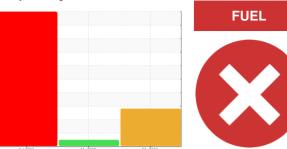


OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id

INGERSOLL RAND 185 INGERSOLL RAND 185

Diesel Engine

TRC MOLY XL PROSPEC III 15W40 (2 GAL

DIAGNOSIS

Recommendation

We advise that you check the fuel injection system. The oil 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

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

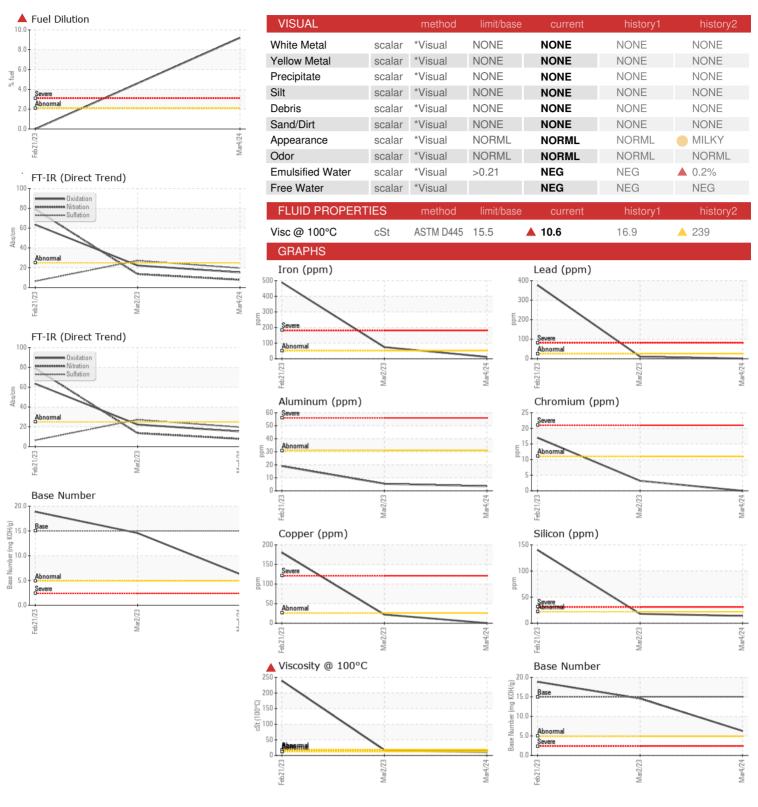
Fluid Condition

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.

SAMPLE INFORMATION method limil/base current history1 history2			Fel	2023	Mar2023 Mar20	124	
Sample Date	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Date Client Info 04 Mar 2024 02 Mar 2023 21 Feb 2023 Machine Age hrs Client Info 1344 1260 0 Oil Age hrs Client Info 0 243 60 Oil Changed Client Info Changed Changed Changed Changed Sample Status Client Info Changed NCR Changed Changed CONTAMINATION method limit/base current history1 history2 Water WC Method >0.21 NEG NEG NEG Glycol WC Method NEG NEG NEG NEG Mean NEG NEG NEG NEG Cloronium ppm ASTM D5185m >51 12 74 488 Ctromium ppm ASTM D5185m >5 2 4 8 Titanium ppm ASTM D5185m >3 <1	Sample Number		Client Info		TR06139372	TR05784636	TR05784633
Machine Age hrs Client Info 1344 1260 0 Oil Age hrs Client Info 0 243 60 Oil Changed Client Info Changed Changed Changed Changed Sample Status SEVERE NCRMAL SEVERE CONTAMINATION method limit/base current history1 history2 Water WC Method >0.21 NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >51 12 74 488 Ohromium ppm ASTM D5185m >51 12 74 488 Ohromium ppm ASTM D5185m >10 <1 69 Silver ppm ASTM D5185m >3 <1 0 <1 69 Silver ppm ASTM D5185m >26 1 11 A 377 <th< td=""><td>•</td><td></td><td></td><td></td><th></th><td></td><td></td></th<>	•						
Oil Changed Nors Client Info Changed Changed Changed Changed Changed Changed Sample Status Client Info Changed Changed Changed Changed Changed Changed Severe Changed Changed Changed Changed Changed Severe Neged Changed Changed Severe Neged Changed Changed Changed Changed Severe Neged Changed C	•	hrs					
Client Info							
SEVERE	•				-		Changed
Water Glycol WC Method (WC Method) >0.21 NEG (NEG (NEG (NEG (NEG (NEG (NEG (NEG (-						
WEAR METALS method Imilibase current history1 history2 Iron ppm ASTM D5185m >51 12 74 ▲ 488 Chromium ppm ASTM D5185m >51 12 74 ▲ 488 Chromium ppm ASTM D5185m >55 2 4 8 Tittanium ppm ASTM D5185m >5 2 4 8 Silver ppm ASTM D5185m >3 -1 0 -1 Aluminum ppm ASTM D5185m >31 4 5 19 Lead ppm ASTM D5185m >26 1 11 △ 377 Copper ppm ASTM D5185m >4 <1	CONTAMINATION	V	method	limit/base	current	history1	history2
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >51 12 74 ▲ 488 Chromium ppm ASTM D5185m >51 12 74 ▲ 488 Chromium ppm ASTM D5185m >11 0 3 ↑ 17 Nickel ppm ASTM D5185m >5 2 4 8 Tittanium ppm ASTM D5185m >3 <1	Water		WC Method	>0.21	NEG	NEG	NEG
Iron	Glycol		WC Method		NEG	NEG	▲ 0.20
Chromium ppm ASTM D5185m >11 0 3 ▲ 17 Nickel ppm ASTM D5185m >5 2 4 8 Titanium ppm ASTM D5185m >3 <1	WEAR METALS		method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>51	12	74	488
Titanium ppm ASTM D5185m 0 <1 69 Silver ppm ASTM D5185m >3 <1 0 <1 Aluminum ppm ASTM D5185m >3 <1 0 <1 Aluminum ppm ASTM D5185m >26 1 11 △ 377 Copper ppm ASTM D5185m >26 <1 22 △ 180 Tin ppm ASTM D5185m >26 <1 3 △ 38 Vanadium ppm ASTM D5185m >4 <1 3 △ 38 Vanadium ppm ASTM D5185m 0 0 <1 1 1 1 1 2 1 2 1 2 1 2 2 2 2 2 2 1 2 2 2 2 2 2 1 2 7 3 4 2 2 7 4 4	Chromium	ppm	ASTM D5185m	>11	0	3	1 7
Silver	Nickel	ppm	ASTM D5185m	>5	2	4	8
Aluminum ppm ASTM D5185m >31 4 5 19 Lead ppm ASTM D5185m >26 1 11 ▲ 377 Copper ppm ASTM D5185m >26 <1	Titanium	ppm	ASTM D5185m		0	<1	69
Lead ppm ASTM D5185m >26 1 11 ▲ 377 Copper ppm ASTM D5185m >26 <1 22 ▲ 180 Tin ppm ASTM D5185m >4 <1 3 ▲ 38 Vanadium ppm ASTM D5185m <1 0 <1 Cadmium ppm ASTM D5185m 0 0 <1 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 285 178 265 Barium ppm ASTM D5185m 0 0 154 Molybdenum ppm ASTM D5185m 62 220 144 Manganese ppm ASTM D5185m 316 584 225 Calcium ppm ASTM D5185m 4500 1486 4758 1713 Phosphorus ppm ASTM D5185m 4500 1486 4758 1713 Sulfur ppm	Silver	ppm	ASTM D5185m	>3	<1	0	<1
Copper ppm ASTM D5185m >26 <1 22 ▲ 180 Tin ppm ASTM D5185m >4 <1	Aluminum	ppm	ASTM D5185m	>31	4	5	1 9
Tin	Lead	ppm	ASTM D5185m	>26	1	11	377
Trin	Copper		ASTM D5185m	>26	<1	22	1 80
Vanadium ppm ASTM D5185m <1 0 <1 Cadmium ppm ASTM D5185m 0 0 <1 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 285 178 265 Barium ppm ASTM D5185m 0 0 0 154 Molybdenum ppm ASTM D5185m 62 220 144 Manganese ppm ASTM D5185m <1 2 7 Magnesium ppm ASTM D5185m 316 584 225 Calcium ppm ASTM D5185m 865 964 1889 Zinc ppm ASTM D5185m 1400 1043 1313 574 Sulfur ppm ASTM D5185m >22 14 18 140 Sodium ppm ASTM D5185m >22 14 18 140 Sodium ppm ASTM D5185m<			ASTM D5185m	>4	<1	3	3 8
Cadmium ppm ASTM D5185m 0 0 <1 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 285 178 265 Barium ppm ASTM D5185m 0 0 154 Molybdenum ppm ASTM D5185m 62 220 144 Manganese ppm ASTM D5185m <1	Vanadium		ASTM D5185m		<1		<1
Boron						0	<1
Barium ppm ASTM D5185m 0 0 154 Molybdenum ppm ASTM D5185m 62 220 144 Manganese ppm ASTM D5185m <1	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 62 220 144 Manganese ppm ASTM D5185m <1 2 7 Magnesium ppm ASTM D5185m 316 584 225 Calcium ppm ASTM D5185m 4500 1486 4758 1713 Phosphorus ppm ASTM D5185m 865 964 1889 Zinc ppm ASTM D5185m 1400 1043 1313 574 Sulfur ppm ASTM D5185m 3470 4163 2129 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >22 14 18 140 Sodium ppm ASTM D5185m >31 2 9 1714 Potassium ppm ASTM D5185m >20 2 4 2974 Fuel % ASTM D7844 >3 0.1 0.3 0.8	Boron	ppm	ASTM D5185m		285	178	265
Manganese ppm ASTM D5185m <1 2 7 Magnesium ppm ASTM D5185m 316 584 225 Calcium ppm ASTM D5185m 4500 1486 4758 1713 Phosphorus ppm ASTM D5185m 865 964 1889 Zinc ppm ASTM D5185m 1400 1043 1313 574 Sulfur ppm ASTM D5185m 3470 4163 2129 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >22 14 18 140 Sodium ppm ASTM D5185m >31 2 9 1714 Potassium ppm ASTM D5185m >20 2 4 2974 Fuel % ASTM D5185m >20 2 4 2974 Fuel % ASTM D5185m >20 2 4 2974 <	Barium	ppm	ASTM D5185m		0	0	154
Magnesium ppm ASTM D5185m 316 584 225 Calcium ppm ASTM D5185m 4500 1486 4758 1713 Phosphorus ppm ASTM D5185m 865 964 1889 Zinc ppm ASTM D5185m 1400 1043 1313 574 Sulfur ppm ASTM D5185m 3470 4163 2129 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >22 14 18 140 Sodium ppm ASTM D5185m >31 2 9 1714 Potassium ppm ASTM D5185m >20 2 4 2974 Fuel % ASTM D3524 >2.1 9.2 <1.0	Molybdenum	ppm	ASTM D5185m		62	220	144
Calcium ppm ASTM D5185m 4500 1486 4758 1713 Phosphorus ppm ASTM D5185m 865 964 1889 Zinc ppm ASTM D5185m 1400 1043 1313 574 Sulfur ppm ASTM D5185m 3470 4163 2129 CONTAMINANTS method limit/base current history1 history2 Soliicon ppm ASTM D5185m >22 14 18 140 Sodium ppm ASTM D5185m >31 2 9 1714 Potassium ppm ASTM D5185m >20 2 4 2974 Fuel % ASTM D5185m >20 2 4 2974 Fuel % ASTM D3524 >2.1 1.0 <1.0	Manganese	ppm	ASTM D5185m		<1	2	7
Phosphorus ppm ASTM D5185m 865 964 1889 Zinc ppm ASTM D5185m 1400 1043 1313 574 Sulfur ppm ASTM D5185m 3470 4163 2129 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >22 14 18 140 Sodium ppm ASTM D5185m >31 2 9 1714 Potassium ppm ASTM D5185m >20 2 4 2974 Fuel % ASTM D3524 >2.1 9.2 <1.0 <1.0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >20 7.9 13.6 79.1 Sulfation Abs/.1mm *ASTM D7415 >30 19.6 27.2 6.4 FLUID DEGRADATION method limit/base current	Magnesium	ppm	ASTM D5185m		316	584	225
Zinc ppm ASTM D5185m 1400 1043 1313 574 Sulfur ppm ASTM D5185m 3470 4163 2129 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >22 14 18 140 Sodium ppm ASTM D5185m >31 2 9 1714 Potassium ppm ASTM D5185m >20 2 4 2974 Fuel % ASTM D3524 >2.1 9.2 <1.0 <1.0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.1 0.3 0.8 Nitration Abs/cm *ASTM D7624 >20 7.9 13.6 79.1 Sulfation Abs/.1mm *ASTM D7415 >30 19.6 27.2 6.4 FLUID DEGRADATION method limit/base <	Calcium	ppm	ASTM D5185m	4500	1486	4758	1713
Sulfur ppm ASTM D5185m 3470 4163 2129 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >22 14 18 ▲ 140 Sodium ppm ASTM D5185m >31 2 9 ▲ 1714 Potassium ppm ASTM D5185m >20 2 4 ▲ 2974 Fuel % ASTM D3524 >2.1 ▲ 9.2 <1.0	Phosphorus	ppm	ASTM D5185m		865	964	1889
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >22 14 18 ▲ 140 Sodium ppm ASTM D5185m >31 2 9 ▲ 1714 Potassium ppm ASTM D5185m >20 2 4 ▲ 2974 Fuel % ASTM D3524 >2.1 ▲ 9.2 <1.0	Zinc	ppm	ASTM D5185m	1400	1043	1313	574
Silicon ppm ASTM D5185m >22 14 18 ▲ 140 Sodium ppm ASTM D5185m >31 2 9 ▲ 1714 Potassium ppm ASTM D5185m >20 2 4 ▲ 2974 Fuel % ASTM D3524 >2.1 ▲ 9.2 <1.0 <1.0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.1 0.3 0.8 Nitration Abs/cm *ASTM D7624 >20 7.9 13.6 79.1 Sulfation Abs/.1mm *ASTM D7415 >30 19.6 27.2 6.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.3 22.3 63.5	Sulfur	ppm	ASTM D5185m		3470	4163	2129
Sodium ppm ASTM D5185m >31 2 9 ▲ 1714 Potassium ppm ASTM D5185m >20 2 4 ▲ 2974 Fuel % ASTM D3524 >2.1 ▲ 9.2 <1.0	CONTAMINANTS	;	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 2 4 ≥2974 Fuel % ASTM D3524 >2.1 ♠ 9.2 <1.0 <1.0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.1 0.3 0.8 Nitration Abs/cm *ASTM D7624 >20 7.9 13.6 79.1 Sulfation Abs/.1mm *ASTM D7415 >30 19.6 27.2 6.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.3 22.3 63.5	Silicon	ppm	ASTM D5185m	>22	14	18	1 40
Fuel % ASTM D3524 >2.1 ▲ 9.2 <1.0 <1.0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.1 0.3 0.8 Nitration Abs/cm *ASTM D7624 >20 7.9 13.6 79.1 Sulfation Abs/.1mm *ASTM D7415 >30 19.6 27.2 6.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.3 22.3 63.5	Sodium	ppm	ASTM D5185m	>31	2	9	<u></u> 1714
INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.1 0.3 0.8 Nitration Abs/cm *ASTM D7624 >20 7.9 13.6 79.1 Sulfation Abs/.1mm *ASTM D7415 >30 19.6 27.2 6.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.3 22.3 63.5	Potassium	ppm	ASTM D5185m	>20	2	4	2974
Soot % % *ASTM D7844 >3 0.1 0.3 0.8 Nitration Abs/cm *ASTM D7624 >20 7.9 13.6 79.1 Sulfation Abs/.1mm *ASTM D7415 >30 19.6 27.2 6.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.3 22.3 63.5	Fuel	%	ASTM D3524	>2.1	▲ 9.2	<1.0	<1.0
Nitration Abs/cm *ASTM D7624 >20 7.9 13.6 79.1 Sulfation Abs/.1mm *ASTM D7415 >30 19.6 27.2 6.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.3 22.3 63.5	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 19.6 27.2 6.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.3 22.3 63.5	Soot %	%	*ASTM D7844	>3	0.1	0.3	0.8
Sulfation Abs/.1mm *ASTM D7415 >30 19.6 27.2 6.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.3 22.3 63.5	Nitration	Abs/cm	*ASTM D7624	>20	7.9	13.6	79.1
Oxidation Abs/.1mm *ASTM D7414 >25 15.3 22.3 63.5		Abs/.1mm				27.2	
	FLUID DEGRADA	ATION	method	limit/base	current	history1	history2
	Oxidation	Abs/.1mm	*ASTM D7414	>25	15.3	22.3	63.5
		mg KOH/g			6.28		



OIL ANALYSIS REPORT





Laboratory Sample No.

: TR06139372 Lab Number : 06139372 Unique Number : 10964180

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

: 09 Apr 2024 Test Package : MOB 2 (Additional Tests: FuelDilution, PercentFuel)

: 09 Apr 2024 - Wes Davis

: 04 Apr 2024

J.P. CARDILLO SON INC 1 MELVIN ST WAKEFIELD, MA US 01880 Contact: MIKE RICHARDS

Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-827-0711.

 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)

F: (781)245-3478