

Machine Id **T-758** Component **Diesel Engine** Fluid **DIESEL ENGINE OIL SAE 15W40 (--- GAL)**

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The oil change at the time of sampling has been noted. No corrective action is recommended at this time. We recommend an early resample	S
to monitor this condition.	Ν
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Piston, ring and cylinder wear is indicated.

RECOMMENDATION

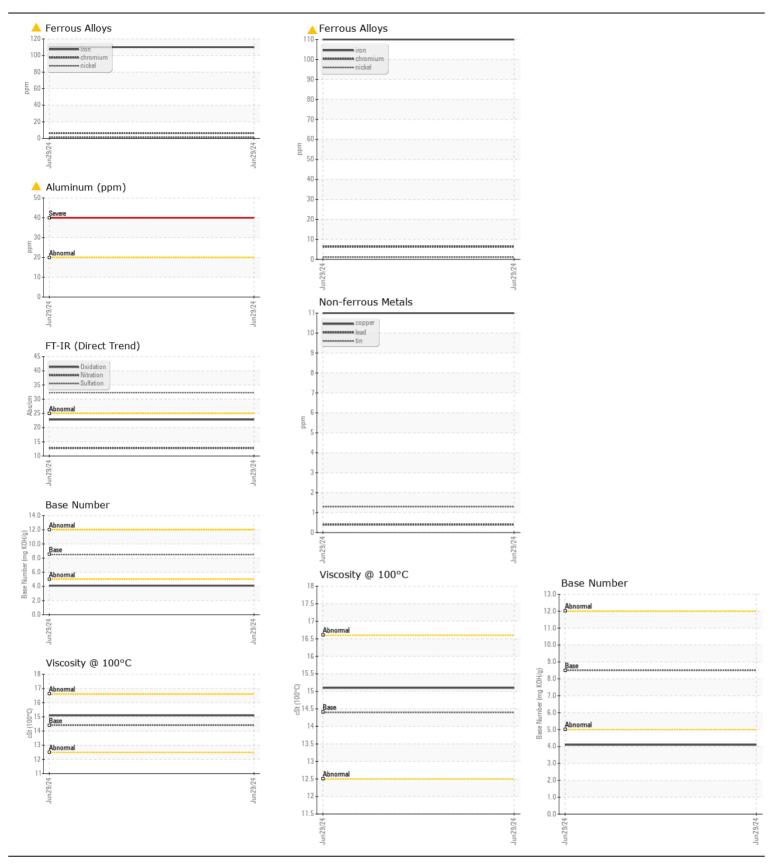
CONT<u>AMINATION</u>

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 acceptable for the time in service.

Test UOM Method Limit/Abn Current History1 History2 Sample Number Client Info 29 Jur 2024							
Sample Date Client Info 29 Jun 2024 Machine Age mis Client Info 0 Gil Age mis Client Info 0 Filter Age mis Client Info Changed Gil Changed Client Info N/A Sample Status Client Info N/A Iron ppm ASTM D5155m<>20 6 Nickel ppm ASTM D5155m<>20 6 Aluminum ppm ASTM D5155m<>20 40 Itanium ppm ASTM D5155m<>33 0 Audinum ppm ASTM D5155m 330 1 Vanadium ppm ASTM D5155m 20 23 Vanadium ppm ASTM D5155m 20 23 <	Test	UOM	Method	Limit/Abn	Current	History1	History2
Machine Age mls Client Info 160458 Filter Age mls Client Info 0 Filter Age mls Client Info Changed Filter Changed Client Info N/A Sample Status ASTM D5185n >20 6 Iron ppm ASTM D5185n >20 6 Nickel ppm ASTM D5185n >20 6 Aluminum ppm ASTM D5185n >20 4 00 Aluminum ppm ASTM D5185n >20 4 00 Vanadium ppm ASTM D5185n >20 4 00 Vanadium ppm ASTM D5185n 21	Sample Number		Client Info		WC0934753		
Machine Age mls Client Info 160458 Filter Age mls Client Info 0 Filter Age mls Client Info Changed Filter Changed Client Info N/A Sample Status ASTM D5185n >20 6 Iron ppm ASTM D5185n >20 6 Nickel ppm ASTM D5185n >20 6 Aluminum ppm ASTM D5185n >20 4 00 Aluminum ppm ASTM D5185n >20 4 00 Vanadium ppm ASTM D5185n >20 4 00 Vanadium ppm ASTM D5185n 21	Sample Date		Client Info		29 Jun 2024		
Oil Age mis Client Info 0 Filter Age mis Client Info 0 Gil Changed Client Info NA Sample Status Client Info ABNORMAL Iron ppm ASTM D5185n >20 6 Nickel ppm ASTM D5185n >20 6 Nickel ppm ASTM D5185n >20 6 Aluminum ppm ASTM D5185n >3 0 Lead ppm ASTM D5185n >3 0 Vanadium ppm ASTM D5185n >330 11 Vanadium ppm ASTM D5185n >20 23 Vanadum ppm ASTM D5185n >20 1.0 <		mls	Client Info		160458		
Filter Age mis Client Info 0 Cil Changed Client Info N/A Sample Status ABNORMAL Iron ppm ASTM D5185m<>100 ▲ 110 Chromium ppm ASTM D5185m<>20 6 Nickel ppm ASTM D5185m<>20 6 Nickel ppm ASTM D5185m<>20 6 Nickel ppm ASTM D5185m<>20 4 0 Silver ppm ASTM D5185m<>20 40 Lead ppm ASTM D5185m<>20 <1 Vanadium ppm ASTM D5185m<>20 Yellow Metal scalar *Visual NONE NONE Yellow Metal scalar *Visual NONE Yellow Metal <td< th=""><th>-</th><th>mls</th><th>Client Info</th><th></th><th>0</th><th></th><th></th></td<>	-	mls	Client Info		0		
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Titanium ppm ASTM D5185m <1	Chromium	ppm	ASTM D5185m	>20	6		
Silver ppm ASTM D5185m >3 0 Aluminum ppm ASTM D5185m >20 ▲ 40 Lead ppm ASTM D5185m >20 ▲ 40 Copper ppm ASTM D5185m >330 11 Vanadium ppm ASTM D5185m 0 White Metal scalar *Visual NONE 0 Yellow Metal scalar *Visual NONE NONE Silicon ppm ASTM D5185m >20 23 Vater WC Method >5 <1.0 Water WC Method >0.2 NEG Soot % % *ASTM D7624 >20 12.8 Sulfation Abs/rm *ASTM D7145 30 32.3	Nickel	ppm	ASTM D5185m	>4	1		
Aluminum ppm ASTM D5185m >20 40 Lead ppm ASTM D5185m >40 <1 Copper ppm ASTM D5185m >330 11 Tin ppm ASTM D5185m >15 1 Vanadium ppm ASTM D5185m >15 1 White Metal scalar *Visual NONE NONE Yellow Metal scalar *Visual NONE NONE Silicon ppm ASTM D5185m >20 23 Fuel WC Method >0.2 NEG Water WC Method >0.2 NEG Soot % % 'ASTM D764 >3 32.3 Sulfation Abs/:1mm 'ASTM D7624	Titanium	ppm	ASTM D5185m		<1		
Lead ppm ASTM D5185m >40 <1	Silver	ppm	ASTM D5185m	>3	0		
Lead ppm ASTM D5185m >40 <1	Aluminum		ASTM D5185m	>20	4 0		
Copper ppm ASTM D5185m >330 11 Tin ppm ASTM D5185m >15 1 Vanadium ppm ASTM D5185m 0 White Metal scalar *Visual NONE NONE Yellow Metal scalar *Visual NONE NONE Silicon ppm ASTM D5185m >25 8 Potassium ppm ASTM D5185m >20 23 Water WC Method >0.2 NEG Glycol % *ASTM D7824 >3 1.8 Sott % % *ASTM D7624 >20 12.8 Sulfation Abs/.tmm<"ASTM D7624 >20 12.8 Sulfation Abs/.tmm<"ASTM D7624 >20	Lead		ASTM D5185m	>40	<1		
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Vanadium ppm ASTM D5185m 0 White Metal scalar *Visual NONE NONE Yellow Metal scalar *Visual NONE NONE Silicon ppm ASTM D5185m >25 8 Potassium ppm ASTM D5185m >20 23 Fuel WC Method >5 <1.0 Glycol % *ASTM D7624 >20 NEG Soot % % *ASTM D7624 >20 12.8 Sulfation Abs/cm< *ASTM D7624 >20 12.8 Sulfation Abs/tm< *ASTM D7624 >20 12.8 Sulfation Abs/tm< *ASTM D7624 >20 12.8 Solit scalar *Visual NONE </th <th></th> <th></th> <th>ASTM D5185m</th> <th>>15</th> <th>1</th> <th></th> <th></th>			ASTM D5185m	>15	1		
White Metal scalar *Visual NONE NONE Yellow Metal scalar *Visual NONE NONE Silicon ppm ASTM D5185m >20 23 Potassium ppm ASTM D5185m >20 23 Fuel WC Method >5 <1.0 Water WC Method >0.2 NEG Soot % % *ASTM D7844 >3 1.8 Sulfation Abs/cm *ASTM D745 >30 32.3 Sulfation Abs/cm *ASTM D745 >30 32.3 Debris scalar *Visual NONE NONE Appearance scalar *Visual NORM NORML Appearance scalar <td< th=""><th>Vanadium</th><th></th><th>ASTM D5185m</th><th></th><th>0</th><th></th><th></th></td<>	Vanadium		ASTM D5185m		0		
Silicon ppm ASTM D5185m >25 8 Potassium ppm ASTM D5185m >20 23 Fuel WC Method >5 <1.0 Water WC Method >0.2 NEG Glycol % *ASTM D5185m 20 12.8 Soot % % *ASTM D7624 >20 12.8 Sulfation Abs/.mm<*ASTM D7624 >20 12.8 Sulfation Abs/.tmm<*ASTM D7624 >20 12.8 Sulfation Abs/.tmm<*ASTM D7614 >30 32.3 Sulfation Abs/.tmm<*ASTM D7614 >30 32.3 Sulfation xscalar *Visual NONE NORE Suffation scalar *Visual NORM NORML -	White Metal		*Visual	NONE	NONE		
Silicon ppm ASTM D5185m >25 8 Potassium ppm ASTM D5185m >20 23 Fuel WC Method >5 <1.0 Water WC Method >0.2 NEG Glycol % *ASTM D5185m 20 12.8 Soot % % *ASTM D7624 >20 12.8 Sulfation Abs/.mm<*ASTM D7624 >20 12.8 Sulfation Abs/.tmm<*ASTM D7624 >20 12.8 Sulfation Abs/.tmm<*ASTM D7614 >30 32.3 Sulfation Abs/.tmm<*ASTM D7614 >30 32.3 Sulfation xscalar *Visual NONE NORE Suffation scalar *Visual NORM NORML -	Yellow Metal	scalar	*Visual	NONE	NONE		
Potassium ppm ASTM D5185m >20 23 Fuel WC Method >5 <1.0 Water WC Method >0.2 NEG Glycol % *ASTM D282 NEG Soot % % *ASTM D7844 >3 1.8 Nitration Abs/.tm *ASTM D7624 >20 12.8 Sulfation Abs/.tm *ASTM D7624 >20 12.8							
Fuel WC Method >5 <1.0	Silicon	ppm	ASTM D5185m	>25	8		
Water WC Method >0.2 NEG Glycol % *ASTM D2982 NEG Soot % % *ASTM D7844 >3 1.8 Nitration Abs/cm *ASTM D7624 >20 12.8 Sulfation Abs/cm *ASTM D7614 >30 32.3 Sulfation scalar *Visual NONE Sand/Dirt scalar *Visual NORM NORME Appearance scalar *Visual NORM NORML Glycor scalar *Visual NORM	Potassium	ppm	ASTM D5185m	>20	23		
Glycol % *ASTM D2982 NEG Soot % % *ASTM D7844 >3 1.8 Nitration Abs/cm *ASTM D7624 >20 12.8 Sulfation Abs/cm *ASTM D7624 >20 32.3 Sulfation Abs/cm *ASTM D7615 >30 32.3 Silt scalar *Visual NONE Debris scalar *Visual NONE Sand/Dirt scalar *Visual NORE Appearance scalar *Visual NORML NORML Odor scalar *Visual NORML NORML Sodium ppm ASTM D5185m 14 Boron ppm ASTM D5185m 10 0 Malganese ppm ASTM D5185m 100 2	Fuel		WC Method	>5	<1.0		
Soot % % *ASTM D7844 >3 1.8 Nitration Abs/cm *ASTM D7624 >20 12.8 Sulfation Abs/.1mm *ASTM D7624 >20 32.3 Silt scalar *Visual NONE NONE Debris scalar *Visual NONE NONE Sand/Dirt scalar *Visual NOR NORE Appearance scalar *Visual NOR NORML Odor scalar *Visual NOR NORML Sodium ppm ASTM D5185m 250 0 Boron ppm ASTM D5185m 250 0 Malganesium ppm ASTM D5185m 100 2 Magnesium ppm <th>Water</th> <th></th> <th>WC Method</th> <th>>0.2</th> <th>NEG</th> <th></th> <th></th>	Water		WC Method	>0.2	NEG		
Nitration Abs/cm *ASTM D7624 >20 12.8 Sulfation Abs/.1mm *ASTM D7415 >30 32.3 Silt scalar *Visual NONE NONE Debris scalar *Visual NONE NONE Sand/Dirt scalar *Visual NORE Appearance scalar *Visual NORL NORML Odor scalar *Visual NORML NORML Godor scalar *Visual NORML NORML Sodium ppm ASTM D5185m >158 14 Boron ppm ASTM D5185m 250 0 Malganese ppm ASTM D5185m 100 2 Magnesium ppm ASTM D5185m 100 2	Glycol	%	*ASTM D2982		NEG		
Sulfation Abs/.1mm *ASTM D7415 >30 32.3 Silt scalar *Visual NONE NONE Debris scalar *Visual NONE NONE Sand/Dirt scalar *Visual NONE NONE Appearance scalar *Visual NORM NORML Odor scalar *Visual NORML NORML Odor scalar *Visual NORML NORML Sodium ppm ASTM D5185m 250 0 Boron ppm ASTM D5185m 250 0 Malganese ppm ASTM D5185m 10 0 Manganese ppm ASTM D5185m 100 2 Magnesium ppm <th>Soot %</th> <th>%</th> <th>*ASTM D7844</th> <th>>3</th> <th>1.8</th> <th></th> <th></th>	Soot %	%	*ASTM D7844	>3	1.8		
Siltscalar*VisualNONENONEDebrisscalar*VisualNONENONESand/Dirtscalar*VisualNONENONEAppearancescalar*VisualNORLNORLOdorscalar*VisualNORLNORMLCdorscalar*VisualNORLNORMLEmulsified Waterscalar*Visual>0.2NEGSodiumppmASTM D5185m>15814BoronppmASTM D5185m2500BariumppmASTM D5185m1002MolybdenumppmASTM D5185m1002MagnesiumppmASTM D5185m30002502PhosphorusppmASTM D5185m1150969ZincppmASTM D5185m13501167SulfurppmASTM D5185m42504127OxidationAbs/.1mm*ASTM D5185m42504127Base Number (BN)mg KOHgASTM D28968.54.1	Nitration	Abs/cm	*ASTM D7624	>20	12.8		
Debrisscalar*VisualNONENONESand/Dirtscalar*VisualNONENONEAppearancescalar*VisualNORMLNORMLOdorscalar*VisualNORMLNORMLOdorscalar*VisualNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGSodiumppmASTM D5185m>15814BoronppmASTM D5185m2500BariumppmASTM D5185m1002MolybdenumppmASTM D5185m1002MagnesiumppmASTM D5185m30002502PhosphorusppmASTM D5185m1150969ZincppmASTM D5185m13501167SulfurppmASTM D5185m42504127OxidationAbs/.1mm*ASTM D5185m42.5041.1Base Number (BN)mg KOH/gASTM D28968.54.1	Sulfation	Abs/.1mm	*ASTM D7415	>30	32.3		
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Appearance scalar *Visual NORML NORML Odor scalar *Visual NORML NORML Emulsified Water scalar *Visual >0.2 NEG Sodium ppm ASTM D5185m >158 14 Boron ppm ASTM D5185m >158 14 Barium ppm ASTM D5185m 250 0 Molybdenum ppm ASTM D5185m 100 2 Magnesium ppm ASTM D5185m 100 2 Magnesium ppm ASTM D5185m 100 2 Magnesium ppm ASTM D5185m 3000 2502 Phosphorus ppm ASTM D5185m 1350 1167 Sulfur ppm <td< th=""><th>Debris</th><th>scalar</th><th>*Visual</th><th>NONE</th><th>NONE</th><th></th><th></th></td<>	Debris	scalar	*Visual	NONE	NONE		
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Boron ppm ASTM D5185m 250 O Barium ppm ASTM D5185m 10 O Barium ppm ASTM D5185m 10 O Molybdenum ppm ASTM D5185m 100 2 Manganese ppm ASTM D5185m 100 2 Magnesium ppm ASTM D5185m 450 47 Calcium ppm ASTM D5185m 3000 2502 Phosphorus ppm ASTM D5185m 1150 969 Zinc ppm ASTM D5185m 1350 1167 Sulfur ppm ASTM D5185m 4250 4127 Oxidation Abs/.1mm<*ASTM D7414 >25 22.8 Base Number (BN) mg KOH/g ASTM D2896							
Barium ppm ASTM D5185m 10 0 Molybdenum ppm ASTM D5185m 100 2 Manganese ppm ASTM D5185m 100 2 Magnesium ppm ASTM D5185m 450 47 Calcium ppm ASTM D5185m 3000 2502 Phosphorus ppm ASTM D5185m 1150 969 Zinc ppm ASTM D5185m 1350 1167 Sulfur ppm ASTM D5185m 4250 4127 Oxidation Abs/.1mm<*ASTM D7414<>25 22.8 Base Number (BN) mg KOH/g ASTM D2896 8.5 4.1	Sodium		ASTM D5185m	>158	14		
Molybdenum ppm ASTM D5185m 100 2 Manganese ppm ASTM D5185m 2 Magnesium ppm ASTM D5185m 450 47 Calcium ppm ASTM D5185m 3000 2502 Phosphorus ppm ASTM D5185m 1150 969 Zinc ppm ASTM D5185m 1350 1167 Sulfur ppm ASTM D5185m 4250 4127 Oxidation Abs/.1mm *ASTM D7414 >25 22.8 Base Number (BN) mg KOH/g ASTM D2896 8.5 4.1	Boron	ppm	ASTM D5185m	250	0		
Manganese ppm ASTM D5185m 2 Magnesium ppm ASTM D5185m 450 47 Calcium ppm ASTM D5185m 3000 2502 Phosphorus ppm ASTM D5185m 1150 9699 Zinc ppm ASTM D5185m 1350 1167 Sulfur ppm ASTM D5185m 4250 4127 Oxidation Abs/.1mm *ASTM D7414 >25 22.8 Base Number (BN) mg KOHg ASTM D2896 8.5 4.1		ppm	ASTM D5185m	10			
Magnesium ppm ASTM D5185m 450 47 Calcium ppm ASTM D5185m 3000 2502 Phosphorus ppm ASTM D5185m 1150 969 Zinc ppm ASTM D5185m 1350 1167 Sulfur ppm ASTM D5185m 4250 4127 Oxidation Abs/.1mm *ASTM D7414 >25 22.8 Base Number (BN) mg KOH/g ASTM D2896 8.5 4.1	Molybdenum	ppm	ASTM D5185m	100	2		
Calcium ppm ASTM D5185m 3000 2502 Phosphorus ppm ASTM D5185m 1150 969 Zinc ppm ASTM D5185m 1350 1167 Sulfur ppm ASTM D5185m 4250 4127 Oxidation Abs/.1mm *ASTM D2896 8.5 4.1	Manganese	ppm	ASTM D5185m		2		
Phosphorus ppm ASTM D5185m 1150 969 Zinc ppm ASTM D5185m 1350 1167 Sulfur ppm ASTM D5185m 4250 4127 Oxidation Abs/.1mm *ASTM D7414 >25 22.8 Base Number (BN) mg KOH/g ASTM D2896 8.5 4.1	Magnesium	ppm	ASTM D5185m	450	47		
Zinc ppm ASTM D5185m 1350 1167 Sulfur ppm ASTM D5185m 4250 4127 Oxidation Abs/.1mm *ASTM D7141 >25 22.8 Base Number (BN) mg KOHg ASTM D2896 8.5 4.1	Calcium	ppm	ASTM D5185m		2502		
Sulfur ppm ASTM D5185m 4250 4127 Oxidation Abs/.1mm *ASTM D7414 >25 22.8 Base Number (BN) mg KOH/g ASTM D2896 8.5 4.1	Phosphorus	ppm	ASTM D5185m	1150	969		
Oxidation Abs/.1mm *ASTM D7414 >25 22.8 Base Number (BN) mg KOH/g ASTM D2896 8.5 4.1	Zinc	ppm	ASTM D5185m	1350	1167		
Base Number (BN) mg KOH/g ASTM D2896 8.5 4.1	Sulfur	ppm	ASTM D5185m	4250	4127		
	Oxidation	Abs/.1mm	*ASTM D7414	>25	22.8		
Visc @ 100°C cSt ASTM D445 14.4 15.1	Base Number (BN)	mg KOH/g	ASTM D2896	8.5	4.1		
	Visc @ 100°C	cSt	ASTM D445	14.4	15.1		



EAI EQUIPMENT A DIIV OF PLEASANT CONSTRUCTION INC Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 Sample No. : WC0934753 Received 24024 FREDERICK ROAD : 15 Jul 2024 Lab Number : 06237358 Tested CLARKSBURG, MD : 17 Jul 2024 Unique Number : 11126192 : 17 Jul 2024 - Don Baldridge US 20871 Diagnosed Test Package : CONST (Additional Tests: Glycol, TBN) Contact: Service Manager Certificate L2367 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. T: F: Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Contact/Location: Service Manager - EAICLA Page 2 of 2