

A030926 Peters & Donovan1. Amount

Evaporation

Evap Rate = 5.1 ft/yr (California Climate Data Archive, Lake Berryessa)

Area = Reservoir surface area

Lower = 2.15 ac

Upper = 1.0 ac Total = 3.15 ac

Factor = 0.6 reservoir adjustment factor from drawdown

Evap = 9.6 ac-ft per yr

Drawdown

8 acres of vineyards @ 0.5 ac-ft per yr. Use = 4 ac-ft per yr

Total = 13.6 ac-ft per yr

2. Base Flow Separation

Methodology: Water-Resources Investigations Report 96-4040 by USGS.

Data: USGS Navarro gage stream flow data.

Fixed interval duration calculated from empirical relation $N=A^{0.2}$

A = Area = 303 sq mi (Navarro Gage)

Interval used for hydrograph separations is 2N nearest to the odd integer between 3 and 11.

= 7 day interval

Every 7 days identify the minimum value and average over the water year to determine the base flow. Note: fixed interval was used (as apposed to sliding interval or local minimum).

Subtract the water year average base flow from the gage data and apply weighted adjustment to get surface runoff at the site.

3. Days of Diversion

Look at four situations:

Last three water years of data

2009/2010

2008/2009

2007/2008

Average of gage data from 1950-2010

Determine the number of days of surface flow runoff that occur to accumulated approximately 13.5 ac-ft per situation.