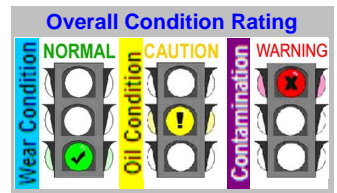


C Code : 23001
 U Name :
 S
 T
 O Address : 26th Floor, M Thai Tower All Seasons Place 87Wireless Rd,
 M Lumpinee Pathumwan, Bangkok 10330
 E
 R Site :
 Location :
 Test code : 814

Unit ID : **Gas Turbine 1 B**
 Unit Type : Engine Turbine Gas
 Unit Make : GENERAL ELECTRIC
 Unit Model : PG 6581 B
 Oil type / Viscosity : SHELL TURBO CC 32
 Oil System Capacity : 6500 Liters



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

Note that AO (anit-oxidant) additive depletion is Cautionary (below 50% remaining).
 Additive Depletion is at a critical stage that possibly could be corrected by partial drain and fill with fresh oil (sweetening). If this is not carried out soon, the oil will degrade more rapidly and not be salvageable.

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			Current Sample			Previous Sample			Baseline and Alarm Limit									
Condition History			Wear	Oil	Cont.	Wear	Oil	Cont.	Wear	Oil	Cont.	Alarm Limit						
Lab ID Bottle ID Date Sampled Oil Hours (Kms) Unit Hours (Kms) Oil Added (Liters) Filters Hours (Kms)	Test Method	Result	N	C	W	N	W	W	N	W	W	Alarm Limit Matrix -Set Name (Equipment type / oil type) Engine Turbine Gas GE Turbo CC32 (Nong Khae)						
						151466	923493		149138	923490		147389	923484					
						06-Jan-11			01-Dec-10			01-Nov-10						
						40800			39912			39192						
						Not Given			Not Given			Not Given						
Wear Condition												The New Oil (TNO)	RDE fine		RFS coarse			
Wear Element	Method	Unit	RDE fine	RFS coarse	RDE fine	RFS coarse	RDE fine	RFS coarse	RDE fine	RFS coarse	RDE fine	RFS coarse	U-Caution	U-Warning	U-Caution	U-Warning		
Iron	D-6595	PPM	0.5	0.1	0.7	0.0	0.0	0.0	0.0	0.2	0	0	>3	>4	>4	>6		
Chromium	D-6595	PPM	0.3	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0	0	>1	>2	>1	>2		
Lead	D-6595	PPM	0.7	0.3	0.0	0.0	0.0	0.6	0.0	0.0	0	0	>1	>2	>4	>6		
Copper	D-6595	PPM	0.0	0.1	0.3	0.1	0.0	0.0	0.0	0.0	0	0	>9	>16	>7	>12		
Tin	D-6595	PPM	0.0	0.6	0.5	0.0	0.0	0.9	0.0	0.0	0	0	>3	>5	>3	>5		
Aluminum	D-6595	PPM	0.0	0.9	0.5	0.3	0.0	0.2	0.0	0.0	0	0	>1	>2	>2	>4		
Nickel	D-6595	PPM	0.7	0.0	0.0	0.1	0.0	0.0	0.0	0.2	0	0	>1	>2	>1	>2		
Silver	D-6595	PPM	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0	0						
Molybdenum	D-6595	PPM	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0	0						
Titanium	D-6595	PPM	0.0	0.2	0.0	0.2	0.0	0.0	0.0	0.0	0	0						
Oil Condition												TNO	L-Warning	L-Caution	U-Caution	U-Warning		
Viscosity @ 40 °C	D-445	cSt	33.1		33.1		33.0				32.2		<29	<30.6	>33.8	>35.4		
Viscosity @ 100 °C	D-445	cSt																
Oxidation	FTIR	Abs	9.9		10.0		10.0								>10.5	>11		
Nitration	FTIR	Abs	10.2		10.3		10.2								>12.5	>13		
TAN	D-974	mg KOH/g.	0.06		0.06		0.07				0.13				>0.21	>0.23		
TBN	D-4739	mg KOH/g.																
Contamination												TNO	U-Caution		U-Warning			
Water	T-H2O Check™	% (Wt.)	0.023		0.014		0.020				0.010				>0.03	>0.05		
Sodium	D-6595	PPM	0		0		0				0							
Silicon	D-6595	PPM	0.0	0.4	0.6	2.5	0.5	1.0			0		>3	>5	>3	>5		
Additive Element												TNO						
Boron	D-6595	PPM	0		0		0				0							
Magnesium	D-6595	PPM	0		0		0				0							
Calcium	D-6595	PPM	2		0		1				1							
Barium	D-6595	PPM	1		0		0				0							
Phosphorus	D-6595	PPM	5		30		3				0							
Zinc	D-6595	PPM	1	2	1	2	0	1			1							
Additional Test												TNO	U-Caution	U-Warning	U-Caution	U-Warning		
Flash Point	D-3828	°C																
Viscosity Index	D-2270																	

Note: Alarm Limits are variable and depend upon dataset size and to be used as general guideline.
 No Sign or **N** : NORMAL, **C** or **!** : CAUTION (first level warning limit), **W** or **!** : Warning (second level warning limit)
 U-Caution : Upper CAUTION Level, L-Caution : Lower CAUTION Level, First Level Alarm Alert Limit in Upper Level and/or Lower Level
 U-Warning : Upper WARNING Level, L-Warning : Lower WARNING required 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.

C U S T O M E R
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Site :
Location :
Test code : 814

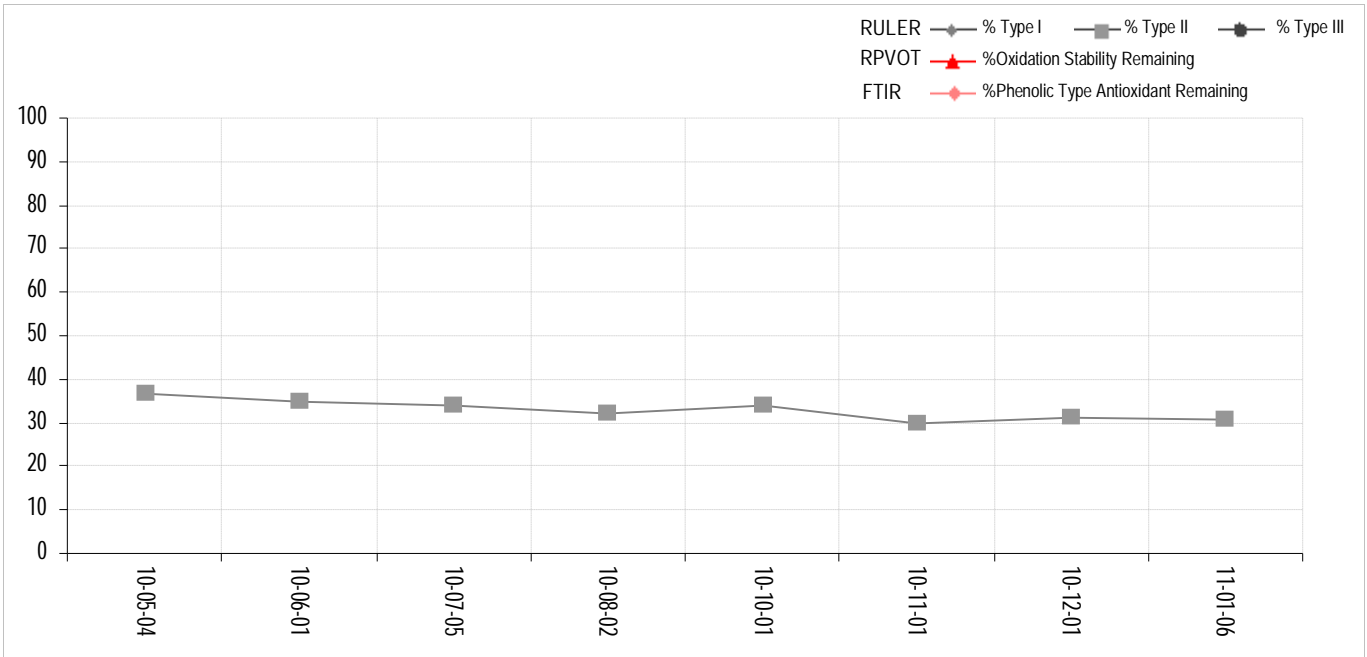
E Q U I P M E N T
Unit ID : **Gas Turbine 1 B**
Unit Type : Engine Turbine Gas
Unit Make : GENERAL ELECTRIC
Unit Model : PG 6581 B
Oil type / Viscosity : SHELL TURBO CC 32
Oil System Capacity : 6500 Liters

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

Note that AO (anit-oxidant) additive depletion is Cautionary (below 50% remaining).

AS / Andy Sitton

Lab ID Bottle ID Date Sampled Oil Hours (Kms) Unit Hours (Kms) Oil Added (Liters) Filters Hours (Kms)	Test Method	Result	Current Sample		Previous Sample		RULER™ RPVOT (RBOT) FTIR		
			151466 923493 06-Jan-11 40800 Not Given	149138 923490 01-Dec-10 39912 Not Given	147389 923484 01-Nov-10 39192 Not Given	The New Oil	Caution	Warning	
Oil Condition									
RULER™(Remaining Useful Life Evaluation Routine)									
% Type I Antioxidant Remaining		%	n/p	n/p	n/p				
% Type II Antioxidant Remaining	D-6971-04	%	30.7	31.2 C	29.7 C	100	<50	<25	
% Type III Antioxidant Remaining		%	n/p	n/p	n/p				
RULER Test Solution	D-6810-02	Color	Green	Green	Green				
RPVOT (Rotating Pressure Vessel Oxidation Test) or previously known as RBOT									
Oxidation Stability	D-2272	Minutes							
%Oxidation Stability Remaining		%							
FTIR (Fourier Transform Infrared)									
%Phenolic Type Antioxidant Remaining	D-2668	%							


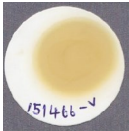
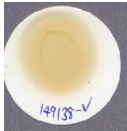






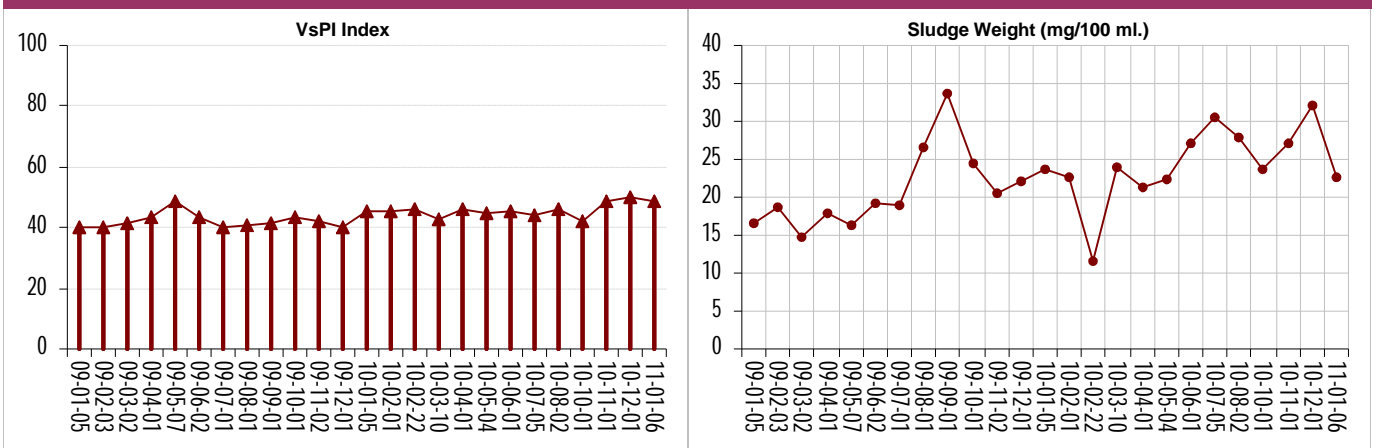
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Notes (Finding, Evaluation, Interpretation, Suggestion and Recommendation)

Varnish & Sludge Potential Index (VsPI) is in the Warning range and indicates the abnormal presence of sludge, varnish and other insoluble matter in the oil system.

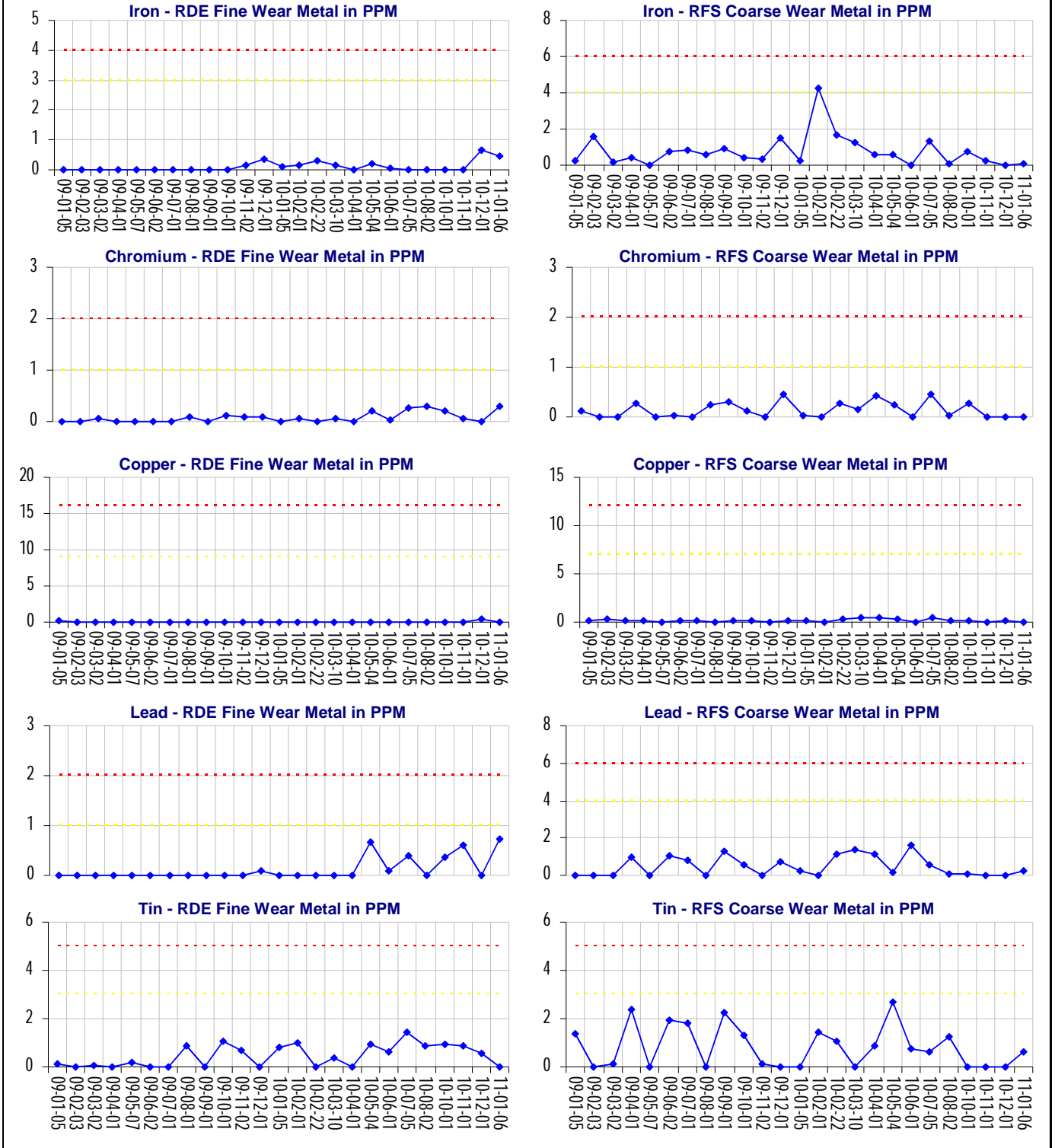
	Current Sample	Previous Sample		
Lab ID	151466	149138	147389	
Bottle ID	923493	923490	923484	
Date Sampled	06-Jan-11	01-Dec-10	01-Nov-10	
Oil Hours (Kms)	40800	39912	39192	
Unit Hours (Kms)	Not Given	Not Given	Not Given	
Oil Added (Liters)				
Filters Hours (Kms)				
Contamination				
Varnish and Sludge Potential Index™ (VsPI™)				
VPI (Varnish Potential Index) : Soluble Varnish Contamination in Oil				
	VPI View	VPI View	VPI View	The New Oil (TNO)
VPI (Varnish Potential Index) Soluble Varnish Contaminant				VPI View
VPI Rating	40.9	36.7	37.7	
SPI (Sludge Potential Index) : or MPC test (Membrane Patch Colorimetric Test) : Insoluble Varnish Contamination in Oil				
	SPI View	SPI View	SPI View	The New Oil (TNO)
SPI (Sludge Potential Index) Insoluble Varnish Contaminant				SPI View
SPI Rating	56.3	63.0	59.4	
Sludge Weight	22.7 mg/100 ml	32.1 mg/100 ml	27.1 mg/100 ml	
Alarm Limit Name Engine Turbine Gas GE Turbo CC32 (Nong Khae)				
				TNO Caution Warning
VsPI VsPI = (VPI + SPI) / 2	48.6 W	49.9 W	48.5 W	2 >35 >45



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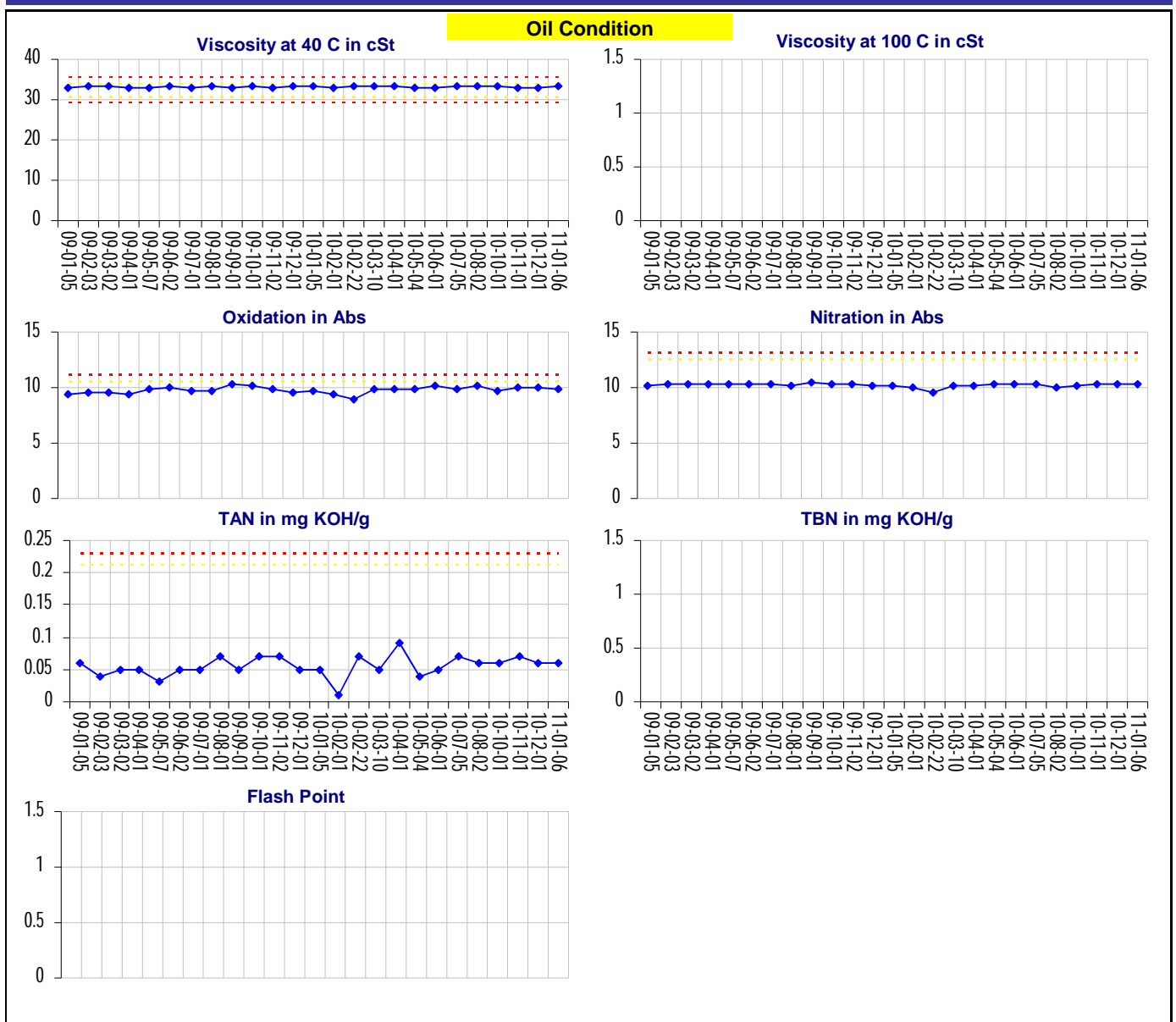
Unit ID : **Gas Turbine 1 B**
 Unit Type : Engine Turbine Gas
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 Unit Model : PG 6581 B
 Oil type / Viscosity : SHELL TURBO CC 32
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Wear Condition



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 O Unit Type : Engine Turbine Gas
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 M Oil type /
 E Viscosity : SHELL TURBO CC 32
 N
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 Oil System Capacity : 6500 Liters

