

May 3, 2000

MEMORANDUM

To: Pam Skaggs
Through: Bob Sutter 
From: Shane Bendixsen 
Subject: Water Right Transfer 5389

It is our understanding water right transfer 5389 proposes to transfer a portion of ground water right 45-07439 (3.92 cfs) from the West Oakley Fan CGWA to the Oakley-Kenyon CGWA. Attachment #1 presents the locations for the current point of diversion and the proposed point of diversion.

The most detailed study of the area is by Young and Newton (1989). They describe the area as having four main aquifers; a limestone aquifer associated with the Cottonwood CGWA, a deep rhyolite aquifer which is overlain by a basalt aquifer and a sediment or alluvial aquifer. Two major faults are also known; the Churchill Knolls fault and the Foothill Road fault. Both are considered to influence the movement of ground water (i.e. a flow boundary)

Attachment #2 presents ground water elevations and flow directions based on 230 wells measured in April and March, 1984. This is the only mass ground water level measurement for the area. As presented, the faults do influence ground water flow directions and elevations and the hydraulic connection between the multiple aquifers is not completely understood. Therefore the "exact" elevations and flow directions are somewhat open to interpretation and can vary as to how one interprets the data, but the generalized flow directions remain the same.

Flow at the current point of diversion is northeast and at some point downgradient slowly turns to the north and then to the northwest. Ground water flow at the proposed point of diversion is approximately north and then downgradient turns northwest. Flow at both the current and proposed points of diversion exit the area at the same point. Flow then is northwest under the Snake River into the Eastern Snake River Plain Aquifer. In this area the Snake River is considered perched and not hydraulically connected to ground water.

The proposed transfer involves moving the point of diversion across a flow boundary. The Oakley Fan area is noted for large decreases in ground water levels due to pumpage. Therefore when moving across a flow boundary one could be moving from an area with stable water levels into an area with decreasing water levels. Attachments #3 and #4

ENCLOSURE

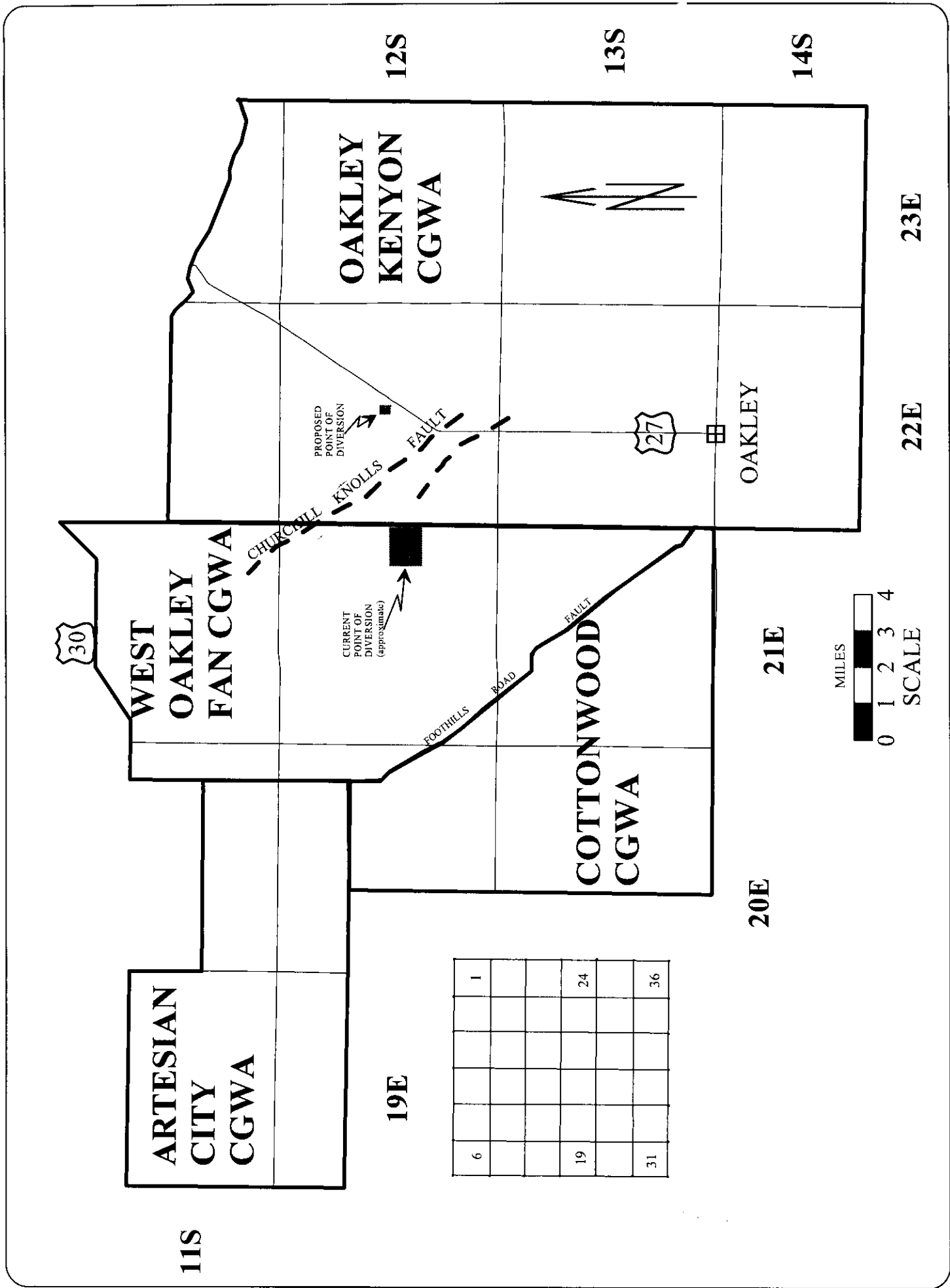
present ground water hydrographs for the West Oakley and Oakley-Kenyon CGWA's respectively. As presented, hydrographs nearest the current and proposed points of diversion show similar declines (50 to 200 feet since 1960). Directly west of the current point of diversion water levels appear to be quite stable, but these are shallow wells in a perched or upper system and are not related to the regional system.

At the current and proposed points of diversion ground water will exit the area at the same point. Both diversion points are in areas of decreasing ground water levels of approximately the same magnitude. The transfer may produce some local well interference problems, but on a regional basis spring flow or Snake River reach gains will not be affected.

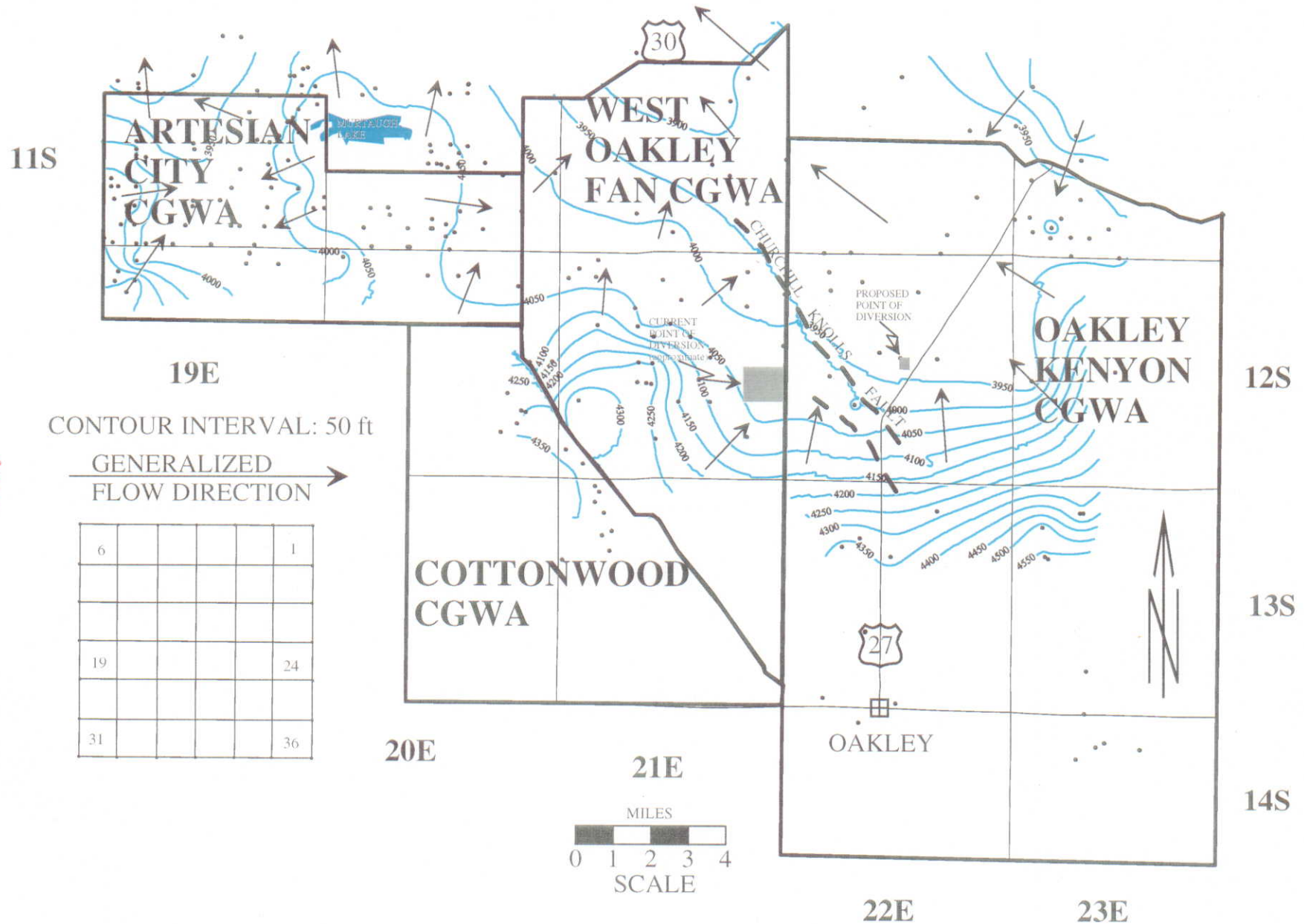
REFERENCES

- Young, H.W. and Newton, G.D., 1989, Hydrology of the Oakley Fan Area, South-Central Idaho, U.S. Geological Survey Water-Resources Investigations, Report 88-4065, Boise, Idaho (73 p.).

cc Helen Harrington



GROUND WATER ELEVATIONS



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