



HUMAN HEALTH RISK ASSESSMENT

Practical Approaches to Estimating Risk & Developing
Site-Specific Cleanup Levels

Course I.D.: REM-402

The Northwest Environmental Training Center presents:

Human Health Risk Assessment Workshop

Practical Approaches to Estimating Risk and Developing Site-Specific Cleanup Levels

Course ID: REM-402 (2 days)

February 12-13, 2009, 8:30 A.M. to 5 P.M.

Computer Classrooms in Seattle - Kirkland Computer Lab

Yarrow Bay Office Park - One North Building

10604 NE 38th Place, Suite 118

Kirkland, Washington

(425) 576-9747

Instructor: Lynn Spence, PE,
Spence Environmental Engineering

Description: Risk assessments are now being performed at almost all sites, whether part of a Risk-Based Correction Action (RBCA) analysis, to determine remediation strategies, or for litigation support and prevention. This class is hands-on, covering all the steps in a risk assessment. Emphasis will be placed on fate and transport modeling to estimate exposure point concentrations. RISC software will be used for classroom exercises, however the principles learned are readily applicable to other risk assessment software. Each participant will have their own computer workstation throughout the class.

Course Topics:

- Overview of the risk assessment process
- Exposure assessment
- Principles of contaminant fate and transport modeling
- Assessment of vapor intrusion to indoor air with the Johnson and Ettinger Model
- Vadose zone and groundwater models
- Risk-Based Corrective Action (RBCA)
- Calculation of site-specific cleanup levels
- Using the RISC software for both fate and transport analysis and risk assessment
- Sensitivity analysis
- Risk issues with total petroleum hydrocarbons (TPH)

After completing this course, participants will be able to:

- Understand the fundamentals of risk assessment protocols;
- Understand key fate and transport principles;
- Use and apply the RISC software;
- Complete technically defensible risk assessments;
- Provide peer reviews of risk assessments developed by others;
- Understand the RBCA process and how risk assessment fits in; and
- Distinguish between key input parameters and less important inputs for fate and transport models and risk assessment.

About the Instructor: Lynn Spence has 22 years experience in environmental engineering, risk assessments, contaminant transport modeling and remedial investigations. Lynn has developed several publicly available software programs including RISC, the API Decision Support System for risk assessments, and the API's TPH RBCA software. Lynn has taught many risk assessment short courses for both the private sector and for regulatory agencies.

Intended Audience: This course is designed for environmental professionals who need to perform risk assessments or apply RBCA protocols, environmental managers who need to understand key principles around risk assessment, and regulators reviewing risk assessment and RBCA submittals.

Prerequisites: A working knowledge of RBCA and knowledge of site characterization skills such as evaluating site analytical data and delineating a source.

Education Level: Intermediate

Course Materials: Participants will receive course proceedings and reference materials.

Continuing Education Units: 1.3

What to Bring: Calculator, pen or pencil, coffee mug, and a water bottle (to reduce waste). Also, please bring questions about current projects relating to risk assessment or fate and transport modeling. Please wear comfortable clothes appropriate for the prevailing weather. Lunch will be on your own. There are numerous restaurants within walking distance. Drinks and snacks will be provided each day.

Registration: \$895 (*\$845 reduced tuition is available for Native American tribes; government employees; nonprofits; students; and NAEP, NEBC, NWAEP members). You may register via the link below or by calling the Northwest Environmental Training Center at 206-762-1976.

Cancellation Policy: Registration fees are fully refundable up to 30 days prior to the event and 50 percent refundable (or 100% credit) thereafter up to 3 business days prior to the event. No refunds are issued for cancellations occurring less than 3 business days before the start day. Course registration fees and cancellation policy are subject to change without notice.

Disability Accommodations: To request disability accommodations, please contact us at info@nwetc.org or (206) 762-1976 at least 30 days prior to the event.

Northwest Environmental Training Center

A nonprofit 501(c)(3) program of the EOS Alliance
650 S. Orcas Street, Suite 220, Seattle, Washington 98108
Phone: (206)762-1976, Fax: (206)762-1979

www.nwetc.org



Kirkland
Washington

Accommodations Near:

Computer Classrooms in Seattle - Kirkland Computer Lab

Yarrow Bay Office Park - One North Building
10604 NE 38th Place, Suite 118
Kirkland, Washington
(425) 576-9747

Please feel free to call us at (206) 762-1976, if you have any questions regarding lodging. The following is a list of nearby hotels. Reservations should be made directly with the hotels.

La Quinta Inn - Kirkland

800-687-6667 (425) 828-6585
10530 NE Northup Way
Kirkland, WA 98033

Use Reservation Code:
ALLBUS

Rates starting at \$84
Walking distance from CCS

Woodmark Hotel on Lake Washington

(800) 822-3700 (425) 822-3700
1200 Carillon Point
Kirkland, WA 98033
<http://www.thewoodmark.com/>

Use Reservation Code:
Computer Classrooms In Seattle

Rates starting at \$190
1 Mile from CCS - Shuttle service available

Silver Cloud Inn - Bellevue

(800) 205-6937 (425) 637-7000
10621 NE 12th Street
Bellevue, WA 98004
<http://www.silvercloud.com/06home.htm>

Use Reservation Code:
Computer Classrooms In Seattle

Rates starting at \$125
2 Miles from CCS

Courtyard by Marriott - Bellevue

(800) 321-2211 (425) 454-5888
11010 NE 8th Street
Bellevue, WA 98004
<http://marriott.com/property/propertypage/BVUDT>

Use Reservation Code:
ZC6

Rates starting at \$169 Standard Room
3 Miles from CCS

Hyatt Regency - Bellevue

(800) 633-7313 (425) 462-1234
900 Bellevue Way
Bellevue, WA 98004
<http://bellevue.hyatt.com/hyatt/hotels/index.jsp>

Use Reservation Code:
Computer Classrooms In Seattle

Rates starting at \$175
2 Miles from CCS

Residence Inn - Bellevue

(800) 331-3131 (425) 882-1222
14455 NE 29th Place
Bellevue, WA 98007

Courtyard by Marriott

Use Reservation Code:

(800) 321-2211 (425) 869-5300
14615 NE 29th Place
Bellevue, WA 98007

Computer Classrooms In Seattle
Rates starting at \$174
4 Miles from CCS

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Directions to:

Computer Classrooms in Seattle - Kirkland Computer Lab

Yarrow Bay Office Park - One North Building
10604 NE 38th Place, Suite 118
Kirkland, Washington
(425) 576-9747

GPS Coordinates

47.644546, -122.198931
N47°38.67276, W122°11.93586

Coming from I-405:

Take the 520 West exit.
Take the first exit, 108th Ave NE.
Turn right at the end of the off ramp.
Go straight through the next light (Northup Way) and turn left at the next street, NE 38th Place (before the Park 'n Ride.)
Turn right at the second driveway, Yarrow Bay Office Park.

Coming from Interstate 5:

Take the 520 East exit.
After crossing the bridge, you will take the third exit, Lake Washington Blvd/Kirkland. This will circle back over 520.
Turn right at the second traffic light, NE 38th Pl. (there will be a Shell station on the corner.)
Pass the Keg Restaurant and take the next left into Yarrow Bay Office Park.

Coming from the Airport:

Head north on Interstate 5.
Take the Highway 520 exit.
After crossing the bridge, you will take the third exit, Lake Washington Blvd/Kirkland. This will circle back over 520.
Turn right at the second traffic light, NE 38th Pl. (there will be a Shell station on the corner.)
Pass the Keg Restaurant and take the next left into Yarrow Bay Office Park.

Parking:

As you face the buildings, Quad One North is on your FAR LEFT. Please park in the right parking lot, and walk over to the building. Handicap parking is available under the Quad One North Building.

To find out more about NWETC's programs send us **an email to** info@nwetc.org

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NORTHWEST ENVIRONMENTAL TRAINING CENTER

650 S Orcas Street, Suite 220, Seattle, Washington 98108

Ph: (206)762-1976, Fax: (206)762-1979

www.nwetc.org

REGISTRATION FORM

Name: _____ Today's Date: _____

Agency/Organization: _____

Street Address: _____

Street Address (cont'd): _____

City: _____ State: _____ Zip: _____

Phone: _____ Fax: _____

Email: _____ Title: _____

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Payment Method: Check PO Credit Card (Visa Mastercard) Total: \$ _____

Credit Card or PO #: _____ Exp: _____

Notes: Please make checks payable to Northwest Environmental Training Center.

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