CALIBRATION PACKAGE

RIO GRANDE ALLUVIUM RESPONSE AREA

Stream Reach: RG1 (Rio Grande from Del Norte to Excelsior Ditch)

2009 Method Response Function

Grouping Based On Streamflow From The Rio Grande Near Del Norte Gage
Dry: <325,000 acre-feet for April through September
Average: 325,000-700,000 acre-feet for April through September
Wet: >700,000 acre-feet for April through September

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Figure 1 **RGDSS Groundwater Model Impulse Run Used to Generate Response Functions, One Curve Per Year for 1988-2010**

These are the 23 impulse curves generated by the RGDSS Groundwater Model that were used to create the response functions. Each impulse result is derived from the difference between two model runs. The first run uses historical hydrologic conditions in the first year followed by 19 years of average hydrologic conditions. The second run uses no Net Groundwater Consumptive Use[1] in the first year followed by 19 years of average hydrologic conditions. The 1990 through 1998 period is used for the average monthly hydrologic conditions.

Figure 2 **Response Functions for Dry, Average, and Wet Years: - Net Stream Depletions as a Percent of Average Net Groundwater Consumptive Use[1]**

These are the three response functions used to generate response function stream depletions using that year's Net Groundwater Consumptive Use[1].

Figures 3 A-D **Calibration Graphs**

A. Monthly Net Stream Depletion Comparison (acre-feet)
B. Annual Net Stream Depletion Comparison (acre-feet)
C. Cumulative Net Stream Depletion Comparison (acre-feet)
D. Response Function Versus RGDSS Groundwater Model Annual Net Stream Depletions for 1988-2010

[1] "Net Groundwater Consumptive Use" means the groundwater consumed by the operations of one or more Wells, and represents the difference between groundwater withdrawals less any return flow to the hydrogeologic system within Water Division No. 3.

Figure 1: RGDSS Groundwater Model Impulse Run Used to Generate Response Functions, One Curve Per Year for 1988-2010

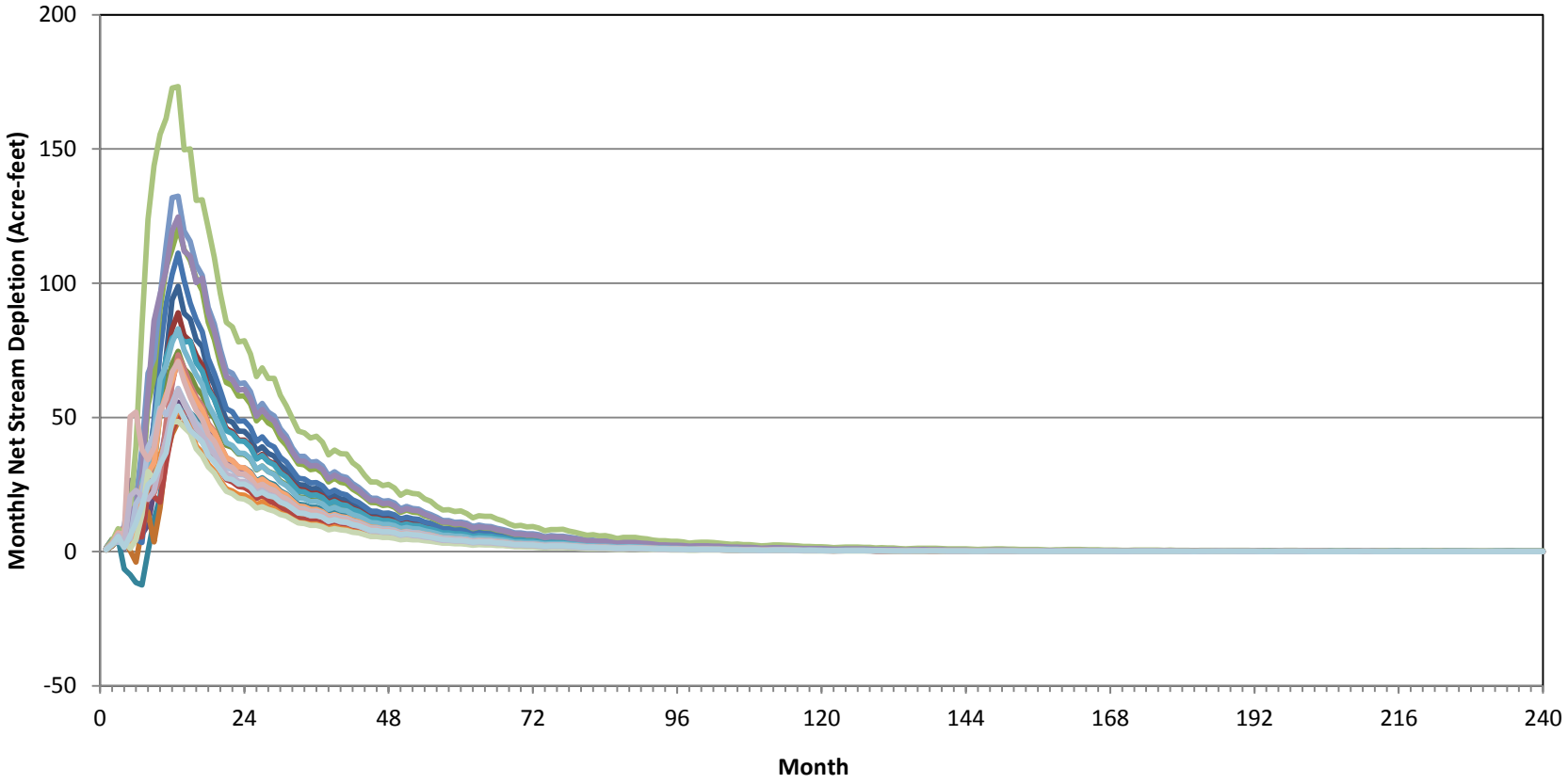


Figure 2: Response Functions for Dry, Average, and Wet Years - Net Stream Depletions as a Percent of Average Net Groundwater Consumptive Use

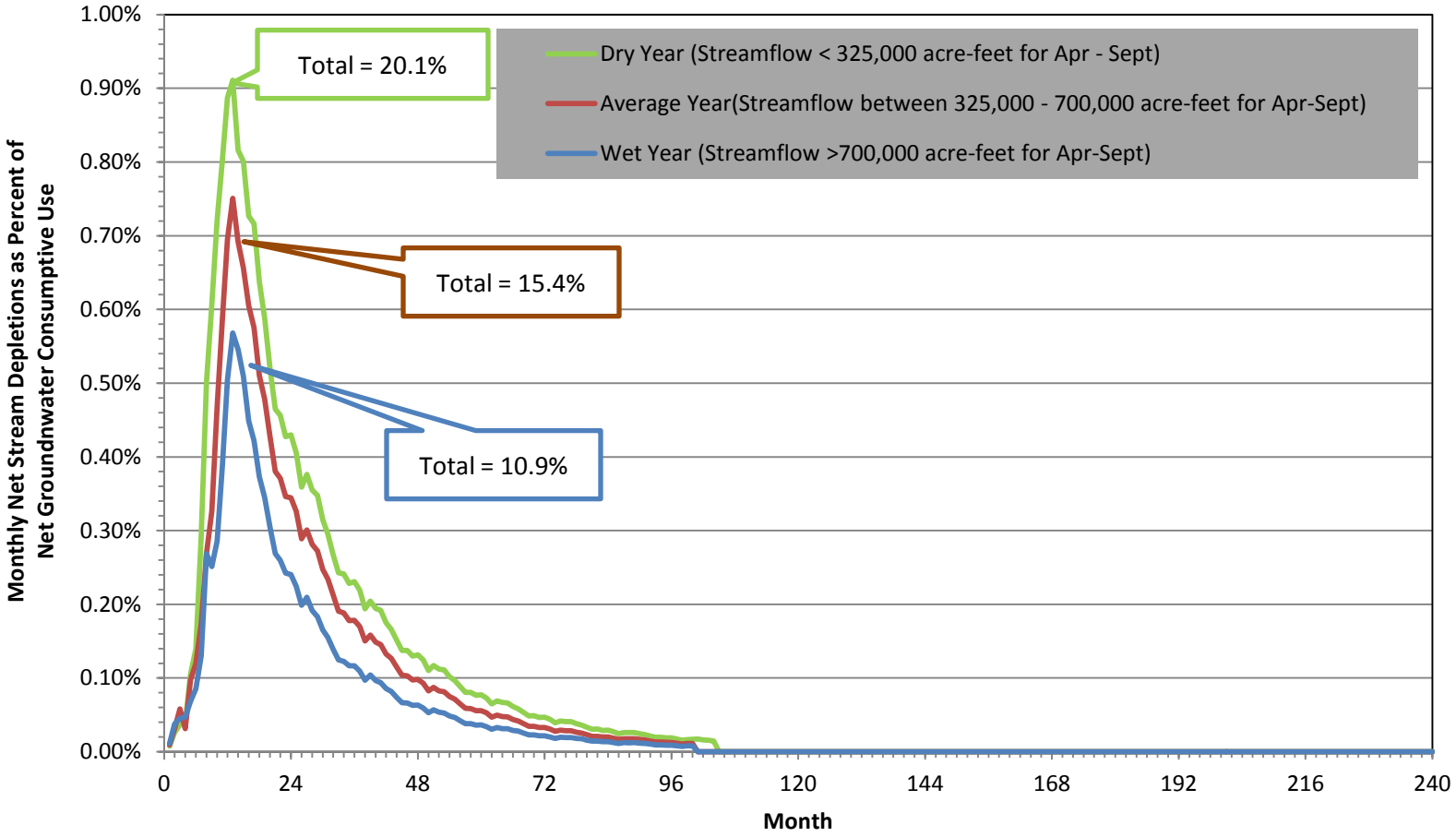


Figure 3A: Monthly Net Stream Depletion Comparison (acre-feet)

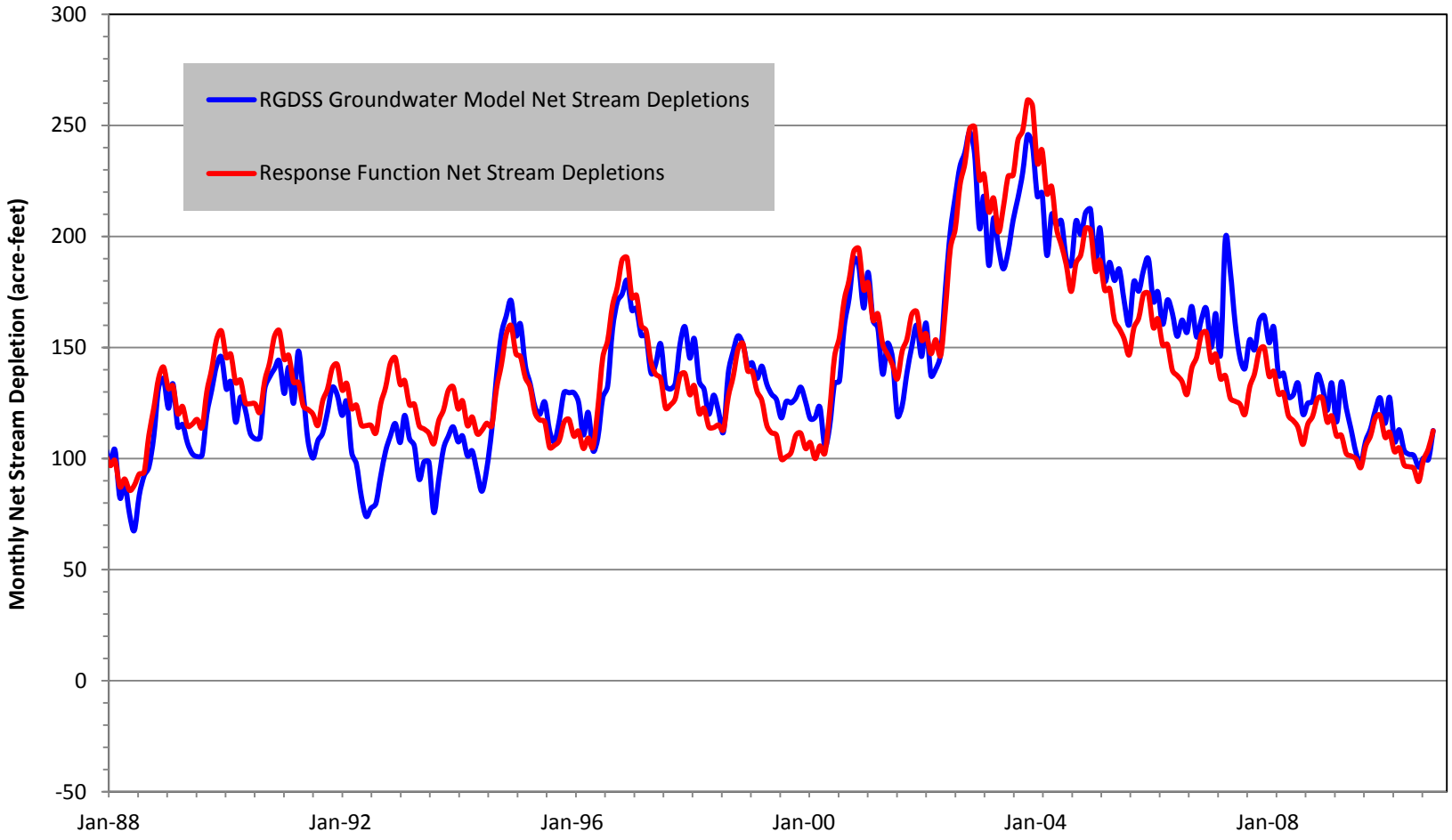


Figure 3B: Annual Net Stream Depletion Comparison (acre-feet)

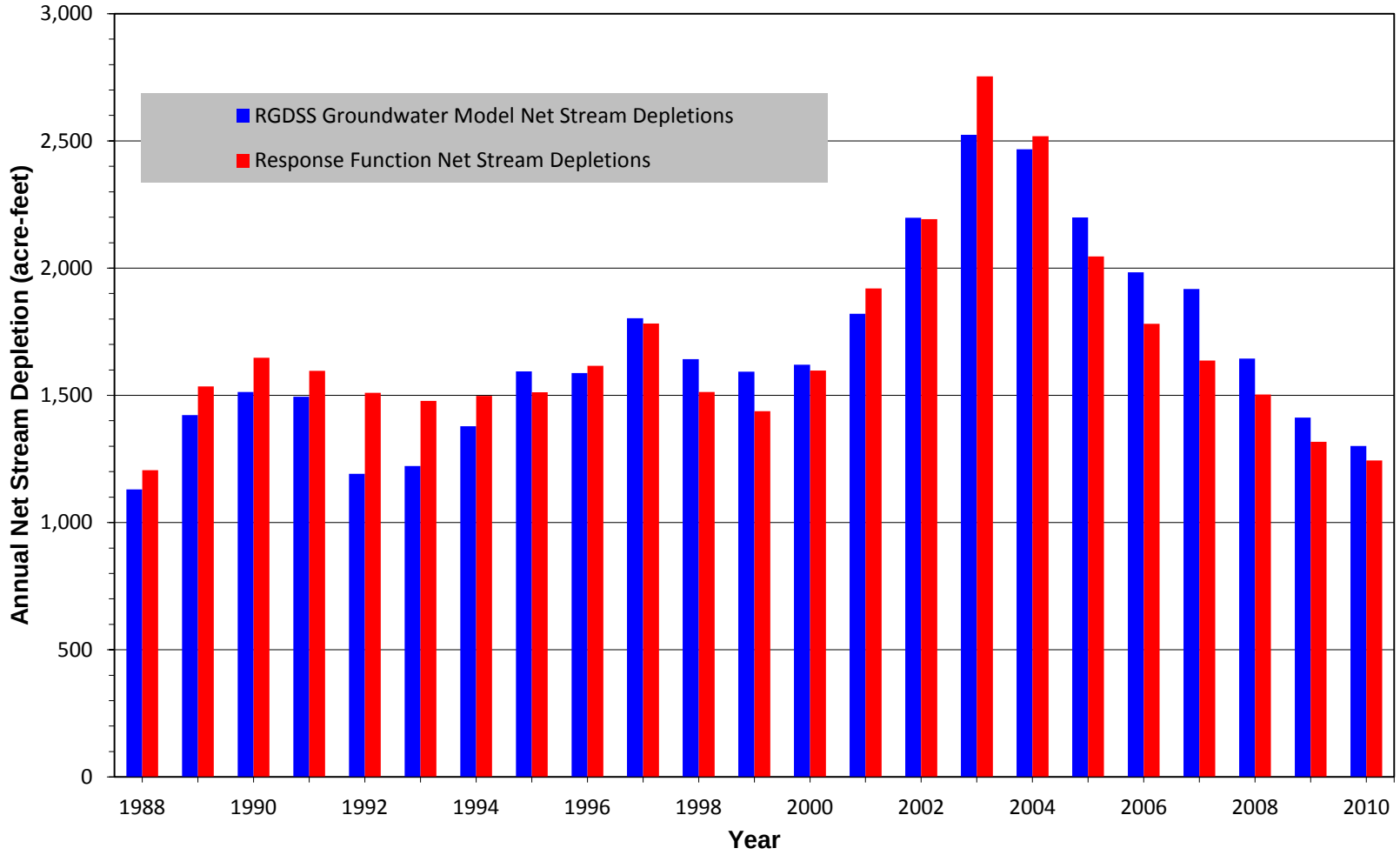


Figure 3C: Cumulative Net Stream Depletion Comparison (acre-feet)

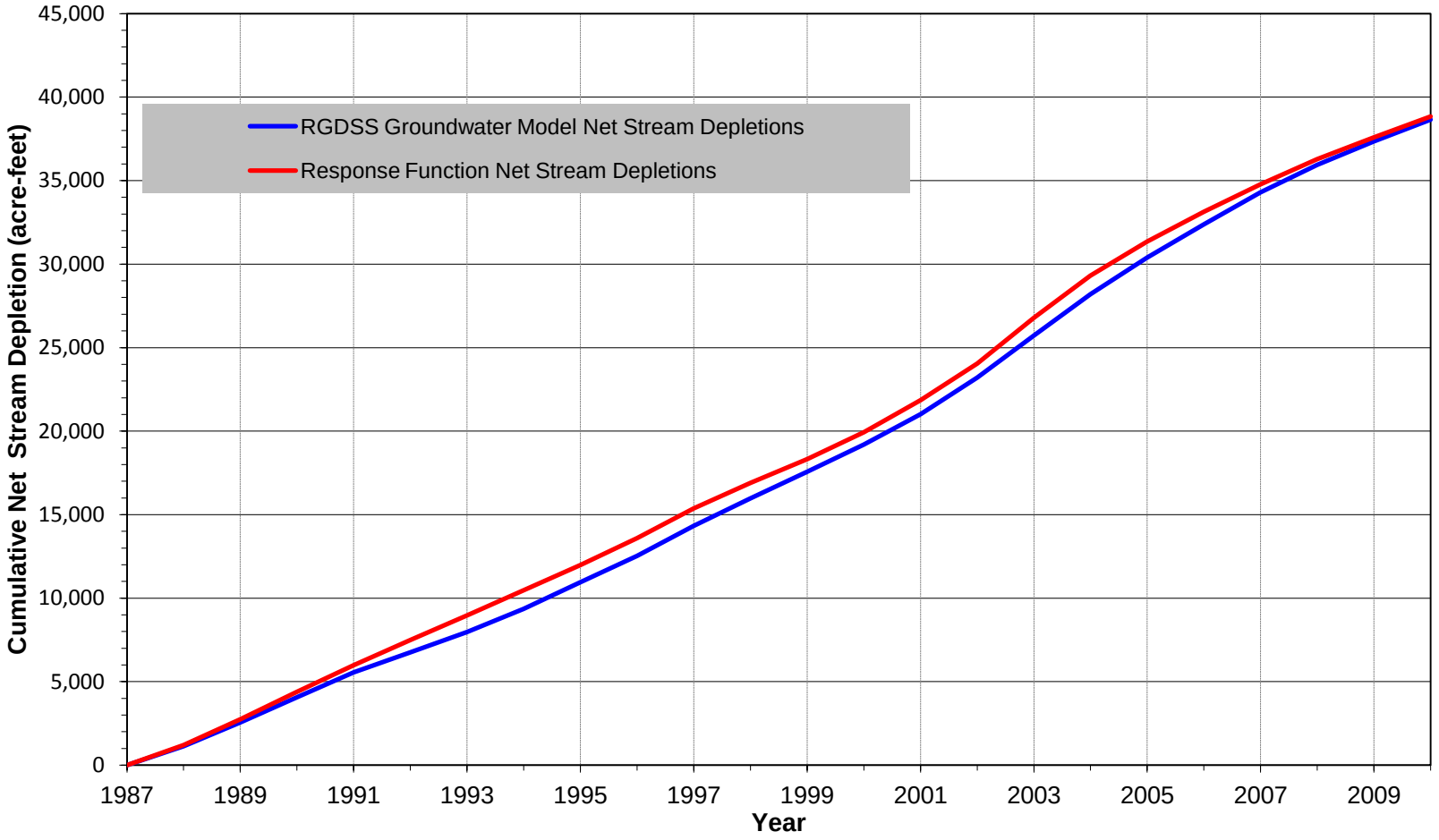


Figure 3D: Response Function Versus RGDSS Groundwater Model Annual Net Stream Depletions for 1988-2010

