



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	ATTENTION
FLUID CONDITION	NORMAL

Area
RIG 879
Machine Id
R879-MP-02

Component
Gearbox
Fluid
GEAR OIL ISO 320 (--- GAL)

RECOMMENDATION

No corrective action is recommended at this time. Resample at the next service interval to monitor.

WEAR

All component wear rates are normal.

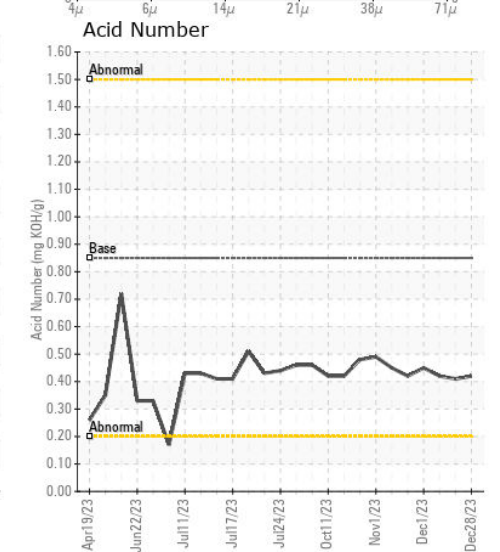
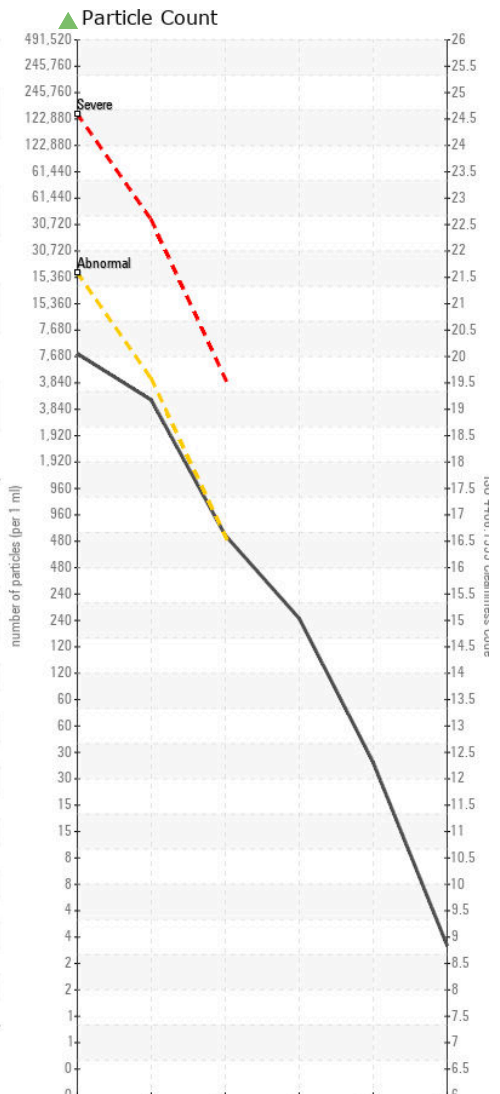
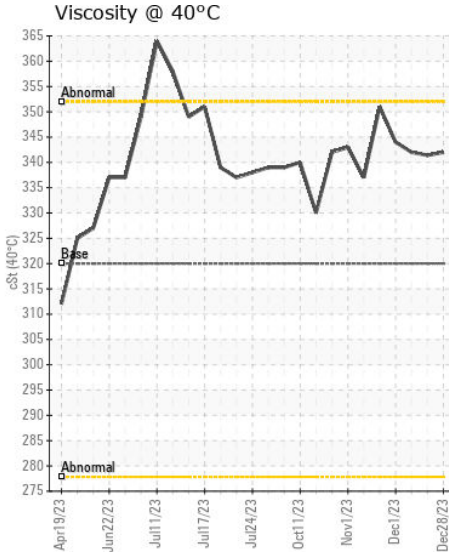
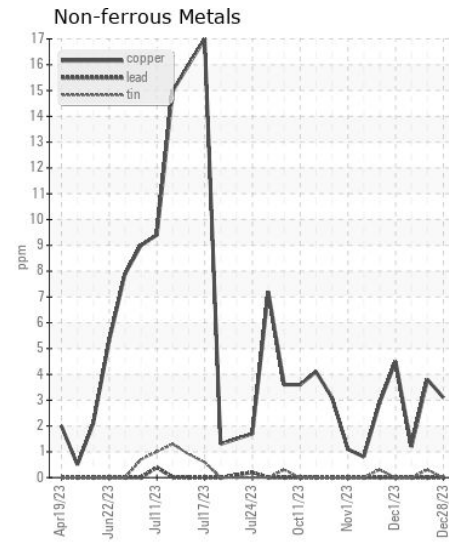
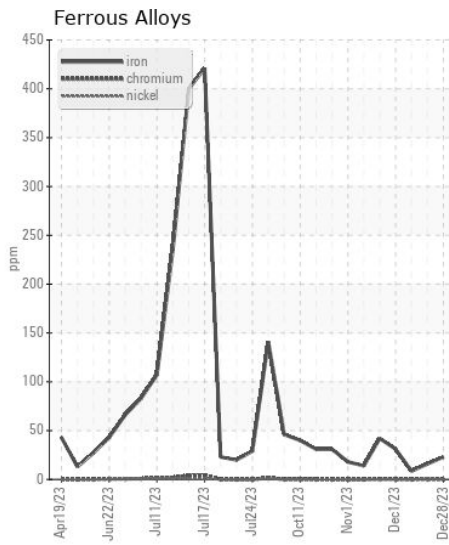
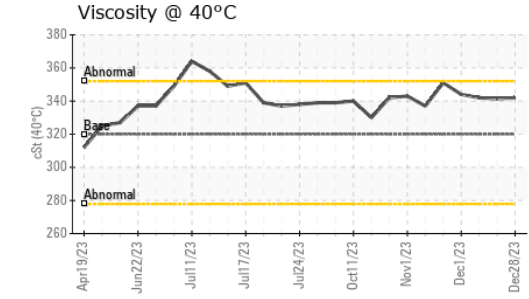
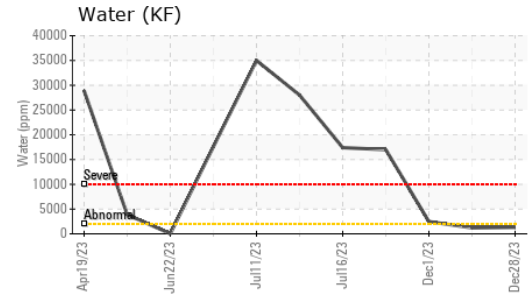
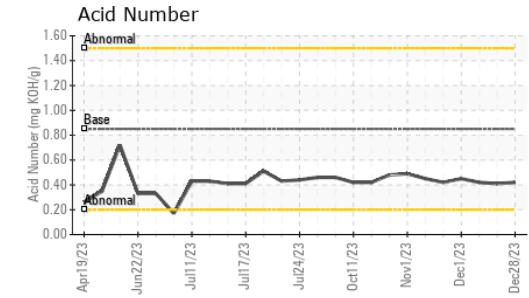
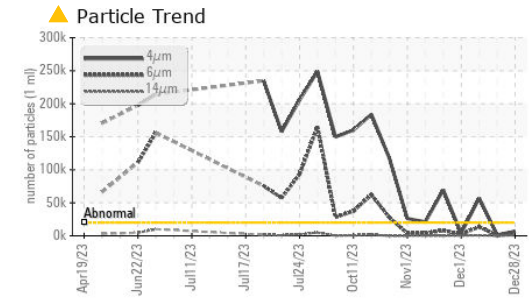
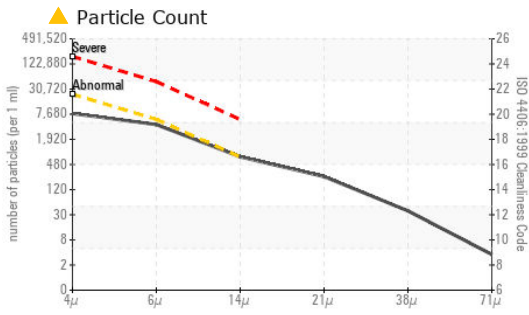
CONTAMINATION

There is a moderate amount of particulates present in the oil.

FLUID CONDITION

The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		KL0013147	KL0013945	KL0013185
Sample Date		Client Info		28 Dec 2023	14 Dec 2023	06 Dec 2023
Machine Age	hrs	Client Info		43803	0	0
Oil Age	hrs	Client Info		0	0	0
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		N/A	N/A	N/A
Filter Changed		Client Info		N/A	N/A	N/A
Sample Status				ATTENTION	NORMAL	ABNORMAL
Iron	ppm	ASTM D5185m	>200	23	16	8
Chromium	ppm	ASTM D5185m	>10	0	<1	0
Nickel	ppm	ASTM D5185m	>10	0	<1	0
Titanium	ppm	ASTM D5185m		0	<1	0
Silver	ppm	ASTM D5185m		0	0	0
Aluminum	ppm	ASTM D5185m	>25	<1	2	<1
Lead	ppm	ASTM D5185m	>50	0	0	0
Copper	ppm	ASTM D5185m	>200	3	4	1
Tin	ppm	ASTM D5185m	>10	0	<1	0
Vanadium	ppm	ASTM D5185m		0	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185m	>50	10	12	8
Potassium	ppm	ASTM D5185m	>20	<1	1	0
Water	%	ASTM D6304	>0.2	0.132	0.121	---
ppm Water	ppm	ASTM D6304	>2000	1320	1210	---
Particles >4µm		ASTM D7647	>20000	6942	1262	▲ 57104
Particles >6µm		ASTM D7647	>5000	3782	687	▲ 13537
Particles >14µm		ASTM D7647	>640	▲ 644	117	▲ 821
Particles >21µm		ASTM D7647	>160	▲ 217	39	▲ 169
Particles >38µm		ASTM D7647	>40	33	6	4
Particles >71µm		ASTM D7647	>10	3	1	0
Oil Cleanliness		ISO 4406 (c)	>21/19/16	▲ 20/19/17	17/17/14	▲ 23/21/17
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	0.2%	0.2%	NEG
Sodium	ppm	ASTM D5185m		32	6	7
Boron	ppm	ASTM D5185m	50	3	4	2
Barium	ppm	ASTM D5185m	15	3	3	0
Molybdenum	ppm	ASTM D5185m	15	<1	2	0
Manganese	ppm	ASTM D5185m		0	<1	0
Magnesium	ppm	ASTM D5185m	50	3	2	6
Calcium	ppm	ASTM D5185m	50	32	16	23
Phosphorus	ppm	ASTM D5185m	350	136	207	142
Zinc	ppm	ASTM D5185m	100	71	104	76
Sulfur	ppm	ASTM D5185m	12500	8848	12767	8804
Acid Number (AN)	mg KOH/g	ASTM D8045	0.85	0.42	0.41	0.42
Visc @ 40°C	cSt	ASTM D445	320	342	341.4	342



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : KL0013147 **Received** : 08 Jan 2024
Lab Number : 06054768 **Diagnosed** : 11 Jan 2024
Unique Number : 10820717 **Diagnostician** : Don Baldridge
Test Package : MOB 2 (Additional Tests: KF, PrtCount)

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)

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