

OIL ANALYSIS REPORT

Sample Rating Trend





Machine Id 4645M Component

Fluid

Diesel Engine

PETRO CANADA DURON SHP 15W40 (5 GAL)

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.

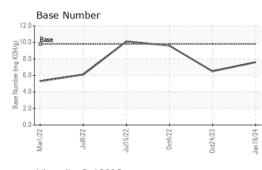
Fluid Condition

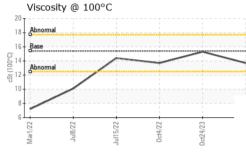
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

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Calcium ppm ASTM D5185m 1070 961 1011 1080 Phosphorus ppm ASTM D5185m 1150 997 943 1008 Zinc ppm ASTM D5185m 1270 1209 1253 1227 Sulfur ppm ASTM D5185m 2060 2945 2468 3332 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 7 <1 Sodium ppm ASTM D5185m >20 2 2 1 Potassium ppm ASTM D5185m >20 2 2 1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 0.3 0.6 0.3	Calcium ppm ASTM D5185m 1070 961 Phosphorus ppm ASTM D5185m 1150 997 Zinc ppm ASTM D5185m 1150 997 Zinc ppm ASTM D5185m 1270 1209 Sulfur ppm ASTM D5185m 2060 2944 CONTAMINANTS method limit/base cu Silicon ppm ASTM D5185m >25 8 Sodium ppm ASTM D5185m >20 2 INFRA-RED method limit/base cu Soot % % *ASTM D7844 >6 0.3 Nitration Abs/cm *ASTM D7415 >30 19.2	<1	0
Phosphorus ppm ASTM D5185m 1150 997 943 1008 Zinc ppm ASTM D5185m 1270 1209 1253 1227 Sulfur ppm ASTM D5185m 2060 2945 2468 3332 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 7 <1	Phosphorus ppm ASTM D5185m 1150 997 Zinc ppm ASTM D5185m 1270 1209 Sulfur ppm ASTM D5185m 2060 2949 CONTAMINANTS method limit/base cu Silicon ppm ASTM D5185m >25 8 Sodium ppm ASTM D5185m >20 2 INFRA-RED method limit/base cu Soot % % *ASTM D7844 >6 0.3 Nitration Abs/cm *ASTM D7415 >30 19.2	i 874	918
Zinc ppm ASTM D5185m 1270 1209 1253 1227 Sulfur ppm ASTM D5185m 2060 2945 2468 3332 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 7 <1 Sodium ppm ASTM D5185m >20 2 2 1 Potassium ppm ASTM D5185m >20 2 2 1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 0.3 0.6 0.3	Zinc ppm ASTM D5185m 1270 1209 Sulfur ppm ASTM D5185m 2060 2944 CONTAMINANTS method limit/base cu Silicon ppm ASTM D5185m >25 8 Sodium ppm ASTM D5185m >20 2 INFRA-RED method limit/base cu Soot % % *ASTM D7844 >6 0.3 Nitration Abs/cm *ASTM D7624 >20 8.2 Sulfation Abs/.1mm *ASTM D7415 >30 19.2	1011	1080
SulfurppmASTM D5185m2060294524683332CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m>2587<1SodiumppmASTM D5185m>20221PotassiumppmASTM D5185m>20221INFRA-REDmethodlimit/basecurrenthistory1history2Soot %%*ASTM D7844>60.30.60.3	SulfurppmASTM D5185m20602944CONTAMINANTSmethodlimit/basecuSiliconppmASTM D5185m>258SodiumppmASTM D5185m>202INFRA-REDmethodlimit/basecuSoot %%*ASTM D7844>60.3NitrationAbs/cm*ASTM D7624>208.2SulfationAbs/.1mm*ASTM D7415>3019.2	943	1008
CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m>2587<1SodiumppmASTM D5185m4103PotassiumppmASTM D5185m>20221INFRA-REDmethodlimit/basecurrenthistory1history2Soot %%*ASTM D7844>60.30.60.3	CONTAMINANTSmethodlimit/basecutSiliconppmASTM D5185m>258SodiumppmASTM D5185m4PotassiumppmASTM D5185m>202INFRA-REDmethodlimit/basecutSoot %%*ASTM D7844>60.3NitrationAbs/cm*ASTM D7624>208.2SulfationAbs/.tmm*ASTM D7415>3019.2)9 1253	1227
Silicon ppm ASTM D5185m >25 8 7 <1	Silicon ppm ASTM D5185m >25 8 Sodium ppm ASTM D5185m >20 4 Potassium ppm ASTM D5185m >20 2 INFRA-RED method limit/base cu Soot % % *ASTM D7844 >6 0.3 Nitration Abs/cm *ASTM D7624 >20 8.2 Sulfation Abs/.1mm *ASTM D7415 >30 19.2	15 2468	3332
Sodium ppm ASTM D5185m 4 10 3 Potassium ppm ASTM D5185m<>20 2 2 1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 0.3 0.6 0.3	Sodium ppm ASTM D5185m 4 Potassium ppm ASTM D5185m >20 2 INFRA-RED method limit/base cu Soot % % *ASTM D7844 >6 0.3 Nitration Abs/cm *ASTM D7624 >20 8.2 Sulfation Abs/.1mm *ASTM D7415 >30 19.2	urrent history1	history2
Potassium ppm ASTM D5185m >20 2 2 1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 0.3 0.6 0.3	Potassium ppm ASTM D5185m >20 2 INFRA-RED method limit/base cu Soot % % *ASTM D7844 >6 0.3 Nitration Abs/cm *ASTM D7624 >20 8.2 Sulfation Abs/.1mm *ASTM D7415 >30 19.2	7	<1
INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 0.3 0.6 0.3	INFRA-RED method limit/base cu Soot % % *ASTM D7844 >6 0.3 Nitration Abs/cm *ASTM D7624 >20 8.2 Sulfation Abs/.1mm *ASTM D7415 >30 19.2	10	3
Soot % % *ASTM D7844 >6 0.3 0.6 0.3	Soot % % *ASTM D7844 >6 0.3 Nitration Abs/cm *ASTM D7624 >20 8.2 Sulfation Abs/.1mm *ASTM D7415 >30 19.2	2	1
	Nitration Abs/cm *ASTM D7624 >20 8.2 Sulfation Abs/.1mm *ASTM D7415 >30 19.2	urrent history1	history2
	Sulfation Abs/.1mm *ASTM D7415 >30 19.2	0.6	0.3
Nitration Abs/cm *ASTM D7624 >20 8.2 11.8 8.0		11.8	8.0
Sulfation Abs/.1mm *ASTM D7415 >30 19.2 23.9 20.5	FLUID DEGRADATION method limit/base cu	2 23.9	20.5
FLUID DEGRADATION method limit/base current history1 history2		urrent history1	history2
Dxidation Abs/.1mm *ASTM D7414 >25 15.8 22.4 16.5	Oxidation Abs/.1mm *ASTM D7414 >25 15.8	8 22.4	16.5
	Base Number (BN) mg KOH/g ASTM D2896 9.8 7.6		9.6

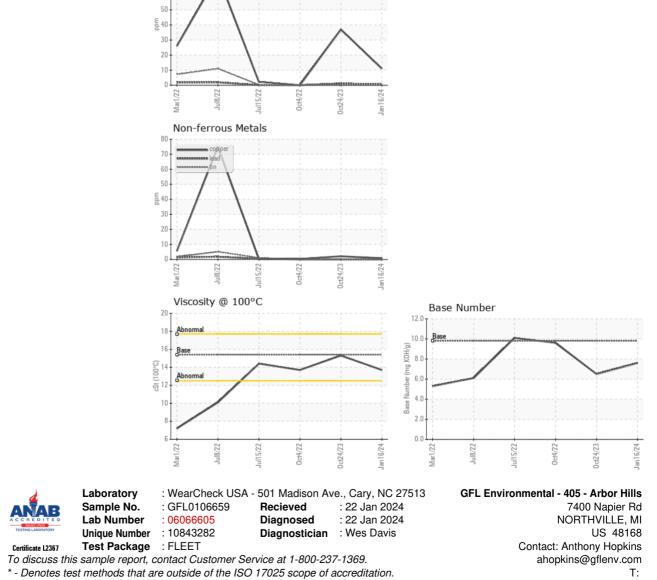


OIL ANALYSIS REPORT





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	NONE	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	13.7	15.3	13.7
GRAPHS						
Ferrous Alloys						
0 - iron chromium						
D - mickel						



* - 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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