



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	NORMAL



Area
RIG 2
Machine Id
CATERPILLAR 3512 R2-G-03-NKL
Component
Diesel Engine
Fluid
CHEVRON 15W40 (--- GAL)

RECOMMENDATION

We recommend you service the filters on this component. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		KL0014261	KL0014241	KL0013834
Sample Date		Client Info		14 May 2024	03 Apr 2024	16 Feb 2024
Machine Age	days	Client Info		45416	45375	45338
Oil Age	days	Client Info		0	0	0
Filter Age	days	Client Info		0	0	0
Oil Changed		Client Info		N/A	N/A	N/A
Filter Changed		Client Info		N/A	N/A	N/A
Sample Status				ABNORMAL	ATTENTION	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	5	5	<1
Chromium	ppm	ASTM D5185m	>20	<1	0	<1
Nickel	ppm	ASTM D5185m	>2	<1	0	0
Titanium	ppm	ASTM D5185m	>2	14	0	0
Silver	ppm	ASTM D5185m	>2	1	0	0
Aluminum	ppm	ASTM D5185m	>25	2	4	3
Lead	ppm	ASTM D5185m	>40	<1	<1	<1
Copper	ppm	ASTM D5185m	>330	3	8	<1
Tin	ppm	ASTM D5185m	>15	<1	0	<1
Vanadium	ppm	ASTM D5185m		<1	<1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

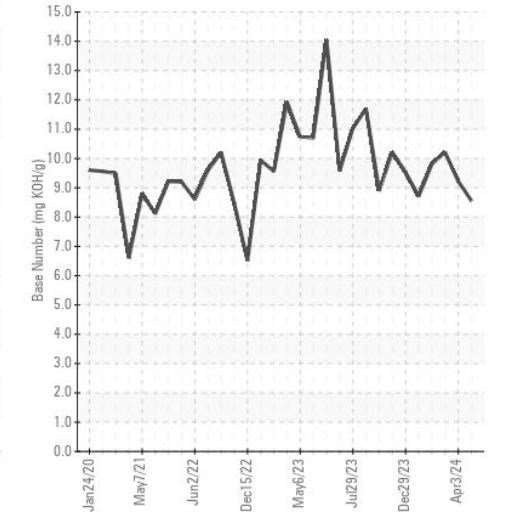
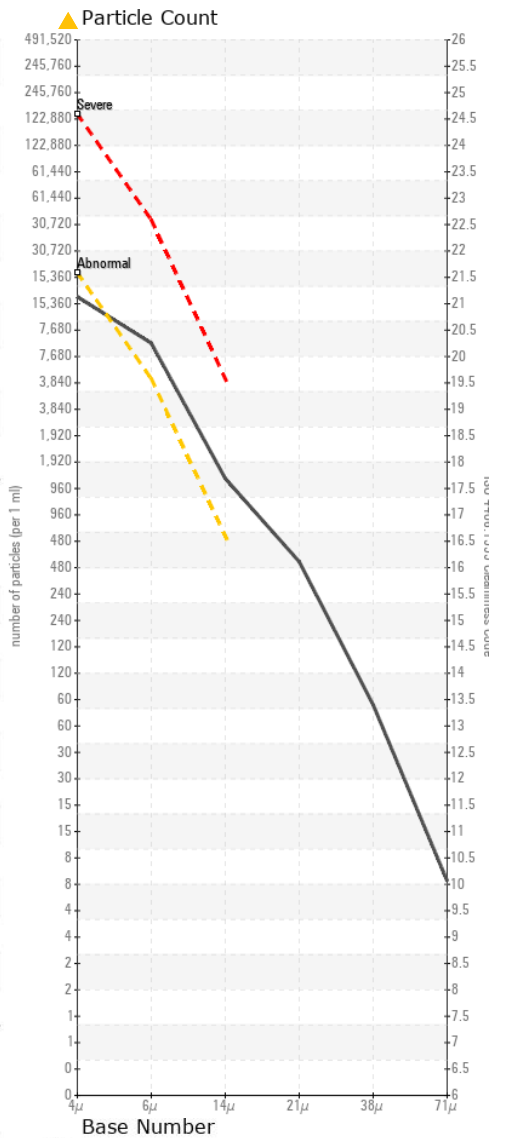
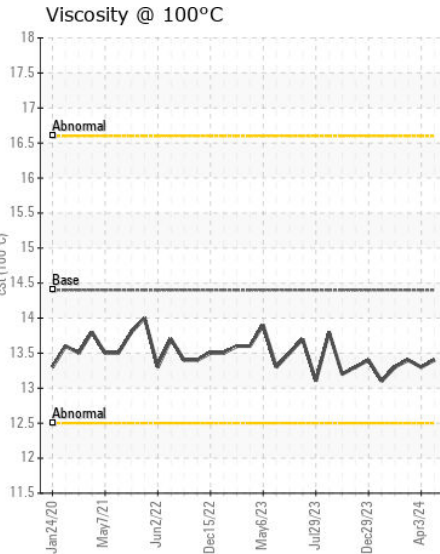
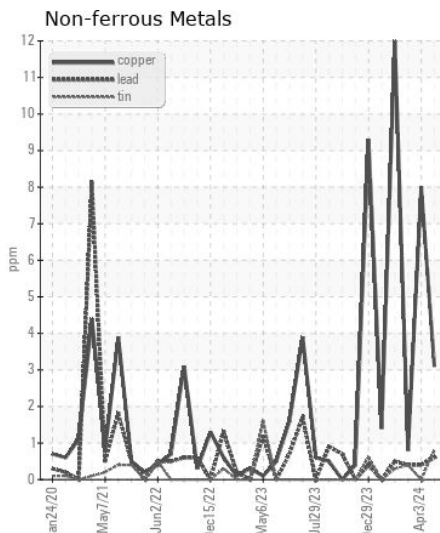
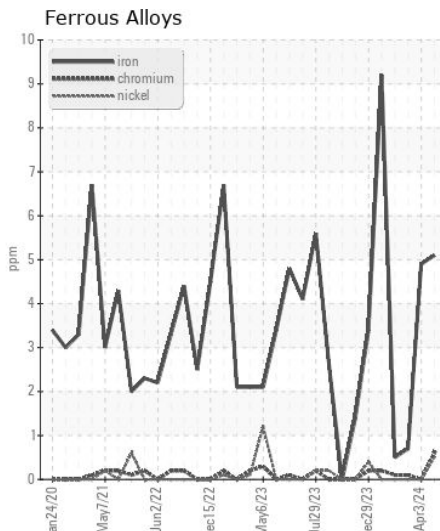
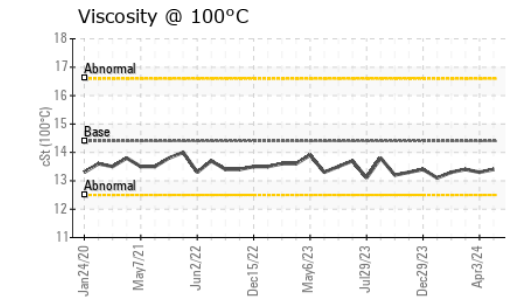
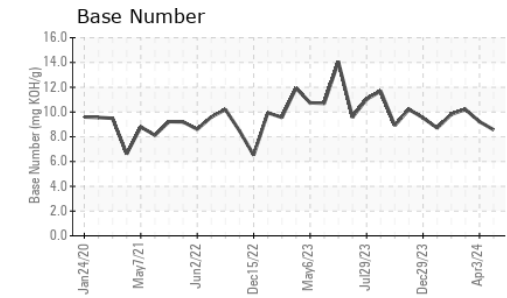
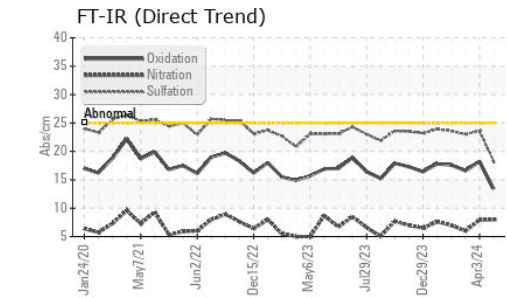
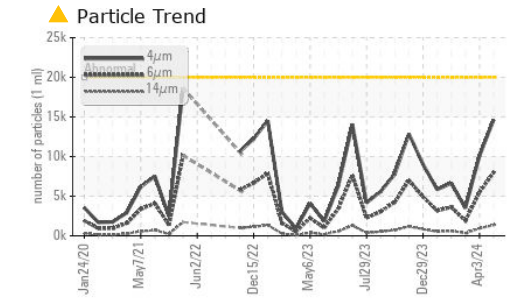
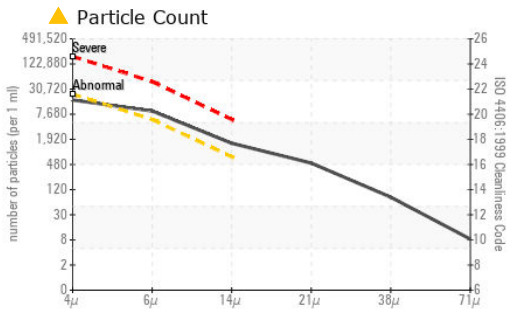
There is a high amount of particulates present in the oil.

Silicon	ppm	ASTM D5185m	>25	6	5	8
Potassium	ppm	ASTM D5185m	>20	4	0	<1
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.2	0.3	0.1
Nitration	Abs/cm	*ASTM D7624	>20	8.0	7.9	6.0
Sulfation	Abs/.1mm	*ASTM D7415	>30	18.3	23.6	23.0
Particles >4µm		ASTM D7647	>20000	14615	10074	3497
Particles >6µm		ASTM D7647	>5000	7962	5488	1905
Particles >14µm		ASTM D7647	>640	1355	934	342
Particles >21µm		ASTM D7647	>160	456	315	109
Particles >38µm		ASTM D7647	>40	70	49	17
Particles >71µm		ASTM D7647	>10	7	5	2
Oil Cleanliness		ISO 4406 (c)	>21/19/16	21/20/18	21/20/17	19/18/16
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG

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.

Sodium	ppm	ASTM D5185m	>50	2	<1	2
Boron	ppm	ASTM D5185m		134	379	320
Barium	ppm	ASTM D5185m		1	<1	0
Molybdenum	ppm	ASTM D5185m		42	136	119
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m		703	723	703
Calcium	ppm	ASTM D5185m		1425	1692	1436
Phosphorus	ppm	ASTM D5185m		689	757	749
Zinc	ppm	ASTM D5185m		830	857	882
Sulfur	ppm	ASTM D5185m		3156	3005	2555
Oxidation	Abs/.1mm	*ASTM D7414	>25	13.4	18.2	16.6
Base Number (BN)	mg KOH/g	ASTM D2896		8.56	9.22	10.21
Visc @ 100°C	cSt	ASTM D445	14.4	13.4	13.3	13.4



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : KL0014261 **Received** : 24 May 2024
Lab Number : 06191207 **Tested** : 30 May 2024
Unique Number : 11047959 **Diagnosed** : 30 May 2024 - Angela Borella
Test Package : MOB 2 (Additional Tests: PrtCount)

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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)