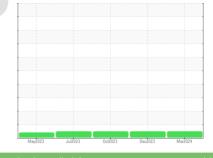


OIL ANALYSIS REPORT







Component Rear Diesel Engine Fluid

PETRO CANADA DURON SHP 15W40 (--- GAL)

DIAGNOSIS

Machine Id

Recommendation

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

Wear

Metal levels are typical for a new component breaking in.

Contamination

There is no indication of any contamination in the oil.

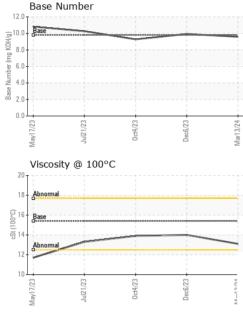
Fluid Condition

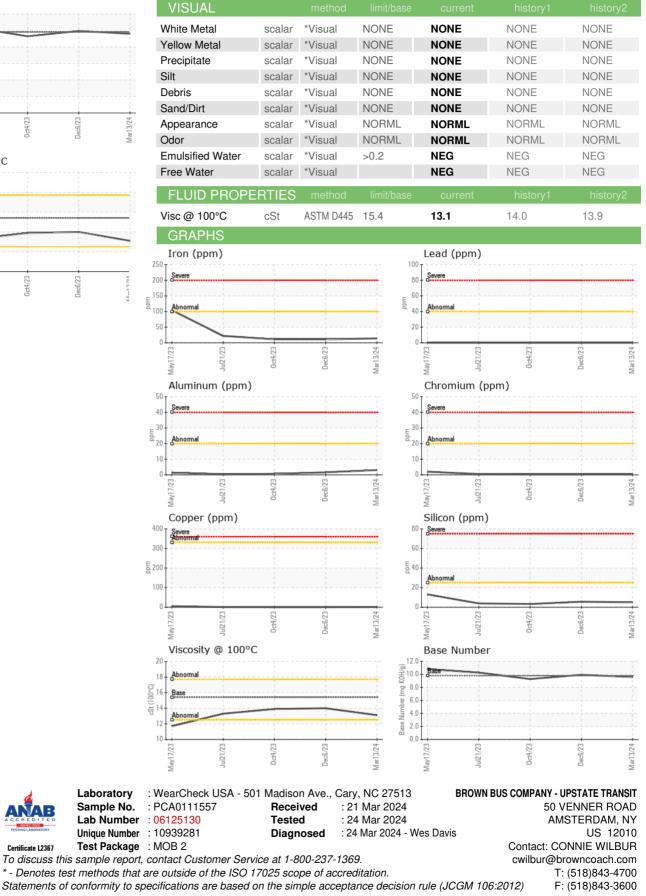
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0111557	PCA0111547	PCA0101042
Sample Date		Client Info		13 Mar 2024	06 Dec 2023	04 Oct 2023
Machine Age	mls	Client Info		59541	45573	36362
Oil Age	mls	Client Info		11968	9211	13364
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATI	ON	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	14	11	11
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m		<1	0	<1
Silver	ppm	ASTM D5185m	>3	<1	0	0
Aluminum	ppm	ASTM D5185m	>20	3	2	<1
Lead	ppm	ASTM D5185m	>40	0	0	0
Copper	ppm	ASTM D5185m	>330	1	<1	<1
Tin	ppm	ASTM D5185m	>15	<1	0	<1
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base 0	13	2	2
Boron Barium	ppm ppm			13 2	2 0	2 0
Boron Barium Molybdenum		ASTM D5185m ASTM D5185m ASTM D5185m	0	13 2 76	2 0 62	2 0 56
Boron Barium Molybdenum Manganese	ppm	ASTM D5185m ASTM D5185m	0	13 2 76 <1	2 0 62 0	2 0 56 <1
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	13 2 76	2 0 62	2 0 56 <1 915
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	13 2 76 <1	2 0 62 0	2 0 56 <1 915 1005
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	13 2 76 <1 882	2 0 62 0 974 1084 958	2 0 56 <1 915 1005 912
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 ASTM D5185m	0 0 60 0 1010 1070 1150 1270	13 2 76 <1 882 1179	2 0 62 0 974 1084 958 1268	2 0 56 <1 915 1005 912 1176
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	0 0 60 0 1010 1070 1150	13 2 76 <1 882 1179 893	2 0 62 0 974 1084 958	2 0 56 <1 915 1005 912
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	0 0 60 0 1010 1070 1150 1270	13 2 76 <1 882 1179 893 1162	2 0 62 0 974 1084 958 1268	2 0 56 <1 915 1005 912 1176
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	0 0 60 0 1010 1070 1150 1270 2060	13 2 76 <1 882 1179 893 1162 3106	2 0 62 0 974 1084 958 1268 3203	2 0 56 <1 915 1005 912 1176 2648
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	0 0 60 1010 1070 1150 1270 2060	13 2 76 <1 882 1179 893 1162 3106 current	2 0 62 0 974 1084 958 1268 3203 history1	2 0 56 <1 915 1005 912 1176 2648 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	0 0 60 1010 1070 1150 1270 2060	13 2 76 <1 882 1179 893 1162 3106 current 5	2 0 62 0 974 1084 958 1268 3203 history1 6	2 0 56 <1 915 1005 912 1176 2648 history2 3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 kimit/base >25	13 2 76 <1 882 1179 893 1162 3106 current 5 0	2 0 62 0 974 1084 958 1268 3203 history1 6 <1	2 0 56 <1 915 1005 912 1176 2648 history2 3 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25	13 2 76 <1 882 1179 893 1162 3106 current 5 0 2	2 0 62 0 974 1084 958 1268 3203 history1 6 <1 1	2 0 56 <1 915 1005 912 1176 2648 history2 3 2 0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25	13 2 76 <1 882 1179 893 1162 3106 current 5 0 2 current	2 0 62 0 974 1084 958 1268 3203 history1 6 <1 1 1 history1	2 0 56 <1 915 1005 912 1176 2648 history2 3 2 0 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >3	13 2 76 <1 882 1179 893 1162 3106 current 5 0 2 current 0.4	2 0 62 0 974 1084 958 1268 3203 history1 6 < 1 1 history1 0.2	2 0 56 <1 915 1005 912 1176 2648 history2 3 2 0 history2 0.2
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 t ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <i>limit/base</i> >25 >20 <i>limit/base</i> >3 >20	13 2 76 <1 882 1179 893 1162 3106 <i>current</i> 5 0 2 <i>current</i> 0.4 7.8	2 0 62 0 974 1084 958 1268 3203 history1 6 <1 1 1 history1 0.2 6.7	2 0 56 <1 915 1005 912 1176 2648 history2 3 2 0 history2 0.2 7.3
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 t ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >25 imit/base >3 >20	13 2 76 <1 882 1179 893 1162 3106 Current 5 0 2 Current 0.4 7.8 18.4	2 0 62 0 974 1084 958 1268 3203 history1 6 <1 1 1 <u>history1</u> 0.2 6.7 18.6	2 0 56 <1 915 1005 912 1176 2648 history2 3 2 0 history2 0.2 7.3 18.6
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	0 0 0 1010 1070 1150 1270 2060 2060 225 20 220 220 20 3 20 3 20 3 3 20 3 3 20 3 3 20 3 3 3 20 3 3 3 20 3 3 3 3	13 2 76 <1 882 1179 893 1162 3106 Current 5 0 2 Current 0.4 7.8 18.4 Current	2 0 62 0 974 1084 958 1268 3203 history1 6 <1 1 1 history1 0.2 6.7 18.6 history1	2 0 56 <1 915 1005 912 1176 2648 history2 3 2 0 0 history2 0.2 7.3 18.6 history2



OIL ANALYSIS REPORT





Certificate L2367

Contact/Location: CONNIE WILBUR - BROAMS