

PROBLEM SUMMARY

/

Sample Rating Trend

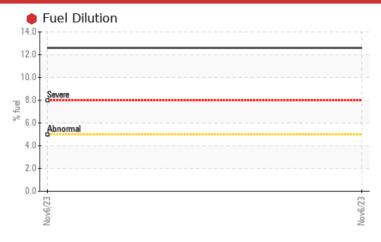
FUEL

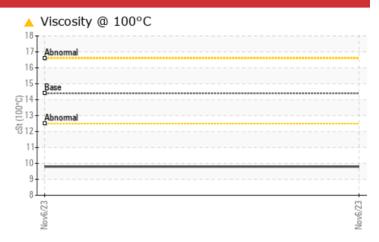


77106
Component
Diesel Engine

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

COMPONENT CONDITION SUMMARY





RECOMMENDATION

We advise that you check the fuel injection system. We recommend that you drain the oil and perform a filter service on this component if not already done. We recommend an early resample to monitor this condition.

PROBLEMATION	C TEST R	ESULTS				
Sample Status				SEVERE	 	
Fuel	%	ASTM D3524	>5	12.6	 	
Visc @ 100°C	cSt	ASTM D445	144	A 9.8	 	

Customer Id: CITSEQ Sample No.: PE0002895 Lab Number: 06008046 Test Package: FLEET



To manage this report scan the QR code

To discuss the diagnosis or test data: Jonathan Hester +1 919-379-4092 x4092 jhester@wearcheckusa.com

To change component or sample information: Customer Service +1 1-800-237-1369 customerservice@wearcheck.com

RECOMMENDED ACTIONS						
Action	Status	Date	Done By	Description		
Change Fluid			?	We recommend that you drain the oil and perform a filter service on this component if not already done.		
Change Filter			?	We recommend that you drain the oil and perform a filter service on this component if not already done.		
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

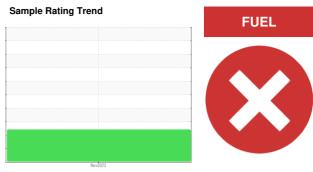


OIL ANALYSIS REPORT

77106 Component

Diesel Engine

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



DIAGNOSIS

Recommendation

We advise that you check the fuel injection system. We recommend that you drain the oil and perform a filter service on this component if not already done. 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.

Fluid Condition

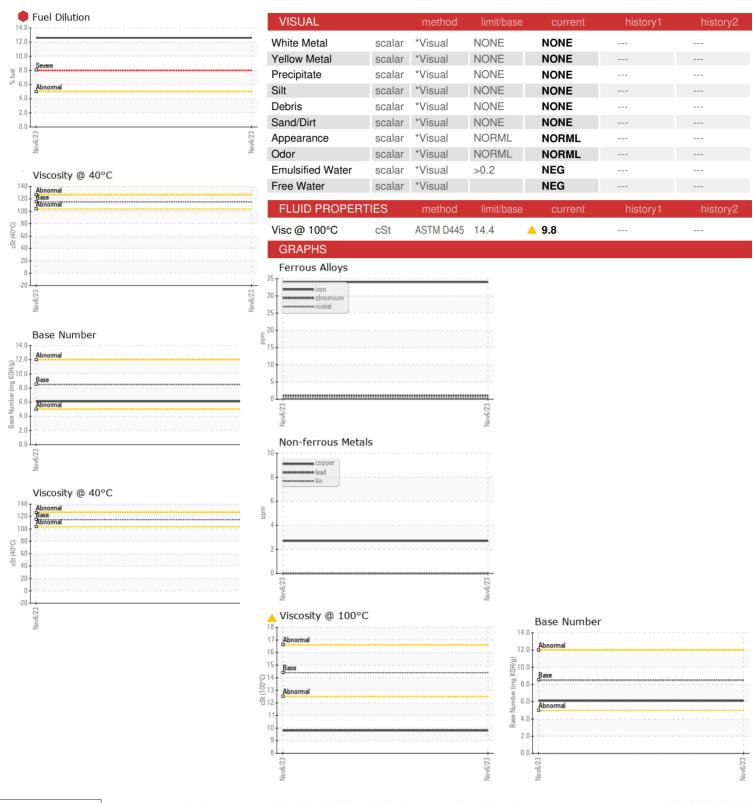
Fuel is present in the oil and is lowering the viscosity. The BN result indicates that there is suitable alkalinity remaining in the oil. The oil is no longer serviceable due to the presence of contaminants.

CAMPLE INCOM	MATION			Nov2023		
SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PE0002895		
Sample Date		Client Info		06 Nov 2023		
Machine Age	mls	Client Info		9803		
Oil Age	mls	Client Info		0		
Oil Changed		Client Info		N/A		
Sample Status				SEVERE		
CONTAMINATION	N	method	limit/base	current	history1	history2
Water		WC Method	>0.2	NEG		
Glycol		WC Method		NEG		
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	34		
Chromium	ppm	ASTM D5185m	>20	1		
Nickel	ppm	ASTM D5185m	>4	- <1		
Titanium	ppm	ASTM D5185m		<1		
Silver	ppm	ASTM D5185m	>3	<1		
Aluminum	ppm	ASTM D5185m	>20	2		
Lead	ppm	ASTM D5185m	>40	0		
Copper	ppm	ASTM D5185m	>330	3		
Tin	ppm	ASTM D5185m	>15	0		
Vanadium	ppm	ASTM D5185m		<1		
Cadmium	ppm	ASTM D5185m		<1		
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 57	history1	history2
	ppm ppm					•
Boron	• • • • • • • • • • • • • • • • • • • •	ASTM D5185m	250	57		
Boron Barium	ppm	ASTM D5185m ASTM D5185m	250 10	57 0		
Boron Barium Molybdenum	ppm	ASTM D5185m ASTM D5185m ASTM D5185m	250 10	57 0 48		
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100	57 0 48 <1		
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450	57 0 48 <1 337		
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000	57 0 48 <1 337 1592		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150	57 0 48 <1 337 1592 813		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350	57 0 48 <1 337 1592 813 985		
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	250 10 100 450 3000 1150 1350 4250	57 0 48 <1 337 1592 813 985 2724		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	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	250 10 100 450 3000 1150 1350 4250 limit/base	57 0 48 <1 337 1592 813 985 2724 current		 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base >25	57 0 48 <1 337 1592 813 985 2724 current		history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base >25 >158	57 0 48 <1 337 1592 813 985 2724 current 10 <1		history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20	57 0 48 <1 337 1592 813 985 2724 current 10 <1		history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20 >5	57 0 48 <1 337 1592 813 985 2724 current 10 <1 2 12.6		history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20 >5	57 0 48 <1 337 1592 813 985 2724 current 10 <1 2 12.6 current		history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20 >5 limit/base	57 0 48 <1 337 1592 813 985 2724 current 10 <1 2 12.6 current 0.2	history1 history1	history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844	250 10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20 >5 limit/base	57 0 48 <1 337 1592 813 985 2724 current 10 <1 2 12.6 current 0.2 11.7	history1 history1	history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation FLUID DEGRADA	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7624 *ASTM D7415 method	250 10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20 >5 limit/base >3 >20 >30 limit/base	57 0 48 <1 337 1592 813 985 2724 current 10 <1 2 12.6 current 0.2 11.7 21.4 current	history1 history1 history1	history2 history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D76145	250 10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20 >5 limit/base >3 >20 >30	57 0 48 <1 337 1592 813 985 2724 current 10 <1 2 12.6 current 0.2 11.7 21.4	history1 history1	history2 history2

Contact/Location: MARK BENEDICT - CITSEQ



OIL ANALYSIS REPORT





Laboratory Sample No. Lab Number **Unique Number**

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : 06008046

: PE0002895 : 10741808

Received Diagnosed

: 30 Nov 2023 Diagnostician : Jonathan Hester

: 15 Nov 2023

CITY OF SEQUIM 152 W CEDAR ST SEQUIM, WA US 98382

Test Package : FLEET (Additional Tests: FT-IR, FuelDilution, ICP, KV100, KV40, PercentFuel, SCREEN, TBNContact: MARK BENEDICT To discuss this sample report, contact Customer Service at 1-800-237-1369.

mbenedict@sequimwa.gov T: (360)912-5639

* - 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:

Contact/Location: MARK BENEDICT - CITSEQ