

TEST CERTIFICATE
DOULTON STERASYL CANDLE

Object

To assess the performance capability of a Doulton Sterasyl candle to remove *Vibrio cholerae* from a contaminated water supply. Cholera is a significant waterborne pathogen, and has been found in recent studies to be one of the most difficult bacterial test organisms to be removed.

Protocol

The test was designed to give a severe intensive challenge over a significant volume of throughput.

Water conditions - dechlorinated mains water spiked as follows:-

Minimum challenge - 1.4×10^5 cfu/100ml.

Mean Challenge (Geometric) - 1.6×10^6 cfu/100ml.(1557358)

Cultured organisms for use as a bacterial challenge were prepared as per the US EPA protocol.

Temperature - $20 \pm 2^\circ\text{C}$.

TOC - Approx 2 mg/l.

Turbidity - Low.

Cycle Time - 3 mins on, 12 off. stagnation overnight.


Results

| Day | Influent (cfu/100ml) | Effluent (cfu/100ml) | % Removal efficiency |
|-----|----------------------|----------------------|----------------------|
| 1 | 1236364 | 4 | 99.9997 |
| 2 | 2309091 | 75 | 99.9968 |
| 3 | 1518182 | 55 | 99.9964 |
| 4 | 136364 | <1 | >99.999 |
| 5 | 15500000 | 18 | 99.9998 |

Conclusions

Based on the above result the Doulton Sterasyl candles are capable of removing cholera from a contaminated source to an efficiency of >99.99%.

The average efficiency over the test was 99.998%.

signed 

Date 8th May 1997