

# **OIL ANALYSIS REPORT**

Sample Rating Trend



Machine Id

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

#### DIAGNOSIS

## Recommendation

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

# Wear

All component wear rates are normal.

#### Contamination

There is no indication of any contamination in the oil.

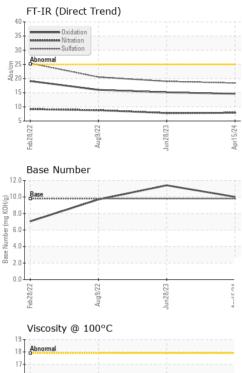
## Fluid Condition

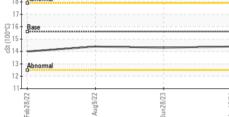
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		KFS0003997	KFS0003899	KFS0001552
Sample Date		Client Info		15 Apr 2024	28 Jun 2023	09 Aug 2022
Machine Age	hrs	Client Info		9296	8808	7975
Oil Age	hrs	Client Info		488	0	0
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATION	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	48	25	25
Chromium	ppm	ASTM D5185m	>20	1	<1	<1
Nickel	ppm	ASTM D5185m		، <1	0	<1
Titanium	ppm	ASTM D5185m	~ 1	<1	0	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	11	6	8
Lead	ppm	ASTM D5185m	>40	<1	0	<1
Copper	ppm	ASTM D5185m		2	<1	<1
Tin	ppm	ASTM D5185m	>15	- <1	0	<1
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		<1	0	0
				<b>N</b>	0	0
ADDITIVES	1-1-	method	limit/base	current	history1	history2
			limit/base		history1	
ADDITIVES	ppm	method	limit/base	current	-	history2
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185m	limit/base	current 2	history1 9	history2 33
ADDITIVES Boron	ppm	method ASTM D5185m ASTM D5185m	limit/base	current 2 0	history1 9 0	history2 33 0
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current 2 0 65	history1 9 0 62	history2 33 0 68
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current 2 0 65 <1	history1 9 0 62 <1	history2 33 0 68 <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	current 2 0 65 <1 916	history1 9 0 62 <1 961	history2 33 0 68 <1 889
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current           2           0           65           <1           916           1105	history1 9 0 62 <1 961 1285	history2 33 0 68 <1 889 1135
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	Current 2 0 65 <1 916 1105 1043	history1 9 0 62 <1 961 1285 1135	history2 33 0 68 <1 889 1135 1064
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	limit/base	current           2           0           65           <1           916           1105           1043           1220	history1 9 0 62 <1 961 1285 1135 1388	history2 33 0 68 <1 889 1135 1064 1255
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		Current 2 0 65 <1 916 1105 1043 1220 3191	history1 9 0 62 <1 961 1285 1135 1388 4068	history2 33 0 68 <1 889 1135 1064 1255 3187
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	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	limit/base	current           2           0           65           <1           916           1105           1043           1220           3191           current	history1 9 0 62 <1 961 1285 1135 1388 4068 history1	history2         33         0         68         <1         889         1135         1064         1255         3187         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 ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current           2           0           65           <1           916           1105           1043           1220           3191           current           7	history1           9           0           62           <1           961           1285           1135           1388           4068           history1           5	history2           33           0           68           <1           889           1135           1064           1255           3187           history2           4
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	current           2           0           65           <1           916           1105           1043           1220           3191           current           7           0	history1           9           0           62           <1           961           1285           1135           1388           4068           history1           5           2	history2         33         0         68         <1         889         1135         1064         1255         3187         history2         4         1
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           2           0           65           <1           916           1105           1043           1220           3191           current           7           0           2	history1           9           0           62           <1           961           1285           1135           1388           4068           history1           5           2           2	history2           33           0           68           <1           889           1135           1064           1255           3187           history2           4           1           <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	method           ASTM D5185m	limit/base >25 >20 limit/base	current         2         0         65         <1         916         1105         1043         1220         3191         current         7         0         2         current	history1         9         0         62         <1         961         1285         1135         1388         4068         history1         5         2         2         history1	history2         33         0         68         <1         889         1135         1064         1255         3187         history2         4         1         <1         <1         <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           2           0           65           <1           916           1105           1043           1220           3191           current           7           0           2           current           0           2           current           0.4	history1           9           0           62           <1           961           1285           1135           1388           4068           history1           5           2           history1           0.4	history2           33           0           68           <1           889           1135           1064           1255           3187           history2           4           1           <1           history2           4           1           <1           history2           0.4
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         2         0         65         <1         916         1105         1043         1220         3191         current         7         0         2         current         0         2         current         0.4         7.9	history1         9         0         62         <1         961         1285         1135         1388         4068         history1         5         2         history1         0.4         7.8	history2         33         0         68         <1         889         1135         1064         1255         3187         history2         4         1         <1         history2         4         1         <1         history2         0.4         8.8
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 >30	current         2         0         65         <1         916         1105         1043         1220         3191         current         7         0         2         current         0.4         7.9         18.4	history1         9         0         62         <1         961         1285         1135         1388         4068         history1         5         2         history1         0.4         7.8         19.0	history2         33         0         68         <1         889         1135         1064         1255         3187         history2         4         1         <1         history2         0.4         8.8         20.5



# **OIL ANALYSIS REPORT**





Aluminum (ppm) 	VISUAL		method				history2
Precipitate scalar 'Visual NONE NONE NONE NONE NONE NONE Sitt scalar 'Visual NONE NONE NONE NONE NONE NONE NONE NON	White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Siti scalar Visual NONE NONE NONE NONE NONE NONE NONE NON	Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silt scalar Visual NONE NONE NONE NONE NONE NONE NONE Sand/Dirt scalar Visual NONE NONE NONE NONE NONE NONE NONE Sand/Dirt scalar Visual NORML N	Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt     scalar     *Visual     NONE     NONE     NONE     NONE     NONE       Appearance     scalar     *Visual     NORML     NORML <th></th> <th>scalar</th> <th>*Visual</th> <th>NONE</th> <th>NONE</th> <th>NONE</th> <th>NONE</th>		scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt     scalar     *Visual     NONE     NONE     NONE     NONE     NONE       Appearance     scalar     *Visual     NORML     NORML <th>Debris</th> <th>scalar</th> <th>*Visual</th> <th>NONE</th> <th>NONE</th> <th>NONE</th> <th>NONE</th>	Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance       scalar       *Visual       NORML       Norma       Norma       Norma	Sand/Dirt	scalar	*Visual	NONE	NONE		NONE
Door     scalar     *Visual     NORML     NORML     NORML     NORML     NORML     NORML     NORML       Emulsified Water     scalar     'Visual     >0.2     NEG     NEG     NEG       Free Water     scalar     'Visual     >0.2     NEG     NEG     NEG       FLUID PROPERTIES     method     limit/base     current     history1     history2       Visc @ 100°C     cSt     ASTM D445     15.6     14.4     14.3     14.4       GRAPHS     Iron (ppm)     Lead (ppm)     Iron (ppm)							
Emulsified Water scalar *Visual >0.2 NEG NEG NEG NEG Free Water scalar *Visual *0.2 NEG NEG NEG NEG FLUID PROPERTIES method limit/base current history1 history2 Visc @ 100°C cSt ASTM D45 15.6 14.4 14.3 14.4 GRAPHS Iron (ppm)							
Free Water     scalar     *Visual     NEG     NEG     NEG     NEG       FLUID PROPERTIES     method     limit/base     current     history1     history2       //isc @ 100°C     cSt     ASTM D445     15.6     14.4     14.3     14.4       GRAPHS     Iron (ppm)     Lead (ppm)     Lead (ppm)     Command     Command <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th>							
Visco @ 100°C cSt ASTM D445 15.6 14.4 14.3 14.4 GRAPHS Iron (ppm) Aluminum (ppm) Copper (ppm) Viscosity @ 100°C							
Viscosity @ 100°C cSt ASTM D445 15.6 14.4 14.3 14.4 GRAPHS Iron (ppm)	FLUID PROPER	TIES	method	limit/base	current	history1	history2
Iron (ppm) Iron (	√isc @ 100°C	cSt					
Aluminum (ppm) Aluminum (ppm) Copper (ppm) Viscosity @ 100°C Anomal Anomal Copper (ppm) Copper (ppm) Coppe	GRAPHS						
Aluminum (ppm) Copper (ppm) Viscosity @ 100°C Anomal Aluminum (ppm) Copper (ppm)							
Aluminum (ppm) Aluminum (ppm) Copper (ppm) Viscosity @ 100°C And and an	1				Severe		
Aluminum (ppm) Copper (ppm) Viscosity @ 100°C Anomal Aluminum (ppm) Copper (ppm) Viscosity @ 100°C							
Aluminum (ppm) Aluminum (ppm) Copper (ppm) Viscosity @ 100°C Canada and and and and and and and and an	Abnormal			E.	Abnormal		
Copper (ppm)       Chromium (ppm)         State       Copper (ppm)         Viscosity @ 100°C       Silicon (ppm)         State       Silicon (ppm)         Silicon (ppm)       <							
Aluminum (ppm) Aluminum (ppm) Anormal							
Aluminum (ppm) Aluminum (ppm) Anormal	28/22 19/22		28/23	15/24	28/22	22/6f	28/23
Abnormal Abnormal Abnormal Abnormal Abnormal Abnormal Copper (ppm) Viscosity @ 100°C Anormal Anormal Abnormal Copper (ppm) Copper			Junî	Aprl			Jun'
Abnormal Abnormal Abnormal Abnormal Copper (ppm) Viscosity @ 100°C Anormal Abnormal Copper (ppm) Copper (	Aluminum (ppm)	)				opm)	
Copper (ppm) Copper (ppm) Viscosity @ 100°C Constant	Severe				Severe		
Copper (ppm) Copper (ppm) Viscosity @ 100°C Costing @ 100°C					10-		
Copper (ppm) Silicon	Abnormal		1 	đ	Abnormal		
Copper (ppm) Copper (ppm) Viscosity @ 100°C Cost and a set of the set of t							
Copper (ppm) Silicon	5					2	
Copper (ppm) Severe Copper (ppm) Severe Severe Copper (ppm) Severe Se	b28/2 b28/22		n28/2.	or15/2	b28/2.	2/6 Bn	n28/2
Base         Base <td< td=""><td></td><td></td><td>μĻ</td><td>Ap</td><th></th><td></td><td></td></td<>			μĻ	Ap			
Abnormal         60         40           40         20         60         40           40         20         60         60         60           40         20         60         60         60           40         20         60         60         60           60         60         60         60         60           60         60         60         60         60           60         60         60         60         60           Viscosity @ 100°C         Base Number         60         60         60           4bnormal         60         60         60         60         60						1	
Wiscosity @ 100°C         Base Number           Anormal         Base Number           Anormal         Base Number	Approximat						
Abnormal         CZC/GEB         <							
ZZ/86249-         ZZ/86249- <t< td=""><td></td><td></td><td></td><td>dd</td><th>Abnormal</th><td></td><td></td></t<>				dd	Abnormal		
ZZ/862rep-J				2	20 -		
Viscosity @ 100°C Base Number			~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~			2	
Viscosity @ 100°C Base Number	.28/2.		128/2.	r15/2'	28/2	.Z/6Br	2/8/2
Abnormal         Base		c	Jur	Ap			
					.0 T		
	Abnormal		1	10 × 10			
	Base			Bm)	TELEVIS		
	Abnormal			10 6 17 4	1		
				N ase 2			
Feb.28/2 Aug.9/2 Jun.28/2 Feb.28/22 Jun.28/22	5			0	.0	2-	
Fet Au Au Au Au	28/2 19/22		128/2	r15/2'	28/2	.2/6Br	28/2
	Fet		Jur	Ap	뀰	AL	
VearCheck USA - 501 Madison Ave., Cary, NC 27513 HARNESS LL	ES0003007	Pooo		Apr 2024			

Laboratory C Sample No. : KFS0003997 : 19 Apr 2024 855 N JAMES CAMPBELL BLVD Received Lab Number : 06155261 Tested : 22 Apr 2024 COLUMBIA, TN : 22 Apr 2024 - Wes Davis US 38401 Unique Number : 10990684 Diagnosed Test Package : MOB 2 Contact: BEN HARNESS Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. ben@slectharness.com \* - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: (615)733-4480 Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) F:

Report Id: HARCOLTN [WUSCAR] 06155261 (Generated: 04/23/2024 00:26:38) Rev: 1

Submitted By: BILL ENYART

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