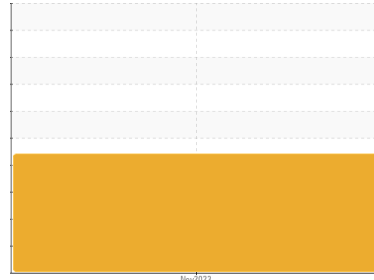




OIL ANALYSIS REPORT

Sample Rating Trend



DIRT



Area
RIG 565
 Machine Id
R565-MP-02
 Component
Gearbox
 Fluid
EP 320 (--- GAL)

DIAGNOSIS

▲ Recommendation

We recommend you service the filters on this component if applicable. Resample at the next service interval to monitor.

▲ Wear

Gear wear is indicated.

▲ Contamination

There is a high amount of particulates present in the oil. Elemental level of silicon (Si) above normal indicating ingress of dirt/seal material.

Fluid Condition

The AN level is acceptable for this fluid.

SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	KL0012967	---	---
Sample Date	Client Info	05 Nov 2023	---	---
Machine Age	Client Info	0	---	---
Oil Age	Client Info	0	---	---
Oil Changed	Client Info	N/A	---	---
Sample Status		ABNORMAL	---	---

WEAR METALS

method	limit/base	current	history1	history2
Iron ppm ASTM D5185m	>20	▲ 78	---	---
Chromium ppm ASTM D5185m	>10	0	---	---
Nickel ppm ASTM D5185m	>10	0	---	---
Titanium ppm ASTM D5185m		0	---	---
Silver ppm ASTM D5185m		0	---	---
Aluminum ppm ASTM D5185m	>10	2	---	---
Lead ppm ASTM D5185m	>10	0	---	---
Copper ppm ASTM D5185m	>75	7	---	---
Tin ppm ASTM D5185m	>10	0	---	---
Vanadium ppm ASTM D5185m		0	---	---
Cadmium ppm ASTM D5185m		<1	---	---

ADDITIVES

method	limit/base	current	history1	history2
Boron ppm ASTM D5185m		9	---	---
Barium ppm ASTM D5185m		0	---	---
Molybdenum ppm ASTM D5185m		0	---	---
Manganese ppm ASTM D5185m		0	---	---
Magnesium ppm ASTM D5185m		3	---	---
Calcium ppm ASTM D5185m		31	---	---
Phosphorus ppm ASTM D5185m		152	---	---
Zinc ppm ASTM D5185m		25	---	---
Sulfur ppm ASTM D5185m		7768	---	---

CONTAMINANTS

method	limit/base	current	history1	history2
Silicon ppm ASTM D5185m	>20	▲ 23	---	---
Sodium ppm ASTM D5185m		299	---	---
Potassium ppm ASTM D5185m	>20	7	---	---

FLUID CLEANLINESS

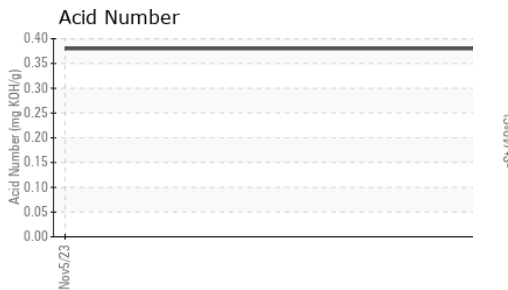
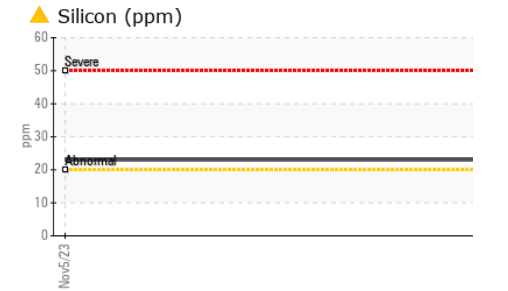
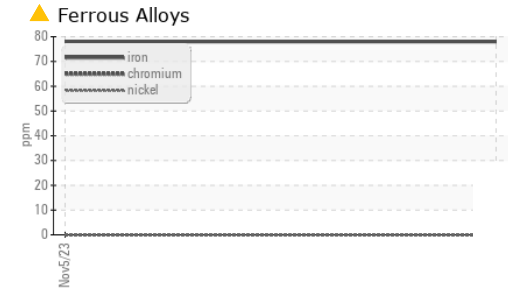
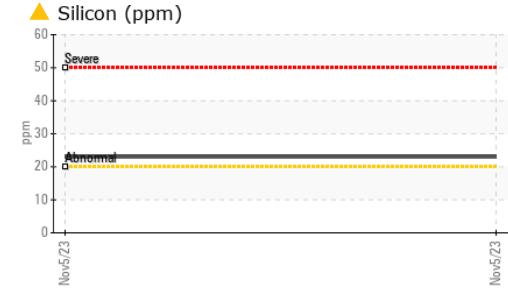
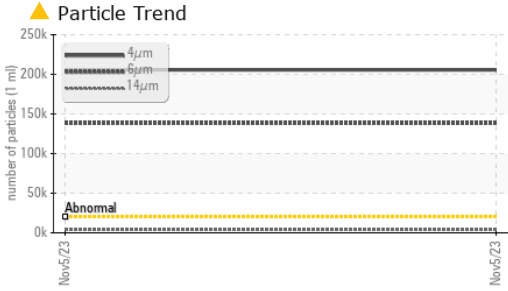
method	limit/base	current	history1	history2
Particles >4µm ASTM D7647	>20000	▲ 205458	---	---
Particles >6µm ASTM D7647	>5000	▲ 138245	---	---
Particles >14µm ASTM D7647	>640	▲ 3811	---	---
Particles >21µm ASTM D7647	>160	▲ 191	---	---
Particles >38µm ASTM D7647	>40	1	---	---
Particles >71µm ASTM D7647	>10	0	---	---
Oil Cleanliness ISO 4406 (c)	>21/19/16	▲ 25/24/19	---	---

FLUID DEGRADATION

method	limit/base	current	history1	history2
Acid Number (AN) mg KOH/g ASTM D8045		0.38	---	---



OIL ANALYSIS REPORT



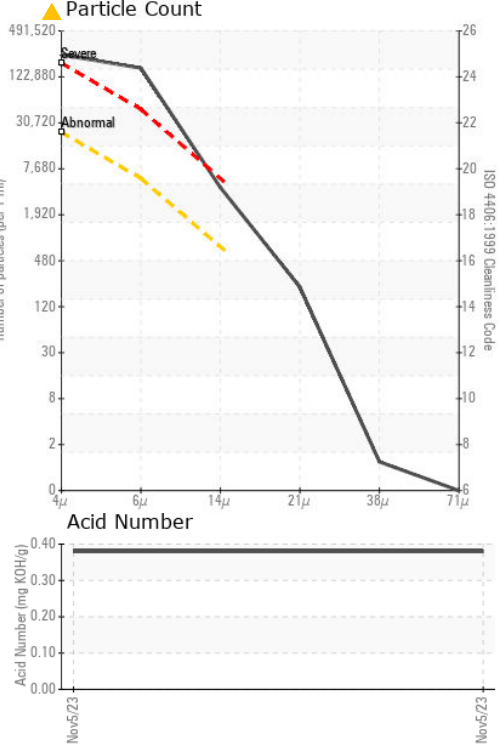
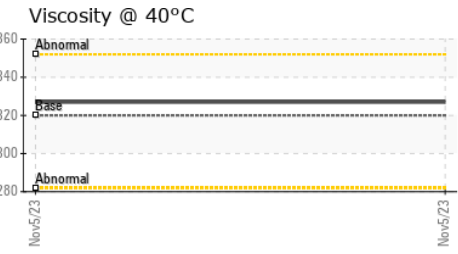
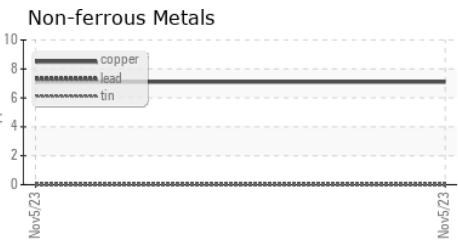
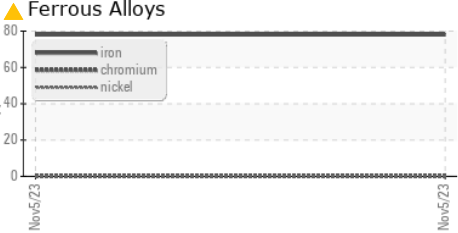
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	---
Yellow Metal	scalar	*Visual	NONE	NONE	---
Precipitate	scalar	*Visual	NONE	NONE	---
Silt	scalar	*Visual	NONE	NONE	---
Debris	scalar	*Visual	NONE	NONE	---
Sand/Dirt	scalar	*Visual	NONE	NONE	---
Appearance	scalar	*Visual	NORML	NORML	---
Odor	scalar	*Visual	NORML	NORML	---
Emulsified Water	scalar	*Visual	>0.1	NEG	---
Free Water	scalar	*Visual		NEG	---

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	320	327	---

SAMPLE IMAGES	method	limit/base	current	history1	history2
---------------	--------	------------	---------	----------	----------

Color				no image	no image
Bottom				no image	no image

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : KL0012967 **Received** : 06 Nov 2023
Lab Number : 05999029 **Diagnosed** : 07 Nov 2023
Unique Number : 10727389 **Diagnostician** : Doug Bogart
Test Package : MOB 2 (Additional Tests: PrtCount)

PATTERSON - UTI DRILLING
 9915 WEST INDUSTRIAL
 MIDLAND, TX
 US 79706
 Contact: RICKY MATA
 ricky.mata@patenergy.com
 T: (832)219-4559
 F: (432)561-9388

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)