**DRAFT FINAL**

## ECOLOGY TOXICS CLEANUP PROGRAM
## EPA BROWNFIELDS PROGRAM

# SAMPLING AND ANALYSIS PLAN

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# Little Squalicum Park
# Remedial Investigation/Feasibility Study
# Bellingham, WA

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Prepared for

**City of Bellingham**

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# ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| ARARs | Applicable or Relevant and Appropriate Requirements |
| ASTM | American Society for Testing and Materials |
| bgs | below ground surface |
| BNA | base neutral acid |
| BNSF | Burlington Northern Santa Fe Railway |
| BTC | Bellingham Technical College |
| CCC | Criterion Continuous Concentration |
| CERCLA | Comprehensive Environmental Response, Compensation and Liability Act |
| CLARC | cleanup levels and risk calculations |
| COCs | chemicals of concern |
| CSL | Cleanup Screening Level |
| Creek | Little Squalicum Creek |
| CSM | conceptual site model |
| DEA | David Evans and Associates |
| DI | deionized |
| DRO | diesel-range organic hydrocarbons |
| E & E | Ecology and Environment, Inc. |
| Ecology | Washington State Department of Ecology |
| EDM | Electronic Distance Meter |
| EPA | U.S. Environmental Protection Agency |
| EPH | extractable petroleum hydrocarbon |
| ESI | expanded site inspection |
| ESL | Ecological Screening Levels |
| FCR | Field Change Request |
| GPS | Global Positioning System |
| GRO | gasoline-range organic hydrocarbons |
| GW | groundwater samples |
| HA | site hazard assessment |
| HASP | health and safety plan |
| ICP/MS | inductively coupled plasma/mass spectrometry |
| ICP-OES | inductively coupled plasma-optical emission spectrometry |
| IHSs | indicator hazardous substance |
| LAETs | Lowest Apparent Effect Thresholds |
| LSC | Little Squalicum Creek |
| LSP | Little Squalicum Park |
| MCL | maximum contaminant level |
| MCTA | Model Toxics Control Act |

| | |
|---|---|
| mg/kg | milligrams per kilogram |
| mg/L | milligrams per liter |
| NAD | North American Datum |
| NAPL | nonaqueous phase liquid |
| NAVD | North American Vertical Datum |
| NAWQC | National Ambient Water Quality Criteria |
| NWTPH | Northwest Total Petroleum Hydrocarbons |
| OCDD | octachlordibenzo-p-dioxin |
| OCDF | octachlordibenzo-p-furan |
| OESER | OESER Company |
| PAHs | polycyclic aromatic hydrocarbons |
| Park | Little Squalicum Park |
| PCP | pentachlorophenol |
| PID | photo-ionization detector |
| Port | Port of Bellingham |
| PRGs | Preliminary Remediation Goals |
| PPE | personal protective equipment |
| PSEP | Puget Sound Estuary Program |
| QA/QC | quality assurance/quality control |
| QAPP | quality assurance project plan |
| RI/FS | remedial investigation and feasibility study |
| SAP | sampling and analysis plan |
| SHA | site hazard assessment |
| SI | site inspection prioritization report |
| SIM | Selective Ion Monitoring |
| SLs | screening levels |
| SMS | Washington State Sediment Management Standards |
| SOPs | standard operating procedures |
| SOW | Statement of Work |
| SQLs | Sample Quantitation Limits |
| SQS | Sediment Quality Standard |
| STL | Severn Trent Laboratories |
| SCV | Secondary Chronic Values |
| SW | surface water |
| SVOCs | semivolatile organic compounds |
| TCDD | tetrachlorodibenzo-p-dioxin |
| TEE | Terrestrial Ecological Evaluation |
| TEQs | toxicity equivalency quotients |
| TICs | tentatively identified compounds |
| TOC | total organic carbon |
| TP | test pit |
| TPH | total petroleum hydrocarbons |
| TSS | total suspended solids |

| | |
|---|---|
| U&I | Utah and Idaho Sugar Company |
| USCS | Unified Soil Classification System |
| VOCs | volatile organic compounds |
| VPH | volatile petroleum hydrocarbon |
| WAC | Washington Administrative Code |
| WISHA | Washington Industrial Safety and Health Act |
| WQC | water quality criteria |