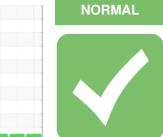


OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id DT643 Component Diesel Eng Fluid PETRO CA

Component Diesel Engine Fluid PETRO CANADA DURON SHP 10W30 (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.

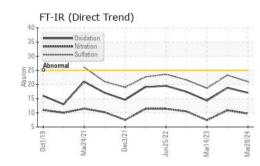
Fluid Condition

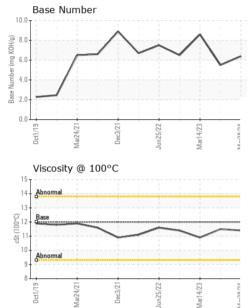
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0120015	PCA0107431	PCA0092514
Sample Date		Client Info		28 Mar 2024	16 Oct 2023	14 Mar 2023
Machine Age	mls	Client Info		237542	237542	219721
Oil Age	mls	Client Info		237542	237542	211985
Oil Changed		Client Info		Changed	Changed	Not Changd
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<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	>120	9	25	4
Chromium	ppm	ASTM D5185m	>20	0	<1	<1
Nickel	ppm	ASTM D5185m	>5	0	0	0
Titanium	ppm	ASTM D5185m		0	0	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	2	6	1
Lead	ppm	ASTM D5185m	>40	0	0	0
Copper	ppm	ASTM D5185m	>330	<1	2	<1
Tin	ppm	ASTM D5185m	>15	0	<1	<1
Vanadium	ppm	ASTM D5185m		0	0	<1
Cadmium	ppm	ASTM D5185m		0	0	0
	ppm	ACTIVI DOTOOIII		0	0	0
ADDITIVES	pp	method	limit/base	current	history1	history2
ADDITIVES Boron	ppm		limit/base	-	-	-
		method		current	history1	history2
Boron	ppm	method ASTM D5185m	2	current	history1 2	history2 6
Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m	2 0 50	current 5 0	history1 2 0	history2 6 0
Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	current 5 0 60	history1 2 0 67	history2 6 0 57
Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0	current 5 0 60 <1	history1 2 0 67 0	history2 6 0 57 <1
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 5 0 60 <1 930	history1 2 0 67 0 959	history2 6 0 57 <1 852
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050	current 5 0 60 <1 930 1137	history1 2 0 67 0 959 1184	history2 6 0 57 <1 852 1151
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	2 0 50 0 950 1050 995	current 5 0 60 <1 930 1137 1091	history1 2 0 67 0 959 1184 1065	history2 6 0 57 <1 852 1151 945
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	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 5 0 60 <1 930 1137 1091 1247	history1 2 0 67 0 959 1184 1065 1305 3283 history1	history2 6 0 57 <1 852 1151 945 1173
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 0 950 1050 995 1180 2600	current 5 0 60 <1 930 1137 1091 1247 3355 current 3	history1 2 0 67 0 959 1184 1065 1305 3283 history1 6	history2 6 0 57 <1 852 1151 945 1173 3159 history2 4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm 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 ASTM D5185m	2 0 50 950 1050 995 1180 2600	current 5 0 60 <1 930 1137 1091 1247 3355 current	history1 2 0 67 0 959 1184 1065 1305 3283 history1 6 <1	history2 6 0 57 <1 852 1151 945 1173 3159 history2 4 1
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 0 950 1050 995 1180 2600 limit/base	current 5 0 60 <1 930 1137 1091 1247 3355 current 3	history1 2 0 67 0 959 1184 1065 1305 3283 history1 6	history2 6 0 57 <1 852 1151 945 1173 3159 history2 4
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 Imit/base >25 >20	current 5 0 60 <1 930 1137 1091 1247 3355 current 3 <1 0 current	history1 2 0 67 0 959 1184 1065 1305 3283 history1 6 <1 6 history1 6 history1	history2 6 0 57 <1 852 1151 945 1173 3159 history2 4 1 <1 <1 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	method ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >25 >20 limit/base >20	current 5 0 60 <1 930 1137 1091 1247 3355 current 3 <1 0 current 0.6	history1 2 0 67 0 959 1184 1065 1305 3283 history1 6 <1 6 +listory1 1.1	history2 6 0 57 <1 852 1151 945 1173 3159 history2 4 1 <1 history2 0.3
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 TS ppm ppm ppm	method ASTM D5185m	2 0 50 950 1050 995 1180 2600 <i>imit/base</i> >25 >20 <i>imit/base</i> >4 >20	current 5 0 60 <1 930 1137 1091 1247 3355 current 3 <1 0 current 0.6 9.7	history1 2 0 67 0 959 1184 1065 1305 3283 history1 6 <116 history1 10	history2 6 0 57 <1 852 1151 945 1173 3159 history2 4 1 <1 history2 0.3 7.4
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 >20	current 5 0 60 <1 930 1137 1091 1247 3355 current 3 <1 0 current 0.6	history1 2 0 67 0 959 1184 1065 1305 3283 history1 6 <1 6 +listory1 1.1	history2 6 0 57 <1 852 1151 945 1173 3159 history2 4 1 <1 history2 0.3
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>imit/base</i> >25 >20 <i>imit/base</i> >4 >20	current 5 0 60 <1 930 1137 1091 1247 3355 current 3 <1 0 current 0.6 9.7	history1 2 0 67 0 959 1184 1065 1305 3283 history1 6 <116 history1 10	history2 6 0 57 <1 852 1151 945 1173 3159 history2 4 1 <1 history2 0.3 7.4
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 0 950 1050 995 1180 2600 imit/base >25 20 imit/base >4 >20 >30	current 5 0 60 <1 930 1137 1091 1247 3355 current 3 <1 0 current 0.6 9.7 21.0	history1 2 0 67 0 959 1184 1065 1305 3283 history1 6 <1 6 history1 1.1 10.9 23.3	history2 6 0 57 <1 852 1151 945 1173 3159 history2 4 1 <1 history2 0.3 7.4 18.7

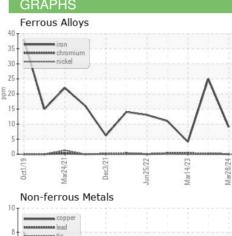


OIL ANALYSIS REPORT





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	12.00	11.4	11.5	10.9
GRAPHS						



bpm

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14

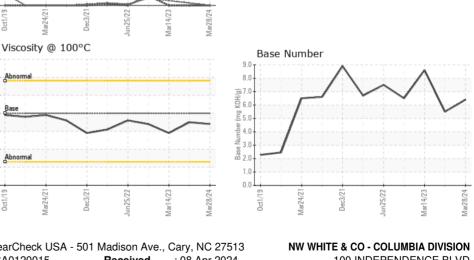
13

10

8

0ct1/19

cSt (100°C)



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 Sample No. : PCA0120015 100 INDEPENDENCE BLVD Received : 08 Apr 2024 Lab Number : 06141078 Tested : 09 Apr 2024 COLUMBIA, SC US 29210 Unique Number : 10965886 Diagnosed : 09 Apr 2024 - Wes Davis Test Package : FLEET Contact: Paul Riddick Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. PRiddick@nwwhite.com T: (803)750-6062 * - 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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