

Appendix 2_9C Streamflow statistics for site S17 estimated using a drainage-area-ratio method and historical streamflows (Olson, S.A., and Mack,T.J., 2011, Technique for estimation of streamflow statistics in mineral areas of interest in Afghanistan: U.S. Geological Survey Open-File Report 2011-1176)

[km², square kilometer; mm, millimeter; m, meter; m³/s, cubic meter per second; The streamgage, listed with Afghan identification number, is the historical site used for the ungaged site estimate.]

Basin Characteristics:

Drainage area:	1168.4 km ²	Basin percent above 3000 Km:	8.28
Basin slope percent:	20.4	Mean October precipitation:	10.7 mm
Centroid elevation:	2515.1 m	Mean November precipitation:	17.8 mm
Basin percent irrigated:	2.52	Mean December precipitation:	35.3 mm
		Mean January precipitation:	43.7 mm

Streamgage: Lal River at Shinya (343000065400000)		8-11.L00-1A		
Drainage area, km ² : 1680		Results		
Streamgage data:		Ungaged site estimate:	area exponent	
90% flow duration:	0.08 m ³ /s	0.05 m ³ /s	1.25	
80% flow duration:	0.31 m ³ /s	0.20 m ³ /s	1.18	
Mean annual discharge:	5.13 m ³ /s	3.52 m ³ /s	1.04	
October mean monthly discharge:	0.95 m ³ /s	0.64 m ³ /s	1.10	
November mean monthly discharge:	1.01 m ³ /s	0.68 m ³ /s	1.09	
December mean monthly discharge:	1.07 m ³ /s	0.72 m ³ /s	1.08	
January mean monthly discharge:	1.23 m ³ /s	0.84 m ³ /s	1.06	
February mean monthly discharge:	1.01 m ³ /s	0.70 m ³ /s	1.00	
March mean monthly discharge:	2.86 m ³ /s	2.05 m ³ /s	0.92	
April mean monthly discharge:	17.2 m ³ /s	12.41 m ³ /s	0.90	
May mean monthly discharge:	21.6 m ³ /s	14.76 m ³ /s	1.05	
June mean monthly discharge:	5.03 m ³ /s	3.28 m ³ /s	1.18	
July mean monthly discharge:	0.88 m ³ /s	0.59 m ³ /s	1.08	
August mean monthly discharge:	1.18 m ³ /s	0.80 m ³ /s	1.06	
September mean monthly discharge:	0.95 m ³ /s	0.64 m ³ /s	1.09	
October minimum monthly discharge:	0.95 m ³ /s	0.61 m ³ /s	1.20	
November minimum monthly discharge:	0.95 m ³ /s	0.62 m ³ /s	1.19	
December minimum monthly discharge:	0.81 m ³ /s	0.53 m ³ /s	1.18	
January minimum monthly discharge:	0.8 m ³ /s	0.51 m ³ /s	1.21	
February minimum monthly discharge:	0.76 m ³ /s	0.50 m ³ /s	1.17	
March minimum monthly discharge:	2.19 m ³ /s	1.50 m ³ /s	1.04	
April minimum monthly discharge:	11.6 m ³ /s	7.97 m ³ /s	1.03	
May minimum monthly discharge:	17.5 m ³ /s	11.43 m ³ /s	1.17	
June minimum monthly discharge:	4.19 m ³ /s	2.62 m ³ /s	1.30	
July minimum monthly discharge:	0.38 m ³ /s	0.24 m ³ /s	1.25	
August minimum monthly discharge:	0.08 m ³ /s	0.05 m ³ /s	1.29	
September minimum monthly discharge:	0.08 m ³ /s	0.05 m ³ /s	1.27	

Drainage area ratio technique:

Streamgage: Malmard River near Shawalat (325100063180000)		6-0.L00-1A		
Drainage area, km ² : 1477		Results		
Streamgage data:		Ungaged site estimate:	area exponent	
7Q10:	0.03 m ³ /s	0.02 m ³ /s	1.14	
7Q2:	0.16 m ³ /s	0.13 m ³ /s	1.03	
90% flow duration:	0.18 m ³ /s	0.13 m ³ /s	1.25	
80% flow duration:	0.28 m ³ /s	0.21 m ³ /s	1.18	
Mean annual discharge:	3.93 m ³ /s	3.08 m ³ /s	1.04	
October mean monthly discharge:	0.33 m ³ /s	0.26 m ³ /s	1.10	
November mean monthly discharge:	0.67 m ³ /s	0.52 m ³ /s	1.09	
December mean monthly discharge:	1.27 m ³ /s	0.99 m ³ /s	1.08	
January mean monthly discharge:	2.76 m ³ /s	2.15 m ³ /s	1.06	
February mean monthly discharge:	5.9 m ³ /s	4.67 m ³ /s	1.00	
March mean monthly discharge:	10.4 m ³ /s	8.38 m ³ /s	0.92	
April mean monthly discharge:	14.4 m ³ /s	11.67 m ³ /s	0.90	
May mean monthly discharge:	7.9 m ³ /s	6.18 m ³ /s	1.05	
June mean monthly discharge:	2.43 m ³ /s	1.84 m ³ /s	1.18	
July mean monthly discharge:	0.84 m ³ /s	0.65 m ³ /s	1.08	
August mean monthly discharge:	0.38 m ³ /s	0.30 m ³ /s	1.06	
September mean monthly discharge:	0.26 m ³ /s	0.20 m ³ /s	1.09	
October minimum monthly discharge:	0.04 m ³ /s	0.03 m ³ /s	1.20	
November minimum monthly discharge:	0.15 m ³ /s	0.11 m ³ /s	1.19	
December minimum monthly discharge:	0.22 m ³ /s	0.17 m ³ /s	1.18	
January minimum monthly discharge:	0.25 m ³ /s	0.19 m ³ /s	1.21	
February minimum monthly discharge:	0.76 m ³ /s	0.58 m ³ /s	1.17	
March minimum monthly discharge:	1.71 m ³ /s	1.34 m ³ /s	1.04	
April minimum monthly discharge:	2.59 m ³ /s	2.03 m ³ /s	1.03	
May minimum monthly discharge:	0.92 m ³ /s	0.70 m ³ /s	1.17	
June minimum monthly discharge:	0.26 m ³ /s	0.19 m ³ /s	1.30	
July minimum monthly discharge:	0.06 m ³ /s	0.04 m ³ /s	1.25	
August minimum monthly discharge:	0.01 m ³ /s	0.01 m ³ /s	1.29	
September minimum monthly discharge:	0.06 m ³ /s	0.04 m ³ /s	1.27	