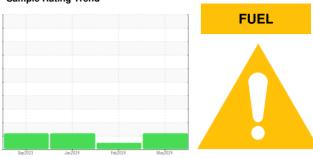


OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id
485

Diesel Engine

DYNA-PLEX 21C 15W40 (--- GAL)

DIAGNOSIS

Recommendation

The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition. 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.

Wear

All component wear rates are normal.

Contamination

There is a moderate 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.

Sample Number Client Info WC0885716 WC0885733 WC0885682 Sample Date Client Info O3 May 2024 06 Feb 2024 20 Jan 2024 20 Jan 2024 Machine Age hrs Client Info O O O O O O O O O							
Cample Date	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Cample Date	Sample Number		Client Info		WC0885716	WC0885733	WC0885682
Machine Age hrs Client Info 22929 178643 22345 Dil Age hrs Client Info 0	Sample Date		Client Info		03 May 2024	06 Feb 2024	20 Jan 2024
Client Info	Machine Age	hrs	Client Info		-	178643	22345
ABNORMAL NORMAL ABNORMAL ABNORMAL	Oil Age	hrs	Client Info		0	0	0
CONTAMINATION method limit/base current history1 history2 Water WC Method >0.2 NEG NEG NEG Glycol WC Method NEG NEG NEG WEAR METALS method limit/base current history1 history2 ron ppm ASTM D5185m >100 7 4 8 Chromium ppm ASTM D5185m >20 <1	Oil Changed		Client Info		Changed	Not Changd	Changed
Water WC Method >0.2 NEG NEG NEG NEG Biycol WC Method Imiti/base current history1 history2 WEAR METALS method limit/base current history1 history2 ron ppm ASTM D5185m >100 7 4 8 Chromium ppm ASTM D5185m >20 <1 0 <1 Silver ppm ASTM D5185m >4 3 2 5 Aluminum ppm ASTM D5185m >3 0 0 0 Adminium ppm ASTM D5185m >33.0 <1 <1 <1 Copper ppm ASTM D5185m >33.0 <1 <1 <1 <1 Janadium ppm ASTM D5185m >33.0 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1	Sample Status				ABNORMAL	NORMAL	ABNORMAL
WEAR METALS	CONTAMINATIO	N	method	limit/base	current	history1	history2
WEAR METALS method limit/base current history1 history2 ron ppm ASTM D5185m >100 7 4 8 Chromium ppm ASTM D5185m >20 <1	Water		WC Method	>0.2	NEG	NEG	NEG
Port	Glycol		WC Method		NEG	NEG	NEG
Description	WEAR METALS		method	limit/base	current	history1	history2
Strickel	Iron	ppm	ASTM D5185m	>100	7	4	8
STIM D5185m	Chromium	ppm	ASTM D5185m	>20	<1	0	<1
Saliver	Nickel	ppm	ASTM D5185m	>4	3	2	5
Aluminum ppm ASTM D5185m >20 3 2 3 Lead ppm ASTM D5185m >40 1 0 1 Copper ppm ASTM D5185m >330 <1 <1 <1 <1 Copper ppm ASTM D5185m >15 <1 0 1 Codmium ppm ASTM D5185m >0 0 0 0 Codmium ppm ASTM D5185m 0 0 12 0 Codmium ppm ASTM D5185m 0 0 0 0 0 0 Codmium ppm ASTM D5185m 0 0 0 0 0 0 0 Codmium ppm ASTM D5185m 0 0 0 0 0 0 0 0 0 0 Codmium ppm ASTM D5185m 0 0 0 0 0 0 0 0 0 0 0 Codmium ppm ASTM D5185m 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Titanium	ppm	ASTM D5185m		<1	<1	0
Lead ppm ASTM D5185m >40 1 0 1 Copper ppm ASTM D5185m >330 <1 <1 <1 Cin ppm ASTM D5185m >15 <1 0 1 Vanadium ppm ASTM D5185m 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 4 5 6 Barium ppm ASTM D5185m 0 12 0 Molybdenum ppm ASTM D5185m 0 0 <1 2 Manganese ppm ASTM D5185m 0 0 <1 1117 Manganese ppm ASTM D5185m 828 752 892 Calcium ppm ASTM D5185m 955 951 932 Phosphorus ppm ASTM D5185m 955 951 932 Zinic ppm	Silver	ppm	ASTM D5185m	>3	0	0	0
Copper	Aluminum	ppm	ASTM D5185m	>20	3	2	3
Fin	Lead	ppm	ASTM D5185m	>40	1	0	1
Vanadium ppm ASTM D5185m 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 4 5 6 Barium ppm ASTM D5185m 0 12 0 Molybdenum ppm ASTM D5185m 64 56 61 Manganese ppm ASTM D5185m 0 0 <1 Magnesium ppm ASTM D5185m 828 752 892 Calcium ppm ASTM D5185m 1007 915 1117 Phosphorus ppm ASTM D5185m 955 951 932 Zinc ppm ASTM D5185m 2996 3186 2953 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 4 <td>Copper</td> <td>ppm</td> <td>ASTM D5185m</td> <td>>330</td> <th><1</th> <td><1</td> <td><1</td>	Copper	ppm	ASTM D5185m	>330	<1	<1	<1
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 4 5 6 Barium ppm ASTM D5185m 0 12 0 Molybdenum ppm ASTM D5185m 64 56 61 Manganese ppm ASTM D5185m 0 0 <1	Tin	ppm	ASTM D5185m	>15	<1	0	1
ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 4 5 6 Barium ppm ASTM D5185m 0 12 0 Molybdenum ppm ASTM D5185m 64 56 61 Manganese ppm ASTM D5185m 0 0 <1	Vanadium	ppm	ASTM D5185m		0	0	0
Soron ppm ASTM D5185m Q 12 0	Cadmium	ppm	ASTM D5185m		0	0	0
Barium ppm ASTM D5185m 0 12 0 Molybdenum ppm ASTM D5185m 64 56 61 Manganese ppm ASTM D5185m 0 0 <1							
Molybdenum ppm ASTM D5185m 64 56 61 Manganese ppm ASTM D5185m 0 0 <1 Magnesium ppm ASTM D5185m 828 752 892 Calcium ppm ASTM D5185m 1007 915 1117 Phosphorus ppm ASTM D5185m 955 951 932 Zinc ppm ASTM D5185m 1300 1137 1030 1197 Sulfur ppm ASTM D5185m 2996 3186 2953 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 4 5 Godium ppm ASTM D5185m >20 3 2 1 Fuel % ASTM D5185m >20 3 2 1 Fuel % ASTM D3524 >5 5.2 <1.0 4.1 INFRA-RED method </td <td>ADDITIVES</td> <td></td> <td>method</td> <td>limit/base</td> <th>current</th> <td>history1</td> <td>history2</td>	ADDITIVES		method	limit/base	current	history1	history2
Manganese ppm ASTM D5185m 0 0 <1 Magnesium ppm ASTM D5185m 828 752 892 Calcium ppm ASTM D5185m 1007 915 1117 Phosphorus ppm ASTM D5185m 955 951 932 Zinc ppm ASTM D5185m 2996 3186 2953 CONTAMINANTS method limit/base current history1 history2 Solicon ppm ASTM D5185m >25 4 4 5 Solium ppm ASTM D5185m >20 3 2 1 Fuel % AST		ppm		limit/base			
Magnesium ppm ASTM D5185m 828 752 892 Calcium ppm ASTM D5185m 1007 915 1117 Phosphorus ppm ASTM D5185m 955 951 932 Zinc ppm ASTM D5185m 1300 1137 1030 1197 Sulfur ppm ASTM D5185m 2996 3186 2953 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 4 5 Goldium ppm ASTM D5185m >20 3 2 1 Fuel % ASTM D5185m >20 3 2 1.0 Fu	Boron		ASTM D5185m	limit/base	4	5	6
Calcium ppm ASTM D5185m 1007 915 1117 Phosphorus ppm ASTM D5185m 955 951 932 Zinc ppm ASTM D5185m 1300 1137 1030 1197 Sulfur ppm ASTM D5185m 2996 3186 2953 CONTAMINANTS method limit/base current history1 history2 Golium ppm ASTM D5185m >25 4 4 5 Sodium ppm ASTM D5185m >20 3 2 1 Potassium ppm ASTM D5185m >20 3 2 1 Fuel % ASTM D3524 >5 5.2 <1.0	Boron Barium	ppm	ASTM D5185m ASTM D5185m	limit/base	4 0	5 12	6
Phosphorus ppm ASTM D5185m 955 951 932 Zinc ppm ASTM D5185m 1300 1137 1030 1197 Sulfur ppm ASTM D5185m 2996 3186 2953 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 4 5 Sodium ppm ASTM D5185m >20 3 2 1 Fuel % ASTM D5185m >3 0.2 <1.0	Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	4 0 64	5 12 56	6 0 61
Zinc ppm ASTM D5185m 1300 1137 1030 1197 Sulfur ppm ASTM D5185m 2996 3186 2953 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 4 5 Sodium ppm ASTM D5185m >20 3 2 1 Potassium ppm ASTM D5185m >20 3 2 1 Fuel % ASTM D3524 >5 4 5.2 1.0 4.1 INFRA-RED method limit/base current history1<	Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	4 0 64 0	5 12 56 0	6 0 61 <1
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 4 5 Sodium ppm ASTM D5185m <1	Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	4 0 64 0 828	5 12 56 0 752	6 0 61 <1 892
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 4 5 Sodium ppm ASTM D5185m <1	Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	4 0 64 0 828 1007	5 12 56 0 752 915	6 0 61 <1 892 1117
Soliticon ppm ASTM D5185m >25 4 4 5	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		4 0 64 0 828 1007 955	5 12 56 0 752 915 951	6 0 61 <1 892 1117 932
Sodium ppm ASTM D5185m <1	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		4 0 64 0 828 1007 955 1137	5 12 56 0 752 915 951 1030	6 0 61 <1 892 1117 932 1197
Potassium ppm ASTM D5185m >20 3 2 1 Fuel % ASTM D3524 >5 ▲ 5.2 <1.0 ▲ 4.1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.2 0.1 0.2 Nitration Abs/cm *ASTM D7624 >20 9.6 5.6 9.8 Sulfation Abs/.1mm *ASTM D7415 >30 19.3 17.5 18.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.8 13.2 15.5	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1300	4 0 64 0 828 1007 955 1137 2996	5 12 56 0 752 915 951 1030 3186	6 0 61 <1 892 1117 932 1197 2953
Fuel	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m	1300 limit/base	4 0 64 0 828 1007 955 1137 2996	5 12 56 0 752 915 951 1030 3186 history1	6 0 61 <1 892 1117 932 1197 2953 history2
INFRA-RED	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m	1300 limit/base	4 0 64 0 828 1007 955 1137 2996 current	5 12 56 0 752 915 951 1030 3186 history1	6 0 61 <1 892 1117 932 1197 2953 history2
Goot % % *ASTM D7844 >3 0.2 0.1 0.2 Nitration Abs/cm *ASTM D7624 >20 9.6 5.6 9.8 Gulfation Abs/.1mm *ASTM D7415 >30 19.3 17.5 18.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.8 13.2 15.5	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	1300 limit/base >25	4 0 64 0 828 1007 955 1137 2996 current 4	5 12 56 0 752 915 951 1030 3186 history1 4	6 0 61 <1 892 1117 932 1197 2953 history2 5
Nitration Abs/cm *ASTM D7624 >20 9.6 5.6 9.8 Sulfation Abs/.1mm *ASTM D7415 >30 19.3 17.5 18.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.8 13.2 15.5	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm	ASTM D5185m	1300 limit/base >25 >20	4 0 64 0 828 1007 955 1137 2996 current 4 <1	5 12 56 0 752 915 951 1030 3186 history1 4 0	6 0 61 <1 892 1117 932 1197 2953 history2 5 3
Sulfation Abs/.1mm *ASTM D7415 >30 19.3 17.5 18.9 FLUID DEGRADATION method limit/base current history1 history2 Dxidation Abs/.1mm *ASTM D7414 >25 15.8 13.2 15.5	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm	ASTM D5185m	1300 limit/base >25 >20 >5	4 0 64 0 828 1007 955 1137 2996 current 4 <1 3	5 12 56 0 752 915 951 1030 3186 history1 4 0 2 <1.0	6 0 61 <1 892 1117 932 1197 2953 history2 5 3 1
FLUID DEGRADATION method limit/base current history1 history2 Dxidation Abs/.1mm *ASTM D7414 >25 15.8 13.2 15.5	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel	ppm	ASTM D5185m	1300 limit/base >25 >20 >5 limit/base	4 0 64 0 828 1007 955 1137 2996 current 4 <1 3 ▲ 5.2 current	5 12 56 0 752 915 951 1030 3186 history1 4 0 2 <1.0 history1	6 0 61 <1 892 1117 932 1197 2953 history2 5 3 1 4.1 history2
Oxidation	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	1300 limit/base >25 >20 >5 limit/base >3	4 0 64 0 828 1007 955 1137 2996 current 4 <1 3 ▲ 5.2 current 0.2	5 12 56 0 752 915 951 1030 3186 history1 4 0 2 <1.0 history1 0.1	6 0 61 <1 892 1117 932 1197 2953 history2 5 3 1 ▲ 4.1 history2 0.2
	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration	ppm	ASTM D5185m ASTM D7844 *ASTM D7844	1300 limit/base >25 >20 >5 limit/base >3 >20	4 0 64 0 828 1007 955 1137 2996 current 4 <1 3 ▲ 5.2 current 0.2 9.6	5 12 56 0 752 915 951 1030 3186 history1 4 0 2 <1.0 history1 0.1 5.6	6 0 61 <1 892 1117 932 1197 2953 history2 5 3 1 ▲ 4.1 history2 0.2 9.8
	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation	ppm	ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7624 *ASTM D76145	1300 limit/base >25 >20 >5 limit/base >3 >20 >30	4 0 64 0 828 1007 955 1137 2996 current 4 <1 3 ▲ 5.2 current 0.2 9.6 19.3	5 12 56 0 752 915 951 1030 3186 history1 4 0 2 <1.0 history1 0.1 5.6 17.5	6 0 61 <1 892 1117 932 1197 2953 history2 5 3 1 4.1 history2 0.2 9.8 18.9
Jaco Hamber (DIT) highory horning horn	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation	ppm	ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7844 *ASTM D7844	1300 limit/base >25 >20 >5 limit/base >3 >20 >30 limit/base	4 0 64 0 828 1007 955 1137 2996 current 4 <1 3 ▲ 5.2 current 0.2 9.6 19.3 current	5 12 56 0 752 915 951 1030 3186 history1 4 0 2 <1.0 history1 0.1 5.6 17.5 history1	6 0 61 <1 892 1117 932 1197 2953 history2 5 3 1 ▲ 4.1 history2 0.2 9.8 18.9 history2



OIL ANALYSIS REPORT







Certificate 12367

Laboratory Sample No.

: WC0885716 Lab Number : 06207619 Unique Number : 11075080

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

: 12 Jun 2024 **Tested** Diagnosed

: 19 Jun 2024 : 19 Jun 2024 - Wes Davis Test Package : CONST (Additional Tests: FuelDilution, PercentFuel, TBN)

Apple Valley Waste - Baltimore District 240 S KRESSON ST BALTIMORE, MD US 21224 Contact: KEVIN HINSON

khinson@goldmedal.net

 st - 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)

To discuss this sample report, contact Customer Service at 1-800-237-1369.

T:

F: