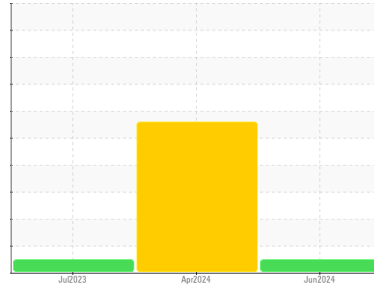




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id
YANMAR V3041
 Component
Diesel Engine
 Fluid
HENNESSEY (--- GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. The AN level is acceptable for this fluid. The condition of the oil is acceptable for the time in service.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number	Client Info			WC0904996	WC0843378	WC0800716
Sample Date	Client Info			17 Jun 2024	18 Apr 2024	13 Jul 2023
Machine Age	hrs	Client Info		28886	27000	0
Oil Age	hrs	Client Info		1200	0	0
Oil Changed	Client Info			Not Chngd	Not Chngd	N/A
Sample Status				NORMAL	SEVERE	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel	WC Method	>5		<1.0	<1.0	<1.0
Water	WC Method	>0.2		NEG	NEG	NEG
Glycol	WC Method			NEG	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	33	▲ 120	24
Chromium	ppm	ASTM D5185m	>20	1	2	<1
Nickel	ppm	ASTM D5185m	>4	<1	<1	0
Titanium	ppm	ASTM D5185m		<1	<1	0
Silver	ppm	ASTM D5185m	>3	<1	0	0
Aluminum	ppm	ASTM D5185m	>20	9	19	6
Lead	ppm	ASTM D5185m	>40	<1	<1	0
Copper	ppm	ASTM D5185m	>330	2	3	<1
Tin	ppm	ASTM D5185m	>15	<1	<1	0
Vanadium	ppm	ASTM D5185m		<1	<1	0
Cadmium	ppm	ASTM D5185m		<1	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		3	27	19
Barium	ppm	ASTM D5185m		2	<1	0
Molybdenum	ppm	ASTM D5185m		205	119	115
Manganese	ppm	ASTM D5185m		1	1	<1
Magnesium	ppm	ASTM D5185m		18	39	17
Calcium	ppm	ASTM D5185m		6249	4169	3761
Phosphorus	ppm	ASTM D5185m		1677	1275	1171
Zinc	ppm	ASTM D5185m		1759	1544	1331
Sulfur	ppm	ASTM D5185m		6425	5024	4843

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	14	14	7
Sodium	ppm	ASTM D5185m		4	6	<1
Potassium	ppm	ASTM D5185m	>20	24	21	7

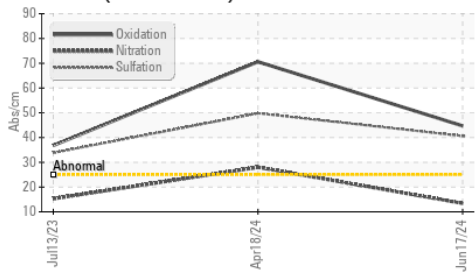
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	0.7	1.9	0.5
Nitration	Abs/cm	*ASTM D7624	>20	13.4	28.0	15.3
Sulfation	Abs/.1mm	*ASTM D7415	>30	40.6	49.8	33.8

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	44.7	70.6	36.8
Acid Number (AN)	mg KOH/g	ASTM D8045		1.27	▲ 38.86	1.80
Base Number (BN)	mg KOH/g	ASTM D2896		13.63	8.05	10.86

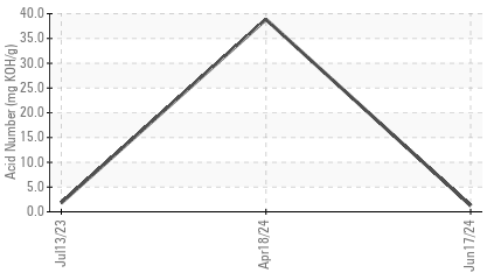


OIL ANALYSIS REPORT

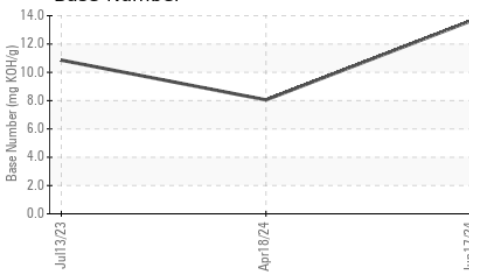
FT-IR (Direct Trend)



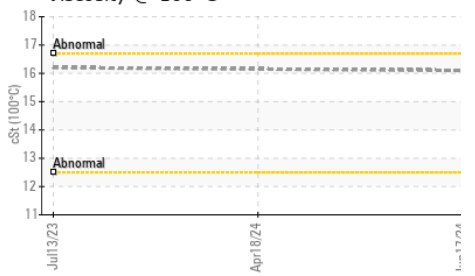
Acid Number



Base Number



Viscosity @ 100°C

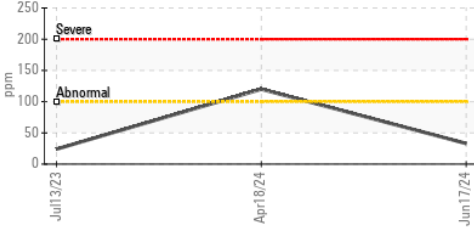


VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

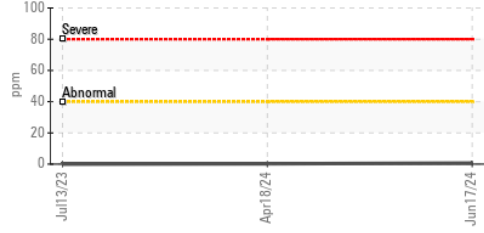
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	16.1	---	16.2

GRAPHS

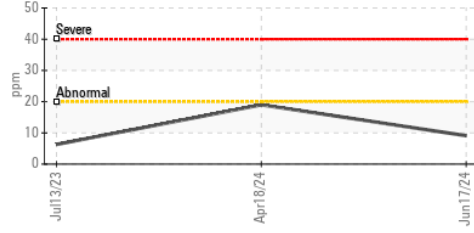
Iron (ppm)



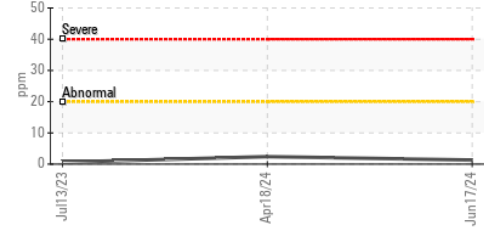
Lead (ppm)



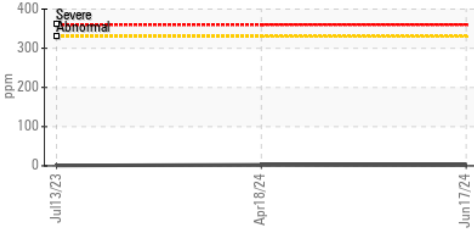
Aluminum (ppm)



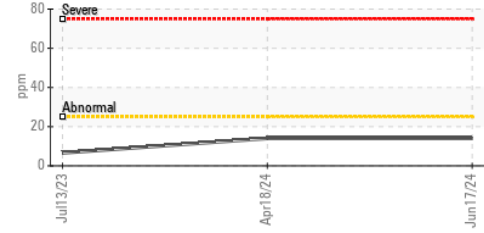
Chromium (ppm)



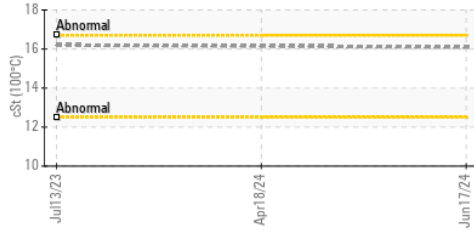
Copper (ppm)



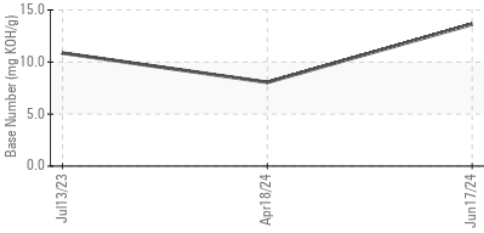
Silicon (ppm)



Viscosity @ 100°C



Base Number



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0904996 **Received** : 21 Jun 2024
Lab Number : 06217406 **Tested** : 25 Jun 2024
Unique Number : 11090270 **Diagnosed** : 25 Jun 2024 - Sean Felton
Test Package : MOB 2

PARKE CO FIREWOOD
 4121 N 100 E
 MARSHALL, IN
 US 47859

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)