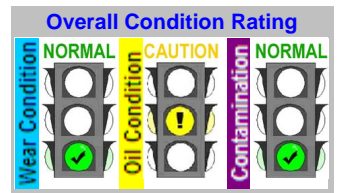


C Code : 28067
 U Name :
 S
 T
 O Address : Train Work Shop 1000
 M Phaholyothin Rd., Ladyao, Jatujak
 E Bangkok 10900
 R
 Site :
 Location :
 Test code : 804

Unit ID : **EMU15 1129 Axle 12 130**
 Unit Type : Gearbox Railcar
 Unit Make : Power Transmission
 Unit Model : BTS 355
 Oil type / Viscosity : SHELL OMALA 320
 Oil System Capacity : 3.7 Liters



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

All other wear tests and oil condition tests appear satisfactory, and the oil was still serviceable at the time of sampling.
 All contaminant conditions and contaminant levels appear in normal ranges.
 Continue routine sampling interval.

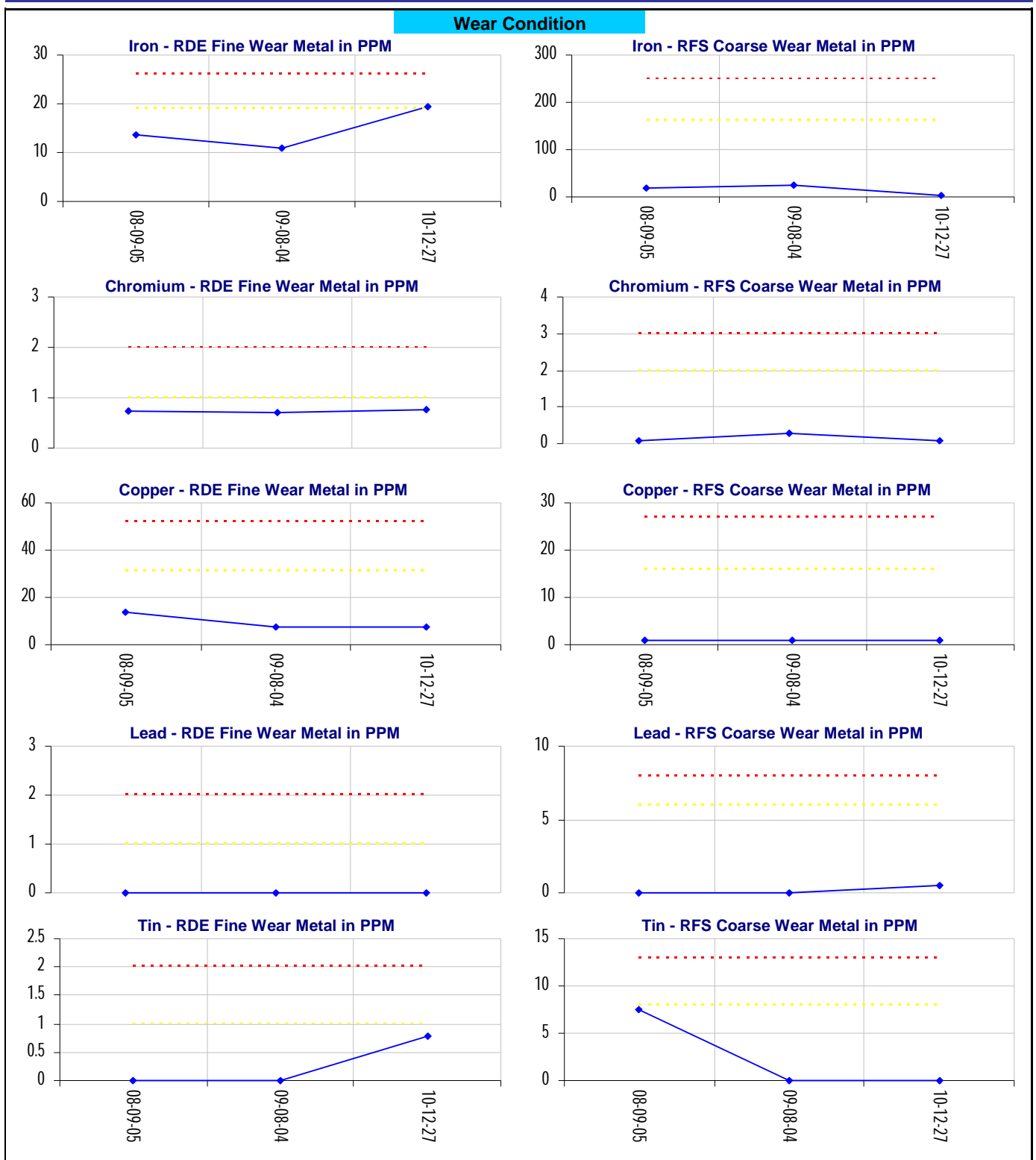
Somchai J / Andy Siltton

			Current Sample			Previous Sample			Baseline and Alarm Limit								
Condition History			Wear	Oil	Cont.	Wear	Oil	Cont.	Wear	Oil	Cont.	Alarm Limit					
			(N)	(C)	(N)	(N)	(N)	(N)	(N)	(N)	(N)	Alarm Limit Matrix -Set Name (Equipment type / oil type) Gearbox Railcar Omala 320 (Siemens)					
Lab ID	Test Method	Result										B A S E L I N E					
Bottle ID			150855			117690			99844								
Date Sampled			925972			900865			886317								
Oil Hours (Kms)			27-Dec-10			04-Aug-09			05-Sep-08								
Unit Hours (Kms)			58276 kms			118440 kms			107457 kms								
Filters Hours (Kms)			1284187 kms			1115970 kms			997530 kms								
Wear Condition												Reference Oil (RO)	RDE fine		RFS coarse		
Wear Element	Method	Unit	RDE fine	RFS coarse	RDE fine	RFS coarse	RDE fine	RFS coarse									
Iron	D-6595	PPM	19.4 C	3.9	10.9	25.3	13.7	17.2	0	>19	>26	>161	>251				
Chromium	D-6595	PPM	0.8	0.1	0.7	0.3	0.7	0.1	0	>1	>2	>2	>3				
Lead	D-6595	PPM	0.0	0.5	0.0	0.0	0.0	0.0	0	>1	>2	>6	>8				
Copper	D-6595	PPM	7.3	1.1	7.4	1.0	14.0	1.0	0	>31	>52	>16	>27				
Tin	D-6595	PPM	0.8	0.0	0.0	0.0	0.0	7.5	0	>1	>2	>8	>13				
Aluminum	D-6595	PPM	0.0	0.0	0.0	0.1	0.0	7.5	0	>1	>2	>12	>21				
Nickel	D-6595	PPM	0.0	0.0	0.6	0.1	0.0	0.0	0	>1	>2	>1	>2				
Silver	D-6595	PPM	0.0	0.0	0.1	0.0	0.0	0.0	0								
Molybdenum	D-6595	PPM	0.0	0.1	0.0	0.3	0.0	0.9	0								
Titanium	D-6595	PPM	0.0	0.0	0.1	0.0	0.0	0.2	0								
Oil Condition												RO	L-Warning	L-Caution	U-Caution	U-Warning	
Viscosity @ 40°C	D-445	cSt	334.9 C		310.4		312.0		318.7	<286.8	<302.8	>334.6	>350.6				
Viscosity @ 100°C	D-445	cSt						24.2									
Oxidation	FTIR	Abs	5.8		3.2		3.8	3.7			>7.5	>9					
Nitration	FTIR	Abs	4.6 C		3.8		3.8	4.2			>4.5	>5.2					
TAN	D-974	mg KOH/g.	0.59		0.39		0.40	0.47			>1.5	>1.6					
TBN	D-4739	mg KOH/g.															
Contamination												RO	U-Caution		U-Warning		
Water	T-H2O Check™	% (Wt.)	0.021		0.019		0.012	0.016			>0.03	>0.06					
Sodium	D-6595	PPM	0		0		0	0									
Silicon	D-6595	PPM	2.3	0.6	1.9	1.3	2.1	6.1	7	>13	>21	>36	>55				
Additive Element												RO					
Boron	D-6595	PPM	2		0		0	0									
Magnesium	D-6595	PPM	0		1		2	0									
Calcium	D-6595	PPM	1		1		2	1									
Barium	D-6595	PPM	0		0		0	0									
Phosphorus	D-6595	PPM	129		142		165	141									
Zinc	D-6595	PPM	8	1	6	1	17	0									
Additional Test												RO	U-Caution	U-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, 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.

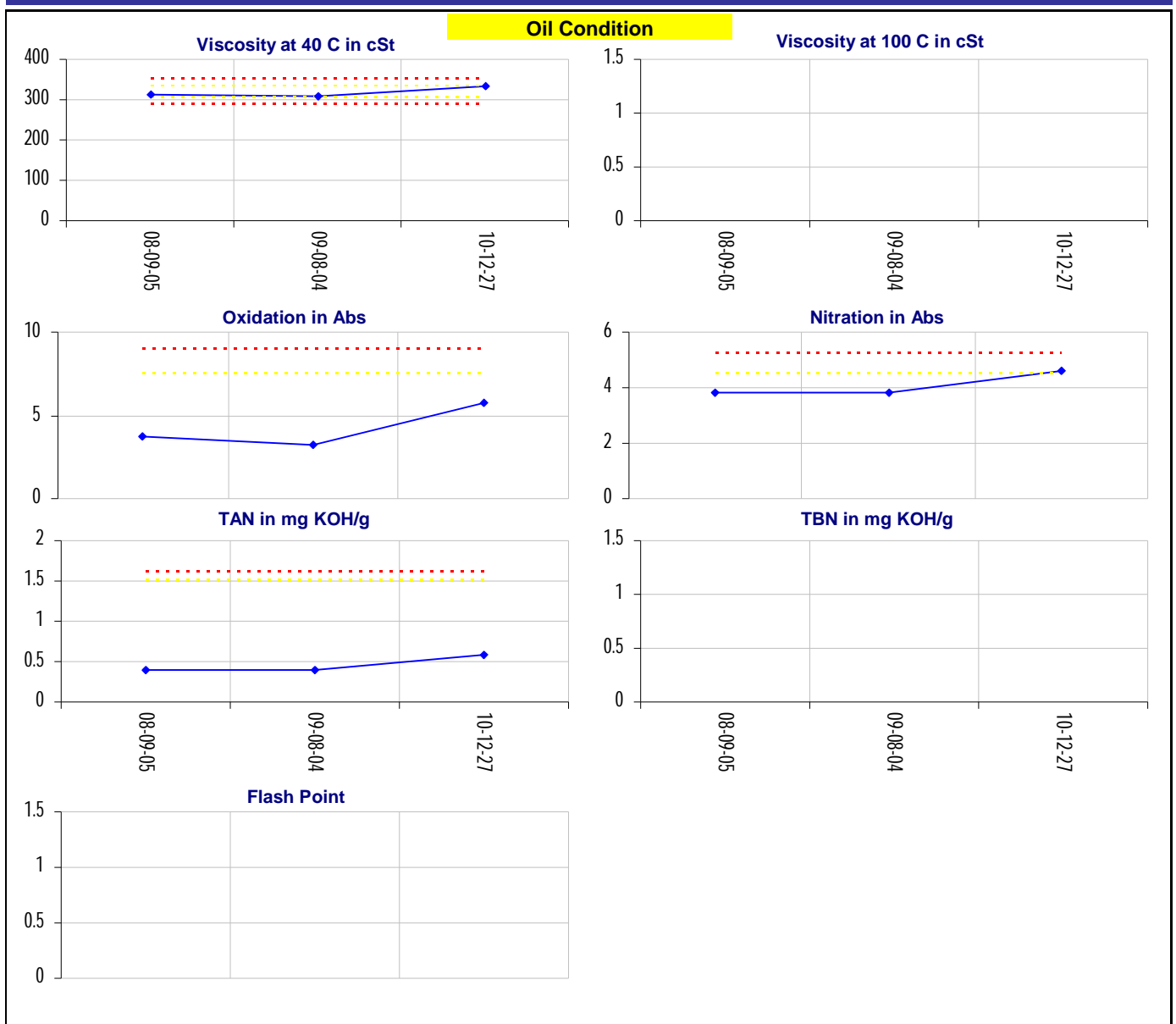
C Code : 28067
 U Name :
 S Address : Train Work Shop 1000
 T Phaholyothin Rd., Ladyao, Jatujak
 O Bangkok 10900
 M Site :
 E Location :
 R Test code : 804

E Unit ID : EMU15 1129 Axle 12 130
 O Unit Type : Gearbox Railcar
 U Unit Make : Power Transmission
 I Unit Model : BTS 355
 P Oil type / Viscosity : SHELL OMALA 320
 M
 E
 N
 T
 Oil System Capacity : 3.7 Liters



C Code : 28067
 U Name :
 S
 T
 O Address : Train Work Shop 1000
 M Phaholyothin Rd., Ladyao, Jatujak
 E Bangkok 10900
 R
 Site :
 Location :
 Test code : 804

E Unit ID : **EMU15 1129 Axle 12 130**
 O Unit Type : Gearbox Railcar
 I Unit Make : Power Transmission
 P Unit Model : BTS 355
 M
 E
 N
 T
 Oil type / Viscosity : SHELL OMALA 320
 L
 Oil System Capacity : 3.7 Liters



C Code : 28067
 U Name :
 S
 T
 O Address : Train Work Shop 1000
 M Phaholyothin Rd., Ladyao, Jatujak
 E Bangkok 10900
 R
 Site :
 Location :
 Test code : 804

E Unit ID : EMU15 1129 Axle 12 130
 O Unit Type : Gearbox Railcar
 U Unit Make : Power Transmission
 I Unit Model : BTS 355
 P
 M
 E
 N
 T
 Oil type / Viscosity : SHELL OMALA 320
 L
 Oil System Capacity : 3.7 Liters

