



OIL ANALYSIS REPORT

Sample Rating Trend



DIRT



Machine Id
JX1369-L37

Component
Gasoline Engine

Fluid
PENNZOIL 0W30 (--- QTS)

DIAGNOSIS

▲ Recommendation

The oil is near the end of its useful service life, recommend schedule an oil change. Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

▲ Contamination

Fuel content negligible. Elemental level of silicon (Si) above normal indicating ingress of seal material. The water content is negligible.

▲ Fluid Condition

The BN level is low. The AN level is at the top-end of the recommended limit.

SAMPLE INFORMATION

	method	limit/base	current	history 1	history 2
Sample Number	Client Info		WC0751511	---	---
Sample Date	Client Info		17 Oct 2022	---	---
Machine Age	kms	Client Info	303485	---	---
Oil Age	kms	Client Info	19228	---	---
Oil Changed	Client Info		Not Chngd	---	---
Sample Status			ABNORMAL	---	---

CONTAMINATION

	method	limit/base	current	history 1	history 2
Glycol	WC Method		NEG	---	---

WEAR METALS

	method	limit/base	current	history 1	history 2
Iron	ppm	ASTM D5185m >150	24	---	---
Chromium	ppm	ASTM D5185m >20	<1	---	---
Nickel	ppm	ASTM D5185m >5	<1	---	---
Titanium	ppm	ASTM D5185m	<1	---	---
Silver	ppm	ASTM D5185m >2	<1	---	---
Aluminum	ppm	ASTM D5185m >40	6	---	---
Lead	ppm	ASTM D5185m >50	<1	---	---
Copper	ppm	ASTM D5185m >155	2	---	---
Tin	ppm	ASTM D5185m >10	<1	---	---
Vanadium	ppm	ASTM D5185m	1	---	---
Cadmium	ppm	ASTM D5185m	0	---	---

ADDITIVES

	method	limit/base	current	history 1	history 2
Boron	ppm	ASTM D5185m	121	---	---
Barium	ppm	ASTM D5185m	0	---	---
Molybdenum	ppm	ASTM D5185m	4	---	---
Manganese	ppm	ASTM D5185m	<1	---	---
Magnesium	ppm	ASTM D5185m	24	---	---
Calcium	ppm	ASTM D5185m	1877	---	---
Phosphorus	ppm	ASTM D5185m	657	---	---
Zinc	ppm	ASTM D5185m	903	---	---
Sulfur	ppm	ASTM D5185m	2566	---	---

CONTAMINANTS

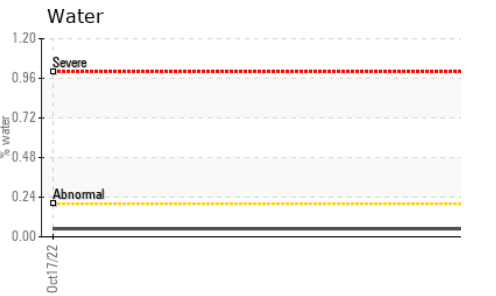
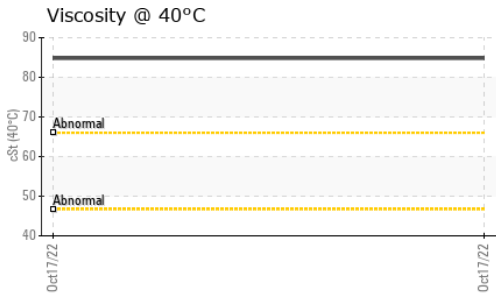
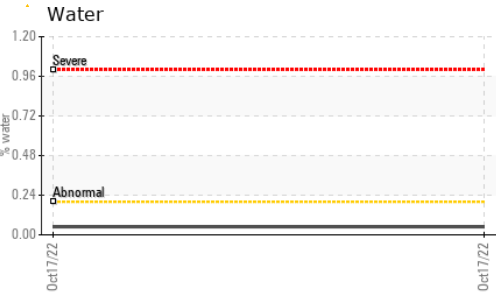
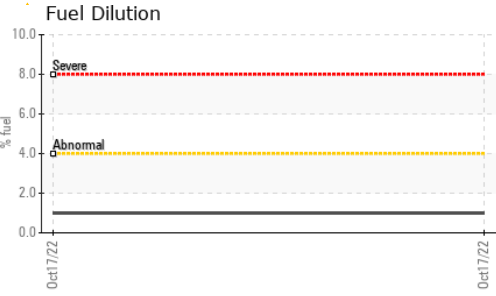
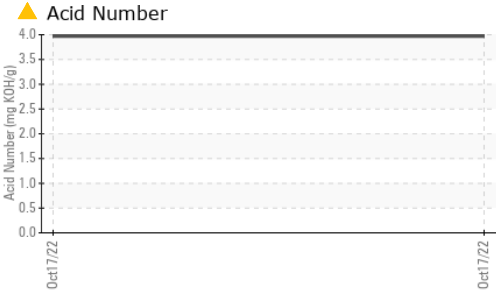
	method	limit/base	current	history 1	history 2
Silicon	ppm	ASTM D5185m >30	▲ 43	---	---
Sodium	ppm	ASTM D5185m >400	6	---	---
Potassium	ppm	ASTM D5185m >20	1	---	---
Fuel	%	ASTM D3524 >4.0	1.0	---	---
Water	%	ASTM D6304 >0.2	0.049	---	---
ppm Water	ppm	ASTM D6304 >2000	496.5	---	---

INFRA-RED

	method	limit/base	current	history 1	history 2
Soot %	%	*ASTM D7844	0.1	---	---
Nitration	Abs/cm	*ASTM D7624 >20	19.9	---	---
Sulfation	Abs.1mm	*ASTM D7415 >30	36.7	---	---



OIL ANALYSIS REPORT

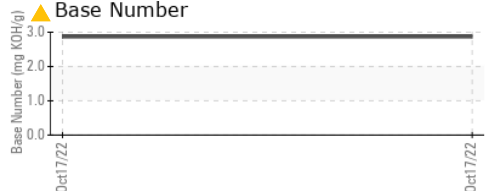
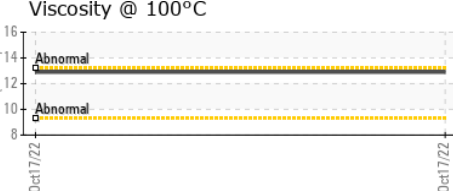
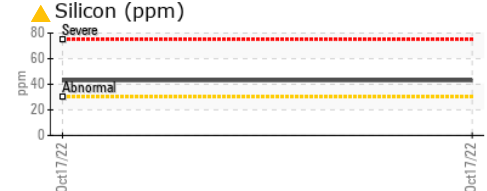
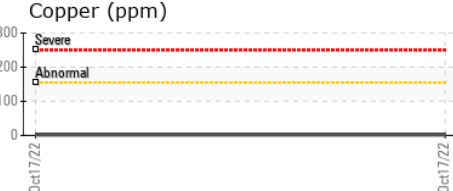
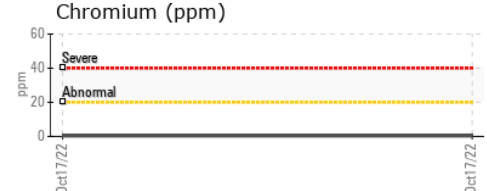
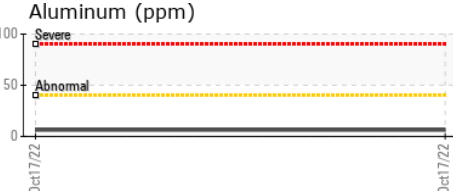
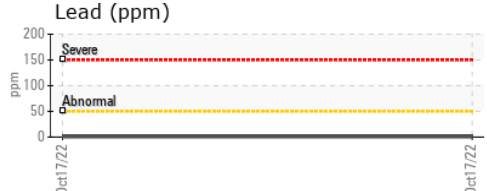
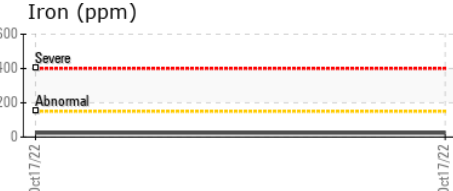


FLUID DEGRADATION		method	limit/base	current	history 1	history 2
Oxidation	Abs./1mm	*ASTM D7414	>25	47.5	---	---
Acid Number (AN)	mg KOH/g	ASTM D8045		▲ 3.97	---	---
Base Number (BN)	mg KOH/g	ASTM D2896		▲ 2.87	---	---

VISUAL		method	limit/base	current	history 1	history 2
White Metal	scalar	*Visual	NONE	NONE	---	---
Yellow Metal	scalar	*Visual	NONE	NONE	---	---
Precipitate	scalar	*Visual	NONE	NONE	---	---
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	---	---
Free Water	scalar	*Visual		NEG	---	---

FLUID PROPERTIES		method	limit/base	current	history 1	history 2
Visc @ 40°C	cSt	ASTM D445		84.8	---	---
Visc @ 100°C	cSt	ASTM D445		12.9	---	---
Viscosity Index (VI)	Scale	ASTM D2270		151	---	---

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0751511 **Received** : 06 Dec 2022
Lab Number : **05710529** **Diagnosed** : 13 Dec 2022
Unique Number : 10245104 **Diagnostician** : Jonathan Hester
Test Package : MOB 2 (Additional Tests: FUELDILUTION, KF, KV40, PercentFuel, TBN, VI) Contact: Service Manager

AVL POWERTRAIN ENGINEERING INC
 47519 HALYARD DRIVE
 PLYMOUTH, MI
 US 48170-2438

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)