

## FUEL REPORT

Sample Rating Trend

### A TREATED Component

**Diesel Fuel** Fluic

No.2 DIESEL FUEL (ULTRALOW SULPHUR) (--- GAL)

#### DIAGNOSIS

#### Recommendation

We advise that you check for the source of water entry. We advise that you filter this fluid before use. We advise that you follow the water drain-off procedure for this component. We recommend you service the filters on this component. We recommend an early resample to monitor this condition.

#### Corrosion

{not applicable}

#### Contaminants

Particles >4µm are abnormally high. Particles >6µm are abnormally high. Oil Cleanliness are abnormally high. Particles >14 $\mu$ m are abnormally high. Particles >21µm are notably high. Free water present. There is no bacteria or fungus (yeast and/or mold) present in the sample.

#### **Fuel Condition**

All laboratory tests indicate that this sample meets specifications for No.2 ultra-low-sulfur diesel fuel (US EPA/CGSB-3.517-3 type B).

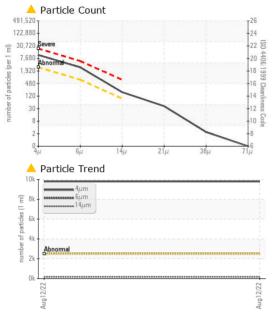
Sample Number         Client Info         PP             Sample Date         Client Info         12 Aug 2022             Machine Age         hrs         Client Info         1600             Sample Status         Client Info         1600              PHYSICAL PROPERTIES         method         limit/base         current         history1         /history1           Specific Gravity         ASTM D1286         0.839         0.842             Visc @ 40°C         cSt         ASTM D7216         52         66.2             Sulfur         °C         ASTM D2807         10         9             SULFUR CONTENT         method         limit/base         current         history1         history1           Sulfur         °C         ASTM D2807         165         163             10% Distill Point         °C         ASTM D2877         216         223             10% Distill Point         °C         ASTM D2877         216         223	, ( <b>.</b> , ( <u>-</u> )		-		Aug2022		
Sample Date         Client Info         12 Aug 2022             Machine Age         hrs         Client Info         1600             PHYSICAL PROPERTIES         method         limit/base         current         history1            Specific Gravity         ASTM 01298'         0.839         0.842             Specific Gravity         ASTM 01298'         0.839         0.842             Suice @ 40°C         CSI         ASTM 02290'              Visc @ 40°C         ASTM 02290'         -12              SULFUR CONTENT         method         limit/base         current         history1         history1           Sulfur         ppm         ASTM 0287'         165         163             DISTILLATION         method         limit/base         current         history1         history1           Sulfur         ppm         ASTM 0287'         165         163             195         Distill Point         *C         ASTM 0287'         214         206	SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Machine Age         hrs         Client Info         1600             Sample Status         ABNORMAL              PHYSICAL PROPERTIES         method         limit/base         current         history1         history1           Specific Gravity         ASTM D128*         0.839         0.842             Specific Gravity         Katt Visual Streent         Yllow         Yllow             Suffur         text         Visual Streent         Yllow         Yllow             Suffur         c         ASTM D2250'         -12              Sulfur         ppm         ASTM D2887         165         163             DISTILLATION         method         limit/base         current         history1         history1           Sulfur         ppm         ASTM D2887         165         163             10% Distill Point         °C         ASTM D2887         201         206             10% Distill Point         °C         ASTM D2887         210         236	Sample Number		Client Info		PP		
Sample Staus         ABNORMAL             PHYSICAL PROPERTIES         method         limit/base         current         history1         history1           Specific Gravity         ASTM D1298'         0.839         0.842             Fuel Color         text         Visual Screent         Yllow         Yllow             Fuel Color         text         Visual Screent         Yllow         Yllow             Pensky-Matters Flash Point         °C         ASTM D7276         52         66.2             SULFUR CONTENT         method         limit/base         current         history1         history1           Sulfur         ppm         ASTM D280'         10         9             DISTILLATION         method         limit/base         current         history1         history1           10% Distillation Point         °C         ASTM D280'         101         206             10% Distill Point         °C         ASTM D280'         201         206             10% Distill Point         °C         ASTM D280' <td>Sample Date</td> <td></td> <td>Client Info</td> <td></td> <td>12 Aug 2022</td> <td></td> <td></td>	Sample Date		Client Info		12 Aug 2022		
PHYSICAL PROPERTIES         method         limit/base         current         history1         history2           Specific Gravity         ASTM D1286'         0.839         0.842             Specific Gravity         Kast M D1286'         0.839         0.842             Visual Screent         Yilow         Yilow              Visual Screent         Yilow         10w              Sulfur         °C         ASTM D2500'         -12             Sulfur         ppm         ASTM D2887'         10         9             DISTILLATION         method         limit/base         current         history1         history1           Sulfur         ppm         ASTM D2887'         10         9             DISTILLATION         method         limit/base         current         history1         history1           Initial Boiling Point         °C         ASTM D2887'         201         206             10% Distill Point         °C         ASTM D2887'         216         223<	Machine Age	hrs	Client Info		1600		
Specific Gravity         ASTM D1288'         0.839         0.842            Fuel Color         text         Visual Screen'         Yllow         Yllow            Visc @ 40°C         cSt         ASTM D7279(m)         3.0         2.7             Pensky-Martens Flash Point         °C         ASTM D7215'         52         66.2             SULFUR CONTENT         method         limit/base         current         history1         history1           Sulfur         ppm         ASTM D2818(m)         10         9             DISTILLATION         method         limit/base         current         history1         history1           Initial Boiling Point         °C         ASTM D2887'         165         163             10% Distill Point         °C         ASTM D2887'         201         206             10% Distill Point         °C         ASTM D2887'         214              20% Distill Point         °C         ASTM D2887'         230         236            50% Distill Point         °C	Sample Status				ABNORMAL		
Fuel Color         text         Visual Screent         Yllow         Yllow             Visc @ 40°C         cSt         ASTM D7279(m)         3.0         2.7             Pensky-Martens Flash Point         °C         ASTM D7275'         52         66.2             SULFUR CONTENT         method         limit/base         current         history1         history1           Sulfur         ppm         ASTM D2857'         165         163             DISTILLATION         method         limit/base         current         history1         history1           10% Distill Point         °C         ASTM D2887'         194             10% Distill Point         °C         ASTM D2887'         201         206             10% Distill Point         °C         ASTM D2887'         230         236             20% Distill Point         °C         ASTM D2887'         230         236             50% Distill Point         °C         ASTM D2887'         267         274        <	PHYSICAL PROP	ERTIES	method	limit/base	current	history1	history2
Visc @ 40°C         cSt         ASTM D7279(m)         3.0         2.7             Pensky-Martens Flash Point         °C         ASTM D7215'         52         66.2             SULFUR CONTENT         method         limit/base         current         history1         history1           Sulfur         ppm         ASTM D280''         10         9             DISTILLATION         method         limit/base         current         history1         history2           Initial Boiling Point         °C         ASTM D2887'         163             5% Distillation Point         °C         ASTM D2887'         201         206             10% Distill Point         °C         ASTM D2887'         216         223             20% Distill Point         °C         ASTM D2887'         267         274             60% Distill Point         °C         ASTM D2887'         280         287             60% Distill Point         °C         ASTM D2887'         263         2641	Specific Gravity		ASTM D1298*	0.839	0.842		
Pensky-Martens Flash Point         °C         ASTM D7215'         52         66.2             Cloud Point         °C         ASTM D2500'         -12             SULFUR CONTENT         method         limit/base         current         history1         history2           Sulfur         ppm         ASTM D5185(m)         10         9             DISTILLATION         method         limit/base         current         history1         history2           Initial Boiling Point         °C         ASTM D2887'         165         163             10% Distill Point         °C         ASTM D2887'         201         206             20% Distill Point         °C         ASTM D2887'         216         223             20% Distill Point         °C         ASTM D2887'         243         249             20% Distill Point         °C         ASTM D2887'         267         274             20% Distill Point         °C         ASTM D2887'         280         267	Fuel Color	text	Visual Screen*	Yllow	Yllow		
Cloud Point         °C         ASTM D2500'         -12             SULFUR CONTENT         method         limit/base         current         history1         history2           Sulfur         ppm         ASTM D5165(m)         10         9             DISTILLATION         method         limit/base         current         history1         history2           Initial Boiling Point         °C         ASTM D2887'         165         163             5% Distillation Point         °C         ASTM D2887'         201         206             10% Distill Point         °C         ASTM D2887'         216         223             20% Distill Point         °C         ASTM D2887'         243         249             30% Distill Point         °C         ASTM D2887'         255         261             40% Distill Point         °C         ASTM D2887'         280         287         313             50% Distill Point         °C         ASTM D2887'         280         287         313	Visc @ 40°C	cSt	ASTM D7279(m)	3.0	2.7		
SULFUR CONTENT         method         limit/base         current         history1         history2           Sulfur         ppm         ASTM D5185(m)         10         9             DISTILLATION         method         limit/base         current         history1         history2           Initial Boiling Point         °C         ASTM D2887*         165         163             5% Distillation Point         °C         ASTM D2887*         201         206             10% Distill Point         °C         ASTM D2887*         214              20% Distill Point         °C         ASTM D2887*         230         236             30% Distill Point         °C         ASTM D2887*         243         249             60% Distill Point         °C         ASTM D2887*         267         274             70% Distill Point         °C         ASTM D2887*         280         287             80% Distill Point         °C         ASTM D2887*         280         287 <t< td=""><td>Pensky-Martens Flash Point</td><td>°C</td><td>ASTM D7215*</td><td>52</td><td>66.2</td><td></td><td></td></t<>	Pensky-Martens Flash Point	°C	ASTM D7215*	52	66.2		
Sulfur         ppm         ASTM D5/85(m)         10         9             DISTILLATION         method         limit/base         current         history1         history1           Initial Boiling Point         °C         ASTM D2887*         165         163             5% Distillation Point         °C         ASTM D2887*         201         206              10% Distill Point         °C         ASTM D2887*         216         223              20% Distill Point         °C         ASTM D2887*         243         249              30% Distill Point         °C         ASTM D2887*         267         274              60% Distill Point         °C         ASTM D2887*         280         287	Cloud Point	°C	ASTM D2500*		-12		
DISTILLATION         method         limit/base         current         history1         history2           Initial Boiling Point         °C         ASTM D2887*         165         163             5% Distillation Point         °C         ASTM D2887*         194             10% Distill Point         °C         ASTM D2887*         201         206             15% Distill Point         °C         ASTM D2887*         216         223             20% Distill Point         °C         ASTM D2887*         216         223             30% Distill Point         °C         ASTM D2887*         230         236             50% Distill Point         °C         ASTM D2887*         243         249             50% Distill Point         °C         ASTM D2887*         267         274             60% Distill Point         °C         ASTM D2887*         295         304             90% Distill Point         °C         ASTM D2887*         313	SULFUR CONTER	NT	method	limit/base	current	history1	history2
Initial Boiling Point         °C         ASTM D2887*         165         163             5% Distillation Point         °C         ASTM D2887*         201         206  -	Sulfur	ppm	ASTM D5185(m)	10	9		
5% Distillation Point       °C       ASTM D2887*       201       206           10% Distillation Point       °C       ASTM D2887*       214           20% Distillation Point       °C       ASTM D2887*       216       223           20% Distill Point       °C       ASTM D2887*       216       223           30% Distill Point       °C       ASTM D2887*       230       236           40% Distill Point       °C       ASTM D2887*       243       249           50% Distill Point       °C       ASTM D2887*       267       274           60% Distill Point       °C       ASTM D2887*       280       287           70% Distill Point       °C       ASTM D2887*       295       304           80% Distillation Point       °C       ASTM D2887*       313           90% Distill Point       °C       ASTM D2887*       310       323           90% Distill Point       °C       ASTM D2887*       341       345	DISTILLATION		method	limit/base	current	history1	history2
5% Distillation Point       °C       ASTM D2887*       201       206           10% Distillation Point       °C       ASTM D2887*       214           20% Distillation Point       °C       ASTM D2887*       216       223           20% Distill Point       °C       ASTM D2887*       216       223           30% Distill Point       °C       ASTM D2887*       230       236           40% Distill Point       °C       ASTM D2887*       243       249           50% Distill Point       °C       ASTM D2887*       267       274           60% Distill Point       °C       ASTM D2887*       280       287           70% Distill Point       °C       ASTM D2887*       295       304           80% Distillation Point       °C       ASTM D2887*       313           90% Distill Point       °C       ASTM D2887*       310       323           90% Distill Point       °C       ASTM D2887*       341       345	Initial Boiling Point	°C	ASTM D2887*	165	163		
15% Distillation Point       °C       ASTM D2887'       216       223           20% Distill Point       °C       ASTM D2887'       216       223           30% Distill Point       °C       ASTM D2887'       230       236           40% Distill Point       °C       ASTM D2887'       243       249           50% Distill Point       °C       ASTM D2887'       255       261           60% Distill Point       °C       ASTM D2887'       267       274           60% Distill Point       °C       ASTM D2887'       280       287           80% Distill Point       °C       ASTM D2887'       295       304           80% Distill Point       °C       ASTM D2887'       310       323           90% Distill Point       °C       ASTM D2887'       341       345           90% Distillation Point       °C       ASTM D2887'       341       345           IGNITION QUALITY       method       limit/base <td< td=""><td>-</td><td>°C</td><td>ASTM D2887*</td><td></td><td>194</td><td></td><td></td></td<>	-	°C	ASTM D2887*		194		
20% Distill Point       °C       ASTM D2887'       216       223           30% Distill Point       °C       ASTM D2887'       230       236           30% Distill Point       °C       ASTM D2887'       243       249           50% Distill Point       °C       ASTM D2887'       255       261           60% Distill Point       °C       ASTM D2887'       280       287            60% Distill Point       °C       ASTM D2887'       295       304	10% Distill Point	°C	ASTM D2887*	201	206		
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40% Distill Point       °C       ASTM D2887*       243       249           50% Distill Point       °C       ASTM D2887*       255       261           60% Distill Point       °C       ASTM D2887*       267       274           60% Distill Point       °C       ASTM D2887*       280       287           70% Distill Point       °C       ASTM D2887*       295       304           80% Distill Point       °C       ASTM D2887*       295       304           80% Distill Point       °C       ASTM D2887*       295       304           85% Distillation Point       °C       ASTM D2887*       310       323           90% Distill Point       °C       ASTM D2887*       341       345           95% Distillation Point       °C       ASTM D2887*       341       345           IGNITION QUALITY       method       limit/base       current       history1       history2         API Gravity       ASTM D5185(m)       <1.0	20% Distill Point	°C	ASTM D2887*	216	223		
50% Distill Point         °C         ASTM D2887*         255         261             60% Distill Point         °C         ASTM D2887*         267         274                      60% Distill Point         °C         ASTM D2887*         280         287             60% Distill Point         °C         ASTM D2887*         295         304           60% Distill Point         °C         ASTM D2887*         295         304           60% Distill Point         °C         ASTM D2887*         310         323           60% Distill Point         °C         ASTM D2887*         310         323           60          60% Distill Point         °C         ASTM D2887*         341         345           60	30% Distill Point	°C	ASTM D2887*	230	236		
60% Distill Point       °C       ASTM D2887*       267       274           70% Distill Point       °C       ASTM D2887*       280       287	40% Distill Point	°C	ASTM D2887*	243	249		
60% Distill Point       °C       ASTM D2887*       267       274           70% Distill Point       °C       ASTM D2887*       280       287	50% Distill Point	°C	ASTM D2887*	255	261		
70% Distill Point       °C       ASTM D2887*       280       287           80% Distill Point       °C       ASTM D2887*       295       304           85%       Distill Point       °C       ASTM D2887*       295       304          85%       Distill Point       °C       ASTM D2887*       295       304          85%       Distill Point       °C       ASTM D2887*       310       323           95%       Distillation Point       °C       ASTM D2887*       341       345		°C					
80% Distill Point       °C       ASTM D2887*       295       304          85% Distillation Point       °C       ASTM D2887*       313           90% Distill Point       °C       ASTM D2887*       310       323          95% Distillation Point       °C       ASTM D2887*       310       323          95% Distillation Point       °C       ASTM D2887*       341       345             95% Distillation Point       °C       ASTM D2887*       341       345 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>							
85% Distillation Point       °C       ASTM D2887*       313           90% Distill Point       °C       ASTM D2887*       310       323           95% Distillation Point       °C       ASTM D2887*       310       323           95% Distillation Point       °C       ASTM D2887*       341       345           Final Boiling Point       °C       ASTM D2887*       341       345           IGNITION QUALITY       method       limit/base       current       history1       history2         API Gravity       ASTM D1298*       37.7       36           ContrAminants       Method       limit/base       current       history1       history2         Silicon       ppm       ASTM D5185(m)       <1.0							
90% Distill Point       °C       ASTM D2887*       310       323            95% Distillation Point       °C       ASTM D2887*       341       338							
95% Distillation Point°CASTM D2887*341338Final Boiling Point°CASTM D2887*341345IGNITION QUALITYmethodlimit/basecurrenthistory1history2API GravityASTM D1298*37.736Cetane IndexIASTM D4737*<40.0				310			
Final Boiling Point°CASTM D2887*341345IGNITION QUALITYmethodlimit/basecurrenthistory1history2API GravityASTM D1298*37.736Cetane IndexIASTM D4737*<40.0				5.0			
API Gravity       ASTM D1298*       37.7       36           Cetane Index       ASTM D4737*       <40.0       48            CONTAMINANTS       method       limit/base       current       history1       history2         Silicon       ppm       ASTM D5185(m)       <1.0       0            Sodium       ppm       ASTM D5185(m)       <0.1       0            Potassium       ppm       ASTM D5185(m)       <0.1       0            Water       %       ASTM D6304*       <0.05       0.034            ppm Water       ppm       ASTM D6304*       <500       341.4				341			
Cetane Index         ASTM D4737*         <40.0         48             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185(m)         <1.0         0              Sodium         ppm         ASTM D5185(m)         <0.1         0              Potassium         ppm         ASTM D5185(m)         <0.1         0              Water         %         ASTM D6304*         <0.05         0.034             ppm Water         ppm         ASTM D6304*         <500         341.4	IGNITION QUALIT	ΓY	method	limit/base	current	history1	history2
Cetane Index         ASTM D4737*         <40.0         48             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185(m)         <1.0         0              Sodium         ppm         ASTM D5185(m)         <0.1         0              Potassium         ppm         ASTM D5185(m)         <0.1         0              Water         %         ASTM D6304*         <0.05         0.034             ppm Water         ppm         ASTM D6304*         <500         341.4	API Gravity		ASTM D1298*	37.7	36		
Silicon         ppm         ASTM D5185(m)         <1.0         0             Sodium         ppm         ASTM D5185(m)         <0.1         0             Potassium         ppm         ASTM D5185(m)         <0.1         0             Water         %         ASTM D6304*         <0.05         0.034             ppm Water         ppm         ASTM D6304*         <500         341.4	Cetane Index		ASTM D4737*	<40.0	48		
Sodium         ppm         ASTM D5185(m)         <0.1         0             Potassium         ppm         ASTM D5185(m)         <0.1	CONTAMINANTS		method	limit/base	current	history1	history2
Potassium         ppm         ASTM D5185(m)         <0.1         0             Water         %         ASTM D6304*         <0.05         0.034             ppm Water         ppm         ASTM D6304*         <500         341.4	Silicon	ppm	ASTM D5185(m)	<1.0	0		
Potassium         ppm         ASTM D5185(m)         <0.1         0             Water         %         ASTM D6304*         <0.05         0.034             ppm Water         ppm         ASTM D6304*         <500         341.4	Sodium	ppm	ASTM D5185(m)	<0.1	0		
ppm Water ppm ASTM D6304* <500 341.4	Potassium		ASTM D5185(m)	<0.1	0		
ppm Water ppm ASTM D6304* <500 341.4	Water	%	ASTM D6304*	< 0.05	0.034		
	ppm Water	ppm	ASTM D6304*		341.4		
			ASTM D1796(e)*		0.002		

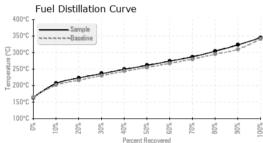




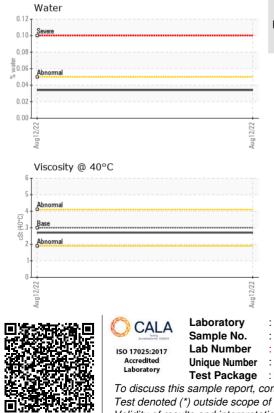


# **FUEL REPORT**





FLUID CLEANLIN	ESS	method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>2500	A 9798		
Particles >6µm		ASTM D7647	>640	<b>A</b> 2515		
Particles >14μm		ASTM D7647	>80	<b>A</b> 163		
Particles >21µm		ASTM D7647	>20	<b>A</b> 35		
Particles >38µm		ASTM D7647	>4	2		
Particles >71µm		ASTM D7647	>3	0		
Oil Cleanliness		ISO 4406 (c)	>18/16/13	<b>A</b> 20/19/15		
MICROBIAL		method	limit/base	current	history1	history2
Bacteria	CFU/ml	ASTM D6469*	>=100000	0		
Yeast	CFU/ml	ASTM D6469*	>=100000	0		
Mold	Colonies	ASTM D6469*	MODER	NONE		
HEAVY METALS		method	limit/base	current	history1	history2
Aluminum	ppm	ASTM D5185(m)	<0.1	0		
Nickel	ppm	ASTM D5185(m)	<0.1	0		
Lead	ppm	ASTM D5185(m)	<0.1	0		
Vanadium	ppm	ASTM D5185(m)	<0.1	0		
Iron	ppm	ASTM D5185(m)	<0.1	<1		
Calcium	ppm	ASTM D5185(m)	<0.1	<1		
Magnesium	ppm	ASTM D5185(m)	<0.1	0		
Phosphorus	ppm	ASTM D5185(m)	<0.1	0		
Zinc	ppm	ASTM D5185(m)	<0.1	<1		
SAMPLE IMAGES	3	method	limit/base	current	history1	history2
Color					no image	no image
Bottom					no image	no image



	ISO 17025:2017 Accredited Laboratory		: PP : <mark>02507784</mark> : 5448754	C8-1175 Appleby Lina Received Diagnosed Diagnostician al Tests: Bacteria, CC Fla	: 29 Aug 2022 : 06 Sep 2022 : Kevin Marson	SUITE 1000,, 100	A DEVELOPMENT CO. LTD NEW GOWER STREET ST.JOHNS, NL CA A1C 6K3 Contact: Sam Nash
時。這些記錄		, , ,		r Service at 1-800-268			ash@exxonmobil.com
				(m) method modified, on the sample and info			T: F: (709)722-3766