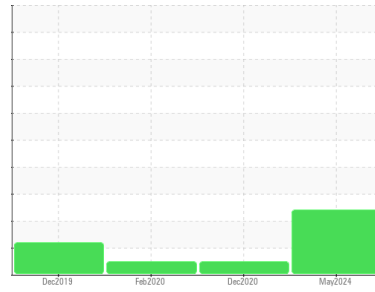


OIL ANALYSIS REPORT

Sample Rating Trend



GLYCOL



Machine Id

P-29

Component

Diesel Engine

Fluid

DIESEL ENGINE OIL SAE 15W40 (--- LTR)

DIAGNOSIS

Recommendation

Check for low coolant level. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Wear

All component wear rates are normal.

Contamination

Sodium and/or potassium levels are high.

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			PCA0124497	PCA0036446	PCA0006154
Sample Date	Client Info			13 May 2024	03 Dec 2020	23 Feb 2020
Machine Age	hrs	Client Info		10000	0	121367
Oil Age	hrs	Client Info		500	0	0
Oil Changed	Client Info			Changed	N/A	N/A
Sample Status				ATTENTION	NORMAL	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

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	24	42	13
Chromium	ppm	ASTM D5185m	>20	2	5	2
Nickel	ppm	ASTM D5185m	>4	2	2	<1
Titanium	ppm	ASTM D5185m		1	<1	0
Silver	ppm	ASTM D5185m	>3	<1	0	0
Aluminum	ppm	ASTM D5185m	>20	4	3	2
Lead	ppm	ASTM D5185m	>40	2	<1	<1
Copper	ppm	ASTM D5185m	>330	4	10	3
Tin	ppm	ASTM D5185m	>15	2	<1	0
Antimony	ppm	ASTM D5185m		---	0	0
Vanadium	ppm	ASTM D5185m		<1	<1	0
Cadmium	ppm	ASTM D5185m		<1	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	250	3	23	25
Barium	ppm	ASTM D5185m	10	0	0	0
Molybdenum	ppm	ASTM D5185m	100	65	39	36
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m	450	940	381	408
Calcium	ppm	ASTM D5185m	3000	1142	1222	1116
Phosphorus	ppm	ASTM D5185m	1150	1035	645	632
Zinc	ppm	ASTM D5185m	1350	1269	780	691
Sulfur	ppm	ASTM D5185m	4250	3649	2200	2568

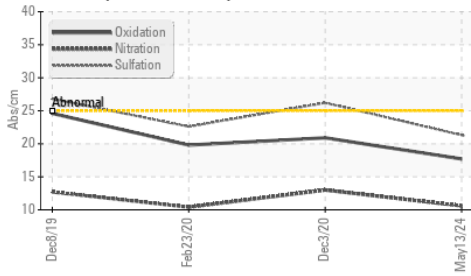
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	7	17	7
Sodium	ppm	ASTM D5185m	>158	86	3	4
Potassium	ppm	ASTM D5185m	>20	24	2	2
Glycol	%	*ASTM D2982		NEG	NEG	NEG

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	0.4	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	10.6	13	10.4
Sulfation	Abs/.1mm	*ASTM D7415	>30	21.3	26.2	22.6

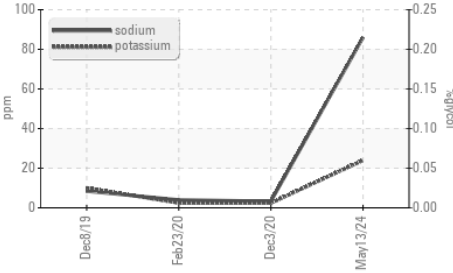
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	17.7	20.9	19.8
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	7.67	3.87	6.57

OIL ANALYSIS REPORT

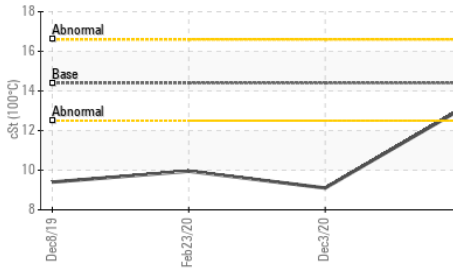
FT-IR (Direct Trend)



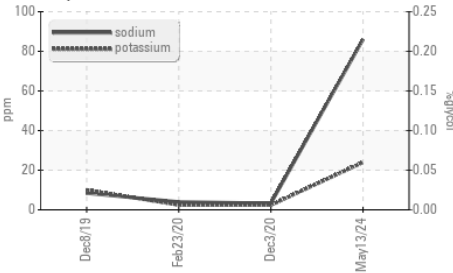
Glycol Contamination



Viscosity @ 100°C



Glycol Contamination



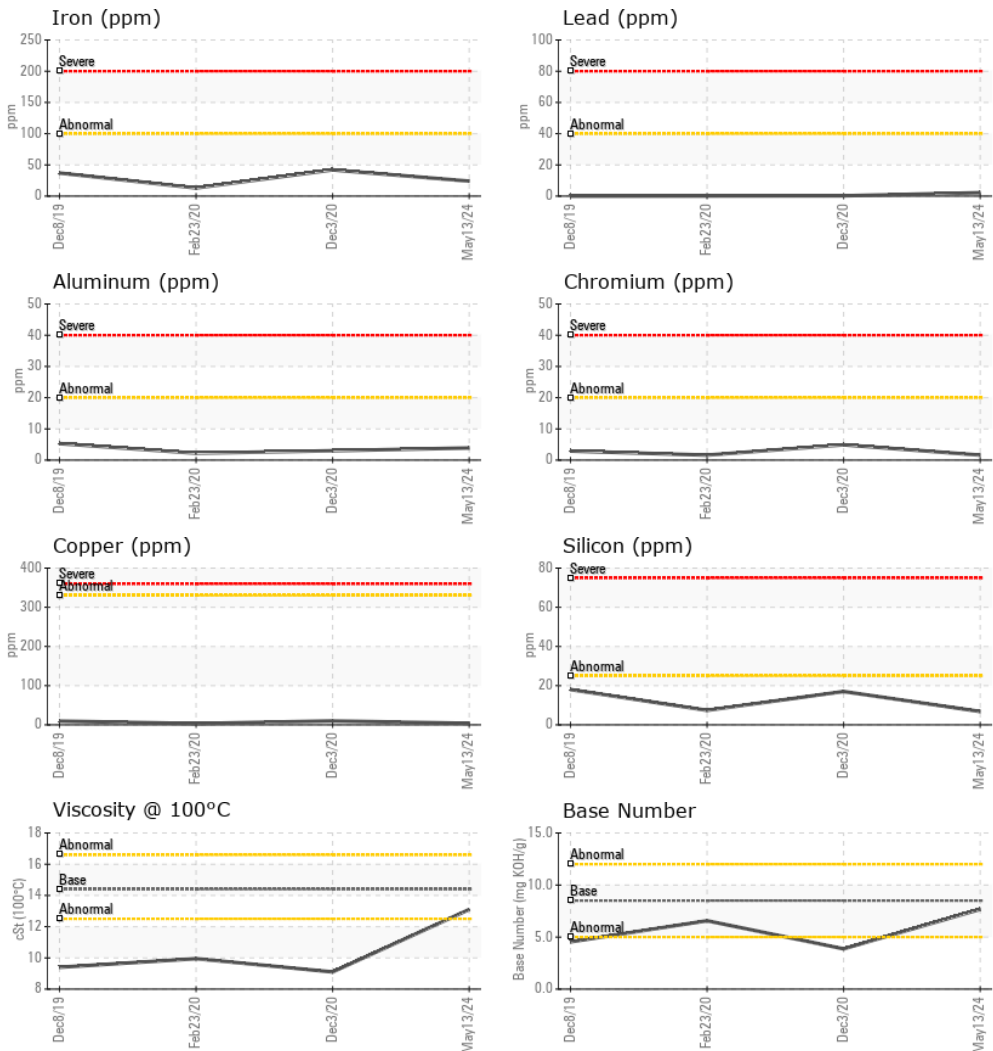
Viscosity @ 100°C



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	13.1	9.1	9.95

GRAPHS



Certificate L2367

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

Sample No. : PCA0124497

Lab Number : 06186391

Unique Number : 11043143

Test Package : MOB 2 (Additional Tests: Glycol)

Received : 21 May 2024

Tested : 23 May 2024

Diagnosed : 23 May 2024 - Sean Felton

SCRAP METAL SERVICES (SMS Mill Services LLC)

250 WEST U.S. HWY 12

CHESTERTON, IN

US 46304

Contact: WALTER MURRAY

wmurray@scrapmetalservices.com

T: (219)787-1341

F:

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)