Prepared in cooperation with the Eugene Water and Electric Board

Water-Quality Data from Semipermeable-Membrane Devices and Polar Organic Chemical Integrative Samplers Deployed in the McKenzie River Basin, Oregon

Data Series 692
Version 2.0, February 2013

U.S. Department of the Interior
U.S. Geological Survey
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Suggested citation:
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Conversion Factors, Datum, and Acronyms

Conversion Factors

Inch/Pound to SI

<table>
<thead>
<tr>
<th>Multiply</th>
<th>By</th>
<th>To obtain</th>
</tr>
</thead>
<tbody>
<tr>
<td>inch (in.)</td>
<td>2.54</td>
<td>centimeter (cm)</td>
</tr>
<tr>
<td>foot (ft)</td>
<td>0.3048</td>
<td>meter (m)</td>
</tr>
<tr>
<td>mile (mi)</td>
<td>1.609</td>
<td>kilometer (km)</td>
</tr>
<tr>
<td>square mile (mi²)</td>
<td>2.590</td>
<td>square kilometer (km²)</td>
</tr>
<tr>
<td>gallon (gal)</td>
<td>3.785</td>
<td>liter (L)</td>
</tr>
<tr>
<td>gallon (gal)</td>
<td>0.003785</td>
<td>cubic meter (m³)</td>
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</table>

SI to Inch/Pound

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<th>Multiply</th>
<th>By</th>
<th>To obtain</th>
</tr>
</thead>
<tbody>
<tr>
<td>centimeter (cm)</td>
<td>0.3937</td>
<td>inch (in.)</td>
</tr>
<tr>
<td>meter (m)</td>
<td>3.281</td>
<td>foot (ft)</td>
</tr>
<tr>
<td>kilometer (km)</td>
<td>0.6214</td>
<td>mile (mi)</td>
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<tr>
<td>square kilometer (km²)</td>
<td>0.3861</td>
<td>square mile (mi²)</td>
</tr>
<tr>
<td>liter (L)</td>
<td>0.2642</td>
<td>gallon (gal)</td>
</tr>
<tr>
<td>cubic meter (m³)</td>
<td>264.2</td>
<td>gallon (gal)</td>
</tr>
<tr>
<td>nanogram (ng)</td>
<td>35.27 × 106</td>
<td>ounce, avoirdupois (oz)</td>
</tr>
<tr>
<td>picogram (pg)</td>
<td>35.27 × 109</td>
<td>ounce, avoirdupois (oz)</td>
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Datum

Horizontal coordinate information is referenced to the North American Datum of 1983 (NAD 83).

Acronyms

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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<tbody>
<tr>
<td>CERC</td>
<td>Columbia Environmental Research Center</td>
</tr>
<tr>
<td>DEET</td>
<td>N,N-diethyltoluamide</td>
</tr>
<tr>
<td>DEHP</td>
<td>Diethylhexylphthalate</td>
</tr>
<tr>
<td>EEQ</td>
<td>Estradiol equivalent</td>
</tr>
<tr>
<td>EST</td>
<td>Environmental Sampling Technologies, Inc.</td>
</tr>
<tr>
<td>EWEB</td>
<td>Eugene Water and Electric Board</td>
</tr>
<tr>
<td>HCB</td>
<td>Hexachlorobenzene</td>
</tr>
<tr>
<td>MDLs</td>
<td>Method detection limits</td>
</tr>
<tr>
<td>MQIs</td>
<td>Method quantification limits</td>
</tr>
<tr>
<td>NQ</td>
<td>Not quantified</td>
</tr>
<tr>
<td>PAH</td>
<td>Polycyclic aromatic hydrocarbon</td>
</tr>
<tr>
<td>PBDE</td>
<td>Polychlorinated diphenyl ether</td>
</tr>
<tr>
<td>PCA</td>
<td>Pentachloroanisole</td>
</tr>
<tr>
<td>PCB</td>
<td>Polychlorinated biphenyl</td>
</tr>
<tr>
<td>POCIS</td>
<td>Polar organic chemical integrative sampler</td>
</tr>
<tr>
<td>PRC</td>
<td>Performance reference compound</td>
</tr>
<tr>
<td>QC</td>
<td>Quality control</td>
</tr>
<tr>
<td>RSD</td>
<td>Relative standard deviation</td>
</tr>
<tr>
<td>SEC</td>
<td>Size exclusion chromatography</td>
</tr>
<tr>
<td>SPMD</td>
<td>Semipermeable membrane device</td>
</tr>
<tr>
<td>USGS</td>
<td>U.S. Geological Survey</td>
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Water-Quality Data from Semipermeable-Membrane Devices and Polar Organic Chemical Integrative Samplers Deployed in the McKenzie River Basin, Oregon

By Kathleen A. McCarthy, David A. Alvarez, and Jami H. Goldman

Abstract

Two types of passive samplers—the semipermeable membrane device (SPMD) and the polar organic chemical integrative sampler (POCIS)—are being used to collect data from the McKenzie River, Oregon. The McKenzie River is the source of drinking water for the City of Eugene, Oregon, and passive-sampler data are part of an ongoing monitoring effort designed to help understand and protect the drinking water source. Data from the passive samplers are reported here. This data report is dynamic and will be appended with additional data as they become available.

Introduction

The McKenzie River is the source of drinking water for approximately 200,000 people in the Eugene area of Oregon (fig. 1). To protect this source, the Eugene Water and Electric Board (EWEB) has implemented a source protection program (Eugene Water and Electric Board, 2000) that includes monitoring water in the McKenzie River basin for the presence of anthropogenic organic compounds.

Among the organic compounds of interest to EWEB are many that may have human-health consequences at concentrations that are orders of magnitude less than the detection limits associated with conventional water-sampling techniques. In addition, many compounds of interest may be present only during episodic events. Two types of passive samplers—the semipermeable membrane device (SPMD) and the polar organic chemical integrative sampler (POCIS)—are being used to address these particular challenges. Both the SPMD (Huckins and others, 2006) and POCIS (Alvarez and others, 2004, 2007) samplers are well suited to overcoming the difficulties of measuring low analyte concentrations and recording episodic analyte loading.

This report presents data obtained from SPMD and POCIS samplers deployed as part of a cooperative study being conducted by the U.S. Geological Survey and EWEB. This report is dynamic, and additional appendixes will be added as new data become available.

Environmental Setting and Data-Collection Sites

The environmental setting of the McKenzie River basin and a discussion of sampling sites in the basin have been previously reported in McCarthy and others (2009) and Kelly and others (2012).

Sample Collection, Laboratory Methods, and Quality Assurance

The methods used to collect, prepare, and analyze samples and to assure the quality of the data are presented in detail in McCarthy and others (2009). Methods are briefly summarized and details specific to each data set are included as a “methods” worksheet in the data workbooks (see appendixes).

SPMD and POCIS Data

The SPMD and POCIS data are available in the appendixes of this report as Microsoft© Excel 2007 (.xlsx) files at http://pubs.usgs.gov/ds/692/.
Figure 1. Study area location and data-collection sites, McKenzie River basin, Oregon.
References Cited


Appendix 1 is a Microsoft© Excel spreadsheet and is available for download at http://pubs.usgs.gov/ds/692/.

Appendix 2. Data from Passive Samplers Deployed in the Mckenzie River Basin, Oregon, During 2010.

Appendix 2 is a Microsoft© Excel spreadsheet and is available for download at http://pubs.usgs.gov/ds/692/.

Appendix 3. Data from Passive Samplers Deployed in the McKenzie River basin, Oregon, During 2011.

Appendix 3 is a Microsoft© Excel spreadsheet and is available for download at http://pubs.usgs.gov/ds/692/.