

Groundwater in the Spokane Valley-Rathdrum Prairie Aquifer flows beneath a broad valley that slopes southwest from Lake Pend Oreille to downtown Spokane, where the Aquifer turns north-northwest to discharge groundwater into the Little Spokane and Spokane Rivers, losing almost 700 feet of elevation during the journey. The basalt formation that creates Spokane Falls and Five Mile Prairie divides the Aquifer flow near downtown Spokane, splitting the Aquifer into the Hillyard Trough to the east and on down the Spokane River gorge to the west. North of downtown Spokane the surface elevation rises and then drops steeply at the confluence of the Spokane and Little Spokane Rivers. In general, the higher the surface elevation, the greater the depth to the Aquifer. The valley floor above the Aquifer covers approximately 250 square miles in Idaho, including the Rathdrum Prairie, and 120 square miles in Washington, including the Spokane Valley. The valley walls are composed of massive rocks and clay that continue below the ground surface to form the impervious basin that holds the Aquifer gravels. Relatively flat basalt plateaus such as Five Mile Prairie and the Columbia Plateau rise hundreds of feet

above the valley. The Bitterroot Mountains east of Rathdrum Prairie and the Selkirk Mountains along the Washington - Idaho border also form the Aquifer edges (or "basin"). These mountains are more than 2,000 feet higher than the basalt plateau to the southwest, so clouds carried by the prevailing southwesterly winds must rise when they reach the mountains. As the clouds climb they release more precipitation, often as snow, which provides significant recharge to the Aquifer during the spring. Several lakes are situated in the mountains around the borders of the Aquifer, and contribute water to the Aquifer through subsurface flow. The surface outlet for the largest lake, Lake Pend Oreille, is the Pend Oreille River that drains to the north, away from the Aquifer. The surface outlet for Lake Coeur d'Alene is the Spokane River, which is the only watercourse over the Aquifer that remains on the surface for an extended distance. Only Hangman (Latah) Creek and the Little Spokane River flowing out of the surrounding highlands actually reach the Spokane River. Other streams contact the coarse, gravelly soils overlying the Aquifer and disappear, percolating downward.

