

**NORMAL**



Machine Id  
**SPARTAN 28013/SPARE SQD**  
Component  
**Front Diesel Engine**  
Fluid  
**CASTROL HYPURON 15W40 (38 LTR)**

**DIAGNOSIS**

**Recommendation**

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 condition of the oil is acceptable for the time in service.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number	Client Info			<b>PC0085031</b>	PC0071363	AP103749
Sample Date	Client Info			<b>23 Apr 2024</b>	23 Apr 2023	20 Nov 2018
Machine Age	kms	Client Info		<b>242984</b>	13988	0
Oil Age	kms	Client Info		<b>0</b>	0	6975
Oil Changed	Client Info			<b>Changed</b>	Changed	Changed
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel	WC Method	>3.0		<b>&lt;1.0</b>	<1.0	<1.0
Water	WC Method	>0.2		<b>NEG</b>	NEG	NEG
Glycol	WC Method			<b>NEG</b>	NEG	NEG

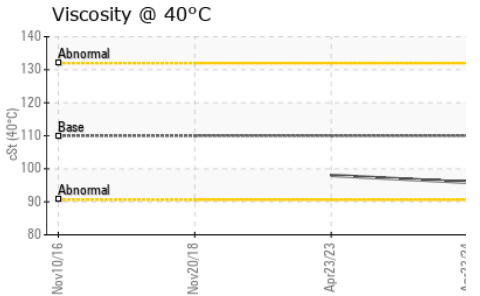
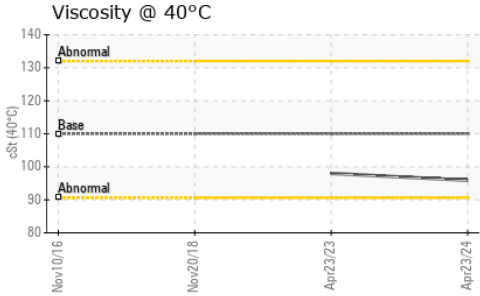
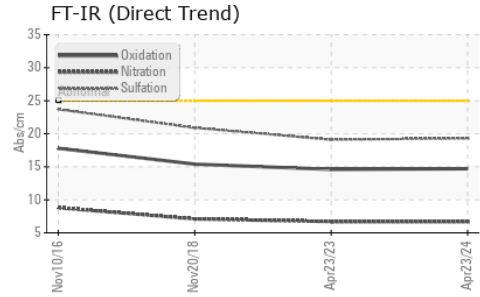
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>200	<b>12</b>	16	15
Chromium	ppm	ASTM D5185(m)	>10	<b>&lt;1</b>	<1	<1
Nickel	ppm	ASTM D5185(m)	>4	<b>0</b>	<1	0
Titanium	ppm	ASTM D5185(m)	>2	<b>0</b>	<1	<1
Silver	ppm	ASTM D5185(m)	>2	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185(m)	>30	<b>&lt;1</b>	2	1
Lead	ppm	ASTM D5185(m)	>30	<b>2</b>	5	1
Copper	ppm	ASTM D5185(m)	>30	<b>1</b>	11	1
Tin	ppm	ASTM D5185(m)	>4	<b>0</b>	<1	0
Antimony	ppm	ASTM D5185(m)		<b>0</b>	0	0
Vanadium	ppm	ASTM D5185(m)		<b>0</b>	0	0
Beryllium	ppm	ASTM D5185(m)		<b>0</b>	0	0
Cadmium	ppm	ASTM D5185(m)		<b>0</b>	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)		<b>3</b>	7	48
Barium	ppm	ASTM D5185(m)		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185(m)		<b>61</b>	61	56
Manganese	ppm	ASTM D5185(m)		<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185(m)		<b>981</b>	983	924
Calcium	ppm	ASTM D5185(m)		<b>1084</b>	1136	1184
Phosphorus	ppm	ASTM D5185(m)		<b>1023</b>	1106	1052
Zinc	ppm	ASTM D5185(m)		<b>1222</b>	1228	1235
Sulfur	ppm	ASTM D5185(m)		<b>2659</b>	2754	3018
Lithium	ppm	ASTM D5185(m)		<b>&lt;1</b>	<1	0

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>30	<b>2</b>	4	3
Sodium	ppm	ASTM D5185(m)		<b>2</b>	3	2
Potassium	ppm	ASTM D5185(m)	>20	<b>0</b>	0	0

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*	>3	<b>0.3</b>	0.3	0.5
Nitration	Abs/cm	ASTM D7624*	>20	<b>6.7</b>	6.7	7.1
Sulfation	Abs/.1mm	ASTM D7415*	>30	<b>19.3</b>	19.1	20.9

# OIL ANALYSIS REPORT

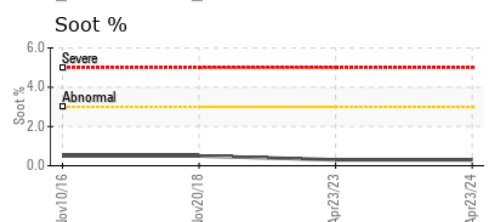
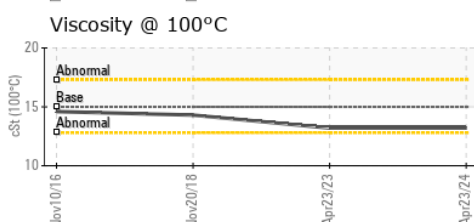
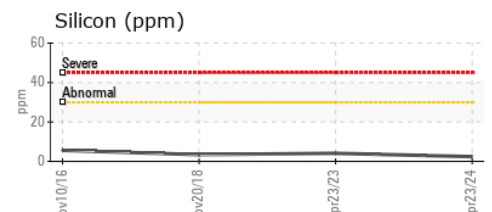
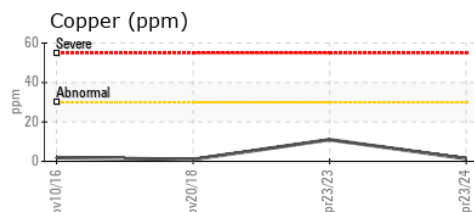
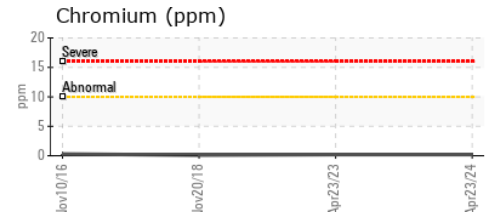
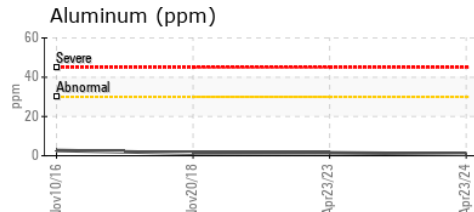
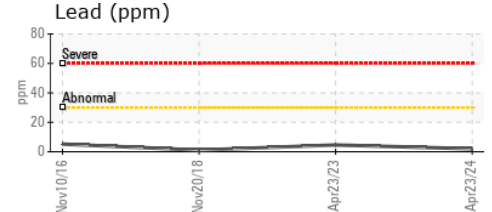
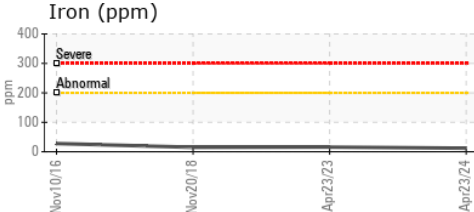


FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs./1mm	ASTM D7414*	>25	<b>14.7</b>	14.6	15.4

VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	<b>NONE</b>	---	---
Yellow Metal	scalar	Visual*	NONE	<b>NONE</b>	---	---
Precipitate	scalar	Visual*	NONE	<b>NONE</b>	---	---
Silt	scalar	Visual*	NONE	<b>VLITE</b>	---	---
Debris	scalar	Visual*	NONE	<b>NONE</b>	---	---
Sand/Dirt	scalar	Visual*	NONE	<b>NONE</b>	---	---
Appearance	scalar	Visual*	NORML	<b>NORML</b>	---	---
Odor	scalar	Visual*	NORML	<b>NORML</b>	NORML	---
Emulsified Water	scalar	Visual*	>0.2	<b>NEG</b>	NEG	NEG
Free Water	scalar	Visual*		<b>NEG</b>	NEG	NEG

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	110	<b>95.9</b>	98.0	---
Visc @ 100°C	cSt	ASTM D7279(m)	15.0	<b>13.2</b>	13.2	14.3
Viscosity Index (VI)	Scale	ASTM D2270*	140	<b>136</b>	132	---

## GRAPHS



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : PC0085031 **Received** : 18 Jun 2024  
**Lab Number** : **02642483** **Tested** : 18 Jun 2024  
**Unique Number** : 5800022 **Diagnosed** : 18 Jun 2024 - Wes Davis  
**Test Package** : MOB 1 ( Additional Tests: KV40, VI, Visual )

**TORONTO FIRE SERVICES**  
 40 TORYORK DRIVE  
 TORONTO, ON  
 CA M9L 1X6  
 Contact: Antonio Rodrigues  
 antonio.rodrigues@toronto.ca  
 T:  
 F: (416)338-9207

*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.*