Dupuitova rovnice

$$Q = \frac{2\pi k(H_2^2 -}{\ln(r_2 - r}$$

hydraulická vodivost	k	1.00E-07	m/s
snížení na hladinu	H1	50	m
původní výška vodního sloupce	H2	100	m
strana čtvercového půdorysu šachty	r1	5	m
převod nap oloměr kruhového půdorysu	r1'	2.820948	m
poloměr deprese	r2	47.43	m
přítok do šachty	Q	1.67E-03	m3/s
		1.7	l/s

Sichardtova
r2=3000*(c

$$\frac{H_1^2\,)}{{}_1)}$$

a rovnice

dH)odm(k)

Goodman et al. (1965)

hydraulická	k	5.00E-07	m/s
	h	100	m
	d	5	m
	r'	2.820947918	m
		7.37E-05	m3/s/m
	Q	**0.0737**	**l/s/m**
	délka štoly	100	m
		7.3725	**l/s**

Literature
Goodman e
Zhang and
Lei (1999); Wagner (
El Tani (19
Karlsrud (2
Moon and I

[1]R_x is the hor
drawdown fror

Su K, Zhou

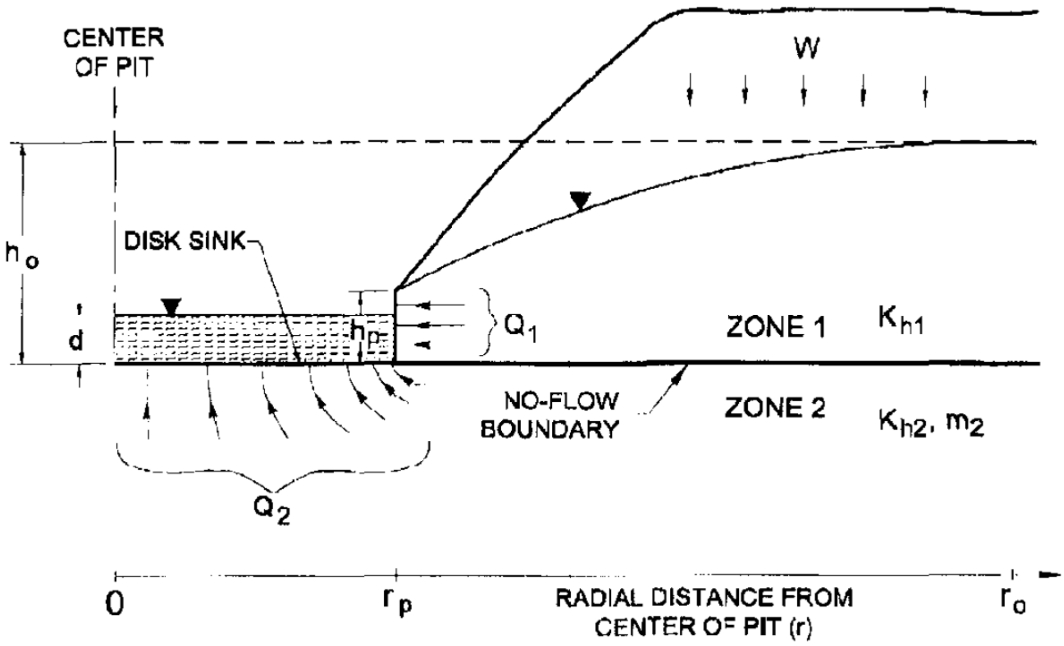
Approximate Solutions of the Groundwater Inflow

	Formula	Description
:t al. (1965)	$Q_{Go} = 2\pi k \frac{h}{\ln \frac{2h}{r}}$	Initial water level, deep tunnels, homogeneous, isotropic and semi-infinite aquifer
Franklin (1993)	$Q_{ZF} = 2\pi k \frac{h}{\ln \sqrt{1+\frac{4h^2}{r^2}}}$	Initial water level, varying hydraulic conductivity of medium in jointed rock deep tunnels
Kolymbas and (2007)	$Q_{LK} = 2\pi k \frac{h}{\ln\left(\frac{h}{r}+\sqrt{\frac{h^2}{r^2}-1}\right)}$	Initial water level, for both deep and shallow tunnels
)99)	$Q_{El} = 2\pi kh \frac{1-3\left(\frac{r}{2h}\right)^2}{\left[1-\left(\frac{r}{2h}\right)^2\right]\ln\frac{2h}{r}-\left(\frac{r}{2h}\right)^2}$	Initial water level, tunnels of circular, elliptical or square cross-sections, non-homogeneous aquifer
:001)	$Q_{Ka} = 2\pi k \frac{h}{\ln\left(\frac{2h}{r}-1\right)}$	Initial water level, homogeneous, isotropic and semi-infinite aquifer
Fernandez (2010)[1]	$Q_{MF1} = \frac{k\left(2R_y h-h^2\right)}{R_x-r}$ (shallow tunnel) $Q_{MF2} = 2\pi k \frac{\bar{h}}{\ln\frac{2h}{r}}$ (deep tunnel)	Lowered water level, using permeability reduction of medium, for both deep and shallow tunnels

rizontal influence distance of groundwater level drawdown from the center of tunnel, and R_y is the vertical influence distance of groundwater level m the initial groundwater level.

Y, Wu H, Shi C, Zhou L. An Analytical Method for Groundwater Inflow into a Drained Circular Tunnel. Groun

d Water. 2017 Sep;55(5):712-721. doi: 10.1111/gwat.12513. Epub 2017 Mar 22. PMID: 28329431.



Marinelli a Nicolli (2000)

rp	200	m		
ho	10	m	25	
hp	5	m	5.40E-05	
d	3	m	1156700.25	
W	2.70E-09	m/s	1.68222358	
kh1	5.00E-05	m/s	558350.125	
kh2	5.00E-05	m/s	9.99E+01	
kv2	1.00E-05	m/s		
m2	2.24			
ro	**1075.5**	**m ===>>>> ho**	**10.00**	
Q1	9.47E-03	m3/s	9.467	l/s
Q2	1.25E-01	m3/s	125.220	l/s
celkem	1.35E-01	m3/s		
celkem	**134.69**	**l/s**		

Marinelli, Fred, and Niccoli, W.L., 2000, Simple analytical equations for estimating ground water inflow to a m

$$h_o = \sqrt{h_p^2 + \frac{W}{K_{h1}}\left(r_o^2 \ln\left(\frac{r_o}{r_p}\right) - \left(\frac{r_o^2 - r_p^2}{2}\right)\right)}$$

$$Q_1 = W\pi\left(r_o^2 - r_p^2\right)$$

$$Q_2 = 4r_p\left(\frac{K_{h2}}{m_2}\right)\left(h_o - d\right)$$

$$m_2 = \sqrt{\frac{K_{h2}}{K_{v2}}}$$

ıine pit: Groundwater, v. 38, no. 2, p. 311-314.