



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	ABNORMAL

Area
GM Seattle Off Road Shop
Machine Id
[GM Seattle Off Road Shop] 16-325
Component
Diesel Engine
Fluid
SHELL 15W40 (--- GAL)

RECOMMENDATION

We advise that you check the fuel injection system. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		PE0003026	PE12291152	PE12292052
Sample Date		Client Info		01 Apr 2024	20 Sep 2021	06 Mar 2019
Machine Age	hrs	Client Info		4838	3717	3033
Oil Age	hrs	Client Info		1121	684	3000
Filter Age	hrs	Client Info		0	---	---
Oil Changed		Client Info		Changed	Changed	Not Changed
Filter Changed		Client Info		Changed	---	---
Sample Status				ABNORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	49	51	29
Chromium	ppm	ASTM D5185m	>20	2	0	0
Nickel	ppm	ASTM D5185m	>4	1	0	0
Titanium	ppm	ASTM D5185m		<1	0	0
Silver	ppm	ASTM D5185m	>3	<1	<1	1
Aluminum	ppm	ASTM D5185m	>20	6	8	8
Lead	ppm	ASTM D5185m	>40	<1	0	0
Copper	ppm	ASTM D5185m	>330	2	0	0
Tin	ppm	ASTM D5185m	>15	<1	0	0
Vanadium	ppm	ASTM D5185m		<1	0	0
White Metal	scalar	*Visual	NONE	NONE	---	---
Yellow Metal	scalar	*Visual	NONE	NONE	---	---

CONTAMINATION

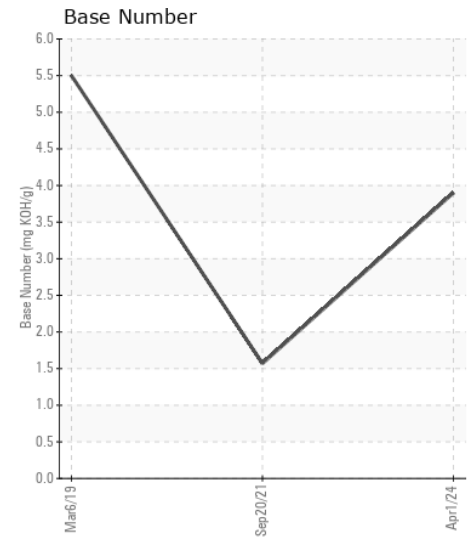
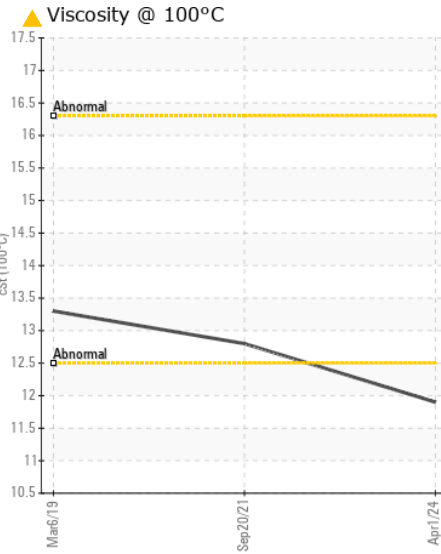
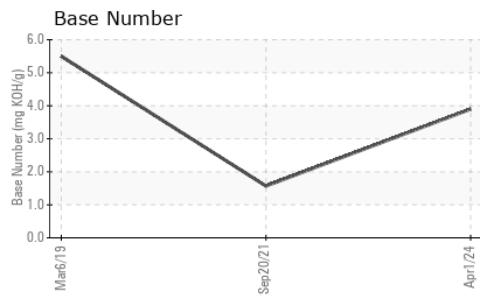
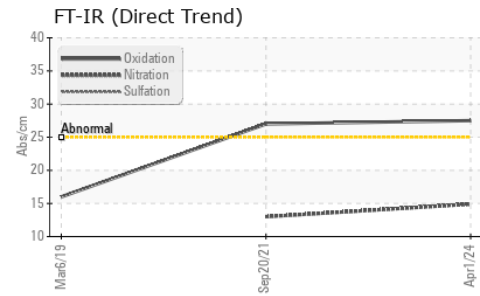
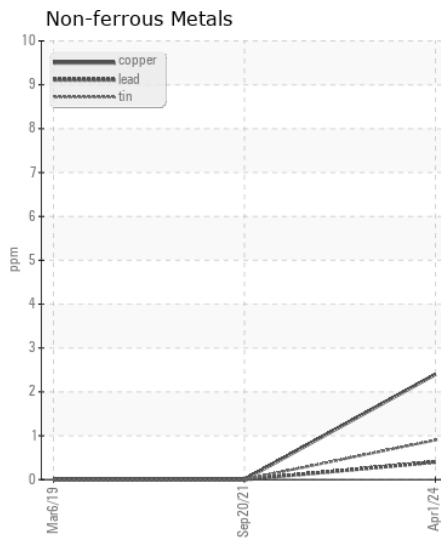
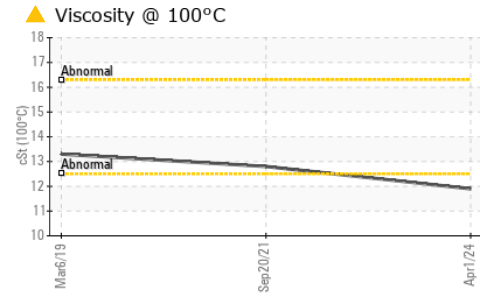
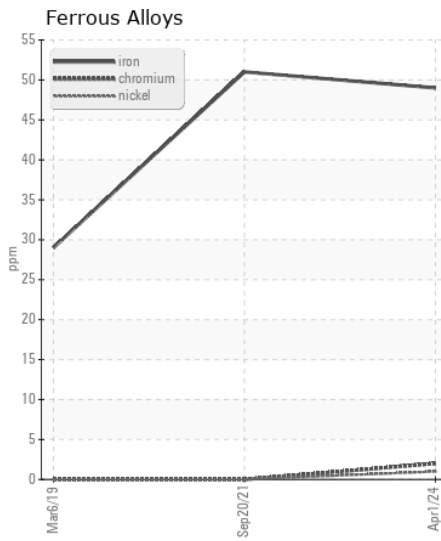
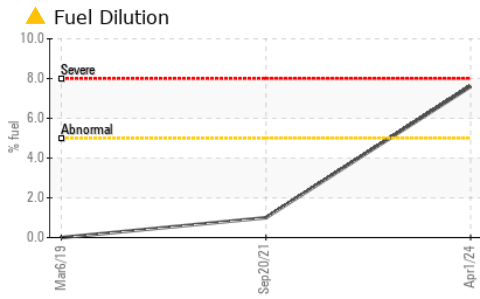
There is a moderate amount of fuel present in the oil.

Silicon	ppm	ASTM D5185m	>25	8	7	7
Potassium	ppm	ASTM D5185m	>20	14	24	13
Fuel	%	ASTM D3524	>5	▲ 7.6	<1.0	<1
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	0.0
Soot %	%	*ASTM D7844	>3	0.6	0.5	<0.1
Nitration	Abs/cm	*ASTM D7624	>20	14.9	13	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	28.7	---	---
Silt	scalar	*Visual	NONE	NONE	---	---
Debris	scalar	*Visual	NONE	NONE	---	---
Sand/Dirt	scalar	*Visual	NONE	NONE	---	---
Appearance	scalar	*Visual	NORML	NORML	---	---
Odor	scalar	*Visual	NORML	NORML	---	---
Emulsified Water	scalar	*Visual	>0.2	NEG	---	---

FLUID CONDITION

Fuel is present in the oil and is lowering the viscosity. The BN result indicates that there is suitable alkalinity remaining in the oil.

Sodium	ppm	ASTM D5185m	>150	<1	0	0
Boron	ppm	ASTM D5185m		26	124	477
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		52	85	80
Manganese	ppm	ASTM D5185m		1	---	---
Magnesium	ppm	ASTM D5185m		619	366	404
Calcium	ppm	ASTM D5185m		1332	1587	1402
Phosphorus	ppm	ASTM D5185m		1002	924	918
Zinc	ppm	ASTM D5185m		1138	1151	1131
Sulfur	ppm	ASTM D5185m		3360	---	---
Oxidation	Abs/.1mm	*ASTM D7414	>25	27.5	27	16
Base Number (BN)	mg KOH/g	ASTM D2896		3.9	1.57	5.5
Visc @ 100°C	cSt	ASTM D445		▲ 11.9	12.8	13.3



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PE0003026
Lab Number : 06156721
Unique Number : 10992144
Test Package : CONST (Additional Tests: FT-IR, FuelDilution, ICP, KV100, PercentFuel, SCREENING)

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To discuss this sample report, contact Customer Service at 1-800-237-1369.
 * - Denotes test methods that are outside of the ISO 17025 scope of accreditation.
 Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)