



Caribbean Industrial Research Institute
Mailing Address: Tunapuna Post Office, Trinidad and Tobago
Telephone: (868) 299-0210 Telefax: (868) 662-7177
www.cariri.com E-mail: mail@cariri.com

SERVICE PROJECT REPORT

Page 1 of 3 pages

Attention: Mr. Griffin Pedigo

CLIENT : OSEI Corporation

ADDRESS : P.O.Box 515429,
Dallas, TX 75251, USA

CLIENT ORDER NO. /REF : ---

PROJECT NO. : EC03870006/20

REPORT NO. : 01

DATE RECEIVED : December 02, 2019

DATE OF REPORT : March 04, 2020

DESCRIPTION OF SAMPLE(S) : One (1) Oil Field Chemical Sample

CARIRI SAMPLE NO.

E0001/20

CLIENT SAMPLE ID.

Oil Spill Eater II Concentrate

-
1. This report relates solely to the specific sample(s) of the product analysed or calibrated by CARIRI as the basis for preparing the report. It shall not be used for purposes of certification, advertising or marketing of products produced by the same manufacturer or the Client without the prior written consent of the Chief Executive Officer of CARIRI.
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INTRODUCTION

The sample was submitted by the Client to CARIRI'S Organic Chemistry & Petroleum Laboratory located at UWI Campus, St. Augustine for determination of the following MSDS parameters:

- pH
- Appearance
- Water Solubility
- Toxicity
- Biodegradability

Toxicity and Biodegradability Analyses were conducted by other CARIRI Laboratories.

METHODOLOGY

pH	-	Direct Meter Reading
Appearance	-	Visual
Water Solubility	-	Visual
Toxicity	-	CAR.CHEM.TOX.2.1 ^{1, 2}
Biodegradability	-	OECD 301D Closed Bottle Test ³

RESULTS:

Date Analysed: 2019.12.10 to 2020.01.20

Analysis	Specifications	Sample # E0001/20
pH (not IAS accredited)	---	6.36 @ 22.3°C
Appearance (not IAS accredited)	Amber to brown liquid	Amber to brown clear liquid
Solubility in Water (not IAS accredited)	100%	100%
^a Toxicity, LC ₅₀ value (mg/L) (not IAS accredited)	---	1628.78
^b Biodegradability, %	≥70*	100*

*% Biodegradability is calculated from the ratio of Biochemical Oxygen Demand to Chemical Oxygen Demand

^a See Appendix A Attached

^b See Appendix B Attached

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REFERENCES:

- ¹ U.S. EPA.2002.Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, 5th Ed. U.S. Environmental Protection Agency, Office of Research and Development Environmental Monitoring Systems Laboratory, Cincinnati, Ohio. EPA/821/R-02/012
- ² U.S. EPA.1991. Trimmed Spearman-Kärber (TSK) program (Version 1.5). Ecological Monitoring Research Division, Environmental Monitoring Systems Laboratory, Cincinnati, Ohio, 45268
- ³ Organization for Economic Cooperation and Development (OECD). 1992. Guidelines for testing of chemicals- Biodegradability Test Guidelines: 301 D Closed Bottle Test



Kern Mahabir

Technologist & Deputy Laboratory Manager
Petroleum and Sustainable Energy Services



Eka Rudder-Fairman, MPhil.

Programme Leader
Petroleum and Sustainable Energy Services

File: [OSEI Corporation 20_0006]

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APPENDIX A



Caribbean Industrial Research Institute
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SERVICE PROJECT REPORT

Page 1 of 3 pages

Attention: Mrs Eka Rudder-Fairman

CLIENT : Petroleum and Sustainable Energy Services

CLIENT ADDRESS : UWI Campus, St. Augustine

CLIENT ORDER NO./REF. : EC03870006/20

PROJECT NO. : IC03890061/20

REPORT NO. : RN 1

DATE RECEIVED : December 11, 2019

DATE OF REPORT : March 04, 2020

DESCRIPTION OF SAMPLE : Chemical

CARIRI SAMPLE NO.

A0153/20

CLIENT SAMPLE ID

E0001/20: Oil spill eater 11 Concentrate

-
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INTRODUCTION

One (1) chemical sample was submitted by the client for assessment of Acute Toxicity to the Mysid shrimp.

METHODOLOGY

The 96-hour Acute (static) Toxicity test was conducted using *Metamysidopsis Insularis* between 1 to 5 days old at test initiation. Range-finder tests were conducted to determine the maximum and minimum sample concentrations for analysis. The definitive test was conducted with a minimum of five (5) sample dilutions plus a negative control at 25 ± 3 °C. Test solutions were prepared by mixing the product with dilution water (artificial saltwater, 20 ± 2 ppt). The health and sensitivity of the organism was verified using a Reference Toxicant (Potassium Chloride). The test was considered acceptable with a $\geq 90\%$ survival of the test species in the control.

The procedure for the Toxicity test followed CAR.CHEM.TOX.2.1, which is based on "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms" (U.S. EPA, 2002)¹. Toxicity is determined by calculation of an LC₅₀ value with a 95% Confidence Interval using Trimmed Spearman-Kärber² analysis. LC₅₀ refers to the concentration of a test sample which results in the mortality of 50% of the test population.

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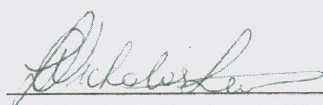
RESULTS

CARIRI Sample No.	Client Sample Description	LC ₅₀ value, (mg/L)
A0153/20	E0001/20 – Oil Spill Eater 11 Concentrate	1628.78

Dates Analysed: 2020-01-16 to 2020-01-20

REFERENCES

1. U.S. EPA. 2002. Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, 5th Ed. U.S. Environmental Protection Agency, Office of Research and Development Environmental Monitoring Systems Laboratory, Cincinnati, Ohio. EPA/821/R-02/012.
2. U.S.EPA. 1991. Trimmed Spearman-Kärber (TSK) program (Version 1.5). Ecological Monitoring Research Division, Environmental Monitoring Systems Laboratory, Cincinnati, Ohio, 45268.



Latisha Nicholas-Lewis (Ms.)
Chemist & Laboratory Manager (Ag.)
Chemistry Laboratory



Gaitri Jeethan (Ms.)
Chemistry & Laboratory Manager (Ag.)
Chemistry Laboratory

-
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APPENDIX B



Environmental Microbiology Internal Client Report

DOCUMENT#
EMICRO.DOC.005

EMICRO PROJECT NO. : IC03894522/20
REPORT NO. : 01
CLIENT ORDER/ REF NO. : EC03870006/20 – PSES-OCP (ex: Oil Out)
DATE OF REPORT : January 24, 2020

RESULTS

(Apply to samples as received)

Table 1: Microbial Analysis


Laboratory Sample No.	Client Sample Label	EMICRO.TM.02	SMEWW ¹ 5220-COD	*Biodegradability (%) (Spec ≥70%)
		Biochemical Oxygen Demand (mg/l)	Chemical Oxygen Demand (mg/l)	
V 0109/20	E 0001/20 – Oil Spill Eater 11 Concentrate	21,000	18,575	100%
Dates of Analysis		2019.12.20 to 2020.01.17	2020.01.15	

*% Biodegradability is calculated from the ratio of Biochemical Oxygen Demand to Chemical Oxygen Demand

REFERENCE

¹ Franson. M. A. H., Ed. (2005) *Standard Methods for the Examination of Water and Wastewater*, 21st ed. American Public Health Association/ American Water Works Association/ Water Environment Federation: USA


Kavir Dhanpat
Deputy Laboratory Manager
Environmental Microbiology Laboratory


Tricia Singh
Laboratory Manager
Environmental Microbiology Laboratory

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Contract No: EC03870006/20
Version No: _____
Department: PSES
Quotation Ref. No.: PTL - Q-061-19
Client Ref. No.: _____

Attention: Mr. Griffin Pedigo

Client: OSEI CORPORATION
Address: PO BOX 515429
DALLAS, TX 75251
USA

Phone: 214-563-4129
Fax: _____
Email: griffinpedigo@msn.com

Start Date: <u>2019.12.02</u>	Estimated Completion Date: <u>2020.03.02</u>
Project Description and Work Required: ANALYSIS OF ONE (01) OIL FIELD CHEMICAL SAMPLE LABELLED OIL SPILL EATER 11 FOR MSDS VERIFICATION : APPEARANCE (VISUAL); pH (DIRECT METER READING); WATER SOLUBILITY; BIODEGRADABILITY & TOXICITY SAMPLE NUMBER: E0001/20	

Fee: USC \$875.00 VAT: _____ Total Fee: \$875.00 Report Dispatch Method: _____

Terms of Payment: PAID VIA WIRE TRANSFER

For and on behalf of Client

For and on behalf of CARIRI

Name [block letters]

EKA RUDDER-FAIRMAN - PROGRAMME LEADER

Signature

Date

Position

N/A

Date

Date

See Terms and Conditions on page 2

EC03870006/20

Terms and Conditions of Contract:

- 1) Any test or calibration report resulting from this contract relates solely to the specific sample(s) of the product analysed or calibrated by CARIRI as the basis for preparing the report. It shall not be used for purposes of certification, advertising or marketing of products produced by the same manufacturer or the Client without the prior written consent of the Chief Executive Officer of CARIRI.
- 2) The report resulting from this contract may not be reproduced other than in full, except with the prior written authorisation from the Chief Executive Officer or Chairman of CARIRI.
- 3) The Client shall indemnify CARIRI against all actions proceedings claims or demands in any way connected with this contract brought or threatened against CARIRI by a third party except to the extent that CARIRI is liable to the Client under this contract.
- 4) In any event and notwithstanding anything contained in this contract, CARIRI's liability in contract, tort (including negligence or breach of statutory duty) or otherwise arising by reason of or in connection with this contract shall be limited to the sum representing the fee payable by the Client to CARIRI under this contract.
- 5) CARIRI is accredited by International Accreditation Service Inc. (IAS) to ISO 17025:2005. Details on the scope of accreditation may be obtained at the URLs: <http://www.iasonline.org/PDF/TL/TL-397.pdf> and <http://www.iasonline.org/PDF/CL/CL-134.pdf>.
- 6) The price quoted is for 1 copy of the final report. Additional copies (including fax copies) shall incur additional charges. The contract does not include any activity outside what is disclosed in its scope.