



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	MARGINAL
FLUID CONDITION	ABNORMAL

Machine Id
KENWORTH 4047
Component
Diesel Engine
Fluid
PETRO CANADA DURON HP 15W40 (--- LTR)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0777326	WC0702348	PC0041416
Sample Date		Client Info		23 Mar 2023	05 May 2022	29 Apr 2021
Machine Age	kms	Client Info		77344	59613	39525
Oil Age	kms	Client Info		18000	6000	10286
Filter Age	kms	Client Info		18000	6000	10286
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				ABNORMAL	ATTENTION	NORMAL

WEAR

Metal levels are typical for a new component breaking in.

Iron	ppm	ASTM D5185(m)	>100	29	13	21
Chromium	ppm	ASTM D5185(m)	>20	<1	<1	<1
Nickel	ppm	ASTM D5185(m)	>4	<1	<1	0
Titanium	ppm	ASTM D5185(m)		<1	0	0
Silver	ppm	ASTM D5185(m)	>3	0	<1	<1
Aluminum	ppm	ASTM D5185(m)	>20	6	3	3
Lead	ppm	ASTM D5185(m)	>40	<1	<1	1
Copper	ppm	ASTM D5185(m)	>330	4	2	7
Tin	ppm	ASTM D5185(m)	>15	<1	<1	<1
Vanadium	ppm	ASTM D5185(m)		0	0	0

CONTAMINATION

Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. Light fuel dilution occurring.

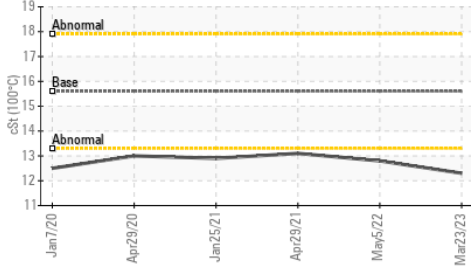
Silicon	ppm	ASTM D5185(m)	>25	6	4	4
Potassium	ppm	ASTM D5185(m)	>20	13	6	19
Fuel	%	ASTM D7593*	>5	▲ 2.8	▲ 2.5	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	0.0
Soot %	%	ASTM D7844*	>3	0.5	0.1	0.4
Nitration	Abs/cm	ASTM D7624*	>20	10.6	8.4	8.8
Sulfation	Abs/.1mm	ASTM D7415*	>30	24.7	20.5	21.0
Emulsified Water	scalar	Visual*	>0.2	NEG	NEG	NEG

FLUID CONDITION

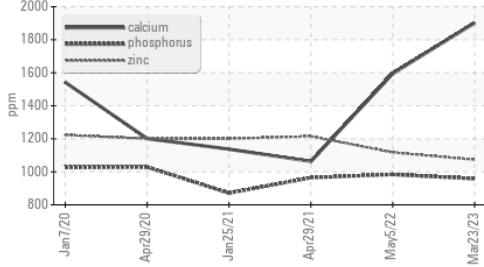
The BN result indicates that there is suitable alkalinity remaining in the oil. Fuel is present in the oil and is lowering the viscosity. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185(m)		2	1	4
Boron	ppm	ASTM D5185(m)	0	8	14	5
Barium	ppm	ASTM D5185(m)	0	0	0	<1
Molybdenum	ppm	ASTM D5185(m)	60	32	33	57
Manganese	ppm	ASTM D5185(m)	0	<1	<1	<1
Magnesium	ppm	ASTM D5185(m)	1010	● 375	● 428	907
Calcium	ppm	ASTM D5185(m)	1070	● 1902	● 1595	1063
Phosphorus	ppm	ASTM D5185(m)	1150	958	984	964
Zinc	ppm	ASTM D5185(m)	1270	1073	1117	1215
Sulfur	ppm	ASTM D5185(m)	2060	2839	2874	2649
Oxidation	Abs/.1mm	ASTM D7414*	>25	18.4	14.2	16.6
Base Number (BN)	mg KOH/g	ASTM D2896*	9.8	4.52	7.17	9.30
Visc @ 100°C	cSt	ASTM D7279(m)	15.6	▲ 12.3	12.8	13.1

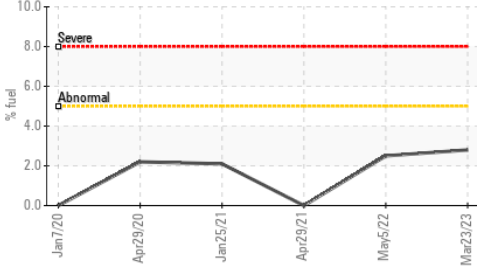
▲ Viscosity @ 100°C



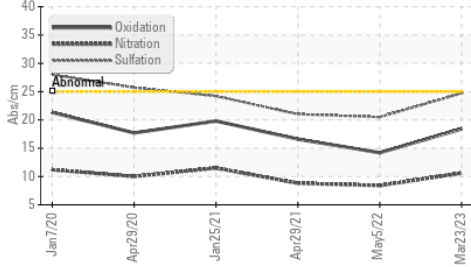
● Additives



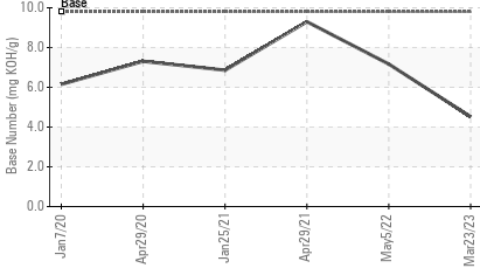
▲ Fuel Dilution



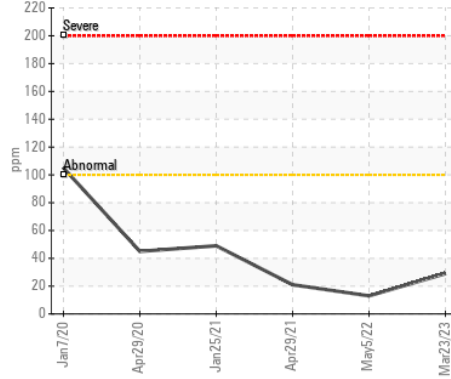
FT-IR (Direct Trend)



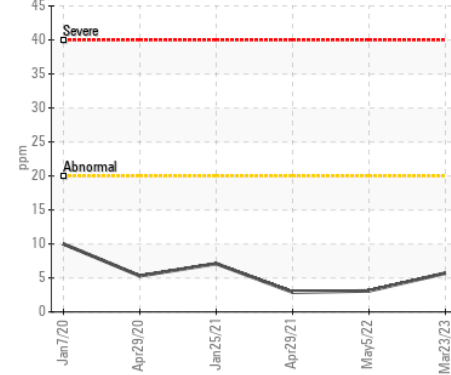
Base Number



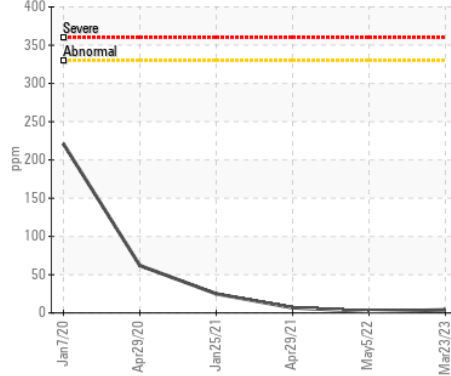
Iron (ppm)



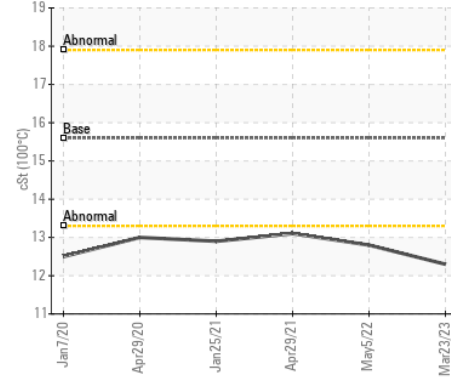
Aluminum (ppm)



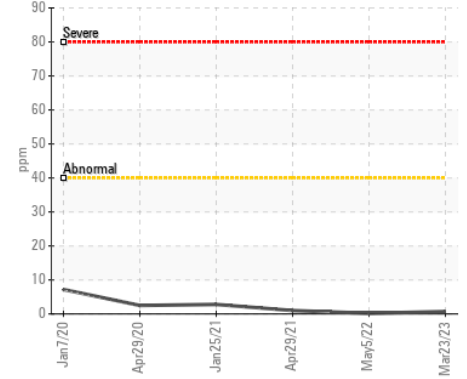
Copper (ppm)



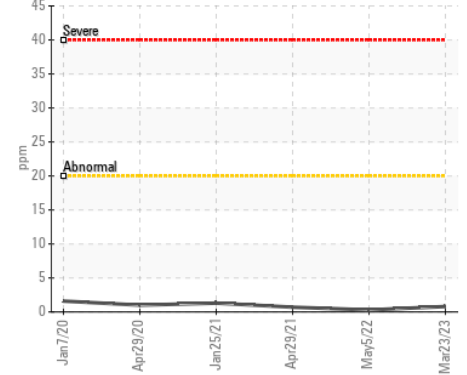
▲ Viscosity @ 100°C



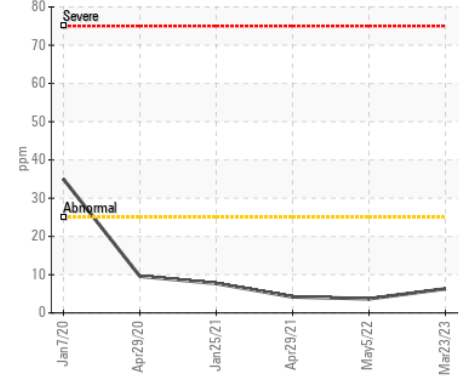
Lead (ppm)



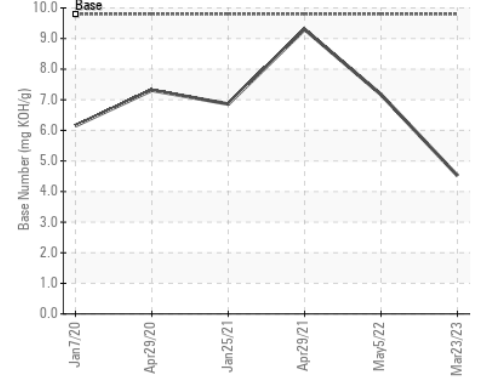
Chromium (ppm)



Silicon (ppm)



Base Number



ISO 17025:2017
Accredited
Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0777326 **Received** : 24 Mar 2023
Lab Number : 02547312 **Tested** : 27 Mar 2023
Unique Number : 5552322 **Diagnosed** : 27 Mar 2023 - Wes Davis
Test Package : MOB 2 (Additional Tests: FuelDilution, PercentFuel)

To discuss this sample report, contact Customer Service at 1-800-268-2131.
 Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
 Validity of results and interpretation are based on the sample and information as supplied.

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