



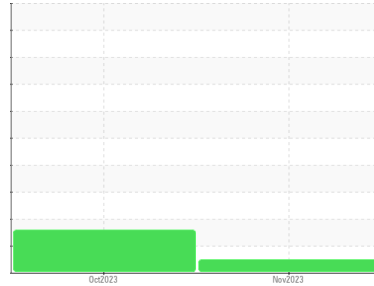
OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL



Machine Id
CATERPILLAR 288
 Component
Diesel Engine
 Fluid
SHELL ROTELLA T 15W40 (--- LTR)



DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

Metal levels are typical for a new component breaking in.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		WC0846971	WC0846972	---
Sample Date	Client Info		28 Nov 2023	23 Oct 2023	---
Machine Age	kms	Client Info	21200	288165	---
Oil Age	kms	Client Info	21200	20300	---
Oil Changed	Client Info		Not Chngd	Not Chngd	---
Sample Status			NORMAL	ABNORMAL	---

CONTAMINATION

	method	limit/base	current	history1	history2
Fuel	WC Method	>5	<1.0	<1.0	---
Water	WC Method	>0.2	NEG	NEG	---
Glycol	WC Method		NEG	NEG	---

WEAR METALS

	method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185(m)	>100	38	26	---
Chromium	ppm	ASTM D5185(m)	>20	<1	<1	---
Nickel	ppm	ASTM D5185(m)	>2	1	1	---
Titanium	ppm	ASTM D5185(m)	>2	0	0	---
Silver	ppm	ASTM D5185(m)	>2	<1	<1	---
Aluminum	ppm	ASTM D5185(m)	>25	2	2	---
Lead	ppm	ASTM D5185(m)	>40	8	2	---
Copper	ppm	ASTM D5185(m)	>330	225	9	---
Tin	ppm	ASTM D5185(m)	>15	0	0	---
Antimony	ppm	ASTM D5185(m)		0	0	---
Vanadium	ppm	ASTM D5185(m)		0	0	---
Beryllium	ppm	ASTM D5185(m)		0	0	---
Cadmium	ppm	ASTM D5185(m)		0	0	---

ADDITIVES

	method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185(m)	35	41	40	---
Barium	ppm	ASTM D5185(m)	0	<1	<1	---
Molybdenum	ppm	ASTM D5185(m)	0	60	84	---
Manganese	ppm	ASTM D5185(m)	0	0	0	---
Magnesium	ppm	ASTM D5185(m)	10	42	58	---
Calcium	ppm	ASTM D5185(m)	2340	2217	2441	---
Phosphorus	ppm	ASTM D5185(m)	1110	966	1121	---
Zinc	ppm	ASTM D5185(m)	1210	1183	1339	---
Sulfur	ppm	ASTM D5185(m)	3890	2839	3407	---
Lithium	ppm	ASTM D5185(m)		<1	<1	---

CONTAMINANTS

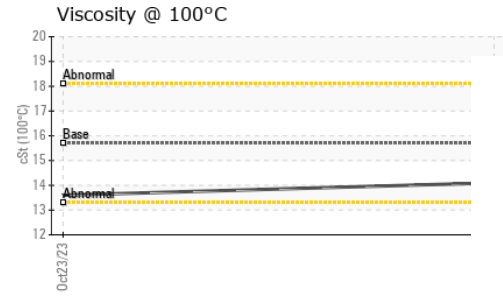
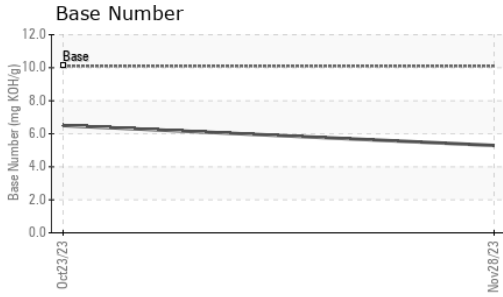
	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185(m)	>25	32	▲ 39	---
Sodium	ppm	ASTM D5185(m)		2	3	---
Potassium	ppm	ASTM D5185(m)	>20	2	1	---

INFRA-RED

	method	limit/base	current	history1	history2	
Soot %	%	ASTM D7844*	>3	0.4	0.3	---
Nitration	Abs/cm	ASTM D7624*	>20	9.5	9.3	---
Sulfation	Abs./1mm	ASTM D7415*	>30	22.0	20.3	---



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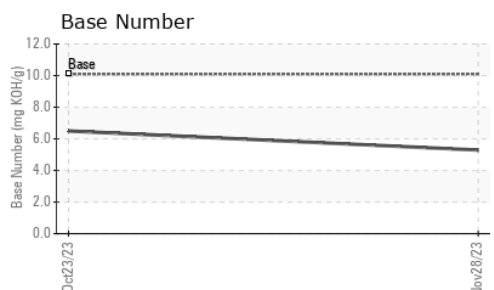
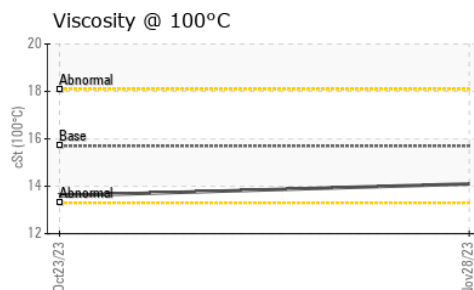
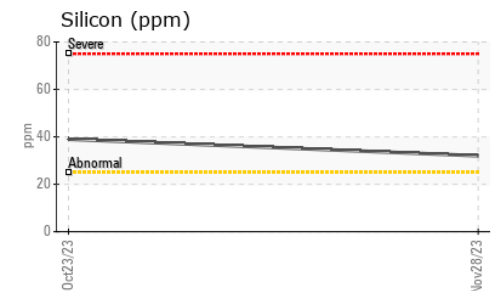
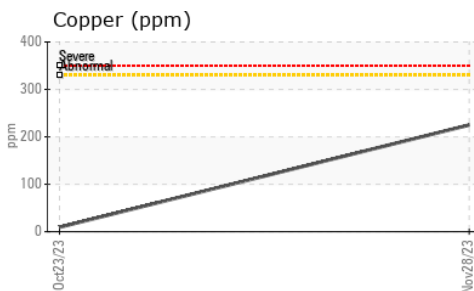
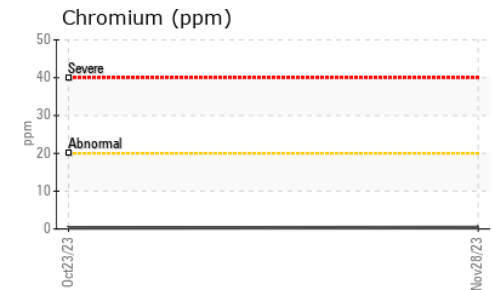
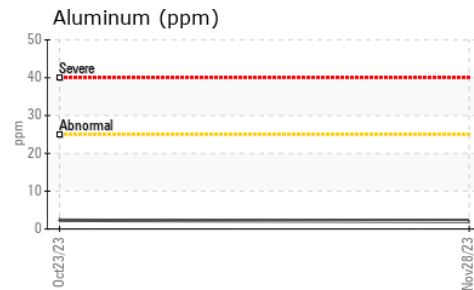
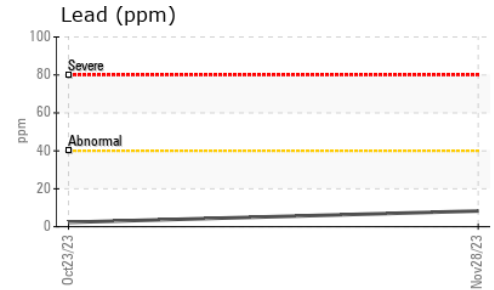
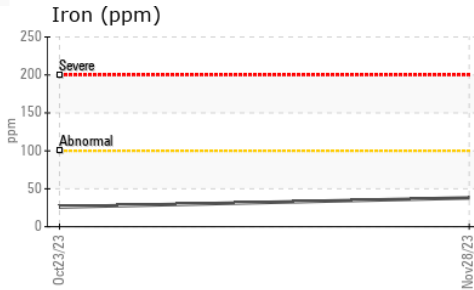


FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*	>25	17.7	16.0	---
Base Number (BN)	mg KOH/g	ASTM D2896*	10.1	5.29	6.50	---

VISUAL		method	limit/base	current	history1	history2
Emulsified Water	scalar	Visual*	>0.2	NEG	NEG	---
Free Water	scalar	Visual*		NEG	NEG	---

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D7279(m)	15.7	14.1	13.6	---

GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0846971 **Received** : 06 Dec 2023
Lab Number : **02601214** **Diagnosed** : 06 Dec 2023
Unique Number : 5694299 **Diagnostician** : Wes Davis
Test Package : MOB 2

O DOYLE TRANSPORT INC.
 3472 COUNTY ROAD 50
 LORETTO, ON
 CA L0G 1L0
 Contact: Patrick Doyle
 odoyletransportinc@gmail.com
 T: (416)889-9827
 F:

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.