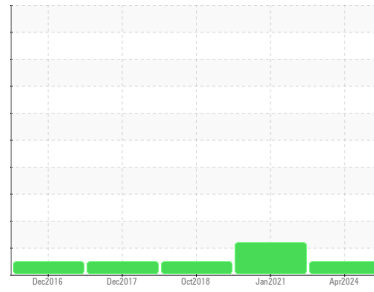




# OIL ANALYSIS REPORT

Sample Rating Trend



**NORMAL**



Machine Id

## CEDAR SWAMP

Component

Diesel Engine

Fluid

DIESEL ENGINE OIL SAE 15W40 (--- 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>RP151972</b>	RP0016530	RP203688
Sample Date	Client Info			<b>22 Apr 2024</b>	20 Jan 2021	25 Oct 2018
Machine Age	hrs	Client Info		<b>264</b>	187	173
Oil Age	hrs	Client Info		<b>0</b>	0	0
Oil Changed	Client Info			<b>N/A</b>	N/A	N/A
Sample Status				<b>NORMAL</b>	ATTENTION	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Glycol	WC Method			<b>NEG</b>	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	<b>6</b>	5	4
Chromium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	<1	<1
Nickel	ppm	ASTM D5185m	>4	<b>&lt;1</b>	0	<1
Titanium	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
Silver	ppm	ASTM D5185m	>3	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>20	<b>2</b>	5	3
Lead	ppm	ASTM D5185m	>40	<b>3</b>	4	2
Copper	ppm	ASTM D5185m	>330	<b>129</b>	17	16
Tin	ppm	ASTM D5185m	>15	<b>&lt;1</b>	1	0
Antimony	ppm	ASTM D5185m		<b>---</b>	0	0
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	<1	0
Cadmium	ppm	ASTM D5185m		<b>&lt;1</b>	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	250	<b>9</b>	22	56
Barium	ppm	ASTM D5185m	10	<b>&lt;1</b>	0	0
Molybdenum	ppm	ASTM D5185m	100	<b>95</b>	83	90
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185m	450	<b>35</b>	13	56
Calcium	ppm	ASTM D5185m	3000	<b>3145</b>	2704	3173
Phosphorus	ppm	ASTM D5185m	1150	<b>1103</b>	971	1066
Zinc	ppm	ASTM D5185m	1350	<b>1237</b>	949	1276

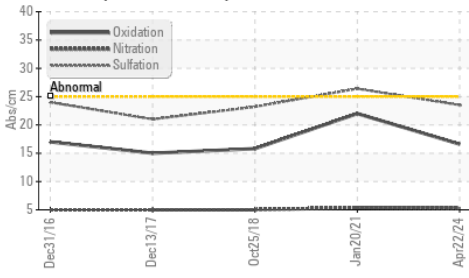
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	<b>6</b>	6	5
Sodium	ppm	ASTM D5185m	>158	<b>5</b>	8	5
Potassium	ppm	ASTM D5185m	>20	<b>3</b>	1	0
Fuel	%	ASTM D3524	>5	<b>&lt;1.0</b>	▲ 3.8	<1.0
Water	%	ASTM D6304	>0.2	<b>NEG</b>	NEG	NEG

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	<b>0.1</b>	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	<b>5.3</b>	5.4	5
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>23.5</b>	26.4	23.2

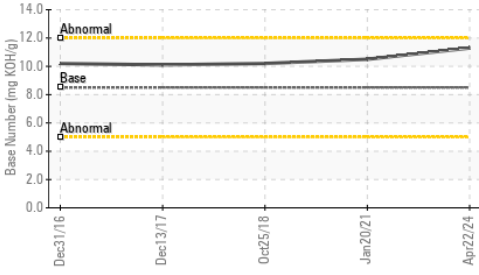
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>16.6</b>	22	15.8
Acid Number (AN)	mg KOH/g	ASTM D8045		<b>---</b>	1.315	---
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	<b>11.29</b>	10.5	10.2

# OIL ANALYSIS REPORT

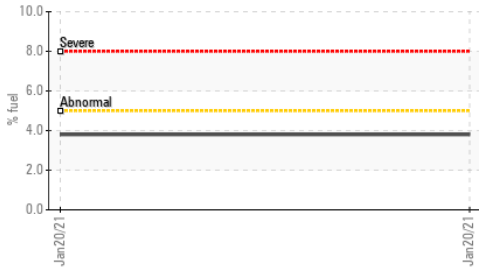
FT-IR (Direct Trend)



Base Number



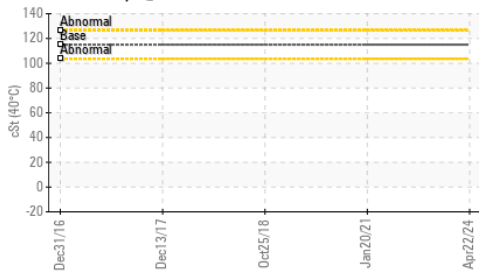
Fuel Dilution



Water (KF)



Viscosity @ 40°C

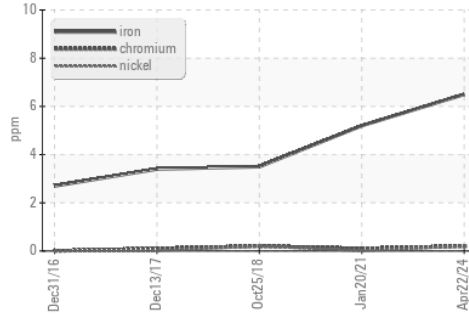


VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance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

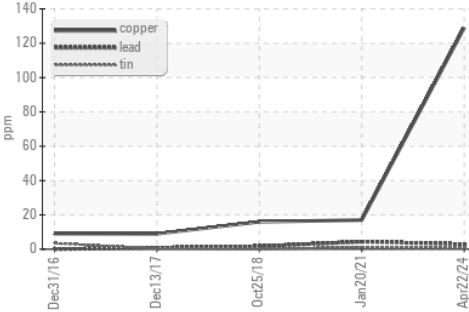
FLUID PROPERTIES	method	limit/base	current	history1	history2	
Visc @ 100°C	cSt	ASTM D445	14.4	12.2	11.9	12.52

GRAPHS

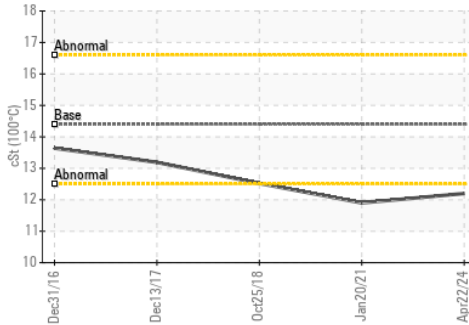
Ferrous Alloys



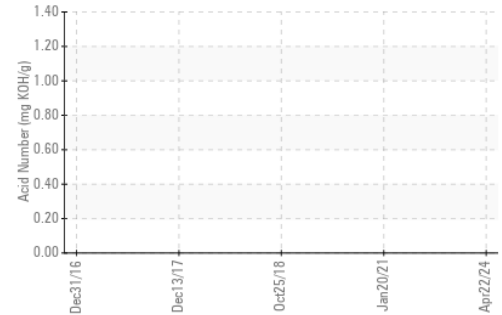
Non-ferrous Metals



Viscosity @ 100°C



Acid Number



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : RP151972  
**Lab Number** : 06179532  
**Unique Number** : 11030858  
**Test Package** : IND 2 ( Additional Tests: FT-IR, FuelDilution, KV100, TBN )

**Received** : 14 May 2024  
**Tested** : 17 May 2024  
**Diagnosed** : 17 May 2024 - Sean Felton

**WARWICK SEWER AUTHORITY**  
 125 ARTHUR DEVINE BLVD  
 WARWICK, RI  
 US 02888  
 Contact: JOHN BROSNAHAN  
 john.s.brosnahan@warwickri.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: