

C Code : 18002
 U Name :
 S
 T
 O Address : 2034/132-161 New Petchburi Rd.,
 M Bangkok, Huaykwang, Bangkok 103
 E
 R
 Site :
 Location :
 Test code : 802

Unit ID : OH Truck No 14 ENG No 26
 Unit Type : Engine Diesel
 Unit Make : CUMMINS
 Unit Model : QST-30-C-1200
 Oil type / Viscosity : SHELL RIMULA X 15W-40
 Oil System Capacity : 150 Liters

Overall Condition Rating

Wear Condition CAUTION	Oil Condition CAUTION	Contamination NORMAL
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Notes (Finding, Evaluation, Interpretation, Suggestion and Recommendation)

Note abnormal wear metals.
 Note viscosity is slightly lower than normal limits.
 Recommend change oil and flush system with clean oil to remove contamination, if the oil from this sample is still in use in this component.
 Recommend shorten oil drain intervals.

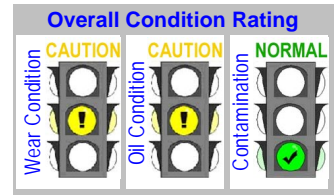
Somchai J / Andy Sitton

			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										Alarm Limit Matrix -Set Name (Equipment type / oil type)							
													Engine Diesel Cummins RIMULA 15W40 (ITD)						
													RDE fine RFS coarse						
													The New Oil	U-Caution	U-Warning	U-Caution	U-Warning		
															0	>12	>18	>8	>15
			Wear Condition												0	>1	>2	>1	>2
			Wear Element			Method	Unit	RDE fine	RFS coarse	RDE fine	RFS coarse	RDE fine	RFS coarse	0	>6	>8	>4	>7	
Iron			D-6595	PPM	4.1	4.4	4.3	1.6	4.7	2.4	0	>10	>17	>1	>2				
Chromium			D-6595	PPM	0.4	0.2	0.4	0.2	0.5	0.3	0	>1	>2	>1	>2				
Lead			D-6595	PPM	0.8	0.1	1.3	0.8	1.0	2.2	0	>2	>3	>1	>2				
Copper			D-6595	PPM	1.6	0.8	1.7	0.3	1.4	0.5	0	>1	>2	>3	>5				
Tin			D-6595	PPM	0.0	0.0	0.0	0.0	0.0	0.0	0	>2	>3	>1	>2				
Aluminum			D-6595	PPM	1.6	1.6	0.9	1.1	1.9	1.4	0	>1	>2	>1	>2				
Nickel			D-6595	PPM	0.0	1.4	0.4	0.8	0.4	0.0	0	>1	>2	>1	>2				
Silver			D-6595	PPM	0.0	0.0	0.0	0.0	0.1	0.0	0								
Molybdenum			D-6595	PPM	0.0	0.0	0.6	0.1	0.0	0.2	0								
Titanium			D-6595	PPM	0.0	0.0	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	93.4		89.9		94.5		14.3	<12.1	<12.9	>15	>15.7				
Viscosity @ 100°C			D-445	cSt	12.7		12.4		12.9		12.5		>15.6	>18.7					
Oxidation			FTIR	Abs	10.7		10.9		9.8		6.0		>9	>10.5					
Nitration			FTIR	Abs	6.2		6.1		5.6		10.6	<2.5	<5.3						
TAN			D-974	mg KOH/g.															
TBN			D-4739	mg KOH/g.															
Contamination												TNO			U-Caution	U-Warning			
Water			FTIR	% (Wt.)	0.049		0.052		0.047		0.050		>0.13	>0.22					
Fuel			SAW	% (Wt.)	0.10		0.10		0.10				>3	>5					
Glycol			FTIR	Abs	0		0		0										
Soot			FTIR	% (Wt.)	0.59		0.55		0.54		0.00		>0.75	>1.5					
Sodium			D-6595	PPM	6		6		5		5								
Silicon			D-6595	PPM	2.4	1.8	2.2	2.2	2.3	1.2	12	>20	>25	>3	>5				
Additive Element												TNO							
Boron			D-6595	PPM	10		11		12		20								
Magnesium			D-6595	PPM	10		11		10		20								
Calcium			D-6595	PPM	3506		3808		3615		4100	>5125	>6150	<2050	<3075				
Barium			D-6595	PPM	0		0		0		0								
Phosphorus			D-6595	PPM	1008		1122		1184		1200	>1500	>1800	<600	<900				
Zinc			D-6595	PPM	1285	902	1332	204	1251	379	1364	>1704	>2045	<682	<1022				
Additional Test												TNO	L-Warning	L-Caution	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 : NORMAL, or : CAUTION (first level warning limit), 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 Code : 18002
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O Address : 2034/132-161 New Petchburi Rd.,
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R Site :
Location :
Test code : 802

Unit ID : OH Truck No 14 ENG No 26
Unit Type : Engine Diesel
Unit Make : CUMMINS
Unit Model : QST-30-C-1200
Oil type / Viscosity : SHELL RIMULA X 15W-40
Oil System Capacity : 150 Liters



Lab ID : 141950 Date sampled : 15-Aug-10 Hours on Oil : 328 Hours on Unit : 33441 Bottle ID : 918288

ส่วนที่ 1 : หน้าหลัก

[Section 1 : Main Page](#)

สังเกต-อนุภาคเศษโลหะสึกหรอที่ผิดปกติ
สังเกตค่าความหนืดต่ำกว่าเกณฑ์ระดับปกติเล็กน้อย
แนะนำให้ถ่ายน้ำมันและล้างระบบด้วยน้ำมันใหม่เพื่อขจัดสิ่งปนเปื้อน ถ้าน้ำมันหล่อลื่นนี้ยังคงใช้งานในขณะนี้
แนะนำให้ถ่ายน้ำมันเร็วขึ้นกว่ากำหนดเดิม

ส่วนที่ 2 : หน้าที่สอง

[Section 2 : Second Page](#)

ส่วนที่ 3 : หน้าของ Analytical Ferrography

[Section 3 : Analytical Ferrography Page](#)

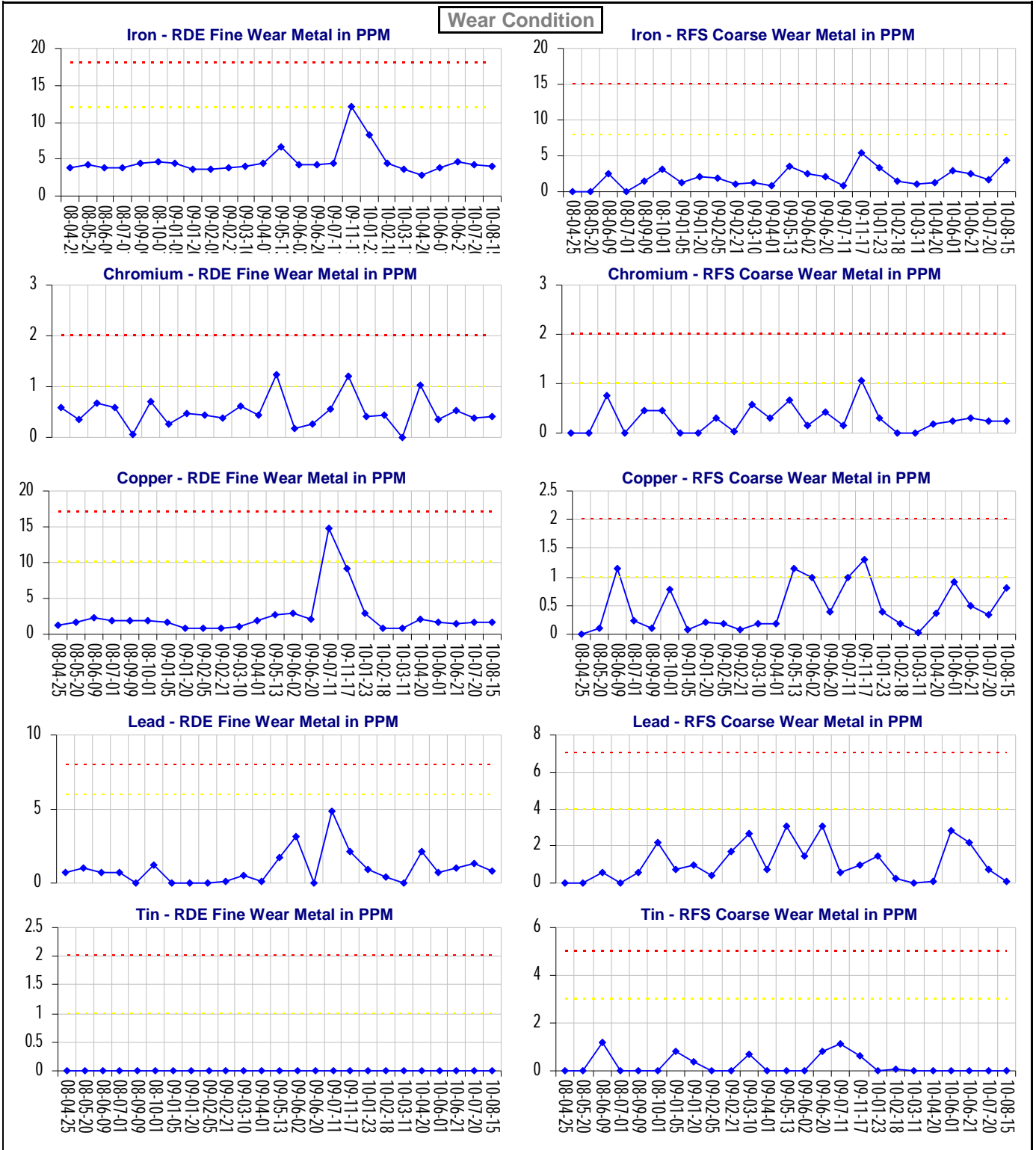
ส่วนที่ 4 : หน้าของ Gravimetric Page

[Section 4 : Gravimetric Page](#)

C Code : **18002**
 Name :
 Address : 2034/132-161 New Petchburi Rd.,
 Bangkapi, Huaykwang, Bangkok 10320
 Site :
 Location :
 Test code : 802

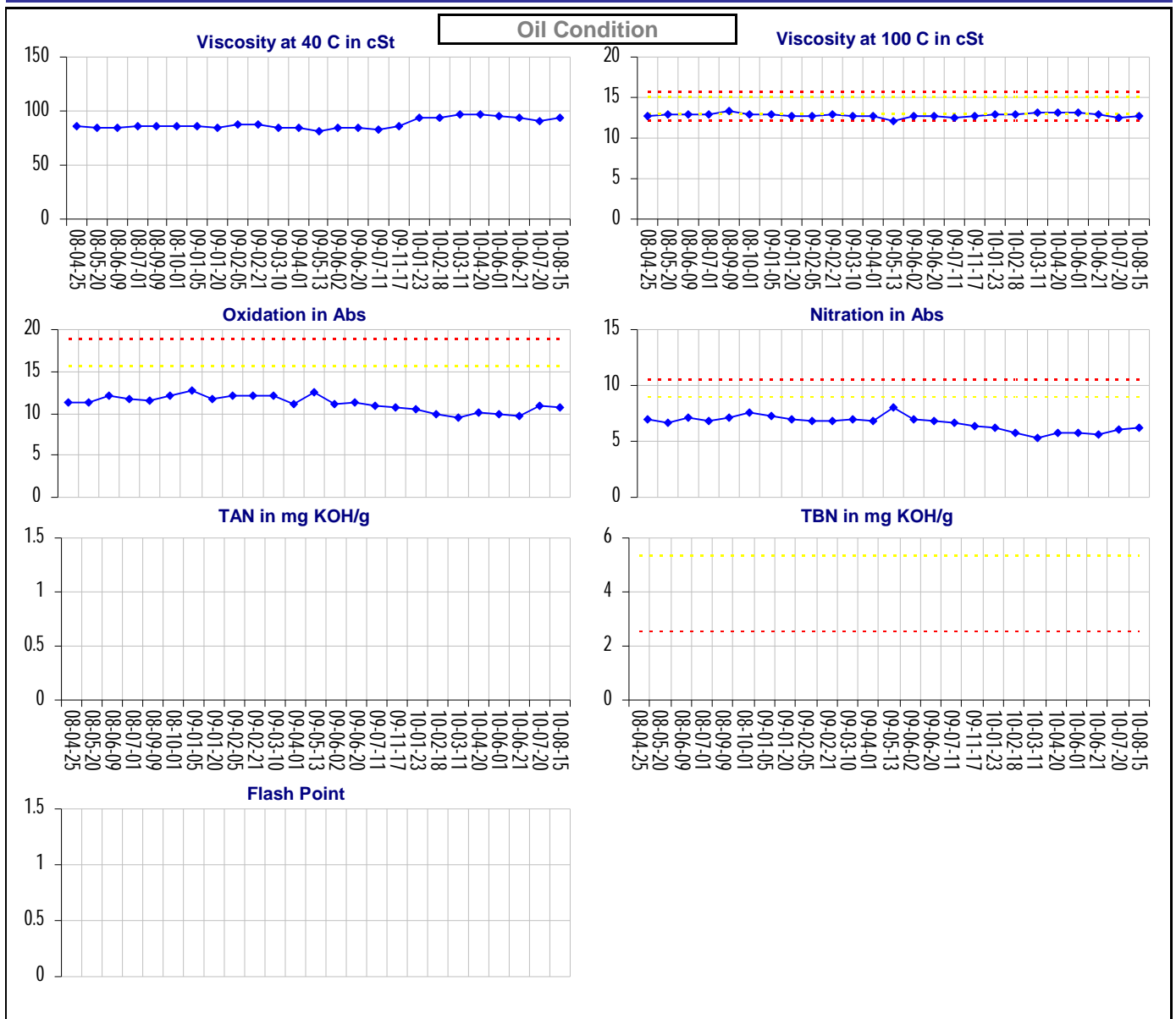
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 Oil type / Viscosity : SHELL RIMULA X 15W-40
 Oil System Capacity : 150 Liters

Wear Condition



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 Oil System Capacity : 150 Liters



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 Oil System Capacity : 150 Liters

