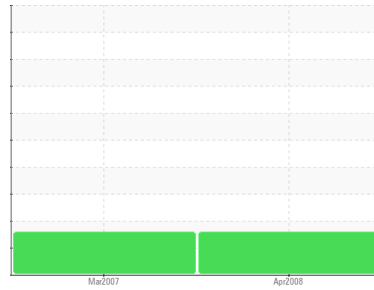




OIL ANALYSIS REPORT

Sample Rating Trend



WEAR



Area

M.S.E.

Machine Id

RETLT 111S (S/N 22)

Component

11 Gearbox

Fluid

ESSO SPARTAN SYNTHETIC EP 220 (68 LTR)

DIAGNOSIS

Recommendation

Nous recommandons le remplacement des filtres de ce composant. Le fluide spécifié est présentement obsolète (renommé, reformulé ou discontinué). Veuillez vérifier le nom du produit avec votre fournisseur.

Wear

Le taux d'étain est anormal. Le taux de cuivre est anormal. 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 | | WC21014810 | WC21011713 | --- |
| Sample Date | Client Info | | 01 Apr 2008 | 23 Mar 2007 | --- |
| Machine Age | hrs | Client Info | 0 | 0 | --- |
| Oil Age | hrs | Client Info | 0 | 0 | --- |
| Oil Changed | Client Info | | N/A | N/A | --- |
| Sample Status | | | ABNORMAL | ABNORMAL | --- |

CONTAMINATION

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

WEAR METALS

| | method | limit/base | current | history1 | history2 |
|----------|--------|---------------|--------------|----------|----------|
| Iron | ppm | ASTM D5185(m) | 63 | 50 | --- |
| Chromium | ppm | ASTM D5185(m) | <1 | <1 | --- |
| Nickel | ppm | ASTM D5185(m) | 6 | 6 | --- |
| Titanium | ppm | ASTM D5185(m) | 0 | 0 | --- |
| Silver | ppm | ASTM D5185(m) | <1 | <1 | --- |
| Aluminum | ppm | ASTM D5185(m) | <1 | <1 | --- |
| Lead | ppm | ASTM D5185(m) | <1 | 1 | --- |
| Copper | ppm | ASTM D5185(m) | ▲ 310 | ▲ 320 | --- |
| Tin | ppm | ASTM D5185(m) | ▲ 37 | ▲ 38 | --- |
| Vanadium | ppm | ASTM D5185(m) | 0 | 0 | --- |

ADDITIVES

| | method | limit/base | current | history1 | history2 |
|------------|--------|---------------|--------------|----------|----------|
| Boron | ppm | ASTM D5185(m) | 17 | 18 | --- |
| Barium | ppm | ASTM D5185(m) | <1 | <1 | --- |
| Molybdenum | ppm | ASTM D5185(m) | 0 | <1 | --- |
| Manganese | ppm | ASTM D5185(m) | <1 | <1 | --- |
| Magnesium | ppm | ASTM D5185(m) | <1 | 0 | --- |
| Calcium | ppm | ASTM D5185(m) | 24 | 24 | --- |
| Phosphorus | ppm | ASTM D5185(m) | 304 | 313 | --- |
| Zinc | ppm | ASTM D5185(m) | 4 | 4 | --- |
| Sulfur | ppm | ASTM D5185(m) | 6612 | 6436 | --- |

CONTAMINANTS

| | method | limit/base | current | history1 | history2 |
|-----------|--------|---------------|--------------|----------|----------|
| Silicon | ppm | ASTM D5185(m) | 4 | 5 | --- |
| Sodium | ppm | ASTM D5185(m) | <1 | 0 | --- |
| Potassium | ppm | ASTM D5185(m) | <1 | <1 | --- |

INFRA-RED

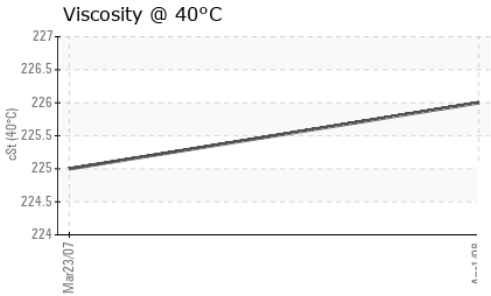
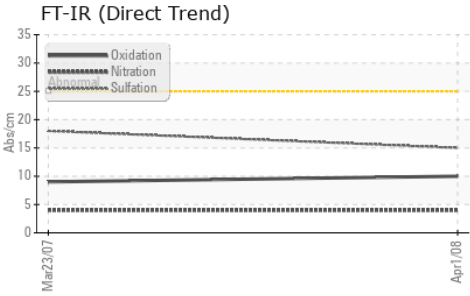
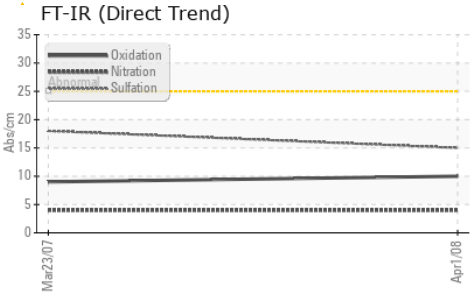
| | method | limit/base | current | history1 | history2 |
|-----------|---------|-------------|-----------|----------|----------|
| Soot % | % | ASTM D7844* | 0 | 0 | --- |
| Nitration | Abs/cm | ASTM D7624* | 4 | 4 | --- |
| Sulfation | Abs.1mm | ASTM D7415* | 15 | 18 | --- |

FLUID DEGRADATION

| | method | limit/base | current | history1 | history2 |
|-----------|---------|-------------|-----------|----------|----------|
| Oxidation | Abs.1mm | ASTM D7414* | 10 | 9 | --- |



OIL ANALYSIS REPORT



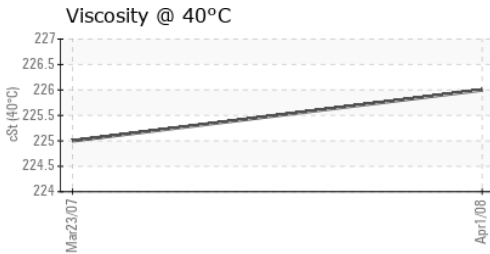
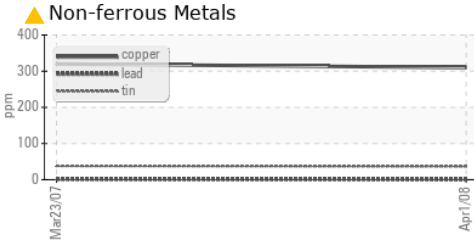
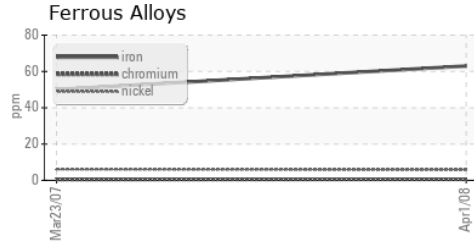
| VISUAL | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| White Metal | scalar | Visual* | NONE | VLITE | NONE |
| Yellow Metal | scalar | Visual* | NONE | NONE | NONE |
| Precipitate | scalar | Visual* | NONE | NONE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

| FLUID PROPERTIES | method | limit/base | current | history1 | history2 |
|------------------|--------|---------------|---------|----------|----------|
| Visc @ 40°C | cSt | ASTM D7279(m) | 226 | 225 | --- |

| SAMPLE IMAGES | method | limit/base | current | history1 | history2 |
|---------------|--------|------------|---------|----------|----------|
|---------------|--------|------------|---------|----------|----------|

| | | | |
|--------|--|----------|----------|
| Color | | no image | no image |
| Bottom | | no image | no image |

GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC21014810 **Received** : 07 Apr 2008
Lab Number : 01453767 **Tested** : 07 Apr 2008
Unique Number : 2632554 **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