

Bernoulli

leakage rate through geomembrane liner

average acceleration of gravity = 32.174 feet/s² Himmelblau.009 9.809 m/s²

note:

rate of leakage through a defect in a geomembrane underlain by a very permeable medium
Bernoulli's equation

hydraulic head on liner 0.45 m
total area 4000 m²

number of defects 1
defect diameter 3.5 mm defect area 0.10 cm² 9.62E-06 m²

$Q/A = 0.6 * \text{defect area} * (2 * g * h)^{0.5}$ 1.715E-05 m³/s

hydraulic head	leak rate m ³ /s	L/s	1 day	1 month
			m ³	m ³
0.05	5.71716E-06	0.005717156	0.49	14.82
0.10	8.08528E-06	0.008085279	0.70	20.96
0.15	9.9024E-06	0.009902404	0.86	25.67
0.20	1.14343E-05	0.011434311	0.99	29.64
0.25	1.27839E-05	0.012783949	1.10	33.14
0.30	1.40041E-05	0.014004114	1.21	36.30
0.35	1.51262E-05	0.015126172	1.31	39.21
0.40	1.61706E-05	0.016170558	1.40	41.91
0.45	1.71515E-05	0.017151467	1.48	44.46

