Figure 4-14
Butte Valley South and Steptoe Valley Constant-Head Boundaries
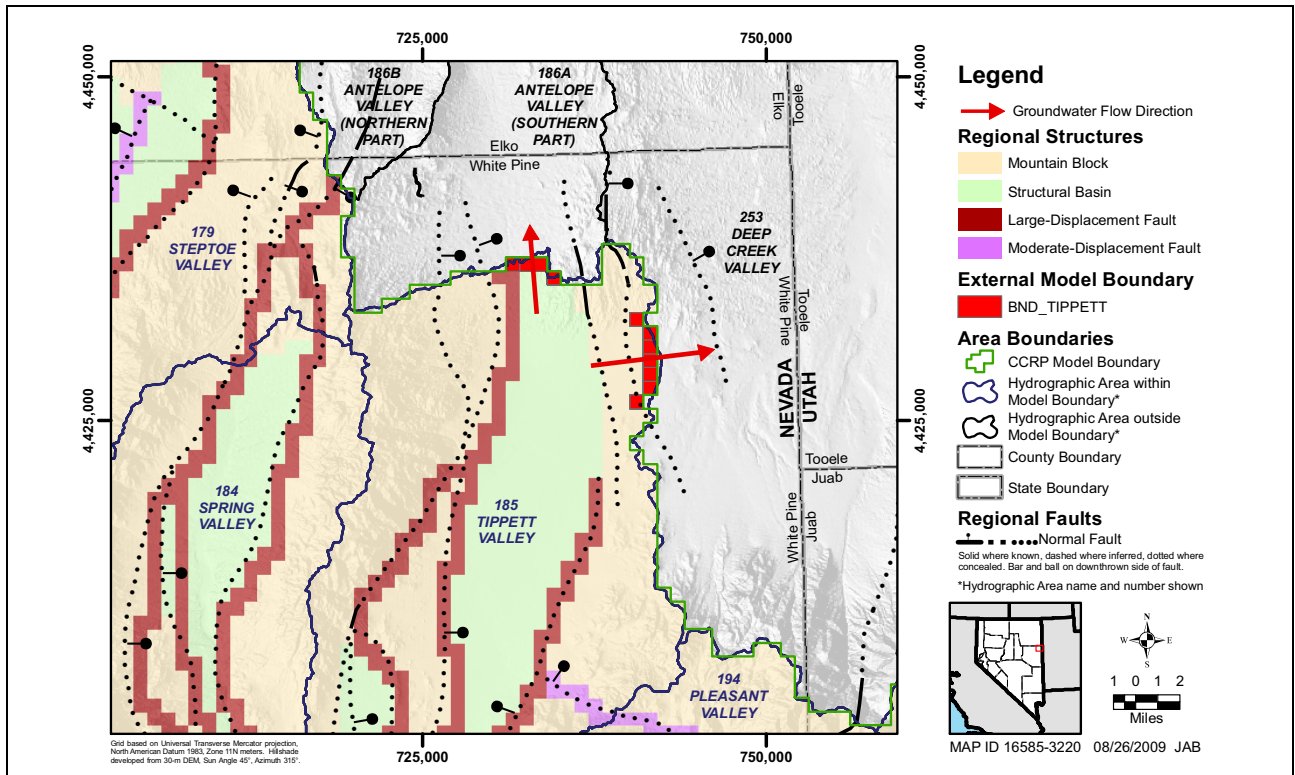

Figure 4-15
Tippett Valley Constant-Head Boundaries

Snake Valley

Snake Valley is interpreted to have groundwater flow moving out of the model area through boundary segments located in the northern and southern parts of the valley (Figure 4-16). These outflow locations are represented as constant-head boundaries in the numerical model. The flow boundaries are as follows:

- The two constant-head boundaries defined in the northern part of Snake Valley consist of one segment along the boundary of Snake Valley with the Great Salt Lake Desert to the north and one segment along the boundary with Fish Springs Flat to the east (Figure 4-16A).

- The three constant-head boundaries defined in the southern part of Snake Valley consist of one segment located along a portion of the Confusion Range on the eastern boundary of Snake Valley, one segment located along the boundary between Snake Valley and Pine Valley, and one segment located along the boundary between Snake Valley and Wah Wah Valley at the southeastern end of the valley (Figure 4-16B).

Long Valley

Long Valley was interpreted to have two constant-head boundaries allowing flow out of the valley (Figure 4-17). Both flow boundaries are consistent with the interpretations of Prudic et al. (1995) and are as follows:

- The first boundary allows flow from Long Valley to Newark Valley.

- The second boundary, located on the northwestern and western edge of Long Valley, allows flow from or to Ruby Valley.

Garden Valley

The Garden Valley constant-head boundary is located along the hydrographic boundary between Garden Valley and Penoyer Valley. This boundary segment is interpreted to be highly transmissive as it coincides with a significant thickness of the LC3 RMU. Groundwater flow is interpreted to be from Garden Valley to Penoyer Valley (Figure 4-18).

Coyote Spring Valley

In the conceptual model report (SNWA, 2009a), water is interpreted to flow from Tikaboo Valley into the north end of Coyote Spring Valley (see Figure 4-19). Some of this water is suspected to be from Pahranagat Valley, flowing along the Pahranagat Shear Zone to Tikaboo Valley. Some of the flow may have more regional sources from the northwest. The boundary of Coyote Spring Valley and Tikaboo Valley parallels the Gass Peak thrust fault. Head values in the area suggest the Gass Peak thrust fault is a barrier to flow, as heads to the west of the fault can be hundreds of feet higher than those measured east of the fault in the central valley area. It has been suggested that for flow to move across this boundary, it may have to move at depth under the shallow-angle thrust fault.