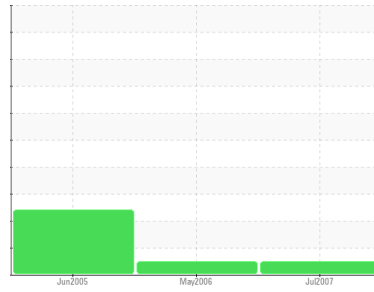




OIL ANALYSIS REPORT

Sample Rating Trend



WEAR



Area

M.S.E.

Machine Id

RETLT 104S (S/N 8)

Component

4 Gearbox

Fluid

ESSO SPARTAN SYNTHETIC EP 220 (68 LTR)

DIAGNOSIS

Recommendation

Nous recommandons de faire un changement d'huile ou une filtration d'huile.

▲ Wear

Le taux de cuivre est marginal. Le taux d'étain est marginal. Il y a indication d'usure de roulements-coussinets et/ou d'engrenages.

Contamination

Il n'y a aucun indice de contamination dans le composant.

Fluid Condition

L'état de l'huile est acceptable pour la durée de service.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		WC21012144	WC21010287	WC621044
Sample Date	Client Info		17 Jul 2007	25 May 2006	16 Jun 2005
Machine Age	hrs	Client Info	0	0	0
Oil Age	hrs	Client Info	0	0	0
Oil Changed	Client Info		N/A	N/A	N/A
Sample Status			NORMAL	NORMAL	ABNORMAL

CONTAMINATION

	method	limit/base	current	history1	history2
Water	WC Method		NEG	NEG	NEG

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	6	5	6
Chromium	ppm	ASTM D5185(m)	0	<1	0
Nickel	ppm	ASTM D5185(m)	5	5	▲ 13
Titanium	ppm	ASTM D5185(m)	0	0	0
Silver	ppm	ASTM D5185(m)	<1	<1	<1
Aluminum	ppm	ASTM D5185(m)	0	<1	<1
Lead	ppm	ASTM D5185(m)	2	2	6
Copper	ppm	ASTM D5185(m)	▲ 336	▲ 264	▲ 708
Tin	ppm	ASTM D5185(m)	▲ 41	▲ 32	▲ 79
Vanadium	ppm	ASTM D5185(m)	0	0	0

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	6	6	<1
Barium	ppm	ASTM D5185(m)	0	0	<1
Molybdenum	ppm	ASTM D5185(m)	0	0	0
Manganese	ppm	ASTM D5185(m)	0	0	0
Magnesium	ppm	ASTM D5185(m)	0	<1	0
Calcium	ppm	ASTM D5185(m)	2	<1	<1
Phosphorus	ppm	ASTM D5185(m)	246	225	235
Zinc	ppm	ASTM D5185(m)	21	5	7
Sulfur	ppm	ASTM D5185(m)	3503	3265	2715

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	30	31	2
Sodium	ppm	ASTM D5185(m)	0	0	0
Potassium	ppm	ASTM D5185(m)	0	1	1

INFRA-RED

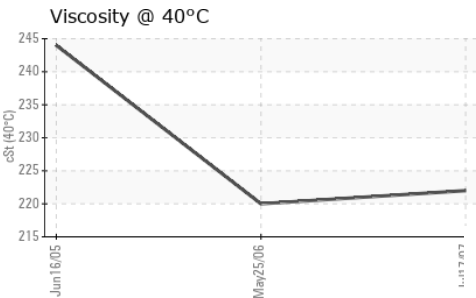
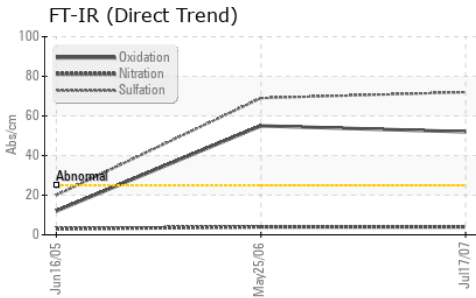
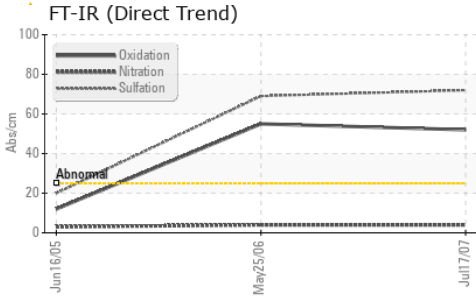
	method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*	0	0	0
Nitration	Abs/cm	ASTM D7624*	4	4	3
Sulfation	Abs.1mm	ASTM D7415*	72	69	20

FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs.1mm	ASTM D7414*	52	55	12



OIL ANALYSIS REPORT



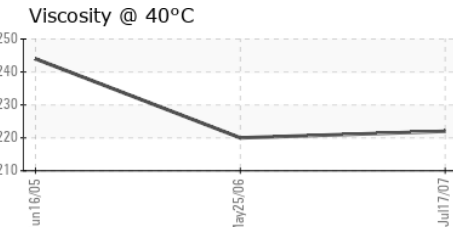
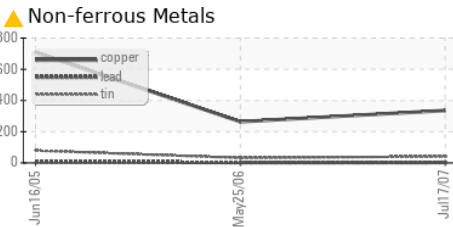
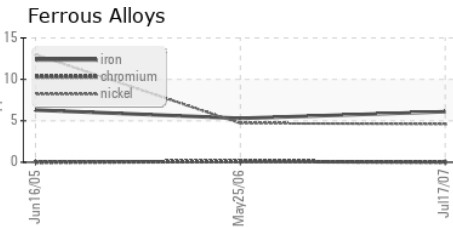
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	NONE	VLITE
Yellow Metal	scalar	Visual*	NONE	NONE	NONE
Precipitate	scalar	Visual*	NONE	NONE	NONE
Silt	scalar	Visual*	NONE	LTMOD	NONE
Debris	scalar	Visual*	NONE	VLITE	NONE
Sand/Dirt	scalar	Visual*	NONE	NONE	NONE
Appearance	scalar	Visual*	NORML	NORML	HAZY
Odor	scalar	Visual*	NORML	NORML	NORML
Emulsified Water	scalar	Visual*	NEG	NEG	NEG
Free Water	scalar	Visual*	NEG	NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	222	220	244

SAMPLE IMAGES	method	limit/base	current	history1	history2
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Color	no image		
Bottom	no image		

GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC21012144 **Received** : 27 Jul 2007
Lab Number : **01399085** **Tested** : 30 Jul 2007
Unique Number : 2489560 **Diagnosed** :
Test Package : IND 1 (Additional Tests: FT-IR)

RTA - ALMA
 3000 RUE DES PINS OUEST, BATISSE 7103 MEZZALINE
 ALMA, QC
 CA G8B 6T3
 Contact: Guy Dufour
 guy.dufour-almacou@riotinto.com

To discuss this sample report, contact Customer Service at 1-800-268-2131.
 Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
 Validity of results and interpretation are based on the sample and information as supplied.

T:
 F: (418)480-6004