

OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL

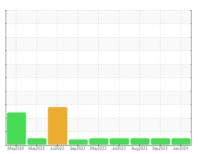


Action Newark Machine Id CATERPILLAR 5582

Component

Diesel Engine

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

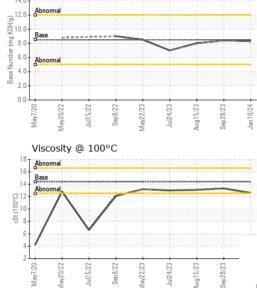
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0875476	WC0850717	WC0774703
Sample Date		Client Info		10 Jan 2024	28 Sep 2023	15 Aug 2023
Machine Age	hrs	Client Info		29002	28355	28151
Oil Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		N/A	N/A	N/A
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATION	N	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	11	9	7
Chromium	ppm	ASTM D5185m	>20	<1	<1	0
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m	>2	<1	0	<1
Silver	ppm	ASTM D5185m		0	0	0
Aluminum	ppm	ASTM D5185m		2	3	<1
Lead	ppm		>40	2	1	<1
Copper	ppm	ASTM D5185m		1	<1	4
Tin	ppm		>15	<1	<1	<1
Vanadium	ppm	ASTM D5185m	7.0	0	0	<1
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	250	13	6	13
Barium	ppm	ASTM D5185m	10	0	0	0
Molybdenum	ppm	ASTM D5185m	100	58	65	65
Manganese						00
Manganese	ppm	ASTM D5185m		<1	0	<1
Magnesium	ppm ppm	ASTM D5185m ASTM D5185m	450			
-		ASTM D5185m	450 3000	<1	0	<1
Magnesium	ppm	ASTM D5185m		<1 856	0 847	<1 819
Magnesium Calcium	ppm	ASTM D5185m ASTM D5185m	3000	<1 856 1064	0 847 1170	<1 819 1283
Magnesium Calcium Phosphorus	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	3000 1150	<1 856 1064 1002	0 847 1170 1006	<1 819 1283 941
Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	3000 1150 1350	<1 856 1064 1002 1145	0 847 1170 1006 1205	<1 819 1283 941 1159
Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	3000 1150 1350 4250	<1 856 1064 1002 1145 3182	0 847 1170 1006 1205 3281	<1 819 1283 941 1159 3642
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	3000 1150 1350 4250 limit/base	<1 856 1064 1002 1145 3182 current	0 847 1170 1006 1205 3281 history1	<1 819 1283 941 1159 3642 history2
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	3000 1150 1350 4250 limit/base >25	<1 856 1064 1002 1145 3182 current	0 847 1170 1006 1205 3281 history1	<1 819 1283 941 1159 3642 history2
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method ASTM D5185m ASTM D5185m	3000 1150 1350 4250 limit/base >25 >158	<1 856 1064 1002 1145 3182 current 4	0 847 1170 1006 1205 3281 history1 4	<1 819 1283 941 1159 3642 history2 4
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	3000 1150 1350 4250 limit/base >25 >158 >20	<1 856 1064 1002 1145 3182 current 4 0	0 847 1170 1006 1205 3281 history1 4 0	<1 819 1283 941 1159 3642 history2 4 3
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method ASTM D5185m	3000 1150 1350 4250 Iimit/base >25 >158 >20 Iimit/base	<1 856 1064 1002 1145 3182	0 847 1170 1006 1205 3281 history1 4 0 1	<1 819 1283 941 1159 3642 history2 4 3 6
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method *ASTM D7844	3000 1150 1350 4250 limit/base >25 >158 >20 limit/base >3	<1 856 1064 1002 1145 3182	0 847 1170 1006 1205 3281 history1 4 0 1 history1	<1 819 1283 941 1159 3642 history2 4 3 6 history2
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm Abs/.1mm	ASTM D5185m	3000 1150 1350 4250 limit/base >25 >158 >20 limit/base >3 >20	<1 856 1064 1002 1145 3182	0 847 1170 1006 1205 3281 history1 4 0 1 history1 0.3 6.7	<1 819 1283 941 1159 3642 history2 4 3 6 history2 0.2 6.7
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm Abs/.1mm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	3000 1150 1350 4250 limit/base >25 >158 >20 limit/base >3 >20 >3	<1 856 1064 1002 1145 3182	0 847 1170 1006 1205 3281 history1 4 0 1 history1 0.3 6.7 18.9	<1 819 1283 941 1159 3642 history2 4 3 6 history2 0.2 6.7 18.7
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRADA	ppm ppm ppm ppm ppm ppm ppm ppm ppm Abs/cm Ation	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method ASTM D5185m Method *ASTM D7844 *ASTM D7624 *ASTM D7415 Method	3000 1150 1350 4250 limit/base >25 >158 >20 limit/base >3 >20 >3 	<1 856 1064 1002 1145 3182 current 4 0 4 current 0.3 7.1 19.3 current	0 847 1170 1006 1205 3281 history1 4 0 1 history1 0.3 6.7 18.9	<1 819 1283 941 1159 3642 history2 4 3 6 history2 0.2 6.7 18.7 history2



Base Number

OIL ANALYSIS REPORT

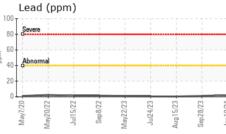


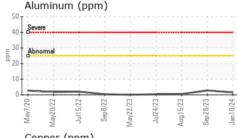
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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
Free Water	scalar	*Visual		NEG	NEG	NEG

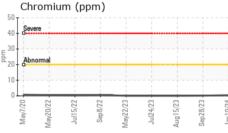
FLUID PROPER	IIIES	method	limit/base		history1	history2
Visc @ 100°C	cSt	ASTM D445	14.4	12.6	13.3	13.1

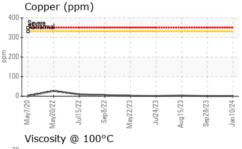
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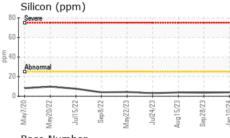
GRAPHS

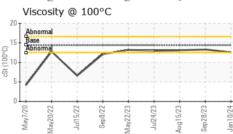


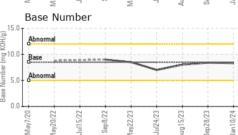














Certificate L2367

Laboratory Sample No. Lab Number

Unique Number

: WC0875476 : 06058696 : 10830078

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

: 11 Jan 2024 : 12 Jan 2024 Diagnostician : Wes Davis

Test Package : MOB 1 (Additional Tests: TBN)

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. **INTERSTATE WASTE-NEWARK** 110 EVERGREEN AVE, BAY 3

NEWARK, NJ US 07114

Contact: Robert Witynski RWitynski@interstatewaste.com

T: F:

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)