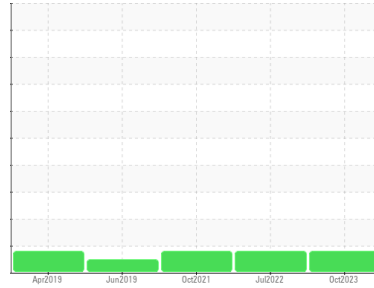


Machine Id  
**JOHN DEERE 600-39**  
 Component  
**Diesel Engine**  
 Fluid  
**PETRO CANADA DURON SHP 15W40 (20 QTS)**



## DIAGNOSIS

### ▲ Recommendation

No corrective action is recommended at this time. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

### ▲ Wear

Cylinder, crank, or cam shaft wear is indicated. All other component wear rates are normal.

### 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 acceptable for the time in service.

## SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	<b>PCA0106854</b>	PCA0060061	PCA0042127
Sample Date	Client Info	<b>27 Oct 2023</b>	07 Jul 2022	05 Oct 2021
Machine Age	hrs	<b>10259</b>	9745	9300
Oil Age	hrs	<b>510</b>	400	350
Oil Changed	Client Info	<b>Changed</b>	Changed	Changed
Sample Status		<b>ABNORMAL</b>	ABNORMAL	ABNORMAL

## CONTAMINATION

method	limit/base	current	history1	history2
Fuel	WC Method >2.1	<b>&lt;1.0</b>	<1.0	<1.0
Glycol	WC Method	<b>NEG</b>	NEG	NEG

## WEAR METALS

method	limit/base	current	history1	history2
Iron	ppm ASTM D5185m >51	<b>▲ 75</b>	▲ 52	▲ 59
Chromium	ppm ASTM D5185m >11	<b>1</b>	1	2
Nickel	ppm ASTM D5185m >5	<b>4</b>	3	2
Titanium	ppm ASTM D5185m	<b>&lt;1</b>	<1	<1
Silver	ppm ASTM D5185m >3	<b>0</b>	<1	0
Aluminum	ppm ASTM D5185m >31	<b>6</b>	4	3
Lead	ppm ASTM D5185m >26	<b>11</b>	6	11
Copper	ppm ASTM D5185m >26	<b>2</b>	1	2
Tin	ppm ASTM D5185m >4	<b>&lt;1</b>	1	<1
Antimony	ppm ASTM D5185m	<b>---</b>	---	0
Vanadium	ppm ASTM D5185m	<b>&lt;1</b>	0	0
Cadmium	ppm ASTM D5185m	<b>&lt;1</b>	0	0

## ADDITIVES

method	limit/base	current	history1	history2
Boron	ppm ASTM D5185m 0	<b>1</b>	7	3
Barium	ppm ASTM D5185m 0	<b>&lt;1</b>	0	0
Molybdenum	ppm ASTM D5185m 60	<b>75</b>	65	75
Manganese	ppm ASTM D5185m 0	<b>&lt;1</b>	<1	<1
Magnesium	ppm ASTM D5185m 1010	<b>1079</b>	949	1032
Calcium	ppm ASTM D5185m 1070	<b>1137</b>	1235	1102
Phosphorus	ppm ASTM D5185m 1150	<b>1094</b>	988	1058
Zinc	ppm ASTM D5185m 1270	<b>1392</b>	1254	1341
Sulfur	ppm ASTM D5185m 2060	<b>3745</b>	3411	2714
Lithium	ppm ASTM D5185m	<b>---</b>	---	---

## CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185m >22	<b>6</b>	5	5
Sodium	ppm ASTM D5185m >31	<b>3</b>	2	3
Potassium	ppm ASTM D5185m >20	<b>2</b>	9	0

## INFRA-RED

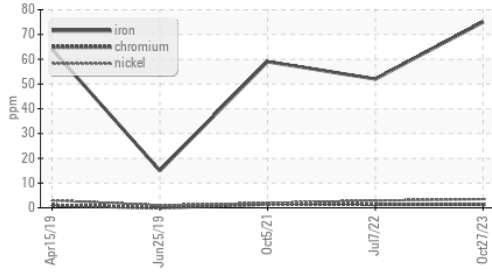
method	limit/base	current	history1	history2
Soot %	% *ASTM D7844 >3	<b>0.8</b>	0.6	0.6
Nitration	Abs/cm *ASTM D7624 >20	<b>10.9</b>	12.1	12.3
Sulfation	Abs/.1mm *ASTM D7415 >30	<b>21.8</b>	22.6	22.6

## FLUID DEGRADATION

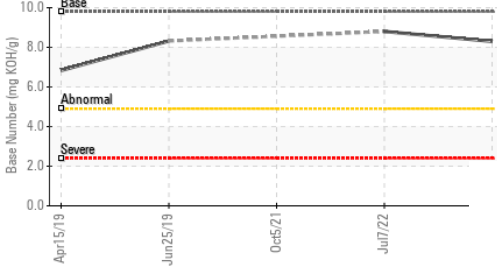
method	limit/base	current	history1	history2
Oxidation	Abs/.1mm *ASTM D7414 >25	<b>19.7</b>	20.4	21.9
Base Number (BN)	mg KOH/g ASTM D2896 9.8	<b>8.3</b>	8.8	---

# OIL ANALYSIS REPORT

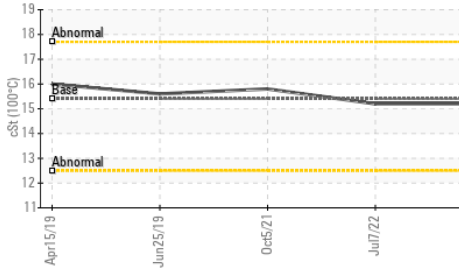
**▲ Ferrous Alloys**



**Base Number**



**Viscosity @ 100°C**

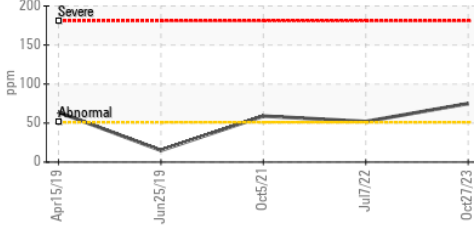


PARAMETER	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.21	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

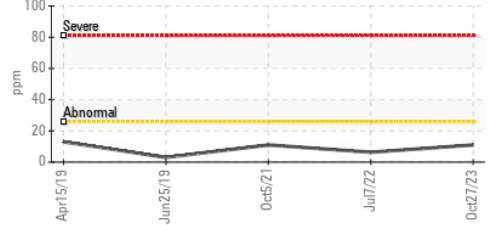
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	15.2	15.8

**GRAPHS**

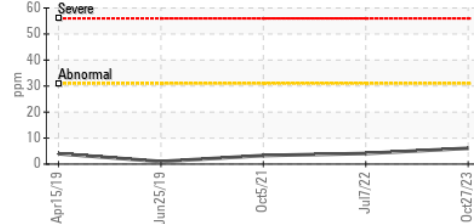
**▲ Iron (ppm)**



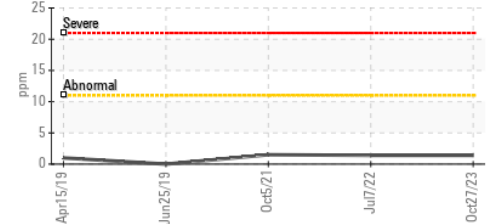
**Lead (ppm)**



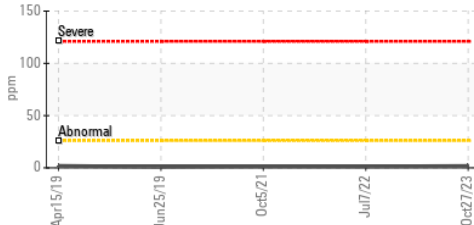
**Aluminum (ppm)**



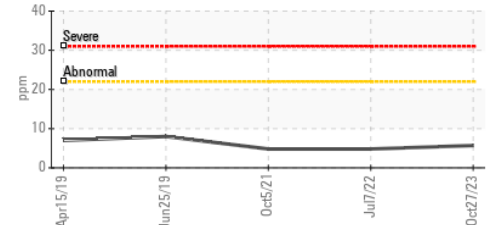
**Chromium (ppm)**



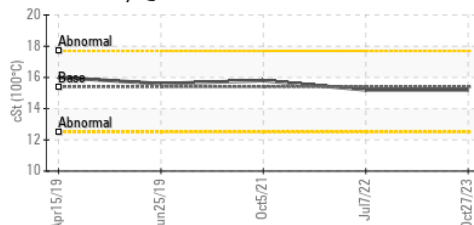
**Copper (ppm)**



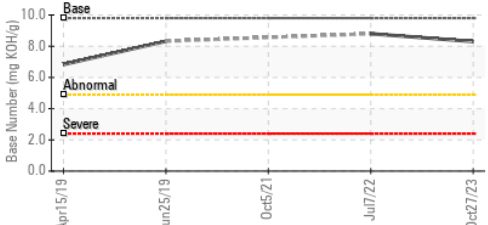
**Silicon (ppm)**



**Viscosity @ 100°C**



**Base Number**



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : PCA0106854 **Received** : 01 Nov 2023  
**Lab Number** : 05995405 **Diagnosed** : 02 Nov 2023  
**Unique Number** : 10723765 **Diagnostician** : Don Baldrige  
**Test Package** : MOB 1 ( Additional Tests: TBN )

**GE MARSHALL EXCAVATION**  
 1351 JOLIET RD  
 VALPARAISO, IN  
 US 46385  
 Contact: MARK STEFFEL  
 mark.steffel@gemarshall.com

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)

T:  
F: