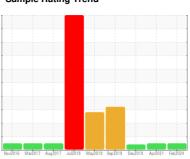


# **OIL ANALYSIS REPORT**

Sample Rating Trend



NORMAL



Machine Id **150-17** 

Component **Diesel Engine** 

PETRO CANADA DURON SHP 15W40 (--- 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

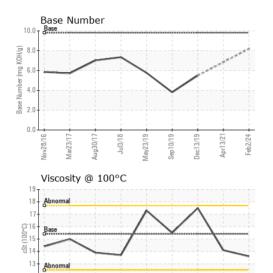
## **Fluid Condition**

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

GAL)		Nov2016 Ma	r2017 Aug2017 Jul2018	May2019 Sep2019 Dec2019 Apr20.	21 Feb2024	
SAMPLE INFOR	RMATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0089584	PCA0050384	LWI-000693
Sample Date		Client Info		02 Feb 2024	13 Apr 2021	13 Dec 2019
Machine Age	hrs	Client Info		248129	22054	201143
Oil Age	hrs	Client Info		10000	9054	10000
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	ABNORMAL
CONTAMINA	TION	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 META	LS	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>90	35	35	61
Chromium	ppm	ASTM D5185m	>4	1	2	2
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m	>2	0	<1	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>15	2	2	3
Lead	ppm	ASTM D5185m	>50	<1	2	1
Copper	ppm	ASTM D5185m	>55	1	2	1
Tin	ppm	ASTM D5185m	>4	<1	<1	0
Antimony	ppm	ASTM D5185m			0	0
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	2	14	0
Barium	ppm	ASTM D5185m	0	2	0	0
Molybdenum	ppm	ASTM D5185m	60	58	51	65
Manganese	ppm	ASTM D5185m	0	0	<1	0
Magnesium	ppm	ASTM D5185m	1010	925	924	1048
Calcium	ppm	ASTM D5185m	1070	1007	1256	1140
Phosphorus	ppm	ASTM D5185m	1150	951	1092	1081
Zinc	ppm	ASTM D5185m	1270	1207	1261	1282
Sulfur	ppm	ASTM D5185m	2060	2879	2788	
Lithium	ppm	ASTM D5185m				0
CONTAMINA	NTS	method	limit/base	current	history1	history2
Silicon	ppm		>15	5	4	6
Sodium	ppm	ASTM D5185m		2	4	12
Potassium	ppm	ASTM D5185m	>20	1	1	0
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>6	1.4	2.1	
Nitration	Abs/cm	*ASTM D7624	>20	9.3	11.4	15
Sulfation	Abs/.1mm	*ASTM D7415	>30	21.2	24.6	



## **OIL ANALYSIS REPORT**



FLUID DEGRAD	DATION	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	16.2	18.7	16
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	8.2		5.49
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	
Precipitate	scalar	*Visual	NONE	NONE	NONE	
Silt	scalar	*Visual	NONE	NONE	NONE	
Debris	scalar	*Visual	NONE	NONE	NONE	
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	
Appearance	scalar	*Visual	NORML	NORML	NORML	
Odor	scalar	*Visual	NORML	NORML	NORML	
<b>Emulsified Water</b>	scalar	*Visual	>0.2	NEG	NEG	
Free Water	scalar	*Visual		NEG	NEG	
FLUID PROPE	RTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.6	14.1	<b>△</b> 17.5

RAPHS							
n (ppm)							Lead (ppm)
re							80 Severe 80 - 1
ormal							E 60 Abnormal
					\		20
Mar23/17	Jul3/18 +	May23/19 +	Sep10/19	Dec13/19 +	Apr13/21-	Feb2/24	Mar23/17 Aug30/17 Jul3/18 Jul3/18 Sep10/19 Sep10/19 Feb2/24 Feb2/24 Feb2/24 Aug3/21 Feb2/24
minum (p	pm)						Chromium (ppm)
re		į	-				8 Severe
ormal							E Abnormal
							2
-717	- 81/	-61/	-61/	-61/	3/21	/24 <b> </b>	ar23/17 1ug30/17 1ug30/17 pp10/19 -
Mar23 Aug30	Jul3	May23	Sep10	Dec13	Apr13	Feb2	Mar23/17. Mar23/17. Aug30/17. Jul3/18 May23/19. Sep10/19 Peb2/24.
oper (ppm	1)						Silicon (ppm)
are .							30 Severe
							E 20 - Abnormal
							10-
Mar23/17	Jul3/18	/lay23/19	Sep10/19	Dec13/19 -	Apr13/21	Feb2/24	May28/16
	.00°C	_					Base Number
ormal	:			:			(S) 10.0 T Base (S) The state of a first to the first to
							E 60
		/					5
ormal	_						4.0 Nymu 2.0
	Jul3/18	May23/19	Sep10/19	Dec13/19	Apr13/21	Feb2/24	Mov28/18
	minum (ppm)  re	minum (ppm)  we annual	minum (ppm)  We 23/17  We				





Laboratory Sample No.

Lab Number : 06082225 Unique Number : 10869670

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : PCA0089584 Received : 07 Feb 2024 : 07 Feb 2024

**Tested** Diagnosed : 07 Feb 2024 - Wes Davis

Test Package: MOB 1 (Additional Tests: TBN)

To discuss this sample report, contact Customer Service at 1-800-237-1369. \* - 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)

**GE MARSHALL EXCAVATION** 

1351 JOLIET RD VALPARAISO, IN US 46385

Contact: MARK STEFFEL

mark.steffel@gemarshall.com

T: F:

Report Id: GEMVAL [WUSCAR] 06082225 (Generated: 02/07/2024 16:47:22) Rev: 1

Contact/Location: MARK STEFFEL - GEMVAL