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# EPRI BWR Sampling Summary

**1022671**

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EPRI Project Manager
S. Garcia

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# ABSTRACT

The report documents BWR sampling practices for key reactor water and feedwater parameters. It includes information on analysis methods and sampling frequencies and compliance with recommended sampling frequencies described in *BWRVIP-190: BWR Vessels and Internals Project, BWR Water Chemistry Guidelines—2008 Revision*.

### Keywords

BWR
Chemistry
Sampling

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# 1
# INTRODUCTION

This report summarizes sampling frequencies and methods for 35 U.S., 2 Mexican, 8 European, and 4 Taiwanese BWRs. This annual report is intended for use by chemistry managers and staff as a benchmarking tool to support efforts to optimize resources while maintaining excellence in chemistry monitoring. Responses to a request for updated information were received from 40 of the 49 stations.

Abbreviations Used in This Report

| | |
|---|---|
| AA | Atomic Absorption Spectroscopy |
| CST | Condensate Storage Tank |
| IC | Ion Chromatography |
| ICP | Inductively Coupled Plasma |
| LRW | Liquid Radwaste |
| MS | Mass Spectroscopy |
| MU | Plant Demineralized Makeup Water |
| PUV | Post-UV |
| VA | Voltammetric Analysis |
| XRF | X-ray Fluorescence |

# 2
# COMPLIANCE WITH RECOMMENDED SAMPLING FREQUENCIES IN BWR WATER CHEMISTRY GUIDELINES

The percentage of plants meeting or exceeding recommended sampling frequencies in *BWRVIP-190: BWR Vessel and Internals Project, BWR Water Chemistry Guidelines – 2008 Revision* is shown in Figure 2-1.

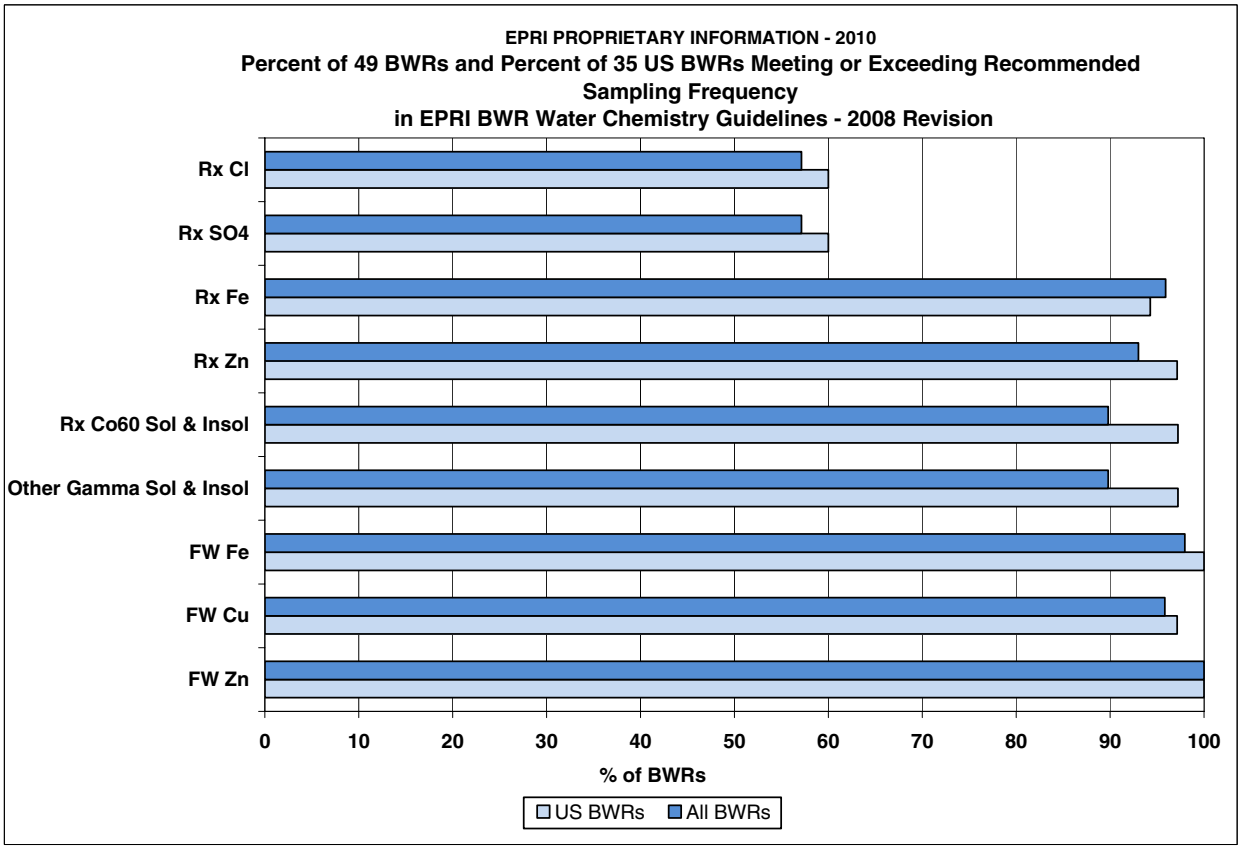


**Figure 2-1**
**BWR Compliance with Recommended Sampling Frequencies**

# 3
# BWR SAMPLING PRACTICES

Information on BWR sampling practices is provided in Figures 3-1 through 3-20.

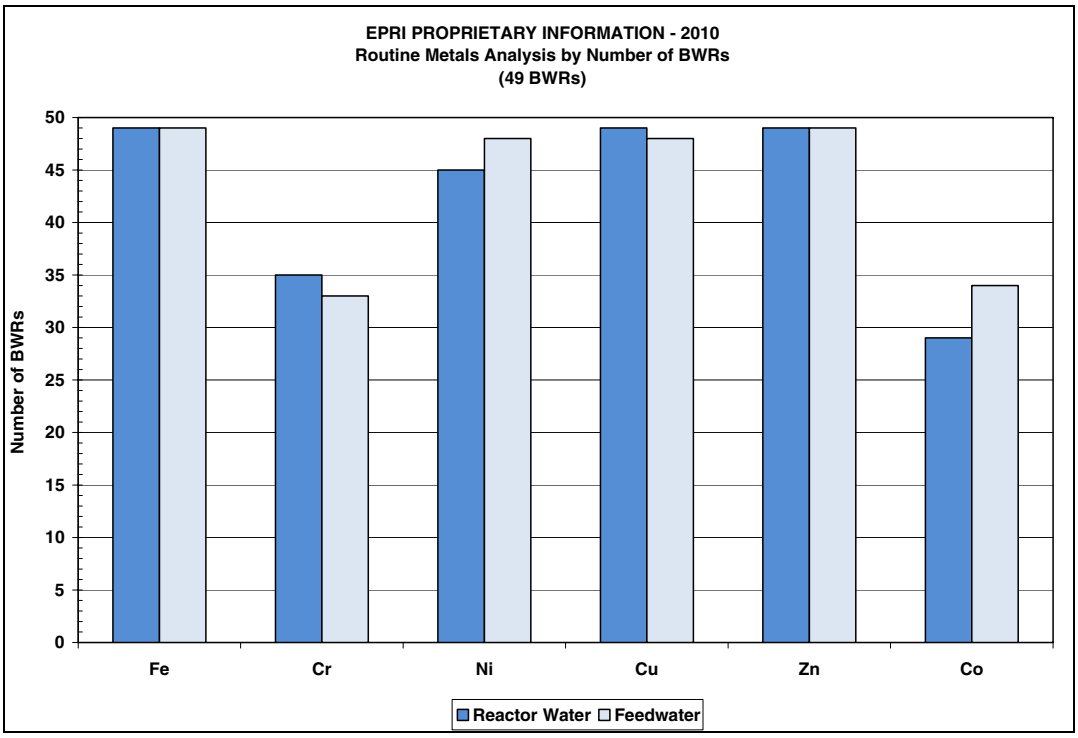


**Figure 3-1**
**Routine Metals Analysis by Number of BWRs**

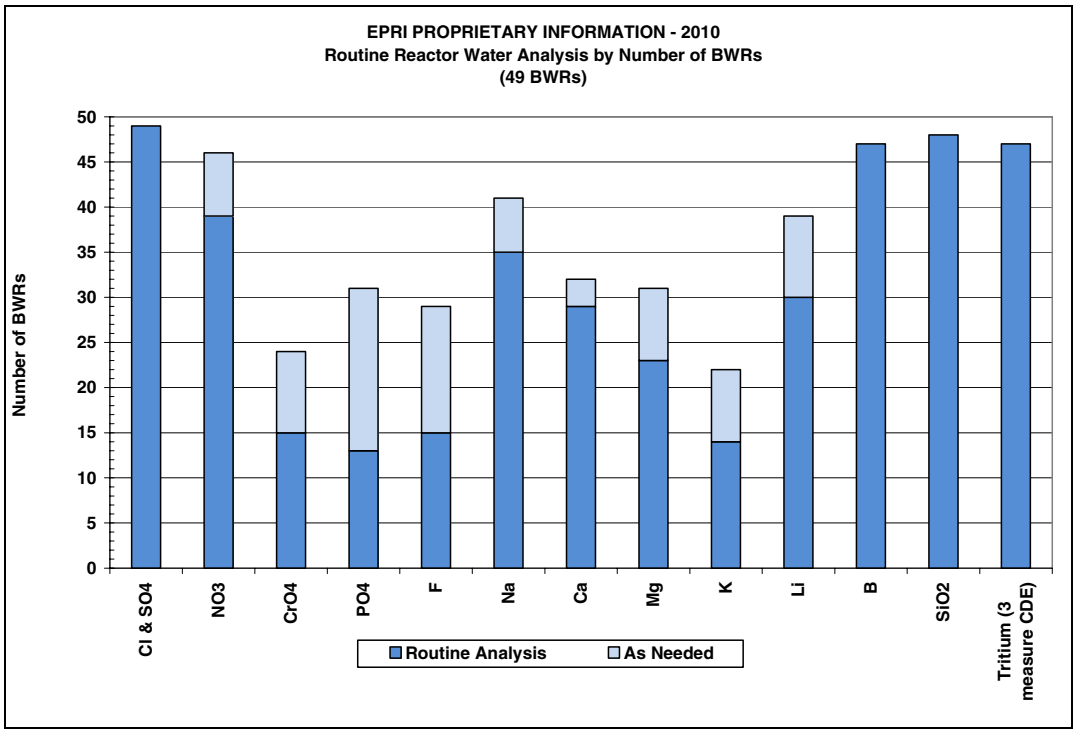


**Figure 3-2**
**Routine Reactor Water Analysis by Number of BWRs**

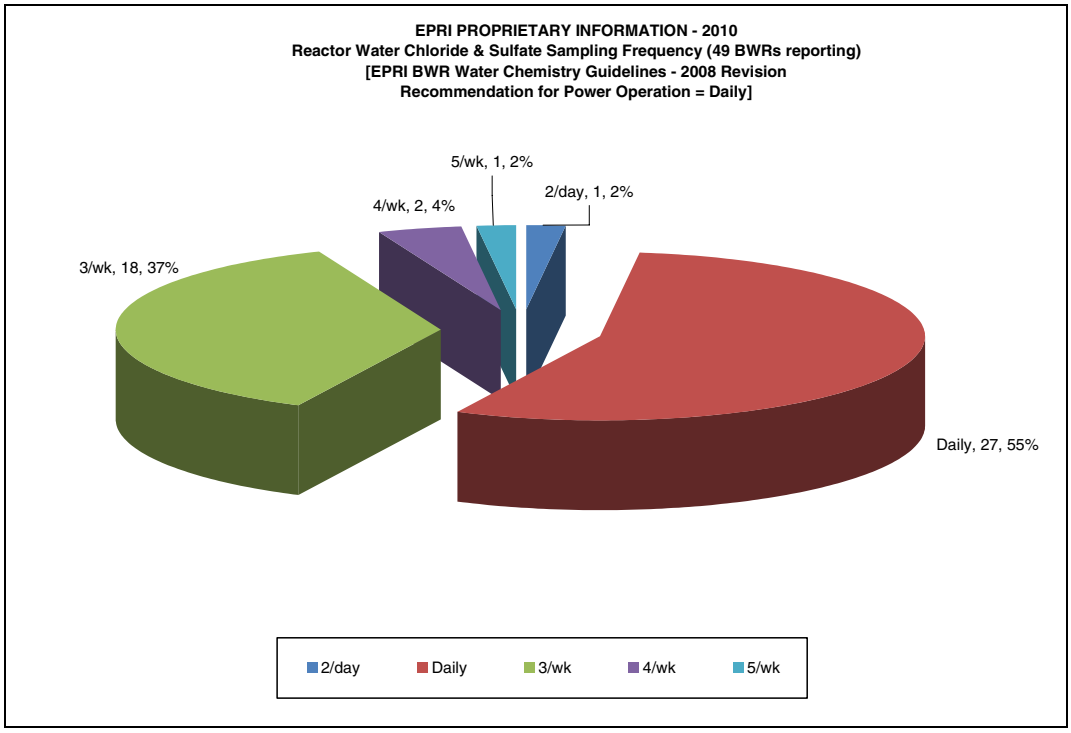


**Figure 3-3**
**Reactor Water Chloride and Sulfate Sampling Frequency**

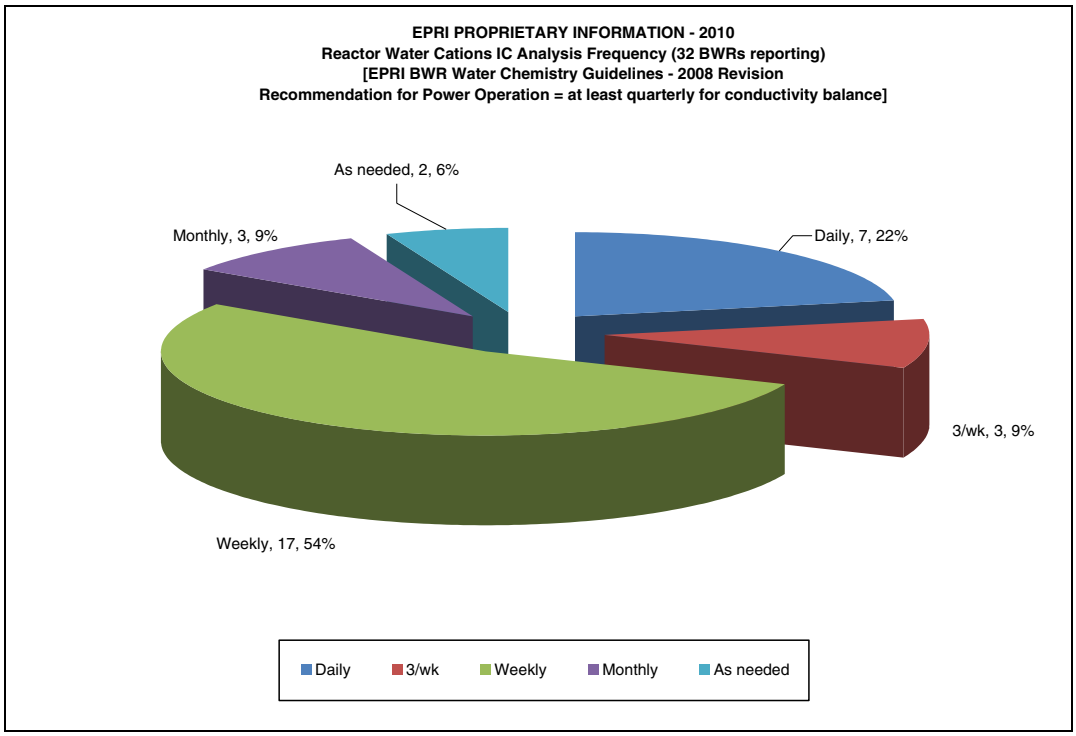


**Figure 3-4**
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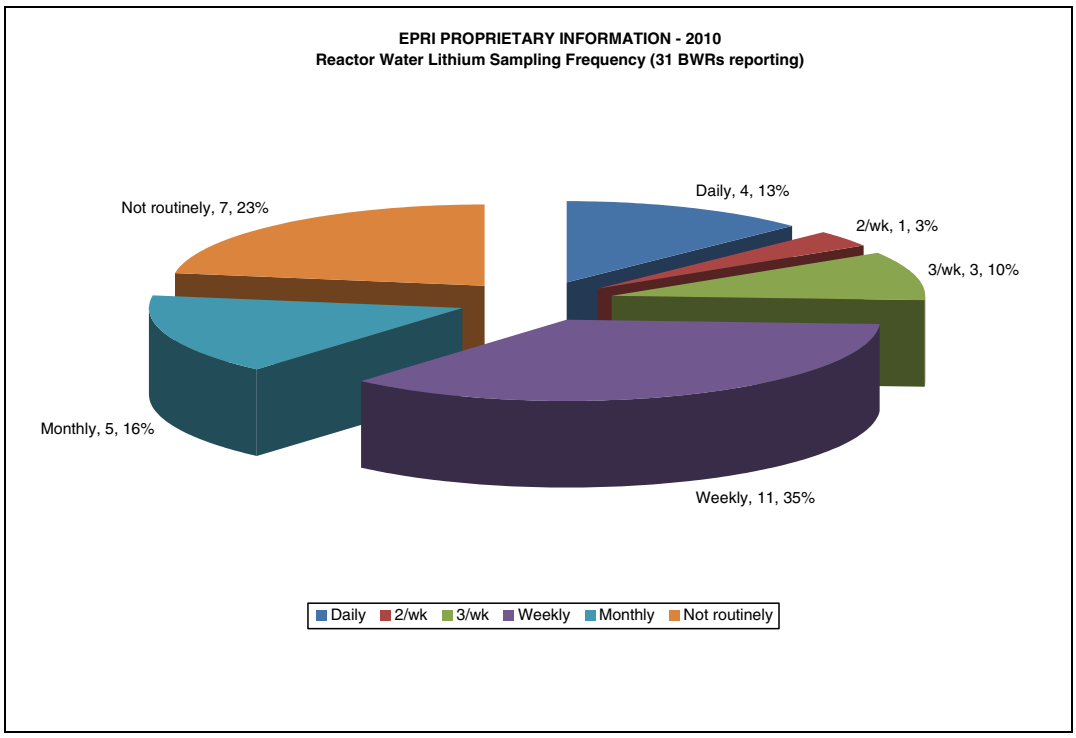
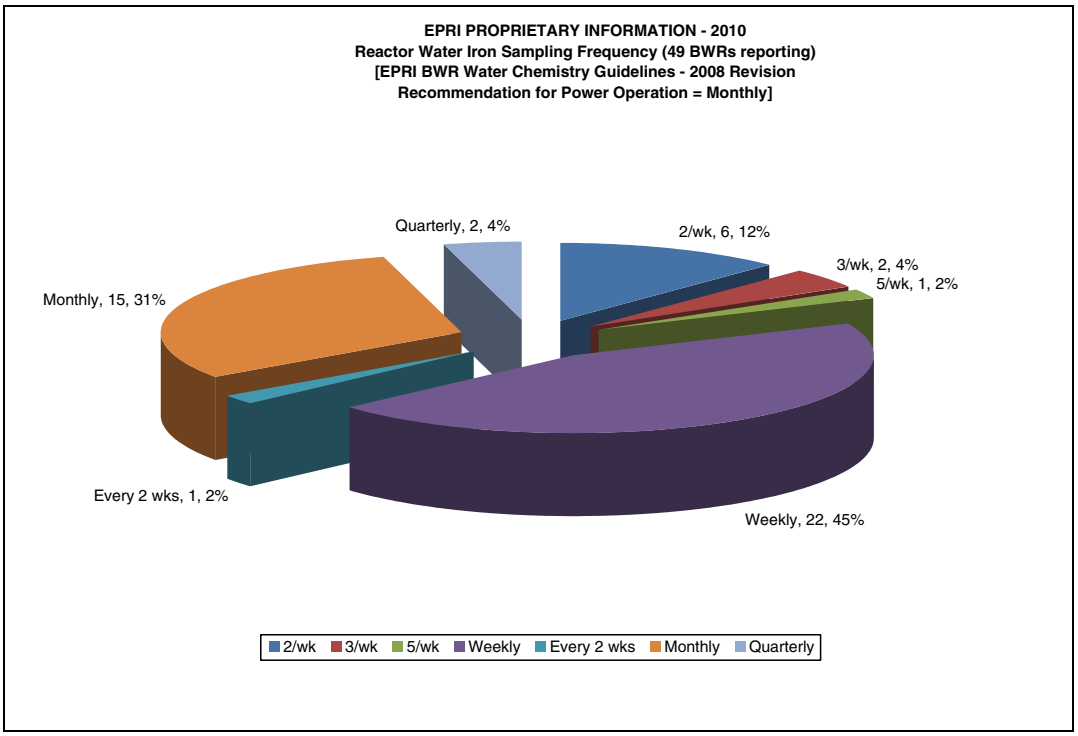



**Figure 3-5**
**Reactor Water Lithium Sampling Frequency**

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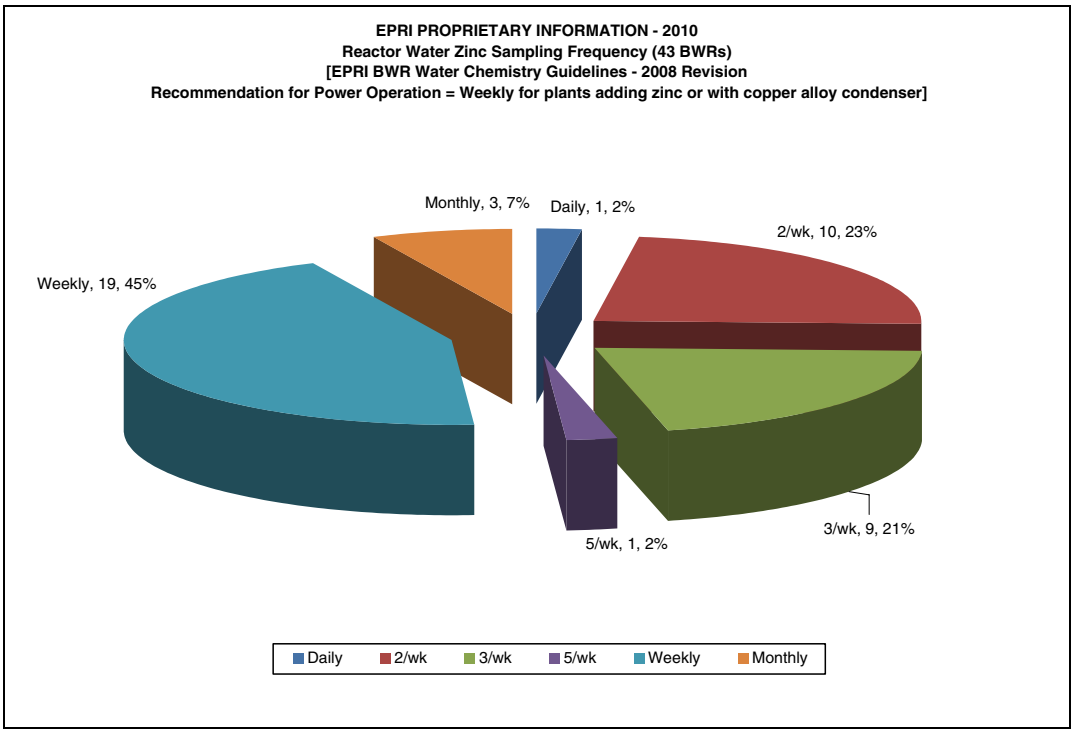


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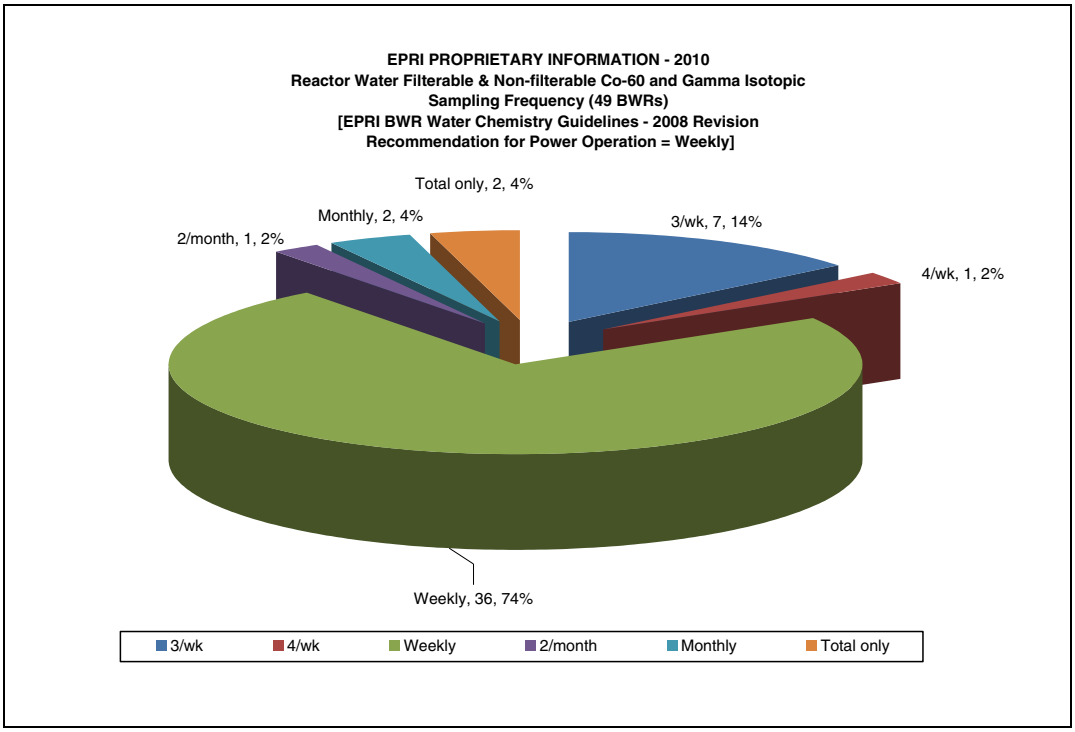


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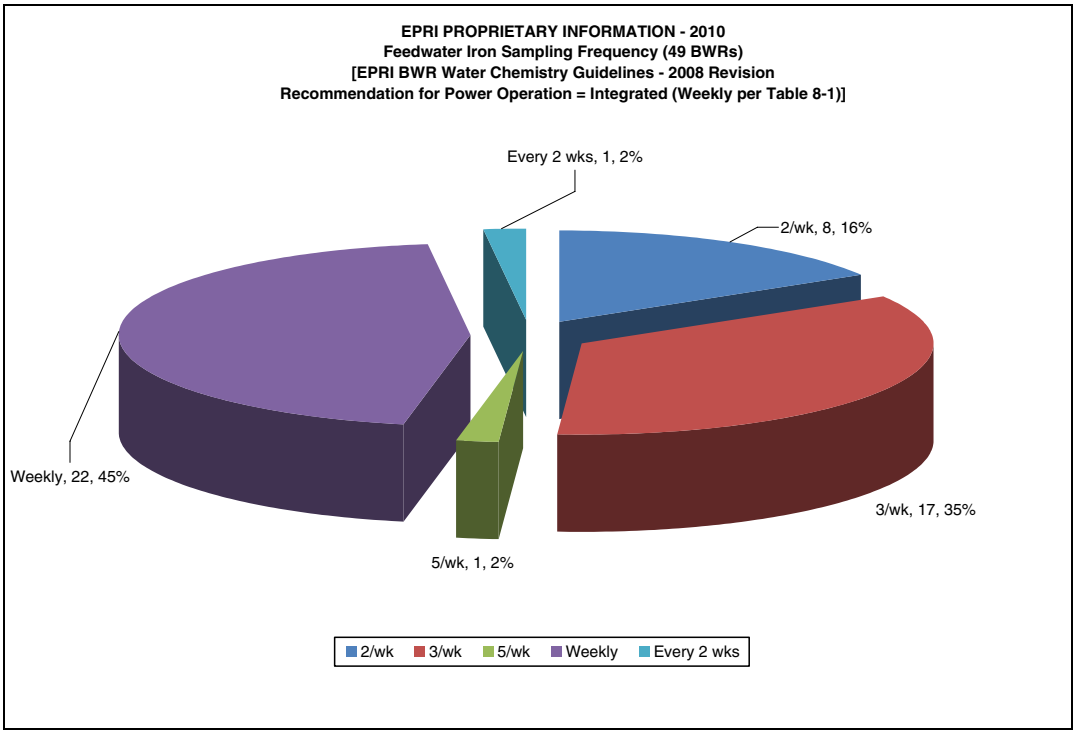


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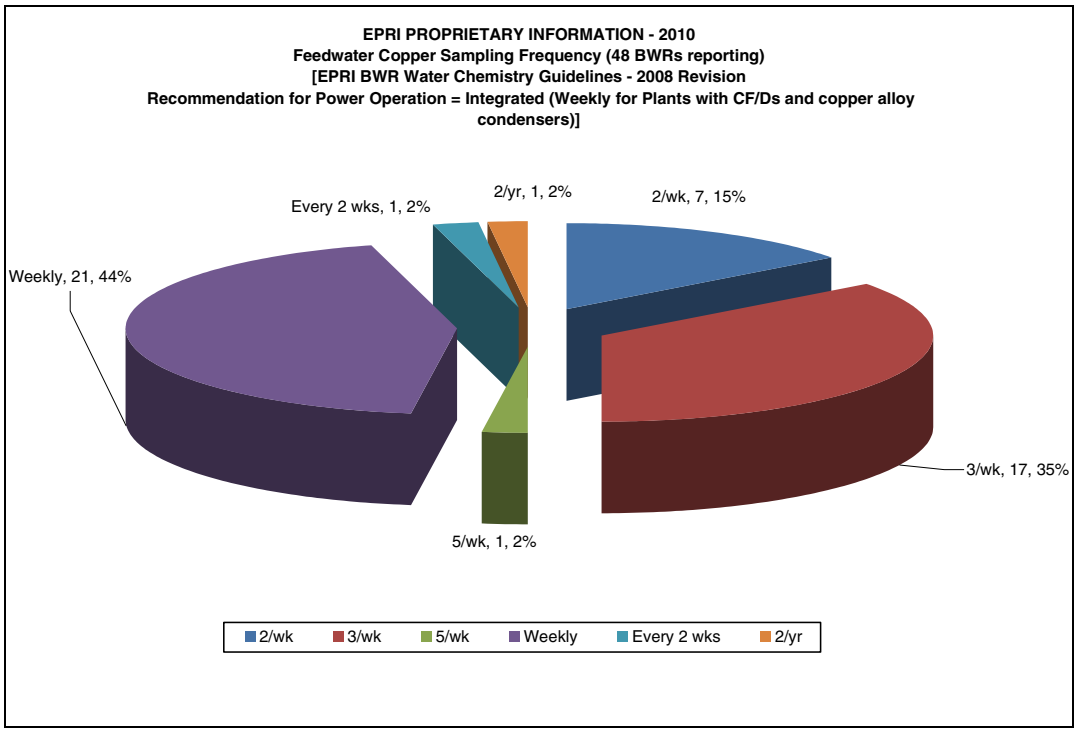


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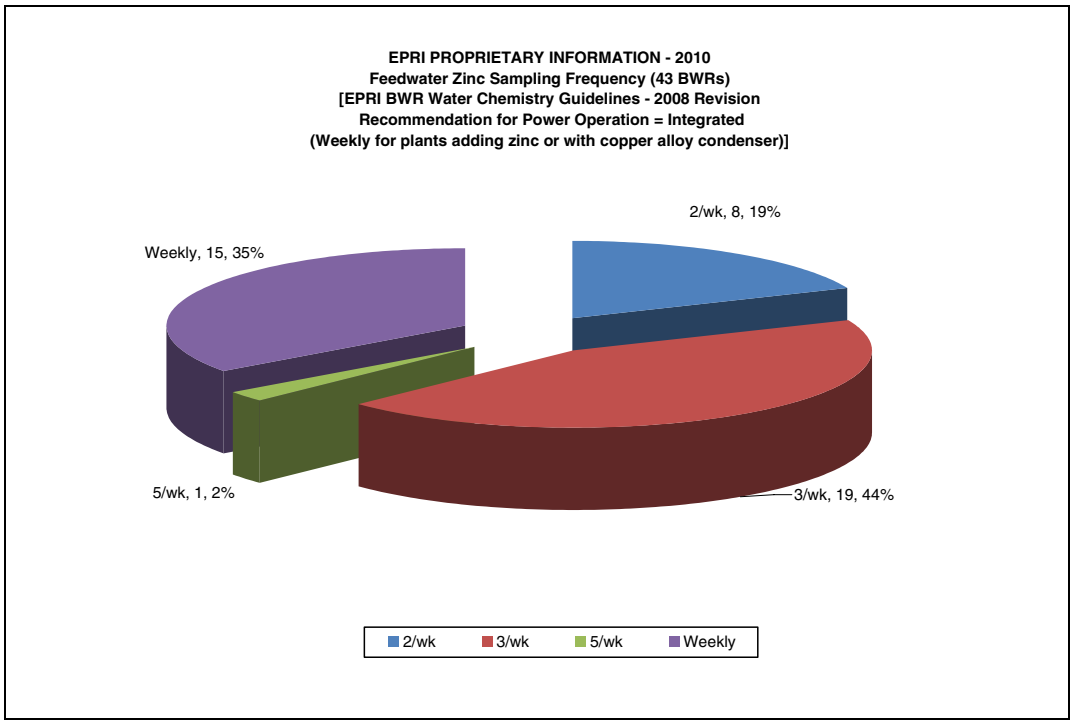


**Figure 3-11**
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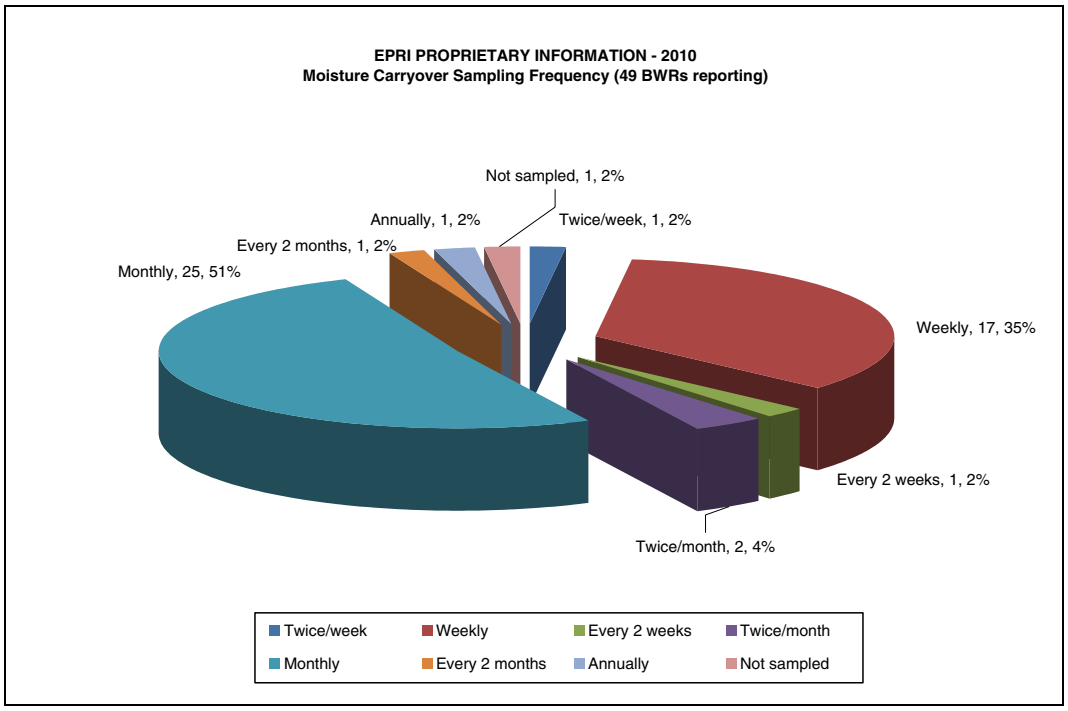


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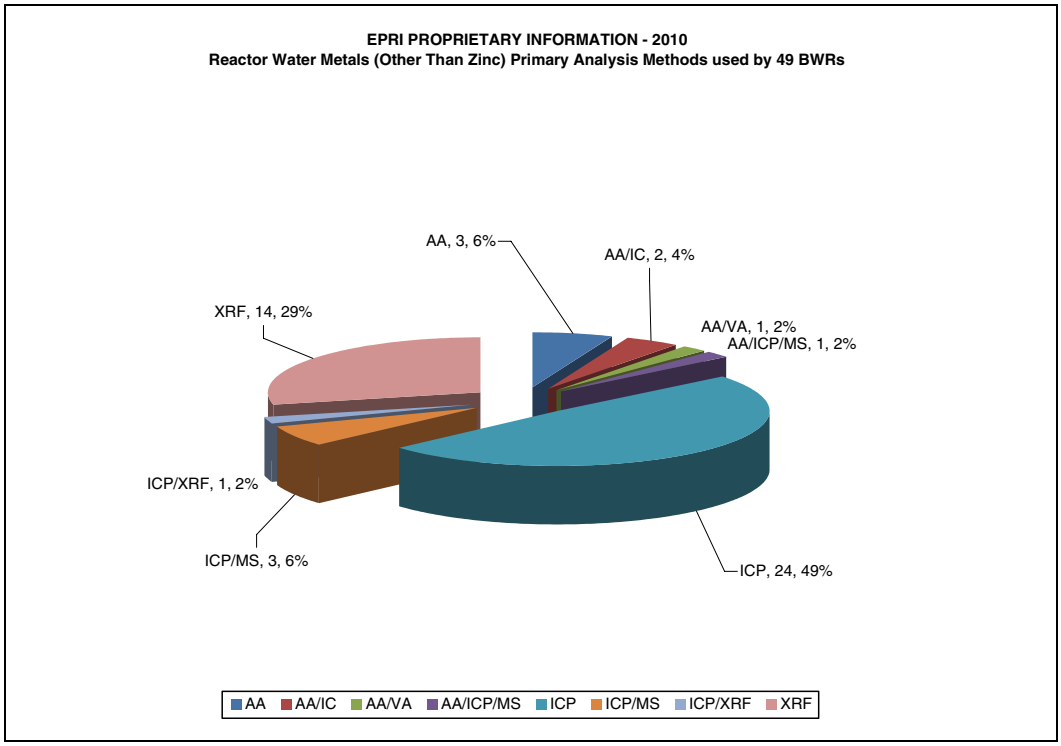


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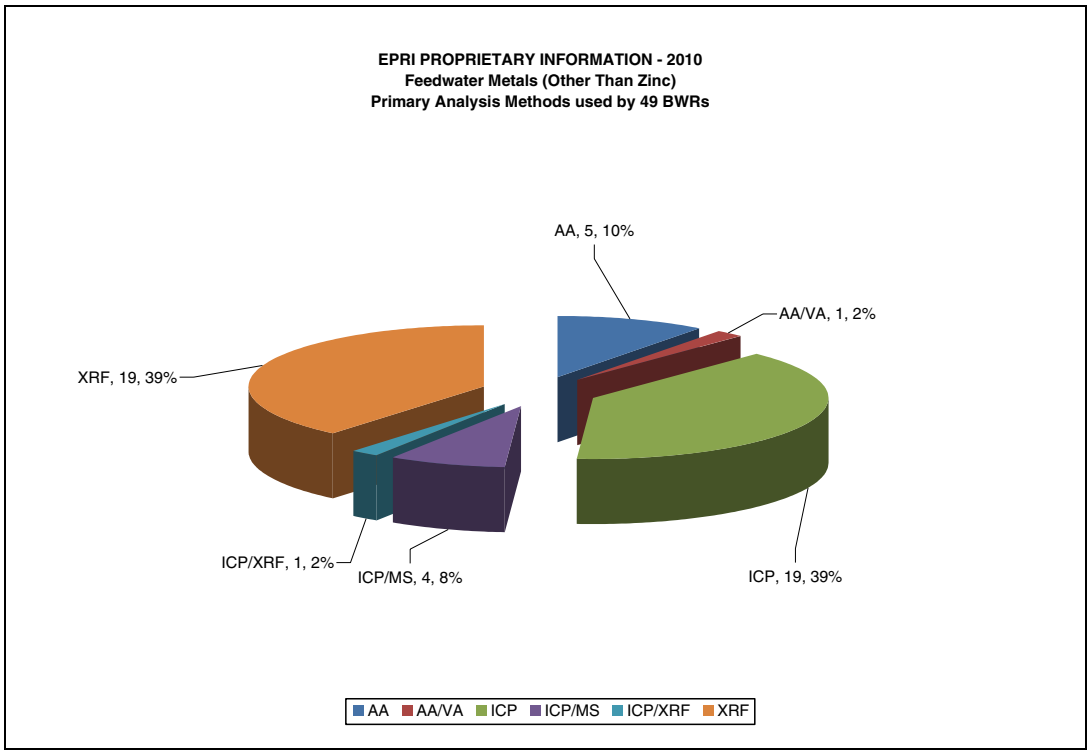
**Reactor Water Metals Analysis Method**

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**Feedwater Metals Analysis Method**

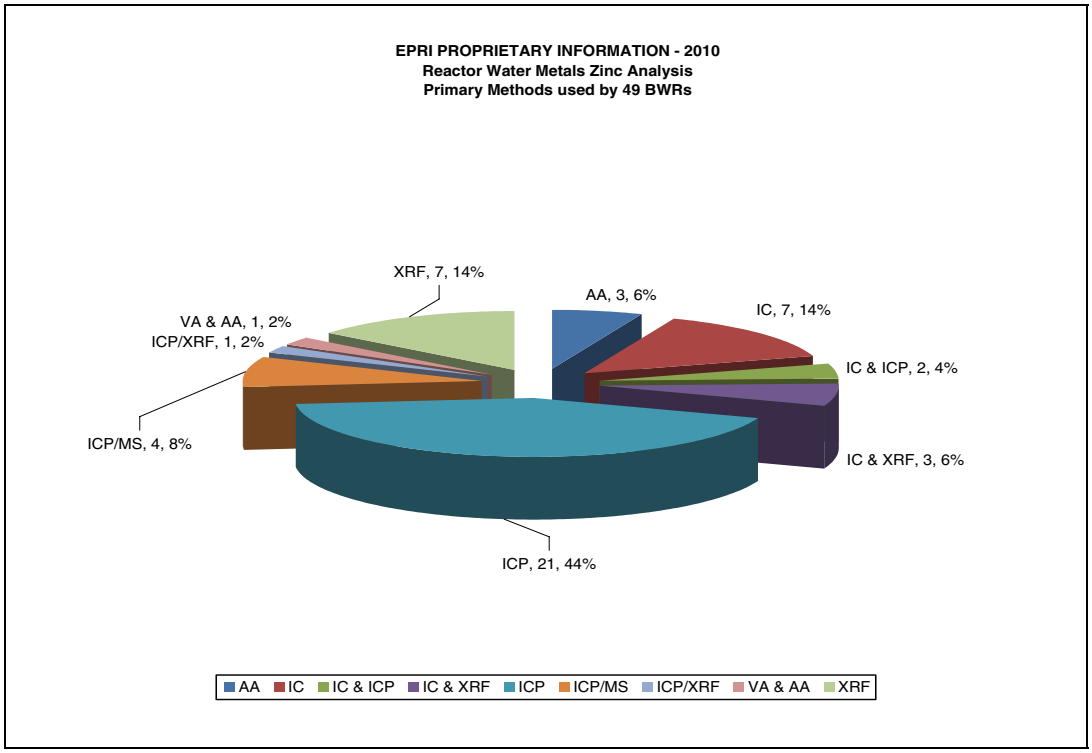
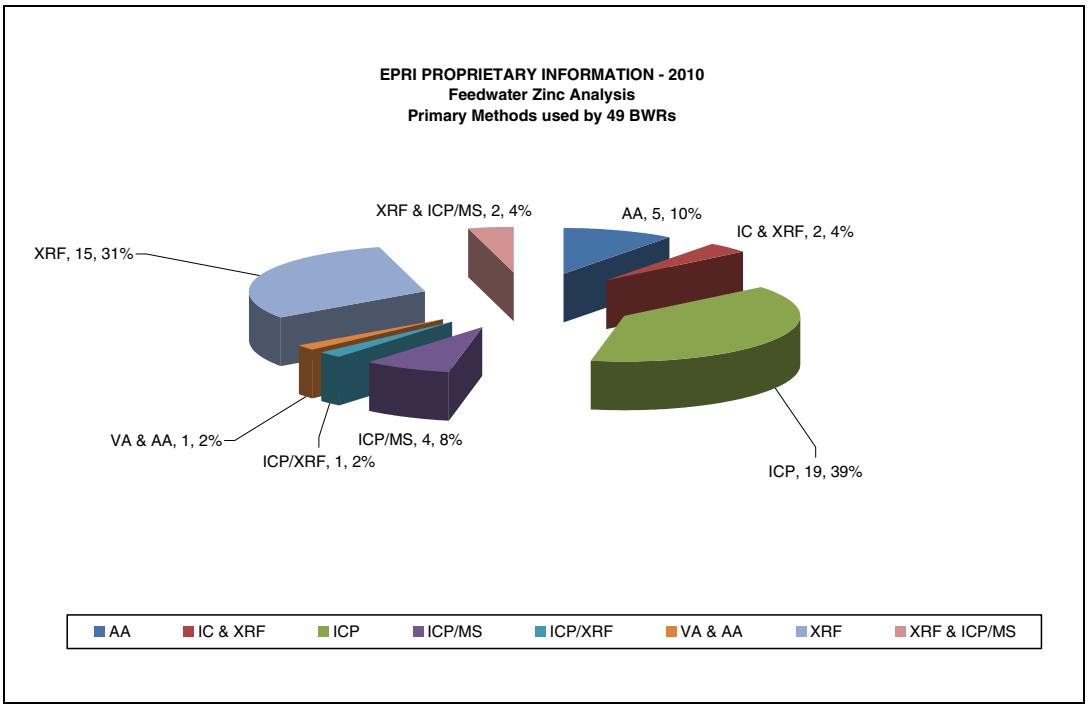



**Figure 3-15**
**Reactor Water Zinc Analysis Method**

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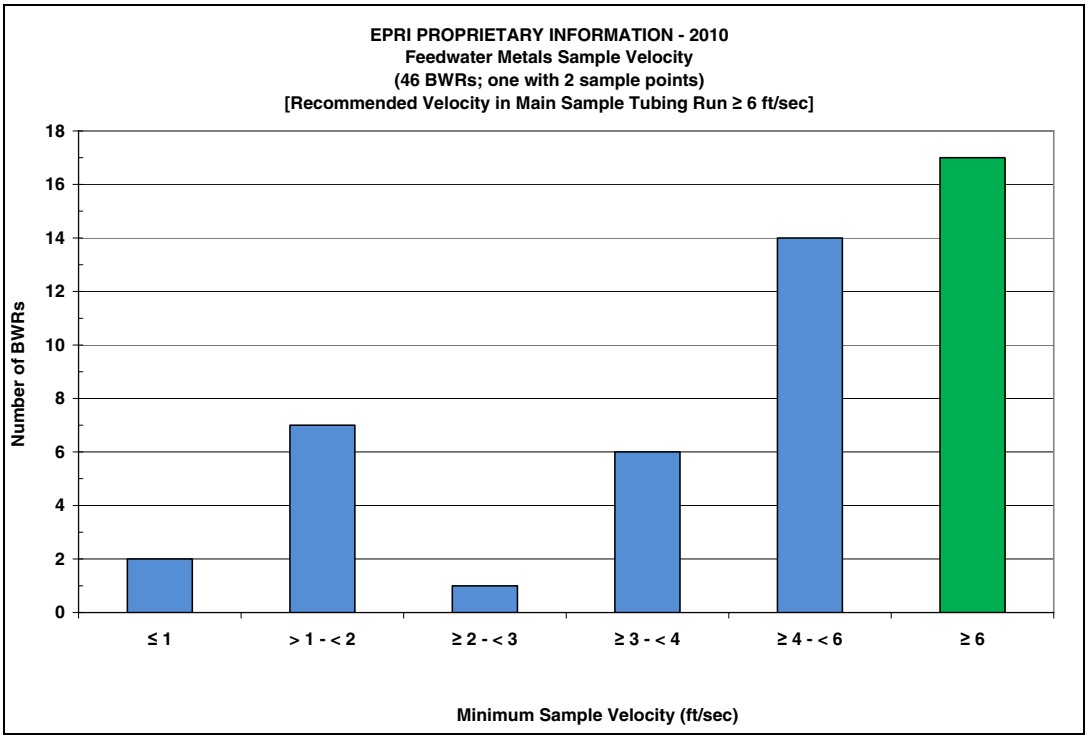


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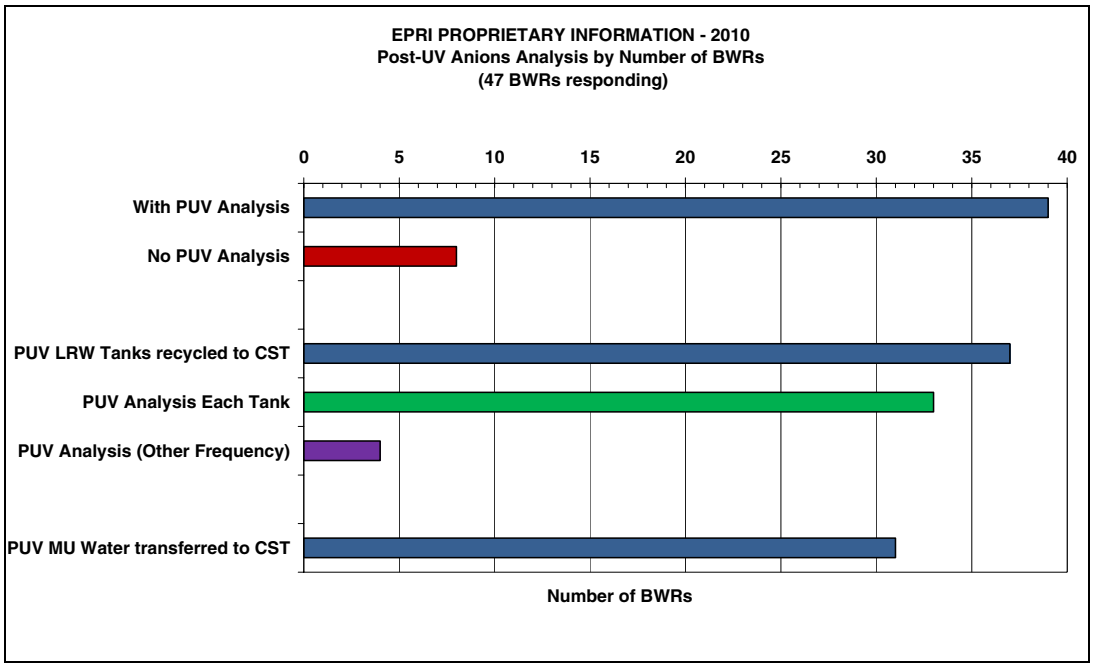


**Figure 3-18**
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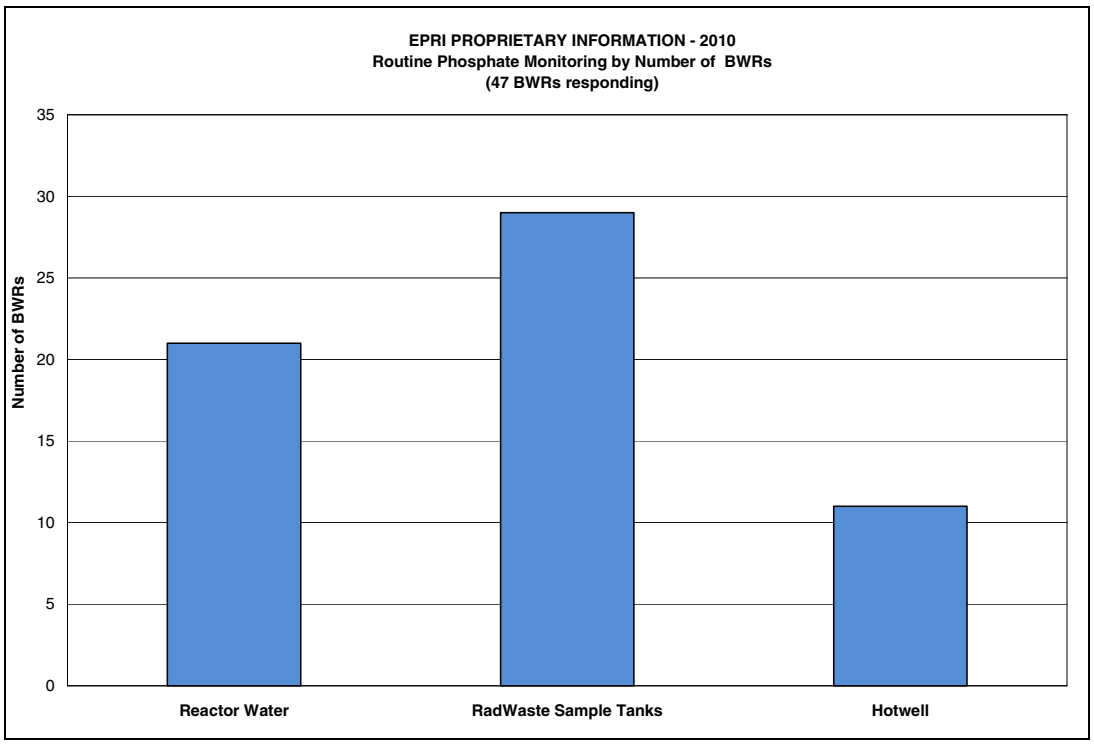


**Figure 3-19**
**Phosphate Monitoring**

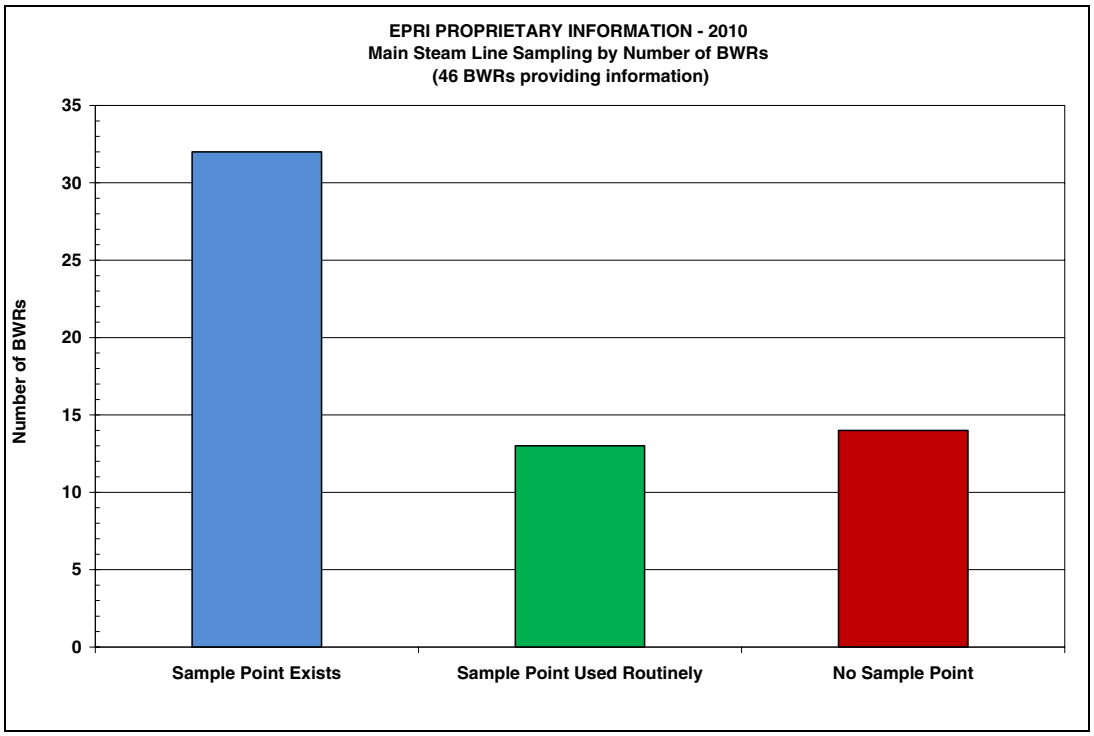


**Figure 3-20**
**Main Steam Line Sampling**

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