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CERTIFICATE OF ANALYSIS

NUMBER 3062104

28 DAY FINAL REPORT

COMPANY: UNDISCLOSED

ATTN: STEVE

SAMPLE: UNDISCLOSED (EAGLEFORD REGION)

DATE: 03/06/2014

INTRODUCTION: PRODUCTION WATER SAMPLE FROM UNDISCLOSED WELL SITE IS BEING TESTED FOR KILL STUDY, USING BIOCIDES INCLUDING GLUTARALDEHYDE (GLUT.)50%, & ANOLITE. KILL STUDIES ARE BEING CONDUCTED ON SRB'S (SULFATE REDUCING BACTERIA) AS WELL APB'S (ACID PRODUCING BACTERIA). ANOLITE DOSING AT 0.5 GALLON/1000 GALLONS FRAC WATER. GLUTARALDEHYDE 50% USED AT 0.3 GALLON/1000 GALLONS FRAC WATER.

RESULTS:

Sulfate-reducing Bacteria (SRB) and Acid-producing Bacteria (APB) Time Kill Study- 7 Day Result

Control Production Water Only (2% Added Bacteria)	SRB's (Colonies/mL)	mL) APB's (Colonies/mL)	
5		5	
10		10	

Biocide	Contact Time (Hours)	SRB's (Colonies/mL)	APB's (Colonies/mL)
Cleantech 5245	2	102	102
Glutaraldehyde	2	10 2	10
Anolite	24	10 2	10 2
Glutaraldehyde	24	10 2	10 2

Test Procedures:

Sulfate-reducing Bacteria and Acid-producing Bacteria Time Kill Study

100 ml of Produced Water is measured out, The desired amount of Bacteria (2%) to be tested is introduced into Produced Water. The Produced Water is then treated with desired amount of ANOLITE and shaken. After the desired time interval has elapsed, Modified Postgate "B" Sulfate –reducer Serial Dilution vials and Phenol Red Acid-producer Serial Dilution vials are then inoculated from the treated samples. The vials are then placed in an incubator for the desired time interval. This identical procedure is duplicated using Glutaraldehyde for direct head on comparison.

Respectfully submitted,

Envirocleanse LLC

Phil Bellan, MD