gardens belonging to members of the public for tritium concentration. We promptly provide each member of the public with a report of the 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.

We also continue to address inquiries from members of the public and provide information accordingly.

11.3 CITY OF PEMBROKE

On March 4, 2008 SRB made a presentation to an open session of City Council regarding SRB's application to resume tritium processing. SRB representatives answered all the questions.

On April 15, 2008 SRB attended a Pembroke City Council Meeting to answer questions from members of Pembroke City Council resulting from a presentation made to Council by Ms. O'Grady. Questions were primarily centered around the models used for calculating dose to the public from exposure to tritium and the agreement between the City and SRB to perform surface soil sampling at all new developments within the vicinity of the SRB Facility.

We continue to regularly provide the Mayor and City of Pembroke officials information on licensing actions or other issues regarding SRB, tritium, relevant media coverage, groundwater study results and sewage measurements. All information is followed by a phone call to ensure clear understanding.

11.4 FEDERAL MEMBER OF PARLIAMENT

We regularly provide our local Member of Parliament and staff with information on licensing actions or other issues regarding SRB, tritium and relevant media coverage. All information is followed up by a phone call to ensure that all information supplied was clearly understood.

11.5 NEIGHBOURS

We have initiated a number of meetings and discussions with our landlord and neighbours to provide them information on our operation. Information was mostly focused on groundwater results and resumption of operation.

11.6 MEDIA

The local television and newspaper covered Hearing Day One, Hearing Day Two and the release of the Decision. SRB answered questions from the media and provided statements which resulted in balanced media coverage.

The local newspaper also covered the April 15, 2008 City Council meeting and the presentation by Ms. O'Grady. As a result, SRB also answered questions from the media and provided statements which resulted in balanced media coverage.

11.7 PRESS RELEASES

As the media have proven to be the most effective way of communicating with the public, we realized that SRB had previously not proactively informed the media of licensing actions or other issues regarding the facility.

As a result SRB developed a list of local media contacts who are provided press releases regarding licensing actions or other issues regarding the facility.

Press releases and detailed supporting information is also provided to the City of Pembroke, the Federal Member of Parliament and to members of the public who have expressed concerns regarding our operations at past CNSC licence hearings.

In 2008 three such press releases have been issued to the media:

1) June 26, 2008: SRB granted 2 year processing licence by the CNSC
2) April 15, 2008: SRB has agreed with the City to do soil sampling
3) February 1, 2008: SRB applies to the CNSC for a processing licence

The press releases have resulted in much more balanced and positive media coverage and have served well in informing the public.

Press releases provide a contact person to provide media the opportunity to ask questions or seek clarification. SRB addresses inquiries more promptly than in the past while ensuring that all information supplied is clearly understood.

11.8 PAMPHLET

An updated pamphlet has been produced, which includes 2006 dose data which more closely reflects anticipated effects from SRB as a result of possible resumption of operation. The company's telephone number and e-mail address are clearly marked on each pamphlet.

The pamphlet is available on the company website and was mass distributed by mail to all 8,800 residences and businesses in Pembroke in April 2008 shortly after Hearing Day One. To date, other than Ms. O'Grady's comments, no other negative comments were received.

11.9 HEARINGS

As part of the licence hearings a total of 38 submissions were received from the public.

20 submissions were received in support of SRB's application seeking authorization to resume processing and use of tritium.

A total of 18 submissions, for the most part, are from individuals associated with local interest groups (Concerned Citizens of Renfrew County and the First 6 Years) who either expressed concerns or are opposed to a possible resumption of operations. This is a reduction of 62% from the number in 2006.

Of the 18 submissions, 12 had also opposed the renewal of SRB's licence in 2006, and 6 are from individuals who had not previously expressed any concerns to SRB.

On February 6, 2008 we sent these 12 intervenors a copy of our application[3] and a postage-paid envelope for providing their comments. On March 10, 2008 we sent these 12 intervenors a copy of our Written Submission[5] for Hearing Day One and a postage-paid envelope for providing their comments. We received comments back from 3 of these individuals which we have responded to, and have continued to provide, in a timely manner, all the information that has been requested by these individuals.

Following receipt of the submissions from the public for Hearing Day Two, we have written to all 18 members of the public who expressed concerns or were opposed to a possible resumption of operations in an attempt to address their concerns. We will continue to provide these individuals information on the operations of the company.

11.10 PLANT TOURS

Over the years plant tours have proven to be a useful tool for SRB to reach the public.

On August 20, 2008 SRB was proud to have provided a tour of its facilities to President Binder and other Members of the Canadian Nuclear Safety Commission.

On July 28, 2008 SRB had the pleasure to have provided a tour of its facilities to our local Provincial Member of Parliament Mr. John Yakabuski.

On May 8, 2008 SRB had the opportunity have provided a tour of its facilities to Mr. Anthony Corriveau founder of Stream Function Inc.

12.0 FORECAST

This section will provide information on our forecast for the coming years.

12.1 VISION, MISSION, GOALS, VALUES AND POLICY

The forecast in the coming years will be to follow our the vision, mission, goals, values and policy that we have developed in 2007 and confirmed in 2008.

This will ensure a proactive approach to safety and protection of the environment and the public while achieving public acceptance.

12.2 OBJECTIVES AND TARGETS

Under our Environment Management System we have set our first goals and objectives. Senior Management will continue to urge the operations to set these sort of measurable performance targets and to support staff in achieving these objectives and targets.

12.3 GROUNDWATER

Continue to monitor and analyze our network of wells to ensure the continued protection of the public.

12.4 PUBLIC ACCEPTANCE

In years to come SRB intends on continuing the work it has begun in achieving public acceptance and trust of local interest groups. This will be primarily achieved by continuing to provide information regarding our operations and by continuing to hold face to face meetings. SRB also intends to perform community surveys to get a better understanding of the community's concerns.

12.5 DRL

SRB and its consultant ECOMETRIX INC. continue to revise the DRL[28] document to address minor points of clarification reported in a letter[29] from CNSC Staff dated February 28, 2008. We expect to provide a revision of this document in the Spring of 2009.

12.6 ENVIRONMENTAL MONITORING PROGRAM

SRB is committed to the continuous improvement of the Environmental Monitoring Program (EMP)[38] to ensure that the EMP[38] provides appropriate and adequate information for calculating the dose to the public. This will require that the results continue to be carefully analyzed, interpreted and understood. This will also be facilitated by data resulting from the installation of a weather monitoring station in 2009.

12.7 CONTINUOUS IMPROVEMENT

We continue the improvement process achieved in previous years through continuous self-assessment and regular review of safety programs and procedures. All staff is encouraged to remain objective and maintain a questionable attitude while performing these activities.

12.8 CHANGES IN QUALITY ASSURANCE DOCUMENTS

In the coming year, as SRB is certified to ISO 9001:2000 Standard, for which recently there has been a change in version; ISO 9001:2008, and with the intent to maintain ISO certification, the Quality Manager will review the transition requirements that may apply. The changes to the ISO Standard itself are considered to be small and fairly insignificant with few changes being required to most organizations management systems. Any changes that may be required for this transition would be drafted in a revision update of the Quality Manual[26] and submitted to CNSC Staff for approval.

12.9 AUDIT PLAN

Set and adhere to a stringent audit plan developed by the Quality Manager for 2009 to continue to audit all activities associated with developing, managing and implementing all company safety.

12.10 WASTE MANAGEMENT PROGRAM

SRB's Waste Management Program[39] was last fully revised October 24, 2007. CNSC staff have reviewed the program and concluded that the program is satisfactory and that its implementation would not pose an unreasonable risk to the health and safety of persons or the environment. A few items still require revision, we expect to provide a revision of this document in the Summer of 2009.

12.11 FIRE PROTECTION PROGRAM

The Fire Protection Program[42] is complemented by a Site Plan, a Fire Hazards Analysis, a Fire Systems Inspection Audit, a Pre-Incident Plan and a Fire Safety Plan.

In 2009 we plan on revising the Fire Protection Program[42] with the main intent to streamline the document and to ensure latest standards are reflected.

REFERENCES

[1] CANADIAN NUCLEAR SAFETY COMMISSION, “Nuclear Substance Processing Facility Operating Licence”, NSPFOL-13.00/2010, June 26, 2008.

[2] CANADIAN NUCLEAR SAFETY COMMISSION, “Nuclear Substance Processing Facility Possession Licence”, NSPFPL-13.01/2008, May 16, 2007.

[3] SRB TECHNOLOGIES (CANADA) INC., “Application for Licence Amendment of Class 1B Nuclear Facility”, December 12, 2007.

[4] CANADIAN NUCLEAR SAFETY COMMISSION, “Records of Proceedings, Including Reasons for Decision Application for the Renewal of Class IB Operating Licence for the Gaseous Tritium Light Source Facility in Pembroke, Ontario”, January 31, 2007.

[5] SRB TECHNOLOGIES (CANADA) INC., “Written Submission For Hearing Day One”, March 3, 2008.

[6] SRB TECHNOLOGIES (CANADA) INC., “Written Submission For Hearing Day Two”, May 12, 2008.

[7] SRB TECHNOLOGIES (CANADA) INC., “Supplemental Written Submission For Hearing Day Two”, June 3, 2008.

[8] CANADIAN NUCLEAR SAFETY COMMISSION, “Records of Proceedings, Including Reasons for Decision for Application To Resume the Processing and Use of Tritium at the Gaseous Tritium Light Source Facility in Pembroke, Ontario”, June 26, 2008.

[9] SRB TECHNOLOGIES (CANADA) INC., “Maintenance Program”, September 29, 2006.

[10] SRB TECHNOLOGIES (CANADA) INC., Operational procedure, “ENG-005 Plant Maintenance”, December 13, 2005.

[11] SRB TECHNOLOGIES (CANADA) INC., Operational procedure, “ENG-014 Effective stack height”, October 28, 2008.

[12] SRB TECHNOLOGIES (CANADA) INC., “Radiation Safety Program”, Revision VIII, May 16, 2008.

[13] SRB TECHNOLOGIES (CANADA) INC., Operational procedure, “ENG-015 Chart recorder”, February 15, 2008.

[14] SRB TECHNOLOGIES (CANADA) INC., “Release Limit Rationale”, December 12, 2007.

[15] SRB TECHNOLOGIES (CANADA) INC., “Licence limits, action levels and administrative limits under CNSC Licence NSPFPL-13.01/2008”, Revision A, May 30, 2007.

[16] SRB TECHNOLOGIES (CANADA) INC., “Licence limits, action levels and administrative limits”, Revision C, May 16, 2008.

[17] SRB TECHNOLOGIES (CANADA) INC. letter, Stephane Levesque to Ann Erdman, “RE: Exceedance In Weekly Stack Emission Action Levels”, October 21, 2008.

[18] SRB TECHNOLOGIES (CANADA) INC., “Final Written Report In Accordance With Section 6.3 Of Licence NSPFOL-13.00/2010 Regarding Exceedance Of Action Level”, November 18, 2008.

[19] SRB TECHNOLOGIES (CANADA) INC., “EMS Objectives and Targets”, Revision A, October 30, 2008.

[20] SRB TECHNOLOGIES (CANADA) INC., “Organizational Study”, July 31, 2007.

[21] SRB TECHNOLOGIES (CANADA) INC., “Supplemental to Organizational Study”, December 31, 2007.

[22] SRB TECHNOLOGIES (CANADA) INC., “Environment Management System”, Revision D, May 27, 2008.

[23] SRB TECHNOLOGIES (CANADA) INC., “EMS Significant Environmental Aspects”, Revision A, October 29, 2008.

[24] SRB TECHNOLOGIES (CANADA) INC., “Contractor Management Program”, Revision C, April 25, 2008.

[25] CNSC Staff letter, Ann Erdman to Stephane Levesque, “Organizational Study”, February 19, 2008.

[26] SRB TECHNOLOGIES (CANADA) INC., “Quality Manual”, Revision G, May 16, 2008.

[27] CNSC Staff letter, Ann Erdman to Stephane Levesque, “Review of Quality Manual Rev. F, November 20, 2007”, February 14, 2008.

[28] ECOMETRIX INC., “Report on the Derived Release Limits for the SRB Technologies Facility in Pembroke – 2006”, September 2006.

[29] CNSC Staff letter, Ann Erdman to Stephane Levesque, “Derived Release Limits (DRLs)”, February 28, 2008.

[30] SRB TECHNOLOGIES (CANADA) INC., “Review Of Hypothetical Incident Scenarios”, February 22, 2008.

[31] SRB TECHNOLOGIES (CANADA) INC., “Health & Safety, Health & Safety Policy & Procedures”, February 2, 2008.

[32] SRB TECHNOLOGIES (CANADA) INC., “Hazard Prevention Program”, December 1, 2008.

[33] SRB TECHNOLOGIES (CANADA) INC., “Emergency Plan”, Revision 2, September 15, 2008.

[34] CNSC Staff e-mail, Ann Erdman to Stephane Levesque, “SRBT Emergency Plan”, September 30, 2008.

[35] SRB TECHNOLOGIES (CANADA) INC., “Investigation Report of Bioassay Result”, December 22, 2008.

[36] SRB TECHNOLOGIES (CANADA) INC. letter, Stephane Levesque to Lucie Desaulniers, “Proposed detailed procedure for wet deposition and weather monitoring”, August 29, 2008.

[37] CNSC Staff letter, Henry Rabski to Stephane Levesque, “SRB Technologies Procedure For Wet Deposition and Weather Monitoring”, September 25, 2008.

[38] SRB TECHNOLOGIES (CANADA) INC., “Environment Monitoring Program Document”, February 28, 2006.

[39] SRB TECHNOLOGIES (CANADA) INC., “Waste Management Program”, October 24, 2007.

[40] ECOMETRIX INC., “Comprehensive Report – Groundwater Studies at the SRB Technologies facility, Pembroke, ON”, January 2008.

[41] SRB TECHNOLOGIES (CANADA) INC. letter, Stephane Levesque to Ann Erdman, “Weather Station”, December 12, 2008.

[42] SRB TECHNOLOGIES (CANADA) INC., “Fire Protection Program”, April 21, 2006.

[43] SRB TECHNOLOGIES (CANADA) INC., “Plan For Resumption”, December 31, 2007.

APPENDIX A

VENTILATION EQUIPMENT MAINTAINED IN 2008

VENTILATION EQUIPMENT MAINTAINED IN 2008

	TYPE	ZONE	LOCATION
1	Heat Recovery unit	1	Mold area/Office
4	Unit heaters	1 & 3	Rig room, Glass shop, Molding area & office
2	A/C wall units	1	Coating room, Glass shop
2	Makeup air units	1 & 2	Coating room, Assembly room
4	Exhaust fans	1 & 2	Coating, Assembly, Glass room, Paint Booth
1	HRV with reheat	2	Assembly room
2	Fan coils	1	Office, Mold area/Office
2	Condenser	1	Mold area/Office
1	Mid efficient gas furnace & central air	1	Stores
1	Mid efficient gas furnace	1	Receiving
1	Bulk stack air handling unit	1	Compound
1	Rig stack air handling unit	1	Compound
2	Rig and Bulk stack air handling unit pitot tubes	1	Compound

APPENDIX B

EQUIPMENT MAINTENANCE INFORMATION FOR 2008

EQUIPMENT MAINTENANCE INFORMATION FOR 2008

2008 Equipment Maintenance Information

Major maintenance carried out in 2008:	None
Quarterly Maintenance Schedule: **Contract:** Kool Temp/ Valley Refrigeration Ltd.	January 31, 2008 April 30, 2008 July 31, 2008 October 31, 2008
Quarterly Maintenance Schedule: **Contract:** Vallley Compressor	March 14, 2008 June 12, 2008 September 10, 2008 December 22, 2008
Monthly maintenance carried out in 2008: **Contract:** Kool Temp/ Valley Refrigeration Ltd.	January 31, 2008 February 29, 2008 March 28, 2008 April 30, 2008 May 30, 2008 June 25, 2008 July 31, 2008 August 29, 2008 September 26, 2008 October 31, 2008 November 26, 2008 December 23, 2008
Report of any weakening or possible major failure of any components:	None

All ventilation systems were maintained in fully operational condition with no major system failures during 2008.
Equipment maintenance was performed under contract with a fully licensed maintenance and TSSA certified local HVAC contract provider.
The contract stipulates quarterly service and maintenance program.
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 with no major equipment failures during 2008.

APPENDIX C

TRITIUM ACTIVITY ON SITE DURING 2008

TRITIUM ACTIVITY ON SITE DURING 2008

Month / 2008	Month-end H-3 Activity On-Site (PBq)	Percent of License Limit (%)
January	3.32	55.33
February	3.28	54.67
March	3.29	54.83
April	3.24	54.00
May	3.26	54.33
June	3.17	52.67
July	3.16	52.67
August	3.17	52.67
September	4.19	69.83
October	3.75	62.50
November	3.36	56.00
December	3.48	58.00
2008 Monthly Average	***3.14***	***56.46***

Note: Possession limit is 6.00 PBq.

APPENDIX D

SHIPMENTS CONTAINING RADIOACTIVE MATERIAL FOR 2008

SHIPMENTS CONTAINING RADIOACTIVE MATERIAL FOR 2008

Month / 2008	**Number of Shipments**
January	19
February	19
March	16
April	29
May	14
June	19
July	15
August	13
September	22
October	27
November	15
December	23
Total Shipments	***231***
2008 Monthly Average:	***19.25***

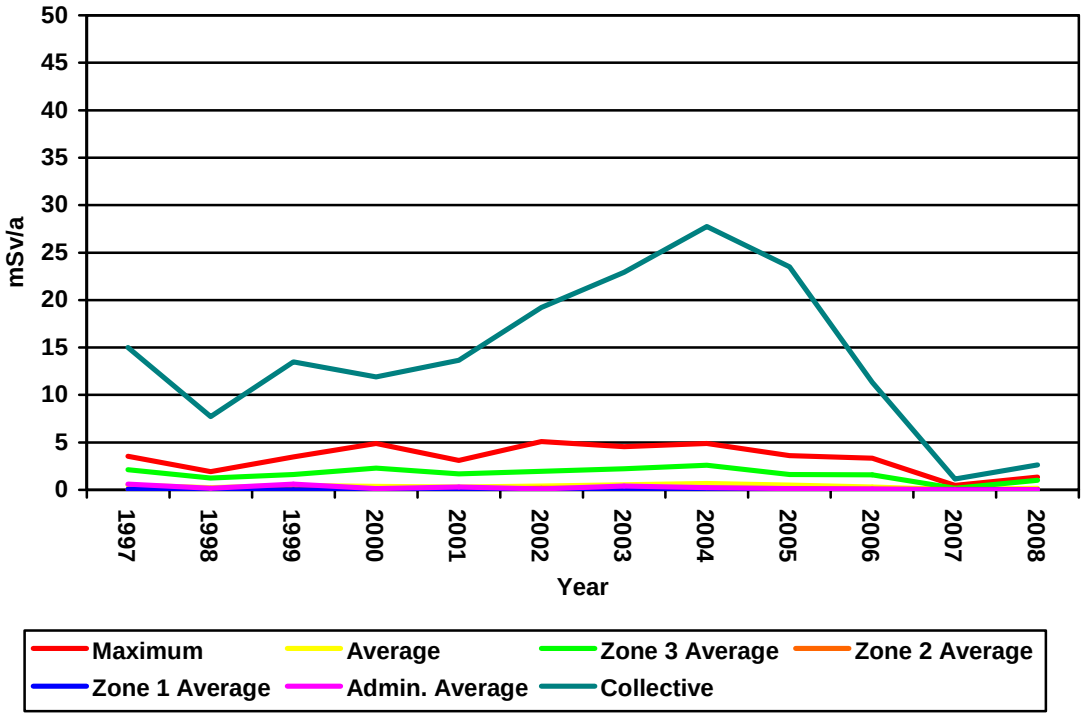
APPENDIX E

RADIOLOGICAL OCCUPATIONAL ANNUAL DOSE DATA FOR 2008

SRBT Radiological Annual Dose Data (1997 – 2008)

Annual Dose (mSv/a)	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	Ave.
Maximum Dose	3.55	1.91	3.48	4.89	3.11	5.08	4.54	4.90	3.61	3.35	0.48	1.34	3.35
Average	0.52	0.24	0.46	0.38	0.29	0.40	0.55	0.67	0.50	0.30	0.04	0.16	0.38
Average Zone 3	2.12	1.26	1.62	2.30	1.70	1.94	2.22	2.58	1.61	1.57	0.17	1.00	1.67
AverageZone 2	0.07	0.12	0.11	0.15	0.08	0.18	0.16	0.18	0.12	0.07	0.07	0.02	0.11
Average Zone 1	0.08	<0.01	<0.01	<0.01	0.01	0.01	0.01	0.02	<0.01	<0.01	0.00	0.03	0.02
Average Admin.	0.61	0.17	0.60	0.12	0.31	0.11	0.39	0.24	0.12	0.09	<0.01	0.05	0.24
Collective Dose	15.01	7.72	13.47	11.91	13.65	19.21	22.91	27.75	23.50	11.34	1.40	2.62	14.20
Dosimetry Range													
0.00 – 0.99 mSv/a	23	29	28	33	43	43	39	30	39	34	32	15	32
1.00 – 1.99 mSv/a	4	3	4	1	4	2	0	5	3	3	0	1	3
2.00 – 2.99 mSv/a	1	0	0	1	1	2	3	2	3	0	0	0	1
3.00 – 3.99 mSv/a	1	0	2	1	1	0	2	2	2	1	0	0	1
4.00 – 4.99 mSv/a	0	0	0	1	0	0	1	2	0	0	0	0	0
> 5.00 mSv/a	0	0	0	0	0	1	0	0	0	0	0	0	0
> 50.00 mSv/a	0	0	0	0	0	0	0	0	0	0	0	0	0
Staff Members	29	32	34	37	49	48	45	41	47	38	32	16	37

SRBT Radiological Annual Dose Data (1997 – 2008)



APPENDIX F

SWIPE MONITORING RESULTS FOR 2008

SWIPE RESULTS FOR ZONE FOR 2008

ZONE	TOTAL SWIPES	PASS	FAIL	PASS %
1	788	766	22	97.21%
2	2387	2359	28	98.83%
3	3790	2885	905	76.12%

APPENDIX G

PASSIVE AIR SAMPLER DATA FOR 2008

2008 Environment Monitoring Program
Passive Air Sampling System

Sampler No.	Sampler ID	Location	Dist. to SRBT	(Bq/m3) Jan (Jan16 - Feb14)	Feb (Feb14 - Mar17)	Mar (Mar17-Apr10)	Apr (Apr10-May16)	May (May16-June11)	Jun (June11-July11)	Jul (July11-Aug6)	Aug (Aug6-Sept3)	Sep (Sept3-Oct1)	Oct (Oct1-Nov3)	Nov (Nov3-Dec2)	Dec (Dec2-Jan6)	Average (Bq/m3)
1	N250	N 45º 48.486' W 077º 07.092' Elev. 137m	322m	0.24	0.41	0.30	0.74	0.94	1.37	1.50	1.80	3.44	2.27	2.08	2.11	**1.43**
2	N500	N 45º 48.572' W 077º 07.008' Elev. 134m	493m	0.27	0.59	0.35	0.45	0.48	0.96	1.00	0.72	1.61	1.37	1.09	0.99	**0.82**
3	N1000	N 45º 48.869' W 077º 06.997' Elev. 135m	1040m	0.16	0.24	0.34	0.24	0.28	0.51	0.49	0.52	0.80	0.61	0.35	0.47	**0.42**
4 (PAS #4)	NW250	N 45º 48.412' W 077º 07.189' Elev. 137m	222m	0.58	0.60	1.20	1.57	1.87	1.72	3.60	2.22	8.91	3.66	4.94	2.89	**2.81**
5	NW500	N 45º 48.577' W 077º 07.382' Elev. 134m	615m	0.25	0.31	0.41	0.54	0.69	0.80	1.50	1.21	4.32	1.52	1.99	1.52	**1.26**
6 (PAS # 8)	NW1000	N 45º 48.754' W 077º 07.599' Elev. 130m	1050m	0.16	0.24	0.34	0.34	0.37	0.41	0.73	0.56	3.41	0.90	1.39	0.81	**0.81**
7	NW2000	N 45º 49.141' W 077º 08.090' Elev. 139m	2000m	0.16	0.24	0.34	0.37	0.33	0.37	0.47	0.61	1.62	0.91	0.67	0.54	**0.55**
8	W250	N 45º 48.300' W 077º 07.323' Elev. 138m	297m	0.53	0.52	0.39	0.58	0.82	0.76	3.20	0.94	0.98	0.55	2.92	0.85	**1.09**
9	W500	N 45º 48.288' W 077º 07.393' Elev. 137m	389m	0.34	0.36	0.37	0.31	0.56	0.40	1.90	0.65	0.54	0.36	1.52	0.66	**0.66**
10	W1000	N 45º 48.306' W 077º 07.630' Elev. 134m	691m	0.57	0.54	0.35	0.29	0.35	0.42	0.46	0.41	0.51	0.27	1.33	0.51	**0.50**
11	SW250	N 45º 48.247' W 077º 07.206' Elev. 140m	183m	0.76	0.42	0.34	0.41	0.44	0.50	1.10	0.55	0.71	0.52	0.90	0.69	**0.61**
12	SW500	N 45º 47.896' W 077º 07.307' Elev. 148m	839m	0.47	0.42	0.35	0.21	0.86	0.24	0.31	0.41	0.26	0.39	0.31	0.38	**0.38**
13	SW1000	N 45º 47.599' W 077º 07.543' Elev. 149m	1470m	0.16	0.24	0.34	0.19	0.27	0.24	0.31	0.27	0.29	0.24	0.28	0.22	**0.25**
14	SW2000	N 45º 47.408' W 077º 07.866' Elev. 155m	2110m	0.16	0.24	0.35	0.20	0.27	0.24	0.31	0.27	0.26	0.24	0.28	0.23	**0.25**
15	S250	N 45º 48.129' W 077º 07.014' Elev. 131m	356m	0.16	0.71	0.51	0.61	0.79	0.88	0.99	1.86	2.30	1.99	2.33	1.24	**1.20**
16	S500	N 45º 48.029' W 077º 07.110' Elev. 143m	532m	0.16	0.24	0.34	0.25	0.35	0.36	0.41	0.52	0.85	0.54	0.51	0.39	**0.41**
17 (PAS # 12)	S1000	N 45º 46.466' W 077º 07.441' Elev. 158m	1450m	0.16	0.24	0.30	0.19	0.27	0.24	0.31	0.27	0.26	0.24	0.28	0.22	**0.25**
18	SE250	N 45º 48.189' W 077º 06.874' Elev. 132m	365m	0.65	1.12	2.00	1.24	1.78	2.74	6.10	4.83	2.01	3.57	1.94	4.42	**2.70**
19	SE500	N 45º 48.108' W 077º 06.783' Elev. 123m	554m	0.23	0.81	0.80	0.68	0.91	1.54	2.90	2.40	0.99	1.44	0.86	1.72	**1.27**
20	SE1000	N 45º 47.894' W 077º 06.501' Elev. 120m	1090m	0.29	0.34	0.34	0.38	0.44	0.55	0.66	0.83	0.35	0.52	0.28	0.68	**0.47**
21	SE2000	N 45º 47.505' W 077º 05.978' Elev. 137m	2080m	0.16	0.24	0.34	0.22	0.27	0.24	0.31	0.36	0.26	0.27	0.28	0.23	**0.27**
22	E250	N 45º 48.234' W 077º 06.807' Elev. 131m	401m	0.59	0.53	0.64	0.50	1.31	1.25	3.50	2.95	3.47	6.64	3.16	2.74	**2.27**
23	E500	N 45º 48.333' W 077º 06.693' Elev. 132m	520m	0.19	0.25	0.34	0.29	1.05	1.30	1.50	1.20	1.64	1.62	0.61	0.96	**0.91**
24	E1000	N 45º 48.303' W 077º 06.260' Elev. 143m	1080m	0.16	0.24	0.35	0.20	0.58	0.69	0.67	0.88	0.83	0.93	0.43	0.37	**0.53**
25	NE250	N 45º 48.371' W 077º 06.964' Elev. 124m	198m	1.22	0.79	0.62	0.68	2.44	3.97	4.80	2.42	24.54	4.19	1.75	2.25	**4.14**
26	NE500	N 45º 48.421' W 077º 06.732' Elev. 131m	508m	0.22	0.34	0.34	0.23	0.93	1.46	1.70	1.06	1.99	1.48	0.82	0.54	**0.93**
27	NE1000	N 45º 48.683' W 077º 06.441' Elev. 148m	1100m	0.16	0.24	0.35	0.28	0.59	0.67	0.58	0.66	1.11	0.68	0.35	0.38	**0.50**
28	NE2000	N 45º 49.116' W 077º 05.843' Elev. 156m	2200m	0.12	0.23	0.35	0.21	0.41	0.40	0.38	0.46	0.77	0.39	0.28	0.28	**0.36**
Pre-Sample Points																
BOC Gas (PAS #1)		N 45º 48.287' W 077º 07.123' Elev. 129m	94.1m	0.34	0.77	0.28	0.77	0.99	1.39	13.00	2.48	2.22	1.72	1.93	*	**2.35**
Brewer's Edge (PAS #2)		N 45º 48.325' W 077º 07.132' Elev. 132m	52.8m	1.06	0.60	1.34	1.87	1.40	0.58	3.80	2.31	4.18	2.29	5.81	*	**2.29**
Med-Eng (PAS #13)		N 45º 48.262' W 077º 07.093' Elev. 132m	61.5m	0.70	1.65	0.95	1.26	1.67	1.94	4.70	6.22	5.87	7.15	1.36	*	**3.04**
Replicates																
4-2	NW250	N 45º 48.412' W 077º 07.189' Elev. 137m	222m	0.51	0.57	0.96	1.41	1.65	1.65	3.40	2.08	8.43	3.51	4.82	1.15	**2.51**
11-2	SW250	N 45º 48.247' W 077º 07.206' Elev. 140m	183m	0.26	0.39	0.34	0.39	0.42	0.48	0.93	0.52	0.60	0.52	0.87	0.65	**0.53**
18-2	SE250	N 45º 48.189' W 077º 06.874' Elev. 132m	365m	0.64	1.09	1.84	1.14	1.78	2.54	6.00	4.51	2.01	3.51	1.88	3.43	**2.53**
25-2	NE250	N 45º 48.371' W 077º 06.964' Elev. 124m	198m	0.72	0.56	0.58	0.56	2.36	3.96	4.60	2.33	18.05	3.81	1.60	1.16	**3.36**
Background Samples																
Maika (PAS # 10)	SW	N 45º 46.367' W 077º 11.447' Elev. 149m	6690m	0.16	0.24	0.30	0.19	0.27	0.24	0.31	0.28	0.26	0.24	0.28	0.22	**0.25**
Maika	Duplicate	Same as above	6690m	0.16	0.24	0.30	0.19	0.27	0.24	0.31	0.27	0.26	0.24	0.28	0.22	**0.25**
Fitzpatrick	SE	N 45º 44.818' W 076º 59.822' Elev. 159m	11400m	0.16	0.24	0.30	0.19	0.27	0.24	0.31	0.27	0.27	0.24	0.28	0.22	**0.25**
Petawawa	NW	N 45º 51.497' W 077º 12.828' Elev. 149m	9480m	0.16	0.24	0.30	0.19	0.27	0.24	0.31	0.28	0.34	0.25	0.28	0.22	**0.26**
Farm	NE	N 45º 53.071' W 076º 56.768' Elev. 142m	16000m	0.22	0.29	0.30	0.19	0.29	0.24	0.30	0.29	0.26	0.24	0.28	0.22	**0.26**
			Sum	14.37	18.57	21.18	20.75	32.29	38.97	79.66	53.68	111.78	62.03	53.60	36.78	45.95

* Sample lost

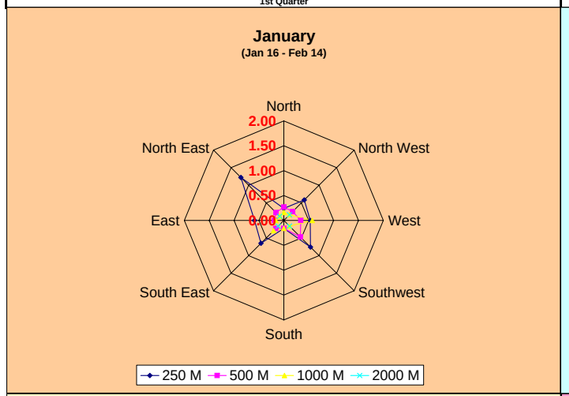
Passive Air Sampling Data (Results in Bq/m3)

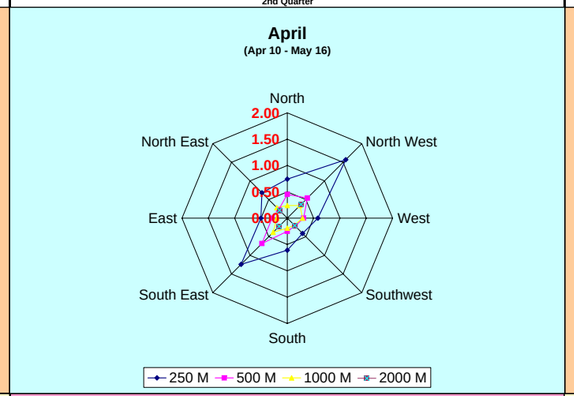
Direction	January (Jan 16 - Feb 14)				February (Feb 14 - Mar 17)				March (Mar 17 - Apr 10)			
	250 M	500 M	1000 M	2000 M	250 M	500 M	1000 M	2000 M	250 M	500 M	1000 M	2000 M
North	0.24	0.27	0.16		0.41	0.59	0.24		0.30	0.35	0.34	
North West	0.58	0.25	0.16	0.16	0.60	0.31	0.24	0.24	1.20	0.41	0.34	0.34
West	0.53	0.34	0.57		0.52	0.36	0.54		0.39	0.37	0.35	
Southwest	0.76	0.47	0.16	0.16	0.42	0.42	0.24	0.24	0.34	0.35	0.34	0.35
South	0.16	0.16	0.16		0.71	0.24	0.24		0.51	0.34	0.30	
South East	0.65	0.23	0.29	0.16	1.12	0.81	0.34	0.24	2.00	0.80	0.34	0.34
East	0.59	0.19	0.16		0.53	0.25	0.24		0.64	0.34	0.35	
North East	1.22	0.22	0.12	0.12	0.79	0.34	0.24	0.23	0.62	0.34	0.35	0.35
	1st Quarter											

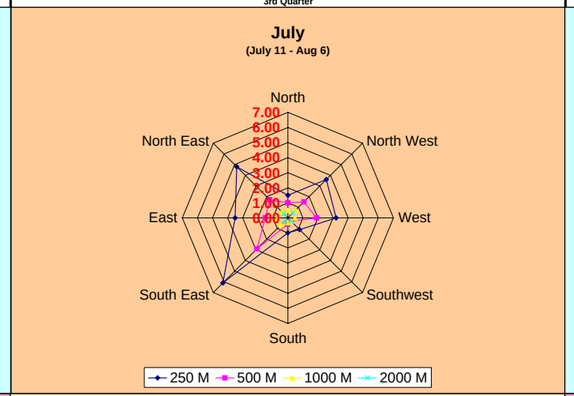
Direction	April (Apr 10 - May 16)				May (May 16 - June 11)				June (June11 - July 11)			
	250 M	500 M	1000 M	2000 M	250 M	500 M	1000 M	2000 M	250 M	500 M	1000 M	2000 M
North	0.74	0.45	0.24		0.94	0.48	0.28		1.37	0.96	0.51	
North West	1.57	0.54	0.34	0.37	1.87	0.69	0.37	0.33	1.72	0.80	0.41	0.37
West	0.58	0.31	0.29		0.82	0.56	0.35		0.76	0.40	0.42	
Southwest	0.41	0.21	0.19	0.20	0.44	0.86	0.27	0.27	0.50	0.24	0.24	0.24
South	0.61	0.25	0.19		0.79	0.79	0.27		0.88	0.36	0.24	
South East	1.24	0.68	0.38	0.22	1.78	0.91	0.44	0.27	2.74	1.54	0.55	0.24
East	0.50	0.29	0.20		1.31	1.05	0.58		1.25	1.30	0.69	
North East	0.68	0.23	0.28	0.21	2.44	0.93	0.59	0.41	3.97	1.46	0.67	0.40
	2nd Quarter											

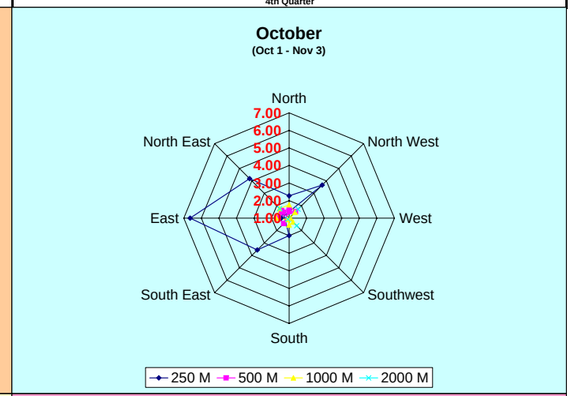
Direction	July (July 11 - Aug 6)				August (Aug 6 - Sept 3)				September (Sept 3 - Oct 1)			
	250 M	500 M	1000 M	2000 M	250 M	500 M	1000 M	2000 M	250 M	500 M	1000 M	2000 M
North	1.50	1.00	0.49		1.80	0.72	0.52		3.44	1.61	0.80	
North West	3.60	1.50	0.73	0.47	2.22	1.21	0.56	0.61	8.91	4.32	3.41	1.62
West	3.20	1.90	0.46		0.94	0.65	0.41		0.98	0.54	0.51	
Southwest	1.10	0.31	0.31	0.31	0.55	0.41	0.27	0.27	0.71	0.26	0.29	0.26
South	0.99	0.41	0.31		1.86	0.52	0.27		2.30	0.85	0.26	
South East	6.10	2.90	0.66	0.31	4.83	2.40	0.83	0.36	2.01	0.99	0.35	0.26
East	3.50	1.50	0.67		2.95	1.20	0.88		3.47	1.64	0.83	
North East	4.80	1.70	0.58	0.38	2.42	1.06	0.66	0.46	24.54	1.99	1.11	0.77
	3rd Quarter											

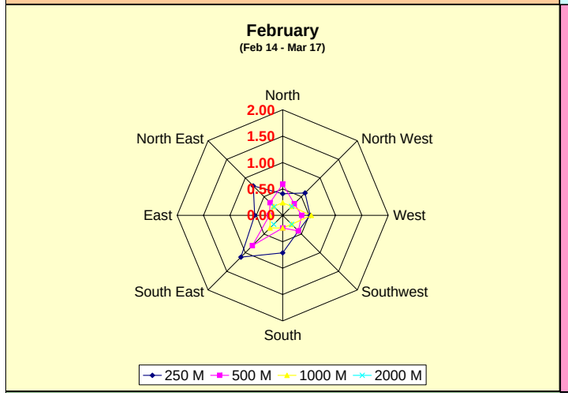
Direction	October (Oct 1 - Nov 3)				November (Nov 3 - Dec 2)				December (Dec 2 - Jan 6)			
	250 M	500 M	1000 M	2000 M	250 M	500 M	1000 M	2000 M	250 M	500 M	1000 M	2000 M
North	2.27	1.37	0.61		2.08	1.09	0.35		2.11	0.99	0.47	
North West	3.66	1.52	0.90	0.91	4.94	1.99	1.39	0.67	2.89	1.52	0.81	0.54
West	0.55	0.36	0.27		2.92	1.52	1.33		0.85	0.66	0.51	
Southwest	0.52	0.39	0.24	0.24	0.90	0.31	0.28	0.28	0.69	0.38	0.22	0.23
South	1.99	0.54	0.24		2.33	0.51	0.28		1.24	0.39	0.22	
South East	3.57	1.44	0.52	0.27	1.94	0.86	0.28	0.28	4.42	1.72	0.68	0.23
East	6.64	1.62	0.93		3.16	0.61	0.43		2.74	0.96	0.37	
North East	4.19	1.48	0.68	0.39	1.75	0.82	0.35	0.28	2.25	0.54	0.38	0.28
	4th Quarter											

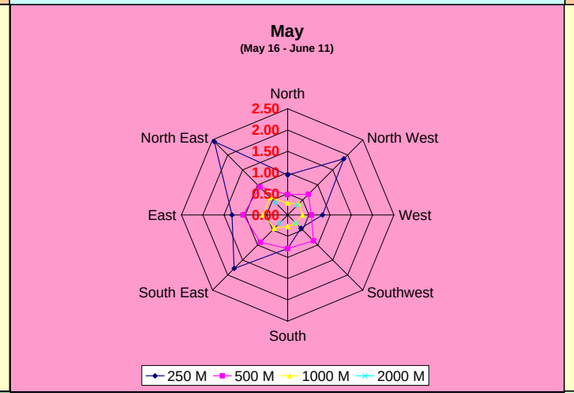


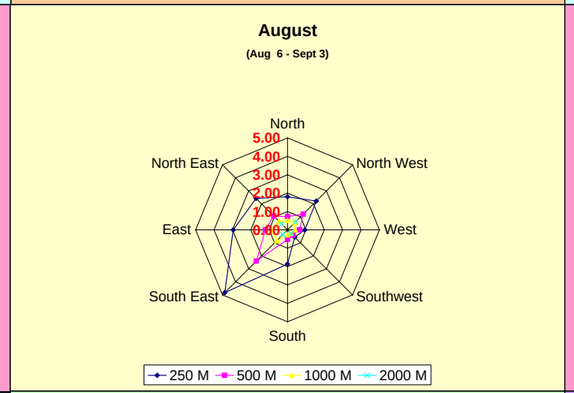


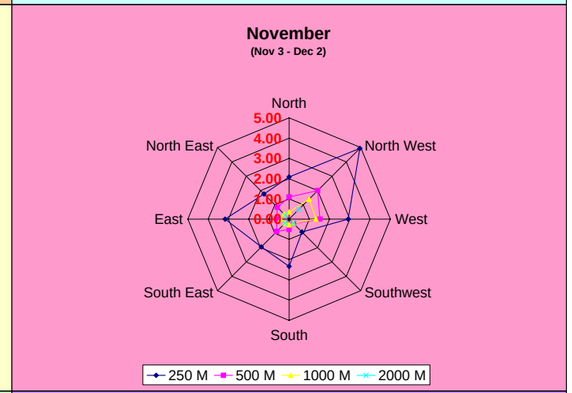


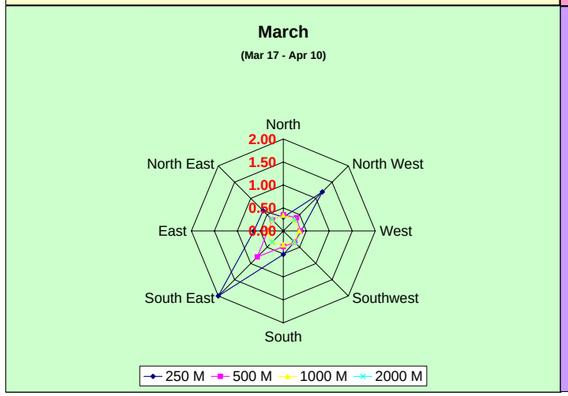


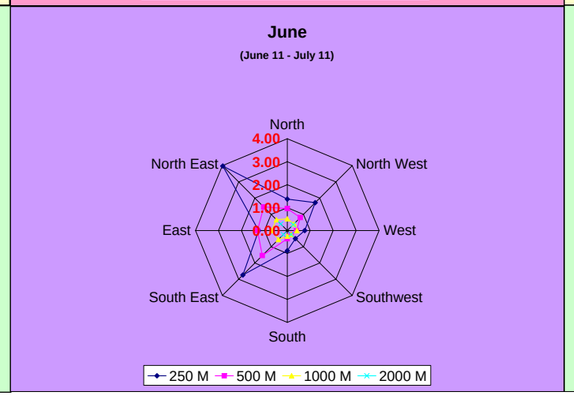


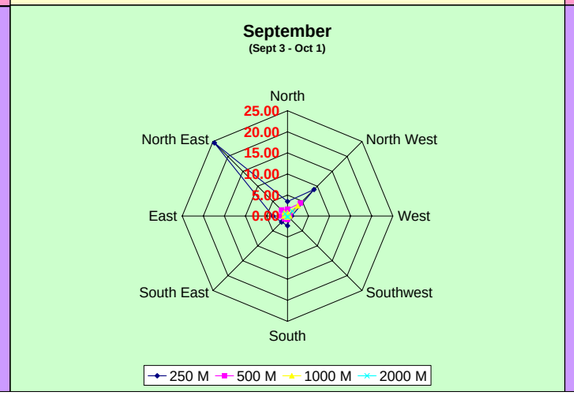


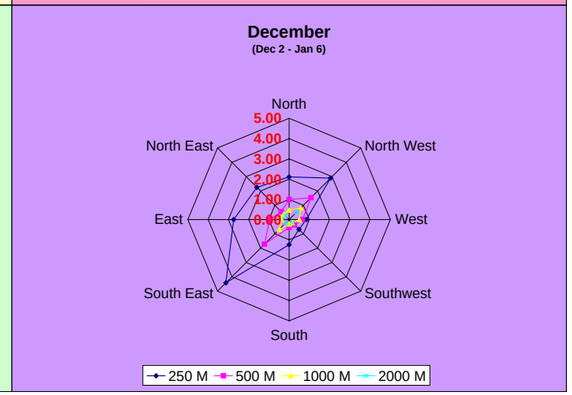




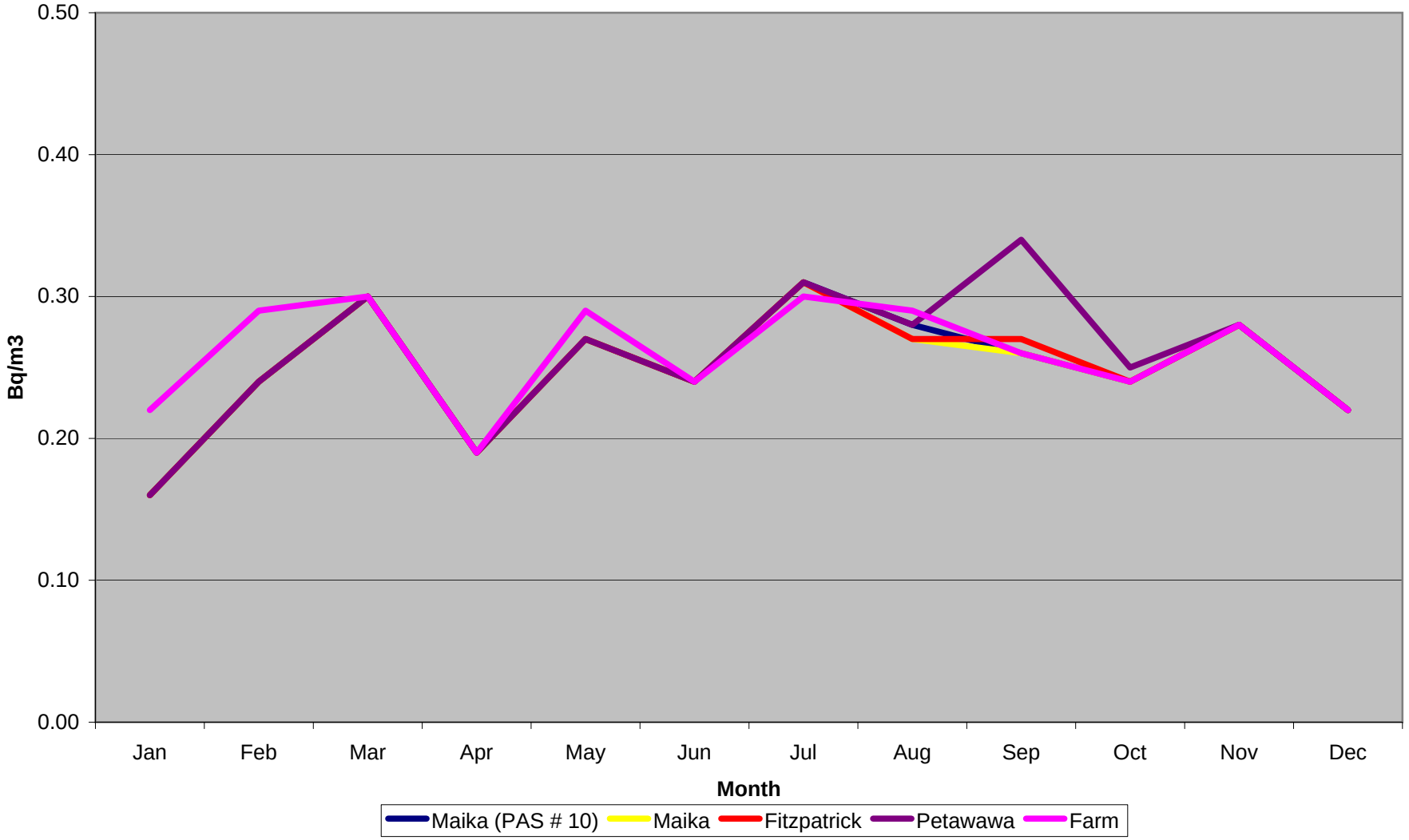


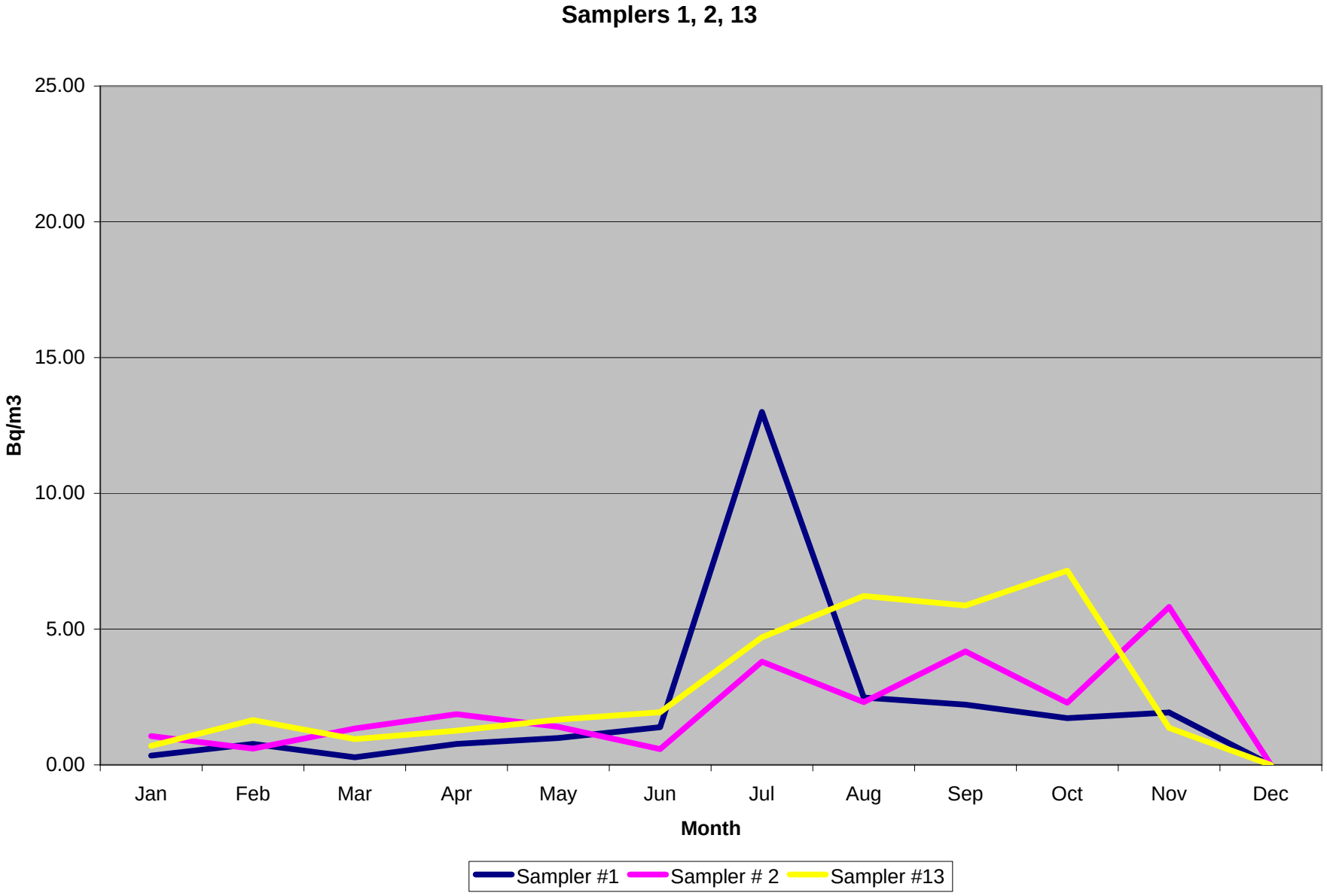






Background Samples




Samplers 1, 2, 13
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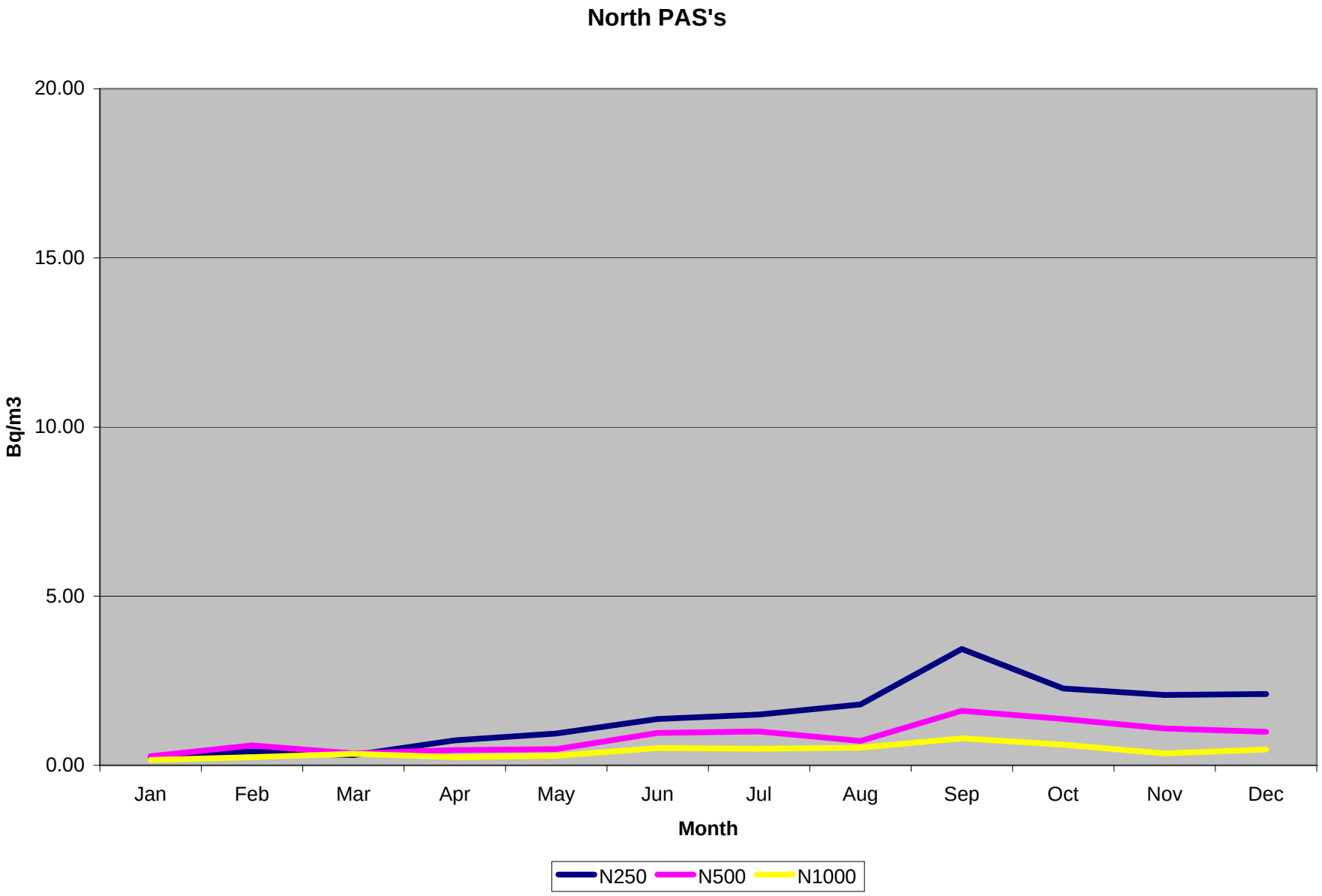
20.00
15.00
10.00
5.00
0.00
Bq/m3
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Month
Sampler #1
Sampler # 2
Sampler #13


North PAS's
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15.00
10.00
5.00
0.00
Bq/m3
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Feb
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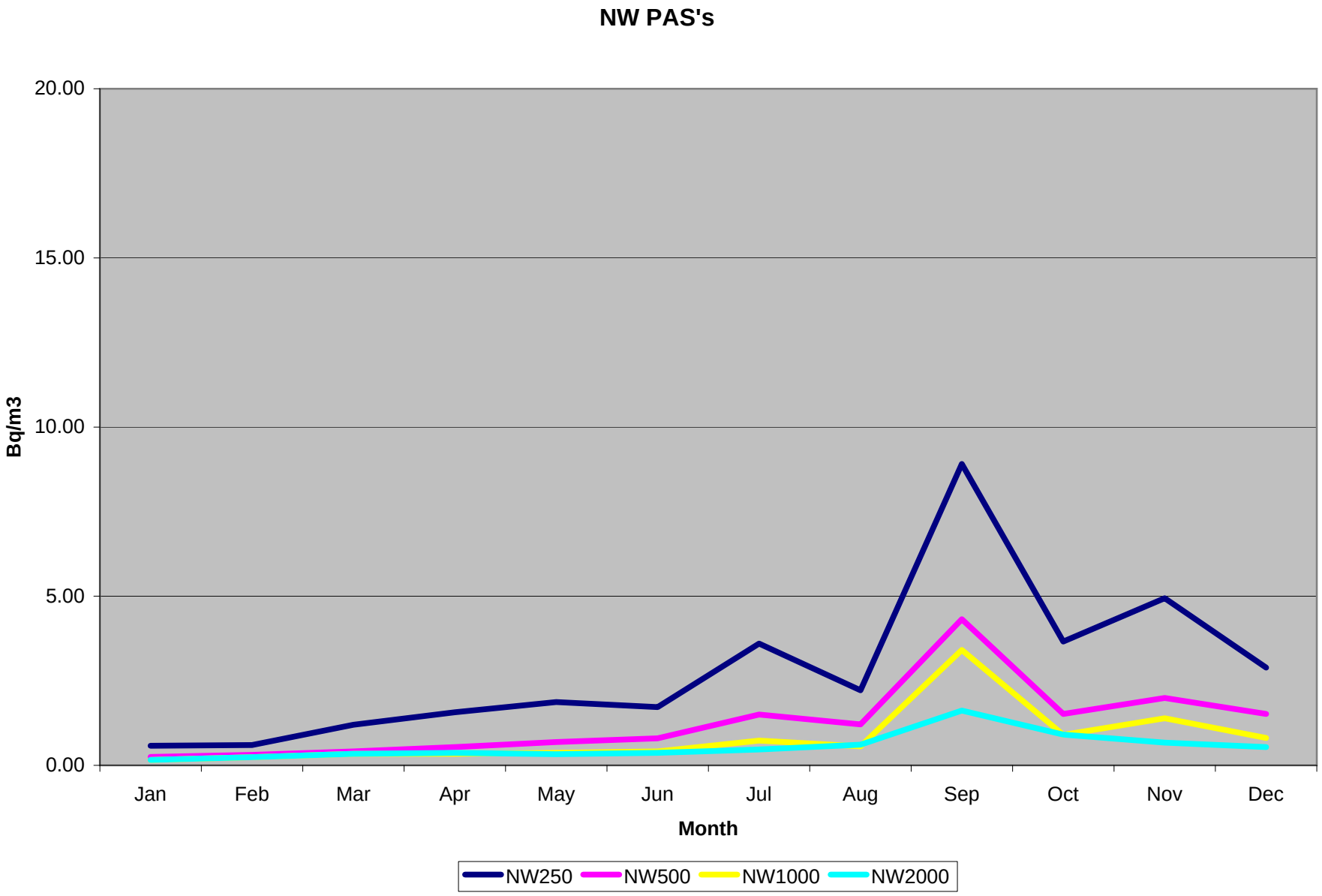
N250
N500
N1000


NW PAS's
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0.00
Bq/m3
Jan
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Month
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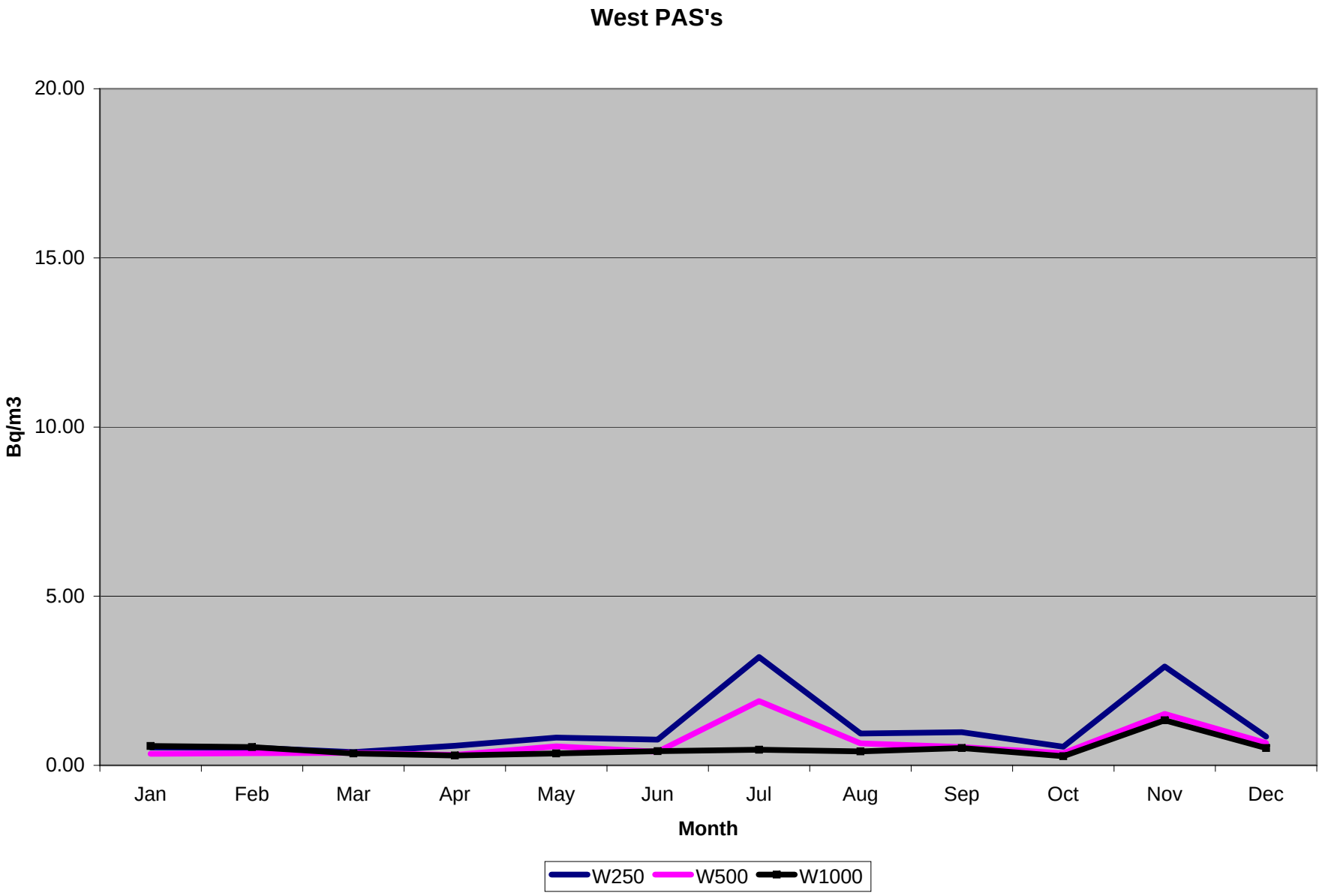
NW500
NW1000
NW2000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Bq/m3
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Month
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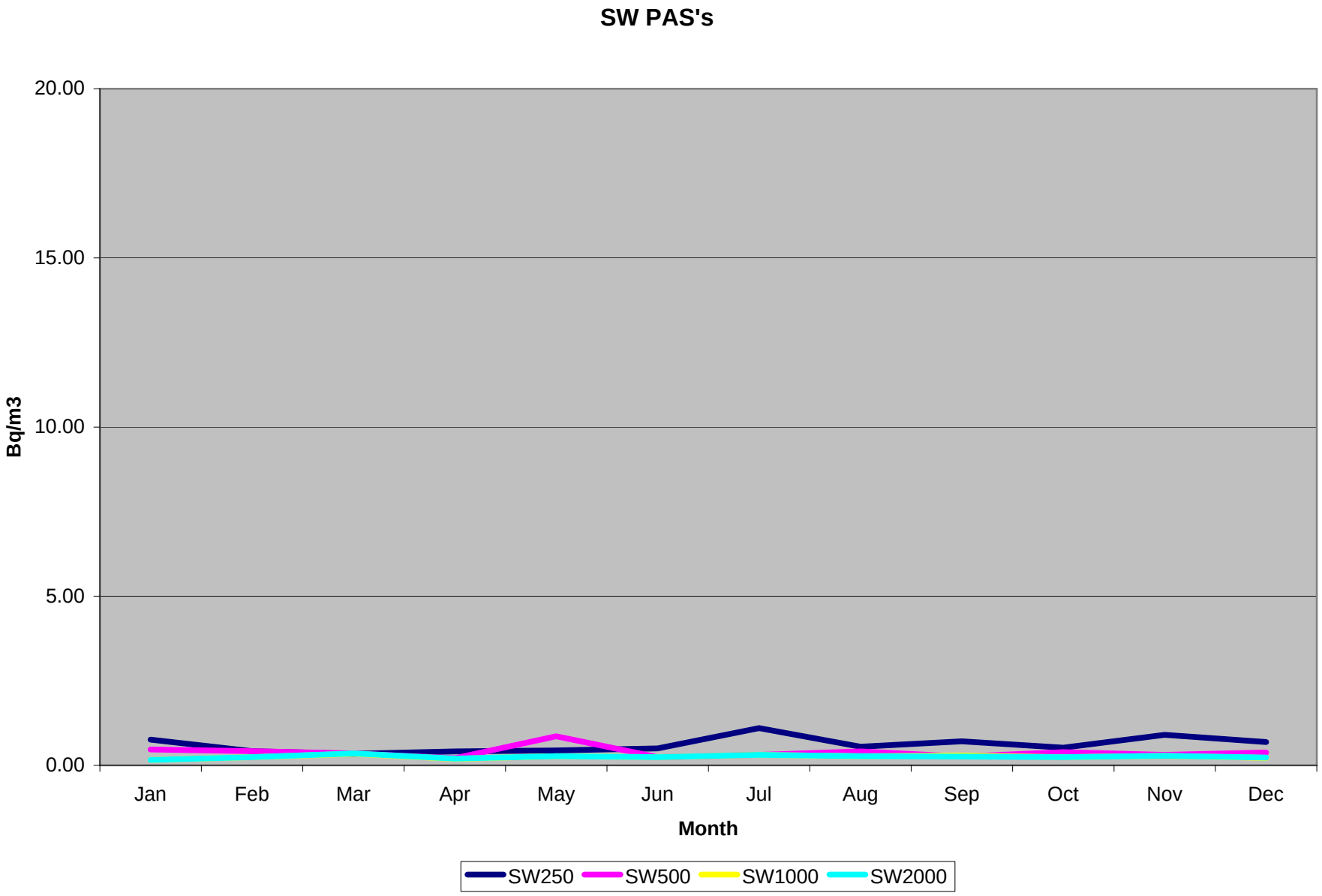
W500
W1000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Bq/m3
Jan
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Month
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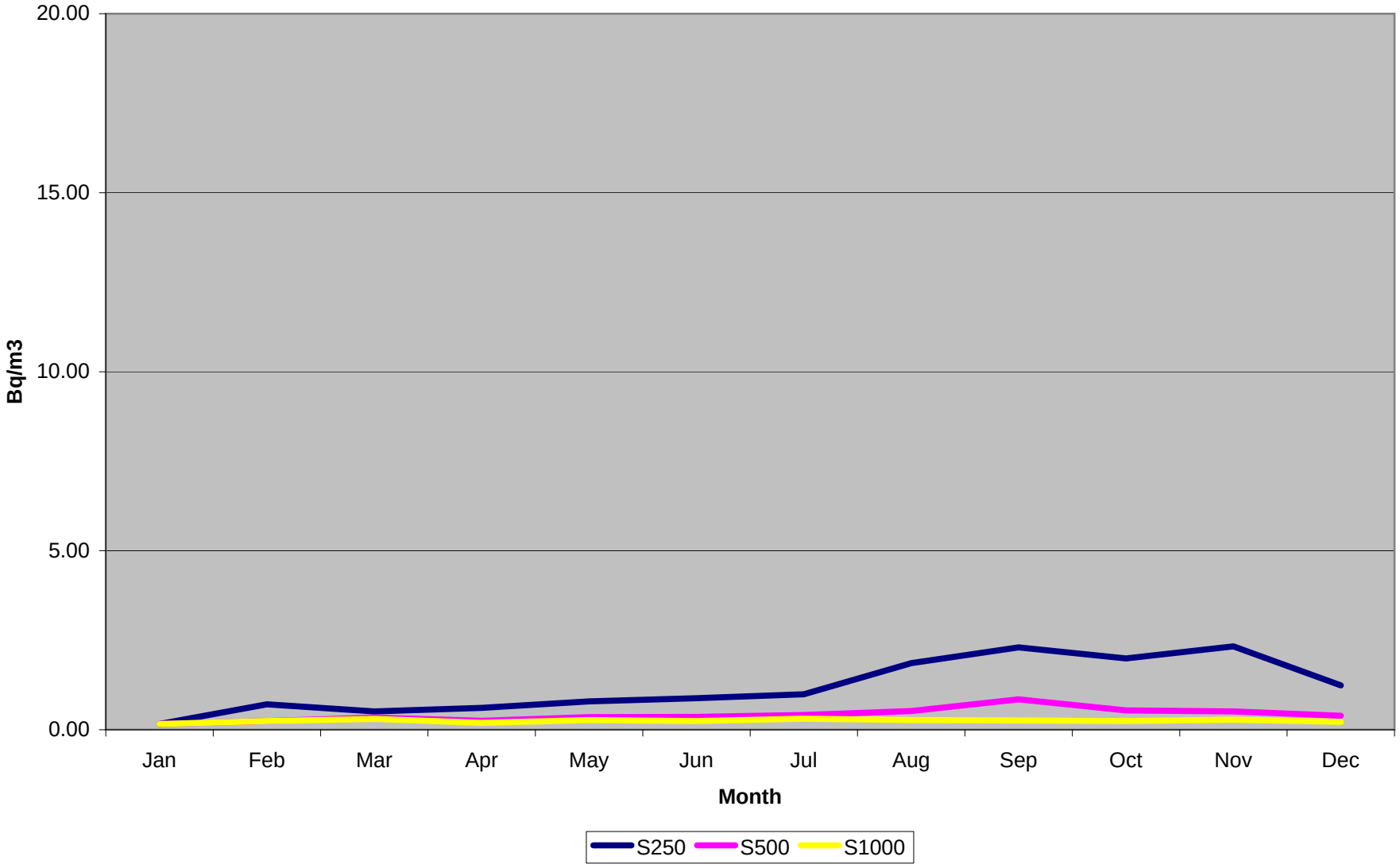
SW500
SW1000
SW2000

South PAS's


20.00
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10.00
5.00
0.00
Bq/m3
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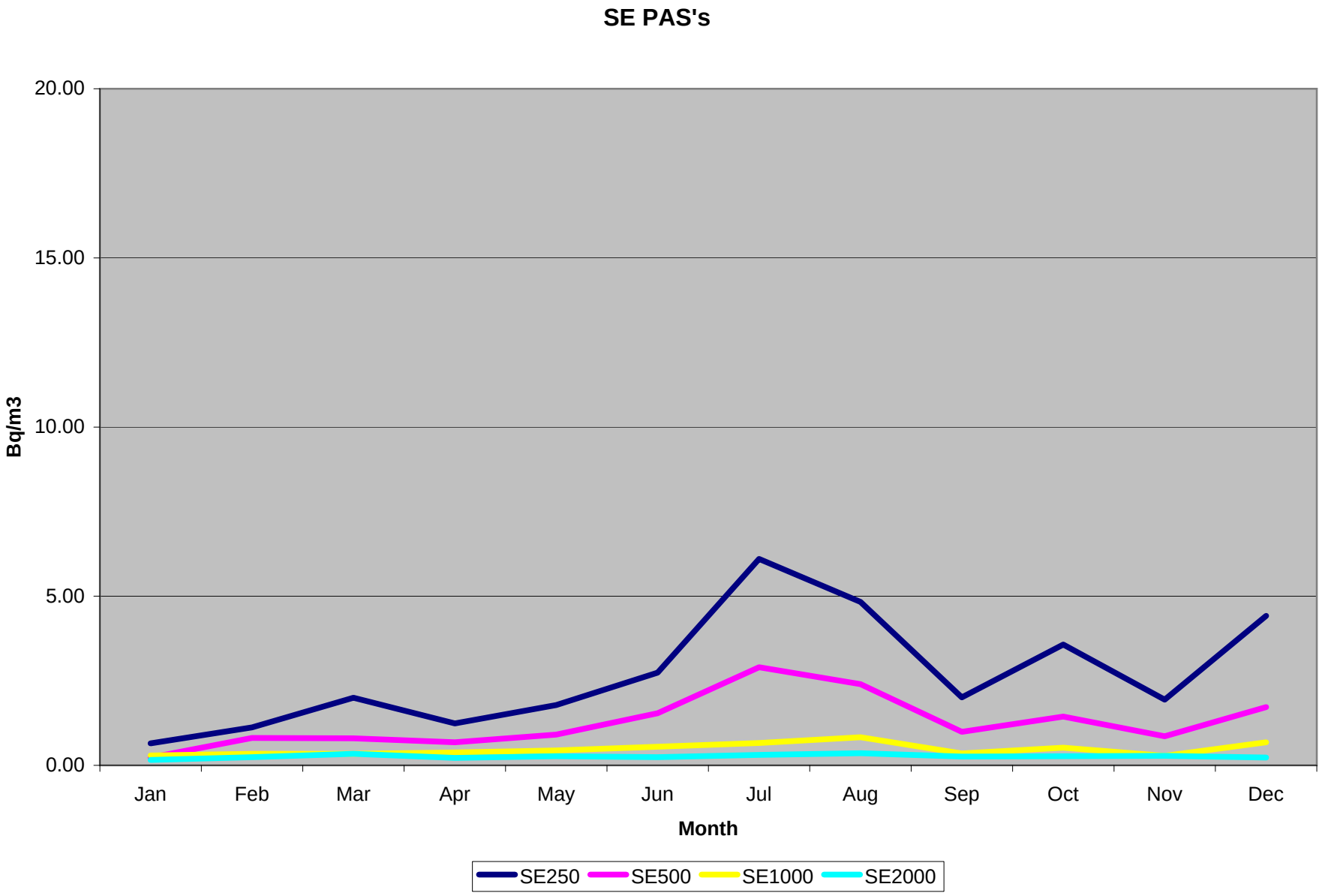
S250
S500
S1000


SE PAS's
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Bq/m3
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Nov
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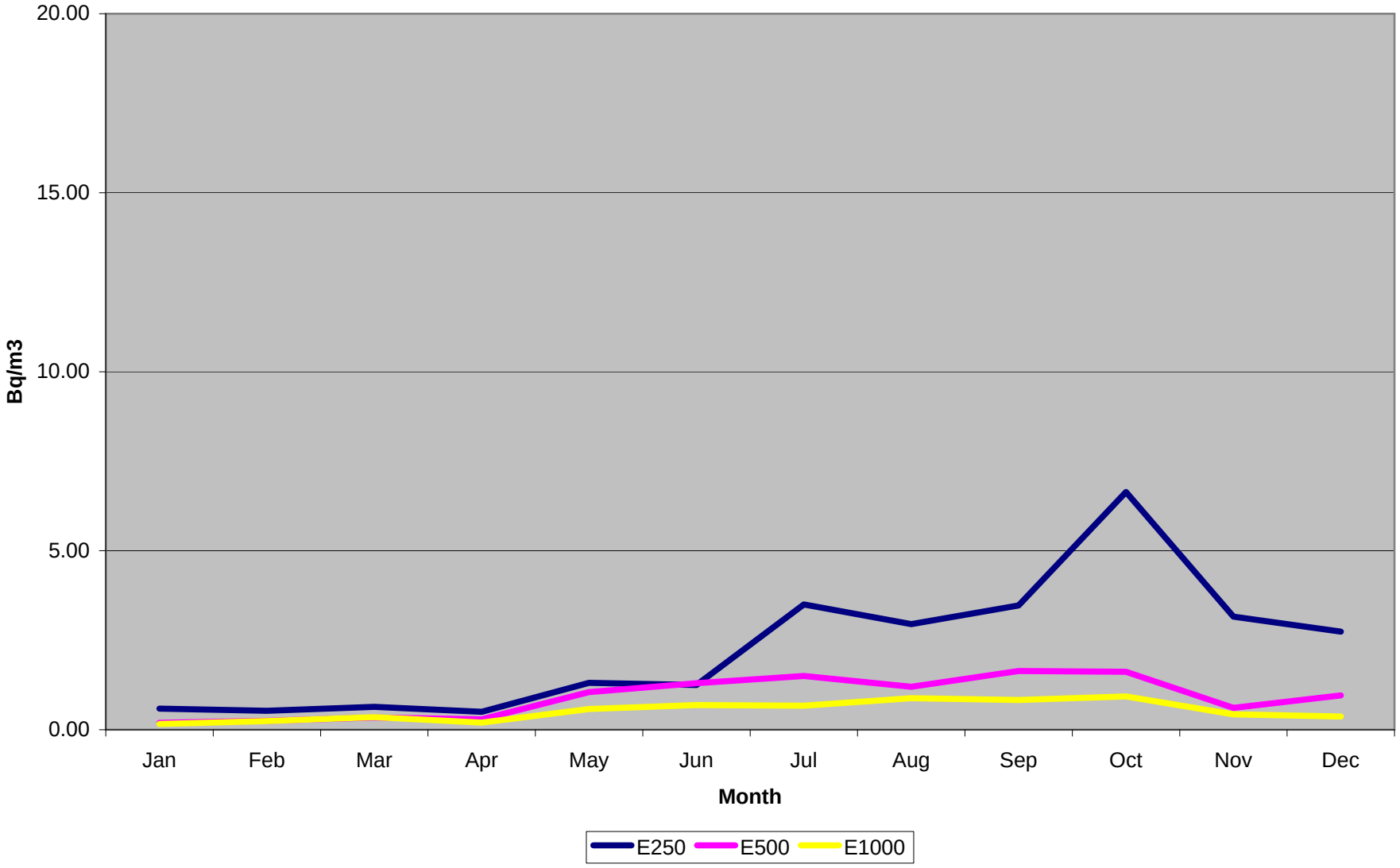
Month
SE250
SE500
SE1000
SE2000

East PAS's


20.00
15.00
10.00
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Bq/m3
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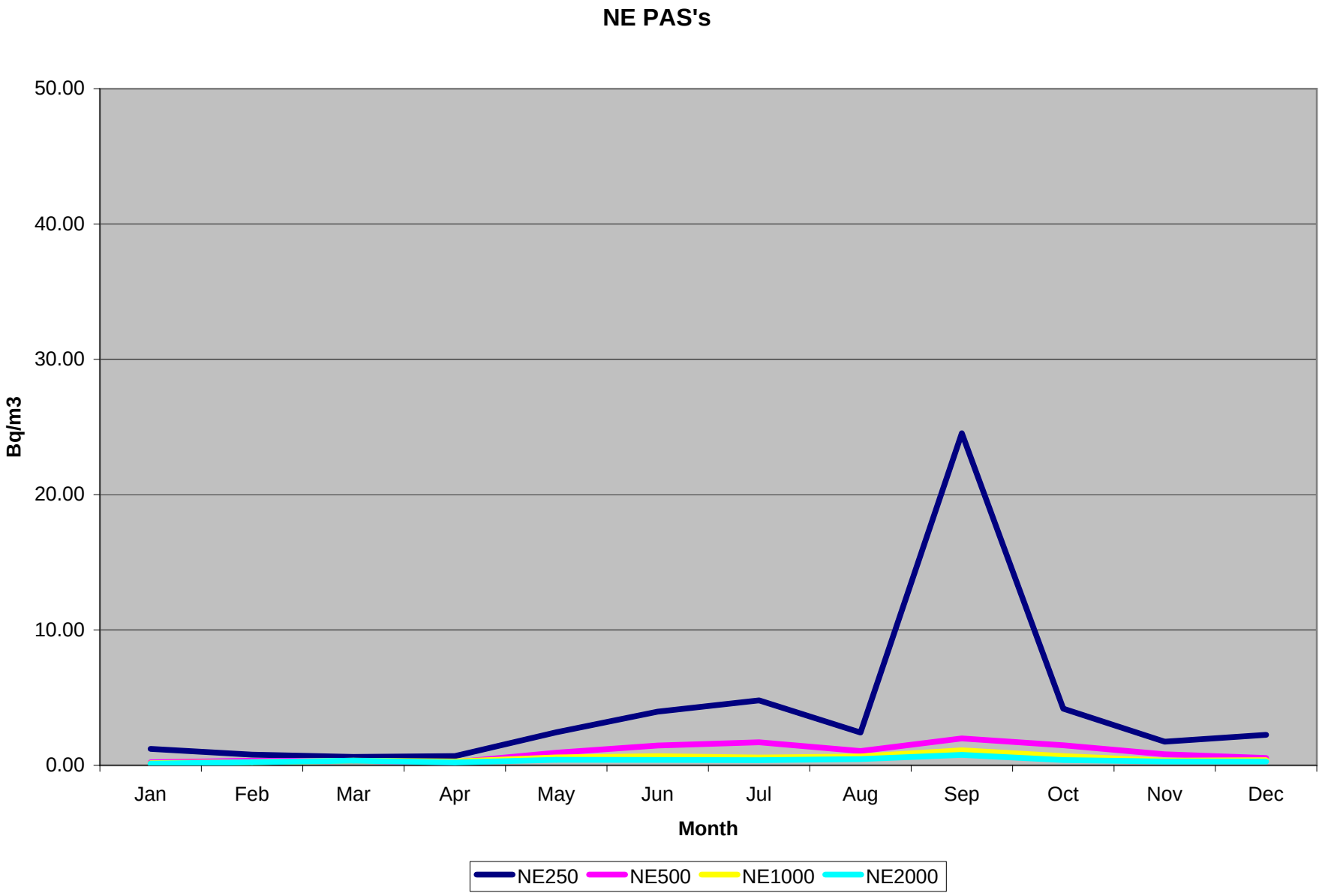
Month
E250
E500
E1000


NE PAS's
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Bq/m3
Jan
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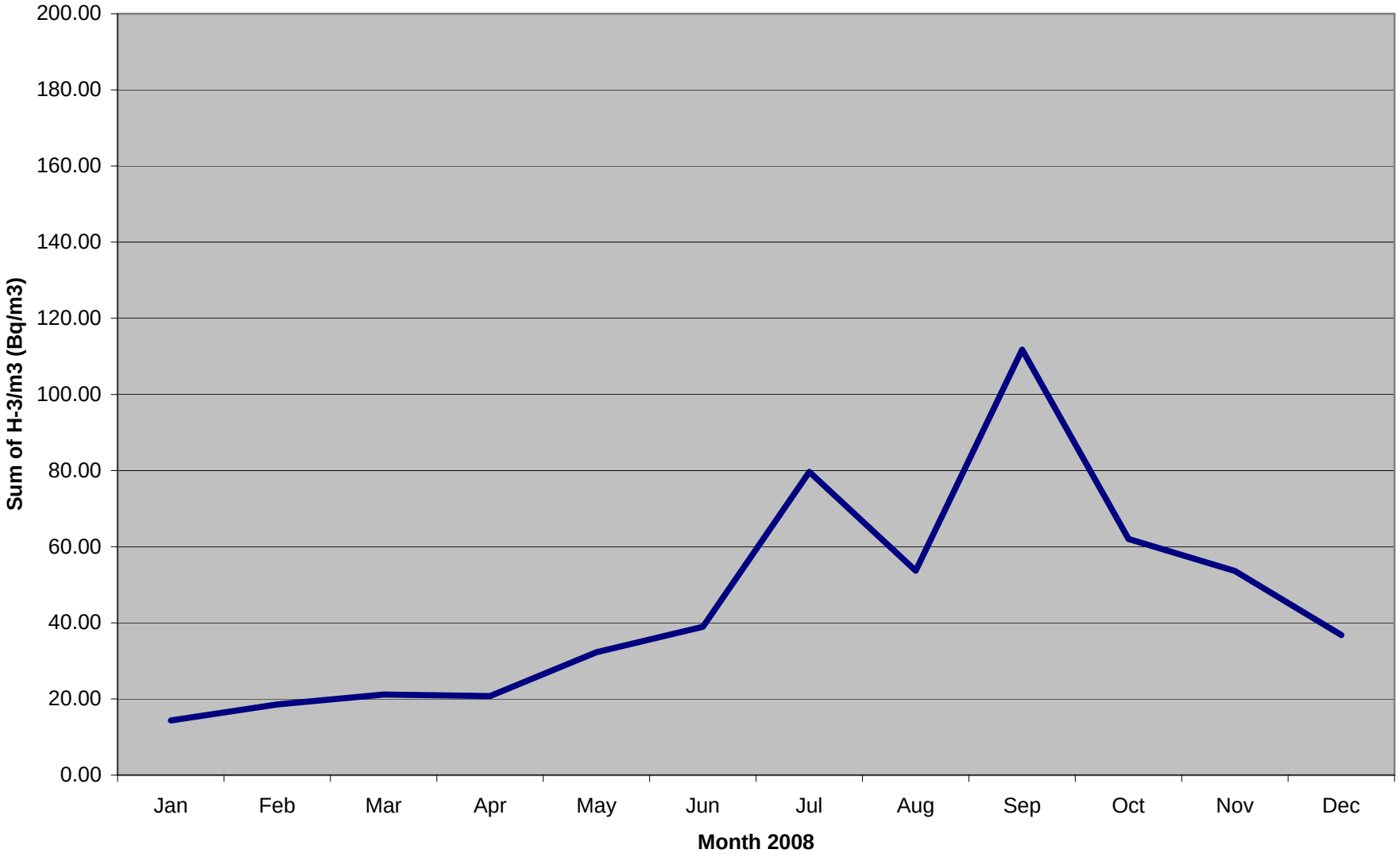
Month
NE250
NE500
NE1000
NE2000

Chart of Sum of HTO in Air in PAS



APPENDIX H

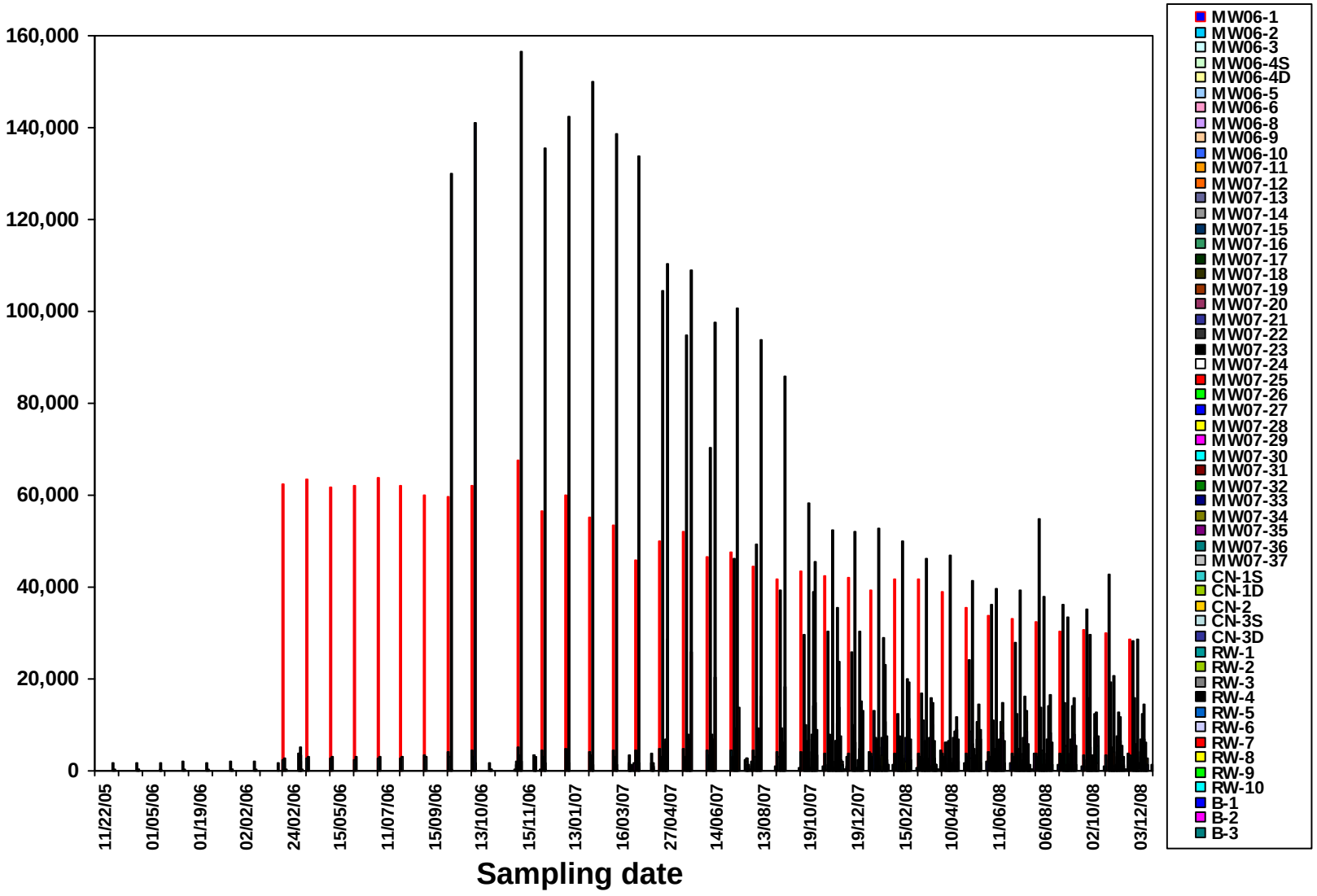
WELL MONITORING RESULTS FOR 2008

WELL I.D.	DESCRIPTION	DISTANCE FROM STACKS (m)	17/01/08	15/02/08	18/03/08	10/4/08	16/5/08	11/6/08	10/7/08	6/8/08	4/9/08	2/10/08	4/11/08	3/12/08	AVG
RW-1	413 BOUNDARY ROAD	465			1,236				972				866		1,025
RW-2	185 MUD LAKE ROAD	1,100			324				293				252		290
RW-3	183 MUD LAKE ROAD	1,100			299				318				250		289
RW-4	711 BRUHAM AVENUE	2,200			3.0				3.1				5		4
RW-5	171 SAWMILL ROAD	2,300			20				19				25		21
RW-6	40987 HWY 41	1,400			92				75				83		83
RW-7	40925 HWY 41	1,600			31				23				16		23
RW-8	204 BOUNDARY ROAD	700			262				307				242		270
RW-9	206 BOUNDARY ROAD	650			454				539				422		472
RW-10	208 BOUNDARY ROAD	625			3.0				2.6				3		3
B-1	SUPERIOR PROPANE OFFICE	160	1,306	820	1,034	1,727	2,001	1,876	1,404	1,309	1,132	1,122	1,037	1,293	1,338
B-3	INTERNATIONAL LUMBER OFFICE	385			6.0				5.0				7		6
														AVG	319

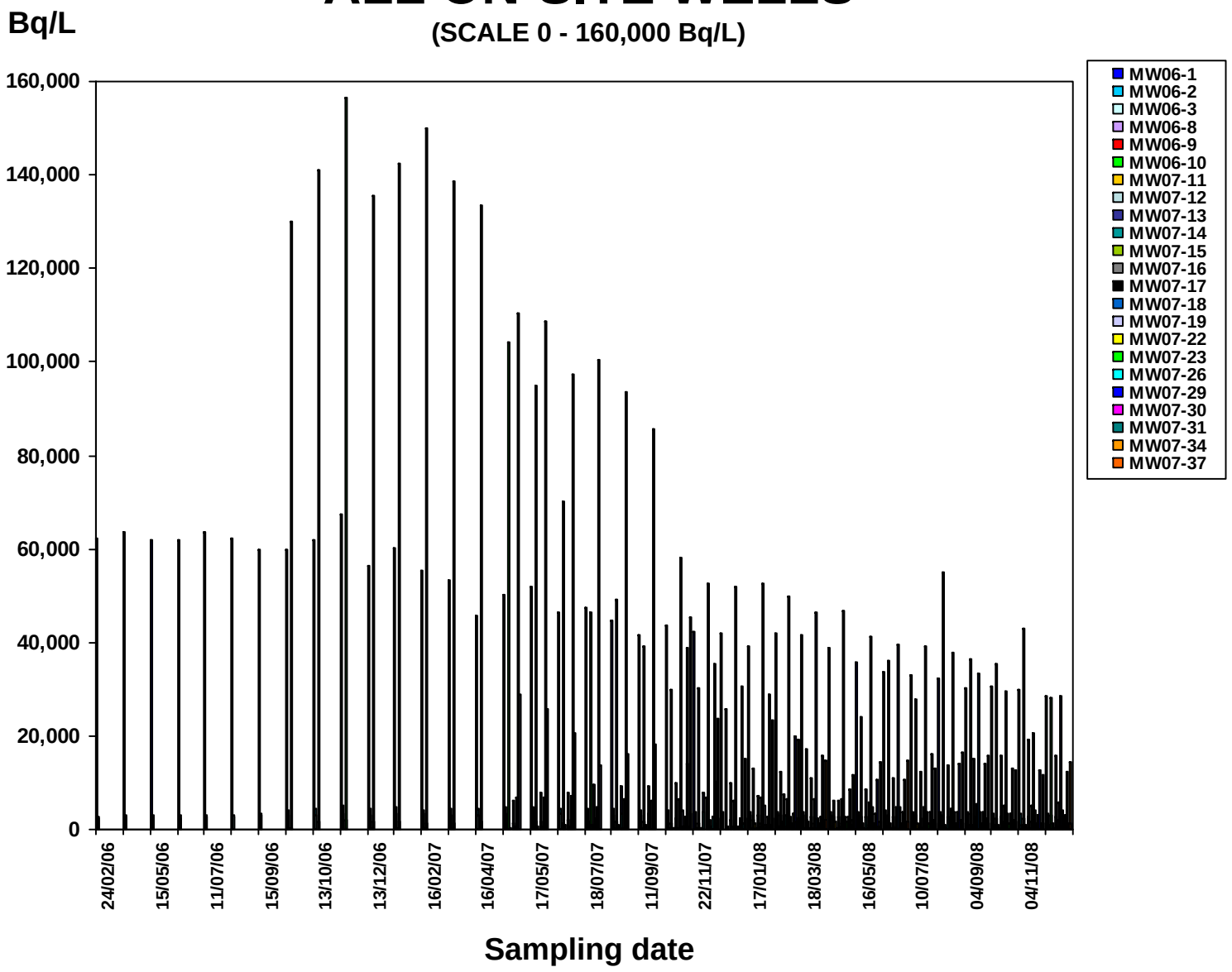
WELL I.D.	DESCRIPTION		DISTANCE FROM STACKS (m)	22/11/05	29/12/05	05/01/06	12/01/06	19/01/06	26/01/06	02/02/06	15/02/06	24/02/06	10/04/06	15/5/06	12/06/06	11/07/06	15/08/06	15/09/06	25/09/06	13/10/06	26/10/06	15/11/06	13/12/06	13/01/07	16/02/07	16/03/07	16/04/07	27/4/07	17/5/07	14/6/07	18/7/07	13/8/07	11/9/07	19/10/07	22/11/07	19/12/07	17/01/08	15/02/08	18/03/08	10/4/08	16/5/08	11/6/08	10/7/08	6/8/08	4/9/08	2/10/08	4/11/08	3/12/08	WELL I.D.
MW06-1	SRB SITE	IN SOIL	50									62,434	63,518	61,774	62,025	63,631	62,155	59,902	59,734	61,947		67,606	56,595	60,166	55,310	53,306	45,932	50,170	51,972	46,565	47,489	44,653	41,651	43,586	42,299	41,947	39,251	41,889	41,623	38,970	35,667	33,864	33,137	32,396	30,416	30,590	29,985	28,526	MW06-1
MW06-2	SRB SITE	IN SOIL	75									2,484	2,786	2,665	2,550	2,698	2,652	3,560	4,264	4,612		5,060	4,414	4,730	4,207	4,347	4,516	4,657	4,646	4,538	4,365	4,329	3,997	4,050	3,695	3,641	3,748	3,923	3,627	3,953	3,880	4,004	3,869	3,839	3,710	3,579	3,339	3,301	MW06-2
MW06-3	SRB SITE	IN SOIL	50									2,722	3,068	3,133	3,045	2,982	3,205	2,990	2,999	3,209		3,564	3,103	3,324	3,282	3,243	3,236	3,273	3,267	3,288	3,187	3,247	3,139	DRY	DRY	DRY	3,136	3,342	3,072	3,128	3,010	3,026	3,018	3,079	DRY	DRY	DRY	2,832	MW06-3
MW06-4S	JOHNSTON MEADOWS		300									211																																				MW06-4S
MW06-4D	JOHNSTON MEADOWS		300									3.0																																				MW06-4D
MW06-5	RENFREW COUNTY HEALTH UNIT		500									14																																				MW06-5
MW06-6	KI, 600 m		600									376																																				MW06-6
MW06-8	SRB SITE	IN SOIL	55																105	141		120	175	178	270	296	258	209	207	172	202	236	247	311	225	DRY	488	641	486	577	760	815	871	1,069	1,094	1,070	998	1,160	MW06-8
MW06-9	SRB SITE	IN SOIL	25																439	1,772		2,003	1,640	1,611	1,487	1,444	1,642	1,450	1,609	1,526	1,866	1,704	1,723	1,489	1,402	DRY	2,013	3,076	2,000	2,877	2,782	3,039	3,024	3,229	3,294	2,544	2,567	3,078	MW06-9
MW06-10	SRB SITE	SURFACE OF BEDROCK	0																130,060	141,111		156,643	135,612	142,308	149,928	138,509	133,622	104,350	94,956	70,225	46,379	49,347	39,228	29,795	30,326	25,712	12,995	12,448	17,064	6,243	24,126	36,040	27,930	54,979	36,311	35,275	42,897	28,330	MW06-10
MW07-11	SRB SITE	SURFACE OF BEDROCK	75																									203	638	936	866	898	955	400	485	727	1,248	1,717	1,615	1,759	1,294	1,511	1,224	1,116	1,044	1,152	1,204	1,399	MW07-11
MW07-12	SRB SITE	SURFACE OF BEDROCK	55																									152	154	114	106	117	151	194	177	DRY	212	490	252	292	255	283	375	345	341	307	323	352	MW07-12
MW07-13	SRB SITE	SURFACE OF BEDROCK	50																									6,358	7,781	8,070	9,463	9,221	9,287	10,057	7,859	9,968	7,344	7,654	11,007	6,092	8,507	11,120	12,382	13,699	14,997	15,718	19,248	15,963	MW07-13
MW07-14	SRB SITE	SURFACE OF BEDROCK	40																									1,504	1,662	1,895	2,526	3,494	3,610	2,357	3,692	2,048	3,063	3,216	2,845	2,878	2,679	2,917	2,503	2,868	2,716	2,887	2,624	2,775	MW07-14
MW07-15	SRB SITE	SURFACE OF BEDROCK	25																									690	675	672	314	376	255	227	170	112	598	642	374	769	442	406	442	361	377	436	457	785	MW07-15
MW07-16	SRB SITE	SURFACE OF BEDROCK	15																									6,855	6,845	7,059	4,927	6,381	6,148	6,646	6,776	6,358	7,007	6,543	6,545	6,388	5,720	4,785	4,864	4,385	5,520	5,143	5,295	5,859	MW07-16
MW07-17	SRB SITE	DEEPER BEDROCK	15																									521	519	233	109	107	106	103	117	663	1,208	1,425	1,265	1,516	1,088	688	828	1,310	1,414	1,604	1,798	1,904	MW07-17
MW07-18	SRB SITE	SURFACE OF BEDROCK	10																									110,422	108,879	97,441	100,612	93,704	85,781	58,139	52,516	52,009	52,690	49,994	46,343	46,735	41,374	39,674	39,345	37,892	33,369	29,530	20,752	28,723	MW07-18
MW07-19	SRB SITE	SURFACE OF BEDROCK	20																									28,788	25,806	20,475	13,852	16,329	18,318	4,229	2,230	DRY	5,153	2,806	2,455	2,708	4,839	4,687	3,730	3,749	3,781	3,503	3,967	4,103	MW07-19
MW07-20	SUPERIOR PROPANE PROPERTY	SURFACE OF BEDROCK	90																															628	674	667	570	1,151	762	912	998	1,013	1,108	1,024	1,120	1,098	952	1,182	MW07-20
MW07-21	SUPERIOR PROPANE PROPERTY	SURFACE OF BEDROCK	110																															102	116	111	100	359	156	273	245	251	310	280	326	334	341	359	MW07-21
MW07-22	SRB SITE	SURFACE OF BEDROCK	70																															557	421	184	225	578	493	422	227	187	243	246	298	291	318	807	MW07-22
MW07-23	SRB SITE	SURFACE OF BEDROCK	90																															595	668	610	992	1,318	1,387	1,632	1,309	1,257	1,315	1,397	1,408	1,479	1,467	1,691	MW07-23
MW07-24	HARRINGTON PROPERTY	SURFACE OF BEDROCK	115																															102	118	111	150	374	273	243	476	448	473	454	564	570	717	803	MW07-24
MW07-25	HARRINGTON PROPERTY	SURFACE OF BEDROCK	105																															1,230	176	111	376	334	118	111	159	172	178	103	138	93	210	144	MW07-25
MW07-26	SRB SITE	SURFACE OF BEDROCK	50																															2,731	2,609	2,533	2,839	3,429	2,917	2,919	3,376	3,624	3,833	3,803	3,800	3,471	3,193	2,947	MW07-26
MW07-27	CITY PROPERTY	SURFACE OF BEDROCK	55																															6,959	6,652	DRY	7,393	7,216	7,366	7,400	6,832	7,002	7,210	6,999	7,001	7,156	7,635	6,965	MW07-27
MW07-28	CITY PROPERTY	DEEPER BEDROCK	55																															8,088	6,569	4,957	3,493	2,102	2,722	1,360	2,244	2,066	2,388	2,401	1,979	1,601	928	1,630	MW07-28
MW07-29	SRB SITE	DEEPER BEDROCK	10																															38,797	35,421	30,468	28,862	19,999	15,779	8,595	10,661	10,827	16,263	14,152	14,098	12,923	12,633	12,305	MW07-29
MW07-30	SRB SITE	DEEPER BEDROCK	50																															14,185	10,457	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	MW07-30
MW07-31	SRB SITE	DEEPER BEDROCK	70																															801	1,394	1,436	929	1,622	940	1,115	653	1,457	2,170	2,199	2,260	1,986	1,233	1,337	MW07-31
MW07-32	HARRINGTON PROPERTY	DEEPER BEDROCK	115																															143	117	111	100	264	112	247	367	284	217	149	197	173	251	235	MW07-32
MW07-33	HARRINGTON PROPERTY	DEEPER BEDROCK	105																															678	428	458	553	791	512	532	754	690	586	546	551	466	476	439	MW07-33
MW07-34	SRB SITE	SHALLOW BEDROCK	10																															45,544	23,711	15,094	23,258	19,424	14,885	11,687	14,393	14,963	13,197	16,687	15,837	12,617	11,759	14,581	MW07-34
MW07-35	CITY PROPERTY	SHALLOW BEDROCK	55																															14,824	13,641	12,948	10,857	11,431	10,021	9,060	8,797	8,443	8,738	8,438	7,957	7,581	6,695	7,006	MW07-35
MW07-36	CITY PROPERTY	SHALLOW BEDROCK	80																															9,100	7,504	DRY	7,649	6,777	6,545	7,043	6,775	6,472	5,915	6,112	5,532	5,427	5,574	6,268	MW07-36
MW07-37	SRB SITE	SHALLOW BEDROCK	60																															3,297	2,490	2,466	2,515	2,402	2,162	2,087	1,776	1,577	1,490	1,358	1,472	1,588	1,340	1,421	MW07-37
CN-1S	CN PROPERTY		125									3,928										3,511				3,780				2,326					2,458				1,980				2,234				2,385	2,286	CN-1S
CN-1D	CN PROPERTY		130									3,838										3,279				1,660				2,806					DRY	DRY	1,885		2,673				2,458				DRY	2,396	CN-1D
CN-2	CN PROPERTY		150									5,037										2,123				1,363	523			2,801					2,184				1,455				1,257				2,958	2,687	CN-2
CN-3S	CN PROPERTY		165									3,581										2,984				1,437	1,783			1,917					DRY	DRY	1,407		956				1,049				DRY	1,406	CN-3S
CN-3D	CN PROPERTY		160									3,283										1,427				1,890	891			1,239					1,354				1,494				1,100				1,550	1,431	CN-3D
RW-1	413 BOUNDARY ROAD		465	1,811	1,884	1,872	1,915	1,895	1,902	1,900	1,826	2,061							1,626								1,506			1,366	1,370					1,399				1,236				972				866		RW-1
RW-2	185 MUD LAKE ROAD		1,100		354	388			362										313								336				311					287				324				293				252		RW-2
RW-3	183 MUD LAKE ROAD		1,100	430	395	331	397	411	437	423		481							366								186				358					323				299				318				250		RW-3
RW-4	711 BRUHAM AVENUE		2,200				3.0	2.0	4.0	2.0	3.0	2.0							4.0								3.8				3.0					4.2				3.0				3.1				5		RW-4
RW-5	171 SAWMILL ROAD		2,300				13		18			15							14								14				18					17				20				19				25		RW-5
RW-6	40987 HWY 41		1,400									77							67								69				70					82				92				75				83		RW-6
RW-7	40925 HWY 41		1,600		123														90								67				38					25				31				23				16		RW-7
RW-8	204 BOUNDARY ROAD		700																	260								254				294					236				262				307				242		RW-8
RW-9	206 BOUNDARY ROAD		650																			455						268				269					583	442			454				539				422		RW-9
RW-10	208 BOUNDARY ROAD		625																			7.0						3.9				2.0					4.3				3.0				2.6				3		RW-10
B-1	SUPERIOR PROPANE OFFICE		160																	1,264								979			1,289	1,515	1,022	1,126	848	865	1,075	1,006	1,306	820	1,034	1,727	2,001	1,876	1,404	1,309	1,132	1,122	1,037	1,293	B-1
B-2	SUPERIOR PROPANE TRUCK WASH		250																	2,145								1,849				2,222					3,087	4,073			4,435				3,939				3,875		B-2
B-3	INTERNATIONAL LUMBER OFFICE		385																			15						6.0				6.0					4.4				6.0				5.0				7		B-3

MONITORING RESULTS
ALL WELLS

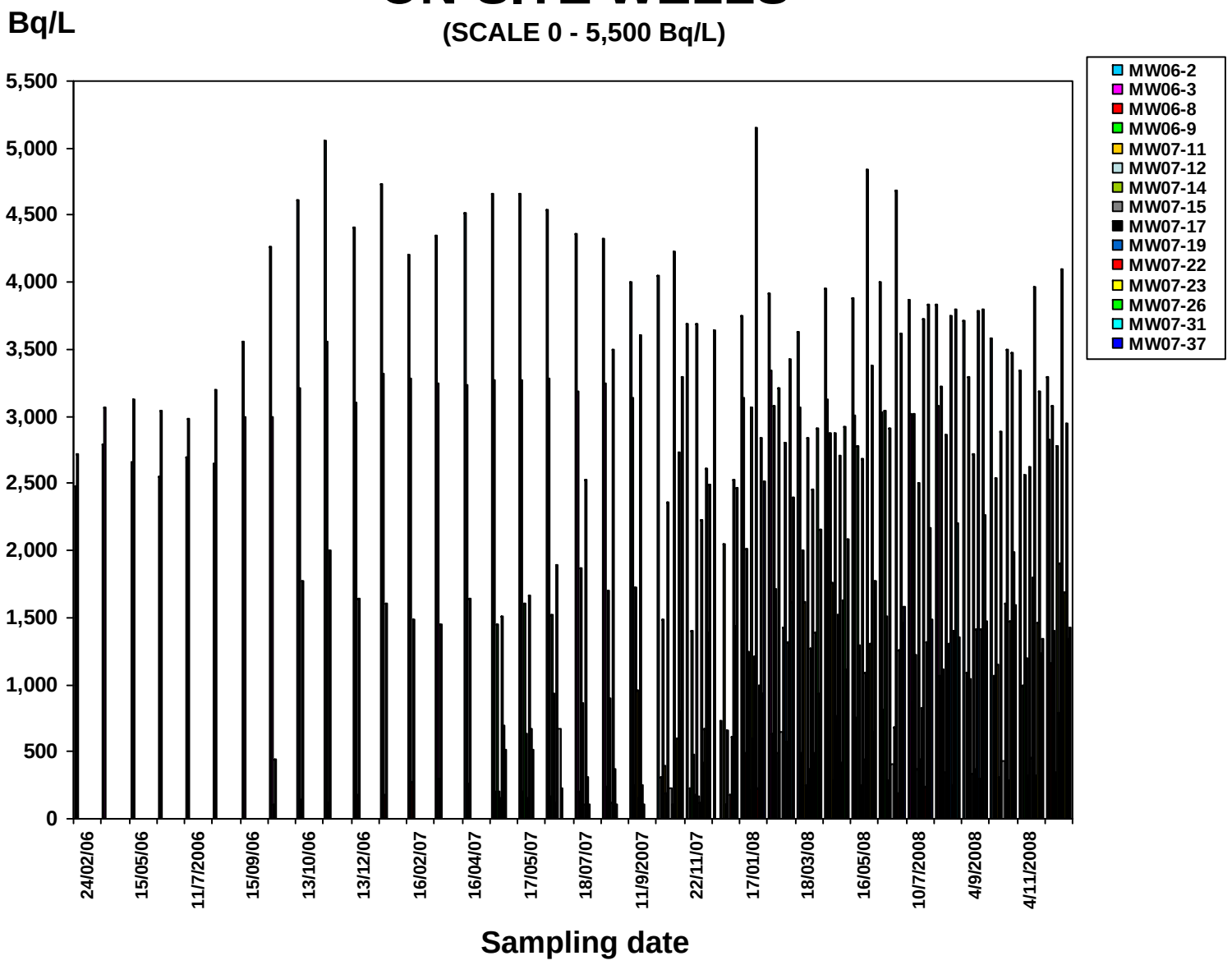
(SCALE 0 – 160,000 Bq/L)



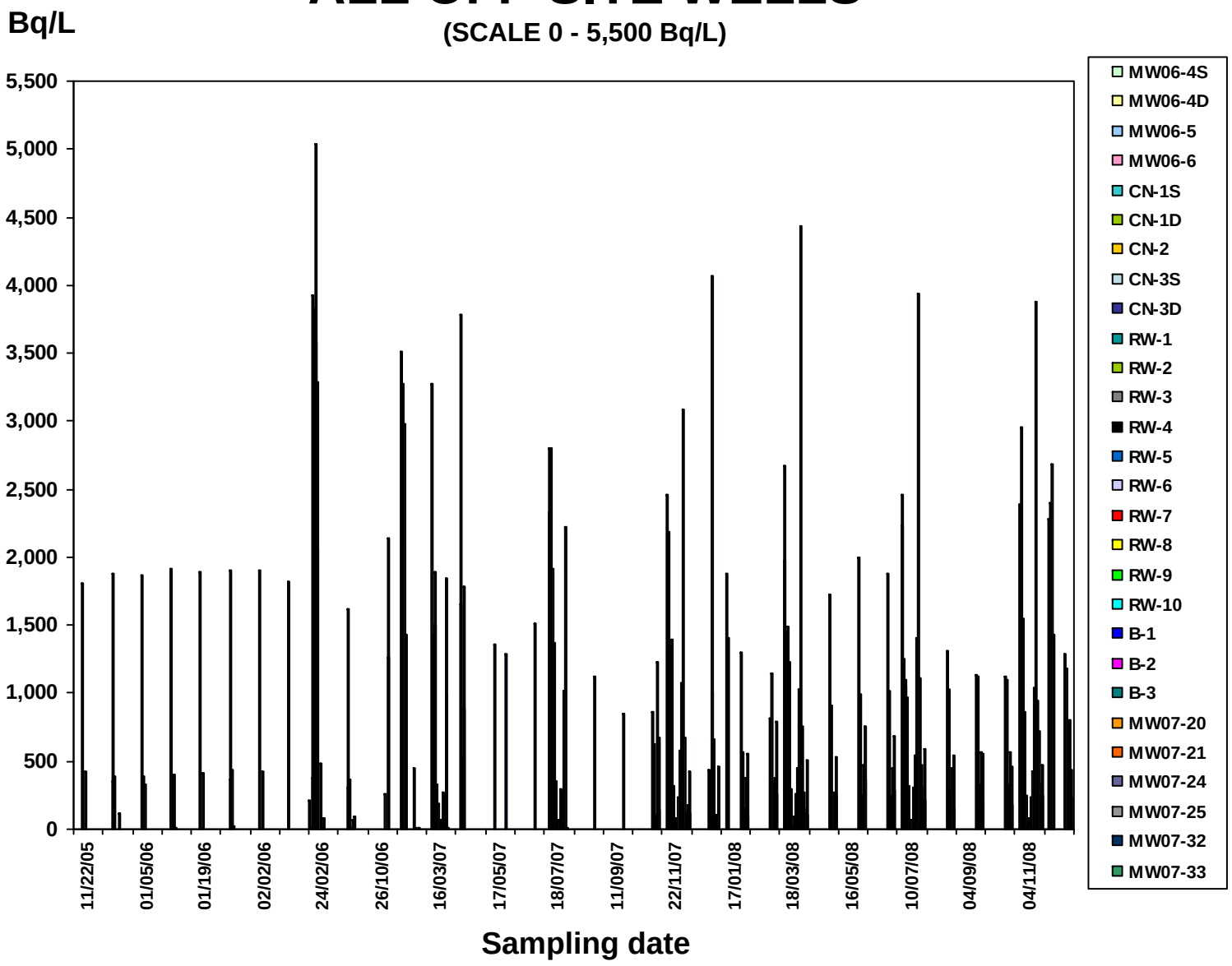
MONITORING RESULTS
ALL ON-SITE WELLS



MONITORING RESULTS
ON-SITE WELLS

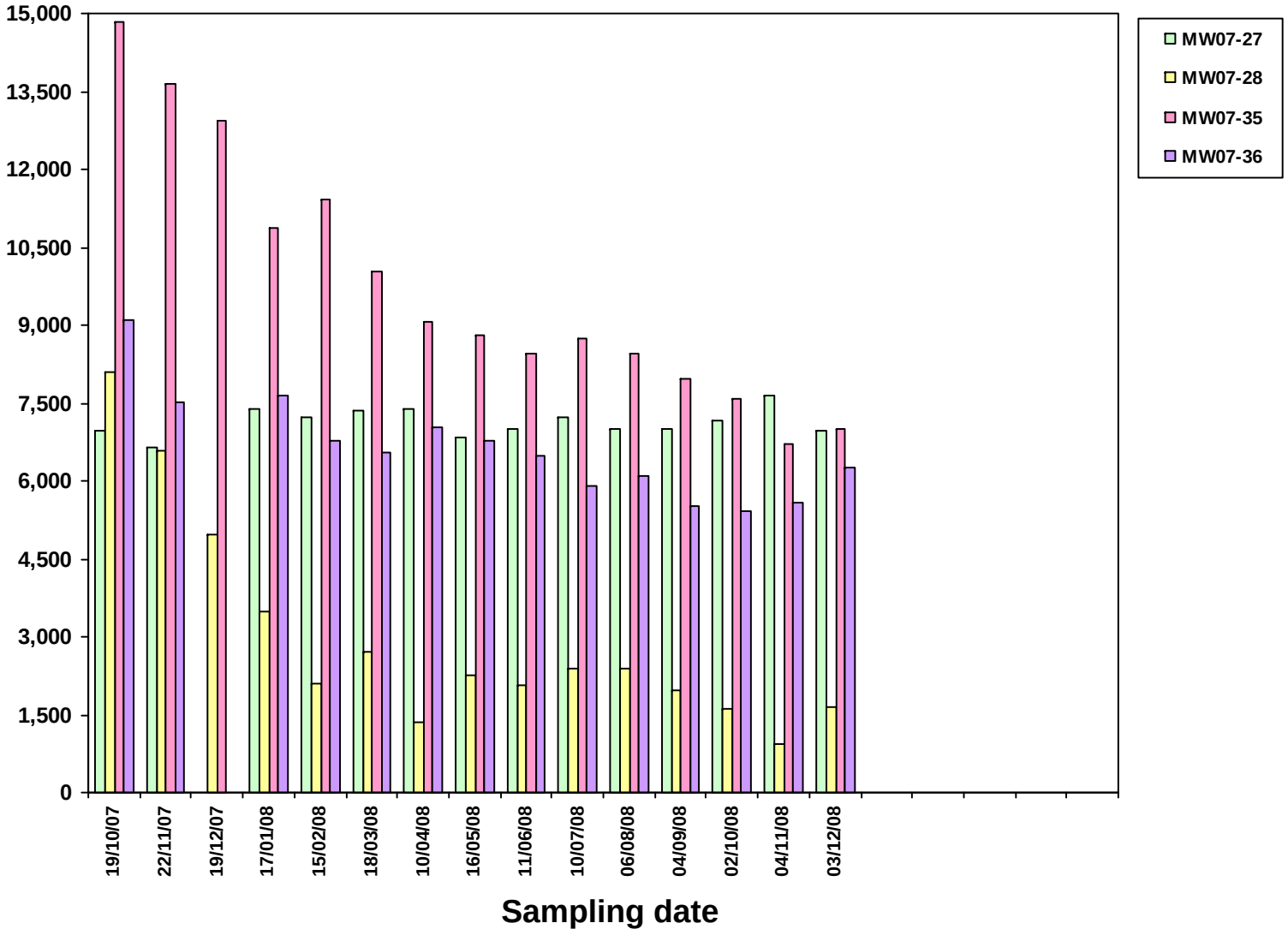


MONITORING RESULTS
ALL OFF-SITE WELLS

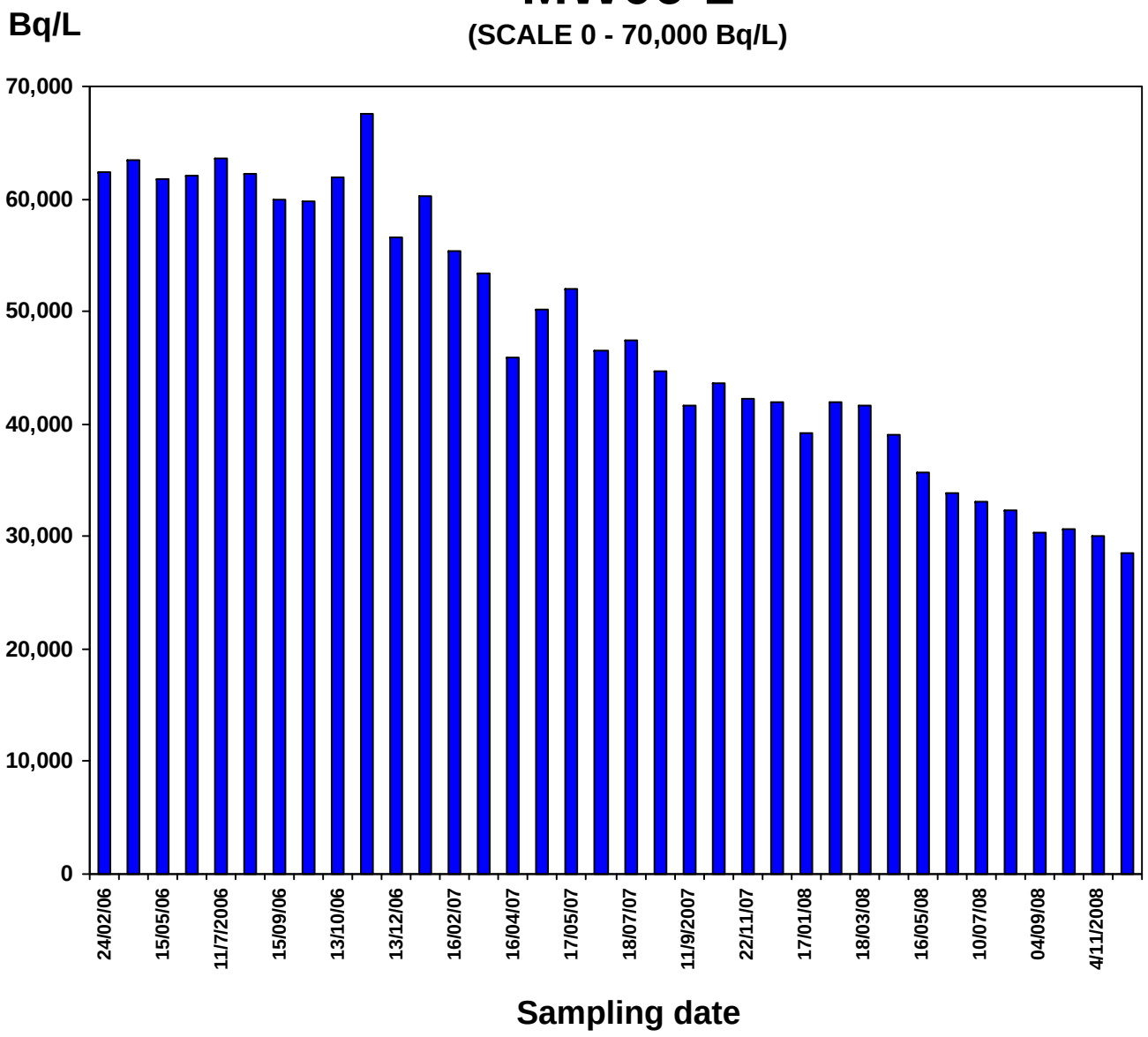


MONITORING RESULTS
ALL OFF-SITE WELLS

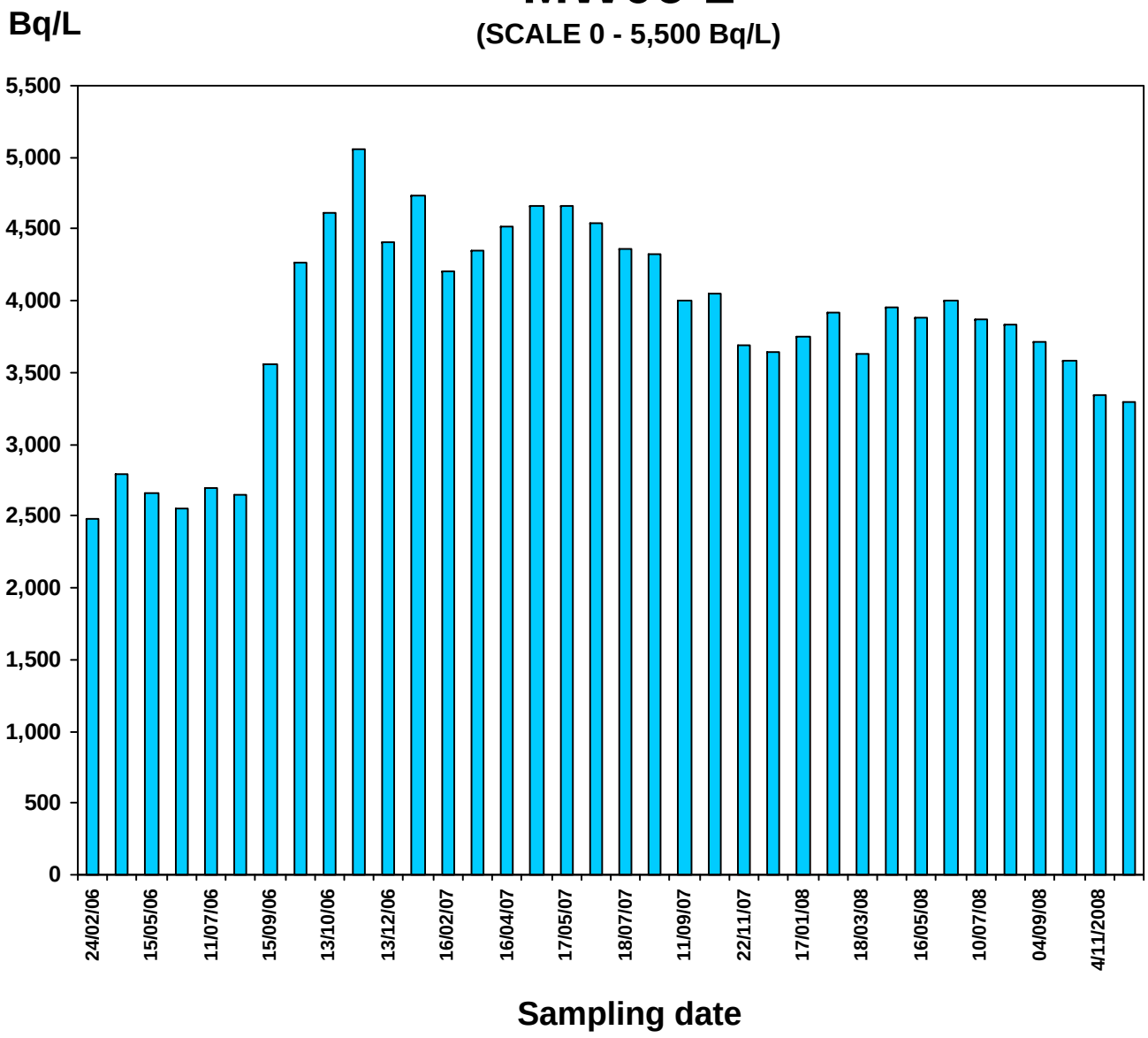
(SCALE 0 – 15,000 Bq/L)



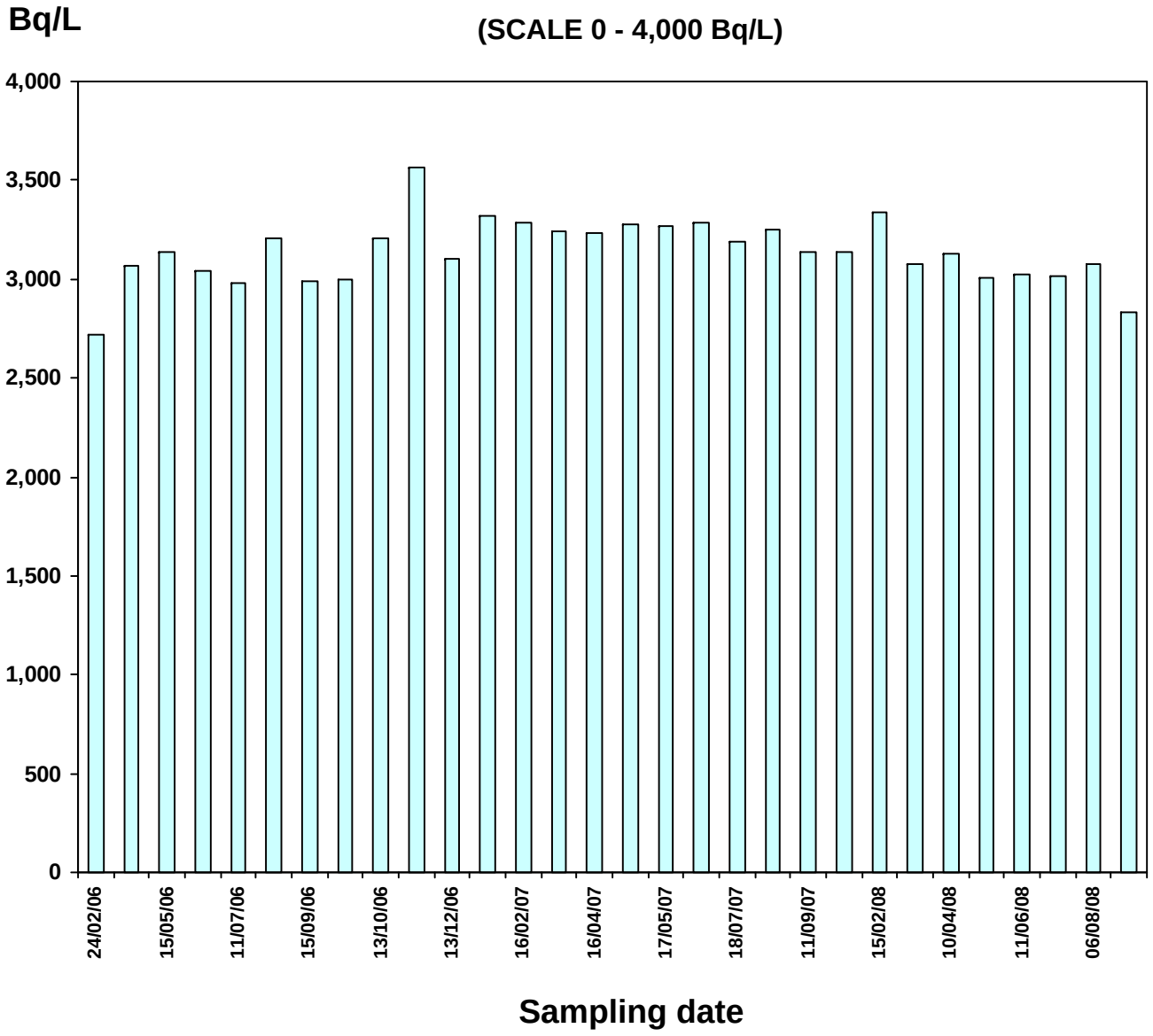
MONITORING RESULTS
MW06-1



MONITORING RESULTS
MW06-2

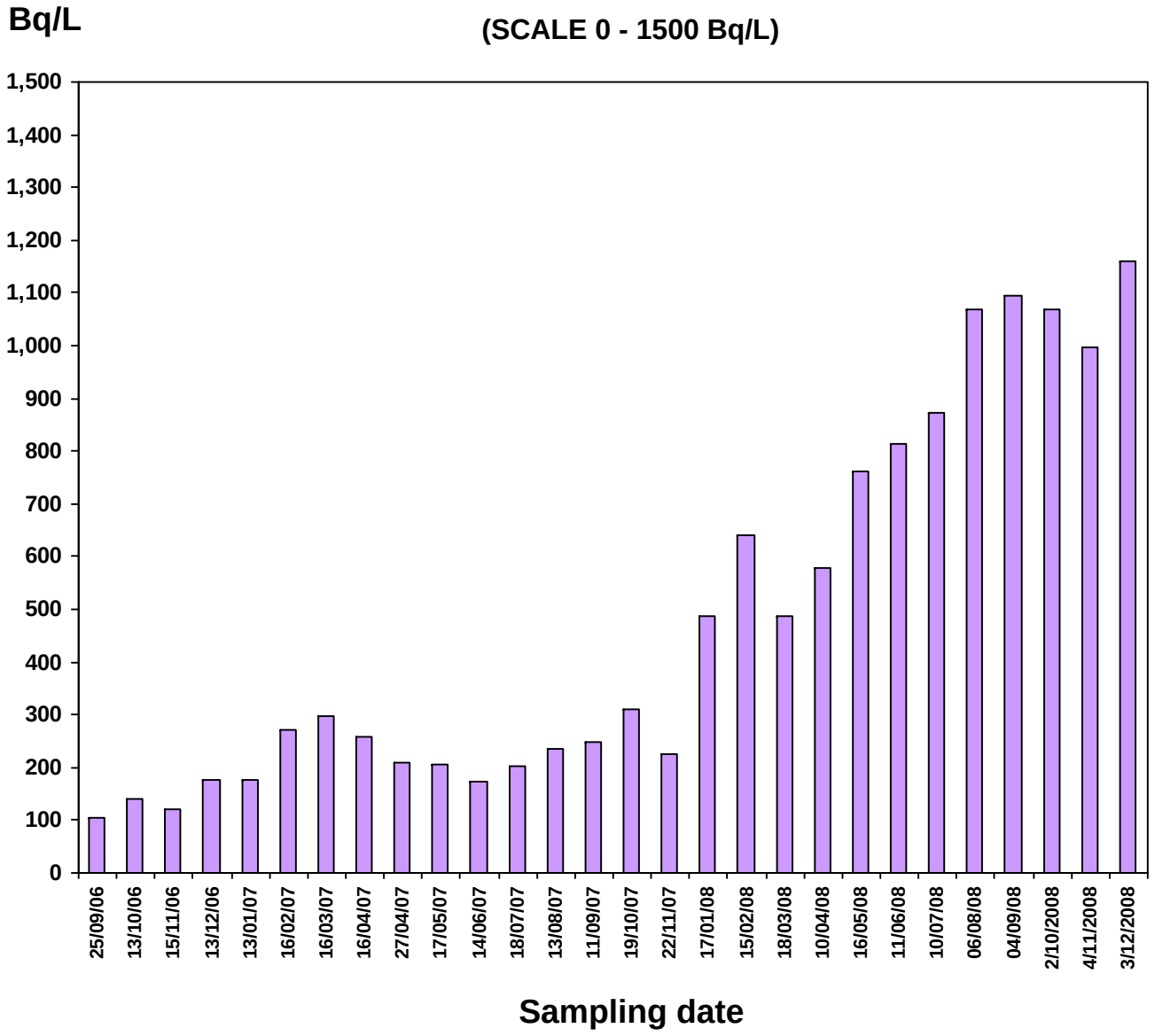


MONITORING RESULTS
MW06-3

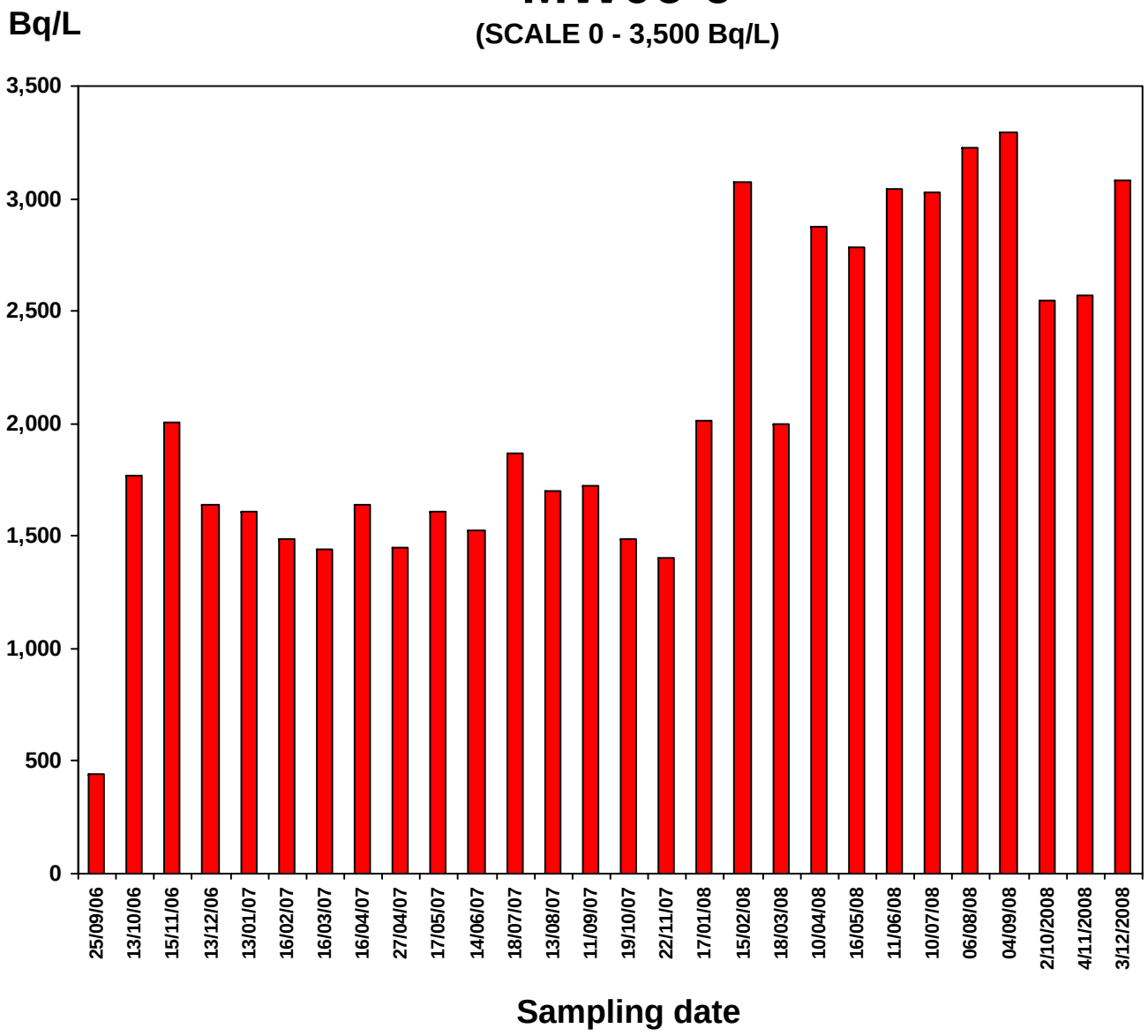


MONITORING RESULTS
MW06-8

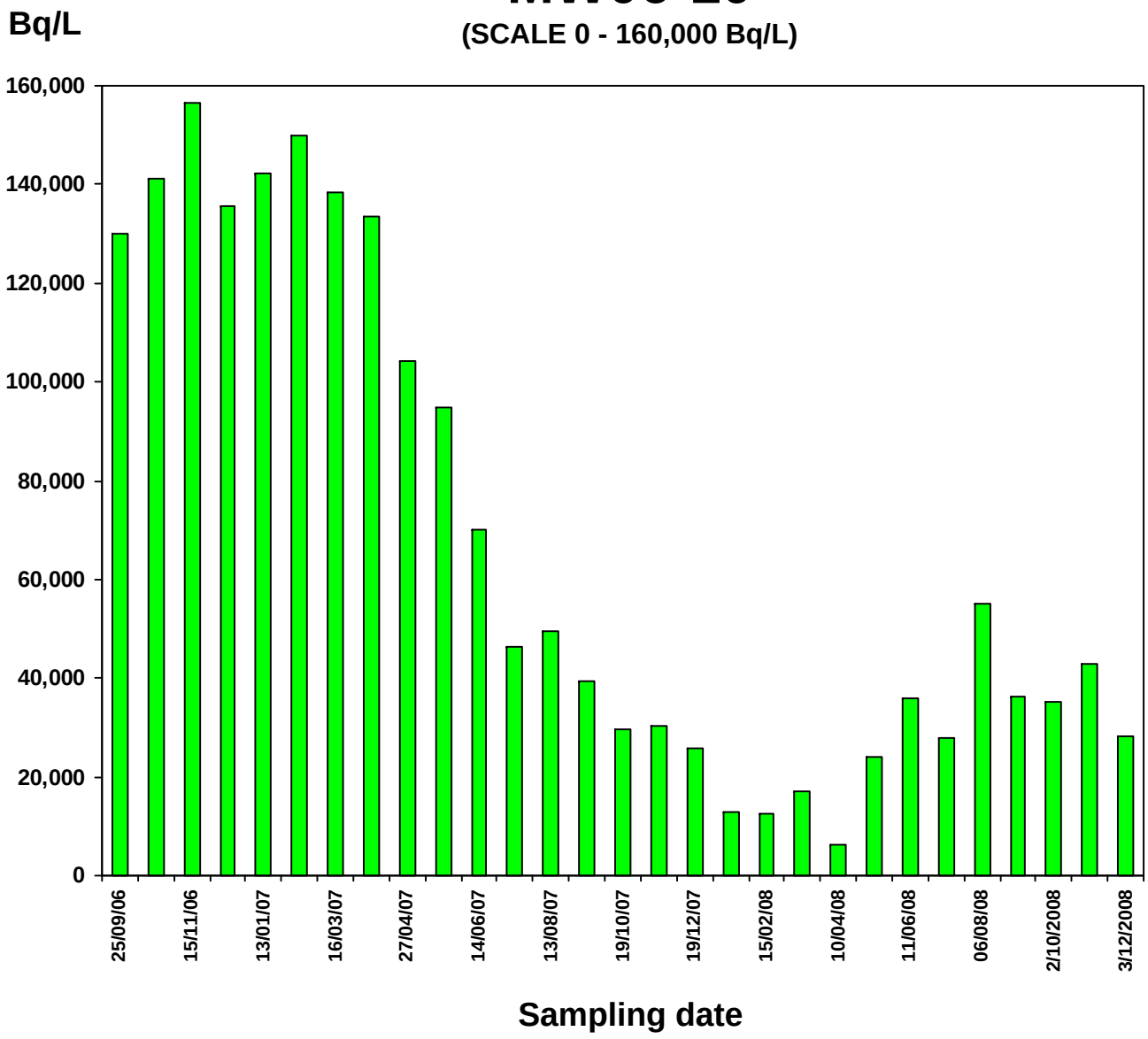
(SCALE 0 - 1500 Bq/L)



MONITORING RESULTS
MW06-9

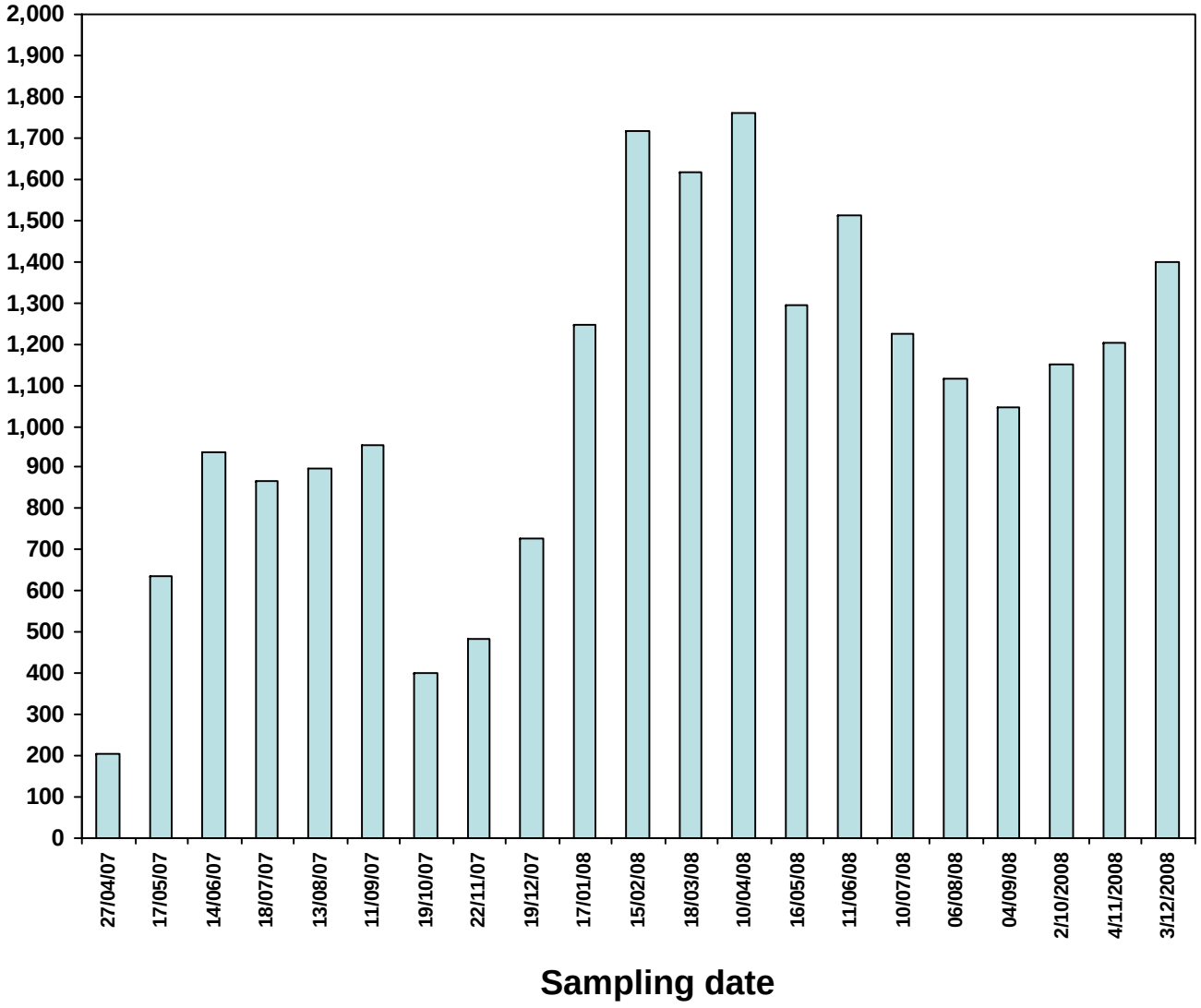


MONITORING RESULTS
MW06-10

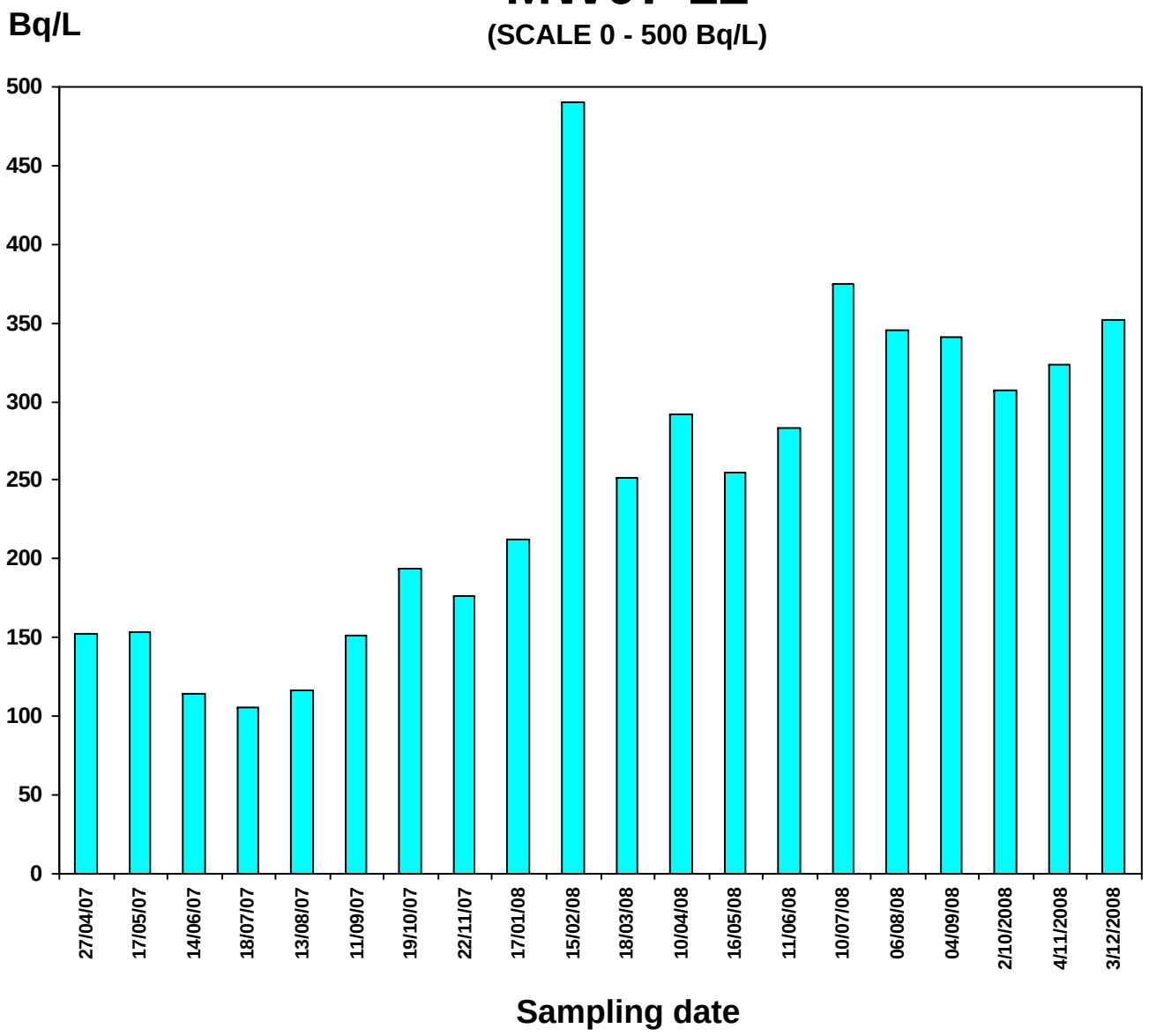


MONITORING RESULTS
MW07-11

(SCALE 0 - 2000 Bq/L)

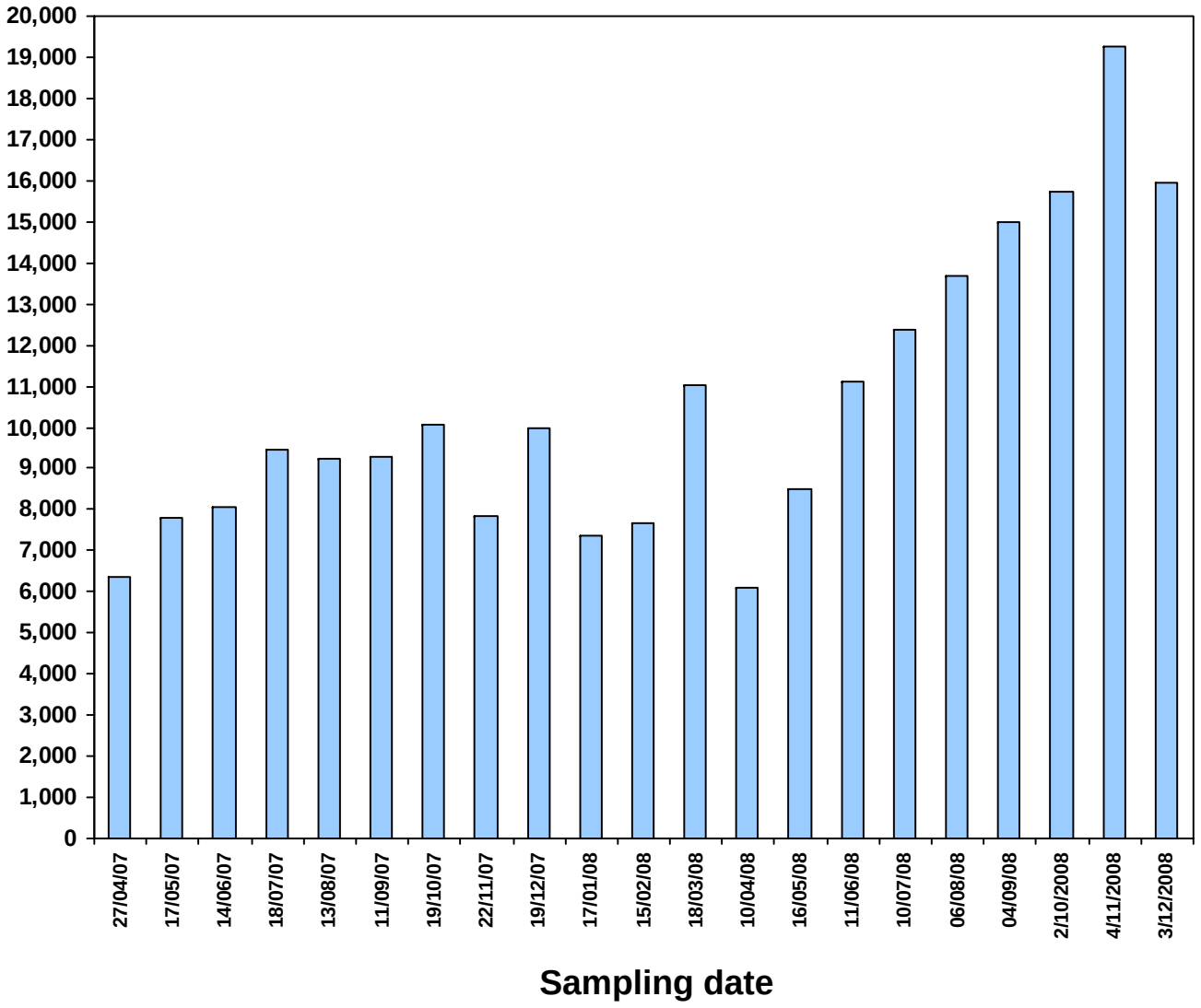


MONITORING RESULTS
MW07-12



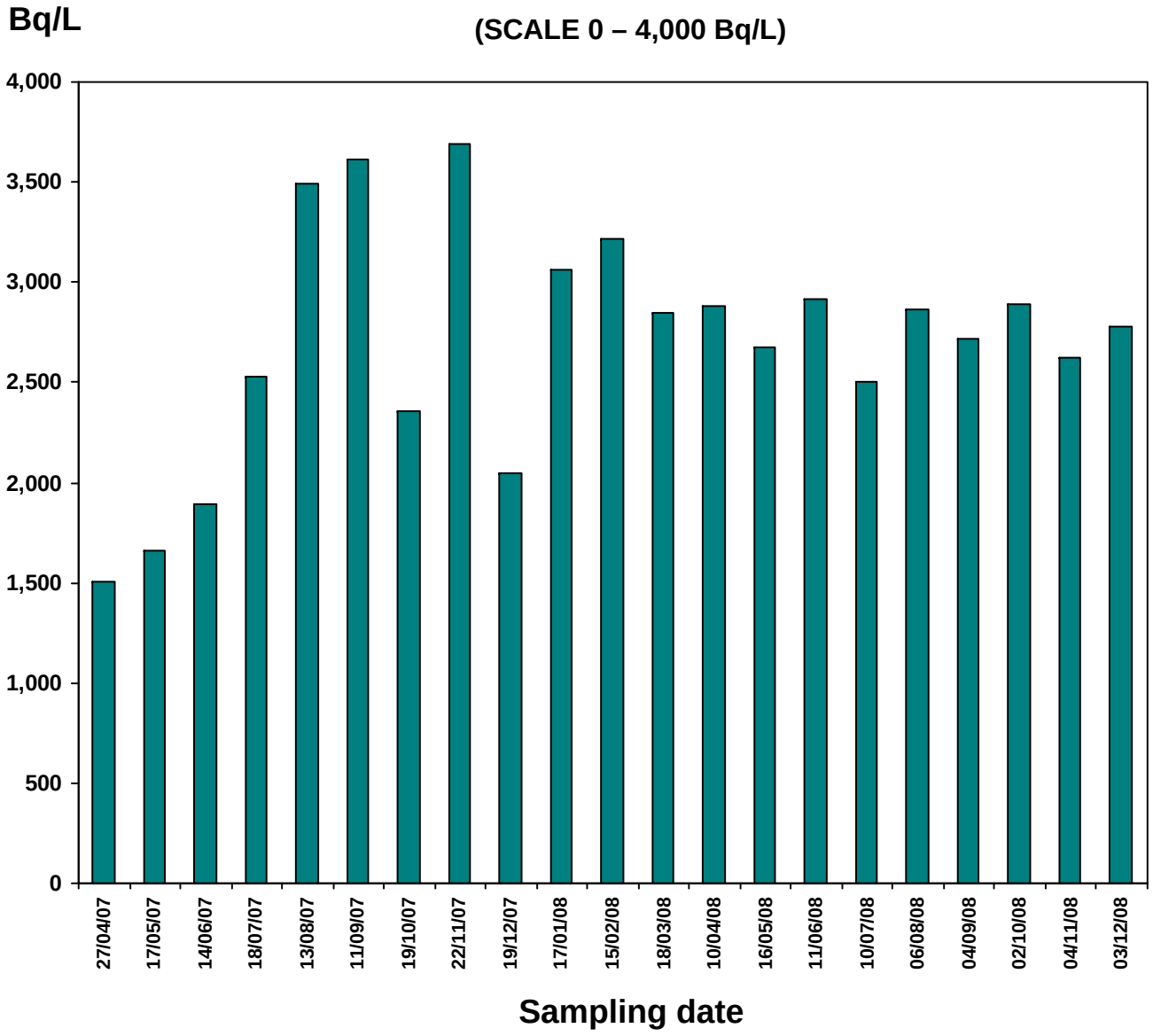
MONITORING RESULTS
MW07-13

(SCALE 0 – 20,000 Bq/L)



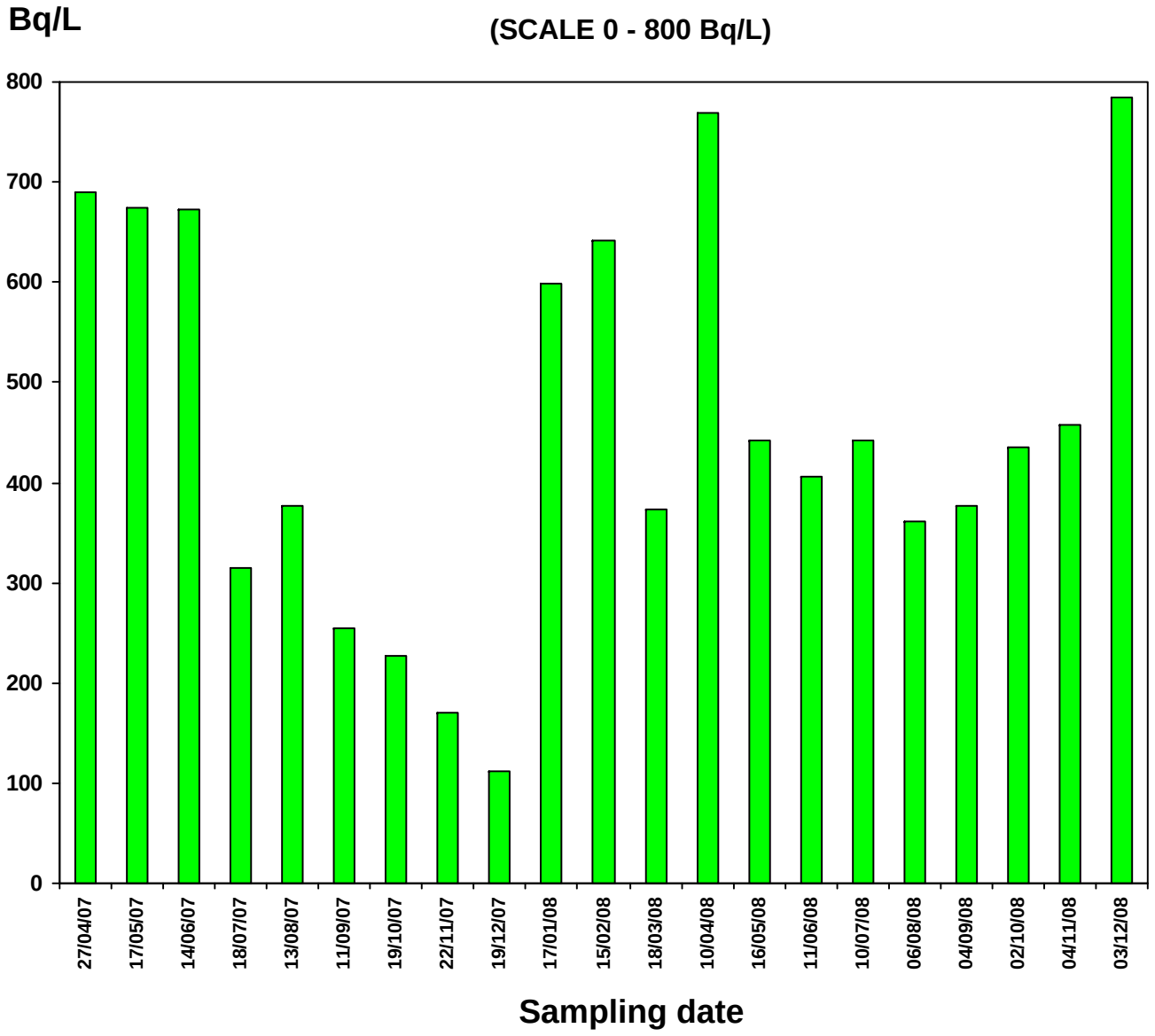
MONITORING RESULTS
MW07-14

(SCALE 0 – 4,000 Bq/L)

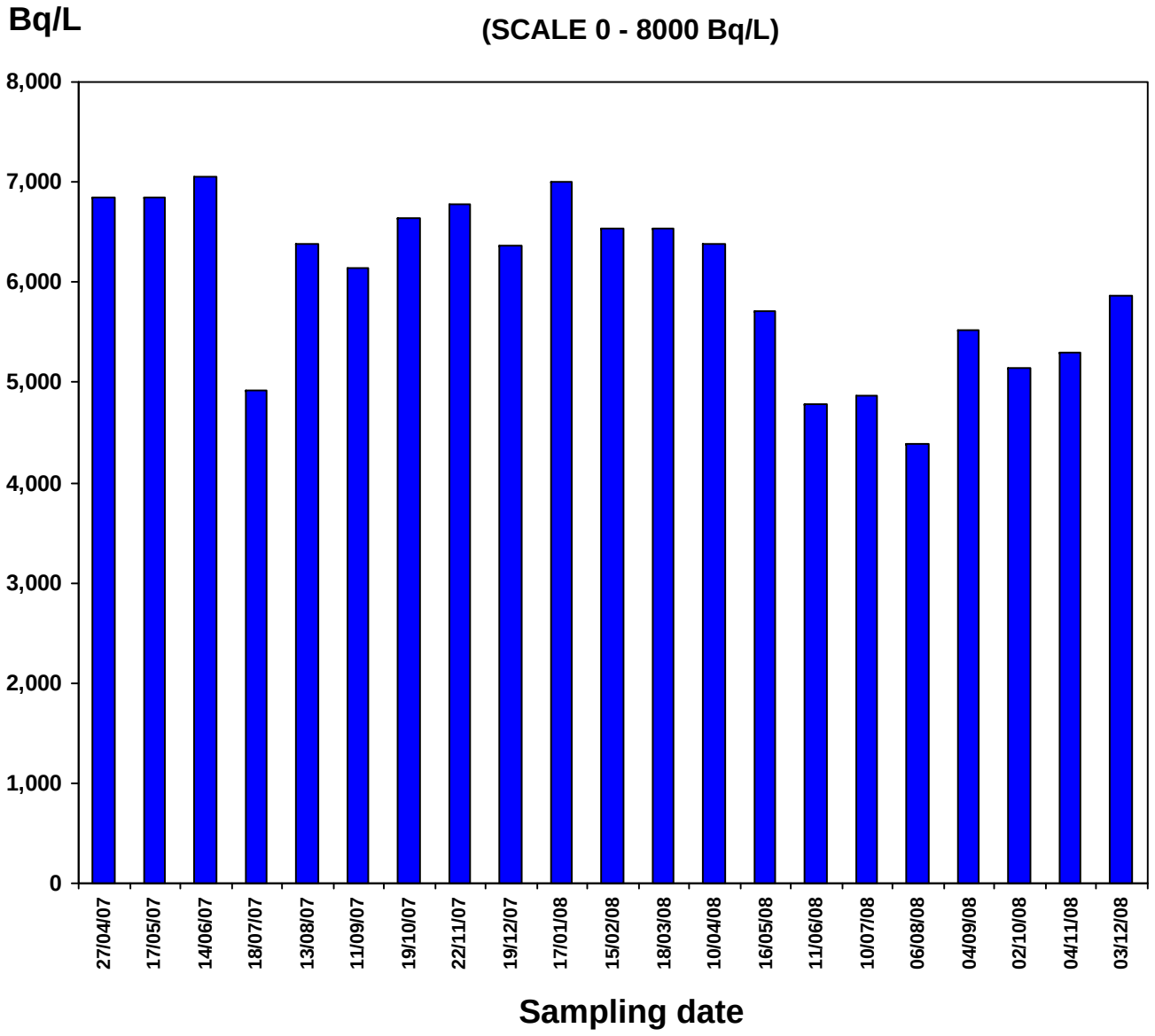


MONITORING RESULTS
MW07-15

(SCALE 0 - 800 Bq/L)

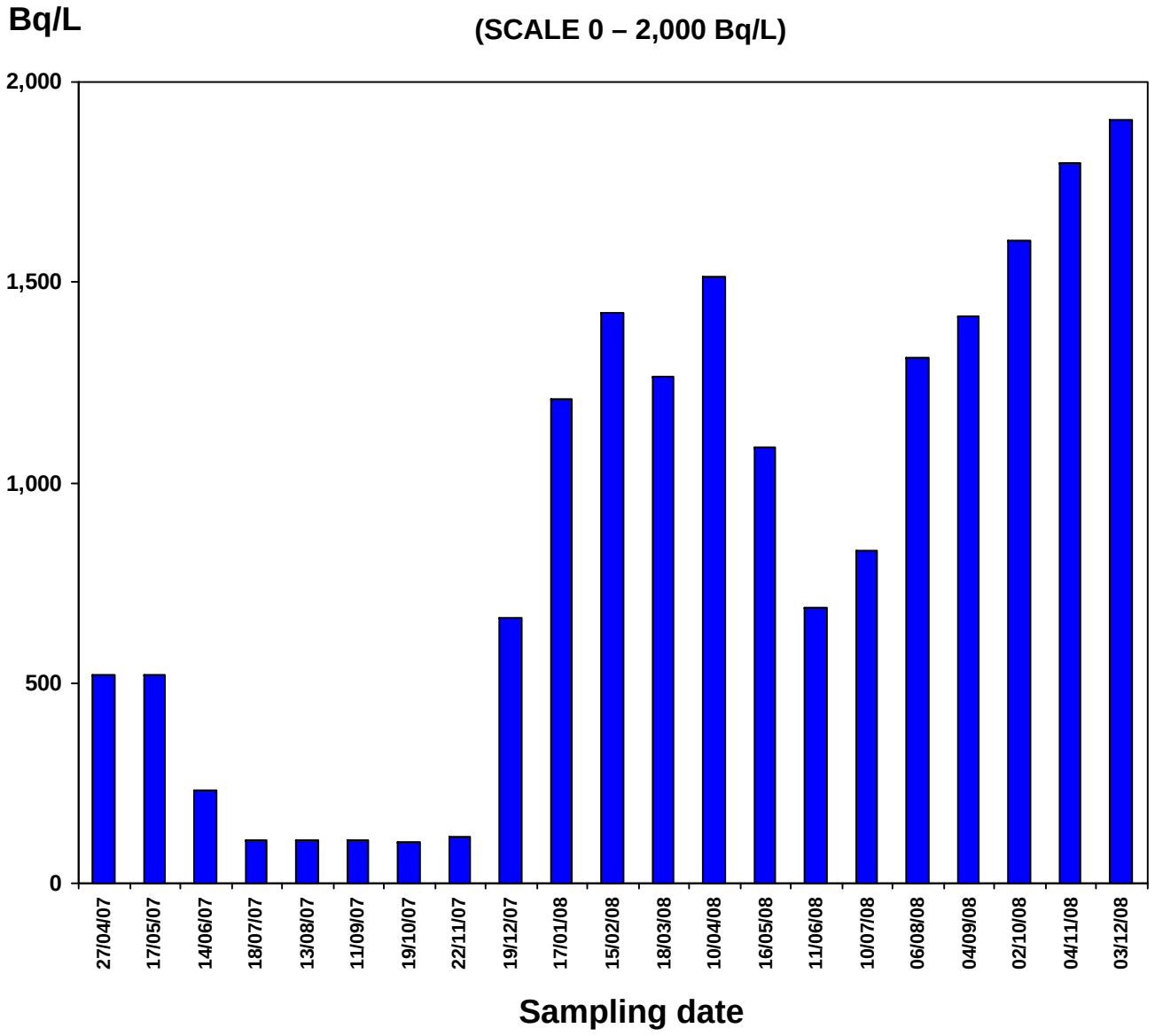


MONITORING RESULTS
MW07-16
(SCALE 0 - 8000 Bq/L)

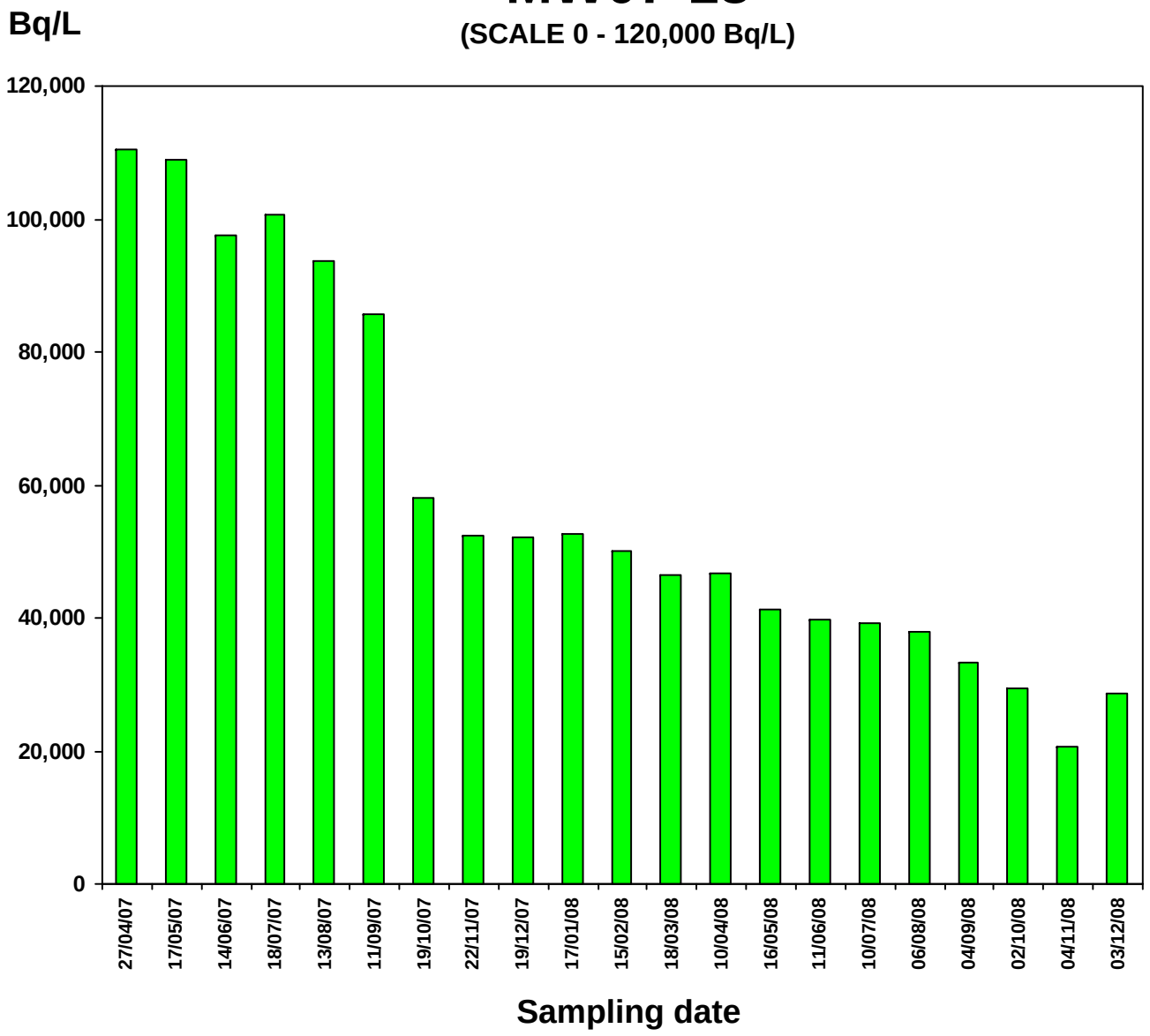


MONITORING RESULTS
MW07-17

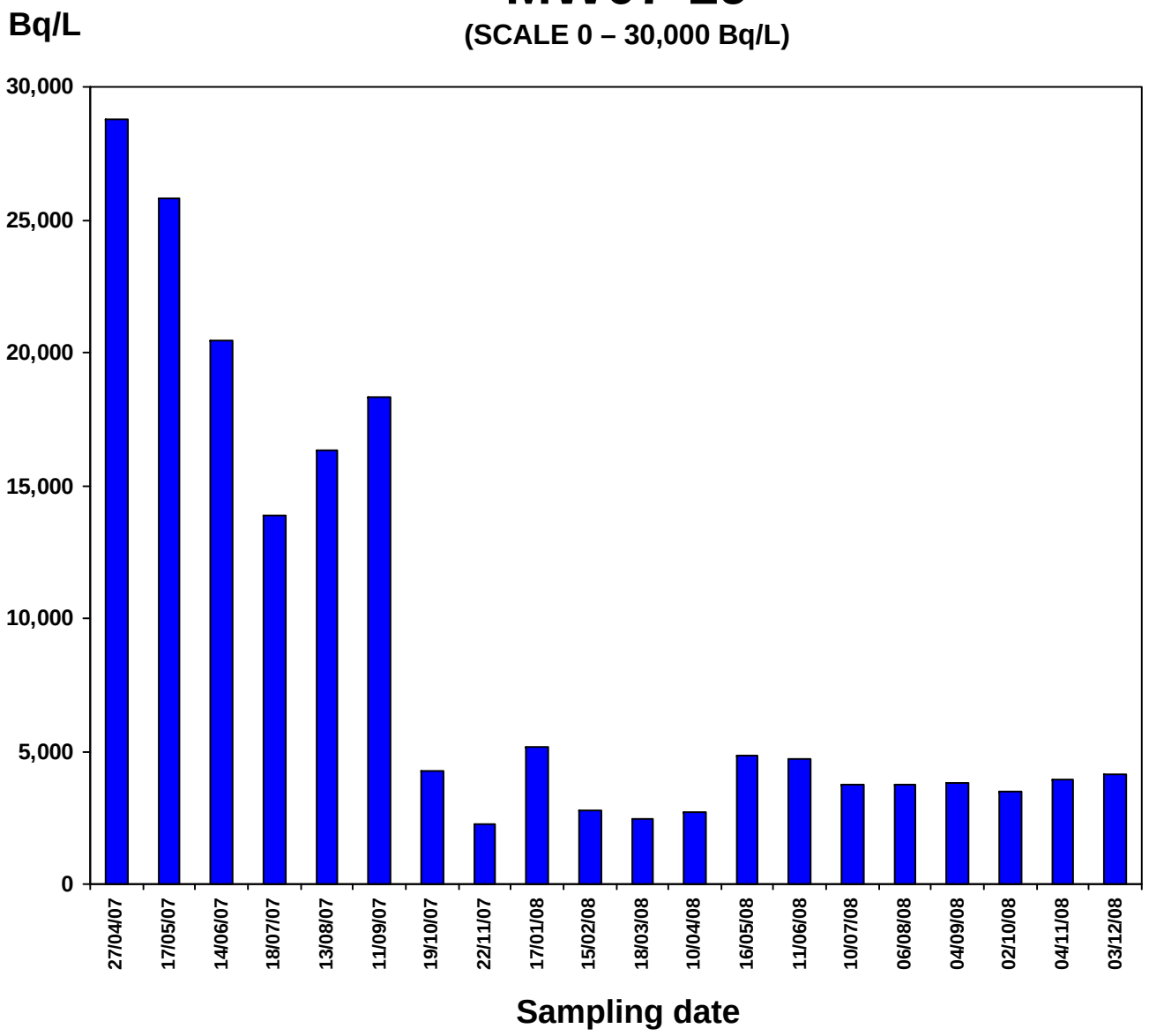
(SCALE 0 – 2,000 Bq/L)



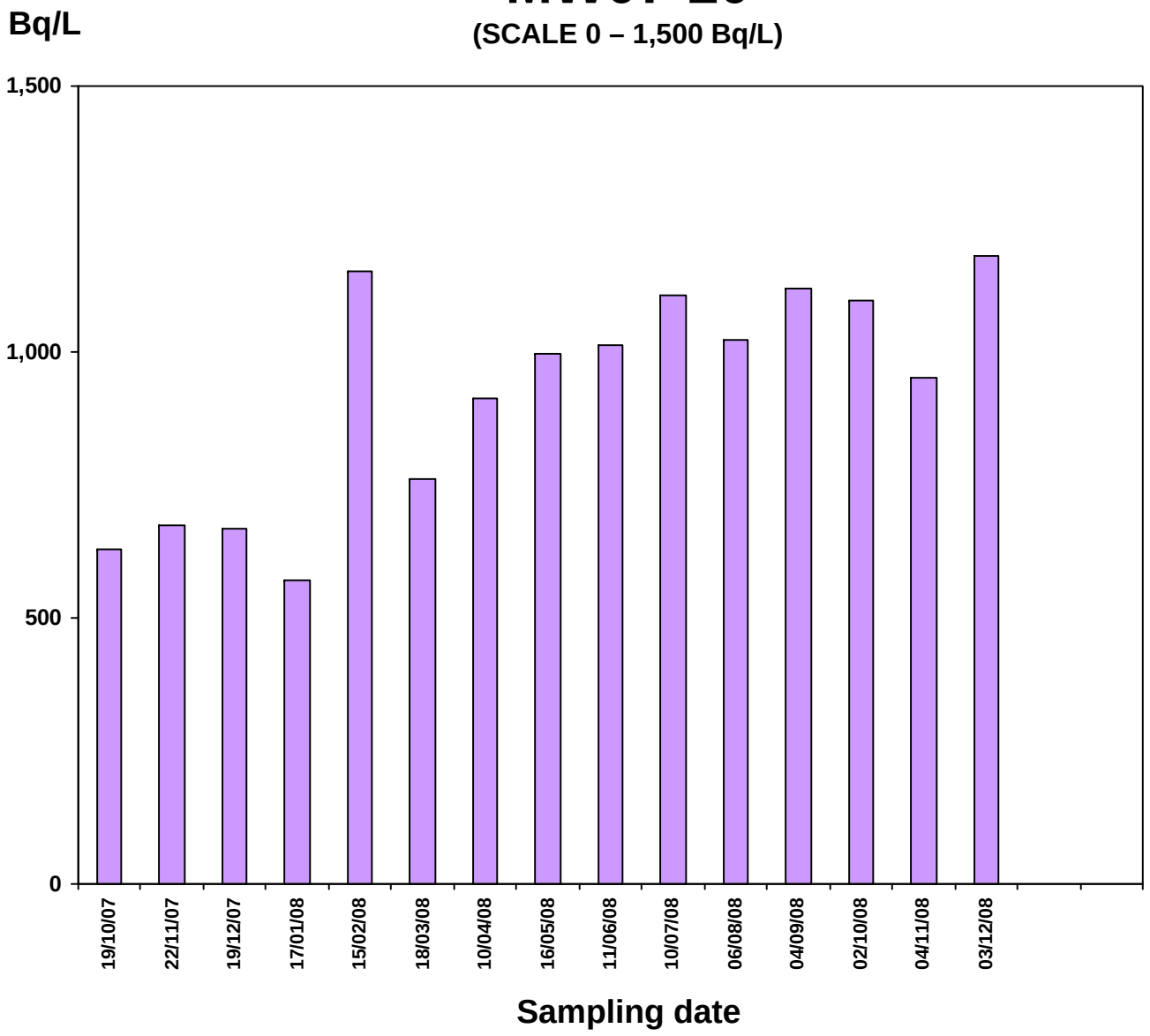
MONITORING RESULTS
MW07-18



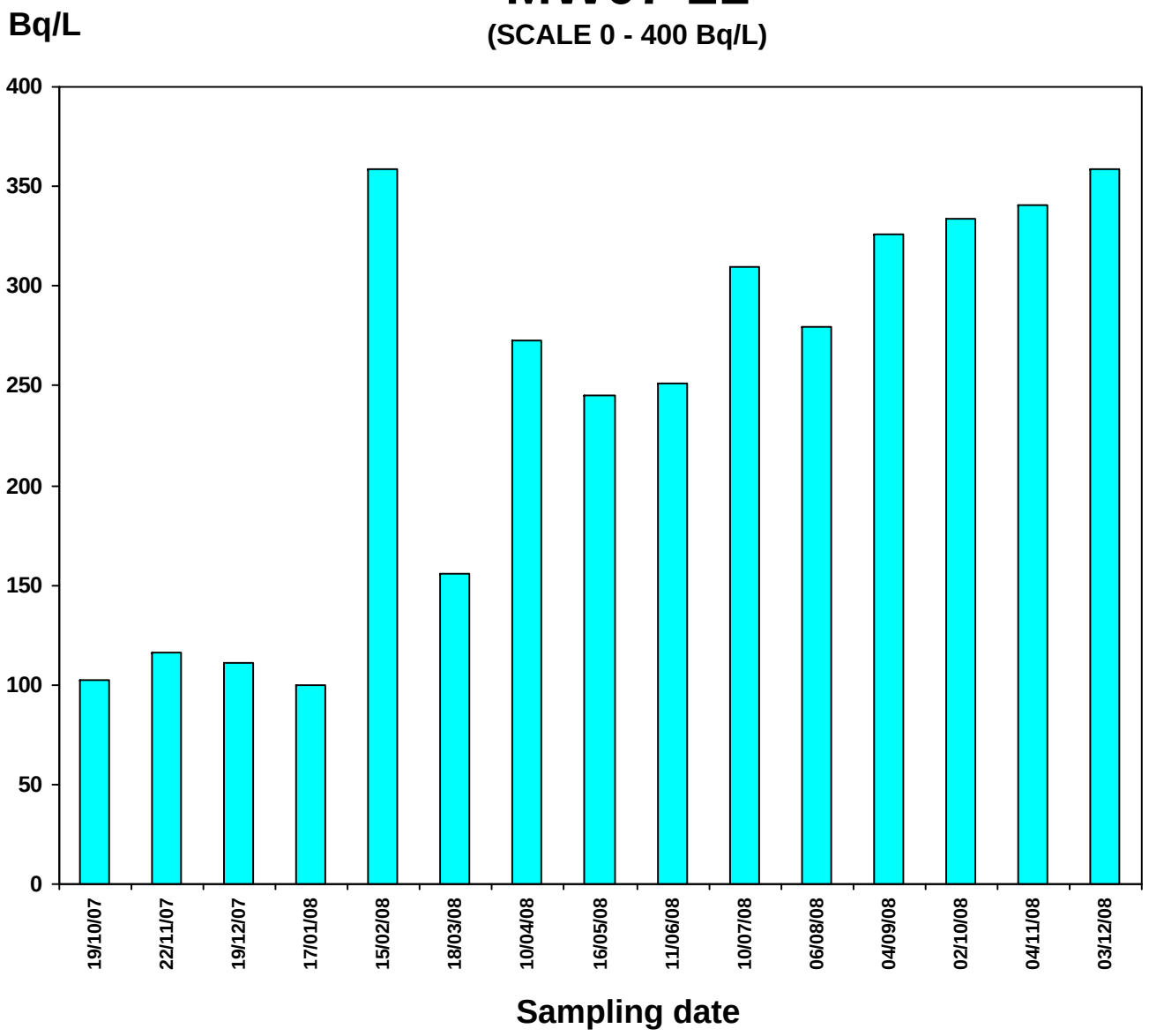
MONITORING RESULTS
MW07-19



MONITORING RESULTS
MW07-20

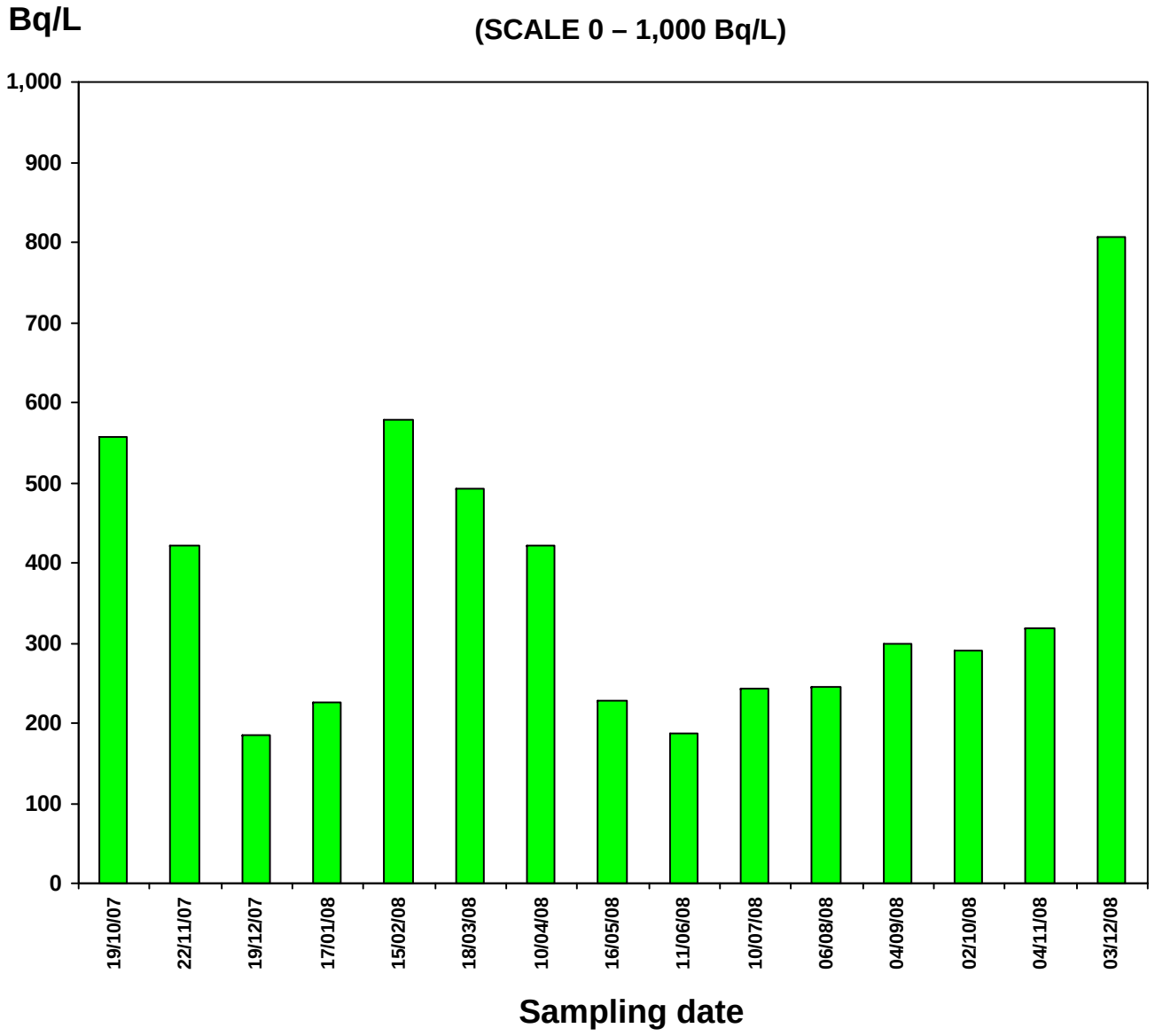


MONITORING RESULTS
MW07-21



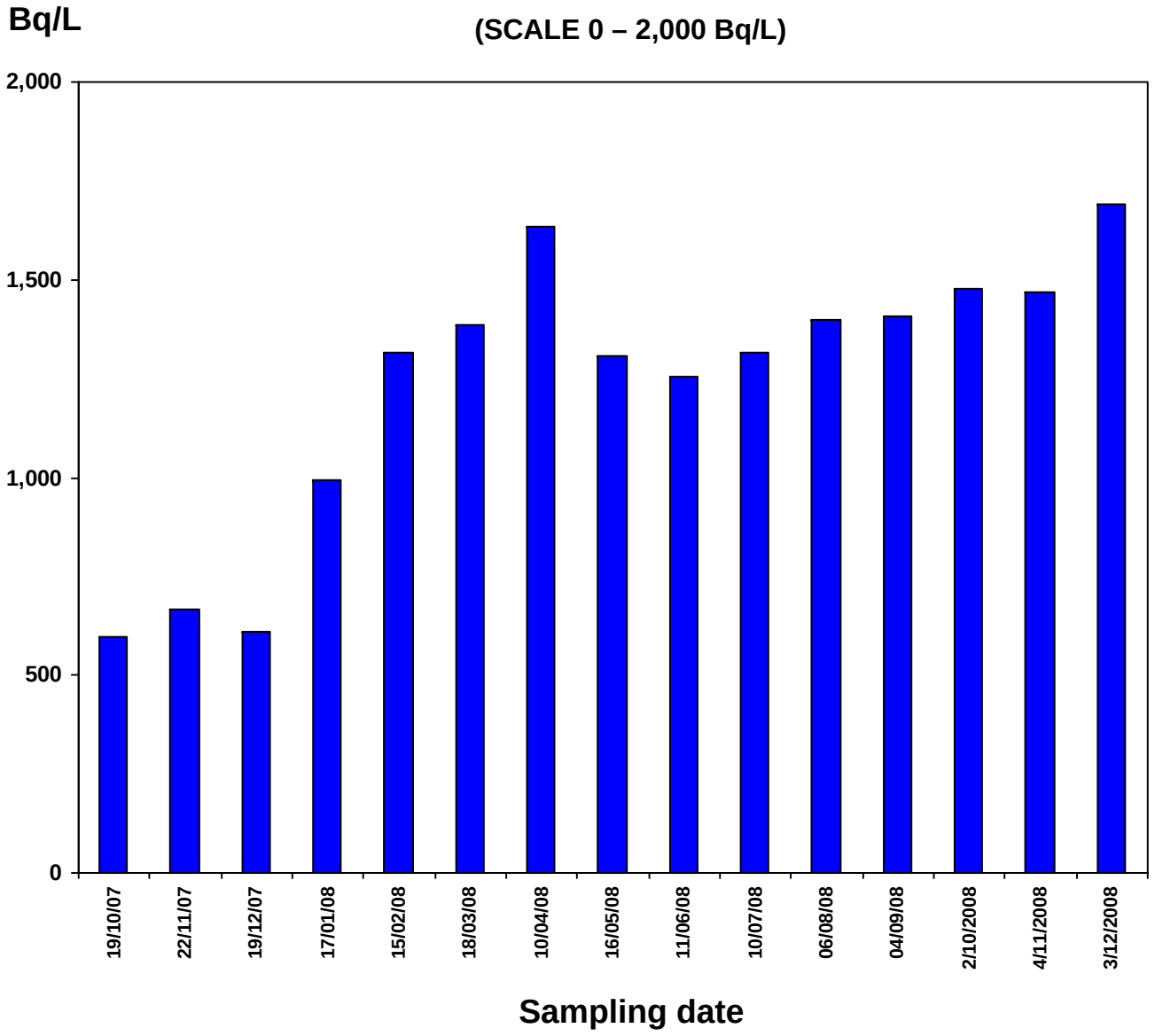
MONITORING RESULTS
MW07-22

(SCALE 0 – 1,000 Bq/L)



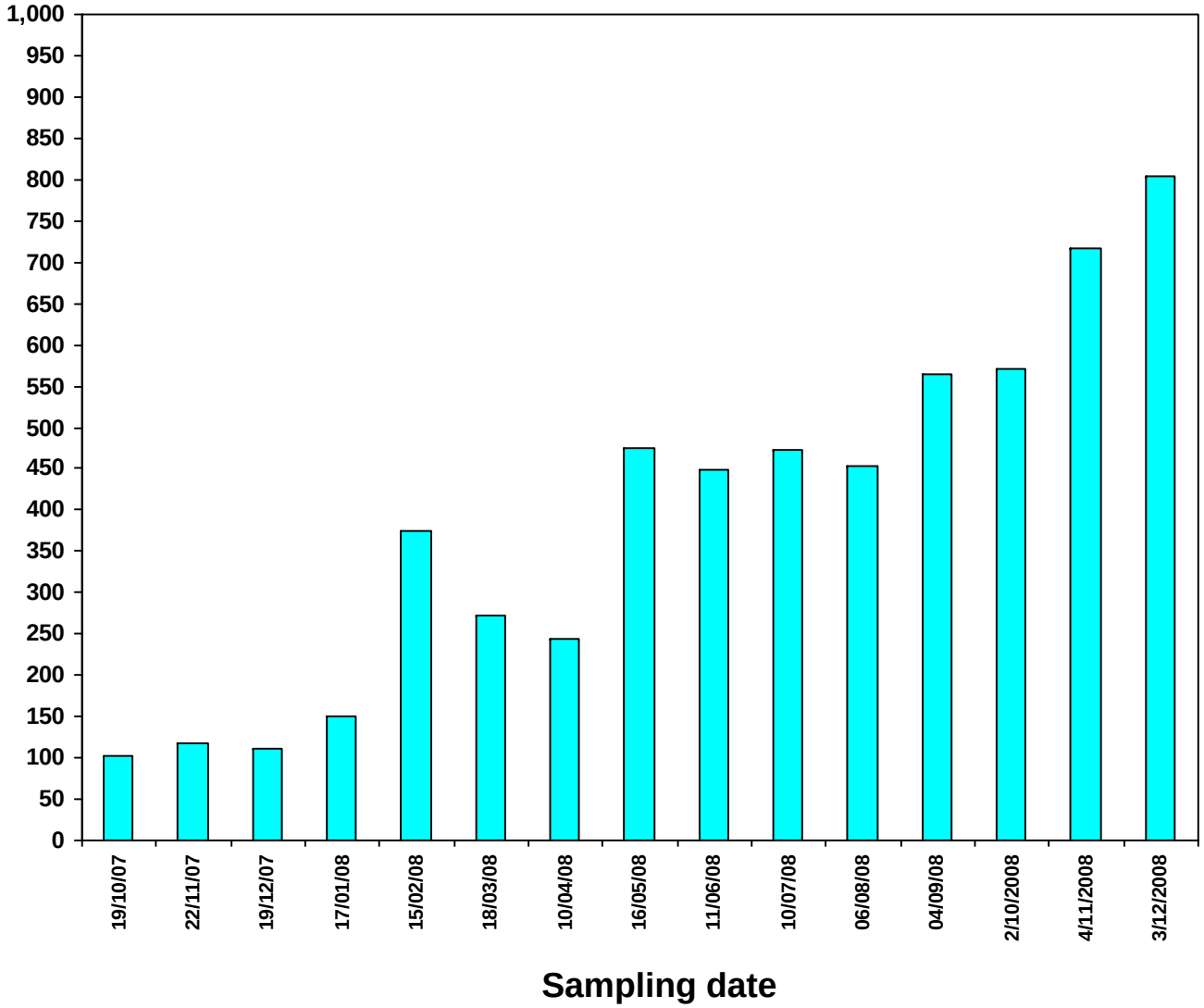
MONITORING RESULTS
MW07-23

(SCALE 0 – 2,000 Bq/L)



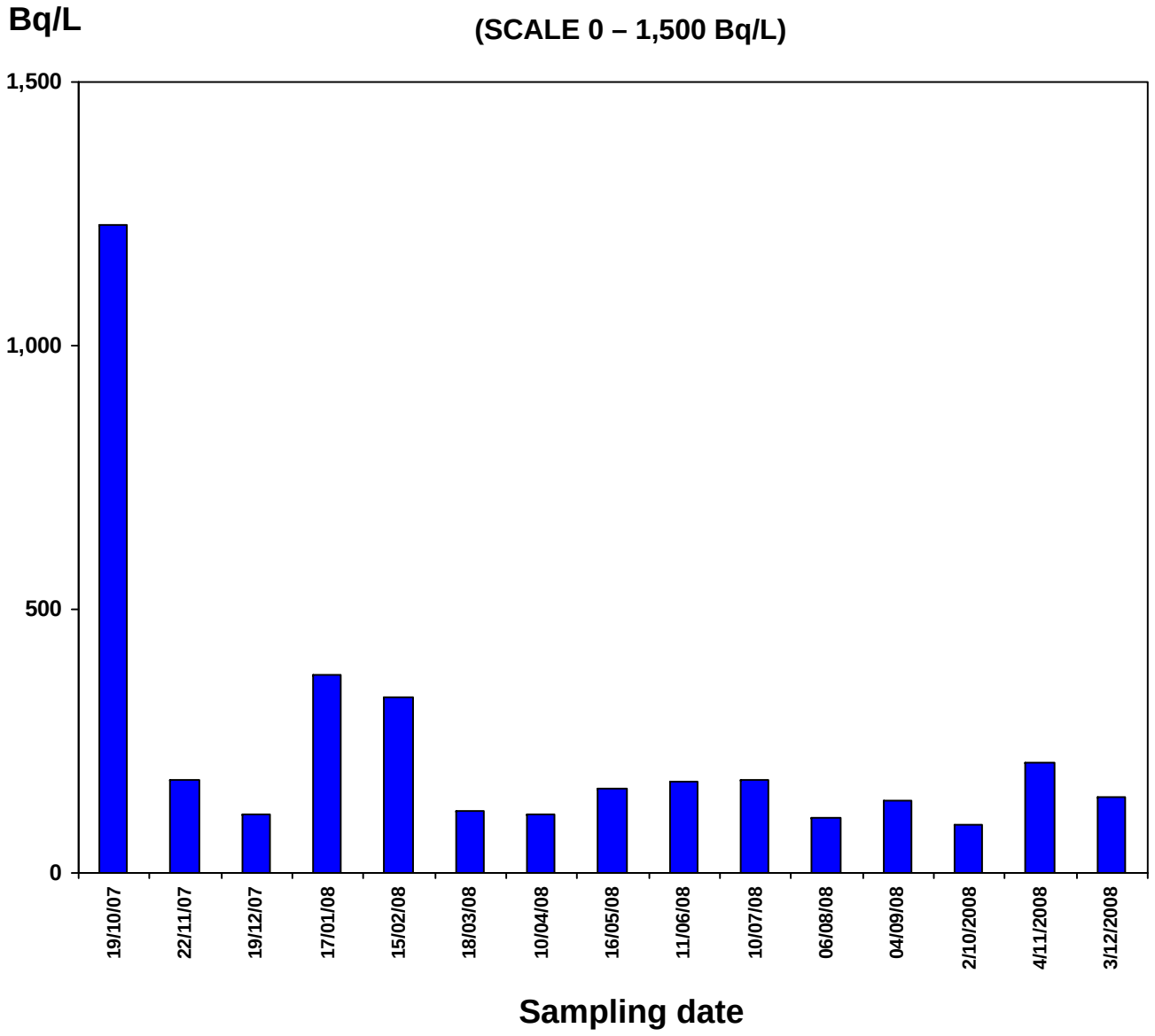
MONITORING RESULTS
MW07-24

(SCALE 0 – 1,000 Bq/L)



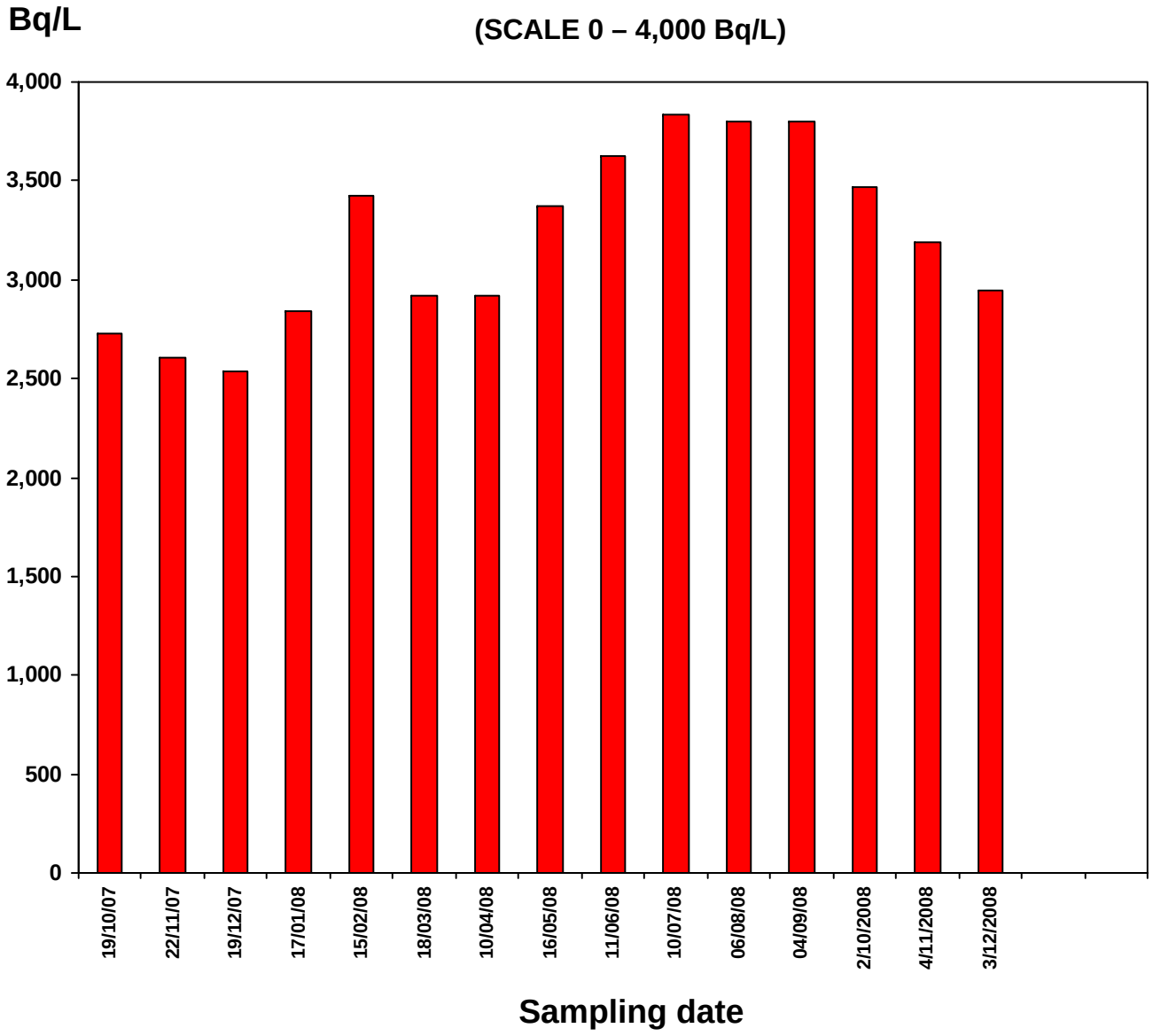
MONITORING RESULTS
MW07-25

(SCALE 0 – 1,500 Bq/L)



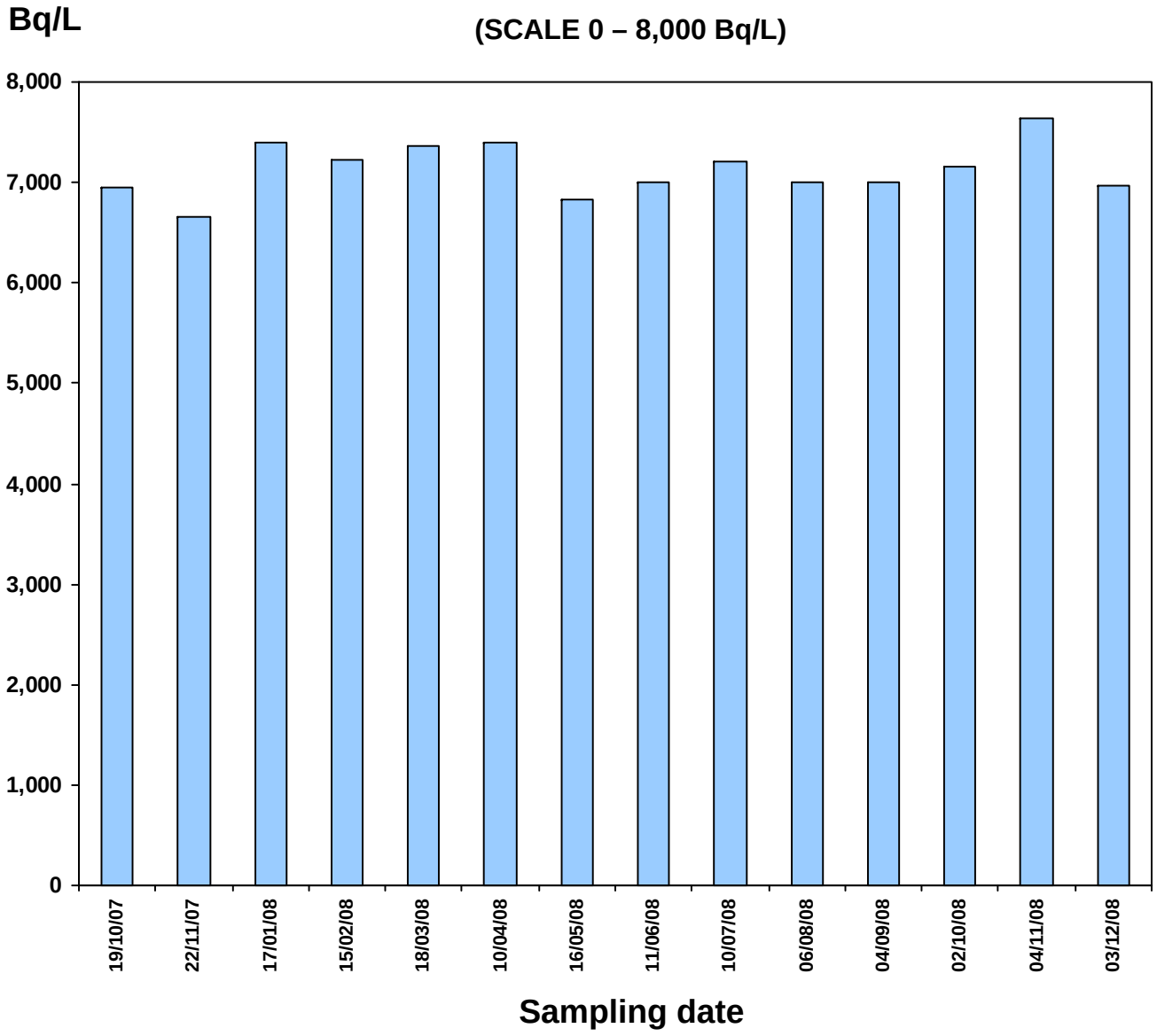
MONITORING RESULTS
MW07-26

(SCALE 0 – 4,000 Bq/L)



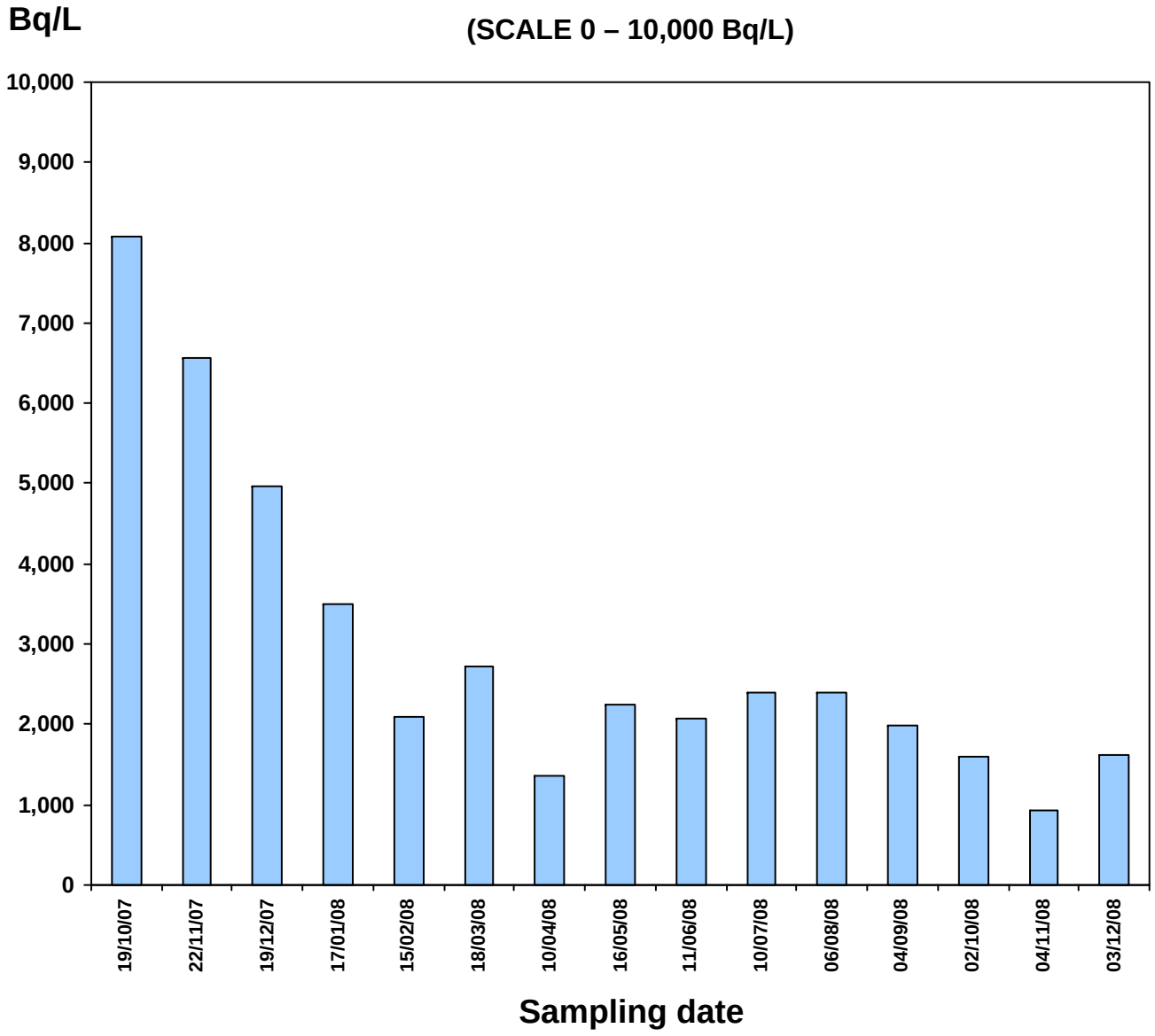
MONITORING RESULTS
MW07-27

(SCALE 0 – 8,000 Bq/L)

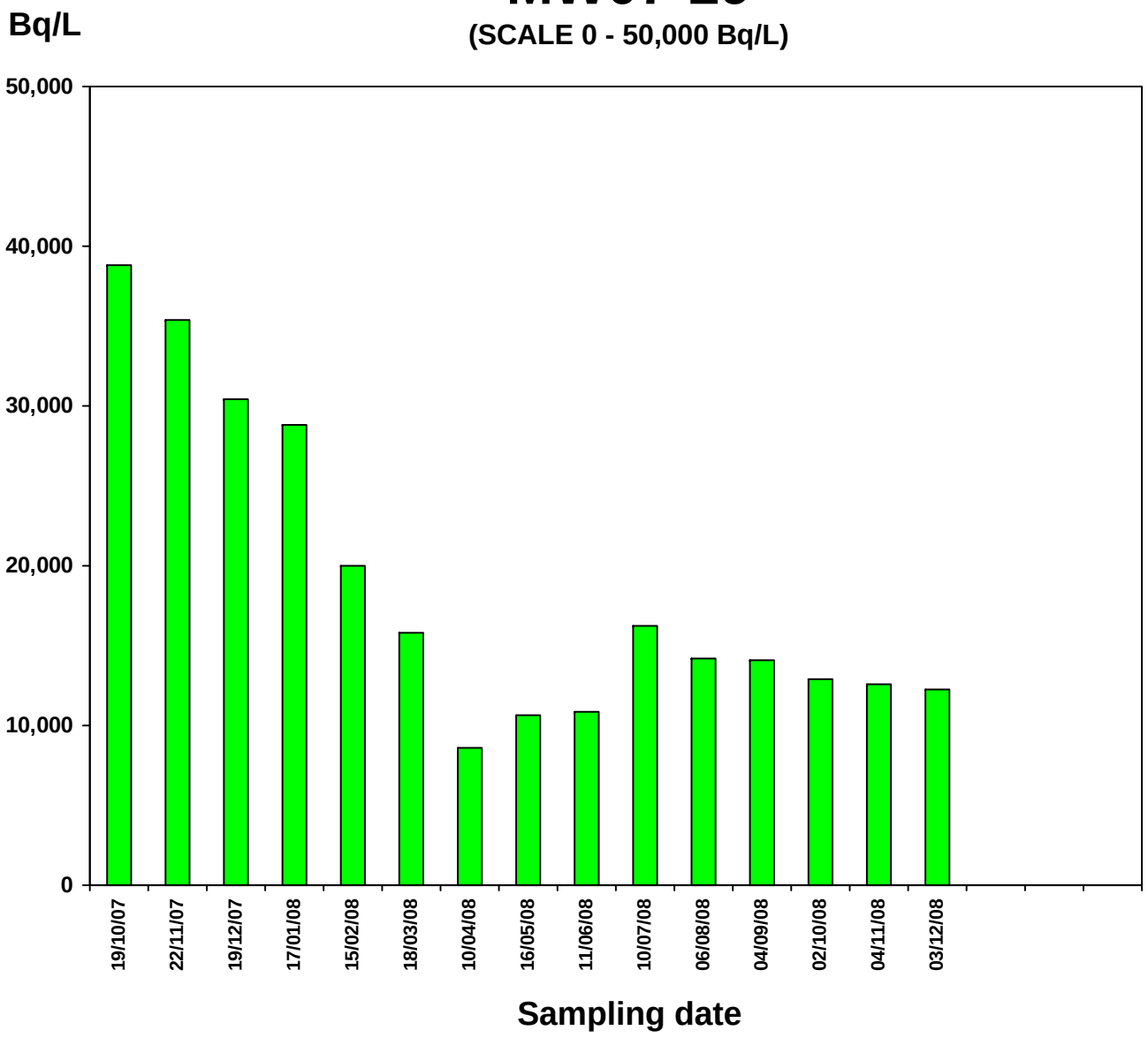


MONITORING RESULTS
MW07-28

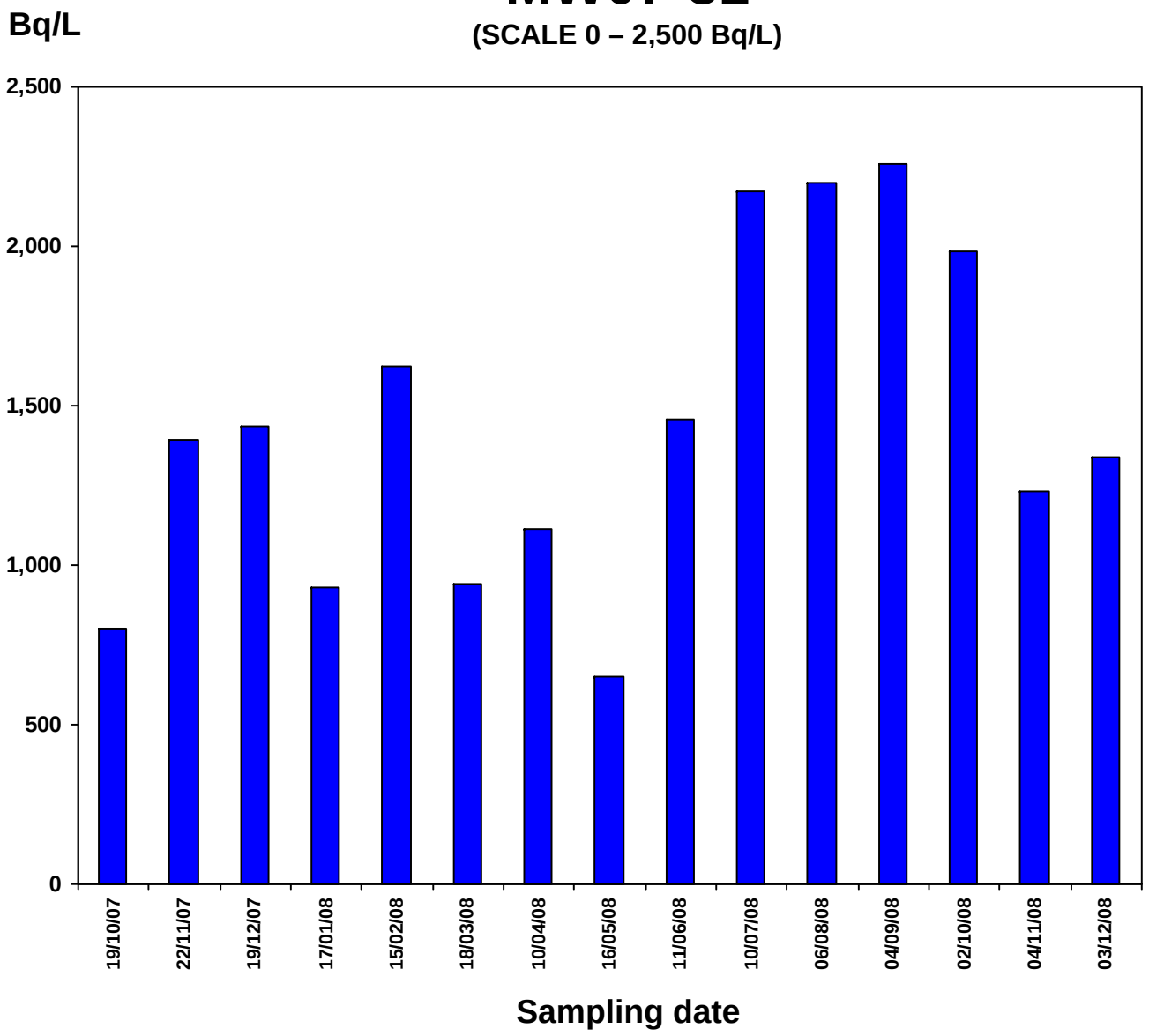
(SCALE 0 – 10,000 Bq/L)



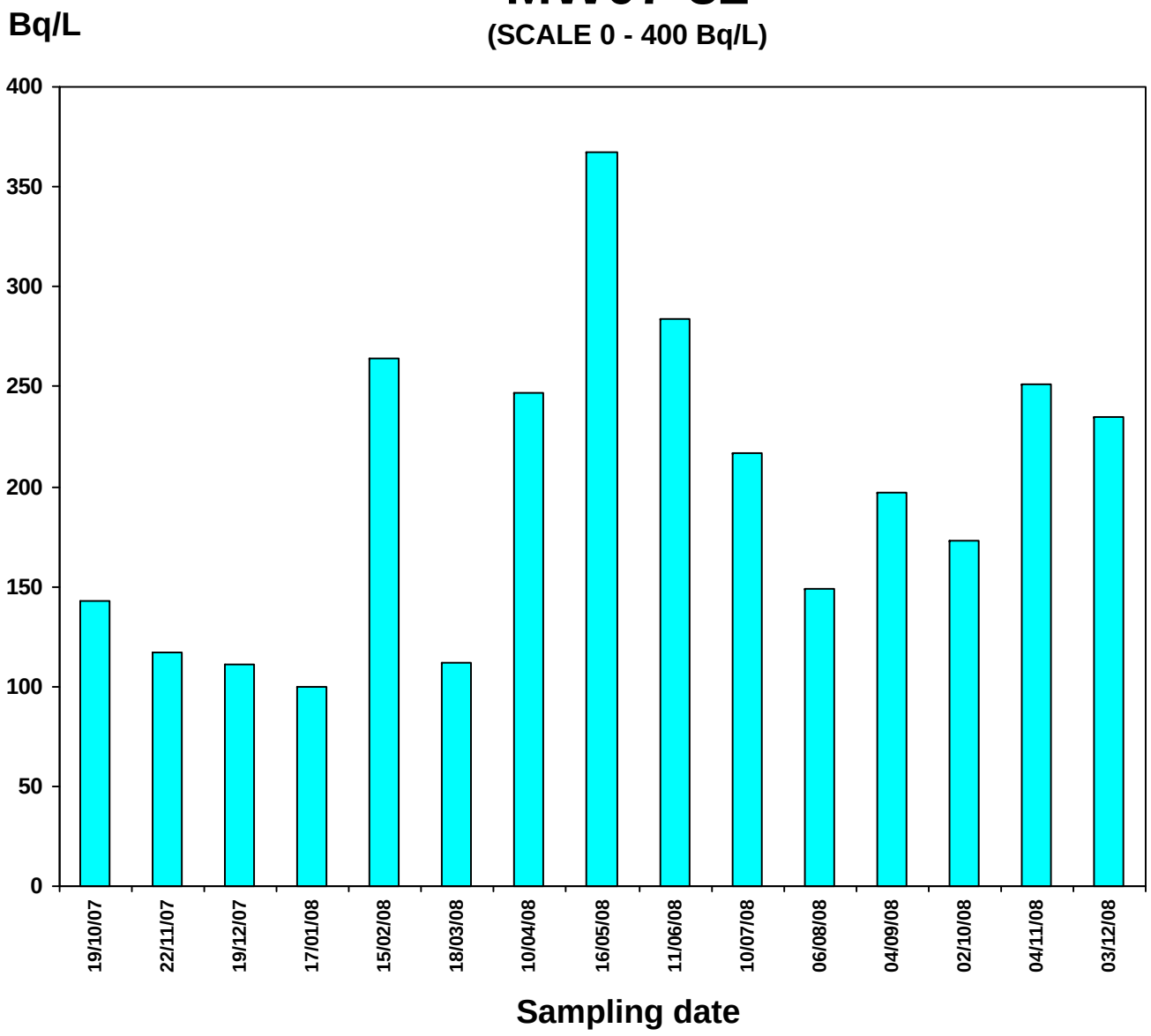
MONITORING RESULTS
MW07-29



MONITORING RESULTS
MW07-31

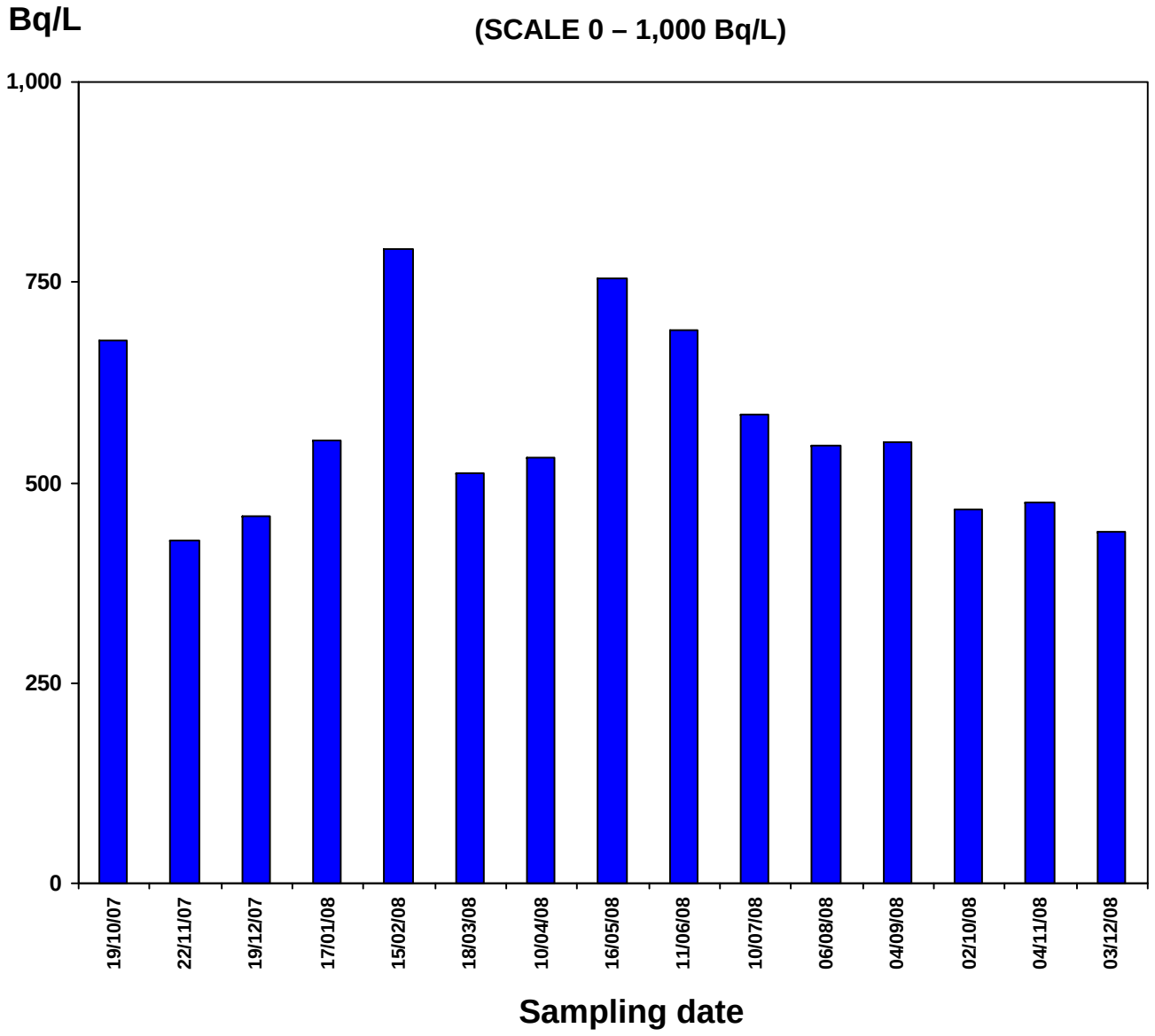


MONITORING RESULTS
MW07-32

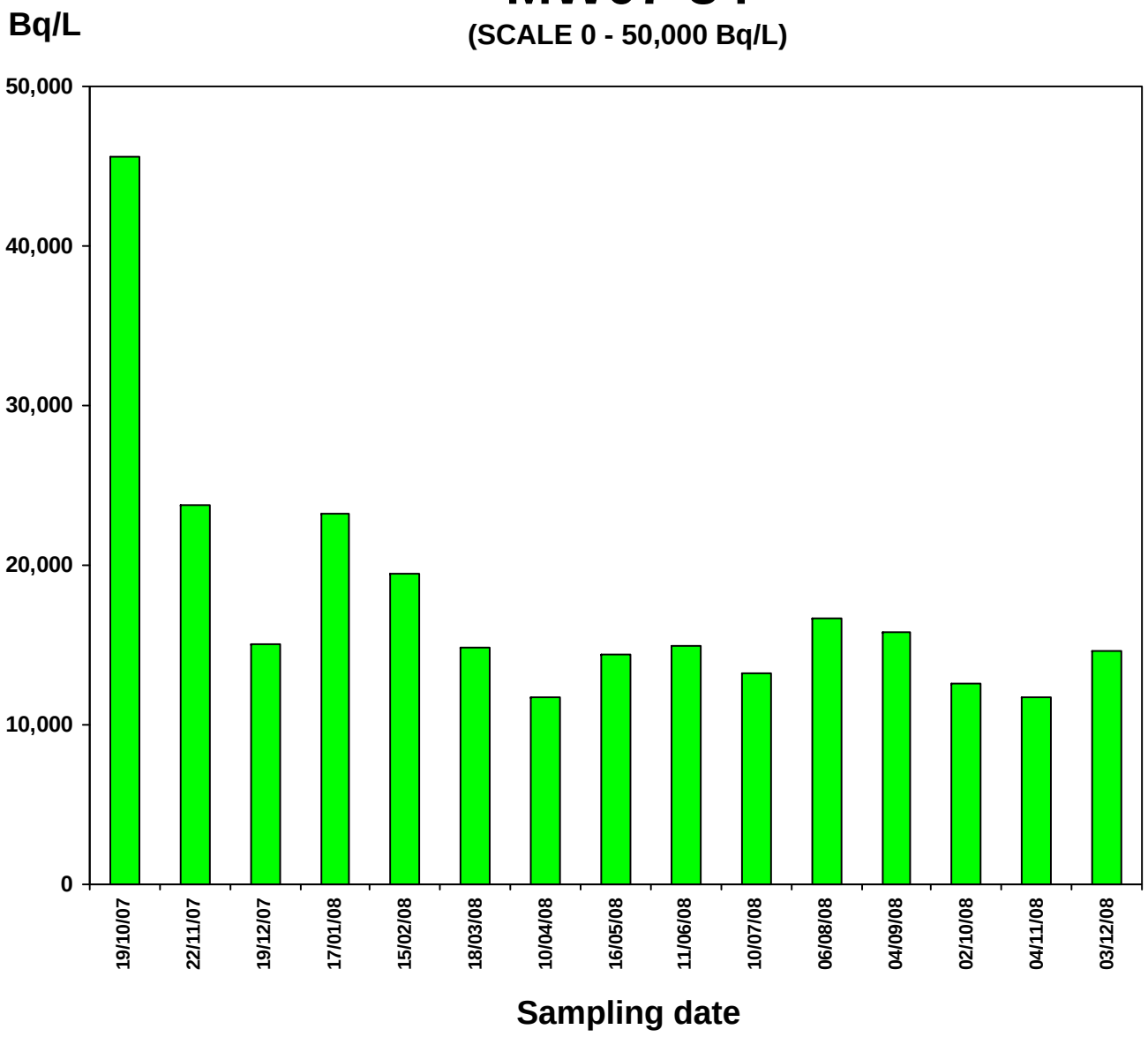


MONITORING RESULTS
MW07-33

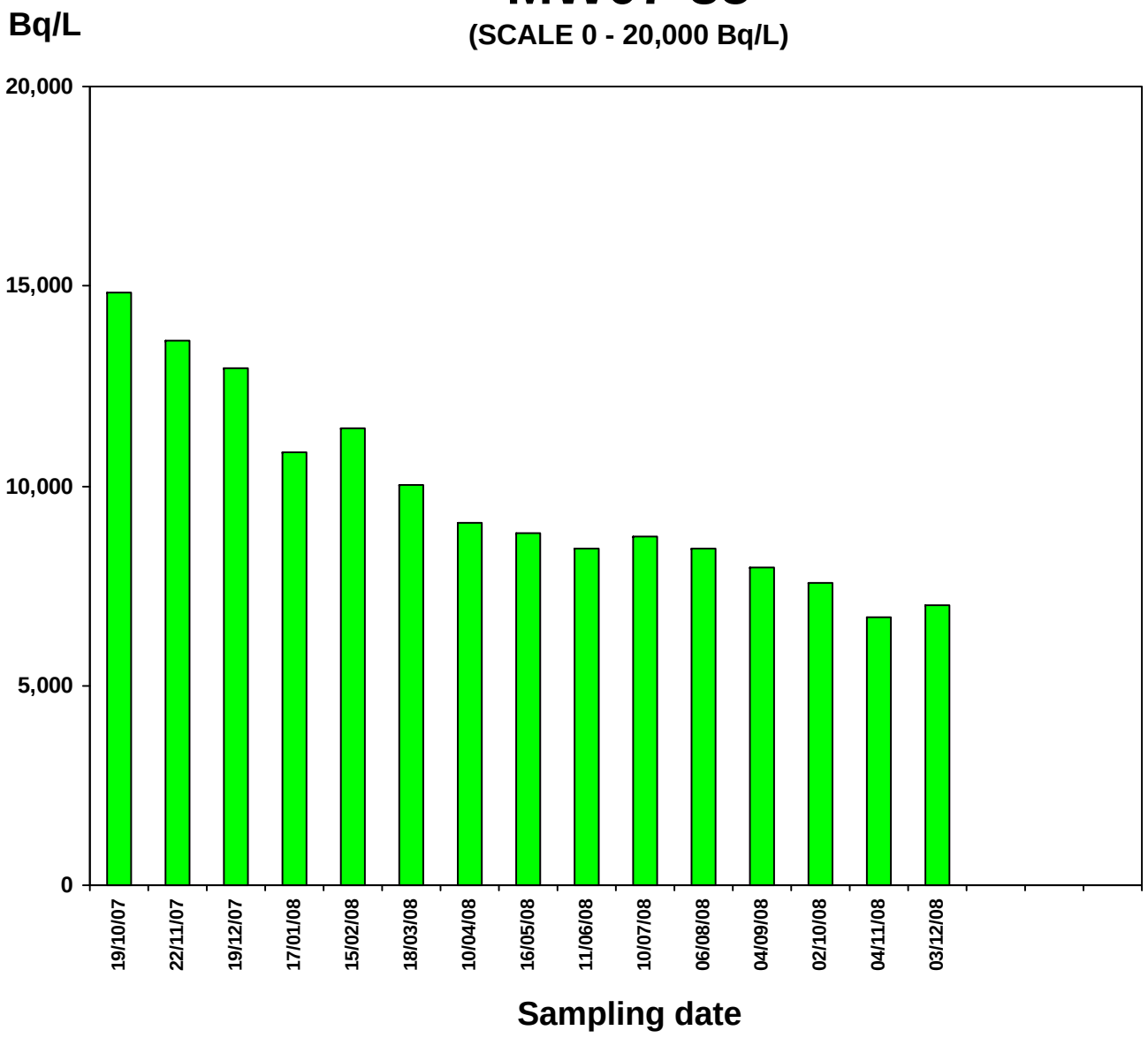
(SCALE 0 – 1,000 Bq/L)



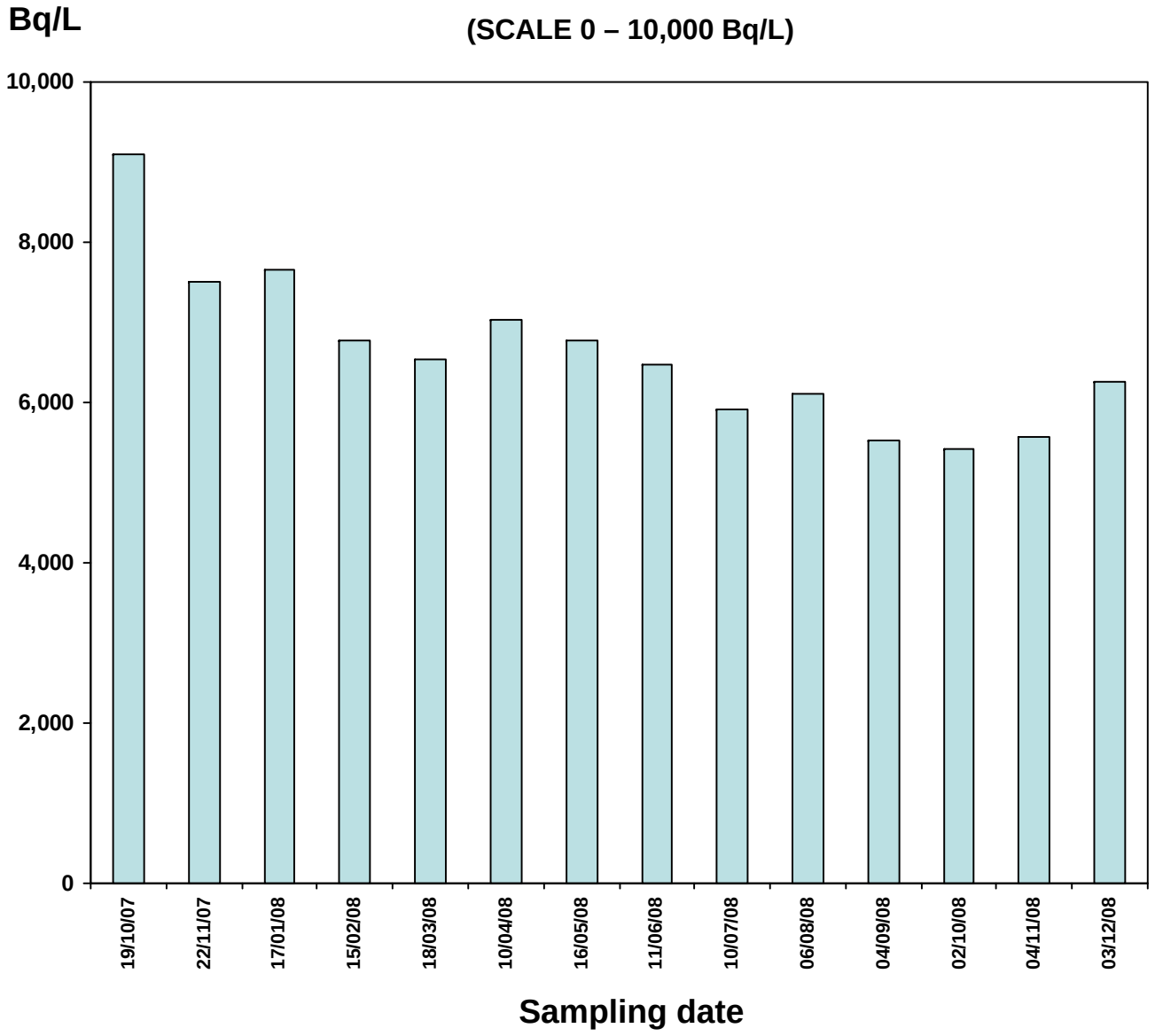
MONITORING RESULTS
MW07-34



MONITORING RESULTS
MW07-35

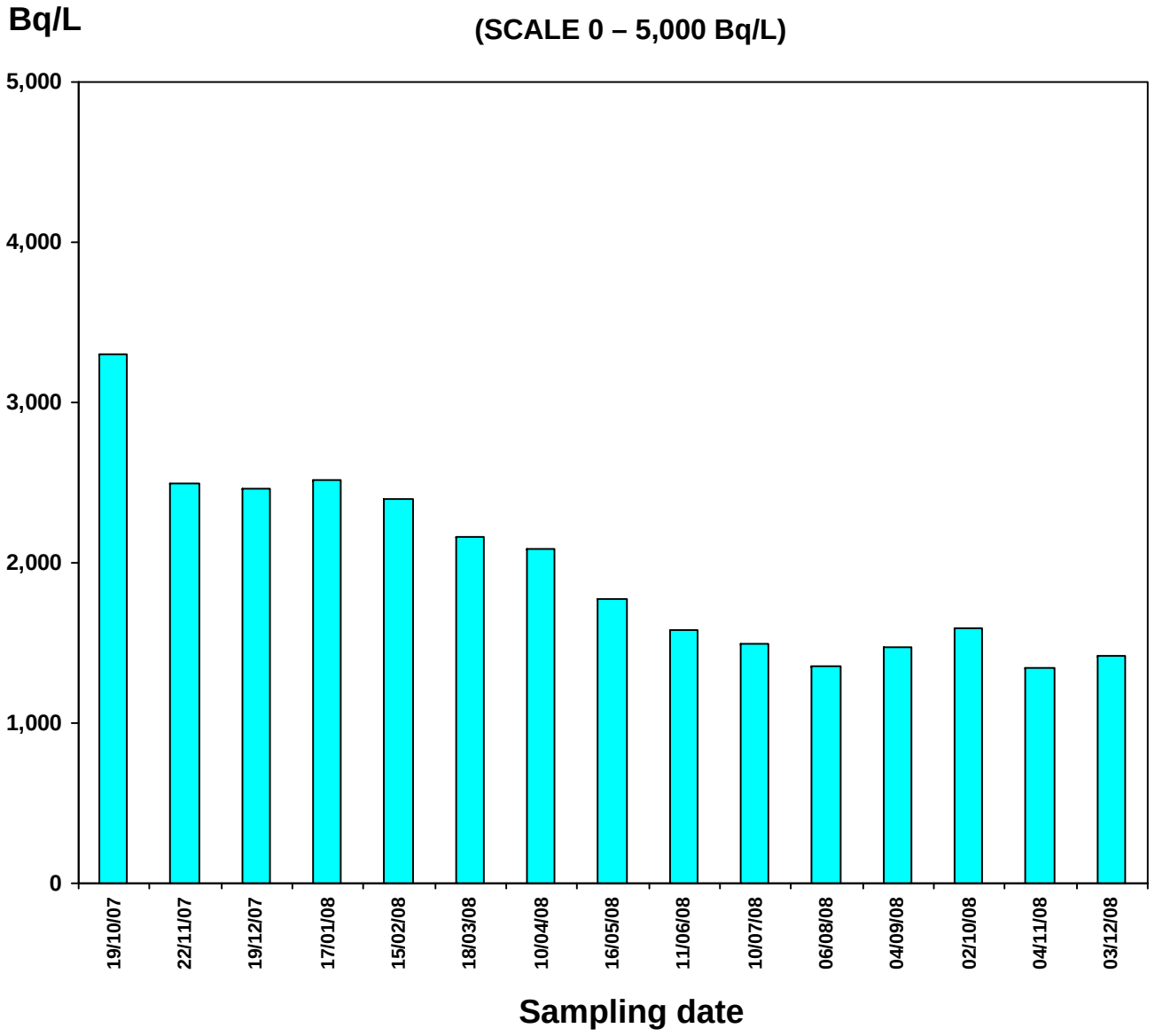


MONITORING RESULTS
MW07-36

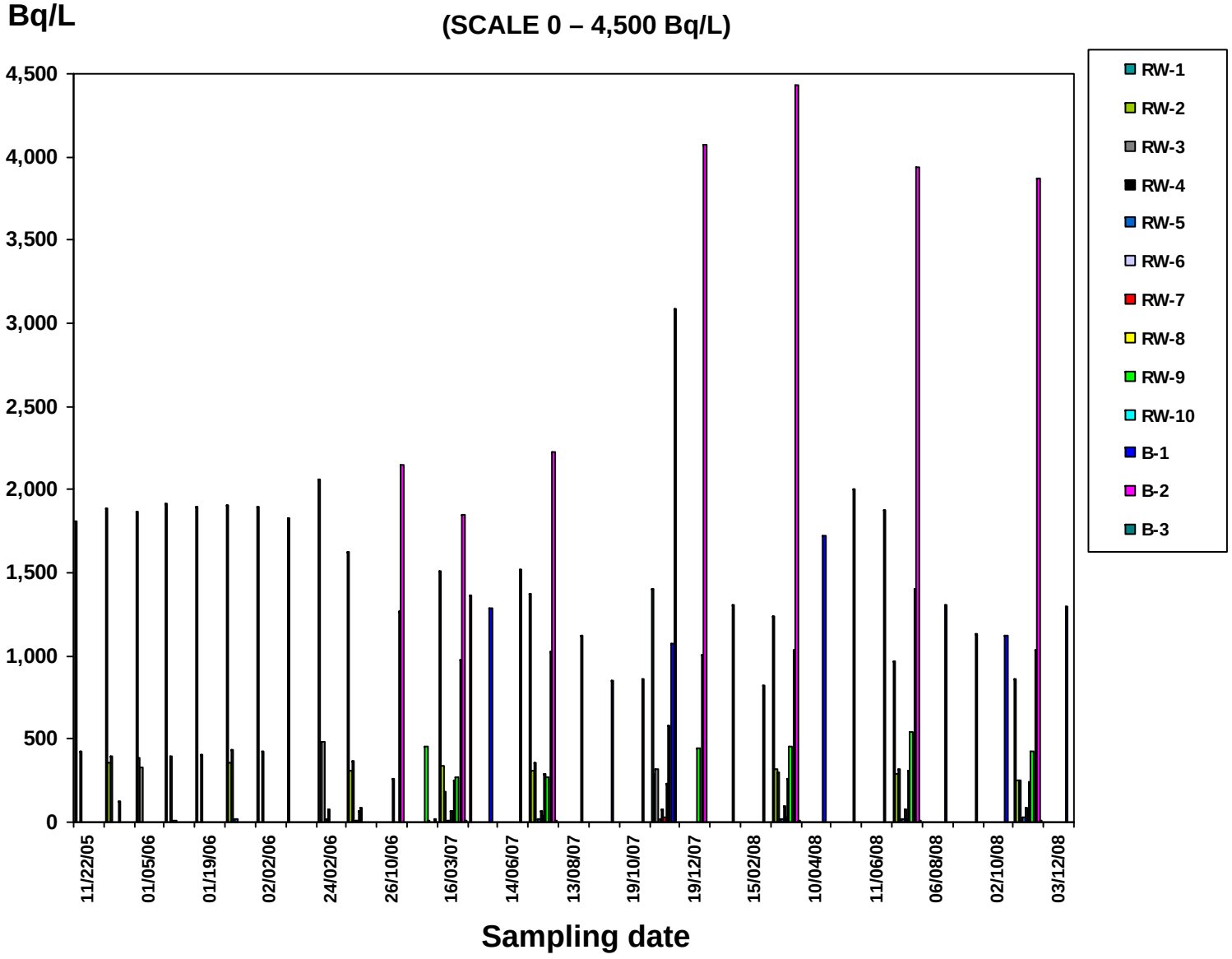


MONITORING RESULTS
MW07-37

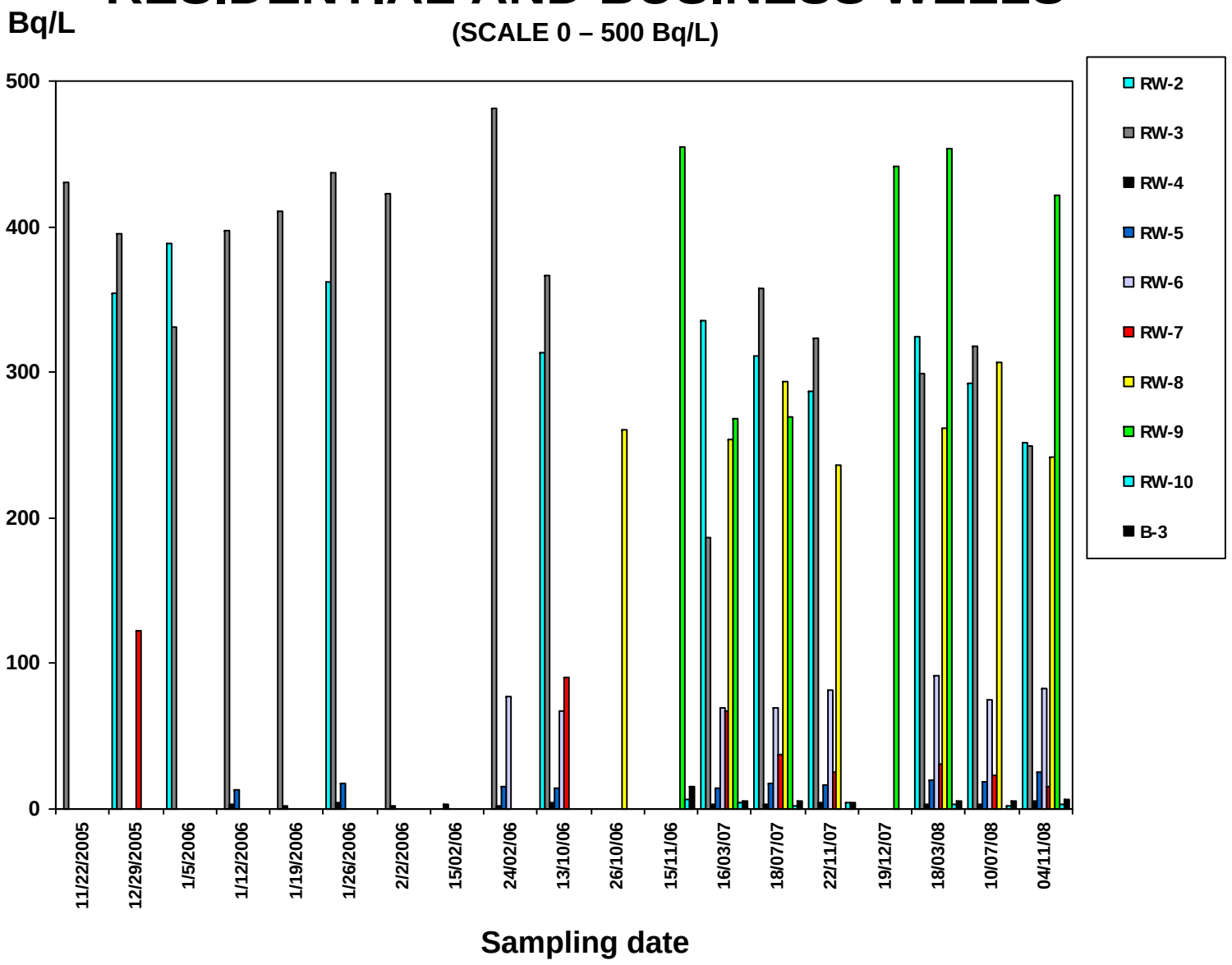
(SCALE 0 – 5,000 Bq/L)



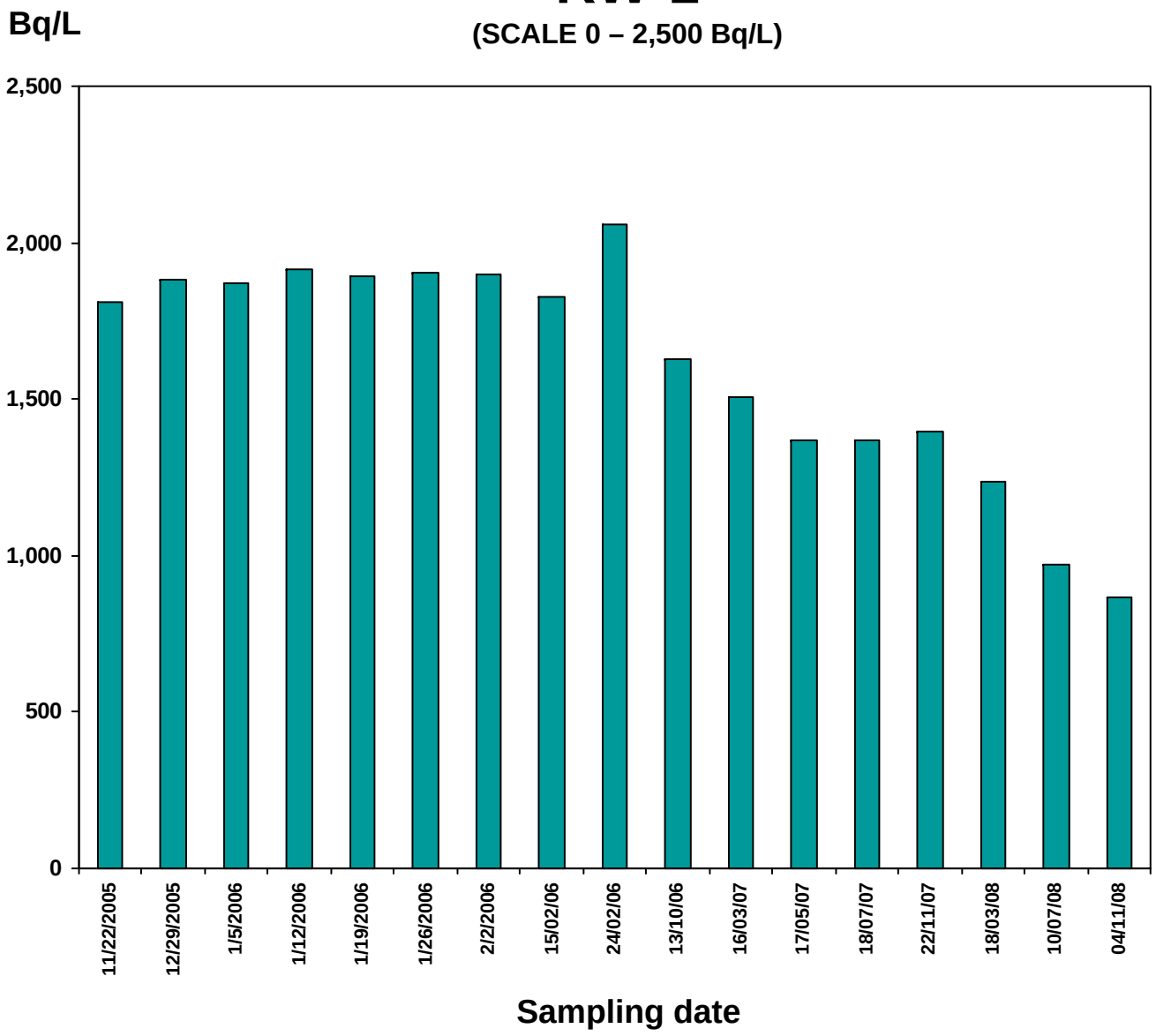
MONITORING RESULTS
ALL RESIDENTIAL AND BUSINESS WELLS



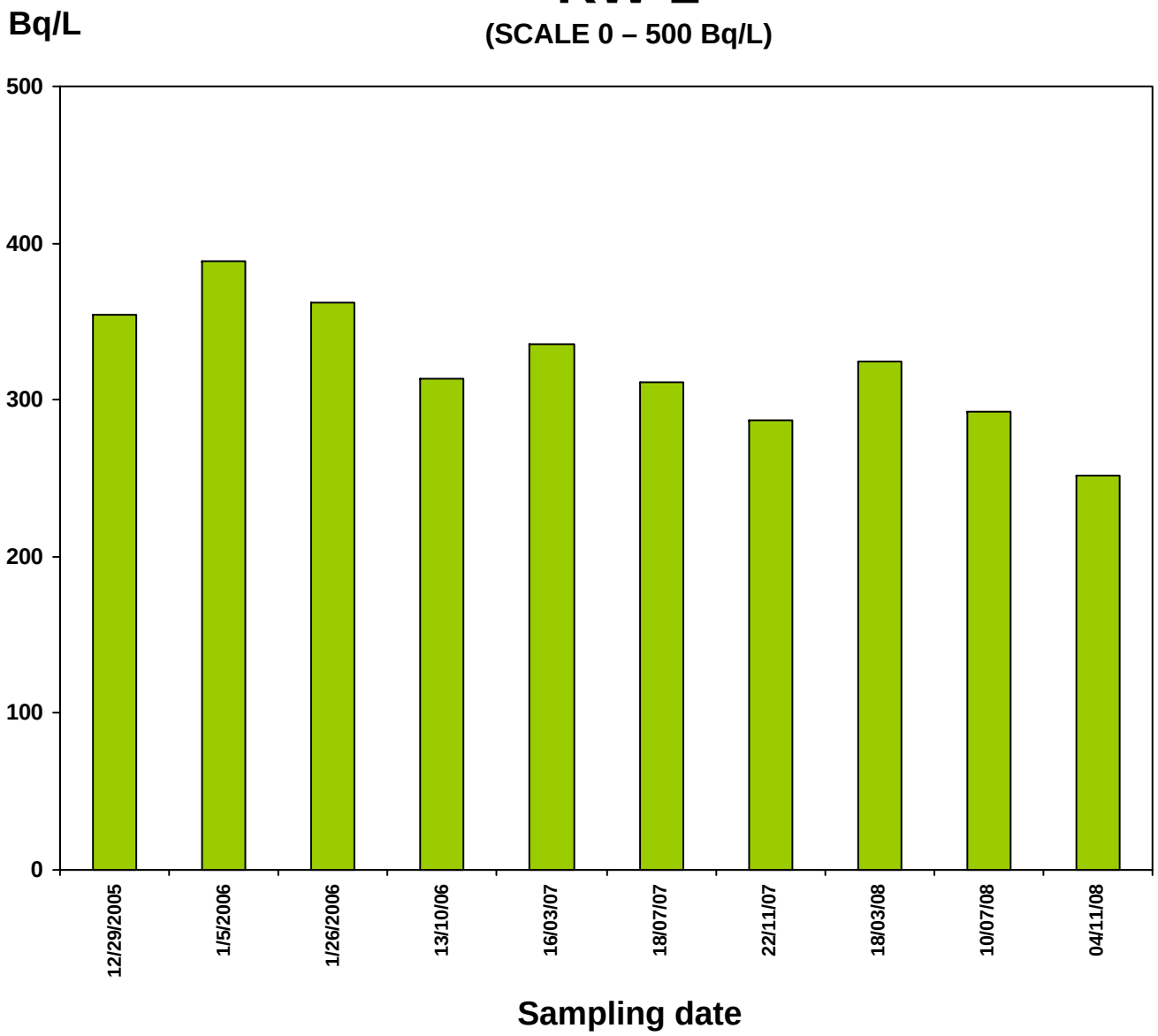
MONITORING RESULTS
RESIDENTIAL AND BUSINESS WELLS



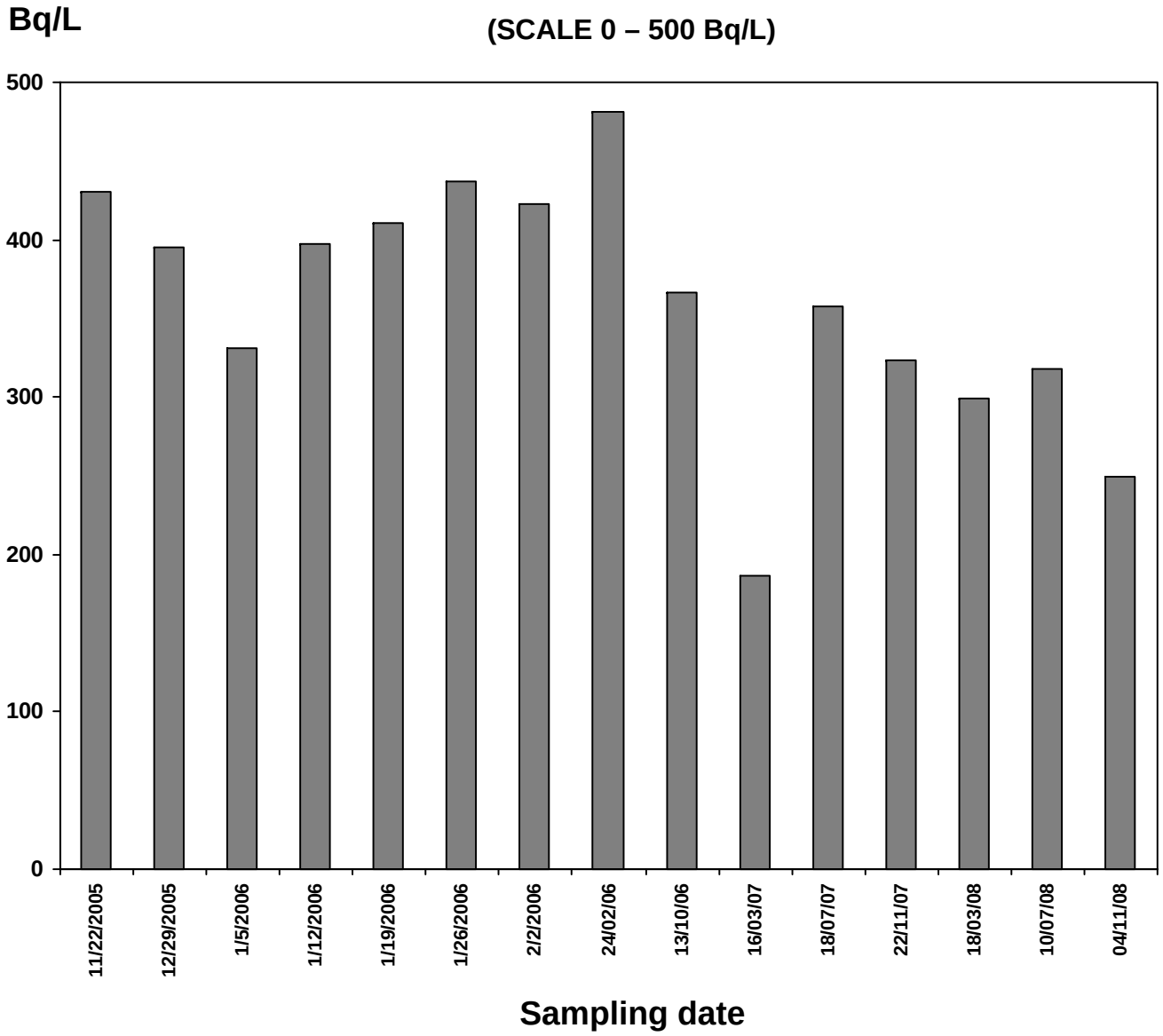
MONITORING RESULTS
RW-1



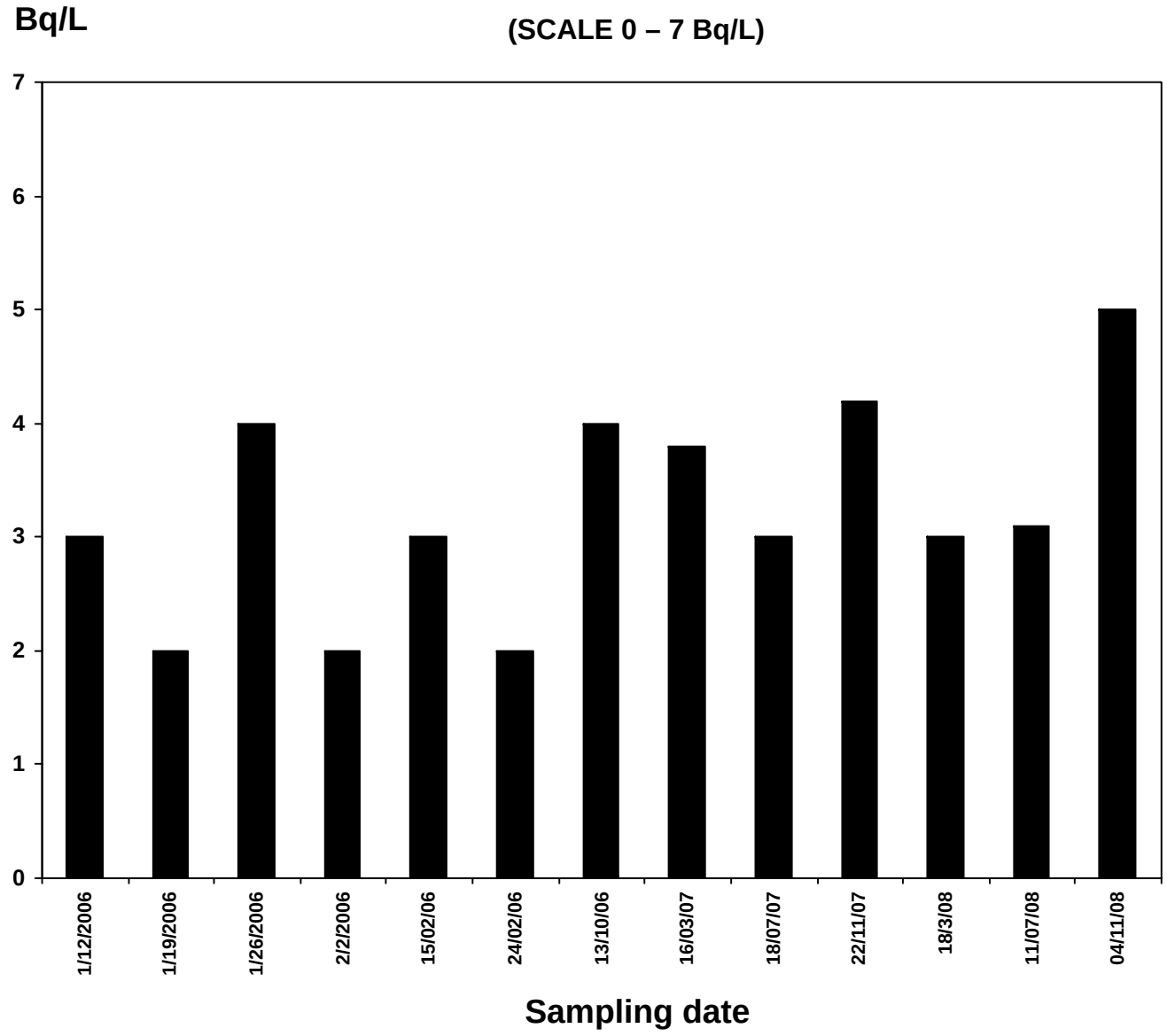
MONITORING RESULTS
RW-2



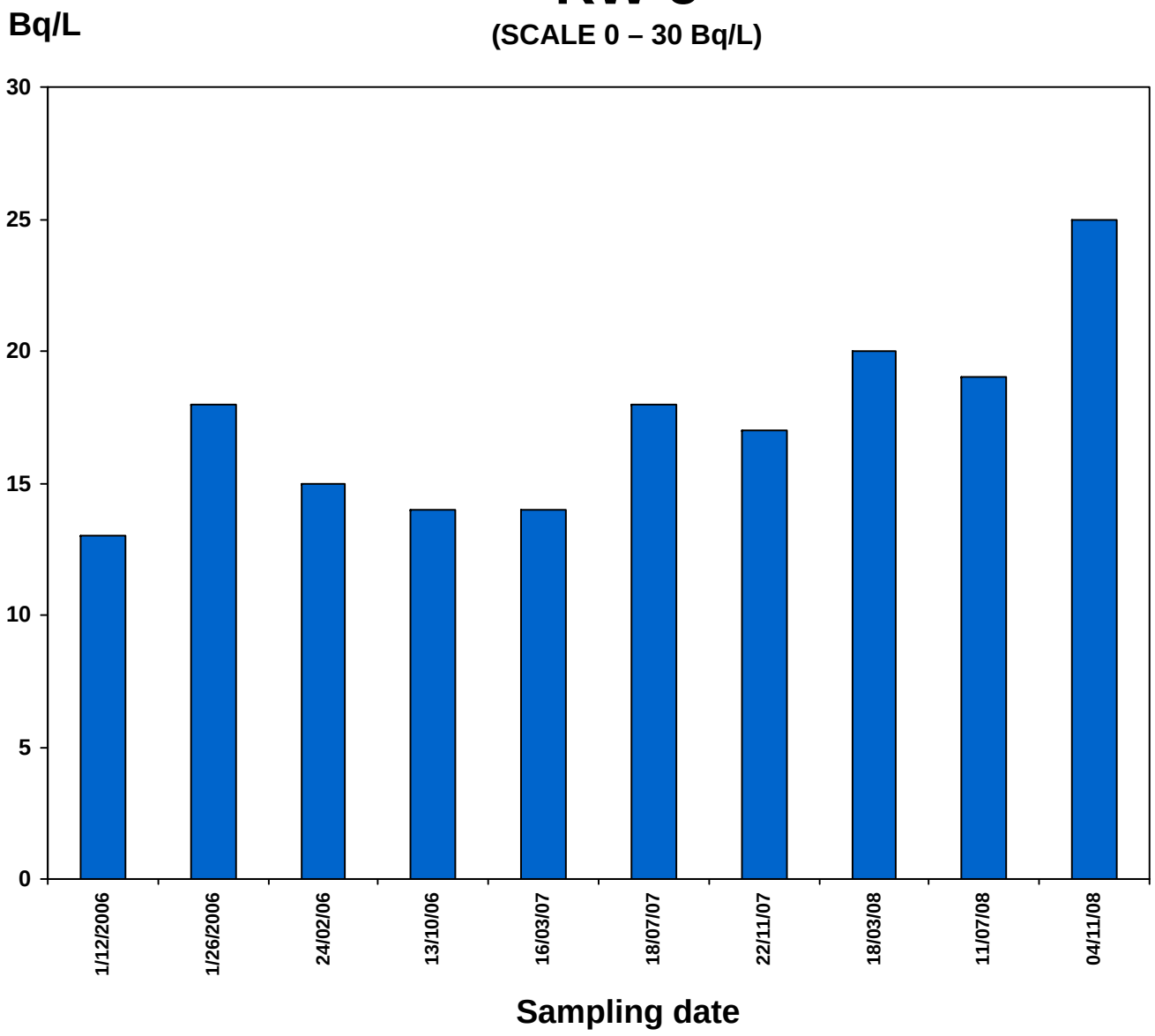
MONITORING RESULTS
RW-3



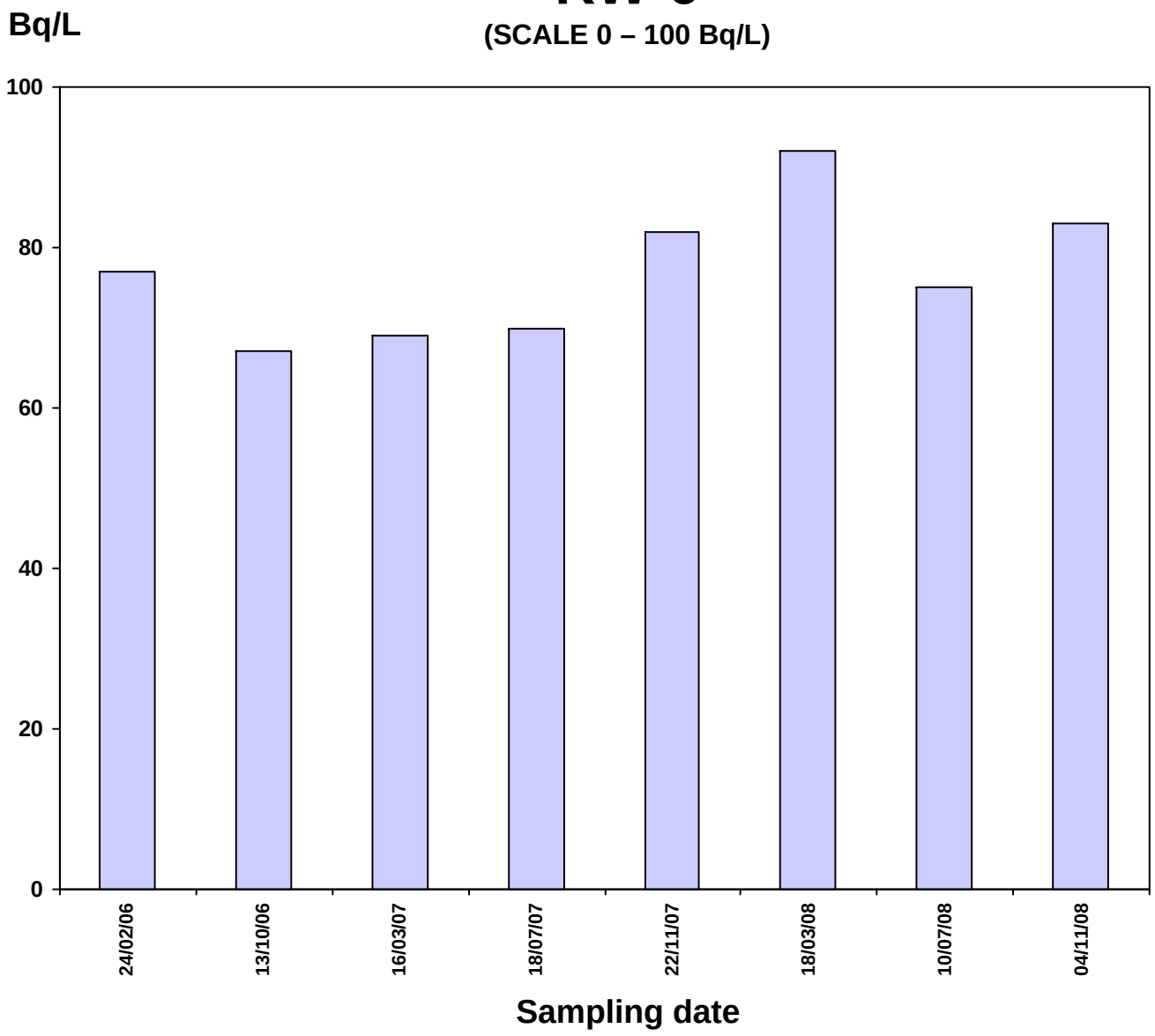
MONITORING RESULTS
RW-4



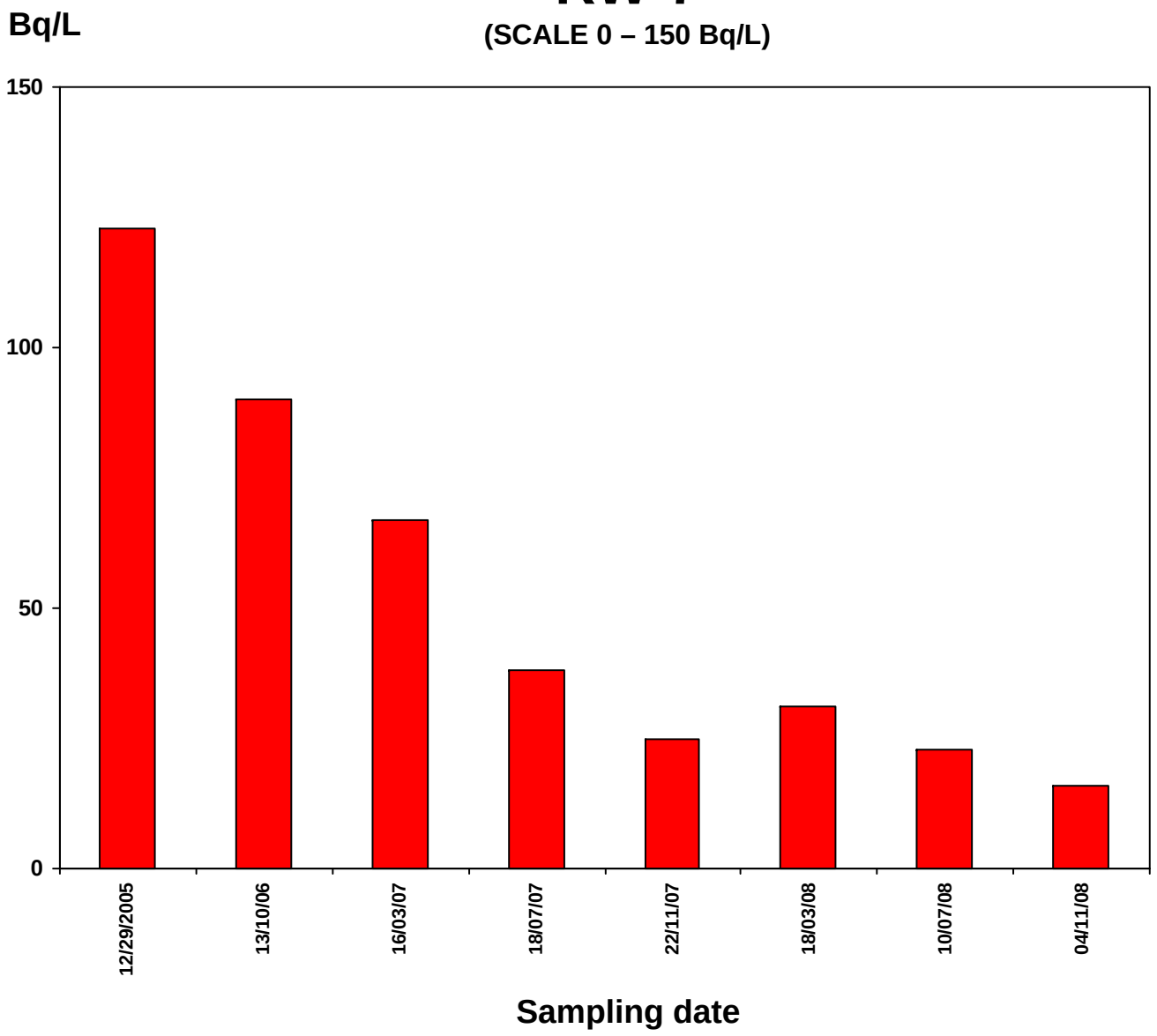
MONITORING RESULTS
RW-5



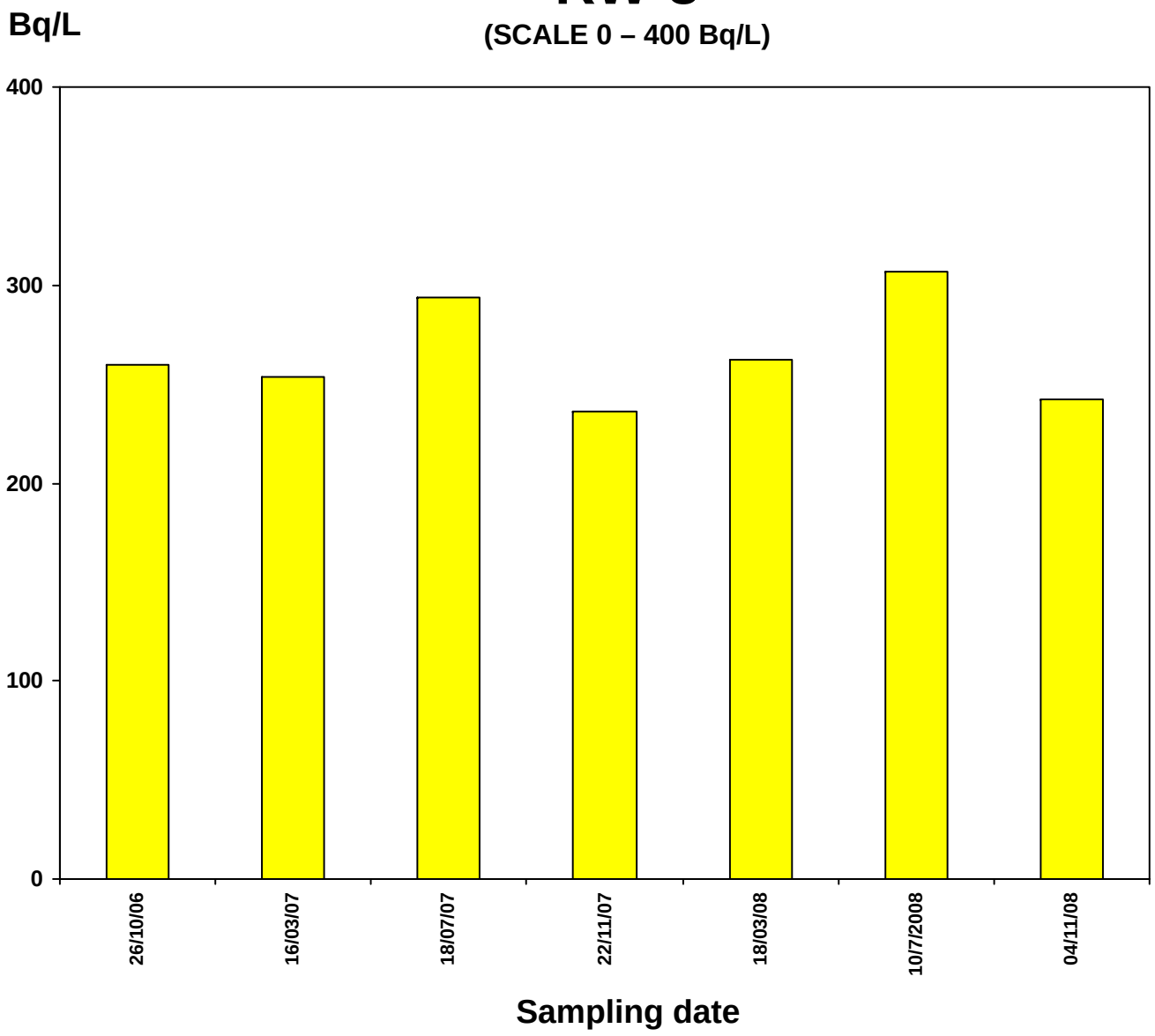
MONITORING RESULTS
RW-6



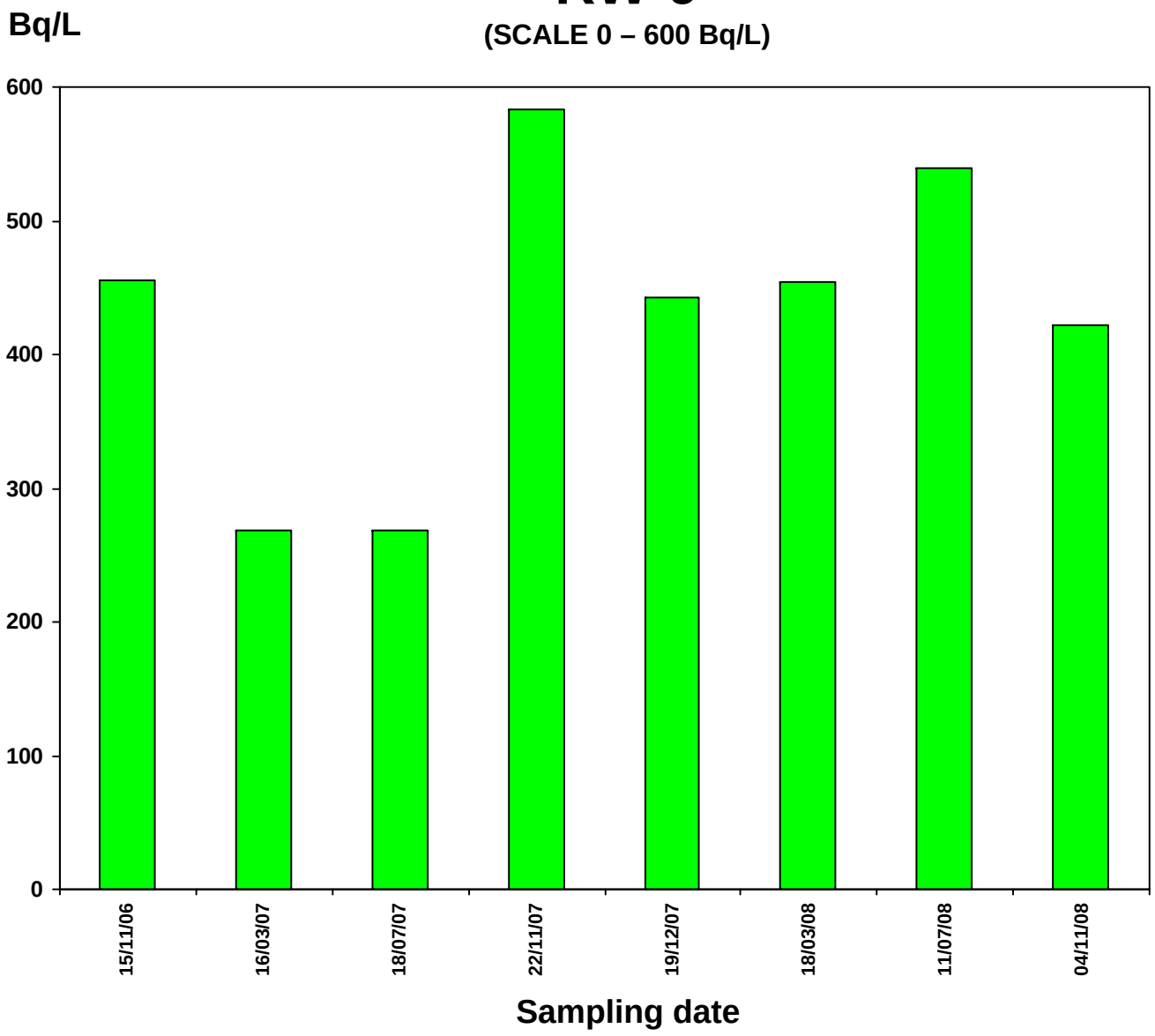
MONITORING RESULTS
RW-7



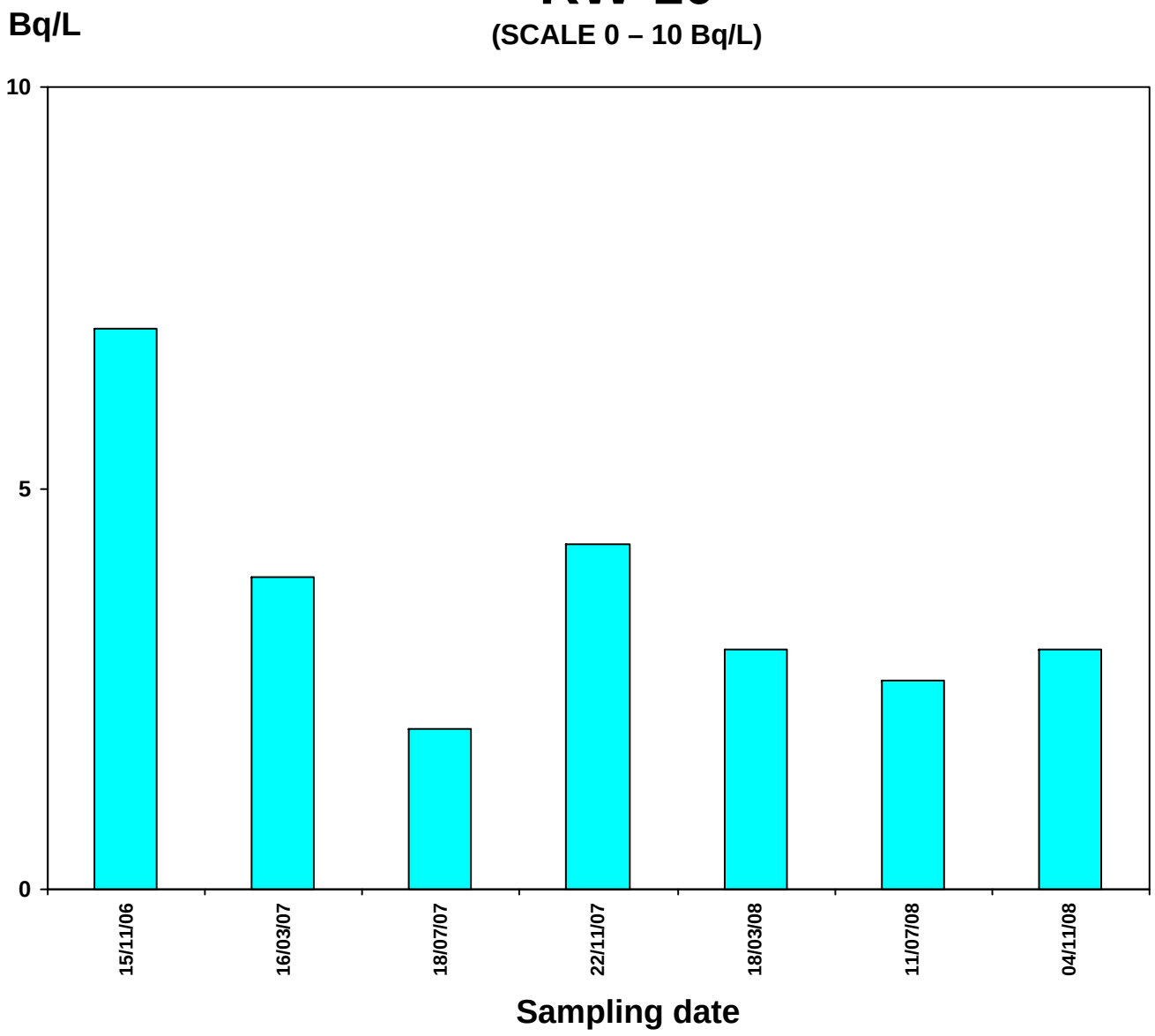
MONITORING RESULTS
RW-8



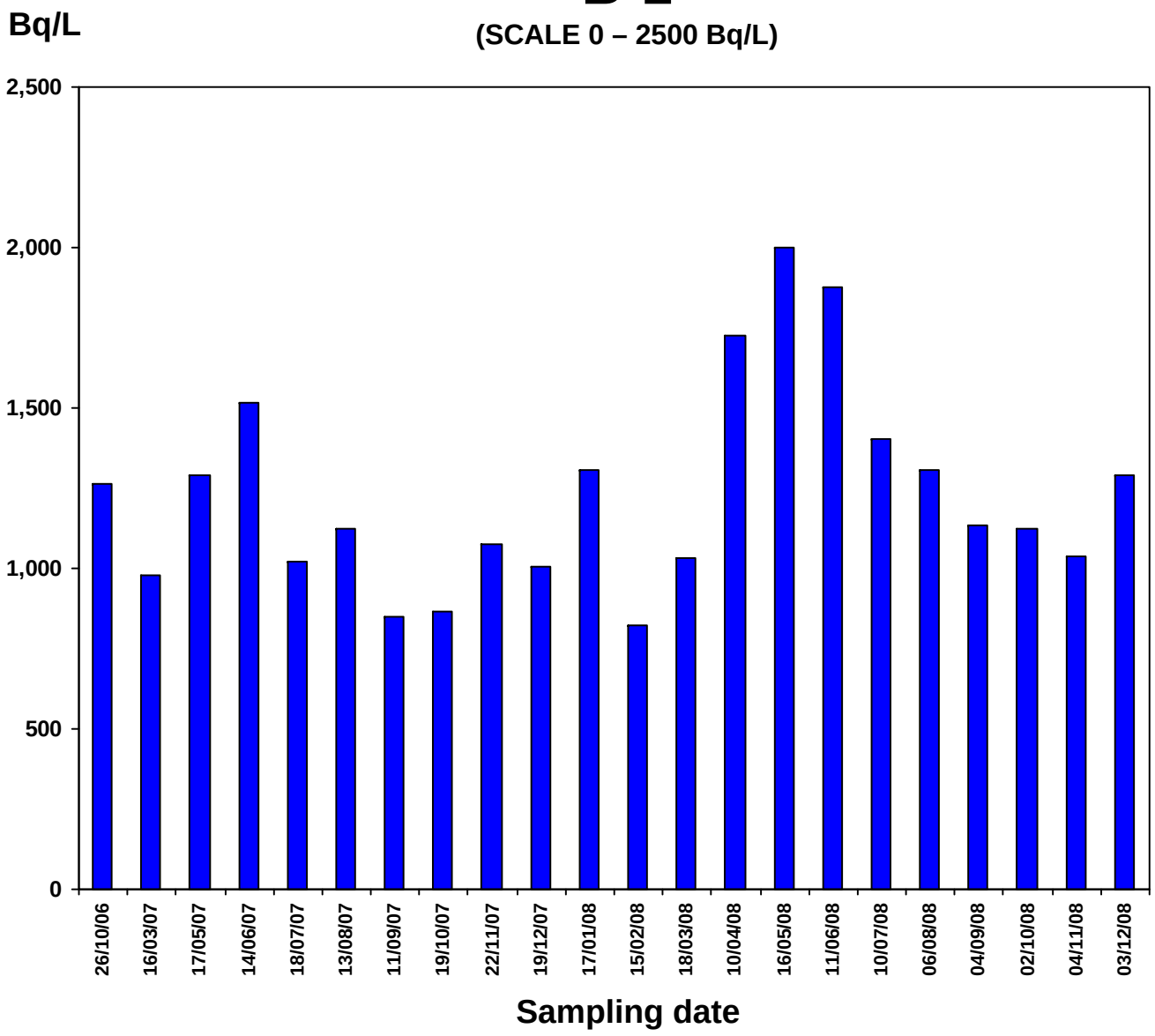
MONITORING RESULTS
RW-9



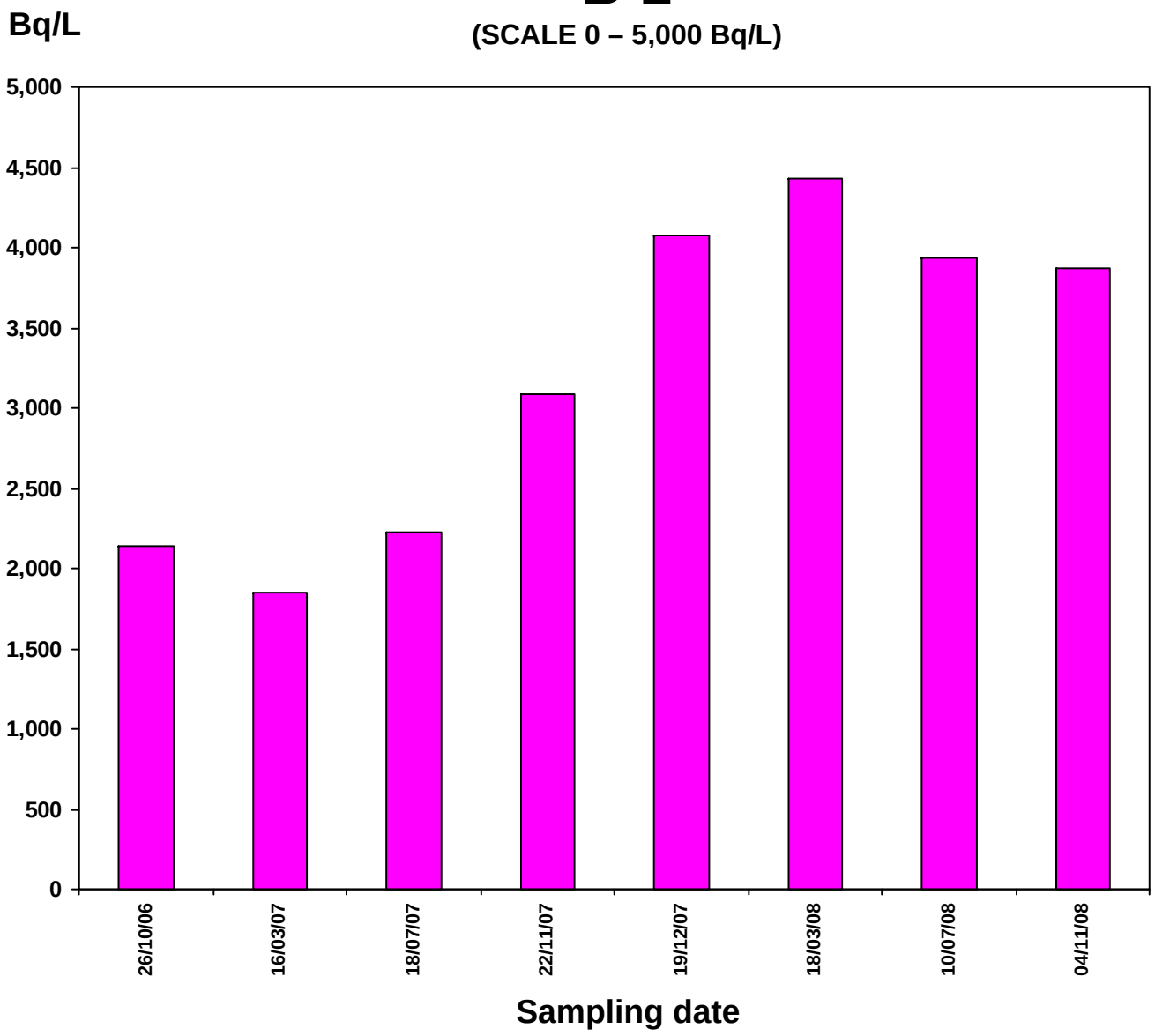
MONITORING RESULTS
RW-10



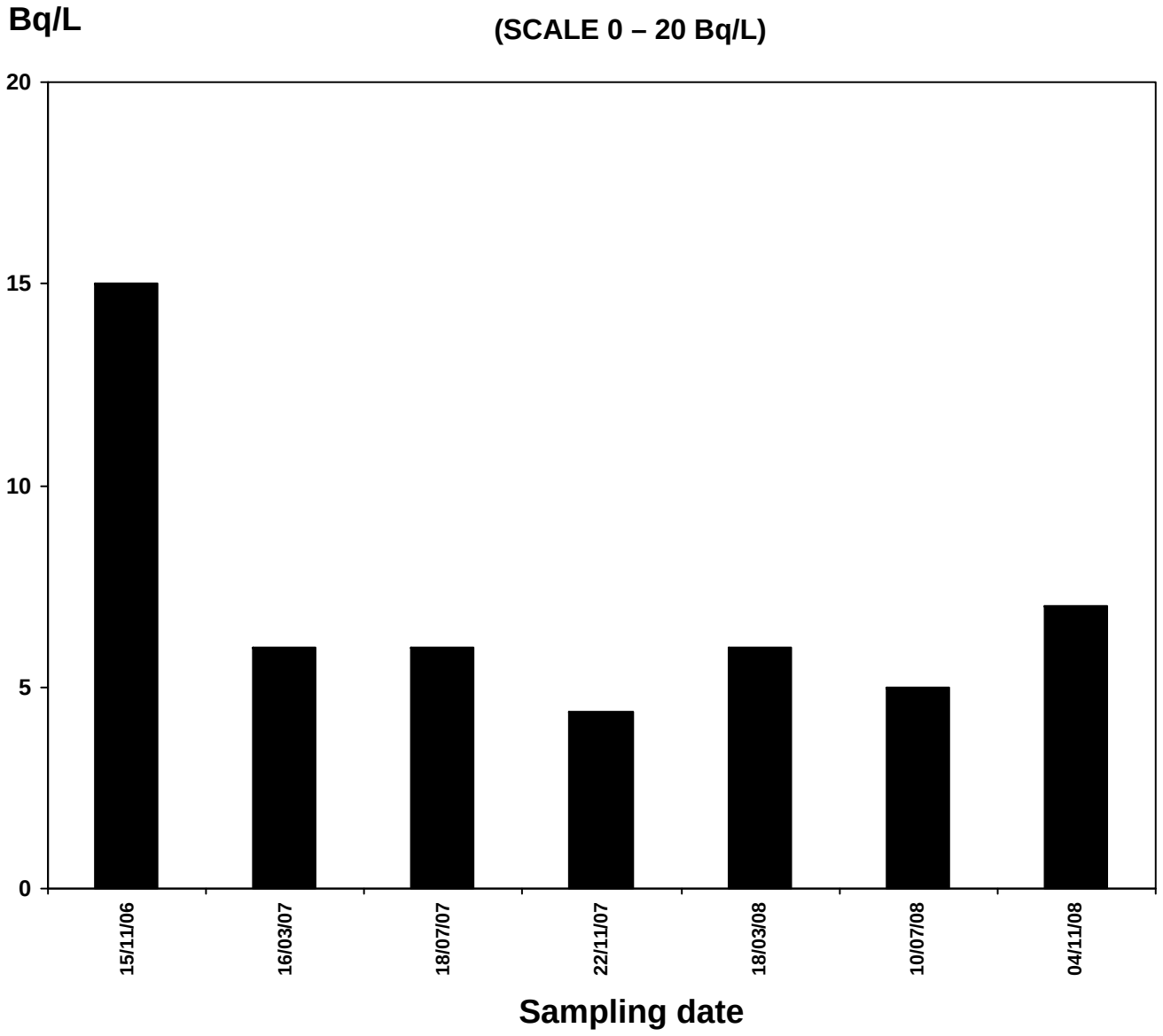
MONITORING RESULTS
B-1



MONITORING RESULTS
B-2

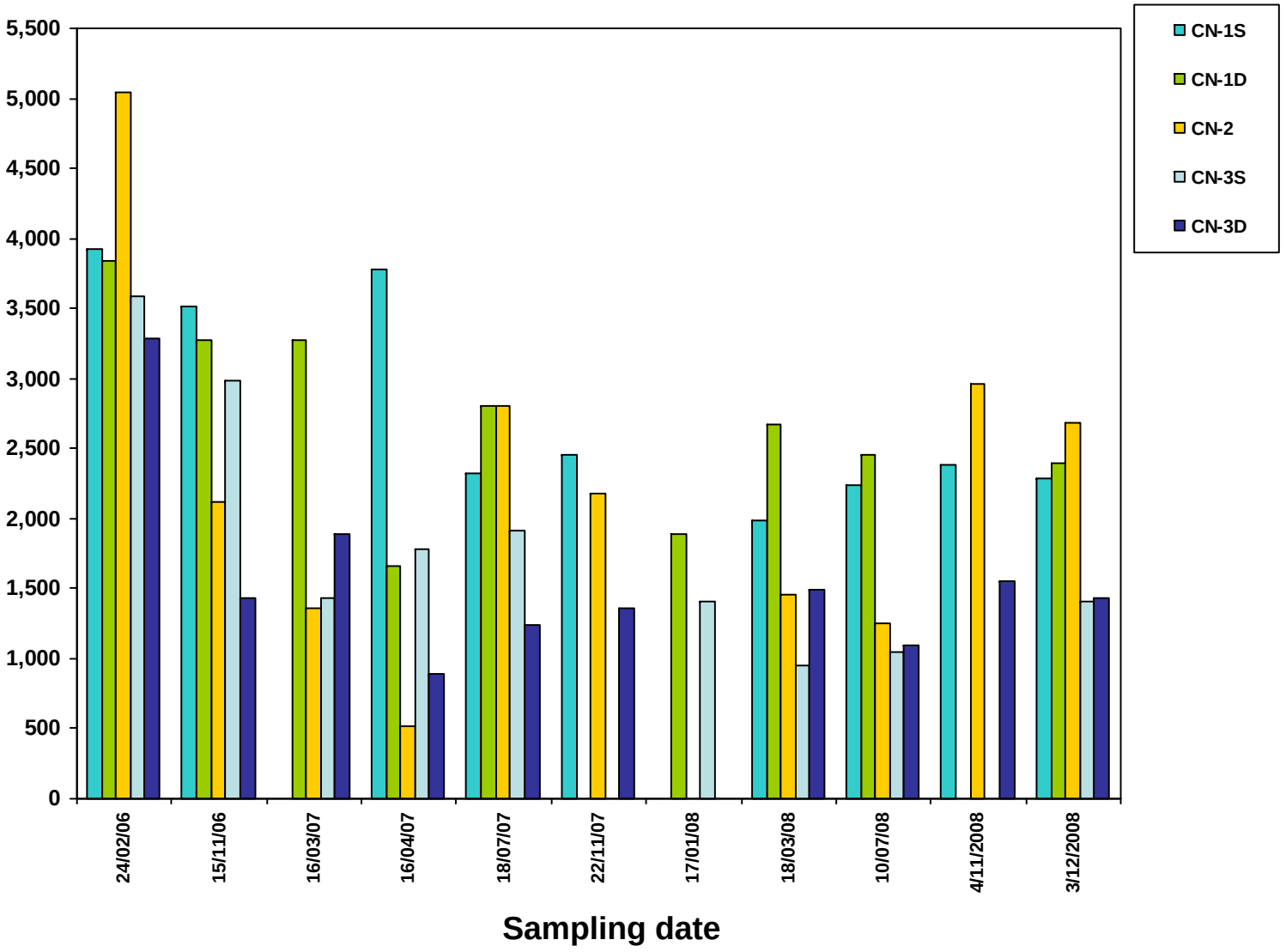


MONITORING RESULTS
B-3

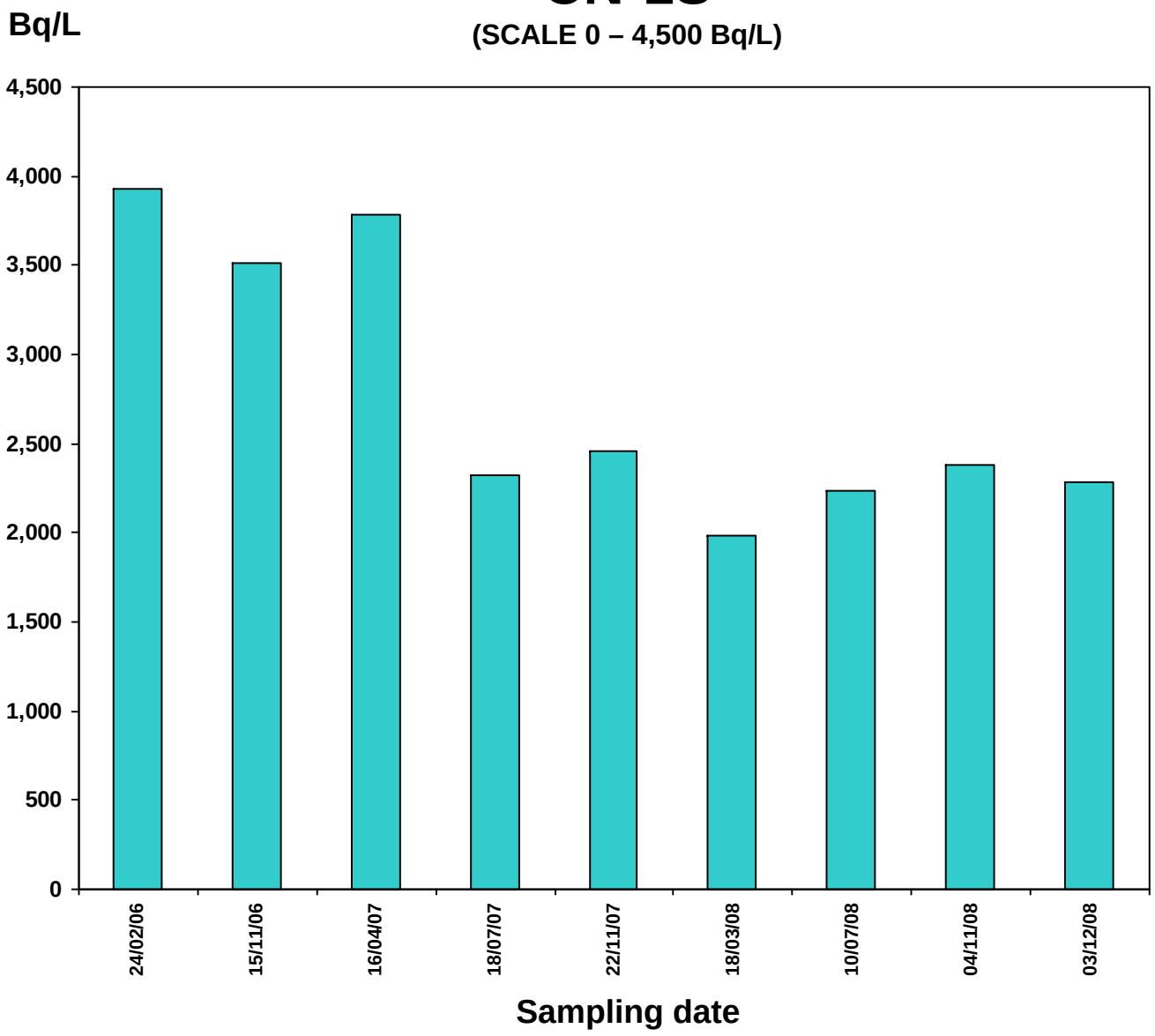


MONITORING RESULTS
ALL CN WELLS

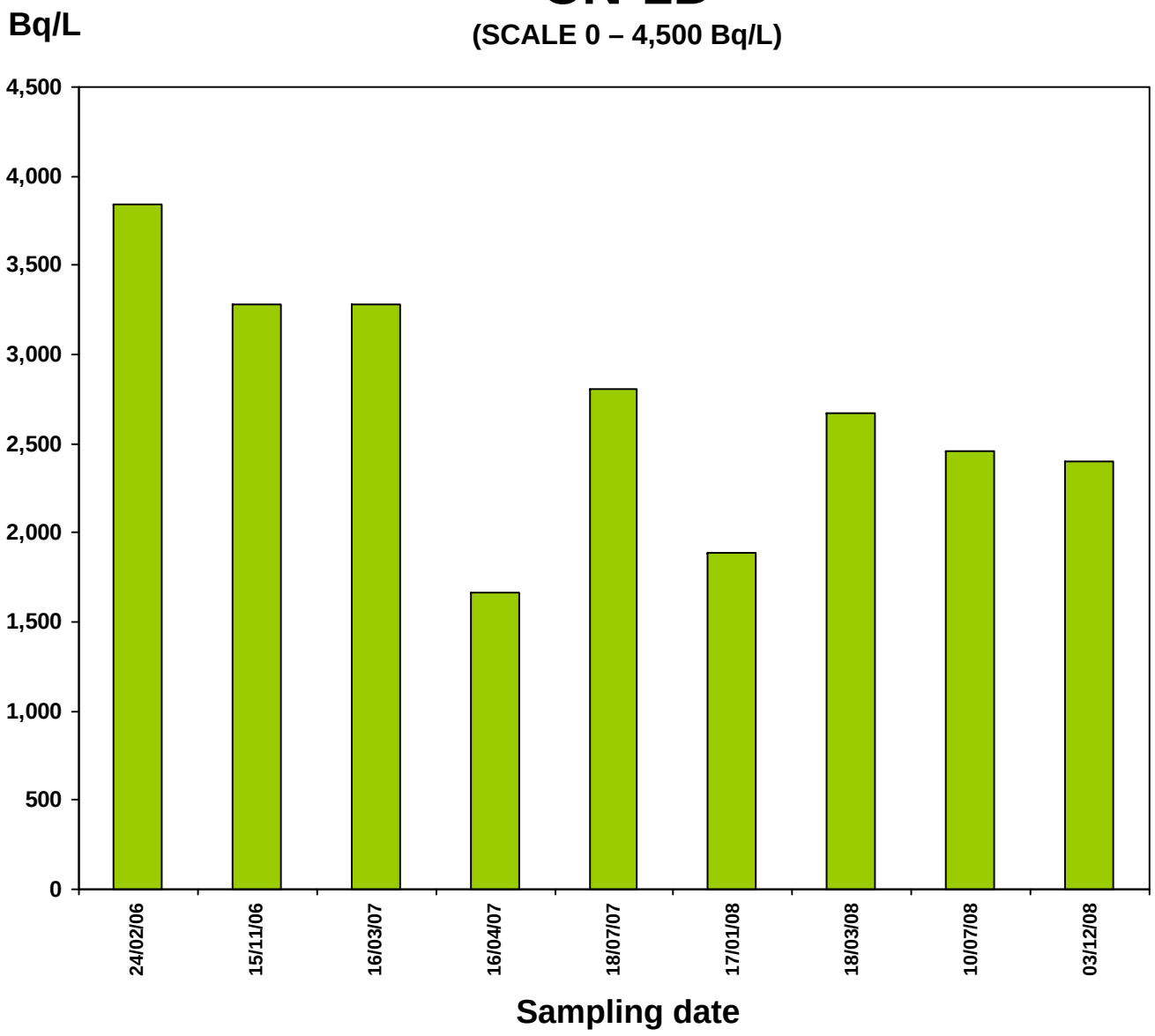
(SCALE 0 – 5,500 Bq/L)



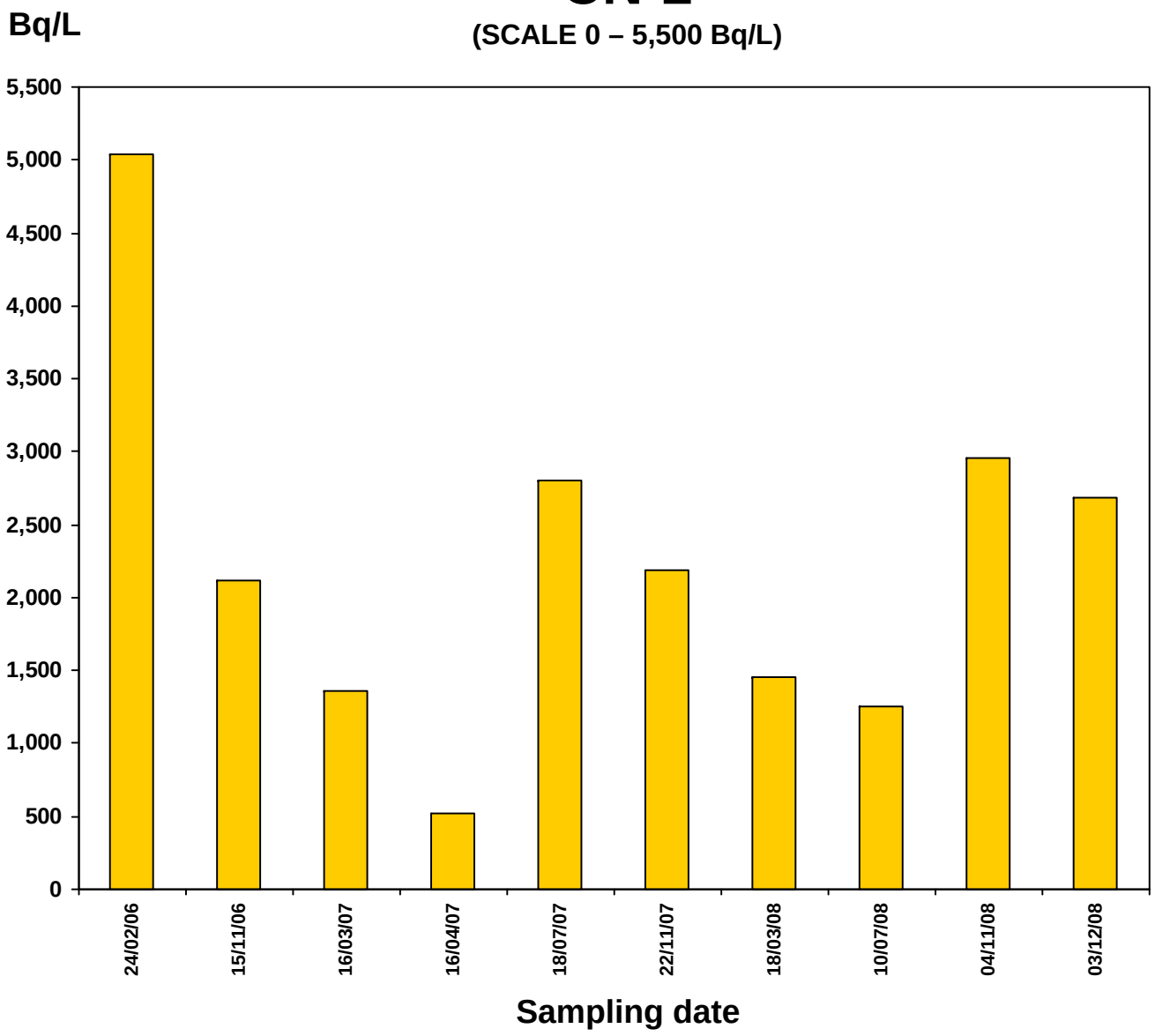
MONITORING RESULTS
CN-1S



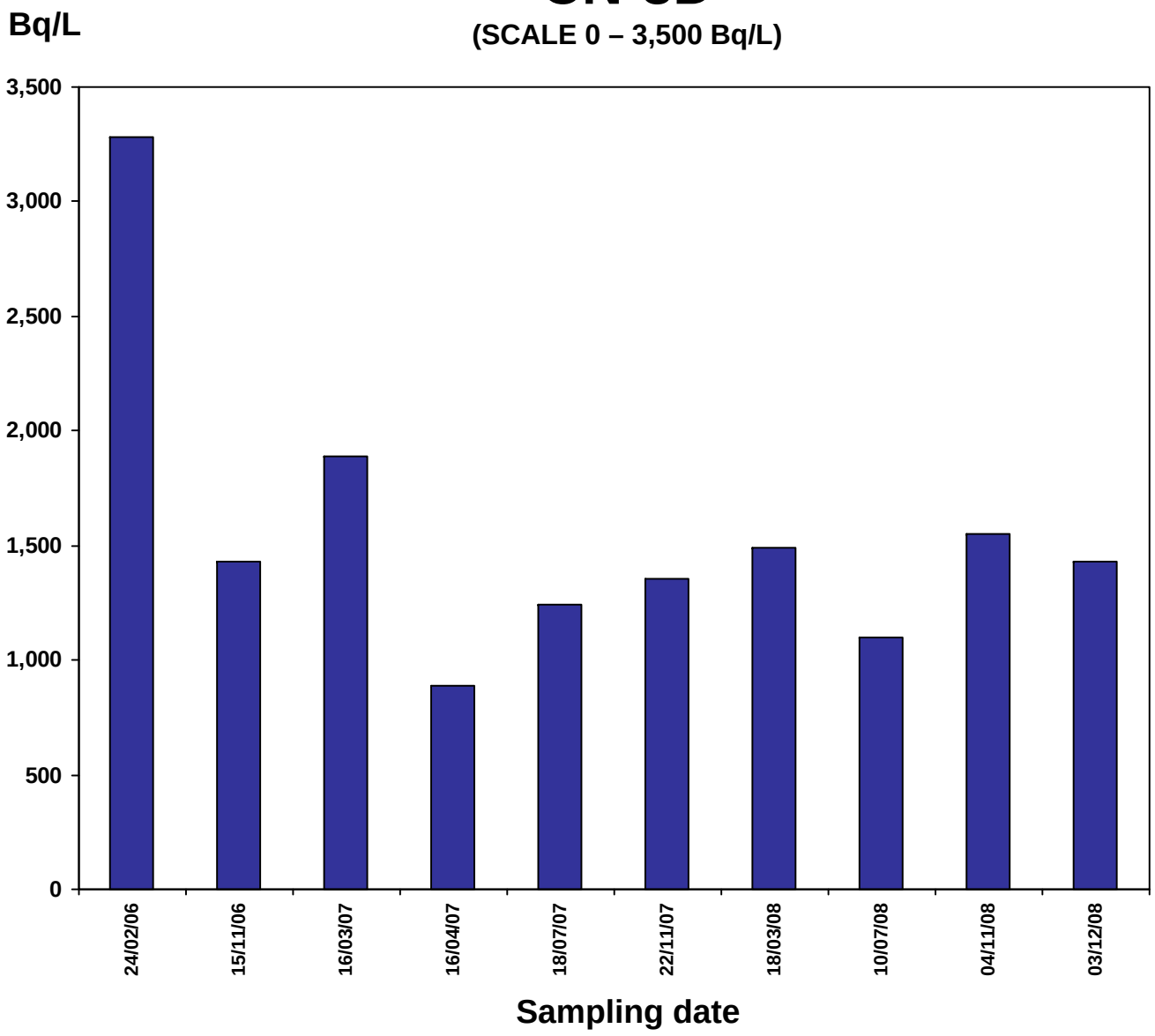
MONITORING RESULTS
CN-1D



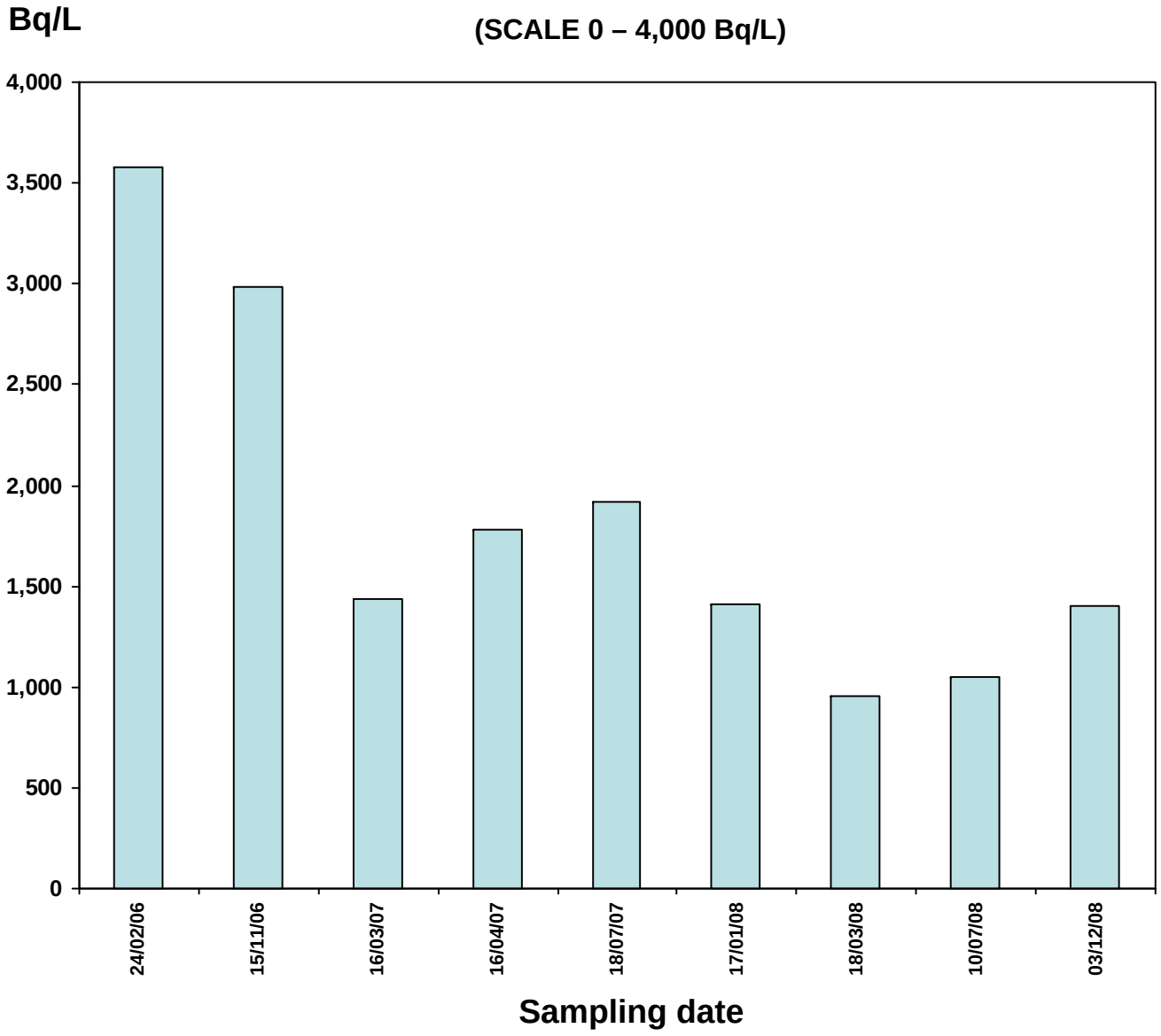
MONITORING RESULTS
CN-2



MONITORING RESULTS
CN-3D



MONITORING RESULTS
CN-3S



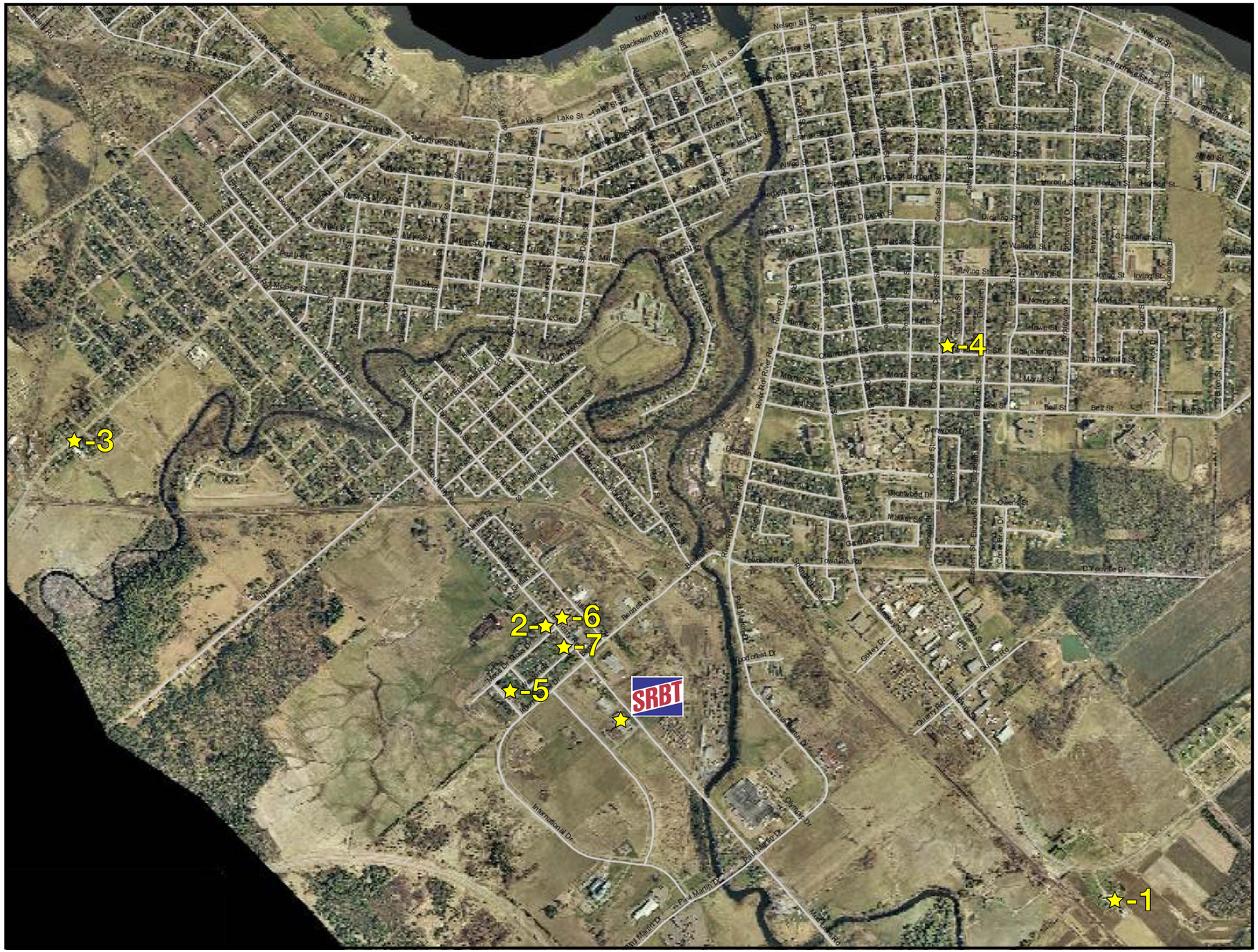
APPENDIX I

PRODUCE MONITORING RESULTS FOR 2008

DESCRIPTION	DISTANCE FROM STACKS	RHUBBARB	TOMATO	RED	LETTUCE	CUCUMBER	POTATO	SPINACH	PLUM	ONION	CARROT	APPLE	AVG
416 BOUNDARY ROAD	400	113					101				382	203	199.75
711 BRUHAM AVENUE	2,000		19			22	14	29					21
366 CHAMBERLAIN	1,650	24	32	15									23.7
413 SWEEZEY COURT	400											434	434
413 BOUNDARY ROAD	400											113	113
408 BOUNDARY ROAD	400		121						256	55			144
												AVG	155.9

DESCRIPTION	DISTANCE FROM STACKS	RHUBBARB	TOMATO	RED	LETTUCE	CUCUMBER	POTATO	SPINACH	PLUM	ONION	CARROT	APPLE	AVG
LOCAL MARKET	1,750		22		23	18	98						40.25
												AVG	40.25

SRB PRODUCE SAMPLING - 2008

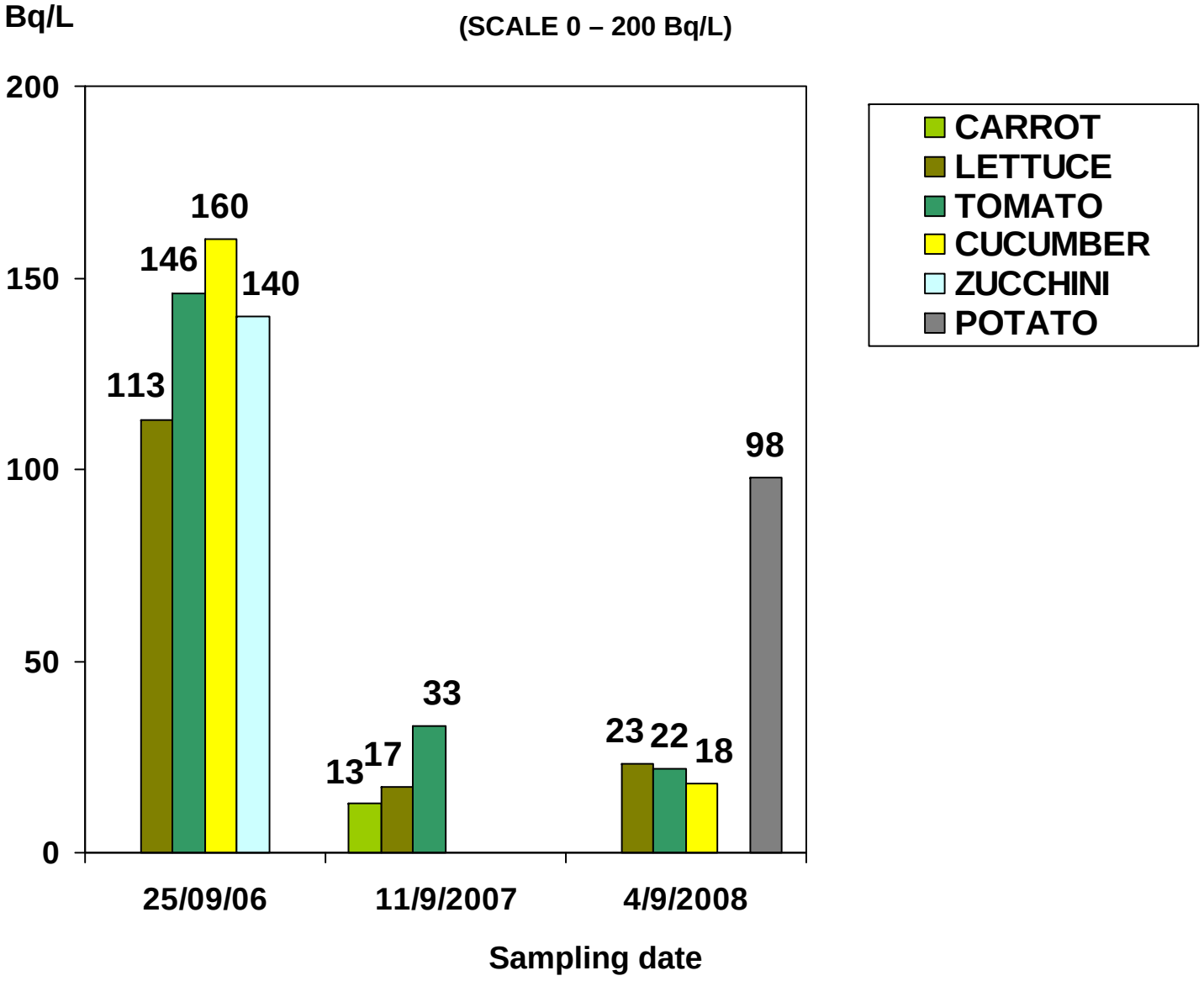


Sample Locations

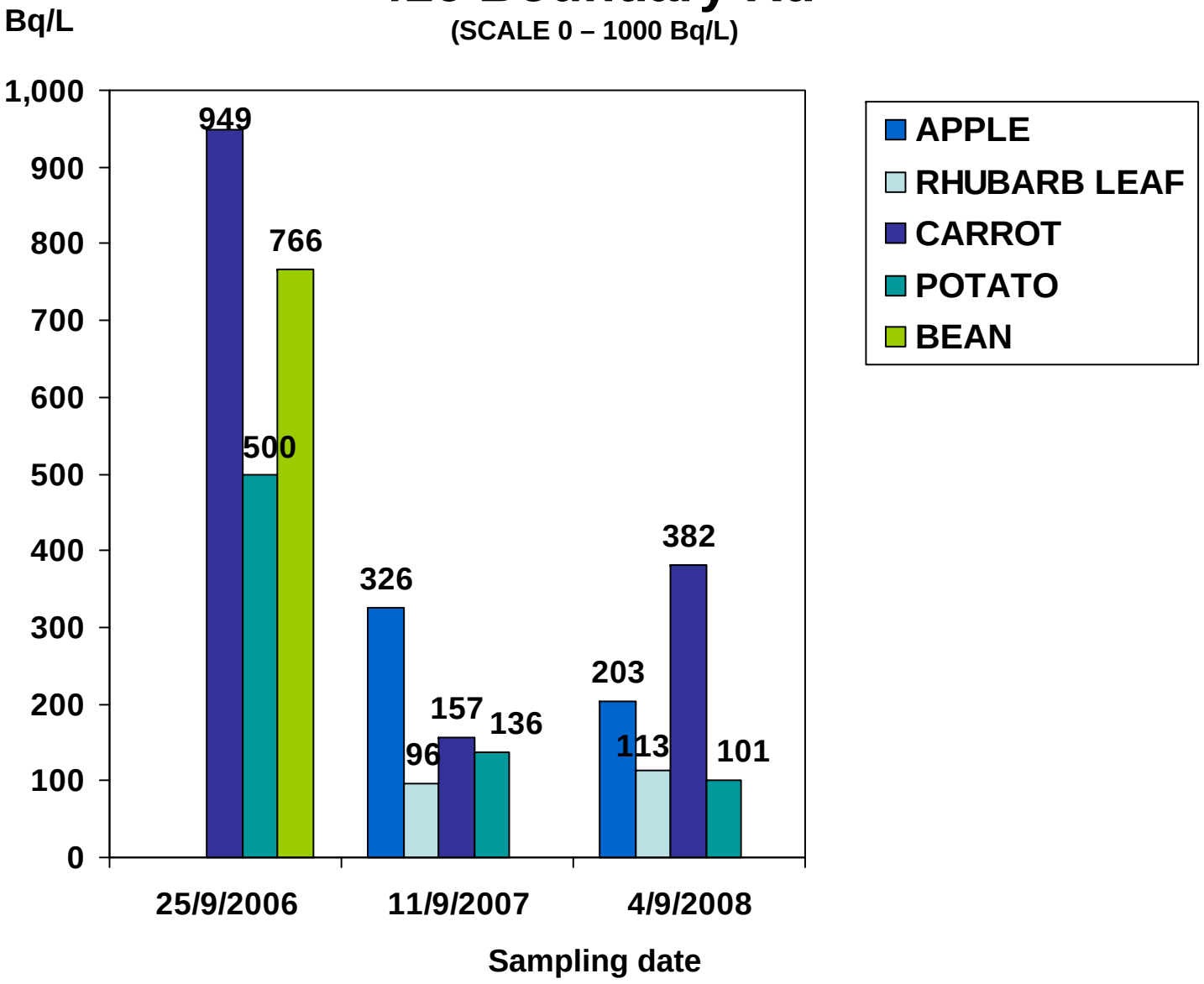
1- Boudens Gardens ~ 1.75 KM
2- 416 Boundary Rd. ~ 0.4 KM
3- 711 Bruham Ave. ~ 2.0 KM
4- 366 Chamberlain St. ~ 1.65 KM
5- 413 Sweezey Crt. ~ 0.4 KM
6- 413 Boundary Rd. ~ 0.4 KM
7- 408 Boundary Rd. ~ 0.35 KM

Rev. 11/ 13/2008

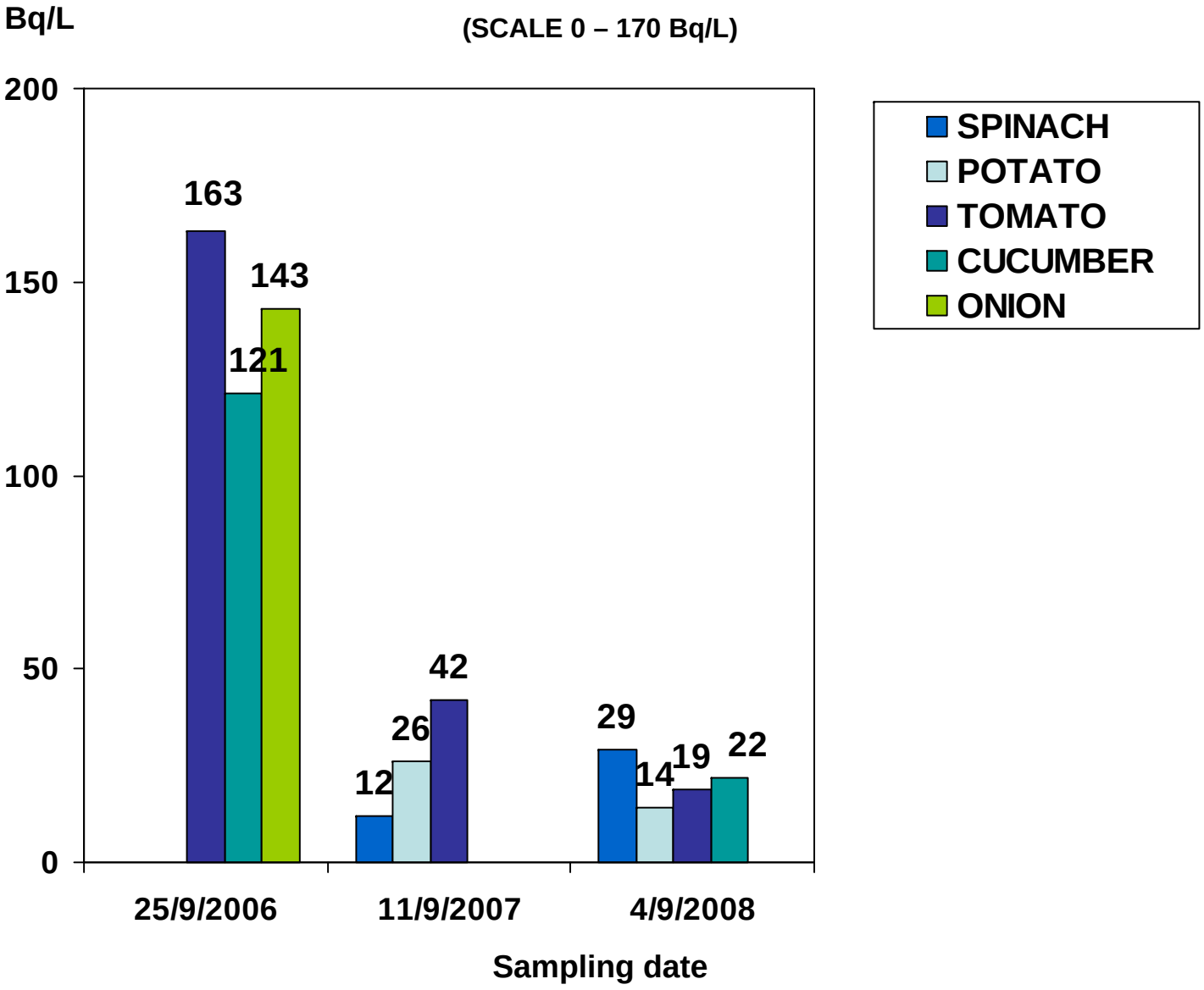
PRODUCE MONITORING RESULTS FROM LOCAL MARKET



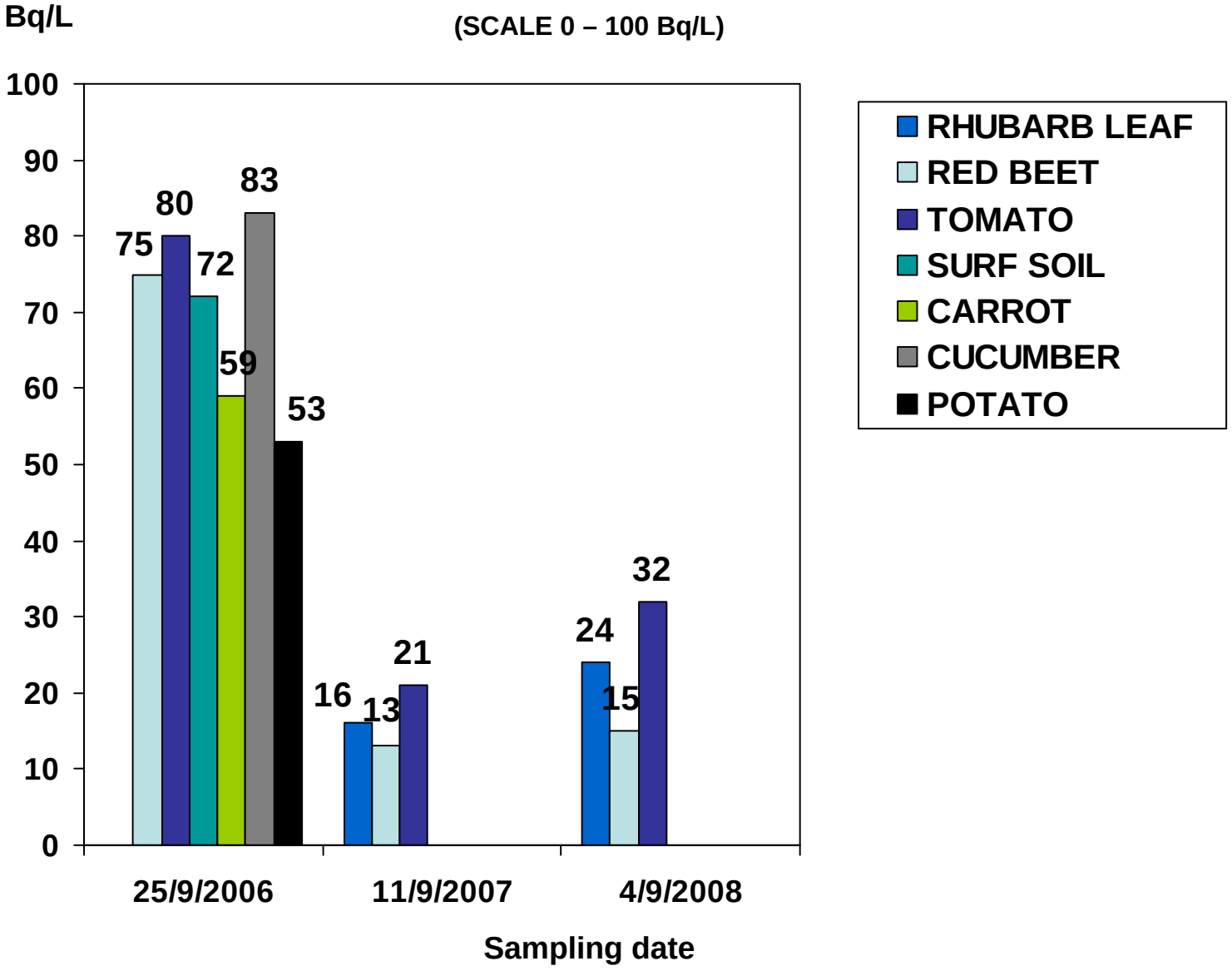
PRODUCE MONITORING RESULTS
416 Boundary Rd



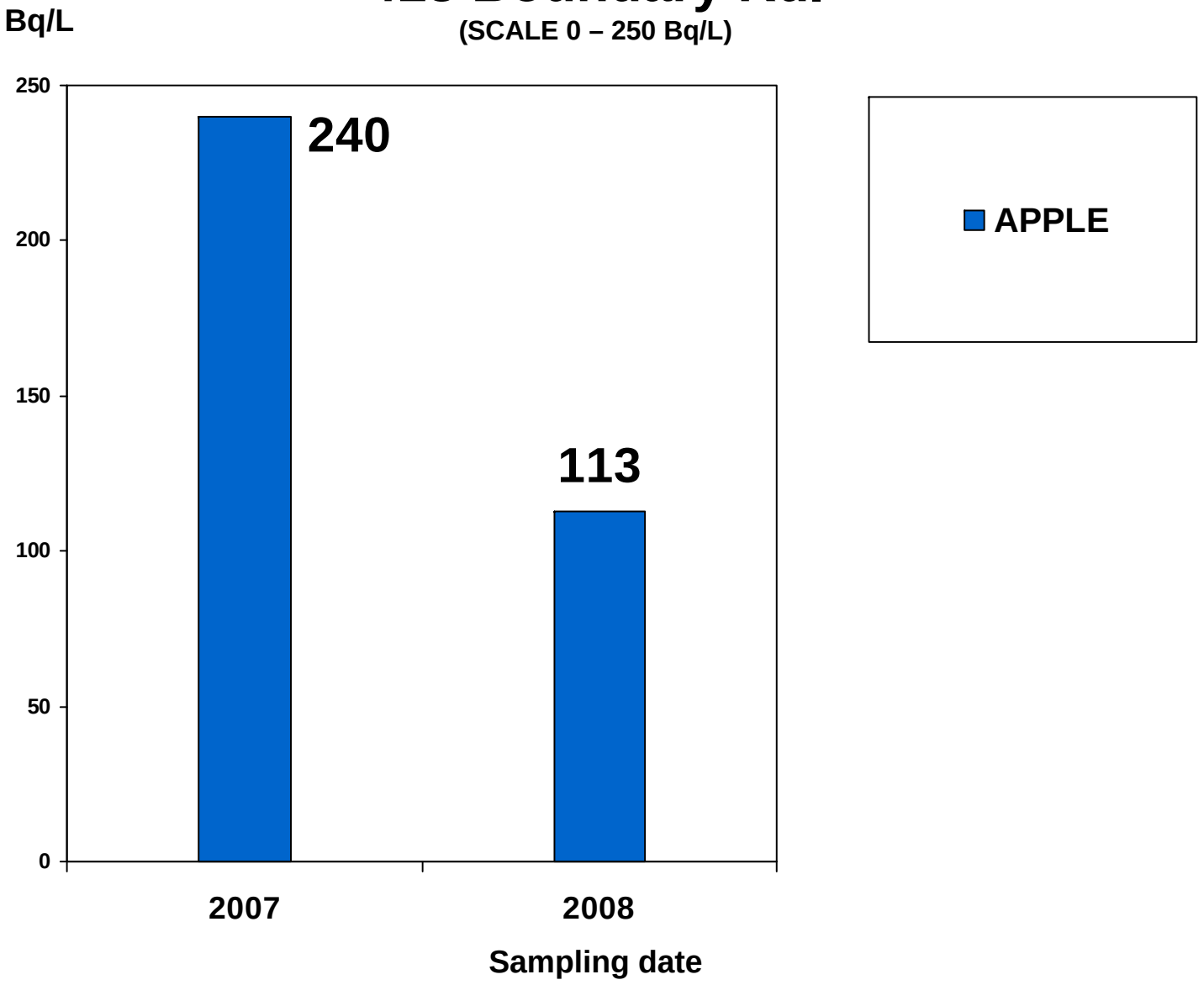
PRODUCE MONITORING RESULTS
711 Bruham Ave.



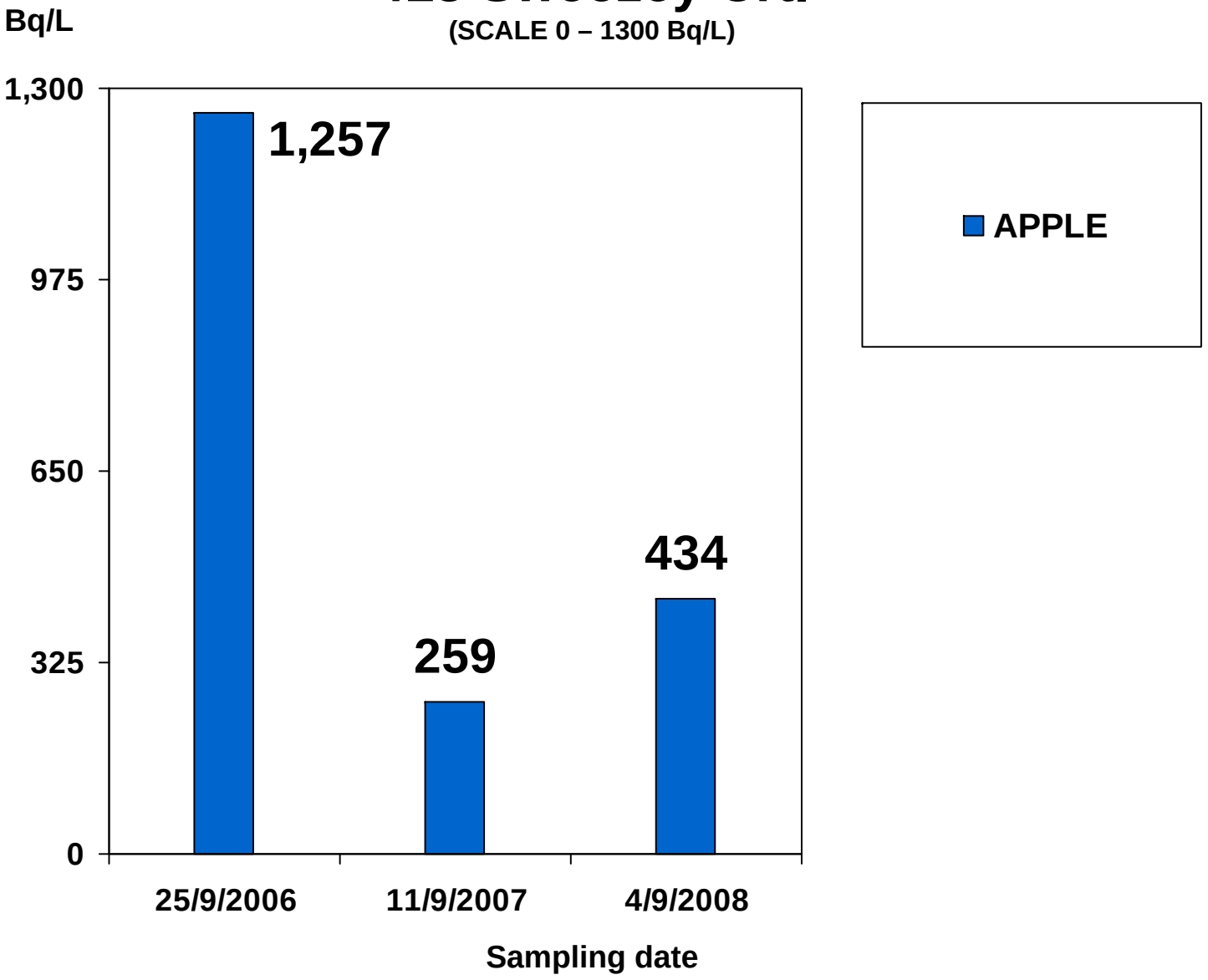
PRODUCE MONITORING RESULTS
366 Chamberlain



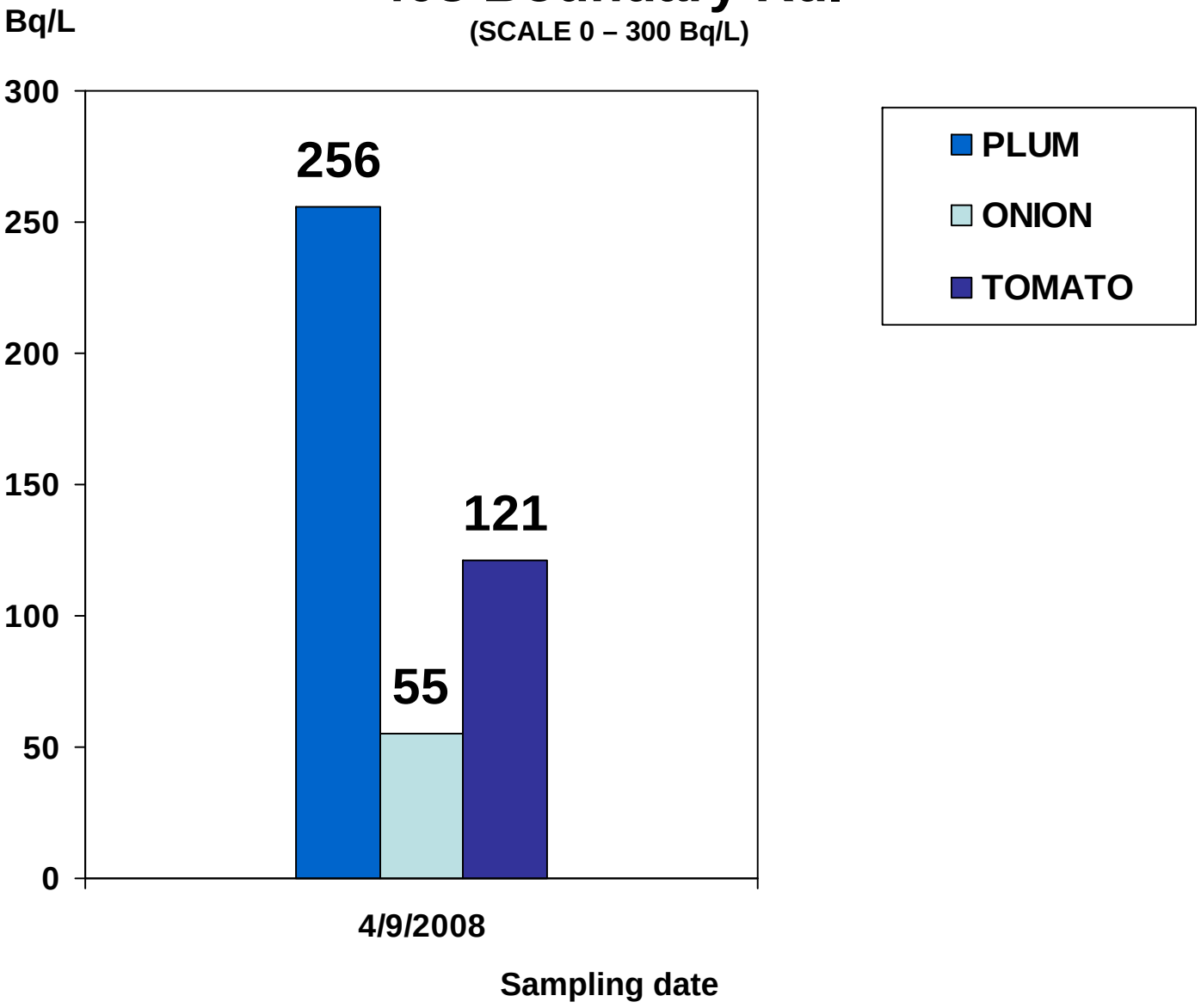
PRODUCE MONITORING RESULTS
413 Boundary Rd.



PRODUCE MONITORING RESULTS
413 Sweezey Crt.



PRODUCE MONITORING RESULTS
408 Boundary Rd.

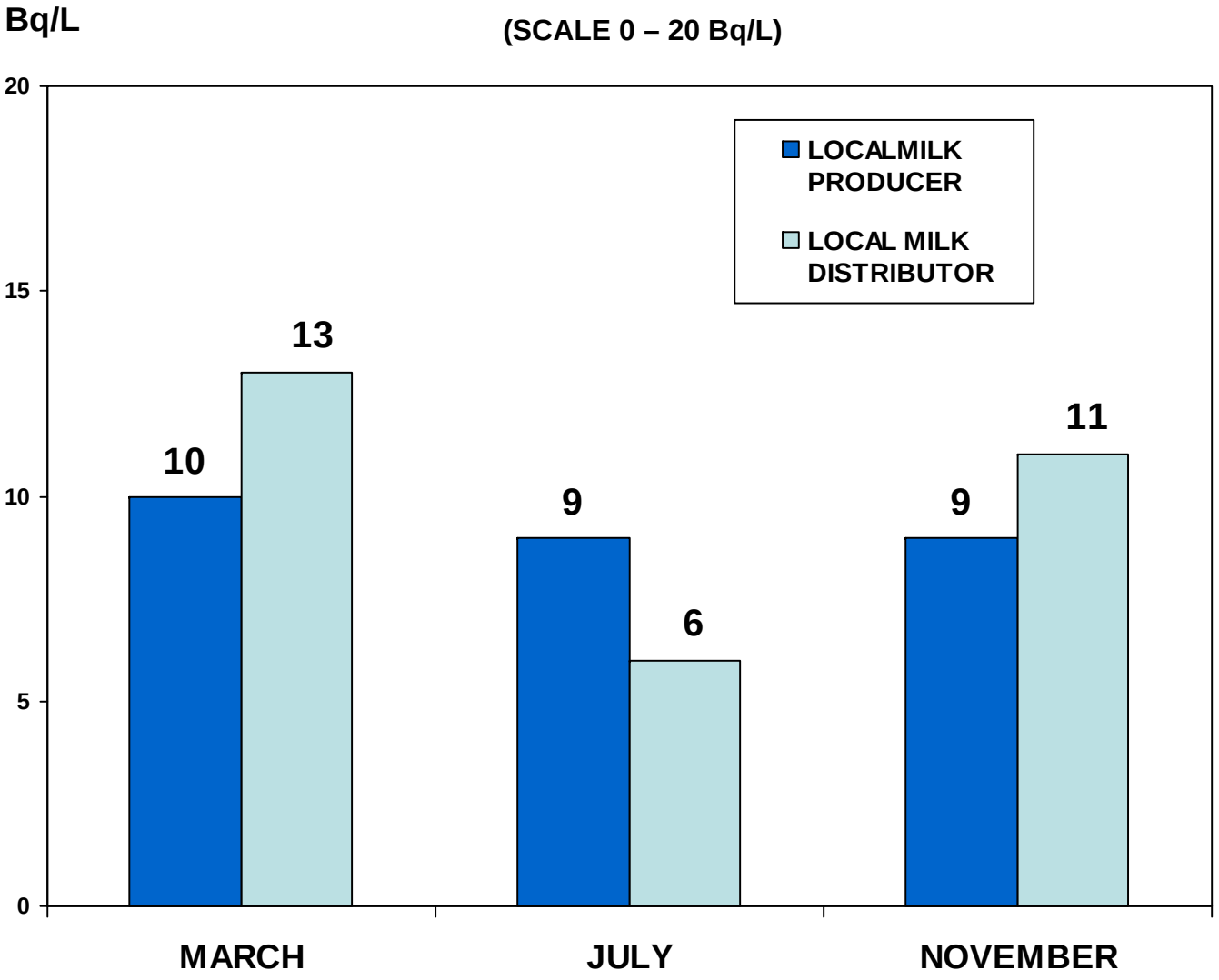


APPENDIX J

MILK MONITORING RESULTS FOR 2008

DESCRIPTION	March	July	November	AVG
LOCAL PRODUCER	10	9	9	9.33
LOCAL DISTRIBUTOR	13	6	11	10
			AVG	9.67

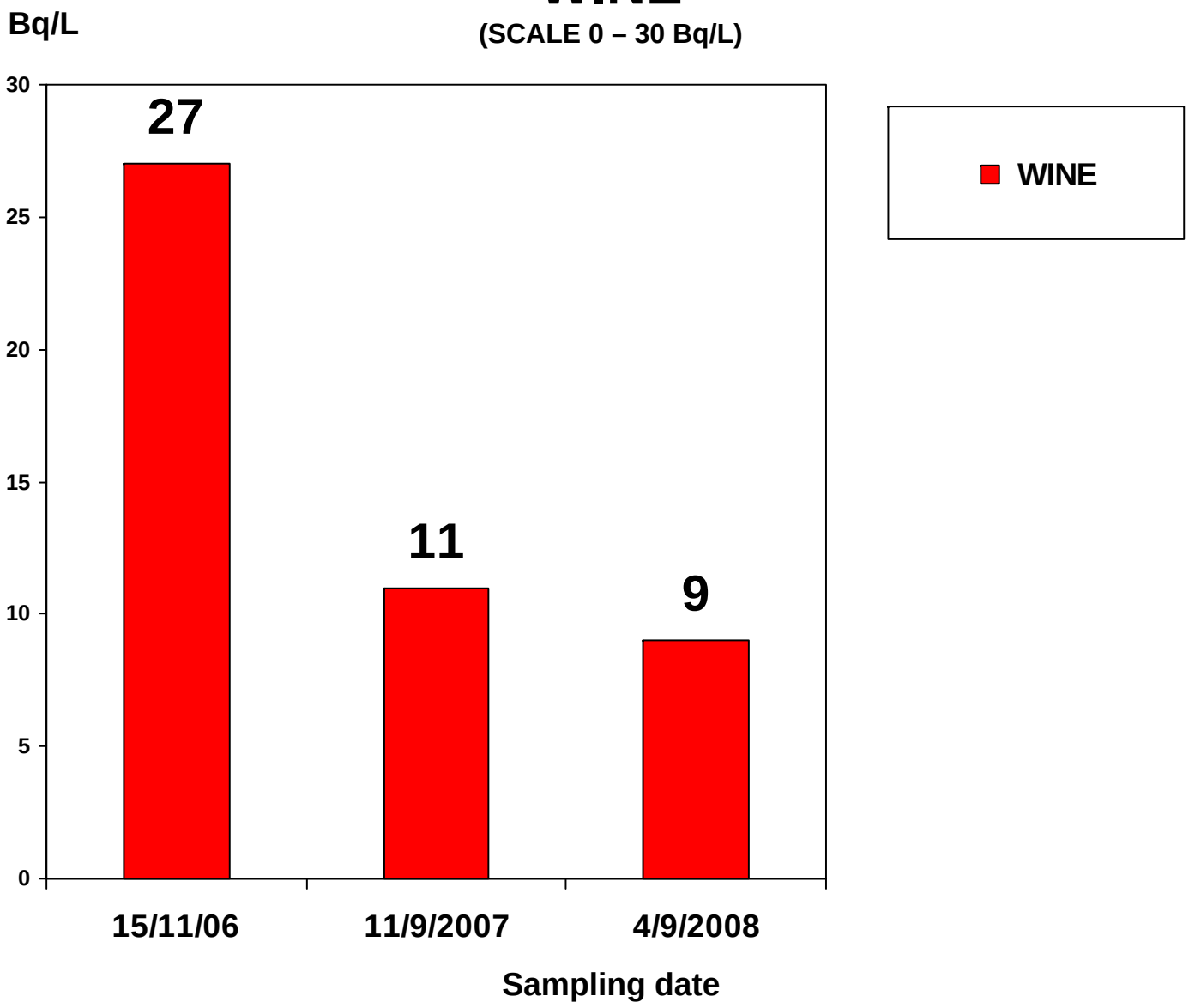
MONITORING RESULTS
MILK FOR 2008



APPENDIX K

WINE MONITORING RESULTS FOR 2008

MONITORING RESULTS
WINE

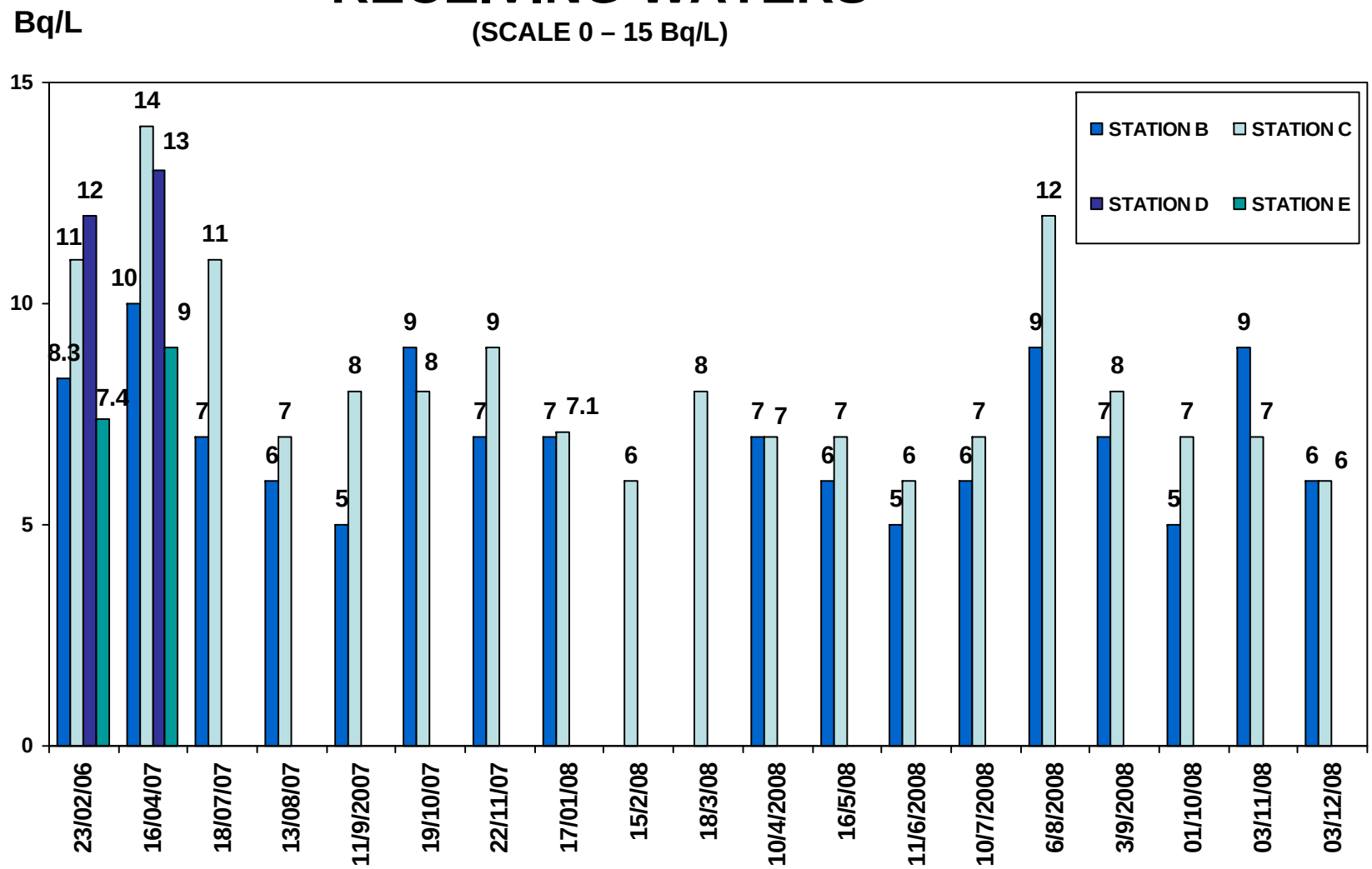


APPENDIX L

RECEIVING WATERS MONITORING RESULTS FOR 2008

MONITORING RESULTS
RECEIVING WATERS

(SCALE 0 – 15 Bq/L)



Sampling date

APPENDIX M

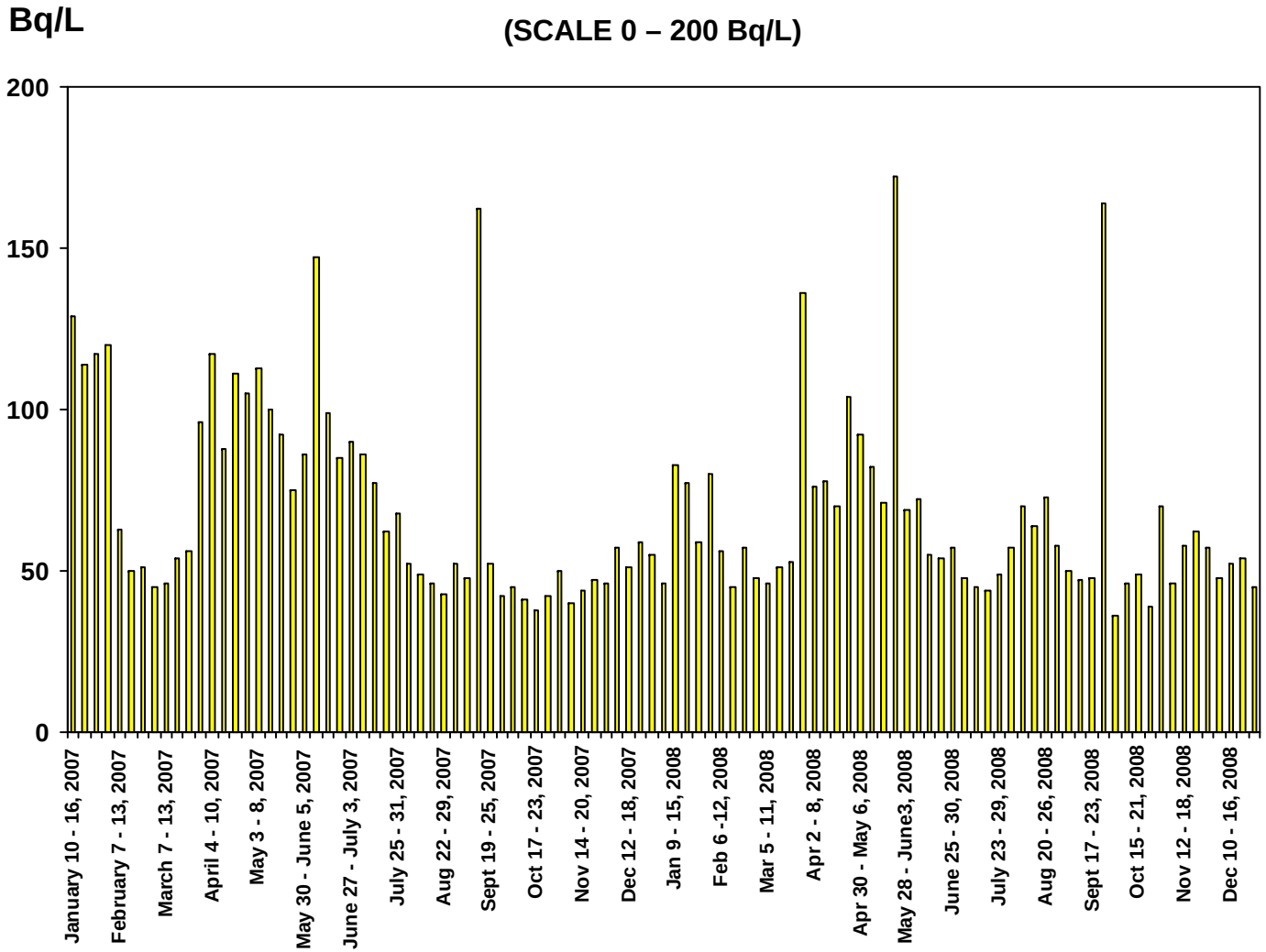
SEWAGE MONITORING RESULTS FOR 2008

SLUDGE WATER FROM POLLUTION CONTROL PLANT	
DATE	**Bq/L**
March 28 – April 3, 2007	96
April 4 - 10 2007	117
April 11 – 17, 2007	88
April 18 – 24, 2007	111
April 25 – May 1, 2007	105
May 2 – May 8, 2007	113
May 9 – 15, 2007	100
May 16 – 22, 2007	92
May 23 - 29, 2007	75
May 30 - June 5, 2007	86
June 5 - 12, 2007	147
June 12 - 19, 2007	99
June 19 – 26, 2007	85
June 27 – July 3, 2007	90
July 4 – 10, 2007	86
July 11 – 17, 2007	77
July 18 - 24, 2007	62
July 25 – 31, 2007	68
Aug 1 – 7, 2007	52
Aug 8 – 13, 2007	49
Aug 15 – 21, 2007	46
Aug 22 – 28, 2007	43
Aug 29 – Sept 4, 2007	52
Sept 5 – 11, 2007	48
Sept 12 – 18, 2007	162
Sept 19 – 25, 2007	52
Sept 26 – Oct 2, 2007	42
Oct 3 – 9, 2007	45
Oct 10 – 16, 2007	41
Oct 17 – 23, 2007	38
Oct 24 – 30, 2007	42
Oct 31 – Nov 6, 2007	50
Nov 7 – 13, 2007	40
Nov 14 – 20, 2007	44
Nov 21 – 27, 2007	47
Nov 28 – Dec 4, 2007	46
Dec 5 – 11, 2007	57
Dec 12 – 18, 2007	51
Dec 19 – 25, 2007	59
Dec 26 – Jan 1, 2008	55
Jan 2 – 8, 2008	46
Jan 9 – 15, 2008	83
Jan 16 – 22, 2008	77
Jan 23 – 29, 2008	59
Jan 30 – Feb 5, 2008	80
Feb 6 -12, 2008	56
Feb 13 – 19, 2008	45
Feb 20- 26, 2008	57
Feb 27 – Mar 4, 2008	48
Mar 5 – 11, 2008	46
Mar 12 – 18, 2008	51

Mar 19 – 25, 2008	53
Mar 26 – Apr 2, 2008	136
Apr 2 – 8, 2008	76
Apr 9 – 15, 2008	78
Apr 16 – 22, 2008	70
Apr 23 – 29, 2008	104
Apr 30 – May 6, 2008	92
May 7 – 13, 2008	82
May 14 – 20, 2008	71
May 21 – 27, 2008	172
May 28 – June 3, 2008	69
June 4 – 10, 2008	72
June 11 – 17, 2008	55
June 18 – 24, 2008	54
June 25 – 30, 2008	57
July 1 – 8, 2008	48
July 9 – 15, 2008	45
July 16 – 22, 2008	44
July 23 – 29, 2008	49
July 30 – Aug 5, 2008	57
Aug 6 – 12, 2008	70
Aug 13 – 19, 2008	64
Aug 20 – 26, 2008	73
Aug 27 – Sept 2, 2008	57
Sept 3 – 9, 2008	70
Sept 10 – 16, 2008	47
Sept 17 – 23, 2008	48
Sept 24 – 30, 2008	164
Oct 1 – 7, 2008	36
Oct 8 – 14, 2008	46
Oct 15 – 21, 2008	49
Oct 22 – 28, 2008	39
Oct 29 – Nov 4, 2008	70
Nov 5 – 11, 2008	46
Nov 12 – 18, 2008	58
Nov 19 – 25, 2008	62
Nov 26 – Dec 2, 2008	57
Dec 3 – 9, 2008	48
Dec 10 – 16, 2008	52
Dec 17 – 23, 2008	54
Dec 24 – 30, 2008	45

MONITORING RESULTS
POLLUTION CONTROL PLANT

(SCALE 0 – 200 Bq/L)



Sampling date

APPENDIX N

PRECIPITATION MONITORING RESULTS FOR 2008

DESCRIPTION	Nov 7 - Dec 2, 08	Dec 2, 08 - Jan 6, 09
1P	56	93
4P	154	224
8P	72	109
11P	60	51
15P	270	46
18P	179	213
22P	N/A	N/A
25P	70	43

PASSIVE AIR SAMPLER	NOV (Bq/m3) MEASURED	NOV (Bq/L) ESTIMATED IN RAIN	PRECIPITATION MONITOR	NOV (Bq/L) MEASURED	RATIO ESTIMATED/MEASURED
N250	2.08	152	1P	56	272%
NW250	4.94	361	4P	154	235%
W250	2.92	214	8P	72	297%
SW250	0.9	66	11P	60	110%
S250	2.33	170	15P	270	63%
SE250	1.94	142	18P	179	79%
NE250	1.75	128	25P	70	183%
					177%

PASSIVE AIR SAMPLER	DEC (Bq/L) MEASURED	DEC (Bq/L) ESTIMATED IN RAIN	PRECIPITATION MONITOR	DEC (Bq/L) MEASURED	RATIO ESTIMATED/MEASURED
N250	2.11	264	1P	93	284%
NW250	2.89	361	4P	224	161%
W250	0.85	106	8P	109	97%
SW250	0.69	86	11P	51	169%
S250	1.24	155	15P	46	337%
SE250	4.42	553	18P	213	259%
NE250	2.25	281	25P	43	654%
					280%

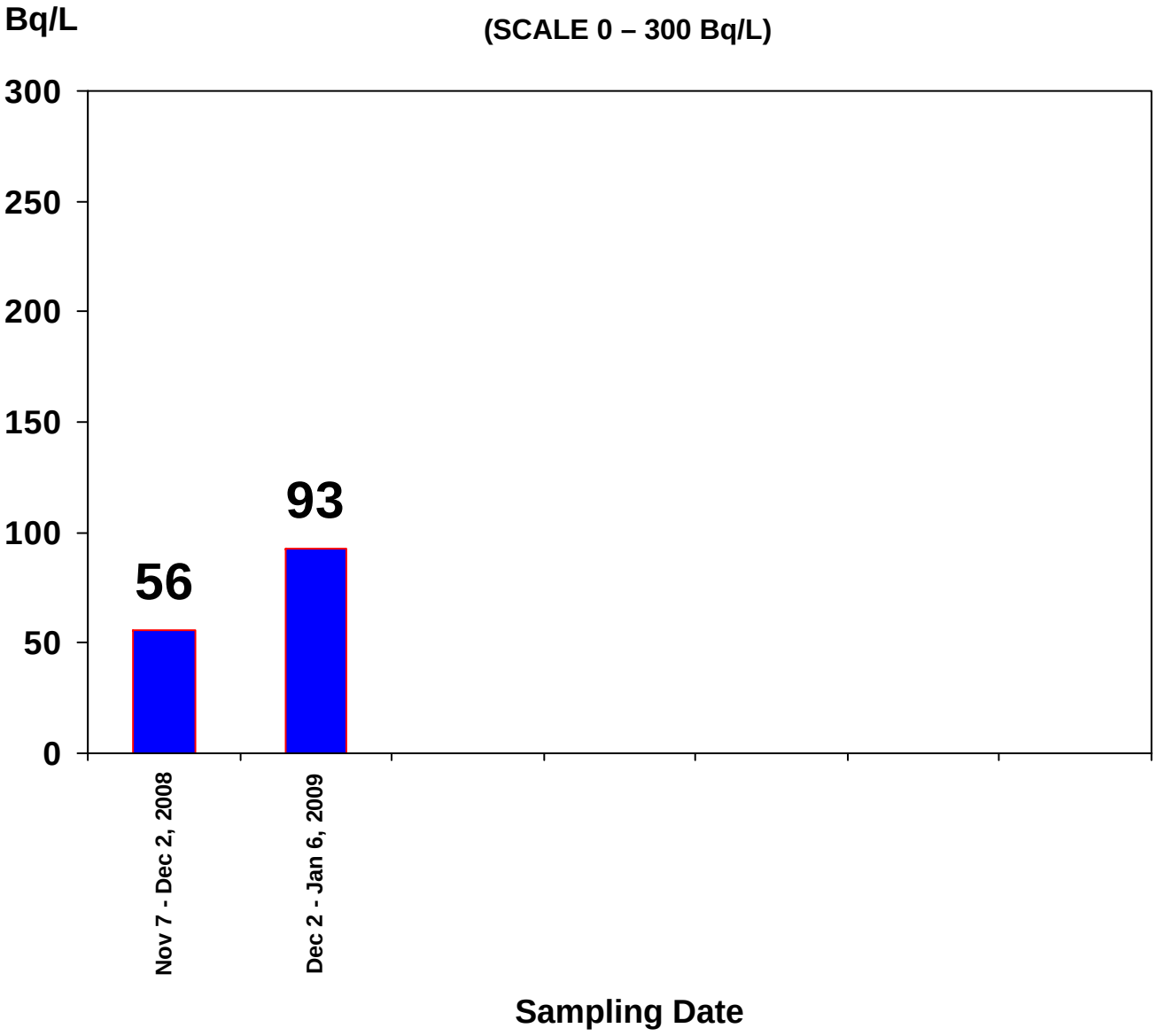
Site-Specific Absolute Humidity Values

year	Endpoint	Monthly Readings												Average		
		J	F	M	A	M	J	J	A	S	O	N	D	Annual	Snow-free Period	Growing Season
2000	Temp (C)	-11.8	-8.2	0.5	4.4	12.4	15.6	18.4	17.7	12.8	7.9	1.0	-11.3	4.9	11.3	16.1
	Dew Point (C)	-16.5	-12.8	-5.7	-3.6	7.0	10.9	13.8	13.8	8.7	2.7	-2.4	-14.8	0.1	6.3	11.8
	RH (%)	68.9	71.7	65.9	61.7	72.7	76.1	77.2	79.9	78.2	72.4	79.4	76.1	73.4	74.7	77.9
	Ha (g/m^3)	1.4	1.9	3.2	3.6	7.6	9.8	11.7	11.7	8.5	5.7	4.0	1.6	5.9	7.8	10.4
2001	Temp (C)	-10.2	-9.9	-3.4	5.8	13.2	18.5	18.9	20.6	14.4	8.3	3.7	-1.2	6.6	12.9	18.1
	Dew Point (C)	-13.4	-14.4	-9.7	-2.8	6.3	12.0	12.4	13.8	10.5	4.6	-0.7	-4.0	1.2	7.0	12.2
	RH (%)	78.0	70.7	63.6	58.5	67.8	68.9	68.8	69.0	79.8	78.6	75.3	82.9	71.8	70.8	71.6
	Ha (g/m^3)	1.8	1.7	2.3	3.9	7.2	10.4	10.7	11.7	9.6	6.5	4.6	3.6	6.2	8.1	10.6
2002	Temp (C)	-5.4	-7.0	-4.0	5.2	9.7	16.5	21.0	19.5	16.6	5.3	-0.7	-6.6	5.8	11.6	18.4
	Dew Point (C)	-8.5	-11.4	-9.2	-1.4	3.2	11.7	15.2	14.3	12.0	1.8	-3.8	-10.0	1.2	6.6	13.3
	RH (%)	80.0	72.0	69.4	65.8	67.2	76.4	72.5	74.9	76.7	79.4	80.7	77.5	74.4	74.2	75.1
	Ha (g/m^3)	2.6	2.1	2.4	4.3	5.9	10.3	12.7	12.0	10.5	5.4	3.7	2.3	6.2	8.1	11.4
2003	Temp (C)	-14.2	-14.0	-4.5	2.8	11.6	17.3	19.3	19.7	15.1	6.4	1.5	-5.7	4.6	11.7	17.9
	Dew Point (C)	-18.8	-19.5	-10.2	-5.5	5.4	10.9	14.4	15.0	11.4	3.2	-1.6	-8.3	-0.3	6.6	12.9
	RH (%)	69.1	64.5	66.4	58.2	70.5	70.3	76.4	76.8	81.1	81.5	81.6	82.4	73.2	74.5	76.2
	Ha (g/m^3)	1.2	1.1	2.3	3.2	6.8	9.7	12.1	12.6	10.2	5.9	4.3	2.6	6.0	8.1	11.1
2004	Temp (C)	-16.6	-8.5	-1.2	4.6	11.3	15.8	19.1	17.3	15.5	8.0	0.8	-9.7	4.7	11.6	16.9
	Dew Point (C)	-21.4	-13.1	-6.1	-2.8	5.2	9.6	15.0	13.0	11.1	3.8	-3.1	-12.9	-0.1	6.5	12.1
	RH (%)	67.4	71.3	71.8	62.6	70.7	70.1	79.0	77.7	76.9	76.6	76.8	78.2	73.2	73.8	75.9
	Ha (g/m^3)	0.9	1.8	3.1	3.9	6.8	9.0	12.6	11.1	9.9	6.2	3.9	1.9	5.9	7.9	10.6
5-yr Avg	*Temp (C)*	*-11.7*	*-9.5*	*-2.5*	*4.6*	*11.6*	*16.8*	*19.3*	*19.0*	*14.9*	*7.2*	*1.2*	*-6.9*	***5.3***	***11.8***	***17.5***
	Dew Point (C)	*-15.7*	*-14.2*	*-8.2*	*-3.2*	*5.4*	*11.0*	*14.2*	*14.0*	*10.7*	*3.2*	*-2.3*	*-10.0*	***0.4***	***6.6***	***12.5***
	RH (%)	*72.7*	*70.0*	*67.4*	*61.4*	*69.8*	*72.4*	*74.8*	*75.7*	*78.6*	*77.7*	*78.8*	*79.4*	***73.2***	***73.6***	***75.3***
	Ha (g/m^3)	*1.6*	*1.7*	*2.7*	*3.8*	*6.9*	*9.8*	*12.0*	*11.8*	*9.7*	*5.9*	*4.1*	*2.4*	***6.0***	***8.0***	***10.8***
Factor to convert		***190***	***176***	***113***	***80***	***44***	***31***	***25***	***25***	***31***	***50***	***73***	***124***	***50***	***37***	***28***

Monthly data derived from hourly readings at Environment Canada's Petawawa A Station
Average Annual values calculated using monthly means
Snow-free period is April to November, inclusive
Growing season is June to September, inclusive

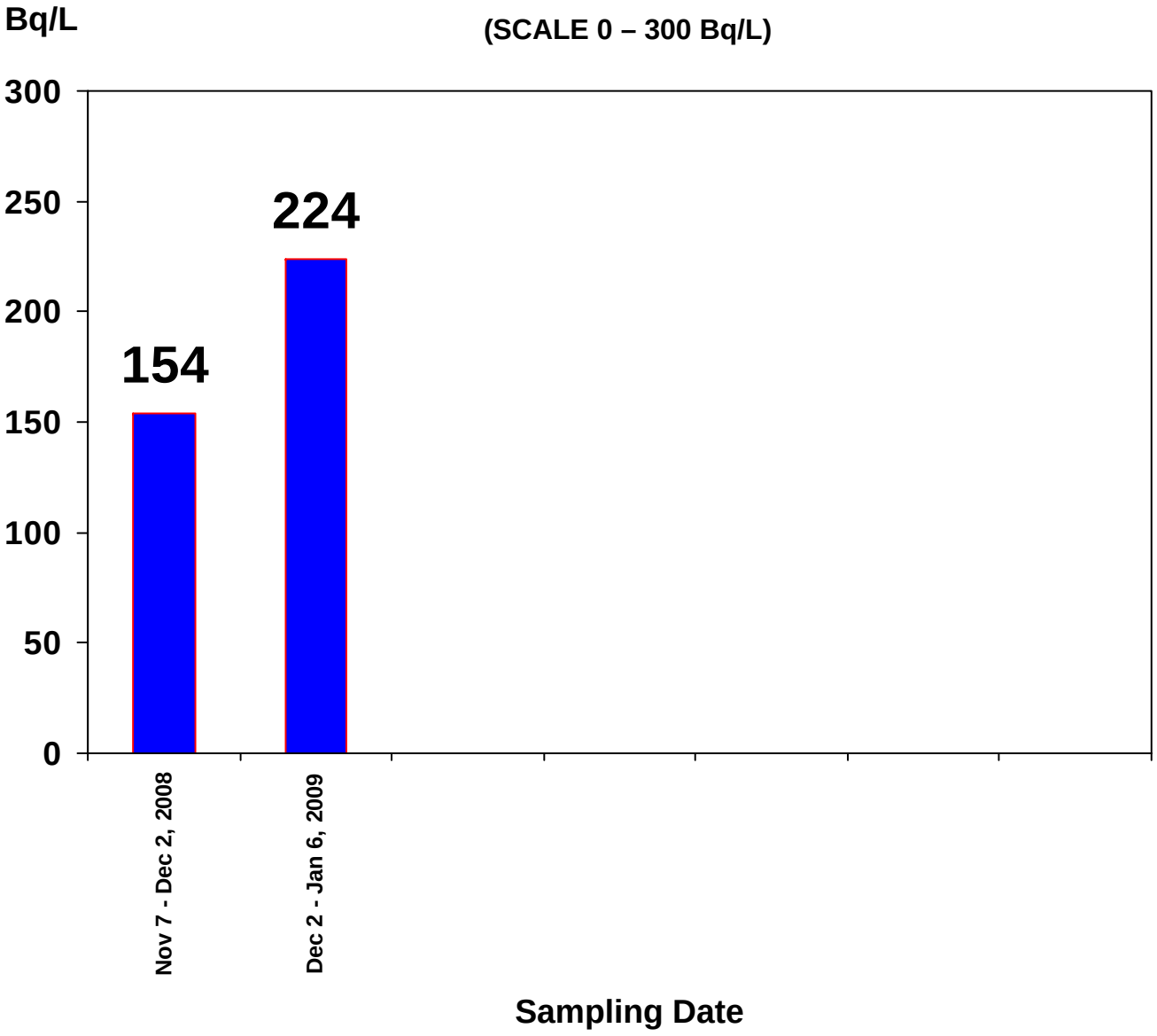
PRECIPITATION RESULTS

1P



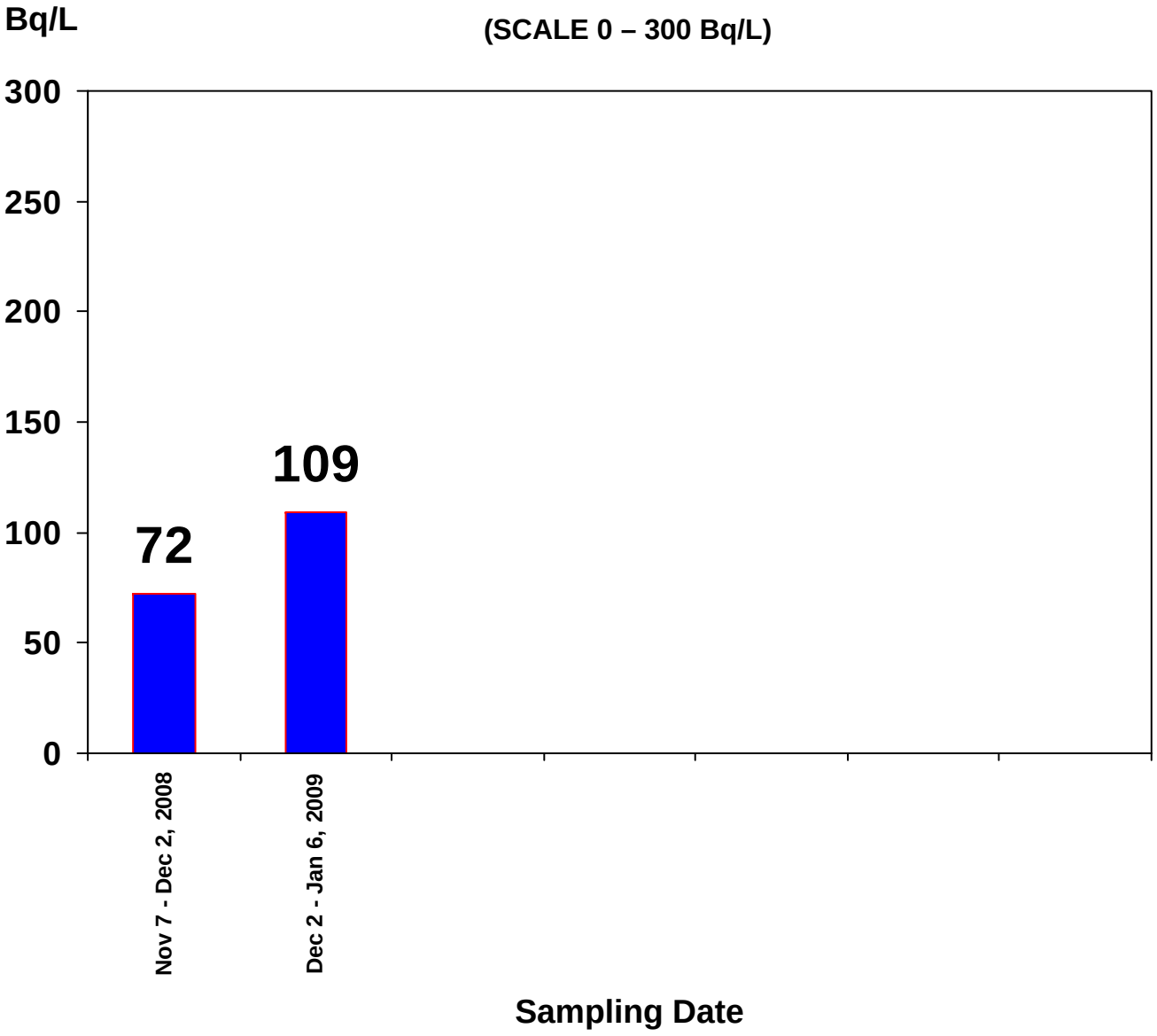
PRECIPITATION RESULTS

4P

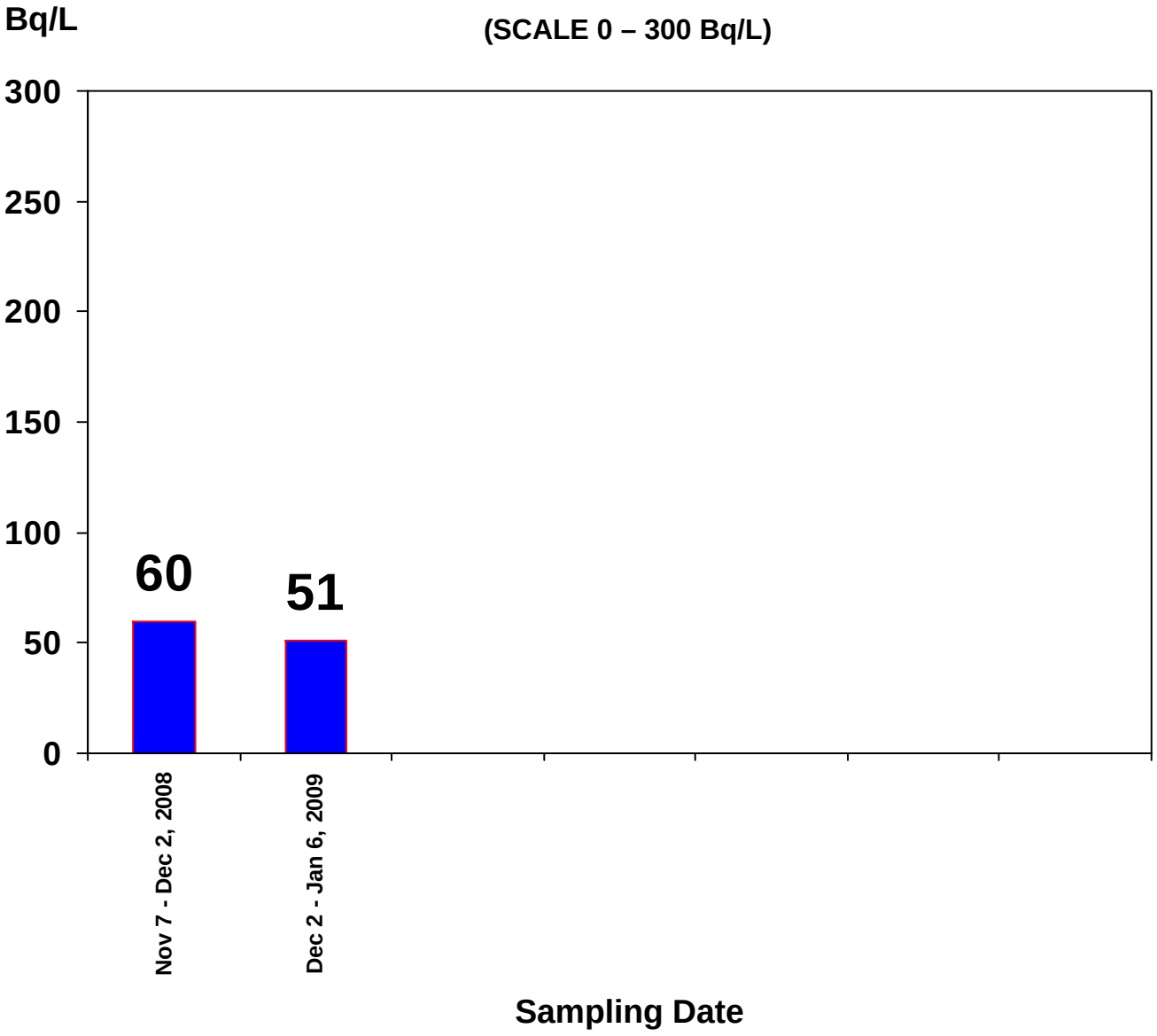


PRECIPITATION RESULTS

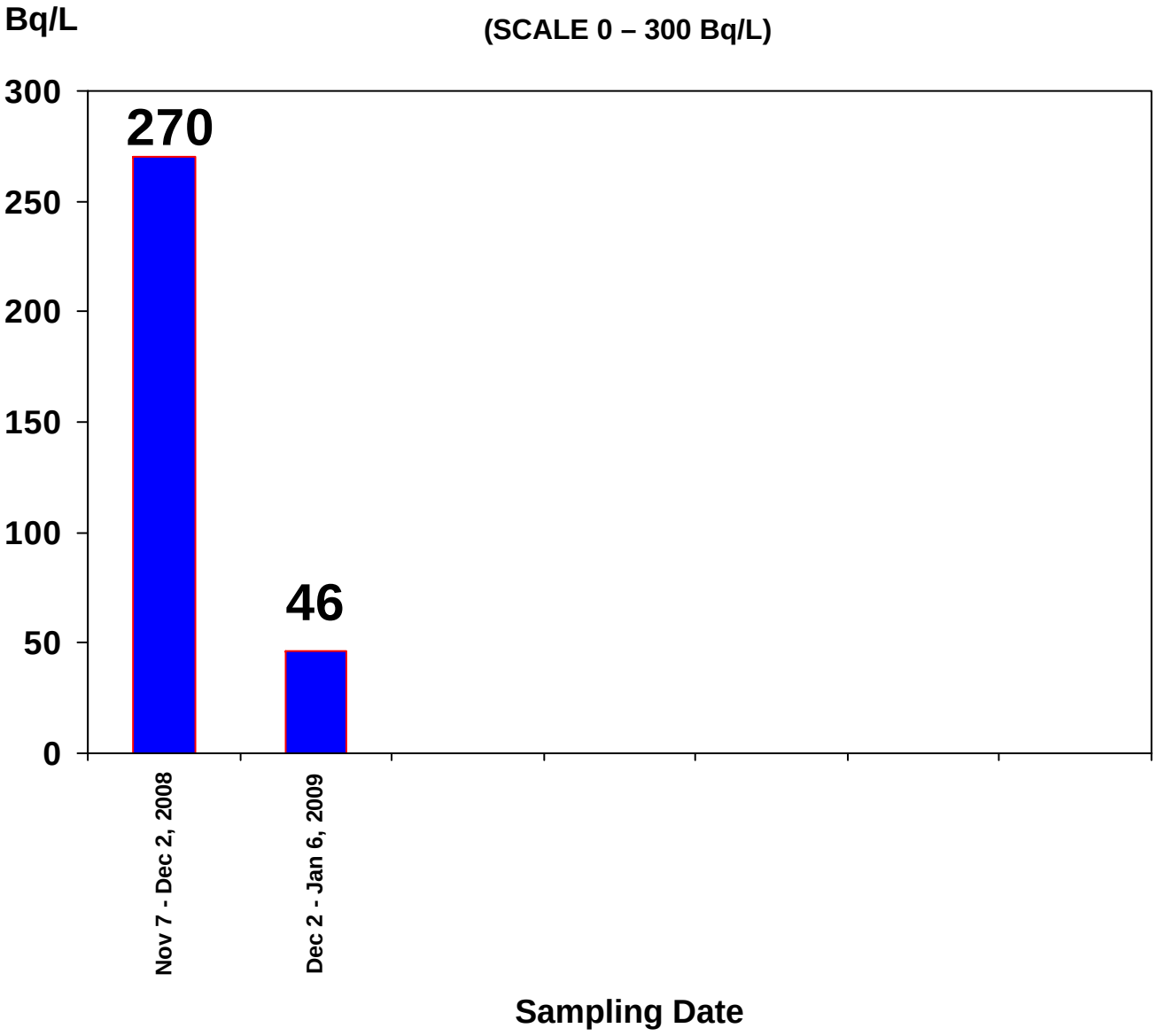
8P



PRECIPITATION RESULTS
11P

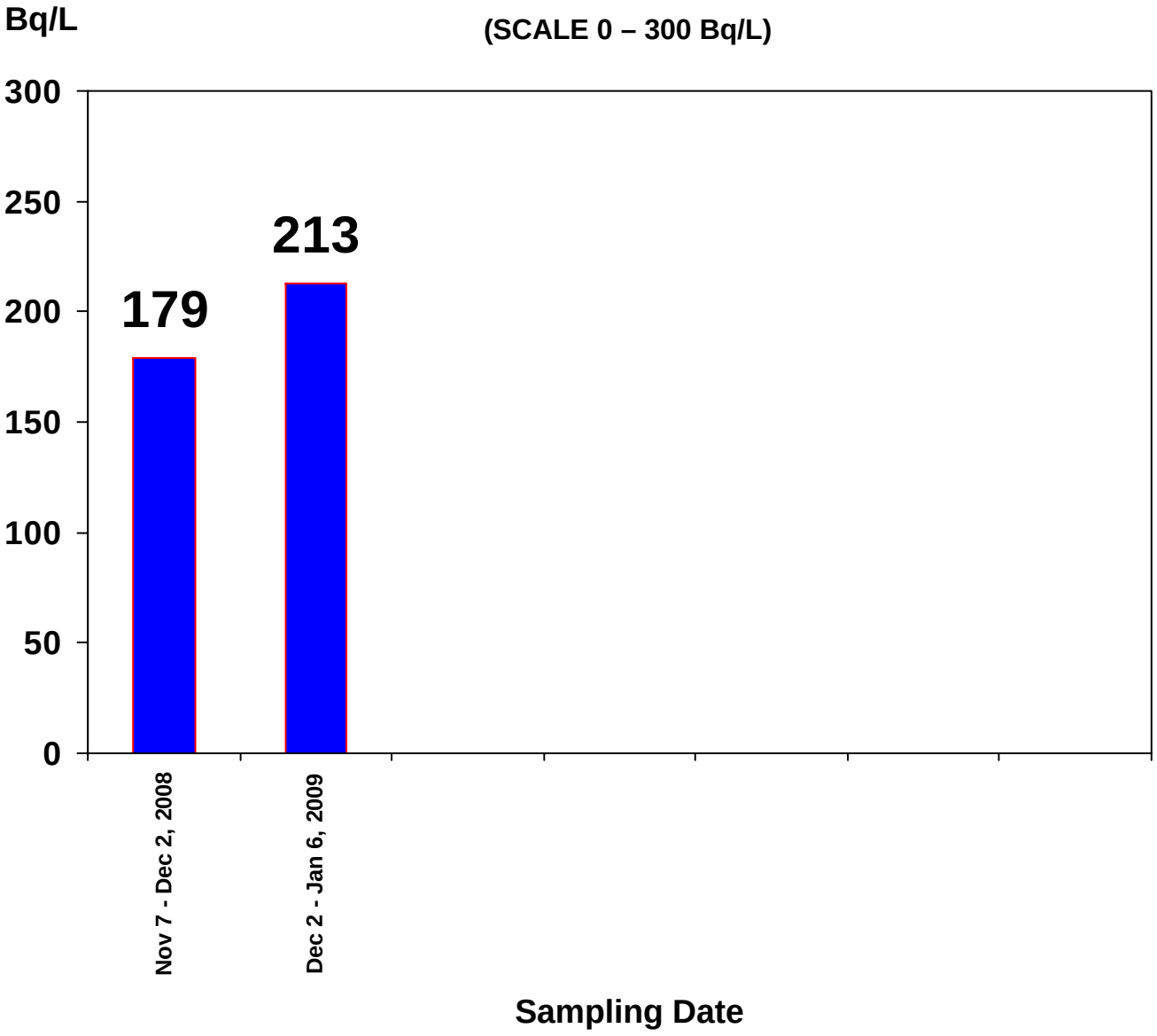


PRECIPITATION RESULTS
15P

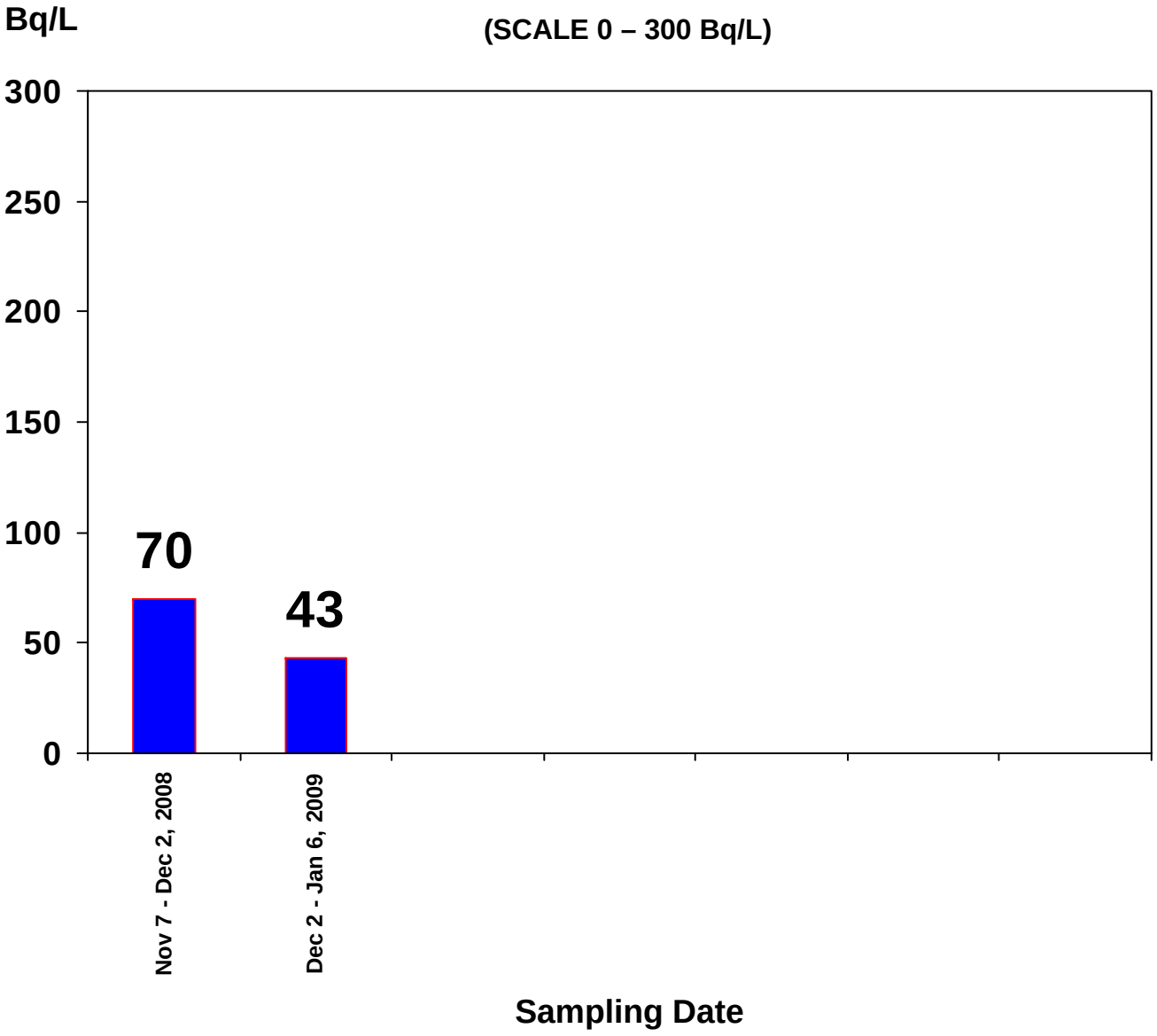


PRECIPITATION RESULTS

18P



PRECIPITATION RESULTS
25P



APPENDIX O

RUNOFF MONITORING RESULTS FOR 2008

****

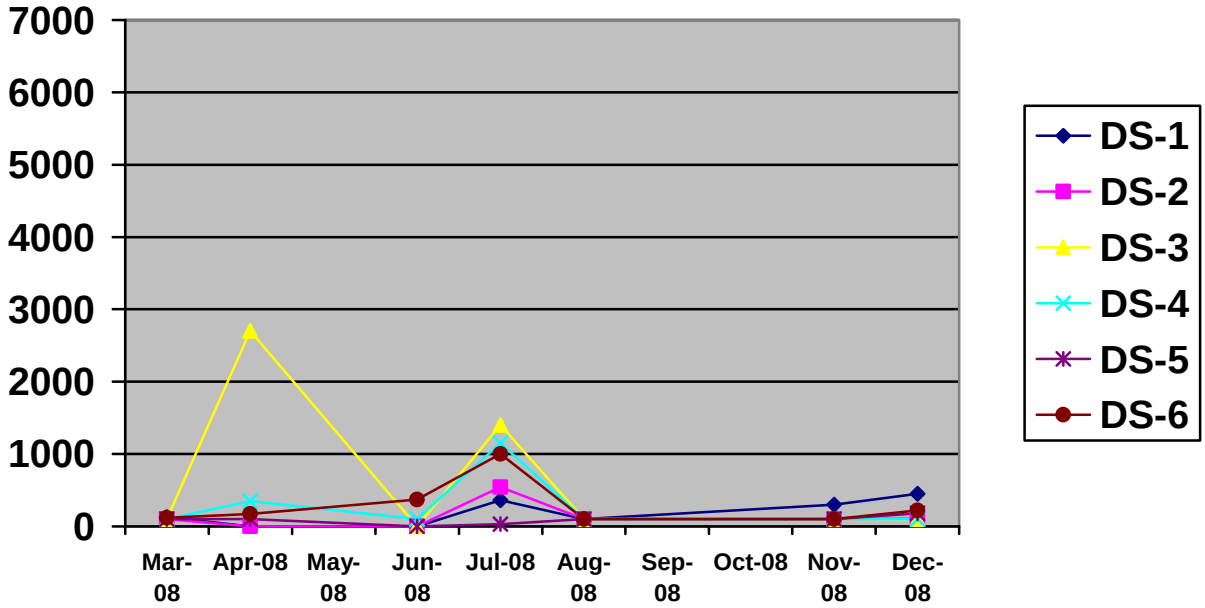
	DATE	TIME	DS-1	DS-2	DS-3	DS-4	DS-5	DS-6
	3-Mar-08	2:30 PM	130	100	100	100	100	120
	28-Apr-08	9:00 AM	No sample	No sample	2,700	350	100	170
	10-Jun-08	9:00 AM	No sample	No sample	No sample	100	No sample	370
	18-Jul-08	10:00 AM	360	540	1,400	1,150	30	1,000
	29-Aug-08	8:30 AM	100	100	100	100	100	100
****	13-Nov-08	9:30 AM	300	100	100	100	100	100
****	14-Dec-08	8:45 AM	450	110	100	100	180	220

Values are all in Bq/L

Lower limit of detection = 100 Bq/L

**** Samples taken <u>after</u> implementation and approval of procedure RSO-032 on Sept 25, 2008

DOWNSPOUTS 2008



LOCATION OF DOWNSPOUTS

APPENDIX P

LIQUID EFFLUENT MONITORING RESULTS FOR 2008

ANNUAL LIQUID EFFLUENT DATA

WEEK ENDING	WEEKLY RELEASE (Bq)	WEEK	LIMIT ALLOWANCE	IF RELEASED IN ONE WORK DAY AT SEWAGE PLANT (Bq/L)	IF RELEASED IN FIVE WORK DAYS AT SEWAGE PLANT (Bq/L)	IF RELEASED IN OVER ENTIRE WEEK AT SEWAGE PLANT (Bq/L)
4-Jan-08	0	53	199,597,126,322	0	0	0
11-Jan-08	0	52	199,597,126,322	0	0	0
18-Jan-08	1,305,149,440	51	198,291,976,882	313	63	15
25-Jan-08	0	50	198,291,976,882	0	0	0
1-Feb-08	2,175,612,200	49	196,116,364,682	522	104	25
8-Feb-08	437,559,280	48	195,678,805,402	105	21	5
15-Feb-08	0	47	195,678,805,402	0	0	0
22-Feb-08	433,920,680	46	195,244,884,722	104	21	5
29-Feb-08	433,920,680	45	194,810,964,042	104	21	5
7-Mar-08	0	44	194,810,964,042	0	0	0
14-Mar-08	869,679,560	43	193,941,284,482	209	42	10
21-Mar-08	0	42	193,941,284,482	0	0	0
28-Mar-08	0	41	193,941,284,482	0	0	0
4-Apr-08	433,920,680	40	193,507,363,802	104	21	5
11-Apr-08	109,401,400	39	193,397,962,402	26	5	1
18-Apr-08	696,780,400	38	192,701,182,002	167	33	8
25-Apr-08	0	37	192,701,182,002	0	0	0
2-May-08	0	36	192,701,182,002	0	0	0
9-May-08	1,208,600	35	192,699,973,402	0	0	0
16-May-08	3,012,600	34	192,696,960,802	1	0	0
23-May-08	0	33	192,696,960,802	0	0	0
30-May-08	0	32	192,696,960,802	0	0	0
6-Jun-08	0	31	192,696,960,802	0	0	0
13-Jun-08	1,252,200	30	192,695,708,602	0	0	0
20-Jun-08	0	29	192,695,708,602	0	0	0
27-Jun-08	0	28	192,695,708,602	0	0	0
4-Jul-08	0	27	192,695,708,602	0	0	0
11-Jul-08	0	26	192,695,708,602	0	0	0
18-Jul-08	0	25	192,695,708,602	0	0	0
25-Jul-08	0	24	192,695,708,602	0	0	0
1-Aug-08	3,021,600	23	192,692,687,002	1	0	0
8-Aug-08	959,042,760	22	191,733,644,242	230	46	11
15-Aug-08	1,458,917,096	21	190,274,727,146	350	70	17
22-Aug-08	1,898,726,960	20	188,376,000,186	455	91	22
29-Aug-08	1,654,105,995	19	186,721,894,191	397	79	19
5-Sep-08	1,186,178,148	18	185,535,716,043	284	57	14
12-Sep-08	1,482,722,685	17	184,052,993,358	356	71	17
19-Sep-08	1,393,157,931	16	182,659,835,427	334	67	16
26-Sep-08	0	15	182,659,835,427	0	0	0
3-Oct-08	0	14	182,659,835,427	0	0	0
10-Oct-08	1,121,388,000	13	181,538,447,427	269	54	13
17-Oct-08	897,110,400	12	180,641,337,027	215	43	10
24-Oct-08	313,988,640	11	180,327,348,387	75	15	4
31-Oct-08	656,704,880	10	179,670,643,507	157	31	7
7-Nov-08	860,481,180	9	178,810,162,327	206	41	10
14-Nov-08	1,209,307,670	8	177,600,854,657	290	58	14
21-Nov-08	1,387,929,850	7	176,212,924,807	333	67	16
28-Nov-08	1,160,528,620	6	175,052,396,187	278	56	13
5-Dec-08	1,426,229,590	5	173,626,166,597	342	68	16
12-Dec-08	1,337,053,570	4	172,289,113,027	321	64	15
19-Dec-08	1,326,316,450	3	170,962,796,577	318	64	15
26-Dec-08	324,096,050	2	170,638,700,527	78	16	4
31-Dec-08	541,472,800	1	170,097,227,727	130	26	6

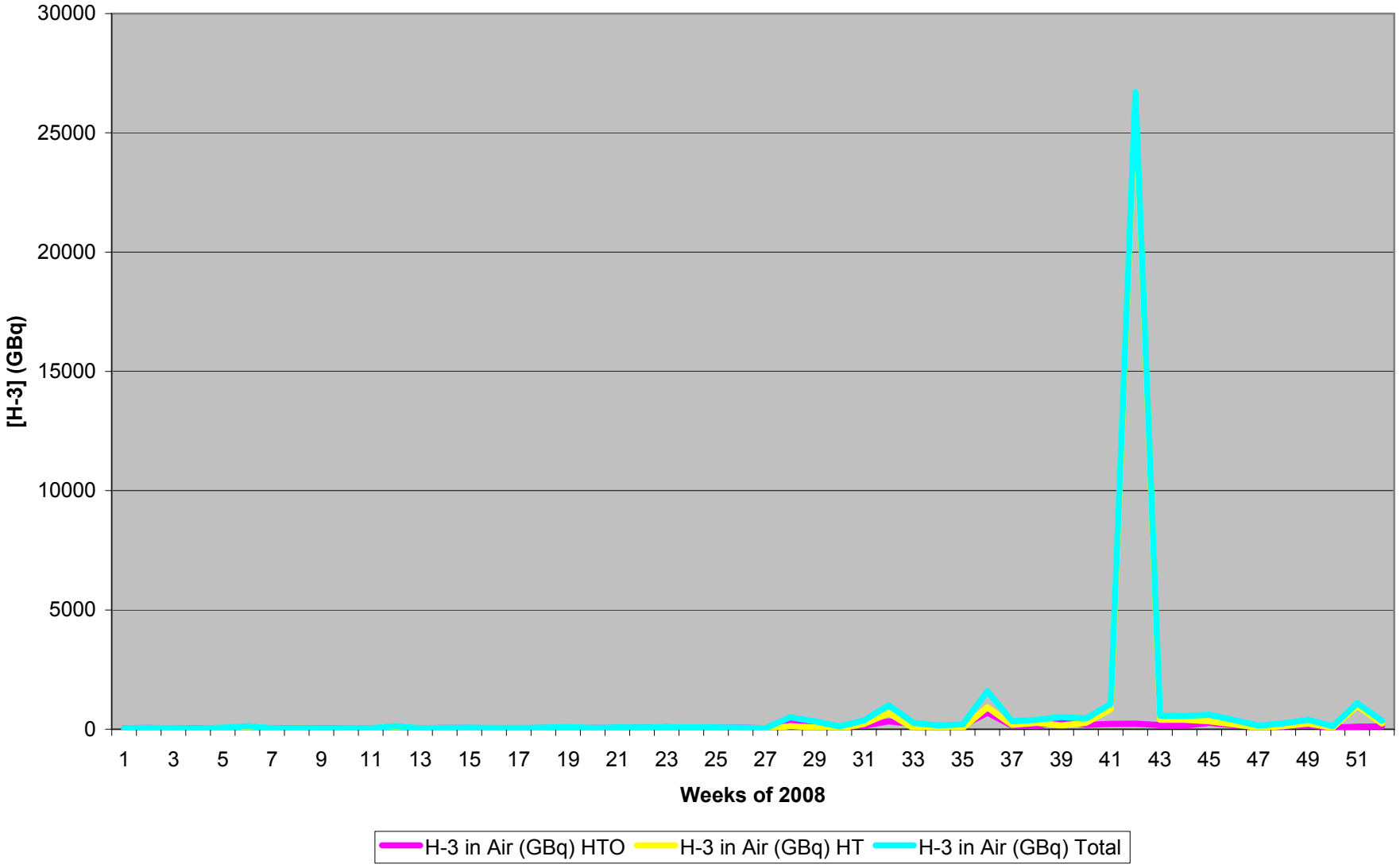
Annual Total (Bq)	29,499,898,595
Annual Total (GBq)	29.50
Limit (GBq)	200
% of limit	**14.75**

APPENDIX Q

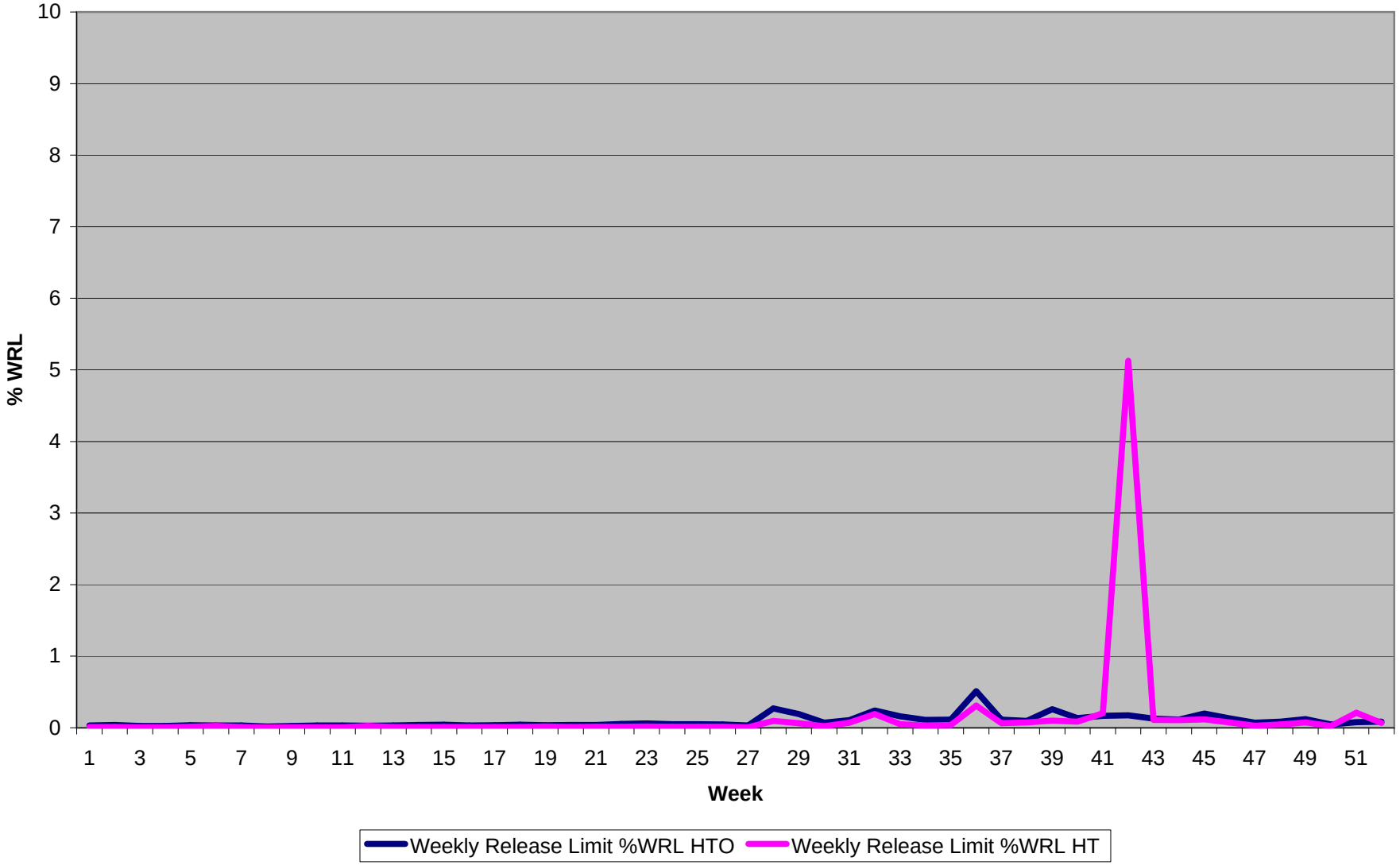
AIR EMISSION MONITORING RESULTS FOR 2008

Week	Date Initial	Date Final	Stack Release Data H-3 in Air (GBq) HTO	HT	Total	(GBq) ∑(HTO)	∑(HTO + HT)	1996 SRBT DEL %DEL Adult Resident	Infant Resident	Adult Worker	Weekly Release Limit %WRL HTO	HT	2006 SRBT DRL % DRL Adult Resident	Infant Resident	Nursing Infant	Nursing Mother	Adult Worker
1	12/31/2008	1/7/2008	44.51	3.22	47.73	44.51	47.73	0.01	0.00	0.01	0.03	0.01	0.03	0.02	0.04	0.03	0.03
2	1/7/2008	1/14/2008	53.79	3.26	57.05	98.30	104.78	0.01	0.01	0.01	0.04	0.01	0.03	0.02	0.05	0.03	0.03
3	1/14/2008	1/21/2008	35.31	2.88	38.19	133.61	142.97	0.01	0.00	0.01	0.03	0.01	0.02	0.02	0.03	0.02	0.02
4	1/21/2008	1/28/2008	32.83	1.83	34.66	166.44	177.63	0.01	0.00	0.01	0.02	0.01	0.02	0.01	0.03	0.02	0.02
5	1/28/2008	2/4/2008	46.05	22.29	68.34	212.49	245.97	0.01	0.00	0.01	0.03	0.01	0.03	0.02	0.04	0.03	0.03
6	2/4/2008	2/12/2008	45.47	78.22	123.69	257.96	369.66	0.01	0.01	0.01	0.03	0.02	0.03	0.02	0.05	0.03	0.03
7	2/12/2008	2/19/2008	43.42	2.85	46.27	301.38	415.93	0.01	0.00	0.01	0.03	0.01	0.03	0.02	0.04	0.03	0.02
8	2/19/2008	2/25/2008	23.80	1.37	25.17	325.18	441.10	0.00	0.00	0.01	0.02	0.00	0.01	0.01	0.02	0.01	0.01
9	2/25/2008	3/3/2008	33.55	3.57	37.12	358.73	478.22	0.01	0.00	0.01	0.02	0.01	0.02	0.01	0.03	0.02	0.02
10	3/3/2008	3/10/2008	43.46	2.46	45.92	402.19	524.14	0.01	0.00	0.01	0.03	0.01	0.03	0.02	0.04	0.03	0.02
11	3/10/2008	3/17/2008	41.43	2.88	44.31	443.62	568.45	0.01	0.00	0.01	0.03	0.01	0.02	0.02	0.04	0.02	0.02
12	3/17/2008	3/24/2008	39.15	91.55	130.70	482.77	699.15	0.01	0.00	0.01	0.03	0.03	0.02	0.02	0.04	0.03	0.02
13	3/24/2008	3/31/2008	43.45	3.01	46.46	526.22	745.61	0.01	0.00	0.01	0.03	0.01	0.03	0.02	0.04	0.03	0.02
14	3/31/2008	4/7/2008	52.66	2.90	55.56	578.88	801.17	0.01	0.01	0.01	0.04	0.01	0.03	0.02	0.05	0.03	0.03
15	4/7/2008	4/14/2008	55.35	3.64	58.99	634.23	860.16	0.01	0.01	0.01	0.04	0.01	0.03	0.02	0.05	0.03	0.03
16	4/14/2008	4/21/2008	45.41	3.06	48.47	679.64	908.63	0.01	0.00	0.01	0.03	0.01	0.03	0.02	0.04	0.03	0.03
17	4/21/2008	4/28/2008	45.82	2.97	48.79	725.46	957.42	0.01	0.00	0.01	0.03	0.01	0.03	0.02	0.04	0.03	0.03
18	4/28/2008	5/6/2008	58.35	3.33	61.68	783.81	1019.10	0.01	0.01	0.01	0.04	0.01	0.03	0.03	0.05	0.03	0.03
19	5/6/2008	5/12/2008	47.50	46.36	93.86	831.31	1112.96	0.01	0.01	0.01	0.04	0.02	0.03	0.02	0.05	0.03	0.03
20	5/12/2008	5/20/2008	52.87	3.75	56.62	884.18	1169.58	0.01	0.01	0.01	0.04	0.01	0.03	0.02	0.05	0.03	0.03
21	5/20/2008	5/26/2008	50.56	24.76	75.32	934.74	1244.90	0.01	0.01	0.01	0.04	0.01	0.03	0.02	0.05	0.03	0.03
22	5/26/2008	6/2/2008	69.86	3.38	73.24	1004.60	1318.14	0.01	0.01	0.02	0.05	0.01	0.04	0.03	0.06	0.04	0.04
23	6/2/2008	6/9/2008	82.04	4.83	86.87	1086.64	1405.01	0.02	0.01	0.02	0.06	0.02	0.05	0.04	0.07	0.05	0.05
24	6/9/2008	6/16/2008	65.84	15.65	81.49	1152.48	1486.50	0.01	0.01	0.01	0.05	0.02	0.04	0.03	0.06	0.04	0.04
25	6/16/2008	6/23/2008	66.78	3.70	70.48	1219.26	1556.98	0.01	0.01	0.02	0.05	0.01	0.04	0.03	0.06	0.04	0.04
26	6/23/2008	6/30/2008	61.91	4.26	66.17	1281.17	1623.15	0.01	0.01	0.01	0.05	0.01	0.04	0.03	0.06	0.04	0.04
27	6/30/2008	7/7/2008	42.31	3.77	46.08	1323.48	1669.23	0.01	0.00	0.01	0.03	0.01	0.02	0.02	0.04	0.03	0.02
28	7/7/2008	7/14/2008	363.90	132.14	496.04	1687.38	2165.27	0.07	0.04	0.08	0.27	0.10	0.21	0.16	0.34	0.22	0.21
29	7/14/2008	7/21/2008	260.10	71.14	331.24	1947.48	2496.51	0.05	0.03	0.06	0.19	0.06	0.15	0.11	0.24	0.16	0.15
30	7/21/2008	7/28/2008	95.51	18.09	113.60	2042.99	2610.11	0.02	0.01	0.02	0.07	0.02	0.06	0.04	0.09	0.06	0.05
31	7/28/2008	8/5/2008	145.96	223.19	369.15	2188.95	2979.26	0.03	0.02	0.03	0.11	0.07	0.09	0.07	0.14	0.09	0.09
32	8/5/2008	8/11/2008	325.91	672.87	998.78	2514.86	3978.04	0.07	0.04	0.08	0.24	0.19	0.21	0.15	0.33	0.21	0.20
33	8/11/2008	8/18/2008	218.09	47.94	266.03	2732.95	4244.07	0.04	0.02	0.05	0.16	0.05	0.13	0.09	0.20	0.13	0.12
34	8/18/2008	8/25/2008	149.22	8.32	157.54	2882.17	4401.61	0.03	0.02	0.03	0.11	0.03	0.09	0.06	0.14	0.09	0.08
35	8/25/2008	9/2/2008	153.05	53.69	206.74	3035.22	4608.35	0.03	0.02	0.03	0.11	0.04	0.09	0.07	0.14	0.09	0.09
36	9/2/2008	9/9/2008	689.95	911.31	1601.26	3725.17	6209.61	0.14	0.08	0.16	0.51	0.31	0.42	0.32	0.67	0.43	0.41
37	9/9/2008	9/15/2008	153.97	178.73	332.70	3879.14	6542.31	0.03	0.02	0.04	0.11	0.06	0.09	0.07	0.15	0.10	0.09
38	9/15/2008	9/22/2008	128.52	265.59	394.11	4007.66	6936.42	0.03	0.01	0.03	0.10	0.08	0.08	0.06	0.13	0.08	0.08
39	9/22/2008	9/30/2008	347.94	160.89	508.83	4355.60	7445.25	0.07	0.04	0.08	0.26	0.10	0.21	0.15	0.32	0.21	0.20
40	9/30/2008	10/6/2008	180.67	268.78	449.45	4536.27	7894.70	0.04	0.02	0.04	0.13	0.09	0.11	0.08	0.18	0.11	0.11
41	10/6/2008	10/14/2008	224.25	836.93	1061.18	4760.52	8955.88	0.05	0.03	0.05	0.17	0.20	0.15	0.11	0.24	0.15	0.15
42	10/14/2008	10/20/2008	236.64	26475.80	26712.44	4997.16	35668.32	0.09	0.12	0.10	0.18	5.13	0.80	0.69	1.49	0.84	0.78
43	10/20/2008	10/27/2008	173.41	396.32	569.73	5170.57	36238.05	0.04	0.02	0.04	0.13	0.11	0.11	0.08	0.18	0.11	0.11
44	10/27/2008	11/3/2008	152.40	399.40	551.80	5322.97	36789.85	0.03	0.02	0.04	0.11	0.11	0.10	0.07	0.16	0.10	0.10
45	11/3/2008	11/10/2008	269.77	332.52	602.29	5592.74	37392.14	0.05	0.03	0.06	0.20	0.12	0.16	0.12	0.26	0.17	0.16
46	11/10/2008	11/17/2008	175.31	204.54	379.85	5768.05	37771.99	0.04	0.02	0.04	0.13	0.07	0.11	0.08	0.17	0.11	0.10
47	11/17/2008	11/24/2008	96.96	49.45	146.41	5865.01	37918.40	0.02	0.01	0.02	0.07	0.03	0.06	0.04	0.09	0.06	0.06
48	11/24/2008	12/1/2008	117.43	123.58	241.01	5982.44	38159.41	0.02	0.01	0.03	0.09	0.05	0.07	0.05	0.11	0.07	0.07
49	12/1/2008	12/8/2008	163.52	232.30	395.82	6145.96	38555.23	0.03	0.02	0.04	0.12	0.08	0.10	0.08	0.16	0.10	0.10
50	12/8/2008	12/15/2008	64.29	65.86	130.15	6210.25	38685.38	0.01	0.01	0.01	0.05	0.02	0.04	0.03	0.06	0.04	0.04
51	12/15/2008	12/22/2008	103.42	979.28	1082.70	6313.67	39768.08	0.02	0.01	0.03	0.08	0.21	0.08	0.07	0.14	0.09	0.08
52	12/22/2008	12/30/2008	112.98	235.49	348.47	6426.65	40116.55	0.02	0.01	0.03	0.08	0.07	0.07	0.05	0.11	0.07	0.07
Annual	**Total**		6426.65	33689.90	40116.55												
Weekly	**Average**		123.59	647.88	771.47			**Average % DEL** 0.03	0.02	0.03	**Average % WRL** 0.09	0.15	**Average % DRL** 0.09	0.07	0.14	0.09	0.09
			(Bq/a)	% Release Limit				**Projected Dose (uSv/a)**					**Projected Dose (uSv/a)**				
% Annual Release Limit:		**HTO**	6.72E+13	9.56				0.26	0.16	0.29			0.88	0.67	1.44	0.90	0.86
		HTO + HT	4.48E+14	8.95				**Adult Resident**	**Infant Resident**	**Adult Worker**	**HTO**	**HT**	**Adult Resident**	**Infant Resident**	**Nursing Infant**	**Nursing Mother**	**Adult Worker**
Derived Weekly HTO Release/Emission Limit (GBq/week)								5.00E+05	9.40E+05	4.40E+05	2.90E+04	NA	1.73E+05	2.33E+05	1.10E+05	1.69E+05	1.77E+05
Derived Weekly HT Release/ Emission Limit (GBq/week)								6.60E+07	2.70E+07	6.40E+07	NA	1.80E+06	4.02E+06	4.52E+06	2.07E+06	3.80E+06	4.07E+06

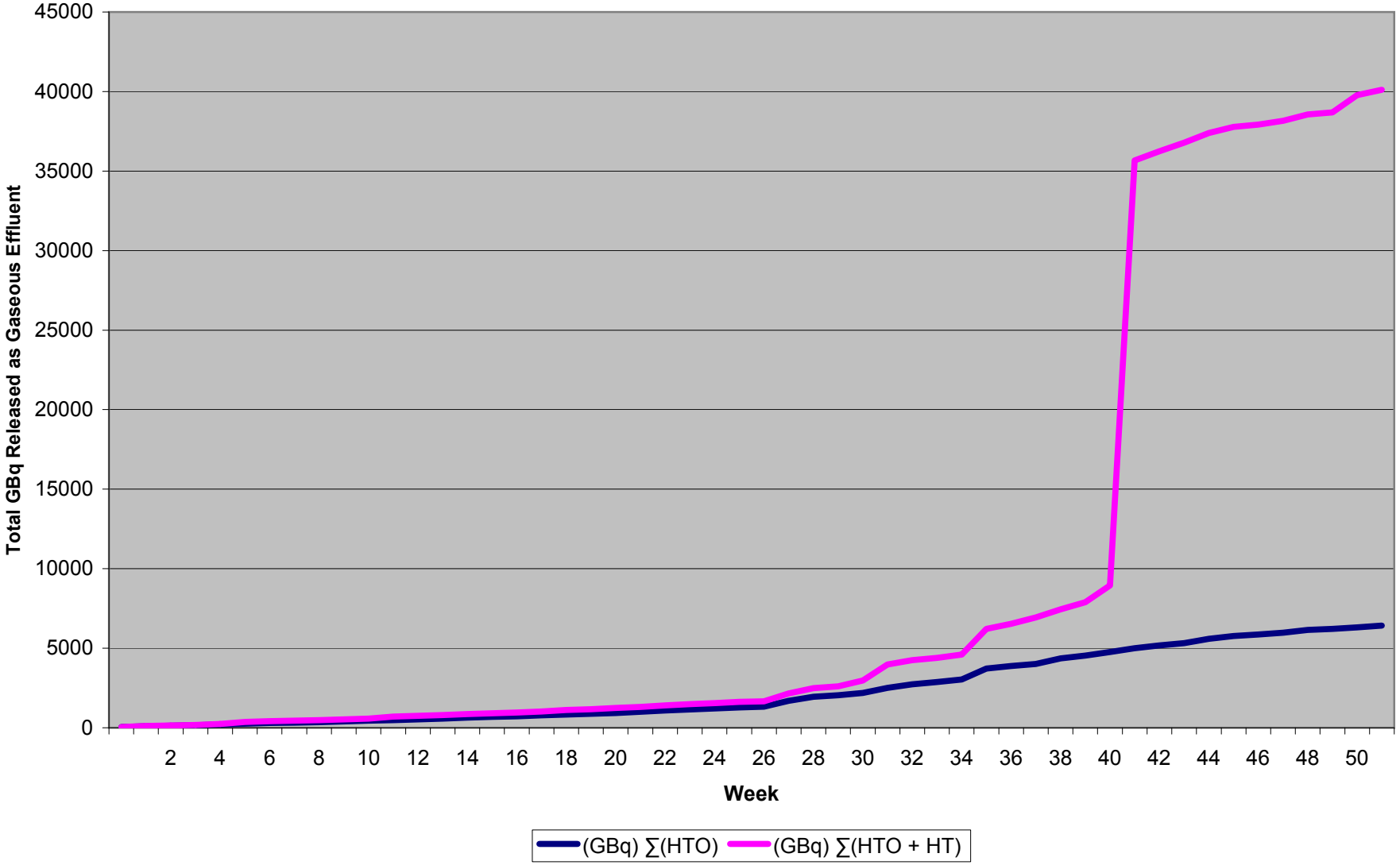
Emissions Data



% Weekly Release Limit (NSPFOL-13.01/2010)



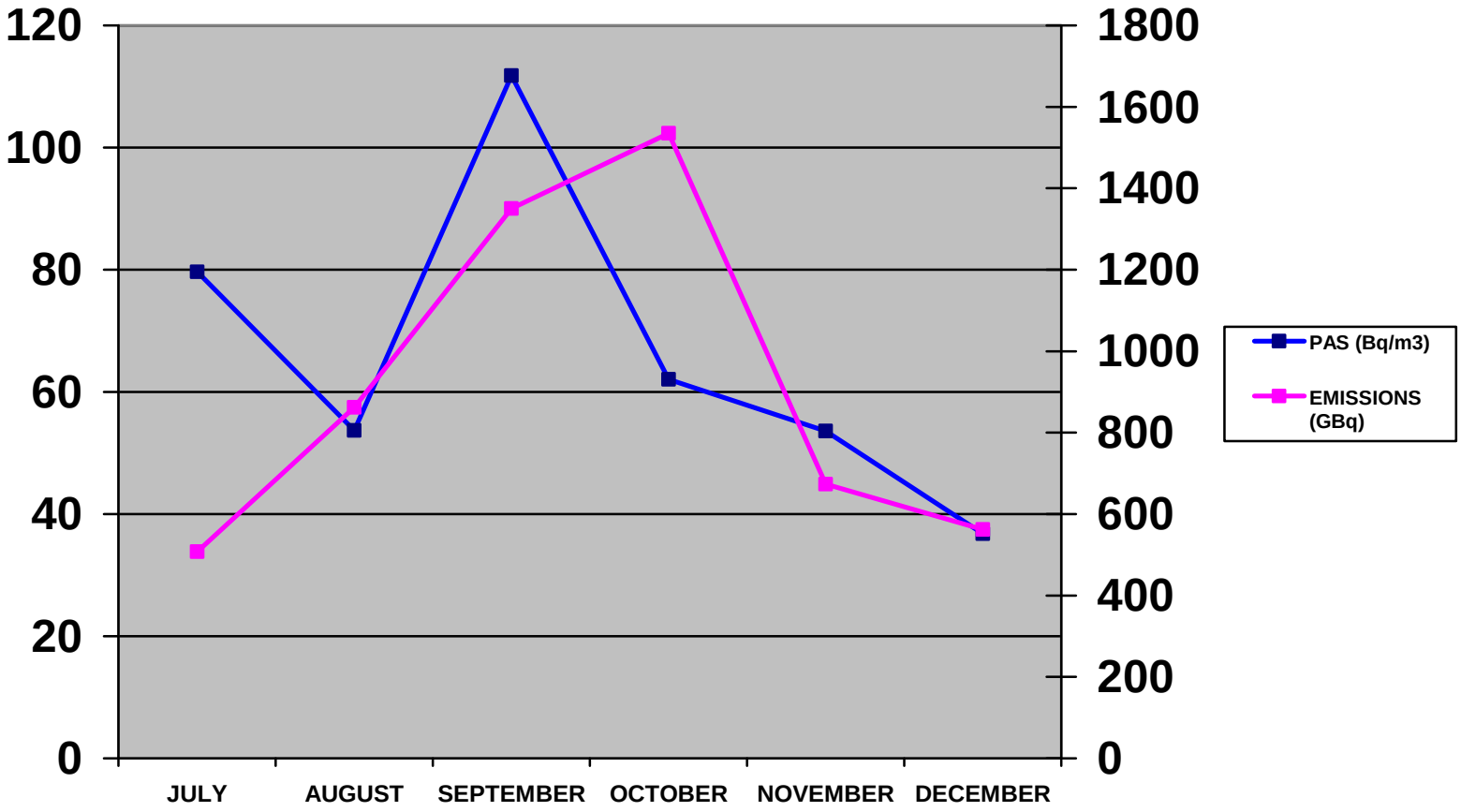
Emissions


45000
40000
35000
30000
25000
20000
15000
10000
5000
0
Total GBq Released as Gaseous Effluent
2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50
Week
(GBq) ∑(HTO)
(GBq) ∑(HTO + HT)

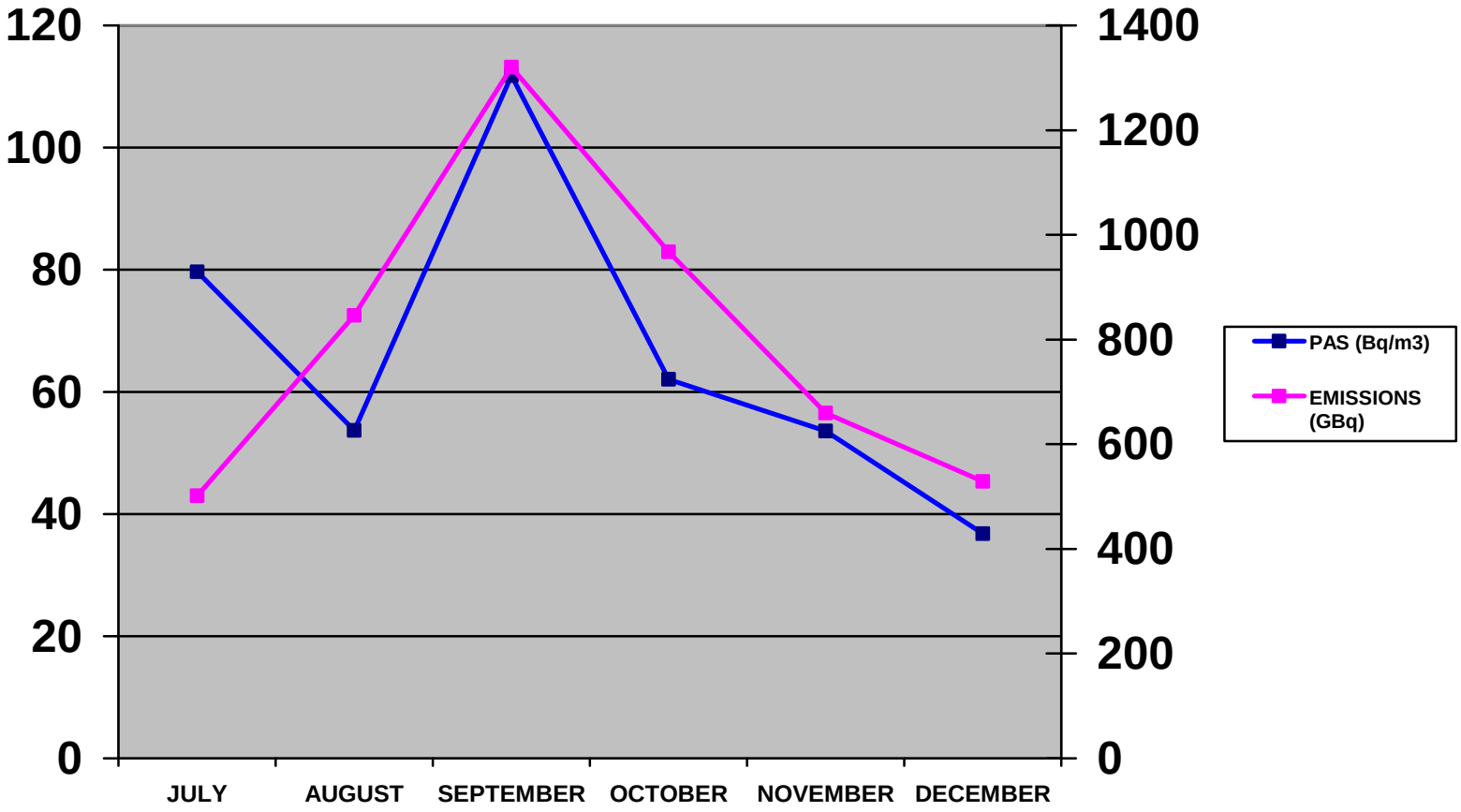
APPENDIX R

PASSIVE AIR SAMPLER RESULTS VS. HTO EMISSIONS 2008

PAS vs. EMISSIONS
WITH 2% HT



PAS vs. EMISSIONS
WITHOUT 2% HT



APPENDIX S

RESULTS OF LSC QA PROGRAM

Instrument performance report

Report date : 12/29/2008
Instrument type : 1400 DSA
Serial number : _____
Protocol used : 99
Date of last measurement : 12/29/2008
Sample ID : Wallac reference samples BLANK, H3 and C14.

H3 statistics

	measured	low	high	test
CPM	116842	81280	162560	passed
SQPI	170.1	100.0	250.0	passed
Eff %	57.5	40.0	80.0	passed
Bg	20.8	1.5	100.0	passed

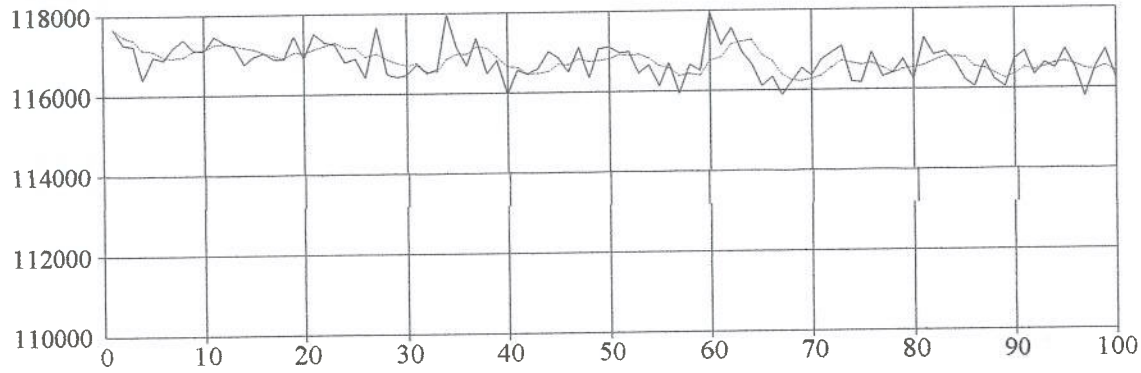
C14 statistics

	measured	low	high	test
CPM	98370	51750	103500	passed
SQPI	396.5	200.0	500.0	passed
Eff %	95.0	50.0	100.0	passed
Bg	37.4	1.0	100.0	passed

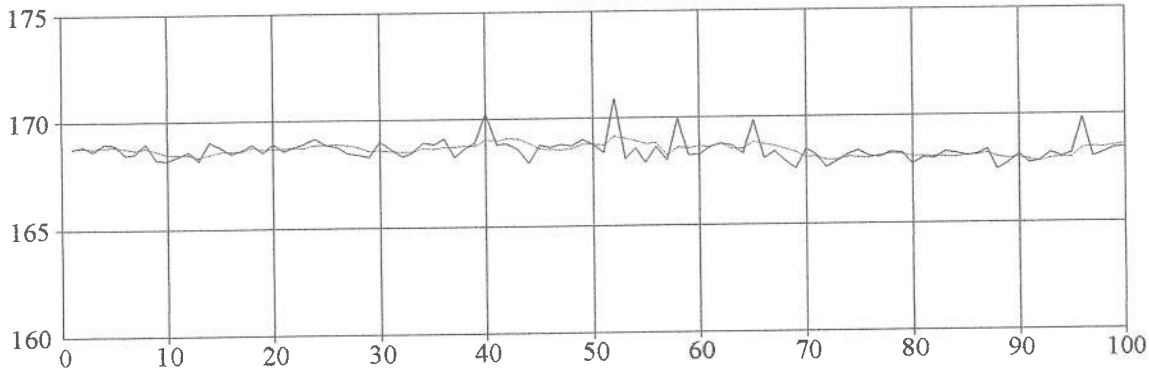
All test passed.

All values are ok.

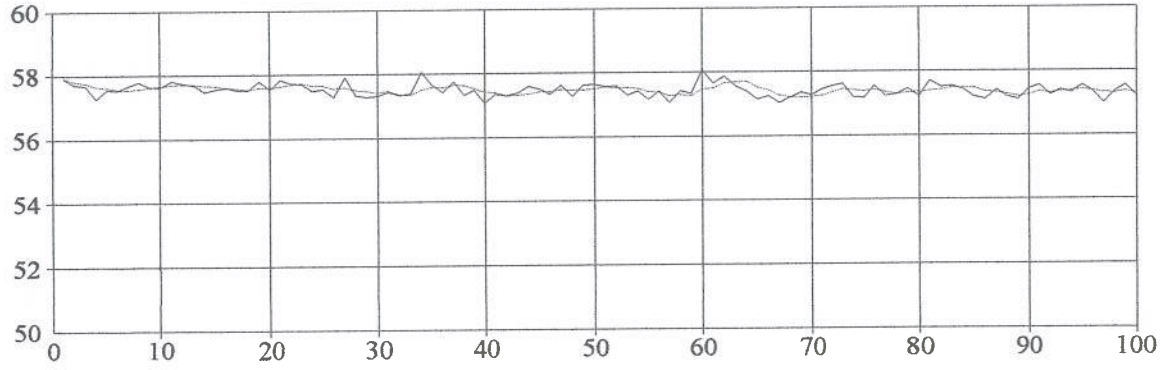
H3 CPM trend



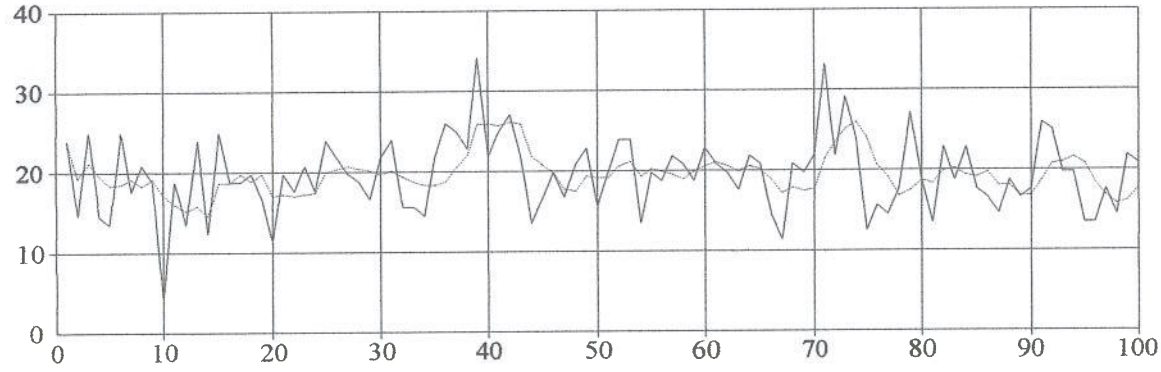
H3 SQPI trend



H3 efficiency trend



H3 background trend



Weekly Reference Standard Report for 2008