

OIL ANALYSIS REPORT

KENWORTH T880 T-870 (S/N 1NKZXPEX7LJ391744) Component

Diesel Engine Fluid

DURALENE Dura-Max 15W40 (--- GAL)

Recommendation

Resample at the next service interval to monitor.

Wear

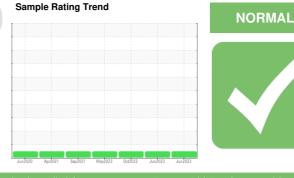
All component wear rates are normal.

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 condition of the oil is suitable for further service.

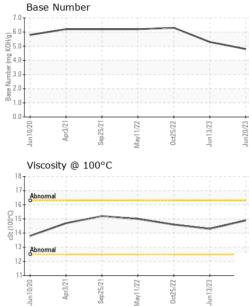




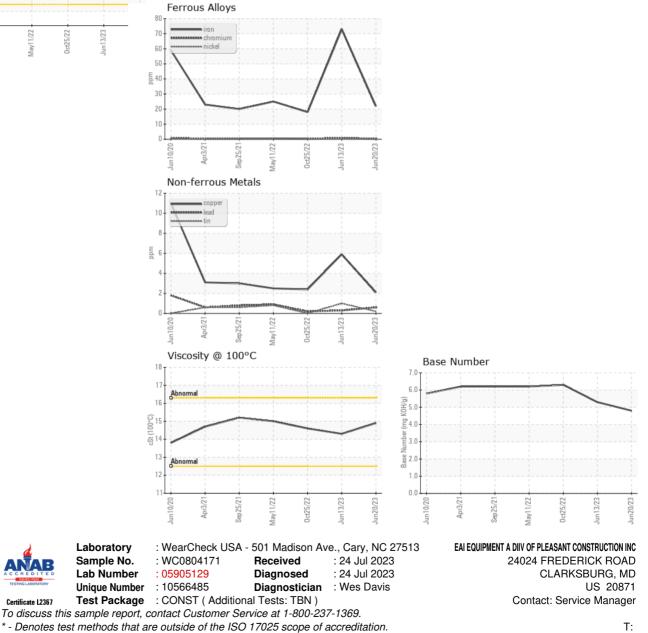
SAMPLE INFORM	1ATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0804171	WC0804116	WC0693405
Sample Date		Client Info		20 Jun 2023	13 Jun 2023	25 Oct 2022
Machine Age	mls	Client Info		190333	49733	166200
Oil Age	mls	Client Info		0	0	0
Oil Changed		Client Info		Changed	Changed	N/A
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATION	١	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	22	73	18
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>4	<1	<1	0
Titanium	ppm	ASTM D5185m		<1	<1	0
Silver	ppm	ASTM D5185m	>3	0	<1	0
Aluminum	ppm	ASTM D5185m	>20	2	12	3
Lead	ppm	ASTM D5185m	>40	<1	<1	<1
Copper	ppm	ASTM D5185m	>330	2	6	2
Tin	ppm	ASTM D5185m	>15	<1	1	0
Vanadium	ppm	ASTM D5185m		<1	<1	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 0	history1 2	history2 0
	ppm ppm		limit/base			
Boron		ASTM D5185m	limit/base	0	2	0
Boron Barium	ppm	ASTM D5185m ASTM D5185m	limit/base	0 0	2	0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 0 5	2 0 4	0 0 4
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 0 5 <1	2 0 4 2	0 0 4 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 0 5 <1 71	2 0 4 2 118	0 0 4 <1 60
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 0 5 <1 71 2567	2 0 4 2 118 2580	0 0 4 <1 60 2596
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 0 5 <1 71 2567 978	2 0 4 2 118 2580 1016	0 0 4 <1 60 2596 933
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 0 5 <1 71 2567 978 1170	2 0 4 2 118 2580 1016 1214	0 0 4 <1 60 2596 933 1115
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 0 5 <1 71 2567 978 1170 4438	2 0 4 2 118 2580 1016 1214 4533	0 0 4 <1 60 2596 933 1115 4324
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 0 5 <1 71 2567 978 1170 4438 current	2 0 4 2 118 2580 1016 1214 4533 history1	0 0 4 <1 60 2596 933 1115 4324 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	limit/base	0 0 5 <1 71 2567 978 1170 4438 current 5	2 0 4 2 118 2580 1016 1214 4533 history1 11	0 0 4 <1 60 2596 933 1115 4324 history2 5
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	limit/base	0 0 5 <1 71 2567 978 1170 4438 <u>current</u> 5 2	2 0 4 2 118 2580 1016 1214 4533 history1 11 3	0 0 4 <1 60 2596 933 1115 4324 history2 5 0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm i ppm i	ASTM D5185m ASTM D5185m	limit/base >25 >20 limit/base	0 0 5 <1 71 2567 978 1170 4438 <u>current</u> 5 2 2 2	2 0 4 2 118 2580 1016 1214 4533 history1 11 3 31	0 0 4 <1 60 2596 933 1115 4324 history2 5 0 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >25 >20 limit/base >3	0 0 5 <1 71 2567 978 1170 4438 <u>current</u> 5 2 2 2	2 0 4 2 118 2580 1016 1214 4533 history1 11 3 31 history1	0 0 4 <1 60 2596 933 1115 4324 history2 5 0 2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm i ppm i	ASTM D5185m ASTM D5185m	limit/base >25 >20 limit/base >3	0 0 5 <1 71 2567 978 1170 4438 <u>current</u> 5 2 2 2 2 <u>current</u> 0.9	2 0 4 2 118 2580 1016 1214 4533 history1 11 3 31 history1 0.8	0 0 4 <1 60 2596 933 1115 4324 history2 5 0 2 2 history2 1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >25 >20 limit/base >3 >20	0 0 5 <1 71 2567 978 1170 4438 <u>current</u> 5 2 2 2 2 <u>current</u> 0.9 10.6	2 0 4 2 118 2580 1016 1214 4533 history1 11 3 31 history1 0.8 12.5	0 0 4 <1 60 2596 933 1115 4324 history2 5 0 2 5 0 2 2 history2 1 1 10.6
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	Imit/base >25 >20 Imit/base >20 >3 >20 >30	0 0 5 <1 71 2567 978 1170 4438 <u>current</u> 5 2 2 2 2 2 <u>current</u> 0.9 10.6 26.2	2 0 4 2 118 2580 1016 1214 4533 history1 11 3 31 history1 0.8 12.5 28.8	0 0 4 <1 60 2596 933 1115 4324 history2 5 0 2 2 history2 1 1 10.6 26.5



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VISUAL		method	limit/base	current	history1	history2
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	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	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPERT	IES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445		14.9	14.3	14.6
GRAPHS						



Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

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