

# **OIL ANALYSIS REPORT**

Sample Rating Trend



Machine Id

#### 188684 Component Diesel Engine Fluid PETRO CANADA DURON SHP 10W30 (--- QTS)

# 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.

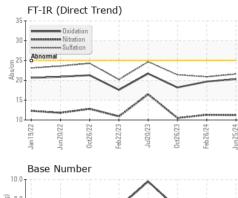
#### Fluid Condition

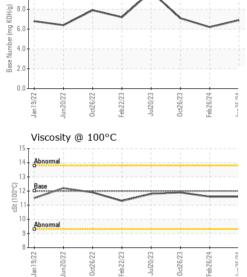
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0128955	PCA0118893	PCA0110445
Sample Date		Client Info		25 Jun 2024	26 Feb 2024	26 Oct 2023
Machine Age	mls	Client Info		80946	73765	66928
Oil Age	mls	Client Info		0	0	0
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	MARGINAL
CONTAMINAT	ION	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 METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	34	27	37
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>4	0	0	<1
Titanium	ppm	ASTM D5185m		<1	0	<1
Silver	ppm	ASTM D5185m	>3	0	0	<1
Aluminum	ppm	ASTM D5185m	>20	4	3	3
Lead	ppm	ASTM D5185m	>40	0	0	<1
Copper	ppm	ASTM D5185m	>330	2	2	3
Tin	ppm	ASTM D5185m	>15	0	<1	<1
Vanadium	ppm	ASTM D5185m		0	<1	<1
Cadmium	ppm	ASTM D5185m		0	0	<1
	ppm			U	0	
ADDITIVES	ppm	method	limit/base	current	history1	history2
			limit/base	-	-	
ADDITIVES	ppm ppm	method ASTM D5185m		current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	2	current 2	history1 3	history2 14
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m	2 0 50	current 2 0	history1 3 0	history2 14 <1
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	current 2 0 62	history1 3 0 58	history2 14 <1 69
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0	current 2 0 62 0	history1 3 0 58 <1	history2 14 <1 69 <1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950	current 2 0 62 0 910	history1 3 0 58 <1 839	history2 14 <1 69 <1 869
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	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	current           2           0           62           0           910           1078	history1 3 0 58 <1 839 1055	history2 14 <1 69 <1 869 1233
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           62           0           910           1078           1166	history1 3 0 58 <1 839 1055 859	history2 14 <1 69 <1 869 1233 989
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 0 950 1050 995 1180	current           2           0           62           0           910           1078           1166           1265	history1 3 0 58 <1 839 1055 859 1058	history2         14         <1         69         <1         869         1233         989         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 62 0 910 1078 1166 1265 3030	history1 3 0 58 <1 839 1055 859 1058 3087	history2         14         <1         69         <1         869         1233         989         1228         3028
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           62           0           910           1078           1166           1265           3030           current	history1 3 0 58 <1 839 1055 859 1058 3087 history1	history2         14         <1         69         <1         869         1233         989         1228         3028         history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 <b>limit/base</b> >25	current           2           0           62           0           910           1078           1166           1265           3030           current           8	history1           3           0           58           <1           839           1055           859           1058           3087           history1           7	history2         14         <1         69         <1         869         1233         989         1228         3028         history2         9
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>limit/base</b> >25	current           2           0           62           0           910           1078           1166           1265           3030           current           8           13           7           current	history1           3           0           58           <1           839           1055           859           1058           3087           history1           7           31	history2         14         <1         69         <1         869         1233         989         1228         3028         history2         9         173         83         history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	2 0 50 950 1050 995 1180 2600 <b>limit/base</b> >25 >20	current           2           0           62           0           910           1078           1166           1265           3030           current           8           13           7           current           0.4	history1         3         0         58         <1         839         1055         859         1058         3087         history1         7         31         11         history1         0.4	history2         14         <1         69         <1         869         1233         989         1228         3028         history2         9         173         83         history2         0.6
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >25 >20 limit/base >3	current           2           0           62           0           910           1078           1166           1265           3030           current           8           13           7           current           0.4           11.2	history1         3         0         58         <1         839         1055         859         1058         3087         history1         7         31         11         history1	history2         14         <1         69         <1         869         1233         989         1228         3028         history2         9         173         83         history2         0.6         10.5
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus 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 limit/base >25 >20 limit/base >3	current           2           0           62           0           910           1078           1166           1265           3030           current           8           13           7           current           0.4	history1         3         0         58         <1         839         1055         859         1058         3087         history1         7         31         11         history1         0.4	history2         14         <1         69         <1         869         1233         989         1228         3028         history2         9         173         83         history2         0.6
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm <b>TS</b> ppm ppm ppm	method           ASTM D5185m	2 0 50 950 1050 995 1180 2600 <i>imit/base</i> >25 >20 <i>imit/base</i>	current           2           0           62           0           910           1078           1166           1265           3030           current           8           13           7           current           0.4           11.2	history1         3         0         58         <1         839         1055         859         1058         3087         history1         7         31         11         history1         0.4         11.3	history2         14         <1         69         <1         869         1233         989         1228         3028         history2         9         ▲ 173         ▲ 83         history2         0.6         10.5
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 <b>TS</b> ppm ppm ppm	method           ASTM D5185m           ASTM D5185m	2 0 50 950 1050 995 1180 2600 <b>imit/base</b> >25 <b>imit/base</b> >3 >20 >30	current           2           0           62           0           910           1078           1166           1265           3030           current           8           13           7           current           0.4           11.2           21.6	history1         3         0         58         <1         839         1055         859         1058         3087         history1         7         31         11         history1         0.4         11.3         20.9	history2         14         <1         69         <1         869         1233         989         1228         3028         history2         9         ▲ 173         ▲ 83         history2         0.6         10.5         21.4



# **OIL ANALYSIS REPORT**





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VISUAL		method	limit/base	current	hist	tory1		histor	y2	
White Metal	scalar	*Visual	NONE	NONE	NON	E	Ν	IONE		
Yellow Metal	scalar	*Visual	NONE	NONE	NON	NONE		NONE		
Precipitate	scalar	*Visual	NONE	NONE	NON	NONE		NONE		
Silt	scalar	*Visual	NONE	NONE	NON	NONE		NONE		
Debris	scalar	*Visual	NONE	NONE	NON	NONE		NONE		
Sand/Dirt	scalar	*Visual	NONE	NONE	NON	NONE		NONE		
Appearance	scalar	*Visual	NORML	NORML	NOR	NORML		NORML		
Odor	scalar	*Visual	NORML	NORML	NOR	ML	NORML			
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG		NEG		
Free Water	scalar	*Visual		NEG	NEG	NEG		NEG		
FLUID PROPE	ERTIES	method	limit/base	current	hist	history1		history2		
/isc @ 100°C	cSt	ASTM D445	12.00	11.6	11.6			1.9		
GRAPHS										
Iron (ppm)				Lead (ppm)						
Severe			100	Severe						
- 0			80	-						
Abnormal			Ed 40	Abnormal						
	~		40	† <b>0</b>		1	1	1		
			20							
9/22	eb22/23 - Jul20/23 -	0ct26/23 -		9/22	0ct26/22 -	Jul20/23 -	6/23	6/24	V Cr	
Jan 19/22 Jun 20/22 Oct26/22	Feb22/23 Jul20/23	0ct26/23 Feb26/24	Jun25/24	Jan 19/22 Jun 20/22	Oct2 Feb2;	Jul2(	0ct26/23	Feb26/24	Lun JE / JA	
Aluminum (ppm)				Chromium (	(ppm)					
T			50	T3						
Severe			40	Severe						
Ab			<sup>30</sup>	Ab						
- donormal			<sup>2</sup> 20	Abnormal						
	$\checkmark$		10	•						
22	23+	23+	24		22	73	/23	24.	10	
Jan 1 9/22 Jun 2 0/22 Oct2 6/22	Feb22/23 Jul20/23	0ct26/23 Feb26/24	Jun25/24	Jan 19/22 Jun 20/22	0ct26/22 =eb22/23	Jul20/23	0ct26/23	Feb 26/24	175./24	
Copper (ppm)			7	Silicon (ppm			-			
Severe			80		.,					
			60							
			튭.40							
)+				Abnormal						
			20				~		_	
22	23	23	24	22	22	23	23	24	VC	
Jan 19/22 Jun 20/22 Oct26/22	Feb22/23 Jul20/23	0ct26/23 Feb26/24	Jun25/24	Jan 19/22 Jun 20/22	0ct26/22 Feb22/23	Jul20/23	0ct26/23	Feb 26/24	17E.72.4	
Viscosity @ 100°	_	E	7	Base Numb		-	0	Ľ.	-	
	-									
Abnormal	adaaaada		(b)H03 8.0 (b)H03 (b)H03 (b) (b)H03 (b)H03 (b) (b)H03 (b)H03 (b)H		~					
Base			ළි 6.0 ක					~		
Abnormal			- 4.0	+						
Abnormal			a 2.0							
22 5	23	23	0.0	22	22	23	23	24	74	
Jan 19/22 Jun 20/22 Oct 26/22	Feb22/23 Jul20/23	0ct26/23 Feb26/24	Jun25/24	Jan 19/22 Jun 20/22	0ct26/22 Feb22/23	Jul20/23	0ct26/23	Feb26/24	12E./2.4	
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 Unique Number
 : 11113501
 Diagnosed
 : 09 Jul 2024 - Wes Davis

 Certificate L2367
 Test Package
 : MOB 1 (Additional Tests: TBN)
 Con

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

 \* - 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)

T: *M 106:2012)* F: (201)528-7053

mlongette@millertransgroup.com

Contact: MIKE LONGETTE

Report Id: MILRUT [WUSCAR] 06230008 (Generated: 07/09/2024 10:34:13) Rev: 1

Laboratory Sample No. Lab Number

Contact/Location: MIKE LONGETTE - MILRUT

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