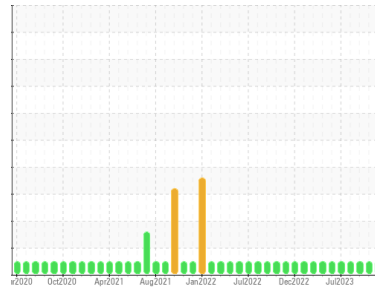




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Area

ENGINE ROOM 3RD DECK

Machine Id

77-G-6584 ESSENTIAL SERVICES GENERATOR (S/N Maint Plan 22480)

Component

Diesel Engine

Fluid

MOBIL MOBILGARD 412 (--- LTR)

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. The ferrography results are normal indicating no abnormal wear in the system.

Contaminants

There is no indication of any contamination in the oil.

Oil 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 INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	PP	PP	PP
Sample Date	Client Info	27 Nov 2023	14 Nov 2023	11 Sep 2023
Machine Age	hrs Client Info	0	0	0
Oil Age	hrs Client Info	0	0	0
Oil Changed	Client Info	N/A	N/A	N/A
Sample Status		NORMAL	NORMAL	NORMAL

CONTAMINATION

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 METALS

method	limit/base	current	history1	history2
PQ	ASTM D8184*	0	0	0
Iron	ppm ASTM D5185(m) >100	3	3	4
Chromium	ppm ASTM D5185(m) >20	0	0	0
Nickel	ppm ASTM D5185(m) >4	0	0	0
Titanium	ppm ASTM D5185(m)	0	0	0
Silver	ppm ASTM D5185(m) >3	0	<1	<1
Aluminum	ppm ASTM D5185(m) >20	2	2	2
Lead	ppm ASTM D5185(m) >40	0	0	0
Copper	ppm ASTM D5185(m) >330	<1	1	1
Tin	ppm ASTM D5185(m) >15	0	0	0
Antimony	ppm ASTM D5185(m)	0	0	0
Vanadium	ppm ASTM D5185(m)	0	0	0
Beryllium	ppm ASTM D5185(m)	0	0	0
Cadmium	ppm ASTM D5185(m)	0	0	0

ADDITIVES

method	limit/base	current	history1	history2
Boron	ppm ASTM D5185(m) 0	<1	1	1
Barium	ppm ASTM D5185(m) 0	0	<1	<1
Molybdenum	ppm ASTM D5185(m) 0	0	0	<1
Manganese	ppm ASTM D5185(m) 0	0	0	0
Magnesium	ppm ASTM D5185(m) 18	19	16	17
Calcium	ppm ASTM D5185(m) 6350	6020	6202	6355
Phosphorus	ppm ASTM D5185(m) 200	211	215	220
Zinc	ppm ASTM D5185(m) 380	348	361	372
Sulfur	ppm ASTM D5185(m) 6950	5188	5172	5432
Lithium	ppm ASTM D5185(m)	<1	<1	<1

CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185(m) >25	22	6	9
Sodium	ppm ASTM D5185(m)	<1	0	1
Potassium	ppm ASTM D5185(m) >20	<1	0	0

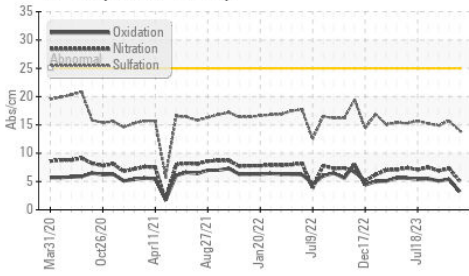
INFRA-RED

method	limit/base	current	history1	history2
Soot %	% ASTM D7844* >3	0	0	0
Nitration	Abs/cm ASTM D7624* >20	5.1	7.3	6.9
Sulfation	Abs./1mm ASTM D7415* >30	14.0	15.7	14.9

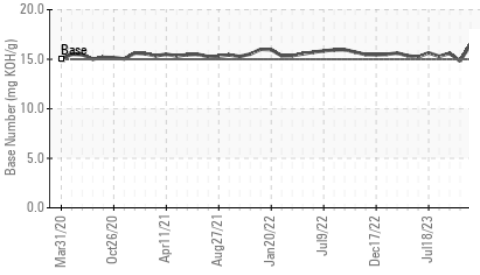


OIL ANALYSIS REPORT

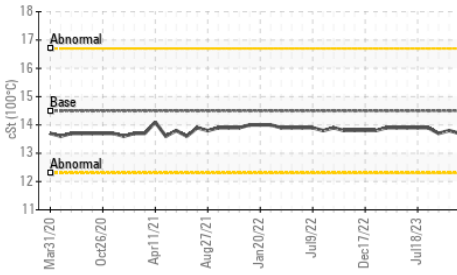
FT-IR (Direct Trend)



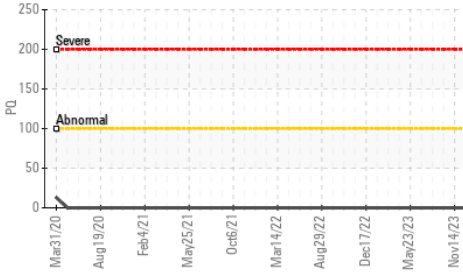
Base Number



Viscosity @ 100°C



PQ



PQ



FLUID DEGRADATION method limit/base current history1 history2

Oxidation	Abs./1mm	ASTM D7414*	>25	3.2	5.4	5.1
Base Number (BN)	mg KOH/g	ASTM D2896*	15	16.50	14.81	15.60

VISUAL method limit/base current history1 history2

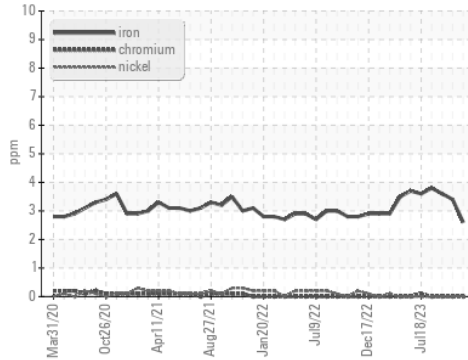
Emulsified Water	scalar	Visual*	>0.2	NEG	NEG	NEG
Free Water	scalar	Visual*		NEG	NEG	NEG

FLUID PROPERTIES method limit/base current history1 history2

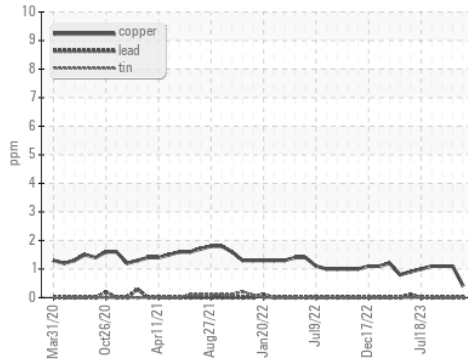
Visc @ 100°C	cSt	ASTM D7279(m)	14.5	13.7	13.8	13.7
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GRAPHS

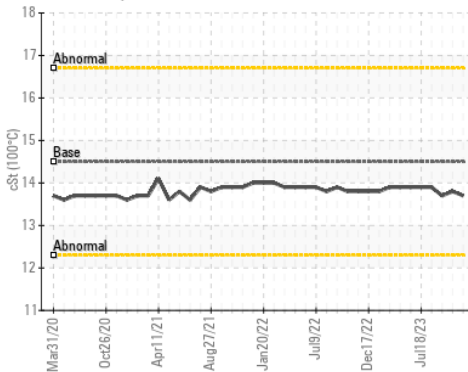
Ferrous Alloys



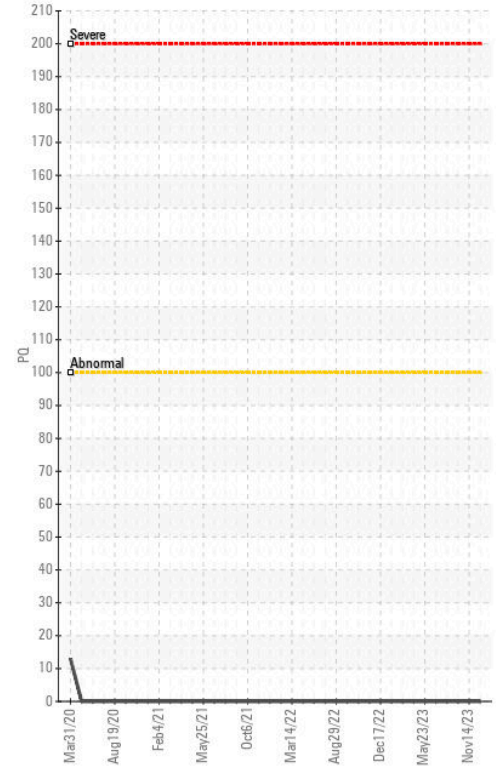
Non-ferrous Metals



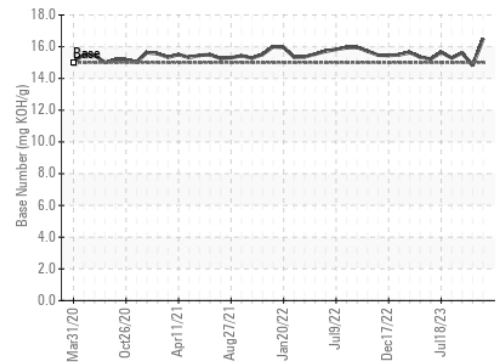
Viscosity @ 100°C



PQ



Base Number



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PP
Lab Number : 02607414
Unique Number : 5708500
Test Package : MAR 3

HUSKY SEA ROSE /AKER SOLUTIONS
 PO BOX 20
 ST. JOHN'S, NL
 CA A1C 6C9

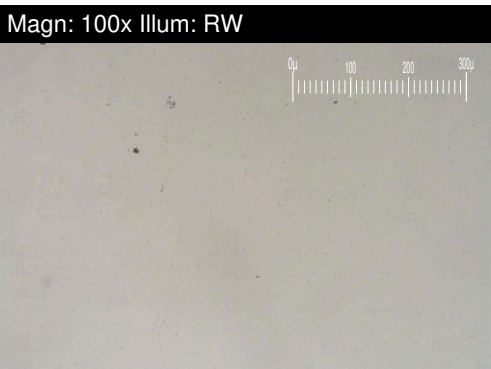
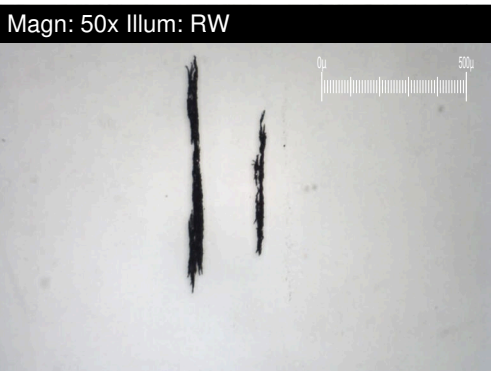
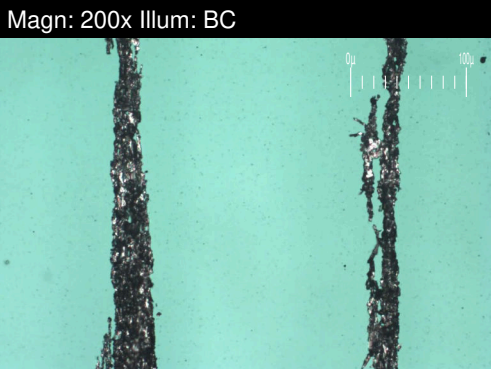
To discuss this sample report, contact Customer Service at 1-800-268-2131.
 Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
 Validity of results and interpretation are based on the sample and information as supplied.

Contact: Maintenance Supervisor
 maintsuper.searose@huskyenergy.ca
 T: x:
 F: x:



FERROGRAPHY REPORT

Area
ENGINE ROOM 3RD DECK
 Machine Id
77-G-6584 ESSENTIAL SERVICES GENERATOR (S/N Maint Plan 22480)
 Component
Diesel Engine
 Fluid
MOBIL MOBILGARD 412 (--- LTR)

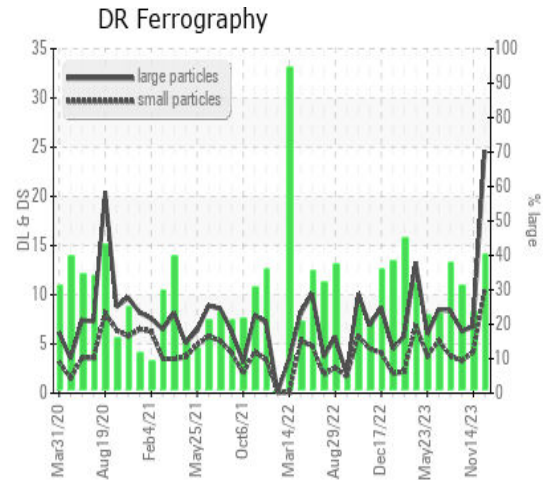


DR-FERROGRAPHY		method	limit/base	current	history1	history2
Large Particles		DR-Ferr*		24.6	6.8	6.3
Small Particles		DR-Ferr*		10.5	4.2	3.3
Total Particles		DR-Ferr*	>---	35.1	11	9.6
Large Particles Percentage	%	DR-Ferr*		40.2	23.6	31.3
Severity Index		DR-Ferr*		347	18	19

FERROGRAPHY		method	limit/base	current	history1	history2
Ferrous Rubbing	Scale 0-10	ASTM D7684*		3	2	3
Ferrous Sliding	Scale 0-10	ASTM D7684*				
Ferrous Cutting	Scale 0-10	ASTM D7684*				
Ferrous Rolling	Scale 0-10	ASTM D7684*		1	1	1
Ferrous Break-in	Scale 0-10	ASTM D7684*				
Ferrous Spheres	Scale 0-10	ASTM D7684*				
Ferrous Black Oxides	Scale 0-10	ASTM D7684*		1	1	1
Ferrous Red Oxides	Scale 0-10	ASTM D7684*				
Ferrous Corrosive	Scale 0-10	ASTM D7684*				
Ferrous Other	Scale 0-10	ASTM D7684*				
Nonferrous Rubbing	Scale 0-10	ASTM D7684*				
Nonferrous Sliding	Scale 0-10	ASTM D7684*				
Nonferrous Cutting	Scale 0-10	ASTM D7684*				
Nonferrous Rolling	Scale 0-10	ASTM D7684*				
Nonferrous Other	Scale 0-10	ASTM D7684*				
Carbonaceous Material	Scale 0-10	ASTM D7684*		1	1	1
Lubricant Degradation	Scale 0-10	ASTM D7684*				
Sand/Dirt	Scale 0-10	ASTM D7684*			1	1
Fibres	Scale 0-10	ASTM D7684*				
Spheres	Scale 0-10	ASTM D7684*				
Other	Scale 0-10	ASTM D7684*		1	2	1

WEAR

All component wear rates are normal.
 The ferrography results are normal indicating no abnormal wear in the system.



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