



The XBEE Enzyme Fuel Technology has proved its efficiency to this company's engines manufacturer. Engineers of the Finnish engine manufacturing company have given their total approval on the enzyme technology and now recommend it to their customers.

Furthermore, **Anac Diagoparc** laboratory, a subsidiary of **Elf** petrol company, which made continuous oil analysis during the tests carried out certifies that XBEE strictly respects the alloys of the different engine parts. The OEM called on XBEE in order to test the "curative" capacity of the product since *M/V Pierre Loti* had combustion problems in her starboard engine.

Two engine endoscopic studies have been carried out in order to check precisely what could be the consequences of treating the engine with XBEE. First inspection was made on June 26, 2002, and second one on March 18, 2003: the engineers certify that they have neither carried any service to the engine nor change any part of it before or during its treatment with the XBEE enzymes.

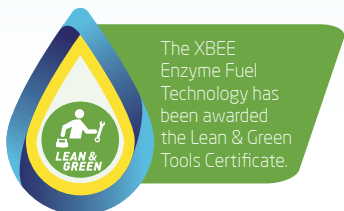
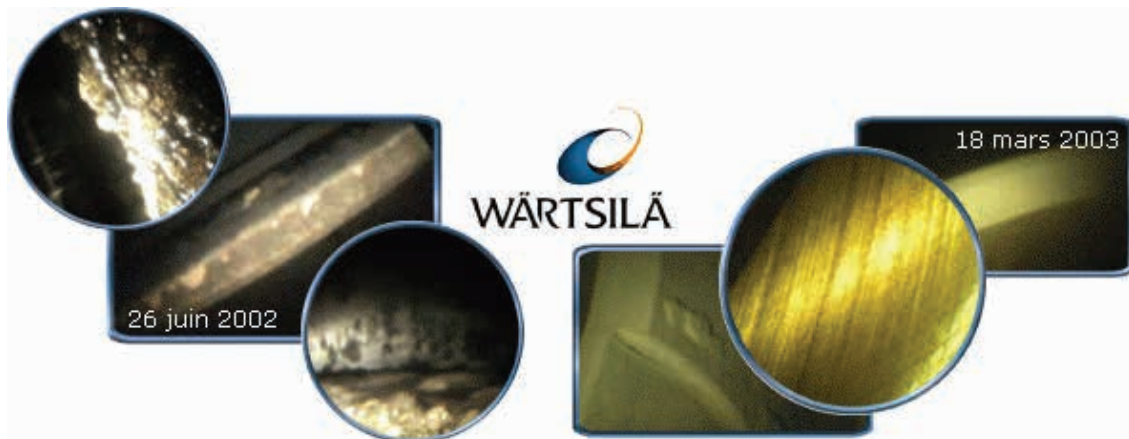
In no more than eight and a half months, XBEE has been capable of sorting out *M/V Pierre Loti* problems during its normal working hours.

*"Perfect cleanliness of these components (cylinder heads, valves, pistons, exhaust...) allows us to think that the additive we have been testing is really efficient [...] Therefore we think that using such product in the fuel will improve the mechanical functioning and lengthen the life of the components [and] we do agree to recommend the use of this additive to our customers..."*

## April 2005, follow up of the treatment after 22 months.

Every year, by the end of March, *M/V Pierre Loti* is having its annual technical inspection in the port of La Pallice (La Rochelle, France). In 2005, engineers had scheduled to open cylinder heads but due to the perfect condition of the engines, the technical management team and its engine manufacturer decided to postpone this heavy operation for at least another year.

Engineers have noticed much cleaner injectors nozzles, a "perfectly" dry exhaust collecting unit, tops of cylinder heads free of any residue and much clearer smokes.



The XBEE Enzyme Fuel Technology has been awarded the Lean & Green Tools Certificate.



**X-tra, Export Trade.  
Avenue de Bielefeld Senne  
29900 Concarneau**

**O/REF:** GGA/MBU/122/03

Surgères, on April 15, 2003

**Object:** *Result of the trial with the fuel additive "XBEE" in the engines A12150 SRHI N°15790/15791 belonging to the passengers boat "Pierre Loti".*

**Copy:** Mr. MOREAU, company Fouras Aix

Dear Sir,

We completed the trial of your product "XBEE" on the passengers boat "Pierre Loti" on the end of March. Please, take a look at the results we obtained.

Both propellant engines \_ type A12150 SRHI \_ N° 15790 & 15791 functioned in a very satisfying way during a year \_ around 3,500 hours \_ with this additive in the fuel.

We recall that we chose this way of treating the combustible aiming to eliminate the important carbon deposits due to functioning in low loads with numerous speed variations. The consequence of this functioning is the engines sticking after a prolonged stop.

We carried out a consistent analysis of the lubricant all through the trial which showed a carbon materials increase \_ internal engine cleaning \_ at the beginning of the treatment.

Please, find enclosed the two last oil analysis proving an excellent general behavior of the two engines.



At the end of the year of the trial period \_ on the end of March 2003, we carried out an endoscopic examination of the cylinders and exhaust manifolds. It's turned out that we were very pleasantly surprised by the total lack of carbon materials on the piston crowns, cylinders faces, valve heads & tulips, cylinders heads and exhaust manifolds. The perfect cleanness of these parts enables us to conclude that the fuel additive we tested had a real effective effect on the improvement of both propellant engines' behavior by eliminating all the carbon materials.

For that reason we think to use such a fuel additive will improve the mechanical behavior and the useful life of the above mentioned parts. We \_ Wärtsilä France Surgères \_ agree to recommend to our customers the use of this fuel additive for our engine range POYAUD.

Sincerely yours,

G. GARCIA

After-sales service manager.

**FOOTNOTE:** Enclosed the CD-Rom and the digital tape recounting the endoscopic visit. Please, return the master tape to me, after you copied it.

GIE ANAC

G.I.E. régi par l'ordonnance du 23 Septembre 1967

SIEGE SOCIAL

Chemin du canal - BP.18

69360 SOLAIZE

RCS LYON 323 576 777

Solaize, le 31/03/2003

## BILAN MULTIDIAGOPARC

Echantillon N° 0103875T

6ème traité pour cet organe suivi  
par DIAGOPARC depuis le 01/07/2002

Bon rempli par LARROCHE

PARC. PIERRE LOTI

N° Chassis : 15791  
 Prélevé le : 15/03/2003  
 Reçu le : 31/03/2003  
 Code de l'Organe : 29241Z01

WARTSILA FRANCE

M. LARROCHE

SERVICE APRES VENTE

USINE DE LA COMBE - BP 113

17700 SURGERES

FRANCE

## MATERIEL:

## ORGANE:MOTEUR

Marque WARTSILA  
 Type UD150V12  
 Numéro 15791  
 Carburant FUEL

En cas d'inexactitude ou d'oubli dans les renseignements ci-dessus, nous informons des rectifications à apporter

## INFORMATIONS RELATIVES AUX DERNIERS ECHANTILLONS TRAITES

N° 01038801 du 19/09/2002: prélèvement  
 ORGANE

AVIA 30  
 Bain d'huile: 208.00 H.

N° 0103875T du 15/03/2003: prélèvement  
 ORGANE

AVIA 30  
 Bain d'huile: 11.00 H.

Remarques du client sur l'échantillon N°0103875T

Echantillon précédent N° 01038801		Echantillon N° 0103875T	
7	USURE (ppm)	6	
2	Fer	3	
2	Plomb	2	
<1	Cuivre	1	
<1	Etain	<1	
2	Chrome	3	
<1	Aluminium	<1	
	Nickel		
6	POLLUTION	10	
<0,02	Silicium (ppm)	<0,02	
<1	Eau %	<1	
<0,2	Antigel	<0,2	
	Dilution %		
	Mat.Charb. %		
11,40	CARACTERISTIQUES PRODUIT	11,30	
97,30	Visco. 100°	97,30	
104	Visco. 40°	102	
15,93	V.I.E	16,80	
	B.N		

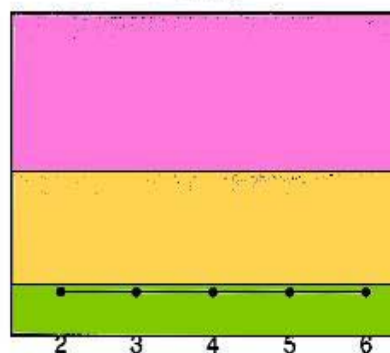
(ppm) Ca: 5145, Mg: 12, Zn: 1658, P: 1393, B: 2, Na: 1, Ag: 0, V: 0, Ti: 0, Ba: 0, Mo: 3

COMMENTAIRE :

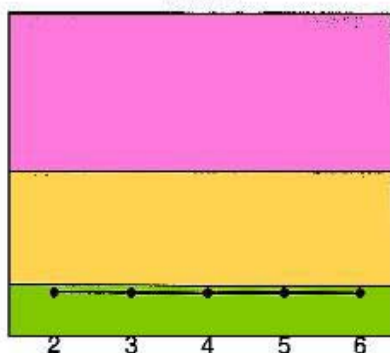


# HISTORIQUE SUR L'ORGANE : 29241Z01 du 12/07/2002 au 15/03/2003

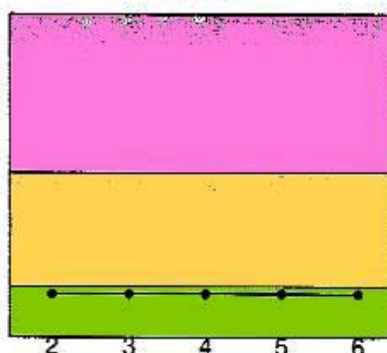
FER



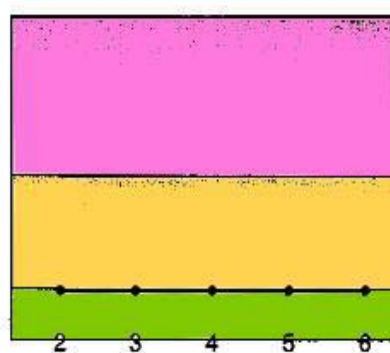
PLOMB



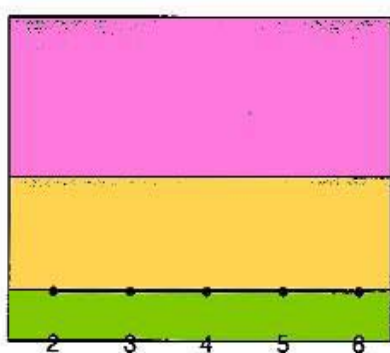
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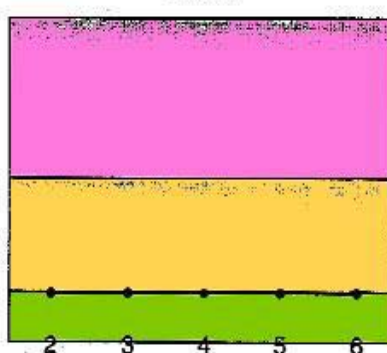
ALUMINIUM



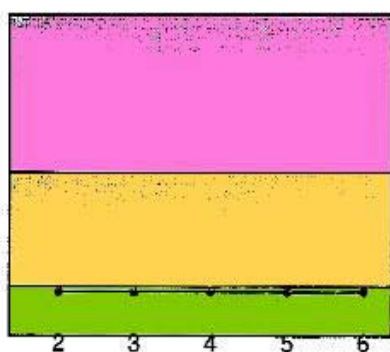
CHROME



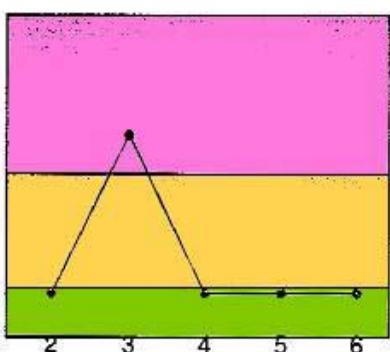
ETAIN



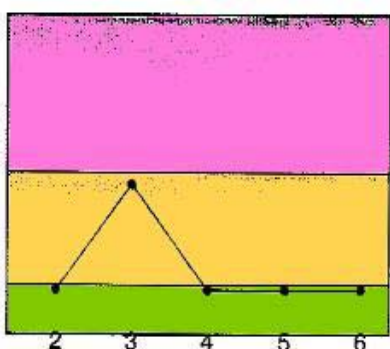
SILICIUM



MATIERES CHARBONNEUSES



COULEUR BILAN



RANG	ECHANTILLON	DATE PRELEVEMENT	VIDANGE	DUREE BAIN D'HUILE
2	0104502T	12/07/2002	OUI	250.00 H.
3	0104501T	21/08/2002	OUI	350.00 H.
4	0104200I	02/09/2002	OUI	210.00 H.
5	0103880I	19/09/2002	NON	208.00 H.

ECHANTILLON DU BILAN D'ANALYSE

6	0103875T	15/03/2003	NON	11.00 H.
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GIE ANAC

G.I.E. régi par l'ordonnance du 23 Septembre 1967

SIEGE SOCIAL

Chemin du canal - BP.18

69360 SOLAIZE

RCS LYON 323 576 777

Solaize, le 31/03/2003

## BILAN MULTIDIAGOPARC

Echantillon N° 0103876T

5ème traité pour cet organe suivi  
par DIAGOPARC depuis le 01/07/2002

Bon rempli par LARROCHE

POLE PIERRE LOTI

N° Chassis : 15790  
 Prélevé le : 15/03/2003  
 Reçu le : 31/03/2003  
 Code de l'Organe : 29242001

Reçu le 31/03/2003

WARTSILA FRANCE

M. LARROCHE

SERVICE APRES VENTE

USINE DE LA COMBE - BP 113

17700 SURGERES

FRANCE

## MATÉRIEL:

## ORGANE: MOTEUR

Marque WARTSILA

Numéro 15790

Carburant FUEL

En cas d'inexactitude ou d'oubli dans les renseignements ci-dessus, nous informons des rectifications à apporter

## INFORMATIONS RELATIVES AUX DERNIERS ÉCHANTILLONS TRAITÉS

N° 01038791 du 20/09/2002: prélèvement  
 ORGANE 29639.00 H. depuis neuf

N° 0103876T du 15/03/2003: prélèvement  
 ORGANE

AVIA 30  
 Bain d'huile: 230.00 H.

AVIA 30  
 Bain d'huile: 57.00 H.

Remarques du client sur l'échantillon N°0103876T

Echantillon précédent N° 01038791

Echantillon N° 0103876T

## USURE (ppm)

Fer 6  
 Plomb 2  
 Cuivre 2  
 Etain 2  
 Chrome <1  
 Aluminium <1  
 Nickel <1

## POLLUTION

Silicium (ppm) 10  
 Eau % <0,02  
 Antigél <1  
 Dilution % <1  
 Mat. Charb. % <0,2

## CARACTÉRISTIQUES PRODUIT

11,50 Visco. 100° 17,10  
 98,60 Visco. 40° 97,70  
 104 V.I.E 192  
 3,30 B.N 15,73

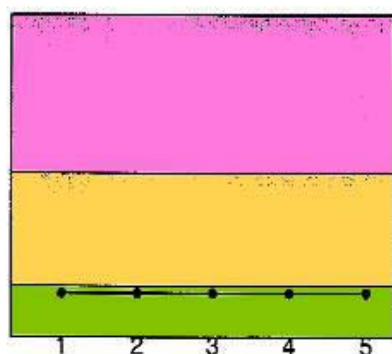
(ppm) Ca: 5122, Mg: 13, Zn: 1841, P: 1383, B: 2, Na: 1, Ag: 0, V: 0, Ti: 0, Ba: 0, Mo: 3

## COMMENTAIRE:

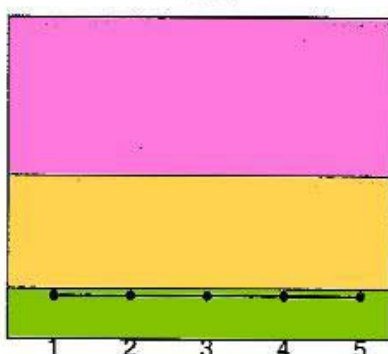
Bon fonctionnement.

# HISTORIQUE SUR L'ORGANE : 29242001 du 27/06/2002 au 15/03/2003

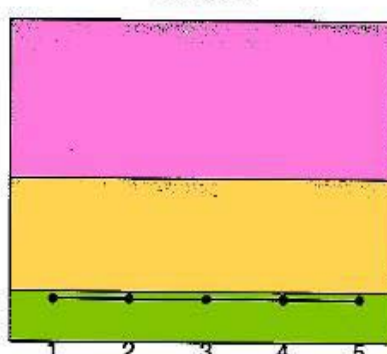
FER



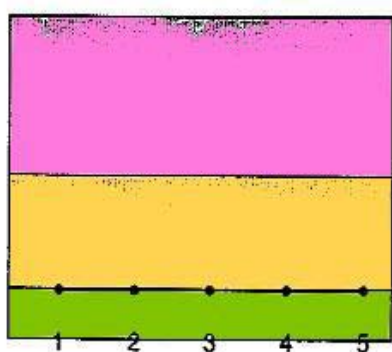
PLOMB



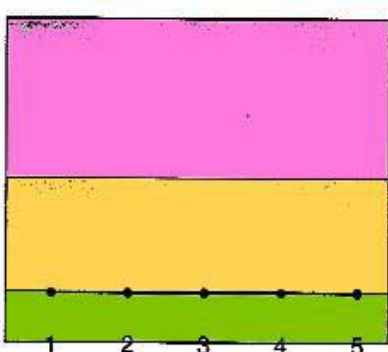
CUIVRE



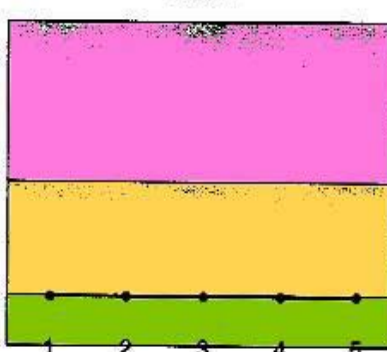
ALUMINIUM



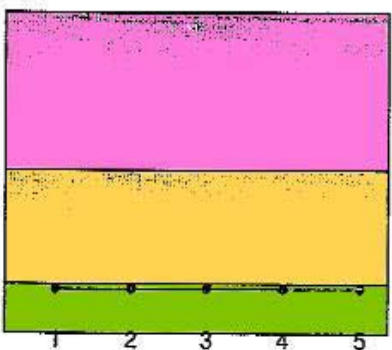
CHROME



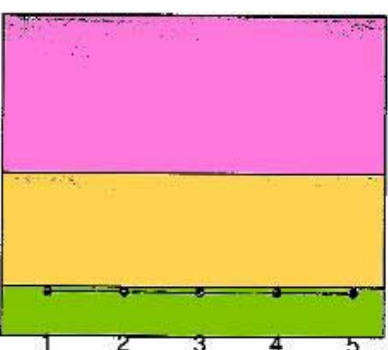
ETAIN



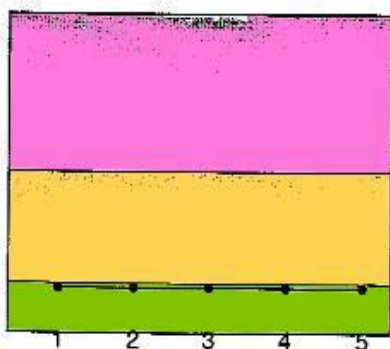
SILICIUM



MATIERES CHARBONNEUSES



COULEUR BILAN



RANG	ECHANTILLON	DATE	VIDANGE	DUREE BAIN
1	0104496T	27/06/2002	OUI	250.00 H.
2	0058251B	02/09/2002	OUI	350.00 H.
3	0103878I	19/09/2002	OUI	231.00 H.
4	0103879I	20/09/2002	NON	230.00 H.

ECHANTILLON DU BILAN D'ANALYSE

5	0103876T	15/03/2003	NON	57.00 H.
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