

Unit/Vehicle No.: HCM1V700J00060221
Unit Make: Hitachi
Unit Model: ZX330-3
Unit Serial No.: HCM1V700J00060221
Unit/Vehicle Site: Revesby

Comp Name: Engine
Comp Make:
Comp Model:
Comp Serial No.:
System Capacity: 41.0 Ltrs

Customer Number
206657
 ACT EARTHMOVING
 14 Stephens Road
 Queanbeyan NSW 2620

	Current Sample	Last Sample	Previous Sample	Previous Sample
SAMPLE STATUS				
LAB CHECK NO.	21619382	22403801	93371164	93070926
TRACKING NUMBER				
ANALYSIS NO.	10204375074	10204368287	10204150188	10204070893
SAMPLED DATE	22-Jan-18	22-Dec-17	21-Jul-16	06-Jan-16
RECEIVED DATE	25-Jan-18	08-Jan-18	27-Jul-16	11-Jan-16
REPORTED DATE	30-Jan-18	10-Jan-18	29-Jul-16	12-Jan-16
MACHINE	Hrs 3402	3400	2517	2035
OIL	Hrs	400	482	549
OIL MAKE	DH-1 Superwide	DH-1 Superwide	DH-1 Superwide	DH-1 Superwide
OIL GRADE	SAE 15W40	SAE 15W40	SAE 15W40	SAE 15W40
OIL ADDED	Ltrs		0.0	0.0
OIL CHANGED	No	Yes	Yes	Yes
FILTER	Hrs		482	549
FILTER CHANGED	No	Yes	Yes	Yes
Metals (ppm)				
*Aluminium (Al)	2	5	5	4
*Nickel (Ni)	<1	<1	<1	<1
*Copper (Cu)	<1	1	1	1
*Chromium (Cr)	<1	<1	<1	<1
*Iron (Fe)	3	8	10	9
*Lead (Pb)	<1	2	3	4
*Tin (Sn)	<1	1	2	1
Contaminants and Additives (ppm)				
*Silicon (Si)	4	7	8	6
Boron (B)	216	128	168	139
*Sodium (Na)	<1	3	5	1
*Potassium (K)	<1	<1	<1	<1
*Phosphorus (P)	791	902	1306	998
*Molybdenum (Mo)	201	<1	<1	<1
*Calcium (Ca)	1372	4133	6008	4510
*Magnesium (Mg)	593	10	15	12
*Zinc (Zn)	1003	1089	1688	1177
Physical Tests				
Water (%)	<0.1	<0.1	<0.1	<0.1
Soot (%)	0.5	0.7	0.6	0.6
Viscosity (cSt,100°C)	15.1	13.9	14.2	14.2
PQ Index	<10	<10	<10	<10
Oxidation (Abs)	14.1	11.5	7.2	10.8
Sulphation (Abs)	22.1	21.9	16.6	20.2
Fuel (% by G.C.)	<0.1	<0.1	<0.1	<0.1
Total Base Number (FTIR)	8.8	15.0	12.4	15.4



LEGEND	
	Severe
	Abnormal
	Caution
	Normal

Guidelines

LEGEND	
(g)	Guidelines
(fr)	Fluid Reference
(*)	No reference

DIAGNOSIS

Please contact your local Hitachi outlet for further explanation on non-normal samples

Lack of information regarding time on oil limits accuracy of diagnosis. All wear rates normal. Abrasive and other contaminant levels are acceptable. Viscosity within specified operating range, however additive package indicates a different oil is in use. Action: Resample next recommended service interval to further monitor.

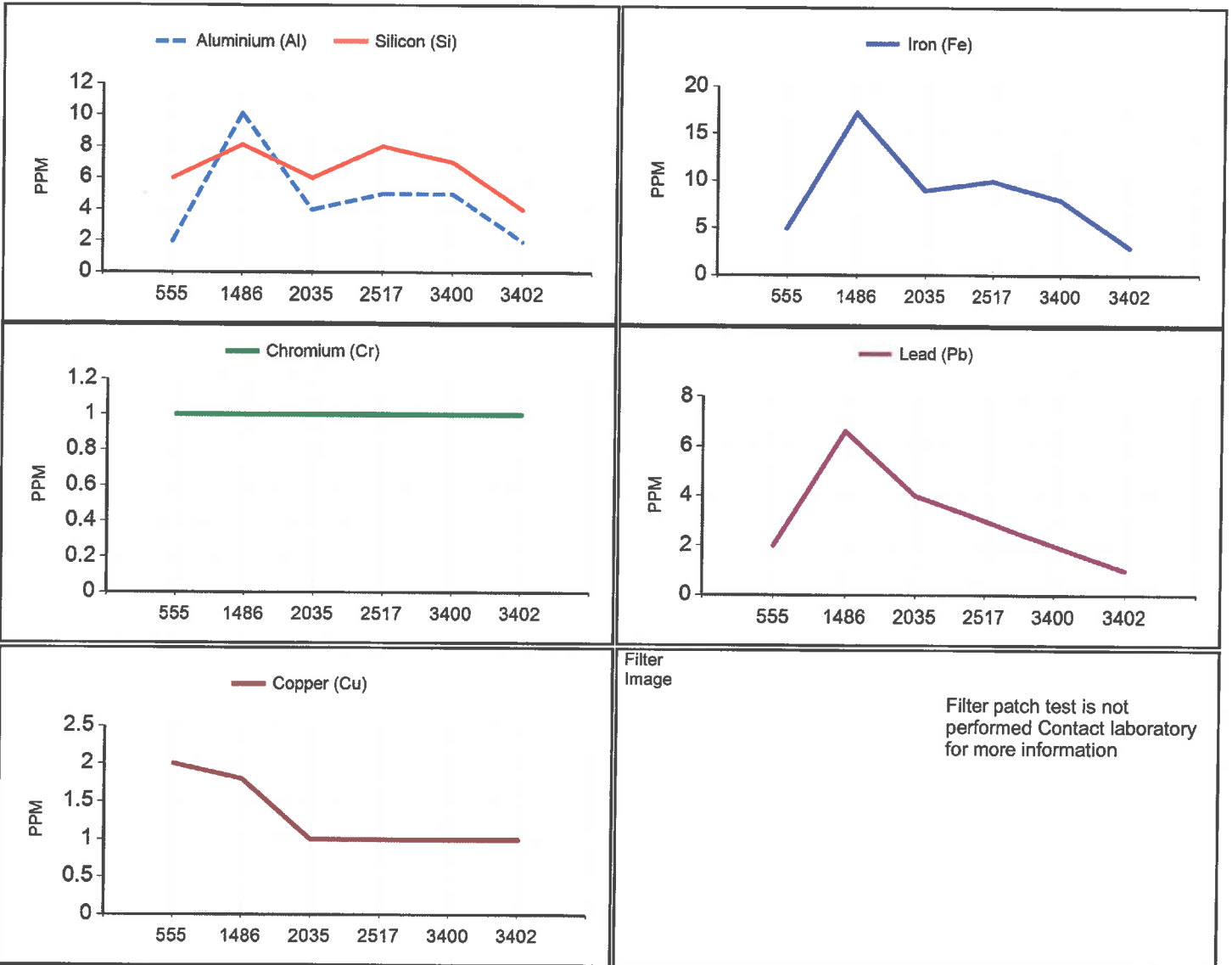
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PREVIOUS DIAGNOSIS

All wear rates normal. Abrasive and other contaminant levels are acceptable. Viscosity within specified operating range.

Action: As oil and filter(s) already changed, resample next recommended service interval to further monitor.

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Hitachi Construction Machinery - Parent
 Attn: Glen Starling
 Building 3
 1 Foundation Place
 Greystanes NSW 2145

Unit/Vehicle No.: HCM1V700J00060221
 Unit Make: Hitachi
 Unit Model: ZX330-3
 Unit Serial No.: HCM1V700J00060221
 Unit/Vehicle Site: Revesby

Comp Name: **Hydraulic**
 Comp Make:
 Comp Model:
 Comp Serial No.:
 System Capacity: 180.0 Ltrs

Customer Number
206657
 ACT EARTHMOVING
 14 Stephens Road
 Queanbeyan NSW 2620

SAMPLE STATUS	Current Sample	Last Sample	Previous Sample	Previous Sample	Caution	LEGEND
LAB CHECK NO.	21619419	93371162	93070925	17976376		LEGEND Severe Abnormal Caution Normal
TRACKING NUMBER						
ANALYSIS NO.	10204375157	10204150220	10204071092	10204029875		
SAMPLED DATE	22-Jan-18	21-Jul-16	06-Jan-16	19-Sep-15		
RECEIVED DATE	25-Jan-18	27-Jul-16	11-Jan-16	23-Sep-15		
REPORTED DATE	29-Jan-18	29-Jul-16	12-Jan-16	25-Sep-15		
MACHINE	Hrs 3402	2517	2035	1486		
OIL	Hrs	2517	2035	1486		
OIL MAKE	Super EX46HN	Super EX46HN	Super EX46HN	Super EX46HN		
OIL GRADE	ISO 46	ISO 46	ISO 46	ISO 46		
OIL ADDED	Ltrs	0.0	0.0			
OIL CHANGED	No	No	No	No		
FILTER	Hrs	482	549			
FILTER CHANGED	No	No	Yes	No		
Metals (ppm)					Guidelines	LEGEND (gl) Guidelines (fr) Fluid Reference (*) No reference
*Aluminium (Al)	7	5	4	3	0 - 9 (gl)	
*Copper (Cu)	<1	1	1	3	0 - 19 (gl)	
*Chromium (Cr)	<1	<1	<1	<1	0 - 9 (gl)	
*Iron (Fe)	24	20	18	19	0 - 29 (gl)	
*Lead (Pb)	<1	<1	<1	<1	0 - 9 (gl)	
*Tin (Sn)	<1	<1	<1	<1	0 - 4 (gl)	
*Nickel (Ni)	<1	<1	<1	<1	0 - 4 (gl)	
Contaminants and Additives (ppm)						
*Silicon (Si)	5	5	4	4	0 - 9 (gl)	
Boron (B)	<5	<5	<5	<5	<5 (fr)	
*Sodium (Na)	<1	1	1	3	0 - 9 (gl)	
*Potassium (K)	1	2	2	2	0 - 9 (gl)	
*Phosphorus (P)	487	538	453	413	656 (fr)	
*Molybdenum (Mo)	<1	<1	<1	1	<1 (fr)	
*Magnesium (Mg)	<1	<1	<1	1	<1 (fr)	
*Calcium (Ca)	<1	2	2	3	2 (fr)	
*Zinc (Zn)	18	38	38	44	2 (fr)	
Physical Tests						
Oxidation (Abs)	6.2	5.8	7.5	5.6	7.7 (fr)	
Viscosity (cSt,40°C)	48	47	45	47	46 (fr)	
Viscosity (cSt,100°C)	7.3	7.5	7.4	7.3	7.6 (fr)	
*Viscosity Index (ASTM D2270)	113	124	128.0	117.0	125 (fr)	
PQ Index	<10	<10	<10	<10	0 - 19 (gl)	
*Water ppm (ASTM D6304 Proc C)	87	96	135	77	0 - 299 (gl)	
Particle Count						
ISO 4406 Code	23/21/14	22/17/12	22/19/16	22/20/15	()	
*ISO Clean 4 Micron (c)	23	22	22	22	0 - 22 (gl)	
*ISO Clean 6 Micron (c)	20	17	19	20	0 - 19 (gl)	
ISO Clean 14 Micron (c)	14	12	16	15	0 - 14 (gl)	

DIAGNOSIS

Please contact your local Hitachi outlet for further explanation on non-normal samples

Lack of information regarding time on oil limits accuracy of diagnosis. Wear levels lower than 8 micron appear satisfactory. However, Oil cleanliness rating exceeds considered recommended limit. Other contaminant levels acceptable. Viscosity within specified operating range. Action: Check filter(s)/screen and sampling procedure as a precaution. Resample at a reduced service interval to further monitor.

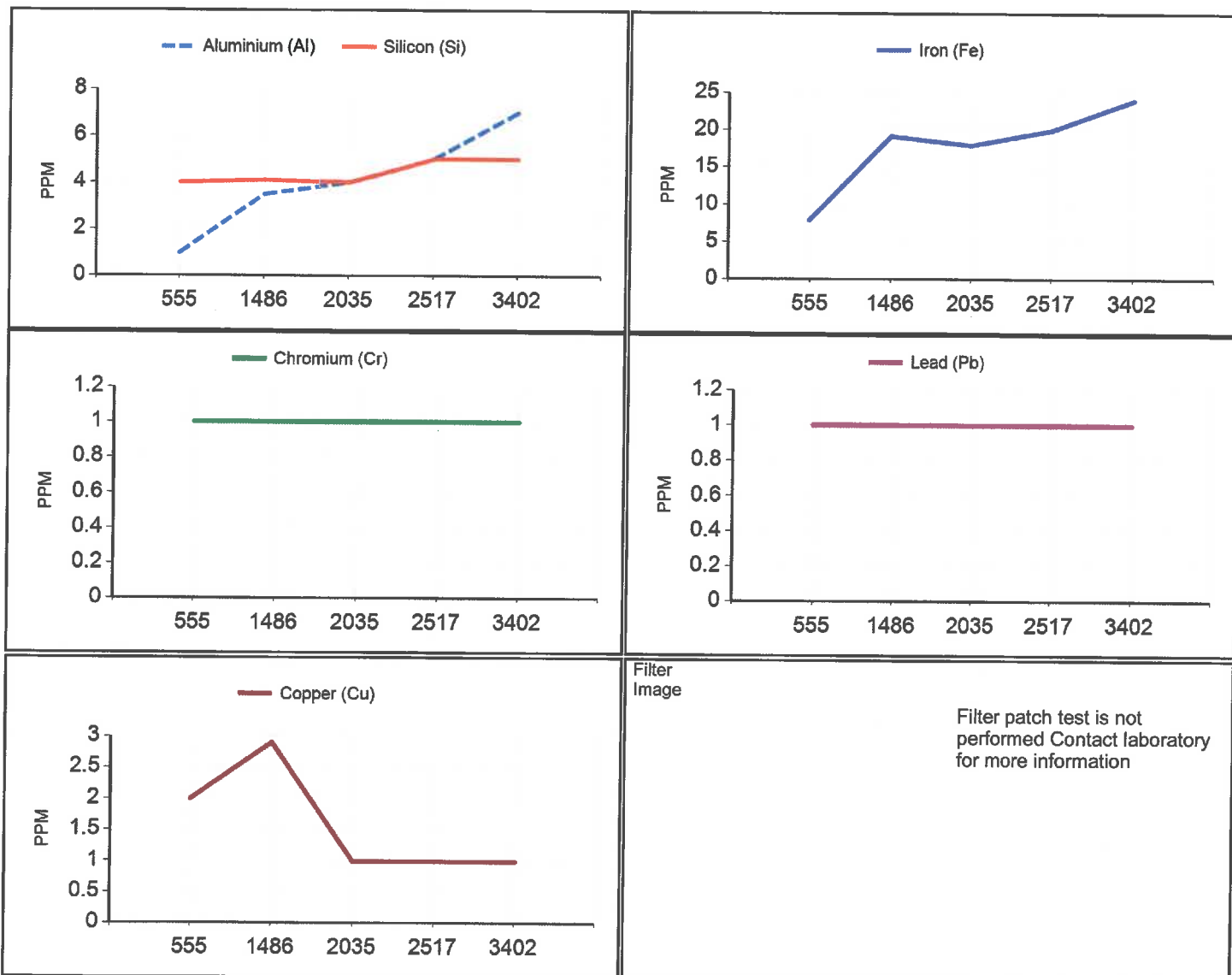
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PREVIOUS DIAGNOSIS

All wear rates normal. Abrasive and other contaminant levels are acceptable. Viscosity within specified operating range.

Action: Resample next recommended service interval to further monitor.

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Hitachi Construction Machinery - Parent
 Attn: Glen Starling
 Building 3
 1 Foundation Place
 Greystanes NSW 2145

Unit/Vehicle No.: HCM1V700J00060221
 Unit Make: Hitachi
 Unit Model: ZX330-3
 Unit Serial No.: HCM1V700J00060221
 Unit/Vehicle Site: Revesby

Comp Name: **Right Final Drive**
 Comp Make:
 Comp Model:
 Comp Serial No.:
 System Capacity: 6.2 Ltrs

Customer Number
206657
 ACT EARTHMOVING
 14 Stephens Road
 Queanbeyan NSW 2620

SAMPLE STATUS	Current Sample	Last Sample	Previous Sample	Previous-Sample	Normal	LEGEND
LAB CHECK NO.	21619415	93371166	93070930	17976370		LEGEND Severe Abnormal Caution Normal
TRACKING NUMBER						
ANALYSIS NO.	10204375055	10204150227	10204071154	10204029880		
SAMPLED DATE	22-Jan-18	21-Jul-16	06-Jan-16	19-Sep-15		
RECEIVED DATE	25-Jan-18	27-Jul-16	11-Jan-16	23-Sep-15		
REPORTED DATE	25-Jan-18	29-Jul-16	12-Jan-16	25-Sep-15		
MACHINE	Hrs 3402	2517	2035	1486		
OIL	Hrs	482	549	500		
OIL MAKE	GL-4	GL-4	GL-4	GL-4		
OIL GRADE	SAE 90	SAE 90	SAE 90	SAE 90		
OIL ADDED	Ltrs	0.0	0.0		Guidelines (gl) Guidelines (fr) Fluid Reference (*) No reference	
OIL CHANGED	No	Yes	Yes	Yes		
FILTER	Hrs	482	549	0		
FILTER CHANGED	No	No	No			
Metals (ppm)						
*Aluminium (Al)	2	4	8	<1		0 - 69 (gl)
*Copper (Cu)	<1	<1	<1	<1		0 - 9 (gl)
*Chromium (Cr)	<1	1	1	<1		0 - 9 (gl)
*Iron (Fe)	17	66	86	54		0 - 699 (gl)
*Lead (Pb)	<1	<1	<1	<1		0 - 4 (gl)
*Tin (Sn)	<1	<1	<1	<1	0 - 4 (gl)	
*Nickel (Ni)	<1	<1	<1	<1	0 - 4 (gl)	
Contaminants and Additives (ppm)						
*Silicon (Si)	4	12	21	3	0 - 289 (gl)	
Boron (B)	<5	<5	<5	<5	<5 (fr)	
*Sodium (Na)	<1	1	<1	2	<1 (fr)	
*Potassium (K)	1	1	4	2	1 (fr)	
*Phosphorus (P)	311	352	332	274	319 (fr)	
*Molybdenum (Mo)	<1	<1	<1	<1	<1 (fr)	
*Magnesium (Mg)	<1	2	1	2	<1 (fr)	
*Calcium (Ca)	<1	1	2	4	3 (fr)	
*Zinc (Zn)	<1	8	5	8	4 (fr)	
Physical Tests						
Water (%)	<0.1	<0.1	<0.1	<0.1	0 - 0.09 (gl)	
Viscosity (cSt,40°C)	213	211	202	209	195 (fr)	
PQ Index	<10	<10	26	<10	0 - 299 (gl)	
Oxidation (Abs)	2.6	2.5	5.7	2.5	0 - 14.90 (gl)	

DIAGNOSIS Please contact your local Hitachi outlet for further explanation on non-normal samples

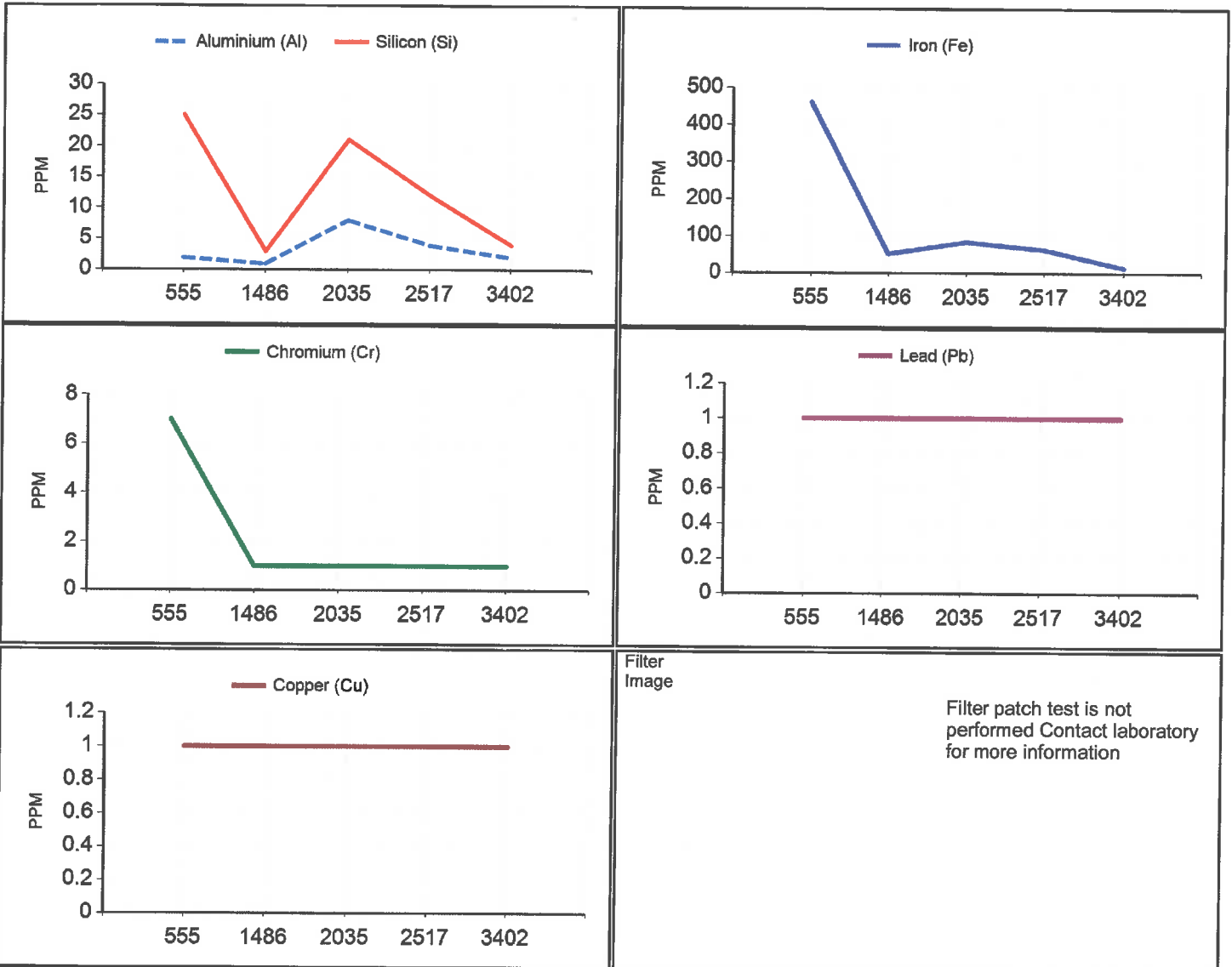
Lack of information regarding time on oil limits accuracy of diagnosis. All wear rates normal. Abrasive and other contaminant levels are acceptable. Viscosity within specified operating range. Action: Resample next recommended service interval to further monitor. Accredited for compliance with ISO/IEC17025-Testing. NATA Accreditation No.825. Site No. 2024. *NATA accreditation covers the performance of this service.

PREVIOUS DIAGNOSIS

All wear rates normal. Abrasive and other contaminant levels are acceptable. Viscosity within specified operating range.

Action: As oil already changed, resample next recommended service interval to further monitor.

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Hitachi Construction Machinery - Parent
 Attn: Glen Starling
 Building 3
 1 Foundation Place
 Greystanes NSW 2145

Unit/Vehicle No.: HCM1V700J00060221
 Unit Make: Hitachi
 Unit Model: ZX330-3
 Unit Serial No.: HCM1V700J00060221
 Unit/Vehicle Site: Revesby

Comp Name: **Left Final Drive**
 Comp Make:
 Comp Model:
 Comp Serial No.:
 System Capacity: 9.2 Ltrs

Customer Number
206657
 ACT EARTHMOVING
 14 Stephens Road
 Queanbeyan NSW 2620

SAMPLE STATUS	Current Sample	Last Sample	Previous Sample	Previous Sample	Normal
					
LAB CHECK NO.	21619418	93371165	93070929	17976384	
TRACKING NUMBER					
ANALYSIS NO.	10204375054	10204150224	10204071153	10204029881	
SAMPLED DATE	22-Jan-18	21-Jul-16	06-Jan-16	19-Sep-15	
RECEIVED DATE	25-Jan-18	27-Jul-16	11-Jan-16	23-Sep-15	
REPORTED DATE	25-Jan-18	29-Jul-16	12-Jan-16	25-Sep-15	
MACHINE	Hrs 3402	Hrs 2517	Hrs 2035	Hrs 1486	
OIL	Hrs 482	Hrs 482	Hrs 549	Hrs 500	
OIL MAKE	GL-4	GL-4	GL-4	GL-4	
OIL GRADE	SAE 90	SAE 90	SAE 90	SAE 90	
OIL ADDED	Ltrs 0.0	Ltrs 0.0	Ltrs 0.0	Ltrs 0.0	
OIL CHANGED	No	Yes	Yes	Yes	
FILTER	Hrs 482	Hrs 482	Hrs 549	Hrs 0	
FILTER CHANGED	No	No	No	No	
Metals (ppm)					Guidelines
*Aluminium (Al)	3	7	9	<1	0 - 69 (g)
*Copper (Cu)	<1	<1	<1	<1	0 - 9 (g)
*Chromium (Cr)	<1	1	1	1	0 - 9 (g)
*Iron (Fe)	20	75	88	60	0 - 699 (g)
*Lead (Pb)	<1	<1	<1	<1	0 - 4 (g)
*Tin (Sn)	<1	<1	<1	<1	0 - 4 (g)
*Nickel (Ni)	<1	<1	<1	<1	0 - 4 (g)
Contaminants and Additives (ppm)					
*Silicon (Si)	7	20	23	4	0 - 289 (g)
Boron (B)	<5	<5	<5	<5	<5 (fr)
*Sodium (Na)	<1	1	<1	2	<1 (fr)
*Potassium (K)	1	2	2	1	1 (fr)
*Phosphorus (P)	291	348	330	272	319 (fr)
*Molybdenum (Mo)	<1	<1	<1	<1	<1 (fr)
*Magnesium (Mg)	<1	1	1	<1	<1 (fr)
*Calcium (Ca)	<1	2	2	4	3 (fr)
*Zinc (Zn)	1	7	5	6	4 (fr)
Physical Tests					
Water (%)	<0.1	<0.1	<0.1	<0.1	0 - 0.09 (g)
Viscosity (cSt,40°C)	197	215	202	206	195 (fr)
PQ Index	<10	20	29	11	0 - 299 (g)
Oxidation (Abs)	2.7	2.9	5.4	2.6	0 - 14.90 (g)

LEGEND

-  Severe
-  Abnormal
-  Caution
-  Normal

LEGEND

- (g) Guidelines
- (fr) Fluid Reference
- (*) No reference

DIAGNOSIS Please contact your local Hitachi outlet for further explanation on non-normal samples

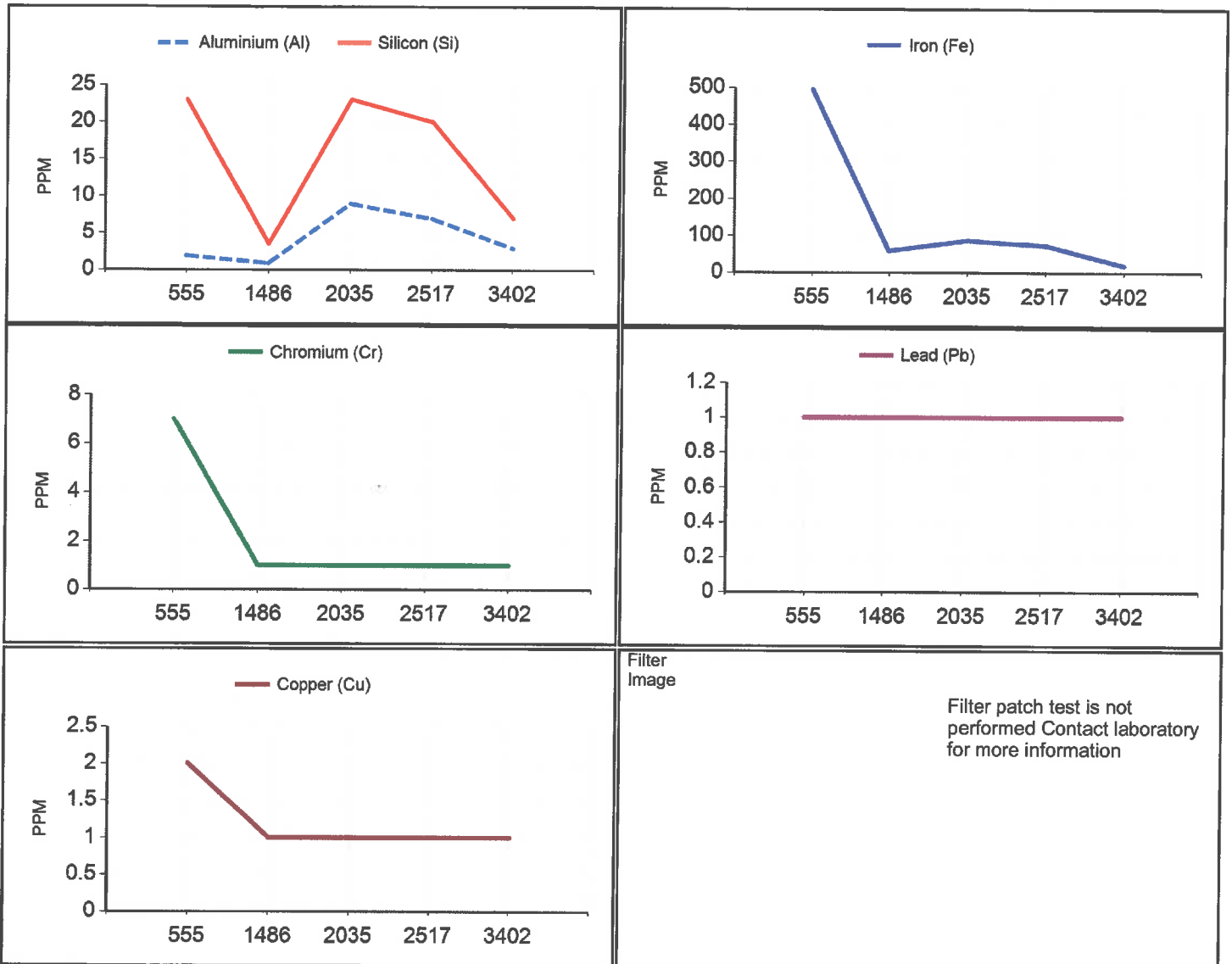
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PREVIOUS DIAGNOSIS

All wear rates normal. Abrasive and other contaminant levels are acceptable. Viscosity within specified operating range.

Action: As oil already changed, Resample next recommended service interval to further monitor.

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