

OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id **DFGS 272808**

Diesel Engine

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

Recommendation

Resample at the next service interval to monitor. Please specify the component make and model with your next sample. Please specify the brand, type, and viscosity of the oil on your next sample.

All component wear rates are normal.

Contamination

There is no indication of any contamination in the

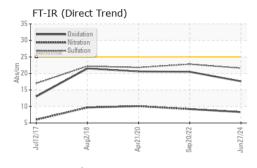
Fluid Condition

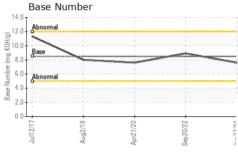
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

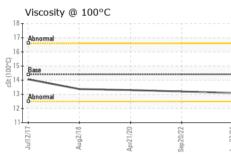
Machine Age hrs Client Info 17692 16314 14808 Oil Age hrs Client Info 0 0 0			Jul2017	Aug2018	Apr2020 Sep2022	Jun2024	
Sample Date	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Machine Age	Sample Number		Client Info		WC0949871	WC0739165	WC0423040
Oil Age hrs Client Info 0 0 0 0 Oil Changed Client Info N/A N/A N/A Changed Sample Status Client Info N/A N/A N/A Changed Sample Status Moranda Imitionse Current history1 history2 Fuel WC Method >5 <1,0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <	Sample Date		Client Info		27 Jun 2024	20 Sep 2022	21 Apr 2020
Oil Changed Sample Status Client Info N/A N/A Changed ATTENTION CONTAMINATION method limit/base current history1 history2 Fuel WC Method >55 <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 5 15 29 Chromium ppm ASTM D5185m >20 0 <1 <1 Nickel ppm ASTM D5185m >20 0 <1 <1 Silver ppm ASTM D5185m >20 3 10 8 Lead ppm ASTM D5185m >40 0 <1 <1 Copper ppm ASTM D5185m >330 <1 <1 <1 Tin <t< td=""><td>Machine Age</td><td>hrs</td><td>Client Info</td><td></td><th>17692</th><td>16314</td><td>14808</td></t<>	Machine Age	hrs	Client Info		17692	16314	14808
NORMAL NORMAL ATTENTION CONTAMINATION method limit/base current history1 history2	Oil Age	hrs	Client Info		0	0	0
CONTAMINATION	Oil Changed		Client Info		N/A	N/A	Changed
Fuel	Sample Status				NORMAL	NORMAL	ATTENTION
Water WC Method VO.2 NEG NEG NEG Glycol WC Method NEG NEG NEG WEAR METALS method limil/base current history1 history2 Iron ppm ASTM D5185m >100 5 15 29 Chromium ppm ASTM D5185m >20 0 -1 <1 Nickel ppm ASTM D5185m >4 0 0 0 Titanium ppm ASTM D5185m >20 3 10 8 Lead ppm ASTM D5185m >20 3 10 8 Lead ppm ASTM D5185m >40 0 -1 -1 Copper ppm ASTM D5185m >30 0 -1 -1 Tin ppm ASTM D5185m >15 -1 -1 -1 Antimony ppm ASTM D5185m 0 -1 0 0 Vanadium <th>CONTAMINATION</th> <th>٧</th> <th>method</th> <th>limit/base</th> <th>current</th> <th>history1</th> <th>history2</th>	CONTAMINATION	٧	method	limit/base	current	history1	history2
WEAR METALS	Fuel		WC Method	>5	<1.0	<1.0	<1.0
WEAR METALS	Water		WC Method	>0.2	NEG	NEG	NEG
Iron	Glycol		WC Method		NEG	NEG	NEG
Chromium	WEAR METALS		method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>100	5	15	29
Titanium	Chromium	ppm	ASTM D5185m	>20	0	<1	<1
Silver	Nickel	ppm	ASTM D5185m	>4	0	0	0
Aluminum ppm ASTM D5185m >20 3 10 8 Lead ppm ASTM D5185m >40 0 <1	Titanium	ppm	ASTM D5185m		0	<1	0
Lead	Silver	ppm	ASTM D5185m	>3	0	0	0
Copper ppm ASTM D5185m >330 <1 5 4 Tin ppm ASTM D5185m >15 <1	Aluminum	ppm	ASTM D5185m	>20	3	10	8
Tin	Lead	ppm	ASTM D5185m	>40	0	<1	<1
Antimony	Copper	ppm	ASTM D5185m	>330	<1	5	4
Vanadium ppm ASTM D5185m 0 <1 0 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 250 304 310 263 Barium ppm ASTM D5185m 10 0 0 0 Molybdenum ppm ASTM D5185m 100 87 116 114 Manganese ppm ASTM D5185m 100 87 116 114 Manganesium ppm ASTM D5185m 450 414 516 481 Calcium ppm ASTM D5185m 450 414 516 481 Zinc ppm ASTM D5185m 1350 1150 941 793 Sulfur ppm ASTM D5185m 4250 3562 3187 2358 CONTAMINANTS method limit/base current history1	Tin	ppm	ASTM D5185m	>15	<1	<1	<1
Vanadium ppm ASTM D5185m 0 <1 0 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 250 304 310 263 Barium ppm ASTM D5185m 10 0 0 0 Molybdenum ppm ASTM D5185m 100 87 116 114 Manganese ppm ASTM D5185m 100 87 116 114 Manganesium ppm ASTM D5185m 450 414 516 481 Calcium ppm ASTM D5185m 3000 1583 1483 1337 Phosphorus ppm ASTM D5185m 1350 1150 941 793 Sulfur ppm ASTM D5185m 4250 3562 3187 2358 CONTAMINANTS method limit/base current his	Antimony	ppm	ASTM D5185m				0
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 250 304 310 263 Barium ppm ASTM D5185m 10 0 0 0 Molybdenum ppm ASTM D5185m 100 87 116 114 Mangaese ppm ASTM D5185m 100 87 116 114 Mangaesium ppm ASTM D5185m 450 414 516 481 Calcium ppm ASTM D5185m 3000 1583 1483 1337 Phosphorus ppm ASTM D5185m 350 1150 941 793 Sulfur ppm ASTM D5185m 4250 3562 3187 2358 CONTAMINANTS method limit/base current history1 history2 Solicon ppm ASTM D5185m >25	Vanadium		ASTM D5185m		0	<1	0
Boron ppm ASTM D5185m 250 304 310 263	Cadmium		ASTM D5185m		0		0
Barium ppm ASTM D5185m 10 0 0 0 Molybdenum ppm ASTM D5185m 100 87 116 114 Manganese ppm ASTM D5185m 0 <1 <1 Magnesium ppm ASTM D5185m 450 414 516 481 Calcium ppm ASTM D5185m 3000 1583 1483 1337 Phosphorus ppm ASTM D5185m 1150 961 737 618 Zinc ppm ASTM D5185m 1350 1150 941 793 Sulfur ppm ASTM D5185m 4250 3562 3187 2358 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 8 5 Sodium ppm ASTM D5185m >20 0 2 3 INFRA-RED method limit/base curr	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 100 87 116 114 Manganese ppm ASTM D5185m 0 <1 <1 Magnesium ppm ASTM D5185m 450 414 516 481 Calcium ppm ASTM D5185m 3000 1583 1483 1337 Phosphorus ppm ASTM D5185m 1150 961 737 618 Zinc ppm ASTM D5185m 1350 1150 941 793 Sulfur ppm ASTM D5185m 4250 3562 3187 2358 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 8 5 Sodium ppm ASTM D5185m >158 18 21 457 Potassium ppm ASTM D5185m >20 0 2 3 INFRA-RED method limit/base current	Boron	ppm	ASTM D5185m	250	304	310	263
Manganese ppm ASTM D5185m 0 <1 <1 Magnesium ppm ASTM D5185m 450 414 516 481 Calcium ppm ASTM D5185m 3000 1583 1483 1337 Phosphorus ppm ASTM D5185m 1150 961 737 618 Zinc ppm ASTM D5185m 1350 1150 941 793 Sulfur ppm ASTM D5185m 4250 3562 3187 2358 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 8 5 Sodium ppm ASTM D5185m >158 18 21 457 Potassium ppm ASTM D5185m >20 0 2 3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 <td< td=""><td>Barium</td><td>ppm</td><td>ASTM D5185m</td><td>10</td><th>0</th><td>0</td><td>0</td></td<>	Barium	ppm	ASTM D5185m	10	0	0	0
Magnesium ppm ASTM D5185m 450 414 516 481 Calcium ppm ASTM D5185m 3000 1583 1483 1337 Phosphorus ppm ASTM D5185m 1150 961 737 618 Zinc ppm ASTM D5185m 1350 1150 941 793 Sulfur ppm ASTM D5185m 4250 3562 3187 2358 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 8 5 Sodium ppm ASTM D5185m >158 18 21 457 Potassium ppm ASTM D5185m >20 0 2 3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.1 0.1 0.1 Nitration Abs/cm *ASTM D7415	Molybdenum	ppm	ASTM D5185m	100	87	116	114
Magnesium ppm ASTM D5185m 450 414 516 481 Calcium ppm ASTM D5185m 3000 1583 1483 1337 Phosphorus ppm ASTM D5185m 1150 961 737 618 Zinc ppm ASTM D5185m 1350 1150 941 793 Sulfur ppm ASTM D5185m 4250 3562 3187 2358 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 8 5 Sodium ppm ASTM D5185m >158 18 21 457 Potassium ppm ASTM D5185m >20 0 2 3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >20 8.3 9.2 10.1 Sulfation Abs/amm *ASTM D7415	Manganese	ppm	ASTM D5185m		0	<1	<1
Phosphorus ppm ASTM D5185m 1150 961 737 618 Zinc ppm ASTM D5185m 1350 1150 941 793 Sulfur ppm ASTM D5185m 4250 3562 3187 2358 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 8 5 Sodium ppm ASTM D5185m >158 18 21 457 Potassium ppm ASTM D5185m >20 0 2 3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.1 0.1 0.1 Nitration Abs/cm *ASTM D7624 >20 8.3 9.2 10.1 Sulfation Abs/.1mm *ASTM D7415 >30 21.6 22.8 21.8 FLUID DEGRADATION met	Magnesium		ASTM D5185m	450	414	516	481
Phosphorus ppm ASTM D5185m 1150 961 737 618 Zinc ppm ASTM D5185m 1350 1150 941 793 Sulfur ppm ASTM D5185m 4250 3562 3187 2358 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 8 5 Sodium ppm ASTM D5185m >158 18 21 457 Potassium ppm ASTM D5185m >20 0 2 3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >20 8.3 9.2 10.1 Nitration Abs/.1mm *ASTM D7415 >30 21.6 22.8 21.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm			ASTM D5185m	3000	1583	1483	1337
Zinc ppm ASTM D5185m 1350 1150 941 793 Sulfur ppm ASTM D5185m 4250 3562 3187 2358 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 8 5 Sodium ppm ASTM D5185m >158 18 21 457 Potassium ppm ASTM D5185m >20 0 2 3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.1 0.1 0.1 Nitration Abs/cm *ASTM D7624 >20 8.3 9.2 10.1 Sulfation Abs/.1mm *ASTM D7415 >30 21.6 22.8 21.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm	Phosphorus		ASTM D5185m	1150	961	737	618
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 8 5 Sodium ppm ASTM D5185m >158 18 21 457 Potassium ppm ASTM D5185m >20 0 2 3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.1 0.1 0.1 Nitration Abs/cm *ASTM D7624 >20 8.3 9.2 10.1 Sulfation Abs/.1mm *ASTM D7415 >30 21.6 22.8 21.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 17.6 20.5 20.6	Zinc	ppm	ASTM D5185m	1350	1150	941	793
Silicon ppm ASTM D5185m >25 4 8 5 Sodium ppm ASTM D5185m >158 18 21 457 Potassium ppm ASTM D5185m >20 0 2 3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.1 0.1 0.1 Nitration Abs/cm *ASTM D7624 >20 8.3 9.2 10.1 Sulfation Abs/.1mm *ASTM D7415 >30 21.6 22.8 21.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 17.6 20.5 20.6	Sulfur		ASTM D5185m	4250	3562	3187	2358
Sodium ppm ASTM D5185m >158 18 21 457 Potassium ppm ASTM D5185m >20 0 2 3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.1 0.1 0.1 Nitration Abs/cm *ASTM D7624 >20 8.3 9.2 10.1 Sulfation Abs/.1mm *ASTM D7415 >30 21.6 22.8 21.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 17.6 20.5 20.6	CONTAMINANTS		method	limit/base	current	history1	history2
Sodium ppm ASTM D5185m >158 18 21 457 Potassium ppm ASTM D5185m >20 0 2 3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.1 0.1 0.1 Nitration Abs/cm *ASTM D7624 >20 8.3 9.2 10.1 Sulfation Abs/.1mm *ASTM D7415 >30 21.6 22.8 21.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 17.6 20.5 20.6	Silicon	ppm	ASTM D5185m	>25	4	8	5
Potassium ppm ASTM D5185m >20 0 2 3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.1 0.1 0.1 Nitration Abs/cm *ASTM D7624 >20 8.3 9.2 10.1 Sulfation Abs/.1mm *ASTM D7415 >30 21.6 22.8 21.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 17.6 20.5 20.6	Sodium		ASTM D5185m	>158	18	21	457
Soot % % *ASTM D7844 >3 0.1 0.1 0.1 Nitration Abs/cm *ASTM D7624 >20 8.3 9.2 10.1 Sulfation Abs/.1mm *ASTM D7415 >30 21.6 22.8 21.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 17.6 20.5 20.6	Potassium		ASTM D5185m	>20	0	2	3
Nitration Abs/cm *ASTM D7624 >20 8.3 9.2 10.1 Sulfation Abs/.1mm *ASTM D7415 >30 21.6 22.8 21.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 17.6 20.5 20.6	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 21.6 22.8 21.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 17.6 20.5 20.6	Soot %	%	*ASTM D7844	>3	0.1	0.1	0.1
Sulfation Abs/.1mm *ASTM D7415 >30 21.6 22.8 21.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 17.6 20.5 20.6	Nitration	Abs/cm	*ASTM D7624	>20	8.3	9.2	10.1
Oxidation Abs/.1mm *ASTM D7414 >25 17.6 20.5 20.6	Sulfation	Abs/.1mm			21.6		21.8
	FLUID DEGRADA	TION	method	limit/base	current	history1	history2
Base Number (BN) mg KOH/g ASTM D2896 8.5 7.6 8.9 7.6	Oxidation	Abs/.1mm	*ASTM D7414	>25	17.6	20.5	20.6
	Base Number (BN)	mg KOH/g	ASTM D2896	8.5	7.6	8.9	7.6

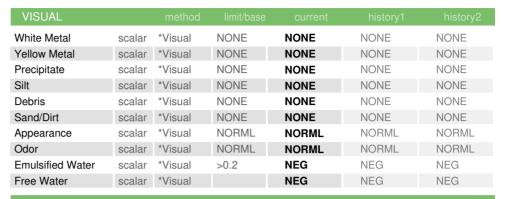


OIL ANALYSIS REPORT

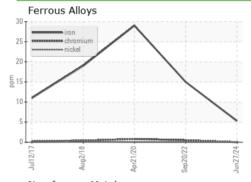


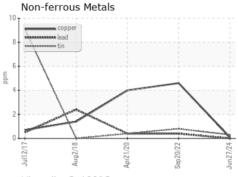


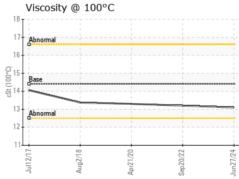


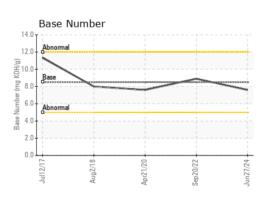


FLUID PROPER	HES	method	iimit/base		nistory i	nistory∠
Visc @ 100°C	cSt	ASTM D445	14.4	13.1	13.2	13.3













Certificate 12367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 Sample No. : WC0949871 Lab Number : 06239710 Unique Number : 11128544 Test Package : FLEET

Received **Tested** Diagnosed

: 17 Jul 2024 : 18 Jul 2024 : 18 Jul 2024 - Wes Davis

DOLE FRESH FRUIT PO BOX 725, ATTN: MAINTENANCE AND REPAIR NEW CASTLE, DE

US 19720 Contact: Timothy Dougherty timothy.dougherty@dole.com T: (302)540-3112

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)

Report Id: DOLWIL [WUSCAR] 06239710 (Generated: 07/18/2024 15:39:30) Rev: 1

Contact/Location: Timothy Dougherty - DOLWIL