

BASIS SUPPORTING PROPOSED DETERMINATION

Surface water rights in the Hat Creek Basin, White River Basin and the Niobrara River Basin above the Mirage Flats Diversion Dam are administered in most years. There has been an informal moratorium and new surface water rights have been denied in the Hat Creek Basin and White River Basin since 1995 due to insufficient flow. The amount of surface water available for diversion from the Niobrara River upstream of the Mirage Flats Canal diversion has significantly decreased.

Each year the Niobrara River is administered to meet the 1937 water right on the Mirage Flats Canal. Records show that diversions to the Mirage Flats Canal averaged 19% less per year during the 1976 to 2003 time period than during the 1948 – 1975 time period. There has been a formal moratorium on the Niobrara River from the Nebraska-Wyoming state line downstream to the headgate of the Mirage Flats Canal in the SENW of Section 26, Township 29 North, Range 48 West of the 6th P.M. in Dawes County since November 30, 1990.

Published reports indicate that Box Butte Creek and Snake Creek were in part perennial streams that had base flow from ground water. Reports of hydrographers and others indicate these flows have decreased in the last several decades. Administration on Box Butte Creek and Snake Creek has not occurred since the 1970's but this may be because there is currently little flow to administer. In addition, adjudications by the Department of Natural Resources have resulted in a significant decrease in the number of rights in each creek.

There is no record of administration for surface water rights on the Niobrara River and its tributaries below the Mirage Flats Diversion Dam, excluding Box Butte Creek, and there is no evidence that stream flow below the diversion dam is insufficient to supply the existing surface water rights.

The ground water reservoirs in the White River Basin and Hat Creek Basin are limited to fractures in the otherwise relatively impermeable subsurface materials, which are for the most part connected to the White River or Hat Creek. Any increased well development in these basins is likely to deplete the water supplies of the White River and the Hat Creek.

Wells in close proximity to the Niobrara River are in close hydrologic connection to and are depleting flow in the Niobrara River. Water table declines of up to 50 or more feet have occurred in the ground water reservoir in Box Butte County. The reservoir is in hydrologic connection to the Niobrara River.

The extent of the ground water considered to be in hydrological connection to the White River and Hat Creek Basins, the Niobrara River above the Mirage Flats Diversion Dam, the Box Butte Creek Basin, and the Snake Creek Basin is shown on the accompanying map and is determined to be the entire UNWNRD except for the southeast area east of the Mirage Flats Diversion Dam and south of the White River drainage area. The exact

boundaries delineating the southeastern extent of the area of hydrological connection were based on the location of the tributaries to these streams, an analysis of the impact of potential ground water pumping on these tributaries and streams, the location and characteristics of the subsurface geologic formations, ground water table declines, and the location of the ground water table divides and surface watershed divides.

Based on the study conducted by the Department, which considered all relevant portions of the UNWNRD Ground Water Management Plan developed by the District pursuant to former Sections 46-656.12 to 46-656.16 of the Nebraska Revised Statutes, and in accordance with Neb. Rev. Stat. 46-713 (3) the Director finds:

1. Current uses of hydrologically connected surface water and ground water in the Hat Creek Basin, the White River Basin, the Niobrara River Basin above the Mirage Flats Diversion Dam (SENW of Section 26, Township 29 North, Range 48 West of the 6th P.M. in Dawes County), Box Butte Creek Basin, Snake Creek Basin are causing and will in the reasonably foreseeable future continue to cause (a) the surface water supply to be insufficient to sustain over the long term the beneficial or useful purposes for which existing natural flow or storage appropriations were granted.

Thus, the surface water resources of the basin of the Hat Creek, the surface water resources of the basin of the White River, the surface water resources of the basin of the Niobrara River above the Mirage Flats Diversion Dam (SENW of Section 26, Township 29 North, Range 48 West of the 6th P.M. in Dawes County), the surface water resources of the basin of the Box Butte Creek, and the surface water resources of the basin of the Snake Creek are determined to be fully appropriated.

2. The ground water resources that are determined to be hydrologically connected to the surface water in the Hat Creek Basin, the White River Basin, the Niobrara Basin above the Mirage Flats Diversion Dam, the Box Butte Creek Basin, and the Snake Creek Basin for purposes of the fully appropriated determination are shown on the accompanying map.