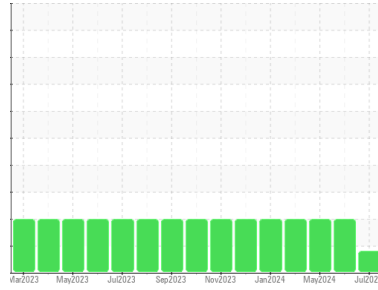




# OIL ANALYSIS REPORT

Sample Rating Trend



**WEAR**



Area

**Huntington**

Machine Id

**[Huntington] Oil - Port Main Engine**

Component

**Port Main Engine**

Fluid

**DIESEL ENGINE OIL SAE 15W40 (165 GAL)**

## DIAGNOSIS

### Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor.

### Wear

The copper level is abnormal. In the absence of other significant wear metals, suspect copper due to sources other than wear (i.e. cooling core). 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 suitable for further service.

## SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		<b>WC0874561</b>	WC0898323	WC0874558
Sample Date	Client Info		<b>02 Jul 2024</b>	09 Jun 2024	08 May 2024
Machine Age	hrs	Client Info	<b>23118</b>	22633	22033
Oil Age	hrs	Client Info	<b>0</b>	0	0
Oil Changed	Client Info		<b>Not Changed</b>	Not Changd	Not Changed
Sample Status			<b>ABNORMAL</b>	ABNORMAL	ABNORMAL

## CONTAMINATION

	method	limit/base	current	history1	history2
Fuel	WC Method	>4.0	<b>&lt;1.0</b>	<1.0	<1.0

## WEAR METALS

	method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185m	>75	<b>22</b>	23	17
Chromium	ppm	ASTM D5185m	>8	<b>0</b>	<1	<1
Nickel	ppm	ASTM D5185m	>2	<b>0</b>	<1	<1
Titanium	ppm	ASTM D5185m	>3	<b>0</b>	<1	<1
Silver	ppm	ASTM D5185m	>2	<b>0</b>	0	<1
Aluminum	ppm	ASTM D5185m	>15	<b>1</b>	3	2
Lead	ppm	ASTM D5185m	>18	<b>4</b>	4	4
Copper	ppm	ASTM D5185m	>80	<b>220</b>	240	254
Tin	ppm	ASTM D5185m	>14	<b>0</b>	<1	<1
Vanadium	ppm	ASTM D5185m		<b>0</b>	0	<1
Cadmium	ppm	ASTM D5185m		<b>0</b>	<1	<1

## ADDITIVES

	method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185m	250	<b>19</b>	21	23
Barium	ppm	ASTM D5185m	10	<b>0</b>	0	<1
Molybdenum	ppm	ASTM D5185m	100	<b>84</b>	86	83
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185m	450	<b>1209</b>	1177	1083
Calcium	ppm	ASTM D5185m	3000	<b>1381</b>	1309	1261
Phosphorus	ppm	ASTM D5185m	1150	<b>1012</b>	1011	932
Zinc	ppm	ASTM D5185m	1350	<b>1202</b>	1237	1127
Sulfur	ppm	ASTM D5185m	4250	<b>3098</b>	2753	2605

## CONTAMINANTS

	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185m	>20	<b>4</b>	5	7
Sodium	ppm	ASTM D5185m	>158	<b>55</b>	62	59
Potassium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	2	3
Water	%	ASTM D6304	>0.1	<b>NEG</b>	NEG	NEG
Glycol	%	*ASTM D2982		<b>NEG</b>	NEG	NEG

## INFRA-RED

	method	limit/base	current	history1	history2	
Soot %	%	*ASTM D7844		<b>0.4</b>	0.3	0.3
Nitration	Abs/cm	*ASTM D7624	>20	<b>11.0</b>	10.4	9.7
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>23.5</b>	23.2	22.2

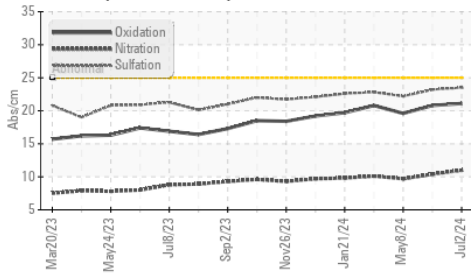
## FLUID DEGRADATION

	method	limit/base	current	history1	history2	
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>21.1</b>	20.8	19.6
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	<b>9.14</b>	8.55	9.27

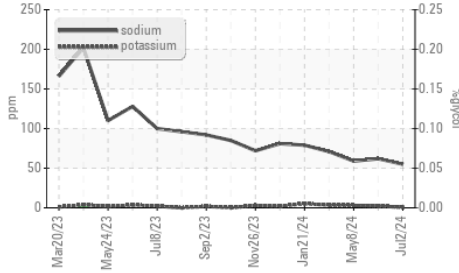


# OIL ANALYSIS REPORT

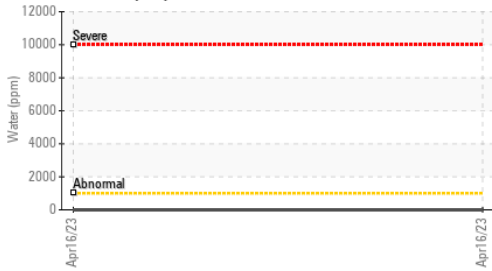
FT-IR (Direct Trend)



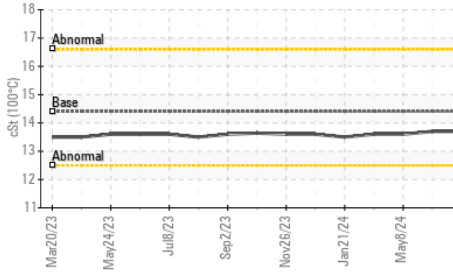
Glycol Contamination



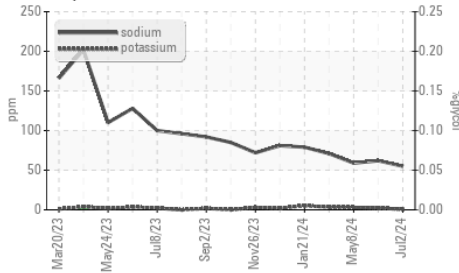
Water (KF)



Viscosity @ 100°C



Glycol Contamination

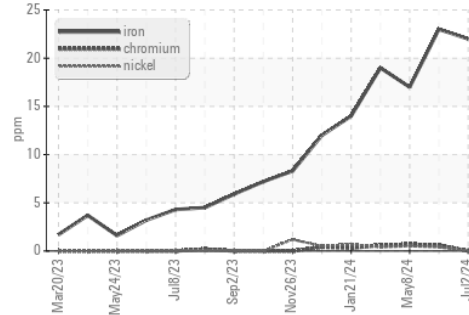


VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

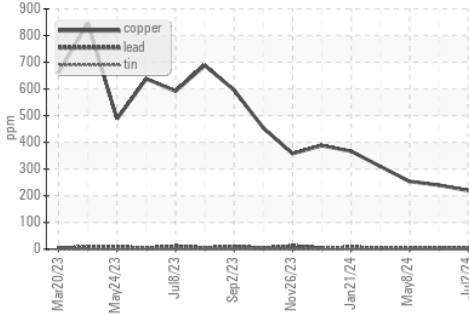
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14.4	13.7	13.6

GRAPHS

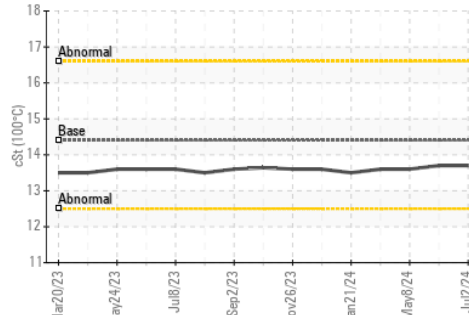
Ferrous Alloys



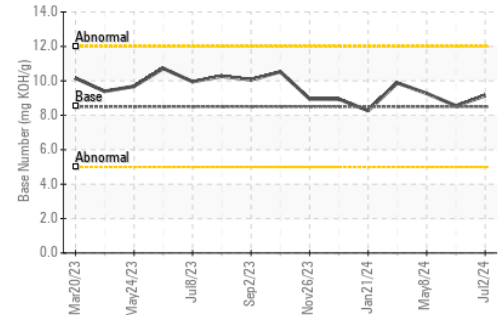
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513

Sample No. : WC0874561

Lab Number : 06236256

Unique Number : 11125090

Test Package : IND 2 ( Additional Tests: Glycol, KF )

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)

Received : 15 Jul 2024

Tested : 16 Jul 2024

Diagnosed : 16 Jul 2024 - Sean Felton

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