

## **OIL ANALYSIS REPORT**

Sample Rating Trend



BM-359 Component Diesel Engine Fluid

# PETRO CANADA DURON SHP 10W30 (10 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.

Machine Id

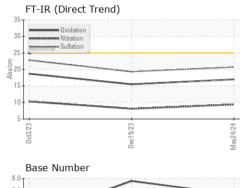
#### Fluid Condition

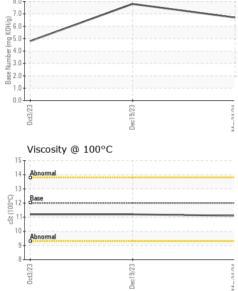
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0122183	PCA0114032	PCA0103134
Sample Date		Client Info		24 May 2024	19 Dec 2023	03 Oct 2023
Machine Age	mls	Client Info		404280	376426	358832
Oil Age	mls	Client Info		27854	17594	38843
Oil Changed		Client Info		Changed	Changed	Changed
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	20	16	41
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>5	0	0	0
Titanium	ppm	ASTM D5185m	>2	0	0	0
Silver	ppm	ASTM D5185m	>2	<1	0	0
Aluminum	ppm	ASTM D5185m	>20	5	3	7
Lead	ppm	ASTM D5185m	>40	1	0	2
Copper	ppm	ASTM D5185m	>330	6	3	7
Tin	ppm	ASTM D5185m	>15	1	<1	<1
Vanadium	ppm	ASTM D5185m		0	<1	0
<b>a</b>						
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES	ppm	ASTM D5185m method	limit/base	0 current	0 history1	0 history2
	ppm ppm		limit/base	-	-	-
ADDITIVES		method ASTM D5185m		current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	2	current 2	history1 <1	history2 0
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m	2 0 50	current 2 0	history1 <1 0	history2 0 0
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	current 2 0 61	history1 <1 0 62	history2 0 0 63
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0	current 2 0 61 <1	history1 <1 0 62 <1	history2 0 0 63 <1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950	current 2 0 61 <1 942	history1 <1 0 62 <1 1013	history2 0 0 63 <1 955
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 2 0 61 <1 942 1065	history1 <1 0 62 <1 1013 1141	history2 0 0 63 <1 955 1093
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	2 0 50 0 950 1050 995	Current 2 0 61 <1 942 1065 1003	history1 <1 0 62 <1 1013 1141 1051	history2 0 63 <1 955 1093 923
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           2           0           61           <1           942           1065           1003           1236	history1 <1 0 62 <1 1013 1141 1051 1290	history2 0 0 63 <1 955 1093 923 1228
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 2 0 61 <1 942 1065 1003 1236 3060	history1 <1 0 62 <1 1013 1141 1051 1290 2984	history2 0 0 63 <1 955 1093 923 1228 2581
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	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           2           0           61           <1           942           1065           1003           1236           3060           current	history1 <1 0 62 <1 1013 1141 1051 1290 2984 history1	history2 0 0 63 <1 955 1093 923 1228 2581 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm <b>TS</b>	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 limit/base >25	current           2           0           61           <1           942           1065           1003           1236           3060           current           8	history1           <1           0           62           <1           1013           1141           1051           1290           2984           history1           6	history2           0           0           63           <1           955           1093           923           1228           2581           history2           6
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	methodASTM D5185mASTM D5185m	2 0 50 950 1050 995 1180 2600 limit/base >25	current           2           0           61           <1           942           1065           1003           1236           3060           current           8           9	history1           <1           0           62           <1           1013           1141           1051           1290           2984           history1           6           6           6	history2           0           0           63           <1           955           1093           923           1228           2581           history2           6           8
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 ASTM D5185m	2 0 50 950 1050 995 1180 2600 <b>limit/base</b> >25	current           2           0           61           <1           942           1065           1003           1236           3060           current           8           9           4	history1           <1           0           62           <1           1013           1141           1051           1290           2984           history1           6           6           1	history2         0         0         63         <1         955         1093         923         1228         2581         history2         6         8         3
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 ppm	method           ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 <b>imit/base</b> >25 >20 <b>imit/base</b> >4	current           2           0           61           <1           942           1065           1003           1236           3060           current           8           9           4           current	history1         <1         0         62         <1         1013         1141         1051         1290         2984         history1         6         10         history1	history2         0         0         63         <1         955         1093         923         1228         2581         history2         6         8         3         history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc 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 <b>imit/base</b> >25 >20 <b>imit/base</b> >4	current           2           0           61           <1           942           1065           1003           1236           3060           current           8           9           4           current           0.5	history1         <1         0         62         <1         1013         1141         1051         1290         2984         history1         6         6         6         6         6         6         0.4	history2           0           0           63           <1           955           1093           923           1228           2581           history2           6           8           3           history2           0.7
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m           ASTM D7844           *ASTM D7624           *ASTM D7415	2 0 50 0 950 1050 995 1180 2600 <b>limit/base</b> >25 >20 <b>limit/base</b> >4 >20	current           2           0           61           <1           942           1065           1003           1236           3060           current           8           9           4           current           0.5           9.4	history1         <1         0         62         <1         1013         1141         1051         1290         2984         history1         6         6         6         6         6         0.4         8.1	history2           0           0           63           <1           955           1093           923           1228           2581           history2           6           8           3           history2           0.7           10.3
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 D7844           *ASTM D7624           *ASTM D7415	2 0 50 950 1050 995 1180 2600 <b>imit/base</b> >25 <b>imit/base</b> >20 <b>imit/base</b> >4 >20	current           2           0           61           <1           942           1065           1003           1236           3060           current           8           9           4           current           0.5           9.4           20.7	history1         <1         0         62         <1         1013         1141         1051         1290         2984         history1         6         6         6         6         0.4         8.1         19.3	history2         0         0         63         <1         955         1093         923         1228         2581         history2         6         8         3         history2         0.7         10.3         22.8

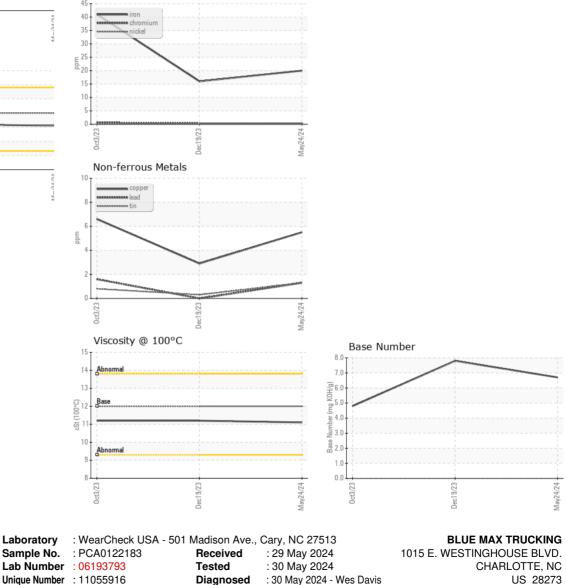


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VISUAL		method	limit/base		history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	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	11.1	11.2	11.2
GRAPHS						
Ferrous Alloys						





Unique Number : 11055916 Diagnosed : 30 May 2024 - Wes Davis Test Package : FLEET Contact: Jody Greer Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. jgreer@bluemaxtrucking.com \* - 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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