

Machine Id
WESTERN STAR 2015
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 10W30 (--- 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

Viscosity of sample indicates oil is within SAE 15W40 range, advise investigate. The condition of the oil is acceptable for the time in service.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number	Client Info			PC0066009	---	---
Sample Date	Client Info			10 Jul 2023	---	---
Machine Age	kms	Client Info		447265	---	---
Oil Age	kms	Client Info		25000	---	---
Oil Changed	Client Info			N/A	---	---
Sample Status				NORMAL	---	---

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

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>100	17	---	---
Chromium	ppm	ASTM D5185(m)	>20	<1	---	---
Nickel	ppm	ASTM D5185(m)	>4	<1	---	---
Titanium	ppm	ASTM D5185(m)		<1	---	---
Silver	ppm	ASTM D5185(m)	>3	<1	---	---
Aluminum	ppm	ASTM D5185(m)	>20	6	---	---
Lead	ppm	ASTM D5185(m)	>40	<1	---	---
Copper	ppm	ASTM D5185(m)	>330	4	---	---
Tin	ppm	ASTM D5185(m)	>15	<1	---	---
Antimony	ppm	ASTM D5185(m)		0	---	---
Vanadium	ppm	ASTM D5185(m)		0	---	---
Beryllium	ppm	ASTM D5185(m)		0	---	---
Cadmium	ppm	ASTM D5185(m)		0	---	---

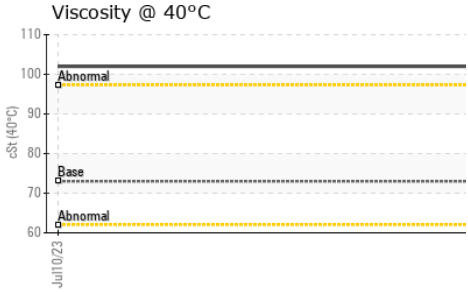
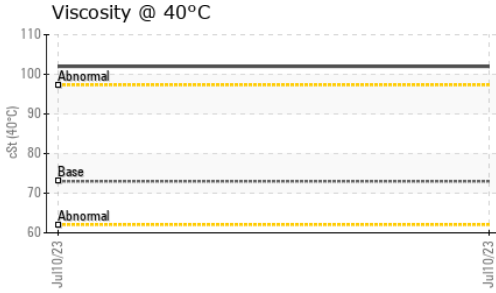
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	250	3	---	---
Barium	ppm	ASTM D5185(m)	10	0	---	---
Molybdenum	ppm	ASTM D5185(m)	100	59	---	---
Manganese	ppm	ASTM D5185(m)		<1	---	---
Magnesium	ppm	ASTM D5185(m)	450	988	---	---
Calcium	ppm	ASTM D5185(m)	3000	1145	---	---
Phosphorus	ppm	ASTM D5185(m)	1150	1074	---	---
Zinc	ppm	ASTM D5185(m)	1350	1252	---	---
Sulfur	ppm	ASTM D5185(m)	4250	2357	---	---
Lithium	ppm	ASTM D5185(m)		<1	---	---

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>25	4	---	---
Sodium	ppm	ASTM D5185(m)		6	---	---
Potassium	ppm	ASTM D5185(m)	>20	2	---	---

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*	>3	1.1	---	---
Nitration	Abs/cm	ASTM D7624*	>20	10.2	---	---
Sulfation	Abs/.1mm	ASTM D7415*	>30	22.7	---	---

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*	>25	17.4	---	---

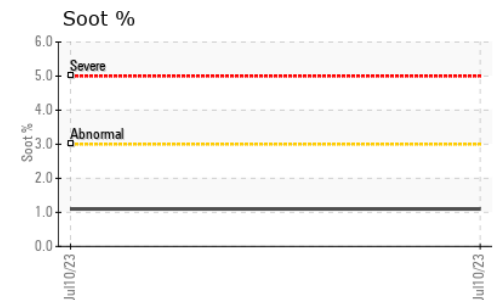
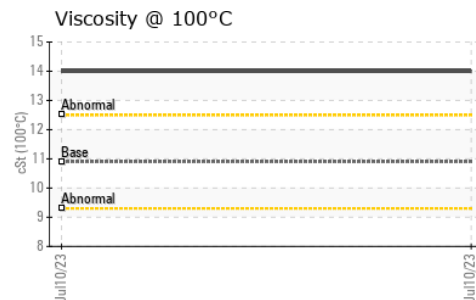
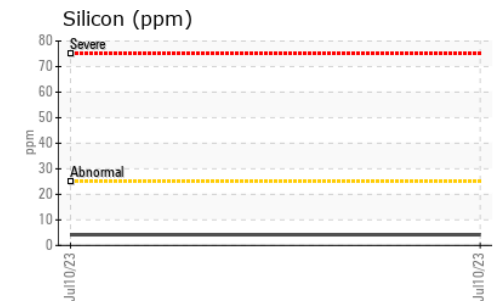
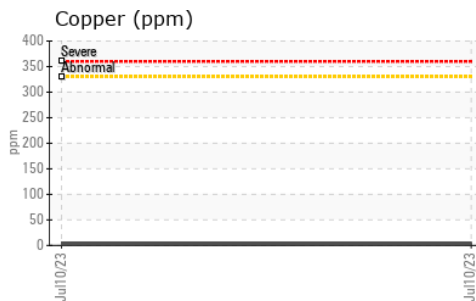
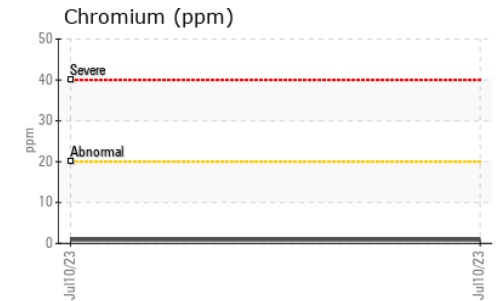
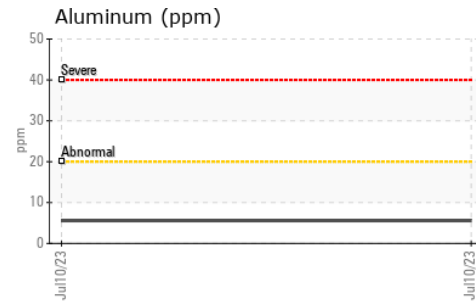
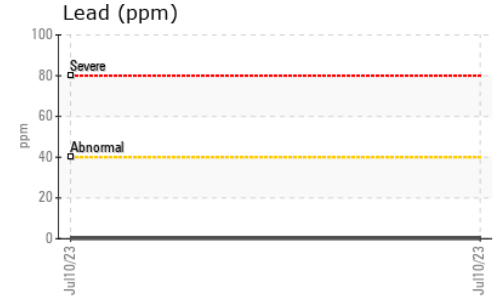
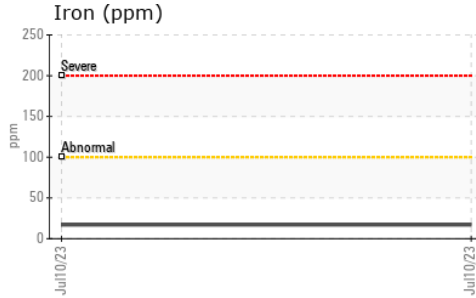
OIL ANALYSIS REPORT



VISUAL	method	limit/base	current	history1	history2
Emulsified Water	scalar	Visual*	>0.2	NEG	---
Free Water	scalar	Visual*		NEG	---

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	73	102	---
Visc @ 100°C	cSt	ASTM D7279(m)	10.9	14.0	---
Viscosity Index (VI)	Scale	ASTM D2270*	138	139	---

GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PC0066009 **Received** : 13 Jul 2023
Lab Number : 02569649 **Diagnosed** : 14 Jul 2023
Unique Number : 5606695 **Diagnostician** : Kevin Marson
Test Package : MOB 1 (Additional Tests: KV40, VI)

B FREGEAU & FILS INC
 402 RUE ST DENIS
 ST ALEXANDRE, QC
 CA J0J 1S0
 Contact: Steve M.
 stevem@bfregeau.com

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.