Calculation of streamflow inches per day (or any time interval) over the watershed area

Inches of streamflow per day over a watershed is a commonly used unit for total streamflow (TOTAL_Q_AREA). Here, the general equations to calculate streamflow in inches per day (or per any time interval) are presented, as well as the areas of HJ Andrews watersheds required for these equations.

Calculation of TOTAL_Q_AREA:
Streamflow as inches per day over the watershed area

Assume:
Y = MEAN_Q (mean cubic feet per second for the day)

Then,
TOTAL_Q_AREA =
Y cu.ft./sec x 1/(WS area in acres) x 12 in./ft. x 1 acre/43560 sq.ft. x 86400 sec/day

Or,

TOTAL_Q_AREA = (MEAN_Q x .0002755 x 86400) / (WS area in acres)

For Andrews watersheds, use the acres values below for watershed area:

SITECODE	WS_AREA_HA	WS_AREA_ACRES
GSLOOK	6242.0	15424.0
GSWS01	95.9	237.0
GSWS02	60.3	149.0
GSWS03	101.2	250.0
GSWS06	13.0	32.0
GSWS07	15.4	38.0
GSWS08	21.4	53.0
GSWS09	8.5	21.1
GSWS10	10.2	25.3
GSWSMA	581.0	1436.0

This can be modified for any interval. Simply replace 86400 with the number of seconds in the interval, and make sure that Y is the mean cfs for that interval (MEAN_Q).

TOTAL_Q_INT = [MEAN_Q x .0002755 x (seconds in interval)]/ (WS area in acres)

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