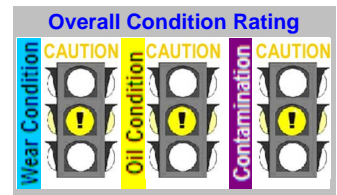


C Code : 25007001
 U Name :
 T
 O Address : Phrakhanong
 M 555 Artnarong Rd.,
 E Klongtoey,
 R Site : PTT
 Location : Lampang
 Test code : P894

Unit ID : P 631 R Roag Loading Pump
 Unit Type : Pump
 Unit Make : NIGATA
 Unit Model : 3HNNS-122
 Oil type / Viscosity : PTT TERBIN 46
 Oil System Capacity : 3 Liters



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

Note abnormal wear metals.
 Dirt (silicon) is present and resulting in abrasive wear.
 Oil condition tests indicate that the oil is slightly degraded.
 Recommend check to determine how dirt is entering the system and correct the problem to prevent further dirt entry.
 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.

Somchai J / Andy Sitton

			Current Sample		Previous Sample		Baseline and Alarm Limit			
Condition History			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) Pump General PTT Terbin 46				
			154020 929067 10-Feb-11 1 years 1month 27 years							
Wear Condition			RDE fine	RFS coarse						
Wear Element	Method	Unit	RDE fine	RFS coarse	Reference Oil (RO)	U-Caution	U-Warning	U-Caution	U-Warning	
Iron	D-6595	PPM	8.6	47.5 W	0	>15	>25	>23	>40	
Chromium	D-6595	PPM	0.2	0.2	0	>2	>3	>2	>3	
Lead	D-6595	PPM	4.1 W	13.1 W	0	>1	>2	>8	>13	
Copper	D-6595	PPM	4.7	0.8	0	>9	>16	>8	>13	
Tin	D-6595	PPM	0.0	0.3	0	>2	>4	>2	>4	
Aluminum	D-6595	PPM	0.0	0.6	0	>1	>2	>2	>4	
Nickel	D-6595	PPM	0.0	0.0	0	>1	>2	>2	>3	
Silver	D-6595	PPM	0.0	0.0	0					
Molybdenum	D-6595	PPM	0.2	0.0	0					
Titanium	D-6595	PPM	0.0	0.0	0					
Oil Condition			RDE fine	RFS coarse	RO	L-Warning	L-Caution	U-Caution	U-Warning	
Viscosity @ 40°C	D-445	cSt	43.8		45.2	<40.7	<42.9	>47.5	>49.7	
Viscosity @ 100°C	D-445	cSt								
Oxidation	FTIR	Abs	9.0 W		2.0			>3	>4	
Nitration	FTIR	Abs	9.0 W		1.5			>2.3	>3	
TAN	D-974	mg KOH/g.	0.14		0.05			>0.5	>1	
TBN	D-4739	mg KOH/g.								
Contamination			RDE fine	RFS coarse	RO	U-Caution	U-Warning			
Water	T-H2O Check™	% (Wt.)	0.013		0.010			>0.03	>0.05	
Sodium	D-6595	PPM	0							
Silicon	D-6595	PPM	96.7 W	8.6 W	0	>7	>12	>5	>8	
Additive Element			RDE fine	RFS coarse	RO					
Boron	D-6595	PPM	0		0					
Magnesium	D-6595	PPM	1		0					
Calcium	D-6595	PPM	8		0					
Barium	D-6595	PPM	0		0					
Phosphorus	D-6595	PPM	109		0					
Zinc	D-6595	PPM	33	13	0					
Additional Test			RDE fine	RFS coarse	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 : 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.

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

Particle count indicates that oil cleanliness level is in unacceptable range.

Lab ID Bottle ID Date Sampled Oil Hours (Kms) Unit Hours (Kms) Oil Added (Liters) Filters Hours (Kms)	Current Sample		Previous Sample				Particle Count		NAS 1638 ISO 4406		
	154020 929067 10-Feb-11 1 years 1month 27 years						BASELINE	Alarm Limit	Pump General PTT Terbin 46		
Contamination							U-Caution		U-Warning		
Particle Count NAS 1638 System Standard							Class		No. of Particles / 100ml. Class		
Particle Size Range	No. of Particles / 100ml.	Class	No. of Particles / 100ml.	Class	No. of Particles / 100ml.	Class	Class	No. of Particles / 100ml.	Class	No. of Particles / 100ml.	Class
Particle Size 5-15 microns	158,800	10 W						>32000	8	>64000	9
Particle Size 15-25 microns	14,400	9 W						>5700	8	>11400	9
Particle Size 25-50 microns	4,100	10 W						>1012	8	>2025	9
Particle Size 50-100 microns	400	9									
Particle Size >100 microns	<100	7									
Particle Count ISO 4406:1999 System Standard							Class		No. of Particles / ml. Class		
Particle Size Range	No. of Particles / ml.	Class	No. of Particles / ml.	Class	No. of Particles / ml.	Class	Class	No. of Particles / ml.	Class	No. of Particles / ml.	Class
Particle Size > 4 microns	4,761	19									
Particle Size > 6 microns	1,333	18									
Particle Size > 14 microns	186	15									
ISO 4406 Class Rating	19/18/15										

