

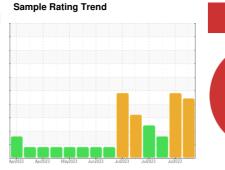
OIL ANALYSIS REPORT

RIG 879 R879-P-03

Component

Pump Drive

BRENNTAG COASTAL CHEMICAL HBC GEAR OIL 320 (





DIAGNOSIS

Recommendation

We advise that you check for the source of water entry. We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition. There is too much water present in this sample to perform a particle count.

Wear

All component wear rates are normal.

Contamination

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

▲ Fluid Condition

The oil viscosity is higher than normal. The AN level is acceptable for this fluid. The oil is no longer serviceable due to the presence of contaminants.

AR OIL 320 (GAL)	Apr2023 A	pr2023 May2023 Jul	n2023 Jul2023 Jul2023	Jul2023	
SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		KL0011971	KL0011974	KL0011985
Sample Date		Client Info		13 Jul 2023	11 Jul 2023	07 Jul 2023
Machine Age	days	Client Info		45120	45118	45114
Oil Age	days	Client Info		0	0	0
Oil Changed		Client Info		N/A	N/A	N/A
Sample Status				SEVERE	SEVERE	ABNORMAL
WEAR METALS		method	limit/base	current	history1	history2
ron	ppm	ASTM D5185m	>500	40	18	9
Chromium	ppm	ASTM D5185m	>15	0	<1	<1
Nickel	ppm	ASTM D5185m	>10	0	<1	0
Titanium	ppm	ASTM D5185m		<1	<1	0
Silver	ppm	ASTM D5185m		0	0	0
Aluminum	ppm	ASTM D5185m	>20	4	5	5
_ead	ppm	ASTM D5185m		0	0	0
Copper	ppm	ASTM D5185m	>35	2	2	1
Γin	ppm	ASTM D5185m	>4	2	<1	0
/anadium	ppm	ASTM D5185m		<1	<1	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		4	4	0
Barium	ppm	ASTM D5185m		<1	0	0
Molybdenum	ppm	ASTM D5185m		4	3	2
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m		19	17	9
Calcium	ppm	ASTM D5185m		112	86	53
Phosphorus	ppm	ASTM D5185m		46	49	51
Zinc	ppm	ASTM D5185m		23	17	19
Sulfur	ppm	ASTM D5185m		10951	11387	10735
CONTAMINANTS	S	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>75	22	26	22
Sodium	ppm	ASTM D5185m		252	183	178
Potassium	ppm	ASTM D5185m	>20	3	5	2
Nater	%	ASTM D6304	>0.2	7.20	3.20	△ 0.417
opm Water	ppm	ASTM D6304	>2000	72000	32000	▲ 4170
FLUID DEGRAD	ATION	method	limit/base	current	history1	history2
A	1/0111	4 OTH 4 DOC 15			0.40	0.455

Acid Number (AN)

mg KOH/g ASTM D8045

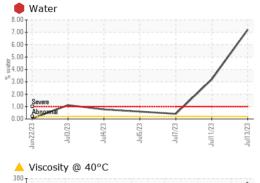
0.19

0.29

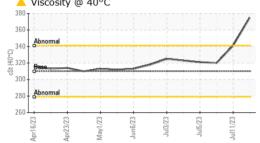
0.155



OIL ANALYSIS REPORT



VICOAL		mounou	IIIIIII Dasc	Current	Thistory i	Thistory Z
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	▲ MODER	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	▲ MILKY	▲ MILKY	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	0.2%	0.2%	0.2%
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPERT	IFS	method	limit/hase	current	history1	history2

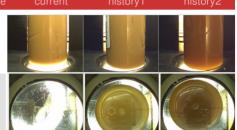


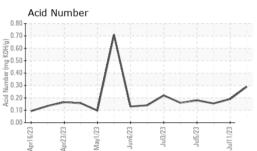
FLUID PROPERTIES		method	limit/base	current	history1	history2	
Visc @ 40°C	cSt	ASTM D445	310	4 375	341	320	

Color

Bottom

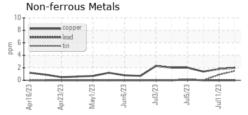
SAMPLE IMAGES

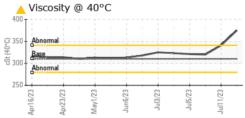


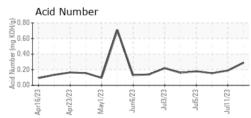


GRAPHS

Ferrous Alloys











Certificate L2367

Laboratory Sample No. Lab Number Unique Number

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : KL0011971 : 05904319

: 10565675

Received : 21 Jul 2023 Diagnosed : 26 Jul 2023

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: SERVICE MANAGER

T: F: (432)561-9388

Contact/Location: SERVICE MANAGER - PATMIDTX