



# OIL ANALYSIS REPORT

WEAR	<b>NORMAL</b>
CONTAMINATION	<b>NORMAL</b>
FLUID CONDITION	<b>NORMAL</b>



Machine Id  
**CATERPILLAR D6N 317 (S/N GHS00934)**  
 Component  
**Diesel Engine**  
 Fluid  
**DIESEL ENGINE OIL SAE 15W40 (5 GAL)**

## RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>RW0004731</b>	RW0004580	RW0004393
Sample Date		Client Info		<b>27 Apr 2024</b>	24 Oct 2023	27 May 2023
Machine Age	hrs	Client Info		<b>10005</b>	9721	9479
Oil Age	hrs	Client Info		<b>284</b>	242	278
Filter Age	hrs	Client Info		<b>284</b>	242	278
Oil Changed		Client Info		<b>Changed</b>	Changed	Changed
Filter Changed		Client Info		<b>Changed</b>	Changed	Changed
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

## WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	<b>17</b>	12	19
Chromium	ppm	ASTM D5185m	>20	<b>0</b>	<1	<1
Nickel	ppm	ASTM D5185m	>2	<b>0</b>	0	0
Titanium	ppm	ASTM D5185m	>2	<b>0</b>	0	0
Silver	ppm	ASTM D5185m	>2	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>25	<b>1</b>	1	2
Lead	ppm	ASTM D5185m	>40	<b>0</b>	0	0
Copper	ppm	ASTM D5185m	>330	<b>0</b>	<1	1
Tin	ppm	ASTM D5185m	>15	<b>&lt;1</b>	<1	0
Vanadium	ppm	ASTM D5185m		<b>0</b>	0	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

## CONTAMINATION

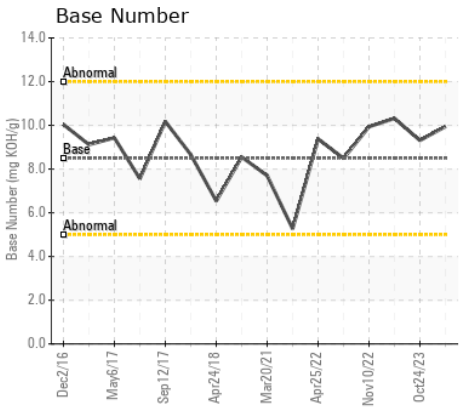
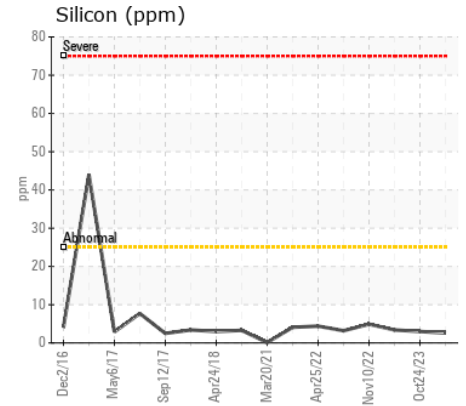
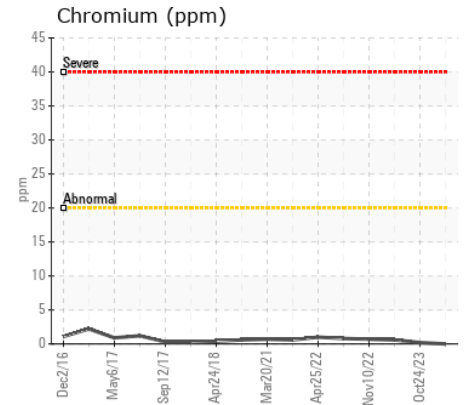
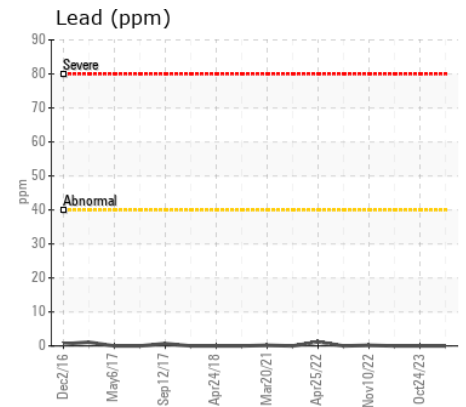
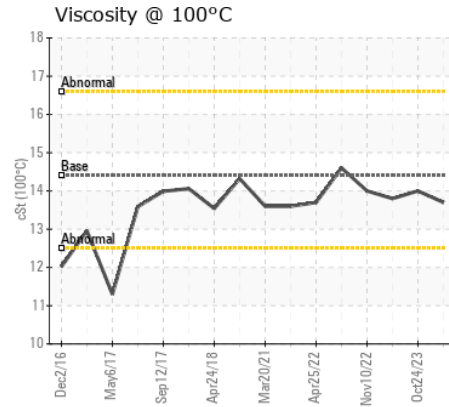
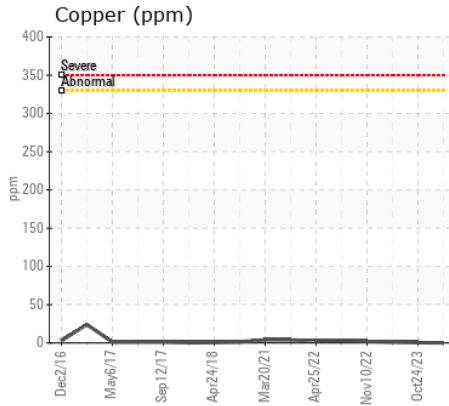
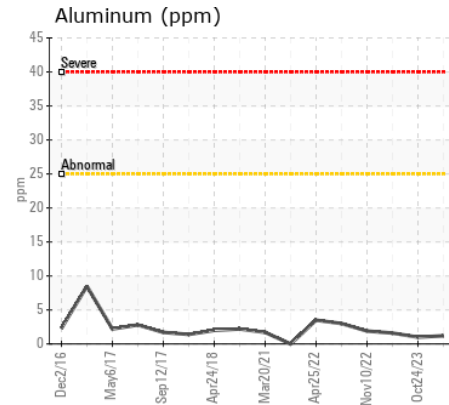
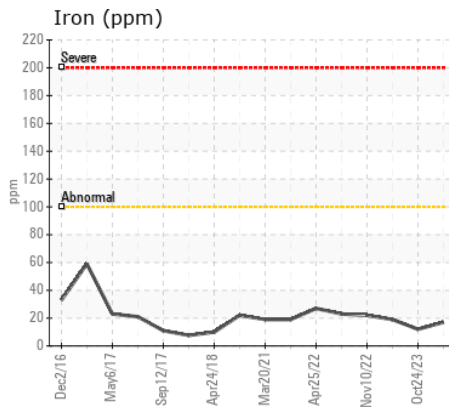
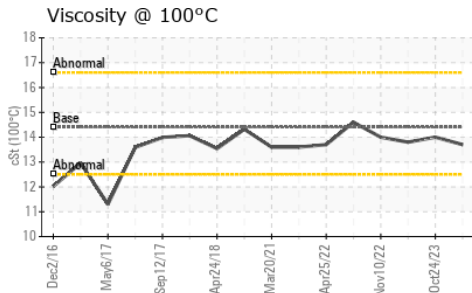
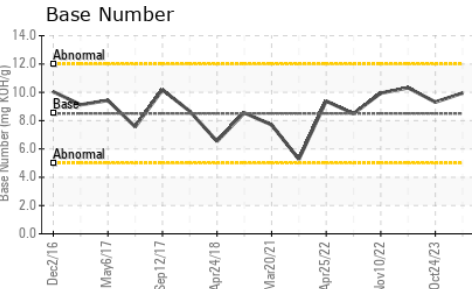
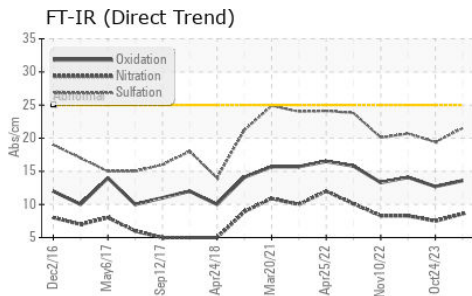
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	<b>3</b>	3	3
Potassium	ppm	ASTM D5185m	>20	<b>0</b>	0	1
Fuel		WC Method	>5	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>3	<b>2.2</b>	1.7	1.5
Nitration	Abs/cm	*ASTM D7624	>20	<b>8.6</b>	7.5	8.3
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>21.5</b>	19.4	20.7
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	<b>NEG</b>	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	>158	<b>2</b>	0	1
Boron	ppm	ASTM D5185m	250	<b>6</b>	7	6
Barium	ppm	ASTM D5185m	10	<b>1</b>	0	0
Molybdenum	ppm	ASTM D5185m	100	<b>58</b>	52	64
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185m	450	<b>851</b>	832	967
Calcium	ppm	ASTM D5185m	3000	<b>1103</b>	969	1172
Phosphorus	ppm	ASTM D5185m	1150	<b>1021</b>	911	1091
Zinc	ppm	ASTM D5185m	1350	<b>1188</b>	1118	1323
Sulfur	ppm	ASTM D5185m	4250	<b>3377</b>	2871	3865
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>13.6</b>	12.7	14.1
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	<b>9.95</b>	9.31	10.32
Visc @ 100°C	cSt	ASTM D445	14.4	<b>13.7</b>	14.0	13.8



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : RW0004731  
**Lab Number** : 06176215  
**Unique Number** : 11022268  
**Test Package** : MOB 2

**Received** : 10 May 2024  
**Tested** : 13 May 2024  
**Diagnosed** : 13 May 2024 - Wes Davis

**HALLACK CONTRACTING, INC.**  
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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)