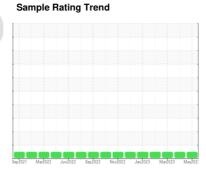


# **OIL ANALYSIS REPORT**







## DIAGNOSIS

#### Recommendation

Resample at the next service interval to monitor. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

#### Wear

All component wear rates are normal.

### Contamination

There is no indication of any contamination in the

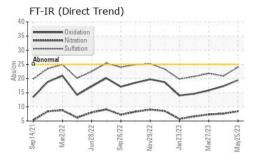
#### **Fluid Condition**

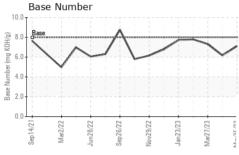
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

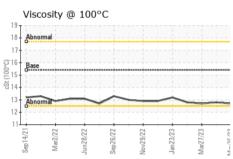
Sample Number		May202:	Z NovŽ02Z JanŽ023 MarŽ0	r2022 Jun2022 Sep202	Sep 2021 Ma	GAL)	PLUS EC 15W40 (
Sample Date	story1 history	history1	current	limit/base	method	MATION	SAMPLE INFORM
Oil Age         hrs         Client Info         0         0           Oil Changed         Client Info         N/A         N/A         N/A           Sample Status         Normal         Normal         Normal           CONTAMINATION         method         limit/base         current         his           Fuel         WC Method         >5         <1.0         <1.0           Water         WC Method         >0.2         NEG         NEG           Glycol         WC Method         NEG         NEG           WEAR METALS         method         limit/base         current         his           Iron         ppm         ASTM D5185m         >100         4         4           Chromium         ppm         ASTM D5185m         >20         0         0           Wickel         ppm         ASTM D5185m         >2         0         0           Silver         ppm         ASTM D5185m         >2         0         0           Silver         ppm         ASTM D5185m         >2         0         0           Lead         ppm         ASTM D5185m         >2         0         0           Lead         ppm         ASTM D51		PCA0096227 26 Apr 2023					·
Contained   Client Info   N/A   N/	0	0	0		Client Info	hrs	•
NORMAL   NORMAL   NORMAL	0	0	0		Client Info	hrs	Oil Age
CONTAMINATION	N/A	N/A	N/A		Client Info		Oil Changed
Fuel   WC Method   S5	MAL NORMAL	NORMAL	NORMAL				Sample Status
Water         WC Method         NEG         NEG           Glycol         WC Method         NEG         NEC           WEAR METALS         method         limit/base         current         his           Iron         ppm         ASTM D5185m         >100         4         4           Chromium         ppm         ASTM D5185m         >20         0         0           Nickel         ppm         ASTM D5185m         >2         0         0           Nickel         ppm         ASTM D5185m         >2         0         0           Silver         ppm         ASTM D5185m         >2         0         0           Silver         ppm         ASTM D5185m         >2         0         0           Lead         ppm         ASTM D5185m         >25         0         0         0           Lead         ppm         ASTM D5185m         >40         <1	story1 history	history1	current	limit/base	method	ON	CONTAMINATI
WEAR METALS	0 <1.0	<1.0	<1.0	>5	WC Method		Fuel
WEAR METALS         method         limit/base         current         his           Iron         ppm         ASTM D5185m         >100         4         4           Chromium         ppm         ASTM D5185m         >20         0         0           Nickel         ppm         ASTM D5185m         >2         0         0           Silver         ppm         ASTM D5185m         >2         0         0           Aluminum         ppm         ASTM D5185m         >2         0         0           Aluminum         ppm         ASTM D5185m         >2         0         0           Lead         ppm         ASTM D5185m         >20         0         0           Lead         ppm         ASTM D5185m         >33         2         2         1         -1 </td <td>G NEG</td> <td>NEG</td> <th>NEG</th> <td>&gt;0.2</td> <td>WC Method</td> <td></td> <td>Water</td>	G NEG	NEG	NEG	>0.2	WC Method		Water
Iron	G NEG	NEG	NEG		WC Method		Glycol
Chromium         ppm         ASTM D5185m         >20         0         0           Nickel         ppm         ASTM D5185m         >2         0         0           Titanium         ppm         ASTM D5185m         >2         0         0           Silver         ppm         ASTM D5185m         >2         0         0           Aluminum         ppm         ASTM D5185m         >25         0         0           Lead         ppm         ASTM D5185m         >40         <1	story1 history	history1	current	limit/base	method	S	WEAR METALS
Nickel	3	4	4	>100	ASTM D5185m	ppm	-
Titanium	<1		_				
Silver	0					• •	
Aluminum         ppm         ASTM D5185m         >25         0         0           Lead         ppm         ASTM D5185m         >40         <1	0						
Lead	0		-			• • • • • • • • • • • • • • • • • • • •	
Copper         ppm         ASTM D5185m         >330         3         2           Tin         ppm         ASTM D5185m         >15         0         0           Vanadium         ppm         ASTM D5185m         0         0           Cadmium         ppm         ASTM D5185m         0         0           ADDITIVES         method         limit/base         current         his           Boron         ppm         ASTM D5185m         0         0           Barium         ppm         ASTM D5185m         0         0           Molybdenum         ppm         ASTM D5185m         103         96           Manganese         ppm         ASTM D5185m         103         96           Manganesium         ppm         ASTM D5185m         441         419           Calcium         ppm         ASTM D5185m         1397         1299           Phosphorus         ppm         ASTM D5185m         1200         913         900           Zinc         ppm         ASTM D5185m         1300         1132         112           Sulfur         ppm         ASTM D5185m         2957         286           Solium         ppm	2		_				
Tin         ppm         ASTM D5185m         >15         0         0           Vanadium         ppm         ASTM D5185m         0         0           Cadmium         ppm         ASTM D5185m         0         0           ADDITIVES         method         limit/base         current         his           Boron         ppm         ASTM D5185m         206         252           Barium         ppm         ASTM D5185m         0         0           Molybdenum         ppm         ASTM D5185m         103         96           Manganese         ppm         ASTM D5185m         103         96           Magnesium         ppm         ASTM D5185m         441         419           Calcium         ppm         ASTM D5185m         1397         1296           Phosphorus         ppm         ASTM D5185m         1200         913         900           Zinc         ppm         ASTM D5185m         1300         1132         1122           Sulfur         ppm         ASTM D5185m         >25         6         5           CONTAMINANTS         method         limit/base         current         his           Silicon         ppm <td>0</td> <td></td> <th></th> <td></td> <td></td> <td></td> <td></td>	0						
Vanadium         ppm         ASTM D5185m         0         0           Cadmium         ppm         ASTM D5185m         0         0           ADDITIVES         method         limit/base         current         his           Boron         ppm         ASTM D5185m         206         252           Barium         ppm         ASTM D5185m         0         0           Molybdenum         ppm         ASTM D5185m         103         96           Manganese         ppm         ASTM D5185m         441         419           Calcium         ppm         ASTM D5185m         1397         1298           Phosphorus         ppm         ASTM D5185m         1200         913         900           Zinc         ppm         ASTM D5185m         1300         1132         1122           Sulfur         ppm         ASTM D5185m         2957         286           CONTAMINANTS         method         limit/base         current         his           Solicon         ppm         ASTM D5185m         >25         6         5           Sodium         ppm         ASTM D5185m         >20         4         4           INFRA-RED         me	3		_				
Cadmium         ppm         ASTM D5185m         0         0           ADDITIVES         method         limit/base         current         his           Boron         ppm         ASTM D5185m         206         252           Barium         ppm         ASTM D5185m         0         0           Molybdenum         ppm         ASTM D5185m         103         96           Manganese         ppm         ASTM D5185m         -1         -1           Magnesium         ppm         ASTM D5185m         441         419           Calcium         ppm         ASTM D5185m         1397         129           Phosphorus         ppm         ASTM D5185m         1200         913         900           Zinc         ppm         ASTM D5185m         1300         1132         1120           Sulfur         ppm         ASTM D5185m         2957         286           CONTAMINANTS         method         limit/base         current         his           Silicon         ppm         ASTM D5185m         >25         6         5           Sodium         ppm         ASTM D5185m         5         7           Potassium         pm         A	0		-	>15			
ADDITIVES         method         limit/base         current         his           Boron         ppm         ASTM D5185m         206         252           Barium         ppm         ASTM D5185m         0         0           Molybdenum         ppm         ASTM D5185m         103         96           Manganese         ppm         ASTM D5185m         -1         -1           Magnesium         ppm         ASTM D5185m         441         419           Calcium         ppm         ASTM D5185m         1397         1299           Phosphorus         ppm         ASTM D5185m         1300         1132         1123           Sulfur         ppm         ASTM D5185m         2957         286           CONTAMINANTS         method         limit/base         current         his           Silicon         ppm         ASTM D5185m         >25         6         5           Sodium         ppm         ASTM D5185m         >25         6         5           Potassium         ppm         ASTM D5185m         >20         4         4           INFRA-RED         method         limit/base         current         his           Soot %	0		-				
Boron	0					ppm	
Barium         ppm         ASTM D5185m         0         0           Molybdenum         ppm         ASTM D5185m         103         96           Manganese         ppm         ASTM D5185m         <1		history1		limit/base			
Molybdenum         ppm         ASTM D5185m         103         96           Manganese         ppm         ASTM D5185m         <1						ppm	
Manganese         ppm         ASTM D5185m         <1         <1           Magnesium         ppm         ASTM D5185m         441         419           Calcium         ppm         ASTM D5185m         1397         1299           Phosphorus         ppm         ASTM D5185m         1200         913         900           Zinc         ppm         ASTM D5185m         1300         1132         1123           Sulfur         ppm         ASTM D5185m         2957         286           CONTAMINANTS         method         limit/base         current         his           Silicon         ppm         ASTM D5185m         >25         6         5           Sodium         ppm         ASTM D5185m         5         7           Potassium         ppm         ASTM D5185m         >20         4         4           INFRA-RED         method         limit/base         current         his           Soot %         %         *ASTM D7844         >3         0.1         0.1           Nitration         Abs/cm         *ASTM D7624         >20         8.4         7.6           Sulfation         Abs/.1mm         *ASTM D7415         >30         24.0	0		-				
Magnesium         ppm         ASTM D5185m         441         419           Calcium         ppm         ASTM D5185m         1397         1298           Phosphorus         ppm         ASTM D5185m         1200         913         900           Zinc         ppm         ASTM D5185m         1300         1132         1123           Sulfur         ppm         ASTM D5185m         2957         286           CONTAMINANTS         method         limit/base         current         his           CONTAMINANTS         method         limit/base         current         his           Solium         ppm         ASTM D5185m         >25         6         5           Solium         ppm         ASTM D5185m         5         7           Potassium         ppm         ASTM D5185m         >20         4         4           INFRA-RED         method         limit/base         current         his           Soot %         %         *ASTM D7844         >3         0.1         0.1           Nitration         Abs/cm         *ASTM D7624         >20         8.4         7.6           Sulfation         Abs/cm         *ASTM D7415 <td>100</td> <td></td> <th></th> <td></td> <td></td> <td>• •</td> <td>,</td>	100					• •	,
Calcium         ppm         ASTM D5185m         1397         1298           Phosphorus         ppm         ASTM D5185m         1200         913         900           Zinc         ppm         ASTM D5185m         1300         1132         1123           Sulfur         ppm         ASTM D5185m         2957         286           CONTAMINANTS         method         limit/base         current         his           Soliicon         ppm         ASTM D5185m         >25         6         5           Sodium         ppm         ASTM D5185m         5         7           Potassium         ppm         ASTM D5185m         5         7           Potassium         ppm         ASTM D5185m         >20         4         4           INFRA-RED         method         limit/base         current         his           Soot %         %         *ASTM D7844         >3         0.1         0.1           Nitration         Abs/cm         *ASTM D7624         >20         8.4         7.6           Sulfation         Abs/.1mm         *ASTM D7415         >30         24.0         20.9	<1						-
Phosphorus         ppm         ASTM D5185m         1200         913         900           Zinc         ppm         ASTM D5185m         1300         1132         1123           Sulfur         ppm         ASTM D5185m         2957         286           CONTAMINANTS         method         limit/base         current         his           Silicon         ppm         ASTM D5185m         >25         6         5           Sodium         ppm         ASTM D5185m         5         7           Potassium         ppm         ASTM D5185m         >20         4         4           INFRA-RED         method         limit/base         current         his           Soot %         %         *ASTM D7844         >3         0.1         0.1           Nitration         Abs/cm         *ASTM D7624         >20         8.4         7.6           Sulfation         Abs/.1mm         *ASTM D7415         >30         24.0         20.9							J
Zinc         ppm         ASTM D5185m         1300         1132         1123           Sulfur         ppm         ASTM D5185m         2957         2866           CONTAMINANTS         method         limit/base         current         his           Silicon         ppm         ASTM D5185m         >25         6         5           Sodium         ppm         ASTM D5185m         5         7           Potassium         ppm         ASTM D5185m         >20         4         4           INFRA-RED         method         limit/base         current         his           Soot %         %         *ASTM D7844         >3         0.1         0.1           Nitration         Abs/cm         *ASTM D7624         >20         8.4         7.6           Sulfation         Abs/.1mm         *ASTM D7415         >30         24.0         20.9           FLUID DEGRADATION         method         limit/base         current         his							
Sulfur         ppm         ASTM D5185m         2957         2866           CONTAMINANTS         method         limit/base         current         his           Silicon         ppm         ASTM D5185m         >25         6         5           Sodium         ppm         ASTM D5185m         5         7           Potassium         ppm         ASTM D5185m         >20         4         4           INFRA-RED         method         limit/base         current         his           Soot %         %         *ASTM D7844         >3         0.1         0.1           Nitration         Abs/cm         *ASTM D7624         >20         8.4         7.6           Sulfation         Abs/.1mm         *ASTM D7415         >30         24.0         20.9           FLUID DEGRADATION         method         limit/base         current         his						• •	·
CONTAMINANTS         method         limit/base         current         his           Silicon         ppm         ASTM D5185m         >25         6         5           Sodium         ppm         ASTM D5185m         5         7           Potassium         ppm         ASTM D5185m         >20         4         4           INFRA-RED         method         limit/base         current         his           Soot %         %         *ASTM D7844         >3         0.1         0.1           Nitration         Abs/cm         *ASTM D7624         >20         8.4         7.6           Sulfation         Abs/.1mm         *ASTM D7415         >30         24.0         20.9           FLUID DEGRADATION         method         limit/base         current         his		1123 2864		1300			
Silicon         ppm         ASTM D5185m         >25         6         5           Sodium         ppm         ASTM D5185m         5         7           Potassium         ppm         ASTM D5185m         >20         4         4           INFRA-RED         method         limit/base         current         his           Soot %         %         *ASTM D7844         >3         0.1         0.1           Nitration         Abs/cm         *ASTM D7624         >20         8.4         7.6           Sulfation         Abs/.1mm         *ASTM D7415         >30         24.0         20.9           FLUID DEGRADATION         method         limit/base         current         his		history1		limit/hase			
Sodium         ppm         ASTM D5185m         5         7           Potassium         ppm         ASTM D5185m         >20         4         4           INFRA-RED         method         limit/base         current         his           Soot %         %         *ASTM D7844         >3         0.1         0.1           Nitration         Abs/cm         *ASTM D7624         >20         8.4         7.6           Sulfation         Abs/.1mm         *ASTM D7415         >30         24.0         20.9           FLUID DEGRADATION         method         limit/base         current         his	5 5						
Potassium         ppm         ASTM D5185m         >20         4         4           INFRA-RED         method         limit/base         current         his           Soot %         %         *ASTM D7844         >3         0.1         0.1           Nitration         Abs/cm         *ASTM D7624         >20         8.4         7.6           Sulfation         Abs/.1mm         *ASTM D7415         >30         24.0         20.9           FLUID DEGRADATION         method         limit/base         current         his	6			720			
Soot %         %         *ASTM D7844         >3         0.1         0.1           Nitration         Abs/cm         *ASTM D7624         >20         8.4         7.6           Sulfation         Abs/.1mm         *ASTM D7415         >30         24.0         20.9           FLUID DEGRADATION         method         limit/base         current         his	3			>20			
Soot %         %         *ASTM D7844         >3         0.1         0.1           Nitration         Abs/cm         *ASTM D7624         >20         8.4         7.6           Sulfation         Abs/.1mm         *ASTM D7415         >30         24.0         20.9           FLUID DEGRADATION         method         limit/base         current         his	story1 history	history1	current	limit/base	method		INFRA-RED
Nitration         Abs/cm         *ASTM D7624         >20         8.4         7.6           Sulfation         Abs/.1mm         *ASTM D7415         >30         24.0         20.9           FLUID DEGRADATION         method         limit/base         current         his	0.1		0.1		*ASTM D7844	%	
Sulfation Abs/.1mm *ASTM D7415 >30 24.0 20.9 FLUID DEGRADATION method limit/base current his	7.3	7.6		>20	*ASTM D7624	Abs/cm	Nitration
		20.9				Abs/.1mm	
Oxidation	story1 history	history1	current	limit/base	method	ATION	FLUID DEGRAD
	3 15.8	17.3	19.4	>25	*ASTM D7414	Abs/.1mm	Oxidation
		6.17					



# **OIL ANALYSIS REPORT**



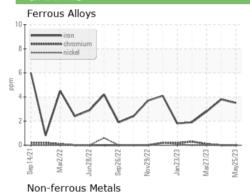




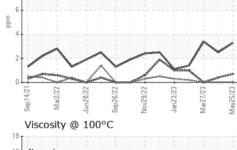
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	LIGHT	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	LIGHT	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
<b>Emulsified Water</b>	scalar	*Visual	>0.2	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG

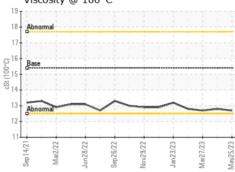
FLUID PROPI	ERTIES	method				history2
Visc @ 100°C	cSt	ASTM D445	15.4	12.7	12.8	12.7

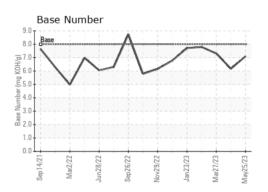
## **GRAPHS**















Certificate 12367

Laboratory Sample No. Unique Number : 10498984 Test Package : IND 2

: PCA0096201 Lab Number : 05864519

: WearCheck USA - 501 Madison Ave., Cary, NC 27513

Received **Tested** Diagnosed

: 05 Jun 2023 : 06 Jun 2023

: 06 Jun 2023 - Wes Davis To discuss this sample report, contact Customer Service at 1-800-237-1369.

1000 WELLS ISLAND RD SHREVEPORT, LA US 71107 Contact: BRAD GORDON bgordon@deltafuel.com T: (318)780-3921

**DELTA FUEL COMPANY** 

\* - 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)