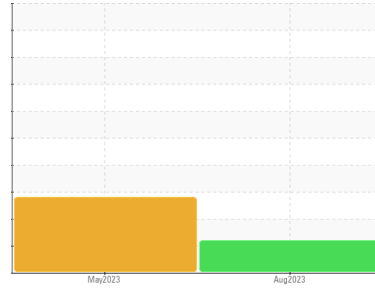


# OIL ANALYSIS REPORT

Sample Rating Trend

**DEGRADATION**

Area  
**LAKE CALUMET**  
 Machine Id  
**DOOSAN G35NC-7 37-01 (S/N FGA17-1290-00128)**  
 Component  
**Diesel Engine**  
 Fluid  
**DIESEL ENGINE OIL SAE 10W30 (--- GAL)**



## 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**  
 There is no indication of any contamination in the oil.

**Fluid Condition**  
 The BN level is low. The condition of the oil is acceptable for the time in service.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number	Client Info			<b>PCA0105664</b>	PCA0097266	---
Sample Date	Client Info			<b>30 Aug 2023</b>	25 May 2023	---
Machine Age	hrs	Client Info		<b>4059</b>	3743	---
Oil Age	hrs	Client Info		<b>500</b>	0	---
Oil Changed	Client Info			<b>N/A</b>	Changed	---
Sample Status				<b>ABNORMAL</b>	ABNORMAL	---

CONTAMINATION		method	limit/base	current	history1	history2
Fuel	WC Method	>3.0	<b>&lt;1.0</b>	<1.0	---	
Water	WC Method	>0.1	<b>NEG</b>	NEG	---	
Glycol	WC Method		<b>NEG</b>	NEG	---	

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>50	<b>32</b>	97	---
Chromium	ppm	ASTM D5185m	>20	<b>4</b>	9	---
Nickel	ppm	ASTM D5185m	>5	<b>&lt;1</b>	1	---
Titanium	ppm	ASTM D5185m		<b>&lt;1</b>	<1	---
Silver	ppm	ASTM D5185m	>3	<b>0</b>	0	---
Aluminum	ppm	ASTM D5185m	>20	<b>5</b>	15	---
Lead	ppm	ASTM D5185m	>40	<b>1</b>	2	---
Copper	ppm	ASTM D5185m	>30	<b>11</b>	16	---
Tin	ppm	ASTM D5185m	>15	<b>4</b>	6	---
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	<1	---
Cadmium	ppm	ASTM D5185m		<b>0</b>	<1	---

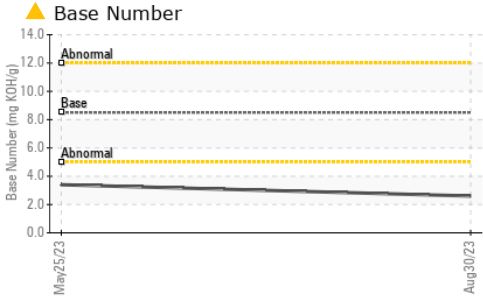
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	250	<b>34</b>	15	---
Barium	ppm	ASTM D5185m	10	<b>0</b>	0	---
Molybdenum	ppm	ASTM D5185m	100	<b>61</b>	68	---
Manganese	ppm	ASTM D5185m		<b>1</b>	3	---
Magnesium	ppm	ASTM D5185m	450	<b>478</b>	559	---
Calcium	ppm	ASTM D5185m	3000	<b>907</b>	1580	---
Phosphorus	ppm	ASTM D5185m	1150	<b>524</b>	717	---
Zinc	ppm	ASTM D5185m	1350	<b>692</b>	985	---
Sulfur	ppm	ASTM D5185m	4250	<b>2121</b>	3698	---

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>15	<b>7</b>	15	---
Sodium	ppm	ASTM D5185m		<b>3</b>	5	---
Potassium	ppm	ASTM D5185m	>20	<b>1</b>	3	---

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	<b>0</b>	0.1	---
Nitration	Abs/cm	*ASTM D7624	>20	<b>9.4</b>	16.9	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>23.2</b>	29.9	---

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>12.4</b>	19.4	---
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	<b>▲ 2.6</b>	3.4	---

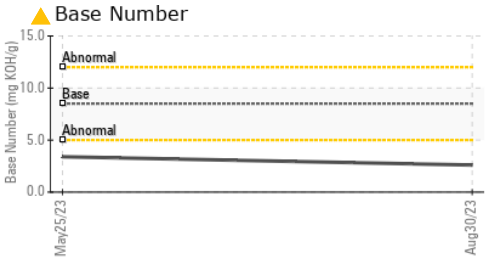
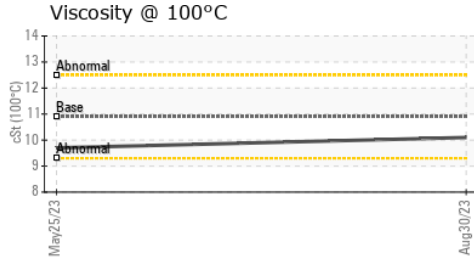
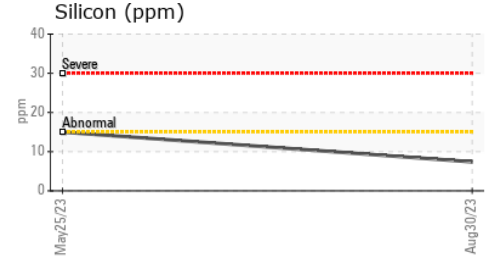
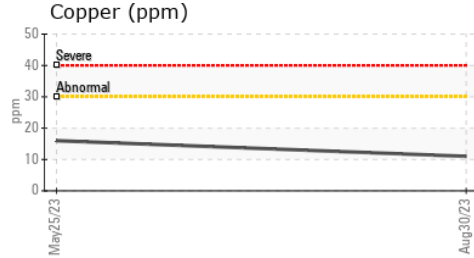
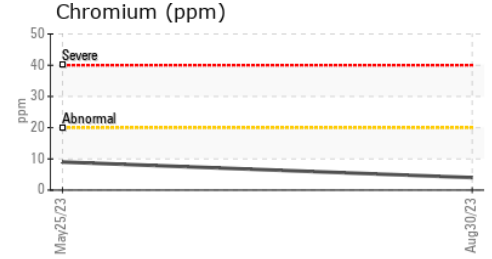
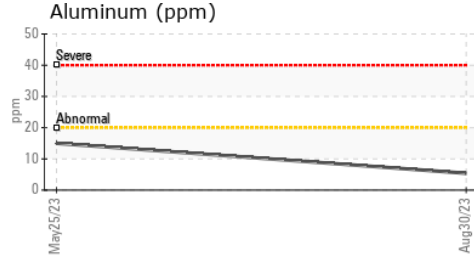
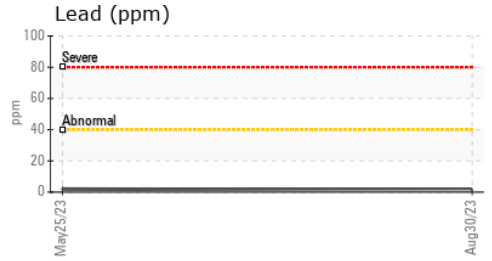
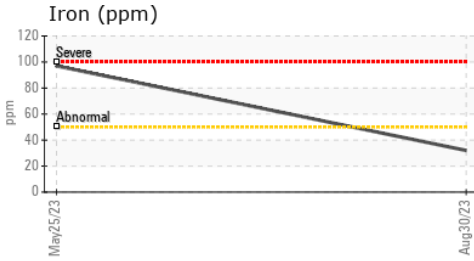
# OIL ANALYSIS REPORT



VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	▲ MODER	---
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	>0.1	▲ 0.2%	---
Free Water	scalar	*Visual	NEG	NEG	---

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	10.9	9.7	---

## GRAPHS



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : PCA0105664      **Received** : 01 Feb 2024  
**Lab Number** : **06076506**      **Tested** : 01 Feb 2024  
**Unique Number** : 10858597      **Diagnosed** : 02 Feb 2024 - Don Baldrige  
**Test Package** : MOB 1 ( Additional Tests: TBN )

**NORTH AMERICAN STEVEDORING CO**  
 9301 S KREITER AVE  
 CHICAGO, IL  
 US 60617  
 Contact: PACO MARTINEZ  
 paco.martinez@qsl.com

Certificate L2367  
 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)

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F: