

FIGURE 4.1
Design for 99% Confidence Level w/ Peak Daily Flow

ADAMS COUNTY HEALTH DEPARTMENT EVAPOTRANSPIRATION BED WATER BALANCE SIZING SPREADSHEET										ADAMS COUNTY HEALTH DEPARTMENT EVAPOTRANSPIRATION BED WATER BALANCE SIZING SPREADSHEET																	
USER INPUT PARAMETERS										TOTAL BED VOLUME				TOTAL STORAGE IN BED (No Water in Bed)				INITIAL WATER CONTENT WITHIN BED (Assumes Bed Has Operated for 1 Year)									
TRIAL BED AREA? (Square Feet)	# Bedrooms?	Avg Daily Flow per Bedroom? (gpd)	Avg Daily Flow	Long Term Acceptance Rate (LTAR) (gal/day/sq.ft. (Table 10, O-17))	MONTHLY PRECIP.? (SEE BELOW)	MONTHLY ET? (SEE BELOW)	(cubic feet)	VOL/VOL	(Inches)	(Gallons)	(cubic feet)	(VOL/VOL)	(gallons)	(cubic feet)	(VOL/VOL)	(gallons)	(cubic feet)										
3100	3	150	450	0.15			6975	0.437	11.80	22800	3048	0.2858	14911	1993													
INITIAL BED WATER? (VOL/VOL)	TOTAL BED	TOTAL AVAILABLE STORAGE IN BED																									
0.2858	0.437																										
OUTPUT										WATER STORAGE IN BED AT END OF MONTH																	
MONTH	PRECIP.@ UPPER 99% CONFID. LEVEL ? (IN.)	RUNOFF @ UPPER 99% CONFID. LEVEL? (IN.)	NET INFILTRA-TION (INCHES)	ET @ LOWER 99% CONFID. LEVEL (IN.)	MONTH	PERCENT TOTAL BED STORAGE UTILIZED	MONTH	(Inches)	ACTUAL STORAGE (Inches)	(Gallons)	ACTUAL STORAGE (Gallons)	Cubic Feet	ACTUAL STORAGE (Cu.Feet)	PERCENT TOTAL STORAGE UTILIZED	YEAR 2 Gallons	Gallons	% Avail. Storage	YEAR 3 Gallons	Gallons	% Avail. Storage							
JANUARY	0.58	0.09	0.49	0.50	JANUARY	65%	JANUARY	8	8	14911	14911	1993	1993	65%	14427	14911	65%	14427	14911	65%							
FEB	0.93	0.21	0.72	0.46	FEB	66%	FEB	7	8	14427	14911	1929	1993	65%	14993	14993	66%	14993	14993	66%							
MARCH	1.50	0.13	1.37	0.69	MARCH	69%	MARCH	8	8	14993	14993	2004	2004	66%	15842	15842	69%	15842	15842	69%							
APRIL	2.05	0.04	2.01	1.18	APRIL	75%	APRIL	8	8	15842	15842	2118	2118	69%	16996	16996	75%	16996	16996	75%							
MAY	5.35	0.14	5.21	2.09	MAY	99%	MAY	9	9	16996	16996	2272	2272	75%	22560	22560	99%	22560	22560	99%							
JUNE	1.86	0.03	1.83	4.67	JUNE	73%	JUNE	12	12	22560	22560	3016	3016	99%	16622	16622	73%	16622	16622	73%							
JULY	2.45	0.06	2.39	8.25	JULY	65%	JULY	9	9	16622	16622	2222	2222	73%	4834	14911	65%	4834	14911	65%							
AUGUST	1.76	0.04	1.72	2.53	AUGUST	65%	AUGUST	3	8	4834	14911	646	1993	65%	12881	14911	65%	12881	14911	65%							
SEPT	1.76	0.04	1.72	3.62	SEPT	65%	SEPT	7	8	12881	14911	1722	1993	65%	10790	14911	65%	10790	14911	65%							
OCT	1.10	0.02	1.08	2.04	OCT	65%	OCT	6	8	10790	14911	1442	1993	65%	12591	14911	65%	12591	14911	65%							
NOV	1.02	0.01	1.01	0.72	NOV	66%	NOV	7	8	12591	14911	1683	1993	65%	15021	15021	66%	15021	15021	66%							
DEC	0.71	0.05	0.66	0.61	DEC	65%	DEC	8	8	15021	15021	2008	2008	66%	14653	14911	65%	14653	14911	65%							
TOTAL	21	0.86	20.21	27	DEC	65%	DEC	8	8	14653	14911	1959	1993	65%													
WATER AND EFFLUENT INTO BED										STATISTICAL ANALYSIS OF PRECIPITATION , RUNOFF AND EVAPOTRANSPIRATION																	
MONTHLY PRECIPITATION INFILTRATION INTO BED						MONTHLY AVERAGE EFFLUENT FLOW INTO BED						AVERAGE PRECIPITATION	STANDARD DEVIATION PRECIP	99% C.I. UPPER LIMIT PRECIP	AVERAGE RUNOFF	STANDARD DEVIATION RUNOFF	99% C.I. JPPER LIMIT RUNOFF										
MONTH	(inches)	(Gallons)	(Cubic Feet)	(inches)	(Gallons)	(Cubic Feet)	MONTH	AVG ET	STD. DEV. ET	99% C.I. ET	JANUARY	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	TOTAL				
JANUARY	0.49	947	127	7.22	13950	1865	JANUARY	0.577	0.225	0.50	0.46	0.34	0.58	0.09	0.142	0.14											
FEB	0.72	1391	186	6.52	12600	1684	FEB	0.548	0.233	0.46	0.77	0.44	0.93	0.21	0.32	0.33											
MARCH	1.37	2647	354	7.22	13950	1865	MARCH	0.847	0.427	0.69	1.25	0.68	1.50	0.133	0.301	0.24											
APRIL	2.01	3884	519	6.99	13500	1805	APRIL	1.476	0.801	1.18	1.71	0.94	2.05	0.041	0.074	0.07											
MAY	5.21	10067	1346	7.22	13950	1865	MAY	2.477	1.06	2.09	2.35	1.41	2.86	0.143	0.239	0.23											
JUNE	1.83	3536	473	6.99	13500	1805	JUNE	4.928	0.716	4.67	1.52	0.93	1.86	0.033	0.075	0.06											
JULY	2.39	4618	617	7.22	13950	1865	JULY	8.352	0.285	8.25	2.05	1.11	2.45	0.061	0.122	0.11											
AUGUST	1.72	3324	444	7.22	13950	1865	AUGUST	2.8	0.753	2.53	1.45	0.86	1.76	0.038	0.095	0.07											
SEPT	1.72	3324	444	6.99	13500	1805	SEPT	3.887	0.726	3.62	1.49	0.75	1.76	0.04	0.068	0.06											
OCT	1.08	2087	279	7.22	13950	1865	OCT	2.21	0.459	2.04	0.86	0.66	1.10	0.016	0.049	0.03											
NOV	1.01	1952	261	6.99	13500	1805	NOV	0.837	0.314	0.72	1.01	0.59	1.02	0.012	0.044	0.03											
DEC	0.66	1275	171	7.22	13950	1865	DEC	0.702	0.253	0.61	0.59	0.34	0.71	0.045	0.115	0.09											
TOTAL							TOTAL	29.641		27.36	15		18.61		1.46												
WATER OUT OF BED										MONTHLY SOIL ABSORPTION RATE																	
MONTH	MONTHLY SOIL ABSORPTION RATE			MONTHLY EVAPOTRANSPIRATION RATE			MONTHLY SOIL ABSORPTION RATE																				
JANUARY	7.46	14415	1927	0.50	966	129	JANUARY	7.46	14415	1927	0.50	966	129	JANUARY	7.46	14415	1927	0.50	966	129	JANUARY	7.46	14415	1927	0.50	966	129
FEB	6.74	13020	1741	0.46	889	119	FEB	7.22	13950	1865	0.46	889	119	FEB	7.22	13950	1865	0.46	889	119	FEB	7.22	13950	1865	0.46	889	119
MARCH	7.46	14415	1927	0.69	1333	178	MARCH	7.46	14415	1927	0.69	1333	178	MARCH	7.46	14415	1927	0.69	1333	178	MARCH	7.46	14415	1927	0.69	1333	178
APRIL	7.22	13950	1865	1.18	2280	305	APRIL	7.22	13950	1865	1.18	2280	305	APRIL	7.22	13950	1865	1.18	2280	305	APRIL	7.22	13950	1865	1.18	2280	305
MAY	7.46	14415	1927	2.09	4039	540	MAY	7.46	14415	1927	2.09	4039	540	MAY	7.46	14415	1927	2.09	4039	540	MAY	7.46	14415	1927	2.09	4039	540
JUNE	7.22	13950	1865	4.67	9024	1206	JUNE	7.22	13950	1865	4.67	9024	1206	JUNE	7.22	13950	1865	4.67	9024	1206	JUNE	7.22	13950	1865	4.67	9024	1206
JULY	7.46	14415	1927	8.25	15942	2131	JULY	7.46	14415	1927	8.25	15942	2131	JULY	7.46	14415	1927	8.25	15942	2131	JULY	7.46	14415	1927	8.25	15942	2131
AUGUST	7.46	14415	1927	2.53	4889	654	AUGUST	7.46	14415	1927	2.53	4889	654	AUGUST	7.46	14415	1927	2.53	4889	654	AUGUST	7.46	14415	1927	2.53	4889	654
SEPT	7.22	13950	1865	3.62	6995	935	SEPT	7.22	13950	1865	3.62	6995	935	SEPT	7.22	13950	1865	3.62	6995	935	SEPT	7.22	13950	1865	3.62	6995	935
OCT	7.46	14415	1927	2.04	3942	527	OCT	7.46	14415	1927	2.04	3942	527	OCT	7.46	14415	1927	2.04	3942	527	OCT	7.46	14415	1927	2.04	3942	527
NOV	7.22	13950	1865	0.72	1391	186	NOV	7.22	13950	1865	0.72	1391	186	NOV	7.22	13950	1865	0.72	1391	186	NOV	7.22	13950	1865	0.72	1391	186
DEC	7.46	14415	1927	0.61	1179	158	DEC	7.46	14415	1927	0.61	1179	158	DEC	7.46	14415	1927	0.61	1179	158	DEC	7.46	14415	1927	0.61	1179	158