



The Unified Voice of Texas Trucking

Fluid Analysis

SPEAKER BIO



WearCheck Lubrication Services



Ken Hill, CESP

Vice President

- *36+ yrs in lubricant analysis industry*
- *USAF Veteran (Master Instructor, Fuels Laboratory)*
- *Certified Equipment Support Professional (Association of Equipment Management Professionals)*
- *Technical Instructor for Lubrication Management*

Purpose of Fluid Analysis

Fluid Analysis helps to:

- Monitor lubricant health and remaining useful life
- Detect equipment wear before failure occurs
- Identify contamination from water, dirt, fuel, coolant, or other substances
- Optimize oil change intervals
- Reduce maintenance costs and unplanned downtime

Typical Tests Performed

1. Viscosity Analysis (Most important property of the fluid)

1. Measures the oil's resistance to flow.
2. Indicates whether the oil has thickened or thinned.

2. Wear Metal Analysis

1. Detects metals such as iron, copper, aluminum, and chromium.
2. Helps identify wear of specific machine components.

3. Contamination Testing

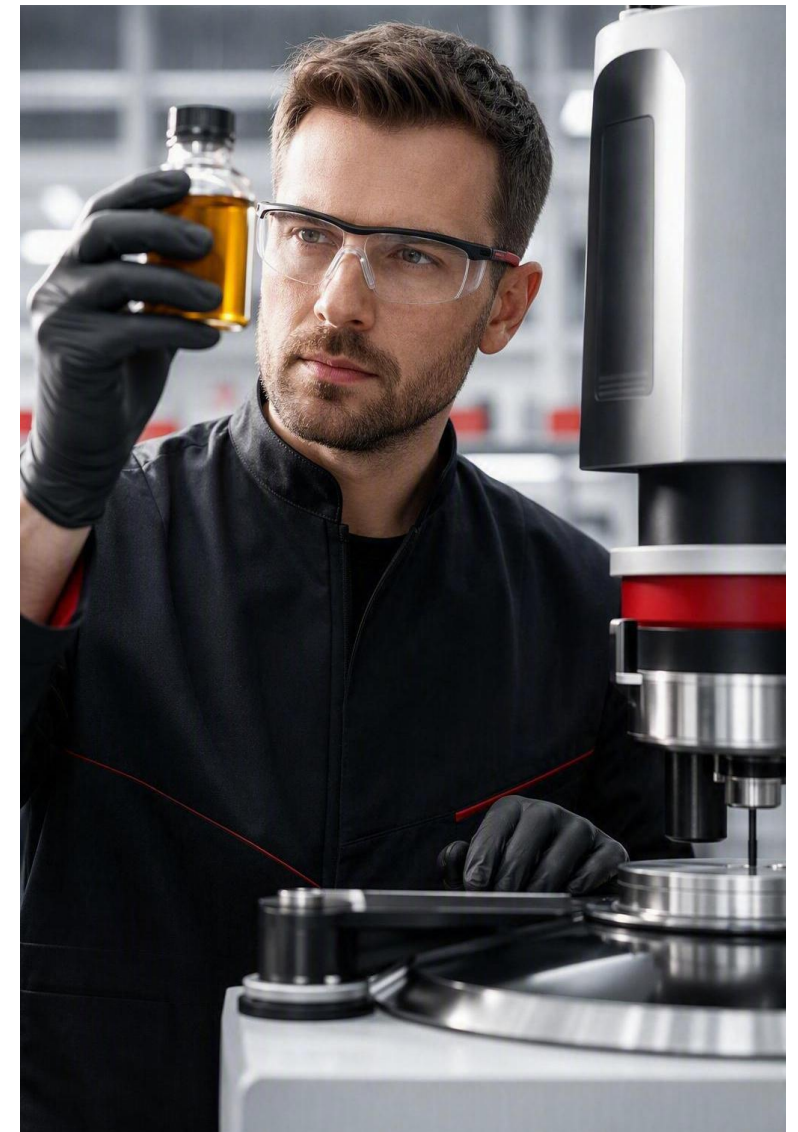
1. Detects water, dirt, fuel dilution, coolant leakage, and other contaminants.

4. Chemical Condition Testing

1. Measures oxidation, nitration, acidity (TAN), and alkalinity (TBN).
2. Evaluates oil degradation and additive depletion.

5. Particle Count Analysis

1. Quantifies the amount and size of solid particles in the oil.
2. Indicates cleanliness and wear levels.



BENEFITS OF FLUID ANALYSIS



Cost	Lower cost of ownership 
Optimize	Optimize Oil Drain Intervals
Monitor	Monitor for signs of wear or contamination
Reduce	Reduce unplanned downtime
Extend	Extend component life
Support	Support for warranty claims

REQUIRED INFORMATION

Complete all fields for accurate analysis and reliable results.

	Customer Information	Your name and email for reporting and follow-up.	→
	Unit Number	The unit or asset identifier.	→
	Component Type	The component and specific location.	→
	Lubricant Used	Oil brand and grade in the unit.	→
	Sample Date	The date the oil sample was taken.	→
	UOM	Time units of Hours, Kilometers, or Miles.	→
	Time on Unit	Total time the unit has been in service.	→
	Time on Oil	Time since the oil was last changed.	→
	Time on Filter	Time since the filter was last changed.	→
	Oil Changed	Indicate YES or NO.	→
	Filter Changed	Indicate YES or NO.	→
	Comments	Add any notes or concerns that may help with analysis.	→

EXAMPLE COMPLETED FORM




SCAN TO COMPLETE ON-LINE ▶

WC sample kits will be replaced with unused kits if defective in manufacture, labeling, or packaging, or if lost by us or any associate company even though by negligence or other fault. WC shall not be liable or responsible for the future performance or failure of any engine, piece of equipment or material involved in any test or sample. The Company makes no warranties, representations, or guarantees with respect to the performance of any such engine, piece of equipment, or material.



WC1251970

CUSTOMER CODE: **CAROKL**

EMAIL/ATTN: **ken.hill@wearcheck.com**

AFFIX MACHINE LABEL OR COMPLETE THIS INFORMATION

▼ **UNIT NUMBER:** **A-12345**

COMPONENT (Circle One): Engine / Transmission / Power Take Off
Hydrostatic / Hydraulic System / Gearbox / Swing Drive / Differential
Final Drive / Planetary / Tandem / Steering / Brake / Other

LOCATION (Circle One): Front / Rear / Left / Right / Other

OIL BRAND & GRADE: **PETRO CANADA DURON SHP 10W30**

SAMPLE DATE: **09/11/26**

TIME UNITS: Hours / Kilometers / Miles (Circle One)

TIME ON UNIT: **179,525**

TIME ON OIL: **45,026**

TIME ON FILTER: **45,026**

OIL CHANGED: YES / NO

FILTER CHANGED: YES / NO

COMMENTS:
Suspect BAD injectors

ADD TESTS: **1000-009**

▲ **PLACE COMPLETED FORM IN MAILER (DON'T STICK TO MAILER)**

▼ **KEEP FOR TRACKING THIS SAMPLE** ▼ **STICK ON BOTTLE**



scan to track sample

ID or S/N: _____

Sample Date: _____

WC1251970



WC1251970

WHAT DO LABORATORIES TEST FOR?

TABLE 1: RECOMMENDED ENGINE OIL ANALYSIS TESTS AND PROCEDURES		
Area of Concern	Proper Test	Procedure
Lubricant Performance	Viscosity	ASTM D445
	TBN	ASTM D4739
	TAN	D664
	Oxidation	ASTM E2412 ASTM D7414 Procedure A
	Nitration	ASTM E2412
Contamination	Soot	TGA (ASTM E1131) FT-IR (ASTM E2412)-correlated
	Dirt (Aluminum, Silicon)	ASTM D5185
	Fuel Dilution	ASTM D3524 ASTM D7593
	Water	ASTM D6304 IR
	Coolant (Sodium, Potassium)	ASTM D5185
Component Wear	Iron, Chromium, Lead, Copper, Aluminum, Tin, Silver, Nickel, etc.	ASTM D5185

SOURCE OF WEAR METALS

**TABLE 2:
TYPICAL METALS FOUND IN HEAVY-DUTY DIESEL ENGINES**

Element	Possible Source Elements
Iron (Fe)	Cylinder liners, engine block, gears, crankshaft, wrist pins, piston rings (cast), camshaft, valve train, oil pump.
Chromium (Cr)	Piston rings, roller/taper bearings (some), exhaust valves, EGR cooler
Molybdenum (Mo)	Piston rings
Nickel (Ni)	Valves, EGR cooler
Aluminium (Al)	Piston skirts, bearings (some), bushings (some), housings, oil pump bushing, thrust bearing, oil cooler, charge air cooler (will contain some elevated potassium and normal sodium)
Tin (Sn)	Pistons (overlay), bearings (overlay), bushings
Lead (Pb)	Bearings
Copper (Cu)	Wrist pins, bushings, bearings, cam bushings, valve training, oil cooler, thrust washer, oil pump, air compressor

INTERPRETATION GUIDELINES

TABLE 3:
USED OIL INTERPRETATION GUIDELINES FOR HEAVY-DUTY 15W40 DIESEL ENGINE OILS*
(*DOES NOT APPLY TO EXTENDED OIL DRAIN INTERVALS)

Analysis Parameter	Viscosity Kv100 cSt@100°C ⁽¹⁾	TBN D4739	TBN D2896	Oxidation, abs/cm
Normal Range	12-16	>4	>6	<15
Borderline Range	11 / 17-20	2-4	4-6	15-29
Warning Range	<11 or >20	<2	<4	>29

(1) For 15W40 grade oils

Recommended Used Oil Analysis Wear Limits for Heavy-Duty Diesel Engines								
Wear Metal, ppm	Iron	Chromium	Molybdenum	Nickel	Aluminum	Tin	Lead	Copper
Normal up to:	100	5	10	5	10	10	20	10
Warning above:	200	15	20	10	20	25	50	25

Recommended Used Oil Contamination Limit for Heavy-Duty Diesel Engines							
Analysis Parameter	Dirt (silicon), ppm	Soot ⁽²⁾ Weight%	Coolant, ppm			Water, % volume	Fuel dilution, % volume
			Potassium	Sodium	Glycol		
Warning above:	25	3	50	50	Any detectable	0.1	2
Critical above:	50	6	100	100		0.2	5

Equipment Information

Recommendation

Wear Comments

Contamination Comments

Fluid Comments



OIL ANALYSIS REPORT

Area: **Guardian**
Machine Id: **PETERBILT 496755**
Component: **Diesel Engine**
Fluid: **CASTROL CRB Multi 15W-40 CK-4 (48 QTS)**

RECOMMENDATION

We advise that you check for the source of the coolant leak. 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. Test for glycol is positive. Elemental level of silicon (Si) above normal indicating ingress of seal material.

FLUID CONDITION

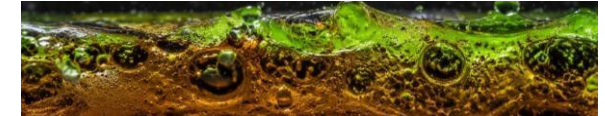
The BN result indicates that there is suitable alkalinity remaining in the oil. The oil is no longer serviceable due to the presence of contaminants.

WEAR
CONTAMINATION
FLUID CONDITION

NORMAL
SEVERE
ABNORMAL

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client info		RPL0046804	RPL0039761	RPL0040132
Sample Date		Client info		16 Aug 2026	28 Apr 2026	16 Mar 2026
Machine Age	mls	Client info		176266	144099	133642
Oil Age	mls	Client info		0	0	12830
Filter Age	mls	Client info		0	0	12830
Oil Changed		Client info		Changed	Changed	Changed
Filter Changed		Client info		Changed	Changed	Changed
Sample Status				SEVERE	ABNORMAL	ABNORMAL
Iron	ppm	ASTM D5185m	>90	27	13	15
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>2	<1	0	2
Titanium	ppm	ASTM D5185m	>2	<1	<1	<1
Silver	ppm	ASTM D5185m	>2	<1	0	0
Aluminum	ppm	ASTM D5185m	>20	4	2	3
Lead	ppm	ASTM D5185m	>40	11	<1	2
Copper	ppm	ASTM D5185m	>330	1	<1	<1
Tin	ppm	ASTM D5185m	>15	<1	<1	<1
Vanadium	ppm	ASTM D5185m		0	0	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185m	>25	▲ 30	5	6
Potassium	ppm	ASTM D5185m	>20	▲ 333	▲ 134	▲ 173
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Water		ASTM D304	>0.2	NEG	NEG	NEG
Glycol	%	*ASTM D2902		▲ 0.10	NEG	▲ 0.06
Soot %	%	E2412/D7844	>6	1.2	0.5	0.5
Nitration	Abs/cm	ASTM E2412	>20	10.4	7.8	8.1
Sulfation	Abs.1mm	E2412/D7415	>30	23.9	18.4	19.2
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
Sodium	ppm	ASTM D5185m		▲ 243	▲ 119	▲ 120
Boron	ppm	ASTM D5185m		5	1	6
Berium	ppm	ASTM D5185m		0	0	<1
Molybdenum	ppm	ASTM D5185m		93	27	32
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m		697	65	64
Calcium	ppm	ASTM D5185m		1255	2181	2101
Phosphorus	ppm	ASTM D5185m		916	851	846
Zinc	ppm	ASTM D5185m		1169	1028	991
Sulfur	ppm	*ASTM D6185m		2550	3092	3402
Oxidation	Abs.1mm	E2412/D7414	>25	16.1	9.8	10.6
Base Number (BN)	mg KOH/g	ASTM D2896	10	7.2	6.5	6.4
Visc @ 100°C	cSt	ASTM D445	15.5	13.4	13.2	13.0

Summary Observation



Sample Information

Wear Data

Contamination Data

Fluid Data



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	SEVERE
FLUID CONDITION	SEVERE

Machine Id
FORD B77039 ROBERT
Component
Diesel Engine
Fluid
MOBIL DELVAC 1300 SUPER 15W40 (14 QTS)

RECOMMENDATION

We advise that you check the fuel injection system. We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition.

WEAR

All component wear rates are normal.

CONTAMINATION

There is a high amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

FLUID CONDITION

The BN result indicates that there is suitable alkalinity remaining in the oil. Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		RPL0037478	RPL0041089	RPL0003468
Sample Date		Client Info		27 Aug 2026	04 Jun 2026	11 Nov 2022
Machine Age	mls	Client Info		120395	118734	94637
Oil Age	mls	Client Info		1661	5259	12011
Filter Age	mls	Client Info		1661	5259	12011
Oil Changed		Client Info		Not Changed	Changed	Changed
Filter Changed		Client Info		Not Changed	Changed	Changed
Sample Status				SEVERE	SEVERE	SEVERE
Iron	ppm	ASTM D5185m	>100	6	12	18
Chromium	ppm	ASTM D5185m	>20	0	0	<1
Nickel	ppm	ASTM D5185m	>2	0	<1	0
Titanium	ppm	ASTM D5185m	>2	0	4	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>25	2	3	4
Lead	ppm	ASTM D5185m	>40	0	0	0
Copper	ppm	ASTM D5185m	>330	<1	1	2
Tin	ppm	ASTM D5185m	>15	0	0	<1
Vanadium	ppm	ASTM D5185m		0	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185m	>25	12	18	6
Potassium	ppm	ASTM D5185m	>20	2	0	0
Fuel	%	ASTM D3524	>5	▲ 16.2	▲ 19.3	▲ 12.3
Water		ASTM D6304	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	E2412/D7844	>3	0.4	0.6	1.3
Nitration	Abs/cm	ASTM E2412	>20	8.1	9.6	12.1
Sulfation	Abs.1mm	E2412/D7415	>30	18.7	19.5	24.6
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
Sodium	ppm	ASTM D5185m		2	<1	1
Boron	ppm	ASTM D5185m	60	8	4	10
Barium	ppm	ASTM D5185m	0	2	0	0
Molybdenum	ppm	ASTM D5185m	40	53	49	49
Manganese	ppm	ASTM D5185m	0	0	<1	<1
Magnesium	ppm	ASTM D5185m	500	818	748	361
Calcium	ppm	ASTM D5185m	1450	858	886	1455
Phosphorus	ppm	ASTM D5185m	700	877	867	798
Zinc	ppm	ASTM D5185m	850	1025	1083	976
Sulfur	ppm	*ASTM D5185m	2200	2643	2532	3305
Oxidation	Abs.1mm	E2412/D7414	>25	14.1	16.1	21.3
Base Number (BN)	mg KOH/g	ASTM D2896	9.4	8.5	8.4	7.4
Visc @ 100°C	cSt	ASTM D445	14	▲ 9.7	▲ 9.6	▲ 10.4

Fuel Dilution = 16.2%

Viscosity = 9.7 cSt = 30W Oil



OIL ANALYSIS REPORT

WEAR
CONTAMINATION
FLUID CONDITION

ATTENTION
SEVERE
ABNORMAL

Area

Contracting

Machine Id

7304 7304

Component

Diesel Engine

Fluid

MOBIL DELVAC 1300 SUPER15W40 (5 GAL)

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. We recommend an early resample to monitor this condition.

WEAR

All component wear rates are normal.

CONTAMINATION

Sodium and/or potassium levels are high. There is a high amount of particulates present in the oil. Test for glycol is negative. Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress. Light fuel dilution occurring.

FLUID CONDITION

Fuel is present in the oil and is lowering the viscosity. The BN result indicates that there is suitable alkalinity remaining in the oil.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC1236866	WC124575	WC0998775
Sample Date		Client Info		27 Aug 2025	16 Oct 2025	31 Oct 2024
Machine Age	hrs	Client Info		11927	11398	10852
Oil Age	hrs	Client Info		581	546	248
Filter Age	hrs	Client Info		581	546	248
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				SEVERE	ABNORMAL	ABNORMAL
Iron	ppm	ASTM D5185m	>100	35	47	39
Chromium	ppm	ASTM D5185m	>20	1	2	<1
Nickel	ppm	ASTM D5185m	>2	4	<1	0
Titanium	ppm	ASTM D5185m	>2	<1	3	0
Silver	ppm	ASTM D5185m	>2	<1	<1	0
Aluminum	ppm	ASTM D5185m	>25	7	3	2
Lead	ppm	ASTM D5185m	>40	2	4	<1
Copper	ppm	ASTM D5185m	>330	26	2	3
Tin	ppm	ASTM D5185m	>15	2	<1	<1
Vanadium	ppm	ASTM D5185m		0	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185m	>25	▲ 88	16	22
Potassium	ppm	ASTM D5185m	>20	▲ 41	0	1
Fuel	%	ASTM D3524	>5	▲ 4.0	<1.0	3.0
Water	%	ASTM D6304	>0.2	NEG	NEG	NEG
Glycol	%	*ASTM D2992		NEG	NEG	NEG
Soot %	%	E2412/D7844	>3	0.3	1.4	0.6
Nitration	Abs/cm	ASTM E2412	>20	6.8	9.5	6.7
Sulfation	Abs/1mm	E2412/D7415	>30	21.3	23.1	21.6
Particles >4µm		ASTM D7647	>20000	▲ 27173	14703	▲ 65185
Particles >6µm		ASTM D7647	>5000	▲ 14803	▲ 8009	▲ 35510
Particles >14µm		ASTM D7647	>640	▲ 2519	1363	6043
Particles >21µm		ASTM D7647	>160	▲ 849	459	▲ 2036
Particles >38µm		ASTM D7647	>40	▲ 131	71	314
Particles >71µm		ASTM D7647	>10	▲ 13	7	32
Oil Cleanliness		ISO 4406 (c)	>21/19/18	▲ 22/21/19	▲ 21/20/18	▲ 23/22/20
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
Sodium	ppm	ASTM D5185m		13	2	2
Boron	ppm	ASTM D5185m	60	112	42	54
Barium	ppm	ASTM D5185m	0	<1	0	0
Molybdenum	ppm	ASTM D5185m	40	64	87	48
Manganese	ppm	ASTM D5185m	0	2	<1	<1
Magnesium	ppm	ASTM D5185m	500	443	675	492
Calcium	ppm	ASTM D5185m	1450	1548	1643	1509
Phosphorus	ppm	ASTM D5185m	700	805	896	736
Zinc	ppm	ASTM D5185m	850	968	1098	888
Sulfur	ppm	*ASTM D5185m	2200	2318	2126	3289
Oxidation	Abs/1mm	E2412/D7414	>25	17.6	19.6	18.2
Base Number (BN)	mg KOH/g	ASTM D2896	9.4	9.2	9.1	9.1
Visc @ 100°C	cSt	ASTM D445	14	▲ 11.0	11.2	11.3

Aluminum = 7 ppm

Silicon = 88 ppm

Oil Cleanliness
22/21/19Fuel Dilution = 4.0%
Viscosity = 11.0 cSt



OIL ANALYSIS REPORT



Machine Id
CATERPILLAR 001771
Component
Diesel Engine
Fluid
CASTROL VECTON 15W40 CK4 (5 GAL)

WEAR	SEVERE
CONTAMINATION	SEVERE
FLUID CONDITION	NORMAL

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. We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC1154128	WC1121728	WC1057710
Sample Date		Client Info		31 Aug 2026	27 Feb 2026	28 Oct 2025
Machine Age	hrs	Client Info		11792	11792	11630
Oil Age	hrs	Client Info		500	162	427
Filter Age	hrs	Client Info		500	162	427
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				SEVERE	NORMAL	NORMAL

WEAR

Cylinder, crank, or cam shaft wear is indicated. Valve wear is indicated.

Iron	ppm	ASTM D5185m	>100	▲ 265	6	11
Chromium	ppm	ASTM D5185m	>20	12	<1	<1
Nickel	ppm	ASTM D5185m	>2	▲ 12	<1	<1
Titanium	ppm	ASTM D5185m	>2	8	<1	<1
Silver	ppm	ASTM D5185m	>2	1	0	0
Aluminum	ppm	ASTM D5185m	>25	● 101	5	5
Lead	ppm	ASTM D5185m	>40	9	0	<1
Copper	ppm	ASTM D5185m	>330	100	<1	2
Tin	ppm	ASTM D5185m	>15	9	0	0
Vanadium	ppm	ASTM D5185m		0	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress. Ingressed dirt has caused abrasive wear to cylinder assemblies.

Silicon	ppm	ASTM D5185m	>25	▲ 194	4	7
Potassium	ppm	ASTM D5185m	>20	31	0	0
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		ASTM D6304	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	E2412/D7844	>3	0.2	0.2	0.3
Nitration	Abs/cm	ASTM E2412	>20	9.9	9.2	10.1
Sulfation	Abs.1mm	E2412/D7415	>30	22.5	17.6	18.9
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 oil is no longer serviceable due to the presence of contaminants.

Sodium	ppm	ASTM D5185m		26	<1	<1
Boron	ppm	ASTM D5185m		222	45	29
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		266	86	103
Manganese	ppm	ASTM D5185m		5	1	<1
Magnesium	ppm	ASTM D5185m		745	71	92
Calcium	ppm	ASTM D5185m		1458	1967	2305
Phosphorus	ppm	ASTM D5185m		889	954	1085
Zinc	ppm	ASTM D5185m		1120	1147	1359
Sulfur	ppm	*ASTM D5185m		2761	3263	3802
Oxidation	Abs.1mm	E2412/D7414	>25	18.5	13.5	15.2
Base Number (BN)	mg KOH/g	ASTM D2896	10	9.4	6.6	6.2
Visc @ 100°C	cSt	ASTM D445	15.5	14.3	12.9	13.3

WEAR

DIRT



Key Performance Indicators. (KPIs)

Program Metrics

Sample Volume

Sample Problems

Sample Actions

Program Health



Overall score indicating the oil analysis programs compliance to key metrics. **TARGET: 70.0%**

Sample Conformance



The number of machines in your fleet that have been sampled during the current period. **TARGET: 80.0%**

Fleet Health



Measures the number of components in your fleet that have no oil or wear related problems. **TARGET: 75.0 %**

Lab Turn-Around



Time from when the sample arrives at the laboratory until the sample has been completed and is ready for viewing on-line. **TARGET: 2.0 d**

Sample Latency



Indicates the amount of time from when the sample was taken until it arrives at the laboratory for analysis. **TARGET: 4.0 d**

On-line Submission



The quantity of oil samples that are entered on-line or using the oil analysis app. **TARGET: 75.0 %**

Data Compliance



A calculated score given based on the oil sample information provided at the time of sample submission. **TARGET: 75.0 %**

CONCLUSION & QUESTIONS

KEY TAKEAWAYS

- ✓ Consistent sampling provides reliable trend analysis.
- ✓ Wear metals, contamination, and fluid condition reveal equipment health.
- ✓ TMC/ATA RP 318 offers a standardized interpretation framework.
- ✓ Effective report interpretation drives maintenance decisions.



Oil analysis transforms data into **actionable maintenance intelligence.**

QUESTIONS?

