



WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
WESTERN STAR 191-1460
 Component
Diesel Engine
 Fluid
DIESEL ENGINE OIL SAE 15W40 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		PC0088730	PC0072562	---
Sample Date		Client Info		22 May 2024	30 Jun 2023	---
Machine Age	kms	Client Info		105010	83000	---
Oil Age	kms	Client Info		0	0	---
Filter Age	kms	Client Info		0	0	---
Oil Changed		Client Info		N/A	N/A	---
Filter Changed		Client Info		N/A	N/A	---
Sample Status				NORMAL	NORMAL	---

WEAR

Metal levels are typical for a new component breaking in.

Iron	ppm	ASTM D5185(m)	>100	89	52	---
Chromium	ppm	ASTM D5185(m)	>20	7	6	---
Nickel	ppm	ASTM D5185(m)	>4	<1	<1	---
Titanium	ppm	ASTM D5185(m)		<1	<1	---
Silver	ppm	ASTM D5185(m)	>3	0	<1	---
Aluminum	ppm	ASTM D5185(m)	>20	46	57	---
Lead	ppm	ASTM D5185(m)	>40	0	<1	---
Copper	ppm	ASTM D5185(m)	>330	17	13	---
Tin	ppm	ASTM D5185(m)	>15	<1	<1	---
Vanadium	ppm	ASTM D5185(m)		0	0	---
White Metal	scalar	Visual*	NONE	NONE	---	---
Yellow Metal	scalar	Visual*	NONE	NONE	---	---

CONTAMINATION

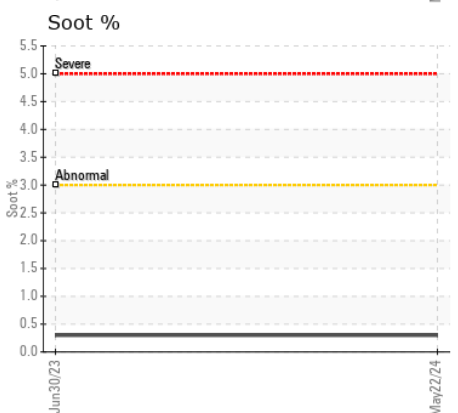
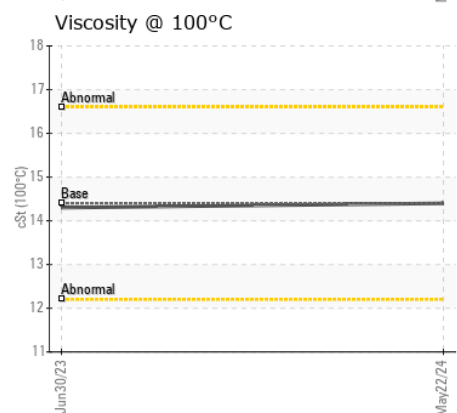
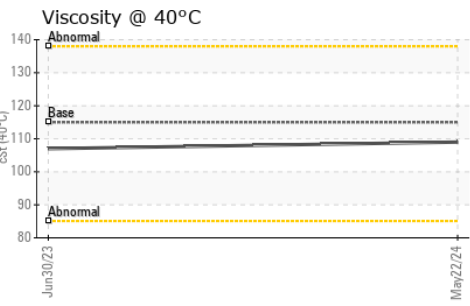
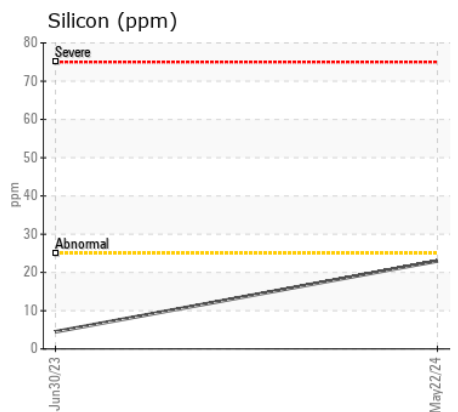
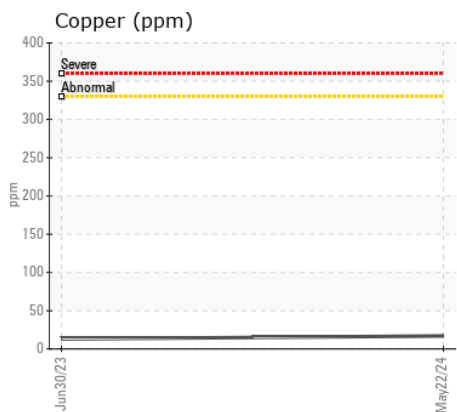
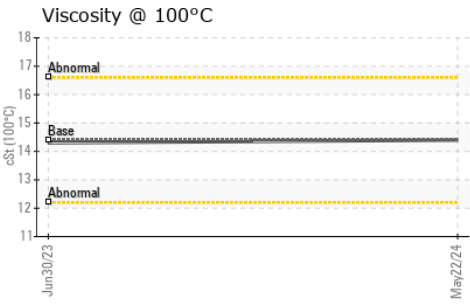
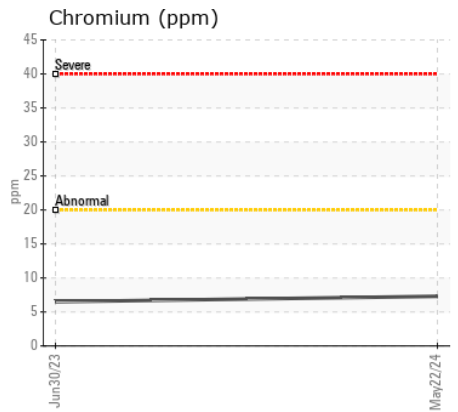
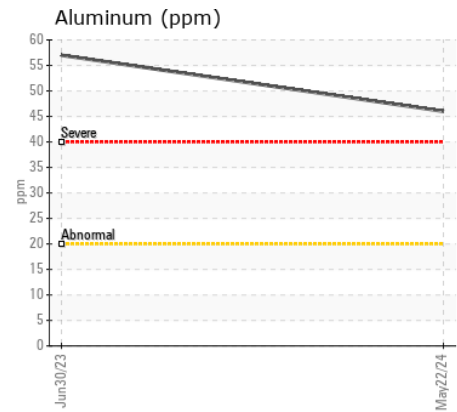
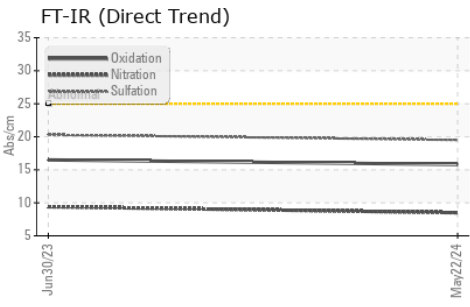
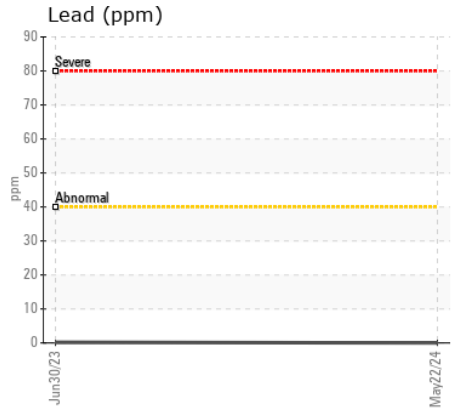
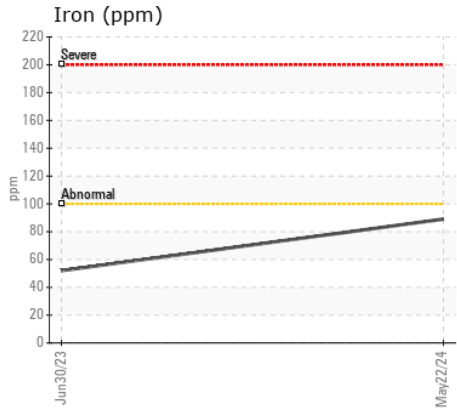
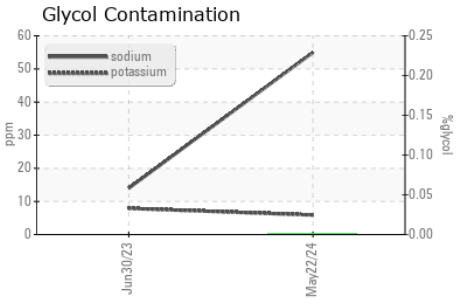
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185(m)	>25	23	4	---
Potassium	ppm	ASTM D5185(m)	>20	6	8	---
Fuel		WC Method	>5	<1.0	<1.0	---
Water		WC Method	>0.2	NEG	NEG	---
Glycol	%	ASTM D7922*		0.0	NEG	---
Soot %	%	ASTM D7844*	>3	0.3	0.3	---
Nitration	Abs/cm	ASTM D7624*	>20	8.5	9.4	---
Sulfation	Abs/.1mm	ASTM D7415*	>30	19.5	20.3	---
Silt	scalar	Visual*	NONE	LIGHT	---	---
Debris	scalar	Visual*	NONE	NONE	---	---
Sand/Dirt	scalar	Visual*	NONE	NONE	---	---
Appearance	scalar	Visual*	NORML	NORML	---	---
Odor	scalar	Visual*	NORML	NORML	NORML	---
Emulsified Water	scalar	Visual*	>0.2	NEG	NEG	---

FLUID CONDITION

The condition of the oil is acceptable for the time in service.

Sodium	ppm	ASTM D5185(m)	>158	55	14	---
Boron	ppm	ASTM D5185(m)	250	3	5	---
Barium	ppm	ASTM D5185(m)	10	0	0	---
Molybdenum	ppm	ASTM D5185(m)	100	61	62	---
Manganese	ppm	ASTM D5185(m)		1	<1	---
Magnesium	ppm	ASTM D5185(m)	450	991	1003	---
Calcium	ppm	ASTM D5185(m)	3000	1135	1089	---
Phosphorus	ppm	ASTM D5185(m)	1150	987	1033	---
Zinc	ppm	ASTM D5185(m)	1350	1182	1219	---
Sulfur	ppm	ASTM D5185(m)	4250	2245	2259	---
Oxidation	Abs/.1mm	ASTM D7414*	>25	15.8	16.5	---
Visc @ 40°C	cSt	ASTM D7279(m)	115	109	107	---
Visc @ 100°C	cSt	ASTM D7279(m)	14.4	14.4	14.3	---
Viscosity Index (VI)	Scale	ASTM D2270*	126	134	136	---



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PC0088730 **Received** : 29 May 2024
Lab Number : 02638352 **Tested** : 31 May 2024
Unique Number : 5787514 **Diagnosed** : 31 May 2024 - Kevin Marson
Test Package : MOB 1 (Additional Tests: Glycol, KV40, VI, Visual)

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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