

(P798431) Preferred Service-Tractor [Preferred Service-Tractor] 192A01749 Component

Diesel Engine Fluid

PETRO CANADA DURON SHP 10W30 (36 QTS)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

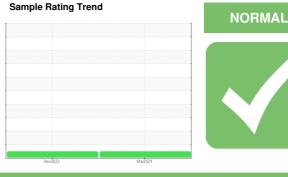
All component wear rates are normal.

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.



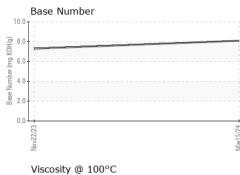


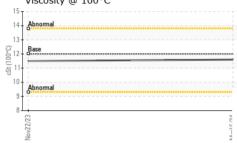
,			Nov2023	Mar2024		
SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0120229	PCA0112172	
Sample Date		Client Info		15 Mar 2024	22 Nov 2023	
Machine Age	mls	Client Info		457493	448273	
Oil Age	mls	Client Info		9220	15160	
Oil Changed		Client Info		Changed	Changed	
Sample Status				NORMAL	NORMAL	
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>6.0	<1.0	<1.0	
Water		WC Method	>0.2	NEG	NEG	
Glycol		WC Method		NEG	NEG	
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	13	19	
Chromium	ppm	ASTM D5185m	>20	<1	0	
Nickel	ppm	ASTM D5185m	>2	<1	0	
Titanium	ppm	ASTM D5185m		<1	<1	
Silver	ppm	ASTM D5185m	>2	0	0	
Aluminum	ppm	ASTM D5185m	>25	2	3	
Lead	ppm	ASTM D5185m	>40	- <1	<1	
Copper	ppm	ASTM D5185m	>330	1	2	
Tin		ASTM D5185m	>330	י <1	<1	
Vanadium	ppm	ASTM D5185m	>15	0	0	
Cadmium	ppm	ASTM D5185m		0	0	
Gaumum	ppm	ASTIVI DUTOJITI		U	0	
			11 11 11			
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	2	0	0	
Boron Barium	ppm ppm		2 0	0 0	0 0	
Boron		ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	0 0 62	0 0 57	
Boron Barium	ppm	ASTM D5185m ASTM D5185m	2 0	0 0	0 0 57 0	
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950	0 0 62 0 972	0 0 57	
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0	0 0 62 0	0 0 57 0	
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950	0 0 62 0 972	0 0 57 0 994	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050	0 0 62 0 972 1114	0 0 57 0 994 1143	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995	0 0 62 0 972 1114 1112	0 0 57 0 994 1143 1081	
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	2 0 50 950 1050 995 1180	0 0 62 0 972 1114 1112 1275	0 0 57 0 994 1143 1081 1280	
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	2 0 50 0 950 1050 995 1180 2600	0 0 62 0 972 1114 1112 1275 3085	0 0 57 0 994 1143 1081 1280 2829	
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	2 0 50 950 1050 995 1180 2600	0 0 62 0 972 1114 1112 1275 3085 current	0 0 57 0 994 1143 1081 1280 2829 history1	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	2 0 50 950 1050 995 1180 2600	0 0 62 0 972 1114 1112 1275 3085 current 3	0 0 57 0 994 1143 1081 1280 2829 history1 3	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	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 ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >25	0 0 62 0 972 1114 1112 1275 3085 current 3 <1	0 0 57 0 994 1143 1081 1280 2829 history1 3 7	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 limit/base >25 >20	0 0 62 0 972 1114 1112 1275 3085 current 3 <1 2	0 0 57 0 994 1143 1081 1280 2829 history1 3 7 0	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 imit/base >25	0 0 62 0 972 1114 1112 1275 3085 current 3 3 <1 2 current 0.7	0 0 57 0 994 1143 1081 1280 2829 history1 3 7 0 0	 history2 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	2 0 50 0 950 1050 995 1180 2600 limit/base >25 >20 limit/base >3	0 0 62 0 972 1114 1112 1275 3085 current 3 <1 2 current	0 0 57 0 994 1143 1081 1280 2829 history1 3 7 0 history1 1.2	 history2 history2
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	ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 <i>imit/base</i> >25 >20 <i>imit/base</i> >3 >20	0 0 62 0 972 1114 1112 1275 3085 <i>current</i> 3 3 <1 2 <i>current</i> 0.7 8.2	0 0 57 0 994 1143 1081 1280 2829 history1 3 7 0 history1 1.2 8.9	 history2 history2 history2
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 % Abs/cm Abs/cm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	2 0 0 50 0 950 1050 995 1180 2600 imit/base >25 20 >20 >30 >30 imit/base	0 0 62 0 972 1114 1112 1275 3085 <i>current</i> 3 <1 2 <i>current</i> 0.7 8.2 19.2 <i>current</i>	0 0 57 0 994 1143 1081 1280 2829 history1 3 7 0 history1 1.2 8.9 21.4 history1	 history2 history2 history2
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	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 imit/base >25 imit/base >3 >20	0 0 62 0 972 1114 1112 1275 3085 <u>current</u> 3 < <u>1</u> 2 <u>current</u> 0.7 8.2 19.2	0 0 57 0 994 1143 1081 1280 2829 history1 3 7 0 history1 1.2 8.9 21.4	 history2 history2 history2 history2



OIL ANALYSIS REPORT

VISUAL





			method	limit/base	current	history1	history
	White Metal	scalar	*Visual	NONE	NONE	NONE	
	Yellow Metal	scalar	*Visual	NONE	NONE	NONE	
	Precipitate	scalar	*Visual	NONE	NONE	NONE	
	Silt	scalar	*Visual	NONE	NONE	NONE	
	Debris	scalar	*Visual	NONE	NONE	NONE	
	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	
	Appearance	scalar	*Visual	NORML	NORML	NORML	
	Odor	scalar	*Visual	NORML	NORML	NORML	
	Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	
	Free Water	scalar	*Visual		NEG	NEG	
	FLUID PROP	ERTIES	method	limit/base	current	history1	history
	Visc @ 100°C	cSt	ASTM D445	12.00	11.6	11.5	
	GRAPHS						
	Ferrous Alloys						
	20 iron						
	15						
	15 -						
	Exa						
	톱 10-						
	5-						
	2			24			
	Nov22/23			Mar15/24			
	—			M			
	Non-ferrous Met	als					
	copper						
	8 - Bassassassassassassassassassassassassass						
	6- E						
	udd 4						
	2-						
	0			24			
	0			lar15/24			
	Nov22/23			Mar15/24			
	USCOSITY @ 100°	C			Base Numbe	er	
	Uiscosity @ 100 ^c	Ċ		9.0		er	
	USCOSITY @ 100°	C		9.0		er	
	0 E222200 Viscosity @ 1000 14 Abnormal 13	C		9.0		er	
	0 E222200 Viscosity @ 1000 14 Abnormal 13	C		9.0		er	
	0 E222200 Viscosity @ 1000 14 Abnormal 13	C		9.0		er	
	Uiscosity @ 1000	C		9.0		er	
	Viscosity @ 100°	C		9.0		er	
	Uiscosity @ 1000	C		9.0		er	
	Viscosity @ 100°	C		9.0 8.0 (h)HO 6.0 10 Jan 4.0 82 2.0 1.0 0.0		er	
	Viscosity @ 100°	C		9.0 8.0 (h)HO 6.0 10 Jan 4.0 82 2.0 1.0 0.0		er	
	Viscosity @ 100°	C		9.0 8.0 (0)(0)(0)(0)(0)(0)(0)(0)(0)(0)(0)(0)(0)(er	
	Viscosity @ 100°			9.0 8.0 (0)(10)(0)(0)(0)(0)(0)(0)(0)(0)(0)(0)(0)(0)(0	Nov2223		Depformed Con
	Viscosity @ 100°	01 Madisc		9.0 8.0 (0HO) 6.0 900 000 000 000 900 000 000 900 00000000	Nov2223	ervice - Shop 1920 -	
	Viscosity @ 100°	01 Madisc Recei	ived : 22	9.0 8.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9	Nov2223	ervice - Shop 1920 - 1955 W. North	Avenue, Bld
r	Viscosity @ 100°	01 Madisc Recei Teste	ived : 22 d : 22	9.0 8.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9	EZZZZYNON	ervice - Shop 1920 - 1955 W. North	Avenue, Bld Ielrose Park
r	Viscosity @ 100°	01 Madisc Recei Teste	ived : 22 d : 22	9.0 8.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9	EZZZZYNON	ervice - Shop 1920 - 1955 W. North N	Avenue, Bld

* - 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)

To discuss this sample

Certificate L2367

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