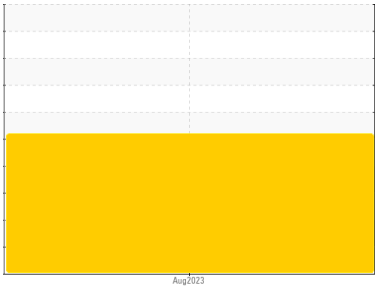
OIL ANALYSIS REPORT

Sample Rating Trend



WATER

Machine Id
HYUNDAI 2019-3153
Component
Gasoline Engine
Fluid
NOT GIVEN (--- GAL)

DIAGNOSIS

Recommendation

We advise that you check for faulty combustion and a possible overheat condition. We advise that you check the engine tuning and timing. We advise that you check for the source of water entry. We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition. Please specify the brand, type, and viscosity of the oil on your next sample.

Wear

Silver ppm levels are abnormal.

Contamination

There is an abnormal level of nitration indicated. Light fuel dilution occurring. There is a moderate concentration of water present in the oil. Free water present. Test for glycol is negative.

Fluid Condition

A small degree of oil oxidation was indicated. Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC0848179**	---	---
Sample Date		Client Info		**24 Aug 2023**	---	---
Machine Age	kms	Client Info		**76000**	---	---
Oil Age	kms	Client Info		**0**	---	---
Oil Changed		Client Info		**N/A**	---	---
Sample Status				**ABNORMAL**	---	---

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>150	**51**	---	---
Chromium	ppm	ASTM D5185(m)	>20	**1**	---	---
Nickel	ppm	ASTM D5185(m)	>5	**0**	---	---
Titanium	ppm	ASTM D5185(m)		**<1**	---	---
Silver	ppm	ASTM D5185(m)	>2	▲ **5**	---	---
Aluminum	ppm	ASTM D5185(m)	>40	**6**	---	---
Lead	ppm	ASTM D5185(m)	>50	**0**	---	---
Copper	ppm	ASTM D5185(m)	>155	**4**	---	---
Tin	ppm	ASTM D5185(m)	>10	**0**	---	---
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)		**22**	---	---
Barium	ppm	ASTM D5185(m)		**<1**	---	---
Molybdenum	ppm	ASTM D5185(m)		**157**	---	---
Manganese	ppm	ASTM D5185(m)		**<1**	---	---
Magnesium	ppm	ASTM D5185(m)		**425**	---	---
Calcium	ppm	ASTM D5185(m)		**1359**	---	---
Phosphorus	ppm	ASTM D5185(m)		**618**	---	---
Zinc	ppm	ASTM D5185(m)		**722**	---	---
Sulfur	ppm	ASTM D5185(m)		**1697**	---	---
Lithium	ppm	ASTM D5185(m)		**<1**	---	---

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>30	**29**	---	---
Sodium	ppm	ASTM D5185(m)	>400	**7**	---	---
Potassium	ppm	ASTM D5185(m)	>20	**2**	---	---
Fuel	%	ASTM D7593*	>4.0	▲ **3.7**	---	---
Glycol	%	ASTM D7922*		**0.0**	---	---

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*		**0.1**	---	---
Nitration	Abs/cm	ASTM D7624*	>20	▲ **22.0**	---	---
Sulfation	Abs/.1mm	ASTM D7415*	>30	**26.8**	---	---

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*	>25	▲ **32.9**	---	---

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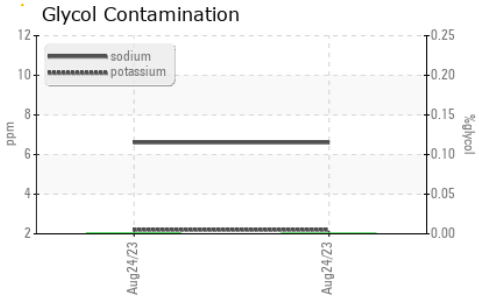
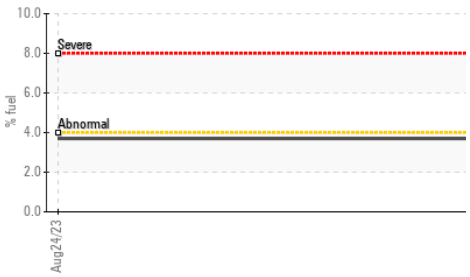
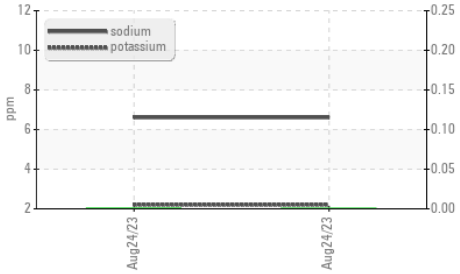
Glycol Contamination



Fuel Dilution



Glycol Contamination

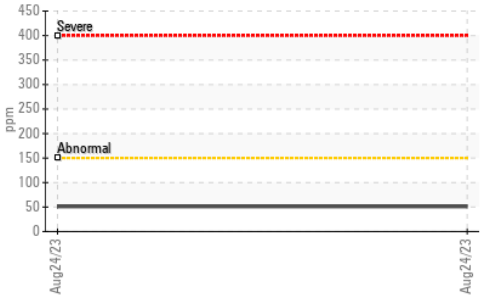


VISUAL		method	limit/base	current	history1	history2
Emulsified Water	scalar	Visual*	>0.2	▲ 1%	---	---
Free Water	scalar	Visual*		▲ 5%	---	---

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D7279(m)		▲ 5	---	---

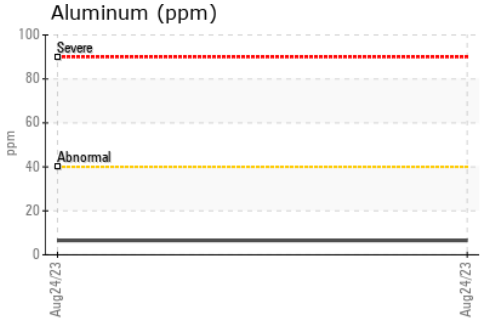
GRAPHS

Iron (ppm)

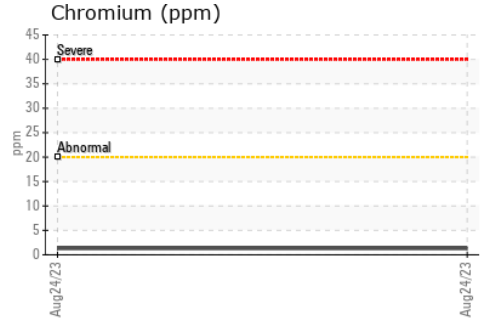


Lead (ppm)

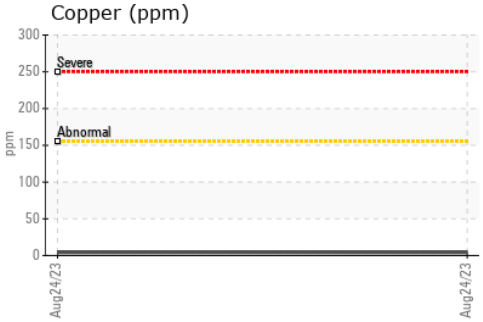
Aluminum (ppm)



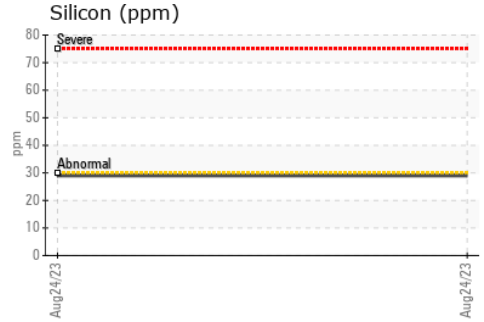
Chromium (ppm)



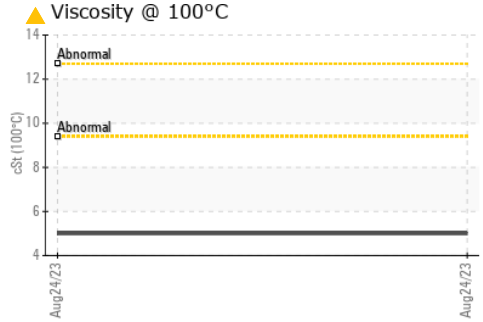
Copper (ppm)



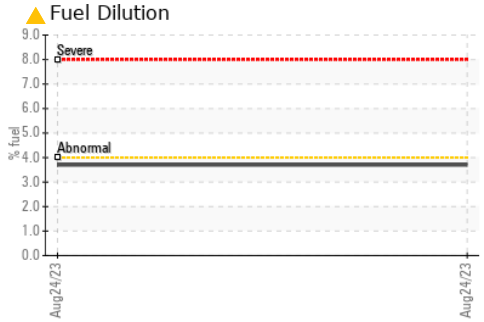
Silicon (ppm)



Viscosity @ 100°C



Fuel Dilution



ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0848179
Lab Number : 02578449
Unique Number : 5631509
Test Package : MOB 1 (Additional Tests: FuelDilution, Glycol, PercentFuel)

Received : 25 Aug 2023
Diagnosed : 28 Aug 2023
Diagnostician : Kevin Marson

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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