

## **OIL ANALYSIS REPORT**



#### Machine Id **406** Component **Diesel Engine** Fluid **PRIMROSE 790 Syn-O-Gen 8 (--- 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.

SAMPLE INFORM	<b>1ATION</b>	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0925556	WC0584588	
Sample Date		Client Info		29 Mar 2024	16 Nov 2023	
Machine Age	mls	Client Info		493084	480205	
Oil Age	mls	Client Info		12000	13000	
Oil Changed		Client Info		Changed	Changed	
Sample Status				NORMAL	NORMAL	
CONTAMINATION	٧	method	limit/base	current	history1	history2
Fuel		WC Method	>2.0	<1.0	<1.0	
Water		WC Method	>0.2	NEG	NEG	
Glycol		WC Method		NEG	NEG	
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	28	40	
Chromium	ppm	ASTM D5185m	>20	<1	<1	
Nickel	ppm		>4	1	2	
Titanium	ppm	ASTM D5185m		<1	<1	
Silver	ppm	ASTM D5185m	>3	0	0	
Aluminum	ppm	ASTM D5185m	>20	10	12	
Lead	ppm	ASTM D5185m	>40	0	<1	
Copper	ppm	ASTM D5185m	>330	2	4	
Tin	ppm	ASTM D5185m	>15	<1	<1	
Vanadium	ppm	ASTM D5185m		<1	0	
Cadmium	ppm	ASTM D5185m		0	0	
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 334	history1 415	history2
	ppm ppm		limit/base			
Boron		ASTM D5185m	limit/base	334	415	
Boron Barium	ppm	ASTM D5185m ASTM D5185m	limit/base	334 0	415 0	
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	334 0 89	415 0 101	
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	334 0 89 <1	415 0 101 <1	
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	334 0 89 <1 454	415 0 101 <1 470	
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	334 0 89 <1 454 1518	415 0 101 <1 470 1694	  
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	334 0 89 <1 454 1518 1104	415 0 101 <1 470 1694 1217	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	334 0 89 <1 454 1518 1104 1365	415 0 101 <1 470 1694 1217 1448	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		334 0 89 <1 454 1518 1104 1365 4128	415 0 101 <1 470 1694 1217 1448 4164	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	334 0 89 <1 454 1518 1104 1365 4128 current	415 0 101 <1 470 1694 1217 1448 4164 history1	     history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b>	limit/base	334 0 89 <1 454 1518 1104 1365 4128 current 15	415 0 101 <1 470 1694 1217 1448 4164 history1 21	     history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	334 0 89 <1 454 1518 1104 1365 4128 current 15 4	415 0 101 <1 470 1694 1217 1448 4164 <b>history1</b> 21 3	      history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >25 >20	334 0 89 <1 454 1518 1104 1365 4128 <u>current</u> 15 4 2	415 0 101 <1 470 1694 1217 1448 4164 <b>history1</b> 21 3 5	     history2  
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >25 >20 limit/base >3	334 0 89 <1 454 1518 1104 1365 4128 <b>current</b> 15 4 2 2	415 0 101 <1 470 1694 1217 1448 4164 <b>history1</b> 21 3 5 <b>history1</b>	     history2   history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm	ASTM D5185m ASTM D5185m	limit/base >25 >20 limit/base >3	334 0 89 <1 454 1518 1104 1365 4128 <u>current</u> 15 4 2 2 <u>current</u> 0.9	415 0 101 <1 470 1694 1217 1448 4164 <b>history1</b> 21 3 5 <b>history1</b> 1.1	     history2   history2
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	ASTM D5185m ASTM D5185m	limit/base >25 >20 limit/base >3 >20	334 0 89 <1 454 1518 1104 1365 4128 <i>current</i> 15 4 2 <i>current</i> 0.9 9.7	415 0 101 <1 470 1694 1217 1448 4164 history1 21 3 5 history1 1.1 9.4	      history2   history2
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	ASTM D5185m ASTM D5185m	limit/base >25 >20 limit/base >3 >20 >30	334 0 89 <1 454 1518 1104 1365 4128 <b>current</b> 15 4 2 <b>current</b> 0.9 9.7 24.0	415 0 101 <1 470 1694 1217 1448 4164 <b>history1</b> 21 3 5 <b>history1</b> 1.1 9.4 23.9	      history2  history2  history2
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	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	limit/base >25 >20 limit/base >3 >20 >30 limit/base	334 0 89 <1 454 1518 1104 1365 4128 <b>current</b> 15 4 2 <b>current</b> 0.9 9.7 24.0	415 0 101 <1 470 1694 1217 1448 4164 <b>history1</b> 21 3 5 <b>history1</b> 1.1 9.4 23.9 <b>history1</b>	      history2  history2  history2  history2



# **OIL ANALYSIS REPORT**

Vellow Metal     scalar     *Visual     NONE     NONE       Yellow Metal     scalar     *Visual     NONE     NONE	
Suffation     Yellow Metal     scalar     *Visual     NONE     NONE       Precipitate     scalar     *Visual     NONE     NONE     NONE	
Precipitate scalar *Visual NONE NONE NONE	
Debris scalar *Visual NONE NONE NONE	
1/v/1/	
Emulsified Water scalar *Visual >0.2 NEG NEG	
base Number	
	history2
GRAPHS	
E 2.0 Ferrous Alloys	
0.0	
SC 35 100 100 100 100 100 100 100 100 100 10	
25	
Viscosity @ 100°C	
15	
13 - Abnormal 10 -	
Wev16/23	
Non-ferrous Metals	
Copper	
2 8 a a a a a a a a a a a a a a a a a a	
E.	
a. 4	
2	
124	
116	
Nov16/23	
Viscosity @ 100°C Base Number	
Viscosity @ 100°C Base Number	
Viscosity @ 100°C Base Number Base Number	
Viscosity @ 100°C Base Number Base Number	
Viscosity @ 100°C	3/24
Viscosity @ 100°C Base Number Base Number	Mar29/24
Viscosity @ 100°C	Mar29/24
Viscosity @ 100°C	TLING - MCCB
Viscosity @ 100°C Viscosity @ 100°C Viscosity @ 100°C Viscosity @ 100°C Viscosity @ 100°C Viscosity @ 100°C Viscosity @ 100°C Base Number Output of the second of	TLING - MCCB LAND AVE
Viscosity @ 100°C Viscosity @ 1	TLING - MCCB
Viscosity @ 100°C Viscosity @ 1	<b>TLING - MCCB</b> LAND AVE BORO, KY
Viscosity @ 100°C Viscosity @ 100°C Viscosity @ 100°C Viscosity @ 100°C Viscosity @ 100°C Viscosity @ 100°C Base Number Of the second s	TLING - MCCB LAND AVE BORO, KY US 40965 FIM GOINS nccbw.com
Viscosity @ 100°C Viscosity @ 100°C Viscosity @ 100°C Base Number Base Number Base Number Base Number Base Number Base Number Base Number Base Number	<b>TLING - MCCB</b> LAND AVE BORO, KY US 40965 FIM GOINS

Report Id: MIDMIDKY [WUSCAR] 06138346 (Generated: 04/05/2024 21:26:05) Rev: 1

Submitted By: TIM GOINS