

TABLE 21
Steady-State Groundwater Balance
PAPA Data Gaps Study

Inflow	Minimum (ac-ft/yr)	Maximum (ac-ft/yr)	Average (ac-ft/yr)
Natural Recharge	7,588	12,562	10,075
Irrigation Recharge	5,862	7,328	6,595
Ditch Loss	1,239	43,744	16,128
Underflow In	95,086	345,690	220,388
Total Inflow	109,775	409,324	253,186
Outflow	Minimum (ac-ft/yr)	Maximum (ac-ft/yr)	Average (ac-ft/yr)
Evapotranspiration	41,361	59,042	50,201
Pumped Groundwater *	1,036	1,553	1,294
Underflow Out	4,354	34,411	19,383
Discharge to Rivers*	160,981	241,472	201,227
Total Outflow	207,732	336,478	272,105

* Minimum and maximum estimates calculated as ±20 percent of average estimate.

Note: ac-ft/yr = acre-feet per year.

TABLE 22
Seepage Rates and Estimated Total Ditch Loss in PAPA Region
PAPA Data Gaps Study

Study	PBS&J (2008)	Leigh & Fipps (2002)	Quinn et al. (1989)	Nofziger (1979)	Nelson Engineering (2004)	MT DNRC (2003)	Iqbal, et al. (2002)
State/Province	Montana	Texas	California	Oklahoma	Wyoming	Montana	Alberta
Seepage Rate Loss Type	ac-ft/yr per mile of ditch				percent of flow per mile of ditch		ft ³ per ft ² of ditch area per day
Seepage Rate	344	144	11.1	250	2.8%	3.8%	0.07
Total Ditch Loss Domain (acre-ft/yr)	59,363	24,863	1,909	43,141	11,383	14,168	1,303

Note: ac-ft/yr = acre-feet per year; ft³ = cubic feet; ft² = square feet. See Section 8 for report citations.

TABLE 23
Estimated Base Flow Reporting to Streams/Rivers in PAPA Region
PAPA Data Gaps Study

Stream	Base Flow (ft ³ /sec)
Pine Creek	3.3
Pole Creek	8.0
Boulder Creek	-6.1
New Fork River	136.3
Green River	102.9
East Fork River	33.2
Big Sandy River	0.16
Total Base Flow	278

Note: ft³/sec = cubic feet per second.