

## **OIL ANALYSIS REPORT**

Sample Rating Trend



Machine Id 7200 Componen Diesel I Fluid PETRO

**720021-361492** 

Diesel Engine

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

SAMPLE INFORMATION method

### 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 Number Sample Date Machine Age Oil Age Oil Changed Sample Status	hrs hrs	Client Info Client Info Client Info Client Info Client Info		GFL0108100 02 Feb 2024 24184 0 Not Changd	GFL0098608 10 Nov 2023 5955 0 Changed ABNOBMAL	GFL0093690 18 Oct 2023 286377 0 Not Changd
CONTAMINATI	ON	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 METALS	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>120	19	60	64
Chromium	ppm	ASTM D5185m	>20	<1	1	2
Nickel	ppm	ASTM D5185m	>5	4	<b>5</b>	<u> </u>
Titanium	ppm	ASTM D5185m	>2	0	<1	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	10	<u> </u>	<u> </u>
Lead	ppm	ASTM D5185m	>40	<1	4	5
Copper	ppm	ASTM D5185m	>330	1	5	5
l in	ppm	ASTM D5185m	>15	<1	2	1
Vanadium	ppm	ASTM D5185m		0	<1	0
Cadmium	ppm	ASTM D5185m		U	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base 0	current 4	history1 2	history2 3
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m	limit/base 0 0	current 4 0	history1 2 0	history2 3 0
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 0 0 60	current 4 0 58	history1 2 0 61	history2 3 0 70
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 0 0 60 0	current 4 0 58 <1	history1 2 0 61 1	history2 3 0 70 1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 0 0 60 0 1010	current 4 0 58 <1 903	history1 2 0 61 1 870	history2 3 0 70 1 946
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 0 0 60 0 1010 1070	Current 4 0 58 <1 903 1007	history1 2 0 61 1 870 1101	history2 3 0 70 1 946 1214
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 0 0 60 0 1010 1070 1150	Current 4 0 58 <1 903 1007 1055	history1 2 0 61 1 870 1101 945	history2 3 0 70 1 946 1214 1085
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 0 60 0 1010 1070 1150 1270	Current 4 0 58 <1 903 1007 1055 1255	history1 2 0 61 1 870 1101 945 1205	history2 3 0 70 1 946 1214 1085 1348
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	limit/base 0 60 0 1010 1070 1150 1270 2060	Current 4 0 58 <1 903 1007 1055 1255 3161	history1 2 0 61 1 870 1101 945 1205 2687	history2 3 0 70 1 946 1214 1085 1348 3069
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	limit/base 0 60 0 1010 1070 1150 1270 2060	Current 4 0 58 <1 903 1007 1055 1255 3161 Current	history1 2 0 61 1 870 1101 945 1205 2687 history1	history2           3           0           70           1           946           1214           1085           1348           3069           history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN <sup>T</sup> Silicon	ppm	method           ASTM D5185m	<pre>limit/base 0 0 60 0 1010 1070 1150 1270 2060 limit/base &gt;25</pre>	current           4           0           58           <1           903           1007           1055           1255           3161           current           8	history1           2           0           61           1           870           1101           945           1205           2687           history1           10	history2           3           0           70           1           946           1214           1085           1348           3069           history2           9
ADDITIVES Boron Barium Molybdenum Maganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm	method           ASTM D5185m	limit/base 0 0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	current           4           0           58           <1           903           1007           1055           1255           3161           current           8           12	history1           2           0           61           1           870           1101           945           1205           2687           history1           10           77	history2           3           0           70           1           946           1214           1085           1348           3069           history2           9           77
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm 1 ppm 2 ppm 2 ppm 2 ppm 2 ppm 2 ppm 2 ppm 3 ppm 4 ppm 4 ppm 2 ppm 4 ppm 4	method           ASTM D5185m	limit/base 0 60 0 1010 1070 1150 1270 2060 vimit/base >25	current           4           0           58           <1           903           1007           1055           1255           3161           current           8           12           5	history1           2           0           61           1           870           1101           945           1205           2687           history1           10           77           13	history2           3           0           70           1           946           1214           1085           1348           3069           history2           9           77           15
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 TS	method           ASTM D5185m	limit/base 0 60 1010 1070 1150 1270 2060 limit/base >20 limit/base	current         4         0         58         <1         903         1007         1055         1255         3161         current         8         12         5         current	history1         2         0         61         1         870         1101         945         1205         2687         history1         10         77         13         history1	history2         3         0         70         1         946         1214         1085         1348         3069         history2         9         77         15         history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm i ppm i	method           ASTM D5185m	limit/base   0   0   60   0   1010   1070   1150   1270   2060   limit/base   >20   limit/base   >20	current         4         0         58         <1         903         1007         1055         1255         3161         current         8         12         5         current         0.2	history1           2           0           61           1           870           1101           945           1205           2687           history1           10           77           13           history1           0.8	history2           3           0           70           1           946           1214           1085           1348           3069           history2           9           77           15           history2           0.7
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ррт ррт ррт ррт ррт ррт ррт ррт	method           ASTM D5185m	limit/base   0   0   60   0   1010   1070   1150   1270   2060   limit/base   >20   limit/base   >20	current           4           0           58           <1           903           1007           1055           1255           3161           current           8           12           5           current           0.2           5.6	history1           2           0           61           1           870           1101           945           1205           2687           history1           10           77           13           history1           0.8           11.0	history2         3         0         70         1         946         1214         1085         1348         3069         history2         9         77         15         history2         0.7         9.5
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	limit/base   0   0   60   0   1010   1070   1150   1270   2060   limit/base   >20   limit/base   >4   >20   >30	current         4         0         58         <1         903         1007         1055         1255         3161         current         8         12         5         current         0.2         5.6         17.9	history1         2         0         61         1         870         1101         945         1205         2687         history1         10         77         13         history1         0.8         11.0         21.8	history2         3         0         70         1         946         1214         1085         1348         3069         history2         9         77         15         history2         0.7         9.5         20.2
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	limit/base   0   0   60   0   1010   1070   1150   1270   2060   limit/base   >20   limit/base   >20   s20   limit/base   >20   limit/base   >30	current         4         0         58         <1         903         1007         1055         1255         3161         current         8         12         5         current         0.2         5.6         17.9         current	history1         2         0         61         1         870         1101         945         1205         2687         history1         10         77         13         history1         0.8         11.0         21.8         history1	history2         3         0         70         1         946         1214         1085         1348         3069         history2         9         77         15         history2         0.7         9.5         20.2         history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAD Oxidation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m           ASTM D7844           *ASTM D7844           *ASTM D7415           method           *ASTM D7414	limit/base   0   0   60   0   1010   1070   1150   1270   2060   limit/base   >20   limit/base   >20   limit/base   >30   limit/base   >25	current         4         0         58         <1         903         1007         1055         1255         3161         current         8         12         5         current         0.2         5.6         17.9         current         13.9	history1         2         0         61         1         870         1101         945         1205         2687         history1         10         77         13         history1         0.8         11.0         21.8         history1         17.6	history2         3         0         70         1         946         1214         1085         1348         3069         history2         9         777         15         history2         0.7         9.5         20.2         history2         15.8



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# **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
0/23 -	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Peb2	Odor	scalar	*Visual	NORML	NORML	NORML	NORML
	Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
<i></i>	Free Water	scalar	*Visual		NEG	NEG	NEG
		RTIES	method	limit/base	current	history1	history2
		cSt	ASTM D445	15.4	13.8	12.9	13.1
	GRAPHS	001	A0110 0443	10.4	10.0	12.5	10.1
	Earraus Allovs						
/23 <del>.</del>	60 - iron	-					
Vov10	50 -						
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	17-			(₽ <sup>8.0</sup>			
	© <sup>16</sup> Base			9 6.0			
				L per			
	<sup>3</sup> 14-			4.0			
	13 Abnormal			<sup>2</sup> 20			
	12-						
	114	23 -		0.0	53	23	24
	Oct18/	lov10/		Feb2/	0ct18/	ov10/	Feb2//
	5	Z			5	Z	
Laboratory	: WearCheck USA - 50	Madison Ave., Cary, N		, NC 27513	GFL Envir	onmental - 834 - C	hillicothe Hauling
ANAB Sample No.	: GFL0108100	Rece	ived 13	8 Feb 2024		201	Mitchell Road
Lab Number	: UbU88041 : 10875486	Teste	ea :14	Feb 2024	les Davis	(	
Certificate L2367 Test Package	: FLEET	Jiagnosed :		14 1 EU ZUZA - WES DAVIS		Contact:	Terry McKiddy
To discuss this sample report	, contact Customer Servi	ce at 1-8	300-237-1369	Э.		tmckide	dy@gflenv.com
* - Denotes test methods that	are outside of the ISO 1	7025 sco	ppe of accrea	litation.		T:	(816)225-6699
Statements of conformity to s	pecifications are based o	n the sin	nple accepta	nce decision	rule (JCGM 106:	2012)	F:

Contact/Location: Terry McKiddy - GFL834