



# OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	NORMAL

Area  
**RIG 8**  
Machine Id  
**DRILLING RIG R8-P-03-G**  
Component  
**Gearbox**  
Fluid  
**GEAR OIL (PAO) ISO 220 (--- GAL)**

## RECOMMENDATION

We recommend you service the filters on this component. Resample at the next service interval to monitor. We were unable to perform a particle count due to a high concentration of particles present in this sample.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>KL0013927</b>	KL0009758	KL0007773
Sample Date		Client Info		<b>29 Mar 2024</b>	23 Nov 2022	25 Mar 2022
Machine Age	days	Client Info		<b>45371</b>	44881	44642
Oil Age	days	Client Info		<b>0</b>	0	0
Filter Age	days	Client Info		<b>0</b>	0	0
Oil Changed		Client Info		<b>N/A</b>	N/A	N/A
Filter Changed		Client Info		<b>N/A</b>	N/A	N/A
Sample Status				<b>ABNORMAL</b>	SEVERE	ABNORMAL

## WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>200	<b>38</b>	17	22
Chromium	ppm	ASTM D5185m	>10	<b>&lt;1</b>	<1	0
Nickel	ppm	ASTM D5185m	>10	<b>&lt;1</b>	0	<1
Titanium	ppm	ASTM D5185m		<b>&lt;1</b>	0	<1
Silver	ppm	ASTM D5185m		<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>25	<b>3</b>	3	12
Lead	ppm	ASTM D5185m	>50	<b>&lt;1</b>	2	1
Copper	ppm	ASTM D5185m	>200	<b>27</b>	8	39
Tin	ppm	ASTM D5185m	>10	<b>&lt;1</b>	0	<1
Vanadium	ppm	ASTM D5185m		<b>0</b>	0	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	VLITE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

## CONTAMINATION

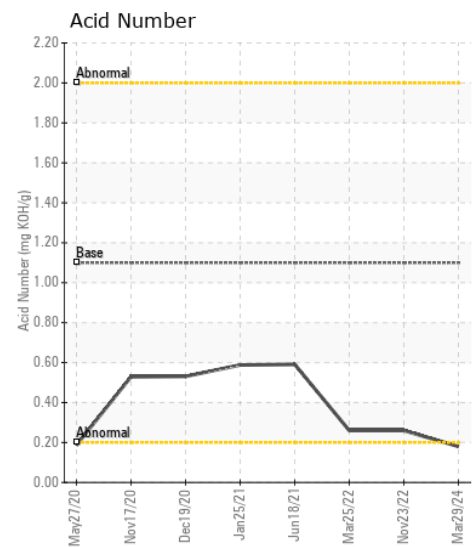
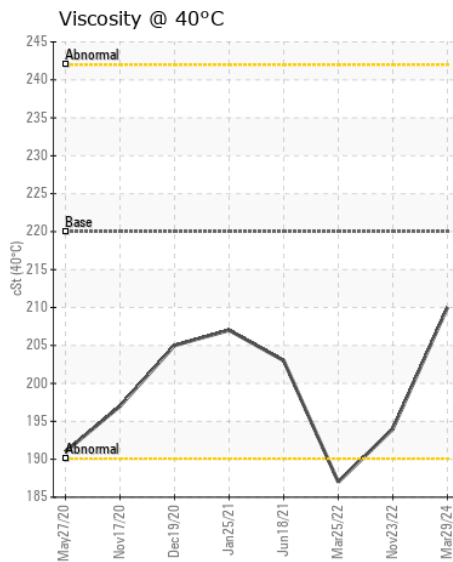
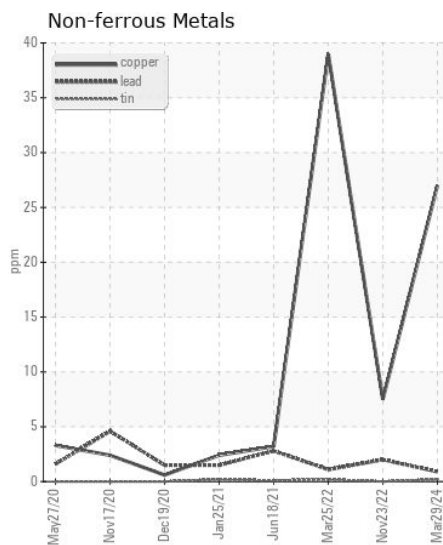
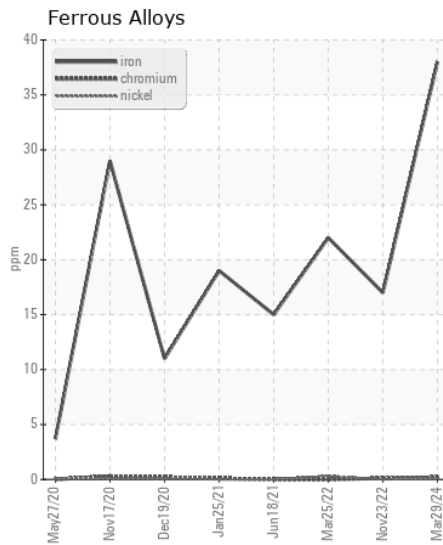
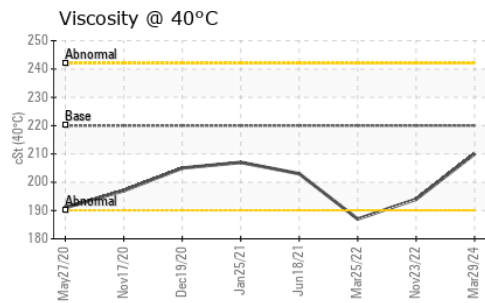
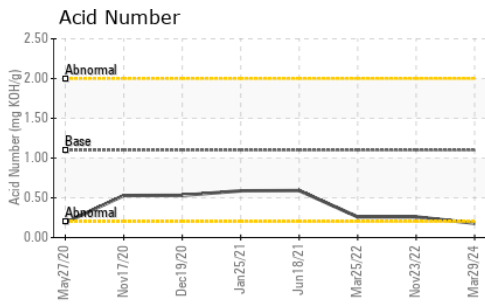
Moderate concentration of visible dirt/debris present in the oil.

Silicon	ppm	ASTM D5185m	>50	<b>18</b>	11	36
Potassium	ppm	ASTM D5185m	>20	<b>5</b>	2	2
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Particles >4µm		ASTM D7647		<b>---</b>	173865	288078
Particles >6µm		ASTM D7647	>5000	<b>---</b>	▲ 47938	▲ 73539
Particles >14µm		ASTM D7647	>640	<b>---</b>	264	181
Particles >21µm		ASTM D7647	>160	<b>---</b>	16	11
Particles >38µm		ASTM D7647	>40	<b>---</b>	1	0
Particles >71µm		ASTM D7647	>10	<b>---</b>	0	0
Oil Cleanliness		ISO 4406 (c)	>19/16	<b>---</b>	▲ 23/15	▲ 23/15
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	*Visual	NONE	▲ <b>MODER</b>	NONE	VLITE
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	<b>NEG</b>	NEG	NEG

## FLUID CONDITION

The AN level is acceptable for this fluid. The condition of the oil is acceptable for the time in service.

Sodium	ppm	ASTM D5185m		<b>54</b>	35	23
Boron	ppm	ASTM D5185m	25	<b>0</b>	3	5
Barium	ppm	ASTM D5185m	12	<b>1</b>	3	0
Molybdenum	ppm	ASTM D5185m	5	<b>1</b>	5	<1
Manganese	ppm	ASTM D5185m		<b>0</b>	<1	<1
Magnesium	ppm	ASTM D5185m	25	<b>10</b>	13	5
Calcium	ppm	ASTM D5185m	25	<b>36</b>	35	31
Phosphorus	ppm	ASTM D5185m	375	<b>136</b>	150	138
Zinc	ppm	ASTM D5185m	25	<b>37</b>	28	27
Sulfur	ppm	ASTM D5185m	4900	<b>5688</b>	5718	5138
Acid Number (AN)	mg KOH/g	ASTM D8045	1.10	<b>0.18</b>	0.26	0.26
Visc @ 40°C	cSt	ASTM D445	220	<b>210</b>	194	187



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : KL0013927  
**Lab Number** : 06145276  
**Unique Number** : 10970084  
**Test Package** : MOB 2 ( Additional Tests: PrtCount )

**Received** : 10 Apr 2024  
**Tested** : 13 Apr 2024  
**Diagnosed** : 13 Apr 2024 - Don Baldrige

**MCVAY DRILLING**  
 401 E BENDER BLVD  
 HOBBS, NM  
 US 88241

Contact: DOMINIK MENDOZA  
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To discuss this sample report, contact Customer Service at 1-800-237-1369.

\* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

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