



PROBLEM SUMMARY

Sample Rating Trend

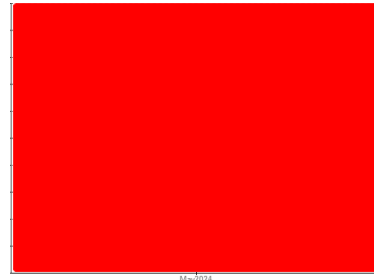
WEAR

Area
TULSA [22921]

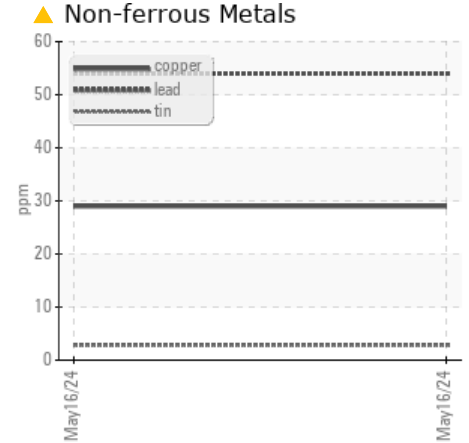
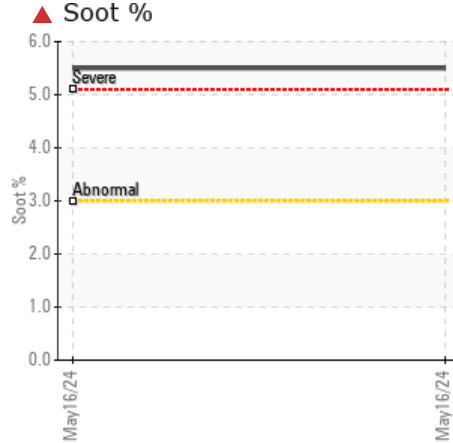
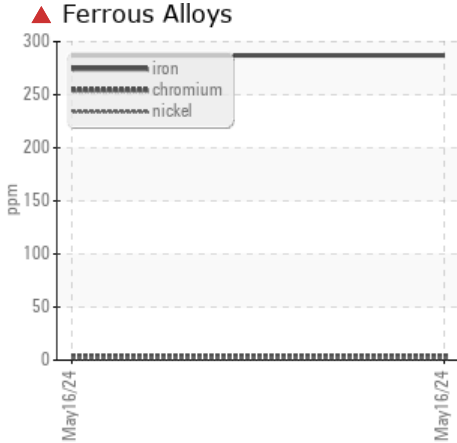
Machine Id
80-257

Component
Diesel Engine

Fluid
CONOCO PHILLIPS GUARDOL ECT 15W40 (--- GAL)



COMPONENT CONDITION SUMMARY



RECOMMENDATION

We advise that you check for faulty combustion, plugged air filters, or aftercoolers. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

PROBLEMATIC TEST RESULTS

Sample Status				SEVERE	---	---
Iron	ppm	ASTM D5185m	>51	▲ 287	---	---
Lead	ppm	ASTM D5185m	>26	▲ 54	---	---
Copper	ppm	ASTM D5185m	>26	▲ 29	---	---
Soot %	%	*ASTM D7844	>3	▲ 5.5	---	---
Base Number (BN)	mg KOH/g	ASTM D2896	9.5	▲ -10.4	---	---

Customer Id: MANTUL
Sample No.: WC0923316
Lab Number: 06207299
Test Package: CONST



To manage this report scan the QR code

To discuss the diagnosis or test data:
Angela Borella +1 800-237-1369
angela.borella@wearcheckusa.com

To change component or sample information:
Customer Service +1 1-800-237-1369
customerservice@wearcheck.com

RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Change Fluid	---	---	?	Oil and filter change at the time of sampling has been noted.
Change Filter	---	---	?	Oil and filter change at the time of sampling has been noted.
Resample	---	---	?	We recommend an early resample to monitor this condition.
Check Combustion	---	---	?	We advise that you check for faulty combustion, plugged air filters, or aftercoolers.

HISTORICAL DIAGNOSIS



OIL ANALYSIS REPORT

Sample Rating Trend

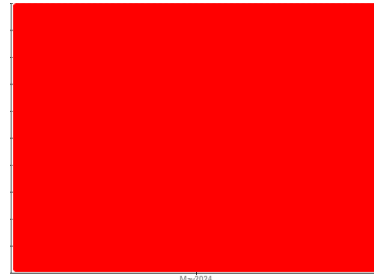
WEAR

Area
TULSA [22921]

Machine Id
80-257

Component
Diesel Engine

Fluid
CONOCO PHILLIPS GUARDOL ECT 15W40 (--- GAL)



DIAGNOSIS

▲ Recommendation

We advise that you check for faulty combustion, plugged air filters, or aftercoolers. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

▲ Wear

Iron ppm levels are severe. Lead and copper ppm levels are abnormal. Cylinder, crank, or cam shaft wear is indicated. Bearing wear is indicated.

▲ Contamination

There is an abnormal amount of solids and carbon present in the oil.

▲ Fluid Condition

TBN too low for accurate measurement. 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		WC0923316	---	---
Sample Date	Client Info		16 May 2024	---	---
Machine Age	hrs	Client Info	5477	---	---
Oil Age	hrs	Client Info	250	---	---
Oil Changed	Client Info		Changed	---	---
Sample Status			SEVERE	---	---

CONTAMINATION

	method	limit/base	current	history1	history2
Fuel	WC Method	>2.1	<1.0	---	---
Water	WC Method	>0.21	NEG	---	---
Glycol	WC Method		NEG	---	---

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >51	▲ 287	---	---
Chromium	ppm	ASTM D5185m >11	4	---	---
Nickel	ppm	ASTM D5185m >5	2	---	---
Titanium	ppm	ASTM D5185m	<1	---	---
Silver	ppm	ASTM D5185m >3	0	---	---
Aluminum	ppm	ASTM D5185m >31	13	---	---
Lead	ppm	ASTM D5185m >26	▲ 54	---	---
Copper	ppm	ASTM D5185m >26	▲ 29	---	---
Tin	ppm	ASTM D5185m >4	3	---	---
Vanadium	ppm	ASTM D5185m	<1	---	---
Cadmium	ppm	ASTM D5185m	<1	---	---

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m 85	41	---	---
Barium	ppm	ASTM D5185m	0	---	---
Molybdenum	ppm	ASTM D5185m	18	---	---
Manganese	ppm	ASTM D5185m	6	---	---
Magnesium	ppm	ASTM D5185m 350	35	---	---
Calcium	ppm	ASTM D5185m 1800	2104	---	---
Phosphorus	ppm	ASTM D5185m 1000	821	---	---
Zinc	ppm	ASTM D5185m 1100	1118	---	---
Sulfur	ppm	ASTM D5185m 3500	3272	---	---

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >22	10	---	---
Sodium	ppm	ASTM D5185m >31	7	---	---
Potassium	ppm	ASTM D5185m >20	11	---	---

INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844 >3	▲ 5.5	---	---
Nitration	Abs/cm	*ASTM D7624 >20	22.0	---	---
Sulfation	Abs/.1mm	*ASTM D7415 >30	43.2	---	---

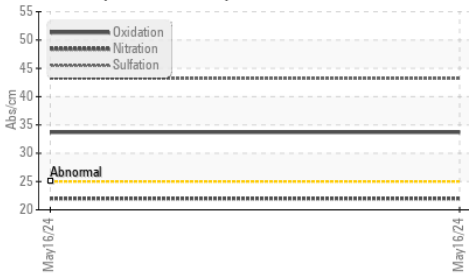
FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	33.7	---	---
Base Number (BN)	mg KOH/g	ASTM D2896 9.5	▲ -10.4	---	---



OIL ANALYSIS REPORT

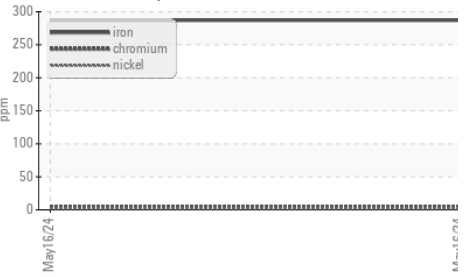
▲ FT-IR (Direct Trend)



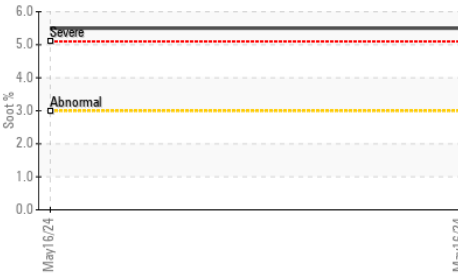
▲ Soot %



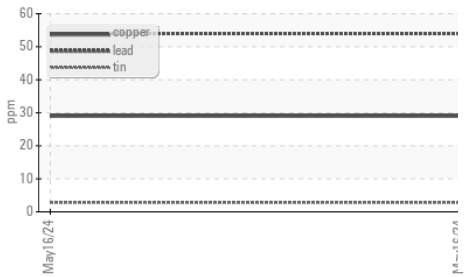
▲ Ferrous Alloys



▲ Soot %



▲ Non-ferrous Metals



VISUAL	method	limit/base	current	history1	history2	
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	>0.21	NEG	---	---
Free Water	scalar	*Visual		NEG	---	---

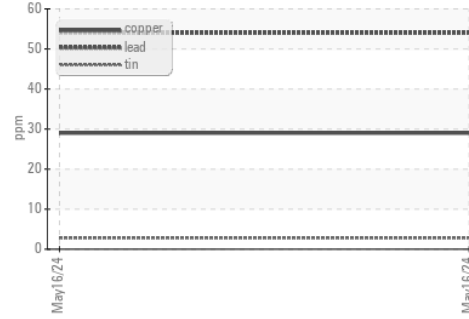
FLUID PROPERTIES	method	limit/base	current	history1	history2	
Visc @ 100°C	cSt	ASTM D445	15.3	13.2	---	---

GRAPHS

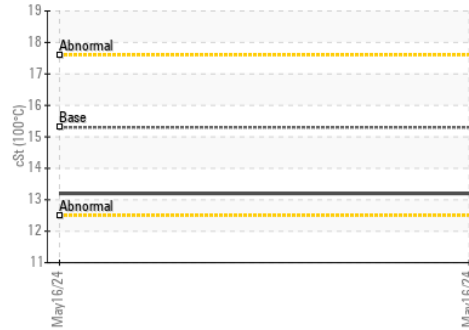
▲ Ferrous Alloys



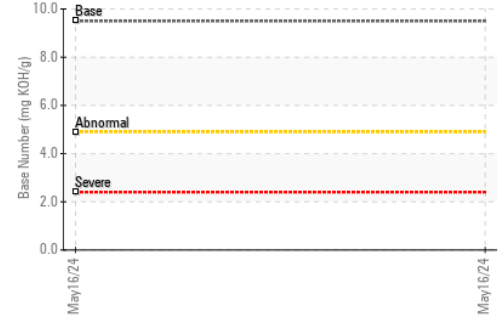
▲ Non-ferrous Metals



Viscosity @ 100°C



▲ Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0923316 **Received** : 11 Jun 2024
Lab Number : 06207299 **Tested** : 13 Jun 2024
Unique Number : 11074760 **Diagnosed** : 13 Jun 2024 - Angela Borella
Test Package : CONST (Additional Tests: TBN)

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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)