

OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL

Machine Id 10543

Component

Diesel Engine

PETRO CANADA DURON SHP 15W40 (36 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.

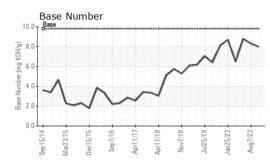
Fluid Condition

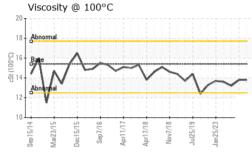
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

pŽ014 MazŽ015 DazŽ015 SapŽ016 ApzŽ017 ApzŽ018 NovZ018 NovZ018 JazZ023 JazZ023								
SAMPLE INFORM	MATION	method	limit/base	current	history1	history2		
Sample Number		Client Info		GFL0069140	GFL0069119	GFL0068730		
Sample Date		Client Info		14 Sep 2023	07 Aug 2023	19 Jun 2023		
Machine Age	hrs	Client Info		19279	19140	18886		
Oil Age	hrs	Client Info		0	0	0		
Oil Changed		Client Info		Not Changd	Not Changd	Changed		
Sample Status				NORMAL	NORMAL	NORMAL		
CONTAMINAT	ION	method	limit/base	current	history1	history2		
Fuel		WC Method	>5	<1.0	<1.0	<1.0		
Glycol		WC Method		NEG	NEG	NEG		
WEAR METAL	S	method	limit/base	current	history1	history2		
Iron	ppm	ASTM D5185m	>100	14	12	26		
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1		
Nickel	ppm	ASTM D5185m	>4	<1	0	<1		
Titanium	ppm	ASTM D5185m		<1	<1	<1		
Silver	ppm	ASTM D5185m	>3	0	<1	0		
Aluminum	ppm	ASTM D5185m	>20	4	2	3		
Lead	ppm	ASTM D5185m	>40	<1	<1	<1		
Copper	ppm	ASTM D5185m	>330	8	8	3		
Tin	ppm	ASTM D5185m	>15	0	0	0		
Vanadium	ppm	ASTM D5185m		0	0	0		
Cadmium	ppm	ASTM D5185m		0	0	0		
ADDITIVES		ام م مالح میں	11	ourropt	history of	history2		
ADDITIVES		method	limit/base	current	history1	nistoryz		
Boron	ppm	ASTM D5185m		4	6	6		
	ppm ppm							
Boron		ASTM D5185m	0	4	6	6		
Boron Barium Molybdenum Manganese	ppm	ASTM D5185m ASTM D5185m	0 0 60	4 0	6 0	6 0		
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	4 0 66	6 0 67	6 0 83		
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	4 0 66 <1	6 0 67 <1	6 0 83 <1		
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	4 0 66 <1 938	6 0 67 <1 929	6 0 83 <1 1118		
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	4 0 66 <1 938 1080	6 0 67 <1 929 1101	6 0 83 <1 1118 1282		
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	0 0 60 0 1010 1070 1150	4 0 66 <1 938 1080 999	6 0 67 <1 929 1101 1001	6 0 83 <1 1118 1282 1251		
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	0 0 60 0 1010 1070 1150 1270	4 0 66 <1 938 1080 999 1231	6 0 67 <1 929 1101 1001 1198	6 0 83 <1 1118 1282 1251 1474		
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	0 0 60 1010 1070 1150 1270 2060	4 0 66 <1 938 1080 999 1231 3200	6 0 67 <1 929 1101 1001 1198 3097	6 0 83 <1 1118 1282 1251 1474 3711		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	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	0 0 60 1010 1070 1150 1270 2060	4 0 66 <1 938 1080 999 1231 3200 current	6 0 67 <1 929 1101 1001 1198 3097 history1	6 0 83 <1 1118 1282 1251 1474 3711 history2		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	0 0 60 1010 1070 1150 1270 2060	4 0 66 <1 938 1080 999 1231 3200 current 7	6 0 67 <1 929 1101 1001 1198 3097 history1 5	6 0 83 <1 1118 1282 1251 1474 3711 history2 9		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 limit/base	4 0 66 <1 938 1080 999 1231 3200 current 7 33 1	6 0 67 <1 929 1101 1001 1198 3097 history1 5 37	6 0 83 <1 1118 1282 1251 1474 3711 history2 9 0		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	4 0 66 <1 938 1080 999 1231 3200 current 7 33 1	6 0 67 <1 929 1101 1001 1198 3097 history1 5 37 2	6 0 83 <1 1118 1282 1251 1474 3711 history2 9 0 2		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25 >20 limit/base >20	4 0 66 <1 938 1080 999 1231 3200 current 7 33 1 current	6 0 67 <1 929 1101 1001 1198 3097 history1 5 37 2 kistory1	6 0 83 <1 1118 1282 1251 1474 3711 history2 9 0 2 2 history2		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25 >20 limit/base >20	4 0 66 <1 938 1080 999 1231 3200 <u>current</u> 7 33 1 1 <u>current</u> 0.2	6 0 67 <1 929 1101 1001 1198 3097 history1 5 37 2 history1 0.1	6 0 83 <1 1118 1282 1251 1474 3711 history2 9 0 2 history2 0.2		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >3 >20	4 0 66 <1 938 1080 999 1231 3200 current 7 33 1 current 0.2 7.1 18.6	6 0 67 <1 929 1101 1001 1198 3097 history1 5 37 2 history1 0.1 6.5	6 0 83 <1 1118 1282 1251 1474 3711 history2 9 0 2 9 0 2 history2 0.2 7.7		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >25 imit/base >3 >20	4 0 66 <1 938 1080 999 1231 3200 current 7 33 1 current 0.2 7.1 18.6	6 0 67 <1 929 1101 1001 1198 3097 history1 5 37 2 <u>history1</u> 0.1 6.5 17.8	6 0 83 <1 1118 1282 1251 1474 3711 history2 9 0 2 9 0 2 <u>history2</u> 0.2 7.7 18.9		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAC	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	0 0 0 1010 1070 1150 1270 2060 2060 225 20 225 20 220 20 20 20 20 20 20 20 20 20 20 20	4 0 66 <1 938 1080 999 1231 3200 current 7 33 1 current 0.2 7.1 18.6	6 0 67 <1 929 1101 1001 1198 3097 history1 5 37 2 history1 0.1 6.5 17.8 history1	6 0 83 <1 1118 1282 1251 1474 3711 history2 9 0 2 9 0 2 history2 0.2 7.7 18.9 history2		



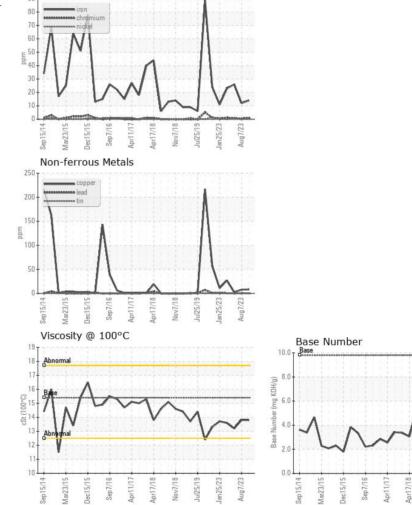
OIL ANALYSIS REPORT





VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	LIGHT	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPE	RTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.8	13.8	13.2
GRAPHS						

Ferrous Alloys



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

Diagnostician : Wes Davis

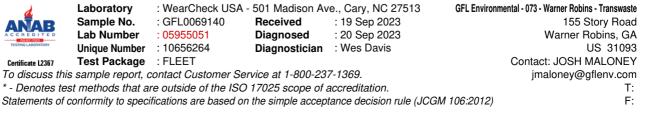
: 19 Sep 2023

: 20 Sep 2023

Received

Diagnosed





Nov7/18

Certificate L2367

Laboratory

Sample No.

Lab Number

Unique Number : 10656264

Test Package : FLEET

: GFL0069140

: 05955051

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.

Aug7/23

an25/23