

# Jersey Bio fuels (2012) Ltd

## Working Plan

Jersey Bio fuels  
Unit 1  
Cheraleen  
La Rue D'Olive  
St Mary  
JE3 38J  
Tel: 01534 280 092 (main office)  
Tel: 01534 481 221 (refinery / store)



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## **Introduction**

Jersey Bio Fuels (2012) Ltd is engaged in the collection of waste cooking oils from commercial premises, and the subsequent conversion into a usable fuel.

Jersey Bio Fuels Ltd ceased trading in August 2012; the new company 'Jersey Bio Fuels (2012) Ltd (hereafter referred to as 'The Company') was formed at this point under new ownership.

## The Site

### History

Unit 1, Cheraleen, St Mary (The Site) was previously used as a commercial garage involved in the sales and repair of agricultural vehicles.

The States of Jersey Planning Department were approached as to whether a formal application would be required for 'Change of Use', emailed confirmation from the Department was that an application would not be required is included in Appendix A.

### Operating Hours

The site will be active from 0800-1700hrs Monday to Friday, and 0800-1300hrs on Saturday, it is not proposed that the site open on a Sunday or bank holidays.

### Staff

The General Manager (Nick Glover) has been involved in the processing of Bio-Diesel in excess of 10 years, and is considered competent by experience as noted below.

#### Nick Glover Experience

Aug 2012 to Present	-	Jersey Biofuels (2012) Ltd
2010 to Aug 2012	-	Jersey Biofuels Ltd
2003 to 2010	-	GBN Ltd

#### Supplier training

West Country Containers, supplier of processing equipment provided a 5 day on site set up and use of equipment training course.

Nick has received training previously from other manufacturers and suppliers, and from suitably experienced individuals for various processes.

#### Supplemental

Forklift operators are suitably trained by TPT (Tony Pallot Training) and provided with a certificate of competence which is displayed on site.

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## **Infrastructure**

### **Premises**

The building is a steel portal framed structure with masonry walls mid height, and sheet material to eaves level and forming the roof, the floor is a concrete slab. The exterior unloading area and parking is concrete slab construction as far as the access roads.

Metal sliding doors provide access to the building.

### **Security**

The processing operations of the business are contained within the envelope of the building structure, externally is used to load and unload vehicles and temporary storage of materials during the daytime only. All materials are stored within the building out of operating hours.

### **Surfaces**

The surface of the building floor is concrete, approximately 150mm thick and does not contain any drainage outlets.

The building contains a bund formed by a concrete upstand to the perimeter walls and at the doorway.

The bund will contain approximately 4500 litres in the event of a spill, the largest single container in use on site contains 1000lts of liquid.

Spill granules are used to ensure a non-slip environment for safety of operatives and visitors, a programme of regular steam cleaning of the slab is also undertaken. A planned maintenance programme for the structure is in place, with regular visual inspections; all to include loading and parking area's.

### **Drainage**

All foul and surface water gullies and drainage runs are indicated on the site plan attached in Appendix B.

No oils or untreated waste water will be discharged into drains or watercourse.

### **Emergency Procedures**

Administer first aid/contact emergency services as required, then contact head office by the fastest practicable means.

### **Notices**

An Emergency contact list is displayed in the site office.

## **Types of Wastes**

### **Cooking Oil**

Waste cooking oil will be accepted at the site, it will be converted into Bio-Diesel by transesterification.

A maximum of 14,000 litres would be held on site at any time.

## Site Operations

Separate distinct areas are provided for each waste type. The waste oil is transferred from the collection vessel to International Bulk Containers (IBC's) on arrival.

The condition of all IBC's are monitored on a regular basis and de-graded vessels disposed of appropriately.

The collection vessels (generally tin containers) in which the waste vegetable oil is collected, is set aside and delivered to the relevant metal recycling yard when a suitable quantity is present. Other collection vessels are disposed of in an appropriate manner.

The refining process is described below: -

- Oils are transferred to an IBC (International Bulk Container) on arrival
- Methanol is delivered in an IBC and pumped directly into a mixing tank where potassium hydroxide is added creating methoxide. This mixture is pumped into the processing tank.
- The oil is then also pumped into the processing tank where it mixes with the Methoxide
- The mixture in the processing tank is then heated to 50 degrees C for approximately an hour
- After heating, the mixture is pumped into the water washing tank and settled so the glycerol forms a layer at the bottom of the tank; the glycerol is then drawn off and either given to a licensed handler or sold if there is a market at the time.
- The biodiesel mixture is then pumped into a water mist unit which removes soap and excess methanol
- From the misting unit the bio is pumped again into a drying tank where air bubbles pass through removing heavy particles such as water, oil and un-reacted particles.
- From the drying tank the bio is then passed through a number of filters (hardwood shavings and polishing pots containing silica) to remove the last of the impurities. This removes particles down to 1 micron
- Lastly this is pumped into the dispensing tank for onward distribution.

The discharges from the process not mentioned previously are generally soapy water, which is re-used where possible, and discharged into the drainage system where not.

## Spills

Any minor accidental spillage should be dealt with by use of appropriate spill kit materials (granules, logs etc), swept up, bagged and disposed of appropriately.

## Equipment and Plant

All plant and equipment is visually inspected before each use to ensure that it is in good working condition and safe operation. Any faults found shall be rectified by a competent person before use or taken off site and replaced. In addition to visual inspections annual inspections will be carried out by competent appropriate persons.

All static plant to have drip trays placed beneath. Emissions i.e. plant, dust to be monitored at all times and kept to a minimum.

## **Forklift Operations**

The forklift will be operated only by authorised and competent individuals holding current and valid training certification.

## **Waste Acceptance**

The site will not be 'public facing' all oils will be collected by JBF's own collection staff or agents.

## **Oil collection**

Oil is collected by our own drivers generally in the re-used tins that the oil is provided in, often the caps for these cans are missing, and therefore spare caps are carried in vehicles. Drivers ensure that all collection vessels are in good condition prior to collection and transportation.

Empty cans are crushed and sent to recycling yard.

All vehicles carry spill granules and/or relevant spill kits.

On receipt of oil at the store it is immediately decanted to IBC's. The oil is poured into a funnel slowly to minimise risks of splashing or spills, the oil passes through a sieve/gauze as appropriate to remove solids and debris.

From the IBC, oil is pumped into the refinery.

## **Waste Products from operational processes**

### **Glycerine**

At present glycerine is sent off island for recycling by appropriate companies, upto circa 3000 ltrs maybe stored on site waiting for sufficient quantities for disposal.

## **Records and Quality Control**

### **Records**

Records of all collections are to be kept for a minimum of 5 years in hard copy format and 10 years electronically.

Records of the following will be included: -

Material collected, volume collected, quality (for our purposes), price paid, collection location, client and operator.

In addition to records of collections, a record of all sales including batch number.



## **Quality Control**

At collection vessels and their contents are checked to ensure there are no hazardous contents or that the vessel is safe to transport. During the transesterification process our product is closely monitored for impurities, all processes are rigorously monitored and meticulously carried out. Final product is manufactured to European Standard EN 14214. Samples (1 litre) of each batch are taken and stored on site for a maximum period of 6 months by way of proof of quality.

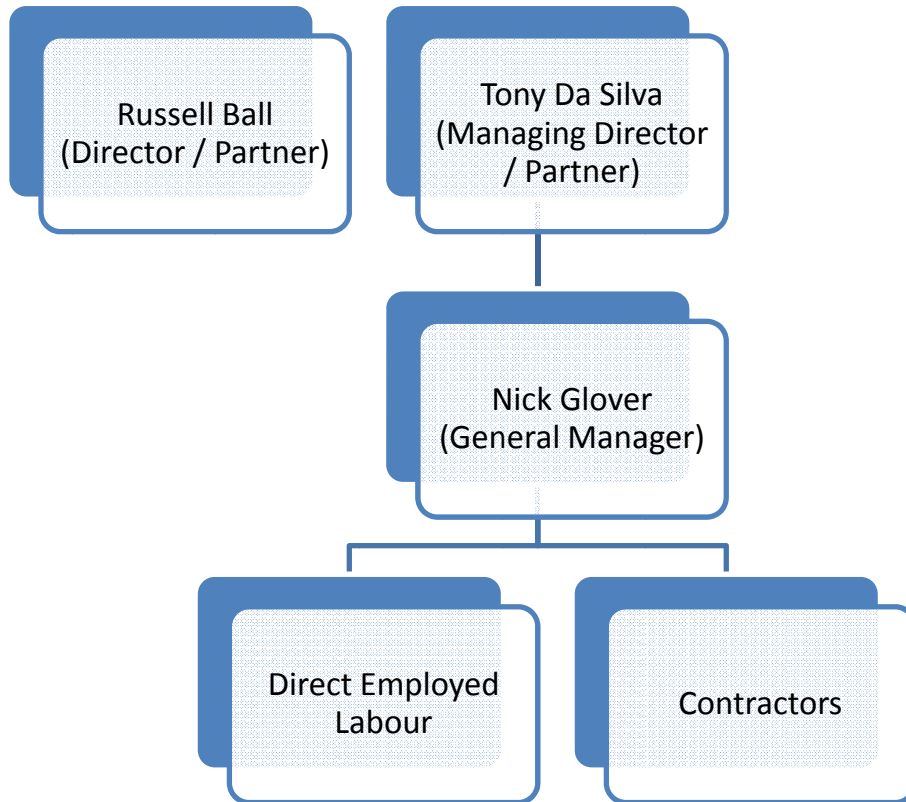
Previous tests on the product have confirmed the purity of the end product (sample report analysis included in Appendix E)

## **Site Completion and Restoration.**

The building will be returned to its former state on completion of operations, no significant changes have had to be made to the existing structure therefore minimal making good is anticipated.

All waste oils and the residues from the treatment process will be removed from site on completion.

## Organization Chart



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## **Appendix A – (Planning Department confirmation)**

**RE: Unit 1 Cheraleen, La Rue D'Olive, St. Mary**

From: "Chris Jones (Planning)" <C.Jones2@gov.je>  
To: 'Russell Ball' <russell@rbcostcontrol.co.uk>

Priority: Normal  
Date 19/12/2012 09:35

Russell

I note that I have not yet responded to your e-mail dated 12th December 2012 regarding the above and would be grateful if you would accept my apologies for this oversight.

I have also noted your comments regarding the length of time the building has been used as a garage.

As I have confirmed previously, there is a restrictive condition regarding use only for the sales, servicing and repair of tractors and agricultural machinery etc.

Therefore, the use of the premises for a general garage purpose would have required planning permission and this doesn't seem to have been achieved.

The last Permit in 2007 sought to remove the personal occupancy condition for Mr. E. Le Feuvre only. This was successful, with the only condition remaining as follows:

1. The permission hereby granted is solely for the sales, servicing and repair of tractors and agricultural machinery and for no other purpose without the written consent of the Minister for Planning and Environment.

I would imagine that the condition was previously imposed because of the former use of the building as an agricultural shed.

However, your intended use seems to be more 'low key' than the approved use and given that the wording of the condition allows us to have some flexibility on the use, I am prepared to accept that your business can occupy the premises without the benefit of a further planning application.

This view is given on the basis that you will be able to secure the necessary approvals from my colleagues in the Environment Department. Also, if we receive any complaints from local residents as a result of your operation, or if any other issues arise then we may have to review the situation again regarding planning permission etc.

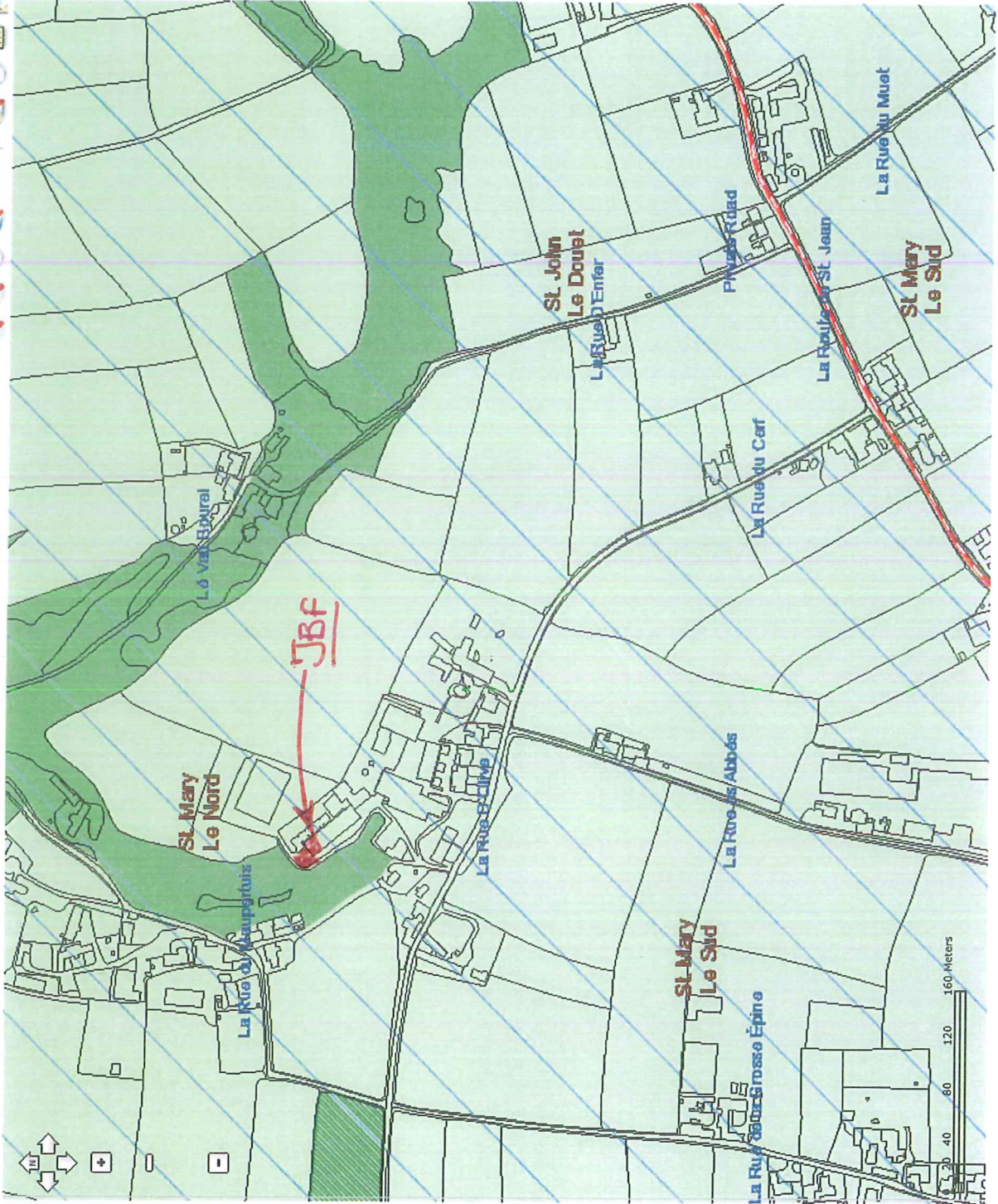
I hope this information clarifies the situation to date.

Regards

Chris Jones  
Senior Planning Officer

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## **Appendix B - (Site Plan)**



### States of Jersey: Island Plan

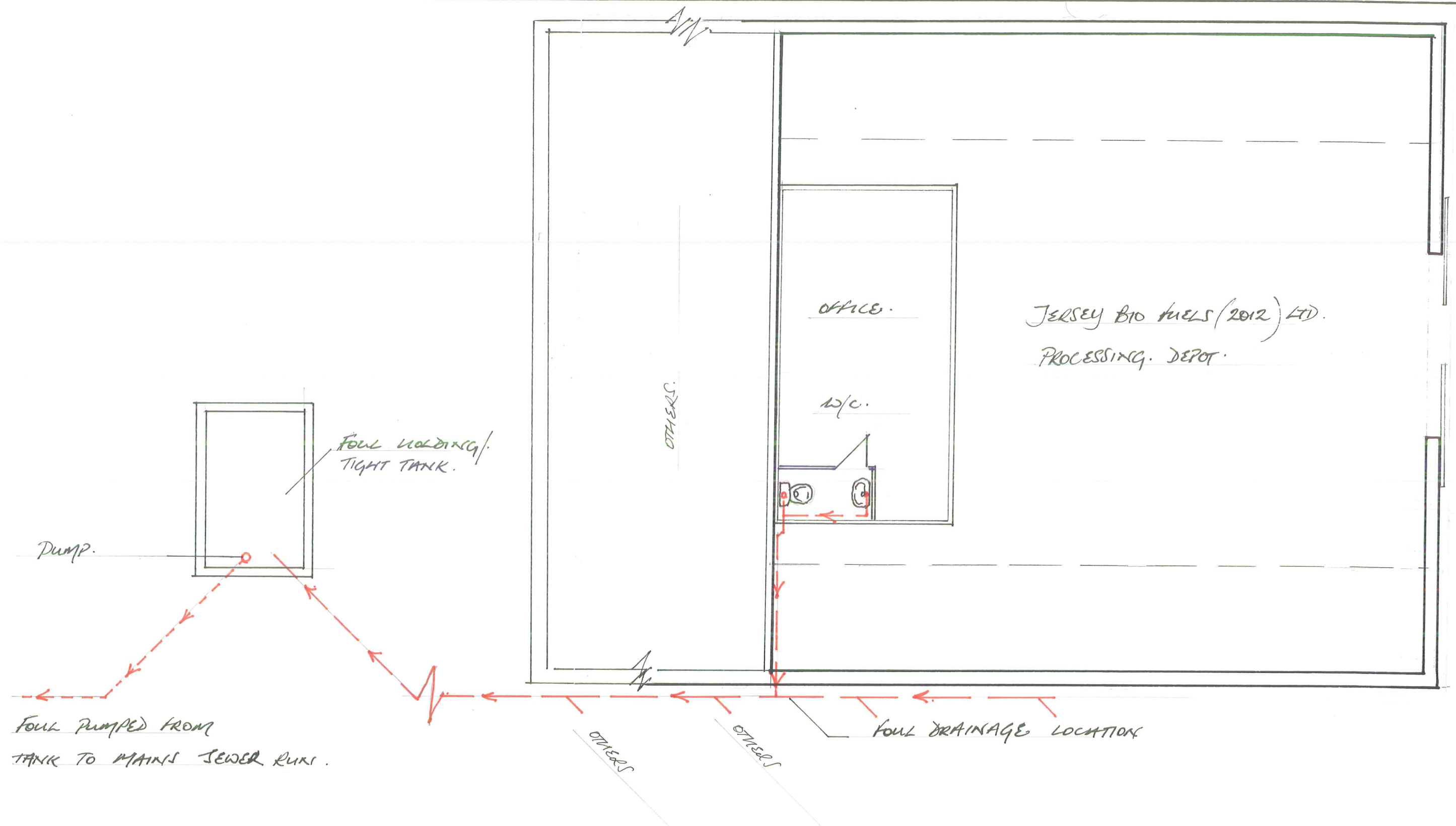
Find Road Find Postcode Print

- Results
- Base\_Map
  - Potential\_States\_Owned\_Category\_A\_Sit
  - Port of St Helier Operational Area
  - Site Safeguarded for Community Facility
  - Waste Management Site
  - Waste Management Site - Line
  - Proposed Waste Management Site
  - Proposed Waste Management Site- Lines
  - Aircraft Public Safety Zone 1
  - Aircraft Public Safety Zone 2
  - Aircraft Noise Zone 1
  - Aircraft Noise Zone 2
  - Aircraft Noise Zone 3
  - Mineral/Sand Extraction Site
  - Provision and Enhancement of Open Space
  - Tourist Destination Area
  - Town Extent
  - Primary Route Network
  - Highway Improvement
  - Eastern Cycle Route Corridor
  - Regeneration Zone
  - Water Pollution Safeguard Area
  - Safety Zone For Hazardous Installation
  - Safety Zone for Hazardous Installation- Line
  - Ramsar Site (UN Convention)
  - Protected Open Space
  - Shoreline Zone
  - Protected Industrial Site
  - Jersey Airport Operational Area
  - Footpath Enhancement
  - Potential Pedestrian Priority
  - Retail Expansion Area
  - Built Up Area Boundary
  - Town Centre
  - Core Retail Centre
  - Other Category A Housing Site
  - Green Backdrop Zone
  - Site Safeguarded For Education Use
  - Green Zone
  - Coastal National Park
  - Marine Zone

0 40 60 80 100 120 140 160 Meters

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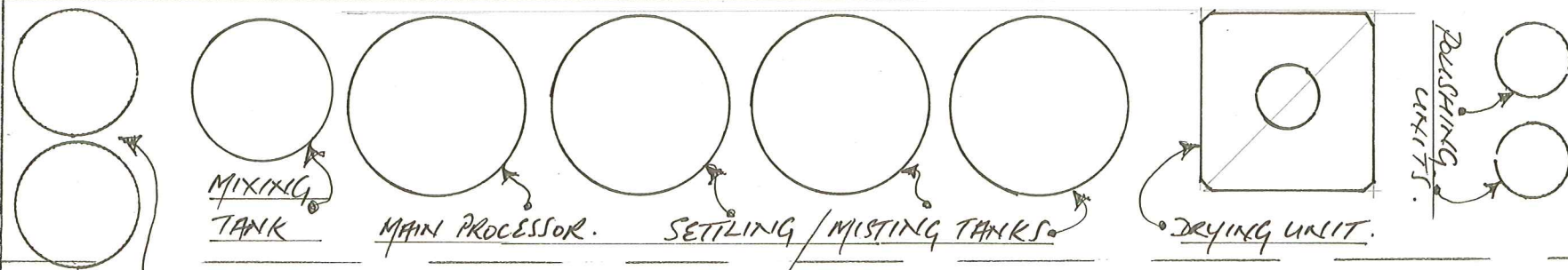
## **Appendix C - (Drainage Plan)**



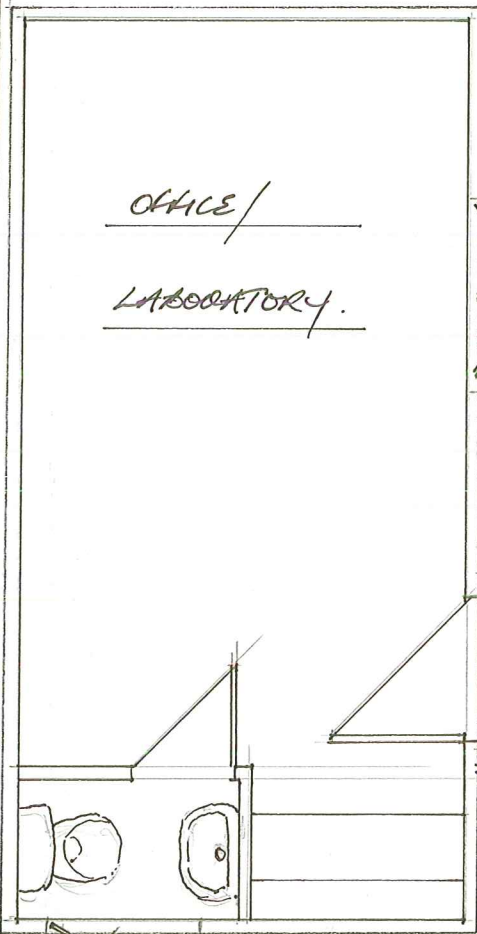


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## **Appendix D – (Activity / Equipment Plan)**



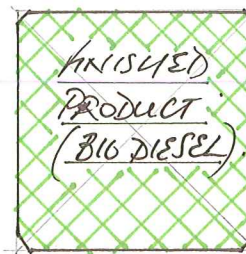
SECONDARY PROCESSORS



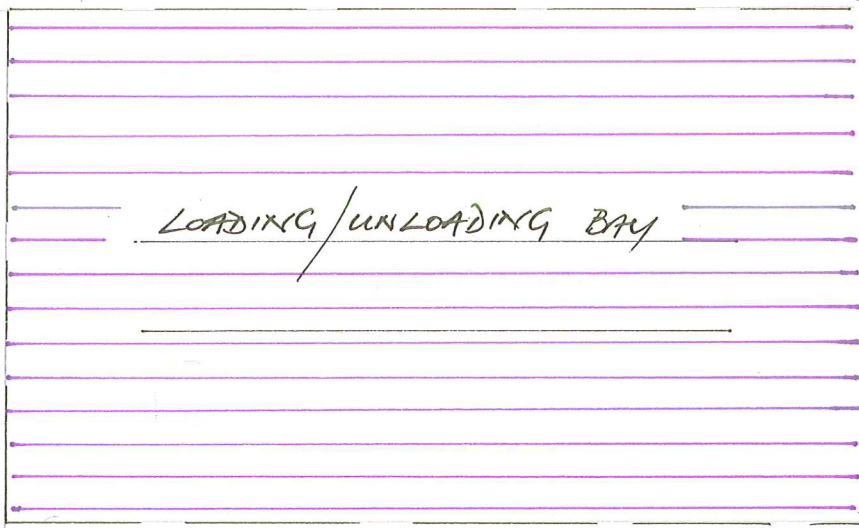
OFFICE /  
LABORATORY



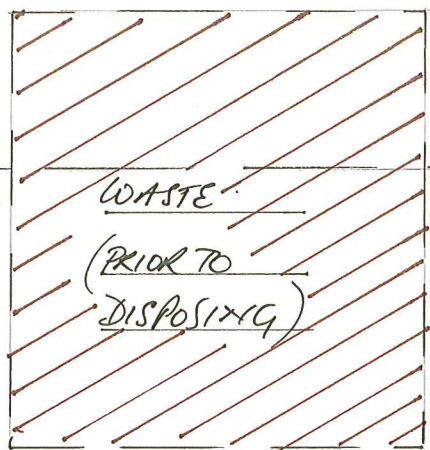
METHANOL



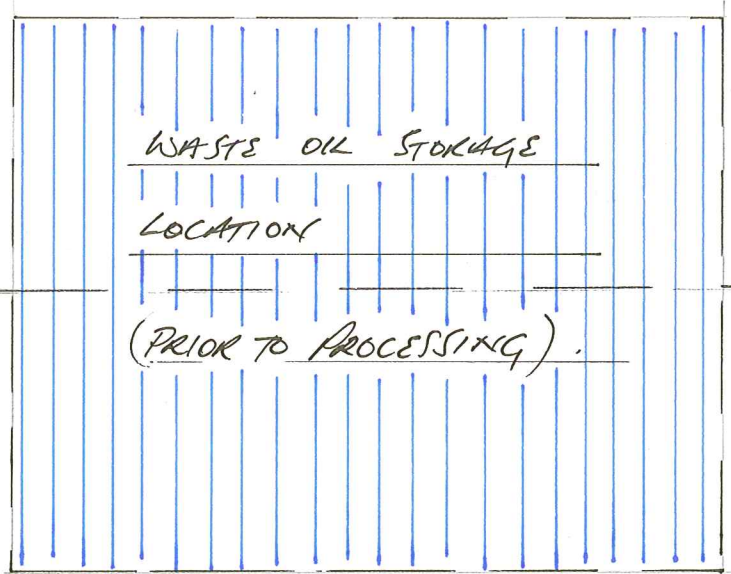
FINISHED  
PRODUCT  
(BIG DIESEL)



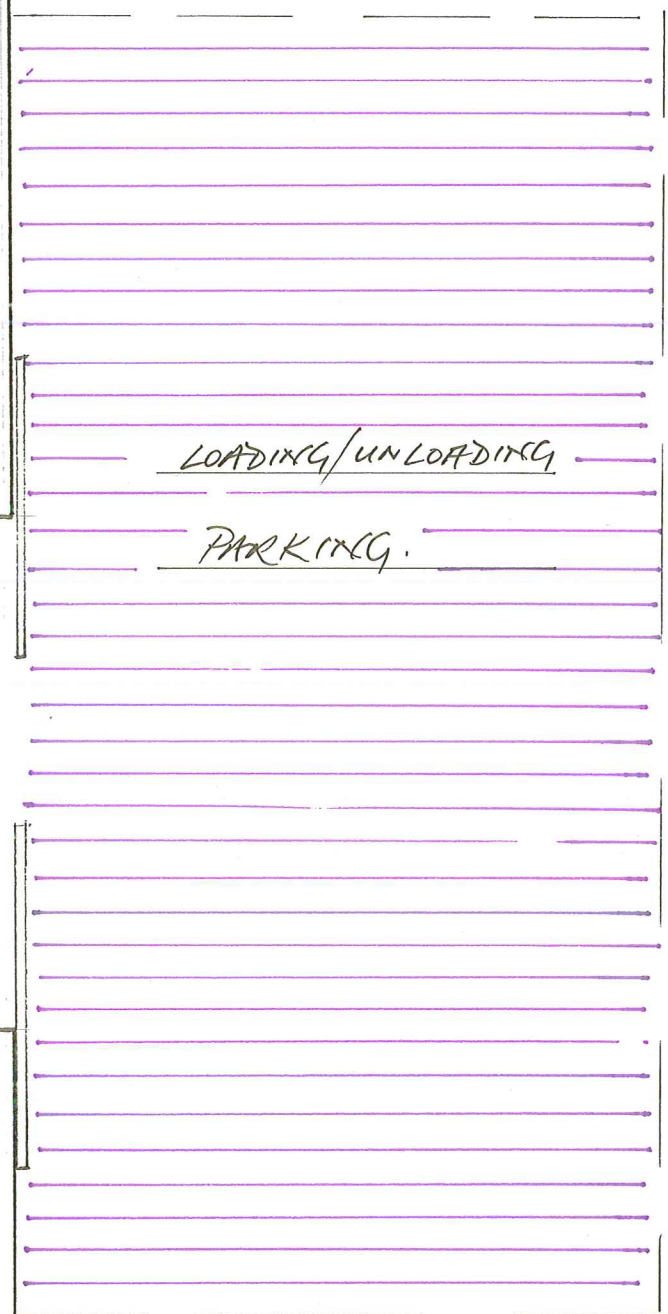
LOADING / UNLOADING BAY



WASTE  
(PRIOR TO  
DISPOSING)



WASTE OIL STORAGE  
LOCATION  
(PRIOR TO PROCESSING)



LOADING / UNLOADING

PARKING

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## **Appendix E – (Sample Analysis Report)**



Date of Receipt: <b>23.05.11</b>	Date of Report: <b>26.05.11</b>	Report No: <b>AL004200</b>
Customer: <b>GBN LIMITED / JERSEY BIOFUELS</b>		
Job No:	PO No:	
Sample /Batch Number:-	<b>01</b>	
Sample Date:-	<b>19.05.11.</b>	
Location:-		

Requirements for Biodiesel	Results	Test Methods	EN 14214 Limits	Units
Ester Content	<b>95.92</b>	EN 14103	Min 96.5%	%m/m
Density @ 15 <sup>o</sup> C	882	EN ISO 3675 EN ISO 12185	860 to 900	kg/m <sup>3</sup>
Viscosity @40 <sup>o</sup> C	3.89	EN ISO 3104	3.5 to 5.0	mm <sup>2</sup> /s
Sulphur Content	0.01	EN ISO 20846	Max 10	mg/kg
Carbon Residue	0.02	EN ISO 10370	Max 0.3	%(m/M0
Total Contamination	1.0	EN12662	Max 24	Mg/kg
Oxidation Stability @110 <sup>o</sup> C	<b>4</b>	EN 14112	Min 6	hours
Sulphated Ash Content	0.01	ISO 3987	max 0.02	%(m/m)
Water Content	<b>657.4</b>	EN ISO 12937	max 500	mg/kg
Copper Band Corrosion(3 hours at 50 <sup>o</sup> C)	Class 1	EN ISO 2160	Class 1	rating
Acid Value	0.41	EN 14104	max 0.5	mg/KOH/g
Iodine Value	120	EN 14111	max 120	
Methanol Content	0.03	EN 14110	max 0.20	%(m/m)
Flash Point	>120	ISO 3679	Above 101	°C
Free Glycerol	0.01	EN 14105	Max 0.02	%(m/m)
Total Glycerol	0.25	EN 14105	Max 0.25	%(m/m)
Monoglyceride Content	0.05	EN 14105	Max 0.8	%(m/m)
Diglyceride Content	0.1	EN 14105	Max 0.2	%(m/m)
Triglyceride Content	0.1	EN 14105	Max 0.2	%(m/m)
Group I (alkali) metals (Na & K)	4.0 <b>5.0</b>	EN 14108(Na) EN 14109(K)	Max 5.0 Max 5.0	Mg/kg
Group II(alkali) metals (Ca & Mg)	Ca <b>10</b> Mg 2	EN 14538	Max 5.0	Mg/kg
Phosphorus Content	7.0	EN 14107	Max 10.0	Mg/kg
Cold Filter Plugging Point °C	-6	EN 116	Climate related	



TECHNICAL CENTRE:- UNIT 6A KAY BROW COMPLEX, KAY BROW, RAMSBOTTOM, BURY. BL0 9AY.  
 TEL: 01706 82 2521 / 07894071986. EMAIL:- [al-bioservices@tiscali.co.uk](mailto:al-bioservices@tiscali.co.uk) [www.al-bioservices.co.uk](http://www.al-bioservices.co.uk)

Whilst every care is taken in the preparation of this report, it is given on the understanding that we accept no liability for any error or omission