

ANIMAL HEALTH LABORATORIES LABORATORY REPORT



Department of Agriculture and Food
AGWEST Animal Health Laboratories



3 Baron-Hay Court South Perth, WA 6151 • Tel: (08) 9368 3351 • Fax: (08) 9474 1881
444 Albany Highway, Albany, WA 6330 • Tel: (08) 9892 8444 • Fax: (08) 9892 8564

Case Number: AS-10-2026-F-V1

Final Report

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Date: 8-JUL-2010

Your Ref: Not Supplied

Enquiries: Dr Nicky Buller(Bacteriology Perth)

To: Gavin Partridge
Challenger TAFE
1 Fleet St
Fremantle
WA

cc.

Owner:

Project: Animal sample testing - non disease investigation

Species: Water

Samples Received: Water x 18

Date Collected: Not Supplied

Date Received: 8-JUL-2010

Submission Number:

Methods

The Australian Centre for Applied Aquaculture Research (ACAAR) prepared a stock solution of chlorine dioxide (CleanOxide) and provided it to the Animal Health Laboratories. A 7500 ppm stock solution was prepared according to the manufacturers directions and diluted to achieve a working solution of 2000 ppb. The concentration of this stock solution was confirmed spectrophotometrically immediately prior to use in the disinfection trials using a Hach DR 2400 with Method #10126.

Disinfection trials were conducted at the Animal Health Laboratories. Laboratory staff prepared a pure culture of the freshwater pathogen *Vibrio mimicus* in nutrient broth at a concentration of 1×10^8 CFU/mL. Prior to disinfection trials, bacteria was concentrated then resuspended in Normal Saline (0.85% w/v NaCl) with a final concentration of 4×10^5 CFU/mL. Normal Saline was used to reduce the organic load within the vials; ensuring that CleanOxide was targeted at bacteria, rather than oxidising the nutrients within the broth. The effectiveness of nine concentrations of CleanOxide against *V. mimicus* was tested in duplicate at concentrations ranging from 0 to 369 ppb. After exposure to the desired concentration for 60 minutes, CleanOxide was neutralised with sodium thiosulphate and the remaining bacteria enumerated.

Results

Bacterial counts are presented in Table 1 and Figure 1. There were no significant reductions in *V. mimicus* at CleanOxide concentrations ≤ 185 ppb. At 220 ppb of CleanOxide, *V. mimicus* was reduced by 64% and by >99.9% at CleanOxide concentrations of 332 and 369 ppb.

ANIMAL HEALTH LABORATORIES

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• Bacteriology • Mycology • Other Microorganisms • Virology • Prions • Parasitology • Serology of Infection
• Biochemistry • Toxicology • Anatomical Pathology • Histopathology • Electron Microscopy • Necropsy



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Table 1 Colony forming units per millilitre (cfu/mL)

Spec No.	Spec ID	Spec Description	Total count
1	Water 1	0	315 000 cfu/mL
2	Water 2	0	410 000 cfu/mL
3	Water 3	45	700 000 cfu/mL
4	Water 4	45	450 000 cfu/mL
5	Water 5	90	480 000 cfu/mL
6	Water 6	90	560 000 cfu/mL
7	Water 7	135	585 000 cfu/mL
8	Water 8	135	505 000 cfu/mL
9	Water 9	180	460 000 cfu/mL
10	Water 10	180	320 000 cfu/mL
11	Water 11	225	650 000 cfu/mL
12	Water 12	225	410 000 cfu/mL
13	Water 13	270	180 000 cfu/mL
14	Water 14	270	170 000 cfu/mL
15	Water 15	405	200 cfu/mL
16	Water 16	405	240 cfu/mL
17	Water 17	450	30 cfu/mL
18	Water 18	450	40 cfu/mL

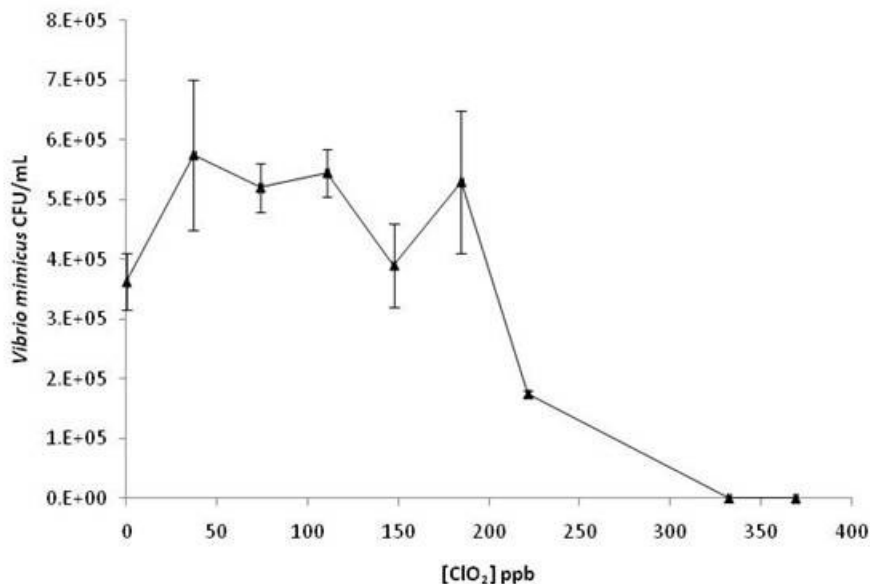


Figure 1

Yours faithfully

Dr Nicky Buller
SENIOR MICROBIOLOGIST

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