CUSTOMER
Code : **25037**
Name :
Address : No.9, I-8 Rd., Map Ta Phut Industrial Estate, Map Ta Phut, Muang, Rayong 21150
Site :
Location :
Test code : P894

EQUIPMENT
Unit ID : **02LAC01AP101 BOILER FEED WATER PUMP**
Unit Type : Bearing Main-Journal
Unit Make : MHI TAKASAGO
Unit Model : MDG 344

OIL
Oil type / Viscosity : IDEMITSU DAPHNE SUPER TURBINE ISO 32
Oil System Capacity : 1150 Liters

WARNING
CAUTION
NORMAL (N)

Notes (Finding, Evaluation, Interpretation, Suggestion and Recommendation)

All wear conditions and wear tests appear in normal working range.
All oil conditions and oil tests appear in normal working range.
All contaminant conditions and contaminant levels appear in normal ranges.
No oil change recommended at this time, oil appears suitable for further use. Continue routine sampling interval.

Wasan C.

Condition History	Test Method	Result	Current Sample Wear	Current Sample Oil	Current Sample Cont.	Previous Sample Wear	Previous Sample Oil	Previous Sample Cont.	Baseline Wear	Baseline Oil	Baseline Cont.
			N	N	N	N	N	W	N	N	W
Lab ID			249773			238387			235005		
Bottle ID			1034489			1027318			1024732		
Date Sampled			05-Mar-14			20-Nov-13			05-Nov-13		
Oil Hours (Kms)			11520			9000			8304		
Unit Hours (Kms)			13876			11356			10660		
Oil Change											
Oil Added (Liters)											
Filters Hours (Kms)											

Baseline and Alarm Limit

BASELINE — **Alarm Limit**
Alarm Limit Matrix -Set Name (Equipment type / oil type)
Bearing Main Daphne Turbine Oil 32 (BLCP)

Wear Condition

Wear Element	Method	Unit	Current Sample Fine(small) Wear	Current Sample Coarse(large) Wear	Previous Sample Fine(small) Wear	Previous Sample Coarse(large) Wear	Baseline Fine(small) Wear	Baseline Coarse(large) Wear	The New Oil (TNO)	Fine wear U-Caution	Fine wear U-Warning	Coarse wear U-Caution	Coarse wear U-Warning
Iron	D-6595	PPM	0.0	0.4	0.5	4.5	0.5	0.8	0	>20	>35	>25	>30
Chromium	D-6595	PPM	0.0	0.0	0.0	0.0	0.0	0.0	0	>1	>2	>2	>3
Lead	D-6595	PPM	0.0	0.3	0.0	0.0	0.0	0.0	0	>2	>3	>6	>10
Copper	D-6595	PPM	0.0	0.0	0.0	0.0	0.1	0.1	0	>5	>10	>10	>15
Tin	D-6595	PPM	0.3	0.1	0.0	0.0	0.0	0.0	0	>2	>3	>3	>6
Aluminum	D-6595	PPM	0.0	0.0	0.0	0.2	0.0	0.0	0	>1	>2	>2	>4
Nickel	D-6595	PPM	0.0	0.0	0.0	0.0	0.0	0.2	0	>1	>2	>2	>3
Silver	D-6595	PPM	0.0	0.0	0.0	0.0	0.0	0.0	0				
Molybdenum	D-6595	PPM	0.0	0.0	0.0	0.0	0.4	0.4	0				
Titanium	D-6595	PPM	0.0	0.0	0.0	0.0	0.0	0.7	0				

Oil Condition

	Method	Unit	Current Sample	Previous Sample	Baseline	TNO	L-Warning	L-Caution	U-Caution	U-Warning
Viscosity @ 40°C	D-445	cSt	32.0	32.6	32.0	32.6	<29.3	<30.9	>34.2	>35.9
Viscosity @ 100°C	D-445	cSt								
Oxidation	FTIR	Abs	7.6	7.4	6.7	7.2			>10.8	>14.4
Nitration	FTIR	Abs	7.3	7.3	7.1	7.3			>10.9	>14.6
TAN	D-974	mg KOH/g.	0.07	0.08	0.08	0.08			>0.18	>0.28
TBN	D-4739	mg KOH/g.								

Contamination

	Method	Unit	Current Sample	Previous Sample	Baseline	TNO	U-Caution	U-Warning
Water	T-H2O Check™	% (Wt.)	0.010	0.017	0.023	0.010	>0.05	>0.08

	Method	Unit	Current Sample Fine wear	Current Sample Coarse wear	Previous Sample Fine wear	Previous Sample Coarse wear	Baseline Fine wear	Baseline Coarse wear	TNO	Fine wear U-Caution	Fine wear U-Warning	Coarse wear U-Caution	Coarse wear U-Warning
Sodium	D-6595	PPM	0		0		0		0				
Silicon	D-6595	PPM	1.3	0.9	0.9	0.5	0.5	0.0	5	>10	>15	>10	>15

Additive Element

	Method	Unit	Current Sample	Previous Sample	Baseline	TNO
Boron	D-6595	PPM	0	0	0	0
Magnesium	D-6595	PPM	0	0	0	0
Calcium	D-6595	PPM	1	1	1	0
Barium	D-6595	PPM	0	0	0	0
Phosphorus	D-6595	PPM	246	252	211	310
Zinc	D-6595	PPM	3	3	3	11

Additional Test

	Method	Unit	TNO	L-Caution	L-Warning	U-Caution	U-Warning
Flash Point	D-3828	°C					
Viscosity Index	D-2270						

Note: Alarm Limits are variable and dependent upon dataset size and to be used as general guideline.
No Sign or N : NORMAL , C or C : CAUTION (first level warning limit) , W or W : Warning (second level warning limit)
U-Caution : Upper CAUTION Level L-Caution : Lower CAUTION Level
U-Warning : Upper WARNING Level L-Warning : Lower WARNING required Level
First Level Alarm _Alert Limit in Upper Level and/or Lower Level
Second Level Alarm Alert Limit in Upper Level and/or Lower Level
Baseline will be data of either "The new oil" or "Reference oil" or "Oil specification".
TNO = The new oil , RO = Reference oil , OS = Oil Specification
Accuracy of interpretation and recommendation are based on representatives sample and information supplied.
No warranty is expressed or implied for this report.

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EQUIPMENT
Unit ID : **02LAC01AP101 BOILER FEED WATER PUMP**
Unit Type : Bearing Main-Journal
Unit Make : MHI TAKASAGO
Unit Model : MDG 344

OIL
Oil type / Viscosity : IDEMITSU DAPHNE SUPER TURBINE ISO 32
Oil System Capacity : 1150 Liters

Notes (Finding, Evaluation, Interpretation, Suggestion and Recommendation)

Particle count shows oil cleanliness level acceptable.

	Current Sample	Previous Sample	
Lab ID	249773	238387	235005
Bottle ID	1034489	1027318	1024732
Date Sampled	05-Mar-14	20-Nov-13	05-Nov-13
Oil Hours (Kms)	11520	9000	8304
Unit Hours (Kms)	13876	11356	10660
Oil Change			
Oil Added (Liters)			
Filters Hours (Kms)			

Particle Count NAS 1638 ISO 4406

BASELINE — **Alarm Limit**

Bearing Main Daphne Turbine Oil 32 (BLCP)

Contamination

Particle Count NAS 1638 System Standard

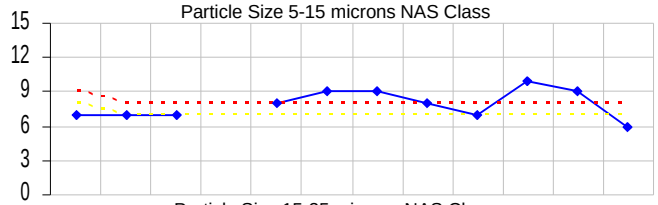
Particle Size Range	No. of Particles / 100ml.	Class	No. of Particles / 100ml.	Class	No. of Particles / 100ml.	Class	Class	U-Caution: No. of Particles / 100ml.	U-Caution: Class	U-Warning: No. of Particles / 100ml.	U-Warning: Class
Particle Size 5-15 microns	15,400	6	64,400	9 W	134,000	10 W		>16000	7	>32000	8
Particle Size 15-25 microns	1,400	5	5,900	8 W	12,200	9 W		>2850	7	>5700	8
Particle Size 25-50 microns	400	6	1,700	8 W	3,500	9 W		>506	7	>1012	8
Particle Size 50-100 microns	<100	5	100	7	300	8					
Particle Size >100 microns	<100	3	<100	6	<100	7					

Particle Count ISO 4406:1999 System Standard

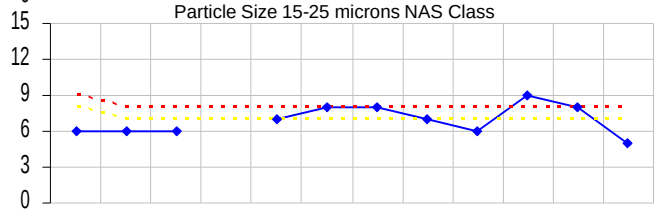
Particle Size Range	No. of Particles / ml.	Class	No. of Particles / ml.	Class	No. of Particles / ml.	Class	Class	U-Caution: No. of Particles / ml.	U-Caution: Class	U-Warning: No. of Particles / ml.	U-Warning: Class
Particle Size > 4 microns	461	16	1,933	18	4,020	19					
Particle Size > 6 microns	129	14	541	16	1,125	17					
Particle Size > 14 microns	18	11	76	13	158	14					
ISO 4406 Class Rating	16 / 14 / 11		18 / 16 / 13		19 / 17 / 14						

NAS 1638

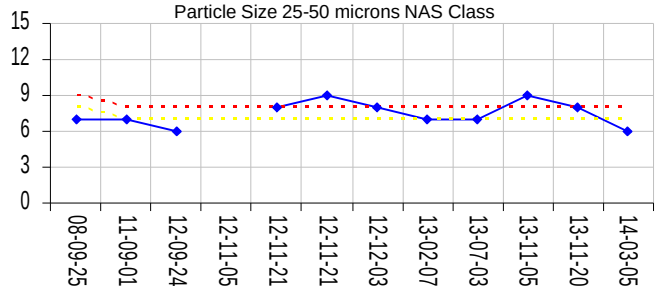
Particle Size 5-15 microns NAS Class



Particle Size 15-25 microns NAS Class

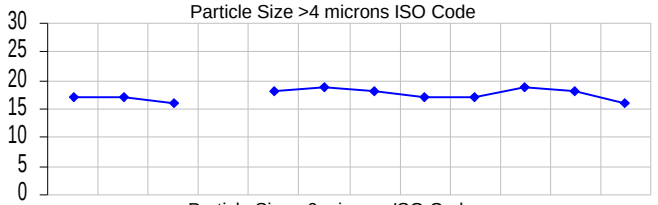


Particle Size 25-50 microns NAS Class

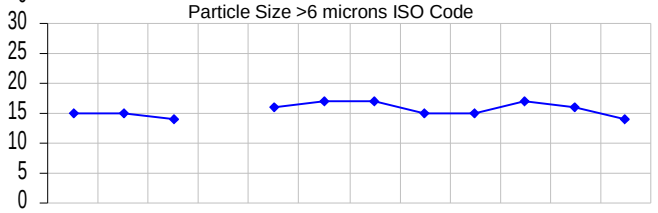


ISO 4406

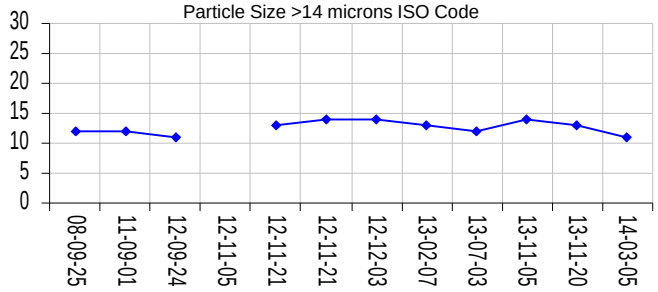
Particle Size >4 microns ISO Code



Particle Size >6 microns ISO Code



Particle Size >14 microns ISO Code



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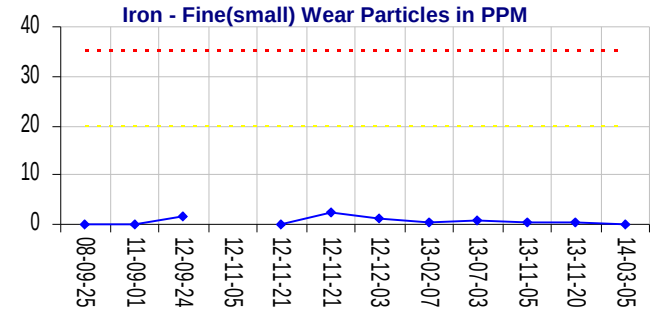
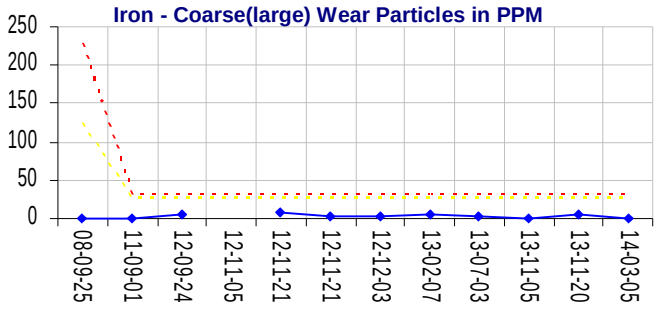
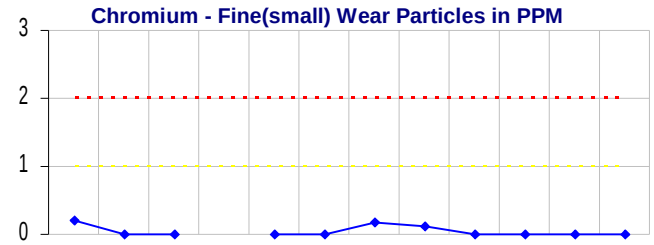
EQUIPMENT
Unit ID : **02LAC01AP101 BOILER FEED WATER PUMP**
Unit Type : Bearing Main-Journal
Unit Make : MHI TAKASAGO
Unit Model : MDG 344

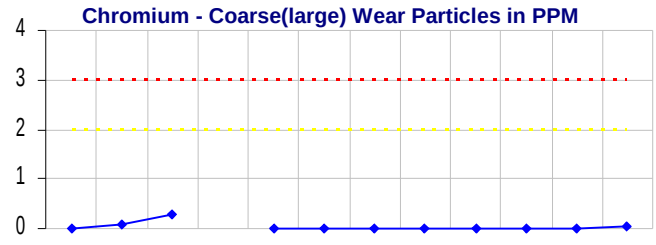
OIL
Oil type / Viscosity : IDEMITSU DAPHNE SUPER TURBINE ISO 32
Oil System Capacity : 1150 Liters

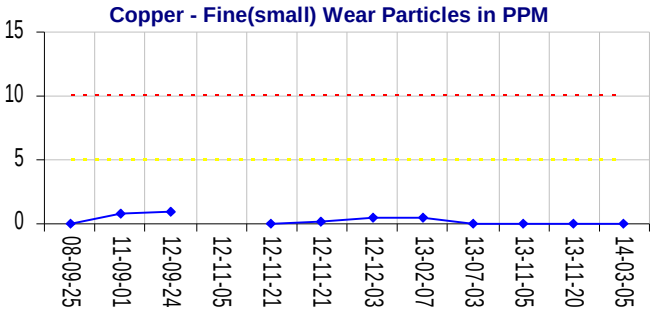
Wear Condition

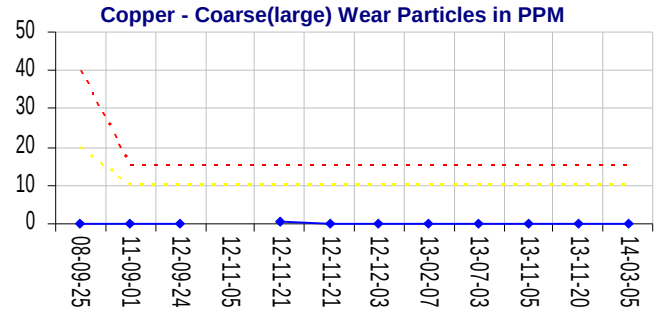


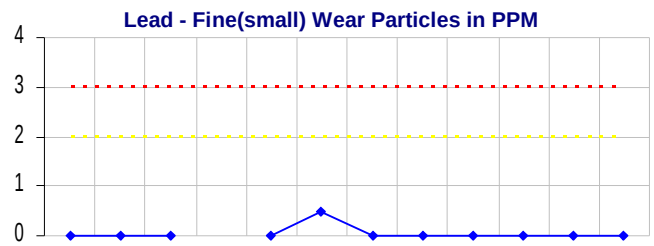


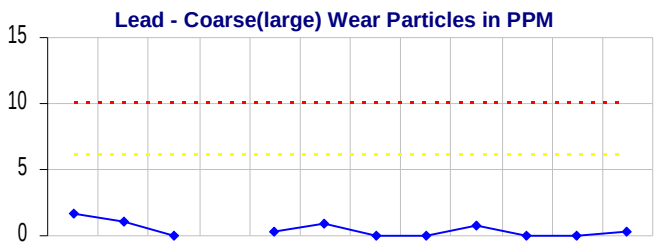


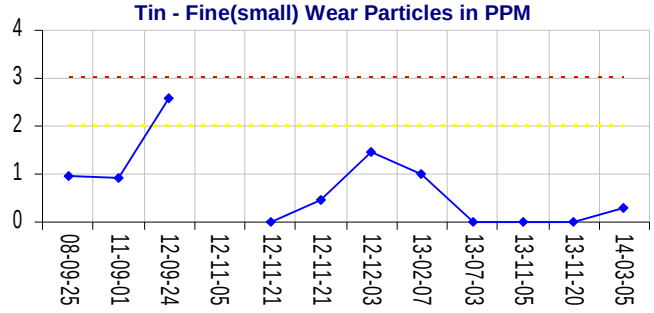


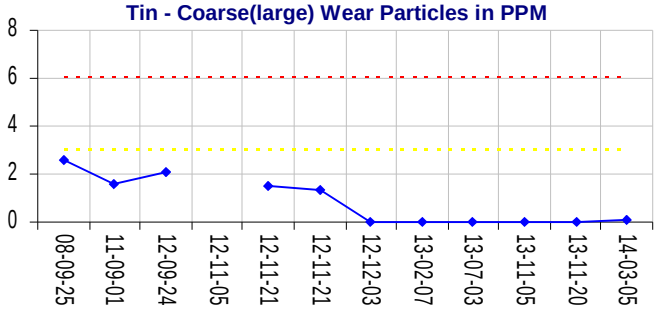












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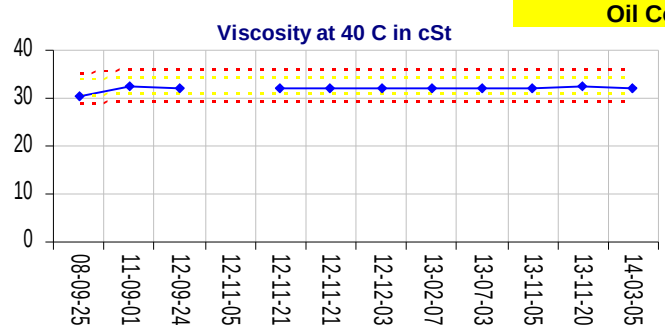
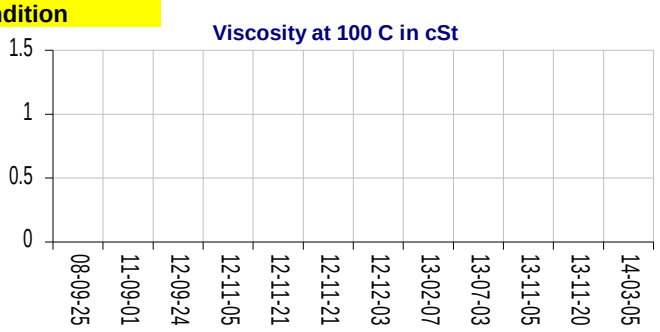
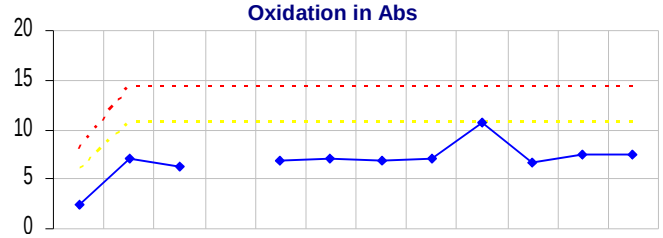
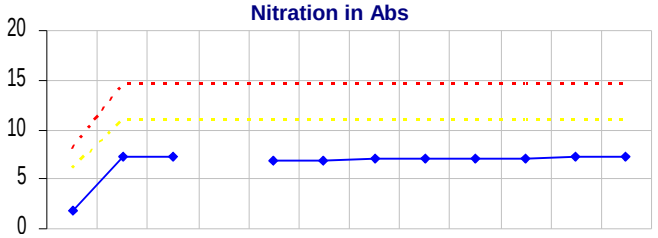
OIL
Oil type / Viscosity : IDEMITSU DAPHNE SUPER TURBINE ISO 32
Oil System Capacity : 1150 Liters

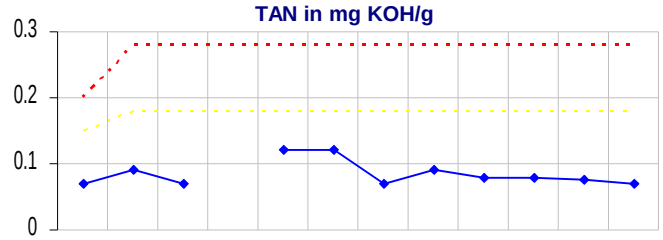
Oil Condition

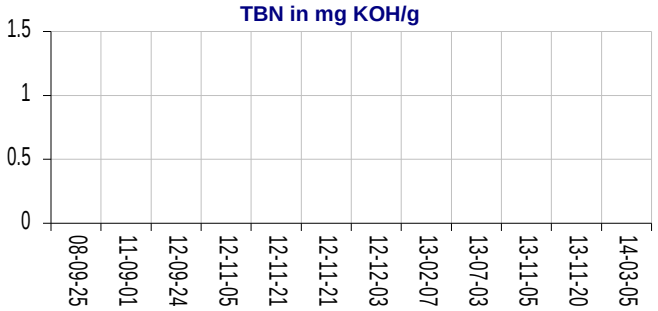


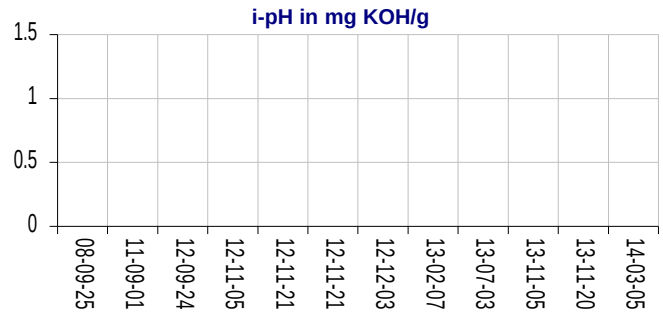












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Unit Model : MDG 344

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Oil type / Viscosity : IDEMITSU DAPHNE SUPER TURBINE ISO 32
Oil System Capacity : 1150 Liters

Contamination Condition