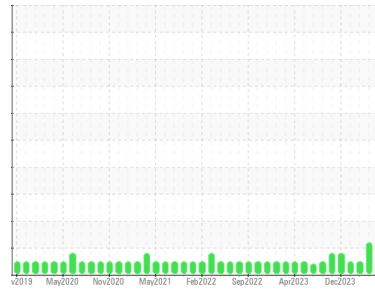




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Area
MACHINE SHOP
 Machine Id
0-5939-0000 DEC MANIPULATOR
 Component
Diesel Engine
 Fluid
ROYAL PURPLE 15W40 CI-4 (HD) (22 QTS)

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		WC0922585	WC0867030	WC0903661
Sample Date	Client Info		30 May 2024	20 Apr 2024	11 Feb 2024
Machine Age	hrs	Client Info	39591	38881	37585
Oil Age	hrs	Client Info	39591	0	37585
Oil Changed	Client Info		N/A	N/A	N/A
Sample Status			NORMAL	ABNORMAL	NORMAL

CONTAMINATION

	method	limit/base	current	history1	history2
Fuel	WC Method	>5	<1.0	<1.0	<1.0
Water	WC Method	>0.2	NEG	NEG	NEG
Glycol	WC Method		NEG	NEG	NEG

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >100	38	65	24
Chromium	ppm	ASTM D5185m >20	1	4	2
Nickel	ppm	ASTM D5185m >4	0	<1	<1
Titanium	ppm	ASTM D5185m	2	<1	1
Silver	ppm	ASTM D5185m >3	0	0	<1
Aluminum	ppm	ASTM D5185m >20	4	18	1
Lead	ppm	ASTM D5185m >40	1	4	2
Copper	ppm	ASTM D5185m >330	2	5	3
Tin	ppm	ASTM D5185m >15	0	<1	<1
Vanadium	ppm	ASTM D5185m	0	<1	<1
Cadmium	ppm	ASTM D5185m	0	<1	<1

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	2	0	2
Barium	ppm	ASTM D5185m	0	<1	5
Molybdenum	ppm	ASTM D5185m 120	89	103	87
Manganese	ppm	ASTM D5185m	<1	<1	<1
Magnesium	ppm	ASTM D5185m	19	17	14
Calcium	ppm	ASTM D5185m 3000	3423	3595	3024
Phosphorus	ppm	ASTM D5185m 1150	1119	1241	961
Zinc	ppm	ASTM D5185m 1250	1383	1433	1182
Sulfur	ppm	ASTM D5185m 16000	18897	18883	17539

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >25	4	6	5
Sodium	ppm	ASTM D5185m	2	2	0
Potassium	ppm	ASTM D5185m >20	<1	3	2

INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844 >3	1.3	1.6	0.6
Nitration	Abs/cm	*ASTM D7624 >20	8.2	9.4	6.4
Sulfation	Abs/.1mm	*ASTM D7415 >30	27.9	31.7	26.5

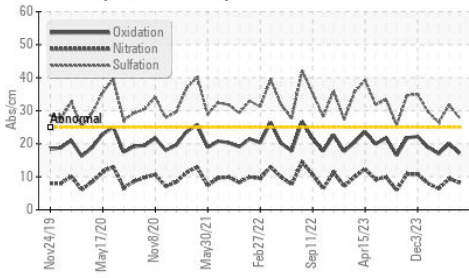
FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	17.1	20.0	17.0
Base Number (BN)	mg KOH/g	ASTM D2896 10	10.66	10.03	10.43

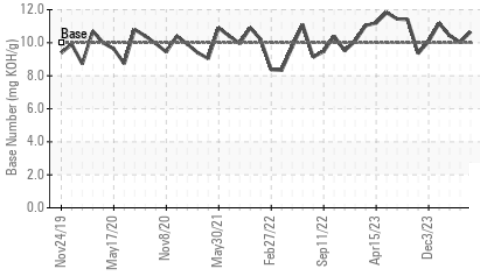


OIL ANALYSIS REPORT

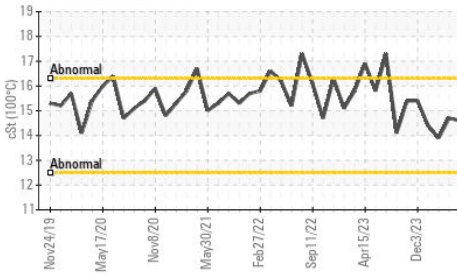
FT-IR (Direct Trend)



Base Number



Viscosity @ 100°C

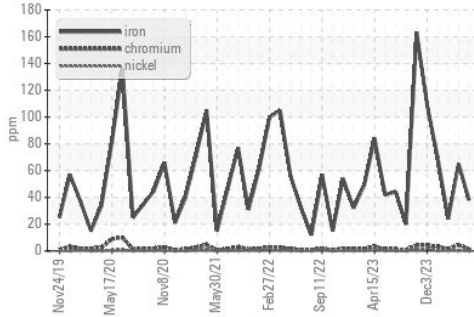


VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	▲ MODER	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	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

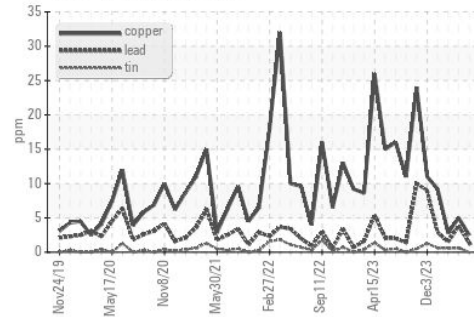
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14.6	14.7	13.9

GRAPHS

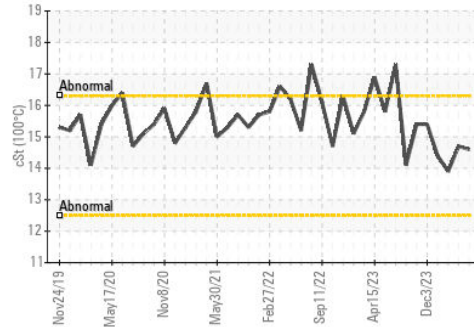
Ferrous Alloys



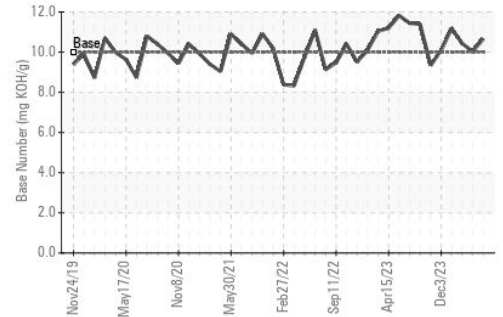
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

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

Sample No. : WC0922585

Lab Number : **06197900**

Unique Number : 11060023

Test Package : IND 2

Received : 03 Jun 2024

Tested : 04 Jun 2024

Diagnosed : 04 Jun 2024 - Don Baldrige

ALLVAC - MACHINE SHOP

2020 ASHCRAFT AVE

MONROE, NC

US 28110

Contact: mark eilerman

mark.eilerman@atimaterials.com

T: (704)292-4051

F: (704)282-0665

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)