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Visual Sample Plan
Version 6.0 User’s Guide

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Abstract

This user’s guide describes Visual Sample Plan (VSP) Version 6.0 and provides instructions for using the software. VSP selects the appropriate number and location of environmental samples to ensure that the results of statistical tests performed to provide input to risk decisions have the required confidence and performance. VSP Version 6.0 provides sample-size equations or algorithms needed by specific statistical tests appropriate for specific environmental sampling objectives. It also provides data quality assessment and statistical analysis functions to support evaluation of the data and determine whether the data support decisions regarding sites suspected of contamination. The easy-to-use program is highly visual and graphic. VSP runs on personal computers with Microsoft Windows operating systems (98, NT, 2000, Millennium Edition, CE, XP, Vista, and Windows 7). Designed primarily for project managers and users without expertise in statistics, VSP is applicable to two- and three-dimensional populations to be sampled (e.g., rooms and buildings, surface soil, a defined layer of subsurface soil, water bodies, and other similar applications) for studies of environmental quality. VSP is also applicable for designing sampling plans for assessing chem/rad/bio threat and hazard identification within rooms and buildings, and for designing geophysical surveys for unexploded ordnance (UXO) identification.
## Acronyms

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Definition</th>
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<tbody>
<tr>
<td>ACS</td>
<td>Attribute Compliance Sampling</td>
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<tr>
<td>AL</td>
<td>Action Level or Action Limit</td>
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<tr>
<td>ANOVA</td>
<td>Analysis of Variance</td>
</tr>
<tr>
<td>AWE</td>
<td>U.K. Atomic Weapons Establishment</td>
</tr>
<tr>
<td>CDC</td>
<td>U.S. Center for Disease Control</td>
</tr>
<tr>
<td>CI</td>
<td>Confidence Interval</td>
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<tr>
<td>COG</td>
<td>Course-Over-Ground</td>
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<tr>
<td>CS</td>
<td>Collaborative Sampling</td>
</tr>
<tr>
<td>DCGLw</td>
<td>Derived Concentration Guideline Level for average concentrations over a wide area</td>
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<tr>
<td>DoD</td>
<td>U.S. Department of Defense</td>
</tr>
<tr>
<td>DOE</td>
<td>U.S. Department of Energy</td>
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<tr>
<td>DHS</td>
<td>U.S. Department of Homeland Security</td>
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<tr>
<td>DPGD</td>
<td>Decision Performance Goal Diagram</td>
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<tr>
<td>DQA</td>
<td>Data Quality Assessment</td>
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<tr>
<td>DQO</td>
<td>Data Quality Objectives</td>
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<tr>
<td>EPA</td>
<td>U.S. Environmental Protection Agency</td>
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<tr>
<td>ESTCP</td>
<td>Environmental Security Technology Certification Program</td>
</tr>
<tr>
<td>GIGO</td>
<td>Garbage In, Garbage Out</td>
</tr>
<tr>
<td>MARSSIM</td>
<td>Multi-Agency Radiation Survey and Site Investigation Manual</td>
</tr>
<tr>
<td>MI</td>
<td>Multiple Increment</td>
</tr>
<tr>
<td>MK</td>
<td>Mann-Kendall</td>
</tr>
<tr>
<td>MQO</td>
<td>Measurement Quality Objectives</td>
</tr>
</tbody>
</table>
NIOSH  National Institute for Occupational Safety and Health
OSL      Optimum Segment Length
PI       Prediction Interval
RCRA    Resource Conservation & Recovery Act of 1976
RMSE    Root Mean Square Error
RSS     Ranked Set Sampling
RTF     Rich Text Format
SE      Standard Error
SERDP   Strategic Environmental Research & Development Program
TOI     Targets of Interest
UCL     Upper Confidence Limit
UTL     Upper Tolerance Limit
UTM     Universal Transverse Mercator
UXO     Unexploded ordnance
VSP     Visual Sample Plan
WRS     Wilcoxon Rank Sum
WSR     Wilcoxon Signed Rank
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