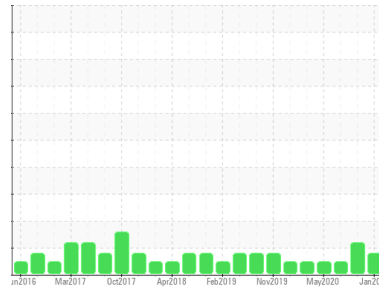




# OIL ANALYSIS REPORT

Sample Rating Trend



FUEL



Machine Id  
**Emergency Generator (S/N 40601268)**  
 Component  
**Diesel Engine**  
 Fluid  
**PETRO CANADA DURON HP 15W40 (30 LTR)**

## DIAGNOSIS

### Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor.

### Wear

All component wear rates are normal. The direct-reading & analytical ferrographic results are normal indicating no abnormal wear in the system.

### Contaminants

Light fuel dilution occurring. No other contaminants were detected in the oil.

### Oil Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

## SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		<b>WC0490608</b>	WC0432965	WC0432954
Sample Date	Client Info		<b>15 Jan 2021</b>	05 Nov 2020	17 Jul 2020
Machine Age	hrs	Client Info	<b>1456</b>	1432	1411
Oil Age	hrs	Client Info	<b>24</b>	34	13
Oil Changed	Client Info		<b>Not Changed</b>	Changed	Not Changed
Sample Status			<b>MARGINAL</b>	ABNORMAL	NORMAL

## CONTAMINATION

	method	limit/base	current	history1	history2
Water	WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol	WC Method		<b>NEG</b>	NEG	NEG

## WEAR METALS

	method	limit/base	current	history1	history2
PQ	ASTM D8184*		<b>0</b>	0	0
Iron	ppm	ASTM D5185(m) >80	<b>1</b>	2	1
Chromium	ppm	ASTM D5185(m) >4	<b>0</b>	<1	0
Nickel	ppm	ASTM D5185(m) >4	<b>&lt;1</b>	0	<1
Titanium	ppm	ASTM D5185(m)	<b>0</b>	0	0
Silver	ppm	ASTM D5185(m)	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185(m) >10	<b>&lt;1</b>	<1	<1
Lead	ppm	ASTM D5185(m) >15	<b>&lt;1</b>	<1	0
Copper	ppm	ASTM D5185(m) >230	<b>&lt;1</b>	8	<1
Tin	ppm	ASTM D5185(m) >4	<b>0</b>	<1	0
Antimony	ppm	ASTM D5185(m)	<b>&lt;1</b>	0	0
Vanadium	ppm	ASTM D5185(m)	<b>0</b>	0	0
Beryllium	ppm	ASTM D5185(m)	<b>0</b>	0	0
Cadmium	ppm	ASTM D5185(m)	<b>0</b>	0	0

## ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m) 0	<b>1</b>	2	2
Barium	ppm	ASTM D5185(m) 0	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185(m) 60	<b>55</b>	50	56
Manganese	ppm	ASTM D5185(m) 0	<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185(m) 1010	<b>936</b>	828	953
Calcium	ppm	ASTM D5185(m) 1070	<b>981</b>	889	980
Phosphorus	ppm	ASTM D5185(m) 1150	<b>980</b>	891	1026
Zinc	ppm	ASTM D5185(m) 1270	<b>1198</b>	1073	1168
Sulfur	ppm	ASTM D5185(m) 2060	<b>2699</b>	2407	2630
Lithium	ppm	ASTM D5185(m)	<b>&lt;1</b>	<1	<1

## CONTAMINANTS

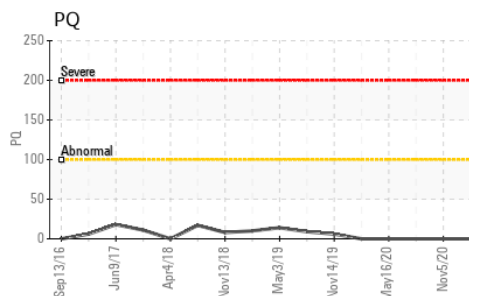
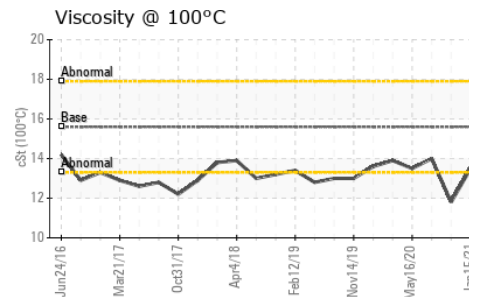
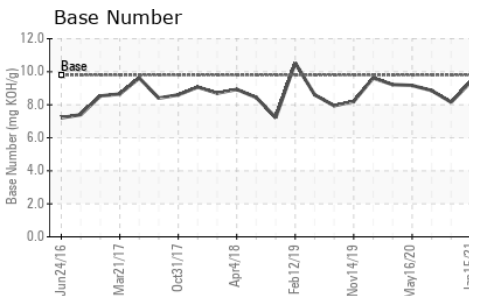
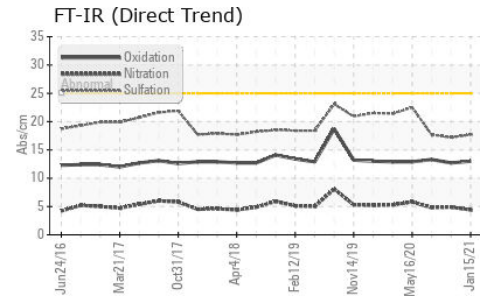
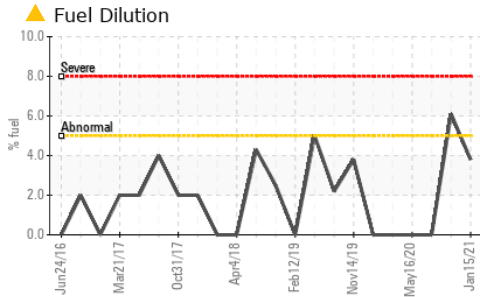
	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m) >25	<b>3</b>	2	2
Sodium	ppm	ASTM D5185(m)	<b>2</b>	2	<1
Potassium	ppm	ASTM D5185(m) >20	<b>&lt;1</b>	<1	<1
Fuel	%	ASTM D7593* >5	<b>▲ 3.8</b>	▲ 6.1	<1.0

## INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	ASTM D7844* >3	<b>0</b>	0	0
Nitration	Abs/cm	ASTM D7624* >20	<b>4.4</b>	4.9	4.8
Sulfation	Abs.1mm	ASTM D7415* >30	<b>17.7</b>	17.2	17.7



# OIL ANALYSIS REPORT

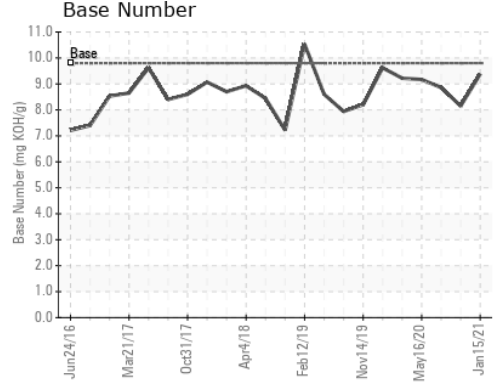
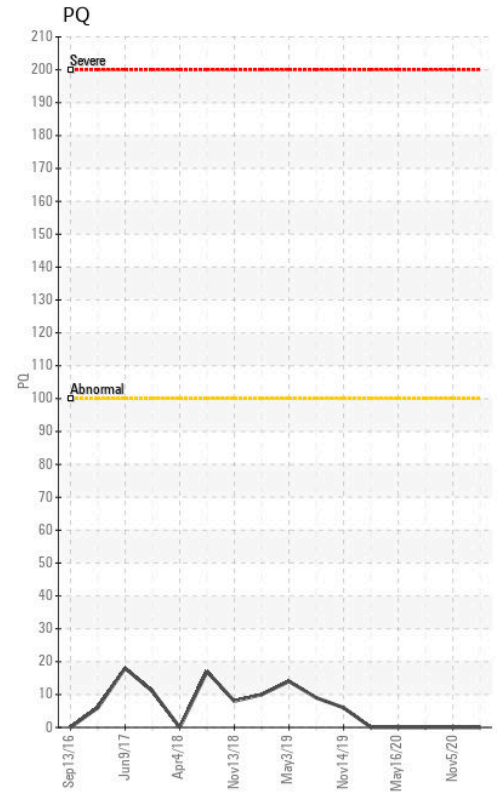
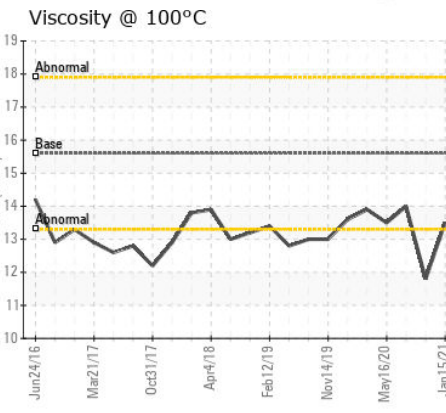
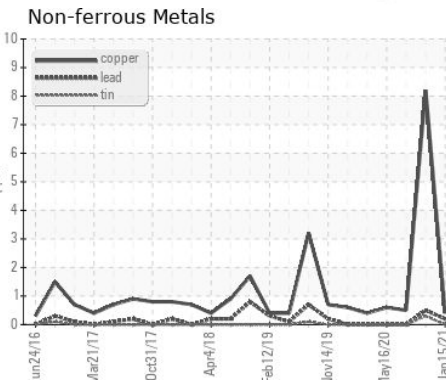
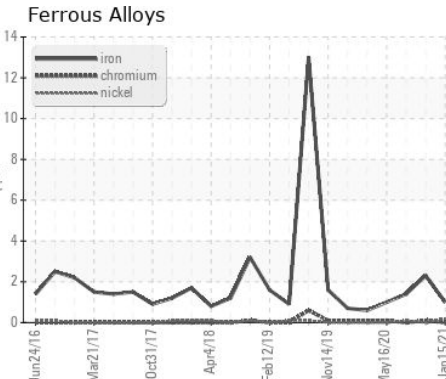


FLUID DEGRADATION	method	limit/base	current	history1	history2	
Oxidation	Abs./1mm	ASTM D7414*	>25	<b>13.0</b>	12.7	13.3
Base Number (BN)	mg KOH/g	ASTM D2896*	9.8	<b>9.38</b>	8.15	8.86

VISUAL	method	limit/base	current	history1	history2	
Emulsified Water	scalar	Visual*	>0.2	<b>NEG</b>	NEG	NEG
Free Water	scalar	Visual*		<b>NEG</b>	NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2	
Visc @ 100°C	cSt	ASTM D7279(m)	15.6	<b>13.5</b>	▲ 11.8	14.0

## GRAPHS



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : WC0490608 **Received** : 21 Jan 2021  
**Lab Number** : **02399075** **Tested** : 26 Jan 2021  
**Unique Number** : 5162536 **Diagnosed** : 26 Jan 2021 - Bill Quesnel  
**Test Package** : MAR 3 ( Additional Tests: PercentFuel )

**CANADIAN COAST GUARD**  
 CCGS GRIFFON, PO BOX 1000, 401 KING ST.W  
 Prescott, ON  
 CA K6V 5T3  
 Contact: Laurie Bosley  
 Laurie.Bosley@dfo-mpo.gc.ca

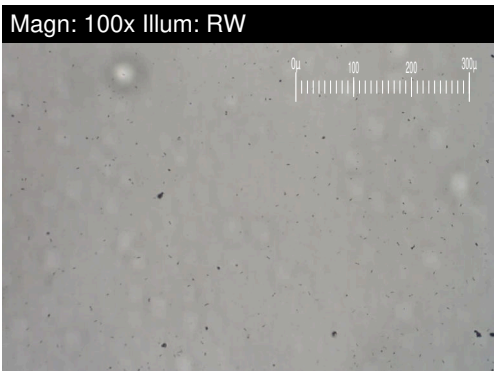
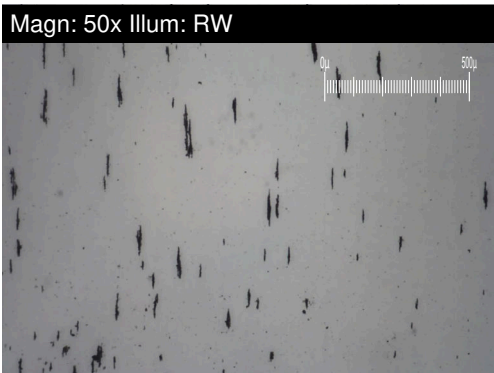
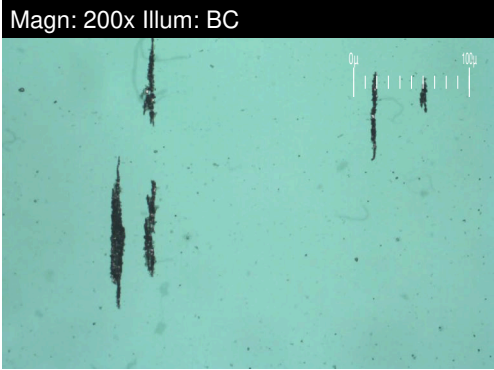
To discuss this sample report, contact Customer Service at 1-800-268-2131.  
 Test denoted (\*) outside scope of accreditation, (m) method modified, (e) tested at external lab.  
 Validity of results and interpretation are based on the sample and information as supplied.

F: (519)383-1994



# FERROGRAPHY REPORT

Machine Id  
**Emergency Generator (S/N 40601268)**  
 Component  
**Diesel Engine**  
 Fluid  
**PETRO CANADA DURON HP 15W40 (30 LTR)**

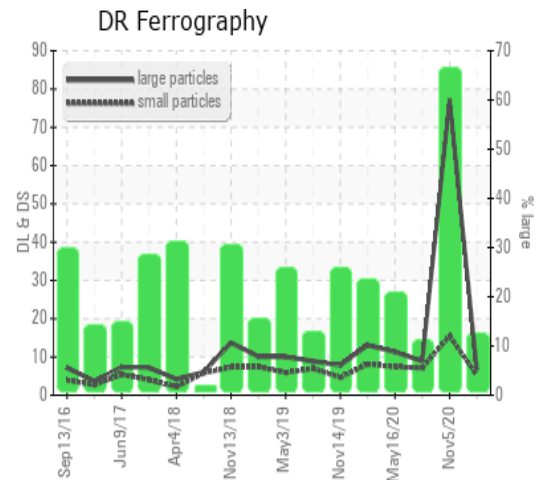


DR-FERROGRAPHY		method	limit/base	current	history1	history2
Large Particles		DR-Ferr*		<b>6.7</b>	77.1	8.9
Small Particles		DR-Ferr*		<b>5.2</b>	15.5	7.1
Total Particles		DR-Ferr*	>---	<b>11.9</b>	92.6	16
Large Particles Percentage	%	DR-Ferr*		<b>12.6</b>	66.5	11.3
Severity Index		DR-Ferr*		<b>10.1</b>	4749	16

FERROGRAPHY		method	limit/base	current	history1	history2
Ferrous Rubbing	Scale 0-10	ASTM D7684*		<b>2</b>	2	2
Ferrous Sliding	Scale 0-10	ASTM D7684*				
Ferrous Cutting	Scale 0-10	ASTM D7684*				
Ferrous Rolling	Scale 0-10	ASTM D7684*		<b>1</b>	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*				
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*		<b>1</b>		
Lubricant Degradation	Scale 0-10	ASTM D7684*				
Sand/Dirt	Scale 0-10	ASTM D7684*		<b>2</b>	1	1
Fibres	Scale 0-10	ASTM D7684*				
Spheres	Scale 0-10	ASTM D7684*				
Other	Scale 0-10	ASTM D7684*			2	1

### WEAR

All component wear rates are normal. The direct-reading & analytical ferrographic results are normal indicating no abnormal wear in the system.



*This page left intentionally blank*