

# Health Consultation

Technical Document Review  
RI/FS Planning Documents  
Little Squalicum Park  
Whatcom County, Washington

September 8, 2005

**Prepared by**

**The Washington State Department of Health  
Under a Cooperative Agreement with the  
Agency for Toxic Substances and Disease Registry**



DOH 333-102 September 2005

## **Foreword**

The Washington State Department of Health (DOH) has prepared this health consultation in cooperation with the Agency for Toxic Substances and Disease Registry (ATSDR). ATSDR is part of the U.S. Department of Health and Human Services and is the principal federal public health agency responsible for health issues related to hazardous waste. This health consultation was prepared in accordance with methodologies and guidelines developed by ATSDR.

The purpose of this health consultation is to identify and prevent harmful human health effects resulting from exposure to hazardous substances in the environment. Health consultations focus on specific health issues so that DOH can respond to requests from concerned residents or agencies for health information on hazardous substances. DOH evaluates sampling data collected from a hazardous waste site, determines whether exposures have occurred or could occur, reports any potential harmful effects, and recommends actions to protect public health. The findings in this report are relevant to conditions at the site during the time of this health consultation, and should not necessarily be relied upon if site conditions or land use changes in the future.

For additional information or questions regarding DOH or the contents of this health consultation, please call the health advisor who prepared this document:

Barbara J. Trejo  
Washington State Department of Health  
Office of Environmental Health Assessments  
P.O. Box 47846  
Olympia, WA 98504-7846  
(360) 236-3373  
1-877-485-7316  
Website: [www.doh.wa.gov/consults](http://www.doh.wa.gov/consults)

For more information about ATSDR, contact the ATSDR Information Center at 1-888-422-8737 or visit the agency's Web site: [www.atsdr.cdc.gov/](http://www.atsdr.cdc.gov/).

## Summary and Statement of Issue

Remedial investigation and feasibility study (RI/FS) planning documents are being developed by the City of Bellingham to determine the nature and extent of contamination and potential health risks posed by the contaminants discovered at the Little Squalicum Park site. This work is being conducted under Washington Department of Ecology (Ecology) oversight, pursuant to the Model Toxics Cleanup Act Cleanup Regulation, Chapter 173-340 WAC. Because of community health concerns regarding known and suspected contamination at the park, the Washington Department of Health (DOH) conducted a technical review of the April 2005 draft RI/FS planning documents, which DOH received from Ecology in June 2005. This health consultation summarizes issues and concerns identified by DOH during its review. These issues and concerns were initially provided to Ecology in a letter on July 5, 2005, (Appendix A) to meet Ecology's deadline for submitting comments on the draft plans.

## Background

Little Squalicum Park is located at 604 Marine Drive in Bellingham, Washington and is owned by the City of Bellingham, Whatcom County, Burlington Northern & Santa Fe Railway (BNSF), and the Port of Bellingham.<sup>1</sup> The park is approximately 32 acres and lies within the Birchwood community, a mixed residential, commercial, and industrial area. The park is used for passive recreational activities (e.g., hiking) and wildlife habitat.<sup>2</sup>

In 1999, the U.S. Environmental Protection Agency (EPA) discovered contaminants at the Little Squalicum Park property while conducting a RI/FS at the Oeser Company Superfund site, which is located north of the park property. The contamination discovered by EPA, however, did not require cleanup under EPA's Superfund Program. In February 2004, Whatcom County Health and Human Services conducted a site hazard assessment (SHA) for the Little Squalicum Park property to estimate the potential human health and environmental risk posed by known and potential site contamination relative to other contaminated sites in Washington. The park property was ranked 1, where 1 represents sites with the highest relative risk. Sites with the lowest relative risk are ranked 5.<sup>2</sup>

## Discussion

The April 2005 draft project work plan and sampling and analysis plan provide background information and details about the proposed sampling and analytical strategy for the upcoming RI/FS.<sup>2,3</sup> Overall, these planning documents provide a good start for the upcoming RI/FS. DOH, however, identified some issues and concerns about the plans that need to be addressed to ensure that appropriate data is collected for determining the nature and extent of site contamination and evaluating human health risks. General and specific comments are summarized below:

### *General Comments*

1. No existing soil, sediment, or groundwater data or screening criteria for selecting chemicals of potential concern (COPC) for these media were included in the work plan or SAP. Consequently, DOH cannot determine whether the proposed RI sampling and analysis will

adequately characterize the nature and extent of contamination or the potential health risks posed by the site.

*Recommendation* - DOH recommends that existing data be presented on maps and in tables. Screening criteria should also be presented in tables.

2. Current and future park maintenance workers are potential receptors at this site. This was noted in the SAP but not included in the work plan discussion about receptors (Section 3, Project Strategy, page 3-1, paragraph 1).

*Recommendation* - DOH recommends that the work plan be revised to include these potential receptors.

3. Existing background soil, groundwater, and sediment data results were used in the SAP along with other criteria when screening data to determine chemicals of potential concern. Background data collection is also planned for the RI. The Model Toxics Control Act (MTCA) cleanup regulation contains methods for defining soil background concentrations (WAC 173-340-709). The regulation requires ten or more samples when determining natural background concentrations in soil and twenty or more samples when determining area background concentrations in soil. The regulation also indicates that the number of samples for other media must be sufficient to provide a representative measure of background concentrations. The existing and proposed number of background soil samples for the site does not meet the MTCA requirement for determining natural or area background contaminant levels. There is also no information provided in the plans demonstrating that the number of proposed background samples for sediment, groundwater, or surface water is appropriate.

*Recommendation* - DOH recommends that Ecology re-evaluate the existing background data for representativeness and revise the proposed RI background data collection, as necessary, to ensure collection of representative samples.

4. The plans note that groundwater discharges as springs along Little Squalicum Creek (LSC) but it is not considered a potential contaminant source although there is information to suggest that the groundwater is contaminated.

*Recommendation* - DOH recommends that groundwater be considered a potential contaminant source posing a risk to human health through dermal or incidental ingestion if there is any possibility that people could come into contact with spring water.

5. Human health exposures were not considered when evaluating surface water data from LCS because it was not considered a potable source. However, both adults and children could easily come into contact with this water along the LSC.

*Recommendation* - DOH recommends that dermal exposure as well as incidental ingestion be considered when evaluating existing and new data and selecting new sample locations for surface water.

6. No volatile organic compound (VOC) analysis is planned for soils. However, there are areas at the site, like the areas where residential and commercial garbage were dumped and along the BNSF tracks, where it appears that no soil testing was previously conducted and VOCs are possible contaminants.

*Recommendations* - DOH recommends that VOC soil sampling and analysis occur where it appears that no soil testing was previously conducted and VOCs are possible contaminants. Decisions about VOC analysis for other media should be based on possible VOC sources, such as VOC contaminated soil.

7. There are no groundwater flow maps provided in either plan to support the proposed groundwater sampling locations.

*Recommendations* - DOH recommends that groundwater flow map(s) and other relevant groundwater information be added to the plans to support sampling locations.

8. The analytical strategy for this site is a tiered approach that generally assumes that all chemicals are associated with petroleum hydrocarbons. For example, if no gasoline or diesel hydrocarbons are detected above screening levels in soil then no other analysis (e.g., SVOCs, dioxin/furans) will be conducted. However, other contaminant sources could exist (e.g., wind blown particulates containing dioxin/furans from the Oeser site, residential and commercial garbage).

*Recommendation* - DOH recommends that Ecology reassess the analytical strategy.

### *Specific Comments*

1. Executive Summary, page i, paragraph 2 – The plan states: “The primary objectives of the RI/FS are to provide critical data necessary to understand the nature and extent of any significant environmental problems at the LSP site . . .” The meaning of “significant” in this context cannot be determined.

*Recommendation* - DOH recommends that “significant” be defined.

2. Work Plan, Section 4, Project Team and Responsibilities, Property Owner and Stakeholders, page 4-1 – The community has had health concerns regarding this property. However, there is no mention of either DOH or Whatcom County Health Department as stakeholders.

*Recommendation* - DOH recommends the addition of local and state health departments as stakeholders.

3. Sampling and Analysis Plan, Figure 2-1 – The sampling and analysis plan (SAP) indicates that residential and commercial garbage might have been dumped near the Bellingham Technical College (BTC). However this is not included on Figure 2-1, which shows other historical activities that could be sources of site contaminants.

*Recommendation* - DOH recommends that the residential and commercial garbage disposal area near BTC be added to Figure 2-1 so there is a complete picture of the potential contaminant sources.

4. Sampling and Analysis Plan, Section 4.1.2, Sampling Strategy, Soil – Surface soil samples are planned to be collected from 0 to 1-foot below ground surface (bgs). Given that this property is planned to be used as a park, it seems unlikely that a recreational or site maintenance worker would typically encounter soils from 0 to 1-foot bgs. This approach could result in an underestimation of risk if the contaminants are located in near-surface soils.

*Recommendation* - DOH recommends that Ecology consider a more realistic surface sampling interval (e.g., 0 to 3-inch interval) for evaluating potential human exposures to contaminated surface soils.

5. Sampling and Analysis Plan, Section 4.4.2, Sampling Strategy, Surface Sediment – Surface sediments collected from the creek are proposed to be collected from 0 to 10 centimeters but the surface sediment samples collected along the transects will be collected from 0 to 1-foot.

*Recommendation* - As with the soil, above, DOH recommends that Ecology consider a more realistic sampling interval when evaluating potential human exposures to contaminated surface sediments.

6. Sampling and Analysis Plan, Section 5.4, Soil/Sediment Processing – The compositing steps noted in the soil/sediment processing procedure are not appropriate for collecting VOC samples.

*Recommendation* - DOH recommends noting this fact in this section of the SAP and in the appropriate standard operating procedures.

### *Child Health Concerns*

Children could potentially be exposed to contaminants found in contaminated media (e.g., soil, sediment, groundwater, surface water) at the park if measures are not taken to identify and reduce such exposures. Children can be uniquely vulnerable to the hazardous effects of environmental contaminants. When compared to adults, pound for pound of body weight, children drink more water, eat more food, and breathe more air. These facts lead to an increased exposure to contaminants. Additionally, the fetus is highly sensitive to many chemicals, particularly with respect to potential impacts on childhood development. For these reasons, DOH considers the specific impacts that contaminated media might have on children, as well as other sensitive populations.

## **Conclusions**

The Little Squalicum Park RI/FS work plan and sampling and analysis plan are part of the planning documents that will be used in the upcoming RI/FS. These documents provide background information and details about the proposed sampling and analytical strategy. During its review, DOH identified some issues and concerns regarding the background information and sampling and analytical strategy that need to be addressed to ensure that appropriate data is collected for determining the nature and extent of park contamination, evaluating potential human health risks, and selecting cleanup measures that are protective of human health.

## **Recommendations**

Recommendations regarding the work plan and sampling and analysis plan for the Little Squalicum Park RI/FS are summarized in the discussion section above.

## **Public Health Action Plan**

1. DOH is available to review future versions of the work plan and sampling and analysis plan as well as the RI/FS report.
2. DOH will post this health consultation report on its web site to make it available to the general public.

## **Authors, Technical Advisors**

### **Preparer of Report**

Barbara Trejo, Health Assessor/Hydrogeologist  
Washington State Department of Health  
Office of Environmental Health Assessments  
Site Assessment Section  
P.O. Box 47846  
Olympia, WA 98504-7846

### **Designated Reviewer**

Wayne Clifford, Manager  
Washington State Department of Health  
Office of Environmental Health Assessments  
Site Assessment Section  
P.O. Box 47846  
Olympia, WA 98504-7846

### **ATSDR Technical Project Officer**

Alan Parham  
Division of Health Assessment and Consultation  
Agency for Toxic Substances and Disease Registry  
1600 Clifton Road, N.E. (MS E-32)  
Atlanta, GA 30333



## References

1. Washington State Department of Ecology. Agreed order for RI/FS for Little Squalicum Park. Bellingham, Washington: Washington Department of Ecology. January 6, 2005.
2. Integral Consulting Incorporated. Work plan, Little Squalicum Park, remedial investigation/feasibility study Bellingham, Washington, revised draft. Bellingham, Washington: Integral Consulting. April 29, 2005.
3. Integral Consulting Incorporated. Sampling and analysis plan, Little Squalicum Park, remedial investigation/feasibility study Bellingham, Washington, revised draft. Bellingham, Washington: Integral Consulting. April 29, 2005.

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**Appendix A**

**July 5, 2005 Letter from DOH to Ecology**

DRAFT

July 5, 2005

Ms. Mary O'Herron  
Washington State Department of Ecology  
1204 Railroad Avenue, Suite 200  
Bellingham, Washington 98225

Dear Mary,

Re: Draft RI/FS Planning Documents  
Little Squalicum Park Site  
604 Marine View Drive  
Whatcom County, Washington

The Washington Department of Health (DOH) reviewed the April 29, 2005, draft versions of the work plan and sampling and analysis plan (SAP) for the Little Squalicum Park (LSP) remedial investigation and feasibility study (RI/FS). DOH appreciates the opportunity to review and comment on these plans in advance of the upcoming public meeting.

Overall, the planning documents provide a good start for the upcoming RI/FS. DOH, however, has identified some issues and concerns about the plans that need to be addressed to ensure that appropriate data is collected for determining the nature and extent of site contamination and evaluating human health risks. General and specific comments are summarized below:

*General Comments*

1. No existing soil, sediment, or groundwater data or screening criteria for selecting chemicals of potential concern (COPC) for these media were included in the work plan or SAP. Consequently, DOH cannot determine whether the proposed RI sampling and analysis will adequately characterize the nature and extent of contamination or the potential health risks posed by the site. DOH recommends that existing data be presented on maps and in tables. Screening criteria should also be presented in tables.
2. Current and future park maintenance workers are potential receptors at this site. This was noted in the SAP but not included in the work plan discussion about receptors (Section 3, Project Strategy, page 3-1, paragraph 1). DOH recommends that the work plan be revised to include these potential receptors.

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3. Existing background soil, groundwater, and sediment data results were used in the SAP along with other criteria when screening data to determine chemicals of potential concern. Background data collection is also planned for the RI. The Model Toxics Control Act (MTCA) cleanup regulation contains methods for defining soil background concentrations (WAC 173-340-709). The regulation requires ten or more samples when determining natural background concentrations in soil and twenty or more samples when determining area background concentrations in soil. The regulation also indicates that the number of samples for other media must be sufficient to provide a representative measure of background concentrations. The existing and proposed number of background soil samples for the site does not meet the MTCA requirement for determining natural or area background contaminant levels. There is also no information provided in the plans demonstrating that the number of proposed background samples for sediment, groundwater, or surface water is appropriate. DOH recommends that Ecology reevaluate the existing background data for representativeness and revise the proposed RI background data collection, as necessary, to ensure collection of representative samples.
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5. Human health exposures were not considered when evaluating surface water data from LCS because it was not considered a potable source. However, both adults and children could easily come into contact with this water along the LSC. DOH recommends that dermal exposure as well as incidental ingestion be considered when evaluating existing and new data and selecting new sample locations for surface water.
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dioxin/furans) will be conducted. However, other contaminant sources could exist (e.g., wind blown particulates containing dioxin/furans from the Oeser site, residential and commercial garbage). DOH recommends that Ecology reassess the analytical strategy.

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If you have any questions or need clarification about these comments, please feel free to contact me at (360) 236-3373 or by e-mail at [barbara.trejo@doh.wa.gov](mailto:barbara.trejo@doh.wa.gov).

Sincerely,

Barbara J. Trejo  
Public Health Advisor/Hydrogeologist  
Site Assessment Section

DRAFT

## **Certification**

This Health Consultation was prepared by the Washington State Department of Health under a cooperative agreement with the Agency for Toxic Substances and Disease Registry (ATSDR). It is in accordance with approved methodology and procedures existing at the time the health consultation was begun.

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Alan Parham  
Technical Project Officer  
CAT, SPAB, DHAC  
ATSDR

The Division of Health Assessment and Consultation, ATSDR, has reviewed this public health consultation and concurs with the findings.

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Alan Yarbrough  
Team Leader  
CAT, SPAB, DHAC  
ATSDR