

Chapter 19.15.160 Critical Aquifer Recharge Areas

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19.15.160 Critical Aquifer Recharge Areas

A. Critical Aquifer Recharge Areas Designation and Classification.

1. Designation. Critical aquifer recharge areas (CARAs) are those areas with a critical recharging effect on aquifers used for potable water as defined by WAC 365-190-030(2). CARAs have prevailing geologic conditions associated with infiltration rates that create a high potential for contamination of ground water resources or contribute significantly to the replenishment of ground water. Aquifer recharge areas are categorized according to the following standards and those contained in Table 19.15.160-A.

- a. Severe Aquifer Sensitivity. Those areas which provide rapid recharge with little protection, having highly permeable soils.
- b. Moderate Aquifer Sensitivity. Those areas with aquifers likely present, but which have a surface soil material that encourages run-off and slows water entry into the ground.
- c. Slight Aquifer Sensitivity. Those whose soil series are derived from basaltic, andesitic, or sedimentary rock or ancient glacial till which are parent material for soils with more clays at the surface. These geological formations do not provide abundant ground water.

2. Exemptions. Activities that are exempt from the requirements of the Critical Aquifer Recharge Areas chapter can be found in CCC 19.15.070, Exemptions.

Table 19.15.160-A. Aquifer Sensitivity Rating for Cowlitz County Soil Types			
Soil Survey Map No. & Soil Series/Name	Severe	Moderate	Slight
1. Andaquepts			X
2. Andic Cryaquepts			X
3-4. Andic Cryumbrepts			X
5. Arents			X
6. Astoria		X	
7-8. Baumgard		X	
9-10. Beigle		X	
11. Boisfort		X	
12-13. Buckpeak		X	
14-15. Bunker		X	
16. Camas		X	
17. Caples			X
18-20. Carrolls	X		X
21-23. Centralia		X	
24-28. Cinebar		X	
29-31. Cinnamon		X	
32. Clato		X	
33-34. Coweeman		X	

Table 19.15.160-A. Aquifer Sensitivity Rating for Cowlitz County Soil Types

Soil Survey Map No. & Soil Series/Name	Severe	Moderate	Slight
35-38. Cowlitz	X		
39. Delameter	X		
40-41. Dobbs		X	
42-46. Domell		X	
47. Edgewick		X	
48. Elkprairie	X		
49. Elochman		X	
50-51. Ferteg		X	
52-53. Forsyth	X		
54-60. Germany		X	
61-64. Gobar		X	
65. Godfrey		X	
66. Greenwater	X		
70-75. Hatchet	X		X
76-80. Hazeldell		X	
81. Histic Cryaquepts			X
82. Histic Humaquepts			X
83-90. Hoffstadt	X		
91-92. Jonas		X	
93-95. Kalama		X	
96-99. Katula		X	
100-103. Kelso		X	
104. Kosmos		X	
105. Lacamas		X	
106-108. Lates		X	
109. Lithic Haplumbrepts			X
110. Lithic Umbric Vitrandepts			X
111-118. Lonestar	X		
119-120. Loper		X	
121-122. Lytell		X	
123-126. Mart		X	
127. Maytown		X	
128-129. Melbourne		X	
130. Minniece		X	
131. Mountsolo	X		
132. Mulholland		X	
133. Murnen		X	
134. Natal			X

Table 19.15.160-A. Aquifer Sensitivity Rating for Cowlitz County Soil Types

Soil Survey Map No. & Soil Series/Name	Severe	Moderate	Slight
135-140. Newaukum		X	
141. Newberg		X	
142-145. Olequa		X	
146-150. Olympic		X	
151-152. Panamaker	X		
153-159. Pheeney		X	
160. Pilchuck	X		
161. Pits	X		
162-165. Polepatch	X		
166-167. Prather			X
168-170. Raught		X	
171. Reichel		X	
172. Riverwash	X		
173. Rock outcrop - Rubbleland	X		
174-175. Rose Valley		X	
176-178. Salkum		X	
179-182. Sara		X	
183-184. Sarazan		X	
185-187. Sauvola		X	
188-191. Schneider		X	
192-194. Seaquest		X	
195. Semiahmoo			X
196-198. Siouxon		X	
199. Snohomish			X
200. Solo	X		
201-202. Speelyai	X		
203. Spodic Cryopsamments		X	X
204-207. Stahl		X	
208-210. Stella		X	
211. Studebaker	X		
212-213. Swem		X	
214-221. Swift	X		
222-223. Vader		X	
224-245. Vanson	X		
246. Voight		X	
247. Winston		X	
248-249. Wyant		X	
250-251. Xana	X		

Table 19.15.160-A. Aquifer Sensitivity Rating for Cowlitz County Soil Types			
Soil Survey Map No. & Soil Series/Name	Severe	Moderate	Slight
252-253. Xeno		X	
254. Xerorthents			X
255-257. Yalelake		X	
258-259. Zenker		X	
260-261. Zymer		X	
262. Zynbar		X	

Source: Soils adapted to aquifer recharge sensitivity categories based on "DRASTIC – A Standardized System for Evaluating Groundwater Pollution Potential Using Hydrogeologic Settings" (Aller et al. June 1987, US Environmental Protection Agency, Publication Number 600287035).

B. Mapping of Critical Aquifer Recharge Areas (CARAs). The approximate location and extent of CARAs are those lands meeting the classification criteria in CCC 19.15.160.A. Mapping of soil types uses the official Natural Resource Conservation Service Soil Survey for Cowlitz County (see CCC 19.15.110).

C. Critical Area Assessment – Additional Requirements for Critical Aquifer Recharge Areas (CARAs). In addition to the general critical area assessment requirements of CCC.15.090.E.2, Critical Area Assessments, for CARAs must meet the requirements of this Section.

1. Preparation by a Qualified Professional. A qualified professional shall prepare an aquifer recharge area critical area assessment.
2. Hydrogeologic Assessment.
 - a. For all proposed activities in a critical aquifer recharge area with Slight Sensitivity, no Hydrogeologic Assessment is required unless requested by the Director. All activities must meet the requirements of this chapter.
 - b. For all proposed activities in a critical aquifer recharge area with Moderate Sensitivity, a Level One Hydrogeological Assessment is required. In addition, a Level Two Hydrogeologic Assessment shall be required for any of the following proposed activities:
 - i. Activities that result in fifteen percent (15%) or more impervious site area;
 - ii. Activities that divert, alter, or reduce the flow of surface or ground waters, or otherwise reduce the recharging of the aquifer;
 - iii. The use of hazardous substances, other than household chemicals; or
 - iv. Any other activity determined by the Director likely to have an adverse impact on ground water quality or quantity or on the recharge of the aquifer.
 - c. For all proposed activities in a critical aquifer recharge area with Severe Sensitivity, a Level Two Hydrogeologic Assessment is required.
3. Level One Hydrogeologic Assessment. A Level One Hydrogeologic Assessment shall include the following site and proposal related information at a minimum:

- a. Available information regarding geologic and hydrogeologic characteristics of the site including the surface location of all CARAs located on site or immediately adjacent to the site, and permeability of the unsaturated zone;
- b. Ground water depth, flow direction, and gradient based on available information;
- c. Currently available data on wells and springs within 1,300 feet of the project area;
- d. Location of other critical areas, including surface waters, within 1,300 feet of the project area;
- e. Available historic water quality data for the area to be affected by the proposed activity; and
- f. Best management practices proposed to be utilized.

4. Level Two Hydrogeologic Assessment. A Level Two Hydrogeologic Assessment shall include the following site- and proposal-related information at a minimum, in addition to the requirements for a Level One Hydrogeological Assessment:

- a. Historic water quality data for the area to be affected by the proposed activity compiled for at least the previous five (5) year period;
- b. Ground water monitoring plan provisions;
- c. Discussion of the effects of the proposed project on the ground water quality and quantity, including:
 - i. Predictive evaluation of ground water withdrawal effects on nearby wells and surface water features; and
 - ii. Predictive evaluation of contaminant transport based on potential releases to ground water; and
 - iii. A spill plan that identifies equipment and/or structures that could fail, resulting in an impact. Spill plans shall include provisions for regular inspection, repair, and replacement of structures and equipment that could fail.

D. Performance Standards – General Requirements.

1. Activities may only be permitted in a critical aquifer recharge area if the applicant can show that the proposed activity will not cause contaminants to enter the aquifer and that the proposed activity will not adversely affect the recharging of the aquifer.

2. The proposed activity must comply with the water source protection requirements and recommendations of the Washington State Department of Health and the Cowlitz County Health Department.

3. The proposed activity must be designed and constructed in accordance with the locally adopted surface water management and/or stormwater regulations. If no surface water or stormwater management regulations have been adopted at the time of application, this standard does not apply.

E. Performance Standards – Specific Uses.

1. Aboveground and Underground Storage Tanks and Vaults. Aboveground or underground storage tanks or vaults for the storage of hazardous substances or dangerous wastes as defined in WAC 173-303,

Dangerous Waste Regulations, or any other substances, solids, or liquids in quantities identified by the County Health Department, consistent with WAC 173-303, as a risk to groundwater quality, shall conform to CCC 16.05.060, the International Fire Code, and WAC 173-360, Underground Storage Tank Regulations.

2. Vehicle Repair and Servicing and Accessory Uses.

- a. Activities must be conducted over impermeable pads and within a covered structure capable of withstanding normally expected weather conditions. Chemicals used in the process of vehicle repair and servicing or accessory uses must be stored in a manner that protects them from weather and provides containment should leaks occur.
- b. No dry wells shall be allowed in Critical Aquifer Recharge Areas (CARAs) on sites used for vehicle repair and servicing. Dry wells existing on the site prior to facility establishment must be abandoned using techniques approved by the state Department of Ecology prior to commencement of the proposed activity.

3. Utility Transmission Facilities. Utility facilities which carry liquid petroleum products or any other hazardous substance as defined in WAC 173-303 may be permitted within Severe and Moderate Sensitivity CARAs only when demonstrated by a qualified professional that the design, location, and monitoring of the proposed facility will not cause contaminants to enter the aquifer and that the proposed activity will not adversely affect the recharging of the aquifer.

F. Uses Prohibited From Moderate and Severe Sensitivity Critical Aquifer Recharge Areas (CARAs).

1. Landfills. Landfills, including hazardous or dangerous waste, municipal solid waste, special waste, woodwaste, and inert and demolition waste landfills;

2. Wood Treatment Facilities. Wood treatment facilities that allow any portion of the treatment process to occur over permeable surfaces (both natural and manmade);

3. Storage, Processing, or Disposal of Radioactive Substances. Facilities that store, process, or dispose of radioactive substances.