

## Machine Id KENWORTH RO-33

## Diesel Engine

## GIBRALTAR 15W/40 SUPER S-3 LX (10 GAL)

RECOMMENDATION	Test	UOM	Method	Limit/Abn	Current	History1	History2
Resample at the next service interval to monitor.	Sample Number		Client Info		WC0875506	WC0875561	
	Sample Date		Client Info		04 Jun 2024	28 Feb 2024	
	Machine Age	hrs	Client Info		10799	10316	
	Oil Age	hrs	Client Info		600	600	
	Filter Age	hrs	Client Info		600	0	
	Oil Changed		Client Info		Changed	Changed	
	Filter Changed		Client Info		Changed	N/A	
	Sample Status				NORMAL	NORMAL	
WEAR	Iron	ppm	ASTM D5185m	>100	17	12	
Metal levels are typical for a new component breaking in.	Chromium	ppm	ASTM D5185m	>20	<1	<1	
	Nickel	ppm	ASTM D5185m	>4	0	0	
	Titanium	ppm	ASTM D5185m		<1	<1	
	Silver	ppm	ASTM D5185m	>3	0	0	
	Aluminum	ppm	ASTM D5185m	>20	2	2	
	Lead	ppm	ASTM D5185m	>40	<1	2	
	Copper	ppm	ASTM D5185m	>330	<1	<1	
	Tin	ppm	ASTM D5185m	>15	0	<1	
	Vanadium	ppm	ASTM D5185m		<1	<1	
	White Metal	scalar	*Visual	NONE	NONE	NONE	
	Yellow Metal	scalar	*Visual	NONE	NONE	NONE	
CONTAMINATION	Silicon	ppm	ASTM D5185m	>25	4	4	
	Potassium	ppm	ASTM D5185m	>20	5	4	
There is no indication of any contamination in the oil.	Fuel		WC Method	>5	<1.0	<1.0	
	Water		WC Method	>0.2	NEG	NEG	
	Glycol		WC Method		NEG	NEG	
	Soot %	%	*ASTM D7844	>3	0.6	0.6	
	Nitration	Abs/cm	*ASTM D7624	>20	8.4	8.8	
	Sulfation	Abs/.1mm	*ASTM D7415	>30	19.9	19.4	
	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	
FLUID CONDITION	Sodium	ppm	ASTM D5185m		5	4	
	Boron	ppm	ASTM D5185m		6	7	
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.	Barium	ppm	ASTM D5185m		0	0	
	Molybdenum	ppm	ASTM D5185m	66	73	104	
	Manganese	ppm	ASTM D5185m		<1	0	
	Magnesium	ppm	ASTM D5185m	1000	945	829	
	Calcium	ppm	ASTM D5185m		1340	1156	
	Phosphorus	ppm	ASTM D5185m		1155	985	
	Zinc	ppm	ASTM D5185m		1381	1190	
	Sulfur	ppm	ASTM D5185m	-	4020	3116	
	Oxidation	Abs/.1mm	*ASTM D7414	>25	15.5	16.1	
	Base Number (BN)				8.5	7.8	
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Visc @ 100°C cSt

ASTM D445 15.5

13.4

13.4



