

¹Tier 1 EAL SURFER SUMMARY REPORT

Hawai'i DOH (Summer 2016, rev Nov 2016)

Site Name: test
Site Address: test address
test city HI 12345
Site ID Number:
Date of EAL Search: 1985-12-19

Selected Site Scenario	
Land Use:	Unrestricted
Groundwater Utility:	Drinking Water Resource
Distance To Nearest Surface Water Body:	>150m

Selected Chemical of Concern:	BORON
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Input Site Concentrations	
Soil (mg/kg):	10
Groundwater (ug/L):	5300
Soil Vapor (ug/m ³):	250000

Soil Environmental Hazards	Units	Tier 1 Action Level	² Potential Hazard?	³ Referenced Table
Direct Exposure:	mg/kg	3.1E+03	No	Table I-1
Vapor Emissions To Indoor Air:	mg/kg	-	-	Table C-1b
Terrestrial Ecotoxicity:	mg/kg	site-specific	No	Table L
Gross Contamination:	mg/kg	1.0E+03	No	Table F-2
Leaching (threat to groundwater):	mg/kg	(Use batch test)	-	Table E-1
Background:	mg/kg	?		
Final Soil Tier 1 EAL:	mg/kg	1.0E+03		
Basis: Gross Contamination				

Groundwater Environmental Hazards	Units	Tier 1 Action Level	² Potential Hazard?	³ Referenced Table
Drinking Water (Toxicity):	ug/L	4.0E+03	Yes	Table D-1b
Vapor Emissions To Indoor Air:	ug/L	-	-	Table C-1a
Aquatic Ecotoxicity:	ug/L	3.4E+04	No	Table D-4a
Gross Contamination:	ug/L	5.0E+04	No	Table G-1
Final Groundwater Tier 1 EAL:	ug/L	4.0E+03		
Basis: Drinking Water Toxicity				

Other Tier 1 EALs:	Units	EAL	² Potential Hazard?	³ Referenced Table
Shallow Soil Vapor:	ug/m ³	-	-	Table C-2
Indoor Air:	ug/m ³	-	-	Table C-3

Notes:

1. Include Surfer Summary Report in appendices of *Environmental Hazard Evaluation* (EHE) for contaminants that exceed Tier 1 EALs (refer to Chapter 3 of main text).
2. Environmental hazard could exist if concentration of contaminant exceeds action level.
3. Referenced tables presented in Appendix 1 of EHE guidance document.

Reference: HDOH 2016, Evaluation of Environmental Hazards at Sites with Contaminated Soil and Groundwater (Summer 2016); Hawai'i Department of Health, Hazard Evaluation and Emergency Response, <http://hawaii.gov/health/environmental/hazard/index.html>

Tier 1 Environmental Action Levels Surfer Hawai'i DOH (Summer 2016, rev Nov 2016)

Summary of Toxicity and Fate & Transport Information

BORON

Human Toxicity Factors	Value	Units	Appendix 1 Reference Table
Cancer Slope Factor - oral		(mg/kg-day) ⁻¹	Table H
Cancer Inhalation Unit Risk Factor		(ug/m ³) ⁻¹	Table H
Reference Dose - oral	2.0E-01	mg/kg-day	Table H
Reference Dose - inhalation	2.0E-02	(mg/m ³)	Table H
Gastro-Intestinal Absorption Factor	1	unitless	Table H
Skin Absorption Factor		unitless	Table H
Target Excess Cancer Risk Used:	#NAME?	unitless	Table I-1
Target Hazard Quotient Used:	0.2	unitless	Table I-1

Aquatic Habitat Protection Goals	Value	Units	Appendix 1 Reference Table
Freshwater Chronic Goal	7200	ug/L	Table D-4a
Marine Chronic Goal	1000	ug/L	Table D-4a
Estuary Chronic Goal	1000	ug/L	Table D-4a
Freshwater Acute Goal	34000	ug/L	Table D-4a
Marine Acute Goal	34000	ug/L	Table D-4a
Estuary Acute Goal	34000	ug/L	Table D-4a
*Bioaccumulation Goal	-	ug/L	Table D-4f

*Bioaccumulation goals used to screen surface water only (refer to Volume 1, Chapter 2 of EAL text).

Fate & Transport Information	Value	Units	Appendix 1 Reference Table
Molecular Weight	14		Table H
Physical State	nonvolatile solid		Table H
Organic Carbon Partition Coeff. (K _{oc})	#NAME?	cm ³ /g	Table H
Diffusivity in air	#NAME?	cm ² /s	Table H
Diffusivity in water	#NAME?	cm ² /s	Table H
Solubility (water)	#NAME?	mg/L	Table H
Henry's Law Constant	#NAME?	atm-m ³ /mol	Table H
Henry's Law Constant	#NAME?	unitless	Table H

	Target Organs & Health Effect
*Potential Health Effects	
Carcinogen	#NAME?
Mutagen	#NAME?
Alimentary Tract	#NAME?
Cardiovascular	#NAME?
Developmental	#NAME?
Endocrine	#NAME?
Eye	#NAME?
Hematologic	#NAME?
Immune	#NAME?
Kidney	#NAME?
Nervous	#NAME?
Reproductive	X
Respiratory	X
Skin	#NAME?
Other	#NAME?
*Not intended to serve as a comprehensive source of toxicological information. Ultimate potential health effects dependent on exposure dose, duration of exposure and numerous other factors. Refer to Appendix 1, Table J for specific references.	

Reference:HDOH 2016, Evaluation of Environmental Hazards at Sites with Contaminated Soil and Groundwater (Summer 2016): Hawai'i Department of Health, Hazard Evaluation and Emergency Response, <http://hawaii.gov/health/environmental/hazard/index.html>