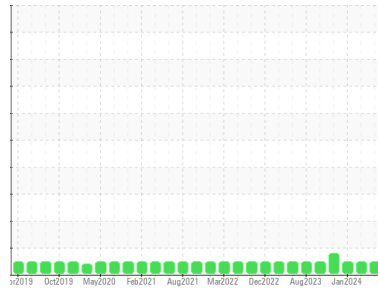


# OIL ANALYSIS REPORT

## Sample Rating Trend



**NORMAL**



Machine Id  
**HYUNDAI L-14**  
 Component  
**Diesel Engine**  
 Fluid  
**FLEETLINE SUPERFLEET XHD 15W40 (12 GAL)**

### 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 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			<b>PCA0109964</b>	LP0001195	LP0001344
Sample Date	Client Info			<b>20 May 2024</b>	12 Apr 2024	29 Jan 2024
Machine Age	hrs	Client Info		<b>10136</b>	9854	9492
Oil Age	hrs	Client Info		<b>282</b>	359	192
Oil Changed	Client Info			<b>Changed</b>	N/A	Changed
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel	WC Method	>5		<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 D5185m	>100	<b>5</b>	9	8
Chromium	ppm	ASTM D5185m	>20	<b>0</b>	1	<1
Nickel	ppm	ASTM D5185m	>4	<b>0</b>	<1	0
Titanium	ppm	ASTM D5185m		<b>0</b>	<1	0
Silver	ppm	ASTM D5185m	>3	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>20	<b>4</b>	7	19
Lead	ppm	ASTM D5185m	>40	<b>2</b>	4	2
Copper	ppm	ASTM D5185m	>330	<b>0</b>	3	<1
Tin	ppm	ASTM D5185m	>15	<b>0</b>	1	<1
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	<1	0
Cadmium	ppm	ASTM D5185m		<b>0</b>	<1	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		<b>10</b>	26	18
Barium	ppm	ASTM D5185m		<b>0</b>	1	0
Molybdenum	ppm	ASTM D5185m		<b>29</b>	26	58
Manganese	ppm	ASTM D5185m		<b>0</b>	<1	<1
Magnesium	ppm	ASTM D5185m		<b>305</b>	187	615
Calcium	ppm	ASTM D5185m		<b>2185</b>	2084	1537
Phosphorus	ppm	ASTM D5185m		<b>1008</b>	934	994
Zinc	ppm	ASTM D5185m		<b>1243</b>	1093	1236
Sulfur	ppm	ASTM D5185m		<b>4196</b>	3854	3256

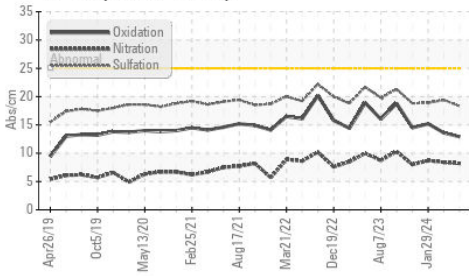
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	<b>4</b>	6	6
Sodium	ppm	ASTM D5185m		<b>0</b>	0	<1
Potassium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	2	<1

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	<b>0.1</b>	0.2	0.2
Nitration	Abs/cm	*ASTM D7624	>20	<b>8.2</b>	8.4	8.7
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>18.3</b>	19.4	18.9

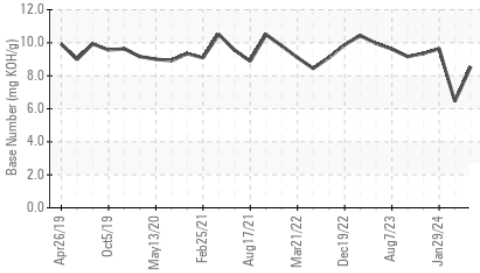
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>12.9</b>	13.6	15.2
Base Number (BN)	mg KOH/g	ASTM D2896		<b>8.54</b>	6.45	9.64

# OIL ANALYSIS REPORT

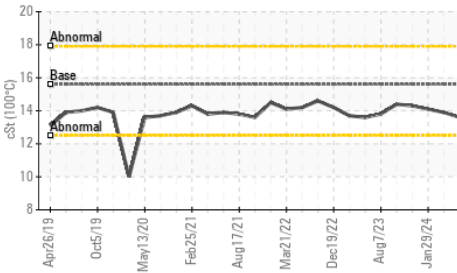
FT-IR (Direct Trend)



Base Number



Viscosity @ 100°C

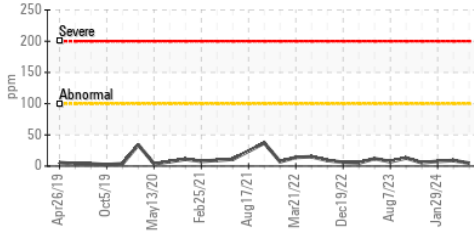


VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	<b>LIGHT</b>	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE
Precipitate	scalar	*Visual	NONE	<b>NONE</b>	NONE
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE
Sand/Dirt	scalar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

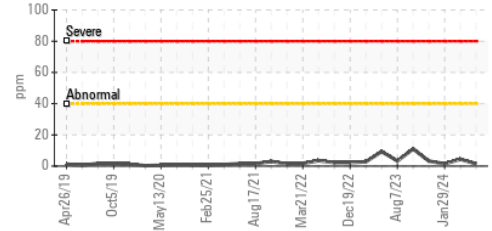
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.6	<b>13.6</b>	13.9

## GRAPHS

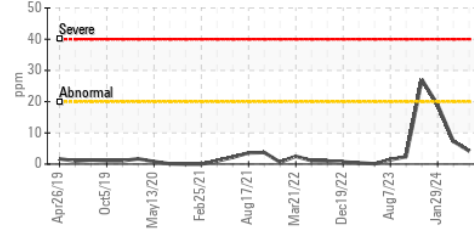
Iron (ppm)



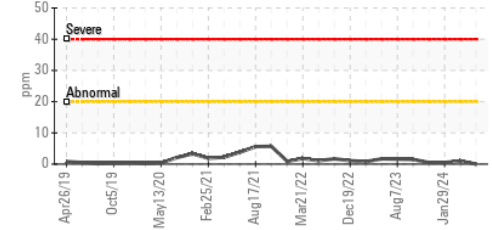
Lead (ppm)



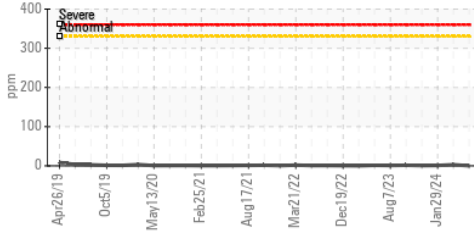
Aluminum (ppm)



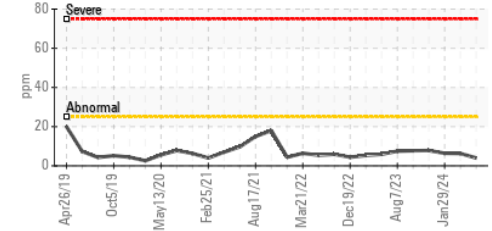
Chromium (ppm)



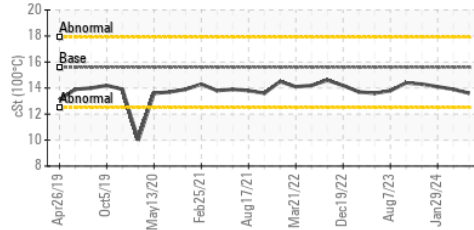
Copper (ppm)



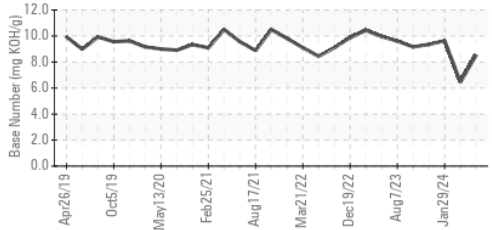
Silicon (ppm)



Viscosity @ 100°C



Base Number



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : PCA0109964  
**Lab Number** : 06196025  
**Unique Number** : 11058148  
**Test Package** : MOB 2

**Received** : 30 May 2024  
**Tested** : 02 Jun 2024  
**Diagnosed** : 02 Jun 2024 - Wes Davis

**S.M. LORUSSO & SONS**  
 221 NORFOLK ST.  
 WALPOLE, MA  
 US 02081

Contact: PAUL BECKMAN  
 pbeckman@smlorusso.com

T: (508)668-2603  
 F: (508)660-0232

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)