



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	NORMAL

Area
RIG 879
Machine Id
R879-MP-03

Component
Gearbox

Fluid
BRENTAG COASTAL CHEMICAL HBC GEAR OIL 320 (--- GAL)

RECOMMENDATION

We advise that you check for the source of water entry. We recommend an early resample to monitor this condition.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		KL0011724	KL0013146	KL0011719
Sample Date		Client Info		09 Jan 2024	28 Dec 2023	14 Dec 2023
Machine Age	days	Client Info		0	43803	0
Oil Age	days	Client Info		0	0	0
Filter Age	days	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				ABNORMAL	SEVERE	ABNORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>200	127	454	25
Chromium	ppm	ASTM D5185m	>10	1	5	<1
Nickel	ppm	ASTM D5185m	>10	0	0	0
Titanium	ppm	ASTM D5185m		0	0	<1
Silver	ppm	ASTM D5185m		0	0	0
Aluminum	ppm	ASTM D5185m	>25	2	7	3
Lead	ppm	ASTM D5185m	>50	0	0	0
Copper	ppm	ASTM D5185m	>200	2	5	4
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

CONTAMINATION

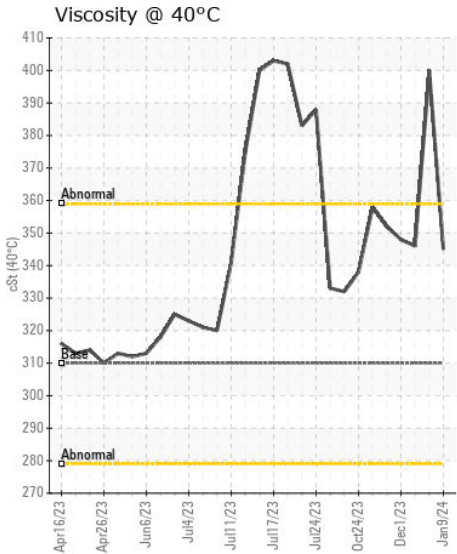
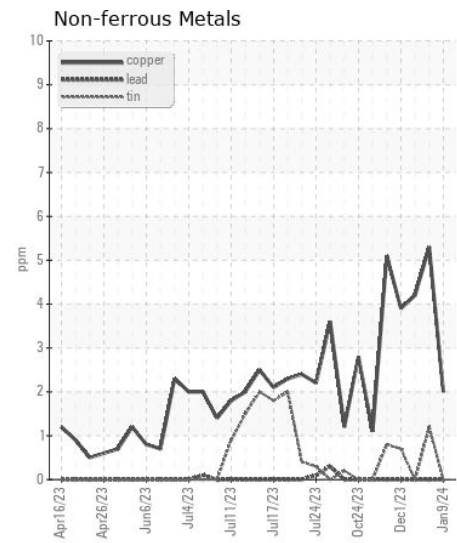
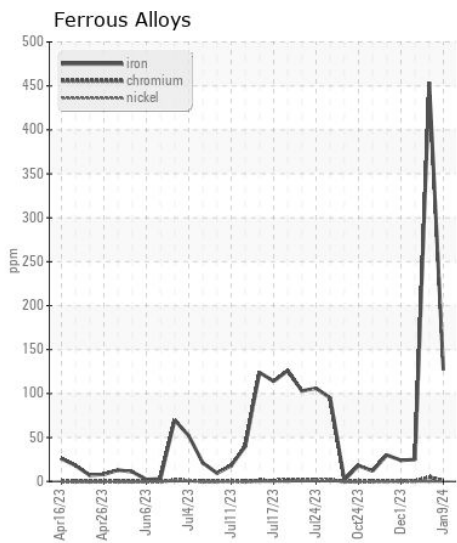
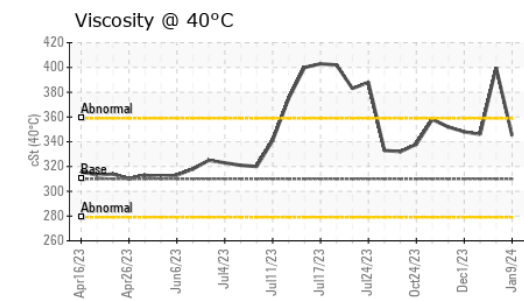
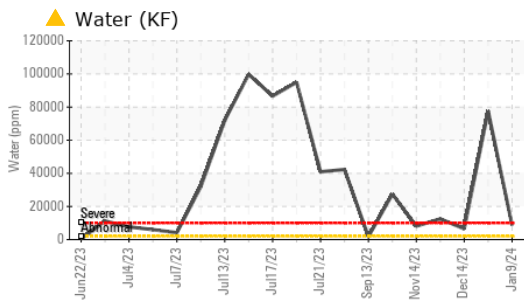
Appearance is milky. There is a moderate concentration of water present in the oil.

Silicon	ppm	ASTM D5185m	>50	12	27	15
Potassium	ppm	ASTM D5185m	>20	2	6	4
Water	%	ASTM D6304	>0.2	0.873	7.76	0.649
ppm Water	ppm	ASTM D6304	>2000	8730	77600	6490
Silt	scalar	*Visual	NONE	NONE	NONE	MODER
Debris	scalar	*Visual	NONE	NONE	MODER	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	MILKY	MILKY
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	0.2%	0.2%	0.2%

FLUID CONDITION

The condition of the oil is acceptable for the time in service.

Sodium	ppm	ASTM D5185m		44	88	128
Boron	ppm	ASTM D5185m		24	8	13
Barium	ppm	ASTM D5185m		0	11	11
Molybdenum	ppm	ASTM D5185m		0	0	<1
Manganese	ppm	ASTM D5185m		0	<1	0
Magnesium	ppm	ASTM D5185m		11	20	22
Calcium	ppm	ASTM D5185m		43	56	51
Phosphorus	ppm	ASTM D5185m		215	95	204
Zinc	ppm	ASTM D5185m		9	41	63
Sulfur	ppm	ASTM D5185m		10372	9637	12717
Visc @ 40°C	cSt	ASTM D445	310	345	400	346



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : KL0011724 **Received** : 10 Jan 2024
Lab Number : 06056981 **Diagnosed** : 11 Jan 2024
Unique Number : 10822930 **Diagnostician** : Doug Bogart
Test Package : FLEET (Additional Tests: KF)

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