

Project Name: Dylan Jones (Ty Mawr Hydro - Nant Llyn)

% Exceedance Probability	Flow upstream of abstraction [l/s]	Abstraction [l/s]	Abstraction as percentage of upstream flow	Residual flow downstream of weir [l/s]	Residual flow as percentage of upstream flow	Penstock Headloss [m]	Combined Turbine & Generator Efficiency [%]	Power output [kW]	Yield [kWh]
5%	602	97.3	16.2%	505	83.8%	2.83	77%	34.00	14,892
10%	407	97.3	23.9%	310	76.1%	2.83	77%	34.00	14,892
15%	322	97.3	30.3%	224	69.7%	2.83	77%	34.00	14,892
20%	236	97.3	41.2%	139	58.8%	2.83	77%	34.00	14,892
25%	197	91.8	46.7%	105	53.3%	2.54	77%	32.26	14,131
30%	157	72.0	45.9%	85	54.1%	1.62	76%	25.48	11,161
35%	134	60.3	45.1%	73	54.9%	1.16	77%	21.81	9,553
40%	110	48.5	44.1%	62	55.9%	0.78	75%	17.24	7,551
45%	96	41.3	43.2%	54	56.8%	0.58	73%	14.33	6,277
50%	81	34.0	42.0%	47	58.0%	0.40	70%	11.37	4,979
55%	71	28.8	40.8%	42	59.2%	0.30	68%	9.36	4,099
60%	60	23.5	39.2%	37	60.8%	0.20	64%	7.21	3,159
65%	52	19.5	37.5%	33	62.5%	0.14	59%	5.52	2,420
70%	44	15.5	35.2%	29	64.8%	0.09	52%	3.87	1,697
75%	37	12.0	32.4%	25	67.6%	0.06	41%	2.37	1,037
80%	30	8.5	28.3%	22	71.7%	0.03	24%	0.98	430
85%	25	5.8	23.5%	19	76.5%	0.02	6%	0.17	73
90%	19	0.0	0.0%	19	100.0%	0.00	0%	0.00	0
95%	13	0.0	0.0%	13	100.0%	0.00	0%	0.00	0
100%	7	0.0	0.0%	7	100.0%	0.00	0%	0.00	0

Annual Totals 126,134
Turbine down time for maintenance in days per year 5
Estimated annual generation in kWh 124,406
Capacity Factor 41.8%

Catchment area: 3.464 km2
Run-off: 1509 mm
Gross Head (Static Head): 49.1 m
Net Head (Dynamic Head) at Design Flow: 46.3 m
Mean Flow (Annual Daily Flow ADF) 166 l/s
Abstraction regime (Percentage take above HOF) 50%
Hands Off Flow (HOF) Exceedance 95%
Hands Off Flow (HOF) 13 l/s
Max Turbine Flow or Design Flow 97.3 l/s
Min Turbine Flow as %age of max flow 5%
Min Turbine Flow 5 l/s
Q95/Qmean Ratio 0.08
Q10/Qmean Ratio 2.45
Max hourly abstraction (Design flow x 3600 sec) 350.3 m3
Max daily abstraction (Max hourly abstract x 24h) 8,406.7 m3
Max Annual abstraction (Max Daily Abstraction x 365 days) 3,068,453 m3

Flow Duration Curve for Dylan Jones (Nant Llyn)

Annual Flow Duration Curve:
Low-Flow Estimates from LowFlows
www.hydrosolutions.co.uk

Dylan Jones Detailed Design
Natural FD series at annual resolution
Basin-name: Dylan Jones Detailed Design
Outlet at: SH 900 110

(Based on catchment characteristics derived at grid-resolution of 20 m)

Annual mean flow	0.17 m³/s		
Q95	0.013 m³/s		
	P (%)	Q (m³/s)	(Scaled) Q [lps]
1	5	0.602	602
2	10	0.407	407
3	20	0.236	236
4	30	0.157	157
5	40	0.11	110
6	50	0.081	81
7	60	0.06	60
8	70	0.044	44
9	80	0.03	30
10	90	0.019	19
11	95	0.013	13
12	99	0.007	7

SCALED FROM A GAUGED RIVER? (Y/N)	N
Scaled from a similar catchment previously Low-flowed?	N
Catchment area originally lowflowed	0.86
Scaling factor for this catchment	1.0000

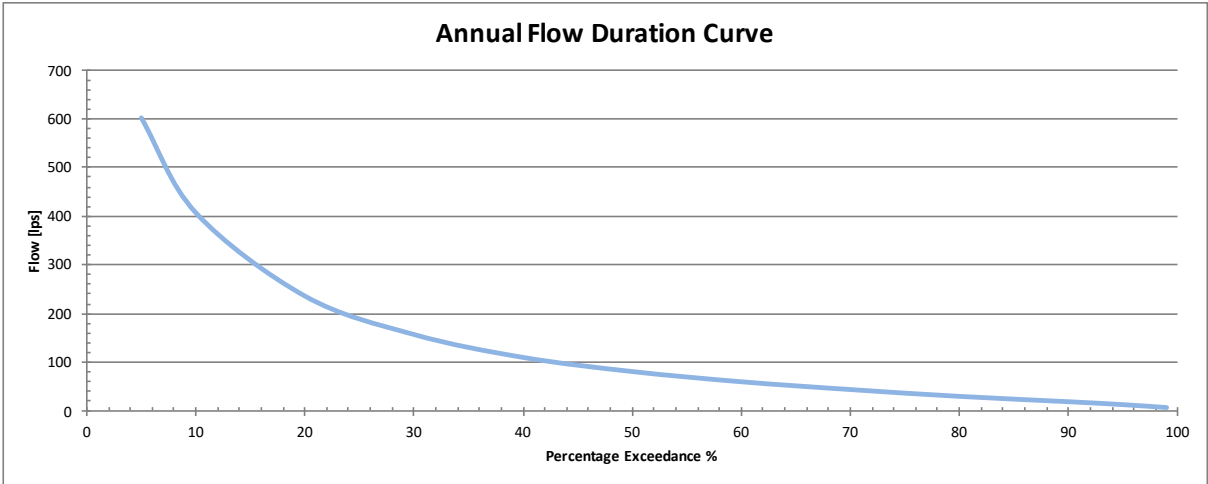
Scaling factor
1.000
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LowFlows Runoff 1509 mm
LowFlows Rainfall 1820 mm
Catchment Area 3.464 km2
BFI 0.33
LowFlows Map 64

Average Flow

166

lps



Dylan Jones (Ty Mawr Hydro – Nant Llyn) catchment area

