

OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL

Machine Id

INTERNATIONAL DUMP TRUCK 3

Diesel Engine

PETRO CANADA 15W40 (--- GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

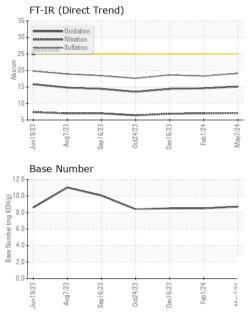
Fluid Condition

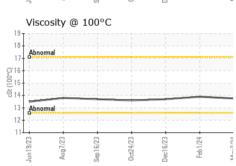
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0878812	WC0906048	WC0879007
Sample Date		Client Info		07 May 2024	01 Feb 2024	16 Dec 2023
Machine Age	mls	Client Info		371168	355365	347365
Oil Age	mls	Client Info		8000	8000	9632
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATION	٧	method	limit/base	current	history1	history2
Fuel		WC Method	>2.0	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	8	7	8
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm		>4	0	0	0
Titanium	ppm	ASTM D5185m	- 1	0	0	<1
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m		1	1	1
Lead	ppm	ASTM D5185m	>40	0	3	<1
Copper	ppm	ASTM D5185m		4	0	<1
Tin	ppm	ASTM D5185m	>15		0	<1
Vanadium	ppm	ASTM D5185m	210	0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
	1. 1					
ADDITIVES		method	limit/base	current	historv1	history2
ADDITIVES	10.10.100	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	limit/base	3	<1	2
Boron Barium	ppm	ASTM D5185m ASTM D5185m	limit/base	3 0	<1 0	2 10
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	3 0 64	<1 0 58	2 10 59
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	3 0 64 <1	<1 0 58 0	2 10 59 0
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	3 0 64 <1 1018	<1 0 58 0 1086	2 10 59 0 891
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	3 0 64 <1 1018 1131	<1 0 58 0 1086 1103	2 10 59 0 891 1008
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	limit/base	3 0 64 <1 1018 1131 1125	<1 0 58 0 1086 1103 1094	2 10 59 0 891 1008 1077
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	3 0 64 <1 1018 1131 1125 1330	<1 0 58 0 1086 1103 1094 1315	2 10 59 0 891 1008 1077 1147
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		3 0 64 <1 1018 1131 1125 1330 3688	<1 0 58 0 1086 1103 1094 1315 3354	2 10 59 0 891 1008 1077 1147 3379
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	limit/base	3 0 64 <1 1018 1131 1125 1330 3688 current	<1 0 58 0 1086 1103 1094 1315 3354 history1	2 10 59 0 891 1008 1077 1147 3379 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	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		3 0 64 <1 1018 1131 1125 1330 3688 current 4	<1 0 58 0 1086 1103 1094 1315 3354 history1 3	2 10 59 0 891 1008 1077 1147 3379 history2 3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm 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	limit/base	3 0 64 <1 1018 1131 1125 1330 3688 current 4 <	<1 0 58 0 1086 1103 1094 1315 3354 history1 3 <	2 10 59 0 891 1008 1077 1147 3379 history2 3 0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >25 >20	3 0 64 <1 1018 1131 1125 1330 3688 current 4 <1 0	<1 0 58 0 1086 1103 1094 1315 3354 history1 3 <1 <1	2 10 59 0 891 1008 1077 1147 3379 history2 3 0 3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >25 >20 limit/base	3 0 64 <1 1018 1131 1125 1330 3688 current 4 <1 0	<1 0 58 0 1086 1103 1094 1315 3354 history1 3 <1 <1 <1 <1 history1	2 10 59 0 891 1008 1077 1147 3379 history2 3 0 3 3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm	ASTM D5185m ASTM D5185m	limit/base >25 >20 limit/base >3	3 0 64 <1 1018 1131 1125 1330 3688 current 4 <1 0 current 0.2	<1 0 58 0 1086 1103 1094 1315 3354 history1 3 <1 <1 <1 0.3	2 10 59 0 891 1008 1077 1147 3379 history2 3 0 3 0 3 <i>history2</i> 0.2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >25 >20 limit/base >3 >20	3 0 64 <1 1018 1131 1125 1330 3688 <i>current</i> 4 <1 0 <i>current</i> 0.2 7.1	<1 0 58 0 1086 1103 1094 1315 3354 history1 3 <1 <1 <1 history1 0.3 7.0	2 10 59 0 891 1008 1077 1147 3379 history2 3 0 3 history2 0.2 6.9
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >25 >20 limit/base >3 >20 >30	3 0 64 <1 1018 1131 1125 1330 3688 <u>current</u> 4 <1 0 <u>current</u> 0.2 7.1 19.1	<1 0 58 0 1086 1103 1094 1315 3354 history1 3 <1 <1 <1 history1 0.3 7.0 18.3	2 10 59 0 891 1008 1077 1147 3379 history2 3 0 3 history2 0.2 6.9 18.6
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844	limit/base >25 >20 limit/base >3 >20 >30 >30	3 0 64 <1 1018 1131 1125 1330 3688 <i>current</i> 4 <1 0 <i>current</i> 0.2 7.1 19.1	<1 0 58 0 1086 1103 1094 1315 3354 history1 3 <1 <1 <1 history1 0.3 7.0 18.3 history1	2 10 59 0 891 1008 1077 1147 3379 history2 3 0 3 0 3 <i>history2</i> 0.2 6.9 18.6 <i>history2</i>
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >25 >20 limit/base >3 >20 >30	3 0 64 <1 1018 1131 1125 1330 3688 <u>current</u> 4 <1 0 <u>current</u> 0.2 7.1 19.1	<1 0 58 0 1086 1103 1094 1315 3354 history1 3 <1 <1 <1 history1 0.3 7.0 18.3	2 10 59 0 891 1008 1077 1147 3379 history2 3 0 3 history2 0.2 6.9 18.6



OIL ANALYSIS REPORT





	VISUAL		method					
	White Metal	scalar	*Visual	NONE	NONE	NONE	NONE	
	Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE	
	Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE	
and the second se	Silt	scalar	*Visual	NONE	NONE	NONE	NONE	
	Debris	scalar	*Visual	NONE	NONE	NONE	NONE	
	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE	
NIdy1/24	Appearance	scalar	*Visual	NORML	NORML	NORML	NORM	
r kroini	Odor	scalar	*Visual	NORML	NORML	NORML	NORM	
	Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG	
	Free Water	scalar	*Visual	20.2	NEG	NEG	NEG	
	FLUID PROPERT		method	limit/base	current	history1		orv2
	Visc @ 100°C	cSt	ASTM D445		13.76	13.9	13.7	, j
	GRAPHS							
	Iron (ppm)				Lead (ppm))		
-	250 Severe			100	Severe			
1111				80				
ΨV	Abnormal			60 E	Abnormal			
	100 4			40			1 I	
	50	1		20			1 1	
		4/23 -	ec16/23 - Feb1/24 -	May7/24		6/23 -	ec16/23 - Feb1/24 -	
	Jun 19/23 Aug7/23 Sep16/23	0ct24/23	Dec16/23 Feb1/24	May	Jun 19/23 Aug 7/23	Sep16/23 0ct24/23	Dec16/23 Feb1/24	
	Aluminum (ppm)				Chromium	(ppm)		
	50 T			50	T			
	40 - Severe			40	- Severe			
	a Abnormal			³⁰ 20) - · · · · · · · · · · · · · · · · · ·			
VGC-W	20 - Abnormal			20	Abnormal			
N.1	10-			10)			
		23	23	24		23	23	
	Jun 19/23 Aug7/23 Sep 16/23	0ct24/23	Dec16/23 Feb1/24	May7/24	Jun 19/23 Aug 7/23	Sep16/23 0ct24/23	Dec16/23 Feb1/24	
	Copper (ppm)	0		_	Silicon (ppr			
	400 Severe	+		80	Severe		!!!	
	300			60				
	<u> </u> 200			틆 40				
	100-			20	Abnormal			
	0			0				
	Jun 19/23	0ct24/23 -	Dec16/23 - Feb1/24 -	May7/24	Jun 19/23	Sep 16/23 - Oct24/23 -	Dec16/23 - Feb1/24 -	
	Jun1 Aug Sep1	Octź	Dec1 Feb	Mar	Junl	Sep1 0ct2	Dec1 Feb	
	Viscosity @ 100°C	2			Base Numb	er		
	20							
	Abnormal			(b)H0.0 Bu) aque Bu) aque Bu) Bu) Bu) Bu) Bu) Bu) Bu) Bu) Bu) Bu)				
	()_016 450 14 Abnormal			ja 6.0)			
				5 4.0				
	12			2.0				
	Jun19/23 + Aug7/23 + Sep16/23 +	4/23	lec16/23 - Feb1/24 -			6/23 -	ec16/23 - Feb1/24 -	
	m15 mg7	0ct24/23	Dec16/23 Feb1/24	May7/24	Jun 19/23 Aug 7/23	Sep16/23 0ct24/23	Dec16/23 Feb1/24	

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. Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

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Certificate L2367

Contact/Location: JAMIE HUCKS - CLBMYR

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