

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id **T288** Component **Diesel Engine** Fluid **PETRO CANADA DURON SHP 10W30 (--- 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.

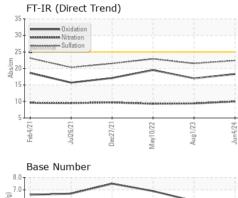
Fluid Condition

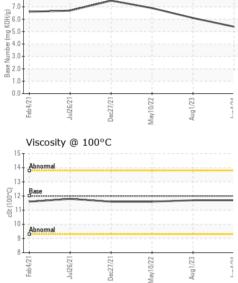
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0125398	PCA0100082	PCA0071344
Sample Date		Client Info		04 Jun 2024	01 Aug 2023	10 May 2022
Machine Age	mls	Client Info		256383	202739	0
Oil Age	mls	Client Info		256383	74430	0
Oil Changed		Client Info		Changed	Changed	N/A
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<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	30	25	29
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>4	0	0	<1
Titanium		ASTM D5185m	~7	0	<1	0
Silver	ppm ppm	ASTM D5185m	>3	0	<1	<1
Aluminum		ASTM D5185m	>20	5	5	8
Lead	ppm	ASTM D5185m	>40	0	0	<1
	ppm		>330	2	2	3
Copper Tin	ppm	ASTM D5185m	>330	_	<1	3 <1
	ppm	ASTM D5185m	>10	<1 	< 1	< 1
Antimony Vanadium	ppm	ASTM D5185m		0	<1	0
Cadmium	ppm	ASTM D5185m		0	0	0
Caumum	ppm	AO INI DO IOJIII		U	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base 2	2	history1 1	3
	ppm ppm	ASTM D5185m	2 0		1 0	3
Boron		ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	2	1 0 63	3 0 61
Boron Barium	ppm	ASTM D5185m ASTM D5185m	2 0 50	2 0 62 <1	1 0 63 <1	3 0 61 <1
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	2 0 62	1 0 63 <1 984	3 0 61 <1 975
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0	2 0 62 <1	1 0 63 <1	3 0 61 <1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950	2 0 62 <1 928	1 0 63 <1 984	3 0 61 <1 975 1176 1015
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	2 0 62 <1 928 1109	1 0 63 <1 984 1212	3 0 61 <1 975 1176 1015 1225
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	2 0 50 0 950 1050 995	2 0 62 <1 928 1109 1004	1 0 63 <1 984 1212 1026	3 0 61 <1 975 1176 1015
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 0 950 1050 995 1180	2 0 62 <1 928 1109 1004 1256	1 0 63 <1 984 1212 1026 1303	3 0 61 <1 975 1176 1015 1225
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 50 950 1050 995 1180 2600	2 0 62 <1 928 1109 1004 1256 2950	1 0 63 <1 984 1212 1026 1303 3148	3 0 61 <1 975 1176 1015 1225 2433
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	2 0 50 0 950 1050 995 1180 2600	2 0 62 <1 928 1109 1004 1256 2950 current	1 0 63 <1 984 1212 1026 1303 3148 history1	3 0 61 <1 975 1176 1015 1225 2433 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 ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >25	2 0 62 <1 928 1109 1004 1256 2950 current 9	1 0 63 <1 984 1212 1026 1303 3148 history1 11	3 0 61 <1 975 1176 1015 1225 2433 history2 8
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	2 0 62 <1 928 1109 1004 1256 2950 current 9 <1	1 0 63 <1 984 1212 1026 1303 3148 history1 11 2	3 0 61 <1 975 1176 1015 1225 2433 history2 8 1
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	2 0 62 <1 928 1109 1004 1256 2950 current 9 <1 4	1 0 63 <1 984 1212 1026 1303 3148 history1 11 2 11	3 0 61 <1 975 1176 1015 1225 2433 history2 8 1 1 12
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 limit/base >25 >20 limit/base >3	2 0 62 <1 928 1109 1004 1256 2950 current 9 <1 4	1 0 63 <1 984 1212 1026 1303 3148 history1 11 2 11 2 11 1 1 history1	3 0 61 <1 975 1176 1015 1225 2433 history2 8 1 1 12 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 TS ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >25 >20 limit/base >3	2 0 62 <1 928 1109 1004 1256 2950 current 9 <1 4 current 1	1 0 63 <1 984 1212 1026 1303 3148 history1 11 2 11 2 11 1 2 11 0.8	3 0 61 <1 975 1176 1015 1225 2433 history2 8 1 1 12 history2 0.8
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 TS ppm ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 imit/base >25 >20 imit/base >3 >20	2 0 62 <1 928 1109 1004 1256 2950 current 9 <1 4 current 1 1 10.0	1 0 63 <1 984 1212 1026 1303 3148 history1 11 2 11 2 11 history1 0.8 9.4	3 0 61 <1 975 1176 1015 1225 2433 history2 8 1 12 12 history2 0.8 9.3
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 TS ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844	2 0 50 950 1050 995 1180 2600 imit/base >25 20 imit/base >3 >20 30	2 0 62 <1 928 1109 1004 1256 2950 current 9 <1 4 current 1 10.0 22.4 current	1 0 63 <1 984 1212 1026 1303 3148 history1 11 2 11 2 11 history1 0.8 9.4 21.5 history1	3 0 61 <1 975 1176 1015 1225 2433 history2 8 1 12 history2 0.8 9.3 22.9 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE Oxidation	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm ppm ppm ppm ppm ppm pp	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7614	2 0 50 0 950 1050 995 1180 2600 imit/base >25 20 imit/base >3 >20 >30	2 0 62 <1 928 1109 1004 1256 2950 current 9 <1 4 current 1 10.0 22.4 current 1 8.3	1 0 63 <1 984 1212 1026 1303 3148 history1 11 2 11 2 11 0.8 9.4 21.5 history1 17.0	3 0 61 <1 975 1176 1015 1225 2433 history2 8 1 12 history2 0.8 9.3 22.9 history2 19.5
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 TS ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844	2 0 50 950 1050 995 1180 2600 imit/base >25 20 imit/base >3 >20 30	2 0 62 <1 928 1109 1004 1256 2950 current 9 <1 4 current 1 10.0 22.4 current	1 0 63 <1 984 1212 1026 1303 3148 history1 11 2 11 history1 0.8 9.4 21.5 history1 17.0 6.1	3 0 61 <1 975 1176 1015 1225 2433 history2 8 1 12 history2 0.8 9.3 22.9 history2

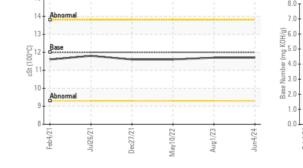


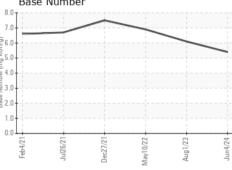
OIL ANALYSIS REPORT





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	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	ERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	12.00	11.7	11.7	11.6
GRAPHS						
Ferrous Alloys						
5		·				
accesses chromium	i					
5 nickel						
.5						
15						
10-						
5						
5 Z Z	22	23	24			
Feb4/21 Jul26/21	Uec21/21 May10/22	Aug1/23 .	Jun4/24			
Non-ferrous Meta						
Copper 1	1					
e eeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeee						
o T						
6						
2 -						
	TAX INCOME.	The Real Property is a second s				
625 621 627	//21	/23	1/24			
Feb4/21 Jul26/21	May10/22	Aug1/23 .	Jun4/24			
Viscosity @ 100°				Base Number		
5			8.0			
4 - Abnormal			7.0			
3				Li	1 1	





NW WHITE & CO - COLUMBIA DIVISION Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 Sample No. : PCA0125398 Received : 07 Jun 2024 100 INDEPENDENCE BLVD Lab Number : 06202515 Tested : 10 Jun 2024 COLUMBIA, SC : 10 Jun 2024 - Wes Davis Unique Number : 11069976 Diagnosed US 29210 Test Package : FLEET Contact: GEORGE EDWARDS Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. gedwards@nwwhite.com * - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: F:

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