

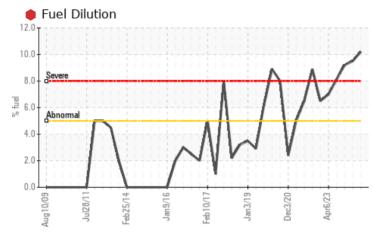
PROBLEM SUMMARY

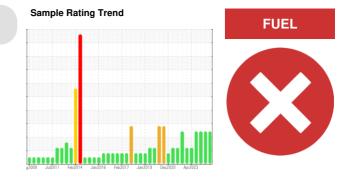
Area System 72 - Essential Power Generation Z-7201C Essential Power Diesal Engine Lube Oil Component

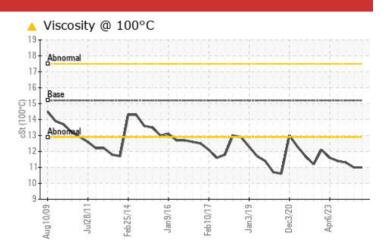
Diesel Engine

IRVING IDO UNIVERSAL SAE 15W40 (830 LTR)

COMPONENT CONDITION SUMMARY







RECOMMENDATION

We advise that you check the fuel injection system. We recommend that you change the oil at the next available stoppage or outage. We recommend an early resample to monitor this condition.

PROBLEMATIC TEST RESULTS								
Sample Status				SEVERE	SEVERE	SEVERE		
Fuel	%	ASTM D7593*	>5	e 10.2	9.5	9.2		
Visc @ 100°C	cSt	ASTM D7279(m)	15.2	11.0	1 1.0	1 1.3		

Customer Id: HIBSTJ Sample No.: PP Lab Number: 02590883 Test Package: MAR 3



To manage this report scan the QR code

To discuss the diagnosis or test data: Kevin Marson +1 (289)291-4644 x4644 Kevin.Marson@wearcheck.com

To change component or sample information: Gloria Gonzalez +1 (289)291-4643 x4643 gloria.gonzalez@wearcheck.com

RECOMMENDED ACTIONS						
Action	Status	Date	Done By	Description		
Change Fluid			?	We recommend that you change the oil at the next available stoppage or outage.		
Resample			?	We recommend an early resample to monitor this condition.		
Check Fuel/injector System			?	We advise that you check the fuel injection system.		

HISTORICAL DIAGNOSIS



31 Aug 2023 Diag: Kevin Marson

We advise that you check the fuel injection system. We recommend that you change the oil at the next available stoppage or outage. We recommend an early resample to monitor this condition.All component wear rates are normal. The direct-reading & analytical ferrographic results are normal indicating no abnormal wear in the system. There is a high amount of fuel present in the oil. The water content is negligible. Tests confirm the presence of fuel in the oil. 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.



view report

01 Jun 2023 Diag: Kevin Marson



We advise that you check the fuel injection system. We recommend that you change the oil at the next available stoppage or outage. We recommend an early resample to monitor this condition.All component wear rates are normal. The direct-reading & analytical ferrographic results are normal indicating no abnormal wear in the system. There is a high amount of fuel present in the oil. The water content is negligible. Tests confirm the presence of fuel in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. Viscosity of sample indicates oil is within SAE 30 range, advise investigate. The oil is no longer serviceable due to the presence of contaminants.



29 Apr 2023 Diag: Kevin Marson



We advise that you check the fuel injection system. We recommend that you change the oil at the next available stoppage or outage. We recommend an early resample to monitor this condition.All component wear rates are normal. The direct-reading & analytical ferrographic results are normal indicating no abnormal wear in the system. There is a high amount of fuel present in the oil. The water content is negligible. Tests confirm the presence of fuel in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. Viscosity of sample indicates oil is within SAE 30 range, advise investigate. The oil is no longer serviceable due to the presence of contaminants.





Area System 72 - Essential Power Generation Z-7201C Essential Power Diesal Engine Lube Oil Component

Diesel Engine

IRVING IDO UNIVERSAL SAE 15W40 (830 LTR)

DIAGNOSIS

Recommendation

We advise that you check the fuel injection system. We recommend that you change the oil at the next available stoppage or outage. We recommend an early resample to monitor this condition.

Wear

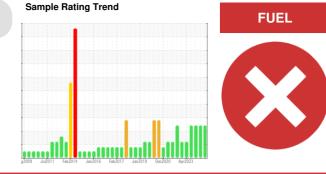
All component wear rates are normal. The ferrography results are normal indicating no abnormal wear in the system.

Contaminants

There is a high amount of fuel present in the oil. The water content is negligible. Tests confirm the presence of fuel in the oil.

Oil Condition

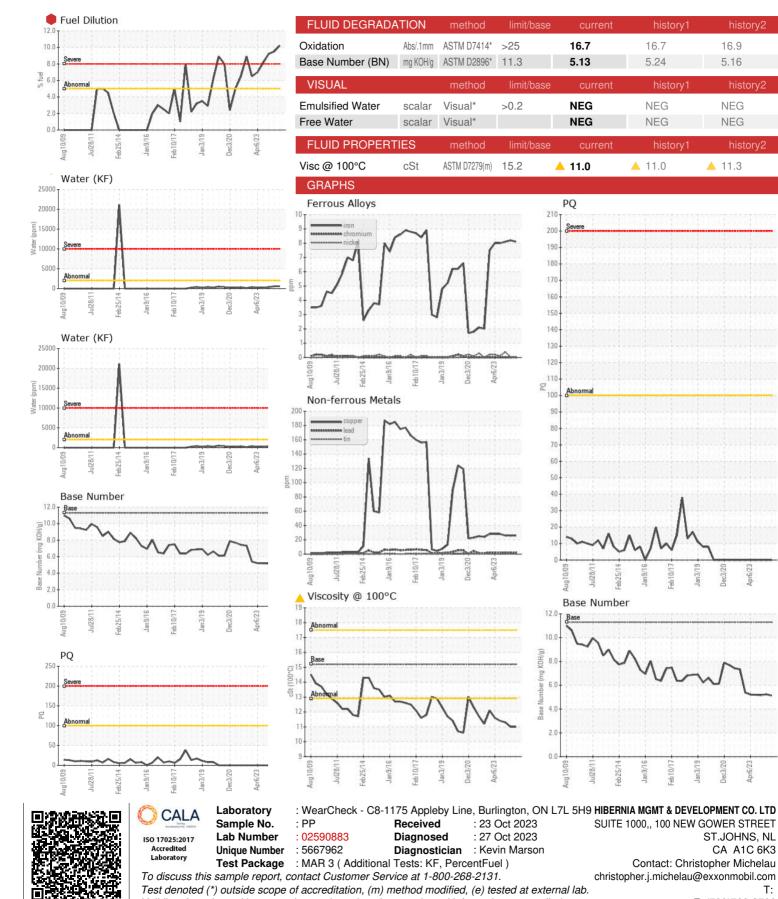
The BN result indicates that there is suitable alkalinity remaining in the oil. Viscosity of sample indicates oil is within SAE 30 range, advise investigate. The oil is no longer serviceable due to the presence of contaminants.



Oli Changed Client Info N/A N/A N/A N/A Sample Status Image Status Image Status SEVERE SEVERE SEVERE CONTAMINATION method Imit/base current History1 History2 Glycol WC Method NEG NEG NEG WEAR METALS method Imit/base current History1 History2 PQ ASTM D585(m) >100 8 8 8 Chromium ppm ASTM D585(m) >20 0 0 0 Silver ppm ASTM D585(m) >33 <1 0 0 Silver ppm ASTM D585(m) >30 26 26 26 Copper ppm ASTM D585(m) >30 0 0 0 Vanadium ppm ASTM D585(m) 0 0 0 0 Berrinum ppm ASTM D585(m) 37 37 40 Berrinum <	SAMPLE INFORM	IATION	method	limit/base	current	history1	history2	
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Titanium ppm ASTM D5185(m) 0 0 0 Silver ppm ASTM D5185(m) >3 <1	Nickel	ppm	ASTM D5185(m)	>4	0	0	<1	
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Lithium ppm ASTM D5185(m) <1	-		()	1300				
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185(m) >25 2 2 2 Sodium ppm ASTM D5185(m) >20 <1 <1 <1 Potassium ppm ASTM D5185(m) >20 <1 <1 <1 Fuel % ASTM D5185(m) >20 <1 <1 <1 Fuel % ASTM D5393* >5 ● 10.2 ● 9.5 ● 9.2 Water % ASTM D6304* >0.2 0.058 0.057 0.035 ppm Water ppm ASTM D6304* >2000 582.4 575.8 350.8 INFRA-RED method limit/base current history1 history2 Soot % % ASTM D7844* >3 0.1 0.1 0.1 Nitration Abs/cm ASTM D7624* >20 9.7 9.6 9.5 Sulfation Abs/.1mm ASTM D7415								
Silicon ppm ASTM D5185(m) >25 2 2 2 2 Sodium ppm ASTM D5185(m) >20 2 2 2 Potassium ppm ASTM D5185(m) >20 <1 <1 <1 Fuel % ASTM D5185(m) >20 <1 <1 <1 Fuel % ASTM D5393* >5 10.2 9.5 9.2 Water % ASTM D6304* >0.2 0.058 0.057 0.035 ppm Water ppm ASTM D6304* >2000 582.4 575.8 350.8 INFRA-RED method limit/base current history1 history2 Soot % % ASTM D7844* >3 0.1 0.1 0.1 Nitration Abs/cm ASTM D7624* >20 9.7 9.6 9.5 Sulfation Abs/.1mm ASTM D7415* >30 20.5 20.5 20.6	Lithium	ppm			<1	<1		
Sodium ppm ASTM D5185(m) 2 2 2 Potassium ppm ASTM D5185(m) >20 <1 <1 <1 Fuel % ASTM D5393* >5 10.2 9.5 9.2 Water % ASTM D6304* >0.2 0.058 0.057 0.035 ppm Water ppm ASTM D6304* >2000 582.4 575.8 350.8 INFRA-RED method limit/base current history1 history2 Soot % % ASTM D7844* >3 0.1 0.1 0.1 Nitration Abs/cm ASTM D7624* >20 9.7 9.6 9.5 Sulfation Abs/.1mm ASTM D7415* >30 20.5 20.5 20.6				limit/base				
Potassium ppm ASTM D5185(m) >20 <1			. ,	>25				
Fuel % ASTM D7593* >5 10.2 9.5 9.2 Water % ASTM D6304* >0.2 0.058 0.057 0.035 ppm Water ppm ASTM D6304* >2000 582.4 575.8 350.8 INFRA-RED method limit/base current history1 history2 Soot % % ASTM D7844* >3 0.1 0.1 0.1 Nitration Abs/cm ASTM D7624* >20 9.7 9.6 9.5 Sulfation Abs/.1mm ASTM D7415* >30 20.5 20.5 20.6								
Water % ASTM D6304* >0.2 0.058 0.057 0.035 ppm Water ppm ASTM D6304* >2000 582.4 575.8 350.8 INFRA-RED method limit/base current history1 history2 Soot % % ASTM D7844* >3 0.1 0.1 0.1 Nitration Abs/cm ASTM D7624* >20 9.7 9.6 9.5 Sulfation Abs/.1mm ASTM D7415* >30 20.5 20.5 20.6			. ,					
ppm Water ppm ASTM D6304* >2000 582.4 575.8 350.8 INFRA-RED method limit/base current history1 history2 Soot % % ASTM D7844* >3 0.1 0.1 0.1 Nitration Abs/cm ASTM D7644* >20 9.7 9.6 9.5 Sulfation Abs/.1mm ASTM D7415* >30 20.5 20.5 20.6							-	
INFRA-RED method limit/base current history1 history2 Soot % % ASTM D7844* >3 0.1 0.1 0.1 Nitration Abs/cm ASTM D7624* >20 9.7 9.6 9.5 Sulfation Abs/.1mm ASTM D7415* >30 20.5 20.6								
Soot % % ASTM D7844* >3 0.1 0.1 0.1 Nitration Abs/cm ASTM D7624* >20 9.7 9.6 9.5 Sulfation Abs/.1mm ASTM D7415* >30 20.5 20.5 20.6		ppm						
Nitration Abs/cm ASTM D7624* >20 9.7 9.6 9.5 Sulfation Abs/.1mm ASTM D7415* >30 20.5 20.5 20.6	INFRA-RED			limit/base				
Sulfation Abs/.1mm ASTM D7415* >30 20.5 20.6				>3				
				>20				
27:31) Rev: 1 Submitted By: ?	Sulfation	Abs/.1mm	ASTM D7415*	>30	20.5			



OIL ANALYSIS REPORT



Validity of results and interpretation are based on the sample and information as supplied.

F: (709)722-3766

ST.JOHNS, NL

CA A1C 6K3

T:

AC3/70

eb10/1

16.9

5.16

NEG

NEG

11.3

history2



Area System 72 - Essential Power Generation Z-7201C Essential Power Diesal Engine Lube Oil Component

Diesel Engine

IRVING IDO UNIVERSAL SAE 15W40 (830 LTR)



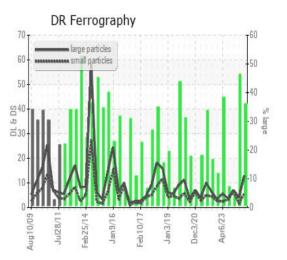


Magn: 100x Illum: RW

DR-FERROGRAP	ΡΗΥ	method	limit/base	current	history1	history2
Large Particles		DR-Ferr*		12.8	4.1	7.0
Small Particles		DR-Ferr*		6.0	1.5	6.4
Total Particles		DR-Ferr*	>	18.8	5.6	13.4
Large Particles Percentage	%	DR-Ferr*		36.2	46.4	4.5
Severity Index		DR-Ferr*		87	11	4
FERROGRAPHY		method	limit/base	current	history1	history2
Ferrous Rubbing	Scale 0-10	ASTM D7684*		2	3	3
Ferrous Sliding	Scale 0-10	ASTM D7684*				
Ferrous Cutting	Scale 0-10	ASTM D7684*				
Ferrous Rolling	Scale 0-10	ASTM D7684*			1	1
Ferrous Break-in	Scale 0-10	ASTM D7684*				
Ferrous Spheres	Scale 0-10	ASTM D7684*				
Ferrous Black Oxides	Scale 0-10	ASTM D7684*		1	1	
Ferrous Red Oxides	Scale 0-10	ASTM D7684*				
Ferrous Corrosive	Scale 0-10	ASTM D7684*				
Ferrous Other	Scale 0-10	ASTM D7684*				
Nonferrous Rubbing	Scale 0-10	ASTM D7684*				
Nonferrous Sliding	Scale 0-10	ASTM D7684*				
Nonferrous Cutting	Scale 0-10	ASTM D7684*				
Nonferrous Rolling	Scale 0-10	ASTM D7684*				
Nonferrous Other	Scale 0-10	ASTM D7684*				
Carbonaceous Material	Scale 0-10	ASTM D7684*				
Lubricant Degradation	Scale 0-10	ASTM D7684*				
Sand/Dirt	Scale 0-10	ASTM D7684*		1	1	1
Fibres	Scale 0-10	ASTM D7684*				
Spheres	Scale 0-10	ASTM D7684*				
Other	Scale 0-10	ASTM D7684*		1	1	1

WEAR

All component wear rates are normal. The ferrography results are normal indicating no abnormal wear in the system.



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