

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id 121621-5095

Diesel Engine Fluid PETRO CANADA DURON SHP 10W30 (--- QTS)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

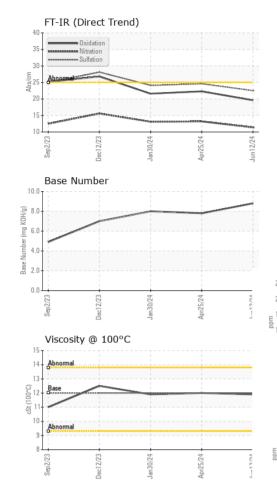
Fluid Condition

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

SAMPLE INFORI		method	limit/base	current	history1	history2
		Client Info		PCA0128893	PCA0123969	PCA0117055
Sample Number		Client Info		12 Jun 2024		30 Jan 2024
Sample Date Machine Age	mls	Client Info		77647	25 Apr 2024 0	0 Jan 2024
Oil Age	mls	Client Info		0	0	0
Oil Changed	1115	Client Info		Changed	N/A	N/A
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method		<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	40	58	66
Chromium	ppm	ASTM D5185m	>20	<1	1	2
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	4	4	7
Lead	ppm	ASTM D5185m	>40	1	2	4
Copper	ppm	ASTM D5185m	>330	4	11	32
Tin	ppm	ASTM D5185m	>15	2	2	3
Vanadium	ppm	ASTM D5185m		0	0	<1
Cadmium	ppm	ASTM D5185m		0	0	0
	le le			J.	0	-
ADDITIVES	le le	method	limit/base	current	history1	history2
	ppm		limit/base	current 3	history1 0	history2 2
ADDITIVES		method	2	current	history1	
ADDITIVES Boron	ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	current 3	history1 0 0 72	2 <1 74
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm	method ASTM D5185m ASTM D5185m	2 0 50	current 3 0	history1 0 0 72 <1	2 <1 74 1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950	current 3 0 68 1 1089	history1 0 0 72 <1 1136	2 <1 74 1 1102
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050	current 3 0 68 1 1089 1217	history1 0 0 72 <1 1136 1319	2 <1 74 1 1102 1417
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995	current 3 0 68 1 1089 1217 1250	history1 0 0 72 <1 1136 1319 1164	2 <1 74 1 1102 1417 1211
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180	current 3 0 68 1 1089 1217 1250 1463	history1 0 0 72 <1 1136 1319 1164 1436	2 <1 74 1 1102 1417 1211 1474
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600	current 3 0 68 1 1089 1217 1250	history1 0 0 72 <1 1136 1319 1164 1436 3472	2 <1 74 1 1102 1417 1211 1474 3069
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180	current 3 0 68 1 1089 1217 1250 1463	history1 0 0 72 <1 1136 1319 1164 1436	2 <1 74 1 1102 1417 1211 1474
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	2 0 50 950 1050 995 1180 2600	current 3 0 68 1 1089 1217 1250 1463 3671 current 5	history1 0 0 72 <1 1136 1319 1164 1436 3472 history1 6	2 <1 74 1 1102 1417 1211 1474 3069 history2 8
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	2 0 50 950 1050 995 1180 2600	current 3 0 68 1 1089 1217 1250 1463 3671 current 5 3	history1 0 0 72 <1 1136 1319 1164 1436 3472 history1 6 3	2 <1 74 1 1102 1417 1211 1474 3069 history2 8 2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	2 0 50 950 1050 995 1180 2600	current 3 0 68 1 1089 1217 1250 1463 3671 current 5	history1 0 0 72 <1 1136 1319 1164 1436 3472 history1 6	2 <1 74 1 1102 1417 1211 1474 3069 history2 8
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	2 0 50 950 1050 995 1180 2600 limit/base	current 3 0 68 1 1089 1217 1250 1463 3671 current 5 3	history1 0 0 72 <1 1136 1319 1164 1436 3472 history1 6 3	2 <1 74 1 1102 1417 1211 1474 3069 history2 8 2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	2 0 50 950 1050 995 1180 2600 limit/base >25	current 3 0 68 1 1089 1217 1250 1463 3671 current 5 3 4	history1 0 0 72 <1 1136 1319 1164 1436 3472 history1 6 3 2	2 <1 74 1 1102 1417 1211 1474 3069 history2 8 2 4
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS	method ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >25 -25	current 3 0 68 1 1089 1217 1250 1463 3671 current 5 3 4 current	history1 0 0 72 <1 1136 1319 1164 1436 3472 history1 6 3 2 history1	2 <1 74 1 1102 1417 1211 1474 3069 history2 8 2 4 4 history2
ADDITIVES 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	method ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >25 >20 limit/base >3	current 3 0 68 1 1089 1217 1250 1463 3671 current 5 3 4 current 1.3	history1 0 0 72 <1 1136 1319 1164 1436 3472 history1 6 3 2 history1 1.5	2 <1 74 1 1102 1417 1211 1474 3069 history2 8 2 4 4 history2 1.4
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	2 0 50 950 1050 995 1180 2600 <i>limit/base</i> >25 >20 <i>limit/base</i> >3 >3	current 3 0 68 1 1089 1217 1250 1463 3671 current 5 3 4 current 1.3 11.4	history1 0 0 72 <1 1136 1319 1164 1436 3472 history1 6 3 2 history1 1.5 13.2	2 <1 74 1 1102 1417 1211 1474 3069 history2 8 2 4 2 4 history2 1.4 1.4 13.1
ADDITIVES 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 ppm ppm ppm	method ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 imit/base >25 imit/base >3 >20	Current 3 0 68 1 1089 1217 1250 1463 3671 current 5 3 4 current 1.3 11.4 22.5	history1 0 0 72 <1 1136 1319 1164 1436 3472 history1 6 3 2 history1 1.5 13.2 24.6	2 <1 74 1 1102 1417 1211 1474 3069 history2 8 2 4 4 <u>history2</u> 1.4 1.4 13.1 24.1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAD	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D7185M ASTM D7624 *ASTM D7624 *ASTM D7415 method	2 0 0 50 0 950 1050 995 1180 2600 2600 255 20 220 20 3 20 20 3 3 20 3 3 20 3 3 20 3 3 3 20 3 3 3 20 3 3 3 20 3 3 3 3	Current 3 0 68 1 1089 1217 1250 1463 3671 current 5 3 4 current 1.3 11.4 22.5 current	history1 0 0 72 <1 1136 1319 1164 1436 3472 history1 6 3 2 history1 1.5 13.2 24.6 history1	2 <1 74 1 1102 1417 1211 1474 3069 history2 8 2 4 2 4 history2 1.4 13.1 24.1 24.1



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	
444-4	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	
Jan 30/24 Apr25/24	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML	
Aprò	Odor	scalar	*Visual	NORML	NORML	NORML	NORML	
	Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG	
	Free Water	scalar	*Visual		NEG	NEG	NEG	
	FLUID PROP	ERTIES	method	limit/base	current	history1	history2	
	Visc @ 100°C	cSt	ASTM D445	12.00	11.9	12.0	11.9	
	GRAPHS							
	Iron (ppm)							
	250 Severe	1		100	Severe			
Jan 30/24 Apr25/24	200			0.0				
л ч <u>-</u>	Abnomat			e 40	Abaranal	1		
	50			20				
	0							
	Sep2/23 Dec12/23	Jan30/24	Apr25/24	Jun12/24	Sep2/23 Dec12/23	Jan 30/24	Apr25/24	
			Api	Jur			Ap.	
	Aluminum (ppm))		, - 50	Chromium (p	pm)		
· · · · · · · · · · · · · · · · · · ·	40 - Severe	1		40	Severe			
Jan30/24 - Apr25/24 -				ق ³⁰	Abnormal			
Apr2	10			10				
		4	4			4	4	
	Sep2/23 Dec12/23	Jan 30/24	Apr25/24	Jun 12/24	Sep2/23 Dec12/23	Jan30/24	Apr25/24	
	Copper (ppm)	'n	A	~	Silicon (ppm)	ň	∢ .	
	400 Severe			80				
	300-			60	-			
	톮 200			톱 40				
	100		1	20	Abnomia	1		
	0				_			
	Sep2/23	Jan30/24 -	Apr25/24 -	Jun12/24	Sep2/23 -	Jan30/24 -	Apr25/24 -	
			Apr	Jun		-	Apr	
	Viscosity @ 100°	U	1		Base Number	1		
	14 Abnormal			6.0 (0)(H0) (H				
	(2000) 112 253			ຍິ 6.0 ອ	The second se			
				4.0 M				
	Abnormal			88 2.0	•			
)/24 -	5/24 -	0.0	2/23	- 1/24	5/24	
	Sep2/23 Dec12/23	Jan30/24	Apr25/24	Jun12/24	Sep2/23 Dec12/23	Jan 30/24	Apr25/24	
ISO/ICC (7025		01 Madiso Recei Teste Diagn	ved : 21 d : 24	, NC 27513 Jun 2024 Jun 2024 Jun 2024 - W		MILLER TRUCK LEASING #11 39 INDUSTRIAL AV HASBROUCK HEIGHTS, N US 0760		
ificate L2367 Test Packa	ge : MOB 1 (Additional 7 ort, contact Customer Ser	Tests: TBN)			Contact: MII ongette@miller	KE LONGETT	

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) F: (201)528-7053

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Contact/Location: MIKE LONGETTE - MILRUT

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