

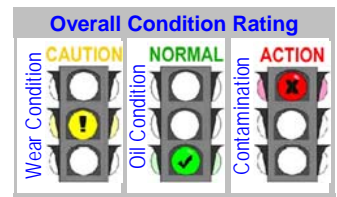
Customer Code : **8888**  
 Customer Name : **ABC Manufacturing Co.,Ltd**  
 Address : 123 Sukhumvit Road , Map Ta Phut  
 Rayong 21150

Unit ID Number : **SHOVEL No 07 HYD**

Unit Type : Hyd Syst Mobile Unit  
 Unit Make : HITACHI  
 Unit Model : EX2500E-5  
 Oil type / Viscosity : IDEMITSU HN 46  
 Site Name :  
 Location :

Test code : 892

Lube System Capacity :



### Recommendations and Notes

Particle count indicates that oil cleanliness level is in unacceptable range.  
 Minor amount of dirt and abrasive wear noted.  
 Recommend check to determine how dirt is entering the system and correct the problem to prevent further dirt entry.  
 Recommend short sampling intervals of this sample point to monitor the abnormal conditions.

WC / Andy Sitton

Condition History			Current Sample			Previous Sample			Alarm Limit Range							
			Wear	Oil	Cont.	Wear	Oil	Cont.	Wear	Oil	Cont.	Limit Name (Equipment / Oil) :				
<b>FocusLab ID</b>			C	N	A	C	N	C	C	N	C	Hyd Syst Hitachi Shovel IDEMITSU (Ital Thai)				
Date sampled		Result	67042			64353			60464							
Hours on Oil			21-Nov-06			28-Sep-06			07-Jul-06							
Hours on Unit			2717			1875			798							
Bottle ID			21490			20648			19571							
			856198			855494			853100							
Wear Condition			RDE fine		RFS coarse		RDE fine		RFS coarse		New Oil					
Wear Element	Method	Unit	RDE fine	RFS coarse	RDE fine	RFS coarse	RDE fine	RFS coarse	RDE fine	RFS coarse	U-Caution	U-Action	L-Caution	L-Action		
Iron	D-6595	PPM	3.1	21.2 A	9.8 A	35.0 A	5.9 C	63.9 A	0	0	>5	>7	>11	>18		
Chromium	D-6595	PPM	0.0	0.2	0.3	0.1	0.0	2.1 A	0	0	>1	>2	>1	>2		
Lead	D-6595	PPM	0.4	0.0	0.2	0.0	0.0	0.1	0	0	>1	>2	>2	>4		
Copper	D-6595	PPM	0.2	1.1	0.4	1.0	0.6	2.9	0	0	>43	>65	>14	>24		
Tin	D-6595	PPM	0.0	0.0	0.8	0.0	0.0	1.1	0	0	>2	>3	>2	>3		
Aluminum	D-6595	PPM	0.5	0.0	1.0	4.6 A	0.7	11.2 A	0	0	>1	>2	>1	>2		
Nickel	D-6595	PPM	0.0	0.0	0.0	0.2	0.0	0.9	0	0	>1	>2	>1	>2		
Silver	D-6595	PPM	0.0	0.0	0.0	0.0	0.1	0.1	0	0						
Molybdenum	D-6595	PPM	0.3	0.0	0.1	0.0	0.0	0.0	0	0						
Titanium	D-6595	PPM	0.0	0.0	0.0	0.0	0.0	0.3	0	0						
Oil Condition			RDE fine		RFS coarse		RDE fine		RFS coarse		New Oil					
Viscosity @ 40 °C	D-445	cSt			7.3		7.4		7.6		<6.84	<7.22	>7.98	>8.36		
Viscosity @ 100 °C	D-445	cSt	7.4		9.6		8.6		6.3				>15	>18		
Oxidation	FTIR	Abs	8.1		4.2 C		4.1 C		3.6				>4	>5		
Nitration	FTIR	Abs	3.7													
TAN	D-974	mg KOH/g.														
TBN	D-4739	mg KOH/g.														
Contamination			RDE fine		RFS coarse		RDE fine		RFS coarse		New Oil					
Water	FTIR	% (Wt.)	0.033		0.018		0.049 C		0.023				>0.049	>0.073		
Fuel	FTIR	% (Wt.)	0.00		0.00		0.00									
Glycol	FTIR	Abs	0		0		0									
Soot	FTIR	% (Wt.)	0.00		0.00		0.00									
Sodium	D-6595	PPM	0		0		0		0							
Silicon	D-6595	PPM	3.0	8.9 A	4.8	4.2 C	3.2	10.2 A	2		>5	>8	>3	>5		
Additive Element			RDE fine		RFS coarse		RDE fine		RFS coarse		New Oil					
Boron	D-6595	PPM	0		0		0		0							
Magnesium	D-6595	PPM	0		1		1		0							
Calcium	D-6595	PPM	1		1		4		2							
Barium	D-6595	PPM	0		0		0		0							
Phosphorus	D-6595	PPM	579		690		647		552							
Zinc	D-6595	PPM	1	4	3	6	4	17	1							
Additional Test			RDE fine		RFS coarse		RDE fine		RFS coarse		New Oil					
Flash Point	Seta Flash	°C														
Viscosity Index	D-2270															
Other																

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 ) , **A** or **A** : ACTION required ( second level warning limit )  
**U-Caution** : Upper CAUTION Level **L-Caution** : Lower CAUTION Level First level warning limit in Upper level and/or Lower level  
**U-Action** : Upper ACTION required Level **L-Action** : Lower ACTION required Level Second level warning limit in Upper level and/or Lower level  
 Accuracy of interpretation and recommendation are based on representatives sample and information supplied. No warranty is expressed or implied for this report.

Customer Code : 8888

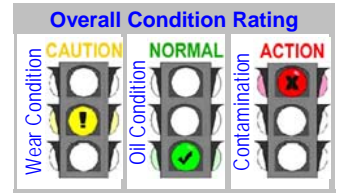
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 Unit Make : HITACHI  
 Unit Model : EX2500E-5  
 Oil type / Viscosity : IDEMITSU HN 46  
 Site Name :  
 Location :

Test code : 892

Lube System Capacity :



FocusLab ID	Current Sample		Previous Sample				Alarm Limit Range				
	Limit Name (Equipment / Oil) :		Hyd Syst Hitachi Shovel IDEMITSU (Ital Thai)								
Date sampled	67042	64353	60464								
Hours on Oil	21-Nov-06	28-Sep-06	07-Jul-06								
Hours on Unit	2717	1875	798								
Bottle ID	21490	20648	19571								
	856198	855494	853100								
Particle Count NAS 1638: Number of Particles Per 100 Milliliter (Counts/100ml)							New Oil	U-Caution		U-Action	
Size Range	No. of Particles	Class	No. of Particles	Class	No. of Particles	Class	Class	No. of Particles	Class	No. of Particles	Class
5-15 microns	522,700	12	12,600	6	136,200	10					
15-25 microns	47,500	11 A	1,100	5	12,400	9 A	<7		<8		<9
25-50 microns	13,600	11	300	6	3,600	9					
50-100 microns	1400	10	<100	5	300	8					
>100 microns	<100	9	<100	3	<100	7					
Particle Count ISO 4406:1999: Number of Particles Per Milliliter (Counts/ml)											
Size Range	No. of Particles	Class	No. of Particles	Class	No. of Particles	Class					
>4 microns	15,585	21	372	16	4,063	19					
>6 microns	4,389	19	105	14	1,144	17					
>14 microns	616	16	14	11	161	15					
ISO 4406 Result	21/19/16		16/14/11		19/17/15						

### Recommendations and Notes

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

### Option Test: Varnish Potential Index™ (VPI™), Testing for Predicting Varnish and Varnish build up

VPI™ Value Condition							VPI™ Severity Limit Range Guideline		
	New Oil		U-Caution		U-Action				
	250	200	150	100	50	0			

### Option Test: RUL (Remain Useful Life), Testing for monitoring Percent Remaining Anti-Oxidant (AO) by ASTM D-6971

% Remaining Antioxidant Additive							New Oil			U-Caution		U-Action	
								100		<50		<25	

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Unit Make : HITACHI

Unit Model : EX2500E-5

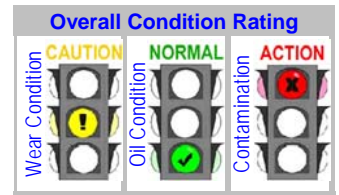
Test code : 892

Oil type / Viscosity : IDEMITSU HN 46

Site Name :

Lube System Capacity :

Location :



FocusLab ID : 67042    Date sampled : 21-Nov-06    Hours on Oil : 2717    Hours on Unit : 21490    Bottle ID : 856198

**ส่วนที่ 1 : หน้าหลัก**

[Section 1 : Main Page](#)

ผลการตรวจนับอนุภาคสิ่งสกปรกชี้ว่าระดับความสะอาดของน้ำมันยอมรับไม่ได้แล้ว  
 สังเกต-ปริมาณเล็กน้อยของฝุ่นละอองและอนุภาคโลหะสึกหรอแบบขูดขีด (abrasive wear)  
 แนะนำให้ตรวจสอบว่าที่มาของสิ่งสกปรกเข้าสู่ระบบได้อย่างไร และแก้ไขเพื่อป้องกันสิ่งสกปรกไม่ให้เข้าสู่ระบบอีกต่อไป  
 แนะนำให้เก็บตัวอย่างเร็วขึ้นกว่าระยะเวลาเดิมของตำแหน่งเก็บตัวอย่างนี้ เพื่อเฝ้าติดตามสภาพผิดปกติ

**ส่วนที่ 2 : หน้าที่สอง**

[Section 2 : Second Page](#)

ผลการตรวจนับอนุภาคสิ่งสกปรกชี้ว่าระดับความสะอาดของน้ำมันยอมรับไม่ได้แล้ว

**ส่วนที่ 3 : หน้าของ Analytical Ferrography**

[Section 3 : Analytical Ferrography Page](#)

**ส่วนที่ 4 : หน้าของ Gravimetric Page**

[Section 4 : Gravimetric Page](#)

Customer Code : **8888**

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Unit Type : Hyd Syst Mobile Unit

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Rayong 21150

Unit Make : HITACHI

Unit Model : EX2500E-5

Oil type / Viscosity : IDEMITSU HN 46

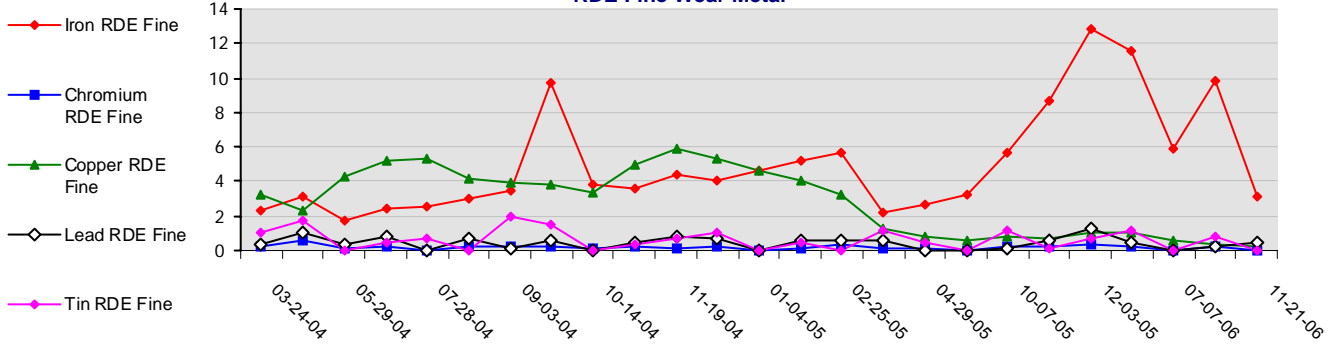
Site Name :

Location :

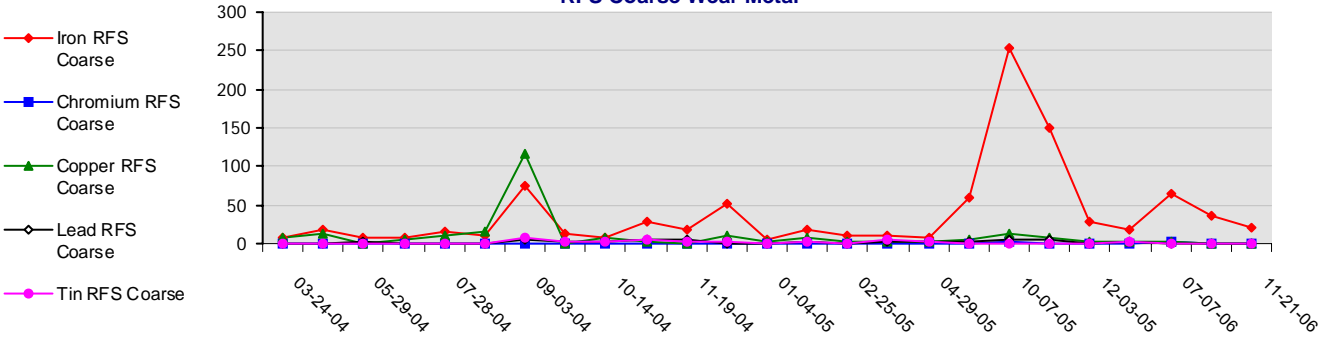
Lube System Capacity :

### Wear Condition

#### RDE Fine Wear Metal

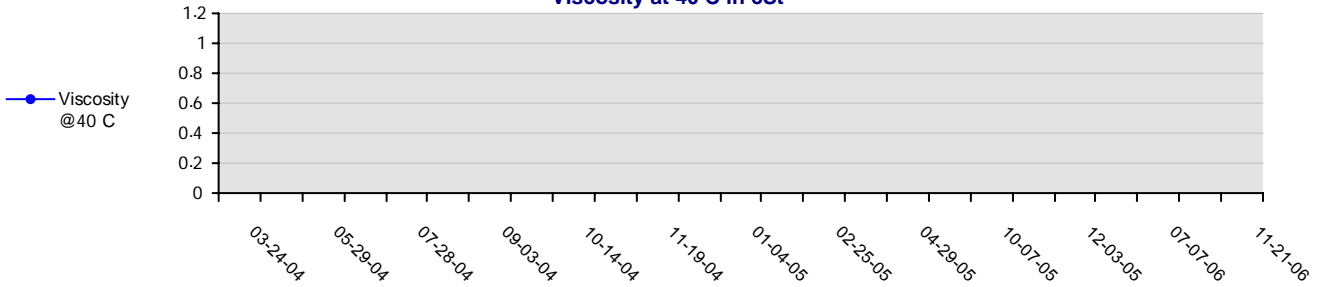


#### RFS Coarse Wear Metal

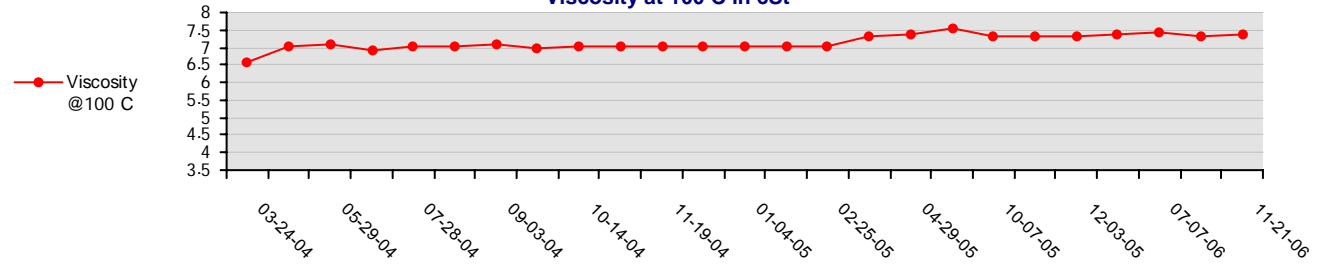


### Oil Condition

#### Viscosity at 40 C in cSt



#### Viscosity at 100 C in cSt



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Unit ID Number : **SHOVEL No 07 HYD**

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Unit Make : HITACHI

Unit Model : EX2500E-5

Oil type / Viscosity : IDEMITSU HN 46

Site Name :

Location :

Lube System Capacity :

