

## **OIL ANALYSIS REPORT**

Sample Rating Trend



Diesel Engine Fluid PETRO CANADA DURON HP 15W40 (--- GAL)

#### DIAGNOSIS

## Recommendation

Resample at the next service interval to monitor.

Machine Id

## Wear

All component wear rates are normal.

#### Contamination

There is no indication of any contamination in the oil.

## Fluid Condition

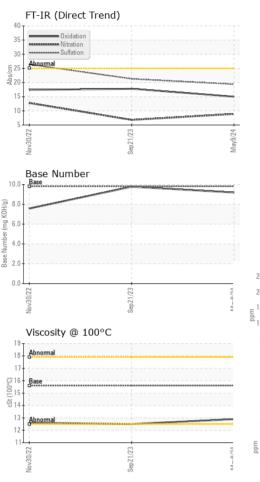
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

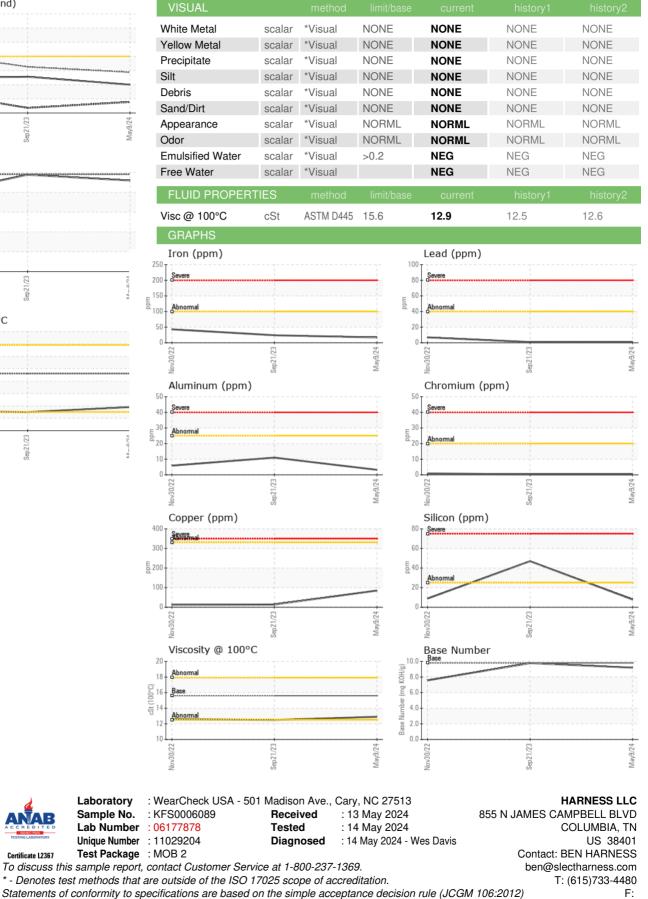
SAMPLE INFORM	ATION	method	limit/base	current	history1	history2
Sample Number		Client Info		KFS0006089	KFS0003926	KFS0002878
Sample Date		Client Info		09 May 2024	21 Sep 2023	30 Nov 2022
Machine Age	hrs	Client Info		6427	5592	4586
Oil Age	hrs	Client Info		835	0	0
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	ABNORMAL	NORMAL
CONTAMINATIO	N	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 METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	17	24	43
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m	>2	0	0	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>25	3	<b>1</b> 1	6
Lead	ppm	ASTM D5185m	>40	1	<1	7
Copper	ppm	ASTM D5185m	>330	85	14	12
Tin	ppm	ASTM D5185m	>15	1	<1	1
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
Cadmium ADDITIVES	ppm	ASTM D5185m method	limit/base	0 current	0 history1	0 history2
	ppm ppm		limit/base	-	-	-
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current 1	history1 41	history2 5
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m	limit/base	current 1 1	history1 41 0	history2 5 0
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current 1 1 51	history1 41 0 41	history2 5 0 29
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current 1 1 51 <1	history1 41 0 41 <1	history2 5 0 29 <1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current 1 1 51 <1 821	history1 41 0 41 <1 487	history2 5 0 29 <1 400
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	Current 1 1 51 <1 821 1394	history1 41 0 41 <1 487 1851	history2 5 0 29 <1 400 2390
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	Current 1 1 51 <1 821 1394 1112	history1 41 0 41 <1 487 1851 993	history2 5 0 29 <1 400 2390 1076
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	limit/base	Current 1 1 51 <1 821 1394 1112 1262	history1 41 0 41 <1 487 1851 993 1185	history2           5           0           29           <1           400           2390           1076           1312
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	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		current           1           51           <1           821           1394           1112           1262           4387           current           8	history1 41 0 41 <1 487 1851 993 1185 3693	history2 5 0 29 <1 400 2390 1076 1312 7771
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	limit/base	Current 1 1 51 <1 821 1394 1112 1262 4387 Current	history1           41           0           41           <1           487           1851           993           1185           3693           history1	history2         5         0         29         <1         400         2390         1076         1312         7771         history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	limit/base	current           1           51           <1           821           1394           1112           1262           4387           current           8	history1         41         0         41         <1         487         1851         993         1185         3693         history1         47	history2           5           0           29           <1           400           2390           1076           1312           7771           history2           9
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	limit/base >25	current           1           51           <1           821           1394           1112           1262           4387           current           8           3           <1	history1         41         0         41         <1         487         1851         993         1185         3693         history1         47         23	history2           5           0           29           <1           400           2390           1076           1312           7771           history2           9           4
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	limit/base >25 >20	current           1           51           <1           821           1394           1112           1262           4387           current           8           3           <1	history1 41 0 41 <1 487 1851 993 1185 3693 history1 ▲ 47 23 12	history2         5         0         29         <1         400         2390         1076         1312         7771         history2         9         4         <1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	limit/base >25 >20 limit/base	current         1         51         <1         821         1394         1112         1262         4387         current         8         3         <1         current         current         current         current	history1         41         0         41         <1         487         1851         993         1185         3693         history1         ▲ 47         23         12         history1	history2         5         0         29         <1         400         2390         1076         1312         7771         history2         9         4         <1         history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	limit/base >25 >20 limit/base >3	current           1           51           <1           821           1394           1112           1262           4387           current           8           3           <1           current           0.5	history1         41         0         41         <1         487         1851         993         1185         3693         history1         47         23         12         history1         0.3	history2         5         0         29         <1         400         2390         1076         1312         7771         history2         9         4         <1         history2         0.9         0.9
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	limit/base >25 >20 limit/base >3 >20	current           1           51           <1           821           1394           1112           1262           4387           current           8           3           <1           current           0.5           8.9	history1         41         0         41         <1         487         1851         993         1185         3693         history1         47         23         12         history1         0.3         6.8	history2         5         0         29         <1         400         2390         1076         1312         7771         history2         9         4         <1         history2         0.9         12.8
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method         ASTM D5185m         ASTM D5185m	limit/base >25 >20 limit/base >3 >20 >3 >20	current           1           51           <1           821           1394           1112           1262           4387           current           8           3           <1           0.5           8.9           19.4	history1         41         0         41         <1         487         1851         993         1185         3693         history1         ▲ 47         23         12         history1         0.3         6.8         21.3	history2         5         0         29         <1         400         2390         1076         1312         7771         history2         9         4         <1         history2         0.9         12.8         26.4

NORMAL



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Certificate 12367

Submitted By: BILL ENYART

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