LABORATORY ANALYSIS



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Department DIECAST

Equipment No. 14D3399 PRESS(ROTOR) QUENCH SHUTTLE 3 (X0004)

System Quenching Fluid

Oil Type ENGINEERED LUBRICANTS ENCOOL SOL-6465GF-ND-XL-RO (450 GAL)

SAMPLE INFORMATION

DIAGNOSIS

Add ENGINEERED LUBRICANTS ENCOOL SOL-6465GF-ND-XL-RO concentrate until reaching a dilution of 10:1. This addition will help increase the alkaline reserve and tertiary amines.{not applicable} There is no indication of any contamination in the quenching fluid. Total amine content is out of range. Excessively low tertiary amine content. Alkaline Reserve is excessively low.

Date of Sample	SAMPLE INFOR	RIVIATION				
Oil Added UNK UNK UNK Last Drain Date Last Filter Service Sample Point Sample Status SEVERE NORMAL ABNORMAL RATIO PER REFRACTOMETER Refract. Reading 1.9 2.8 2.6 Refract. Model DIGITAL DIGITAL DIGITAL DIGITAL DIGITAL DIGITAL DIGITAL A DIGITAL DIGITAL DIGITAL DIGITAL <t< th=""><th>Lab Number</th><th>New</th><th>2306-00728</th><th>2305-00008</th><th>2302-00394</th></t<>	Lab Number	New	2306-00728	2305-00008	2302-00394	
Last Drain Date Last Filter Service Sample Point Sample Status SEVERE NORMAL RATIO PER REFRACTOMETER Refract. Reading Refract. Reading Refract. Ratio oilwater □ 15:1 □ 10:1 □ 11:1 ALKALINE RESERVE (ADDITION OF DEIONIZED WATER IS PREFERRED) Alkaline Reserve □ 90 □ 127 □ 106 PH (ASTM E-70) PH Sale 014 □ 9.3 □ 9.2 □ 9.0 Ratio Rec'd oilwater AS REC'D AS REC'D AS REC'D HARDNESS (MG/L CACO3) Hardness (CaCO3) mg/L □ 46.6 □ 46.	Date of Sample	(Typica	l) 21 Jun 2023	27 Apr 2023	09 Feb 2023	
Last Filter Service Sample Point Sample Status SEVERE NORMAL ABNORMAL RATIO PER REFRACTOMETER Refract. Reading 1.9 2.8 2.6 Refract. Redolel DIGITAL Refract. Rodel Refract. Ratio olivater □ 15:1 □ 10:1 □ 11:1 ALKALINE RESERVE (ADDITION OF DEIONIZED WATER IS PREFERRED) Alkaline Reserve □ 90 □ 127 □ 106 PH (ASTM E-70) pH Ratio Rec'd olivater AS REC'D AS REC'D AS REC'D HARDNESS (MG/L CACO3) Hardness (CaCO3) Hardness (CaCO3) mg/L <-6.6 -6.6 -6.6 -6.6 -6.6 -6.6 -6.6 -6.	Oil Added		UNK	UNK	UNK	
Sample Point Sample Status SEVERE NORMAL ABNORMAL RATIO PER REFRACTOMETER Refract. Reading 1.9 2.8 2.6 Refract. Model DIGITAL DIGIT	Last Drain Date		-			
Sample Status SEVERE NORMAL ABNORMAL RATIO PER REFRACTOMETER Refract. Reading 1.9 2.8 2.6 Refract. Model DIGITAL DIGITAL DIGITAL Refract. Ratio oilwater ■15:1 ■10:1 ■11:1 ALKALINE RESERVE (ADDITION OF DEIONIZED WATER IS PREFERRED) Alkaline Reserve ▲ 90 ■127 ■106 PH (ASTM E-70) PREC'D ASTEC'D ASTEC'D ASTEC'D ASTEC'D ASTEC'D ASTEC'D ASTEC'D ASTEC'D ASTEC'D ASTEC'D ASTEC'D <td cols<="" th=""><th>Last Filter Service</th><th></th><th></th><th></th><th></th></td>	<th>Last Filter Service</th> <th></th> <th></th> <th></th> <th></th>	Last Filter Service				
RATIO PER REFRACTOMETER Refract. Reading Refract. Model Refract. Reading Refract. Ratio DIGITAL Refract. Ratio DIGITAL SPREFERRED A SREC'D AS REC'D CIC CORROSION CIC Dilution CIC Dilution CIC Corrosion AS REC'D AS REC'D AS REC'D CIC CORROSION CIC DIGITAL D	Sample Point					
Refract. Reading	Sample Status		SEVERE	NORMAL	ABNORMAL	
Refract. Model Refract. Model Refract. Ratio Refr	RATIO PER RE	FRACTOMETE	R			
Refract. Ratio oilwater □ 15:1 □ 10:1 □ 11:1 ALKALINE RESERVE (ADDITION OF DEIONIZED WATER IS PREFERRED) Alkaline Reserve	Refract. Reading		1.9	2.8	2.6	
ALKALINE RESERVE (ADDITION OF DEIONIZED WATER IS PREFERRED) Alkaline Reserve	Refract. Model		DIGITAL	DIGITAL	DIGITAL	
Alkaline Reserve	Refract. Ratio	oil:water	15:1	■10:1	11:1	
PH (ASTM E-70) pH Scale 0·14 ■ 9.3 ■ 9.2 ■ 9.0 Ratio Rec'd oilwater AS REC'D AS REC'D AS REC'D HARDNESS (MG/L CACO3) Hardness (CaCO3) mg/L <6.6 ■ <6.6 ■ <6.6 General Sector <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0	ALKALINE RES	ERVE (ADDITIO	ON OF DEIONIZED	WATER IS PREF	FERRED)	
pH Scale 0-14 ■ 9.3 ■ 9.2 ■ 9.0 Ratio Rec`d oil:water AS REC'D AS REC'D AS REC'D HARDNESS (MG/L CACO3) Hardness (CaCO3) mg/L <6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.6 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6.0 ■<6	Alkaline Reserve		<u> </u>	□127	□106	
AS REC'D AS REC'	PH (ASTM E-70)				
HARDNESS (MG/L CACO3) Hardness (CaCO3) mg/L	рН	Scale 0-14	■ 9.3	□ 9.2	■ 9.0	
Hardness (CaCO3) mg/L <6.6	Ratio Rec'd	oil:water	AS REC'D	AS REC'D	AS REC'D	
Company Com	HARDNESS (M	G/L CACO3)				
Company Com	Hardness (CaCO3)	ma/l	<6.6	□<6.6	□<6.6	
TOTAL AMINE Total mmolgam	, ,	1119/ 2				
Total mmol/gram			- 110			
Tertiary mmol/gram 0.06 0.09 0.08 Primary mmol/gram 0.05 0.06 0.05 CIC CORROSION CIC Dilution AS REC'D AS REC'D AS REC'D CIC Corrosion % 0.0 0.0 0.0 GRAVIMETRIC, MG/L Filter Micron μ 0.45 0.45 0.45 Gravimetric mg/L 2 50 10 BACTERIA COUNT (CLASS RANGE 0 TO 6) Bacteria Class Scale 0-6 0 0 0 0 FUNGUS COUNT (CLASS RANGES: YEAST 0 TO 4/MOLD 0 TO 3) Yeast Class Scale 0-4 0 0 0 Mold Class Scale 0-3 0 0 0 0 Mold Class Scale 0-3 0 0 0 Mold Class Scale 0-3 0 0 0 Tertiary 0.00 0 0 O		mmol/gram	0.11	□0.15	□0.13	
Primary mmol/gam 0.05 0.06 0.05 CIC CORROSION CIC Dilution AS REC'D	Tertiary	·	-		_	
CIC Dilution AS REC'D 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.45 0.45 0.45 0.45 0.45 0.45 0.45 0.45 0.45 0.45 0.45 0.0 10 10 0 0 10 0	Primary	Ü	■ 0.05		0.05	
CIC Dilution AS REC'D 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.45 0.45 0.45 0.45 0.45 0.45 0.45 0.45 0.45 0.45 0.45 0.0 10 10 0 0 10 0	CIC CORROSIO	ON .	_	-	_	
CIC Corrosion %			AS REC'D	AS BEC'D	AS REC'D	
GRAVIMETRIC, MG/L Filter Micron μ 0.45 0.45 0.45 0.45 0.45 0.45 0.45 0.45		%				
Filter Micron μ 0.45 0.45 0.45 Gravimetric mg/L 2 50 10 BACTERIA COUNT (CLASS RANGE 0 TO 6) Bacteria Class Scale 0-6 0 0 0 0 FUNGUS COUNT (CLASS RANGES: YEAST 0 TO 4/MOLD 0 TO 3) Yeast Class Scale 0-4 0 0 0 0 Mold Class Scale 0-3 0 0 0						
Gravimetric mg/L 2 50 10 BACTERIA COUNT (CLASS RANGE 0 TO 6) Bacteria Class Scale 0.6 0 0 0 FUNGUS COUNT (CLASS RANGES: YEAST 0 TO 4/MOLD 0 TO 3) Yeast Class Scale 0.4 0 0 0 Mold Class Scale 0.3 0 0 0			0.45	0.45	0.45	
BACTERIA COUNT (CLASS RANGE 0 TO 6) Bacteria Class	Gravimetric					
Bacteria Class Scale 0.6 0 0 0 FUNGUS COUNT (CLASS RANGES: YEAST 0 TO 4/MOLD 0 TO 3) Yeast Class Scale 0.4 0 0 0 Mold Class Scale 0.3 0 0 0		ŭ				
FUNGUS COUNT (CLASS RANGES: YEAST 0 TO 4/MOLD 0 TO 3) Yeast Class Scale 0-4 0 0 0 Mold Class Scale 0-3 0 0 0		•	· ·			
Yeast Class Scale 0-4 0 0 0 Mold Class Scale 0-3 0 0 0			_	_		
Mold Class Scale 0-3 0 0		•		·		
ENERGY DISPERSIVE XRF (*BELOW MINIMUM DETECTION LIMIT)	Mold Class	Scale 0-3	■0	0	0	
	ENERGY DISPI	ERSIVE XRF (*I	BELOW MINIMUM I	DETECTION LIMI	T)	

Customer Id: EMERUS Sample No.: EN23060728 Lab Number: 23060728 Test Package: TEST

ppm Chlorine (CI)

ppm

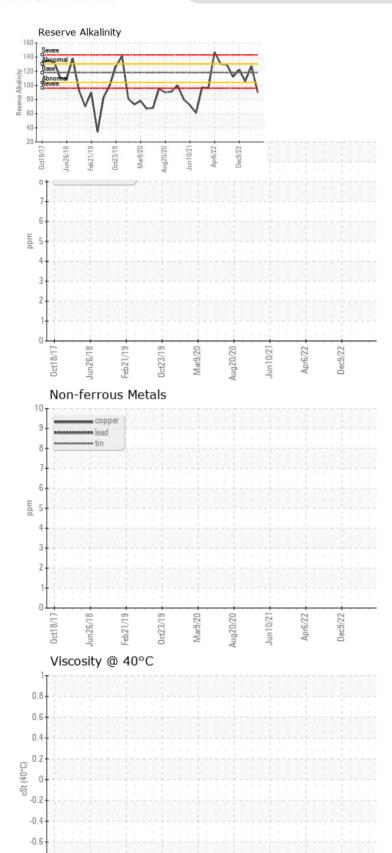
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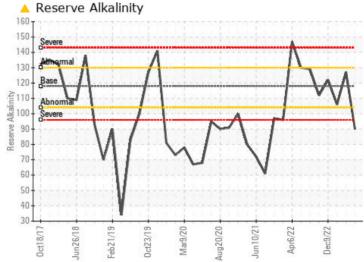
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FUEL REPORT





Report Id: EMERUS [ENGBAN] 23060728 (Generated: 07/10/2023 16:38:59) Rev: 1

Jun 10/21

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Oct18/17.

Jun26/18