APPENDIX K

Extractable Petroleum Hydrocarbon Compliance Evaluation

A1 Soil Cleanup Levels: Worksheet for Soil Data Entry: Refer to WAC 173-340-720, 740,745, 747, 750

1. Enter Site Information

Date: 01/03/16
Site Name: Boeing Auburn
Sample Name: ASB0141-9

2. Enter Soil Concentration Measured

Chemical of Concern or Equivalent Carbon Group	Measured Soil Conc dry basis mg/kg	Composition Ratio %
Petroleum EC Fraction		
AL_EC >5-6		0.00%
AL_EC >6-8		0.00%
AL_EC >8-10		0.00%
AL_EC >10-12		0.00%
AL_EC >12-16		0.00%
AL_EC >16-21		0.00%
AL_EC >21-34	5.5	100.00%
AR_EC >8-10		0.00%
AR_EC >10-12		0.00%
AR_EC >12-16		0.00%
AR_EC >16-21		0.00%
AR_EC >21-34		0.00%
Benzene		0.00%
Toluene		0.00%
Ethylbenzene		0.00%
Total Xylenes		0.00%
Naphthalene		0.00%
1-Methyl Naphthalene		0.00%
2-Methyl Naphthalene		0.00%
n-Hexane		0.00%
MTBE		0.00%
Ethylene Dibromide (EDB)		0.00%
1,2 Dichloroethane (EDC)		0.00%
Benzo(a)anthracene		0.00%
Benzo(b)fluoranthene		0.00%
Benzo(k)fluoranthene		0.00%
Benzo(a)pyrene		0.00%
Chrysene		0.00%
Dibenz(a,h)anthracene		0.00%
Indeno(1,2,3-cd)pyrene		0.00%
Sum	5.5	100.00%

Notes for Data Entry | Set Default Hydrogeology

Clear All Soil Concentration Data Entry Cells

Restore All Soil Concentration Data cleared previously

REMARK:
Analyzed for BTEX and PAHs (including naphthalene, 1-methyl naphthalene, and 2-methyl naphthalene); no detections. Other samples in SWMU-06 analyzed for PCBs; none detected.

3. Enter Site-Specific Hydrogeological Data

Total soil porosity:	0.43	Unitless
Volumetric water content:	0.3	Unitless
Volumetric air content:	0.13	Unitless
Soil bulk density measured:	1.5	kg/L
Fraction Organic Carbon:	0.001	Unitless
Dilution Factor:	20	Unitless

4. Target TPH Ground Water Concentration (if adjusted)

If you adjusted the target TPH ground water concentration, enter adjusted value here: ug/L

A2 Soil Cleanup Levels: Calculation and Summary of Results. Refer to WAC 173-340-720, 740, 745, 747, 750

Site Information

Date: 1/3/2016
Site Name: Boeing Auburn
Sample Name: ASB0141-9
Measured Soil TPH Concentration, mg/kg: **5.500**

1. Summary of Calculation Results

Exposure Pathway	Method/Goal	Protective Soil TPH Conc, mg/kg	With Measured Soil Conc		Does Measured Soil Conc Pass or Fail?
			RISK @	HI @	
Protection of Soil Direct Contact: Human Health	Method B	111,111	0.00E+00	4.95E-05	Pass
	Method C	1,333,333	0.00E+00	4.13E-06	Pass
Protection of Method B Ground Water Quality (Leaching)	Potable GW: Human Health Protection	100% NAPL	0.00E+00	5.07E-15	Pass
	NA	NA	NA	NA	NA

2. Results for Protection of Soil Direct Contact Pathway: Human Health

	Method B: Unrestricted Land Use	Method C: Industrial Land Use
Protective Soil Concentration, TPH mg/kg	**111,111.11**	**1,333,333.33**
Most Stringent Criterion	**HI =1**	**HI =1**

Soil Criteria	Protective Soil Concentration @Method B				Protective Soil Concentration @Method C			
	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @
HI =1	YES	1.11E+05	0.00E+00	1.00E+00	YES	1.33E+06	0.00E+00	1.00E+00
Total Risk=1E-5	NA	NA	NA	NA	NA	NA	NA	NA
Risk of Benzene= 1E-6	NA	NA	NA	NA	NA			
Risk of cPAHs mixture= 1E-6	NA	NA	NA	NA				
EDB	NA	NA	NA	NA		NA		
EDC	NA	NA	NA	NA				

3. Results for Protection of Ground Water Quality (Leaching Pathway)

3.1. Protection of Potable Ground Water Quality (Method B): Human Health Protection

Most Stringent Criterion	**NA**
Protective Ground Water Concentration, ug/L	**NA**
Protective Soil Concentration, mg/kg	**Soil-to-Ground Water is not a critical pathway!**

Ground Water Criteria	Protective Potable Ground Water Concentration @Method B				Protective Soil Conc, mg/kg
	Most Stringent?	TPH Conc, ug/L	RISK @	HI @	
HI=1	YES	7.50E-10	0.00E+00	2.34E-14	100% NAPL
Total Risk = 1E-5	NA	NA	NA	NA	NA
Total Risk = 1E-6	NA	NA	NA	NA	NA
Risk of cPAHs mixture= 1E-5	NA	NA	NA	NA	NA
Benzene MCL = 5 ug/L	NA	NA	NA	NA	NA
MTBE = 20 ug/L	NA	NA	NA	NA	NA

Note: 100% NAPL is 68000 mg/kg TPH.

3.2 Protection of Ground Water Quality for TPH Ground Water Concentration previously adjusted and entered

Ground Water Criteria	Protective Ground Water Concentration			Protective Soil Conc, mg/kg
	TPH Conc, ug/L	Risk @	HI @	
NA	NA	NA	NA	**NA**

A1 Soil Cleanup Levels: Worksheet for Soil Data Entry: Refer to WAC 173-340-720, 740,745, 747, 750

1. Enter Site Information

Date: 09/18/07
Site Name: Boeing Auburn
Sample Name: ASB0147-15 (SWMU-18)

2. Enter Soil Concentration Measured

Chemical of Concern or Equivalent Carbon Group	Measured Soil Conc dry basis mg/kg	Composition Ratio %
Petroleum EC Fraction		
AL_EC >5-6	0	0.00%
AL_EC >6-8	0	0.00%
AL_EC >8-10	0	0.00%
AL_EC >10-12	0	0.00%
AL_EC >12-16	0	0.00%
AL_EC >16-21	0	0.00%
AL_EC >21-34	0	0.00%
AR_EC >8-10	9.6	100.00%
AR_EC >10-12	0	0.00%
AR_EC >12-16	0	0.00%
AR_EC >16-21	0	0.00%
AR_EC >21-34	0	0.00%
Benzene	0	0.00%
Toluene	0	0.00%
Ethylbenzene	0	0.00%
Total Xylenes	0	0.00%
Naphthalene	0	0.00%
1-Methyl Naphthalene	0	0.00%
2-Methyl Naphthalene	0	0.00%
n-Hexane	0	0.00%
MTBE	0	0.00%
Ethylene Dibromide (EDB)	0	0.00%
1,2 Dichloroethane (EDC)	0	0.00%
Benzo(a)anthracene	0	0.00%
Benzo(b)fluoranthene	0	0.00%
Benzo(k)fluoranthene	0	0.00%
Benzo(a)pyrene	0	0.00%
Chrysene	0	0.00%
Dibenz(a,h)anthracene	0	0.00%
Indeno(1,2,3-cd)pyrene	0	0.00%
Sum	9.6	100.00%

Notes for Data Entry | Set Default Hydrogeology

Clear All Soil Concentration Data Entry Cells

Restore All Soil Concentration Data cleared previously

REMARK:
Sample analyzed for BTEX and PAHs (including naphthalene, 1-methyl naphthalene and 2-methyl naphthalene); no detections.

3. Enter Site-Specific Hydrogeological Data

Total soil porosity:	0.43	Unitless
Volumetric water content:	0.3	Unitless
Volumetric air content:	0.13	Unitless
Soil bulk density measured:	1.5	kg/L
Fraction Organic Carbon:	0.001	Unitless
Dilution Factor:	20	Unitless

4. Target TPH Ground Water Concentation (if adjusted)

If you adjusted the target TPH ground water concentration, enter adjusted value here: ug/L

A2 Soil Cleanup Levels: Calculation and Summary of Results. Refer to WAC 173-340-720, 740, 745, 747, 750

Site Information

Date: 9/18/2007
Site Name: Boeing Auburn
Sample Name: ASB0147-15 (SWMU-18)
Measured Soil TPH Concentration, mg/kg: **9,600**

1. Summary of Calculation Results

Exposure Pathway	Method/Goal	Protective Soil TPH Conc, mg/kg	With Measured Soil Conc		Does Measured Soil Conc Pass or Fail?
			RISK @	HI @	
Protection of Soil Direct Contact: Human Health	Method B	7,390	0.00E+00	1.30E-03	Pass
	Method C	145,455	0.00E+00	6.60E-05	Pass
Protection of Method B Ground Water Quality (Leaching)	Potable GW: Human Health Protection	29	0.00E+00	3.29E-01	Pass
	NA	NA	NA	NA	NA

2. Results for Protection of Soil Direct Contact Pathway: Human Health

	Method B: Unrestricted Land Use	Method C: Industrial Land Use
Protective Soil Concentration, TPH mg/kg	**7,390.30**	**145,454.55**
Most Stringent Criterion	**HI =1**	**HI =1**

Soil Criteria	Protective Soil Concentration @Method B				Protective Soil Concentration @Method C			
	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @
HI =1	YES	7.39E+03	0.00E+00	1.00E+00	YES	1.45E+05	0.00E+00	1.00E+00
Total Risk=1E-5	NA	NA	NA	NA	NA	NA	NA	NA
Risk of Benzene= 1E-6	NA	NA	NA	NA	NA			
Risk of cPAHs mixture= 1E-6	NA	NA	NA	NA				
EDB	NA	NA	NA	NA				
EDC	NA	NA	NA	NA				

NA

3. Results for Protection of Ground Water Quality (Leaching Pathway)

3.1. Protection of Potable Ground Water Quality (Method B): Human Health Protection

Most Stringent Criterion	**HI=1**
Protective Ground Water Concentration, ug/L	**800.00**
Protective Soil Concentration, mg/kg	**29.15**

Ground Water Criteria	Protective Potable Ground Water Concentration @Method B				Protective Soil Conc, mg/kg
	Most Stringent?	TPH Conc, ug/L	RISK @	HI @	
HI=1	YES	8.00E+02	0.00E+00	1.00E+00	2.91E+01
Total Risk = 1E-5	NA	NA	NA	NA	NA
Total Risk = 1E-6	NA	NA	NA	NA	NA
Risk of cPAHs mixture= 1E-5	NA	NA	NA	NA	NA
Benzene MCL = 5 ug/L	NA	NA	NA	NA	NA
MTBE = 20 ug/L	NA	NA	NA	NA	NA

3.2 Protection of Ground Water Quality for TPH Ground Water Concentration previously adjusted and entered

Ground Water Criteria	Protective Ground Water Concentration			Protective Soil Conc, mg/kg
	TPH Conc, ug/L	Risk @	HI @	
NA	NA	NA	NA	NA

A1 Soil Cleanup Levels: Worksheet for Soil Data Entry: Refer to WAC 173-340-720, 740,745, 747, 750

1. Enter Site Information

Date: 01/03/16
Site Name: Boeing Auburn
Sample Name: ASB0149-15 (AOC-02C)

2. Enter Soil Concentration Measured

Chemical of Concern or Equivalent Carbon Group	Measured Soil Conc dry basis mg/kg	Composition Ratio %
Petroleum EC Fraction		
AL_EC >5-6		0.00%
AL_EC >6-8		0.00%
AL_EC >8-10		0.00%
AL_EC >10-12		0.00%
AL_EC >12-16		0.00%
AL_EC >16-21		0.00%
AL_EC >21-34	5.5	100.00%
AR_EC >8-10		0.00%
AR_EC >10-12		0.00%
AR_EC >12-16		0.00%
AR_EC >16-21		0.00%
AR_EC >21-34		0.00%
Benzene		0.00%
Toluene		0.00%
Ethylbenzene		0.00%
Total Xylenes		0.00%
Naphthalene		0.00%
1-Methyl Naphthalene		0.00%
2-Methyl Naphthalene		0.00%
n-Hexane		0.00%
MTBE		0.00%
Ethylene Dibromide (EDB)		0.00%
1,2 Dichloroethane (EDC)		0.00%
Benzo(a)anthracene		0.00%
Benzo(b)fluoranthene		0.00%
Benzo(k)fluoranthene		0.00%
Benzo(a)pyrene		0.00%
Chrysene		0.00%
Dibenz(a,h)anthracene		0.00%
Indeno(1,2,3-cd)pyrene		0.00%
Sum	5.5	100.00%

Notes for Data Entry | Set Default Hydrogeology

Clear All Soil Concentration Data Entry Cells

Restore All Soil Concentration Data cleared previously

REMARK:
Analyzed for EPH only. Sample ASB0149-21 analyzed for BTEX and PAHs (including naphthalene, 1-methyl naphthalene, and 2-methyl naphthalene); no detections. Other samples in SWMU-06 analyzed for PCBs; no detections.

3. Enter Site-Specific Hydrogeological Data

Total soil porosity:	0.43	Unitless
Volumetric water content:	0.3	Unitless
Volumetric air content:	0.13	Unitless
Soil bulk density measured:	1.5	kg/L
Fraction Organic Carbon:	0.001	Unitless
Dilution Factor:	20	Unitless

4. Target TPH Ground Water Concentration (if adjusted)

If you adjusted the target TPH ground water concentration, enter adjusted value here:		ug/L

A2 Soil Cleanup Levels: Calculation and Summary of Results. Refer to WAC 173-340-720, 740, 745, 747, 750

Site Information

Date: 1/3/2016
Site Name: Boeing Auburn
Sample Name: ASB0149-15 (AOC-02C)
Measured Soil TPH Concentration, mg/kg: **5.500**

1. Summary of Calculation Results

Exposure Pathway	Method/Goal	Protective Soil TPH Conc, mg/kg	With Measured Soil Conc		Does Measured Soil Conc Pass or Fail?
			RISK @	HI @	
Protection of Soil Direct Contact: Human Health	Method B	111,111	0.00E+00	4.95E-05	Pass
	Method C	1,333,333	0.00E+00	4.13E-06	Pass
Protection of Method B Ground Water Quality (Leaching)	Potable GW: Human Health Protection	100% NAPL	0.00E+00	5.07E-15	Pass
	NA	NA	NA	NA	NA

2. Results for Protection of Soil Direct Contact Pathway: Human Health

	Method B: Unrestricted Land Use	Method C: Industrial Land Use
Protective Soil Concentration, TPH mg/kg	**111,111.11**	**1,333,333.33**
Most Stringent Criterion	**HI =1**	**HI =1**

Soil Criteria	Protective Soil Concentration @Method B				Protective Soil Concentration @Method C			
	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @
HI =1	YES	1.11E+05	0.00E+00	1.00E+00	YES	1.33E+06	0.00E+00	1.00E+00
Total Risk=1E-5	NA	NA	NA	NA	NA	NA	NA	NA
Risk of Benzene= 1E-6	NA	NA	NA	NA	NA			
Risk of cPAHs mixture= 1E-6	NA	NA	NA	NA				
EDB	NA	NA	NA	NA		NA		
EDC	NA	NA	NA	NA				

3. Results for Protection of Ground Water Quality (Leaching Pathway)

3.1. Protection of Potable Ground Water Quality (Method B): Human Health Protection

Most Stringent Criterion	**NA**
Protective Ground Water Concentration, ug/L	**NA**
Protective Soil Concentration, mg/kg	**Soil-to-Ground Water is not a critical pathway!**

Ground Water Criteria	Protective Potable Ground Water Concentration @Method B				Protective Soil Conc, mg/kg
	Most Stringent?	TPH Conc, ug/L	RISK @	HI @	
HI=1	YES	7.50E-10	0.00E+00	2.34E-14	100% NAPL
Total Risk = 1E-5	NA	NA	NA	NA	NA
Total Risk = 1E-6	NA	NA	NA	NA	NA
Risk of cPAHs mixture= 1E-5	NA	NA	NA	NA	NA
Benzene MCL = 5 ug/L	NA	NA	NA	NA	NA
MTBE = 20 ug/L	NA	NA	NA	NA	NA

Note: 100% NAPL is 68000 mg/kg TPH.

3.2 Protection of Ground Water Quality for TPH Ground Water Concentration previously adjusted and entered

Ground Water Criteria	Protective Ground Water Concentration			Protective Soil Conc, mg/kg
	TPH Conc, ug/L	Risk @	HI @	
NA	NA	NA	NA	**NA**

A1 Soil Cleanup Levels: Worksheet for Soil Data Entry: Refer to WAC 173-340-720, 740,745, 747, 750

1. Enter Site Information

Date: 09/18/07
Site Name: Boeing Auburn
Sample Name: ASB0150-21 (AOC-02d)

2. Enter Soil Concentration Measured

Chemical of Concern or Equivalent Carbon Group	Measured Soil Conc dry basis mg/kg	Composition Ratio %
Petroleum EC Fraction		
AL_EC >5-6	0	0.00%
AL_EC >6-8	0	0.00%
AL_EC >8-10	0	0.00%
AL_EC >10-12	0	0.00%
AL_EC >12-16	0	0.00%
AL_EC >16-21	0	0.00%
AL_EC >21-34	0	0.00%
AR_EC >8-10	4.5	100.00%
AR_EC >10-12	0	0.00%
AR_EC >12-16	0	0.00%
AR_EC >16-21	0	0.00%
AR_EC >21-34	0	0.00%
Benzene	0	0.00%
Toluene	0	0.00%
Ethylbenzene	0	0.00%
Total Xylenes	0	0.00%
Naphthalene	0	0.00%
1-Methyl Naphthalene	0	0.00%
2-Methyl Naphthalene	0	0.00%
n-Hexane	0	0.00%
MTBE	0	0.00%
Ethylene Dibromide (EDB)	0	0.00%
1,2 Dichloroethane (EDC)	0	0.00%
Benzo(a)anthracene	0	0.00%
Benzo(b)fluoranthene	0	0.00%
Benzo(k)fluoranthene	0	0.00%
Benzo(a)pyrene	0	0.00%
Chrysene	0	0.00%
Dibenz(a,h)anthracene	0	0.00%
Indeno(1,2,3-cd)pyrene	0	0.00%
Sum	4.5	100.00%

Notes for Data Entry | Set Default Hydrogeology

Clear All Soil Concentration Data Entry Cells

Restore All Soil Concentration Data cleared previously

REMARK:
Sample analyzed for PAHs (including naphthalene, 1-methyl naphthalene, 2-methyl naphthalene); no detections.

3. Enter Site-Specific Hydrogeological Data

Total soil porosity:	0.43	Unitless
Volumetric water content:	0.3	Unitless
Volumetric air content:	0.13	Unitless
Soil bulk density measured:	1.5	kg/L
Fraction Organic Carbon:	0.001	Unitless
Dilution Factor:	20	Unitless

4. Target TPH Ground Water Concentation (if adjusted)

If you adjusted the target TPH ground water concentration, enter adjusted value here: ug/L

A2 Soil Cleanup Levels: Calculation and Summary of Results. Refer to WAC 173-340-720, 740, 745, 747, 750

Site Information

Date: 9/18/2007
Site Name: Boeing Auburn
Sample Name: ASB0150-21 (AOC-02d)
Measured Soil TPH Concentration, mg/kg: 4.500

1. Summary of Calculation Results

Exposure Pathway	Method/Goal	Protective Soil TPH Conc, mg/kg	With Measured Soil Conc		Does Measured Soil Conc Pass or Fail?
			RISK @	HI @	
Protection of Soil Direct Contact: Human Health	Method B	7,390	0.00E+00	6.09E-04	Pass
	Method C	145,455	0.00E+00	3.09E-05	Pass
Protection of Method B Ground Water Quality (Leaching)	Potable GW: Human Health Protection	29	0.00E+00	1.54E-01	Pass
	NA	NA	NA	NA	NA

2. Results for Protection of Soil Direct Contact Pathway: Human Health

	Method B: Unrestricted Land Use	Method C: Industrial Land Use
Protective Soil Concentration, TPH mg/kg	7,390.30	145,454.55
Most Stringent Criterion	HI =1	HI =1

Soil Criteria	Protective Soil Concentration @Method B				Protective Soil Concentration @Method C			
	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @
HI =1	YES	7.39E+03	0.00E+00	1.00E+00	YES	1.45E+05	0.00E+00	1.00E+00
Total Risk=1E-5	NA	NA	NA	NA	NA	NA	NA	NA
Risk of Benzene= 1E-6	NA	NA	NA	NA	NA			
Risk of cPAHs mixture= 1E-6	NA	NA	NA	NA				
EDB	NA	NA	NA	NA				
EDC	NA	NA	NA	NA				

NA

3. Results for Protection of Ground Water Quality (Leaching Pathway)

3.1. Protection of Potable Ground Water Quality (Method B): Human Health Protection

Most Stringent Criterion	HI=1
Protective Ground Water Concentration, ug/L	800.00
Protective Soil Concentration, mg/kg	29.15

Ground Water Criteria	Protective Potable Ground Water Concentration @Method B				Protective Soil Conc, mg/kg
	Most Stringent?	TPH Conc, ug/L	RISK @	HI @	
HI=1	YES	8.00E+02	0.00E+00	1.00E+00	2.91E+01
Total Risk = 1E-5	NA	NA	NA	NA	NA
Total Risk = 1E-6	NA	NA	NA	NA	NA
Risk of cPAHs mixture= 1E-5	NA	NA	NA	NA	NA
Benzene MCL = 5 ug/L	NA	NA	NA	NA	NA
MTBE = 20 ug/L	NA	NA	NA	NA	NA

3.2 Protection of Ground Water Quality for TPH Ground Water Concentration previously adjusted and entered

Ground Water Criteria	Protective Ground Water Concentration			Protective Soil Conc, mg/kg
	TPH Conc, ug/L	Risk @	HI @	
NA	NA	NA	NA	NA

A1 Soil Cleanup Levels: Worksheet for Soil Data Entry: Refer to WAC 173-340-720, 740,745, 747, 750

1. Enter Site Information

Date: 09/18/07
Site Name: Boeing Auburn
Sample Name: ASB0152-15 (AOC-12)

2. Enter Soil Concentration Measured

Chemical of Concern or Equivalent Carbon Group	Measured Soil Conc dry basis mg/kg	Composition Ratio %
Petroleum EC Fraction		
AL_EC >5-6	0	#DIV/0!
AL_EC >6-8	0	#DIV/0!
AL_EC >8-10	0	#DIV/0!
AL_EC >10-12	0	#DIV/0!
AL_EC >12-16	0	#DIV/0!
AL_EC >16-21	0	#DIV/0!
AL_EC >21-34	0	#DIV/0!
AR_EC >8-10	0	#DIV/0!
AR_EC >10-12	0	#DIV/0!
AR_EC >12-16	0	#DIV/0!
AR_EC >16-21	0	#DIV/0!
AR_EC >21-34	0	#DIV/0!
Benzene	0	#DIV/0!
Toluene	0	#DIV/0!
Ethylbenzene	0	#DIV/0!
Total Xylenes	0	#DIV/0!
Naphthalene	0	#DIV/0!
1-Methyl Naphthalene	0	#DIV/0!
2-Methyl Naphthalene	0	#DIV/0!
n-Hexane	0	#DIV/0!
MTBE	0	#DIV/0!
Ethylene Dibromide (EDB)	0	#DIV/0!
1,2 Dichloroethane (EDC)	0	#DIV/0!
Benzo(a)anthracene	0	#DIV/0!
Benzo(b)fluoranthene	0	#DIV/0!
Benzo(k)fluoranthene	0	#DIV/0!
Benzo(a)pyrene	0	#DIV/0!
Chrysene	0	#DIV/0!
Dibenz(a,h)anthracene	0	#DIV/0!
Indeno(1,2,3-cd)pyrene	0	#DIV/0!
Sum	0	#DIV/0!

Notes for Data Entry | Set Default Hydrogeology

Clear All Soil Concentration Data Entry Cells

Restore All Soil Concentration Data cleared previously

REMARK:
Sample analyzed for PAHs (including naphthalene, 1-methyl naphthalene, 2-methyl naphthalene); no detections.

3. Enter Site-Specific Hydrogeological Data

Total soil porosity:	0.43	Unitless
Volumetric water content:	0.3	Unitless
Volumetric air content:	0.13	Unitless
Soil bulk density measured:	1.5	kg/L
Fraction Organic Carbon:	0.001	Unitless
Dilution Factor:	20	Unitless

4. Target TPH Ground Water Concentation (if adjusted)

If you adjusted the target TPH ground water concentration, enter adjusted value here: ug/L

A2 Soil Cleanup Levels: Calculation and Summary of Results. Refer to WAC 173-340-720, 740, 745, 747, 750

Site Information

Date: 9/18/2007
Site Name: Boeing Auburn
Sample Name: ASB0152-15 (AOC-12)
Measured Soil TPH Concentration, mg/kg: **0.000**

1. Summary of Calculation Results

Exposure Pathway	Method/Goal	Protective Soil TPH Conc, mg/kg	With Measured Soil Conc		Does Measured Soil Conc Pass or Fail?
			RISK @	HI @	
Protection of Soil Direct Contact: Human Health	Method B		0.00E+00	0.00E+00	Pass
	Method C		0.00E+00	0.00E+00	Pass
Protection of Method B Ground Water Quality (Leaching)	Potable GW: Human Health Protection		0.00E+00	0.00E+00	Pass
	NA		NA	NA	NA

2. Results for Protection of Soil Direct Contact Pathway: Human Health

	Method B: Unrestricted Land Use	Method C: Industrial Land Use
Protective Soil Concentration, TPH mg/kg		
Most Stringent Criterion		

Soil Criteria	Protective Soil Concentration @Method B				Protective Soil Concentration @Method C			
	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @
HI =1	NA	NA	NA	NA				
Total Risk=1E-5								
Risk of Benzene= 1E-6					NA			
Risk of cPAHs mixture= 1E-6								
EDB								
EDC								

3. Results for Protection of Ground Water Quality (Leaching Pathway)

3.1. Protection of Potable Ground Water Quality (Method B): Human Health Protection

Most Stringent Criterion	
Protective Ground Water Concentration, ug/L	
Protective Soil Concentration, mg/kg	

Ground Water Criteria	Protective Potable Ground Water Concentration @Method B				Protective Soil Conc, mg/kg
	Most Stringent?	TPH Conc, ug/L	RISK @	HI @	
HI=1					
Total Risk = 1E-5					
Total Risk = 1E-6					
Risk of cPAHs mixture= 1E-5					
Benzene MCL = 5 ug/L					
MTBE = 20 ug/L					

3.2 Protection of Ground Water Quality for TPH Ground Water Concentration previously adjusted and entered

Ground Water Criteria	Protective Ground Water Concentration			Protective Soil Conc, mg/kg
	TPH Conc, ug/L	Risk @	HI @	
NA				

A1 Soil Cleanup Levels: Worksheet for Soil Data Entry: Refer to WAC 173-340-720, 740,745, 747, 750

1. Enter Site Information

Date: 09/18/07
Site Name: Boeing Auburn
Sample Name: ASB0159-16 (SWMU-16)

2. Enter Soil Concentration Measured

Chemical of Concern or Equivalent Carbon Group	Measured Soil Conc dry basis mg/kg	Composition Ratio %
Petroleum EC Fraction		
AL_EC >5-6	0	#DIV/0!
AL_EC >6-8	0	#DIV/0!
AL_EC >8-10	0	#DIV/0!
AL_EC >10-12	0	#DIV/0!
AL_EC >12-16	0	#DIV/0!
AL_EC >16-21	0	#DIV/0!
AL_EC >21-34	0	#DIV/0!
AR_EC >8-10	0	#DIV/0!
AR_EC >10-12	0	#DIV/0!
AR_EC >12-16	0	#DIV/0!
AR_EC >16-21	0	#DIV/0!
AR_EC >21-34	0	#DIV/0!
Benzene	0	#DIV/0!
Toluene	0	#DIV/0!
Ethylbenzene	0	#DIV/0!
Total Xylenes	0	#DIV/0!
Naphthalene	0	#DIV/0!
1-Methyl Naphthalene	0	#DIV/0!
2-Methyl Naphthalene	0	#DIV/0!
n-Hexane	0	#DIV/0!
MTBE	0	#DIV/0!
Ethylene Dibromide (EDB)	0	#DIV/0!
1,2 Dichloroethane (EDC)	0	#DIV/0!
Benzo(a)anthracene	0	#DIV/0!
Benzo(b)fluoranthene	0	#DIV/0!
Benzo(k)fluoranthene	0	#DIV/0!
Benzo(a)pyrene	0	#DIV/0!
Chrysene	0	#DIV/0!
Dibenz(a,h)anthracene	0	#DIV/0!
Indeno(1,2,3-cd)pyrene	0	#DIV/0!
Sum	0	#DIV/0!

Notes for Data Entry | Set Default Hydrogeology

Clear All Soil Concentration Data Entry Cells

Restore All Soil Concentration Data cleared previously

REMARK:
Sample analyzed for BTEX and PAHs (including naphthalene, 1-methyl naphthalene, 2-methyl naphthalene); no detections. Other soil samples in SWMU-16 were analyzed for PCBs. PCBs were detected in some samples; however, the detected concentrations did not exceed soil screening levels.

3. Enter Site-Specific Hydrogeological Data

Total soil porosity:	0.43	Unitless
Volumetric water content:	0.3	Unitless
Volumetric air content:	0.13	Unitless
Soil bulk density measured:	1.5	kg/L
Fraction Organic Carbon:	0.001	Unitless
Dilution Factor:	20	Unitless

4. Target TPH Ground Water Concentation (if adjusted)

If you adjusted the target TPH ground water concentration, enter adjusted value here: ug/L

A2 Soil Cleanup Levels: Calculation and Summary of Results. Refer to WAC 173-340-720, 740, 745, 747, 750

Site Information

Date: 9/18/2007
Site Name: Boeing Auburn
Sample Name: ASB0159-16 (SWMU-16)
Measured Soil TPH Concentration, mg/kg: **0.000**

1. Summary of Calculation Results

Exposure Pathway	Method/Goal	Protective Soil TPH Conc, mg/kg	With Measured Soil Conc		Does Measured Soil Conc Pass or Fail?
			RISK @	HI @	
Protection of Soil Direct Contact: Human Health	Method B		0.00E+00	0.00E+00	Pass
	Method C		0.00E+00	0.00E+00	Pass
Protection of Method B Ground Water Quality (Leaching)	Potable GW: Human Health Protection		0.00E+00	0.00E+00	Pass
	NA		NA	NA	NA

2. Results for Protection of Soil Direct Contact Pathway: Human Health

	Method B: Unrestricted Land Use	Method C: Industrial Land Use
Protective Soil Concentration, TPH mg/kg		
Most Stringent Criterion		

Soil Criteria	Protective Soil Concentration @Method B				Protective Soil Concentration @Method C			
	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @
HI =1	NA	NA	NA	NA				
Total Risk=1E-5								
Risk of Benzene= 1E-6					NA			
Risk of cPAHs mixture= 1E-6								
EDB								
EDC								

3. Results for Protection of Ground Water Quality (Leaching Pathway)

3.1. Protection of Potable Ground Water Quality (Method B): Human Health Protection

Most Stringent Criterion	
Protective Ground Water Concentration, ug/L	
Protective Soil Concentration, mg/kg	

Ground Water Criteria	Protective Potable Ground Water Concentration @Method B				Protective Soil Conc, mg/kg
	Most Stringent?	TPH Conc, ug/L	RISK @	HI @	
HI=1					
Total Risk = 1E-5					
Total Risk = 1E-6					
Risk of cPAHs mixture= 1E-5					
Benzene MCL = 5 ug/L					
MTBE = 20 ug/L					

3.2 Protection of Ground Water Quality for TPH Ground Water Concentration previously adjusted and entered

Ground Water Criteria	Protective Ground Water Concentration			Protective Soil Conc, mg/kg
	TPH Conc, ug/L	Risk @	HI @	
NA				

A1 Soil Cleanup Levels: Worksheet for Soil Data Entry: Refer to WAC 173-340-720, 740,745, 747, 750

1. Enter Site Information

Date: 09/18/07
Site Name: Boeing Auburn
Sample Name: ASB0160R-17.5 (SWMU-15a)

2. Enter Soil Concentration Measured

Chemical of Concern or Equivalent Carbon Group	Measured Soil Conc dry basis mg/kg	Composition Ratio %
Petroleum EC Fraction		
AL_EC >5-6	0	0.00%
AL_EC >6-8	0	0.00%
AL_EC >8-10	0	0.00%
AL_EC >10-12	0	0.00%
AL_EC >12-16	0	0.00%
AL_EC >16-21	570	3.23%
AL_EC >21-34	15000	85.03%
AR_EC >8-10	0	0.00%
AR_EC >10-12	0	0.00%
AR_EC >12-16	0	0.00%
AR_EC >16-21	170	0.96%
AR_EC >21-34	1900	10.77%
Benzene	0.0019	0.00%
Toluene	0	0.00%
Ethylbenzene	0	0.00%
Total Xylenes	0.0026	0.00%
Naphthalene	0	0.00%
1-Methyl Naphthalene	0	0.00%
2-Methyl Naphthalene	0	0.00%
n-Hexane	0	0.00%
MTBE	0	0.00%
Ethylene Dibromide (EDB)	0	0.00%
1,2 Dichloroethane (EDC)	0	0.00%
Benzo(a)anthracene	0	0.00%
Benzo(b)fluoranthene	0	0.00%
Benzo(k)fluoranthene	0	0.00%
Benzo(a)pyrene	0	0.00%
Chrysene	0	0.00%
Dibenz(a,h)anthracene	0	0.00%
Indeno(1,2,3-cd)pyrene	0	0.00%
Sum	17640.0045	100.00%

Notes for Data Entry | Set Default Hydrogeology

Clear All Soil Concentration Data Entry Cells

Restore All Soil Concentration Data cleared previously

REMARK:
Sample analyzed for BTEX (detections shown to left). Sample analyzed for PAHs (including naphthalene, 1-methyl naphthalene); no detections. Other soil samples in SWMU-15 were analyzed for PAHs (including naphtalene, 1-methyl naphthalene and 2-methyl naphthalene); no detections.

3. Enter Site-Specific Hydrogeological Data

Total soil porosity:	0.43	Unitless
Volumetric water content:	0.3	Unitless
Volumetric air content:	0.13	Unitless
Soil bulk density measured:	1.5	kg/L
Fraction Organic Carbon:	0.001	Unitless
Dilution Factor:	20	Unitless

4. Target TPH Ground Water Concentation (if adjusted)

If you adjusted the target TPH ground water concentration, enter adjusted value here: ug/L

A2 Soil Cleanup Levels: Calculation and Summary of Results. Refer to WAC 173-340-720, 740, 745, 747, 750

Site Information

Date: 9/18/2007
Site Name: Boeing Auburn
Sample Name: ASB0160R-17.5 (SWMU-15a)
Measured Soil TPH Concentration, mg/kg: **17,640.005**

1. Summary of Calculation Results

Exposure Pathway	Method/Goal	Protective Soil TPH Conc, mg/kg	With Measured Soil Conc		Does Measured Soil Conc Pass or Fail?
			RISK @	HI @	
Protection of Soil Direct Contact: Human Health	Method B	16,078	1.05E-10	1.10E+00	Fail
	Method C	192,939	1.40E-11	9.14E-02	Pass
Protection of Method B Ground Water Quality (Leaching)	Potable GW: Human Health Protection	100% NAPL	4.90E-08	2.29E-03	Pass
	NA	NA	NA	NA	NA

Warning! Check to determine if a simplified or site-specific Terrestrial Ecological Evaluation may be required (Refer to WAC 173-340-7490 through -7494).

Warning! Check Residual Saturation (WAC340-747(10)).

2. Results for Protection of Soil Direct Contact Pathway: Human Health

	Method B: Unrestricted Land Use	Method C: Industrial Land Use
Protective Soil Concentration, TPH mg/kg	**16,078.23**	**192,939.29**
Most Stringent Criterion	**HI =1**	**HI =1**

Soil Criteria	Protective Soil Concentration @Method B				Protective Soil Concentration @Method C			
	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @
HI =1	YES	1.61E+04	9.54E-11	1.00E+00	YES	1.93E+05	1.53E-10	1.00E+00
Total Risk=1E-5	*NO*	1.69E+09	1.00E-05	1.05E+05	*NO*	1.26E+10	1.00E-05	6.53E+04
Risk of Benzene= 1E-6	*NO*	1.69E+08	1.00E-06	1.05E+04	NA			
Risk of cPAHs mixture= 1E-6	NA	NA	NA	NA				
EDB	NA	NA	NA	NA				
EDC	NA	NA	NA	NA				

3. Results for Protection of Ground Water Quality (Leaching Pathway)

3.1. Protection of Potable Ground Water Quality (Method B): Human Health Protection

Most Stringent Criterion	**NA**
Protective Ground Water Concentration, ug/L	**NA**
Protective Soil Concentration, mg/kg	**Soil-to-Ground Water is not a critical pathway!**

Ground Water Criteria	Protective Potable Ground Water Concentration @Method B				Protective Soil Conc, mg/kg
	Most Stringent?	TPH Conc, ug/L	RISK @	HI @	
HI=1	YES	5.72E-01	5.36E-08	2.40E-03	100% NAPL
Total Risk = 1E-5	YES	5.72E-01	5.36E-08	2.40E-03	100% NAPL
Total Risk = 1E-6	YES	5.72E-01	5.36E-08	2.40E-03	100% NAPL
Risk of cPAHs mixture= 1E-5	NA	NA	NA	NA	NA
Benzene MCL = 5 ug/L	YES	5.72E-01	5.36E-08	2.40E-03	100% NAPL
MTBE = 20 ug/L	NA	NA	NA	NA	NA

Note: 100% NAPL is 71000 mg/kg TPH.

3.2 Protection of Ground Water Quality for TPH Ground Water Concentration previously adjusted and entered

Ground Water Criteria	Protective Ground Water Concentration			Protective Soil Conc, mg/kg
	TPH Conc, ug/L	Risk @	HI @	
NA	NA	NA	NA	NA

A1 Soil Cleanup Levels: Worksheet for Soil Data Entry: Refer to WAC 173-340-720, 740,745, 747, 750

1. Enter Site Information

Date: 09/18/07
Site Name: Boeing Auburn
Sample Name: ASB0163-17 (SWMU-15b)

2. Enter Soil Concentration Measured

Chemical of Concern or Equivalent Carbon Group	Measured Soil Conc dry basis mg/kg	Composition Ratio %
Petroleum EC Fraction		
AL_EC >5-6	0	0.00%
AL_EC >6-8	0	0.00%
AL_EC >8-10	0	0.00%
AL_EC >10-12	0	0.00%
AL_EC >12-16	0	0.00%
AL_EC >16-21	0	0.00%
AL_EC >21-34	0	0.00%
AR_EC >8-10	0	0.00%
AR_EC >10-12	0	0.00%
AR_EC >12-16	0	0.00%
AR_EC >16-21	3.2	100.00%
AR_EC >21-34	0	0.00%
Benzene	0	0.00%
Toluene	0	0.00%
Ethylbenzene	0	0.00%
Total Xylenes	0	0.00%
Naphthalene	0	0.00%
1-Methyl Naphthalene	0	0.00%
2-Methyl Naphthalene	0	0.00%
n-Hexane	0	0.00%
MTBE	0	0.00%
Ethylene Dibromide (EDB)	0	0.00%
1,2 Dichloroethane (EDC)	0	0.00%
Benzo(a)anthracene	0	0.00%
Benzo(b)fluoranthene	0	0.00%
Benzo(k)fluoranthene	0	0.00%
Benzo(a)pyrene	0	0.00%
Chrysene	0	0.00%
Dibenz(a,h)anthracene	0	0.00%
Indeno(1,2,3-cd)pyrene	0	0.00%
Sum	3.2	100.00%

Notes for Data Entry | Set Default Hydrogeology

Clear All Soil Concentration Data Entry Cells

Restore All Soil Concentration Data cleared previously

REMARK:
Sample analyzed for PAHs (including naphthalene, 1-methyl naphthalene, 2-methyl naphthalene); no detections.

3. Enter Site-Specific Hydrogeological Data

Total soil porosity:	0.43	Unitless
Volumetric water content:	0.3	Unitless
Volumetric air content:	0.13	Unitless
Soil bulk density measured:	1.5	kg/L
Fraction Organic Carbon:	0.001	Unitless
Dilution Factor:	20	Unitless

4. Target TPH Ground Water Concentation (if adjusted)

If you adjusted the target TPH ground water concentration, enter adjusted value here: ug/L

A2 Soil Cleanup Levels: Calculation and Summary of Results. Refer to WAC 173-340-720, 740, 745, 747, 750

Site Information

Date: 9/18/2007
Site Name: Boeing Auburn
Sample Name: ASB0163-17 (SWMU-15b)
Measured Soil TPH Concentration, mg/kg: 3.200

1. Summary of Calculation Results

Exposure Pathway	Method/Goal	Protective Soil TPH Conc, mg/kg	With Measured Soil Conc		Does Measured Soil Conc Pass or Fail?
			RISK @	HI @	
Protection of Soil Direct Contact: Human Health	Method B	1,667	0.00E+00	1.92E-03	Pass
	Method C	20,000	0.00E+00	1.60E-04	Pass
Protection of Method B Ground Water Quality (Leaching)	Potable GW: Human Health Protection	100% NAPL	0.00E+00	2.08E-02	Pass
	NA	NA	NA	NA	NA

2. Results for Protection of Soil Direct Contact Pathway: Human Health

	Method B: Unrestricted Land Use	Method C: Industrial Land Use
Protective Soil Concentration, TPH mg/kg	1,666.67	20,000.00
Most Stringent Criterion	HI =1	HI =1

Soil Criteria	Protective Soil Concentration @Method B				Protective Soil Concentration @Method C			
	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @
HI =1	YES	1.67E+03	0.00E+00	1.00E+00	YES	2.00E+04	0.00E+00	1.00E+00
Total Risk=1E-5	NA	NA	NA	NA	NA	NA	NA	NA
Risk of Benzene= 1E-6	NA	NA	NA	NA	NA			
Risk of cPAHs mixture= 1E-6	NA	NA	NA	NA				
EDB	NA	NA	NA	NA				
EDC	NA	NA	NA	NA				

NA

3. Results for Protection of Ground Water Quality (Leaching Pathway)

3.1. Protection of Potable Ground Water Quality (Method B): Human Health Protection

Most Stringent Criterion	NA
Protective Ground Water Concentration, ug/L	NA
Protective Soil Concentration, mg/kg	Soil-to-Ground Water is not a critical pathway!

Ground Water Criteria	Protective Potable Ground Water Concentration @Method B				Protective Soil Conc, mg/kg
	Most Stringent?	TPH Conc, ug/L	RISK @	HI @	
HI=1	YES	2.55E+01	0.00E+00	5.31E-02	100% NAPL
Total Risk = 1E-5	NA	NA	NA	NA	NA
Total Risk = 1E-6	NA	NA	NA	NA	NA
Risk of cPAHs mixture= 1E-5	NA	NA	NA	NA	NA
Benzene MCL = 5 ug/L	NA	NA	NA	NA	NA
MTBE = 20 ug/L	NA	NA	NA	NA	NA

Note: 100% NAPL is 100000 mg/kg TPH.

3.2 Protection of Ground Water Quality for TPH Ground Water Concentration previously adjusted and entered

Ground Water Criteria	Protective Ground Water Concentration			Protective Soil Conc, mg/kg
	TPH Conc, ug/L	Risk @	HI @	
NA	NA	NA	NA	NA

A1 Soil Cleanup Levels: Worksheet for Soil Data Entry: Refer to WAC 173-340-720, 740,745, 747, 750

1. Enter Site Information

Date: 09/18/07
Site Name: Boeing Auburn
Sample Name: ASB0164R-20 (SWMU-17)

2. Enter Soil Concentration Measured

Chemical of Concern or Equivalent Carbon Group	Measured Soil Conc dry basis mg/kg	Composition Ratio %
Petroleum EC Fraction		
AL_EC >5-6	0	0.00%
AL_EC >6-8	0	0.00%
AL_EC >8-10	0	0.00%
AL_EC >10-12	0	0.00%
AL_EC >12-16	0	0.00%
AL_EC >16-21	0	0.00%
AL_EC >21-34	0	0.00%
AR_EC >8-10	0	0.00%
AR_EC >10-12	0	0.00%
AR_EC >12-16	0	0.00%
AR_EC >16-21	2.4	100.00%
AR_EC >21-34	0	0.00%
Benzene	0	0.00%
Toluene	0	0.00%
Ethylbenzene	0	0.00%
Total Xylenes	0	0.00%
Naphthalene	0	0.00%
1-Methyl Naphthalene	0	0.00%
2-Methyl Naphthalene	0	0.00%
n-Hexane	0	0.00%
MTBE	0	0.00%
Ethylene Dibromide (EDB)	0	0.00%
1,2 Dichloroethane (EDC)	0	0.00%
Benzo(a)anthracene	0	0.00%
Benzo(b)fluoranthene	0	0.00%
Benzo(k)fluoranthene	0	0.00%
Benzo(a)pyrene	0	0.00%
Chrysene	0	0.00%
Dibenz(a,h)anthracene	0	0.00%
Indeno(1,2,3-cd)pyrene	0	0.00%
Sum	2.4	100.00%

Notes for Data Entry | Set Default Hydrogeology

Clear All Soil Concentration Data Entry Cells

Restore All Soil Concentration Data cleared previously

REMARK:
Sample analyzed for BTEX and PAHs (including naphthalene, 1-methyl naphthalene, 2-methyl naphthalene); no detections.

3. Enter Site-Specific Hydrogeological Data

Total soil porosity:	0.43	Unitless
Volumetric water content:	0.3	Unitless
Volumetric air content:	0.13	Unitless
Soil bulk density measured:	1.5	kg/L
Fraction Organic Carbon:	0.001	Unitless
Dilution Factor:	20	Unitless

4. Target TPH Ground Water Concentation (if adjusted)

If you adjusted the target TPH ground water concentration, enter adjusted value here: ug/L

A2 Soil Cleanup Levels: Calculation and Summary of Results. Refer to WAC 173-340-720, 740, 745, 747, 750

Site Information

Date: 9/18/2007
Site Name: Boeing Auburn
Sample Name: ASB0164R-20 (SWMU-17)
Measured Soil TPH Concentration, mg/kg: **2.400**

1. Summary of Calculation Results

Exposure Pathway	Method/Goal	Protective Soil TPH Conc, mg/kg	With Measured Soil Conc		Does Measured Soil Conc Pass or Fail?
			RISK @	HI @	
Protection of Soil Direct Contact: Human Health	Method B	1,667	0.00E+00	1.44E-03	Pass
	Method C	20,000	0.00E+00	1.20E-04	Pass
Protection of Method B Ground Water Quality (Leaching)	Potable GW: Human Health Protection	100% NAPL	0.00E+00	1.56E-02	Pass
	NA	NA	NA	NA	NA

2. Results for Protection of Soil Direct Contact Pathway: Human Health

	Method B: Unrestricted Land Use	Method C: Industrial Land Use
Protective Soil Concentration, TPH mg/kg	1,666.67	20,000.00
Most Stringent Criterion	HI =1	HI =1

Soil Criteria	Protective Soil Concentration @Method B				Protective Soil Concentration @Method C			
	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @
HI =1	YES	1.67E+03	0.00E+00	1.00E+00	YES	2.00E+04	0.00E+00	1.00E+00
Total Risk=1E-5	NA	NA	NA	NA	NA	NA	NA	NA
Risk of Benzene= 1E-6	NA	NA	NA	NA	NA			
Risk of cPAHs mixture= 1E-6	NA	NA	NA	NA				
EDB	NA	NA	NA	NA				
EDC	NA	NA	NA	NA				

NA

3. Results for Protection of Ground Water Quality (Leaching Pathway)

3.1. Protection of Potable Ground Water Quality (Method B): Human Health Protection

Most Stringent Criterion	NA
Protective Ground Water Concentration, ug/L	NA
Protective Soil Concentration, mg/kg	Soil-to-Ground Water is not a critical pathway!

Ground Water Criteria	Protective Potable Ground Water Concentration @Method B				Protective Soil Conc, mg/kg
	Most Stringent?	TPH Conc, ug/L	RISK @	HI @	
HI=1	YES	2.55E+01	0.00E+00	5.31E-02	100% NAPL
Total Risk = 1E-5	NA	NA	NA	NA	NA
Total Risk = 1E-6	NA	NA	NA	NA	NA
Risk of cPAHs mixture= 1E-5	NA	NA	NA	NA	NA
Benzene MCL = 5 ug/L	NA	NA	NA	NA	NA
MTBE = 20 ug/L	NA	NA	NA	NA	NA

Note: 100% NAPL is 100000 mg/kg TPH.

3.2 Protection of Ground Water Quality for TPH Ground Water Concentration previously adjusted and entered

Ground Water Criteria	Protective Ground Water Concentration			Protective Soil Conc, mg/kg
	TPH Conc, ug/L	Risk @	HI @	
NA	NA	NA	NA	NA

A1 Soil Cleanup Levels: Worksheet for Soil Data Entry: Refer to WAC 173-340-720, 740,745, 747, 750

1. Enter Site Information

Date: 09/18/07
Site Name: Boeing Auburn
Sample Name: ASB0171-17.5 (SWMU-16)

2. Enter Soil Concentration Measured

Chemical of Concern or Equivalent Carbon Group	Measured Soil Conc dry basis mg/kg	Composition Ratio %
Petroleum EC Fraction		
AL_EC >5-6	0	0.00%
AL_EC >6-8	0	0.00%
AL_EC >8-10	0	0.00%
AL_EC >10-12	0	0.00%
AL_EC >12-16	0	0.00%
AL_EC >16-21	250	3.01%
AL_EC >21-34	6900	83.19%
AR_EC >8-10	0	0.00%
AR_EC >10-12	0	0.00%
AR_EC >12-16	0	0.00%
AR_EC >16-21	44	0.53%
AR_EC >21-34	1100	13.26%
Benzene	0.0045	0.00%
Toluene	0.0065	0.00%
Ethylbenzene	0	0.00%
Total Xylenes	0.002	0.00%
Naphthalene	0	0.00%
1-Methyl Naphthalene	0	0.00%
2-Methyl Naphthalene	0	0.00%
n-Hexane	0	0.00%
MTBE	0	0.00%
Ethylene Dibromide (EDB)	0	0.00%
1,2 Dichloroethane (EDC)	0	0.00%
Benzo(a)anthracene	0	0.00%
Benzo(b)fluoranthene	0	0.00%
Benzo(k)fluoranthene	0	0.00%
Benzo(a)pyrene	0	0.00%
Chrysene	0	0.00%
Dibenz(a,h)anthracene	0	0.00%
Indeno(1,2,3-cd)pyrene	0	0.00%
Sum	8294.013	100.00%

3. Enter Site-Specific Hydrogeological Data

Total soil porosity:	0.43	Unitless
Volumetric water content:	0.3	Unitless
Volumetric air content:	0.13	Unitless
Soil bulk density measured:	1.5	kg/L
Fraction Organic Carbon:	0.001	Unitless
Dilution Factor:	20	Unitless

4. Target TPH Ground Water Concentation (if adjusted)

If you adjusted the target TPH ground water concentration, enter adjusted value here: ug/L

Notes for Data Entry | Set Default Hydrogeology

Clear All Soil Concentration Data Entry Cells

Restore All Soil Concentration Data cleared previously

REMARK:
Sample analyzed for BTEX (detections shown to left). Sample analyzed for PAHs (including naphthalene, 1-methyl naphthalene, 2-methyl naphthalene); no detections. Other soil samples in SWMU-16 were analyzed for PCBs. PCBs were detected in some samples; however, the detected concentrations did not exceed soil screening levels.

A2 Soil Cleanup Levels: Calculation and Summary of Results. Refer to WAC 173-340-720, 740, 745, 747, 750

Site Information

Date: 9/18/2007
Site Name: Boeing Auburn
Sample Name: ASB0171-17.5 (SWMU-16)
Measured Soil TPH Concentration, mg/kg: **8,294.013**

1. Summary of Calculation Results

Exposure Pathway	Method/Goal	Protective Soil TPH Conc, mg/kg	With Measured Soil Conc		Does Measured Soil Conc Pass or Fail?
			RISK @	HI @	
Protection of Soil Direct Contact: Human Health	Method B	14,159	2.48E-10	5.86E-01	Pass
	Method C	169,914	3.32E-11	4.88E-02	Pass
Protection of Method B Ground Water Quality (Leaching)	Potable GW: Human Health Protection	100% NAPL	2.17E-07	6.15E-03	Pass
	NA	NA	NA	NA	NA

Warning! Check to determine if a simplified or site-specific Terrestrial Ecological Evaluation may be required (Refer to WAC 173-340-7490 through -7494).

Warning! Check Residual Saturation (WAC340-747(10)).

2. Results for Protection of Soil Direct Contact Pathway: Human Health

	Method B: Unrestricted Land Use	Method C: Industrial Land Use
Protective Soil Concentration, TPH mg/kg	**14,159.28**	**169,913.58**
Most Stringent Criterion	**HI =1**	**HI =1**

Soil Criteria	Protective Soil Concentration @Method B				Protective Soil Concentration @Method C			
	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @
HI =1	YES	1.42E+04	4.23E-10	1.00E+00	YES	1.70E+05	6.80E-10	1.00E+00
Total Risk=1E-5	*NO*	3.35E+08	1.00E-05	2.36E+04	*NO*	2.50E+09	1.00E-05	1.47E+04
Risk of Benzene= 1E-6	*NO*	3.35E+07	1.00E-06	2.36E+03	NA			
Risk of cPAHs mixture= 1E-6	NA	NA	NA	NA				
EDB	NA	NA	NA	NA				
EDC	NA	NA	NA	NA				

3. Results for Protection of Ground Water Quality (Leaching Pathway)

3.1. Protection of Potable Ground Water Quality (Method B): Human Health Protection

Most Stringent Criterion	**NA**
Protective Ground Water Concentration, ug/L	**NA**
Protective Soil Concentration, mg/kg	**Soil-to-Ground Water is not a critical pathway!**

Ground Water Criteria	Protective Potable Ground Water Concentration @Method B				Protective Soil Conc, mg/kg
	Most Stringent?	TPH Conc, ug/L	RISK @	HI @	
HI=1	YES	6.23E-01	2.68E-07	7.42E-03	100% NAPL
Total Risk = 1E-5	YES	6.23E-01	2.68E-07	7.42E-03	100% NAPL
Total Risk = 1E-6	YES	6.23E-01	2.68E-07	7.42E-03	100% NAPL
Risk of cPAHs mixture= 1E-5	NA	NA	NA	NA	NA
Benzene MCL = 5 ug/L	YES	6.23E-01	2.68E-07	7.42E-03	100% NAPL
MTBE = 20 ug/L	NA	NA	NA	NA	NA

Note: 100% NAPL is 72000 mg/kg TPH.

3.2 Protection of Ground Water Quality for TPH Ground Water Concentration previously adjusted and entered

Ground Water Criteria	Protective Ground Water Concentration			Protective Soil Conc, mg/kg
	TPH Conc, ug/L	Risk @	HI @	
NA	NA	NA	NA	NA