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SRB TECHNOLOGIES (CANADA) INC.

2009 ANNUAL COMPLIANCE REPORT

Date: March 31, 2010

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INTRODUCTION

For all of 2009 SRB Technologies (Canada) Inc. is licensed under Canadian Nuclear Safety Commission Nuclear Substance Processing Facility Operating Licence, NSPFOL-13.00/2010[1].

Condition 6.4 of Licence NSPFOL-13.00/2010[1] reads:

> ***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 Licence NSPFOL-13.00/2010[1] reads:

> ***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 to provide the information detailed in Appendix E of this licence.

METHODOLOGY

The report is structured to provide the information listed in Appendix E of licence NSPFOL-13.00/2010[1] 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 2009.

1.1 SIGNIFICANT EVENTS / HIGHLIGHTS

In an application[2] dated October 28, 2009 SRB made an application[2], in accordance with section 24(2) of the Nuclear Safety and Control Act, for the renewal of licence NSPFOL-13.00/2010[1] for a period of 5 years.

SRB requested little change to the current licence with the same licensed activities and licence conditions as those described in our existing licence NSPFOL-13.00/2010[1].

Licence conditions 10.2 and 10.3 which are associated with implementing wet deposition and weather monitoring procedures can be eliminated as these have now been implemented and approved by CNSC Staff. Licence condition 14.1 requiring the submission of a revised Emergency Plan[3] can also be eliminated as the revised Emergency Plan[3] has been submitted and approved by CNSC Staff.

All other licence conditions including those on Groundwater Monitoring and Decommissioning can remain to provide the public, CNSC Staff and the Commission further assurance that monitoring is being performed and that the decommissioning fund continues to be built up as fast as possible.

In the months leading to the issuance of the licence in place throughout 2009, a number of programs and procedures were improved to further ensure the protection of the public, the workers and the environment. These same programs and procedures that were in place when the current licence was issued are still in place. Only minor changes have been made to include more detail, to further describe activities and controls that are currently in place at the facility. These minor changes further ensure protection of the public, the workers and the environment.

A number of new documents have been implemented as a result of a change from Provincial to Federal jurisdiction. These documents ensure compliance with the Canada Labour Code, Part II and the Occupational Health and Safety Regulations and other associated regulations.

No new methods or processes are required, and we will be operating existing equipment with our present trained staff. We proposed to continue to operate to the same release limit and observe the same action levels. We have surpassed our emission reduction target by reducing the average weekly emissions by four times what we targeted for the first year of operation under licence number NSPFOL-13.00/2010[1].

We requested that the Commission issue a licence for a period of 5 years from July 1, 2010 to July 1, 2015.

We requested that the Commission continue to accept SRB's proposal[4] for payment of the cost recovery fee adjustments, and continue to include this plan as a licence condition with the schedule in Appendix G of current licence NSPFOL-13.00/2010[1].

As part of the hearing for the licence in place throughout 2009, SRB proposed a schedule of payments to grow the decommissioning fund to $550,476.94 which is the value necessary for the full decommissioning of the facility. According to this schedule SRB stated that the full amount would be in place by April 30, 2014. In their decision, the Commission approved the proposed schedule that SRB had submitted. As part of its application[2] SRB also requested that the Commission incorporate this schedule in the licence being applied for.

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 10,000 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 2009 can be found in **Appendix A** of this report.

All ventilation systems were maintained in fully operational condition with no major system failures during 2009 to the requirements of our Maintenance Program [5] and operational procedures [6], [7]. 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 five portable tritium-in-air monitors available for airborne tritium monitoring at the facility. Normally two are located in Zone 3, two in Zone 2 and one in Zone 1.

As required by our Radiation Safety Program[8] all tritium-in-air monitors were calibrated at least once during 2009, all five of them were last calibrated in July 2009.

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[8] all tritium-in-air monitors were calibrated at least once during 2009, in December 2009.

1.2.4 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 2009, in July 2009.

1.2.5 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[9], each tritium-in-air monitor connected to a real-time recording device was calibrated at least once during 2009, in November. The recording device itself was calibrated at least every three months during 2009 for a total of 4 times in 2009.

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 2009.

In January 2009 we also contracted a third party (AECL) to install an independent bubbler monitoring system to perform a validation of the bubbler system.

Results over three consecutive weekly sampling periods showed that our bubbler system was accurate and conservative and overestimating overall HT + HTO emissions by an average of 12%. HT emissions were to be below those measured by the independent bubbler by an average of 16% while HTO emissions were found to be on average 39% above those measured by the independent bubbler.

These results show that our stack monitoring equipment further protects the public and the environment as the dose to the public and effect on the environment have a much greater dependence on HTO emissions rather than HT.

Further third party validations will be performed at least every two years.

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 icence NSPFPL-13.00/2010[1] reads:

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

Throughout 2009 the possession limit was not exceeded. The maximum tritium activity possessed at any time during 2009 was 4,736 TBq in June. Tritium activity on site during 2009 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

During 2009 all Import & Export licenses were acquired as necessary and no licence limits were exceeded. Prior & Post Notifications were made to the CNSC for all international shipments.

2.3 SHIPPING ACTIVITIES

In 2009, SRB prepared, packaged and shipped, in accordance with CNSC regulatory document, SOR/2000-208, Packaging and Transport of Nuclear Substances Regulations, 228 consignments to various customers located in 11 countries around the world including Canada. The number of monthly shipments containing radioactive material for 2009 can be found in **Appendix D**.

No transport incidents occurred nor were reported during 2009.

2.4 TRITIUM PROCESSED

In 2009 a total of 5,045,720 GBq of tritium was processed. For comparison in 2008 a total of 2,356,979 GBq of tritium processed after the issuance of the licence on July 1, 2008.

2.5 RELEASE LIMITS TO ATMOSPHERE

Throughout the year SRB operated under Nuclear Substance Processing Facility Operating Licence number NSPFOL-13.00/2010[1] and its associated release limits to atmosphere which are outlined in Appendix C.

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 21.31% and the emissions of HTO + HT was maintained at 9.05% of the license limit.

TABLE 1: 2009 AIR RELEASES AGAINST RELEASE LIMIT:

NUCLEAR SUBSTANCE AND FORM	LIMIT (GBq/YEAR)	RELEASED (GBq/YEAR)	RELEASED (GBq/WEEK)	% OF LIMIT
TRITIUM AS TRITIUM OXIDE (HTO)	67,200	14,253	274.09	21.21%
TOTAL TRITIUM AS TRITIUM OXIDE (HTO) AND TRITIUM GAS (HT)	448,000	40,547	779.75	9.05%

2.6 ACTION LEVELS FOR RELEASES TO ATMOSPHERE

Throughout the year SRB operated under Nuclear Substance Processing Facility Operating Licence number NSPFOL-13.00/2010[1] and the associated action levels for releases to atmosphere.

The SRB document titled Licence Limits, Action Levels and Administrative Limits[10], 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 2: 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

On no occasions have one of the weekly stack emission action levels been exceeded during 2009.

2.7 AIR EMISSIONS AGAINST TARGET

Based on operational experience and emissions during the last 21 weeks of operation (Between September 2006 to January 2007), members of the Mitigation Committee and Production Supervisors had developed an optimistic "Emission Reduction Target" for the first year of operation. The "Emission Reduction Target" for the first full year of operation was to decrease emissions by 10% from what they were based on the last 21 weeks of operation (Between September 2006 to January 2007):

TABLE 3: TOTAL AIR EMISSIONS AGAINST TARGET

	TOTAL YEARLY EMISSIONS BASED ON LAST 21 WEEKS OF OPERATION	JULY 1, 2008 TO JUNE 30, 2009 (12 MONTHS)	REDUCTION	TARGET
TRITIUM RELEASED (GBq)	108,957	61,765	-43%	-10%

We have surpassed our emission reduction target by reducing the average weekly emissions by four times what we targeted for the first year of operation under our current licence reaching a total reduction of just over 43%.

2.8 AIR EMISSIONS AGAINST NEW TARGET

Based on results achieved new targets have also been established for the second year of operation.

Based on operational experience and emissions during the first year of operation (Between July 2008 to June 2009) since the issuance of the current licence, members of the Mitigation Committee and Production Supervisors developed another optimistic "Emission Reduction Target" for the second year of operation.

Since the production output and tritium processed is expected to increase between 10 to 15% for the second year of operation an "Emission Reduction Target" for that period was to again decrease emissions by 10% from what they were during the last year of operation (Between July 2008 to June 2009):

TABLE 4: TOTAL AIR EMISSIONS AGAINST NEW TARGET

	JULY 1, 2008 TO JUNE 30, 2009 (12 MONTHS)	JULY 1, 2009 TO DEC 31, 2009 (6 MONTHS)	REDUCTION TO DATE	TARGET
TRITIUM RELEASED PER WEEK (GBq)	1,188	664	-44%	-10%

For the period of July 1, 2009 to December 31, 2009 (6 months), despite an increase in production output and tritium processed of 13%, we are on track to reduce the average weekly emissions by four times what we targeted with a reduction of just over 44%.

2.9 RELEASE LIMIT TO SEWER

Throughout the year SRB operated under Nuclear Substance Processing Facility Operating Licence number NSPFOL-13.00/2010[1] and its associated release limit to the sewer system which is outlined in Appendix C.

Sewer release values based on sampling and analysis indicate that the emissions to sewer in 2009 were 31.02% of the license limit.

TABLE 5: 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	62.04	31.02%

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[11] a maximum liquid release per day of 0.3 GBq. At no point was this target exceeded in 2009.

3.0 MODIFICATIONS

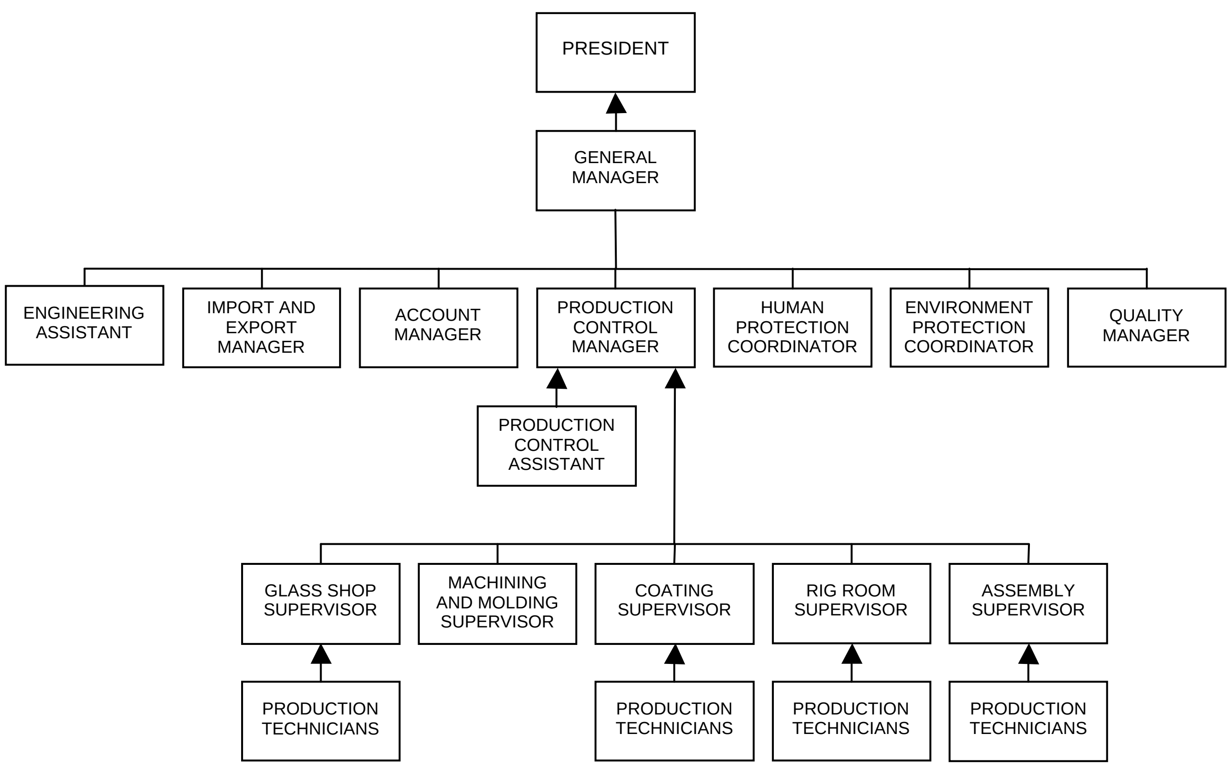
This section of the report will outline modifications including changes in organization, administration and / or procedures that may affect licensed activities.

3.1 ORGANIZATIONAL IMPROVEMENTS

A number of minor organizational improvements have been made to further ensure the protection of the public, the workers and the environment, but essentially we have the same organization that was in place in 2008.

The following organizational chart represents the current structure at the company as a result of addressing the recommendations of the organizational study[12] [13] that was performed in support of the current licence[1]. Each position is held by a single individual who possesses the qualifications and experience requirements of the position:

FIGURE 1: ORGANIZATIONAL CHART



3.1.1 STABLE WORKFORCE

In 2009 our workforce continued to be stable, this is the same structure with the exact same staff, in the same positions, that was in place in 2008.

3.1.2 EXPERIENCED WORKFORCE

By the end of 2009 employees in our workforce had an average experience of just over 12 years at the company with the experience of any individual employee ranging between 4 and 19 years, with an average age of just under 41 years of age.

3.1.3 COMMITTEES

In 2009 committees have been instrumental in the development and refinement of company programs and procedures and at identifying ways to reduce emissions and improve safety at the facility. Committees use meeting results as an opportunity for improvement and make recommendations accordingly.

In 2009 a total of 54 minuted meetings have taken place at the company with Occupational Health And Safety Committee meetings being most frequent at 12:

TABLE 6: BREAKDOWN OF MEETINGS HELD

COMMITTEE	NUMBER OF MEETINGS
HEALTH PHYSICS COMMITTEE	7
OCCUPATIONAL HEALTH AND SAFETY COMMITTEE	12
EXECUTIVE COMMITTEE	4
FIRE PROTECTION COMMITTEE	5
MITIGATION COMMITTEE	7
PUBLIC INFORMATION COMMITTEE	5
WASTE MANAGEMENT COMMITTEE	3
OTHER STAFF	11
TOTAL	**54**

Notable improvements made by the Committees in 2009 included; the implementation of additional training, the increase in the frequency of fire drills, the addition of information provided on the web site for the public, the institution of improvements to work practices to reduce emissions and the development and implementation of equipment modifications to reduce emissions.

In 2009 changes have also been made to Committees themselves to improve their effectiveness. For example, as a result of an Executive Committee Meeting held on October 1, 2009, Senior Management decided to increase the company's emphasis on Health Physics by adding an additional member to the Health Physics Committee. The Health Physics Committee, now comprised of five staff members, is primarily responsible for the review of all safety programs and safety related procedures to ensure that requirements of the Nuclear Safety and Control Act, Regulations, conditions of the licence[1] are met.

3.1.4 VISION, MISSION, GOALS, VALUES AND POLICY

In November of 2009 the company vision, mission, goals, values and policy was reviewed to ensure that the company adopts a pro-active approach to safety. The company vision, mission, goals, values and policy are fully communicated to our contractors and posted on our web site, to demonstrate to the public that the overriding corporate objective is the company's commitment to public and environmental safety.

FIGURE 2: COMPANY'S GOVERNING PRINCIPLES

SRBT

Our Vision

Strive to maintain or exceed the standing required to allow our company to process tritium and manufacture life safety devices to fulfill the needs of our customers.

Our Mission

Continuously improve company programs in order to meet or exceed the requirements of the Nuclear Safety and Control Act, Regulations and conditions of the licence in order to strive to achieve higher grades in all safety areas.

Our Goals

1. To promote a strong safety culture throughout the organization by having all employees continuously assess and analyze any impact the operations may have on the public and the environment.
2. To reduce any risk to the public and the environment due to the operations to ensure that requirements of the Nuclear Safety and Control Act, Regulations, conditions of the licence and ISO 9001 requirements are met or exceeded.
3. To be transparent, visible and open with our community, our regulators, and our staff.
4. To ensure that the products are supplied to customer requirements and specifications and to the requirements of the Nuclear Safety and Control Act, Regulations, conditions of the licence and ISO 9001 requirements.
5. To continue to lower emissions and improve the effectiveness of our programs and processes.

Our Values

We will achieve our goals by acting with integrity with the regulators, the members of the public and our employees, and by respecting their input and contribution by making improvements based on this input.

Our Policy

It is the policy of the company and its employees to learn from our operational experience and research, to consider the input of all stakeholders and be conservative in our decision making to ensure the protection of the public and the environment to achieve the goals that we have set to meet our ultimate vision.

3.2 PROGRAM AND PROCEDURE IMPROVEMENTS

In 2009 only minor changes have been made to programs and procedures to include more detail, to further describe activities and controls that are currently in place at the facility. These minor changes further ensure protection of the public, the workers and the environment.

Programs and procedures are continuously reviewed by SRB staff against information in International Atomic Energy Agency documents, CNSC Regulatory Guides, recommendations from the International Commission on Radiological Protection and various industry standards and documents of other CNSC licensees.

3.2.1 IMPROVED FIRE PROTECTION PROGRAM

A new revision of the Fire Protection Program[14] dated December 31, 2009 was also developed to address CNSC Staff comments and to reflect the many upgrades and changes that have been made at the facility in the last 2 years to improve fire safety.

3.2.2 NEW PROCEDURE FOR WEATHER MONITORING

We have also erected a weather station near the facility to provide suitable information for interpretation of environmental monitoring data and for future use in modeling of atmospheric dispersion of tritium.

We have developed a procedure[15] for disposition of weather data, weather instrument inspection and maintenance and any other requirements associated with the weather station.

On March 10, 2009, CNSC staff approved[16] SRB's weather station procedure which allows the collection of weather data including but not limited to wind speed, wind direction, temperature, barometric pressure, humidity and rainfall. The collection of data started on May 20, 2009 within the 90 days required.

3.2.3 OTHER ONGOING PROGRAM AND PROCEDURE IMPROVEMENTS

Only minor changes have been made to many other procedures to include more detail, to further describe activities and controls that are currently in place at the facility. These minor changes further ensure protection of the public, the workers and the environment.

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 2009, SRB maintained a Dosimetry Service License[17], 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 18 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[18] of Achievement for successful participation in the Tritium Urinalysis Intercomparison Program National Calibration Reference Centre for Bioassay and In Vivo Monitoring for the year 2009.

SRB also submits, to the CNSC, an annual compliance report (ACR) for Dosimetry Service License[17], 11341-3-10.0.

4.2 STAFF RADIATION EXPOSURE

SRB, through the Dosimetry Service License[17], 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 Guidelines for Tritium Bioassay and CNSC Regulatory Standard S-106, revision 1 tilted Technical and Quality Assurance Requirements for Dosimetry Services.

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 1.45 mSv with an average for all staff of only 0.25 mSv. Collective dose was also low at 4.52 mSv. The table found in **Appendix E** provides the radiological occupational annual dose data for 2009. The table provides a comparison of dosimetry results for the years 1997 to 2009. 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 NSPFOL-13.00/2010[1] outlined action levels for effective dose to workers and for bioassay level.

TABLE 7: 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 NSPFOL-13.00/2010[1] the actions levels are not included directly in the licence but referenced in the document titled Licence limits, action levels and administrative limits[10] dated May 16, 2008:

TABLE 8: 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 9: ACTION LEVELS FOR BIOASSAY RESULT

PARAMETER	ACTION LEVEL
BIOASSAY RESULT	1,000 Bq/ml FOR ANY PERIOD

There were no instances at anytime in 2009 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 1.45 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 10: 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

At no time in 2009 did Zone 3 staff bioassay sample results exceed the administrative limit of 500 Bq/mL.

At no time in 2009 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 1.45 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 11: 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 2009 has been tabulated and is included in **Appendix F**.

Any comparison of the data in 2009 to that collected in 2008 is not informative or appropriate as the facility only processed tritium from July 1, 2008. As expected failures were more prominent in the area where tritium was processed.

The data collected shows that 758 swipes were taken in Zone 1 resulting in a pass rate of 98.94% below the administrative level of 4 Bq/cm^2.

The data collected shows that 2,326 swipes were taken in Zone 2 resulting in a pass rate of 96.00% below the administrative level of 4 Bq/cm^2.

The data collected shows that 5,949 swipes were taken in Zone 3 resulting in a pass rate of 78.62% below 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[19] 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 third party laboratory for tritium concentration assessment by the third party 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.

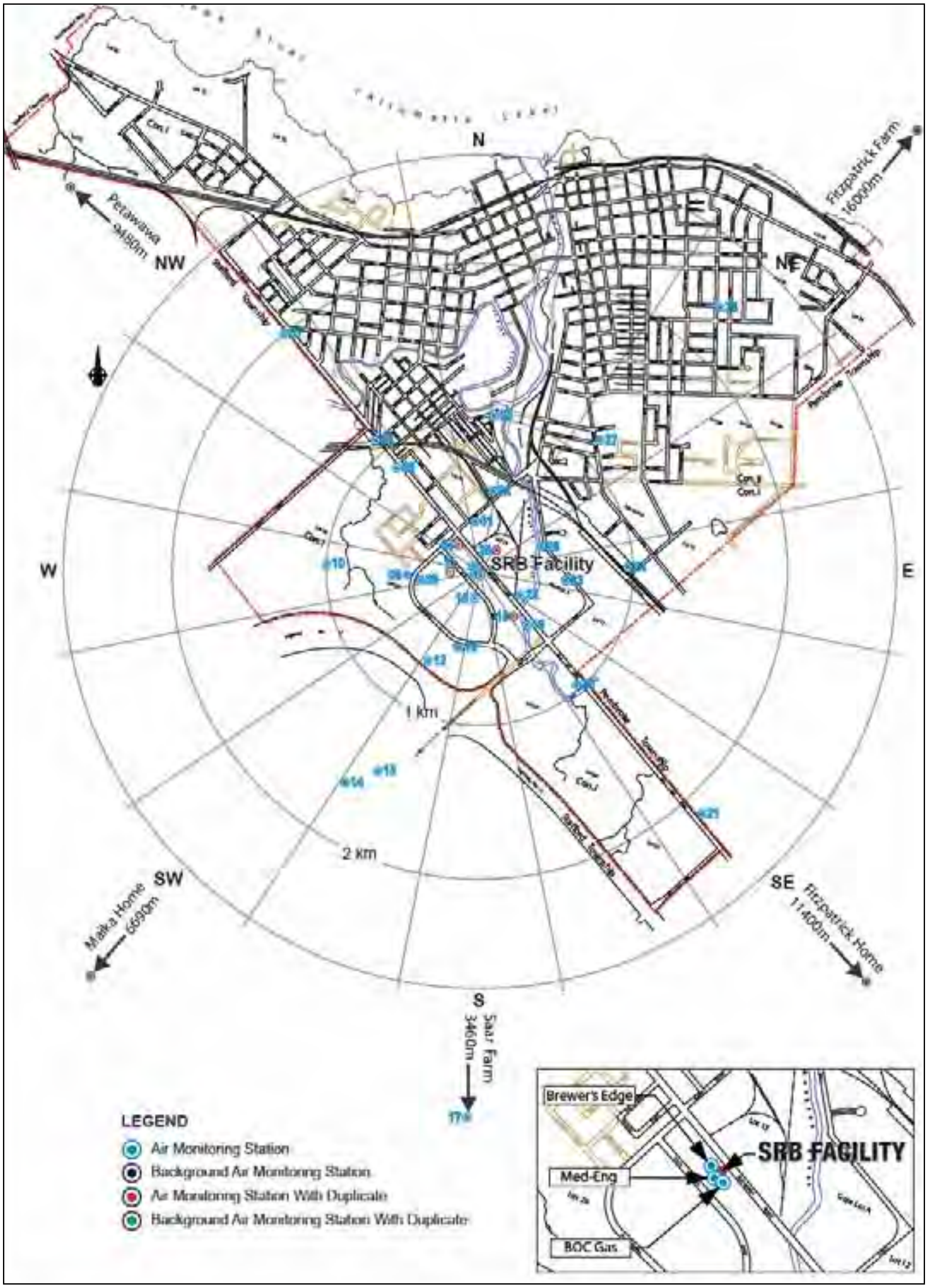
Passive air sampler results for 2009 can be found in the table on **page A1** in **Appendix G**. It was noted that 3 samplers were missing during all sample collections in 2009, PAS # 1 in March and PAS # 1 & 13 in July. Samplers were replaced the following month.

The table shows the HTO concentrations for the samplers located in each of the 8 compass sectors. 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 2009 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 2009.

FIGURE 3: PASSIVE AIR SAMPLER LOCATIONS



5.1.2 WELL MONITORING RESULTS

Water from a number of 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 third party 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 2009 from all 13 residential and business wells being monitored indicates that the concentrations in all wells are below 7,000 Bq/L. Tritium concentrations in these wells have generally shown a slight downward trend in 2009.

The highest concentration in a well used for drinking water is in business well B-1 (1,346 Bq/L in December 2009). Due to close proximity of the well to the facility, as a precautionary measure since October 2006 SRB has been supplying the business with bottled drinking water and has been sampling the well monthly. 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 (millisieverts) for the entire year, or approximately 2.5% of the annual public dose limit set by the Canadian Nuclear Safety Commission of 1 mSv (millisieverts).

The tritium uptake due to consumption of well water is calculated by taking the average tritium concentration of the water sampled. The highest concentration in a residential well used as the sole source of the drinking water is found in RW-8 at 277 Bq/L and will therefore be used in the calculation of the public dose. It should be noted that the average concentration in all wells (which was previously used to calculate the public dose) averaged 253 Bq/L in 2009, 9% below the average concentration of 277 Bq/L in 2009 for RW-8 which will now be used.

We have a total of 55 wells that have been studied to date. Analyzing all monitoring results in 2009 indicates that the concentrations in the month of December for 7 wells (MW06-1, MW06-10, MW07-13, MW07-18, MW07-19 MW07-29, MW07-34) which are located on site exceed 7,000 Bq/L. As well as well (MW07-36) located just off site also slightly exceeds 7,000 Bq/L.

Concentrations being measured in the wells including in MW06-10 which is the well with the highest concentration are as a result of downward migration of soil moisture affected by emissions that occurred between 2000 and 2006. This can still be considered to be true by the response rate of the wells.

This assumption can be further confirmed when we consider the geometric mean hydraulic conductivity value of approximately 1.2×10^{-8} m/s for the clay unit and using a conservative estimate for the vertical gradient of 0.9 m/m which yields a vertical velocity of approximately 1.2 meters per year, resulting in an average of 5 years to travel through 6 meters of clay which is typical of our site.

Air emissions were also not the sole factor that contributed to existing groundwater conditions. A number of now discontinued or modified practices resulted in the infiltration of elevated tritium concentrations to the water in the ground. All historical practices additional to air emissions are covered on page 41 of the report[20] titled SRB Technologies (Canada) Inc., Systematic and Quantitative Analysis of Tritium Sources and Their Potential Contribution to Groundwater Contamination, March 29, 2007.

Concentrations in soil profiles also confirm this assumption. For the installation of most wells we were able to collect soil samples at various depths all the way down to the sampling zone. Measured well concentrations in these wells were then compared against soil moisture.

In the table below, concentrations in MW06-10 to date are well within those found in soil moisture. Note that a more thorough analysis of these results is included in the Comprehensive Report[21] – Groundwater Studies at the SRB Technologies facility, Pembroke, ON, January 2008.

TABLE 12: SOIL MOISTURE CONCENTRATIONS RANGE

WELL I.D.	SOIL MOISTURE CONCENTRATIONS RANGE AT ALL DEPTHS (Bq/L)		
	LOW	HIGH	BOTTOM
MW06-10	10,281	277,844	150,541

Measured well concentrations were then compared against model estimates for 2000 to 2006. From this comparison it can be seen that concentrations measured in wells are generally within those expected by the air dispersion model.

The majority of groundwater samples have tritium concentrations that are consistent with values expected from the emissions history and air concentrations at the well locations. Groundwater samples that are 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 historically developed with higher tritium levels in closer proximity to the stacks. Note that a more thorough analysis of these results is included in the Comprehensive Report[21] – Groundwater Studies at the SRB Technologies facility, Pembroke, ON, January 2008.

Well monitoring results and locations for 2009 can be found in **Appendix H**.

5.1.3 WATER LEVEL MEASUREMENTS

Compilation of water level measurements for 2009 can be found in **Appendix I**.

5.1.4 PRODUCE MONITORING RESULTS

Produce from a local market and from local gardens were sampled once in 2009. The samples were collected by SRB and a third party laboratory for tritium concentration assessment by the third party 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 2009.

Produce monitoring results and locations for 2009 can be found in **Appendix J** with a graph comparing 2009, 2008, 2007 and 2006 results.

5.1.5 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 third party laboratory for tritium concentration assessment by the third party laboratory. This data is also used in the calculations for critical group annual estimated dose for 2009.

Milk monitoring results and locations for 2009 can be found in **Appendix K.**

5.1.6 WINE MONITORING RESULTS

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

Wine monitoring results for 2009 can be found in **Appendix L** with a graph comparing 2009, 2008, 2007 and 2006 results.

5.1.7 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 third party laboratory for tritium concentration assessment by the third party 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 M**.

5.1.8 SEWAGE MONITORING RESULTS

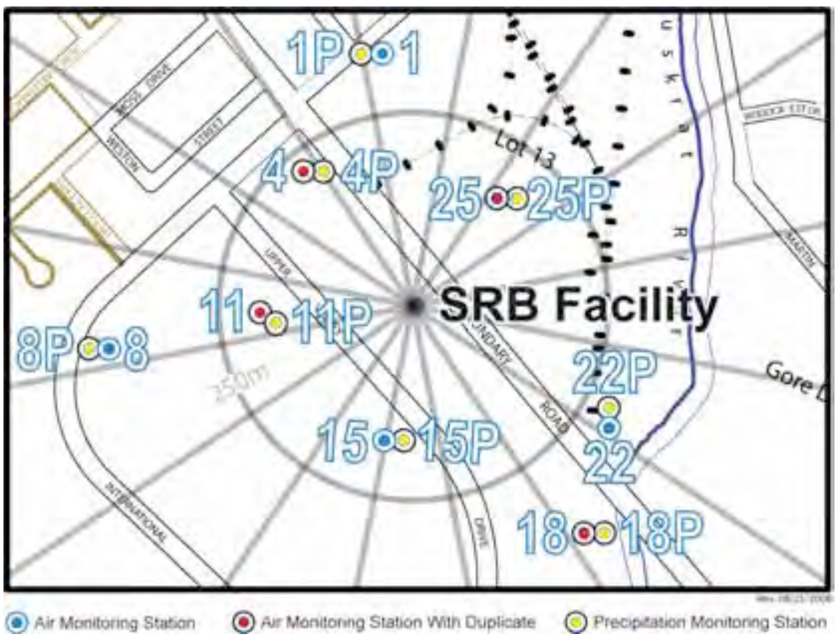
Sewage samples were taken by Pollution Control Plant staff on a daily basis and provided to a third party laboratory for tritium concentration assessment. Maximum concentration in sewage in 2009 was 138 Bq/L, during the week of May 13 to 19th.

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

5.1.9 PRECIPITATION SAMPLER RESULTS

Eight precipitation monitors are installed near existing air monitoring stations that are located approximately 250 m from the facility. Each of the precipitation monitors is identified by a unique identification number which is the same as the identification number for the air monitoring stations in the same position but followed by the suffix “P” for precipitation. The samples were collected on a monthly basis by SRB and a third party laboratory for tritium concentration assessment by the third party laboratory.

FIGURE 4: MAP OF AIR AND PRECIPITATION MONITORING STATIONS



Average results in 2009 ranged between 56 Bq/L (sampler 15P) and 181 Bq/L (sampler 18P) and 106 Bq/L for all eight precipitation monitors.

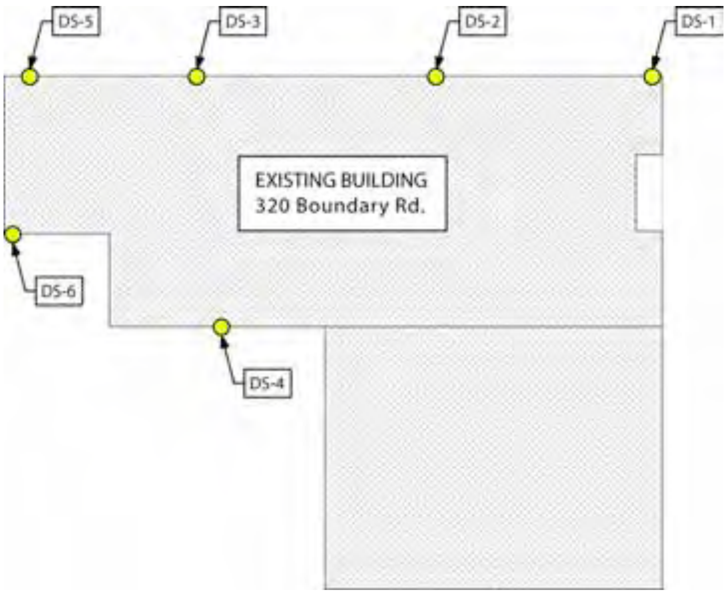
Since the precipitation monitors are installed in close proximity to a passive sampler we have compared the measurements from the passive air samplers to the measurements from the precipitation. Using passive air sampler concentrations, we have calculated expected concentration in precipitation at each 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 July 2009 estimated concentrations were 115% of actual and for March 2009 were 700% of actual.

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

5.1.10 RUN OFF FROM DOWNSPOUTS

Tritium concentrations are measured in all facility downspouts. The samples were collected periodically by SRB for tritium concentration assessment.

FIGURE 5: BUILDING DOWNSPOUTS



Runoff from downspouts was collected 13 times throughout 2009. Average results in 2009 ranged between 240 Bq/L (DS-4) and 765 Bq/L (DS-6) and 392 Bq/L for all six downspouts.

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

5.2 PUBLIC DOSE FOR A MEMBER OF THE CRITICAL GROUP FOR 2009

The calculation method used to determine the dose to the 'Critical Group' as defined in the SRB Environment Monitoring Program[19] is described in the EMP document using the effective dose coefficients found in CSA Guideline N288.1-08. 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}).

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 2009 average concentration of tritium oxide in air at Passive Air Sampler NW250 has been determined to be 3.29 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 2009 for PAS # 1, PAS # 2, and PAS # 13 is 13.28 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 3.29 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)
= 3.29 Bq/m^3 x 6,680 h/a x 1.2m^3/h x 2.0E-05 µSv/Bq
= 0.527 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 Passive Air Samplers #13 at 13.28 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)
= 13.28 Bq/m^3 x 2,080 h/a x 1.2m^3/h x 2.0E-05 µSv/Bq
= 0.663 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 3.29 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)
= 3.29 Bq/m^3 x 8,760 h/a x 1.2 m^3/h x 2.0E-05 µSv/Bq
= 0.692 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 3.29 Bq/m^3:

$P_{(i)19}$ = [H-3$_{air}$] (Bq/m^3) Breathing Rate (m^3/a) x DCF$_{H3}$ (µSv/Bq)
= 3.29 Bq/m^3 x 1.4 E+03m^3/a x 5.3E-05 µSv/Bq
= 0.244 µSv/a

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.

$P_{(e)19r}$ = 0.527 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.

$P_{(e)19w}$ = 0.663 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.

$P_{(e)19}$ = 0.692 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.

$P_{(e)19}$ = 0.244 µSv/a

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. The highest concentration in a residential well used as the sole source of the drinking water is found in RW-8 at 277 Bq/L and will therefore be used in the calculation of the public dose:

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

P_{29} = $[H\text{-}3]_{well}$ x M x 2.0E-05 µSv/Bq;
= [277 Bq/L] x 700 L/a x 2.0E-05 µSv/Bq
= 3.878 µSv/a

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

P_{29} = $[H\text{-}3]_{well}$ x M x 5.3E-05 µSv/Bq;
= [277 Bq/L] x 300 L/a x 5.3E-05 µSv/Bq
= 4.404 µSv/a

DOSE DUE TO CONSUMPTION OF PRODUCE

The tritium uptake due to consumption of produce, both locally purchased and home grown is calculated by taking the average tritium concentration of produce purchased from the local market and consuming 70% of the annual total and by taking the average tritium concentration from local gardens and consuming 30% 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 44.00 Bq/L and if we assume the average concentration in produce from local gardens be 89.53 Bq/L.

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

$\mathbf{P_{49HTO}}$ = $[[\mathbf{H}_{\mathbf{prod,market}}] + [\mathbf{H}_{\mathbf{prod,res}}]]$ x 2.0E-05 µSv/Bq
= $[[H\text{-}3_{veg}]$ (Bq/kg) x (kg) x 0.7] + $[H\text{-}3_{veg}]$ (Bq/kg) x (kg) x 0.3]] x 2.0E-5 µSv/Bq
= [[44.0 Bq/kg x 200 kg/a x 0.7] + [89.53 Bq/kg x 200 kg/a x 0.3]] x 2.0E-05 µSv/Bq
= [[6,160 Bq/a] + [5,371.8 Bq/a]] x 2.0E-05 µSv/Bq
= 0.231 µSv/a

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

$\mathbf{P_{49HTO}}$ = $[[\mathbf{H}_{\mathbf{prod,market}}] + [\mathbf{H}_{\mathbf{prod,res}}]]$ x 5.3E-05 µSv/Bq
= $[[H\text{-}3_{veg}]$ (Bq/kg) x (kg) x 0.7] + $[H\text{-}3_{veg}]$ (Bq/kg) x (kg) x 0.3]] x 5.3E-5 µSv/Bq
= [[44.0 Bq/kg x 84 kg/a x 0.7] + [89.53 Bq/kg x 84 kg/a x 0.3]] x 5.3E-05 µSv/Bq
= [[2,587.2 Bq/a] + [2,256.15 Bq/a]] x 5.3E-05 µSv/Bq
= 0.257 µSv/a

For OBT, the same equations are applied, using the same ingestion rates and fractions. Since measures of OBT are not available, the measured HTO amount can be used to estimate the OBT. The transfer parameter from HTO in air to HTO in the plant (on a fresh weight basis) is given by:

$$\mathbf{P_{14HTO} = RF_p \bullet [1 - DW_p] / H_a}$$

The transfer parameter from HTO in air to OBT in the plant (fresh weight basis) is:

$$\mathbf{P_{14HTO\text{-}OBT} = RF_p \bullet DW_p \bullet ID_p \bullet WE_p / H_a}$$

where: RF_p = reduction factor – default is 0.68
DW_p = dry weight of plant – default value of 0.1 for generic fruit and vegetables
ID_p = isotopic discrimination factor for plant metabolism (unitless) - default is 0.8
WE_p = water equivalent of the plant dry matter (L water • kg^{-1} dry plant) –default value for all plants is 0.56
H_a = atmospheric absolute humidity - a generic default value of 0.011 L/m^3 can be used.

In using the default values and combining the equations, the amount of OBT in a plant (fresh weight basis) can be determined by multiplying the HTO measure for plants for the same location by 0.05. If we assume the average concentration in produce purchased from a market to be 44.00 Bq/L and if we assume the average concentration in produce from local gardens to be 89.53 Bq/L. Then the values for OBT will be 2.20 Bq/L produce purchased from a market and 4.48 Bq/L in produce from local gardens:

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

$\mathbf{P_{49OBT}}$ = [[$\mathbf{H_{prod,market}}$] + [$\mathbf{H_{prod,res}}$]] x 4.6E-05 µSv/Bq
= [[H-3_{veg}] (Bq/kg) x (kg) x 0.7] + [H-3_{veg}] (Bq/kg) x (kg) x 0.3]] x 4.6E-5 µSv/Bq
= [[2.20 Bq/kg x 200 kg/a x 0.7] + [4.48 Bq/kg x 200 kg/a x 0.3]] x 4.6E-05 µSv/Bq
= [[308 Bq/a] + [268.8 Bq/a]] x 4.6E-05 µSv/Bq
= 0.027 µSv/a

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

$\mathbf{P_{49OBT}}$ = [[$\mathbf{H_{prod,market}}$] + [$\mathbf{H_{prod,res}}$]] x 1.3E-4 µSv/Bq
= [[H-3_{veg}] (Bq/kg) x (kg) x 0.7] + [H-3_{veg}] (Bq/kg) x (kg) x 0.3]] x 1.3E-4 µSv/Bq
= [[2.20 Bq/kg x 84 kg/a x 0.7] + [4.48 Bq/kg x 84 kg/a x 0.3]] x 1.3E-4 µSv/Bq
= [[129.36 Bq/a] + [112.90 Bq/a]] x 1.3E-4 µSv/Bq
= 0.031 µSv/a

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

$\mathbf{P_{49}}$ = $\mathbf{P_{49HTO}}$ + $\mathbf{P_{49OBT}}$
= 0.231 µSv/a + 0.027 µSv/a
= 0.258 µSv/a

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

P_{49} = P_{49HTO} + P_{49OBT}
= 0.257 µSv/a + 0.031 µSv/a
= 0.288 µSv/a

DOSE DUE TO CONSUMPTION OF LOCAL MILK

The tritium uptake due to consumption of milk, from a local producer and distributor is calculated by taking the average tritium concentration of the milk sampled. The annual consumption rate for milk is assumed to be 120.45 kg/a (0.33 kg/day) for adults and 219 kg/a (0.6 kg/day) for infants. The average concentration in milk being 12.83 Bq/L but adjusting for the density of milk 9.67 Bq/L x 0.97 L/kg = 12.45 Bq/kg:

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

P_{59} = $[H\text{-}3]_{dairy}$ x M x 2.0E-05 µSv/Bq;
= [12.45 Bq/kg] x 120 kg/a x 2.0E-05 µSv/Bq
= 0.030 µSv/a

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

P_{59} = $[H\text{-}3]_{dairy}$ x M x 5.3E-05 µSv/Bq;
= [12.45 Bq/kg] x 219 kg/a x 5.3E-05 µSv/Bq
= 0.145 µSv/a

CRITICAL GROUP ANNUAL DOSE DUE TO TRITIUM UPTAKE

Based on the Environmental Monitoring Program[19] 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 6.546 µSv/A for an adult worker of the critical group:

TABLE 13: 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	$P_{(I)19}$	0.663	N/A	N/A
DOSE DUE TO SKIN ABSORPTION AT WORK	$P_{(E)19}$	0.663	N/A	N/A
DOSE DUE TO INHALATION AT RESIDENCE	$P_{(I)19}$	0.527	0.692	0.244
DOSE DUE TO SKIN ABSORPTION AT RESIDENCE	$P_{(E)19}$	0.527	0.692	0.244
DOSE DUE TO CONSUMPTION OF WELL WATER	P_{29}	3.878	3.878	4.404
DOSE DUE TO CONSUMPTION OF PRODUCE	P_{49}	0.258	0.258	0.288
DOSE DUE TO CONSUMPTION OF MILK	P_{59}	0.030	0.030	0.145
TOTAL DOSE DUE TO TRITIUM UPTAKE	P_{TOTAL}	6.546	5.55	5.325

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 2.9 of this report, throughout the year SRB operated under release limits to sewer prescribed in Appendix C of licence NSPFOL-13.00/2010[1].

Sewer release values based on sampling and analysis indicate that the emissions to sewer in 2009 were 31.02% of the license limit.

A weekly breakdown of liquid effluent monitoring results for 2009 can be found in **Appendix Q** 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 number NSPFOL-13.00/2010[1] and associated release limits to atmosphere.

A weekly breakdown of air emission monitoring results for 2009 can be found in **Appendix R** 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 2009/2008 → 14,779 GBq / 7,100 GBq = 208 %

HTO releases 2009/2008 → 14,253 GBq / 6,427 GBq = 222 %

PAS measurements 2009/2008 → 91.48 Bq/m3 / 45.95 Bq/m3 = 199%

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. The comparison also shows good correlation, and even better correlation when 2% conversion of HT is excluded. These graphs can be found in **Appendix S** of this report.

6.2.2 DOSE FROM EMP DATA VS DOSE FROM DRL

For 2009, 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 14: 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	6.546	5.550	5.325
TOTAL DOSE BASED ON EMP DATA WITHOUT WELL CONSUMPTION	2.668	1.672	0.921
TOTAL DOSE BASED ON DRL	1.673	1.673	2.736

When we compare the data from the EMP[19] one can see that the annual dose to the public based on the DRL[22] compared is much lower than to the dose based on EMP[19] results. If we exclude the contribution from consumption of well water the dose based on the DRL[22] is more comparable to the dose based on EMP[19] results.

Therefore the DRL[22] used is more accurate in estimating the dose to a member of the public when consumption of well water is excluded.

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 2009.

6.4 ANY RELEASES OF HAZARDOUS SUBSTANCES

In 2009 SRB continued to make releases of hazardous substances to the air under a Certificate[23] 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 & liquid wastes produced, and the handling and storage or disposal of those wastes.

7.1 WASTE MANAGEMENT PROGRAM

The Nuclear Substances and Radiation Regulations (CNSC) were amended April 2008 with one of the significant changes being the introduction of regulatory measures that allow for the removal of nuclear substances from regulatory control by establishing clearance limits below which abandonment or disposal is safe. These threshold limits are based on international standards and practices for bulk quantities of materials, published in the 2004 edition of the IAEA Safety Standards Series, Safety Guide No. RS-G-1.7 – *Application of the Concepts of Exclusion, Exemption and Clearance*. The adoption of these new international standards is consistent with the CNSC risk-informed regulatory control and ensures that Canadian regulations are consistent with international practices.

Therefore, as a result of these changes, SRB is able to dispose of some of its waste through conventional methods.

The Waste Management Program[24] will be revised to reflect these changes.

7.2 RADIOACTIVE CONSIGNMENTS

In 2009 only a small amount of radioactive waste was generated. This was due to waste minimization practices. The following waste consignments were made during 2009:

TABLE 15: RADIOACTIVE CONSIGNMENTS

DATE	CONSIGNOR	WASTE DESCRIPTION	QTY & PACKAGE DESCRIPTION	TOTAL WEIGHT (Kg)	TOTAL ACTIVITY (GBq)
JUN. 24	AECL	LLW	6 X 200L DRUM	420.0000	20,045.58
JUL. 16	MONSERCO LTD.	SCINT VIALS	3 X 200L DRUM	90.0000	147.60
DEC. 21	BEE LINE DISPOSAL	VLLW	23 X 200L DRUM	964.7000	8.26

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[24]. 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 & 3, assessed, and ultimately placed into steel drums. Once a drum was full, it was prepared for interim storage and transferred to the secure, fenced-in 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 2009 (CONTAINER)	AMOUNT GENERATED THROUGHOUT 2009 (CONTAINER)	TOTAL ACTIVITY OF TRITIUM (GBQ)
200 LITER STEEL DRUMS	42	2	12.38
*200 LITER STEEL DRUMS	33	0	0.09

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

7.3.2 INTERIM STORAGE OF "LOW-LEVEL WASTE"

"Low-level waste" as defined in the Waste Management Program[24] 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 2009 (CONTAINER)	AMOUNT GENERATED THROUGHOUT 2009 (CONTAINER)	TOTAL ACTIVITY OF TRITIUM (GBq)
* 200 LITER STEEL DRUMS	8	4	121.88
** 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 2009 there was one hazardous waste collection consisting of 1 x 20 L plastic pail of liquid waste material (thinners & inks) and 2 boxes of fluorescent light tubes for recycling. The pail of liquid waste material was generated during 2008 and was only partially full.

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.

Throughout 2009, the generation of liquid hazardous waste material had been reduced to zero mainly due to the elimination of certain silk screening activities. Historically, the screens were emulsioned on-site which generated the bulk of the hazardous liquid waste. A third party now performs this process off-site. Also paints and thinners are now more efficiently generated and re-used as part of SRB's waste minimization practices.

TABLE 18: HAZARDOUS MATERIAL STORAGE

HAZARDOUS LIQUID WASTE	AMOUNT IN STORAGE AT YEAR END 2009	AMOUNT GENERATED THROUGHOUT 2009
20 Liter Plastic Drums	0	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 FIRE PROTECTION

Various measures were taken at the facility in 2009 to improve fire safety.

8.1.1 FIRE PROTECTION COMMITTEE

SRB Senior Management has formally constituted a Fire Protection Committee in the organizational structure shortly before the current licence[1] was issued. In 2009 five minuted meetings have been held which have resulted in the implementation of various measures which have improved fire safety at the facility.

8.1.2 IMPROVED FIRE PROTECTION PROGRAM

A new revision of the Fire Protection Program[14] dated December 31, 2009 was developed to address CNSC Staff comments and to reflect the many upgrades and changes that have been made at the facility in the last 2 years to improve fire safety.

8.1.3 MAINTENANCE OF THE SPRINKLER SYSTEM

Quarterly maintenance was performed on the fire sprinkler system by a third party, also locked valves were checked on a monthly basics by a member of SRB's staff. The maintenance was performed on the fire alarm control panel by a third party as well, to the requirements of the National Fire Code.

8.1.4 FIRE PROTECTION EQUIPMENT INSPECTIONS

In 2009 inspections of the emergency lighting and fire extinguishers have been performed monthly by in-house trained staff.

8.1.5 THIRD PARTY INSPECTIONS

Mr. Rhéaume Chaput performed an inspection of the facility on December 29, 2009 with the main focus being on compliance with the requirements of the National Fire Code, 2005, and National Fire Protection Association, NFPA-801, 2008 edition. There were five recommendations which were since addressed.

8.1.6 INSPECTIONS FROM THE PEMBROKE FIRE DEPARTMENT

Since the issuance of the current licence[1], the Pembroke Fire Department inspected the facility on May 15, 2009. No violations of the Ontario Fire Code were found.

8.1.7 STAFF TRAINING

Since the issuance of the current licence[1], yearly fire extinguisher training was performed for all staff. Training was performed on September 25, 2009 by the Pembroke Fire Department.

8.1.8 FIRE RESPONDER TRAINING

Fire Responders were trained to respond to a fire at the facility on October 27, 2009. The training includes a tour of the facility and information with respect to the hazardous materials found on the site. Responders are also instructed on the various properties and precautions with respect to tritium.

8.1.9 FIRE ALARM DRILLS

Five Fire Alarm Drills were performed since the issuance of the current licence; in September 2008, March 2009, June 2009, September 2009 and December 2009. Any finding were promptly addressed.

8.2 QUALITY ASSURANCE

In 2009 the quality management system implemented continues 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.

For 2009 a total of 34 non-conformances and 37 opportunities for improvements were raised on numerous areas of the company operations. By the end of 2009, 30 of these non-conformances had been addressed in full and the other 3 expected to be addressed early in 2010.

All staff is continuously reminded to maintain a healthy safety culture in identified areas that may need improvement or corrective action for all company safety.

8.2.1 CNSC INSPECTIONS

CNSC Staff performed an inspection[25] of the facility on June 29, 2009. The general objective of the inspection was to assess whether SRB met all the requirements of the regulations and the licence NSPFOL-13.00/2010[1]. The inspection resulted in one action notice which has since been addressed.

CNSC Staff performed a Type I inspection[26] of the facility between September 2 and 4, 2009. The inspection was undertaken to assess the adequacy and effectiveness of the managed processes implemented by SRB to ensure its dosimetry service was operated effectively and is in compliance with regulatory requirements. The inspection resulted in 5 action notices and one recommendations which will be addressed by SRB in 2010.

CNSC Staff performed a Type II Fire Protection Inspection[27] of the facility on October 22, 2009. The inspection was conducted to evaluate compliance by SRB with the Canadian Nuclear Safety and Control Act and associated Regulations through compliance with the requirements National Fire Code of Canada (2005), National Building Code of Canada (2005) and the National Fire Protection Association, NFPA-801,2008. The inspection resulted in 4 action notices which will be addressed by SRB in 2010.

CNSC Staff performed an inspection[28] of the facility on November 23, 2009. The general objective of the inspection was to verify compliance with the Nuclear Safety and Control Act, CNSC Regulations and SRB's program documentation. The inspection resulted in 5 recommendations which will be addressed by SRB in 2010.

8.2.2 ISO 9001 REGISTRAR AUDITS

SRB Technologies (Canada) Inc. is registered to ISO 9001: 2008 by BSI Management Systems. On December 10, 2009 BSI Management Systems performed a full audit of our operations. No nonconformities were identified and 3 opportunities for improvements were raised. The audit resulted in registration to the new version of the ISO 9001 standard, 2008 version.

8.2.3 INTERNAL AUDITS

The stringent audit plan developed by the Quality Manager for 2009 to audit all activities associated with developing, managing and implementing all company safety programs has been followed. In addition to the 18 audits performed as per the audit plan schedule, an additional audit was conducted on the quality management system as a gap analysis on the key changes in the new version of ISO 9001:2008 standard, bringing the total to 19 formal internal audits performed in 2009. These audits resulted in identifying 21 non-conformances and 20 opportunities for improvement.

8.2.4 BENCHMARKING

In 2009 individuals responsible for specific programs and procedures at SRB regularly looked at process problems, corrective actions as well as trending and used this information to benchmark elsewhere in or out of the organization in order to improve the effectiveness of these programs and procedures and to help define where improvements could be made.

Benchmarking against other CNSC Licensees was encouraged. The documents of other CNSC Licensees were continuously reviewed:

- Commission Member Documents
- Proceedings, Including Reasons For Decision
- Documents from other licensees

At the end 2009 a meeting was then held with the Quality Manager and Senior Management to discuss the results of benchmarking and to define areas of improvement.

Notable improvements made as a result of benchmarking performed in 2009 included; the implementation of increased Life Safety Equipment Inspections (sprinkler system, fire doors, etc.), the improved tracking of corrective maintenance of equipment, the addition of more detail in purchase orders issued to contractors and instituted enhanced tracking of equipment that requires calibration.

8.2.5 SELF-ASSESSMENTS

Throughout 2009 routine self-assessments by Organizational Managers were undertaken to identify, correct and prevent problems that hinder the achievement of the company's vision, mission, goals, values and policy and to assess the adequacy and effectiveness of the Quality Management System.

Self-assessments were performed by review of:

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

A meeting then took place before the end of 2009 with the Quality Manager and Senior Management to discuss the results of benchmarking and to define areas of improvement.

Notable improvements made as a result of self-assessments performed in 2009 included; the increased trending of results, the increased use of preventive actions to achieve improvements and the scheduling of root cause analysis training.

8.2.6 CHANGES IN QUALITY ASSURANCE DOCUMENTS

There were no changes to the Quality Manual[29] in 2009. Various associated second tier procedures were updated to address minor changes needed on opportunities for improvements and corrective actions identified throughout the year.

8.2.7 RESULTS OF LSC QA PROGRAM

The LSC-QA[30] program includes weekly instrument efficiency checks using National Institute of Standards and Technology (NIST) traceable standards of a blank, H-3 and C-14 standards. The absolute activity of the capsules is calibrated by comparison with the reference standards of tritiated toluene supplied by NIST. The Standard Reference Material is certified to have an estimated accuracy of ± 1.2%. Weekly instrument performance report for Wallac 1409 LSC for 2009 is included in **Appendix T**. The report shows that the liquid scintillation counter performed within the specified criteria.

8.3 TRITIUM MITIGATION

In the past licence period we primarily focused our attention to developing emission reduction initiatives specifically related to the filling process as these formerly constituted the majority of the emissions. In 2009 we have continued to build on these initiatives and to expand to other processes and work areas. Our staff has been intimately involved in finding ways to reduce emissions. SRB continued to be in communication with other tritium processing facilities in 2009 and discussed other possible methods of further reducing emissions.

8.3.1 MITIGATION COMMITTEE

SRB Senior Management has formally constituted a Mitigation Committee in the organizational structure shortly before the existing licence was issued. In 2009 seven minuted meetings have been held which have resulted in the implementation of various measures which have contributed to the reduction in emissions observed.

Most notable improvements made by the Mitigation Committees included; the modifications made to a number of lights in order to reduce the possibility of releases while the lights are sealed during the filling process, the introduction of additional measures during the handling of light sources to limit any releases from the facility and the implementation of additional training.

The Committee is also responsible for continuously seeking input from other staff, contractors or other individuals who may have recommendations to mitigate emissions from the facility.

8.3.2 REDUCTION IN URANIUM BED HEATING CYCLES

In order to increase the ability of a uranium bed to reabsorb tritium during the filling process, in 2005 SRB first implemented a reduction in the number of uranium bed heating cycles by approximately 30%.

In 2006, based on successful results, SRB then implemented a further reduction in the number of heating cycles of 25%.

In December 2009, SRB's Mitigation Committee implemented yet a further reduction of heating cycles of 13%. Results from implementing this further reduction will only be reflected in the facility's emissions in 2010.

8.3.3 REDUCTION IN VOLUME OF RELEASE

In 2006 changes were made to allow the reduction of the volume of all our lights which our research determined would contribute to the reduction of emissions from the filling process. Reduction in volume of release continued to be made to the lights and equipment throughout 2009.

8.4 RESEARCH AND DEVELOPMENT

In addition to research and development associated with reducing emissions discussed in section "8.3 Tritium mitigation", during 2009 SRB has been undertaking research and development activities with respect to studying effects from emissions on the environment and groundwater and defining ways of effectively monitoring wet deposition of tritium. An overview of these efforts have been provided in sections "5.1.2 Well monitoring results", "5.1.9 Precipitation sampler results" and "5.1.10 Run off from downspouts".

In 2009 we also performed research to identify the best method of effectively monitoring weather parameters. SRB has thoroughly reviewed industry standards regarding the placement and selection of weather monitoring instruments. On March 10, 2009, CNSC staff approved[16] SRB's weather station procedure[15] which allowed the collection of weather data including but not limited to wind speed, wind direction, temperature, barometric pressure, humidity and rainfall. The information will provide suitable information for interpretation of environmental monitoring data and for future use in modeling of atmospheric dispersion of tritium. The collection of data started on May 20, 2009. Monthly weather data collected in 2009 can be found in **Appendix U** of this report.

There have been no product research and development initiatives taken in 2009.

8.5 TRAINING

Staff last received Radiation Protection Training as part of the ongoing employee-training program on February 25, 2009. 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, fire safety, security, 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 2009 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 8.1.4 fire extinguisher training was performed for all staff on September 25, 2009 by the Pembroke Fire Department.

In 2009, SRB continue to focus 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.

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 NATIONAL AND INTERNATIONAL

For the purpose of packaging and offering for transport, shipments of product designated as dangerous goods, SRB must comply with the requirements of:

- Canadian Nuclear Safety Commission (CNSC)
- International Atomic Energy Agency
- International Air Transport Association (IATA)
- Transport Canada

Regulations for the safe transport of radioactive goods are found in guides published by the above groups. The procedures used at SRB are based on regulations and practices found in the following publications;

- IAEA Safety Standards Series – No. TS-R-1 (ST-1 Revised), 1996 edition
- CNSC Packaging and Transport of Nuclear Substances Regulations
- CNSC Nuclear Safety And Control Act
- The TDG Compliance Manual: Clear Language Edition (Carswell)
- Dangerous Goods Regulations (IATA)

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 2009 SRB continued to make releases of hazardous substances to the air under a Certificate[23] 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

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 2009, 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 OCCUPATIONAL 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 an Occupational Health and Safety Committee.

The committee is comprised of three representatives. The representatives are required to meet no less than 9 times per year as required under section 135(10) of the CLC Part II. In Section 3.1.3 of this submission it was discussed the Occupational Health and Safety Committee has met 12 times in 2009 at a rate of one meeting per month. All minutes are kept on file.

10.4 MINOR INCIDENTS AND LOST TIME INCIDENTS

During 2009 there were no minor or major 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.

10.5 NEW OCCUPATIONAL HEALTH AND SAFETY DOCUMENTS

In 2009, a revised Hazard Prevention Program[31], Revision B, dated March 16, 2009 was supplied to HRSDC which addressed comments supplied by HRSDC in December 2008.

In Section 3.1.3 of this submission it was discussed the Occupational Health and Safety Committee has met 12 times since being formed at a rate of at least one meeting per month. All minutes are kept on file.

10.6 VISITS FROM HRSDC

In 2009 there has been no facility visits by a Health and Safety Officer from HRSDC.

10.7 REPORTING

In accordance with Section 15.10 (1) of Part XV of the Canada Occupational Health and Safety Regulations the Employer's Annual Hazardous Occurrence Report was submitted to HRSDC in 2009 as required.

In accordance with Section 135.2(1) (g) of Part II of the Canada Labour Code (Occupational Health and Safety) the Work Place Committee Report was submitted to HRSDC in 2009 as required.

10.8 TRAINING

In November 2009, all 3 members of the Occupational Health and Safety Committee received Standard First Aid with CPR Level A training.

All records of training are kept on file.

11.0 PUBLIC INFORMATION INITIATIVES

This section of the report will provide public information initiatives taken in 2009.

11.1 PUBLIC INFORMATION COMMITTEE

The Public Information Committee had five minuted meetings in 2009 which have resulted in the implementation of various public information initiatives.

11.2 WEBSITE

The website is frequently updated to provide up to date information on the facility. The main page provides a number of possible information sources for the public.

11.3 DIRECT INTERACTION WITH THE PUBLIC

In 2009 we only received four inquiries from members of the public, two from one individual and two from another. These individuals requested monitoring results which were promptly provided. The information is also available on our web site.

Over the years plant tours have proven to be a useful tool for SRB to reach the public. In 2009 we have continued to provide members of the public plant tours.

As part of the current licence[1] 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.

11.4 CITY OF PEMBROKE

On May 19, 2009 we met with members of Pembroke City Council and provided them our yearly presentation in support of the 2008 Annual Compliance Report[32]. The presentation was televised and aired a number of times. We provided Pembroke City Council an overview of SRB's organizational changes, public relations efforts, monitoring results including an overview on groundwater and the occupational and public dose as a result of the operations of SRB. Members of Council asked a number of questions and stated that they were impressed with SRB's efforts.

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.

11.5 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.

11.6 HEARINGS

In 2009 we sent a press release to the media announcing our application[2] for a licence. One positive front page article resulted in the print and online version of Pembroke's Daily Observer who has a circulation that exceeds 6,000, no questions were received by the public as a result.

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 vision, mission, goals, values and policy that we have developed in 2007 and confirmed in 2008 and 2009.

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[33] we have set goals and targets for our second year of operation. 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 to the public.

12.5 DRL

SRB continue to revise the DRL[22] document to address minor points of clarification reported in a letter[34] from CNSC Staff dated February 28, 2008. We expect to provide a revision of this document in 2010.

12.6 ENVIRONMENTAL MONITORING PROGRAM

SRB is committed to the continuous improvement of the Environmental Monitoring Program (EMP)[19] to ensure that the EMP[19] 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.

12.7 CONTINUOUS IMPROVEMENT

In the past year, the addition of benchmarking and self-assessment has been completed and is beneficial to improve on the effectiveness and help define where improvements can be made in the various company safety programs. We continue the improvement process achieved in previous years through continuous review of safety programs and procedures. All staff is encouraged to remain objective and maintain a questionable attitude while performing these activities.

Also to support continuous improvement to the quality management system the Quality Manager has recently completed training courses on; Key changes to ISO 9001 2008 edition and Rout Cause Analysis.

12.8 CHANGES IN QUALITY ASSURANCE DOCUMENTS

For 2010, a few minor changes to the Quality Manual[29] is expected to bring the program up to date with recent improvements, for example; revise staff responsibilities to include Heath Physics tasks of recent added member, add statement for new version of ISO 9001:2008 standard. The minor changes will be drafted in a revision update of the Quality Manual[29] and submitted to CNSC Staff for approval.

12.9 AUDIT PLAN

A stringent audit plan is set for 2010. The Quality Manager developed the audit plan to maintain focus on all activities associated with developing, managing and implementing the various areas of company safety.

12.10 TRITIUM MITIGATION

We have a plan to further reduce the volume of release on our bulk splitter and filling rigs in 2010 which will result in further reduction in emissions.

12.11 WASTE MANAGEMENT PROGRAM

SRB's Waste Management Program[24] 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 2010.

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APPENDIX A

Ventillation equipment maintained in 2009

VENTILATION EQUIPMENT MAINTAINED IN 2009

	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 2009

EQUIPMENT MAINTENANCE INFORMATION FOR 2009

2009 Equipment Maintenance Information

Major maintenance carried out in 2009:	None
Quarterly Maintenance carried out in 2009: **Contract:** Kool Temp/ Valley Refrigeration Ltd.	January 30, 2009 April 30, 2009 July 28, 2009 October 29, 2009
Quarterly Maintenance Schedule: **Contract:** Valley Compressor	March 13, 2009 June 4, 2009 September 22, 2009 December 3, 2009
Monthly maintenance carried out in 2009: **Contract:** Kool Temp/ Valley Refrigeration Ltd.	January 30, 2009 February 26, 2009 March 27, 2009 April 30, 2009 May 29, 2009 June 30, 2009 July 28, 2009 August 28, 2009 September 30, 2009 October 29, 2009 November 27, 2009 December 18, 2009
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 2009.
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 2009.

APPENDIX C

Tritium activity on site during 2009

TRITIUM ACTIVITY ON SITE DURING 2009

Month / 2009	Month-end H-3 Activity On-Site (PBq)	Percent of Licence Limit (%)
January	3.44	57
February	4.20	70
March	4.25	70
April	4.12	69
May	4.03	67
June	4.74	79
July	4.57	76
August	4.42	74
September	3.97	66
October	3.77	63
November	3.58	60
December	4.33	72
2009 Monthly Average	***3.87***	***65***

Note: Possession limit is 6.00 PBq.

APPENDIX D

Shipments containing radioactive material for 2009

SHIPMENTS CONTAINING RADIOACTIVE MATERIAL FOR 2009

Month / 2009	Number of Shipments
January	20
February	19
March	20
April	21
May	18
June	25
July	16
August	20
September	19
October	22
November	12
December	16
Total Shipments	***228***
2009 Monthly Average:	***19.00***

APPENDIX E

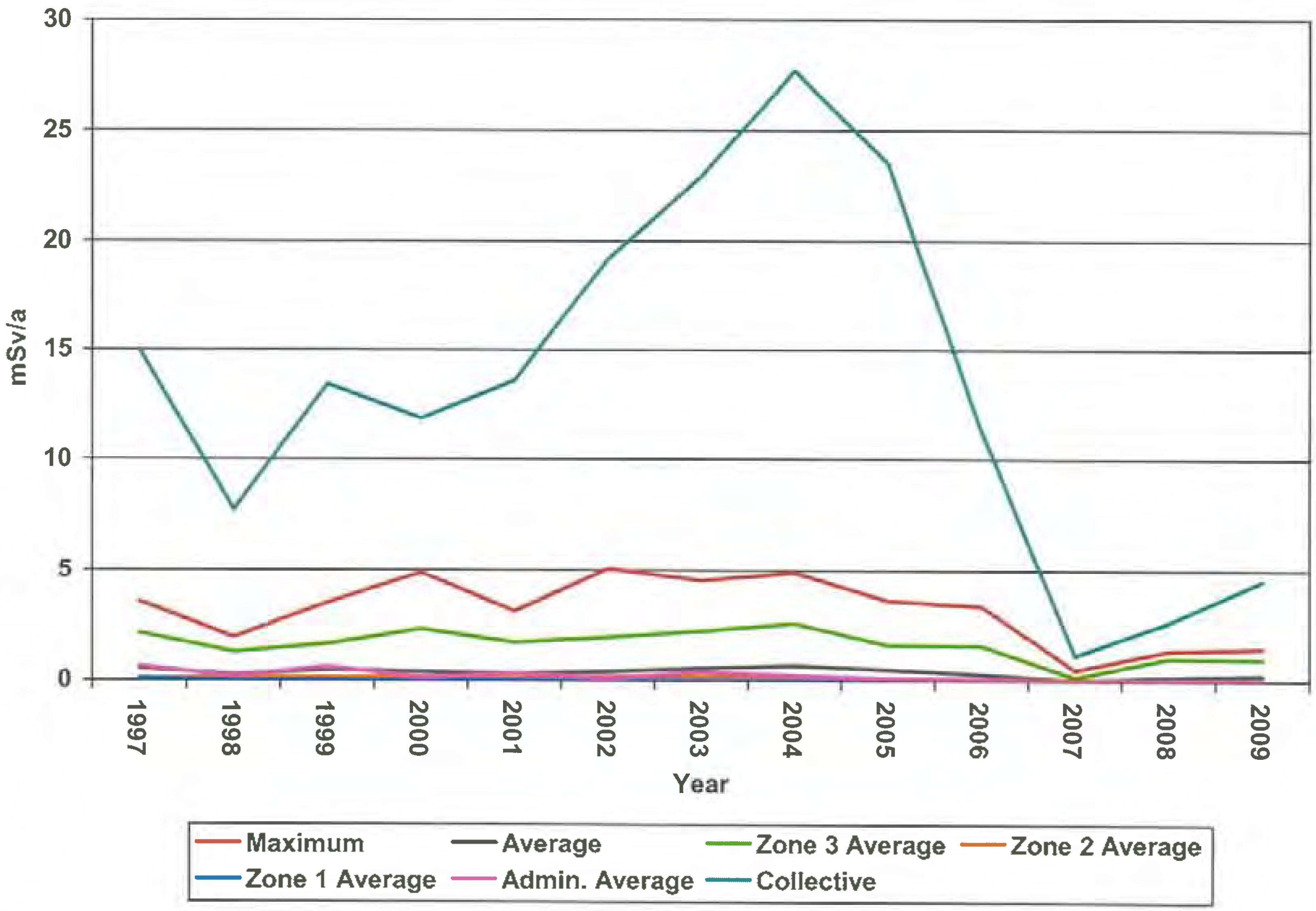
Radiological occupational annual dose data for 2009

SRB RADIOLOGICAL ANNUAL DOSE DATA (1997 – 2009)

ANNUAL DOSE (mSv/year)	1997	1998	1999	2000	2001	2002	2003	2004	2005	*2006	**2007	***2008	2009	AVERAGE
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	1.45	3.21
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	0.25	0.37
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	0.97	1.62
Average Zone 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	0.02	0.10
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	0.03	0.03
Average Administration	0.61	0.17	0.60	0.12	0.31	0.11	0.39	0.24	0.12	0.09	<0.01	0.05	0.05	0.22
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	4.52	13.46
DOSIMETRY RANGE (mSv/year)														
0.00 – 0.99	23	29	28	33	43	43	39	30	39	34	32	15	15	31.00
1.00 – 1.99	4	3	4	1	4	2	0	5	3	3	0	1	3	2.54
2.00 – 2.99	1	0	0	1	1	2	3	2	3	0	0	0	0	1.00
3.00 – 3.99	1	0	2	1	1	0	2	2	2	1	0	0	0	0.92
4.00 – 4.99	0	0	0	1	0	0	1	2	0	0	0	0	0	0.31
> 5.00	0	0	0	0	0	1	0	0	0	0	0	0	0	0.08
> 50.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
Staff Members	29	32	34	37	49	48	45	41	47	38	32	16	18	[illegible]

* Operated 48 weeks
** Operated 5 weeks
*** Operated 26 weeks

SRB RADIOLOGICAL ANNUAL DOSE DATA (1997 – 2009)



APPENDIX F

Swipe monitoring results for 2009

SWIPE RESULTS FOR ZONE FOR 2009

ZONE	TOTAL SWIPES	PASS	FAIL	PASS %
1	758	750	8	98.94%
2	2,326	2,233	93	96.00%
3	5,949	4,677	1,272	78.62%

APPENDIX G

Passive air sampler data for 2009

2009 Environment Monitoring Program
Passive Air Sampling System

Sampler No.	Sampler ID	Location	Dist. to SRBT	Jan (Jan 6-Feb 3)	Feb (Feb 3-Mar 3)	Mar (Mar 3-Apr 1)	Apr (Apr 1-May4)	May (May4 - June3)	Jun (June3-July2)	Jul (July2-Aug5)	Aug (Aug5-Sept4)	Sep (Sept4-Oct1)	Oct (Oct1-Nov3)	Nov (Nov3-Dec2)	Dec (Dec2-Jan5)	Average (Bq/m3)
				(Bq/m3)												
1	N250	N 45° 48.486' W 077° 07.092' Elev. 137m	322m	0.61	0.70	0.58	1.73	1.58	3.14	2.55	2.03	3.32	3.19	0.62	1.16	1.77
2	N500	N 45° 48.572' W 077° 07.008' Elev. 134m	493m	0.45	0.37	0.36	1.01	1.28	1.82	1.28	1.72	1.58	1.45	0.52	1.04	1.07
3	N1000	N 45° 48.869' W 077° 06.997' Elev. 135m	1040m	0.36	0.23	0.40	0.33	0.76	0.94	0.65	0.66	0.77	0.44	0.52	0.50	0.55
4 (PAS #4)	NW250	N 45° 48.412' W 077° 07.189' Elev. 137m	222m	1.14	3.89	3.31	3.33	3.87	6.16	3.14	2.15	5.23	2.80	3.05	1.45	3.29
5	NW500	N 45° 48.577' W 077° 07.382' Elev. 134m	615m	0.63	1.32	1.03	0.88	1.42	1.91	1.28	1.02	2.64	0.98	1.16	0.66	1.24
6 (PAS # 8)	NW1000	N 45° 48.754' W 077° 07.599' Elev. 130m	1050m	0.61	0.84	0.63	0.40	0.95	0.99	0.63	0.58	1.19	0.42	0.81	0.55	0.72
7	NW2000	N 45° 49.141' W 077° 08.090' Elev. 139m	2000m	0.60	0.61	0.48	0.33	0.81	0.73	0.40	0.45	0.62	0.66	0.42	0.47	0.55
8	W250	N 45° 48.300' W 077° 07.323' Elev. 138m	297m	2.80	2.81	3.11	1.73	2.45	5.03	1.44	0.65	3.31	4.14	1.22	1.19	2.49
9	W500	N 45° 48.288' W 077° 07.393' Elev. 137m	389m	2.12	1.11	1.34	1.15	1.49	2.74	1.11	0.54	1.74	2.93	0.70	0.71	1.47
10	W1000	N 45° 48.306' W 077° 07.630' Elev. 134m	691m	1.09	1.07	1.18	0.52	1.28	1.71	0.51	0.46	0.71	0.82	0.58	0.59	0.88
11	SW250	N 45° 48.247' W 077° 07.206' Elev. 140m	183m	1.12	1.13	0.94	3.08	2.70	8.42	0.72	1.63	2.85	5.73	0.74	0.74	2.48
12	SW500	N 45° 47.896' W 077° 07.307' Elev. 148m	839m	0.53	0.41	0.37	0.33	0.64	0.80	0.38	0.45	0.50	0.37	0.40	0.39	0.46
13	SW1000	N 45° 47.599' W 077° 07.543' Elev. 149m	1470m	0.44	0.40	0.36	0.33	0.38	0.48	0.38	0.45	0.50	0.37	0.40	0.33	0.40
14	SW2000	N 45° 47.408' W 077° 07.866' Elev. 155m	2110m	0.32	0.28	0.36	0.34	0.54	0.45	0.38	0.45	0.53	0.38	0.42	0.33	0.40
15	S250	N 45° 48.129' W 077° 07.014' Elev. 131m	356m	1.23	4.89	4.97	2.32	3.78	2.58	0.41	1.87	2.81	0.87	3.20	0.81	2.48
16	S500	N 45° 48.029' W 077° 07.110' Elev. 143m	532m	0.61	0.85	1.05	1.07	0.92	2.18	0.38	0.61	1.33	0.44	0.42	0.33	0.85
17 (PAS # 12)	S1000	N 45° 46.466' W 077° 07.441' Elev. 158m	1450m	0.26	0.23	0.36	0.33	0.38	0.44	0.38	0.44	0.50	0.37	0.41	0.34	0.37
18	SE250	N 45° 48.189' W 077° 06.874' Elev. 132m	365m	6.78	11.82	4.95	6.22	6.38	4.80	4.92	7.75	6.89	3.61	2.67	7.23	6.17
19	SE500	N 45° 48.108' W 077° 06.783' Elev. 123m	554m	2.64	5.84	1.77	4.21	3.52	2.71	0.67	3.45	3.51	1.69	1.35	2.71	2.84
20	SE1000	N 45° 47.894' W 077° 06.501' Elev. 120m	1090m	0.57	1.22	0.51	0.97	1.23	1.33	0.38	0.97	0.78	0.42	0.60	0.59	0.80
21	SE2000	N 45° 47.505' W 077° 05.978' Elev. 137m	2080m	0.41	0.71	0.36	0.39	0.76	0.86	0.38	0.44	0.50	0.38	0.47	0.34	0.50
22	E250	N 45° 48.234' W 077° 06.807' Elev. 131m	401m	4.30	7.43	3.53	4.86	3.06	3.61	1.45	6.38	4.91	3.63	2.22	4.47	4.15
23	E500	N 45° 48.333' W 077° 06.693' Elev. 132m	520m	0.93	0.37	3.41	1.41	1.48	2.62	1.07	2.03	2.40	2.80	0.88	0.62	1.67
24	E1000	N 45° 48.303' W 077° 06.260' Elev. 143m	1080m	0.41	0.28	1.83	0.65	1.07	1.24	0.69	1.11	1.15	0.97	0.68	0.40	0.87
25	NE250	N 45° 48.371' W 077° 06.964' Elev. 124m	198m	0.77	0.61	4.92	4.86	8.05	5.49	1.37	7.74	2.13	6.48	1.24	1.58	3.77
26	NE500	N 45° 48.421' W 077° 06.732' Elev. 131m	508m	0.69	0.25	6.02	1.77	2.10	2.08	1.26	1.90	1.20	1.39	0.73	0.71	1.68
27	NE1000	N 45° 48.683' W 077° 06.441' Elev. 148m	1100m	0.52	0.23	0.36	0.65	1.06	1.01	0.60	1.19	0.90	0.77	0.42	0.38	0.67
28	NE2000	N 45° 49.116' W 077° 05.843' Elev. 156m	2200m	0.48	0.23	0.36	0.36	0.91	0.58	0.38	0.68	0.50	0.37	0.42	0.48	0.48
Pre-Sample Points																
BOC Gas (PAS #1)		N 45° 48.287' W 077° 07.123' Elev. 129m	94.1m	1.99	1.66	*	6.89	6.99	38.70	*	7.51	11.18	18.23	1.48	0.57	9.52
Brewer's Edge (PAS #2)		N 45° 48.325' W 077° 07.132' Elev. 132m	52.8m	1.38	4.90	8.40	7.00	5.74	22.10	5.26	2.09	14.83	7.17	2.47	1.44	6.90
Med-Eng (PAS #13)		N 45° 48.262' W 077° 07.093' Elev. 132m	61.5m	4.64	27.87	8.41	8.33	8.39	31.40	*	22.96	25.70	4.14	3.16	1.13	13.28
Replicates																
4-2	NW250	N 45° 48.412' W 077° 07.189' Elev. 137m	222m	0.94	3.86	3.21	3.23	3.83	5.66	2.84	2.12	5.20	2.43	2.88	1.27	3.12
11-2	SW250	N 45° 48.247' W 077° 07.206' Elev. 140m	183m	1.03	1.10	0.78	2.71	2.58	7.74	0.70	1.60	2.46	5.58	0.63	0.65	2.30
18-2	SE250	N 45° 48.189' W 077° 06.874' Elev. 132m	365m	6.65	11.00	4.47	6.20	6.17	4.63	4.89	6.99	6.54	3.57	2.67	6.74	5.88
25-2	NE250	N 45° 48.371' W 077° 06.964' Elev. 124m	198m	0.63	0.60	4.14	4.78	7.87	5.26	1.24	7.11	2.01	5.89	1.14	1.50	3.51
Background Samples																
Maika (PAS # 10)	SW	N 45° 46.367' W 077° 11.447' Elev. 149m	6690m	0.24	0.23	0.37	0.32	0.41	0.43	0.38	0.45	0.50	0.38	0.40	0.33	0.37
Maika	Duplicate	Same as above	6690m	0.24	0.23	0.36	0.32	0.38	0.43	0.38	0.45	0.50	0.37	0.42	0.34	0.37
Fitzpatrick	SE	N 45° 44.818' W 076° 59.822' Elev. 159m	11400m	0.24	0.23	0.35	0.33	0.38	0.44	0.38	0.45	0.51	0.38	0.41	0.34	0.37
Petawawa	NW	N 45° 51.497' W 077° 12.828' Elev. 149m	9480m	0.24	0.23	0.35	0.33	0.63	0.44	0.38	0.44	0.50	0.38	0.41	0.34	0.39
Farm	NE	N 45° 53.071' W 076° 56.768' Elev. 142m	16000m	0.24	0.32	0.37	0.32	0.60	0.44	0.38	0.44	0.50	0.37	0.40	0.42	0.40
			Sum	51.88	102.36	80.06	86.32	98.82	184.52	46.02	102.41	125.43	97.76	43.74	46.17	91.48

* Sample lost

Passive Air Sampling Data (Results in Bq/m3)

1st Quarter

Direction	January (Jan 6 - Feb 3) 250 M	500 M	1000 M	2000 M	February (Feb 3 - Mar 3) 250 M	500 M	1000 M	2000 M	March (Mar 3 - Apr 1) 250 M	500 M	1000 M	2000 M
North	[illegible]	[illegible]	[illegible]		0.70	0.37	0.23		[illegible]	[illegible]	[illegible]	
North West	1.14	0.63	0.61	[illegible]	3.89	1.32	0.84	0.61	3.31	1.03	0.63	[illegible]
West	2.80	2.12	1.09		2.81	1.11	1.07		3.11	1.34	1.18	
Southwest	1.12	0.53	0.44	0.32	1.13	0.41	0.40	0.28	0.94	0.37	0.38	[illegible]
South	1.23	0.61	0.26		4.89	0.85	0.23		4.97	1.05	0.36	
South East	6.78	2.64	0.57	0.41	11.82	5.84	1.22	0.71	4.95	1.77	0.51	[illegible]
East	4.30	0.93	0.41		7.43	0.37	0.28		3.53	3.41	1.83	
North East	0.77	[illegible]	0.48	[illegible]	0.61	0.28	0.21	0.23	[illegible]	6.02	0.36	[illegible]

2nd Quarter

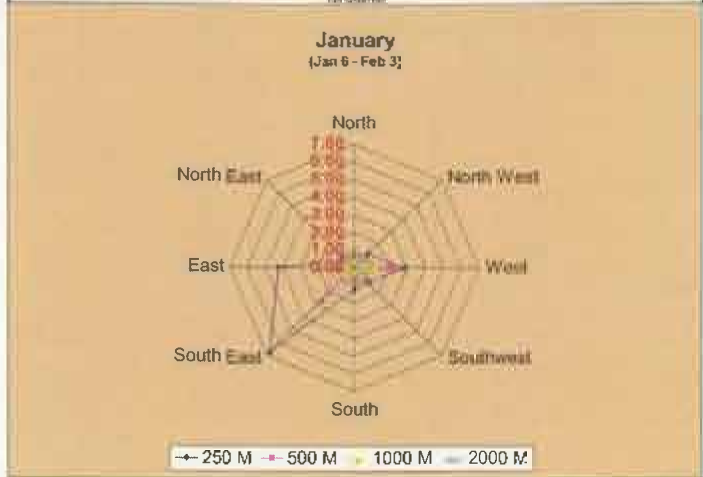
Direction	April (Apr 1 - May 4) 250 M	500 M	1000 M	2000 M	May (May 4 - June 3) 250 M	500 M	1000 M	2000 M	June (June 3 - July 2) 250 M	500 M	1000 M	2000 M
North	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	
North West	3.33	0.88	0.40	0.33	3.87	1.42	0.95	0.81	6.16	1.91	0.98	[illegible]
West	1.73	1.15	0.52		2.45	1.49	1.28		5.03	2.74	1.71	
Southwest	3.08	0.33	0.33	0.34	2.70	0.64	0.38	0.54	8.42	0.80	0.48	[illegible]
South	2.32	1.07	0.33		3.78	3.78	0.38		2.58	2.18	0.44	
South East	6.22	4.21	0.97	0.39	6.39	3.52	1.23	0.76	4.80	2.71	1.33	[illegible]
East	4.86	1.41	0.65		3.06	1.48	1.07		3.61	2.62	1.24	
North East	[illegible]	1.77	[illegible]	0.36	[illegible]	[illegible]	1.06	0.91	[illegible]	[illegible]	[illegible]	[illegible]

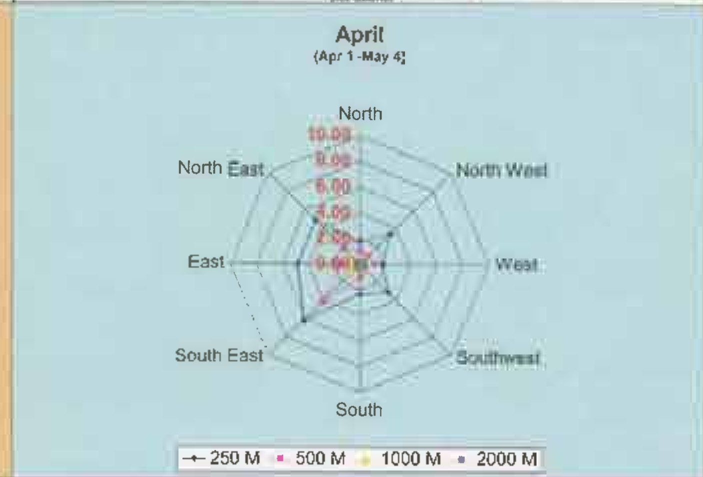
3rd Quarter

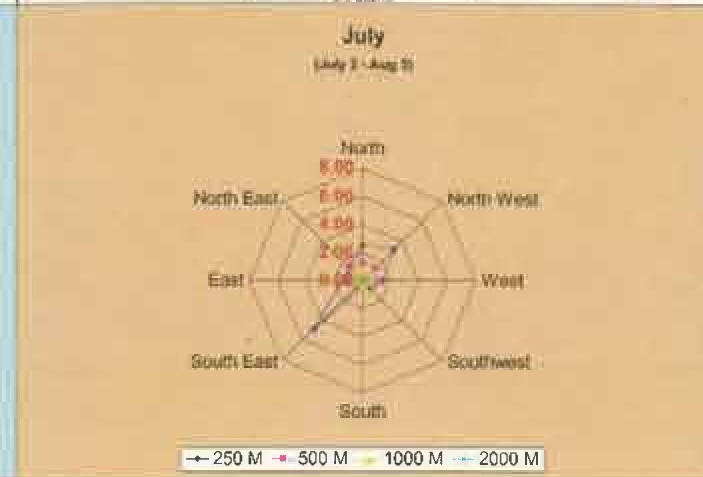
Direction	July (July 2 - Aug 5) 250 M	500 M	1000 M	2000 M	August (Aug 5 - Sept 4) 250 M	500 M	1000 M	2000 M	September (Sept 4 - Oct 1) 250 M	500 M	1000 M	2000 M
North	[illegible]	[illegible]	[illegible]		2.03	1.72	0.66		[illegible]	[illegible]	[illegible]	
North West	3.14	1.28	0.63	[illegible]	2.15	1.02	0.58	[illegible]	5.23	2.64	1.19	[illegible]
West	1.44	1.11	0.51		0.65	0.54	0.46		3.31	1.74	0.71	
Southwest	0.72	0.38	0.38	[illegible]	1.63	0.45	0.45	0.45	2.85	0.50	0.50	[illegible]
South	0.41	0.38	0.38		1.87	0.61	0.44		2.81	1.33	0.50	
South East	4.92	0.67	0.38	[illegible]	7.75	3.45	0.97	0.44	6.89	3.51	0.78	[illegible]
East	1.45	1.07	0.69		6.38	2.03	1.11		4.91	2.40	1.15	
North East	[illegible]	[illegible]	0.60	[illegible]	7.74	1.90	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

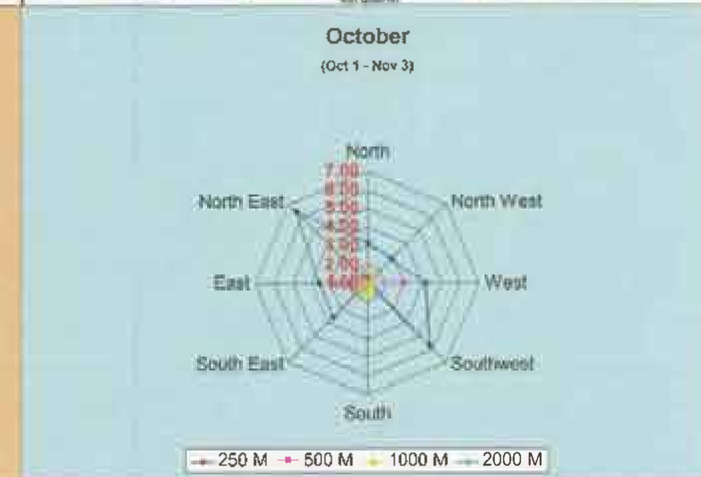
4th Quarter

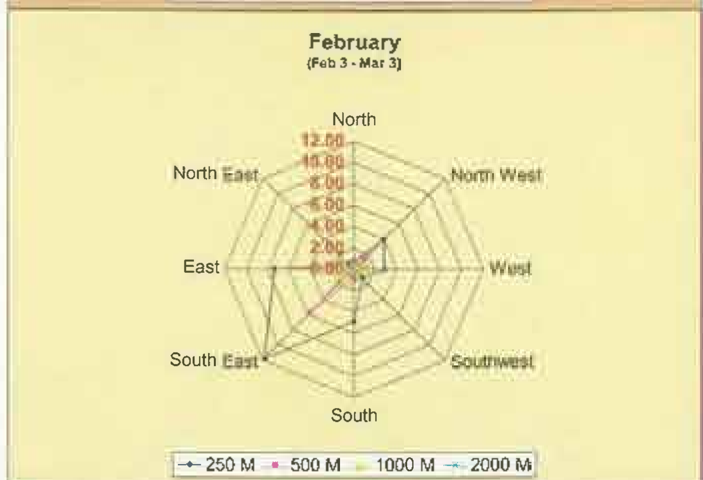
Direction	October (Oct 1 - Nov 3) 250 M	500 M	1000 M	2000 M	November (Nov 3 -Dec 2) 250 M	500 M	1000 M	2000 M	December (Dec 2 - Jan 5) 250 M	500 M	1000 M	2000 M
North	[illegible]	[illegible]	0.44		[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	
North West	2.80	0.98	0.42	[illegible]	3.05	1.16	0.81	0.42	1.45	0.66	[illegible]	[illegible]
West	4.14	2.93	0.82		1.22	0.70	0.58		1.19	0.71	[illegible]	
Southwest	5.73	0.37	0.37	[illegible]	0.74	0.40	0.40	0.42	0.74	0.39	[illegible]	[illegible]
South	0.87	0.44	0.37		3.20	0.42	0.41		0.81	0.33	[illegible]	
South East	3.61	1.69	0.42	0.38	2.67	1.35	0.60	0.47	7.23	2.71	[illegible]	[illegible]
East	3.63	2.60	0.97		2.22	0.88	0.68		4.47	0.62	[illegible]	
North East	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

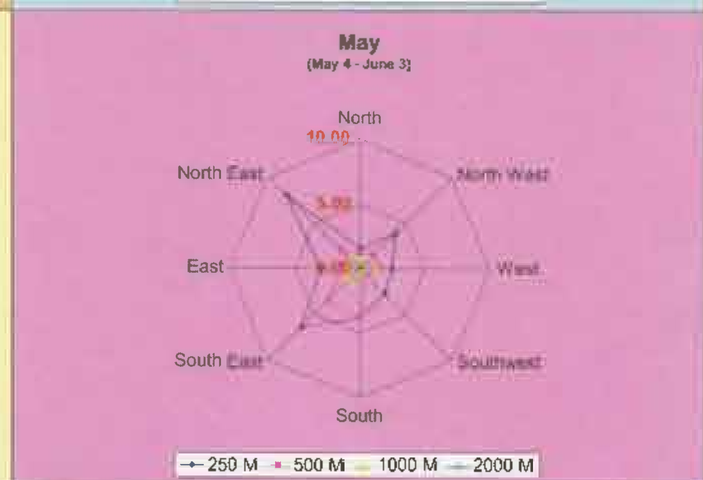


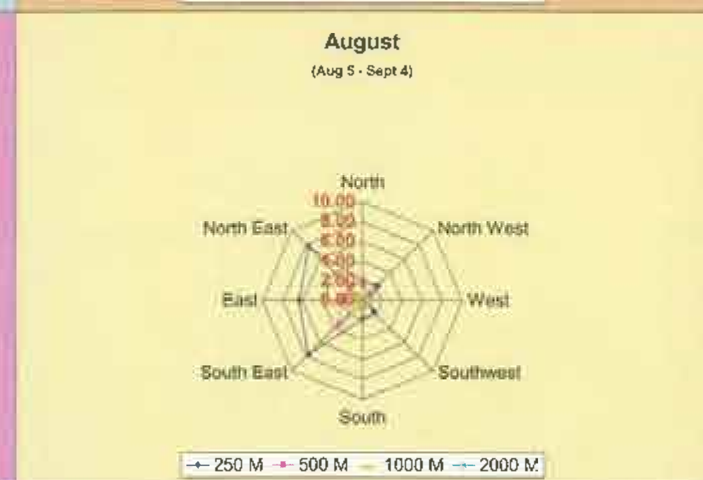


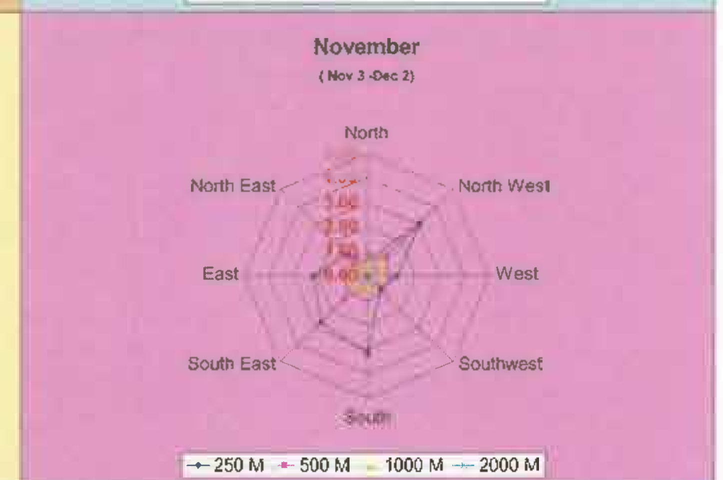


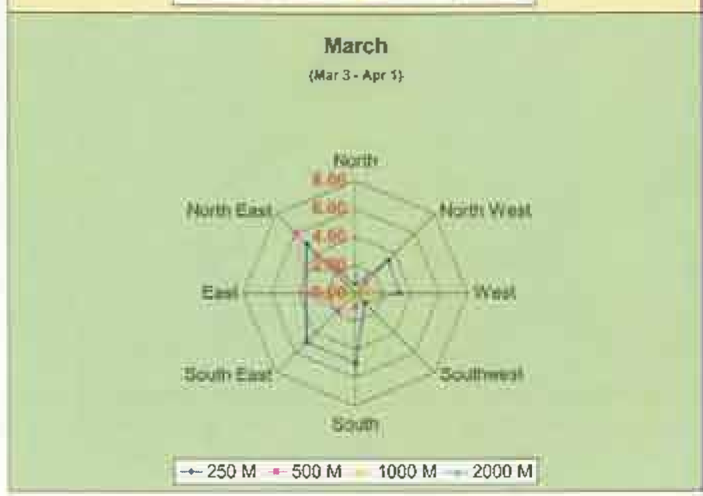


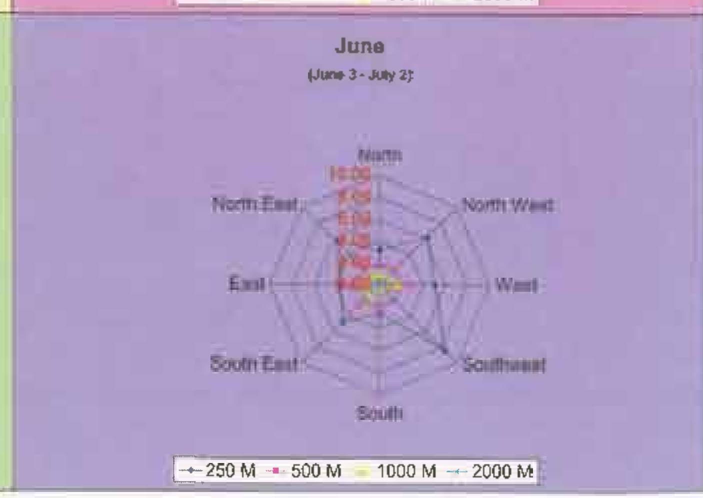


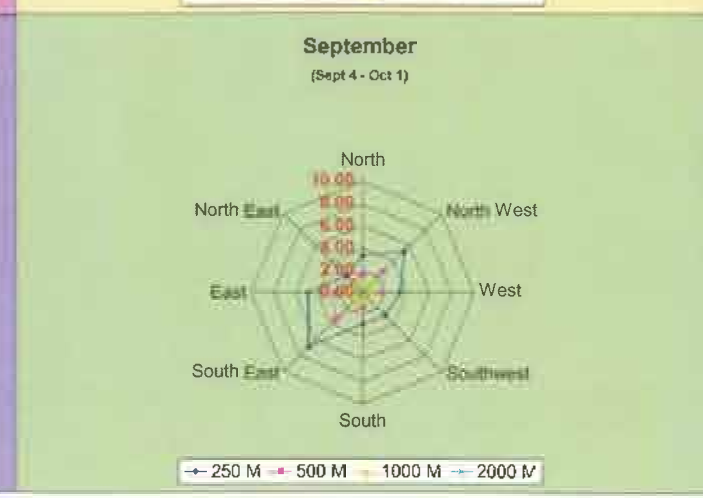


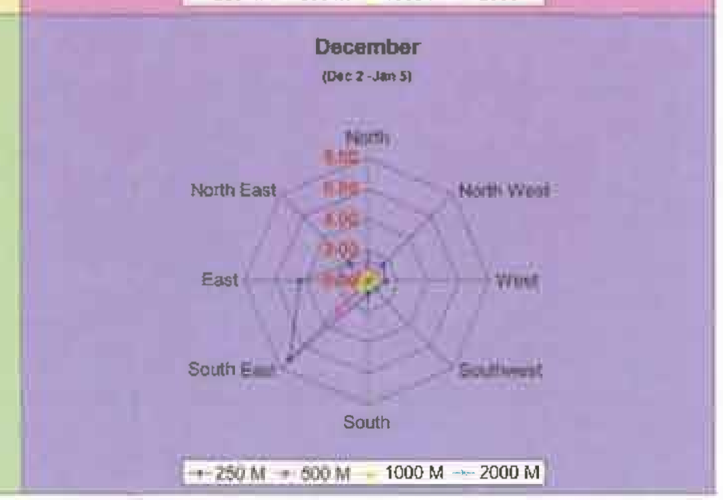


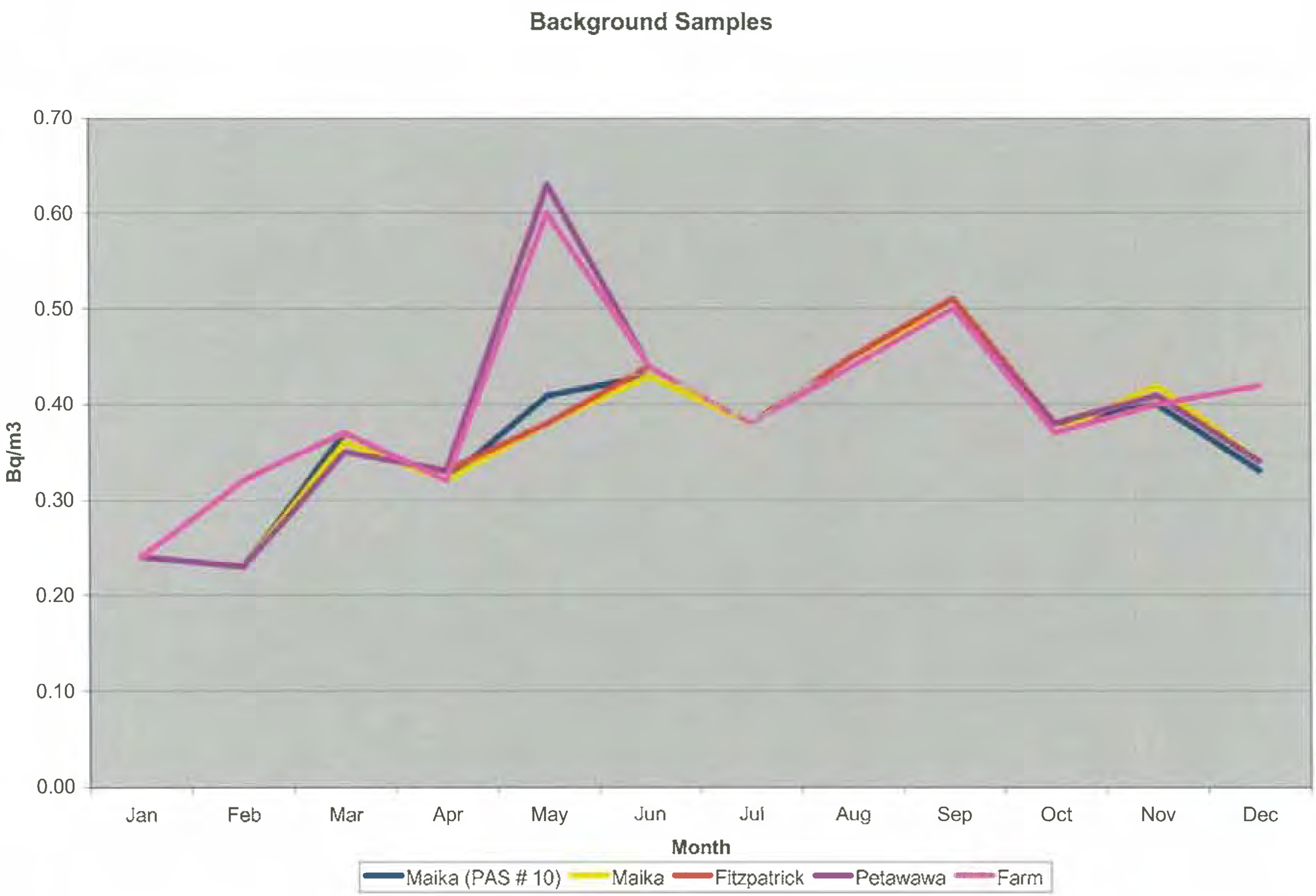











Background Samples
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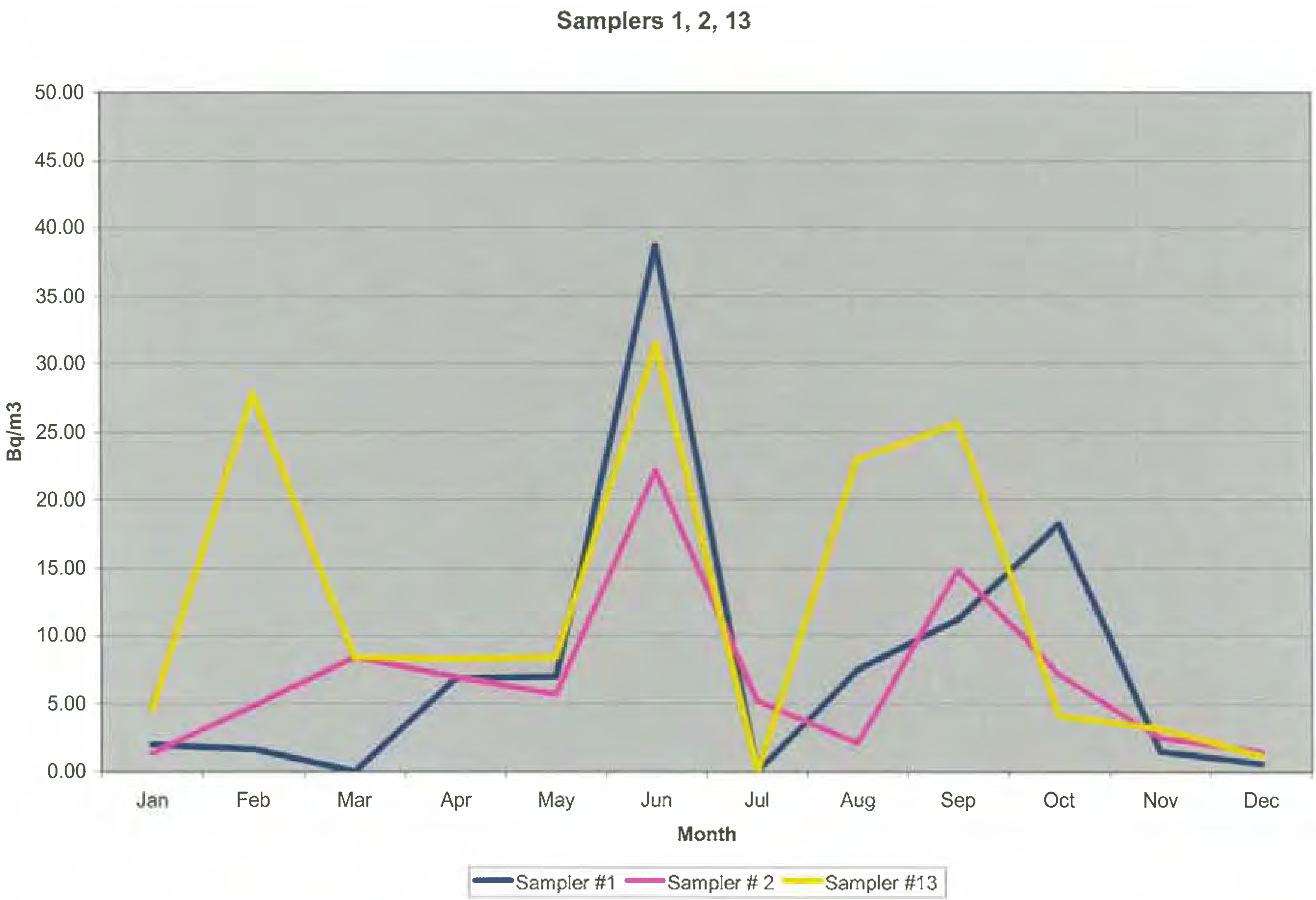
0.50
0.40
0.30
0.20
0.10
0.00
Bq/m3
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Month
Maika (PAS # 10)
Maika
Fitzpatrick
Petawawa
Farm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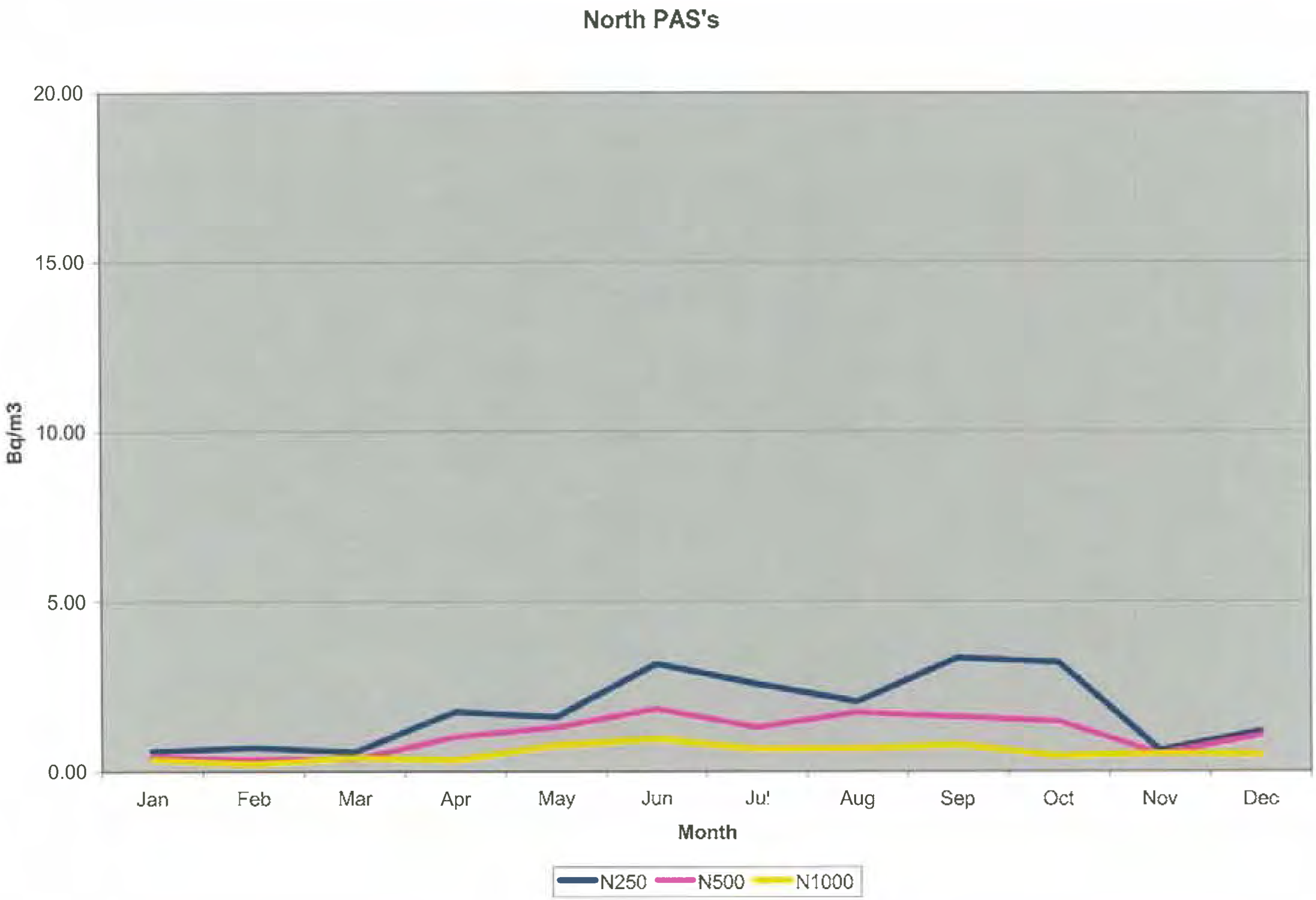
Bq/m3
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
Month
Sampler #1
Sampler # 2
Sampler #13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10.00
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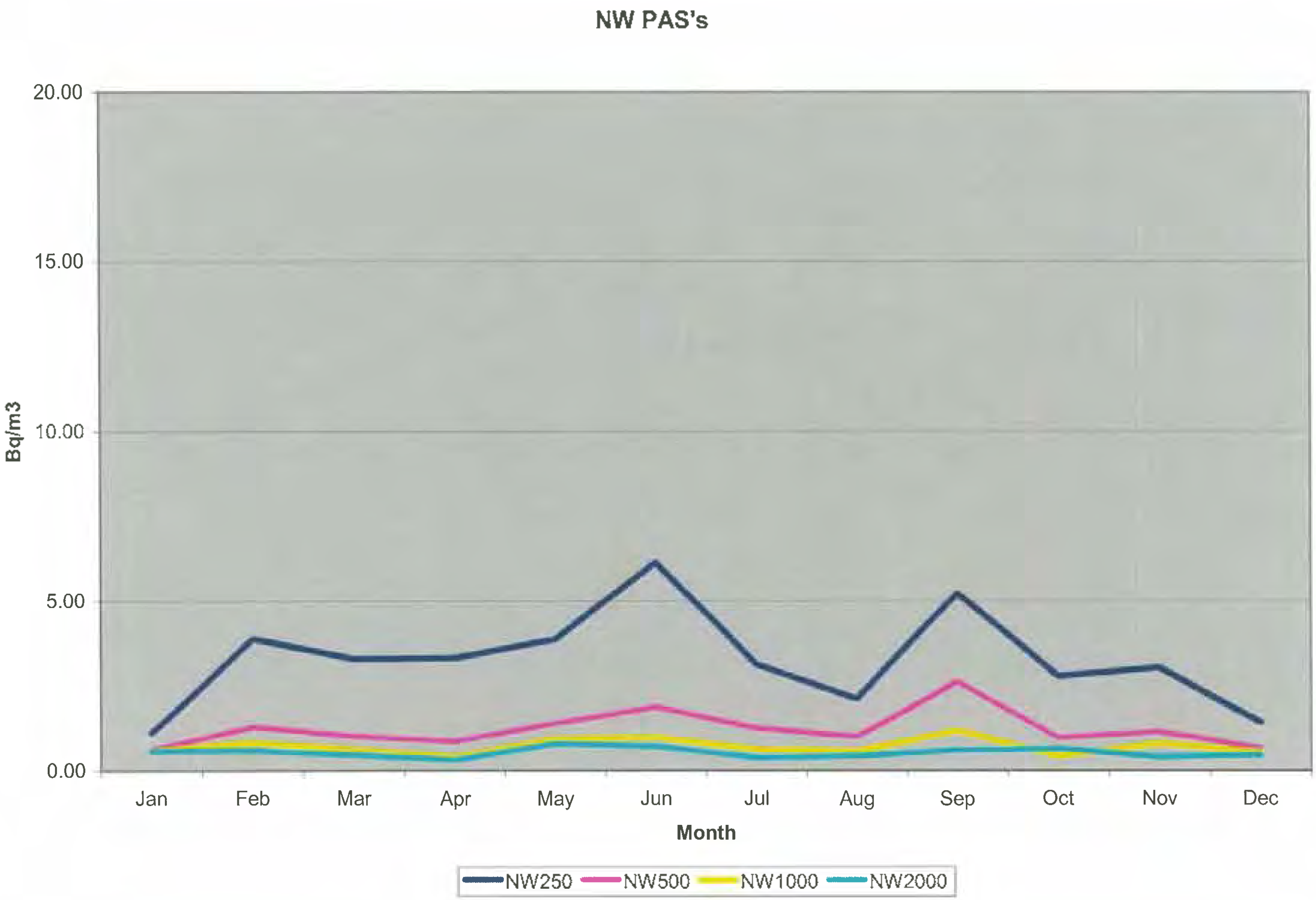
Bq/m3
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Month
N250
N500
N1000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0.00
Bq/m3
Jan
Feb
Mar
Apr
May
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Jul
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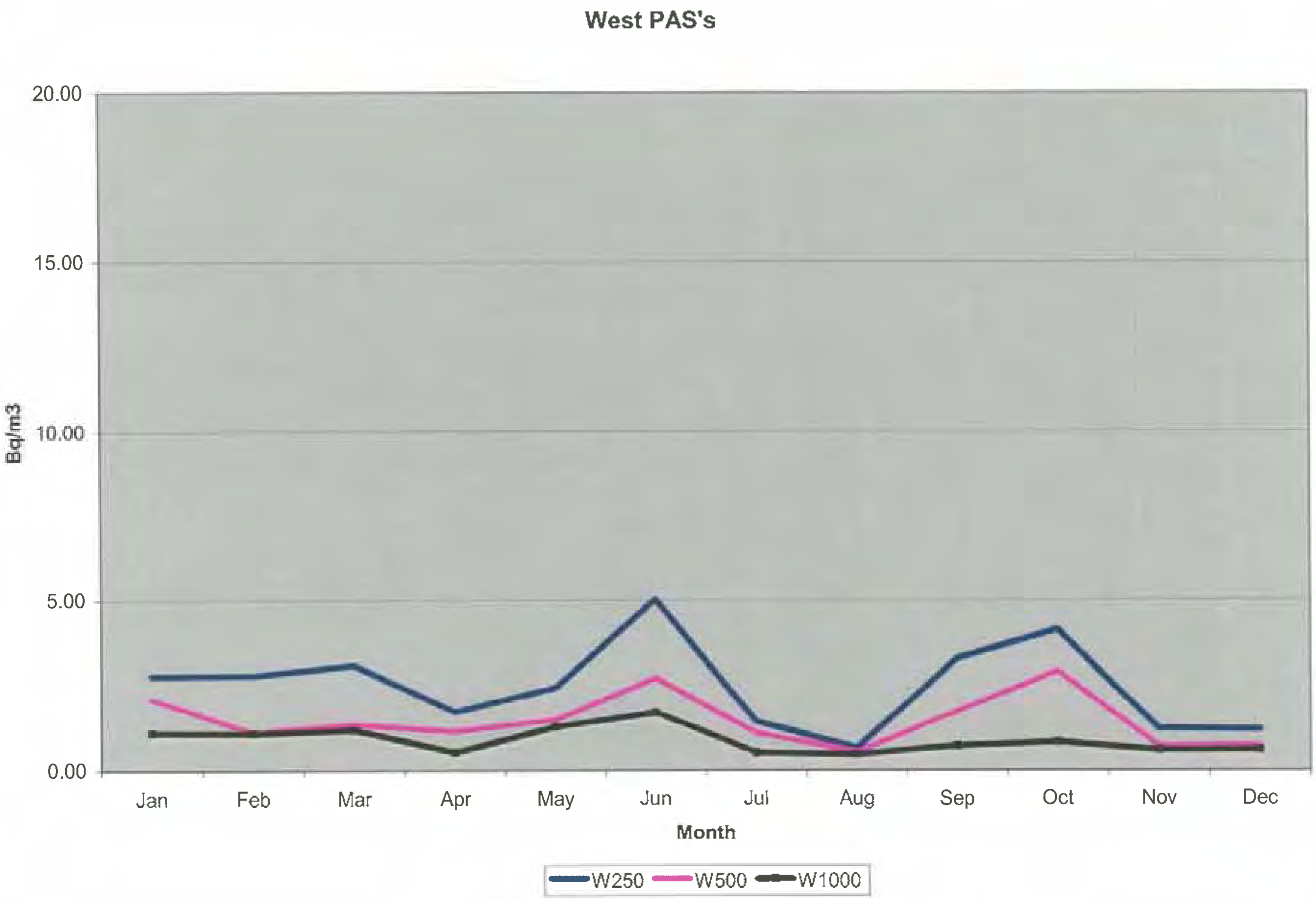
Nov
Dec
Month
NW250
NW500
NW1000
NW2000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0.00
Bq/m3
Jan
Feb
Mar
Apr
May
Jun
Jul
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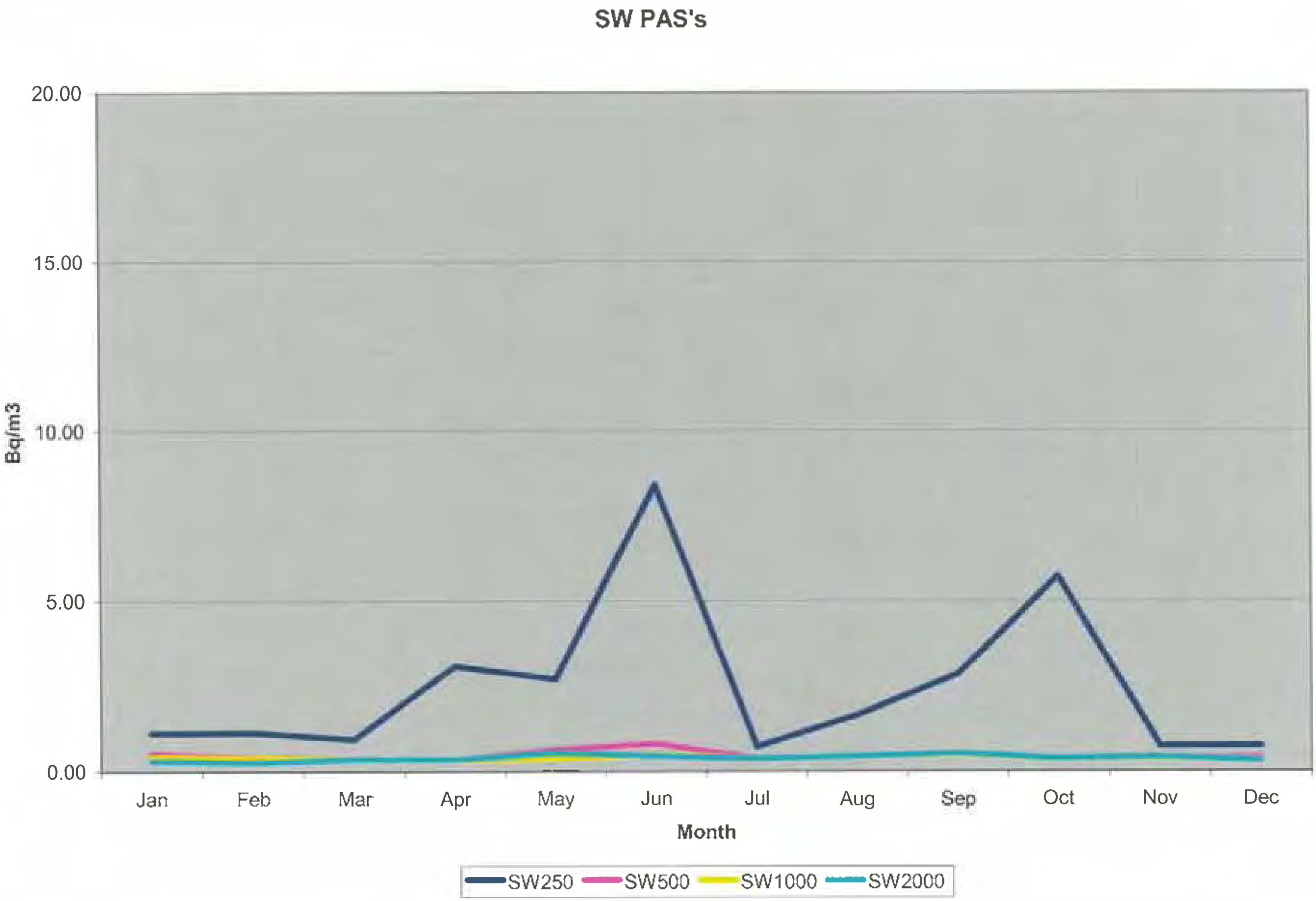
Month
W250
W500
W1000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15.00
10.00
5.00
0.00
Bq/m3
Jan
Feb
Mar
Apr
May
Jun
Jul
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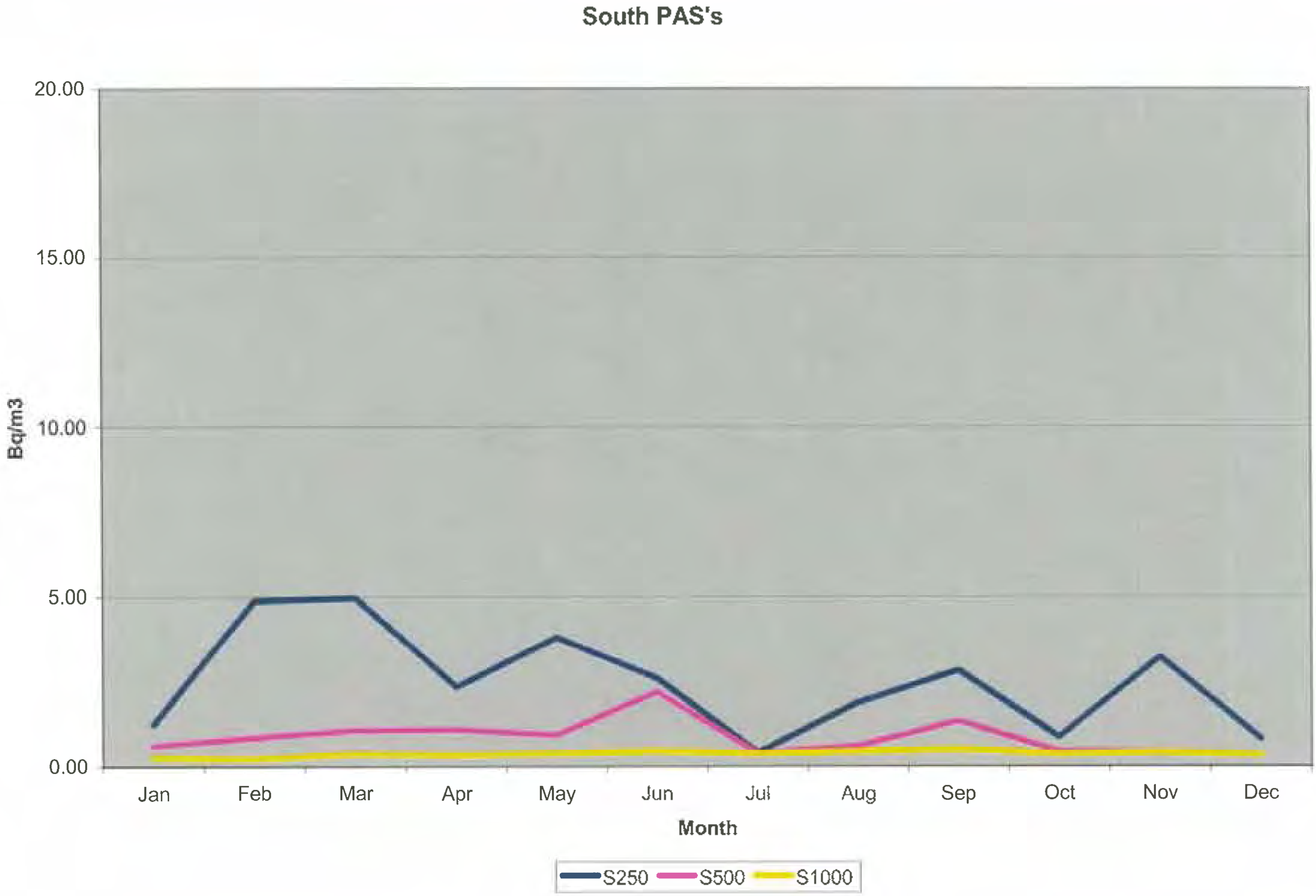
SW250
SW500
SW1000
SW2000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5.00
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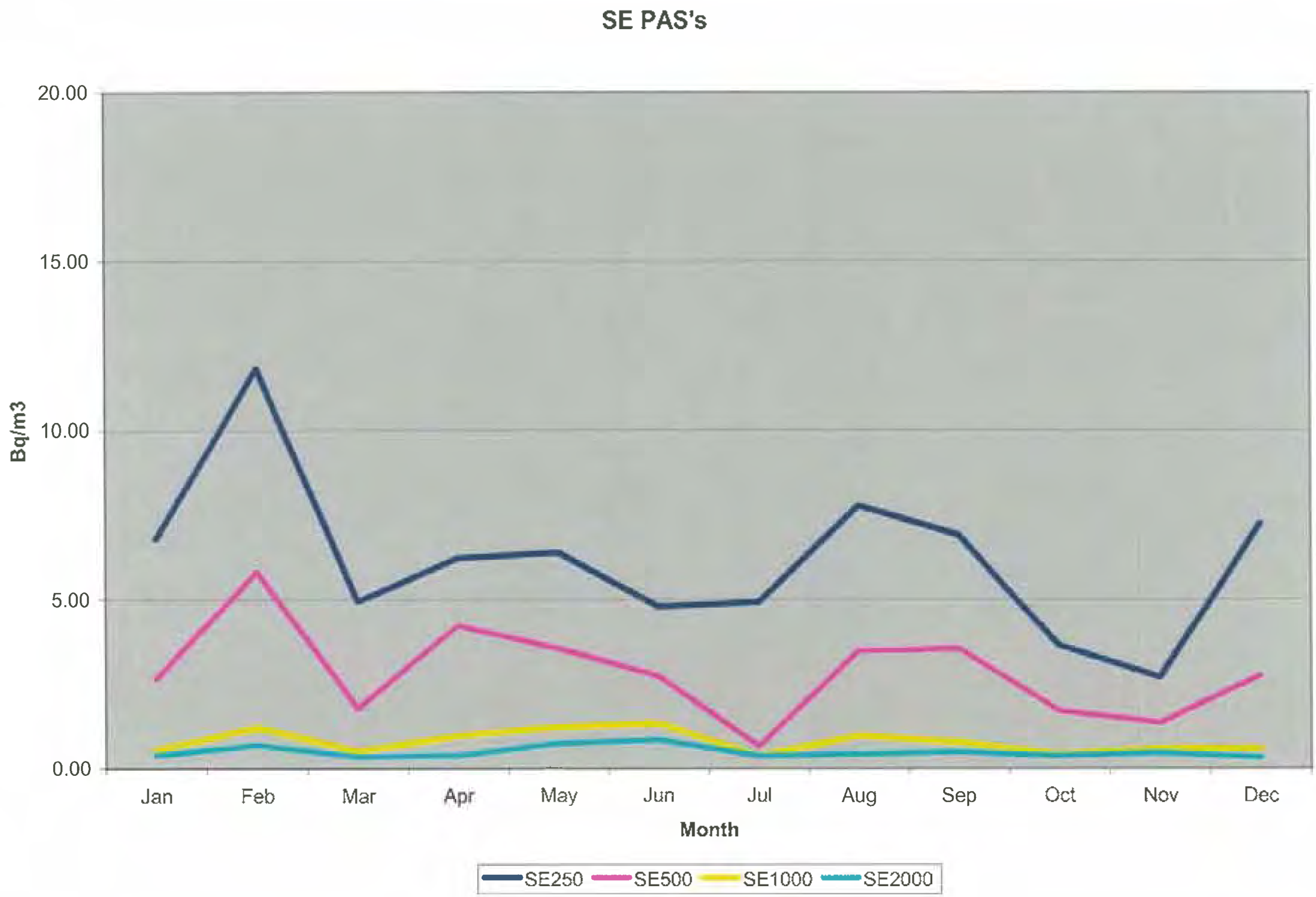
Bq/m3
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Month
S250
S500
S1000


SE PAS's
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10.00
5.00
0.00
Bq/m3
Jan
Feb
Mar
Apr
May
Jun
Jul
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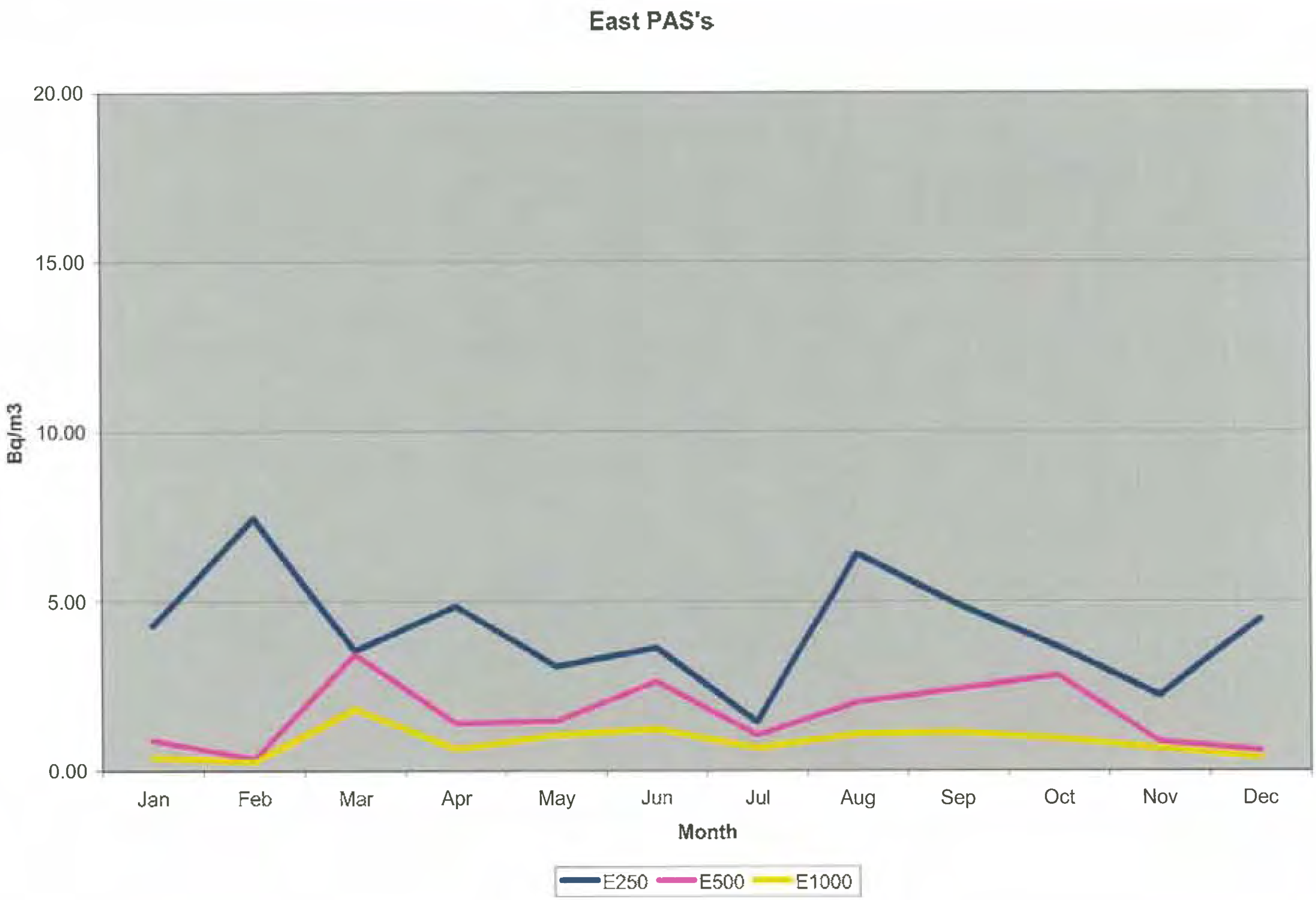
SE250
SE500
SE1000
SE2000


East PAS's
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15.00
10.00
5.00
0.00
Bq/m3
Jan
Feb
Mar
Apr
May
Jun
Jul
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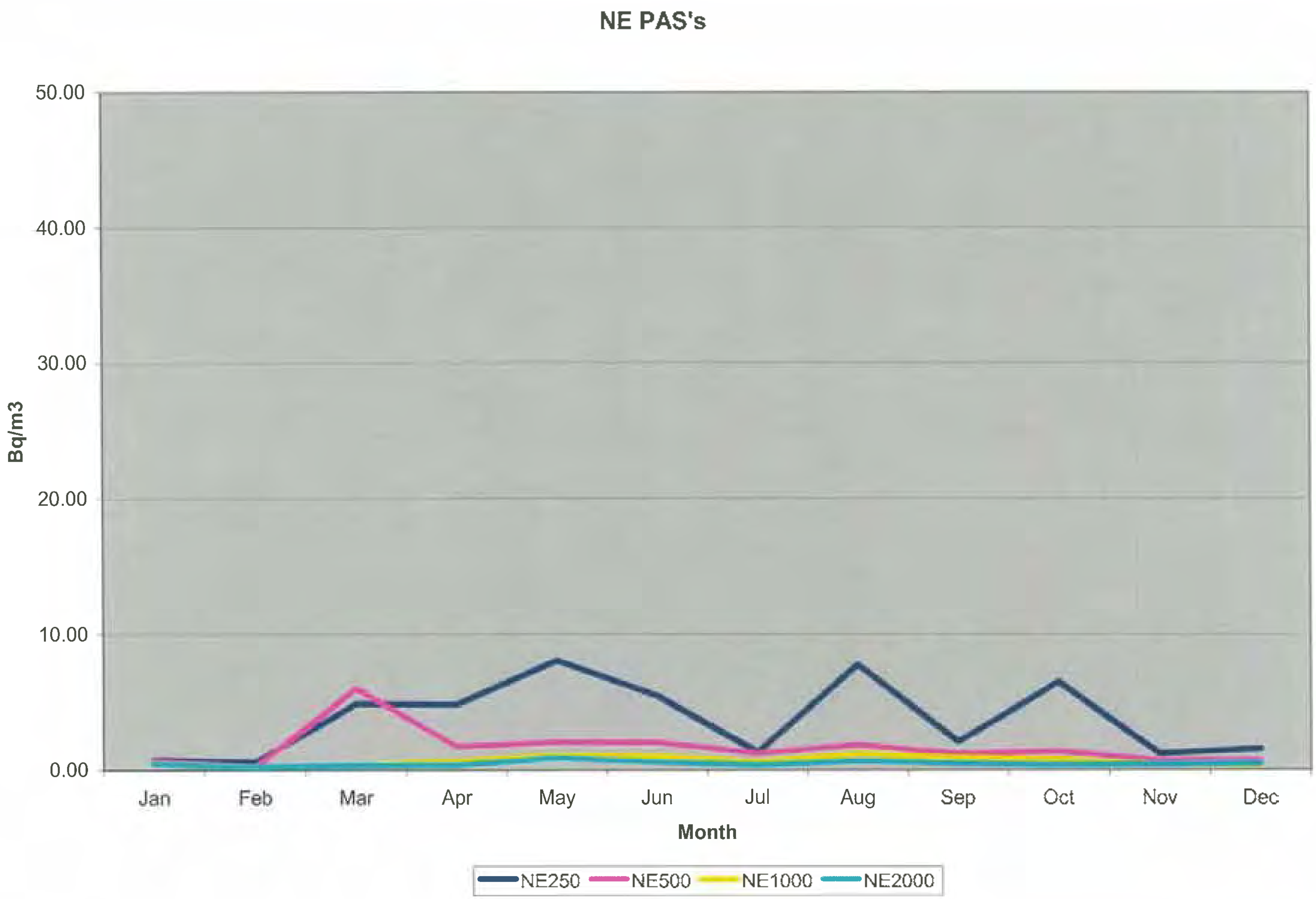
Oct
Nov
Dec
Month
E250
E500
E1000


NE PAS's
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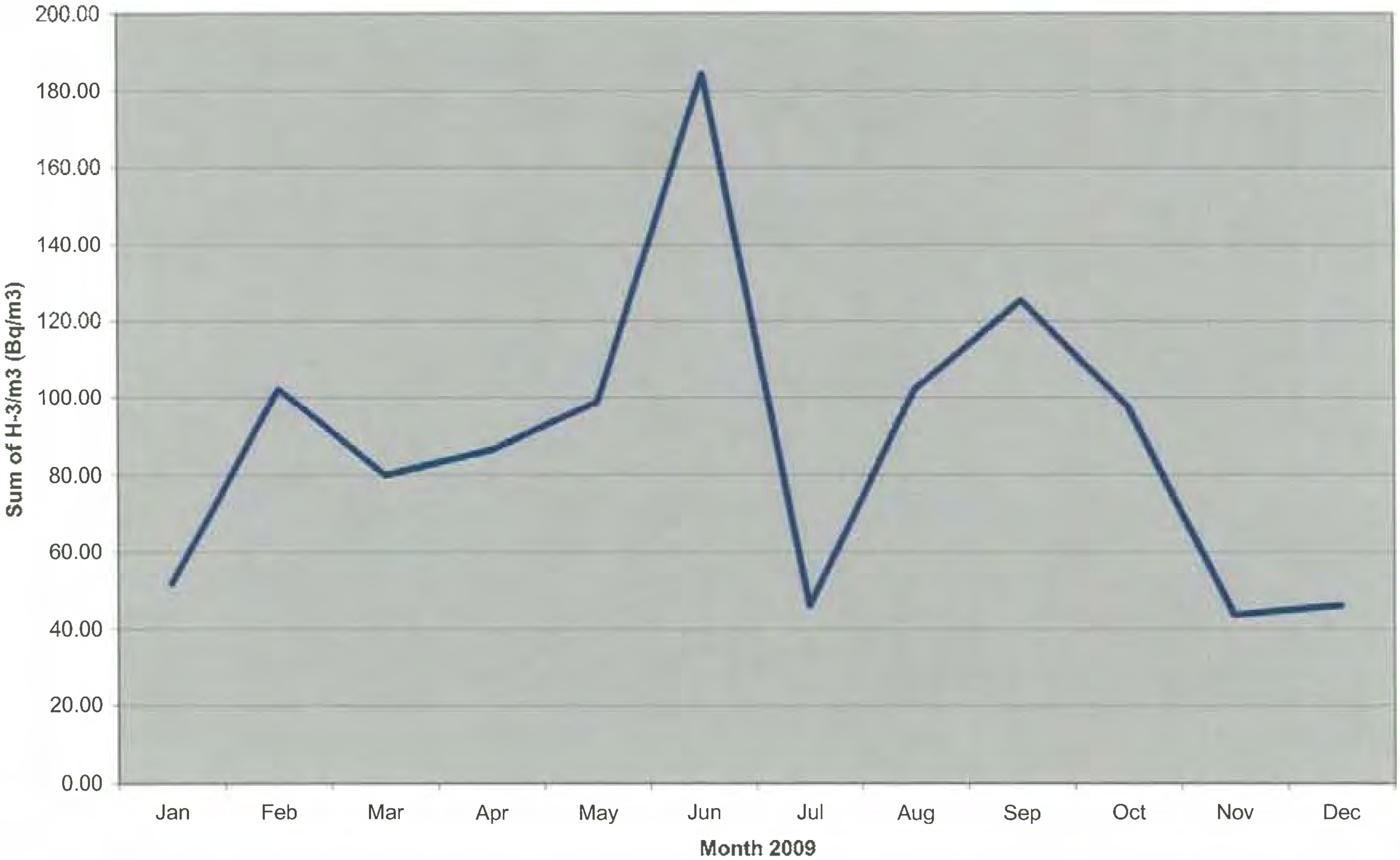
40.00
30.00
20.00
10.00
0.00
Bq/m3
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
Month
NE250
NE500
NE1000
NE2000

Chart of Sum of HTO in Air in PAS



APPENDIX H

Well monitoring results for 2009

WELL I.D.	DESCRIPTION	DISTANCE FROM STACK (m)	6/1/09	4/2/09	3/3/09	2/4/09	5/5/09	4/6/09	3/7/09	6/8/09	4/9/09	2/10/09	4/11/09	2/12/09	AVG
RW-1	415 BOUNDARY ROAD	465			701				632				507		613
RW-2	185 MUD LAKE ROAD	1,100			268				230				200		233
RW-3	185 MUD LAKE ROAD	1,100			265				225				176		222
RW-4	771 BRIGHAM AVENUE	2,300			3				3.4				4.0		3
RW-5	171 SAWMILL ROAD	2,300			17				17				15		16
RW-6	40987 HWY 41	1,400			81				75				74		77
RW-7	40025 HWY 41	1,600			12				14				9		12
RW-8	204 BOUNDARY ROAD	760			303				283				246		277
RW-9	206 BOUNDARY ROAD	650			139				132				20		97
RW-10	208 BOUNDARY ROAD	825			7				3.5				4.0		5
B-1	SUPERIOR PROPANE OFFICE	180	1,556	1,211	1 411	2 063	1 864	1,460	1,542	1,362	1,405	1 168	1,319	1,346	1,476
B-3	INTERNATIONAL LUMBER OFFICE	385			2				3.5				4.0		3
														AVG	253

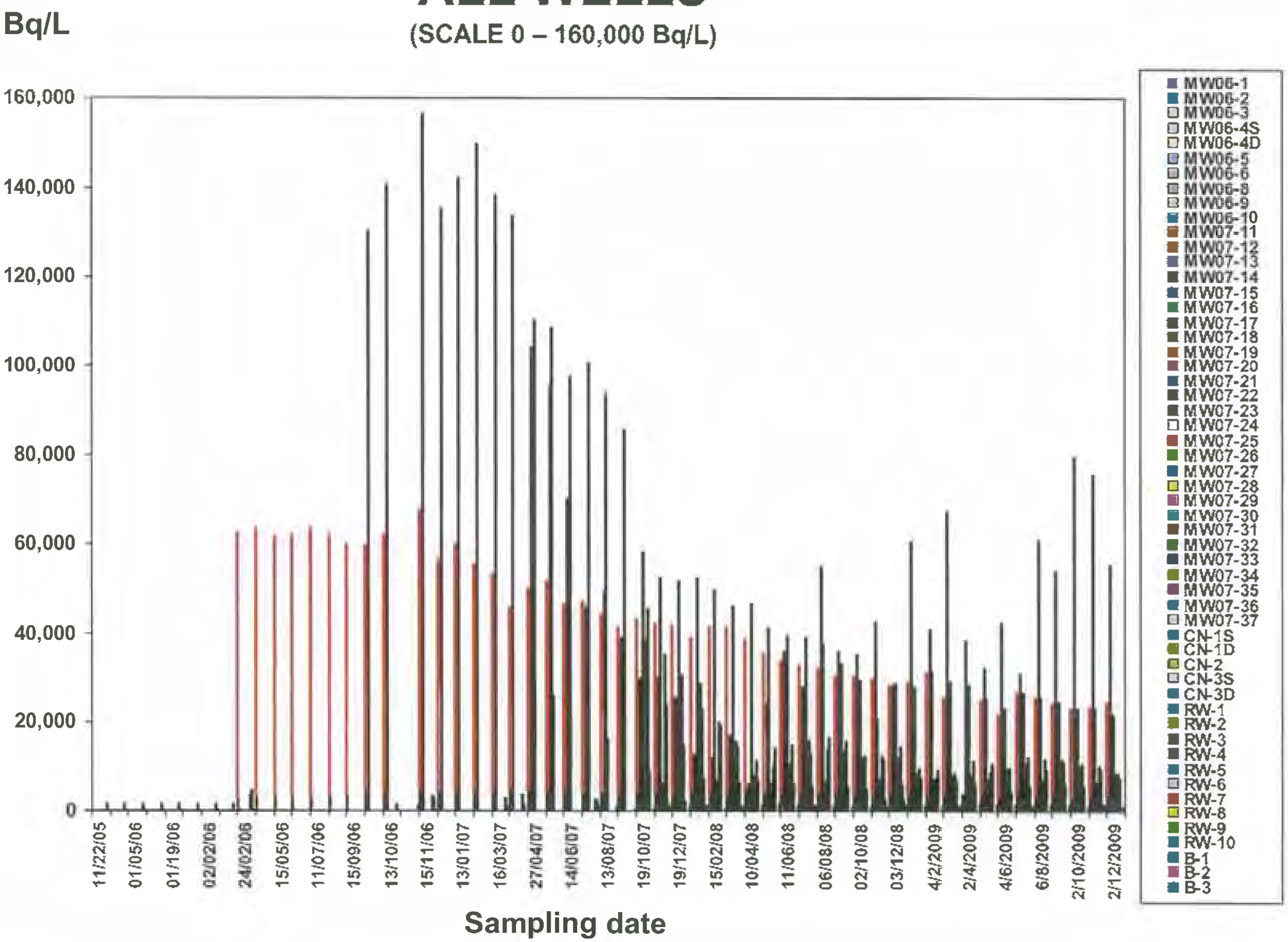
WELL I.D.	DESCRIPTION		DISTANCE FROM SOURCE (m)	22/11/07	19/12/07	17/01/08	15/02/08	18/03/08	[illegible]	[illegible]	[illegible]	[illegible]	6/8/08
MW06-1	SRB SITE	IN SOIL	50	42,299	41,947	39,251	41,889	41,623	38,970	35,667	33,864	33,137	32,396
MW06-2	SRB SITE	IN SOIL	75	3,895	3,641	3,748	3,923	3,627	3,953	3,880	4,004	3,889	3,839
MW06-3	SRB SITE	IN SOIL	60	DRY	DRY	3,136	3,342	3,072	3,128	3,010	3,026	3,018	3,079
MW06-4S	JOHNSTON MEADOWS		300										
MW06-4D	JOHNSTON MEADOWS		300										
MW06-5	RENFREW COUNTY HEALTH UNIT		450										
MW06-6	+/- 600 m		600										
MW06-8	SRB SITE	IN SOIL	55	225	DRY	488	641	486	577	760	816	871	1,069
MW06-9	SRB SITE	IN SOIL	20	1,402	DRY	2,013	3,076	2,000	2,877	2,782	3,039	3,024	3,229
MW06-10	SRB SITE	SURFACE OF BEDROCK	5	30,328	25,712	12,995	12,448	17,084	8,243	24,126	36,040	27,930	54,979
MW07-11	SRB SITE	SURFACE OF BEDROCK	75	485	727	1,248	1,717	1,615	1,759	1,294	1,511	1,224	1,116
MW07-12	SRB SITE	SURFACE OF BEDROCK	55	177	DRY	212	490	252	292	255	283	375	345
MW07-13	SRB SITE	SURFACE OF BEDROCK	90	7,859	9,968	7,344	7,654	11,007	8,082	8,507	11,120	12,382	13,699
MW07-14	SRB SITE	SURFACE OF BEDROCK	40	3,692	2,048	3,063	3,216	2,845	2,878	2,679	2,917	2,503	2,868
MW07-15	SRB SITE	SURFACE OF BEDROCK	25	170	112	598	642	374	769	442	406	442	361
MW07-16	SRB SITE	SURFACE OF BEDROCK	15	6,776	6,358	7,007	6,543	6,545	6,388	5,720	4,785	4,864	4,385
MW07-17	SRB SITE	DEEPER BEDROCK	15	117	663	1,208	1,425	1,265	1,516	1,088	688	828	1,310
MW07-18	SRB SITE	SURFACE OF BEDROCK	10	52,516	52,009	52,690	49,994	46,343	46,735	41,374	39,674	39,345	37,892
MW07-19	SRB SITE	SURFACE OF BEDROCK	20	2,230	DRY	5,153	2,806	2,455	2,708	4,839	4,687	3,730	3,749
MW07-20	SUPERIOR PROPANE PROPERTY	SURFACE OF BEDROCK	90	874	867	570	1,151	762	912	998	1,013	1,108	1,024
MW07-21	SUPERIOR PROPANE PROPERTY	SURFACE OF BEDROCK	110	116	111	100	359	156	273	245	251	310	280
MW07-22	SRB SITE	SURFACE OF BEDROCK	70	421	184	225	578	493	422	227	187	243	246
MW07-23	SRB SITE	SURFACE OF BEDROCK	90	668	610	992	1,318	1,387	1,632	1,309	1,257	1,315	1,397
MW07-24	HARRINGTON PROPERTY	SURFACE OF BEDROCK	115	118	111	150	374	273	243	476	448	473	454
MW07-25	HARRINGTON PROPERTY	SURFACE OF BEDROCK	165	176	111	376	334	118	111	159	172	178	103
MW07-26	SRB SITE	SURFACE OF BEDROCK	50	2,609	2,533	2,839	3,429	2,917	2,919	3,376	3,624	3,833	3,803
MW07-27	CITY PROPERTY	SURFACE OF BEDROCK	50	6,652	DRY	7,393	7,216	7,366	7,400	6,832	7,002	7,210	6,999
MW07-28	CITY PROPERTY	DEEPER BEDROCK	55	6,569	4,957	3,493	2,102	2,722	1,360	2,244	2,066	2,388	2,401
MW07-29	SRB SITE	DEEPER BEDROCK	15	35,421	30,468	28,662	19,999	15,779	8,595	10,661	10,827	16,263	14,152
MW07-30	SRB SITE	DEEPER BEDROCK	50	10,457	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
MW07-31	SRB SITE	DEEPER BEDROCK	70	1,394	1,436	929	1,622	940	1,115	653	1,457	2,170	2,199
MW07-32	HARRINGTON PROPERTY	DEEPER BEDROCK	115	117	111	100	264	112	247	367	284	217	149
MW07-33	HARRINGTON PROPERTY	DEEPER BEDROCK	105	428	458	553	791	512	532	754	690	586	546
MW07-34	SRB SITE	SHALLOW BEDROCK	10	23,711	15,094	23,258	19,424	14,885	11,687	14,393	14,963	13,197	16,687
MW07-35	CITY PROPERTY	SHALLOW BEDROCK	55	13,641	12,948	10,857	11,431	10,021	9,060	6,797	6,443	8,738	8,438
MW07-36	CITY PROPERTY	SHALLOW BEDROCK	50	7,504	DRY	7,649	6,777	6,545	7,043	6,775	6,472	5,915	6,112
MW07-37	SRB SITE	SHALLOW BEDROCK	60	2,490	2,466	2,515	2,402	2,162	2,087	1,776	1,577	1,490	1,358
CN-1S	CN PROPERTY		135	2,458				1,980				2,234	
CN-1D	CN PROPERTY		130	DRY	DRY	1,886		2,673				2,458	
CN-2	CN PROPERTY		160	2,184				1,455				1,257	
CN-3S	CN PROPERTY		165	DRY	DRY	1,407		956				1,049	
CN-3D	CN PROPERTY		160	1,354				1,494				1,100	
RW-1	413 BOUNDARY ROAD		400	1,399				1,238				972	
RW-2	185 MUD LAKE ROAD		1,100	287				324				293	
RW-3	183 MUD LAKE ROAD		1,100	323				299				318	
RW-4	711 BRUHAM AVENUE		2,300	4.2				3.0				3.1	
RW-5	171 SAWMILL ROAD		2,300	17				20				19	
RW-6	[illegible] HWY 41		1,400	82				92				75	
RW-7	[illegible] HWY 41		1,400	25				31				23	
RW-8	204 BOUNDARY ROAD		700	236				262				307	
RW-9	208 BOUNDARY ROAD		550	583	442			454				539	
RW-10	20[illegible] BOUNDARY ROAD		635	4.3				3.0				2.6	
B-1	SUPERIOR PROPANE OFFICE		160	1,075	1,006	1,306	820	1,034	1,727	2,001	1,876	1,404	1,309
B-2	SUPERIOR PROPANE TRUCK WASH		200	3,087	4,073			4,435				3,939	
B-3	INTERNATIONAL LUMBER OFFICE		395	4.4				6.0				5.0	

WELL I.D.	4/9/08	2/10/08	4/11/08	3/12/08	6/1/09	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2/10/09	4/11/09	2/12/09	WELL I.D.
MW06-1	30,416	30,590	29,085	28,526	29,045	31,171	25,477	24,502	24,969	21,702	26,783	25,452	24,126	23,320	23,481	24,457	MW06-1
MW06-2	3,710	3,579	3,339	3,301	3,668	3,757	3,856	3,860	3,499	3,078	3,623	3,589	3,432	3,303	3,346	3,500	MW06-2
MW06-3	DRY	DRY	DRY	2,832	2,948	DRY	2,960	2,948	2,593	2,199	2,829	2,663	DRY	DRY	2,647	2,575	MW06-3
MW06-4S																	MW06-4S
MW06-4D																	MW06-4D
MW06-5																	MW06-5
MW06-6																	MW06-6
MW06-8	1,094	1,070	998	1,160	1,165	1,035	1,009	1,032	1,062	935	1,203	1,157	1,187	1,032	1,193	1,240	MW06-8
MW06-9	3,294	2,544	2,567	3,078	3,818	3,100	3,099	3,728	3,313	2,938	3,071	3,413	3,353	2,599	3,723	3,887	MW06-9
MW06-10	36,311	35,275	42,897	28,330	60,624	41,029	67,282	38,839	32,241	42,319	30,839	61,191	53,990	79,479	75,762	55,334	MW06-10
MW07-11	1,044	1,152	1,204	1,399	1,151	1,380	1,424	1,589	1,513	1,468	1,586	1,681	1,694	1,780	1,749	2,092	MW07-11
MW07-12	341	307	323	352	364	304	345	322	287	239	283	347	337	316	344	363	MW07-12
MW07-13	14,997	15,718	19,248	15,963	17,504	17,421	16,932	16,625	16,312	14,135	17,899	18,615	20,310	19,339	19,321	21,746	MW07-13
MW07-14	2,716	2,887	2,624	2,775	2,774	2,743	2,845	3,370	2,886	2,661	3,136	3,019	2,772	2,852	3,003	3,089	MW07-14
MW07-15	377	436	457	785	580	594	642	783	852	771	687	680	719	759	808	1,001	MW07-15
MW07-16	5,520	5,143	5,295	5,859	5,255	4,097	5,083	4,126	4,996	4,271	4,674	4,219	3,642	4,750	4,620	4,293	MW07-16
MW07-17	1,414	1,604	1,798	1,904	1,863	1,864	1,839	1,766	1,425	1,010	1,308	1,866	1,867	2,046	2,063	2,191	MW07-17
MW07-18	33,389	29,530	20,752	28,723	28,066	31,743	29,267	28,347	25,318	23,198	26,736	25,604	24,601	23,189	23,184	21,323	MW07-18
MW07-19	3,781	3,503	3,967	4,103	6,874	6,407	6,432	9,723	5,529	3,750	5,824	7,462	7,945	6,101	6,442	7,421	MW07-19
MW07-20	1,120	1,098	952	1,182	1,298	1,206	1,332	1,182	1,262	1,089	1,256	1,259	1,351	1,268	1,346	1,738	MW07-20
MW07-21	326	334	341	359	437	442	542	482	445	390	481	495	578	578	591	635	MW07-21
MW07-22	298	291	318	807	334	396	377	440	373	338	454	465	514	644	593	727	MW07-22
MW07-23	1,408	1,479	1,467	1,691	1,741	1,890	1,901	2,135	2,083	2,008	2,230	2,222	2,296	2,339	2,354	2,650	MW07-23
MW07-24	564	570	717	803	911	952	979	1,170	1,154	1,048	1,232	1,229	1,285	1,384	1,504	1,371	MW07-24
MW07-25	138	93	210	144	100	178	249	312	296	371	490	529	428	338	403	436	MW07-25
MW07-26	3,800	3,471	3,193	2,947	3,479	3,811	3,835	4,077	3,941	3,481	3,934	3,915	3,763	3,332	3,514	3,600	MW07-26
MW07-27	7,001	7,156	7,635	6,965	6,799	7,550	7,078	7,322	7,229	6,085	6,765	6,729	6,717	7,011	6,662	6,763	MW07-27
MW07-28	1,979	1,601	928	1,630	2,340	1,306	1,680	3,216	2,470	2,561	3,644	3,578	3,223	2,297	2,875	4,026	MW07-28
MW07-29	14,098	12,923	12,633	12,305	8,822	6,404	8,500	8,566	9,277	9,808	11,390	11,977	11,888	10,495	10,647	8,685	MW07-29
MW07-30	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	N/A	N/A	N/A	MW07-30
MW07-31	2,260	1,986	1,233	1,337	1,111	1,113	1,069	1,779	531	1,340	1,806	2,005	1,817	1,908	1,720	1,618	MW07-31
MW07-32	107	173	251	235	311	293	254	270	348	221	205	239	285	308	368	540	MW07-32
MW07-33	551	466	476	439	524	473	472	708	732	809	653	585	599	607	631	817	MW07-33
MW07-34	15,837	12,617	11,759	14,581	9,749	9,315	8,640	11,723	10,882	9,740	12,132	9,313	11,053	11,006	9,375	8,922	MW07-34
MW07-35	7,957	7,581	6,695	7,006	6,835	8,523	7,525	7,798	7,400	6,363	7,457	7,093	7,150	6,259	6,142	5,214	MW07-35
MW07-36	5,532	5,427	5,574	6,268	7,826	6,175	6,930	6,395	5,425	4,708	5,958	6,154	6,269	5,636	7,566	7,651	MW07-36
MW07-37	1,472	1,588	1,340	1,421	1,457	1,598	1,423	1,549	1,264	996	1,163	1,245	1,228	1,338	1,351	1,341	MW07-37
CN-1S			2,385	2,286			1,465				1,611				1,510		CN-1S
CN-1D			DRY	2,396			2,232				1,764				1,750		CN-1D
CN-2			2,958	2,687			857				928				1,158		CN-2
CN-3S			DRY	1,406			636				412				DRY	817	CN-3S
CN-3D			1,550	1,431			1,119				958				1,154		CN-3D
RW-1			866				701				632				507		RW-1
RW-2			252				268				230				200		RW-2
RW-3			250				265				225				176		RW-3
RW-4			5				3				3.4				4.0		RW-4
RW-5			25				17				17				15		RW-5
RW-6			83				81				75				74		RW-6
RW-7			16				12				14				9		RW-7
RW-8			242				303				283				246		RW-8
RW-9			422				139				132				20		RW-9
RW-10			3				7				3.5				4.0		RW-10
B-1	1,132	1,122	1,037	1,293	1,558	1,211	1,411	2,063	1,884	1,460	1,542	1,362	1,405	1,168	1,319	1,346	B-1
B-2			3,875				3,376				2,661				2,660		B-2
B-3			7				2				3.5				4.0		B-3

WELL I.D.	DESCRIPTION		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	18/7/07	[illegible]	[illegible]	[illegible]	WELL I.D.
[illegible]	[illegible]	IN SOIL	[illegible]									62,434	63,518	61,774	62,025	63,631	62,155	59,902	59,734	61,947		67,606	58,596	60,166	55,310	53,396	45,932	50,170	51,972	46,565	47,499	44,803	41,851	43,586	[illegible]
[illegible]	[illegible]	IN SOIL	[illegible]									2,484	2,788	2,665	2,550	2,698	2,052	3,580	4,264	4,012		5,000	4,414	4,730	4,207	4,347	4,516	4,657	4,646	4,538	4,365	4,329	3,907	4,050	[illegible]
[illegible]	[illegible]	IN SOIL	[illegible]									2,722	3,068	3,133	3,045	2,982	3,205	2,890	2,599	3,209		3,094	3,100	3,324	3,292	3,243	3,236	3,273	3,297	3,288	3,187	3,247	3,139	DRY	[illegible]
[illegible]	[illegible]		[illegible]									211																							[illegible]
[illegible]	[illegible]		[illegible]									3.0																							[illegible]
[illegible]	[illegible]		[illegible]									14																							[illegible]
[illegible]	[illegible]		[illegible]									376																							[illegible]
[illegible]	[illegible]	IN SOIL	[illegible]																106	141		120	175	178	270	299	258	209	207	172	292	236	247	311	[illegible]
[illegible]	[illegible]	IN SOIL	[illegible]																439	1,772		2,003	1,640	1,611	1,487	1,444	1,642	1,460	1,609	1,526	1,888	1,704	1,723	1,450	[illegible]
[illegible]	[illegible]	SURFACE OF BEDROCK	[illegible]																130,000	141,111		136,643	135,012	142,308	149,959	138,506	130,822	104,350	94,936	10,225	46,379	40,347	30,228	29,795	[illegible]
[illegible]	[illegible]	SURFACE OF BEDROCK	[illegible]																									283	630	508	856	890	955	400	[illegible]
[illegible]	[illegible]	SURFACE OF BEDROCK	[illegible]																									152	154	114	108	117	151	144	[illegible]
[illegible]	[illegible]	SURFACE OF BEDROCK	[illegible]																									6,358	7,781	8,070	9,463	9,221	9,287	10,667	[illegible]
[illegible]	[illegible]	SURFACE OF BEDROCK	[illegible]																									1,504	1,062	1,695	2,526	3,494	3,610	2,357	[illegible]
[illegible]	[illegible]	SURFACE OF BEDROCK	[illegible]																									690	673	672	314	376	255	237	[illegible]
[illegible]	[illegible]	SURFACE OF BEDROCK	[illegible]																									6,858	6,848	7,059	4,027	6,381	6,148	6,646	[illegible]
[illegible]	[illegible]	DEEPER BEDROCK	[illegible]																									521	519	233	109	107	108	103	[illegible]
[illegible]	[illegible]	SURFACE OF BEDROCK	[illegible]																									110,422	108,679	97,441	100,612	93,704	85,781	58,139	[illegible]
[illegible]	[illegible]	SURFACE OF BEDROCK	[illegible]																									28,786	25,906	20,475	13,852	16,329	19,318	4,229	[illegible]
[illegible]	[illegible] PROPERTY	SURFACE OF BEDROCK	[illegible]																															828	[illegible]
[illegible]	[illegible] PROPERTY	SURFACE OF BEDROCK	[illegible]																															102	[illegible]
[illegible]	[illegible] SITE	SURFACE OF BEDROCK	[illegible]																															557	[illegible]
[illegible]	[illegible]	SURFACE OF BEDROCK	[illegible]																															595	[illegible]
[illegible]	[illegible] PROPERTY	SURFACE OF BEDROCK	[illegible]																															102	[illegible]
[illegible]	[illegible] PROPERTY	SURFACE OF BEDROCK	[illegible]																															1,250	[illegible]
[illegible]	[illegible]	SURFACE OF BEDROCK	[illegible]																															2,731	[illegible]
[illegible]	[illegible] PROPERTY	SURFACE OF BEDROCK	[illegible]																															6,989	[illegible]
[illegible]	[illegible] PROPERTY	DEEPER BEDROCK	[illegible]																															8,088	[illegible]
[illegible]	[illegible]	DEEPER BEDROCK	[illegible]																															38,797	[illegible]
[illegible]	[illegible]	DEEPER BEDROCK	[illegible]																															14,185	[illegible]
[illegible]	[illegible]	DEEPER BEDROCK	[illegible]																															801	[illegible]
[illegible]	[illegible] PROPERTY	DEEPER BEDROCK	[illegible]																															143	[illegible]
[illegible]	[illegible] PROPERTY	DEEPER BEDROCK	[illegible]																															678	[illegible]
[illegible]	[illegible]	SHALLOW BEDROCK	[illegible]																															45,544	[illegible]
[illegible]	[illegible] PROPERTY	SHALLOW BEDROCK	[illegible]																															14,824	[illegible]
[illegible]	[illegible] PROPERTY	SHALLOW BEDROCK	[illegible]																															3,100	[illegible]
[illegible]	[illegible]	SHALLOW BEDROCK	[illegible]																															3,297	[illegible]
[illegible]	[illegible] PROPERTY		[illegible]									3,028										9,511					3,760				2,305				[illegible]
[illegible]	[illegible] PROPERTY		[illegible]									3,636										5,279				3,277	1,660				2,808				[illegible]
[illegible]	[illegible] PROPERTY		[illegible]									5,037										2,423				1,363	823				2,801				[illegible]
[illegible]	[illegible] PROPERTY		[illegible]									3,581										2,984				1,437	1,703				1,917				[illegible]
[illegible]	[illegible] PROPERTY		[illegible]									3,283										1,427				1,895	891				1,339				[illegible]
[illegible]	[illegible] ROAD		[illegible]	1,911	1,884	1,872	1,915	1,895	1,902	1,900	1,826	2,061								1,626						1,806			1,388		1,370				[illegible]
[illegible]	[illegible] LAKE ROAD		[illegible]		354	389			392											372						336					311				[illegible]
[illegible]	[illegible] LAKE ROAD		[illegible]	430	306	331	307	411	437	423		481								366						186					358				[illegible]
[illegible]	[illegible]		[illegible]				3.0	2.0	4.0	2.0	3.0	2.0								4.0						3.8					3.0				[illegible]
[illegible]	171 SAWMILL ROAD		[illegible]				13		18			15								14						14					18				[illegible]
[illegible]	[illegible]		[illegible]									77								67						69					70				[illegible]
[illegible]	[illegible]		[illegible]		123															90						67					38				[illegible]
[illegible]	[illegible] ROAD		[illegible]																		260					294					294				[illegible]
[illegible]	[illegible] ROAD		[illegible]																			455				268					269				[illegible]
[illegible]	[illegible] ROAD		[illegible]																			7.0				3.8					2.0				[illegible]
[illegible]	[illegible]		[illegible]																		1,264					979			1,289	1,515	1,022	1,128	848	885	[illegible]
[illegible]	[illegible]		[illegible]																		2,145					1,849					2,222				[illegible]
[illegible]	[illegible]		[illegible]																			10				0.0					0.0				[illegible]

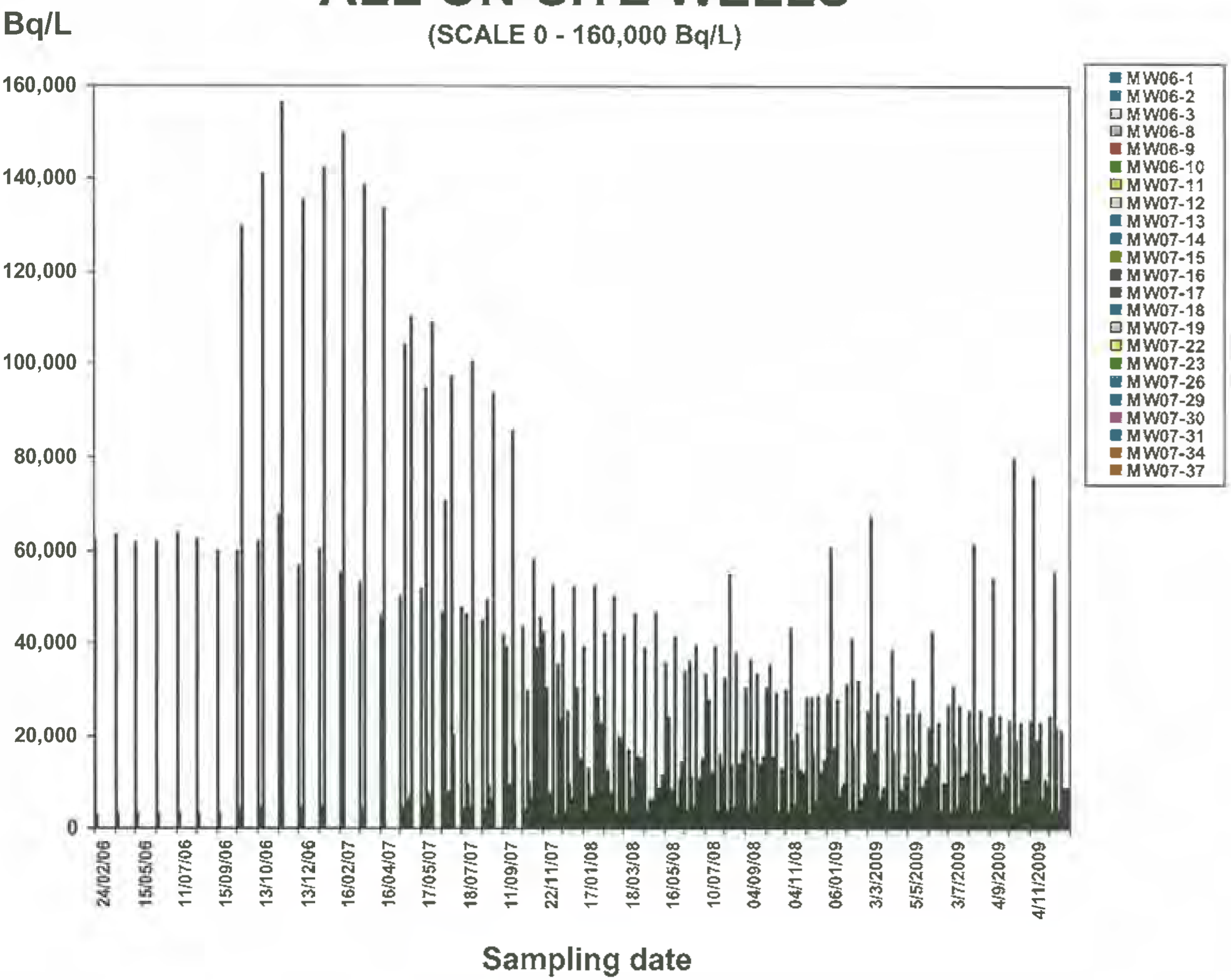
MONITORING RESULTS ALL WELLS

(SCALE 0 – 160,000 Bq/L)

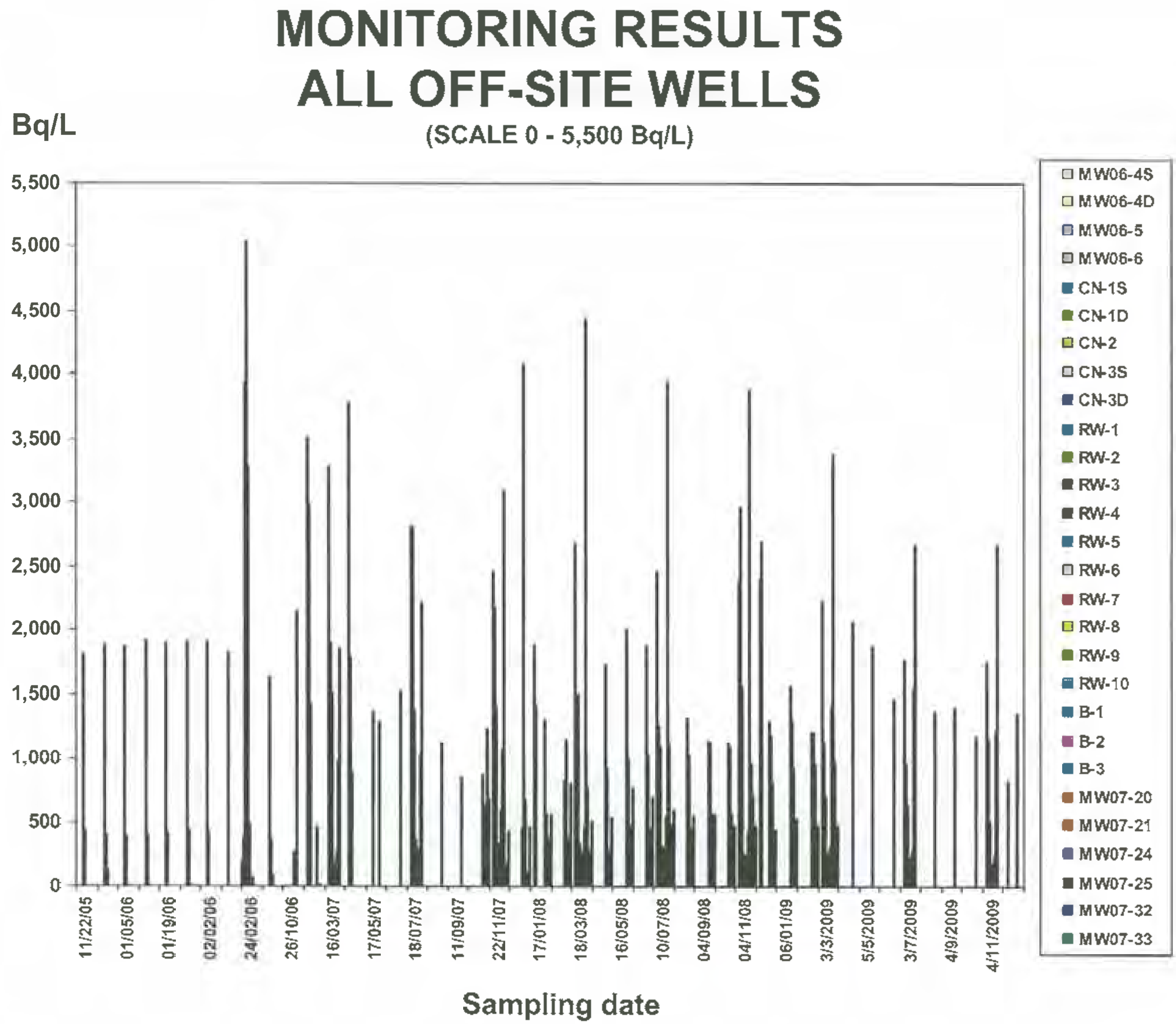


APPENDIX H

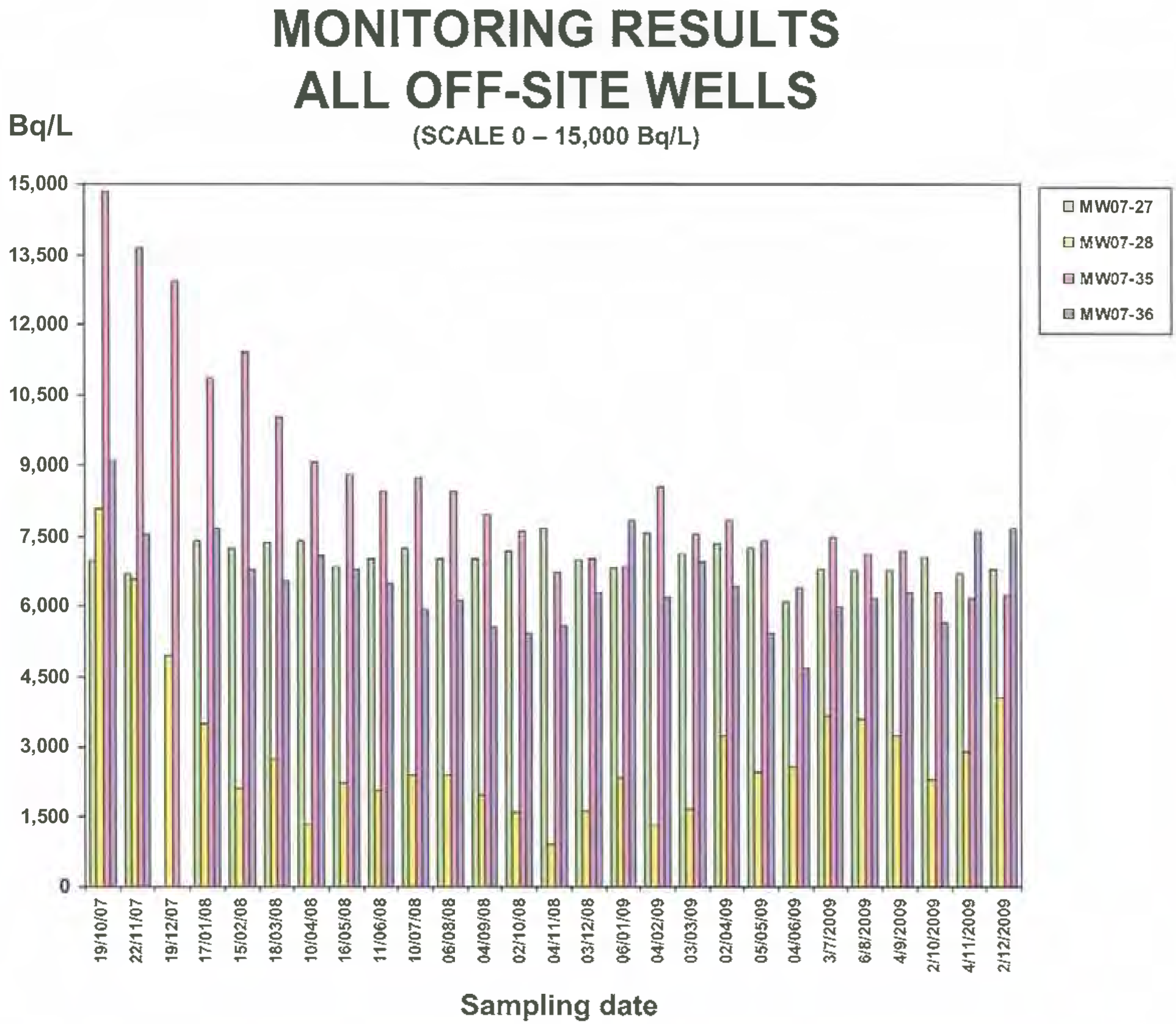
MONITORING RESULTS
ALL ON-SITE WELLS

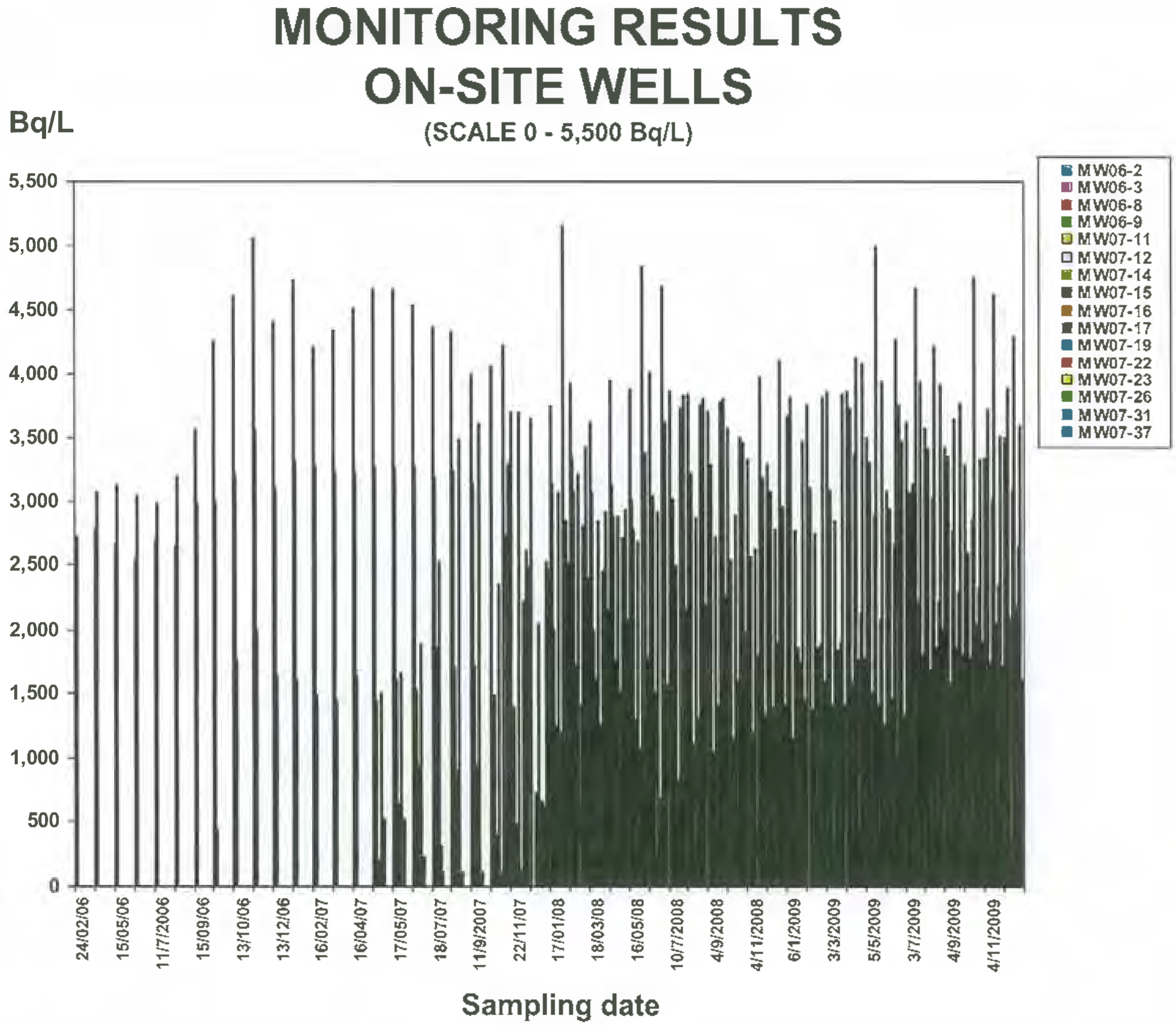


APPENDIX H


MONITORING RESULTS
ALL OFF-SITE WELLS
(SCALE 0 - 5,500 Bq/L)
Bq/L
5,500
5,000
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
11/22/05
01/05/06
01/19/06
02/02/06
24/02/06
26/10/06
16/03/07
17/05/07
18/07/07
11/09/07
22/11/07
17/01/08
18/03/08
16/05/08
10/07/08
04/09/08
04/11/08
06/01/09
3/3/2009
5/5/2009
3/7/2009
4/9/2009
4/11/2009
Sampling date
MW06-4S
MW06-4D
MW06-5
MW06-6
CN-1S
CN-1D
CN-2
CN-3S
CN-3D
RW-1
RW-2
RW-3
RW-4
RW-5
RW-6
RW-7
RW-8
RW-9
RW-10
B-1
B-2
B-3
MW07-20
MW07-21
MW07-24
MW07-25
MW07-32
MW07-33

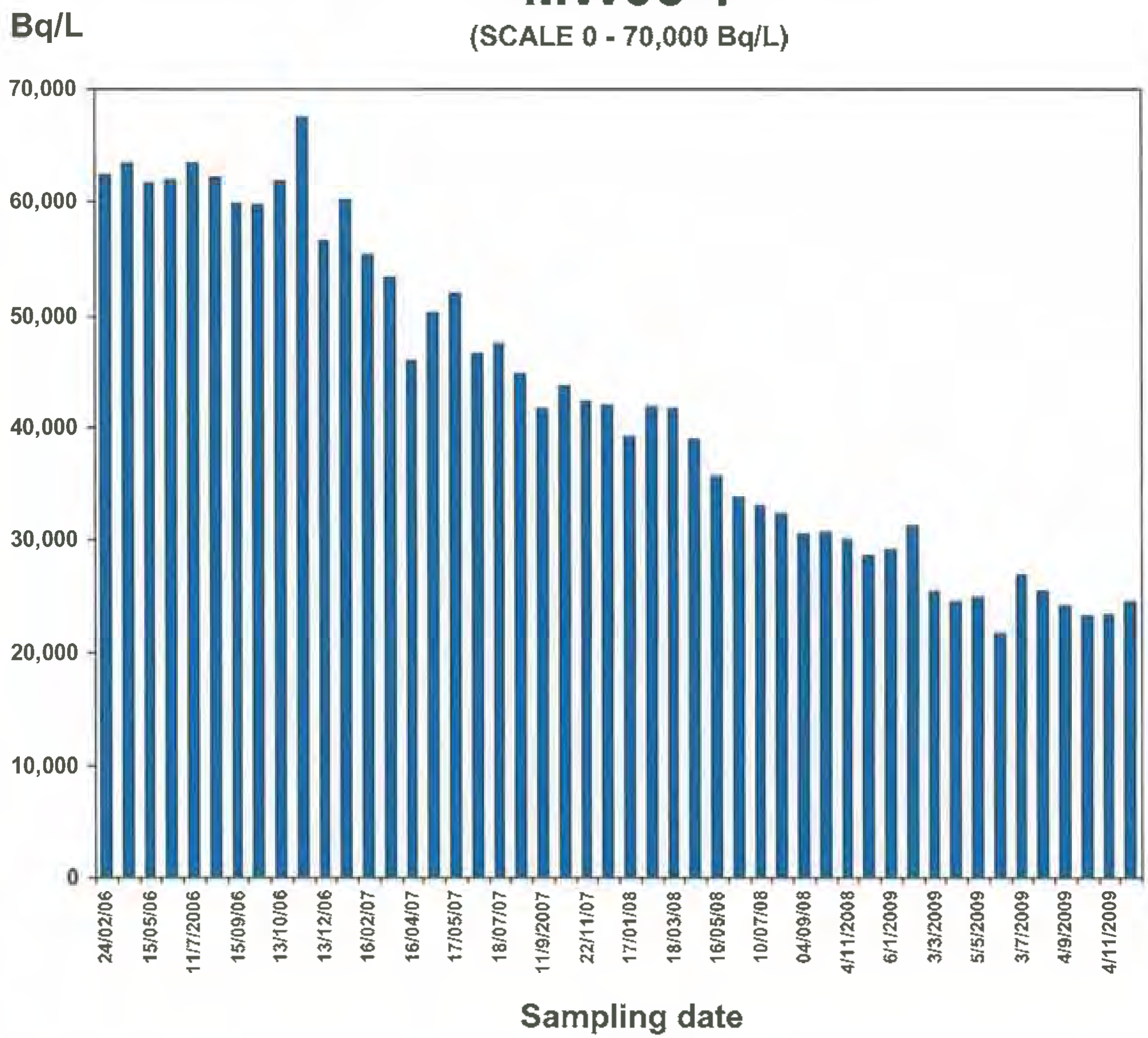
APPENDIX H


MONITORING RESULTS
ALL OFF-SITE WELLS
(SCALE 0 – 15,000 Bq/L)
Bq/L
15,000
13,500
12,000
10,500
9,000
7,500
6,000
4,500
3,000
1,500
0
MW07-27
MW07-28
MW07-35
MW07-36
19/10/07
22/11/07
19/12/07
17/01/08
15/02/08
18/03/08
10/04/08
16/05/08
11/06/08
10/07/08
06/08/08
04/09/08
02/10/08
04/11/08
03/12/08
06/01/09
04/02/09
03/03/09
02/04/09
05/05/09
04/06/09
3/7/2009
6/8/2009
4/9/2009
2/10/2009
4/11/2009
2/12/2009
Sampling date

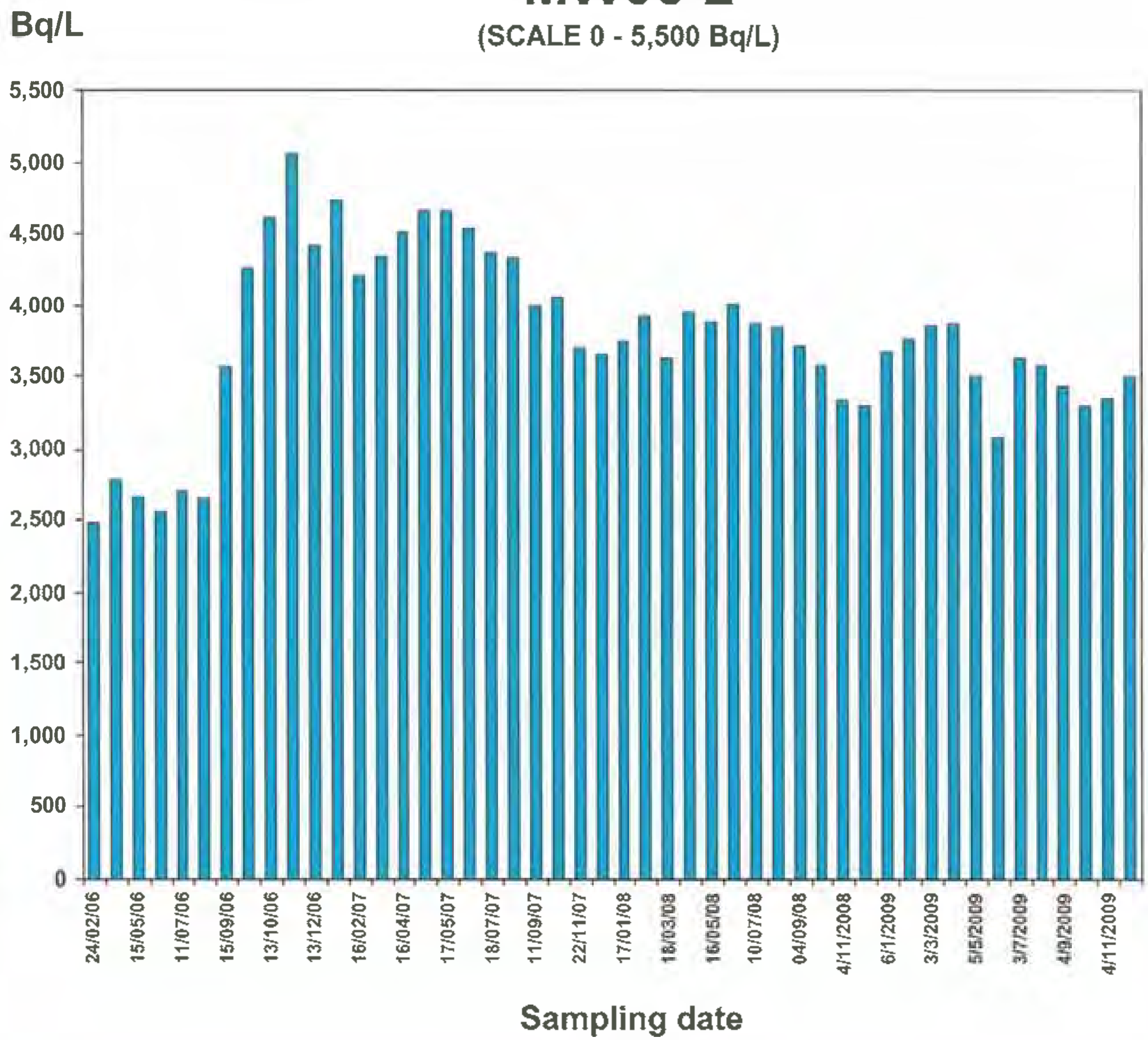

MONITORING RESULTS
ON-SITE WELLS
(SCALE 0 - 5,500 Bq/L)
Bq/L
5,500
5,000
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
24/02/06
15/05/06
11/7/2006
15/09/06
13/10/06
13/12/06
16/02/07
16/04/07
17/05/07
18/07/07
11/9/2007
22/11/07
17/01/08
18/03/08
16/05/08
10/7/2008
4/9/2008
4/11/2008
6/1/2009
3/3/2009
5/5/2009
3/7/2009
4/9/2009
4/11/2009
Sampling date
MW06-2
MW06-3
MW06-8
MW06-9
MW07-11
MW07-12
MW07-14
MW07-15
MW07-16
MW07-17
MW07-19
MW07-22
MW07-23
MW07-26
MW07-31
MW07-37

MONITORING RESULTS
MW06-1

(SCALE 0 - 70,000 Bq/L)



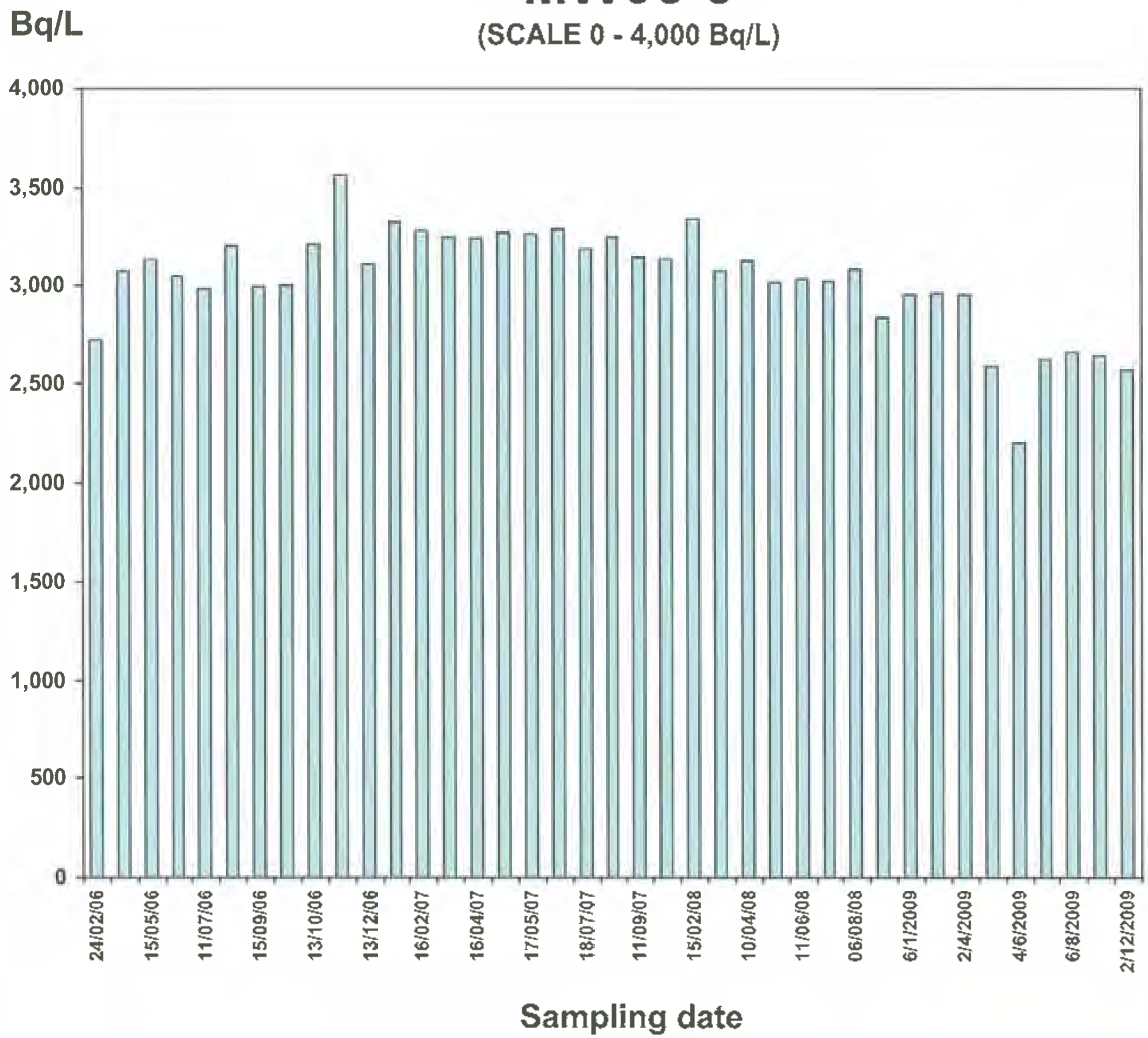
MONITORING RESULTS
MW06-2
(SCALE 0 - 5,500 Bq/L)



APPENDIX H

MONITORING RESULTS
MW06-3

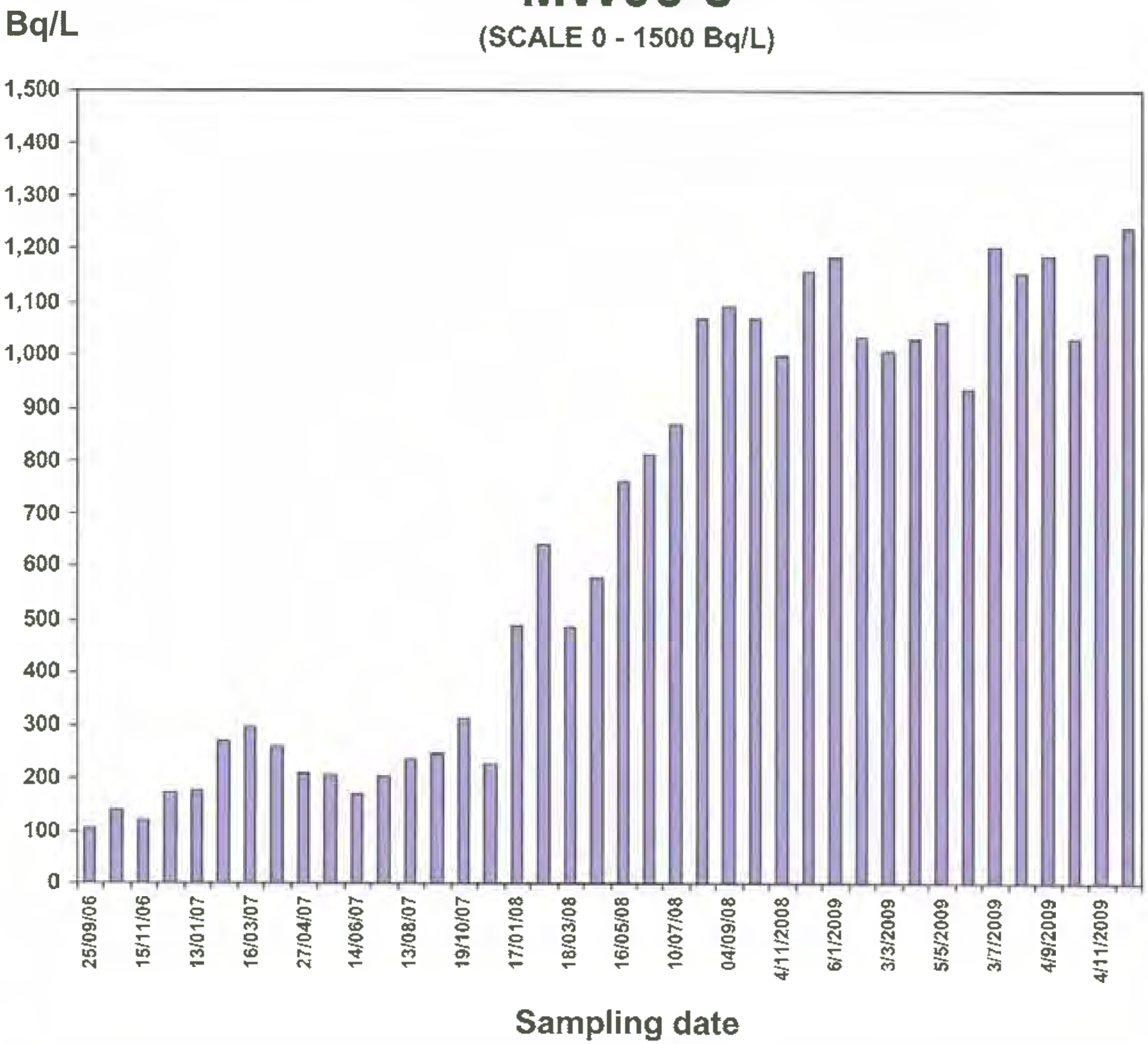
(SCALE 0 - 4,000 Bq/L)



APPENDIX H

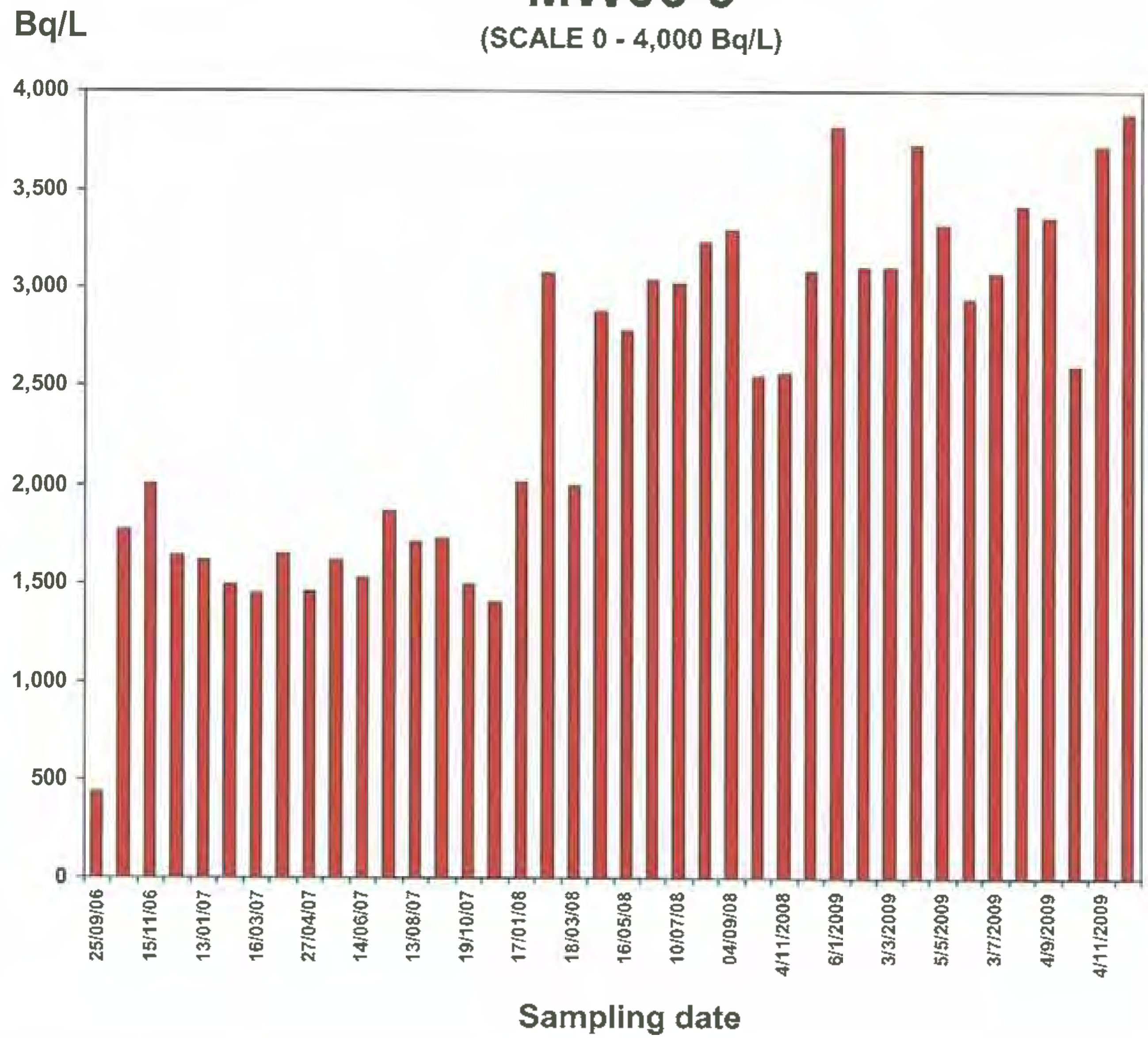
MONITORING RESULTS
MW06-8

(SCALE 0 - 1500 Bq/L)



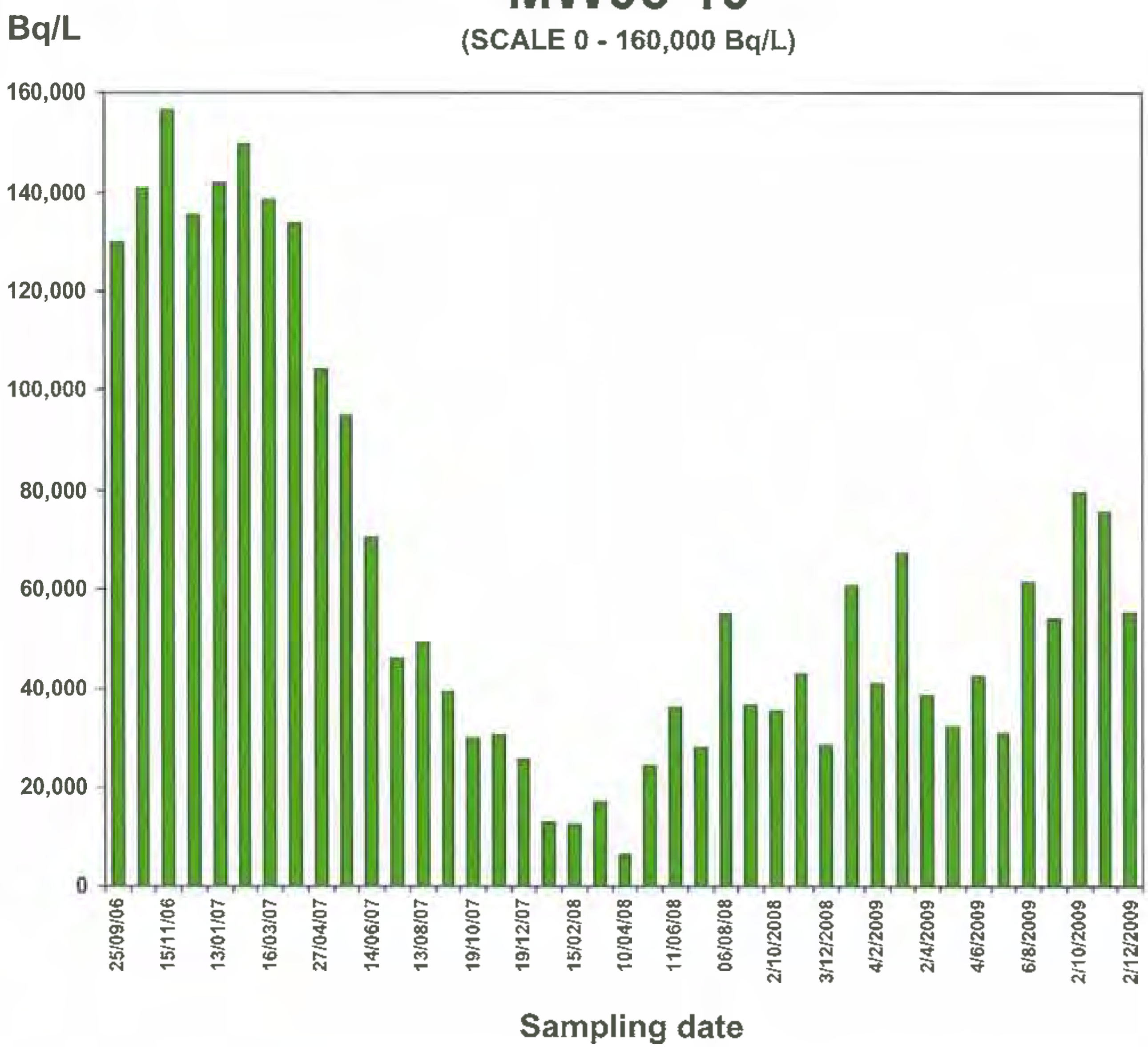
APPENDIX H

MONITORING RESULTS
MW06-9



APPENDIX H

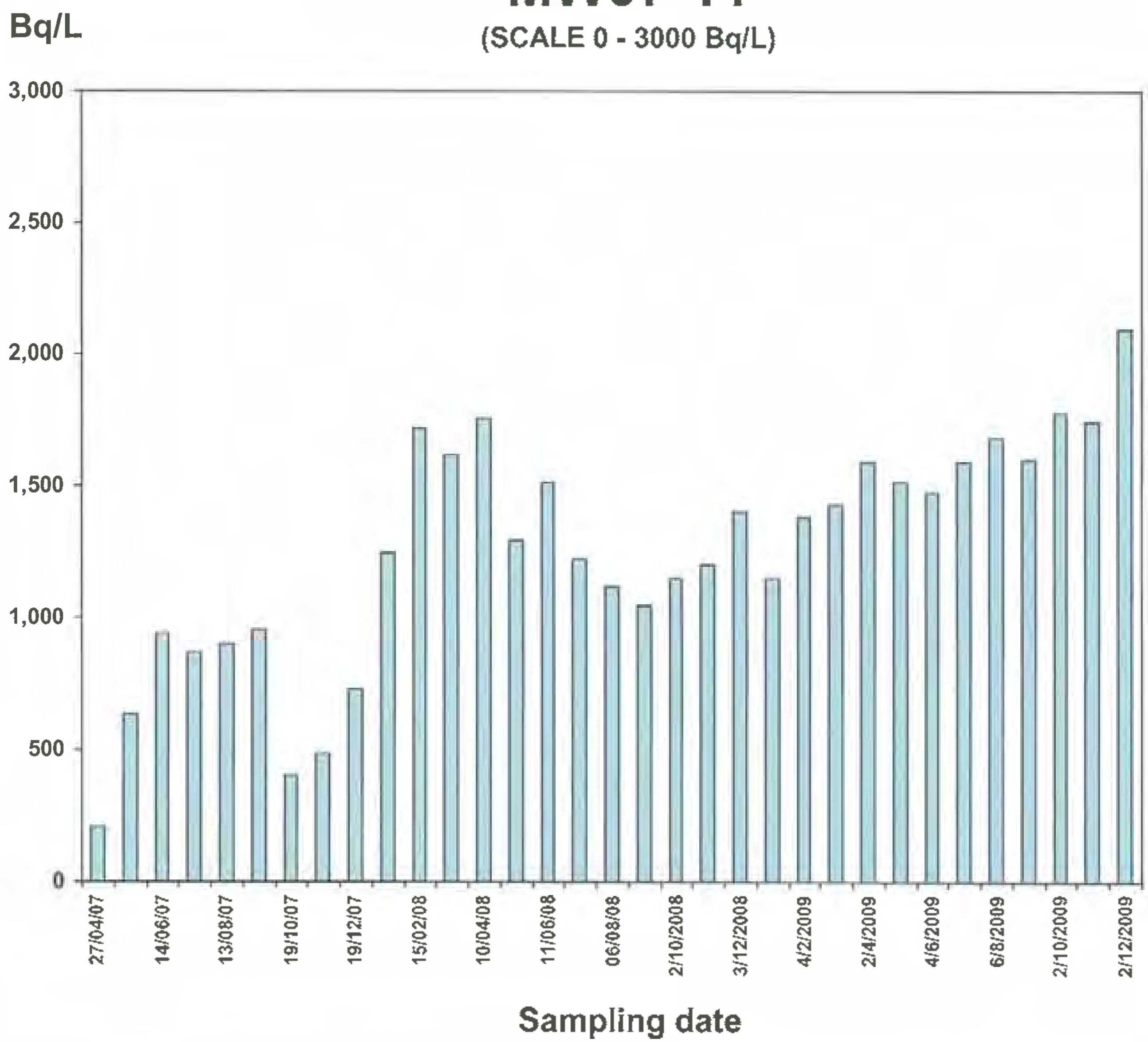
MONITORING RESULTS
MW06-10
(SCALE 0 - 160,000 Bq/L)



APPENDIX H

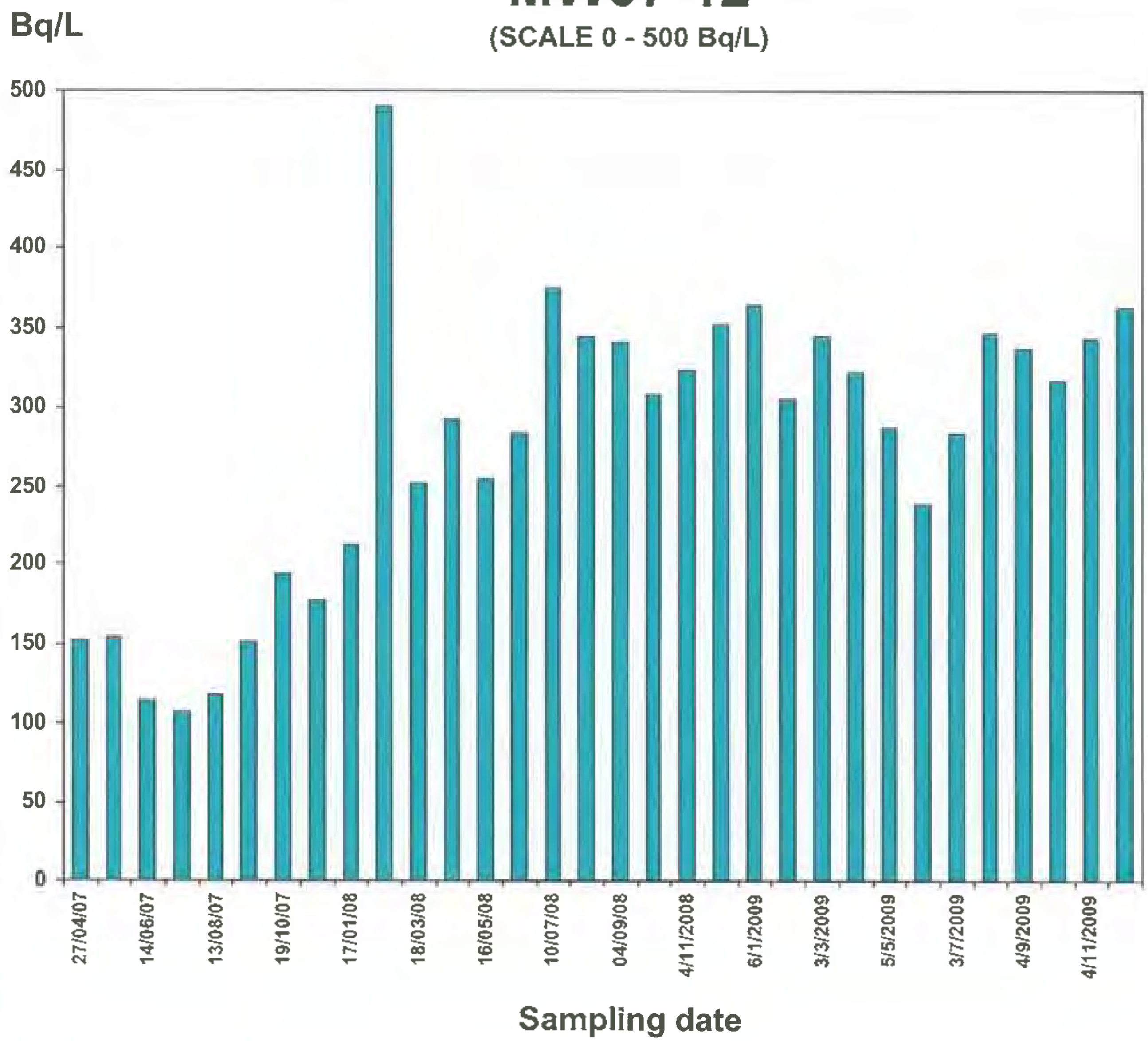
MONITORING RESULTS
MW07-11

(SCALE 0 - 3000 Bq/L)



APPENDIX H

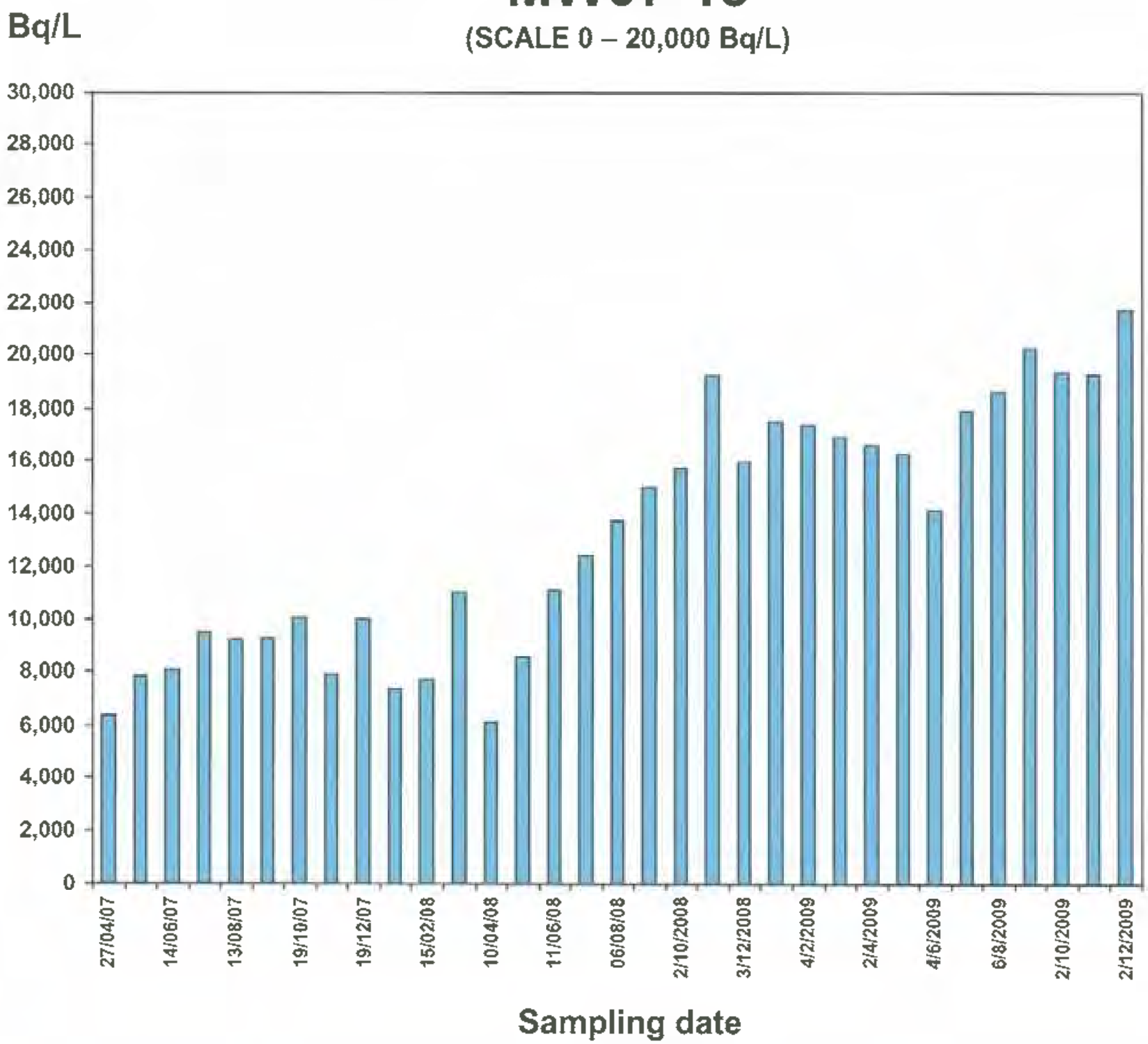
MONITORING RESULTS
MW07-12
(SCALE 0 - 500 Bq/L)



APPENDIX H

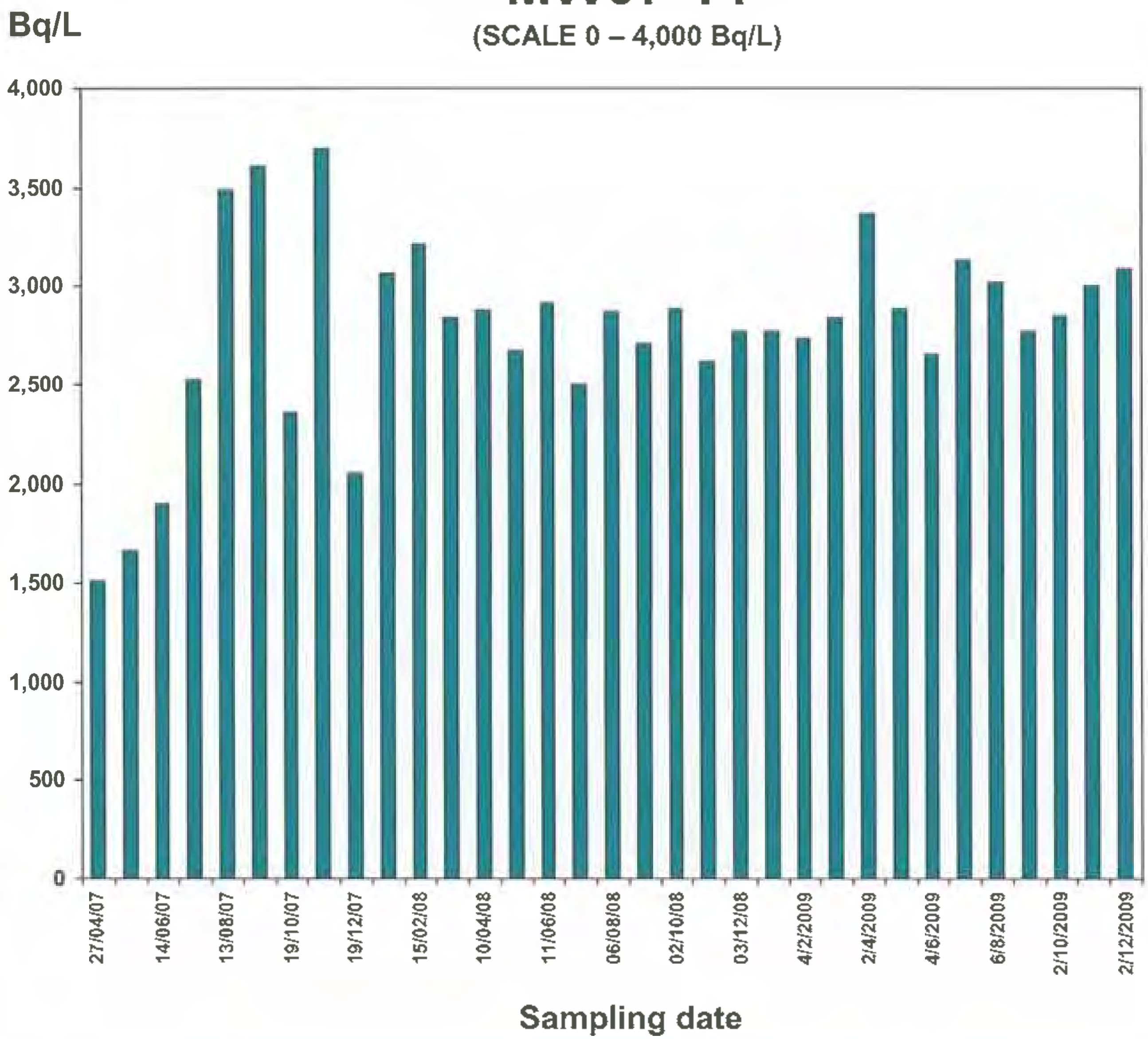
MONITORING RESULTS
MW07-13

(SCALE 0 – 20,000 Bq/L)

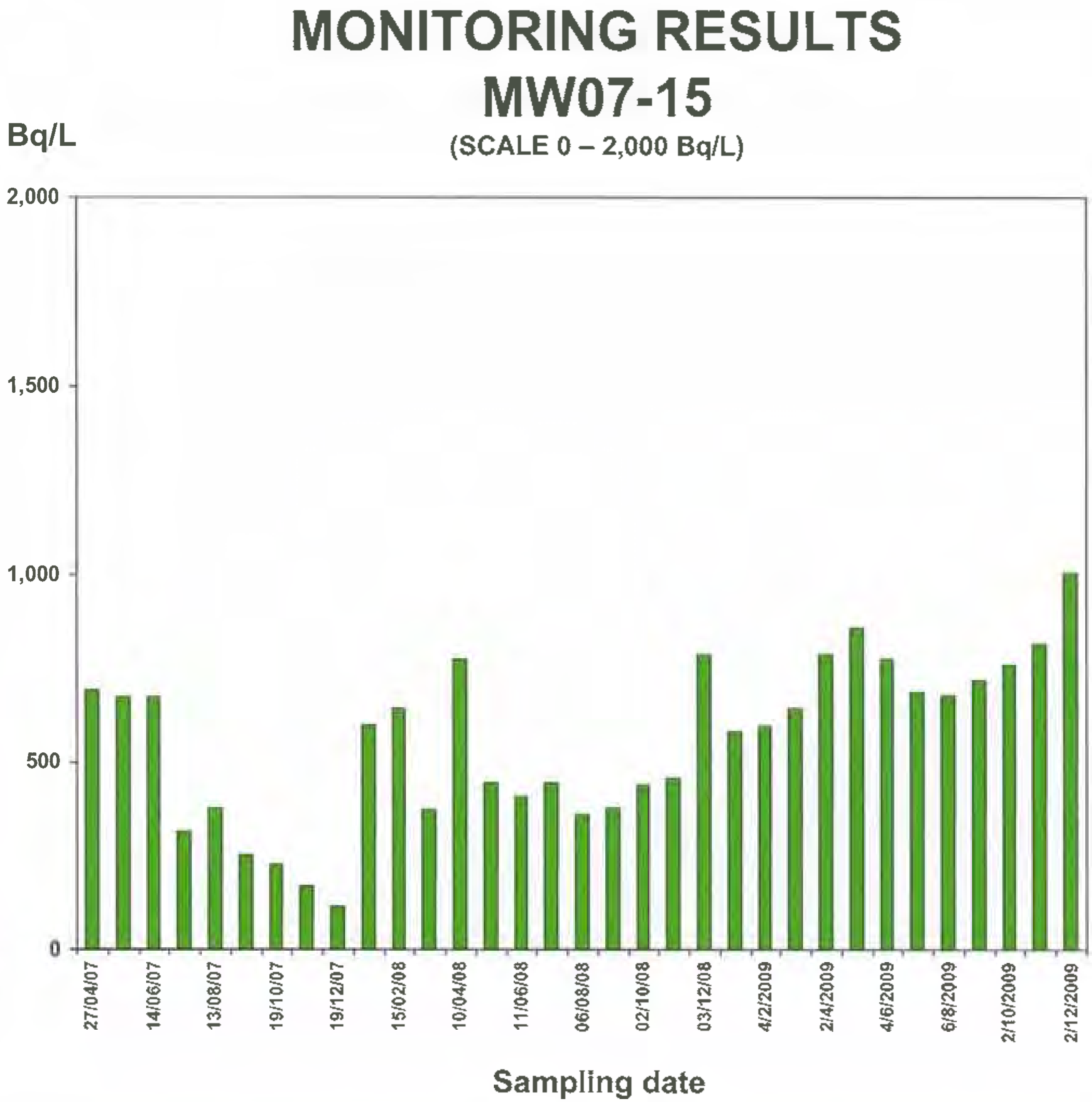


MONITORING RESULTS
MW07-14

(SCALE 0 – 4,000 Bq/L)

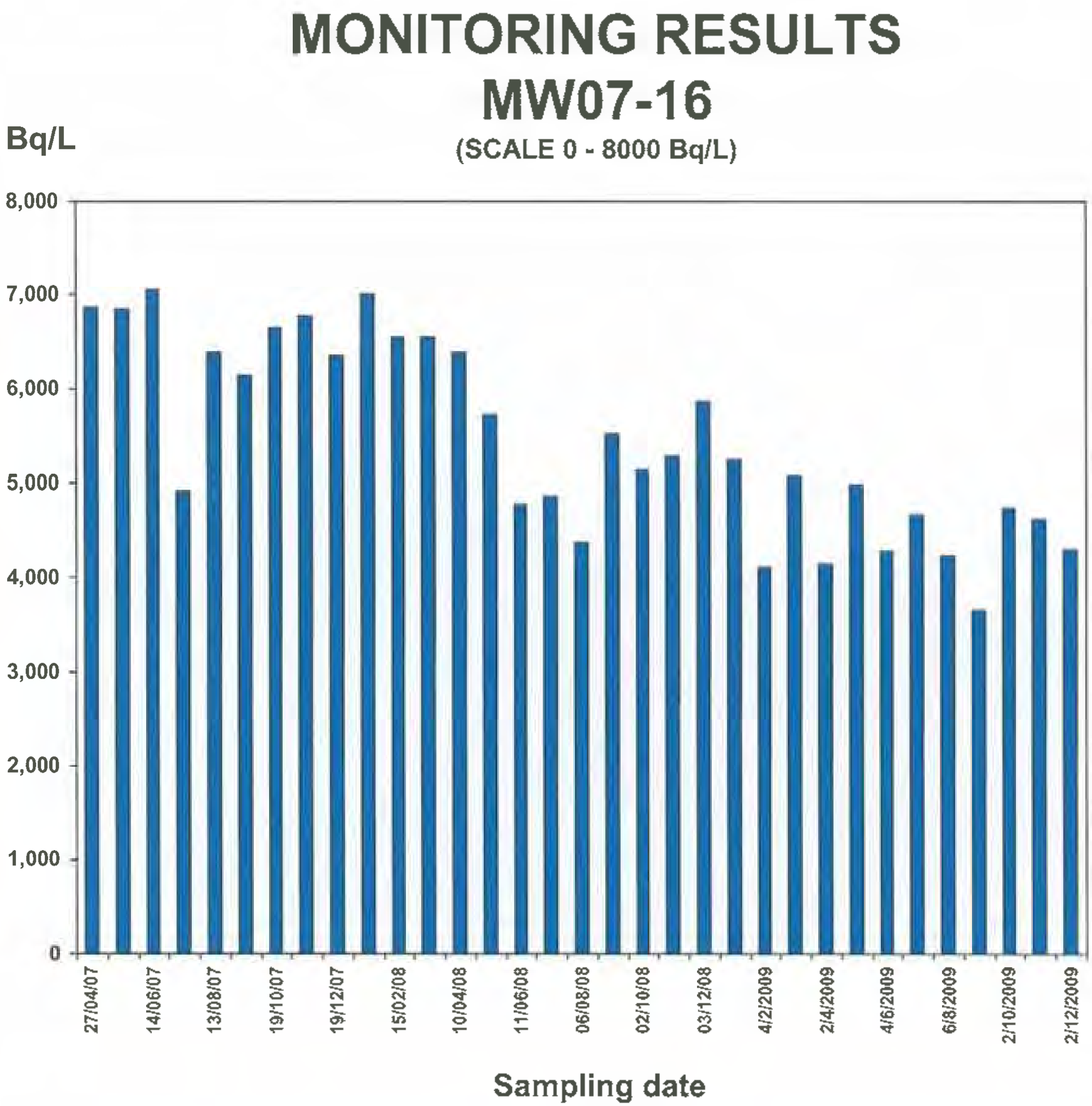


APPENDIX H



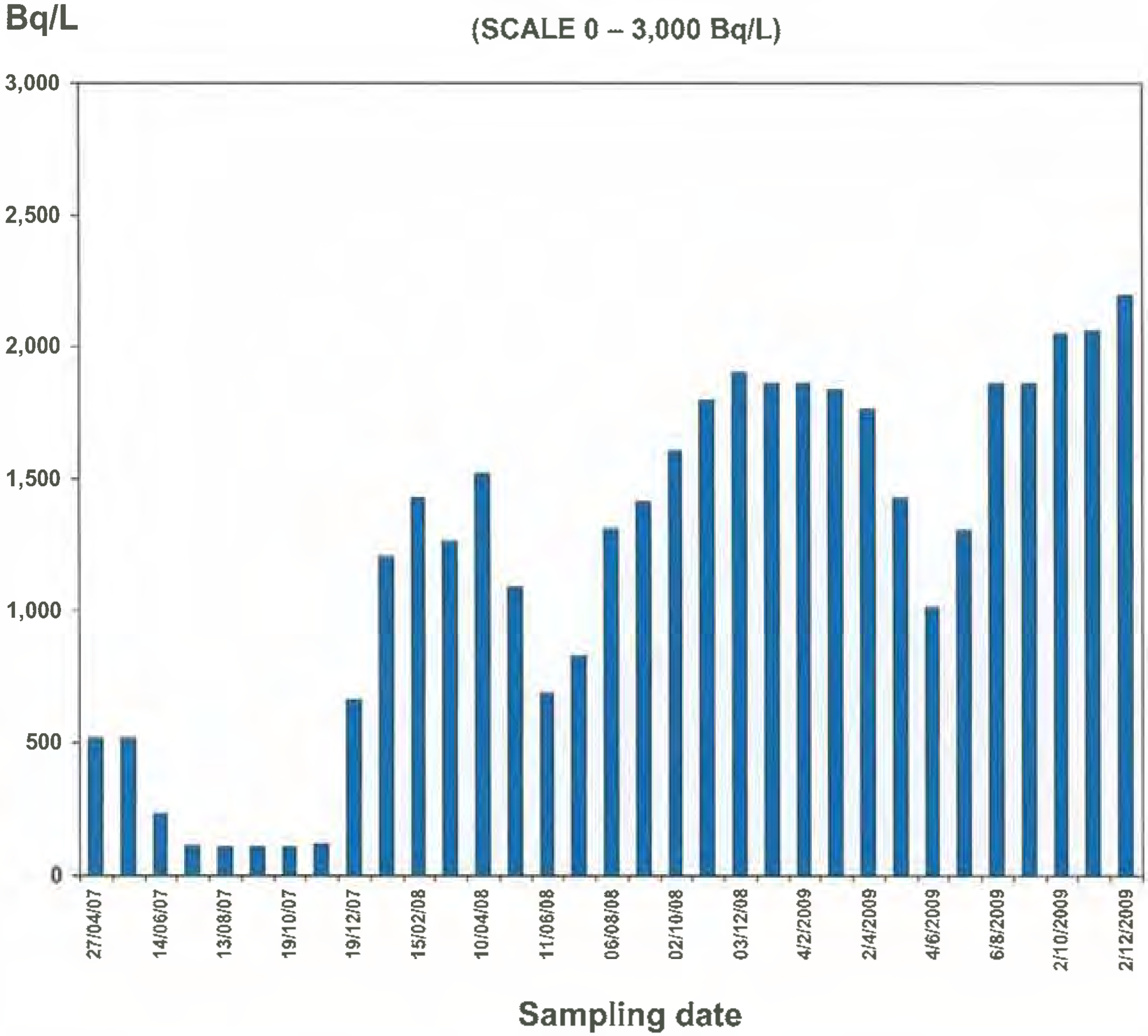
MONITORING RESULTS
MW07-15
(SCALE 0 – 2,000 Bq/L)
Bq/L
2,000
1,500
1,000
500
0
27/04/07
14/06/07
13/08/07
19/10/07
19/12/07
15/02/08
10/04/08
11/06/08
06/08/08
02/10/08
03/12/08
4/2/2009
2/4/2009
4/6/2009
6/8/2009
2/10/2009
2/12/2009
Sampling date

APPENDIX H

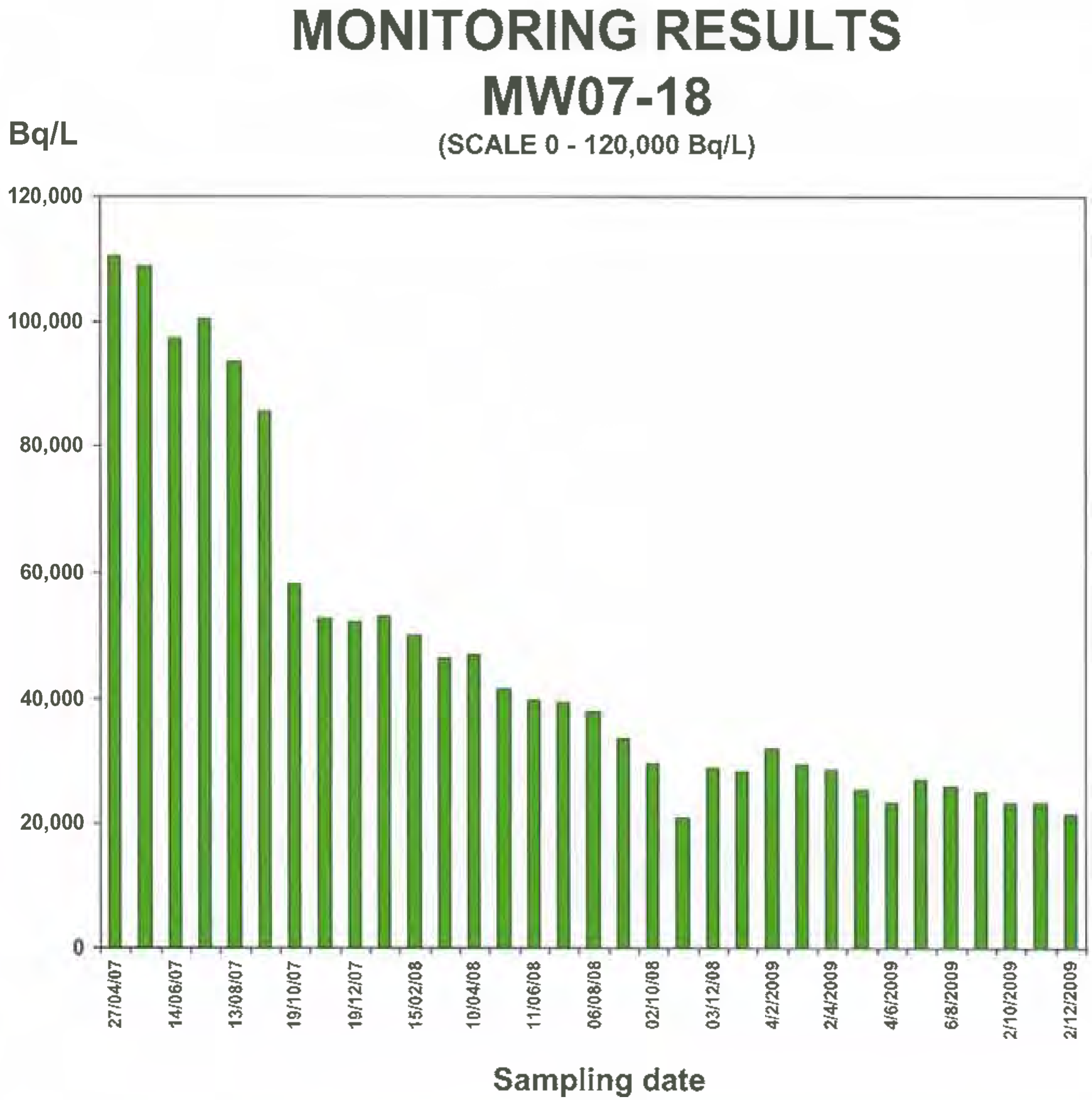

MONITORING RESULTS
MW07-16
(SCALE 0 - 8000 Bq/L)
Bq/L
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
27/04/07
14/06/07
13/08/07
19/10/07
19/12/07
15/02/08
10/04/08
11/06/08
06/08/08
02/10/08
03/12/08
4/2/2009
2/4/2009
4/6/2009
6/8/2009
2/10/2009
2/12/2009
Sampling date

APPENDIX H

MONITORING RESULTS
MW07-17



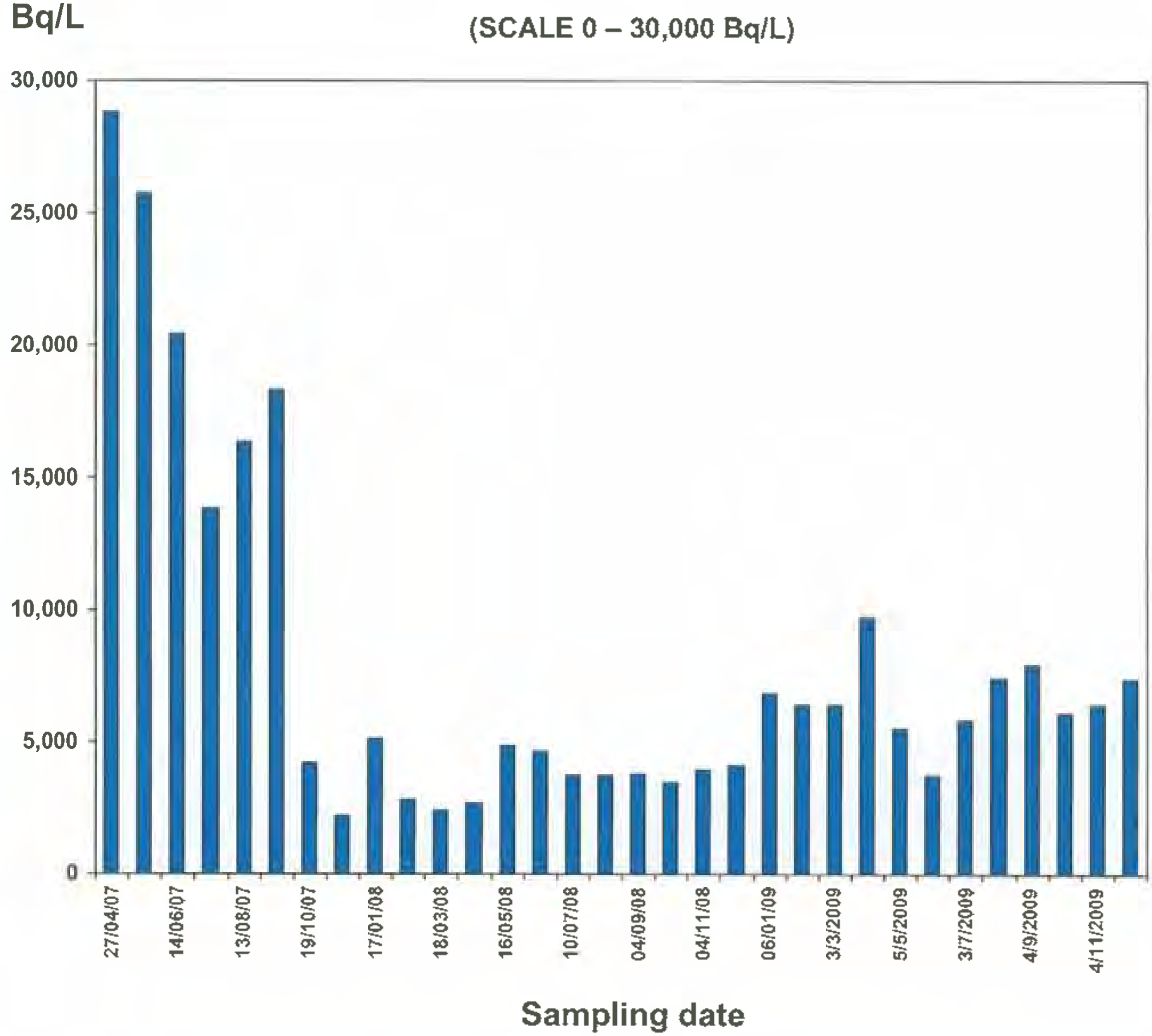
APPENDIX H



MONITORING RESULTS
MW07-18
(SCALE 0 - 120,000 Bq/L)
Bq/L
120,000
100,000
80,000
60,000
40,000
20,000
0
27/04/07
14/06/07
13/08/07
19/10/07
19/12/07
15/02/08
10/04/08
11/06/08
06/08/08
02/10/08
03/12/08
4/2/2009
2/4/2009
4/6/2009
6/8/2009
2/10/2009
2/12/2009
Sampling date

APPENDIX H

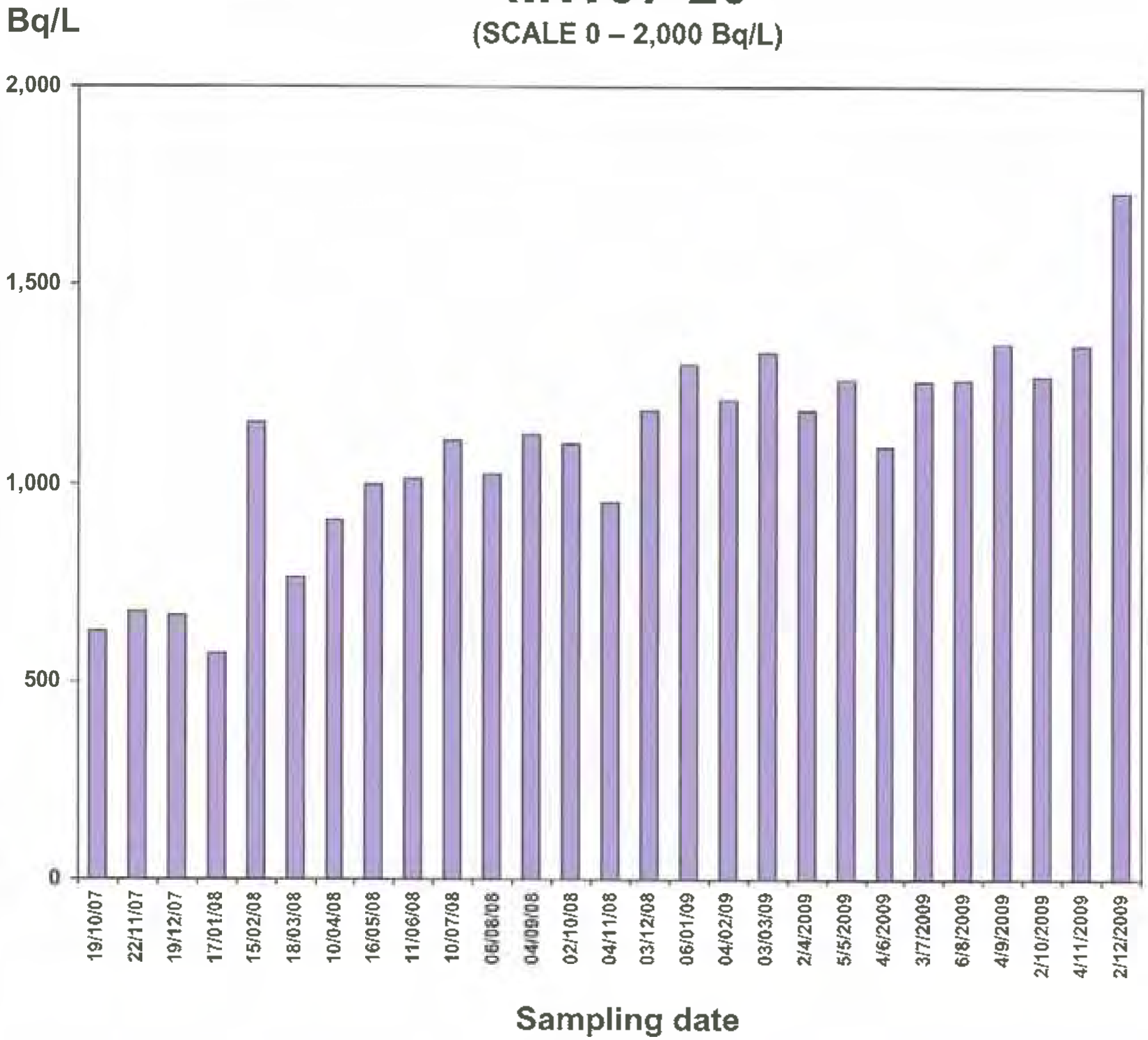
MONITORING RESULTS
MW07-19



APPENDIX H

MONITORING RESULTS
MW07-20

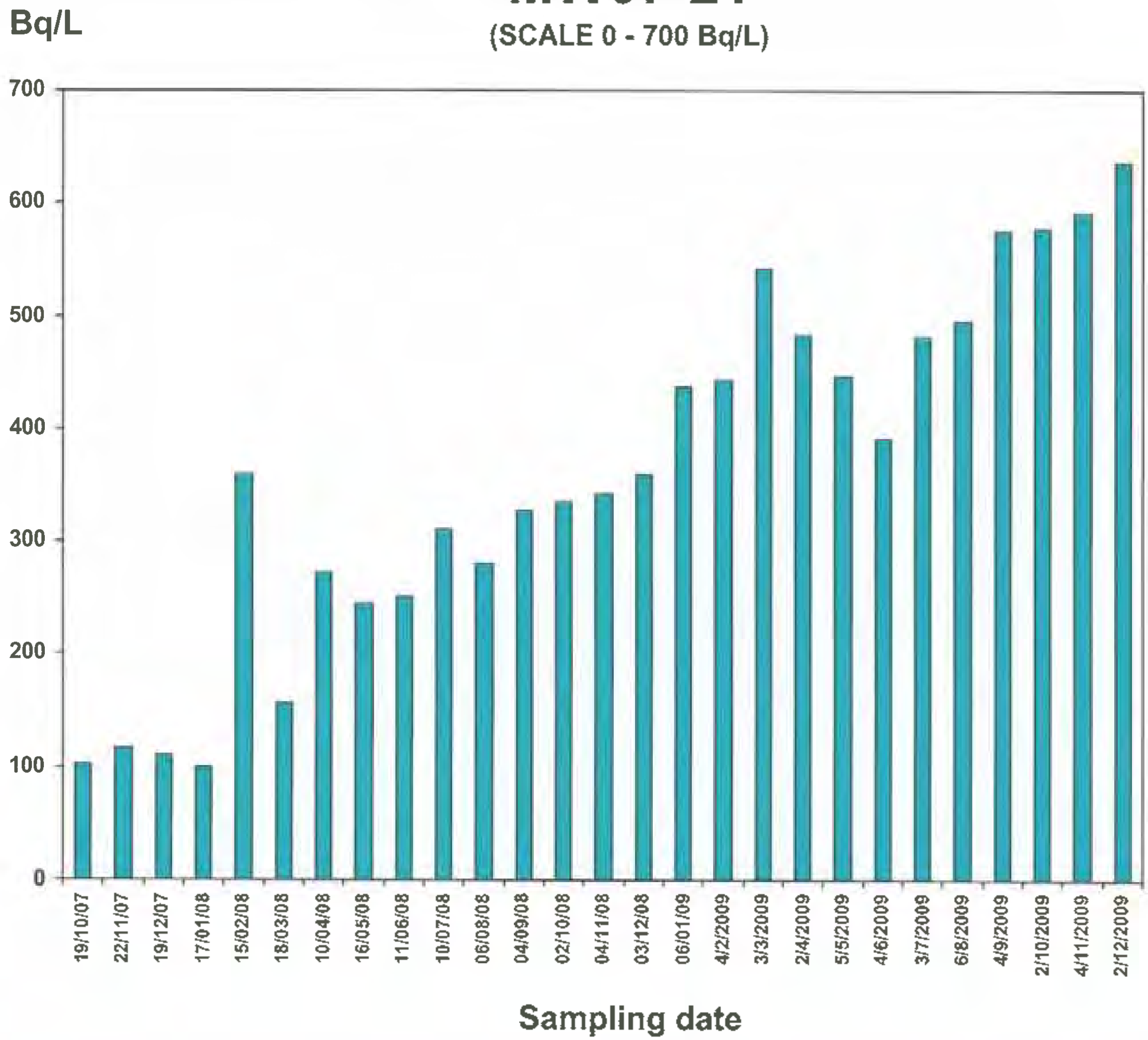
(SCALE 0 – 2,000 Bq/L)



APPENDIX H

MONITORING RESULTS
MW07-21

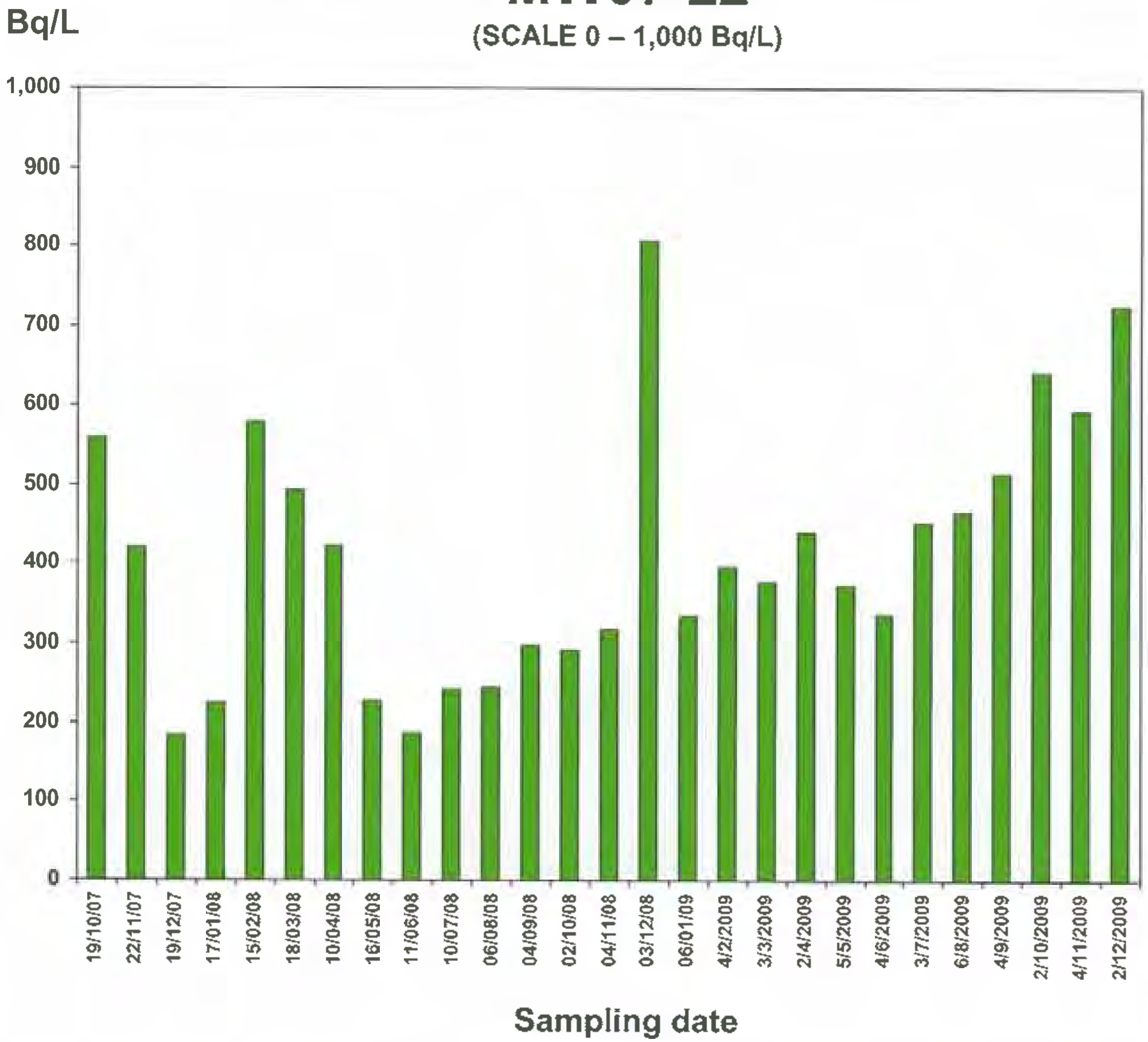
(SCALE 0 - 700 Bq/L)



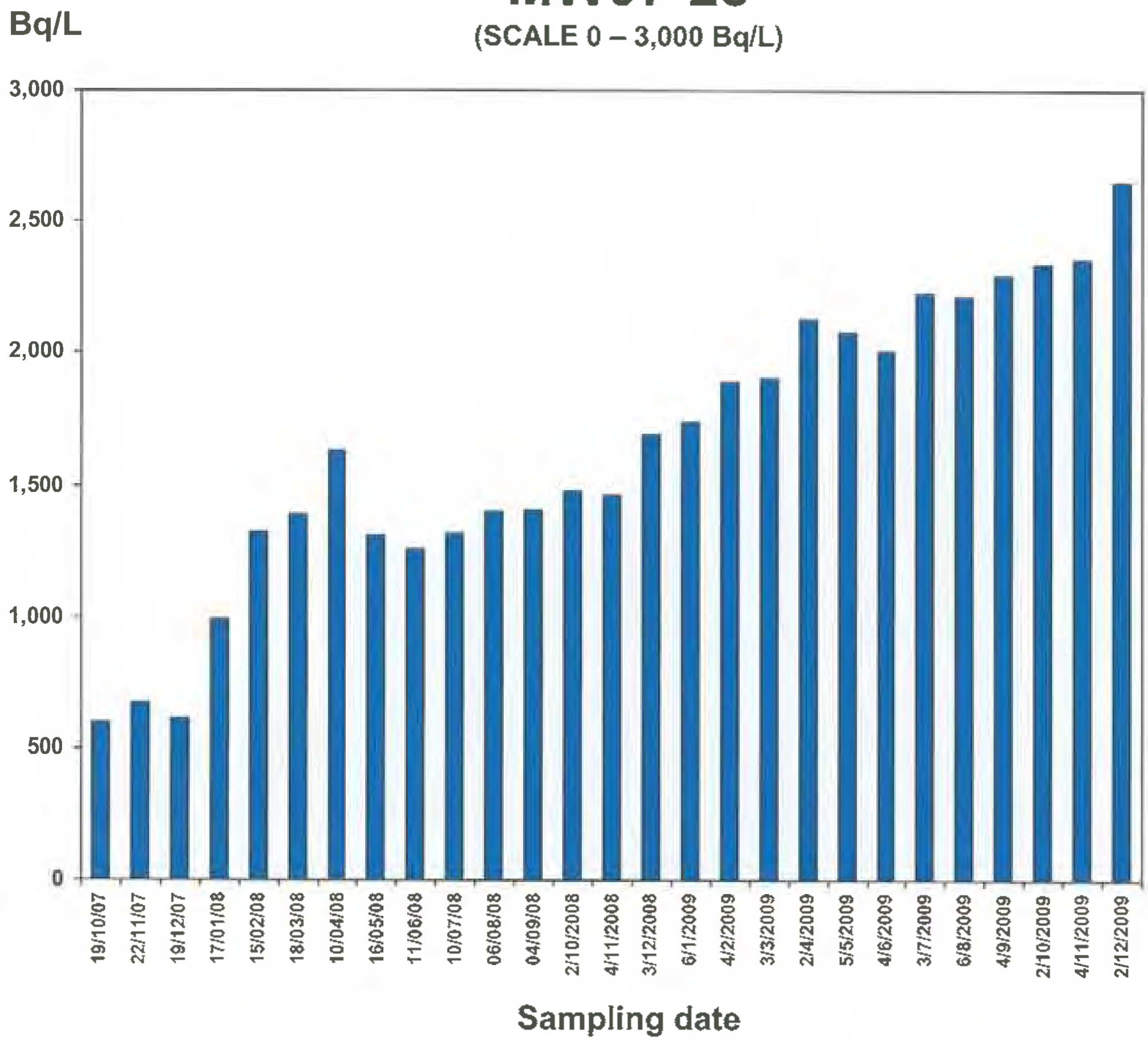
APPENDIX H

MONITORING RESULTS
MW07-22

(SCALE 0 – 1,000 Bq/L)



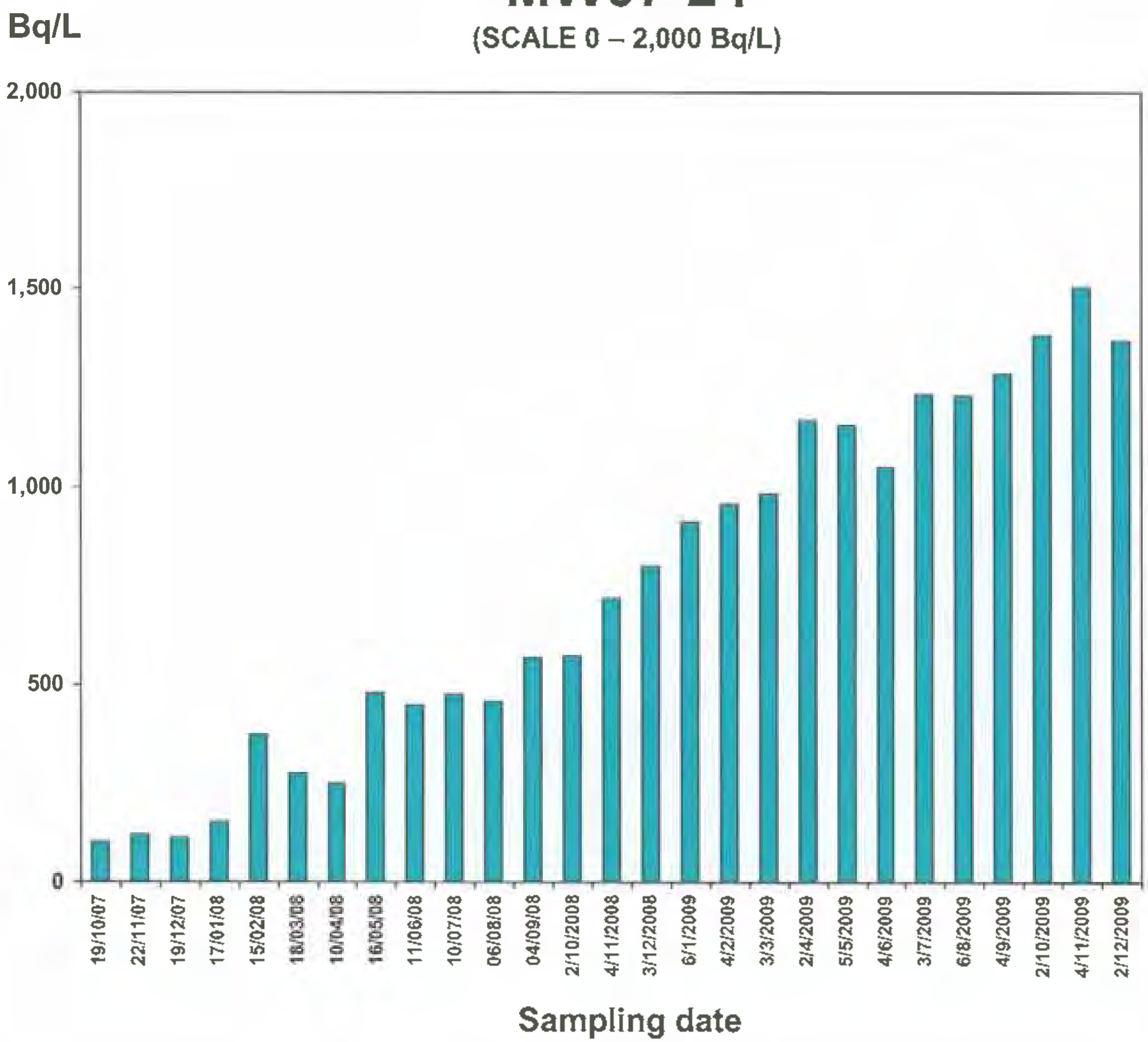
MONITORING RESULTS
MW07-23
(SCALE 0 – 3,000 Bq/L)



APPENDIX H

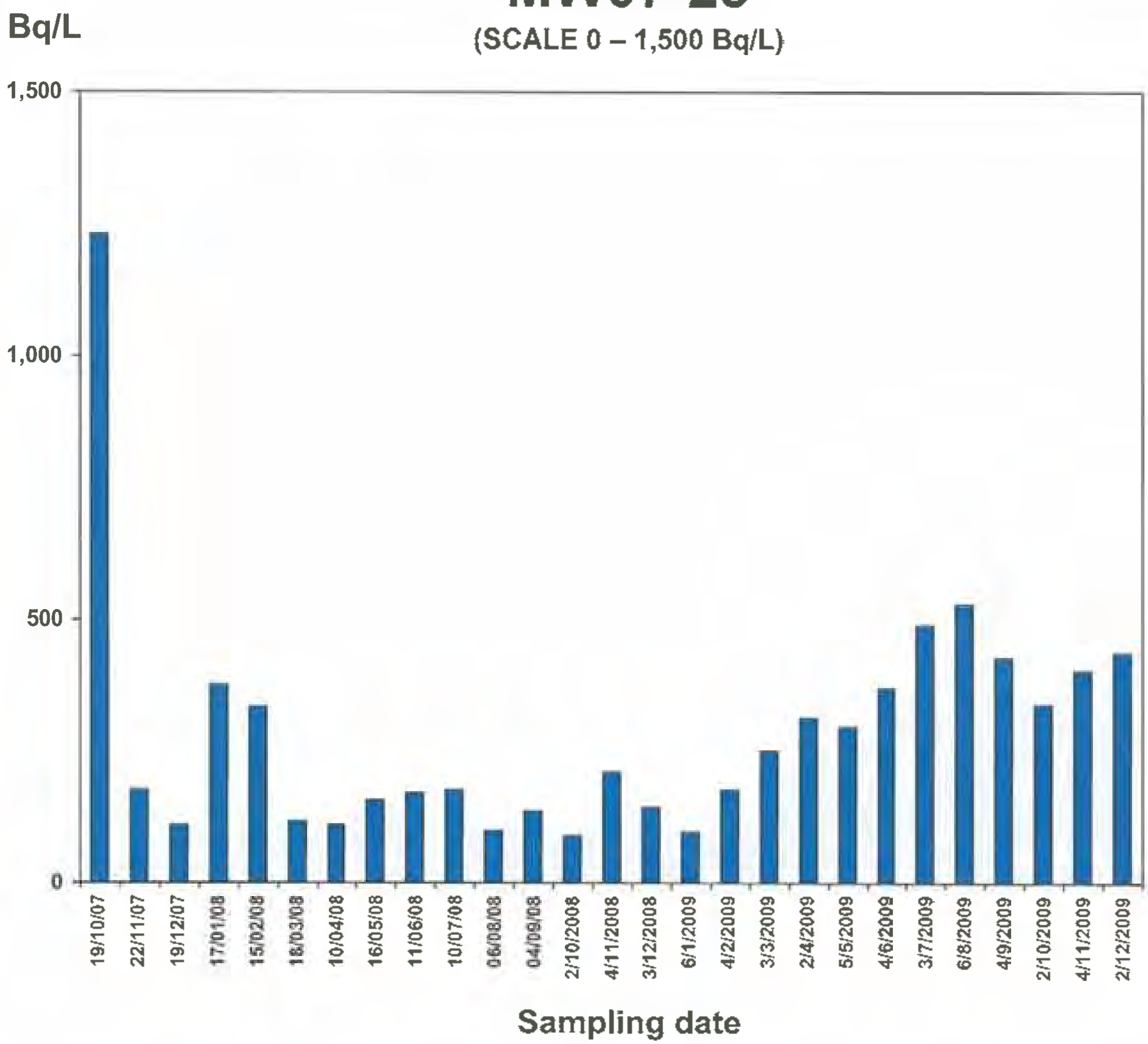
MONITORING RESULTS
MW07-24

(SCALE 0 – 2,000 Bq/L)

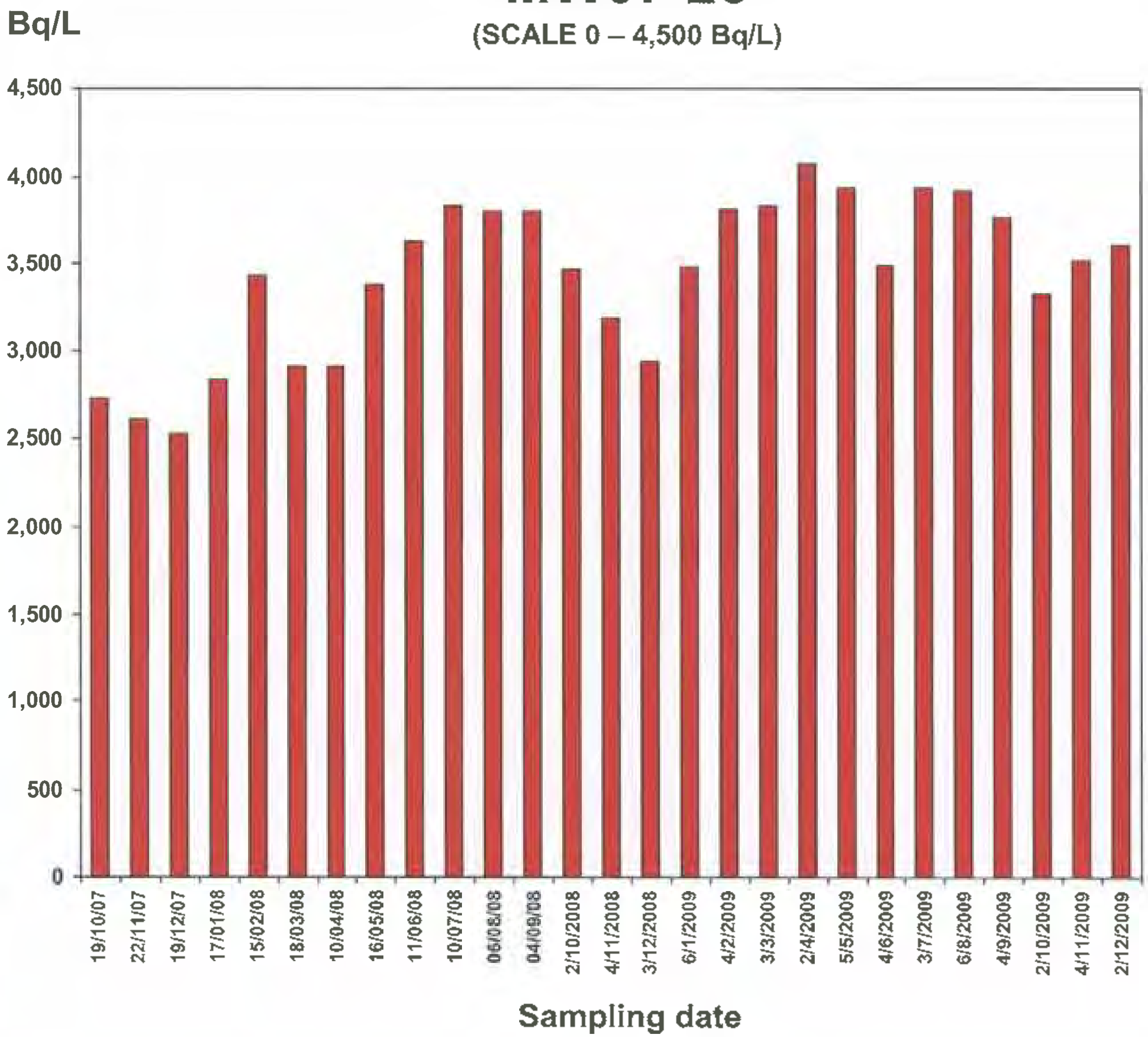


MONITORING RESULTS
MW07-25

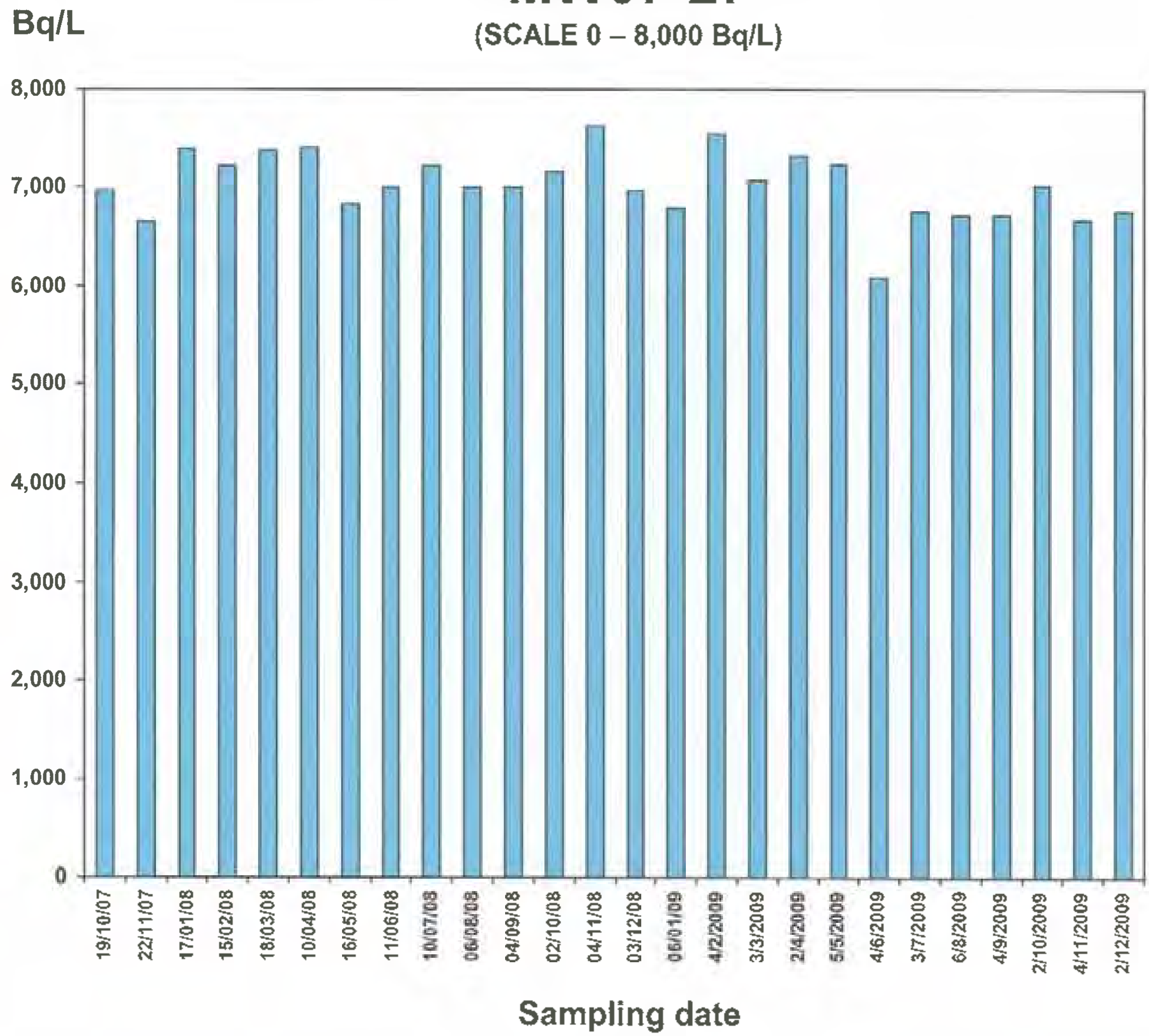
(SCALE 0 – 1,500 Bq/L)



MONITORING RESULTS
MW07-26
(SCALE 0 – 4,500 Bq/L)

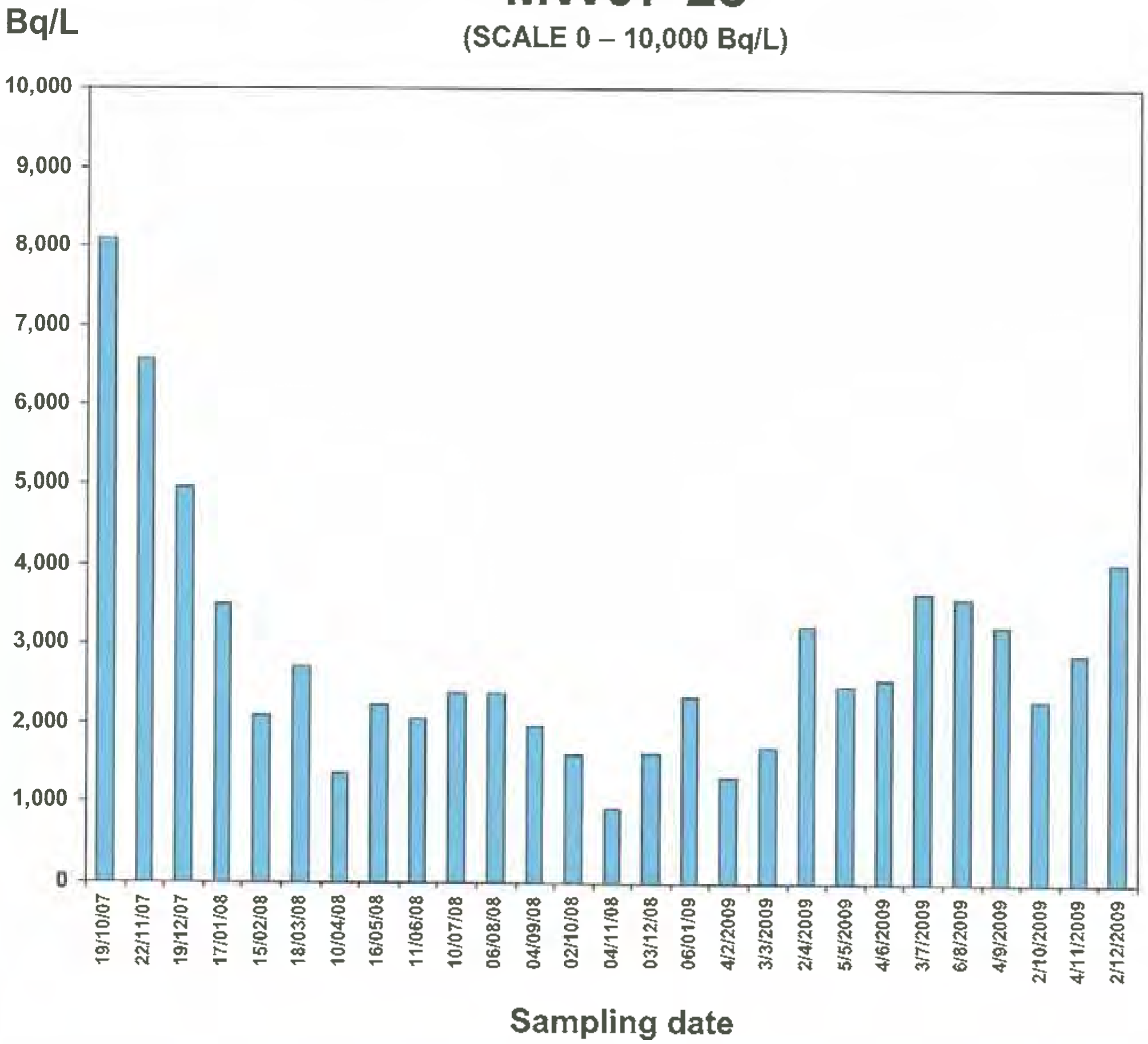


MONITORING RESULTS
MW07-27

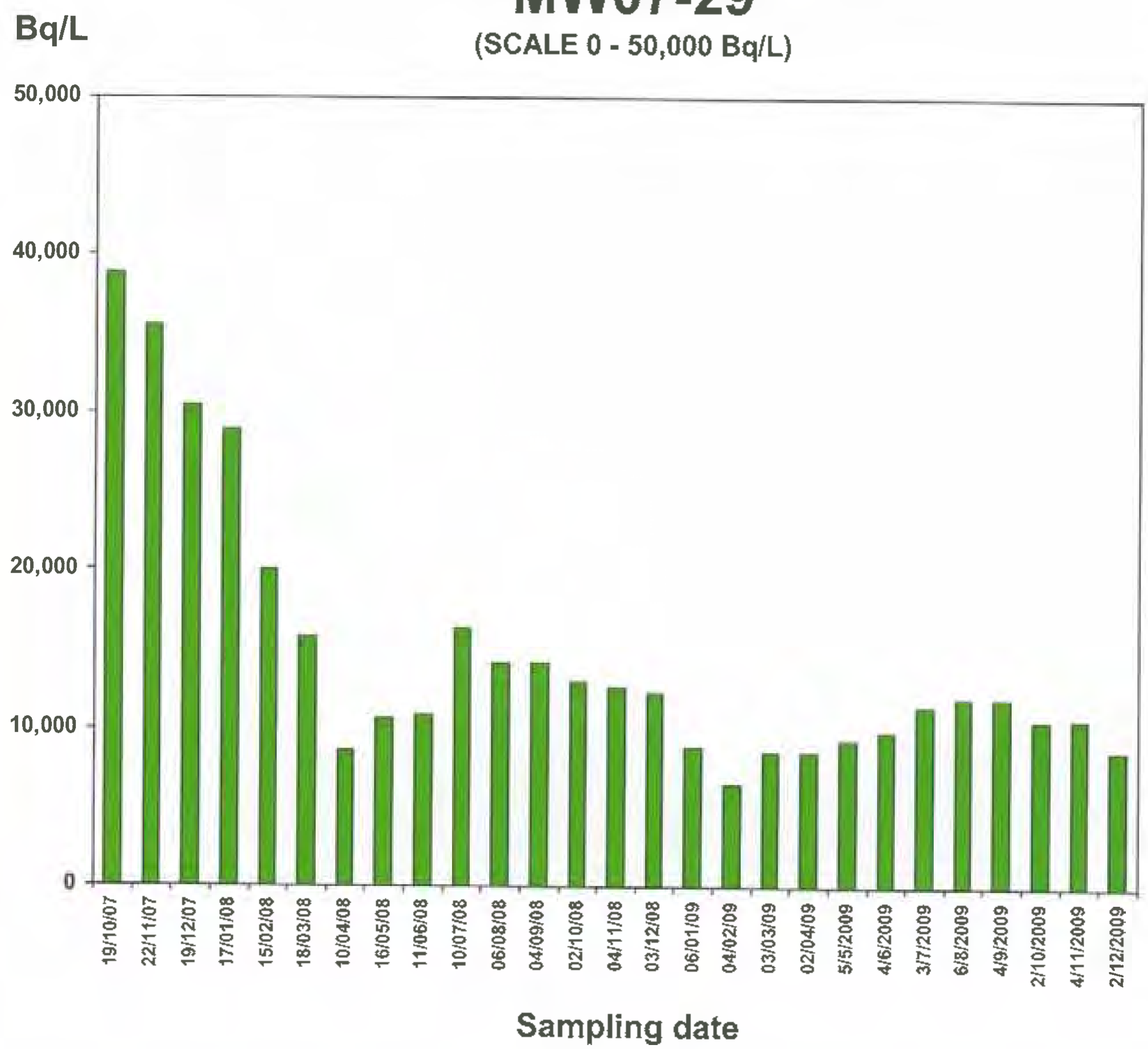


APPENDIX H

MONITORING RESULTS
MW07-28



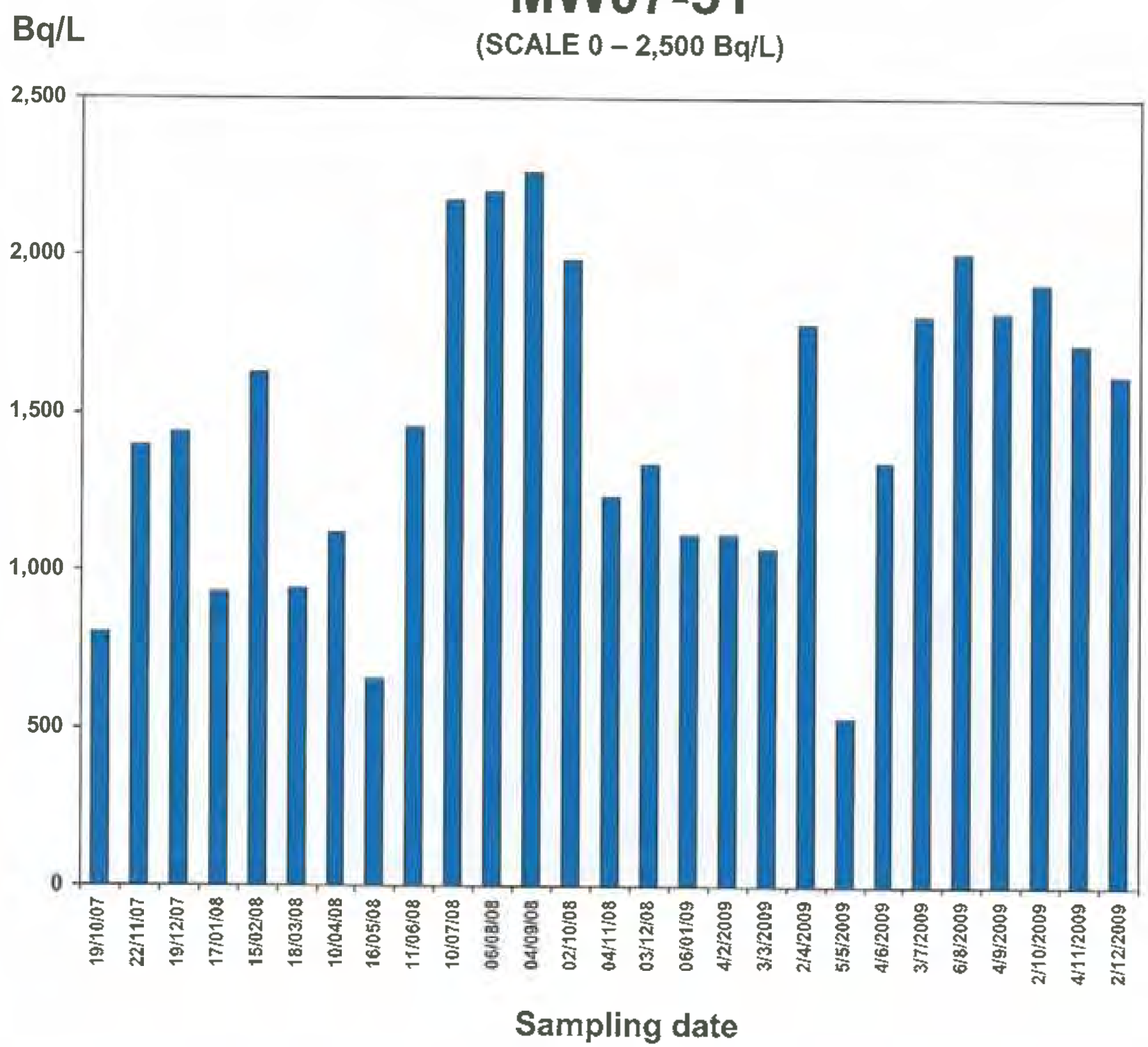
MONITORING RESULTS
MW07-29



APPENDIX H

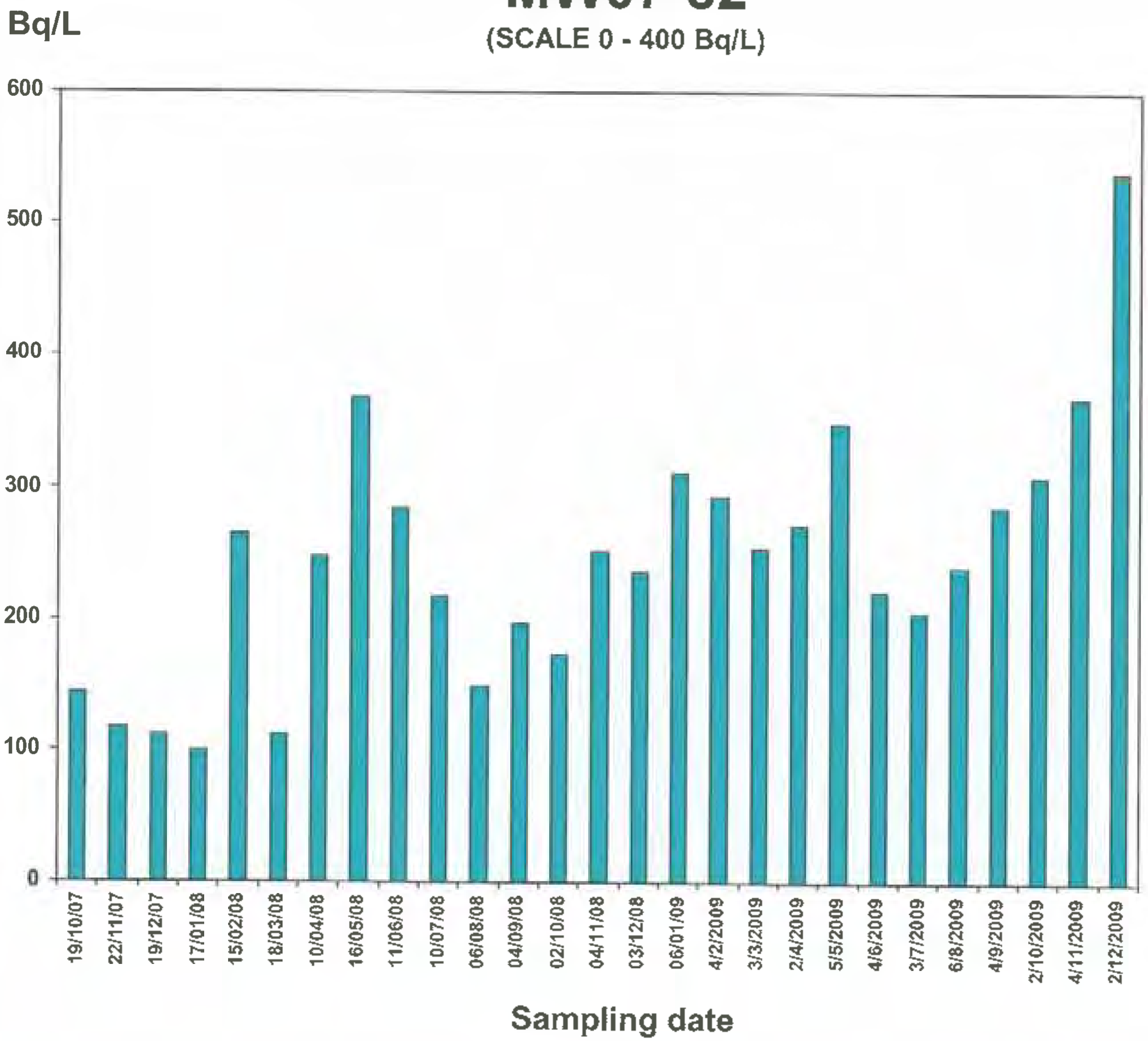
MONITORING RESULTS
MW07-31

(SCALE 0 – 2,500 Bq/L)

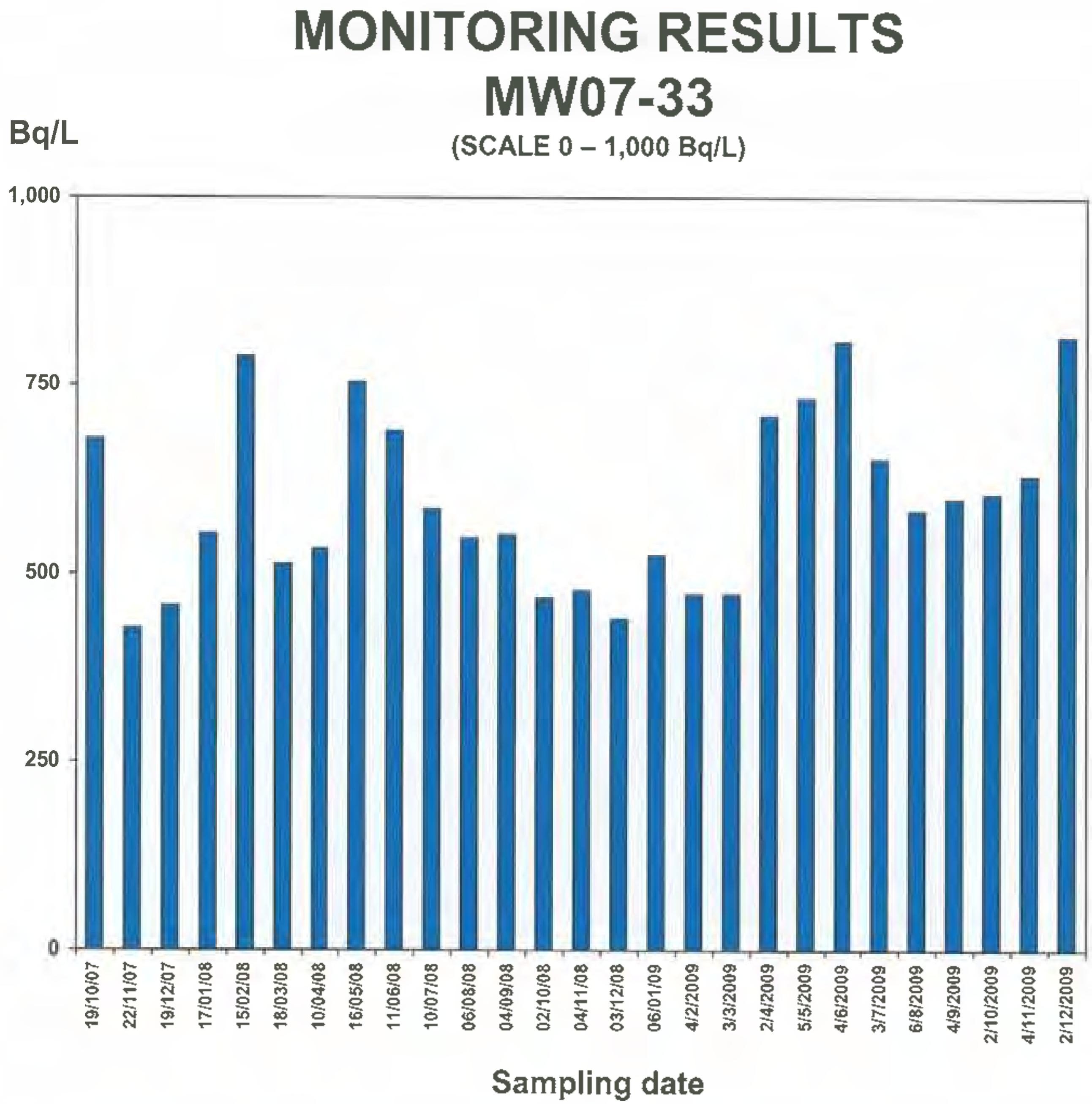


MONITORING RESULTS
MW07-32

(SCALE 0 - 400 Bq/L)

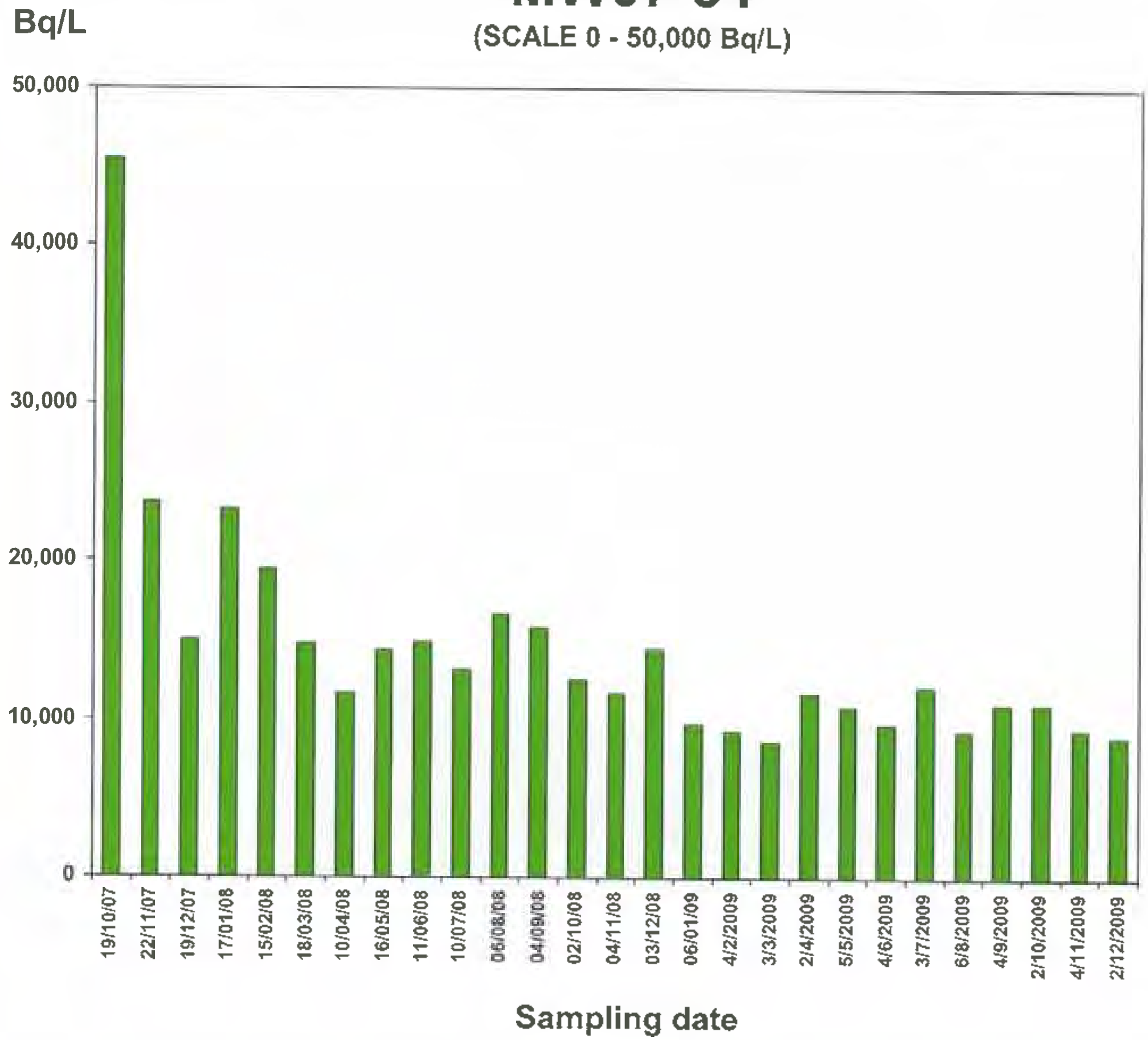


APPENDIX H


MONITORING RESULTS
MW07-33
Bq/L
(SCALE 0 – 1,000 Bq/L)
1,000
750
500
250
0
19/10/07
22/11/07
19/12/07
17/01/08
15/02/08
18/03/08
10/04/08
16/05/08
11/06/08
10/07/08
06/08/08
04/09/08
02/10/08
04/11/08
03/12/08
06/01/09
4/2/2009
3/3/2009
2/4/2009
5/5/2009
4/6/2009
3/7/2009
6/8/2009
4/9/2009
2/10/2009
4/11/2009
2/12/2009
Sampling date

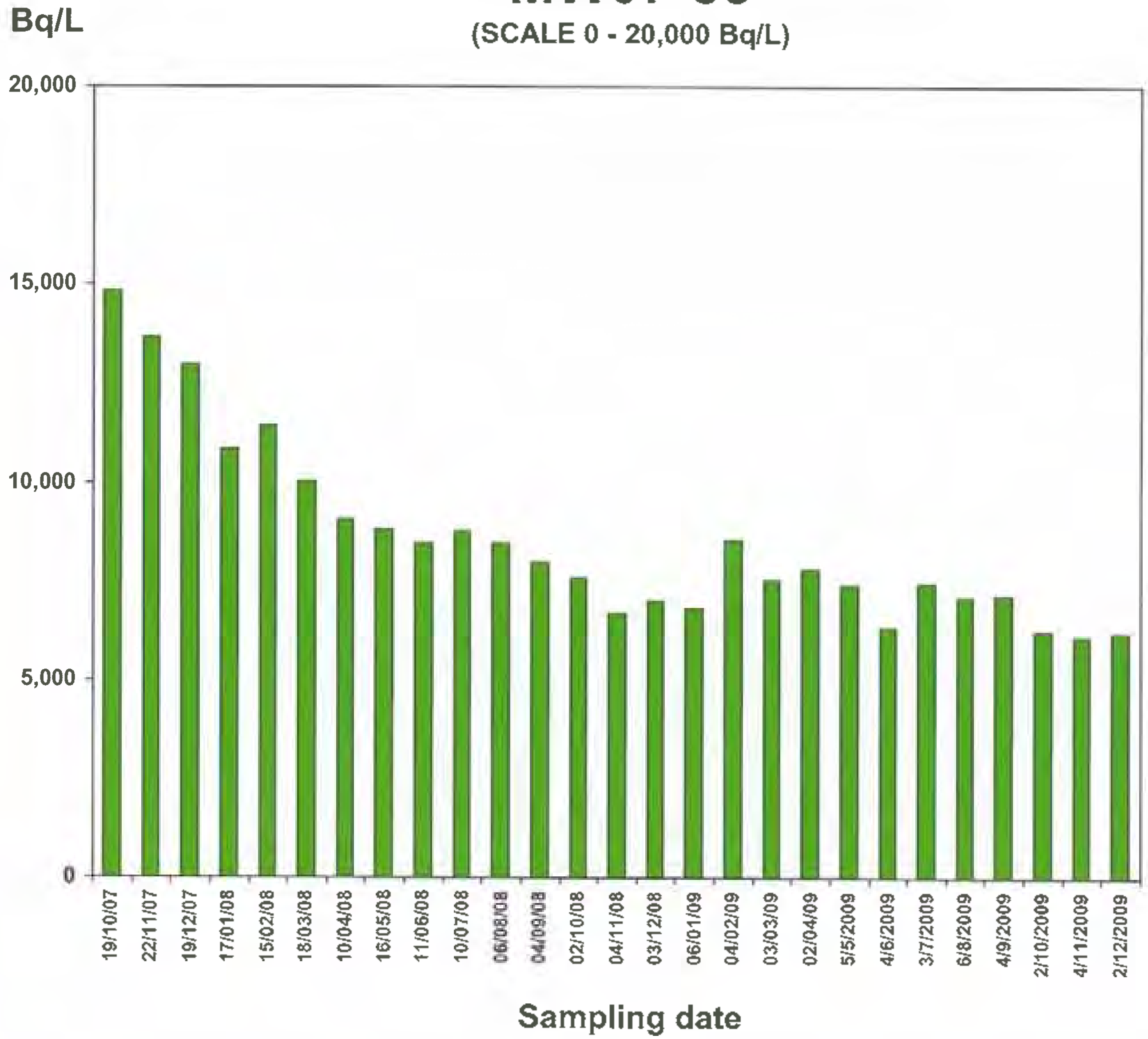
APPENDIX H

MONITORING RESULTS
MW07-34



APPENDIX H

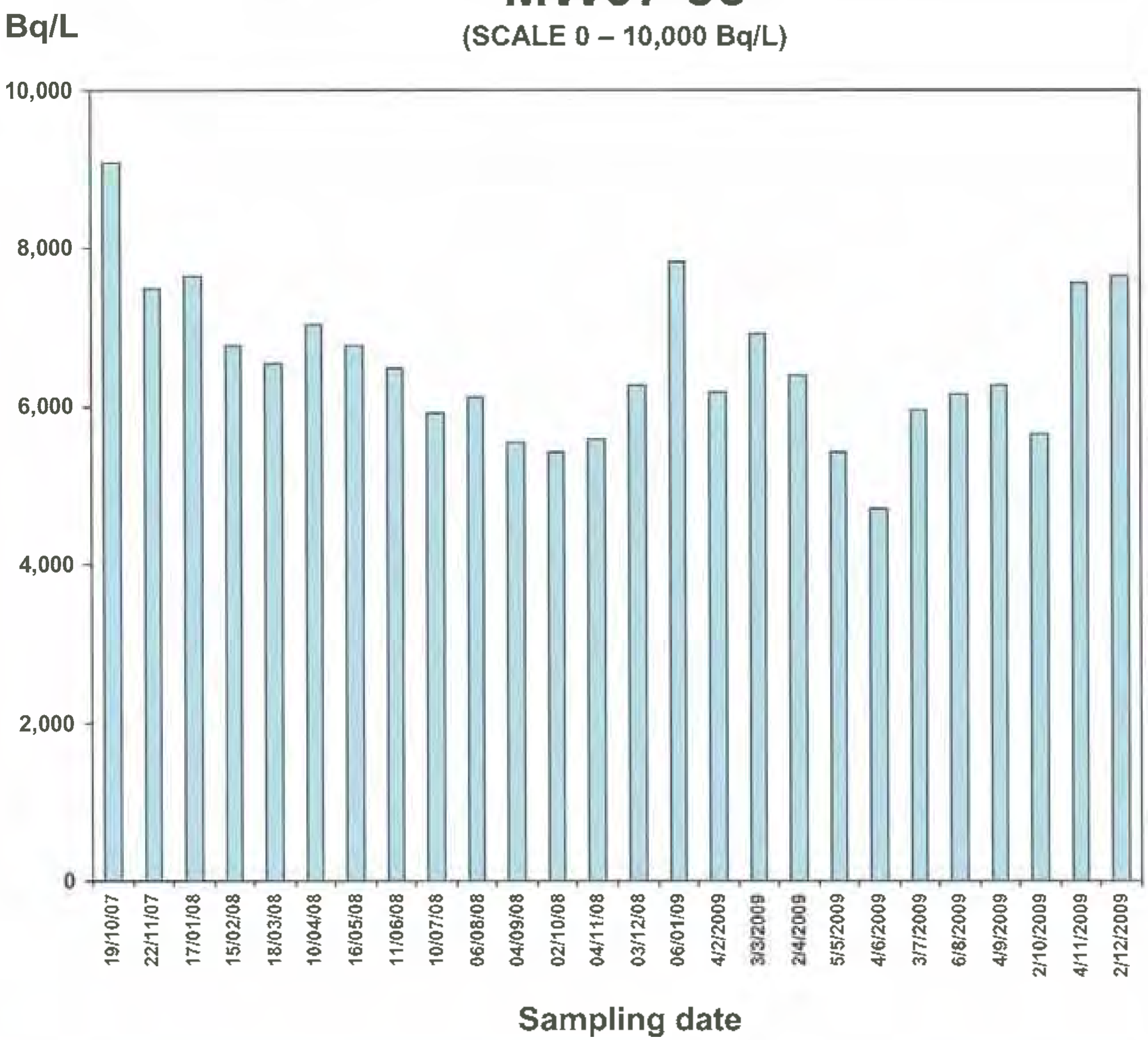
MONITORING RESULTS
MW07-35



APPENDIX H

MONITORING RESULTS
MW07-36

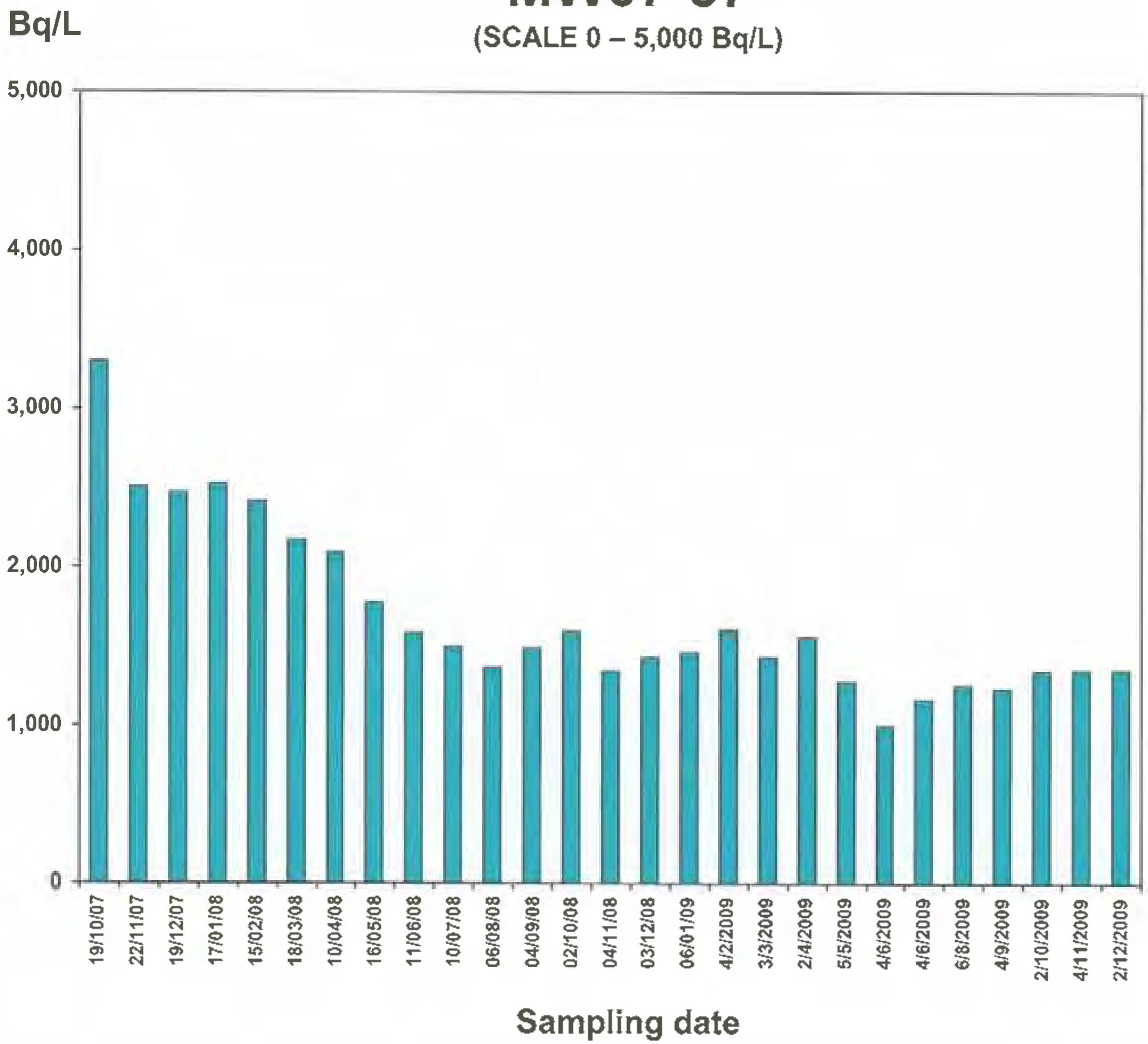
(SCALE 0 – 10,000 Bq/L)



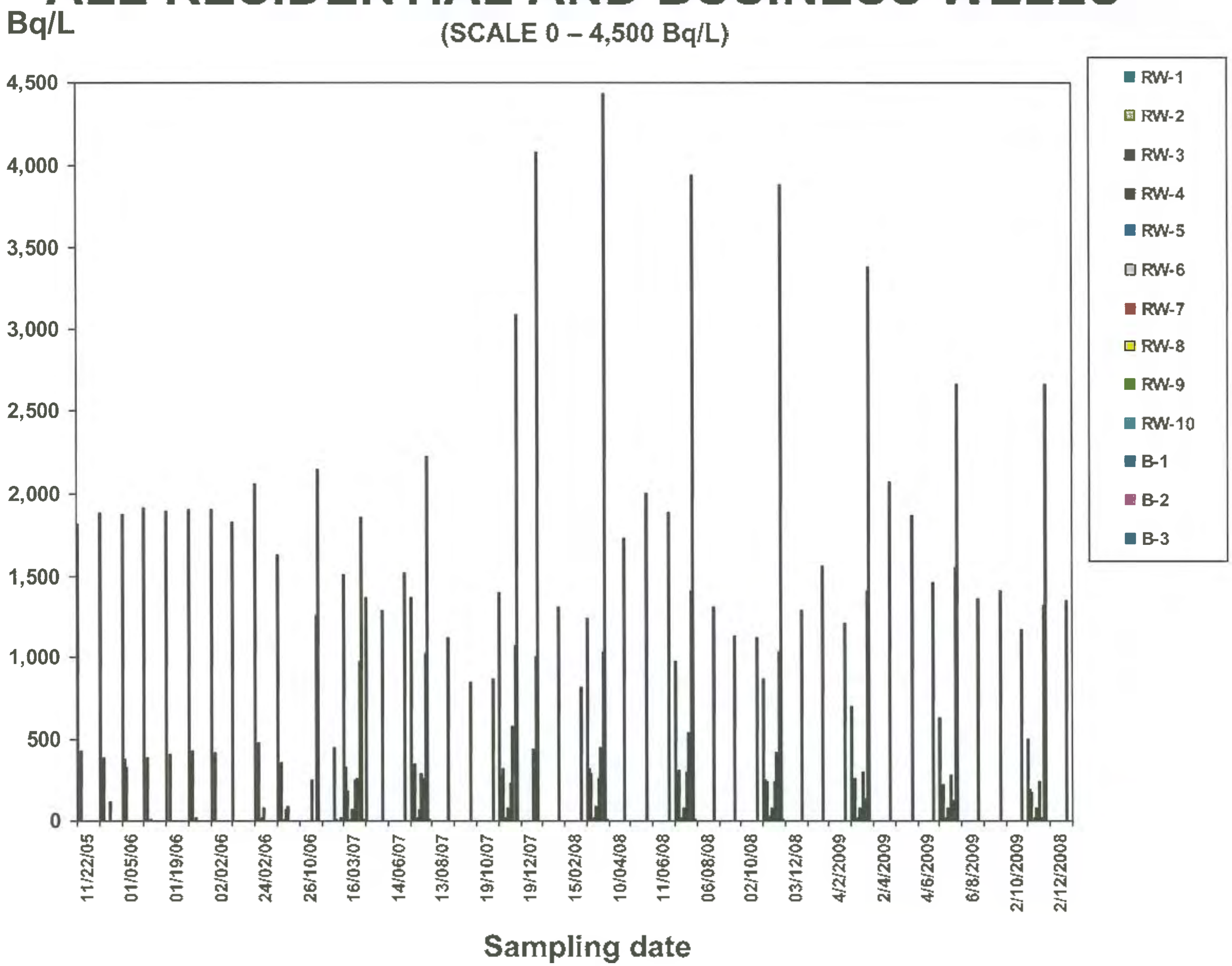
APPENDIX H

MONITORING RESULTS
MW07-37

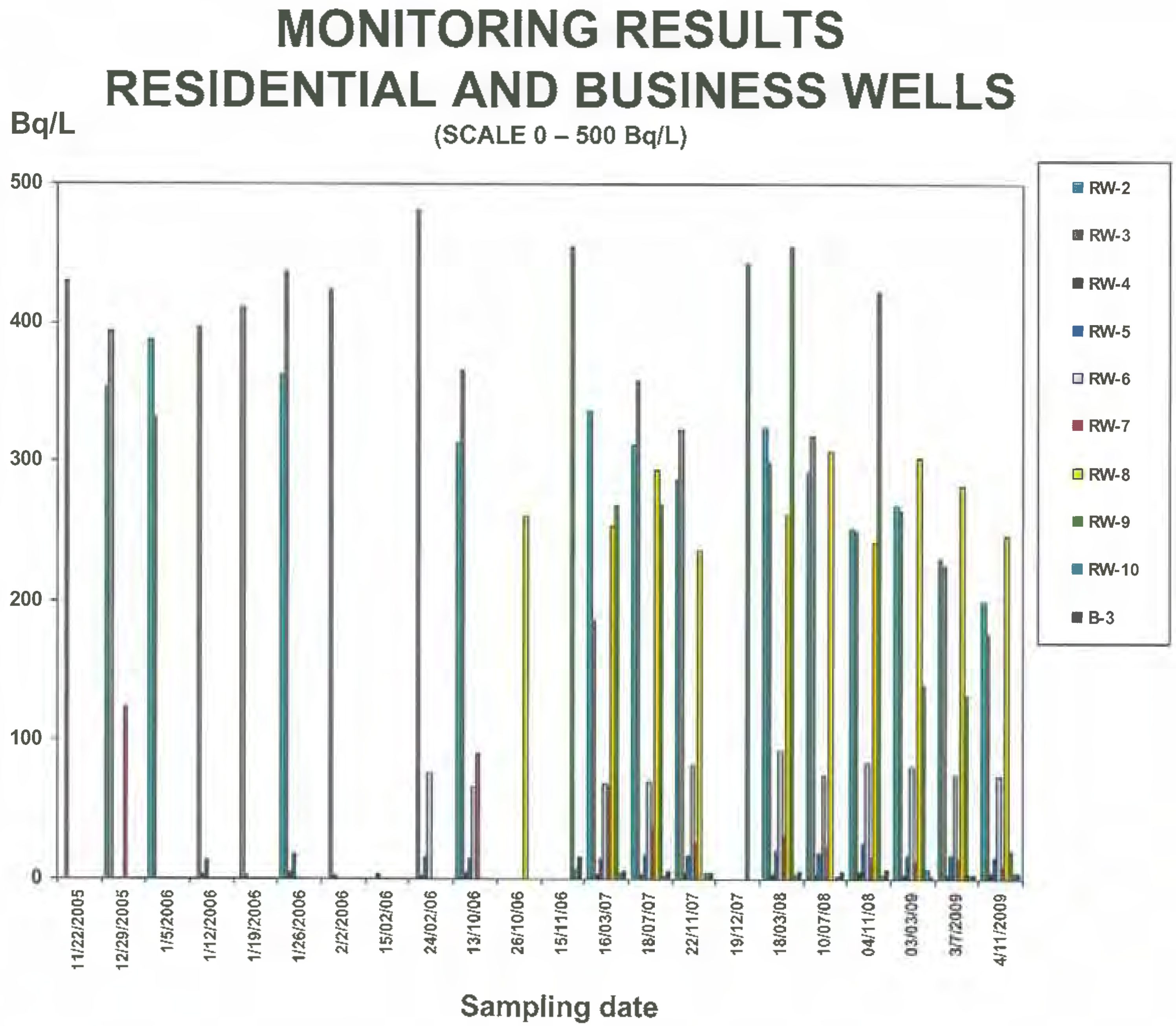
(SCALE 0 – 5,000 Bq/L)



MONITORING RESULTS
ALL RESIDENTIAL AND BUSINESS WELLS

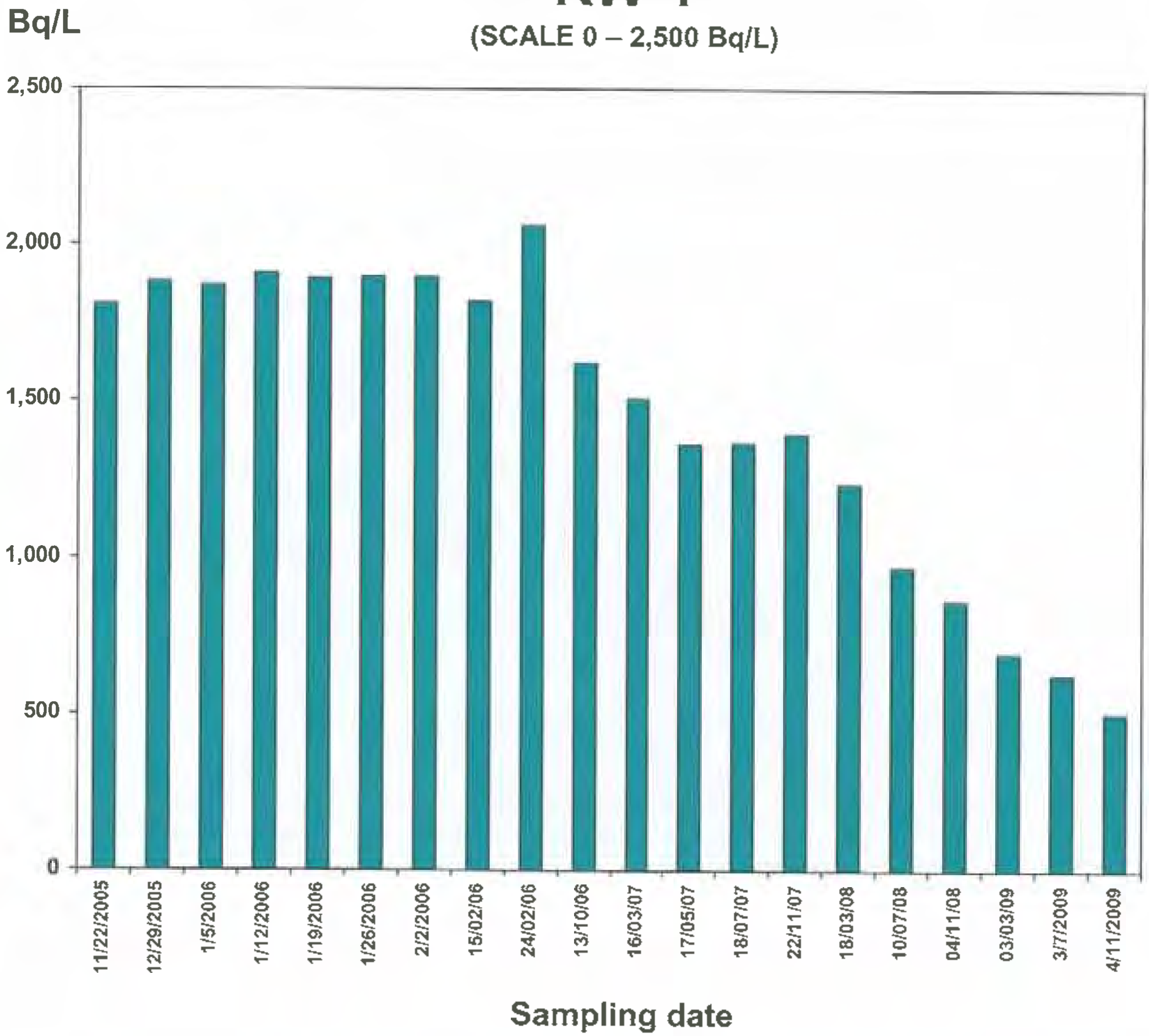


APPENDIX H

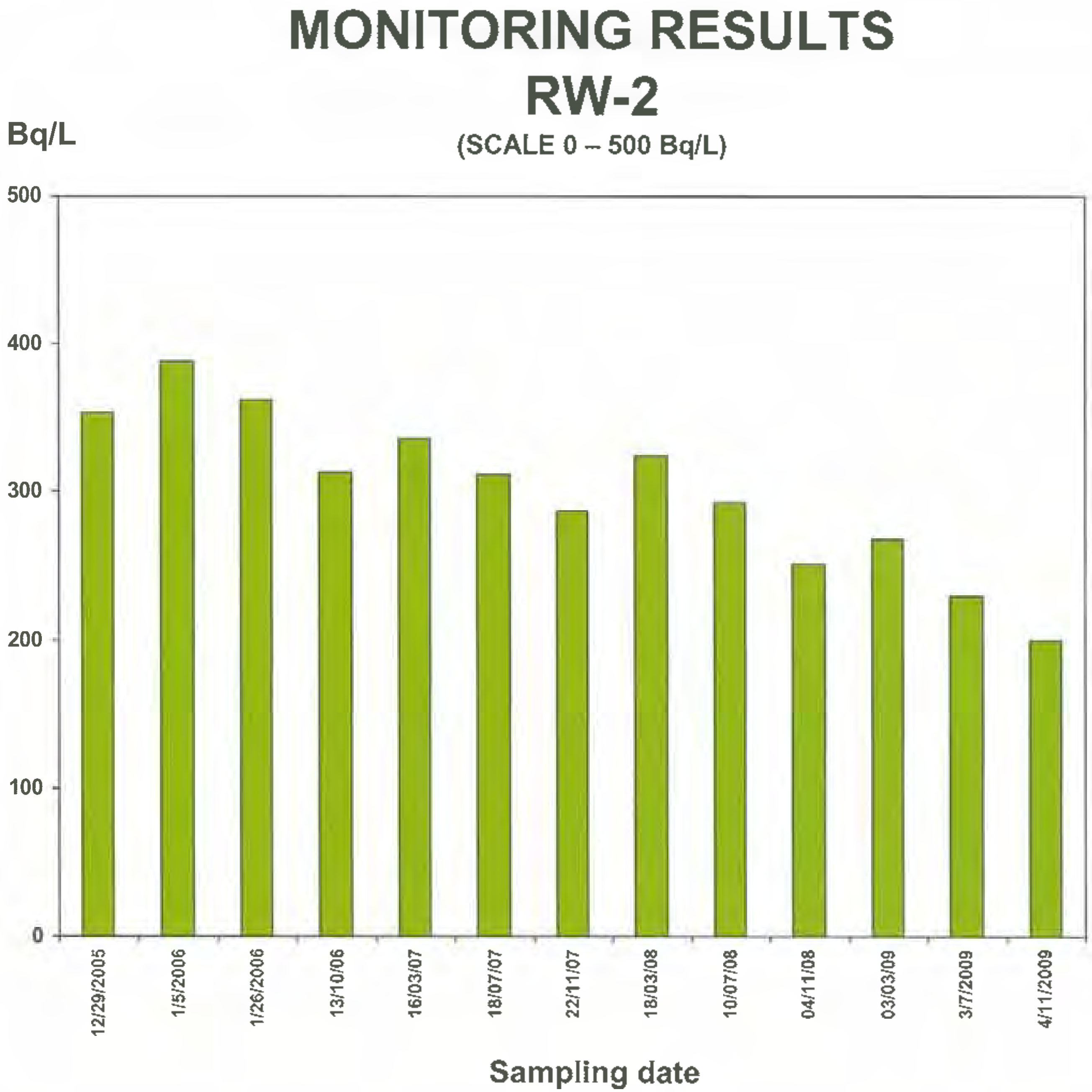

MONITORING RESULTS
RESIDENTIAL AND BUSINESS WELLS
Bq/L
(SCALE 0 – 500 Bq/L)
500
400
300
200
100
0
RW-2
RW-3
RW-4
RW-5
RW-6
RW-7
RW-8
RW-9
RW-10
B-3
11/22/2005
12/29/2005
1/5/2006
1/12/2006
1/19/2006
1/26/2006
2/2/2006
15/02/06
24/02/06
13/10/06
26/10/06
15/11/06
16/03/07
18/07/07
22/11/07
19/12/07
18/03/08
10/07/08
04/11/08
03/03/09
3/7/2009
4/11/2009
Sampling date

APPENDIX H

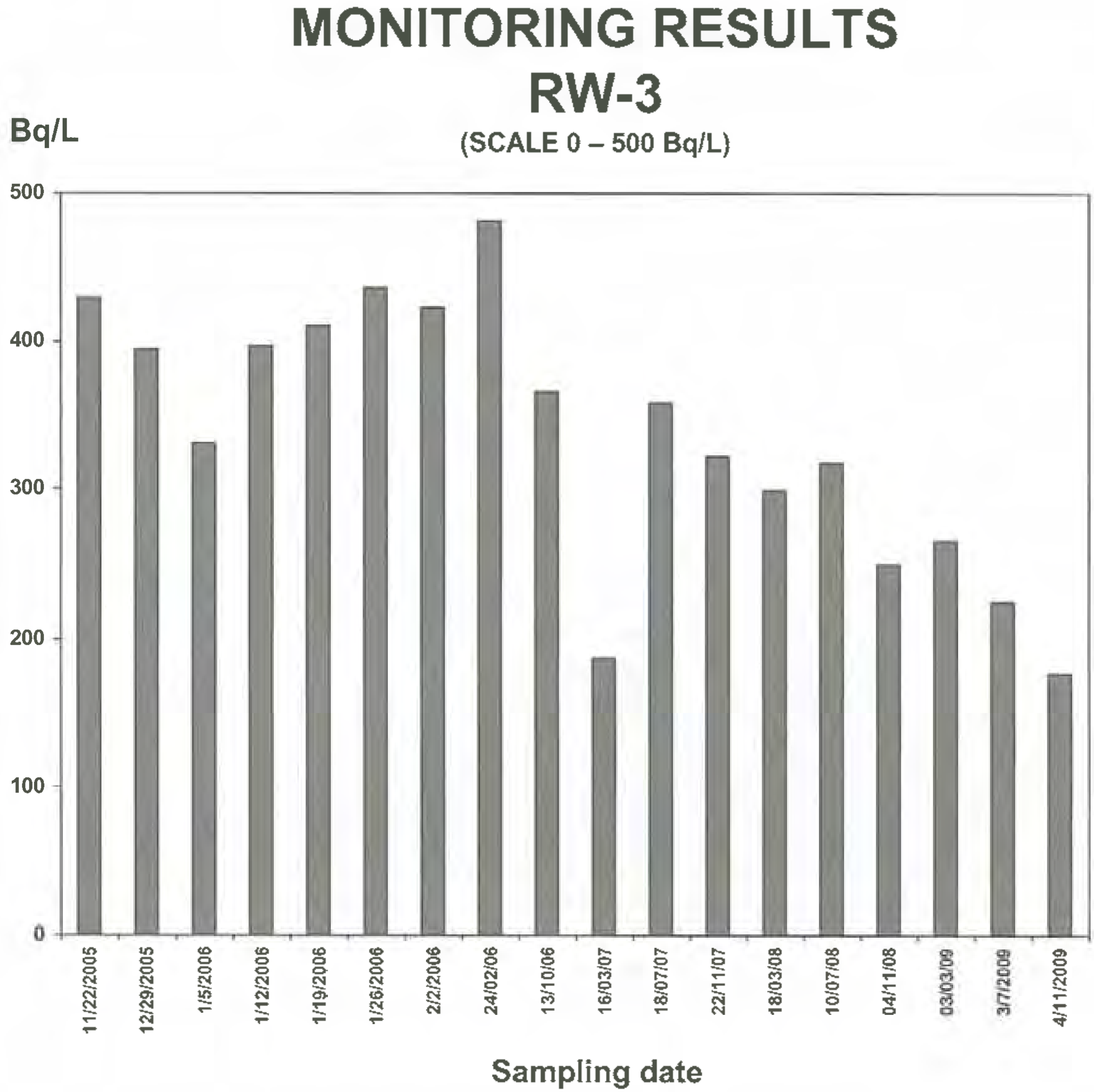
MONITORING RESULTS
RW-1



APPENDIX H


MONITORING RESULTS
RW-2
Bq/L
(SCALE 0 – 500 Bq/L)
500
400
300
200
100
0
12/29/2005
1/5/2006
1/26/2006
13/10/06
16/03/07
18/07/07
22/11/07
18/03/08
10/07/08
04/11/08
03/03/09
3/7/2009
4/11/2009
Sampling date

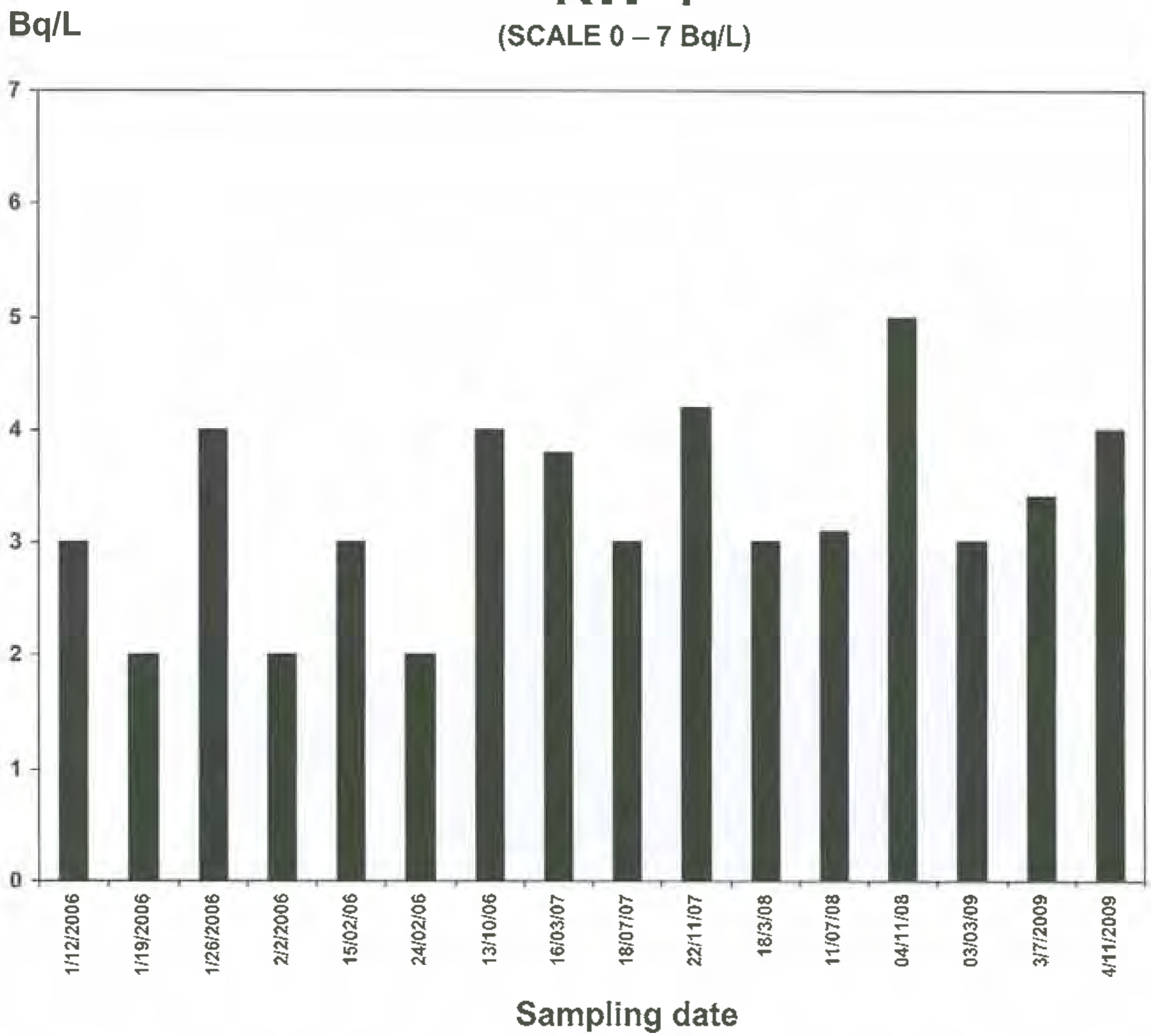
APPENDIX H



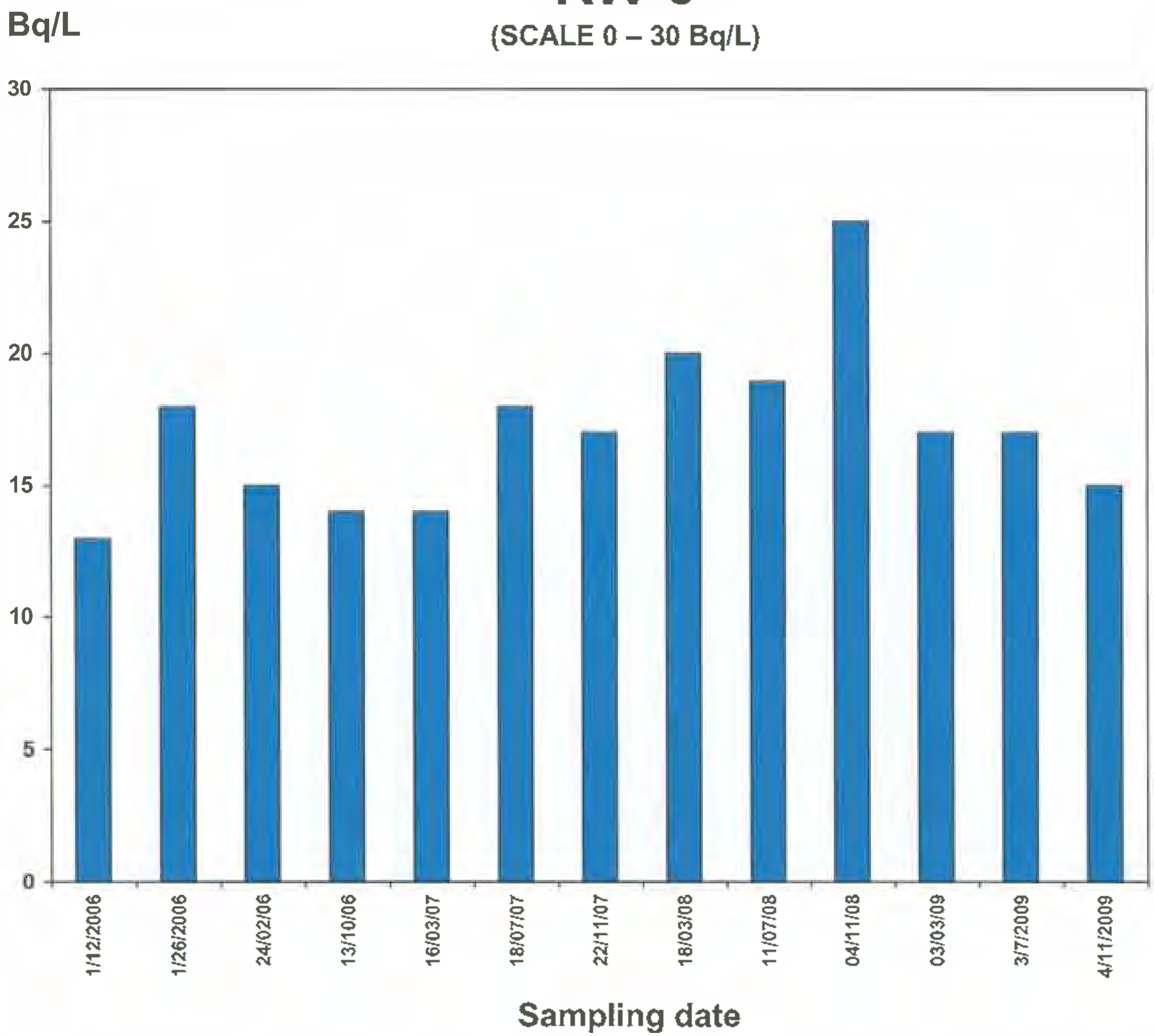
MONITORING RESULTS
RW-3
Bq/L
(SCALE 0 – 500 Bq/L)
500
400
300
200
100
0
11/22/2005
12/29/2005
1/5/2006
1/12/2006
1/19/2006
1/26/2006
2/2/2006
24/02/06
13/10/06
16/03/07
18/07/07
22/11/07
18/03/08
10/07/08
04/11/08
03/03/09
3/7/2009
4/11/2009
Sampling date

APPENDIX H

MONITORING RESULTS
RW-4

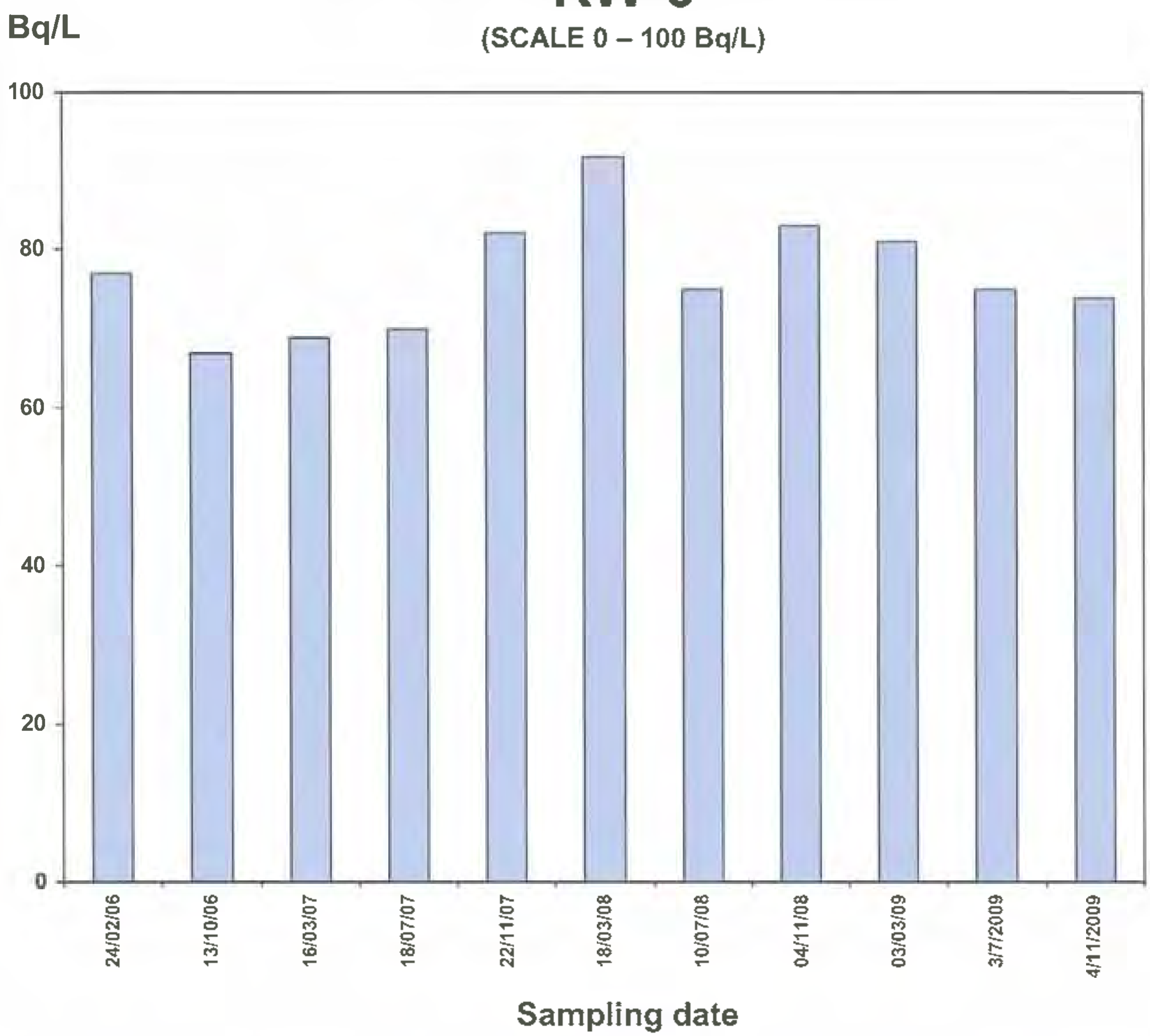


MONITORING RESULTS
RW-5
(SCALE 0 – 30 Bq/L)



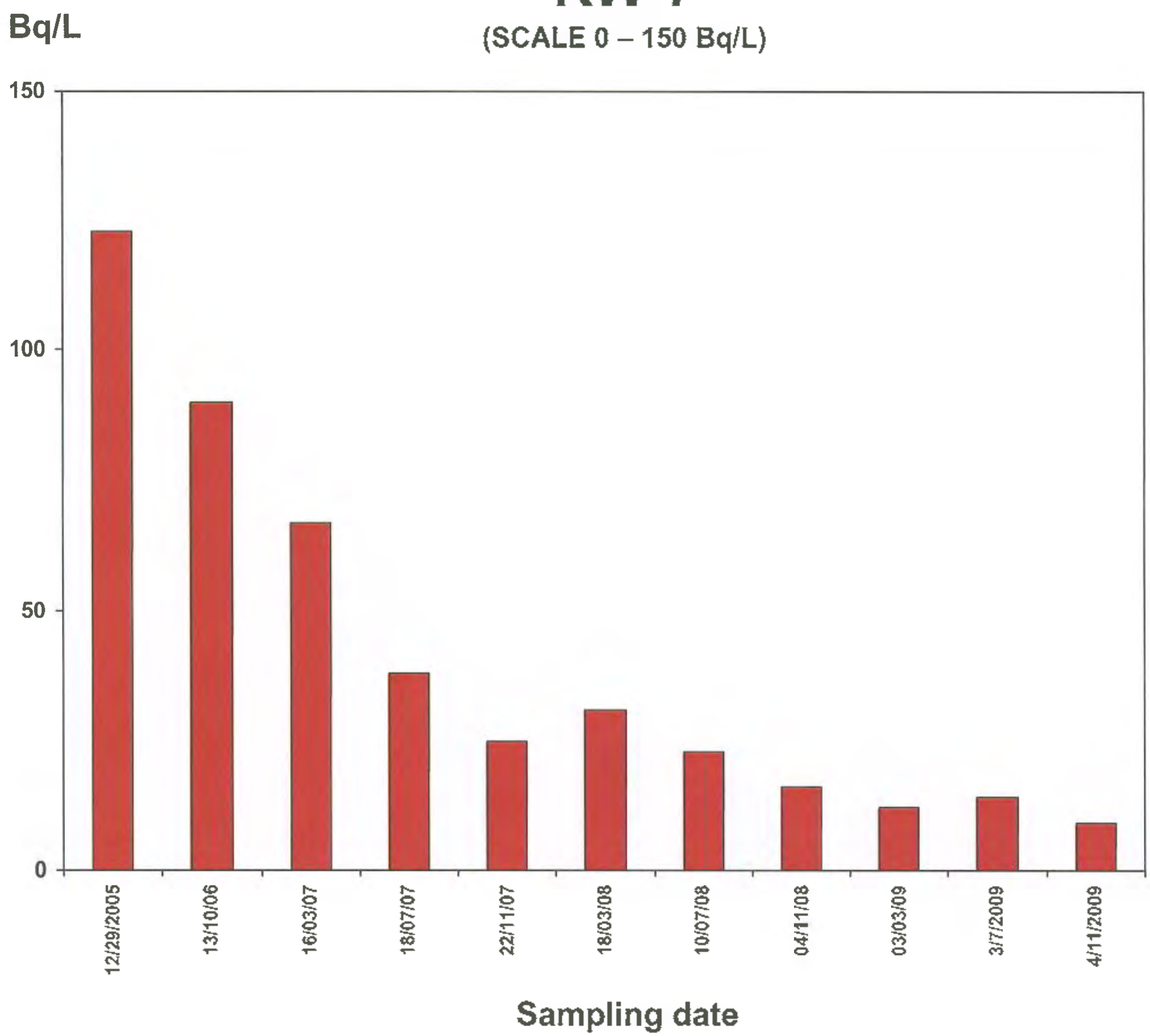
MONITORING RESULTS
RW-6

(SCALE 0 – 100 Bq/L)



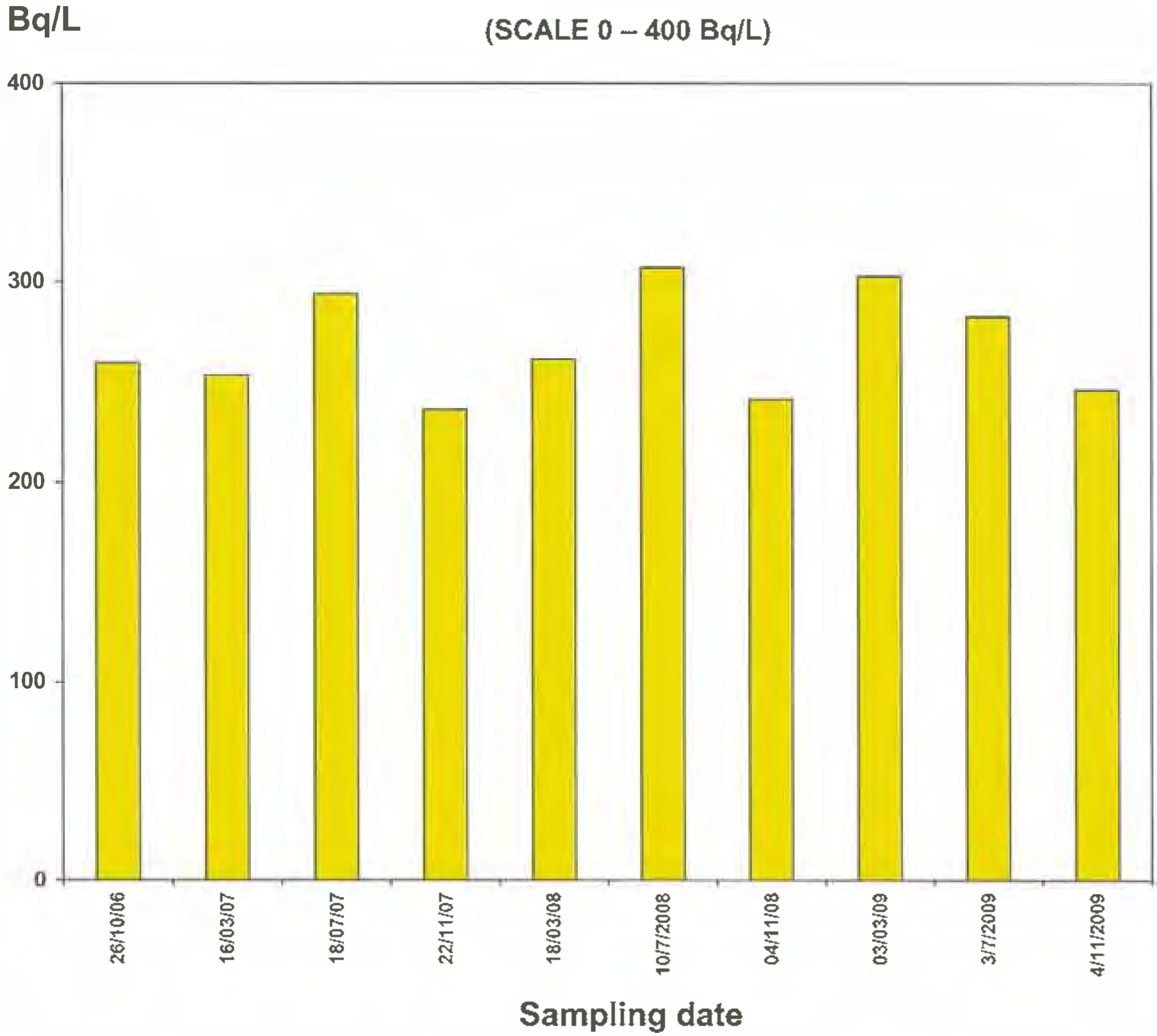
MONITORING RESULTS
RW-7

(SCALE 0 – 150 Bq/L)



MONITORING RESULTS
RW-8

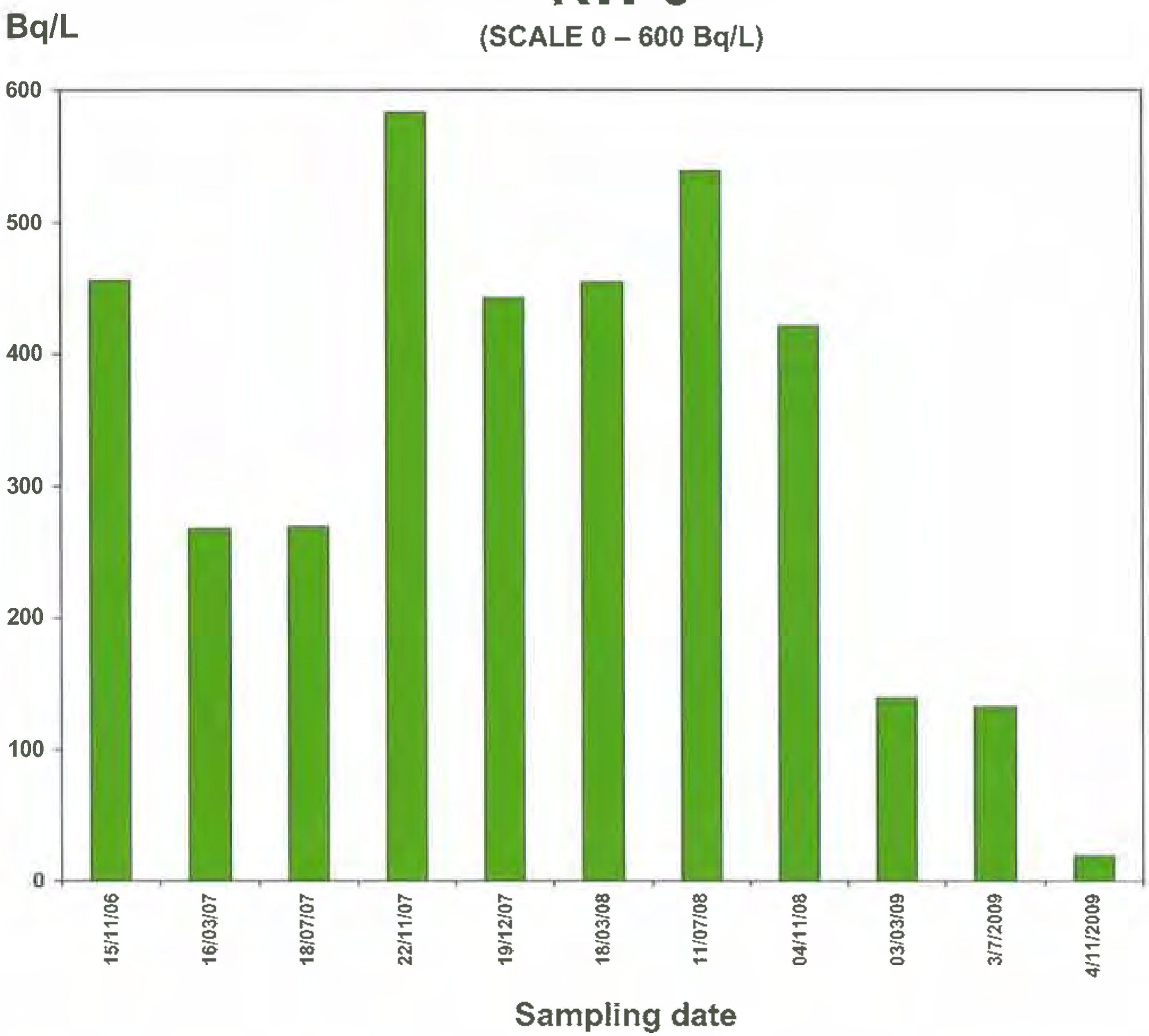
(SCALE 0 – 400 Bq/L)



APPENDIX H

MONITORING RESULTS
RW-9

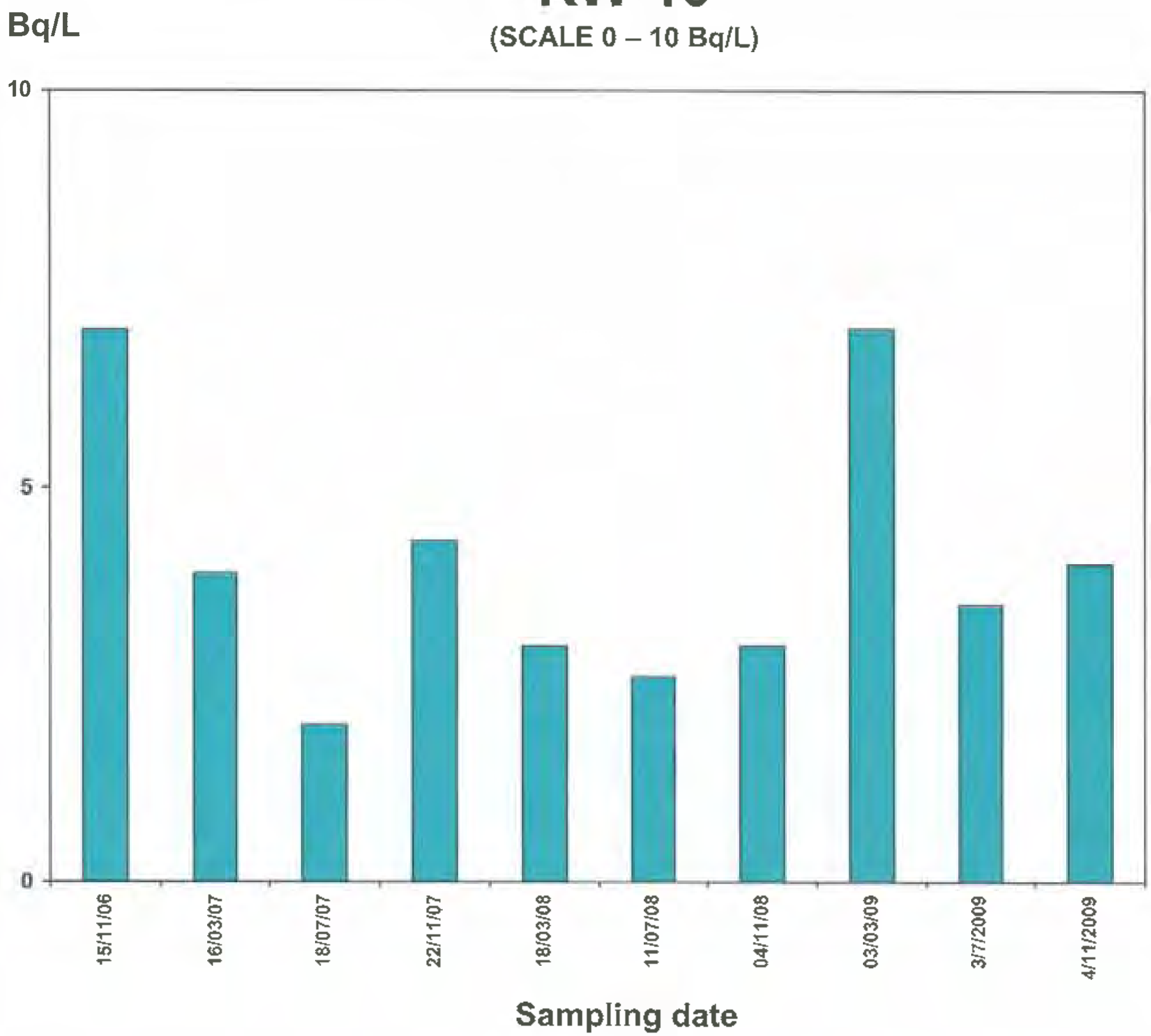
(SCALE 0 – 600 Bq/L)



APPENDIX H

MONITORING RESULTS
RW-10

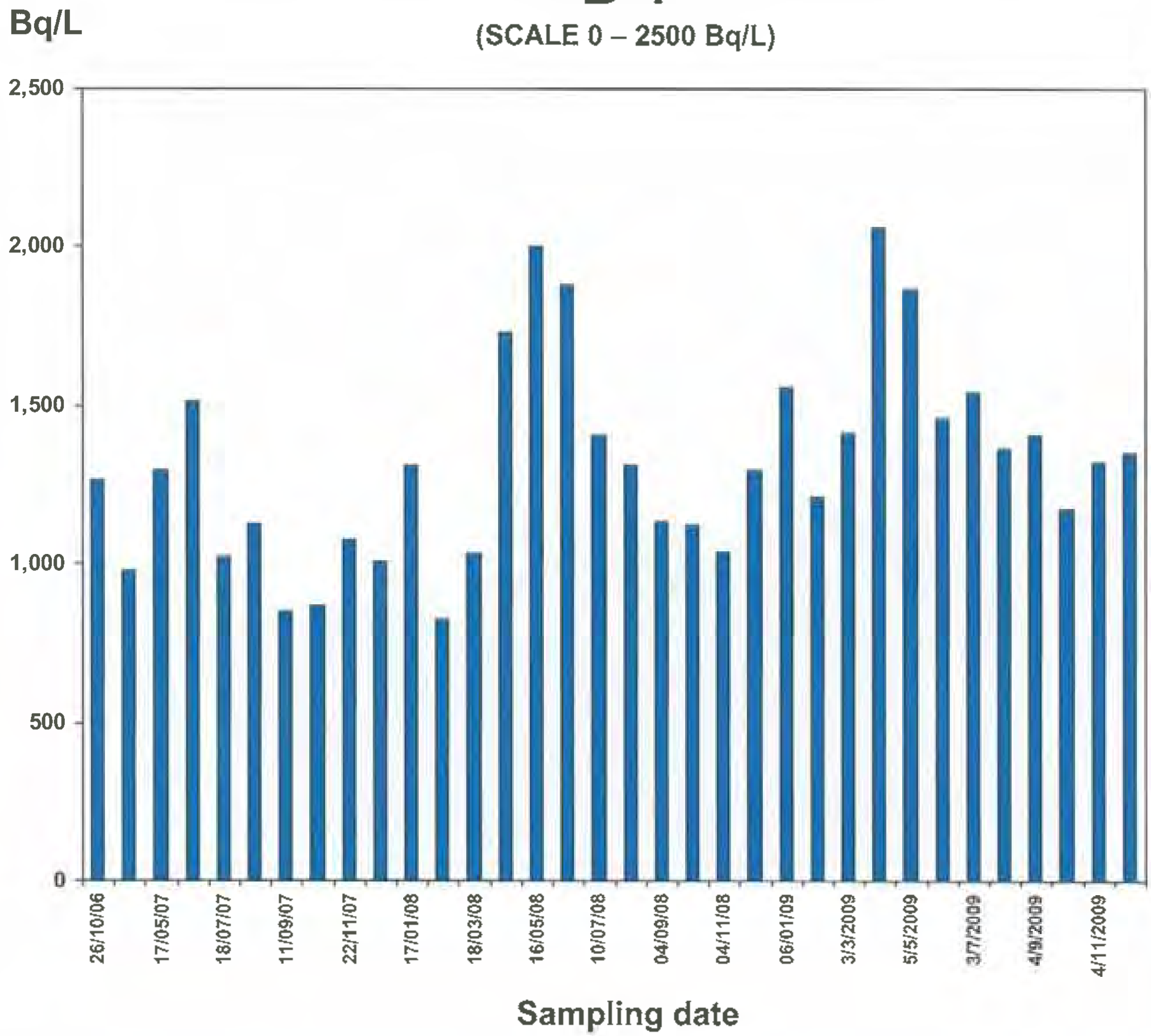
(SCALE 0 – 10 Bq/L)



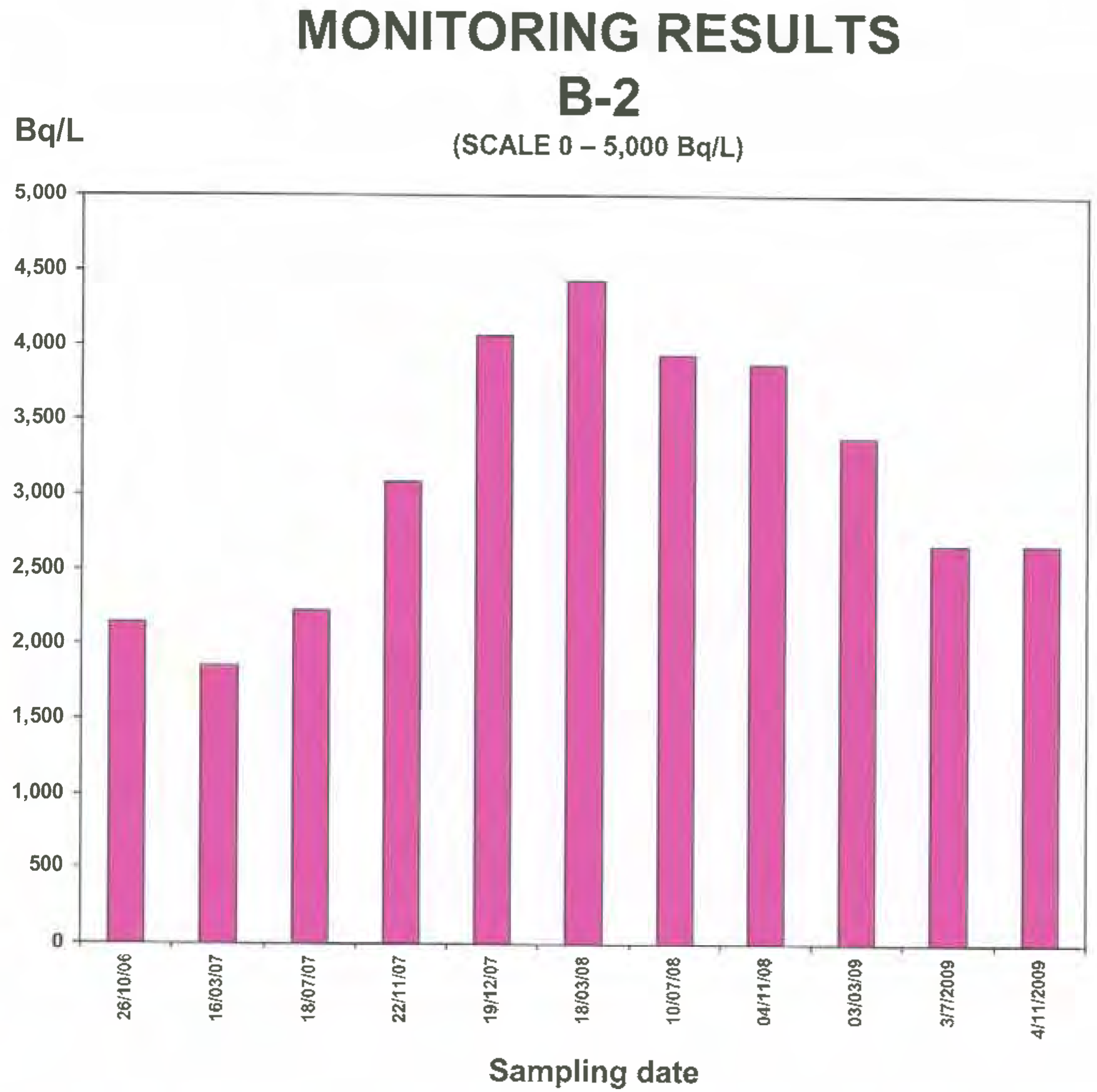
APPENDIX H

MONITORING RESULTS
B-1

(SCALE 0 – 2500 Bq/L)

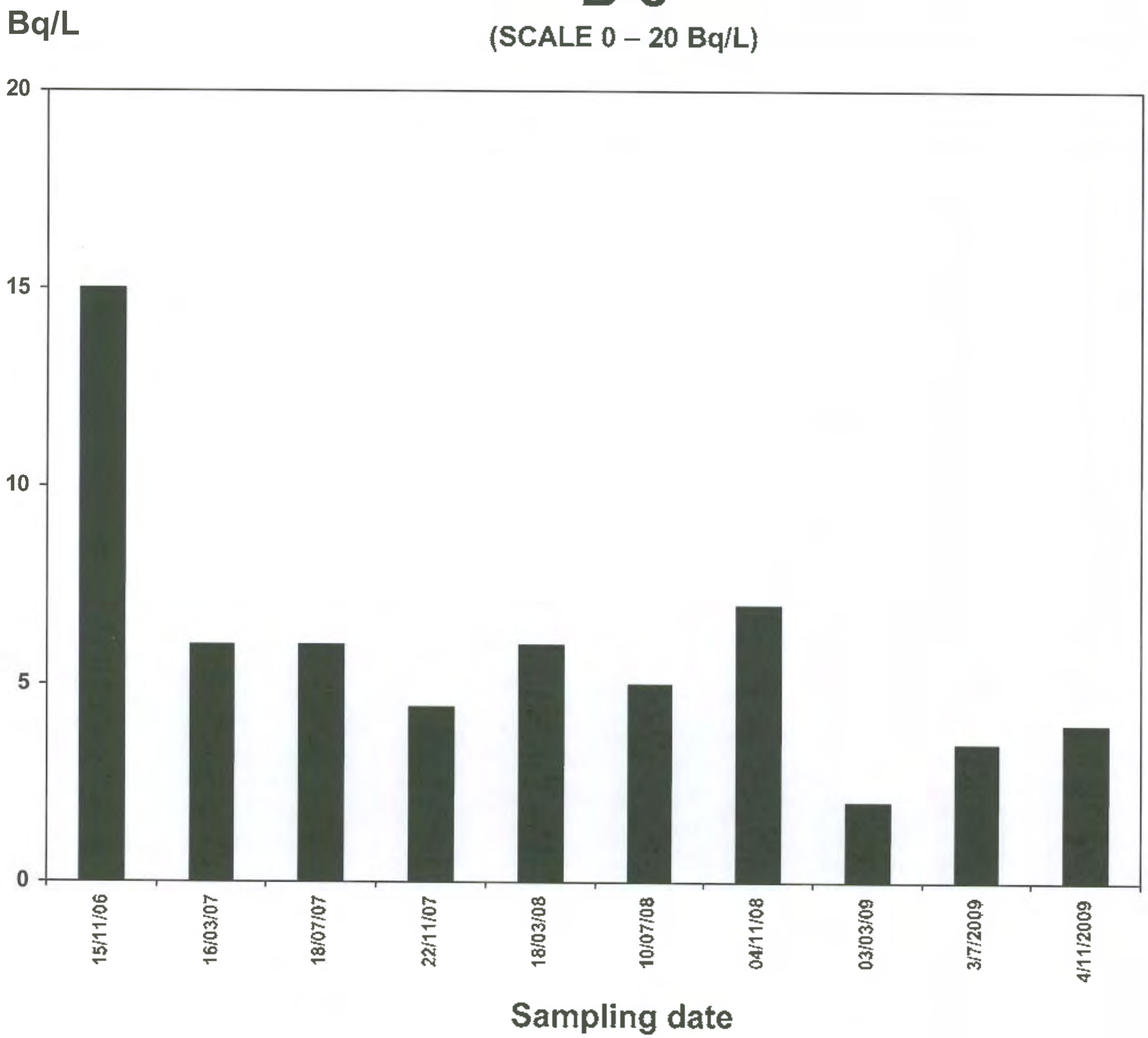


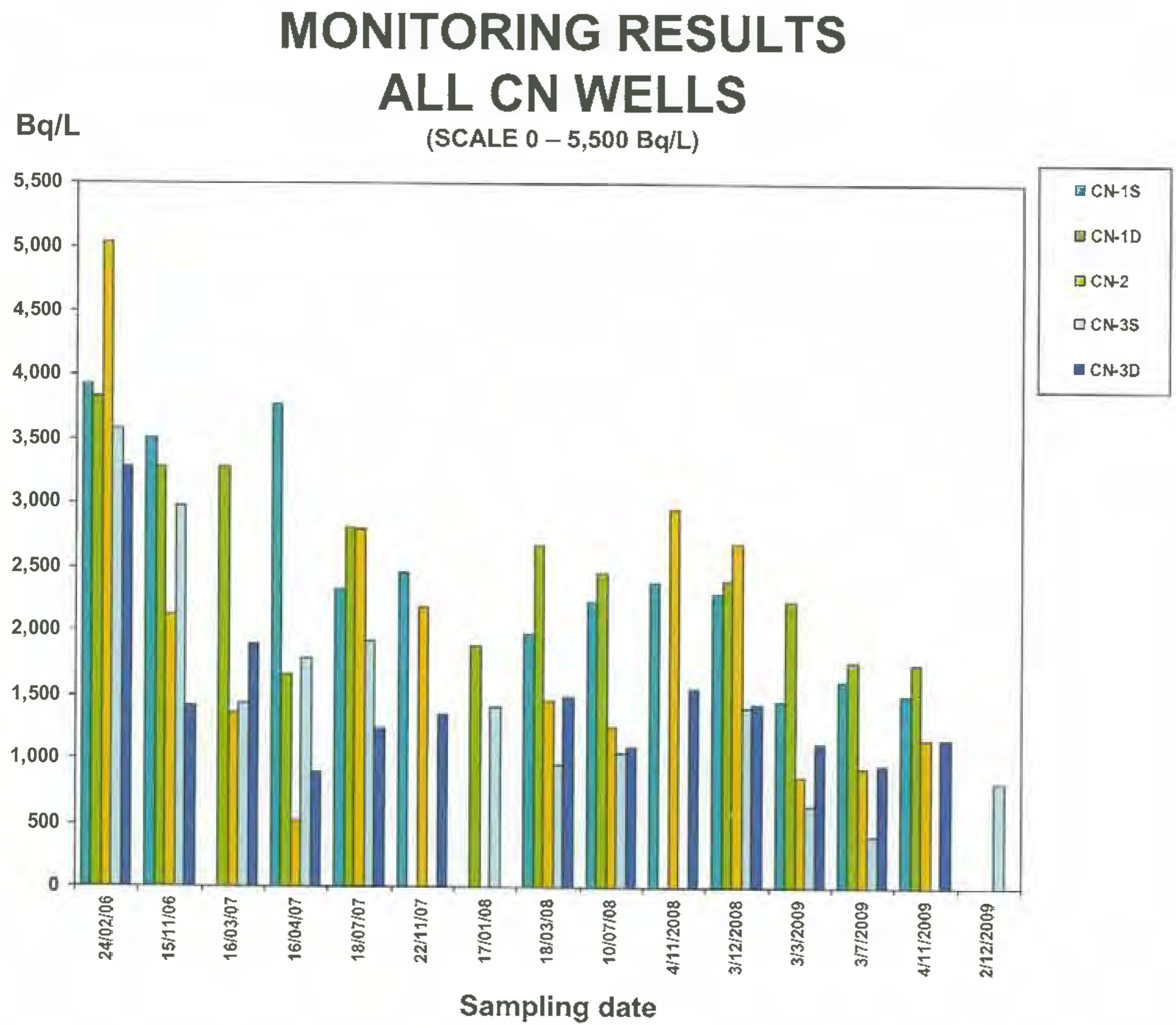
APPENDIX H



MONITORING RESULTS
B-2
(SCALE 0 – 5,000 Bq/L)
Bq/L
5,000
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
26/10/06
16/03/07
18/07/07
22/11/07
19/12/07
18/03/08
10/07/08
04/11/08
03/03/09
3/7/2009
4/11/2009
Sampling date

MONITORING RESULTS
B-3
(SCALE 0 – 20 Bq/L)

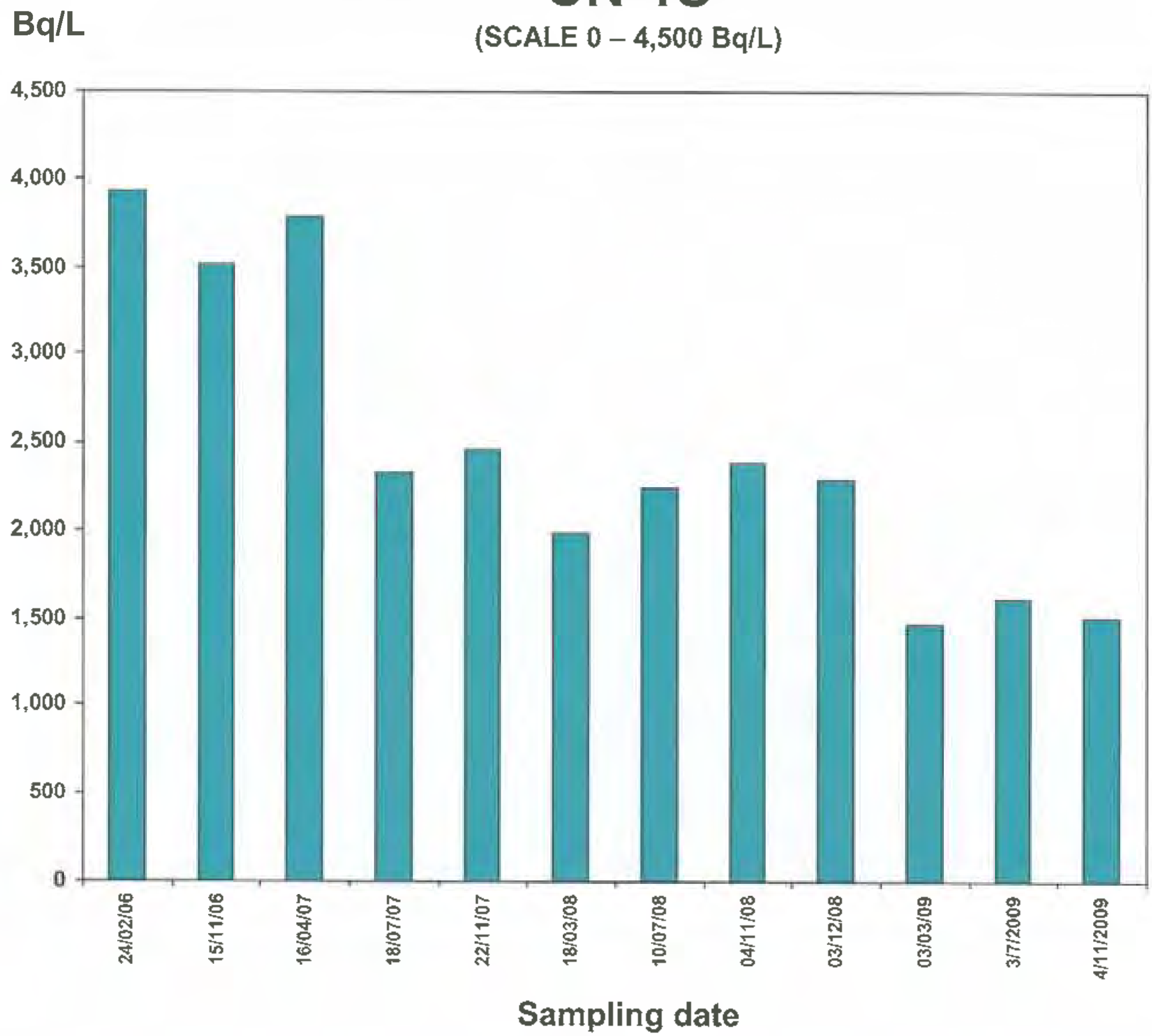



MONITORING RESULTS
ALL CN WELLS
(SCALE 0 – 5,500 Bq/L)
Bq/L
5,500
5,000
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
CN-1S
CN-1D
CN-2
CN-3S
CN-3D
24/02/06
15/11/06
16/03/07
16/04/07
18/07/07
22/11/07
17/01/08
18/03/08
10/07/08
4/11/2008
3/12/2008
3/3/2009
3/7/2009
4/11/2009
2/12/2009
Sampling date

APPENDIX H

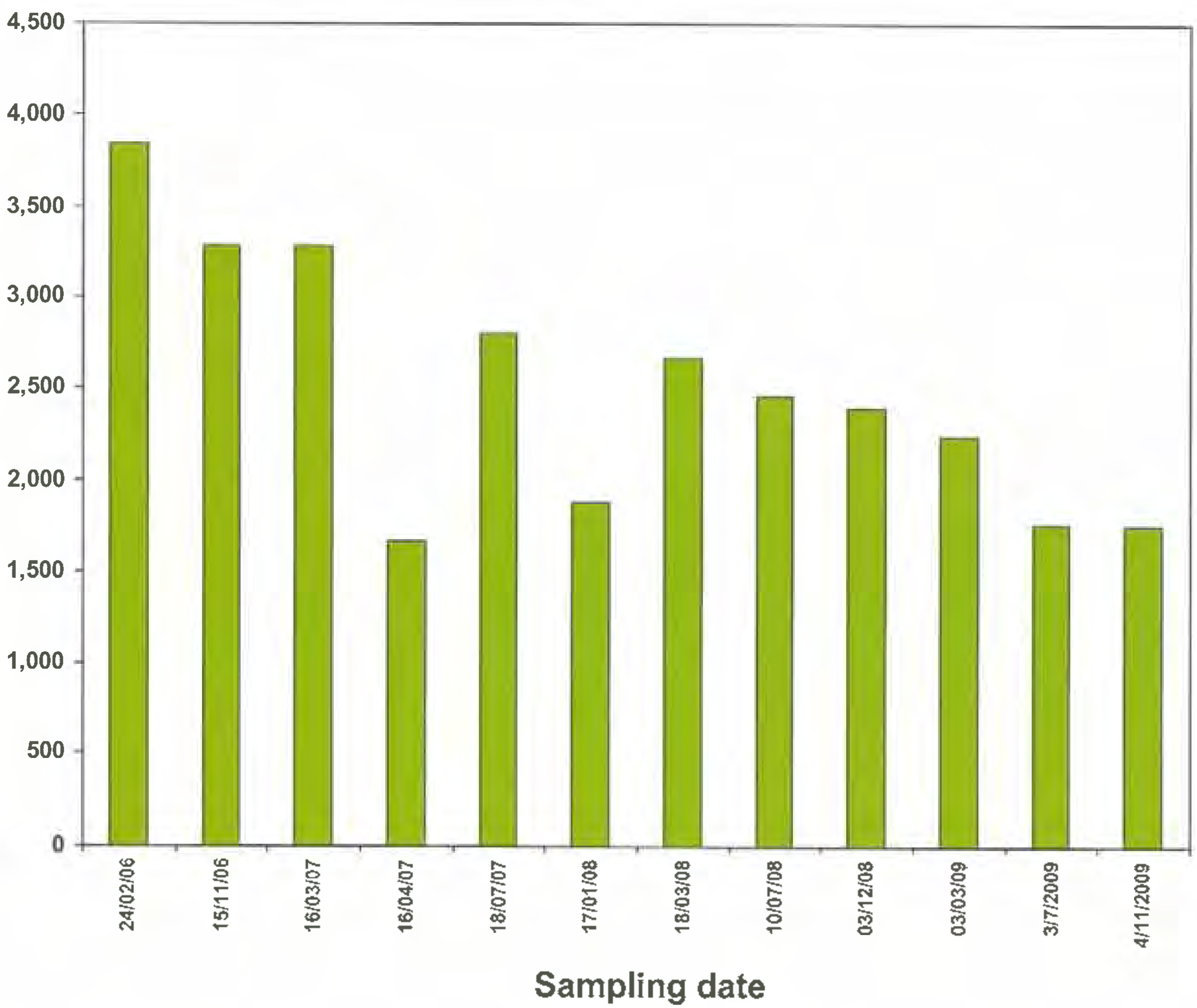
MONITORING RESULTS
CN-1S

(SCALE 0 – 4,500 Bq/L)

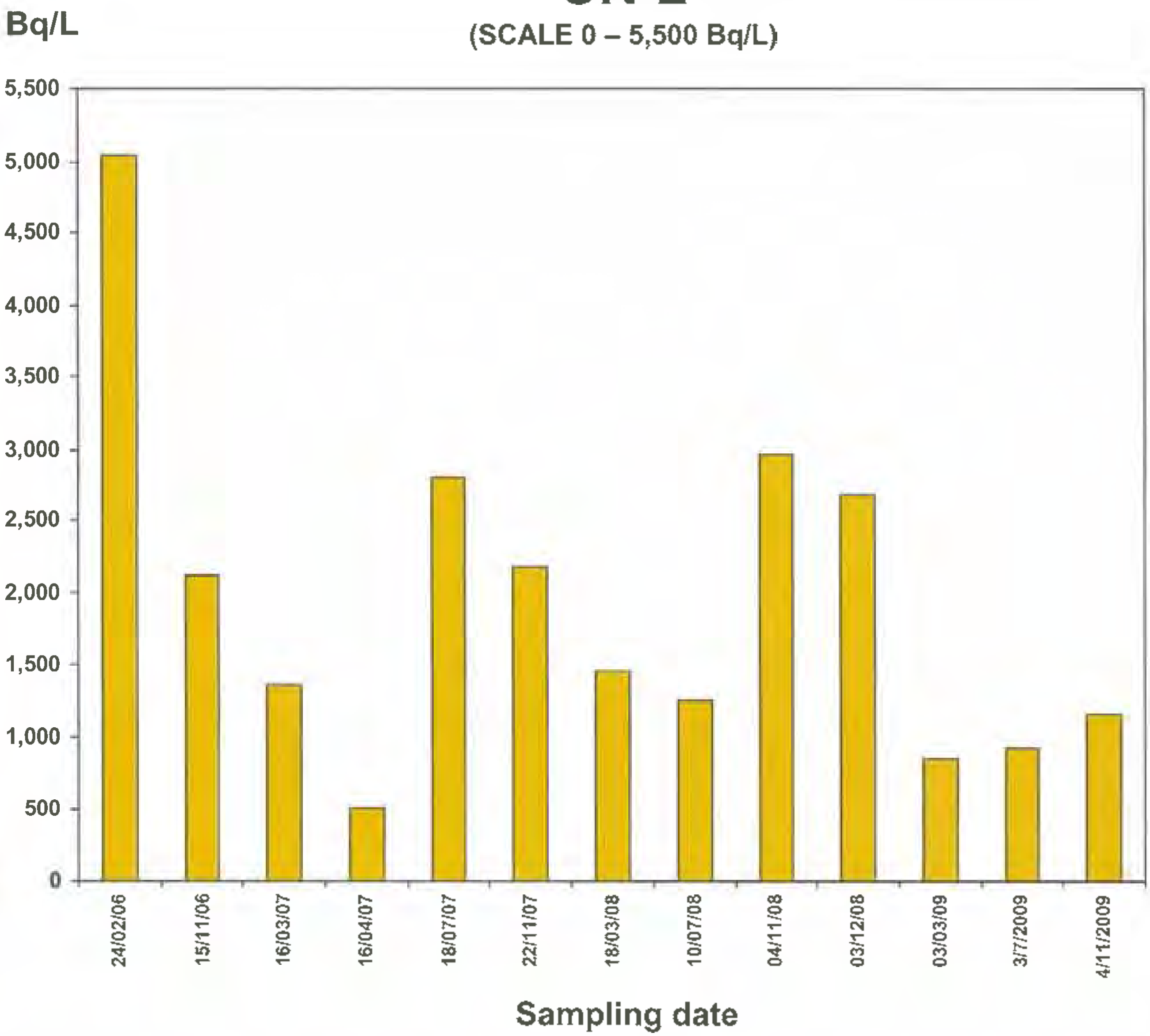


MONITORING RESULTS
CN-1D

(SCALE 0 – 4,500 Bq/L)

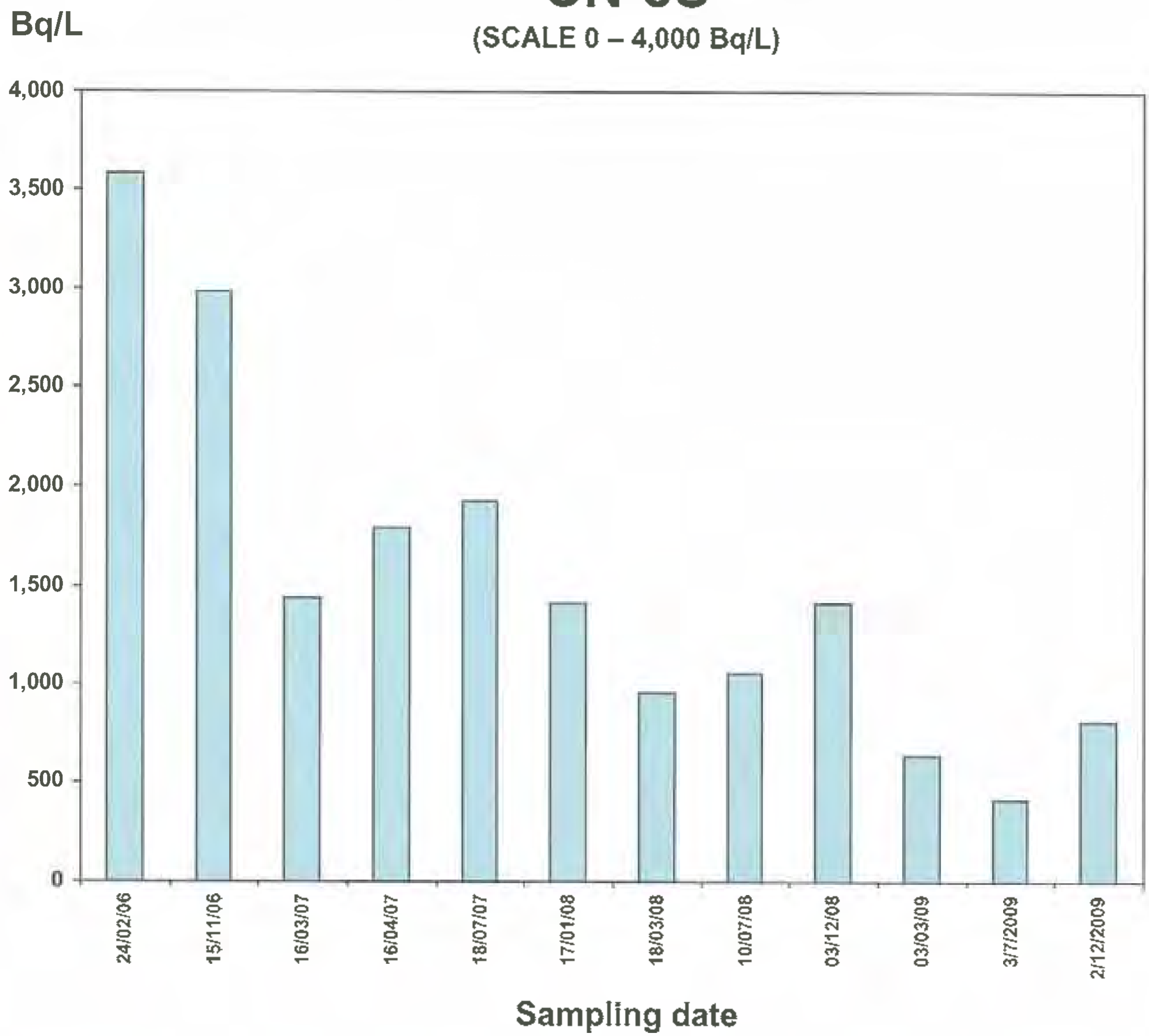


MONITORING RESULTS
CN-2
(SCALE 0 – 5,500 Bq/L)

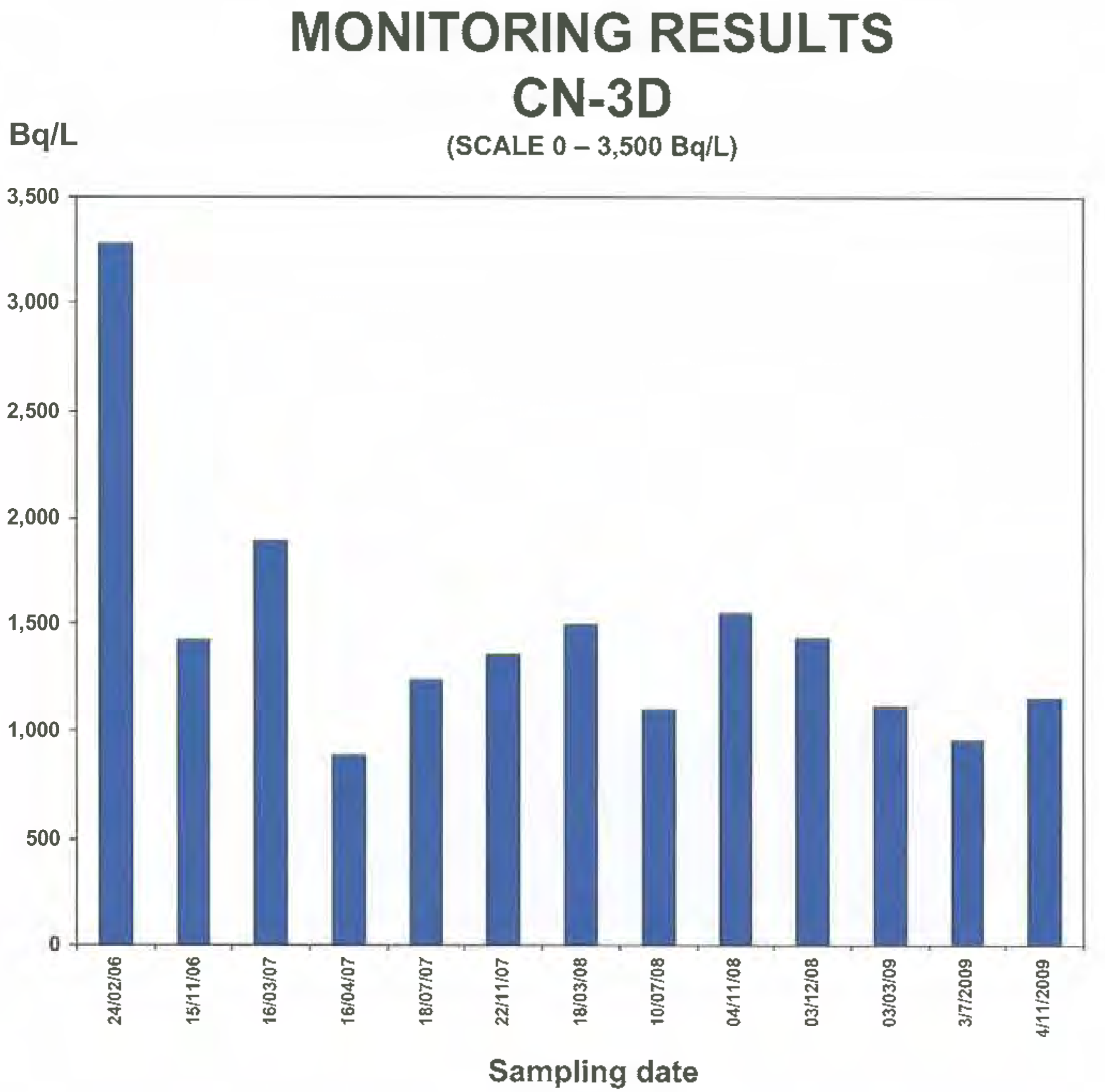


APPENDIX H

MONITORING RESULTS
CN-3S
(SCALE 0 – 4,000 Bq/L)



APPENDIX H


MONITORING RESULTS
CN-3D
(SCALE 0 – 3,500 Bq/L)
Bq/L
3,500
3,000
2,500
2,000
1,500
1,000
500
0
24/02/06
15/11/06
16/03/07
16/04/07
18/07/07
22/11/07
18/03/08
10/07/08
04/11/08
03/12/08
03/03/09
3/7/2009
4/11/2009
Sampling date

APPENDIX H

APPENDIX I

Compilation of water level measurements for 2009

WELL I.D.	DESCRIPTION	DISTANCE FROM STACKS (m)	6/1/09	4/2/09	3/3/09	2/4/09	5/5/09	4/6/09	3/7/09	6/8/09	4/9/09	2/10/09	4/11/09	2/12/09	AVG
RW-1	413 BOUNDARY ROAD	465			701				632				507		613
RW-2	185 MUD LAKE ROAD	1,100			268				230				200		233
RW-3	183 MUD LAKE ROAD	1,100			265				225				176		222
RW-4	711 BRUHAM AVENUE	2,200			3				3.4				4.0		3
RW-5	171 SAWMILL ROAD	2,300			17				17				15		16
RW-6	40987 HWY 41	1,400			81				75				74		77
RW-7	40925 HWY 41	1,600			12				14				9		12
RW-8	204 BOUNDARY ROAD	700			303				283				246		277
RW-9	206 BOUNDARY ROAD	650			139				132				20		97
RW-10	208 BOUNDARY ROAD	625			7				3.5				4.0		5
B-1	SUPERIOR PROPANE OFFICE	160	1,558	1,211	1,411	2,063	1,864	1,460	1,542	1,362	1,405	1,168	1,319	1,346	1,476
B-3	INTERNATIONAL LUMBER OFFICE	385			2				3.5				4.0		3
														AVG	253

APPENDIX J

Produce monitoring results for 2009

DESCRIPTION	DISTANCE FROM STACKS	RHUBBARB	TOMATO	BEANS	CORN	CUCUMBER	POTATO	SPINACH	ZUCCHINI	ONION	CARROT	APPLE	AVG
416 BOUNDARY RD	400	68		84			92		78		107	203	105.33
711 BRUHAM AVE	2,000		23		24	19	20	19					21
413 SWEEZEY CRT	400					62					99	255	138.67
413 BOUNDARY RD	400											115	115
408 BOUNDARY RD	400		91			27				85			67.67
												AVG	89.53

DESCRIPTION	DISTANCE FROM STACKS	RHUBBARB	TOMATO	RED	LETTUCE	CUCUMBER	POTATO	SPINACH	PLUM	ONION	CARROT	APPLE	AVG
LOCAL MARKET	1,750		43		26	63							44
												AVG	44

SRB PRODUCE SAMPLING - 2009

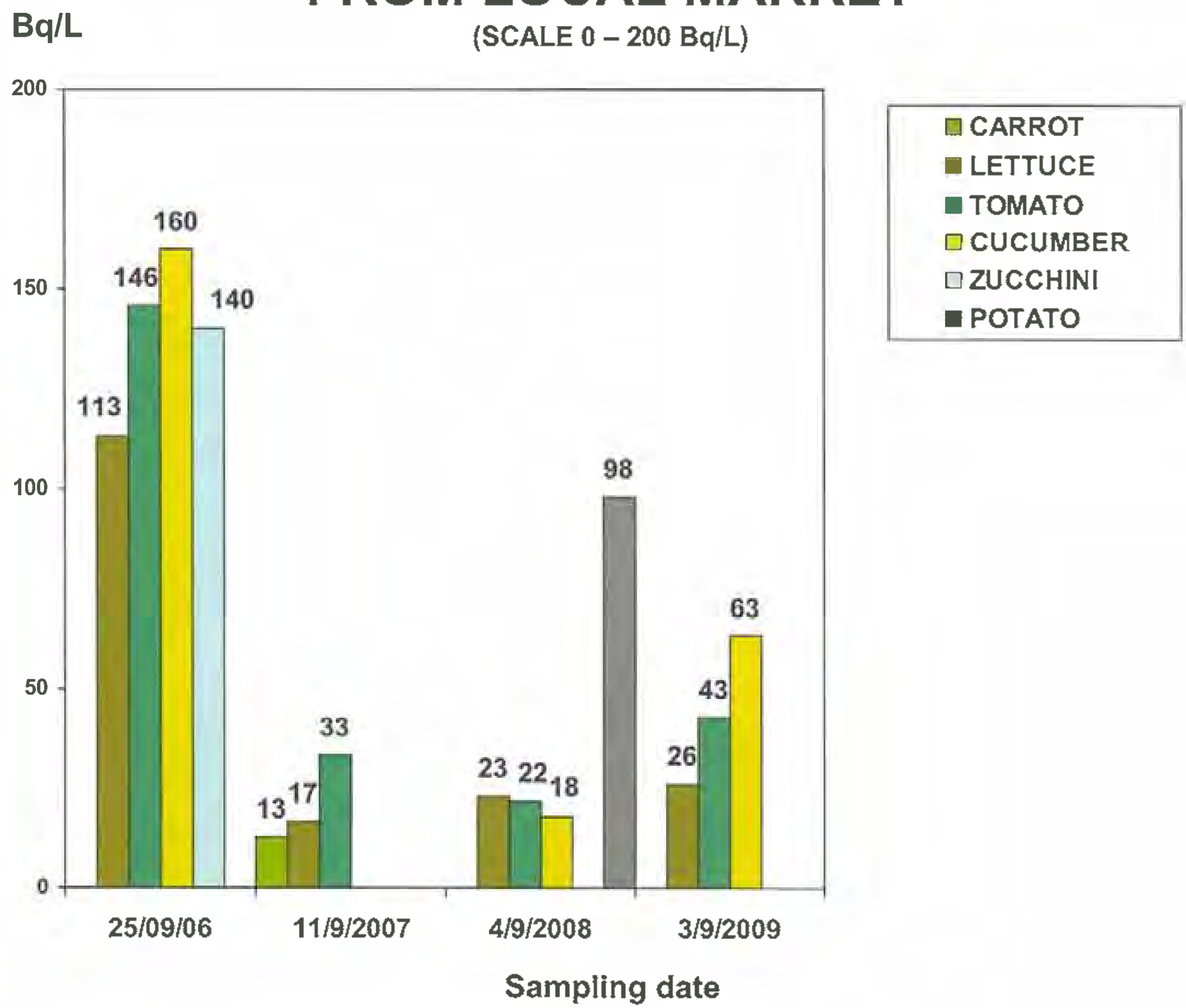
Rev. 11/11/2009

Sample Locations

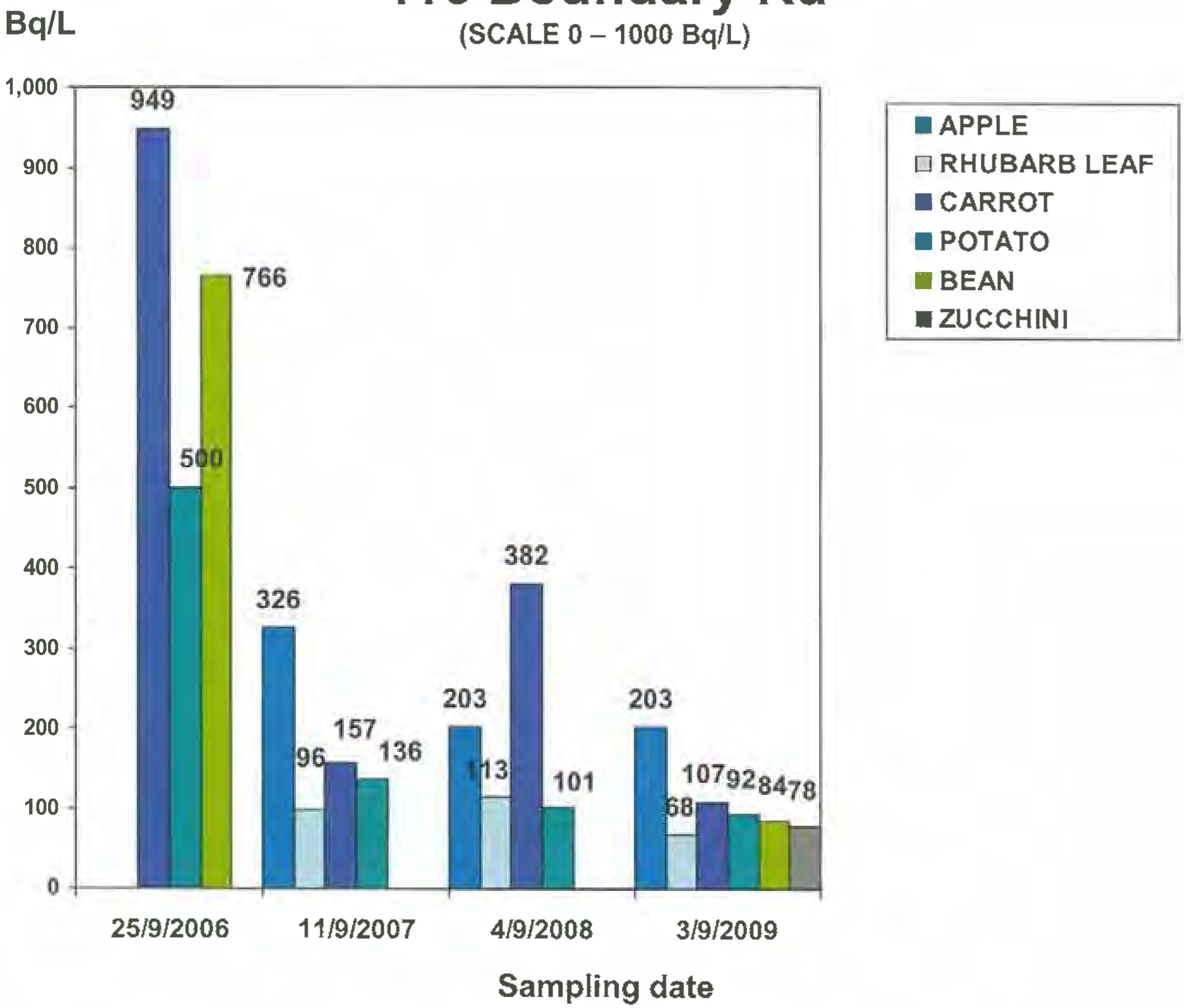
1- Boudens Gardens ~ 1.75 KM
2- 416 Boundary Rd. ~ 0.4 KM
3- 711 Bruham Ave. ~ 2.0 KM
4- 413 Sweezey Crt. ~ 0.4 KM
5- 413 Boundary Rd. ~ 0.4 KM
6- 408 Boundary Rd. ~ 0.35 KM

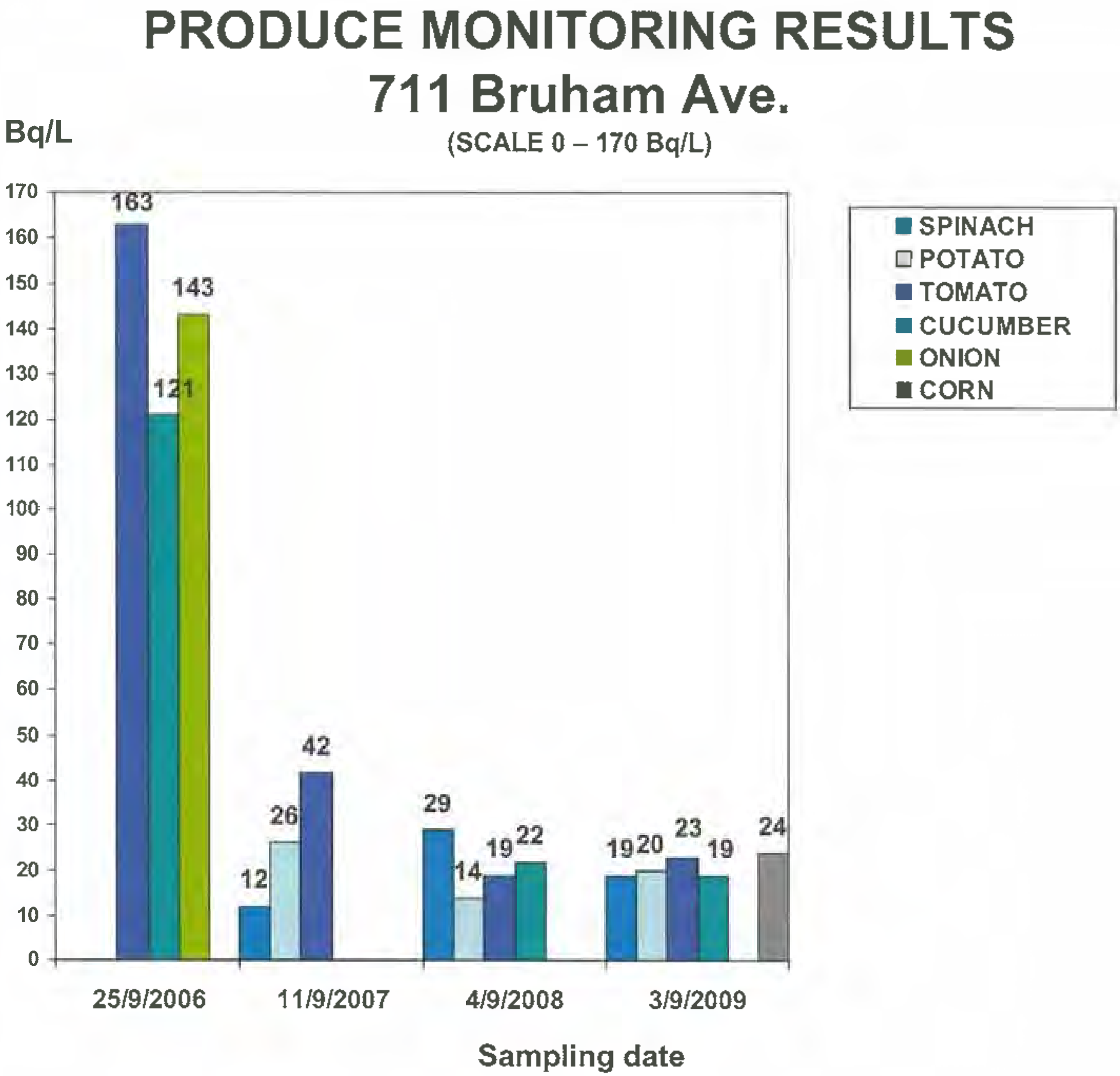
APPENDIX J

PRODUCE MONITORING RESULTS FROM LOCAL MARKET

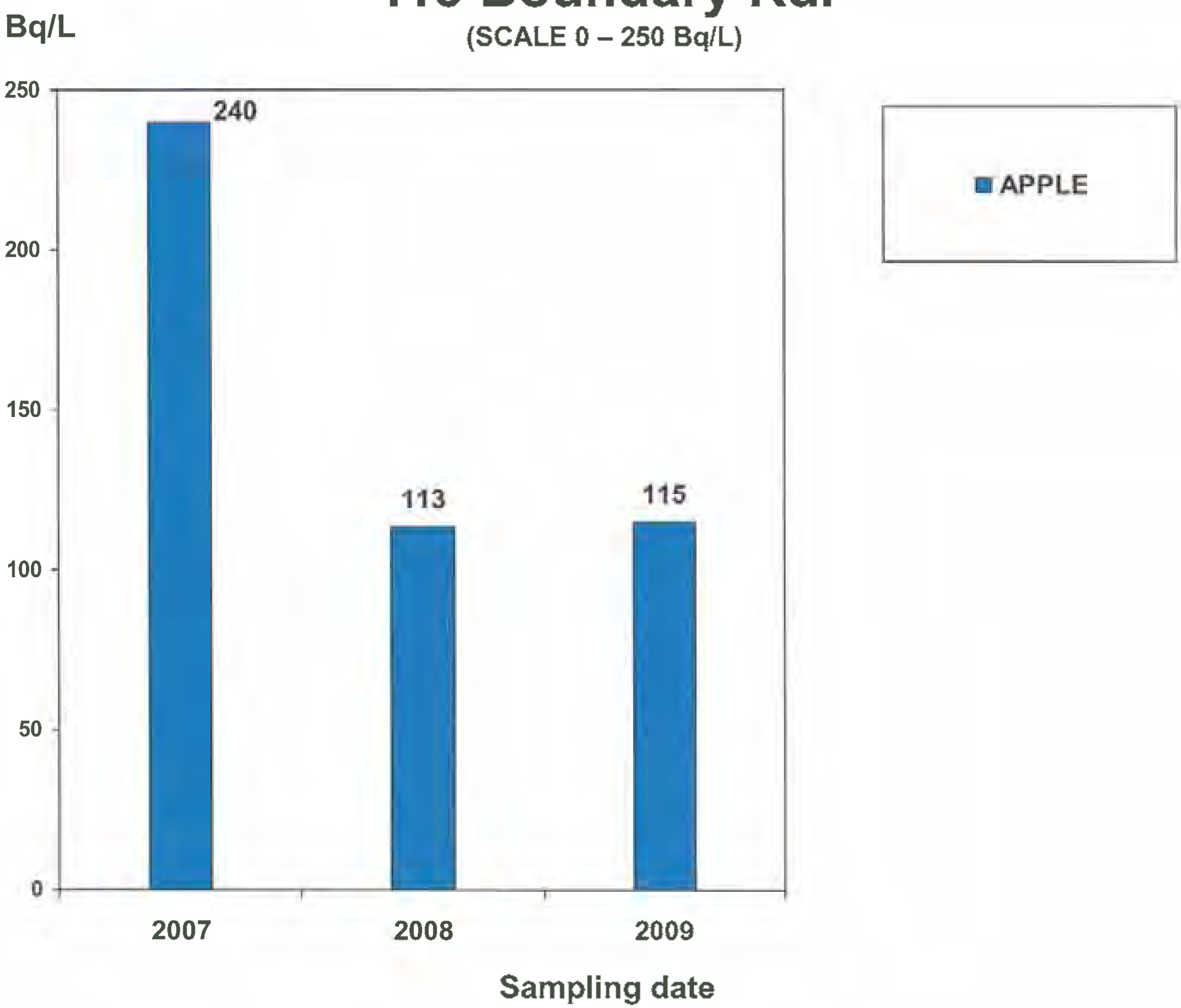


PRODUCE MONITORING RESULTS
416 Boundary Rd
(SCALE 0 – 1000 Bq/L)



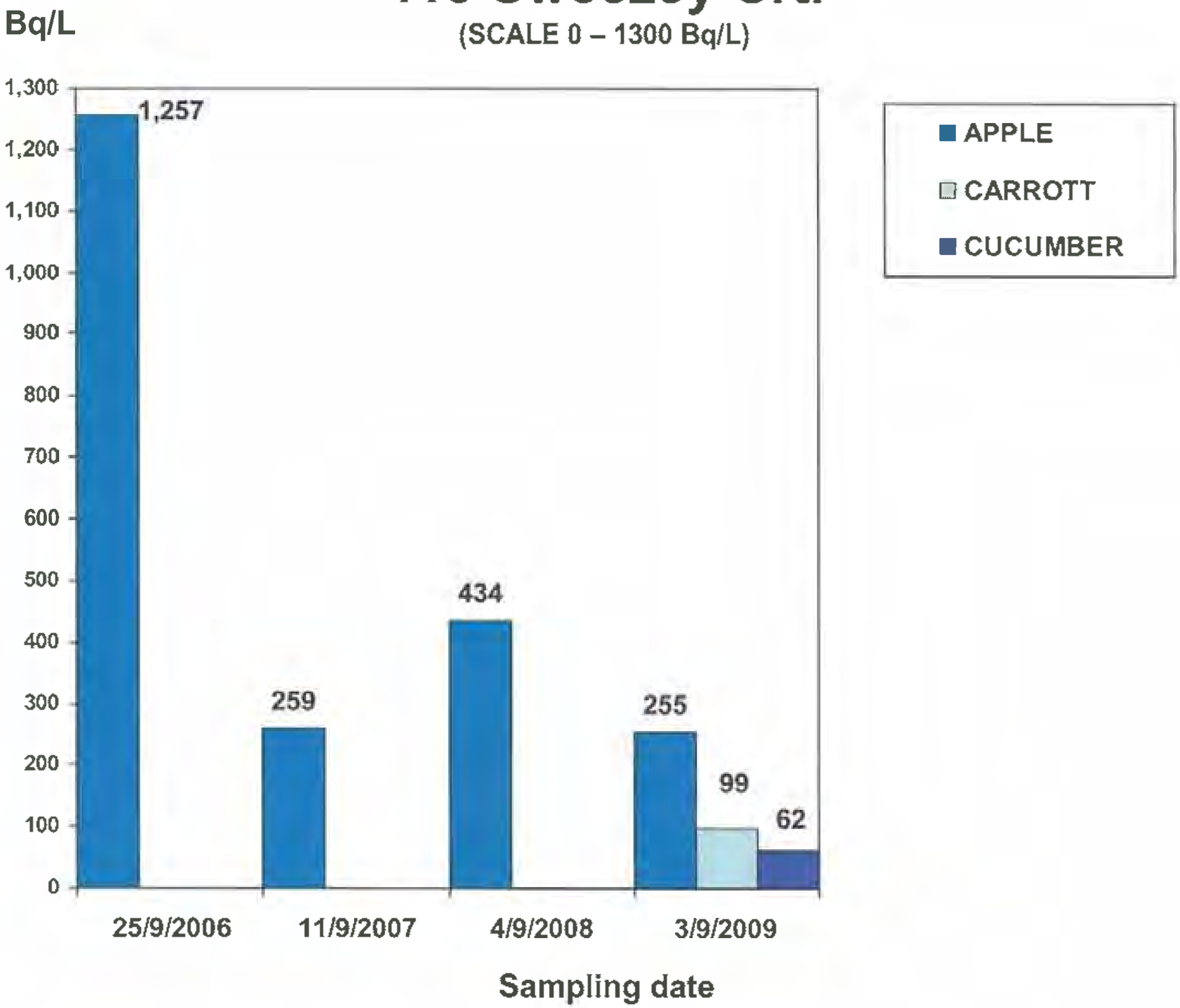

PRODUCE MONITORING RESULTS
711 Bruham Ave.
(SCALE 0 – 170 Bq/L)
Bq/L
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
163
121
143
12
26
42
29
14
19
22
19
20
23
19
24
25/9/2006
11/9/2007
4/9/2008
3/9/2009
Sampling date
SPINACH
POTATO
TOMATO
CUCUMBER
ONION
CORN

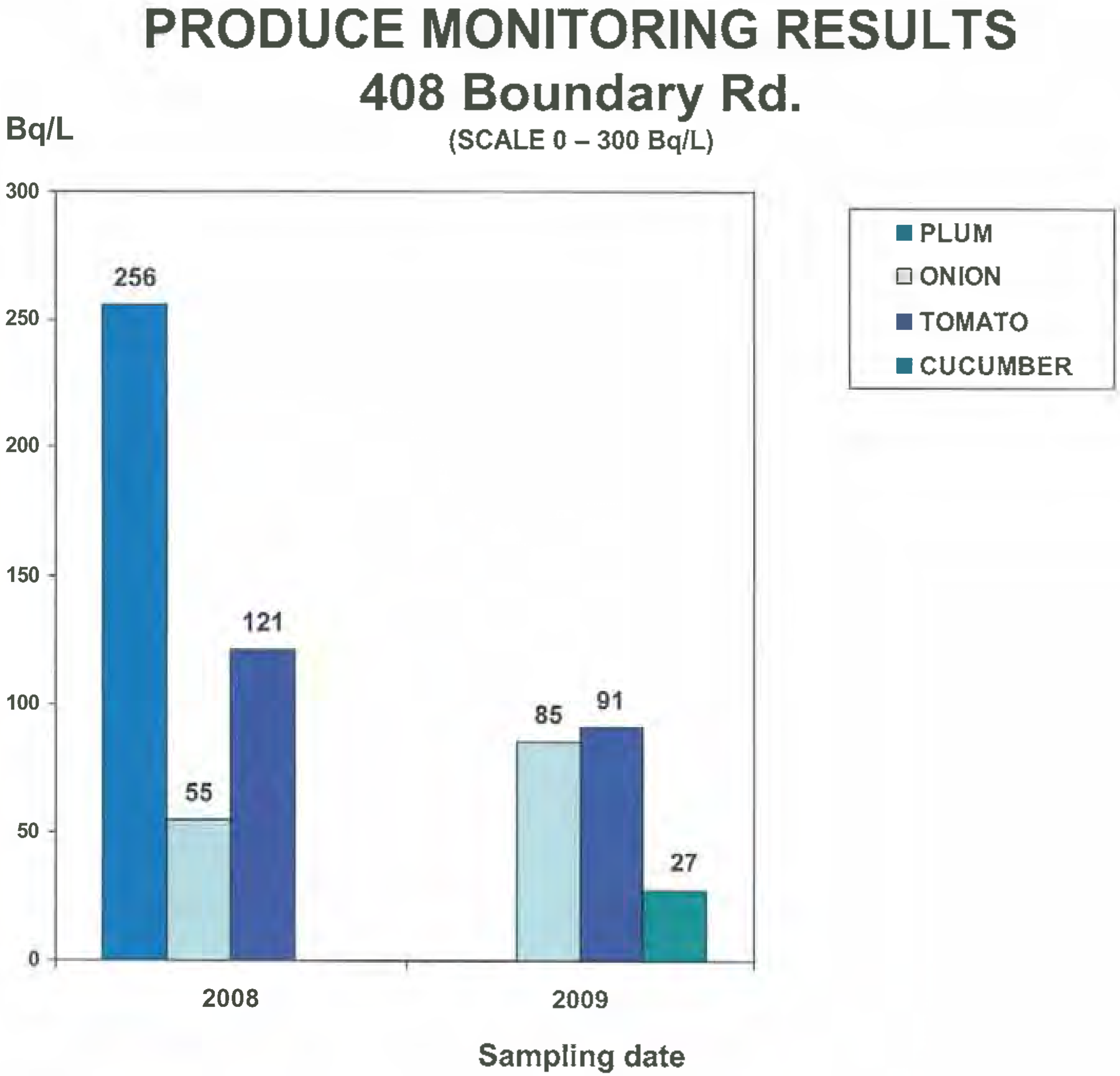
PRODUCE MONITORING RESULTS
413 Boundary Rd.
(SCALE 0 – 250 Bq/L)



PRODUCE MONITORING RESULTS
413 Sweezey Crt.

(SCALE 0 – 1300 Bq/L)




PRODUCE MONITORING RESULTS
408 Boundary Rd.
(SCALE 0 – 300 Bq/L)
Bq/L
300
250
200
150
100
50
0
256
55
121
85
91
27
2008
2009
Sampling date
PLUM
ONION
TOMATO
CUCUMBER

APPENDIX J

APPENDIX K

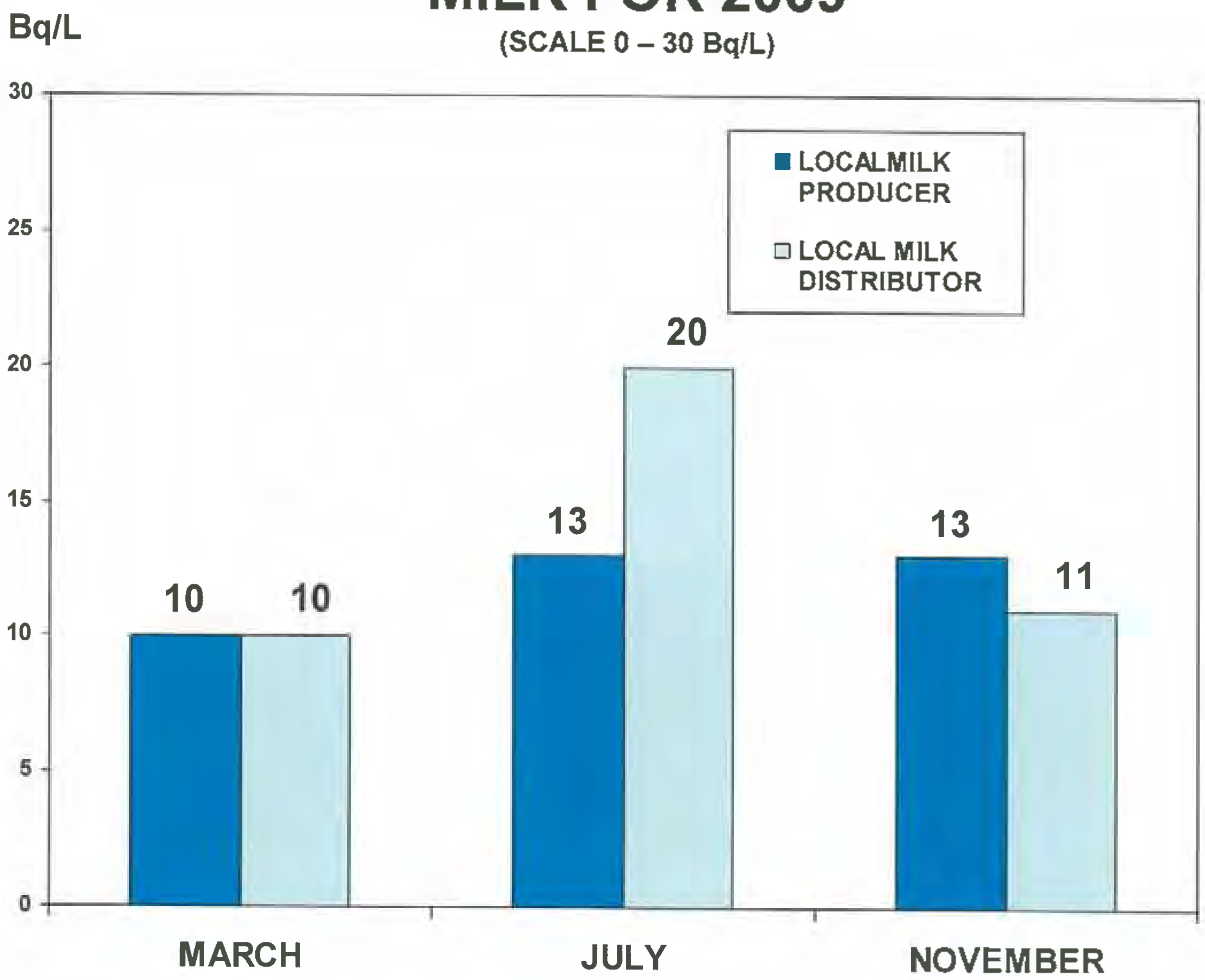
Milk monitoring results for 2009

DESCRIPTION	March	July	November	AVG
LOCAL PRODUCER	10	13	13	12
LOCAL DISTRIBUTOR	10	20	11	13.7
			AVG	12.85

APPENDIX K

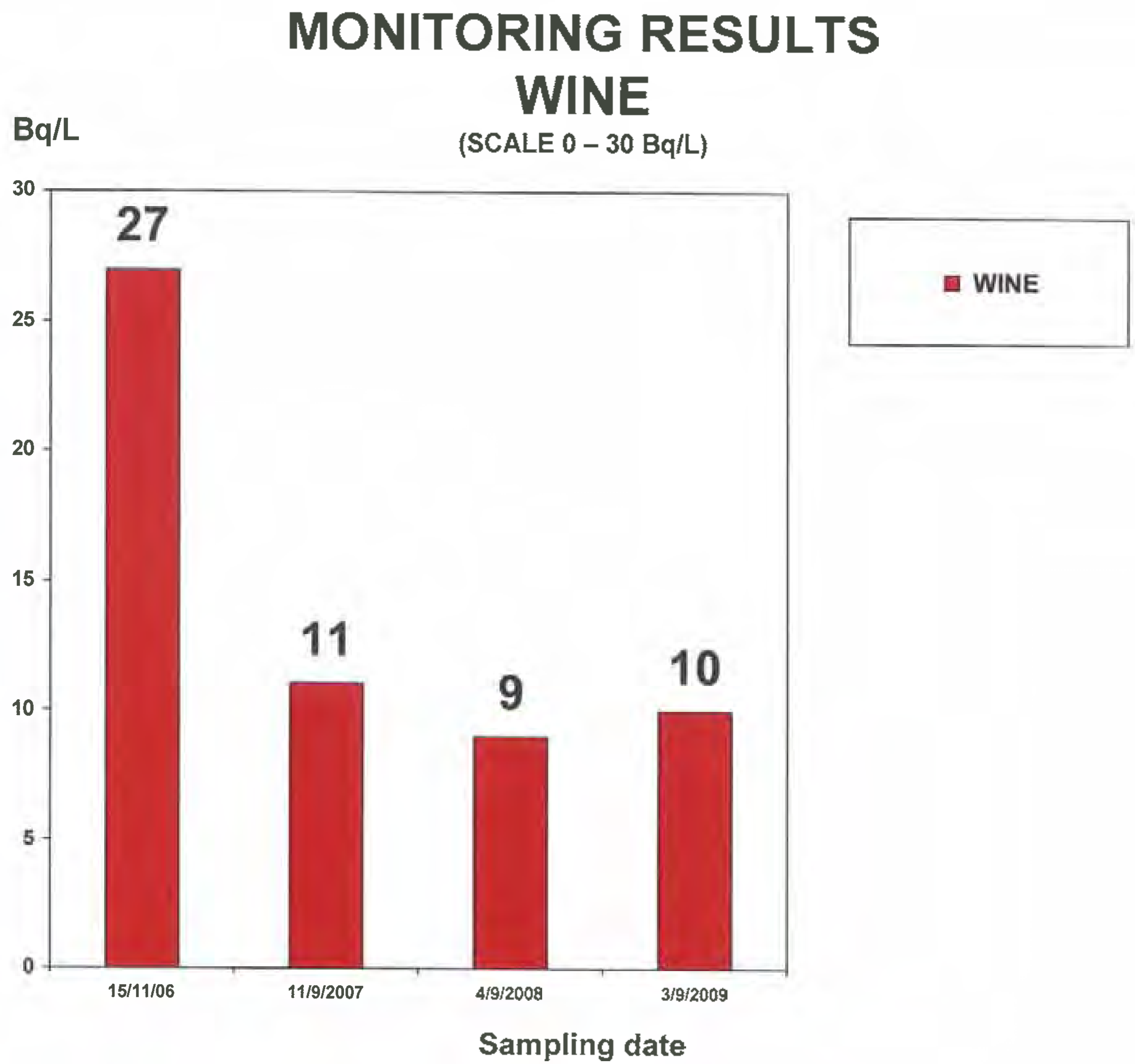
MONITORING RESULTS
MILK FOR 2009

(SCALE 0 – 30 Bq/L)



APPENDIX L

Wine monitoring results for 2009


MONITORING RESULTS
WINE
(SCALE 0 – 30 Bq/L)
Bq/L
30
25
20
15
10
5
0
27
11
9
10
WINE
15/11/06
11/9/2007
4/9/2008
3/9/2009
Sampling date

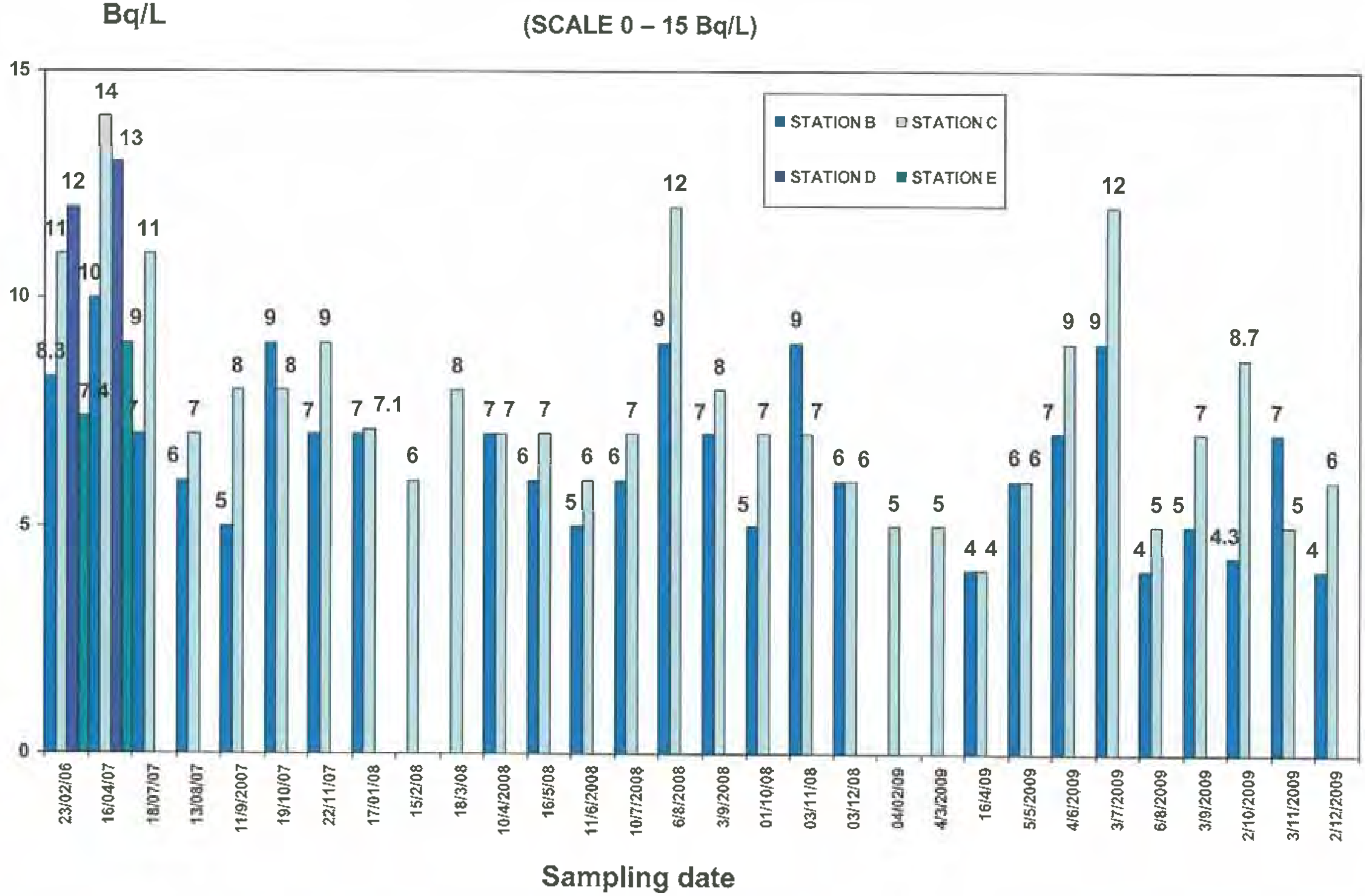
APPENDIX L

APPENDIX M

Receiving waters monitoring results for 2009

MONITORING RESULTS RECEIVING WATERS

(SCALE 0 – 15 Bq/L)



APPENDIX M

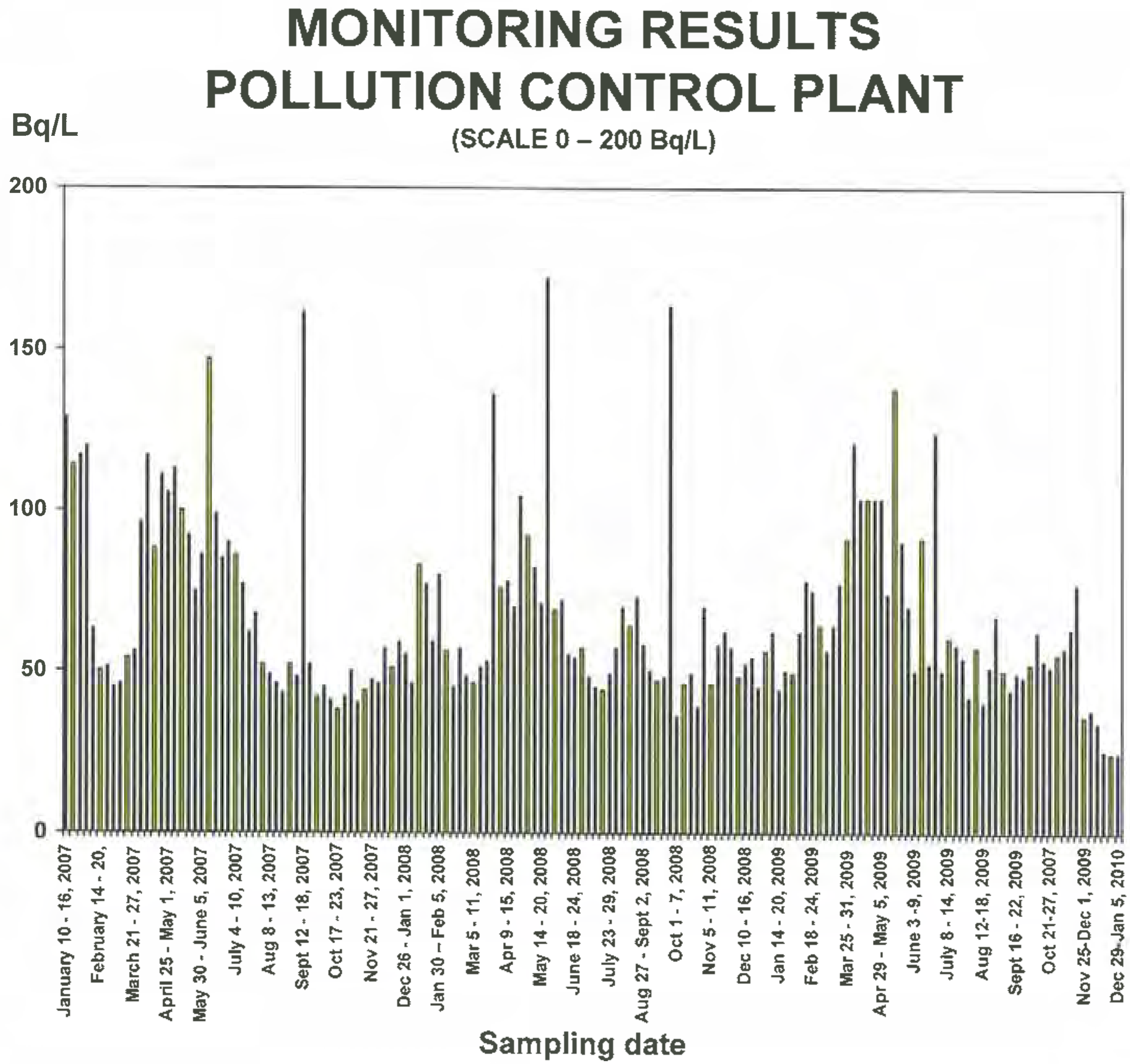
APPENDIX N

Sewage monitoring results for 2009

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
Dec 31 – Jan 6, 2009	56
Jan 7 – 13, 2009	62
Jan 14 – 20, 2009	44
Jan 21 – 27, 2009	50
Jan 28 – Feb 3, 2009	49
Feb 4 – 10, 2009	62
Feb 11 – 17, 2009	78
Feb 18 – 24, 2009	75
Feb 25 – Mar 2, 2009	64
Mar 4 – 10, 2009	56
Mar 11 – 17, 2009	64
Mar 18 – 24, 2009	77

Mar 25 – 31, 2009	91
Apr 1 – 7, 2009	<121
Apr 8 -14, 2009	<103
Apr 15 – 21, 2009	103
Apr 22 – 28, 2009	<103
Apr 29 – May 5, 2009	<103
May 6 – 12, 2009	74
May 13 – 19, 2009	138
May 19 – 26, 2009	90
May 27 – June 2, 2009	70
June 3 – 9, 2009	50
June 10 – 16, 2009	91
June 17 – 23, 2009	52
June 24 – 30, 2009	124
July 1 -7, 2009	50
July 8 – 14, 2009	60
July 15 – 21, 2009	58
July 22 – 28, 2009	54
July 29 – Aug 4, 2009	42
Aug 5 – 11, 2009	57
Aug 12 – 18, 2009	40
Aug 19 – 25, 2009	51
Aug 26 – Sept 1, 2009	67
Sept 2 – 8, 2009	50
Sept 9 – 15, 2009	44
Sept 16 – 22, 2009	49
Sept 23 – 29, 2009	48
Sept 30 – Oct 6, 2009	52
Oct 7 – 13, 2009	62
Oct 13 – 20, 2009	53
Oct 21 – 27, 2009	51
Oct 28 – Nov 3, 2009	55
Nov 4 – 10, 2009	57
Nov 11- 17, 2009	63
Nov 18 – 24, 2009	77
Nov 25 – Dec 1, 2009	36
Dec 2 – 8, 2009	38
Dec 8 – 15, 2009	34
Dec 15 – 22, 2009	26
Dec 22 – 29, 2009	25
Dec 29, 2009 – Jan 5, 2010	25



MONITORING RESULTS
POLLUTION CONTROL PLANT
(SCALE 0 – 200 Bq/L)
Bq/L
200
150
100
50
0
January 10 - 16, 2007
February 14 - 20,
March 21 - 27, 2007
April 25 - May 1, 2007
May 30 - June 5, 2007
July 4 - 10, 2007
Aug 8 - 13, 2007
Sept 12 - 18, 2007
Oct 17 - 23, 2007
Nov 21 - 27, 2007
Dec 26 - Jan 1, 2008
Jan 30 – Feb 5, 2008
Mar 5 - 11, 2008
Apr 9 - 15, 2008
May 14 - 20, 2008
June 18 - 24, 2008
July 23 - 29, 2008
Aug 27 - Sept 2, 2008
Oct 1 - 7, 2008
Nov 5 - 11, 2008
Dec 10 - 16, 2008
Jan 14 - 20, 2009
Feb 18 - 24, 2009
Mar 25 - 31, 2009
Apr 29 - May 5, 2009
June 3 -9, 2009
July 8 - 14, 2009
Aug 12-18, 2009
Sept 16 - 22, 2009
Oct 21-27, 2007
Nov 25-Dec 1, 2009
Dec 29-Jan 5, 2010
Sampling date

APPENDIX O

Precipitation monitoring results for 2009

PRECIPITATION SAMPLERS								
	1P	4P	8P	11P	15P	18P	22P	25P
	Bq/L							
Jan 6 - Feb 3, 2009	58	143	503	275	68	1,193	*n/a	135
Feb 3 - Mar 3, 2009	14	303	335	907	107	155	*n/a	20
Mar 3 - Apr 1, 2009	47	248	44	26	26	59	*n/a	148
Apr 1 - May 4, 2009	20	150	120	103	183	115	*n/a	53
May 4 - June 3, 2009	42	57	169	90	62	105	67	37
June 3 - July 2, 2009	21	46	95	35	22	40	20	62
July 2 - Aug 5, 2009	26	64	85	17	35	44	68	88
Aug 5 - Sept 4, 2009	17	24	40	12	27	47	19	27
Sept 4 - Oct 1, 2009	184	72	18	13	8	64	45	18
Oct 1 - Nov 3, 2009	91	117	88	76	44	41	24	41
Nov 3 - Dec 2, 2009	137	125	62	62	49	59	116	291
Dec 2, 2009 - Jan 5, 2010	32	128	69	169	44	251	164	39
Average	**57**	**123**	**136**	**149**	**56**	**181**	**65**	**80**
Average all results	**106**							

*Samplers are installed on posts that are dug into the ground. As permission was not granted by landowner before the thaw occurred sampler 22P was only installed in April 2009 after the ground was soft enough.

PASSIVE AIR SAMPLER	JAN (Bq/m3) MEASURED	JAN (Bq/L) ESTIMATED IN RAIN	PRECIPITATION MONITOR	JAN (Bq/L) MEASURED	RATIO ESTIMATED/MEASURED
N250	0.61	114	1P	58	197%
NW250	1.14	214	4P	143	149%
W250	2.8	525	8P	503	104%
SW250	1.12	210	11P	275	76%
S250	1.23	231	15P	68	339%
SE250	6.78	1271	18P	1,193	107%
NE250	0.77	144	25P	135	107%
					154%

PASSIVE AIR SAMPLER	FEB (Bq/m3) MEASURED	FEB (Bq/L) ESTIMATED IN RAIN	PRECIPITATION MONITOR	FEB (Bq/L) MEASURED	RATIO ESTIMATED/MEASURED
N250	0.7	124	1P	14	882%
NW250	3.89	686	4P	303	227%
W250	2.81	496	8P	335	148%
SW250	1.13	199	11P	907	22%
S250	4.89	863	15P	107	806%
SE250	11.82	2086	18P	155	1346%
NE250	0.61	108	25P	20	538%
					567%

PASSIVE AIR SAMPLER	MAR (Bq/m3) MEASURED	MAR (Bq/L) ESTIMATED IN RAIN	PRECIPITATION MONITOR	MAR (Bq/L) MEASURED	RATIO ESTIMATED/MEASURED
N250	0.58	64	1P	47	137%
NW250	3.31	368	4P	248	148%
W250	3.11	346	8P	44	785%
SW250	0.94	104	11P	26	402%
S250	4.97	552	15P	26	2124%
SE250	4.95	560	18P	59	932%
NE250	4.92	547	25P	148	369%
					700%

PASSIVE AIR SAMPLER	APR (Bq/m3) MEASURED	APR (Bq/L) ESTIMATED IN RAIN	PRECIPITATION MONITOR	APR (Bq/L) MEASURED	RATIO ESTIMATED/MEASURED
N250	1.73	137	1P	20	685%
NW250	3.33	263	4P	150	175%
W250	1.73	137	8P	120	114%
SW250	3.08	243	11P	103	236%
S250	2.32	183	15P	183	100%
SE250	6.22	491	18P	115	427%
NE250	4.86	384	25P	53	724%
					351%

PASSIVE AIR SAMPLER	MAY (Bq/m3) MEASURED	MAY (Bq/L) ESTIMATED IN RAIN	PRECIPITATION MONITOR	MAY (Bq/L) MEASURED	RATIO ESTIMATED/MEASURED
N250	1.58	69	1P	42	164%
NW250	3.87	168	4P	57	295%
W250	2.45	107	8P	169	63%
SW250	2.7	117	11P	90	130%
S250	3.78	164	15P	62	265%
SE250	6.38	277	18P	105	264%
E250	3.06	133	22P	67	199%
NE250	8.05	350	25P	37	946%
					291%

PASSIVE AIR SAMPLER	JUNE (Bq/m3) MEASURED	JUNE (Bq/L) ESTIMATED IN RAIN	PRECIPITATION MONITOR	JUNE (Bq/L) MEASURED	RATIO ESTIMATED/MEASURED
N250	3.14	96	1P	21	458%
NW250	6.16	189	4P	46	410%
W250	5.03	154	8P	95	162%
SW250	8.42	258	11P	35	736%
S250	2.58	79	15P	22	359%
SE250	4.8	147	18P	40	367%
E250	3.61	111	22P	20	553%
NE250	5.49	168	25P	62	271%
					415%

PASSIVE AIR SAMPLER	JULY (Bq/m3) MEASURED	JULY (Bq/L) ESTIMATED IN RAIN	PRECIPITATION MONITOR	JULY (Bq/L) MEASURED	RATIO ESTIMATED/MEASURED
N250	2.55	64	1P	26	245%
NW250	3.14	79	4P	64	123%
W250	1.44	36	8P	85	42%
SW250	0.72	18	11P	17	106%
S250	0.41	10	15P	35	29%
SE250	4.92	123	18P	44	280%
E250	1.45	36	22P	68	53%
NE250	1.37	34	25P	88	39%
					116%

PASSIVE AIR SAMPLER	AUG (Bq/m3) MEASURED	AUG (Bq/L) ESTIMATED IN RAIN	PRECIPITATION MONITOR	AUG (Bq/L) MEASURED	RATIO ESTIMATED/MEASURED
N250	2.03	52	1P	17	304%
NW250	2.15	55	4P	24	228%
W250	0.65	17	8P	40	41%
SW250	1.63	41	11P	12	345%
S250	1.87	48	15P	27	176%
SE250	7.75	197	18P	47	419%
E250	6.38	162	22P	19	854%
NE250	7.74	197	25P	27	729%
					387%

PASSIVE AIR SAMPLER	SEPT (Bq/m3) MEASURED	SEPT (Bq/L) ESTIMATED IN RAIN	PRECIPITATION MONITOR	SEPT (Bq/L) MEASURED	RATIO ESTIMATED/MEASURED
N250	3.32	103	1P	184	56%
NW250	5.23	162	4P	72	225%
W250	3.31	102	8P	18	569%
SW250	2.85	88	11P	13	678%
S250	2.81	87	15P	8	1086%
SE250	6.89	213	18P	64	333%
E250	4.91	152	22P	45	337%
NE250	2.13	66	25P	18	366%
					456%

APPENDIX O

PASSIVE AIR SAMPLER	OCT (Bq/m3) MEASURED	OCT (Bq/L) ESTIMATED IN RAIN	PRECIPITATION MONITOR	OCT (Bq/L) MEASURED	RATIO ESTIMATED/MEASURED
N250	3.18	162	1P	91	178%
NW250	2.8	142	4P	117	122%
W250	4.14	211	8P	88	239%
SW250	5.73	291	11P	76	383%
S250	0.87	44	15P	44	101%
SE250	3.61	184	18P	41	448%
E250	3.63	185	22P	24	769%
NE250	6.46	329	25P	41	804%
					380%

PASSIVE AIR SAMPLER	NOV (Bq/m3) MEASURED	NOV (Bq/L) ESTIMATED IN RAIN	PRECIPITATION MONITOR	NOV (Bq/L) MEASURED	RATIO ESTIMATED/MEASURED
N250	0.62	45	1P	137	33%
NW250	3.05	223	4P	125	179%
W250	1.22	89	8P	62	144%
SW250	0.74	54	11P	62	87%
S250	3.2	234	15P	49	478%
SE250	2.67	195	18P	59	331%
E250	2.22	162	22P	116	140%
NE250	1.24	91	25P	291	31%
					178%

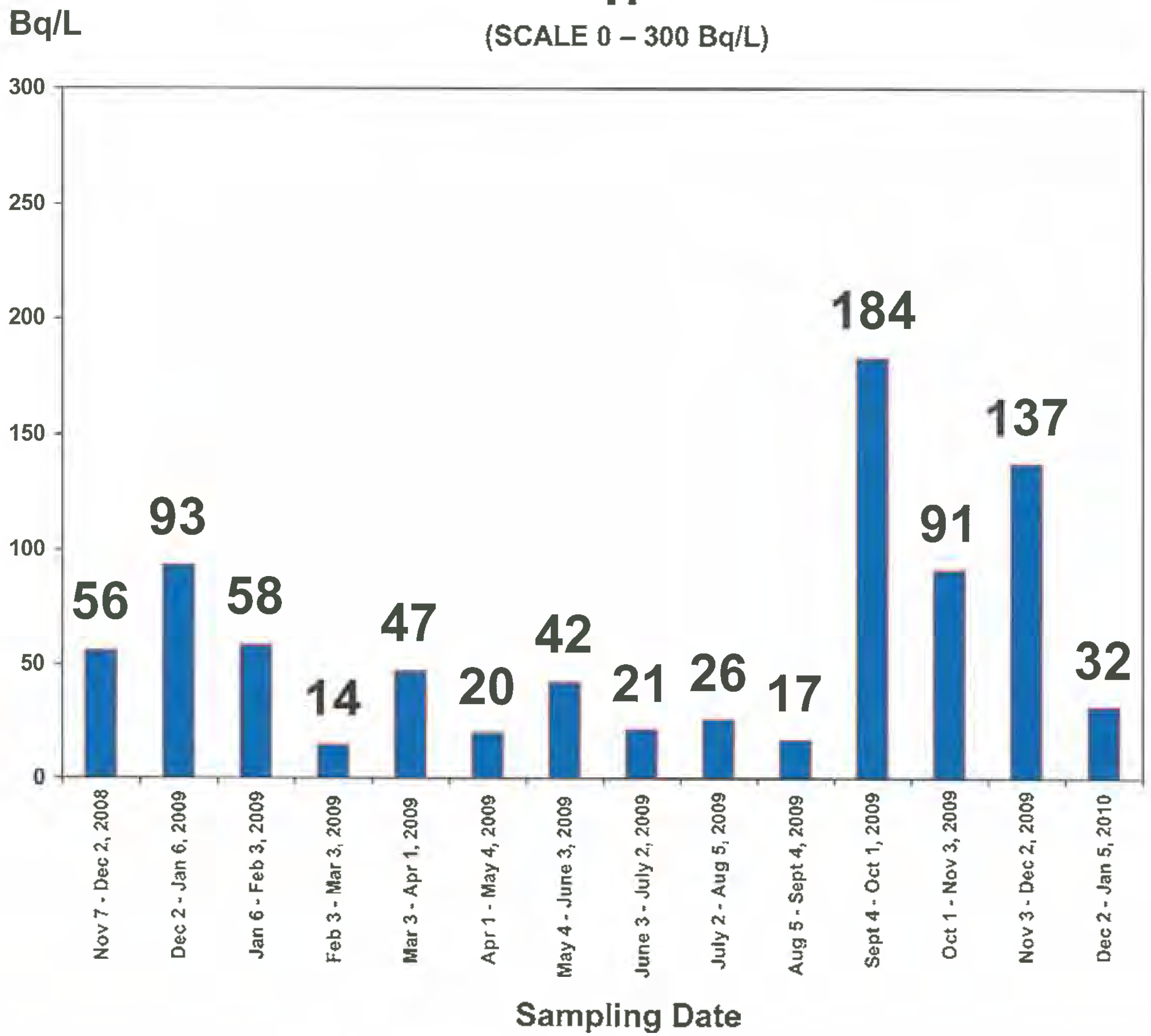
PASSIVE AIR SAMPLER	DEC (Bq/m3) MEASURED	DEC (Bq/L) ESTIMATED IN RAIN	PRECIPITATION MONITOR	DEC (Bq/L) MEASURED	RATIO ESTIMATED/MEASURED
N250	1.16	145	1P	32	453%
NW250	1.45	181	4P	128	142%
W250	1.19	149	8P	69	216%
SW250	0.74	93	11P	169	55%
S250	0.81	101	15P	44	230%
SE250	7.23	904	18P	251	360%
E250	4.47	559	22P	164	341%
NE250	1.58	198	25P	39	506%
					288%

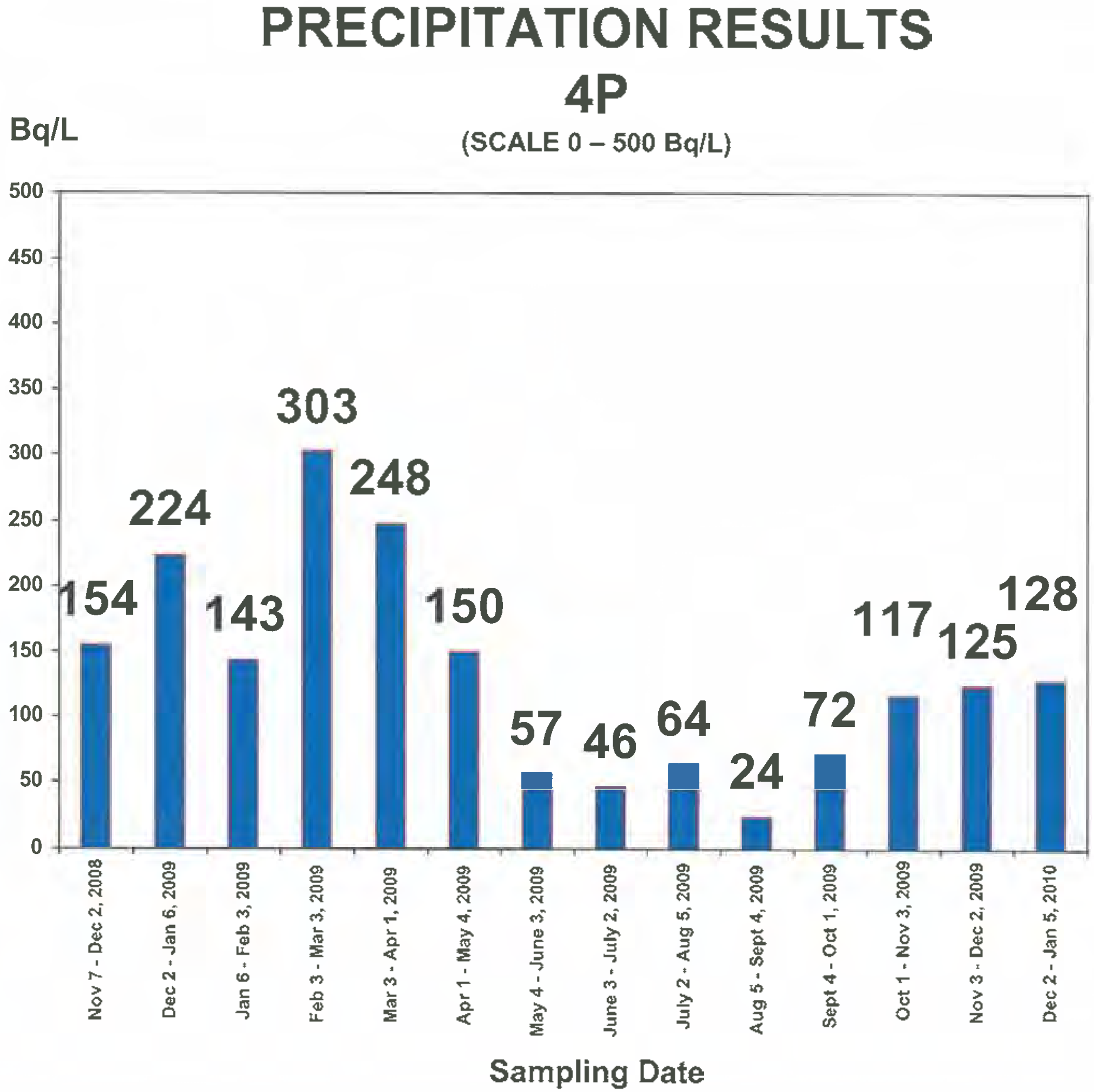
Site-Specific Absolute Humidity Values

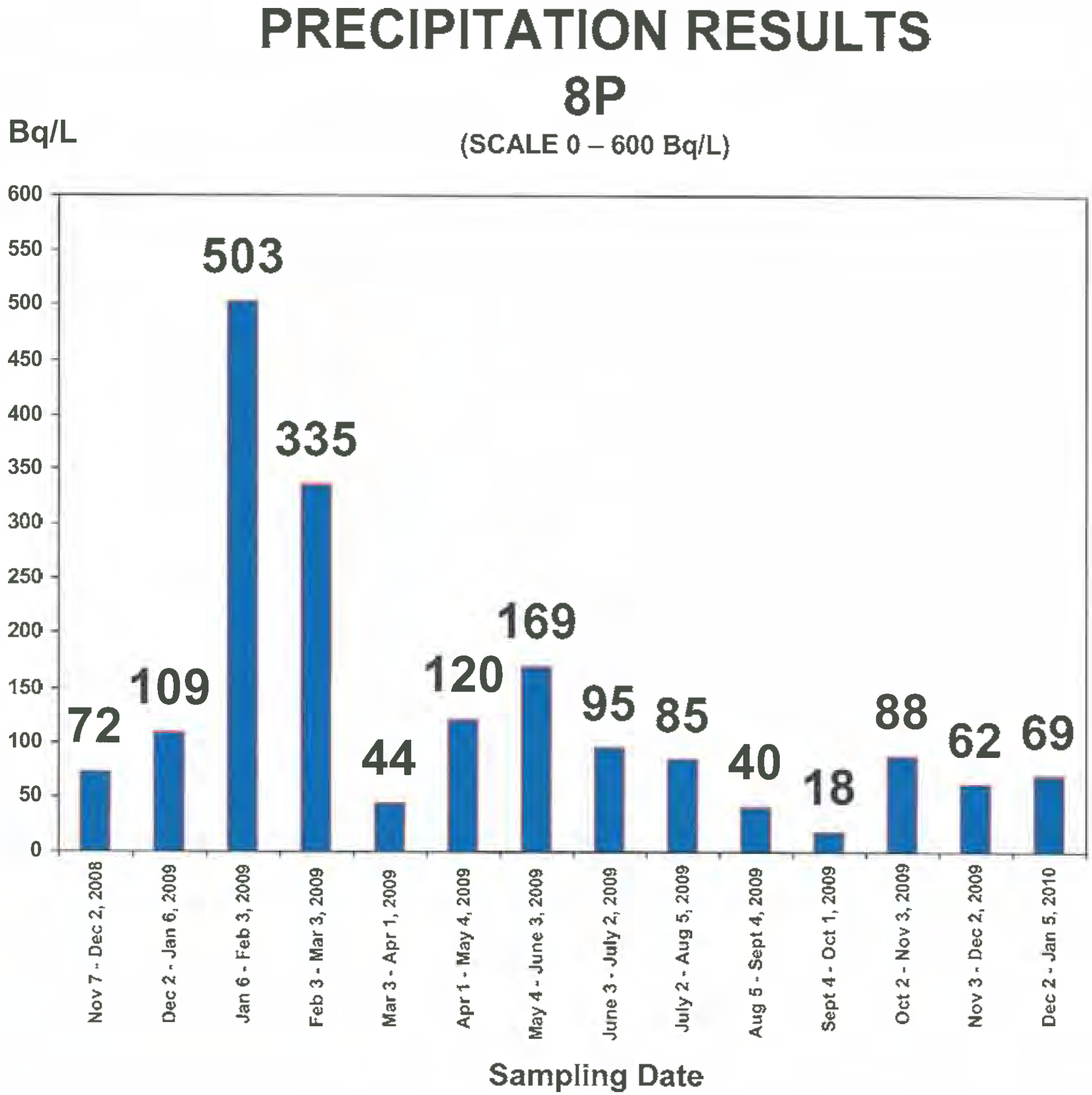
year	Endpoint	Monthly Readings												Average		
		J	F	M	A	M	J	J	A	S	O	N	D	Annual	Snow-free Period	Growing Season
2000	Temp (C)	-11.8	-8.2	0.5	4.4	12.4	15.6	18.4	17.7	12.8	7.9	1.0	-11.3	4.9	11.3	16.1
	Dew Point (C)	-16.5	-12.8	-5.7	-3.6	7.0	10.9	13.8	13.8	8.7	2.7	-2.4	-14.8	0.1	6.3	11.8
	RH (%)	68.9	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

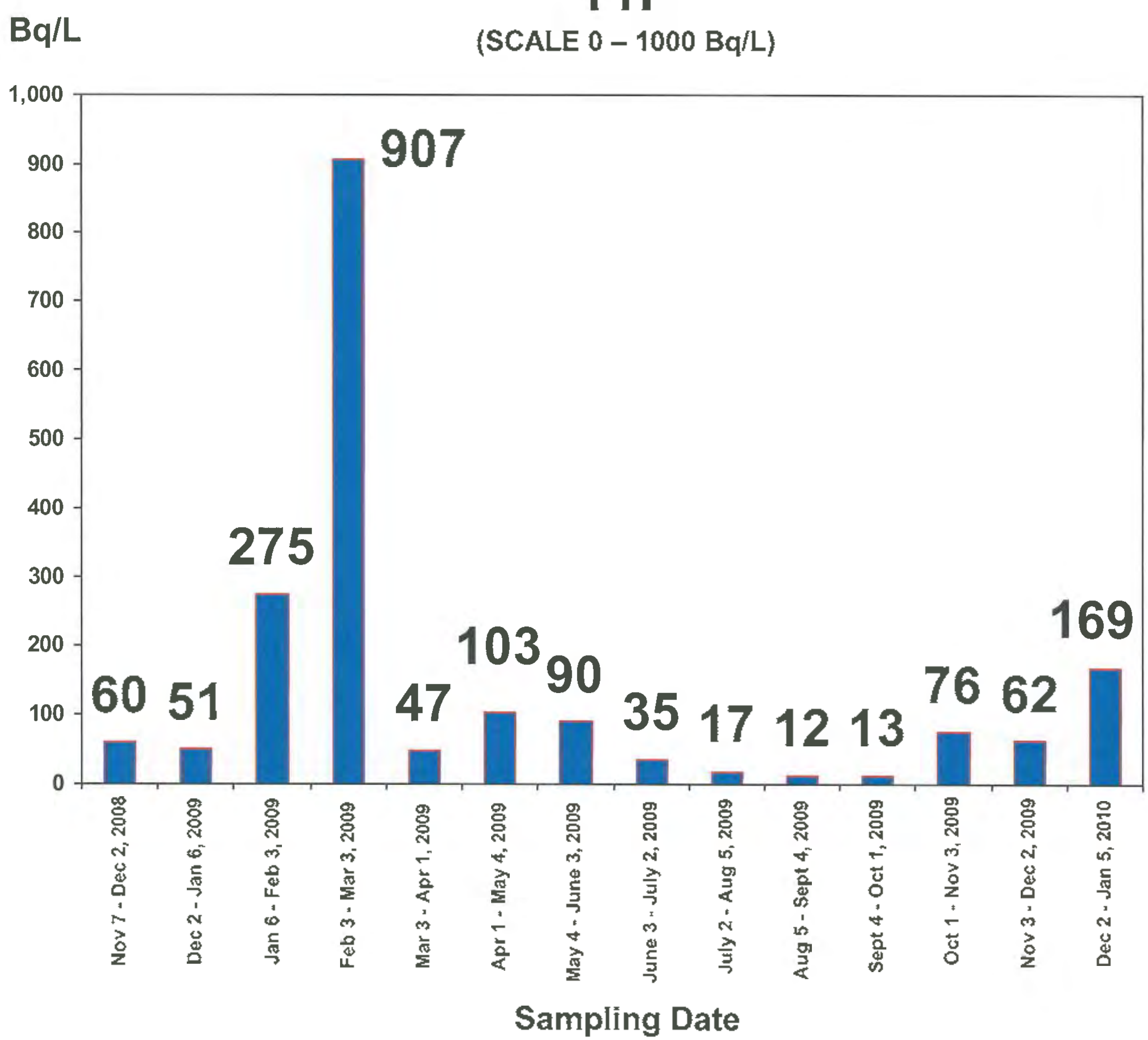


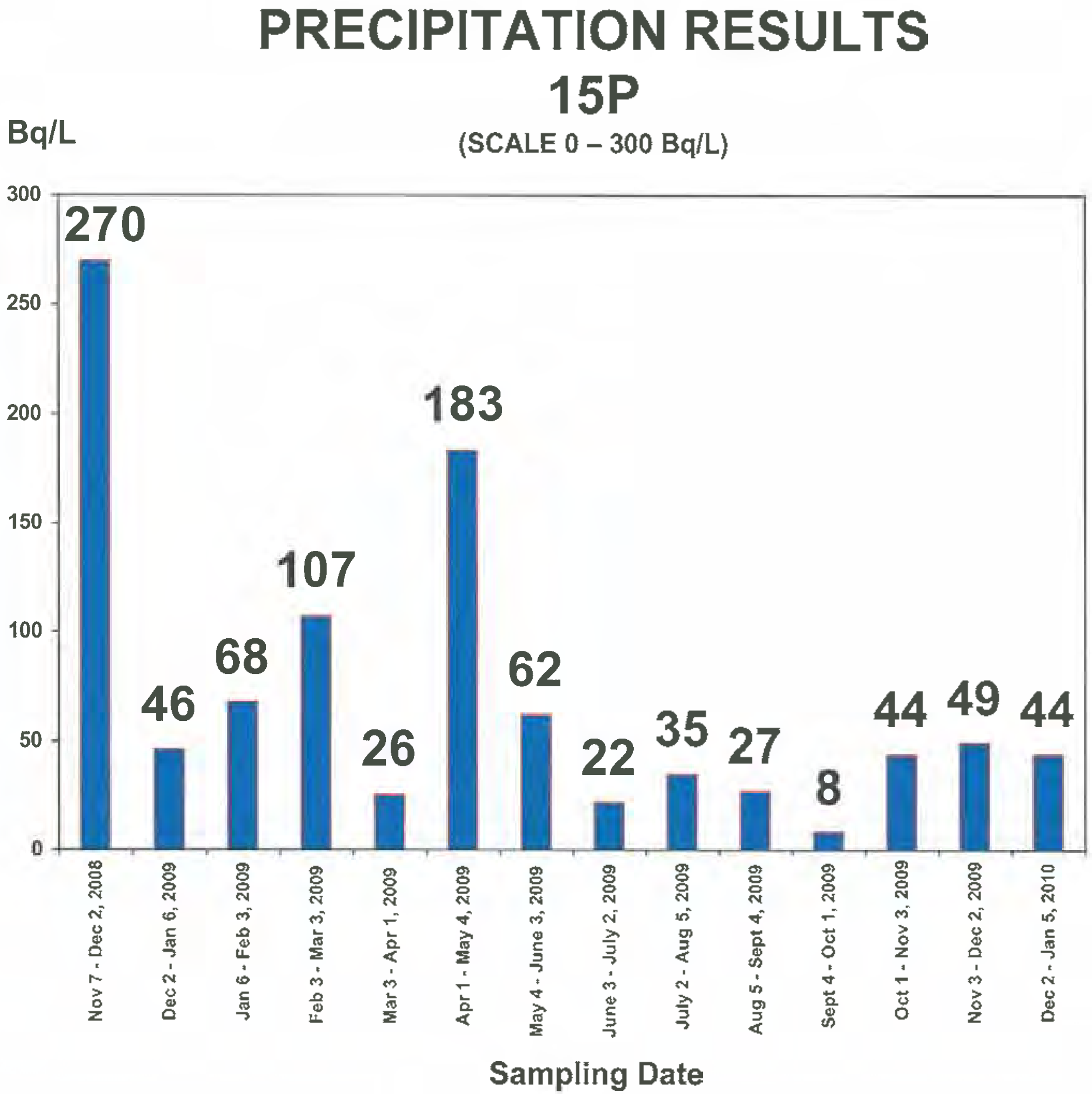

PRECIPITATION RESULTS
4P
(SCALE 0 – 500 Bq/L)
Bq/L
500
450
400
350
300
250
200
150
100
50
0
154
224
143
303
248
150
57
46
64
24
72
117
125
128
Nov 7 - Dec 2, 2008
Dec 2 - Jan 6, 2009
Jan 6 - Feb 3, 2009
Feb 3 - Mar 3, 2009
Mar 3 - Apr 1, 2009
Apr 1 - May 4, 2009
May 4 - June 3, 2009
June 3 - July 2, 2009
July 2 - Aug 5, 2009
Aug 5 - Sept 4, 2009
Sept 4 - Oct 1, 2009
Oct 1 - Nov 3, 2009
Nov 3 - Dec 2, 2009
Dec 2 - Jan 5, 2010
Sampling Date

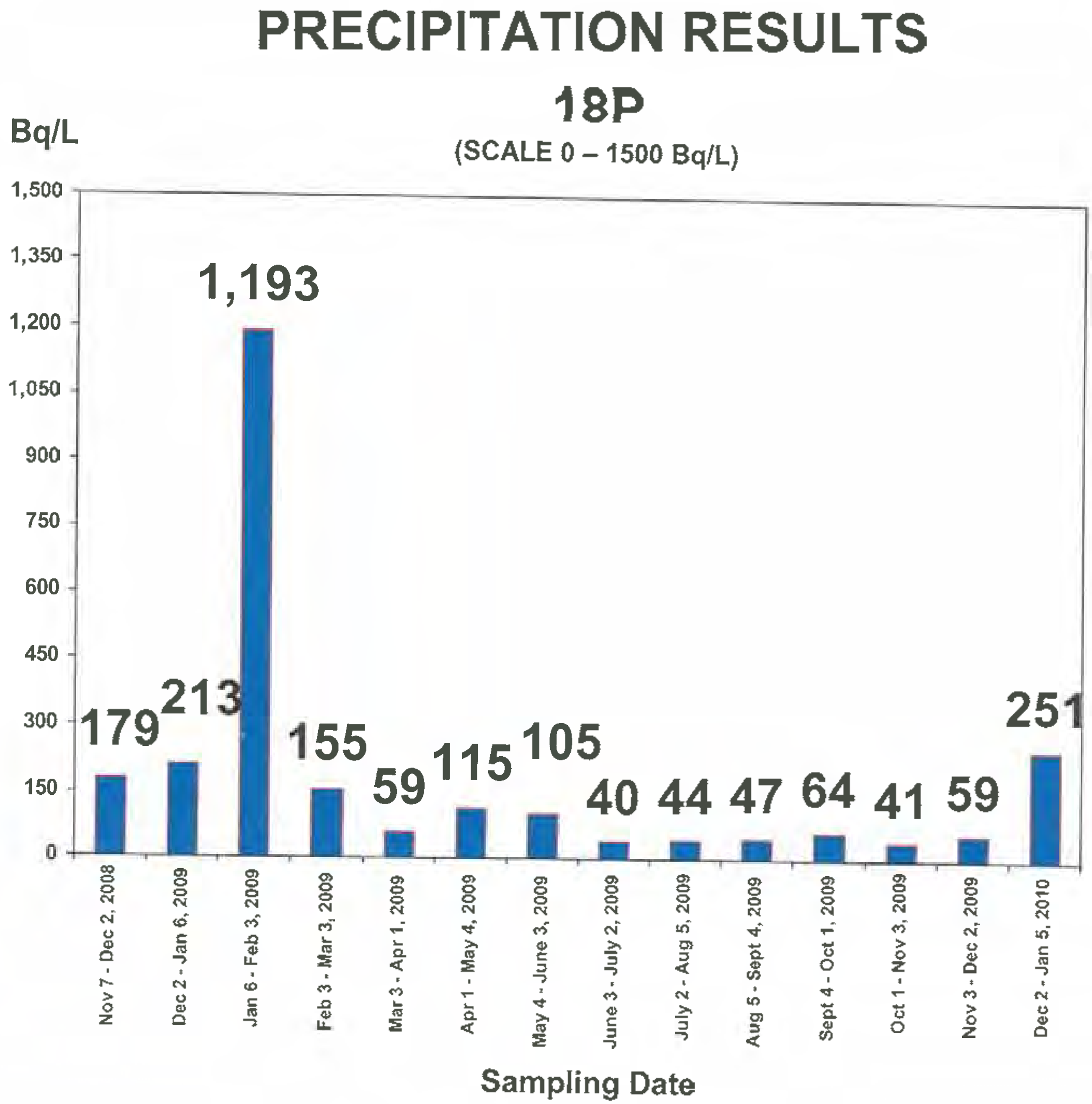


PRECIPITATION RESULTS
8P
(SCALE 0 – 600 Bq/L)
Bq/L
600
550
500
450
400
350
300
250
200
150
100
50
0
72
109
503
335
44
120
169
95
85
40
18
88
62
69
Nov 7 - Dec 2, 2008
Dec 2 - Jan 6, 2009
Jan 6 - Feb 3, 2009
Feb 3 - Mar 3, 2009
Mar 3 - Apr 1, 2009
Apr 1 - May 4, 2009
May 4 - June 3, 2009
June 3 - July 2, 2009
July 2 - Aug 5, 2009
Aug 5 - Sept 4, 2009
Sept 4 - Oct 1, 2009
Oct 2 - Nov 3, 2009
Nov 3 - Dec 2, 2009
Dec 2 - Jan 5, 2010
Sampling Date

PRECIPITATION RESULTS
11P
(SCALE 0 – 1000 Bq/L)

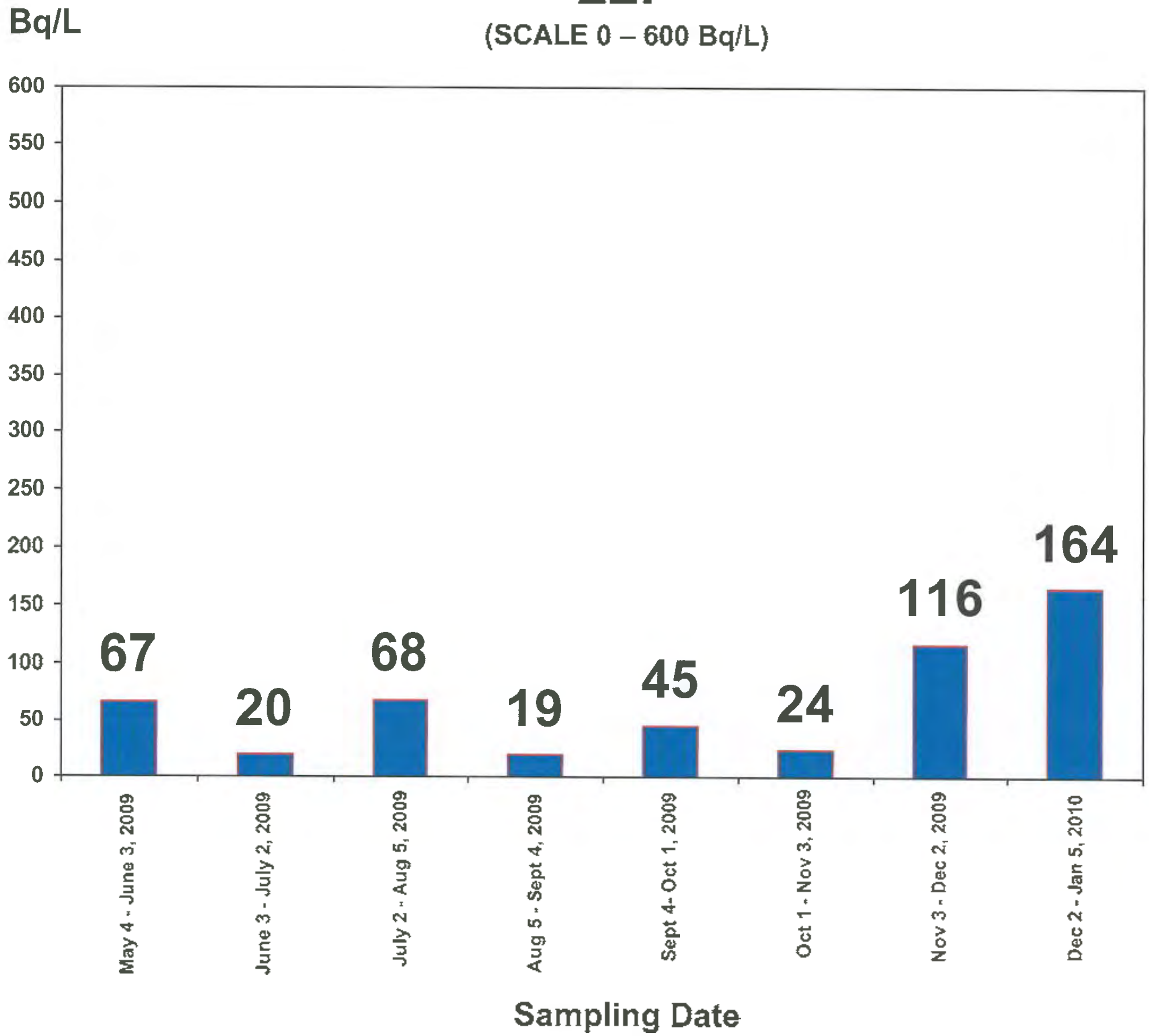



PRECIPITATION RESULTS
15P
(SCALE 0 – 300 Bq/L)
Bq/L
300
250
200
150
100
50
0
270
46
68
107
26
183
62
22
35
27
8
44
49
44
Nov 7 - Dec 2, 2008
Dec 2 - Jan 6, 2009
Jan 6 - Feb 3, 2009
Feb 3 - Mar 3, 2009
Mar 3 - Apr 1, 2009
Apr 1 - May 4, 2009
May 4 - June 3, 2009
June 3 - July 2, 2009
July 2 - Aug 5, 2009
Aug 5 - Sept 4, 2009
Sept 4 - Oct 1, 2009
Oct 1 - Nov 3, 2009
Nov 3 - Dec 2, 2009
Dec 2 - Jan 5, 2010
Sampling Date

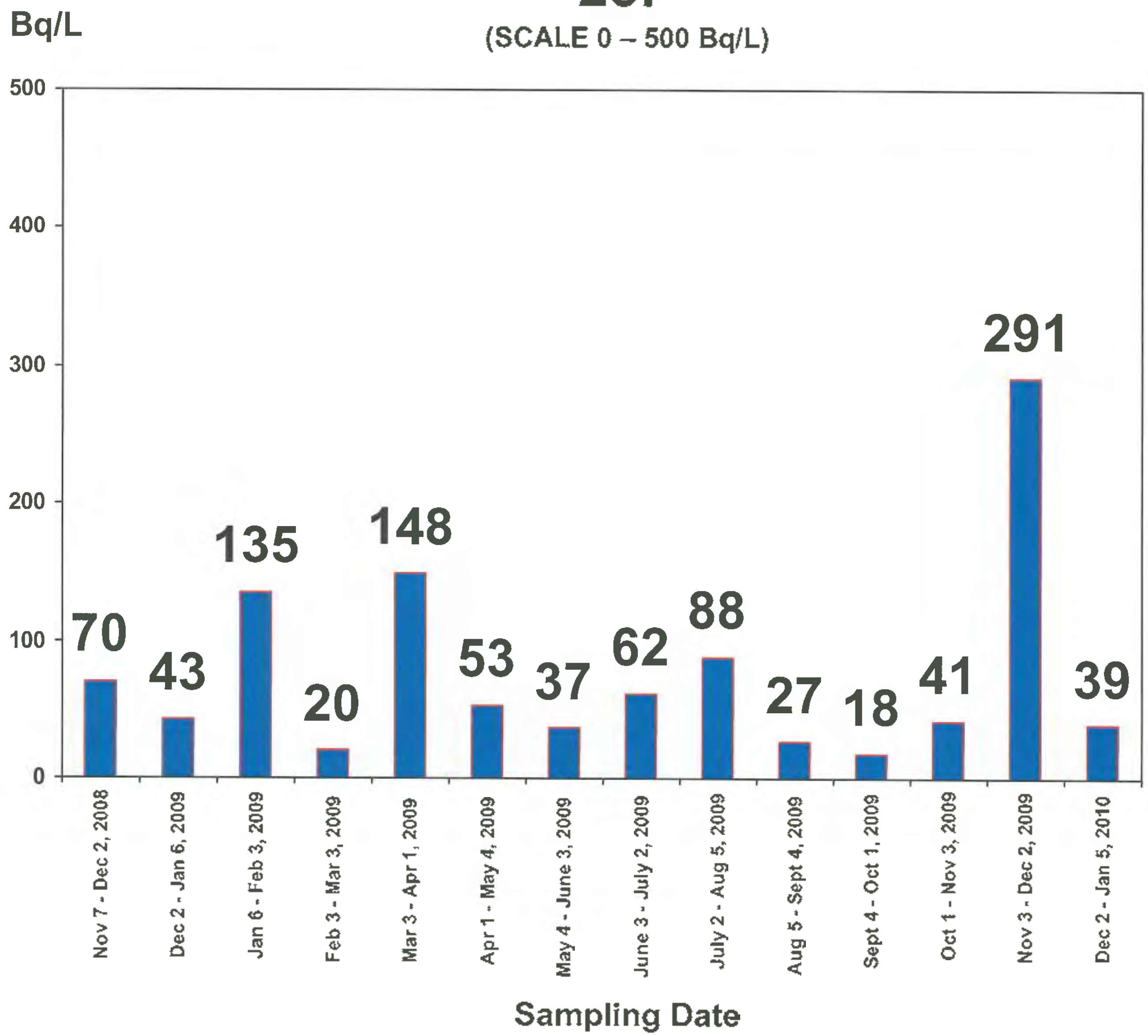


PRECIPITATION RESULTS
18P
(SCALE 0 – 1500 Bq/L)
Bq/L
1,500
1,350
1,200
1,050
900
750
600
450
300
150
0
179
213
1,193
155
59
115
105
40
44
47
64
41
59
251
Nov 7 - Dec 2, 2008
Dec 2 - Jan 6, 2009
Jan 6 - Feb 3, 2009
Feb 3 - Mar 3, 2009
Mar 3 - Apr 1, 2009
Apr 1 - May 4, 2009
May 4 - June 3, 2009
June 3 - July 2, 2009
July 2 - Aug 5, 2009
Aug 5 - Sept 4, 2009
Sept 4 - Oct 1, 2009
Oct 1 - Nov 3, 2009
Nov 3 - Dec 2, 2009
Dec 2 - Jan 5, 2010
Sampling Date

PRECIPITATION RESULTS
22P
(SCALE 0 – 600 Bq/L)



PRECIPITATION RESULTS
25P
(SCALE 0 – 500 Bq/L)



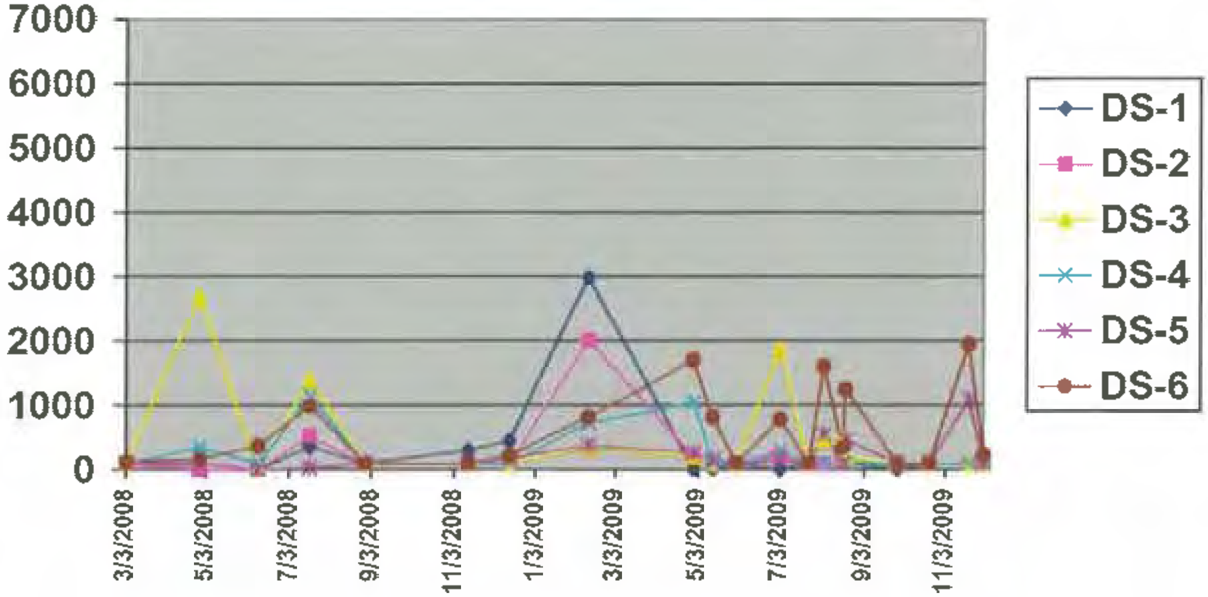
APPENDIX P

Runoff monitoring results for 2009

DOWNSPOUTS							
DATE	TIME	DS-1	DS-2	DS-3	DS-4	DS-5	DS-6
11-Feb-09	12:30 PM	2,990	2,030	350	730	380	820
29-Apr-09	8:30 AM	No sample	190	200	1,050	260	1,710
14-May-09	1:30 PM	No sample	100	100	100	160	820
1-Jun-09	9:30 AM	100	100	100	100	100	100
3-Jul-09	9:00 AM	No sample	230	1,880	300	140	790
24-Jul-09	9:00 AM	100	100	100	100	100	100
4-Aug-09	3:00 PM	100	100	470	100	560	1,610
18-Aug-09	9:30 AM	100	100	490	100	100	350
20-Aug-09	9:15 AM	100	100	190	100	480	1,250
28-Sep-09	10:00 AM	No sample	100	100	100	100	100
22-Oct-09	2:00 PM	100	100	100	100	100	100
20-Nov-09	1:30 PM	100	100	100	100	1,110	1,960
1-Dec-09	12:30 PM	No sample	170	100	140	100	240
Average		**461**	**271**	**329**	**240**	**284**	**765**
Average all results		**392**					

Values are all in Bq/L
Lower limit of detection = 100 Bq/L
February 11, 2009 samples taken during thawing of snow and ice on roof

DOWNSPOUTS



LOCATION OF DOWNSPOUTS

APPENDIX Q

Liquid effluent monitoring results for 2009

ANNUAL LIQUID EFFLUENT DATA

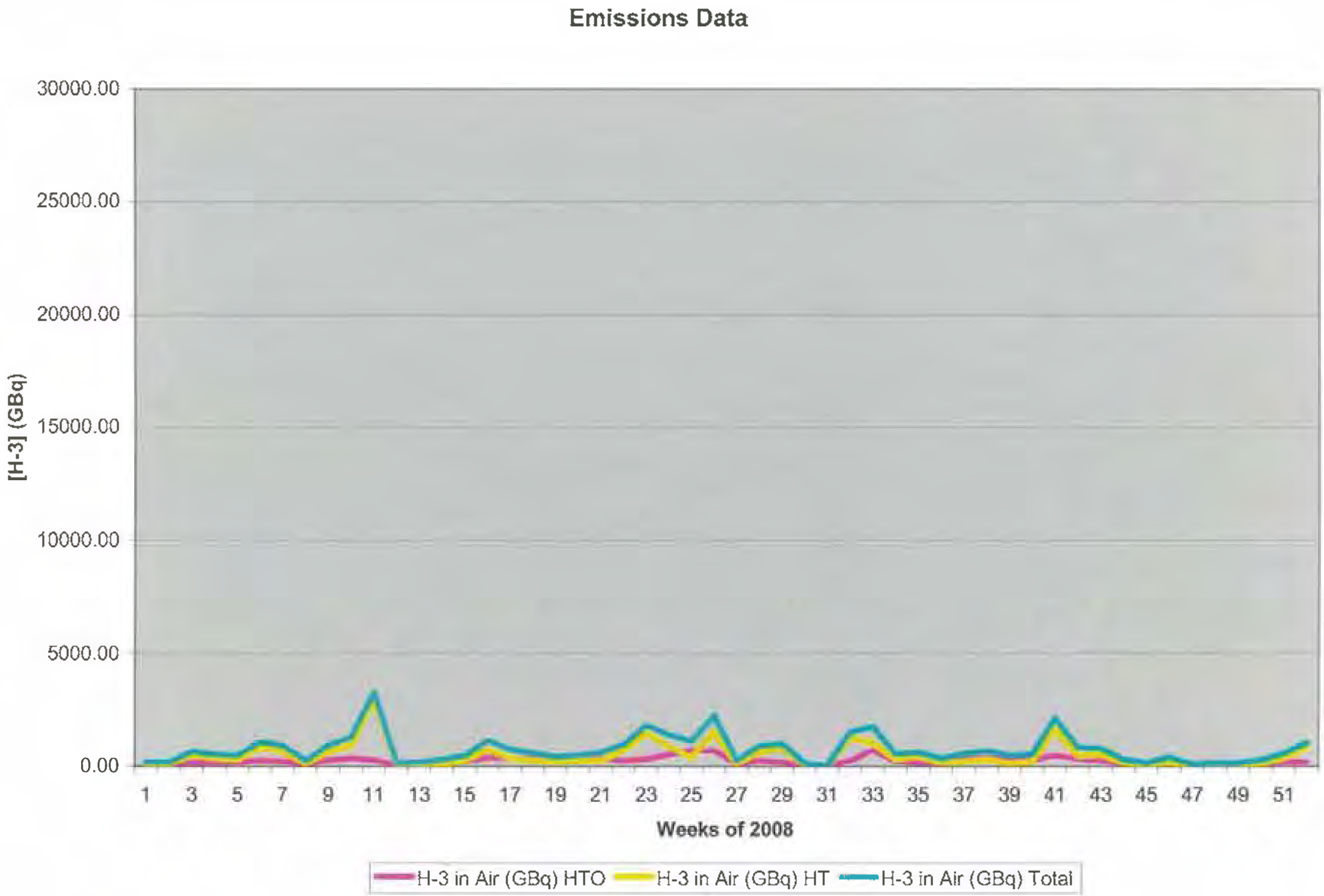
WEEK ENDING	WEEKLY RELEASE (Bq)	WEEK	LIMIT ALLOWANCE	IF RELEASED IN ONE WORK DAY AT SEWAGE PLANT (Bq/L)	IF RELEASED IN FIVE WORK DAYS AT SEWAGE PLANT (Bq/L)	IF RELEASED IN OVER ENTIRE WEEK AT SEWAGE PLANT (Bq/L)
9-Jan-09	1,353,682,000	52	198,243,444,322	325	65	16
16-Jan-09	1,295,198,160	51	196,948,246,162	311	62	16
23-Jan-09	1,391,805,000	50	195,556,441,162	334	67	16
30-Jan-09	1,393,182,200	49	194,163,258,962	334	67	16
6-Feb-09	1,402,444,200	48	192,760,814,762	336	67	16
13-Feb-09	1,445,001,000	47	191,315,813,762	346	69	16
20-Feb-09	1,156,000,800	46	190,159,812,962	277	55	13
27-Feb-09	1,445,001,000	45	188,714,811,962	346	69	16
6-Mar-09	1,372,249,075	44	187,342,562,887	329	66	16
13-Mar-09	1,371,884,075	43	185,970,678,812	329	66	16
20-Mar-09	1,371,884,075	42	184,598,794,737	329	66	16
27-Mar-09	1,371,884,075	41	183,226,910,662	329	66	16
3-Apr-09	1,333,258,710	40	181,893,651,952	320	64	15
10-Apr-09	1,110,707,000	39	180,782,944,952	266	53	13
17-Apr-09	1,388,383,750	38	179,394,561,202	333	67	16
24-Apr-09	1,388,383,750	37	178,006,177,452	333	67	16
1-May-09	1,340,717,980	36	176,665,459,472	321	64	15
8-May-09	1,286,750,900	35	175,378,708,572	309	62	15
15-May-09	1,308,940,800	34	174,069,767,772	314	63	15
22-May-09	1,094,818,410	33	172,974,949,362	263	53	13
29-May-09	1,388,383,750	32	171,586,565,612	333	67	16
5-Jun-09	1,388,383,750	31	170,198,181,862	333	67	16
12-Jun-09	1,399,916,830	30	168,798,265,032	336	67	16
19-Jun-09	1,446,049,150	29	167,352,215,882	347	69	17
26-Jun-09	1,446,049,150	28	165,906,166,732	347	69	17
3-Jul-09	1,156,839,320	27	164,749,327,412	277	55	13
10-Jul-09	1,312,107,160	26	163,437,220,252	315	63	15
17-Jul-09	1,411,150,520	25	162,026,069,732	338	68	16
24-Jul-09	1,446,049,150	24	160,580,020,582	347	69	17
31-Jul-09	1,180,747,200	23	159,399,273,382	283	57	13
7-Aug-09	1,001,440,030	22	158,397,833,352	240	48	11
14-Aug-09	1,446,049,150	21	156,951,784,202	347	69	17
21-Aug-09	1,170,773,240	20	155,781,010,962	281	56	13
28-Aug-09	1,446,049,150	19	154,334,961,812	347	69	17
4-Sep-09	1,481,940,000	18	152,853,021,812	355	71	17
11-Sep-09	1,185,552,000	17	151,667,469,812	284	57	14
18-Sep-09	1,481,940,000	16	150,185,529,812	355	71	17
25-Sep-09	1,481,940,000	15	148,703,589,812	355	71	17
2-Oct-09	1,483,194,000	14	147,220,395,812	356	71	17
9-Oct-09	1,481,940,000	13	145,738,455,812	355	71	17
16-Oct-09	1,082,891,040	12	144,655,564,772	260	52	12
23-Oct-09	1,481,940,000	11	143,173,624,772	355	71	17
30-Oct-09	1,481,940,000	10	141,691,684,772	355	71	17
6-Nov-09	1,481,940,000	9	140,209,744,772	355	71	17
13-Nov-09	1,481,940,000	8	138,727,804,772	355	71	17
20-Nov-09	1,168,325,860	7	137,559,478,912	280	56	13
27-Nov-09	0	6	137,559,478,912	0	0	0
4-Dec-09	0	5	137,559,478,912	0	0	0
11-Dec-09	0	4	137,559,478,912	0	0	0
18-Dec-09	1,232,000	3	137,558,246,912	0	0	0
25-Dec-09	0	2	137,558,246,912	0	0	0
31-Dec-09	0	1	137,558,246,912	0	0	0

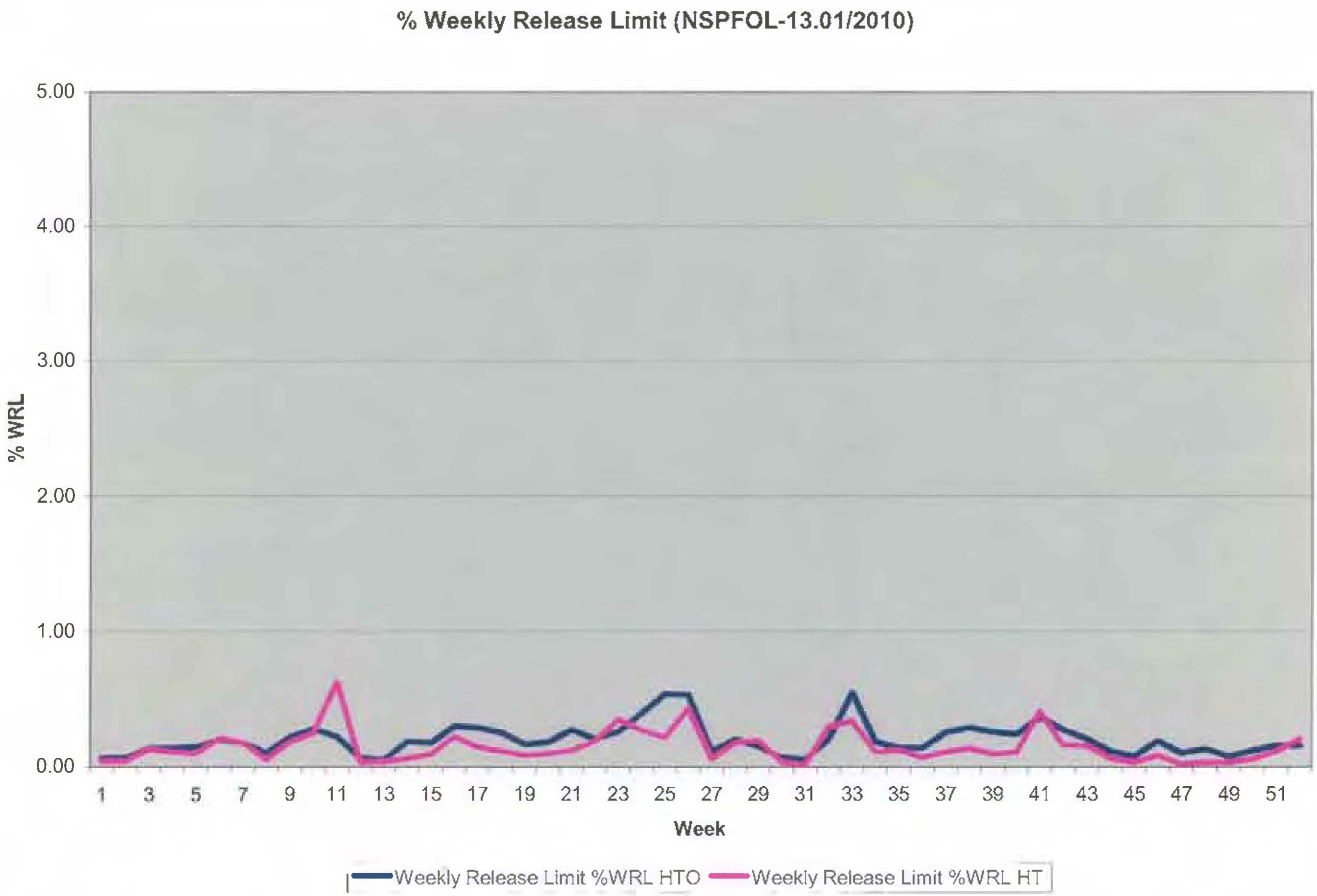
Annual Total (Bq)	62,038,879,410
Annual Total (GBq)	62
Limit (GBq)	200
% of limit	31

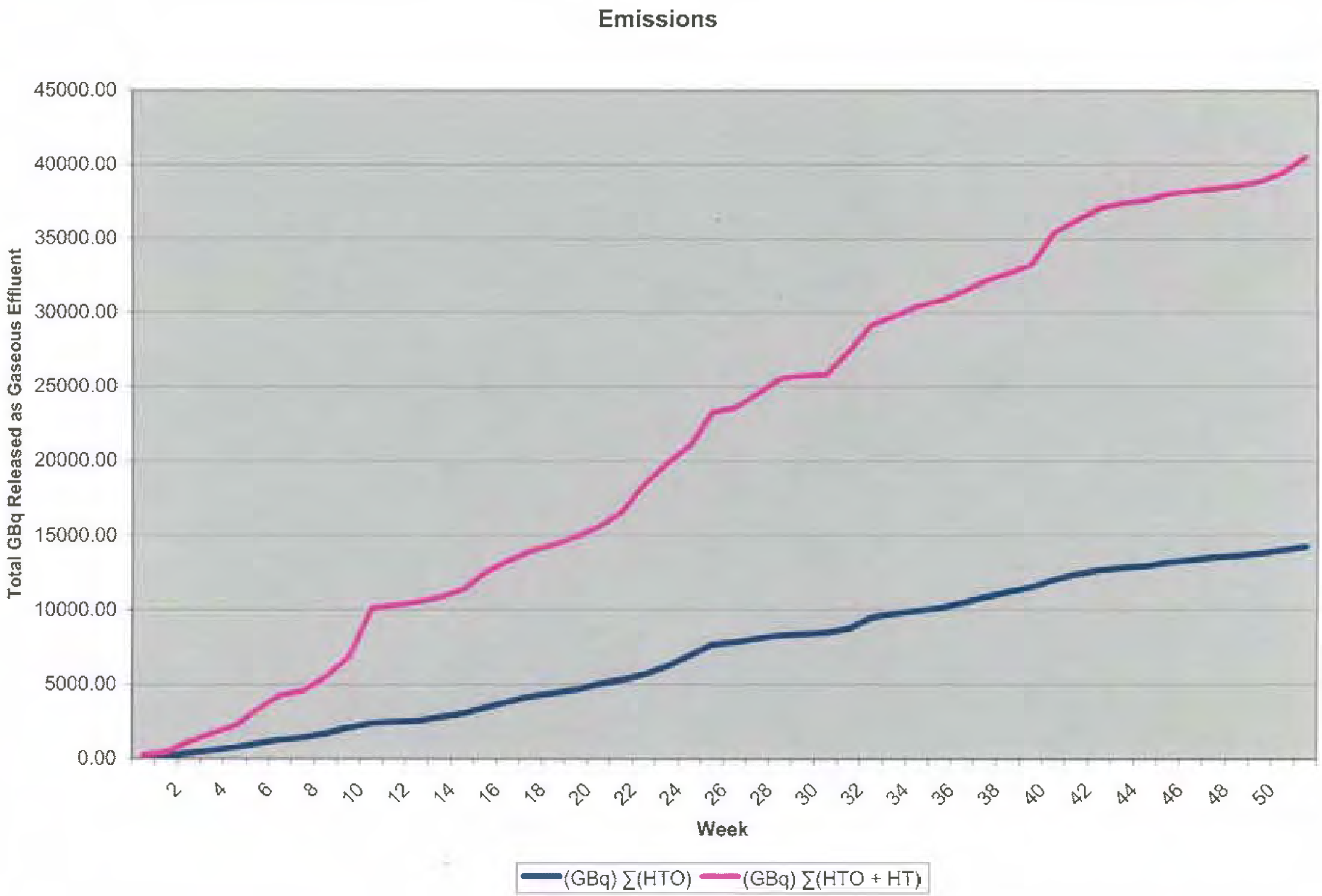
APPENDIX R

Air emission monitoring results for 2009

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	12/30/2009	1/6/2009	84.36	136.52	220.88	84.36	220.88	0.02	0.01	0.02	0.06	0.04	0.05	0.04	0.08	0.05	0.05
2	1/6/2009	1/12/2009	89.79	131.85	221.64	174.15	442.52	0.02	0.01	0.02	0.07	0.04	0.06	0.04	0.09	0.06	0.05
3	1/12/2009	1/19/2009	185.41	502.21	687.62	359.56	1130.14	0.04	0.02	0.04	0.14	0.13	0.12	0.09	0.19	0.12	0.12
4	1/19/2009	1/26/2009	187.71	382.23	569.94	547.27	1700.08	0.04	0.02	0.04	0.14	0.11	0.12	0.09	0.19	0.12	0.12
5	1/26/2009	2/2/2009	198.55	323.59	522.14	745.82	2222.22	0.04	0.02	0.05	0.15	0.10	0.12	0.09	0.20	0.13	0.12
6	2//2009	2/9/2009	274.23	838.45	1112.68	1020.05	3334.90	0.06	0.03	0.06	0.20	0.21	0.18	0.14	0.29	0.18	0.18
7	2/9/2009	2/17/2009	242.39	696.64	939.03	1262.44	4273.93	0.05	0.03	0.06	0.18	0.18	0.16	0.12	0.25	0.16	0.15
8	2/17/2009	2/23/2009	137.51	145.04	282.55	1399.95	4556.48	0.03	0.02	0.03	0.10	0.05	0.08	0.06	0.13	0.09	0.08
9	2/23/2009	3/2/2009	298.77	674.92	973.69	1698.72	5530.17	0.06	0.03	0.07	0.22	0.19	0.19	0.14	0.30	0.19	0.19
10	3/2/2009	3/9/2009	381.62	933.65	1315.27	2080.34	6845.44	0.08	0.04	0.09	0.28	0.25	0.24	0.18	0.39	0.25	0.24
11	3/9/2009	3/16/2009	303.65	2981.41	3285.06	2383.99	10130.50	0.07	0.04	0.07	0.22	0.63	0.25	0.20	0.42	0.26	0.24
12	3/16/2009	3/23/2009	85.22	109.57	194.79	2469.21	10325.29	0.02	0.01	0.02	0.06	0.04	0.05	0.04	0.08	0.05	0.05
13	3/23/2009	3/30/2009	72.99	142.13	215.12	2542.20	10540.41	0.01	0.01	0.02	0.05	0.04	0.05	0.03	0.07	0.05	0.04
14	3/30/2009	4/6/2009	253.57	86.57	340.14	2795.77	10880.55	0.05	0.03	0.06	0.19	0.07	0.15	0.11	0.23	0.15	0.15
15	4/6/2009	4/13/2009	241.30	261.51	502.81	3037.07	11383.38	0.05	0.03	0.06	0.18	0.10	0.15	0.11	0.23	0.15	0.14
16	4/13/2009	4/20/2009	409.07	770.89	1179.96	3446.14	12563.32	0.08	0.05	0.09	0.30	0.23	0.26	0.19	0.41	0.26	0.25
17	4/20/2009	4/27/2009	392.71	383.06	775.77	3838.85	13339.09	0.08	0.04	0.09	0.29	0.15	0.24	0.18	0.38	0.24	0.23
18	4/27/2009	5/4/2009	344.10	277.09	621.19	4182.95	13960.28	0.07	0.04	0.08	0.25	0.12	0.21	0.15	0.33	0.21	0.20
19	5/4/2009	5/12/2009	228.44	230.04	458.48	4411.39	14418.76	0.05	0.03	0.05	0.17	0.09	0.14	0.10	0.22	0.14	0.13
20	5/12/2009	5/19/2009	247.83	269.25	517.08	4659.22	14935.84	0.05	0.03	0.06	0.18	0.10	0.15	0.11	0.24	0.15	0.15
21	5/19/2009	5/25/2009	370.97	277.54	648.51	5030.19	15584.35	0.07	0.04	0.08	0.27	0.12	0.22	0.17	0.35	0.23	0.22
22	5/25/2009	6/1/2009	283.39	719.71	1003.10	5313.58	16587.45	0.06	0.03	0.07	0.21	0.19	0.18	0.14	0.29	0.19	0.18
23	6/1/2009	6/8/2009	355.23	1488.64	1843.87	5668.81	18431.32	0.07	0.04	0.08	0.26	0.35	0.24	0.19	0.39	0.25	0.24
24	6/8/2009	6/15/2009	539.59	890.46	1430.05	6208.40	19861.37	0.11	0.06	0.12	0.40	0.27	0.33	0.25	0.53	0.34	0.33
25	6/15/2009	6/22/2009	731.21	419.39	1150.60	6939.61	21011.97	0.15	0.08	0.17	0.54	0.22	0.43	0.32	0.68	0.44	0.42
26	6/22/2009	6/29/2009	724.10	1535.91	2260.01	7663.71	23271.98	0.15	0.08	0.17	0.54	0.43	0.46	0.34	0.73	0.47	0.45
27	6/29/2009	7/6/2009	152.63	159.11	311.74	7816.34	23583.72	0.03	0.02	0.03	0.11	0.06	0.09	0.07	0.15	0.09	0.09
28	7/6/2009	7/13/2009	276.74	669.47	946.21	8093.08	24529.93	0.06	0.03	0.06	0.20	0.18	0.18	0.13	0.28	0.18	0.17
29	7/13/2009	7/20/2009	211.13	825.50	1036.63	8304.21	25566.56	0.04	0.03	0.05	0.16	0.20	0.14	0.11	0.23	0.15	0.14
30	7/20/2009	7/27/2009	90.44	104.80	195.24	8394.65	25761.80	0.02	0.01	0.02	0.07	0.04	0.05	0.04	0.09	0.06	0.05
31	7/27/2009	8/4/2009	77.86	7.43	85.29	8472.51	25847.09	0.02	0.01	0.02	0.06	0.02	0.05	0.03	0.07	0.05	0.04
32	8/4/2009	8/10/2009	281.29	1288.35	1569.64	8753.80	27416.73	0.06	0.03	0.07	0.21	0.30	0.19	0.15	0.32	0.20	0.19
33	8/10/2009	8/17/2009	746.13	1046.02	1792.15	9499.93	29208.88	0.15	0.08	0.17	0.55	0.34	0.46	0.34	0.73	0.47	0.45
34	8/17/2009	8/24/2009	253.83	343.70	597.53	9753.76	29806.41	0.05	0.03	0.06	0.19	0.11	0.16	0.12	0.25	0.16	0.15
35	8/24/2009	8/31/2009	192.49	464.08	656.57	9946.25	30462.98	0.04	0.02	0.04	0.14	0.13	0.12	0.09	0.20	0.13	0.12
36	8/31/2009	9/8/2009	190.60	194.77	385.37	10136.85	30848.35	0.04	0.02	0.04	0.14	0.07	0.12	0.09	0.18	0.12	0.11
37	9/8/2009	9/14/2009	350.17	235.82	585.99	10487.02	31434.34	0.07	0.04	0.08	0.26	0.11	0.21	0.16	0.33	0.21	0.20
38	9/14/2009	9/21/2009	392.65	331.18	723.83	10879.67	32158.17	0.08	0.04	0.09	0.29	0.14	0.24	0.18	0.37	0.24	0.23
39	9/21/2009	9/28/2009	352.89	153.51	506.40	11232.56	32664.57	0.07	0.04	0.08	0.26	0.10	0.21	0.15	0.33	0.21	0.20
40	9/28/2009	10/5/2009	327.42	238.35	565.77	11559.98	33230.34	0.07	0.04	0.07	0.24	0.11	0.20	0.15	0.31	0.20	0.19
41	10/5/2009	10/13/2009	501.59	1656.31	2157.90	12061.57	35388.24	0.10	0.06	0.12	0.37	0.41	0.33	0.25	0.54	0.34	0.32
42	10/13/2009	10/19/2009	370.56	488.51	859.07	12432.13	36247.31	0.07	0.04	0.08	0.27	0.16	0.23	0.17	0.36	0.23	0.22
43	10/19/2009	10/26/2009	283.80	547.68	831.48	12715.93	37078.79	0.06	0.03	0.07	0.21	0.16	0.18	0.13	0.28	0.18	0.17
44	10/26/2009	11/2/2009	155.89	182.66	338.55	12871.82	37417.34	0.03	0.02	0.04	0.12	0.06	0.09	0.07	0.15	0.10	0.09
45	11/2/2009	11/9/2009	108.29	81.43	189.72	12980.11	37607.06	0.02	0.01	0.02	0.08	0.04	0.06	0.05	0.10	0.07	0.06
46	11/9/2009	11/16/2009	261.08	189.01	450.09	13241.19	38057.15	0.05	0.03	0.06	0.19	0.09	0.16	0.12	0.25	0.16	0.15
47	11/16/2009	11/23/2009	138.38	4.75	143.13	13379.57	38200.28	0.03	0.01	0.03	0.10	0.03	0.08	0.06	0.13	0.08	0.08
48	11/23/2009	11/30/2009	178.20	6.86	185.06	13557.77	38385.34	0.04	0.02	0.04	0.13	0.04	0.10	0.08	0.16	0.11	0.10
49	11/30/2009	12/7/2009	106.64	74.76	181.40	13664.41	38566.74	0.02	0.01	0.02	0.08	0.03	0.06	0.05	0.10	0.07	0.06
50	12/7/2009	12/14/2009	160.15	147.20	307.35	13824.56	38874.09	0.03	0.02	0.04	0.12	0.06	0.10	0.07	0.15	0.10	0.09
51	12/14/2009	12/21/2009	213.69	380.37	594.06	14038.25	39468.15	0.04	0.02	0.05	0.16	0.11	0.13	0.10	0.21	0.14	0.13
52	12/21/2009	12/28/2009	214.42	864.06	1078.48	14252.67	40546.63	0.04	0.03	0.05	0.16	0.21	0.15	0.11	0.24	0.15	0.14
Annual	Total		14252.67	26293.96	40546.63			Average % DEL			Average % WRL		Average % DRL				
Weekly	Average		274.09	505.65	779.74			0.06	0.03	0.06	0.20	0.15	0.17	0.13	0.27	0.18	0.17
% Annual Release Limit:			(Bq/a)	% Release Limit				Projected Dose (uSv/a)					Projected Dose (uSv/a)				
		HTO	6.72E+13	21.21				0.56	0.31	0.63			1.71	1.29	2.74	1.75	1.67
		HTO + HT	4.48E+14	9.05				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
30000.00
25000.00
20000.00
15000.00
10000.00
5000.00
0.00
[H-3] (GBq)
1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31 33 35 37 39 41 43 45 47 49 51
Weeks of 2008
H-3 in Air (GBq) HTO
H-3 in Air (GBq) HT
H-3 in Air (GBq) Total

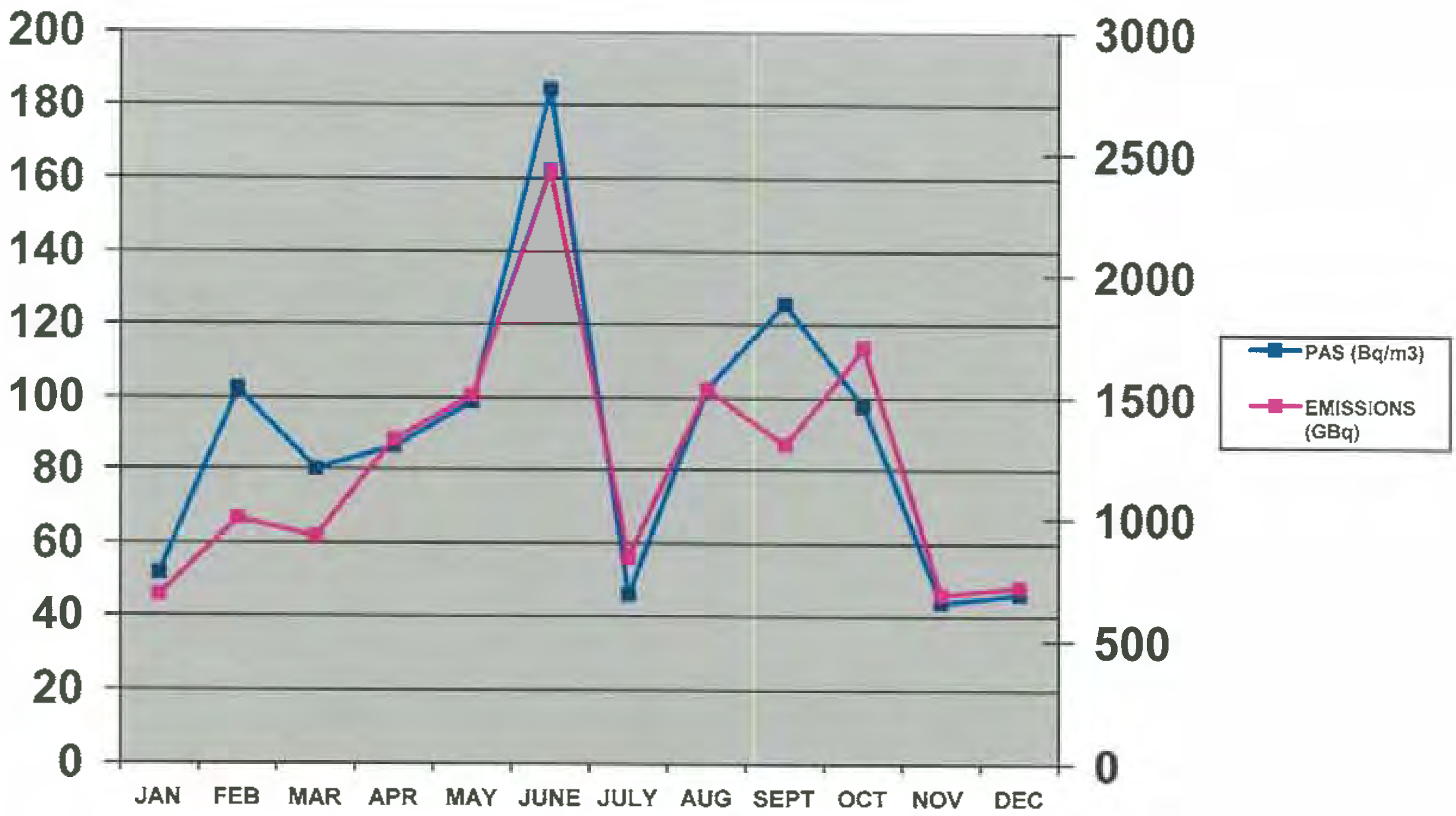

% Weekly Release Limit (NSPFOL-13.01/2010)
5.00
4.00
3.00
2.00
1.00
0.00
% WRL
1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31 33 35 37 39 41 43 45 47 49 51
Week
Weekly Release Limit %WRL HTO
Weekly Release Limit %WRL HT


Emissions
45000.00
40000.00
35000.00
30000.00
25000.00
20000.00
15000.00
10000.00
5000.00
0.00
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 S

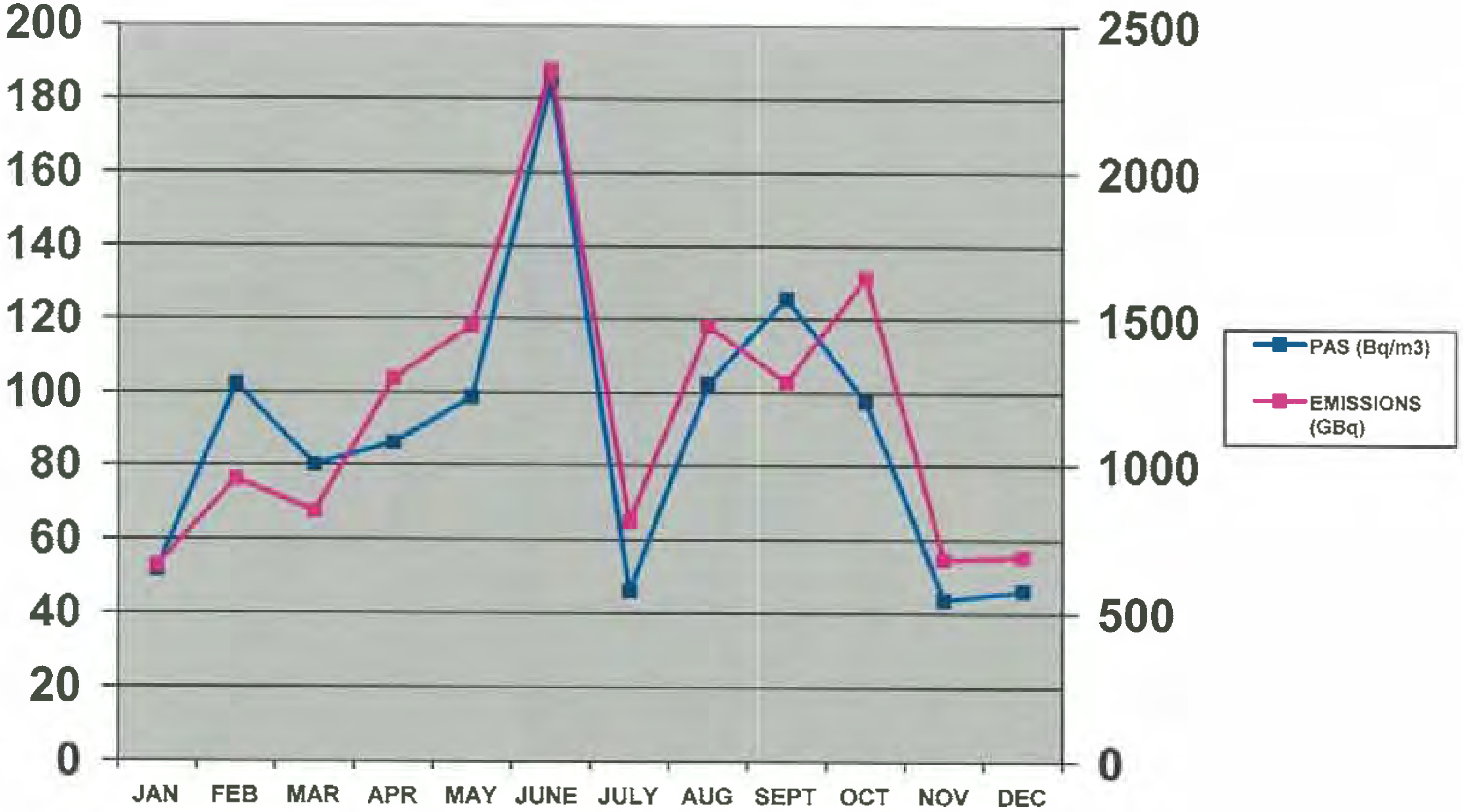
Passive air sampler results vs. HTO emissions 2009

PAS vs. EMISSIONS
WITH 2% HT



APPENDIX S

PAS vs. EMISSIONS
WITHOUT 2% HT



APPENDIX S

APPENDIX T

Weekly instrument performance report for

Wallac 1409 LSC for 2009

Instrument performance report

Report date	: 12/23/2009
Instrument type	: 1400 DSA
Serial number	: ________
Protocol used	: 99
Date of last measurement	: 12/23/2009
Sample ID	: Wallac reference samples BLANK, H3 and C14.

H3 statistics

	measured	low	high	test
CPM	117000	79960	159920	passed
SQPI	168.9	100.0	250.0	passed
Eff %	58.5	40.0	80.0	passed
Bg	22.8	1.5	100.0	passed

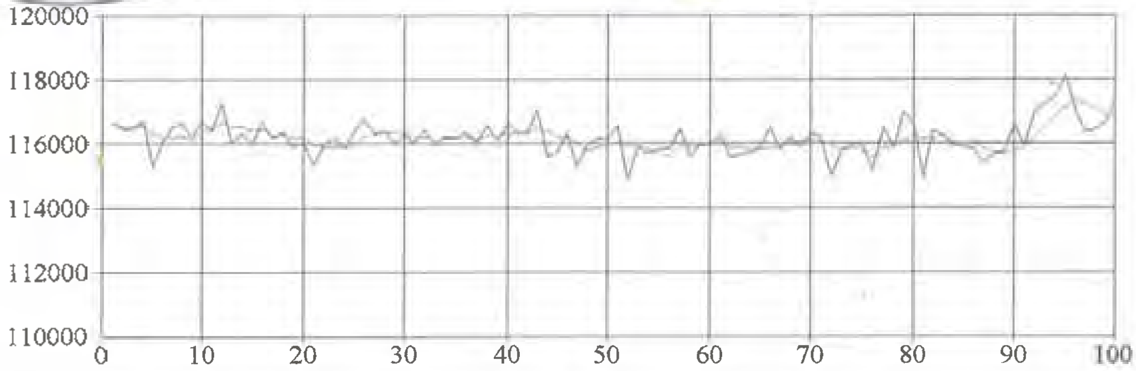
C14 statistics

	measured	low	high	test
CPM	95234	49900	99800	passed
SQPI	391.4	200.0	500.0	passed
Eff %	95.4	50.0	100.0	passed
Bg	38.4	1.0	100.0	passed

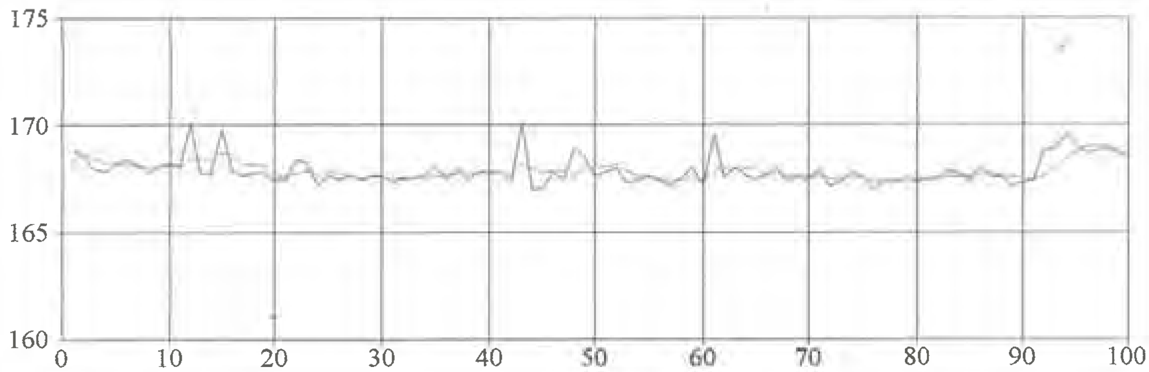
All test passed.

All values are ok. (Wallac A)

H3 CPM trend

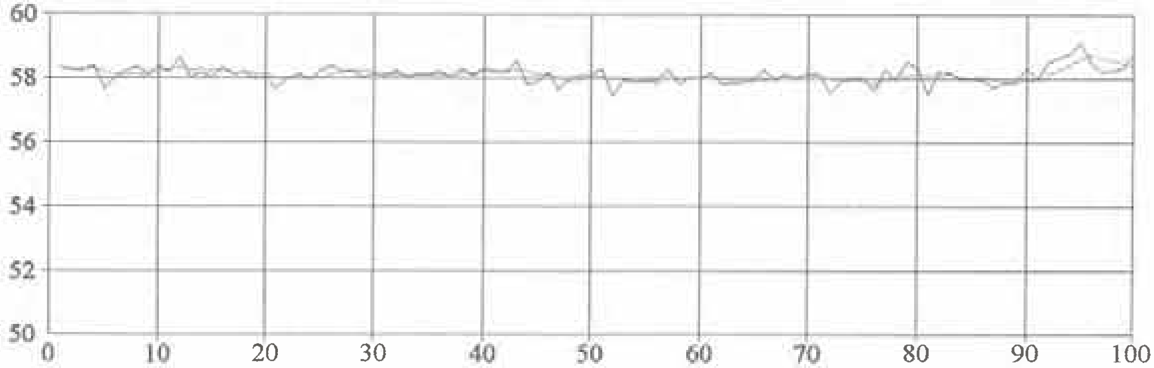


H3 SQPI trend

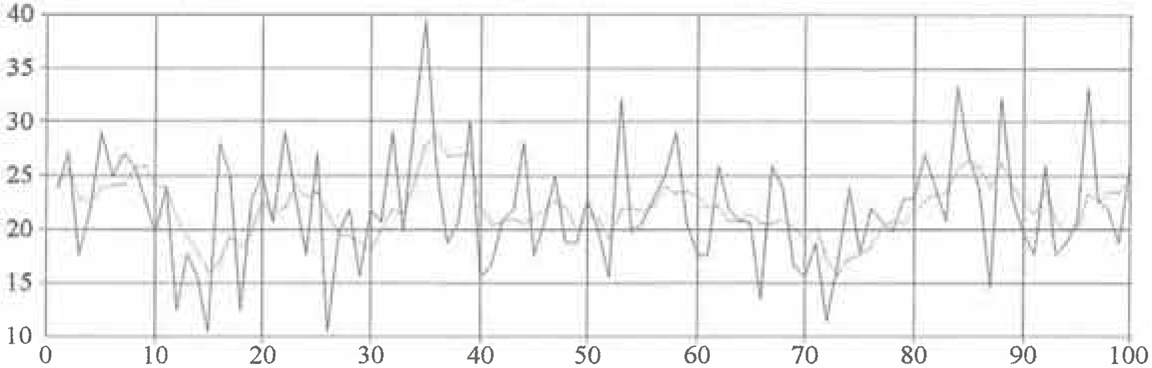


APPENDIX T

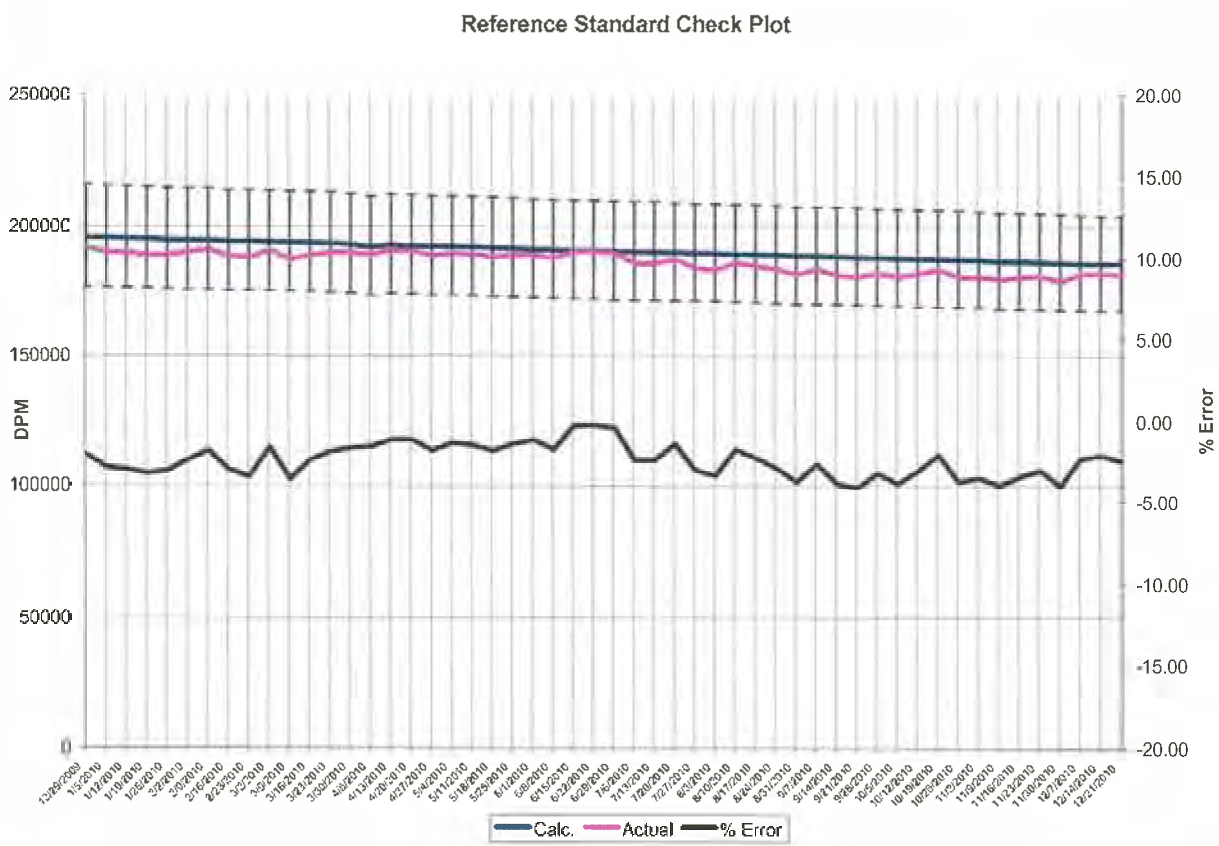
H3 efficiency trend



H3 background trend



Weekly Reference Standard Report for 2009



APPENDIX U

Weather monitoring data for 2009

	WEATHER MONITORING DATA 2009								
	Pressure, mbar()	Wind Speed, m/s()	Gust Speed, m/s()	Wind Direction, ø()	Temp, °C()	RH, %()	DewPt, °C()	Wind sector (nesw)	Total rain (mm)
May 20 - June 3	997.15	3.2	4.81	212	12.76	64.1	4.9	SW	42.8
June 4 - July 2	993.27	2.1	3.14	193.5	17.839	72.3	12.1	SSW	86.8
July 3 - Aug 5	994.44	2.44	3.64	187.9	18.375	77.6	14.1	SSW	85.8
Aug 6 - Sept 4	998.83	2.25	3.37	216.5	18.725	76.81	14.2	SW	70.2
Sept 5 - Oct 1	1000.93	2.38	3.56	204.3	13.225	79.5	9.4	SSW	54.8
Oct 2 - Nov 3	999.08	2.68	3.94	184.37	5.94	80.39	2.6	SSW	62.2
Nov 4 - Dec 2	1001.38	2.38	3.37	181.22	3.09	84.08	0.48	SSW	44.6
Dec 3 - Jan 5	999.04	3.06	4.28	212.67	-7.98	84.17	-10.2	SW	41
YEARLY AVERAGE	998.01	2.56	3.76	199.06	10.25	77.37	5.95	SW	61.03