

**TECHNICAL SERVICE REPORT**

No: 12-1-TSR -1-19-022-0

Date: 23 Oct 2019

**TEHRAN LAB**

FR-QC-01/00

<b>Project Title</b>	OBM FLC QC test
<b>Reference No.</b>	12-1-TSR -1-19-022-0
<b>Request Reference No.</b>	12-1-GME-1-19-022-0
<b>Batch Number</b>	.....
<b>Company Name</b>	Palayesh Paraffin Khavaran
<b>Request submitted by (Name/Branch/Location)</b>	Palayesh Paraffin Khavaran / Tehran
<b>Request Documentation</b>	S-FLC/OW
<b>Project assigned to</b>	Maryam Rezvani
<b>Testing Date</b>	23 Oct 2019
<b>Reporting Date</b>	23 Oct 2019
<b>Classified as</b>	QC Test
<b>Report prepared by</b>	Maryam Rezvani
<b>Report reviewed by</b>	Saeed Sepehri
<b>Report approved by</b>	Ali Sepehri
<b>Key Search Terms</b>	Temperature, Hot rolling time, HTHP Fluid loss, Rheology, Mud weight, ES, NISOC
<b>Summary</b>	OBM FLC sample was received from Palayesh Paraffin Khavaran. QC test was done. Based on NISOC method was approved.

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## 1. Introduction

CONFI-TROL(OBM FLC) is a natural occurring gilsonite used for HTHP filtration control in invert oil / synthetic base systems. It is often used to seal low pressure and depleted formations. It is compatible to all invert oil / synthetic base systems and can be used both in the initial formulation and for treatment while drilling.

## 2. Objective

Evaluation Test of OBM FLC.

## 3. Sample of Materials:

One sample of OBM FLC was received on 08 Oct 2019 from Palayesh Paraffin Khavaran.

## 4. Procedures:

Mud samples were prepared based on NISOC procedure as per Palayesh Paraffin Khavaran Company request.

Chemical	Unit	Sample#1	Sample#2	Sample#3	Sample#4
Diesel	ml	187.5	181.5	187.5	181.5
Primary Emulsifier	ml	10.5	10.5	10.5	10.5
Lime	gr	12	8	12	8
OBM FLC	gr	13	10	13	10
CaCL <sub>2</sub> Saturate 82 pcf	ml	140	57	-	-
Salt Saturate 75 pcf	ml	-	-	140	57
Secondary Emulsifier	ml	3.5	3.5	3.5	3.5
OBM Viscosifier	gr	0.5	0.5	0.5	0.5
CaCo <sub>3</sub>	gr	-	238	-	245

### 5. Results:

Rolling for 4 hours at 200° F									
Properties	-	Sample#1 Index	Result	Sample#2 Index	Result	Sample#3 Index		Sample#4 Index	
MW	PCF	64	64	90	90	64	64	90	90
Oil/Water Ratio	%	60/40	60/40	80/20	80/20	60/40	60/40	80/20	80/20
A.V	Cp	20±2	22	23±2	26	20±2	21.5	23±2	25
Yield Point	Lb/100ft <sup>2</sup>	10±2	12	10±2	8	10±2	7	10±2	9
Initial Gel	Lb/100ft <sup>2</sup>	6±1	6	4±1	5	6±1	5	4±1	3
Secondary Gel	Lb/100ft <sup>2</sup>	7±1	8	5±1	6	7±1	6	5±1	4
Electric Stability	Volt	Minimum 400	435	Minimum 450	520	Minimum 250	290	Minimum 300	330
HTHP Fluid Loss (@180° F & 500 psi)	ml/30 min	Max 3	2.2	Max 3	1.5	Max 3	2.8	Max 3	2.5
Settlement	-	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil

### 6. Conclusion: Based on NISOC method mentioned sample is approved.

Lab Engineer: Maryam Rezvani

Technical Engineer: Saeed Sepehri



#### Note:

- Results relate only to the sample(s) under test in as received condition and applicable parameter(s).
- The sample will be stored up to 14 days from the date of test report unless otherwise specified.