

Leachate dewatering for landfill expansion



Case characteristics

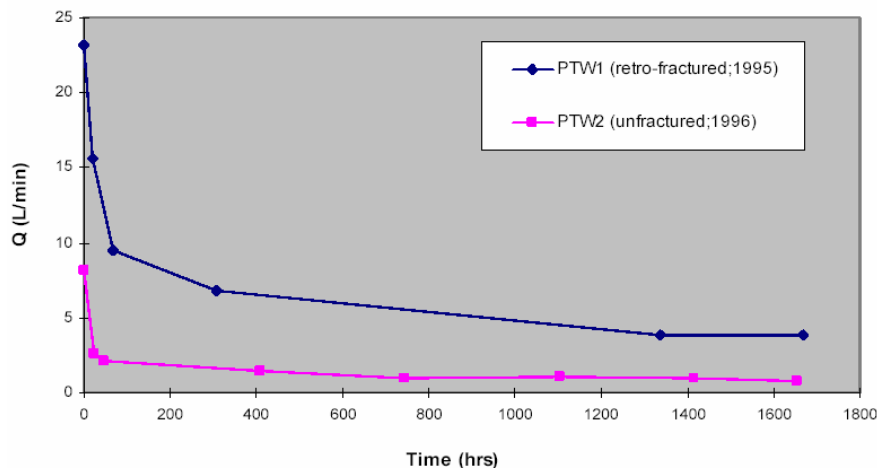
- Vertical expansion needed to increase landfill capacity
- Expansion conditional upon reducing leachate levels (i.e. pure pressure)
- Pilot fracturing program to improve leachate recovery

Fracturing program

- Fracturing pilot program consisted of the placement of 8 sand-filled fractures in three fractured recovery wells;
- Fractures placed in saturated wastes at depths ranging from 7 metres to 14 metres;
- Short term (24 hr) and long term (10 week) pump testing on conventional recovery wells and fractured recovery wells.

Parameter	Baseline Wells	Retro-Frac Wells	Fractured Wells
K [m/sec]	$4 \cdot 10^{-6}$	$2 \cdot 10^{-5}$	$6 \cdot 10^{-5}$
Q_{24HR} [l/min]	1.5	15	30
R [m]	19	25	47

Leachate Flow Rate vs. Time
PTW1 and PTW2



Results

- Assessment of fractured well performance determined need for < 30 fractured dewatering wells compared to 55+ conventional wells to reduce leachate levels for vertical landfill expansion;
- Fracturing of landfills can enhance methane recovery for co-generation applications.