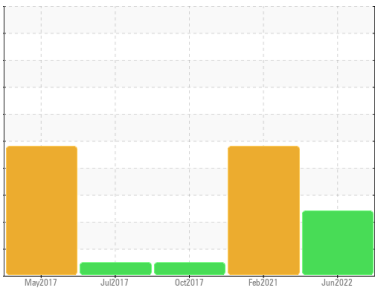
OIL ANALYSIS REPORT

Sample Rating Trend



DIRT

Area
CONSTRUCTORS, INC
Machine Id
12-1248
Component
Rear Biogas Engine
Fluid
MOBIL DELVAC 1300 SUPER 10W30 (--- GAL)

DIAGNOSIS

Recommendation
We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Wear
All component wear rates are normal.

Contamination
Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.

Fluid Condition
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**SBP0001164**	SBP35236050	SBP90199051
Sample Date		Client Info		**08 Jun 2022**	02 Feb 2021	13 Oct 2017
Machine Age	hrs	Client Info		**8709**	8125	6999
Oil Age	hrs	Client Info		**584**	500	308
Oil Changed		Client Info		**Changed**	Changed	Changed
Sample Status				**ABNORMAL**	SEVERE	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>4.0	**<1.0**	<1.0	<1.0
Water		WC Method	>0.1	**NEG**	NEG	NEG
Glycol		WC Method		**NEG**	0.0	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>45	**30**	58	5
Chromium	ppm	ASTM D5185m	>2	**6**	6	0
Nickel	ppm	ASTM D5185m	>2	**0**	0	0
Titanium	ppm	ASTM D5185m		**<1**	1	0
Silver	ppm	ASTM D5185m		**<1**	0	0
Aluminum	ppm	ASTM D5185m	>10	**11**	20	2
Lead	ppm	ASTM D5185m	>5	**6**	8	0
Copper	ppm	ASTM D5185m	>14	**6**	6	0
Tin	ppm	ASTM D5185m	>13	**1**	0	0
Vanadium	ppm	ASTM D5185m		**0**	0	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		**62**	38	51
Barium	ppm	ASTM D5185m		**0**	1	0
Molybdenum	ppm	ASTM D5185m		**34**	34	41
Manganese	ppm	ASTM D5185m		**<1**	0	0
Magnesium	ppm	ASTM D5185m		**533**	438	686
Calcium	ppm	ASTM D5185m		**1676**	1239	1541
Phosphorus	ppm	ASTM D5185m		**748**	692	983
Zinc	ppm	ASTM D5185m		**890**	669	1005
Sulfur	ppm	ASTM D5185m		**2651**	---	---

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>200	**57**	74	6
Sodium	ppm	ASTM D5185m		**6**	4	7
Potassium	ppm	ASTM D5185m	>20	**3**	5	0
Chlorine	ppm	ASTM D5185m		**---**	0	0

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844		**0.2**	0.41	0.37
Nitration	Abs/cm	*ASTM D7624	>20	**9.6**	---	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	**20.5**	---	---

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**20.5**	5	---
Base Number (BN)	mg KOH/g	ASTM D2896	10.5	**8.7**	---	---

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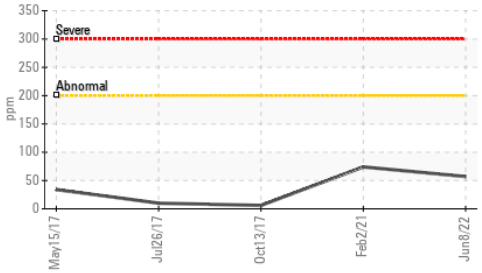
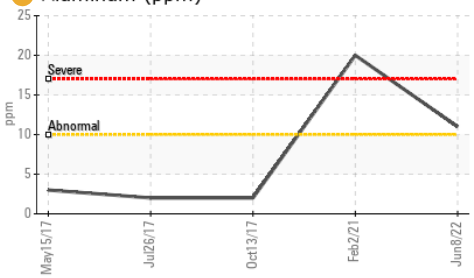
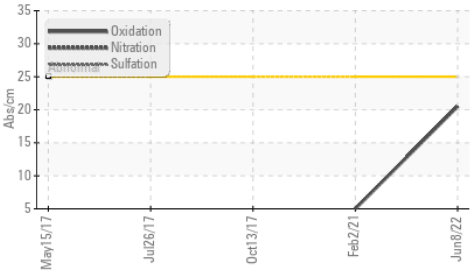
Silicon (ppm)



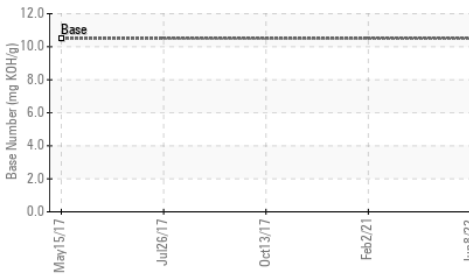
Aluminum (ppm)



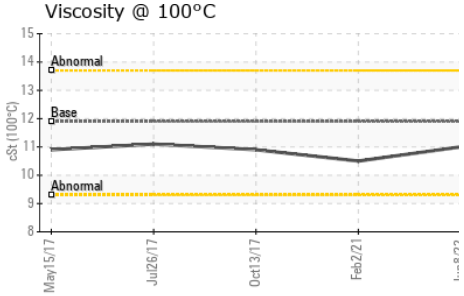
FT-IR (Direct Trend)



Base Number



Viscosity @ 100°C

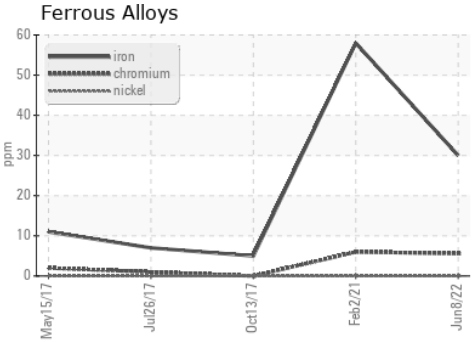


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	---	---
Yellow Metal	scalar	*Visual	NONE	**NONE**	---	---
Precipitate	scalar	*Visual	NONE	**NONE**	---	---
Silt	scalar	*Visual	NONE	**NONE**	---	---
Debris	scalar	*Visual	NONE	**NONE**	---	---
Sand/Dirt	scalar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

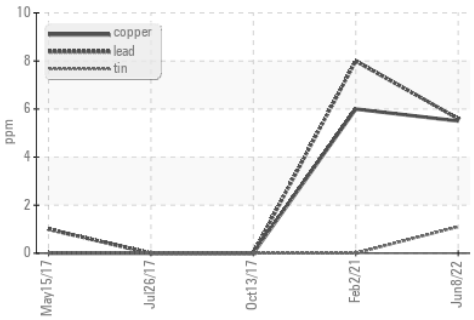
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	11.9	**11.0**	10.5	10.9

GRAPHS

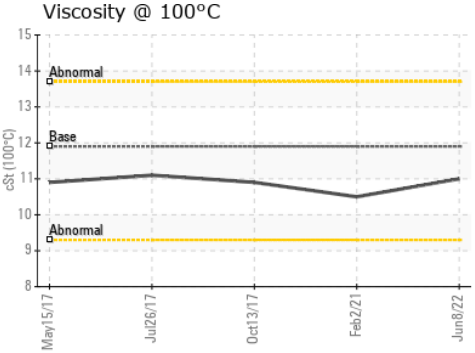
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



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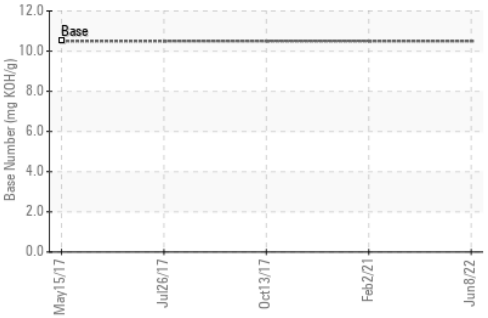

Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : SBP0001164
Lab Number : 05566211
Unique Number : 10010611
Test Package : FLEET

Received : 10 Jun 2022
Tested : 13 Jun 2022
Diagnosed : 13 Jun 2022 - Don Baldridge

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)

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