LIFECYCLE OILS LTD

(Registered in England and Wales as Company No: 11374746)

ENVIRONMENTAL MANAGEMENT PLAN FOR WASTE RECOVERY OPERATION v1.2 (Mar 24)

STORAGE & PROCESSING/RECOVERY OF USED/WASTE COOKING OIL - EWC 20-01-25 (EDIBLE OIL AND FAT)

AT

5 MOORCROFT DRIVE, WEDNESBURY, WEST MIDLANDS, WS10 7DE

(NATIONAL OS GRID REF: 973949)

Chapter 1 – Non-Technical Summary – v1.0

Introduction:

1. Lifecycle Oils (LCO) already holds an EA Permit (EPR/HB3502XY) for a non-hazardous waste transfer and treatment facility at its current site at Woodwards Road, Walsall, WS2 9SL but intends to move and expand its activity to a new site at 5 Moorcroft Drive, Wednesbury, WS10 7ED (OS Grid Ref: 937949). Activity on site will include the storage (R13) and recycling/reclamation of non-hazardous organic substances (R3) as specified at Table 1.1 below.

2. The Wednesbury site is planned as the first of 4-7 further sites that will be set-up across the UK to establish a nationwide network for fresh cooking oil distribution and Used Cooking Oil (UCO) collection and waste recovery.

3. UCO will be processed mechanically, with no chemicals used, by physical treatment (heating, settling and filtration) to remove impurities (organic and non-organic solid matter and water) to render it suitable for use as a biofuel for electrical power generation on- and off-site (designated as "LF100"), or for use as a feedstock in biodiesel or Sustainable Aviation Fuel (SAF) production (designated as "5&2").

Table 1.1 – Waste Types:

Waste Code	Description of waste
02	Wastes from agriculture, horticulture, aquaculture, forestry, hunting and fishing, food preparation and processing.
02.02	Wastes from the preparation and processing meat, fish and other foods of animal origin.
02.02.03	Materials unsuitable for consumption or processing.
02.02.99 *	Oils and fats used in the cooking, preparation and processing of foods of animal or part animal origin and any food residues contained therein.
02.03	Wastes from fruit, vegetables, cereals, edible oils, cocoa, coffee, tea and tobacco preparation and processing; conserve production; yeast and yeast extract production, molasses preparation and fermentation
02.03.04	Materials unsuitable for consumption or processing.
02.03.99 *	Oils and fats used in the cooking, preparation and processing of foods of vegetable or part vegetable origin and any food residues contained therein.
02.06	Waste from the baking and confectionary industry
02.06.01	Materials unsuitable for consumption or processing.
02.06.99 *	Oils and fats used in the cooking, preparation and processing of baked foods or confectionary and any food residues contained therein.

19	Materials from waste and water treatment
19.08	Waste water treatments plants not otherwise specified
19.08.09	Grease and oil mixture from oil/water separation containing edible oil and fats

20	Municipal wastes (household waste and similar commercial, industrial and institutional wastes) including separately collected fractions
20.01	Separately collected fractions (except 15.01)
20.01.08	Biodegradeable kitchen and canteen waste
20.01.25	Edible oil and fat

** Specified '99' codes included as advised by local area EA team during application for permit EPR/HB3502XY (Lifecycle Oils' current Walsall site) to cover material received/collected from food manufacturing facilities, as opposed to the standard 20.01.25 which, we were advised, applies only to restaurants/cafes/take-aways etc.*

4. For simplicity, in this document, all of the above will be referred to as UCO although some of it may, more correctly, be referred to as waste cooking oil or food waste (ie cooking oil that has not been 'used', per se, but may be either contaminated or

at/near/past its expiry date and therefore no longer fit for human consumption or use as animal feed) or "FOGs" (Fats, Oils and Greases).

5. Collection/delivery of UCO will be from other bulk collectors/aggregators and/or "Points of Origin" (the point at which the UCO becomes a waste – ie food processing factories and smaller scale restaurants, cafes and food outlets).

6. This will be achieved either directly from this site or via a supporting network of smaller 'micro-sites' (off-site 'warehouses' dedicated to the distribution of fresh cooking oil and the collection of UCO on a small scale).

7. Delivery will be by a combination of road/vacuum tanker; or trailers/vans carrying 1,000L industrial bulk containers (IBCs); sealed barrels or drums (60-120L capacity); 'Fattboxes' (purpose built, wheeled containers with sealable lids and 60 or 120L capacity); or returned 20L drums/tins.

8. These items will, collectively, hereafter be referred to as "units".

9. All material received on site will be measured by weighbridge or pallet scale, both of which will be calibrated and verified for trade use annually. LCO will apply a standardised conversion ratio of 1 metric tonne (minus the weight of packaging) to 1,098 litres (based on the average specific gravity of the UCO collected). The tonnage/volume of material received will be accurately recorded and reported iaw standards set by the International Sustainability and Carbon Commission (ISCC).

Operating Capacity:

10. At capacity, operating up to a maximum 24/7 rhythm for 50 weeks per year, LCO expects to be able to safely receive, process and dispatch the volumes of UCO and recovered product/bi-product volumes at Table 1.2, below:

Table 1.2 – Operating Capacity:

Waste to be Processed:	**Anticipated Maximum Volumes (L):**		
	Daily	**Weekly**	**Annually**
Used/Waste Cooking Oil (UCO) (100%)	200,000	1,400,000	70,000,000
Primary/Secondary Waste Streams for Recovery:			
Processed/dried UCO ("LF100" or "5&2") (97% of recovery)	186,000	1,302,000	65,100,000
Bi-Products/Tertiary Waste Streams for Disposal Off-Site:			
Wastewater (est 5% of recovery)	10,000	70,000	3,500,000
Food Residue (est 2% of recovery)	4,000	28,000	1,400,000

Storage Capacity:

11. The processing volume will be achieved by throughput. The intention is for all incoming units received to be triaged, processed and transferred to the bunded tank system for storage and settling within 24 hours (48 hours maximum).

12. Maximum UCO storage capacity will be as follows:

- Dedicated 'goods inward' reception and temporary storage area.
  - space for 300 x double-stacked pallets + 40 quadruple-stacked IBCs.
  - max 200,000L/day in individual units.
  - secondary containment bund surround.

- 6 x 12 IBC/pallet, double-stacked heater/storage units.
  - total max capacity 72,000L.
  - each integrally bunded.

- 48 x 32,000L storage/settling tanks.
  - total max capacity 1,536,000L.
  - arranged into 6 'tank rooms', each bunded iaw current regulations.

- An additional max 45,000L
  - in other processing machinery, pipework and bi-product storage.
  - all to be bunded as appropriate

- **Total Max Storage Capacity = 1,853,000L or 1,688mt**

Site and Management:

13. A full description of the site at which the waste recovery operation will take place is provided at *Chapter 2: Site Condition Report.*

14. The Directors and Senior Management of LCO have substantial experience in a range of areas within the biofuels and waste recovery sectors and other areas of business/services.

15. **The Company's Head of Compliance holds a valid WAMITAB qualification (Level 4 Medium Risk Operator Competence for Non-Hazardous Waste Treatment and Transfer - MROC1) and will perform the duty of Technically Competent Manager for the site** until a suitably qualified replacement is specifically engaged as Site Manager**.**

16. LCO's management systems will be compliant with the requirements of the International Sustainability and Carbon Commission (ISCC) which sets out detailed parameters for the handling of sustainable material, including biofuels and UCO, and the bi-products derived from their processing. ISCC certification requires an annual independent audit by an authorised certification body (in LCO's case, SGS Germany).

17. A copy of the company's current ISCC certificate is at *Appendix 1*. As the company grows, it will also undertake to work towards relevant ISO certifications.

18. More detail on the group management systems, structure and personnel, including the staffing plan for this specific site, can be found at *Chapter 3: Management Systems and Personnel.*

19. The waste recovery process has been designed and sourced to be undertaken, where practicable, indoors, in an enclosed, bunded environment.

20. Additional control and risk reduction measures will be implemented, in line with the *Environmental Risk Assessment (see Appendix 2)* to ensure that:

- only non-hazardous materials within the scope of the Environmental Permit are accepted on site *(see Table 1.1, above, and Chapter 4: Waste Acceptance Plan)*;

- the risk of spillages or other environmental contamination is minimised *(see Appendix 2: Environmental Risk Assessment and Chapter 5: Operational Techniques);*

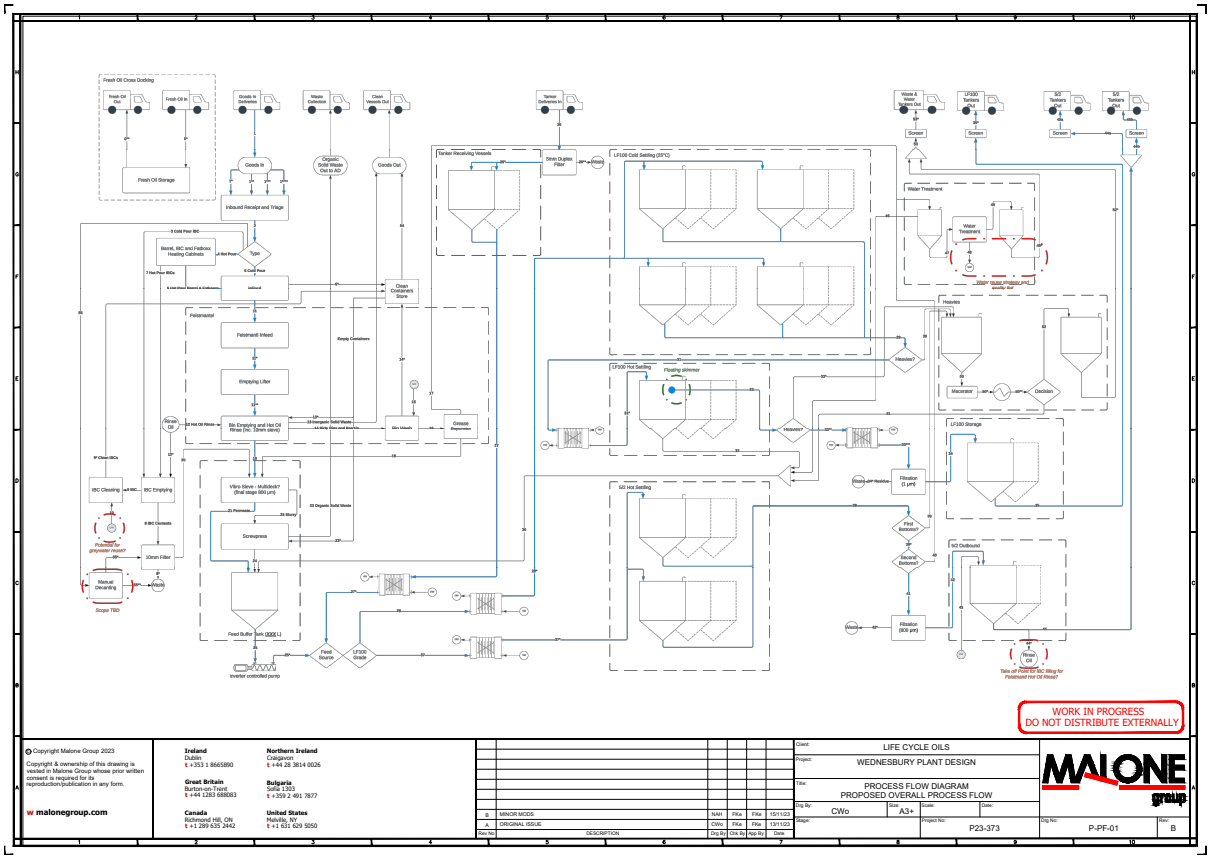
- and any incident/accidents that do occur are promptly and effectively managed with no further detriment to the site or its environs *(see Chapter 6: Accident Management Plan).*

21. Wastewater treatment will require the use of some chemicals for flocculation and coagulation but, where possible, organic chemicals will be sourced and they will be stored in a bunded, locked, secure area, and handled and disposed of in accordance with appropriate Care of Substances Hazardous to Health (COSHH) regulations

Process Overview:

22. Fig 1.1, below, shows the process flows for the various waste recovery streams that will be carried out on-site. This is best viewed in a larger scale so a standalone version that can be expanded electronically and/or printed (A3 minimum recommended) has been provided at *Appendix 3.*

Fig 1.1: Lifecycle Oils Ltd Process Flow Diagram for Waste Recovery



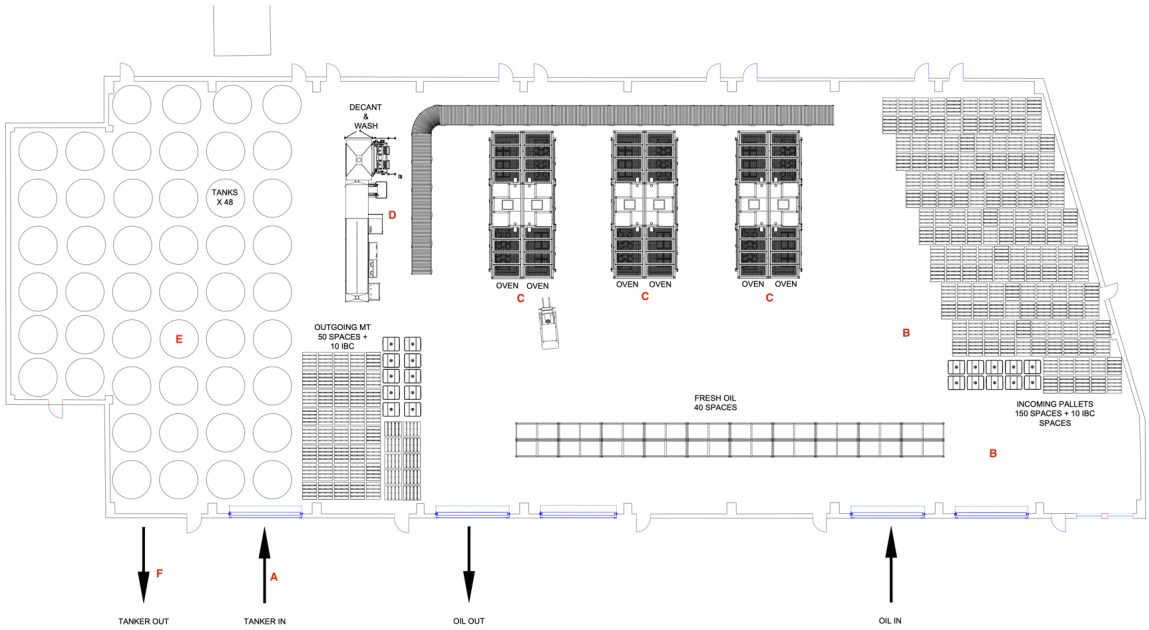
23. A non-technical summary explanation of those process flows can be found at paras 24-43 below with further detail added at *Chapter 5: Operational Techniques.*

24. Fig 1.2, below, shows the plant/equipment layout on-site. Physical movement of material around the site will flow from right to left from 'goods inward" and triage, through processing, to settling/filtering and dispatch. Much of the material will be recycled multiple times through the process.

25. A standalone version of Fig 1.2 that can be expanded electronically and/or printed is at *Appendix 4.*

26. More detail of the equipment/machinery to be installed and the processes to be carried out can be found at *Chapter 5: Operational Techniques* as referenced below.

Fig 1.2: Lifecycle Oils Ltd Interior Plant/Equipment Layout



27. "Goods Inwards" will be received as per *Chapter 4: Waste Acceptance Plan.*

28. Bulk deliveries by road fuel tanker will be received directly into the storage/settling tanks positioned within the main bund wall via an external, bunded delivery system (Point A on Fig 1.2) *(see paras 5.10-16 for further technical/process description).*

29. Upon receipt, other units will be offloaded into the bunded reception area (B) where they will undergo a visual assessment to determine their processing requirements and product suitability. In general terms, this can be split into 2 'types' of material:

- "Hot-Pour" – material that is solid/semi-solid at ambient temperatures and that needs to be heated to become liquid (typically fats and palm oils) to facilitate flow and prevent downstream blockages.

- "Cold-Pour" – material that remains liquid at ambient temperatures and can be poured (mostly oil with low fat content).

30. Units identified as Hot-Pour will be moved to one of 6 x 12 IBC/pallet, double-stacked, self-bunded, heater/storage units (C) *(see paras 5.17-19)* where they will

either be heated in a low temperature oven (not exceeding 80°C) or stored overnight for next day processing.

31. Cold-Pour material will be moved directly to the self-bunded decanting machinery (D).

32. Units will be mechanically emptied and cleaned and will have inorganic solids (rubbish found in the containing unit, including plastic wrappers, cardboard, metal lids etc) removed *(see paras 5.20-28).*

33. Effluent from the cleaning process will be sent for treatment via a grease separator (see para 39 below).

34. UCO from the emptied units will be screened and processed to separate organic solid particulates. The resulting slurry will be further processed via a screw press to remove embedded UCO, leaving dry matter. This material will be stored in sealable waste bins until disposal/removal off-site.

35. The screened mixture will then be transferred to LF100 cold settling tanks (E) for phase separation (separation into oil, fats and water). Bottom-settled content ("Heavies") will be sent for further treatment *(see paras 5.29-30).*

36. The remaining LF100 cold settling content will undergo heating and settling for further phase separation. As above, bottom-settled "Heavies" will be sent for further treatment and a final 1μm filter will be applied before storage and dispatch *(see para 5.31).*

37. 5&2 feedstock and recirculated "Heavies" will also undergo heating and settling for phase separation. Bottom-settled "Heavies" will again sent for further treatment with an 800μm filter applied before storage and dispatch *(see para 5.32).*

38. Non-water components from "Heavies" will undergo separation via fat trap/grease separator and will be returned to the process *(see para 5.33).*

39. Effluent from container cleaning and water extracted from "Heavies" undergoes water treatment before clean water is removed from the site either by discharge to a controlled drain, if within relevant effluent consent levels, or, if not, transferred off-site for disposal or treatment through an appropriate route *(see paras 5.34-35).*

40. Solid waste (organic and non-organic) is collected by licensed waste carriers.

41. Clean containers are distributed to customers alongside fresh cooking oil.

42. Drums/tins will be crushed and baled and moved to temporary on-site storage (metal skip) prior to removal off-site and disposal/recycling at an appropriately certified plastic/metal recycling facility *(see paras 5.48-50).*

43. LF100 biofuel and 5&2 will be discharged from the tank system via an external, bunded delivery system (F), to a road tanker for sale/transport off-site to an appropriately permitted recipient *(see paras 5.10-15).*

** Note: LCO operates its own vehicle fleet and holds both a valid Operator Licence and an Upper Tier Waste Carrier Licence. It may also contract out some movements to other haulage companies.*

Emissions:

44. Noise and odour emissions from the site and process, and their impact on the surrounding environment, will be negligible.

45. No finished or bi-products will be released to drain other than water within correct effluent consent parameters.

46. The single point emission source will be the exhaust from the generators that will provide the primary power to the site.

47. Emissions are covered in more detail at *Chapter 2: Site Condition Report.*

Chapter 2 – Site Condition Report v1.0

1. Lifecycle Oils Ltd's Registered and Postal address is currently: Woodwards Road, Walsall, West Midlands, WS2 9SL the site of its existing permitted facility (EA Permit: EPR/HB3502XY). This will change when this new site becomes operational.

2. The address of LCO's new UCO processing plant will be 5 Moorcroft Drive, Wednesbury, West Midlands, WS10 7DE and its 6-figure National Grid Reference is SO973949. 10-figure grid reference co-ordinates of the site boundary can be seen at Fig 2.1 below.

Fig 2.1. Aerial Photograph and OS Co-ordinates of Facility.

3. The site occupies just over 5,000m² in total, approximately 2,590m² of which is undercover in a single approx. 35m (W) x 74m (L) x 9m (H) (useable) warehouse accessible by 5 x 6m high roller-shutter doors.

4. The site was built and previously used by KTC Edibles Ltd, 21st Century Drinks Ltd and, most recently, United Aerosols Ltd for the manufacturing and printing of tin plates and aerosol cans.

5. There is no physical or visual indication of historical contamination of the site. Nor is there any known record of specific activity or pollution incidents that may have affected the land.

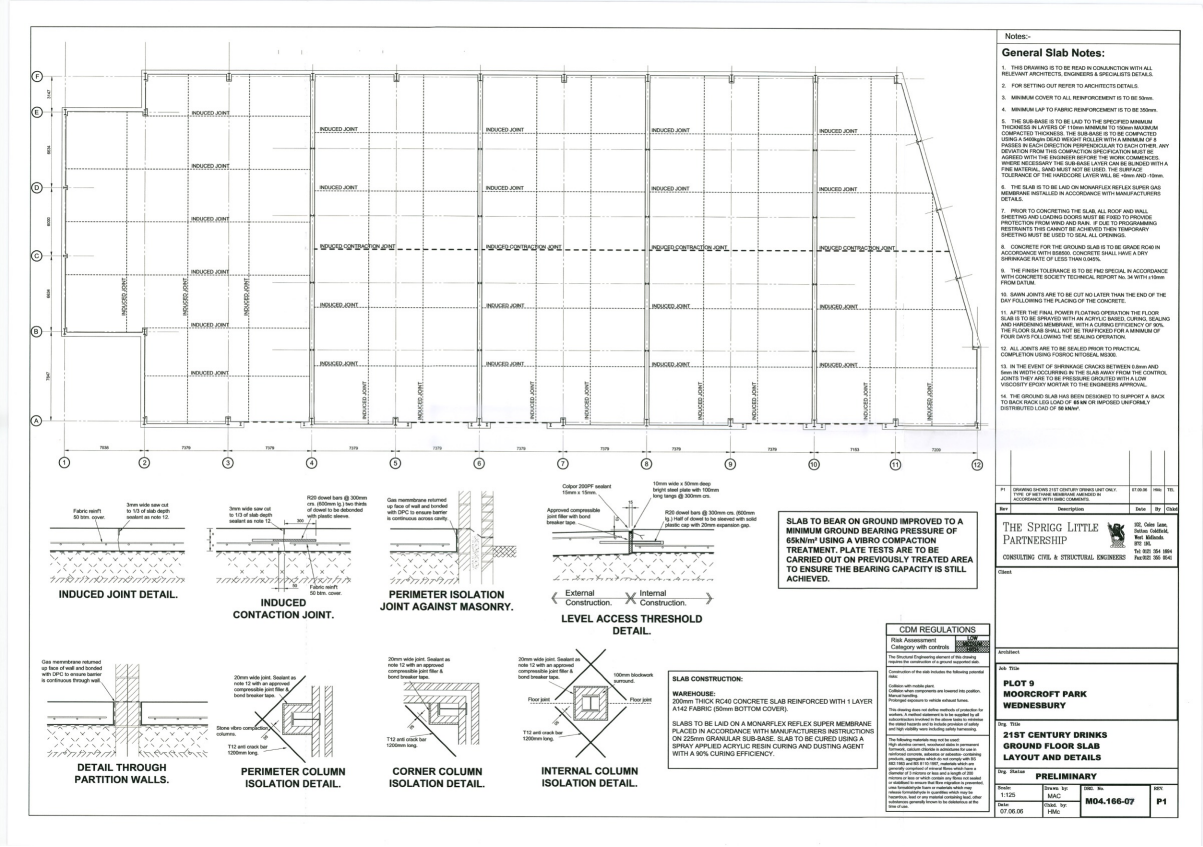
Potential Environmental Pollution Pathways:

6. The sources of pollution that could be caused by planned activities at the site are:
   - spillage of used/waste cooking oil,
   - spillage of wastewater containing residual (up to 5%) waste cooking oil,
   - spilled oil/fats collected by rain-water run-off,
   - noise (from machinery on-site and/or traffic movements to/from site),
   - odour (from on-site activity or exhaust from the Combined Heat and Power unit.
   - Exhaust emissions from the mobile Combined Heat and Power (CHP) unit.

7. Steps will be taken to mitigate the risk of each of these and their extent and impact is expected to be negligible.

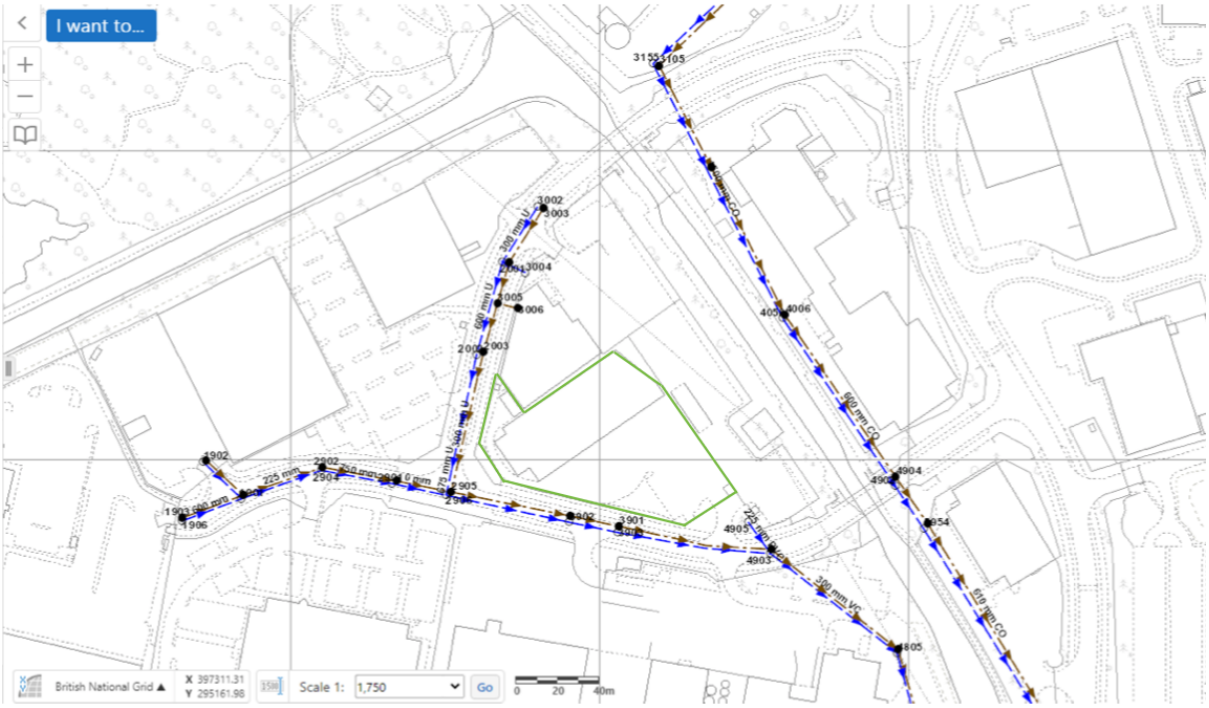
8. All UCO storage and processing activity will take place within the main building. The floor is an impermeable reinforced concrete surface with no drains through which UCO could potentially exit the site or enter the drainage system. Fig 2.2 below provides a diagram and notes on the interior floor. A standalone version of this diagram is also at *Appendix 5.*

Fig 2.2: Interior Floor Slab – Diagram and Notes



9. Drainage & Ground Water: Fig 2.3, below, shows the public ground (blue) and foul (brown) water sewer infrastructure surrounding the site and which runs beneath Patent Drive and Moorcroft Drive. Fig 2.4 and 2.5 *(also at Appendix 6)* show, in more detail, the subterranean drainage routes from the site to that system.

Fig 2.3: Public Sewer System at Moorcroft Drive, Wednesbury, WS10 7DE



10. Rainwater from the building roof is caught in an enclosed guttering system which drains through the building direct to the sewers without coming into contact with the ground.

11. The external yard is surrounded by a 4" kerb boundary and has been constructed with a natural slope to the south-easterly corner, away from the building (to the north) and the road/verges (to the west and south). Additionally, there is a rainwater gulley on the eastern edge which will capture any water flowing towards the adjacent site to the east, so the likelihood of contamination of both on-site and adjacent underlying soils, land and groundwater will be negligible.

12. Drains within the yard connect to the public sewer system (see Fig 2.4 and 2.5 below), though, so there is potential for UCO to enter that system through rain/ground water run-off. Measures will be taken, however, to ensure that no UCO goes to ground: all input points; processing machinery; transfer pumps & pipes; storage tanks; and output points of oil and waste products will be bunded and, where practicable, sited indoors. Lips will be placed across all entry/exit doors and roller door accesses.

13. These measures, alongside regular house-keeping, should be sufficient to prevent UCO-contaminated rain water entering the public system but, that said, there is space within the site boundary to fit an interceptor or grease trap in the main point of ground water egress to the public sewer (see note on Fig 2.4) should it be deemed necessary.

Fig 2.4: Site Drainage Pathways for Lifecycle Oils Ltd – Moorcroft Drive, Wednesbury, WS10 7DE

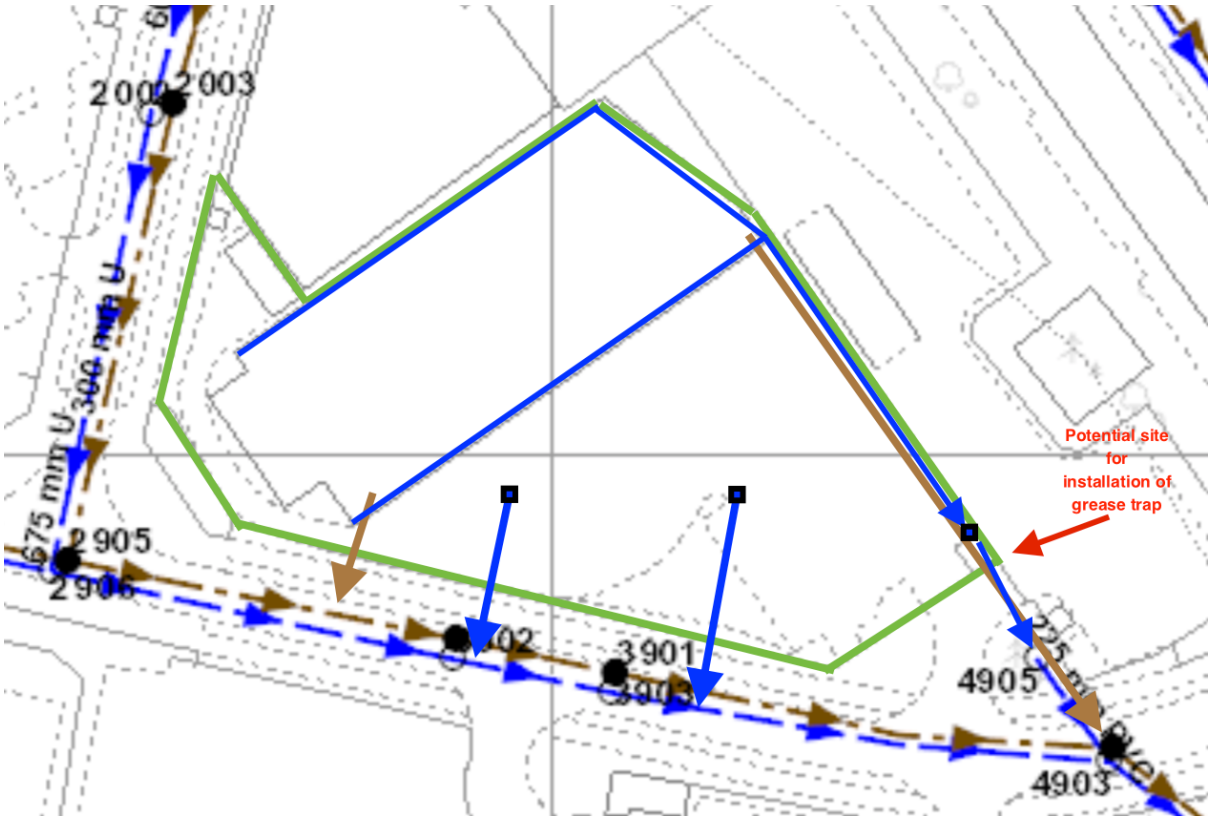
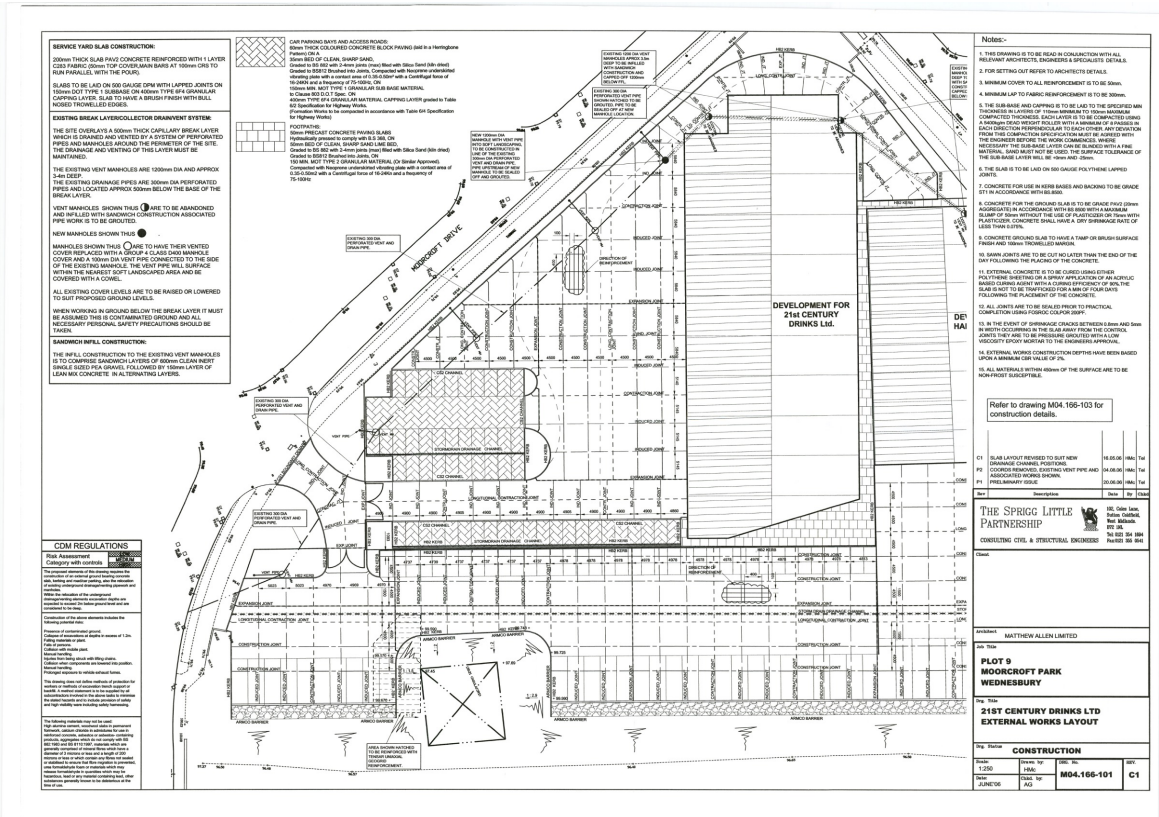


Fig 2.5: Service Yard Slab & Drainage Diagram & Notes



14. Odour: Practical experience in handling large volumes of UCO at LCO's current site (Woodwards Road, Walsall, WS2 9SL - EA Permit: EPR/HB3502XY) over the past 2 years has shown that odours emanating from the activity and site are minimal and do not negatively impact on the site or its environs or provide a source of nuisance to neighbouring receptors (in that case a residential area within 50m).

15. Odour release from UCO does not increase with volume, nor does it degrade and worsen, and, in any case, the process is designed for rapid throughput. So, even when odours are present, they are rapidly 'removed' and quickly dissipate.

16. Noise: The site will have the capacity to operate 24/7 and is located in. anon-residential area. Nevertheless, LCO will undertake to minimise noisy activity at unreasonable hours.

17. Apart from traffic movements, which will be less than those of most immediate neighbours, the only machinery that will make a significant noise is the drum/tin crusher/baler which will operate up to 62.4dBA *(see equipment specification sheet at Appendix 8).* This will, however, be positioned within the building and will only be operated for an estimated maximum of 10 'events' per week which will be scheduled for normal working hours.

18. Other Emissions: The site will be primarily (but not wholly) powered and heated from 4 x Volvo Penta generator engines running on LF100 Biofuel that is produced on-site and is OFGEM accredited.

19. The engines to be used will be taken from an existing fixed generation site with existing Environmental Permits which include MCPD compliance. All such systems which ensure current compliance will be transferred and operated to the same level of conformance.

20. The engines will be containerised which will ensure noise levels remain within relevant standards.

21. The combined engine array will exhaust to a combined stack arrangement incorporating a full Selective Catalytic Reduction (SCR) system, ensuring that NOx emissions remain within the specified ELV.

22. An estimated 1.2-1.5 MWth of thermal output from the engines will also be utilised within the site. This exceeds the 1MWth threshold (but not the 50MWth threshold).

23. No additional, permanent gas-fired heat generation is currently being considered as part of this solution.

24. The engines will be used to solely satisfy the electrical and heat demand needs for the facility and LCO see this solution as a more progressive and environmentally compliant than a gas fired boiler to deliver the heat and increased load on a carbon-heavy grid supply.

Situational Environment and Potential Pollution Receptors:

25. According to DEFRA's "Magic Map", the premises are located in a 'Built Up Area'. The immediate vicinity can be classified as 'light industrial' and has no known access restrictions or limitations.

26. A map of potential receptors in the vicinity of the site can be seen at Fig 2.6, below. Distances from the site boundary to each receptor grouping and an assessment of their sensitivity to emissions can be found at Table 2.1 and paras 2.25-2.30 below.

Fig 2.6: Map of potential pollution receptors in vicinity of the site.

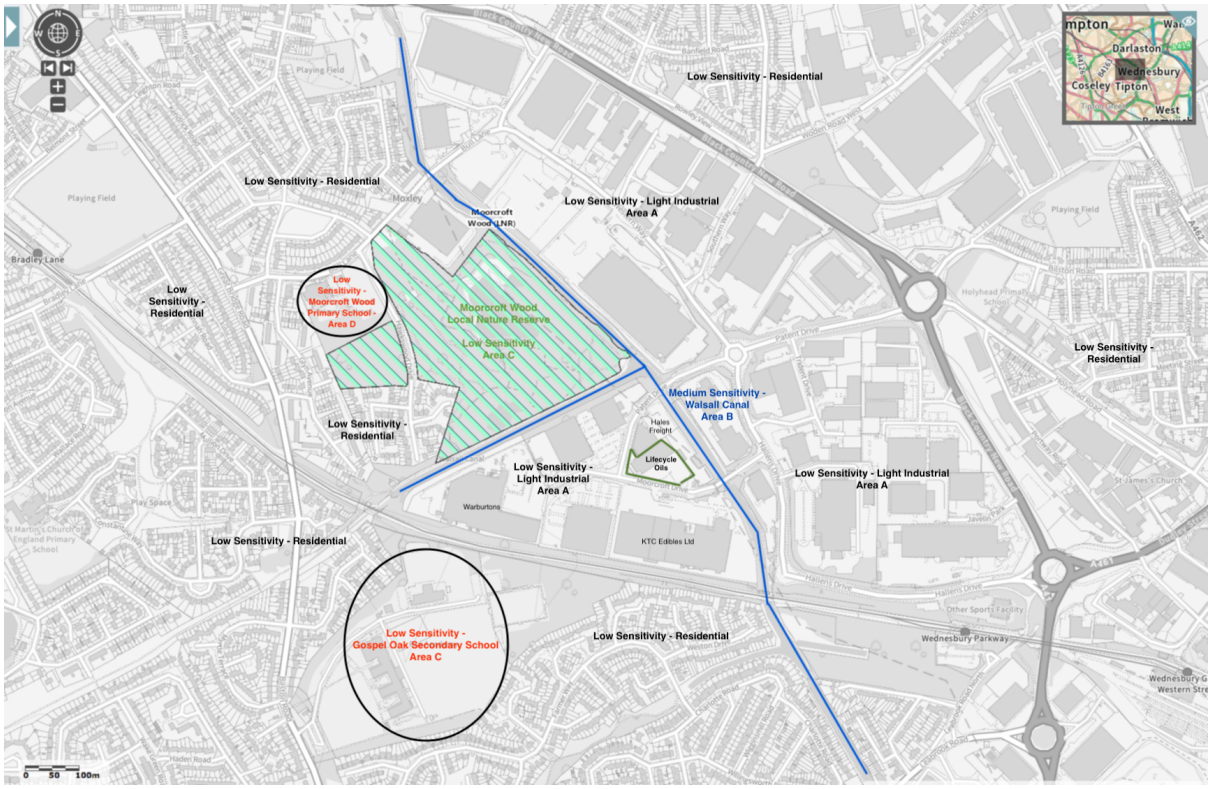


Table 2.1: Map of potential pollution receptors in vicinity of the site.

Area	Receptor	Sensitivity			Range	Direction
		Spillage	Noise	Odour		
A1 (para 18)	Hales Freight Ltd Moorcroft Drive & Patent Drive	Medium Medium	Low Low	Medium Medium	0m 0m	N-E S-W
A2 (para 19)	Light Industrial	Nil Nil Nil Nil	Nil Nil Low Low	Low Low Low Low	70-700m 60-450m 20-150m 20-400m	N E S W
B (para 20)	Walsall Canal	Medium	Low	Low	45m	E-ENE
C (para (21)	Moorcroft Wood – Local Nature Reserve	Nil	Nil	Nil	150m	NNW
D (para 22)	Public (School) – Gospel Oak Secondary	Nil	Nil	Nil	250-750m	SW
E (para 22)	Public (School) – Moorcroft Wood Primary	Nil	Ni	Nil	600m	NW
F (para 23)	Residential	Nil Nil Nil Nil Nil	Nil Nil Nil Nil Nil	Nil Nil Nil Nil Nil	570m 650m 200m 450m 350m	NNE E S WSW WNW

27. Area A1: The site adjacent to the LCO facility is currently occupied by Hales Freight Ltd, to the east and north. Two public highways (Moorcroft Drive to the south and Patent Drive to the west) complete the encirclement of the site. Risk of UCO leaking or spilling from the site and affecting these areas will be minimal due to the internal safety measures *(see Chapter 5: Operational Techniques)* that will be installed but, as the risk can never be completely removed, and, if there was to be a (unlikely) catastrophic spillage, it would be these areas that would be directly affected, the sensitivity of these Receptors has been classified as "Medium". Noise and odour concerns are also assessed as minimal, although, due to proximity, these have been classified as "Low" sensitivity, primarily to ensure that regular consultation takes place to address any concerns and that the impact on them of any on-site activity is fully taken into account in any planning/operational decisions/actions taken.

28. Area A2: The bulk of the immediate surrounding area is occupied by light industrial premises, the closest being KTC Edibles Ltd and Warburtons Ltd. This area is assessed as having Nil sensitivity to UCO spillage. Those areas within 50m of the site boundary are classified as being of Low sensitivity to noise and odour.

29. Area B: Walsall Canal (Local Wildlife Site - LWS) runs along the eastern boundary of the adjoining site (marked as a blue line on Fig 2.1, above). It is 45m from the easterly edge of LCO's site which is bordered on that side by a 5" kerb and a channel drain and across and adjacent yard. Although the impact any such spillage would have on it, were it to reach, would be potentially harmful, the operational precautions that will be implemented on site to prevent/contain UCO spillage and the distance/obstacles any such spillage would have to traverse see it classified as a "Low" sensitivity receptor. Sensitivity to noise and odour is rated as "nil" or "low'.

30. Area C: Moorcroft Wood is a Local Nature Reserve, the closest point of which is situated soe 150m to the north-west of the LCO facility with other roads, buildings and a spur of the Walsall Canal (Bradley Locks – also a LWS) in between. Due to the distances involved, the probability and risk of spillage affecting either of these sites is negligible. Sensitivity to noise and odour is rated as "nil" or "low'.

* *Detailed risk assessments to the support these summary statements for each of these sites can be found at Appendix 2: Environmental Risk Assessment.*

31. Areas D & E: The closes public buildings to the LCO facility are. Gospel Oka Secondary School, the playing fields of which lie 250m to the south-west, and Moorcroft Wood Primary School, 600m to the north-west. The risk of spillage, noise or odour pollution to these sites is negligible (due to distance and building/infrastructure barriers between) but, for the purposes of this assessment have been classified as "Low".

32. The closest residential area lies 200m to the south with a road, KTC Edibles Ltd's factory and a railway in between it and the LCO facility. The risk of spillage, noise or odour pollution to these sites is also negligible (due to distance and building/infrastructure barriers between) but, for the purposes of this assessment have been classified as "Low".

Decommissioning:

33. As the plant machinery and storage tanks are self-contained, with no discharge points to groundwater or sewerage, de-commissioning of the plant, should it be required, will simply involve dismantling the equipment in use and moving it off site. Any residual contamination from spilled Used Cooking Oil will be cleaned up using domestic detergents.

34. **The Directors of Lifecycle Oils Ltd accept that, as the legal operator of the site, they would be responsible for any clean-up requirements if identified at permit surrender.**

Chapter 3 – Management Systems and Personnel – v1.0

1. Lifecycle Oils Ltd's management systems will be compliant with the requirements of the International Sustainability and Carbon Commission (ISCC) which sets out detailed parameters for the handling sustainable material (including Used Cooking Oil (UCO) and the bi-products derived from its processing. The ISCC process requires an initial audit to gain certification (achieved 26th July 2019), and annual auditing thereafter. The current certificate is attached at *Appendix 1*.

2. Detailed notice is also taken of Environment Agency's *IPPC S5.06: Guidance for the recovery and disposal of hazardous and non-hazardous waste* and, in particular, the 'Best Available Techniques' it lists for the acceptance, storage, testing, recording, and recovery/disposal of waste.

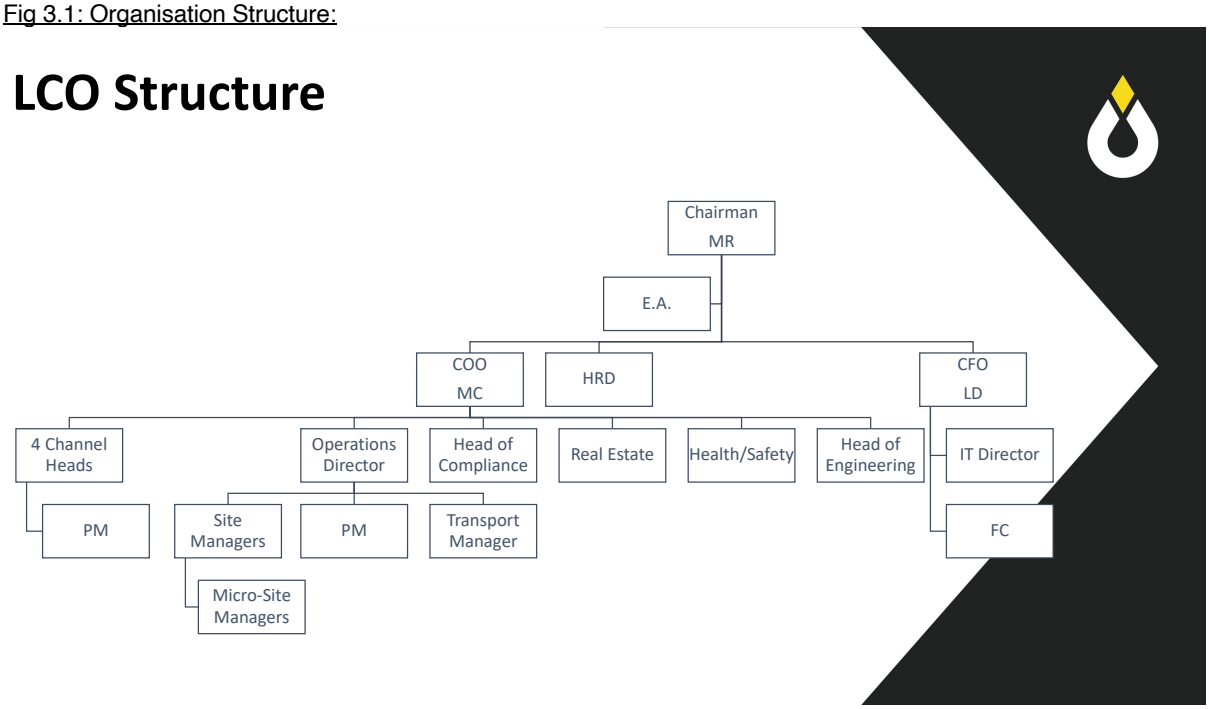
3. As LCO expands and additional resources become available, the Company undertakes to work towards ISO 9001 (Quality and Process Management) and ISO 14001 (Environmental Management) certification.

4. The Directors and Senior Management of Lifecycle Oils all have over 15 years' experience in a range of areas both within the biofuels and waste recovery sectors and other areas of business/services. **The Company's Head of Compliance holds a valid WAMITAB qualification (Level 4 Medium Risk Operator Competence for Non-Hazardous Waste Treatment and Transfer - MROC1) and will perform the duty of Technically Competent Manager for the site.** A copy of the valid certificate is at *Appendix 9*.

5. None of the directors have been convicted of any EA offences or had current or past bankruptcy proceedings against them.

6. A organisation chart showing the current senior management structure of the Lifecycle Oils Group is provided at Fig 3.1, below.

Fig 3.1: Organisation Structure:



7. The staffing plan (all currently t be appointed) for the site is as follows:

Role	Qty
Site Manager	1
Production/Shift Manager	2
Operatives incl. FLT drivers x 2 shifts	16/18
Maintenance	1
Admin	1
Total across 16 hours	21/23
Compliance role split across 2 sites so not incl.	

8. The site manager will either be recruited with the required MROC L4 qualification or will be expected to achieve it within 6 months as part of his/her employment terms.

9. Brief biographies of key senior group management are as follows with full CVs available on request:

Chairman (Interim Chief Executive Officer) and Director – Mike Redford

After a career in The City, Redford has been involved in the waste management/waste to energy industry for 15 years. He has designed and operated processes to refine waste streams from crude form for the biodiesel and power generation markets, focussing on waste cooking oils and fats and other bulk products such as glycerine, as well as a degree of work on processing waste confectionary, and R&D into the handling of specialised waste streams such as chocolate and soft cheese. He is currently Chairman and acting CEO of Lifecyle Oils, Living Fuels and Living Power. The business model of this collective is to sell fresh cooking, purchase the subsequent waste stream of UCO, refine it to fuel grade, and finally to generate power using mobile generators.

Chief Executive Officer – to be appointed

Managing Director – Mark Chesworth

With 30 years' experience in Operations in the U.K. and overseas, working for independent businesses and most recently, prior to joining LifeCycle Oils Ltd in November 2022, for various Divisions of Associated British Foods at Director level for 18 years. With the roles I have held, I have all of the relevant experience required to lead the Lifecycle Oils expansion plans and adoption of new Used Cooking Oil Processing Plants.

In addition to leading large businesses with multiple locations across the UK with teams of approximately 600 people, I have delivered numerous significant capital projects again both in the UK and overseas.

My two most recent roles were:

AB Agri UK Supply Chain Director 2019 to 2022, responsible for the safe and efficient operation of a number of businesses operating in the UK producing over 4 million tonnes of

animal feed for the U.K. market. AB Agri operated 11 feed mills and 9 blending sites from Scotland to Devon in addition to an AD Plant in Yorkshire and 2 pre-mix sites in the Midlands. Within this operation was a 110 HGV operation with over 200 drivers. These operations fell under my direct remit with all aspects of operations from planning, production, logistics and health, safety and environment.

Vivergo Fuels Ltd Managing Director 2013 to 2018, responsible for commissioning and safely operating Europe's largest Bioethanol refinery in Hull milling 1 million tonnes of wheat to produce 350 million tonnes of animal feed and 450 million litres of bio-ethanol for blending into petrol. The site, representing a £400m investment on SaltEnd Chemicals Park was a COMAH Tier 1 site covering 27 acres with a team of approximately 100 people with an exemplary record over 5 years in terms of health, safety and environmental performance.

Roles prior to these for ABF include Jordans Ryvita Supply Chain Director, UK Grocery Group Operations Director and Westmill Foods Commodity Director. Prior to joining ABF I was the General Manager Operations for Hall & Woodhouse Brewery, Supply Chain Manager for Pork Farm Bowyers and Site Manager for 2 business' overseas.

With a clear plan covering the multiple faceted aspects for business expansion including HS&E, Capability identification, Recruitment and Training, Capital Management and Plant installation and commissioning, the business is well set to commence with the development of our second site in Walsall.

Chief Finance Officer – Lian Dutton

Lian qualified as a Chartered Accountant (Institute of Chartered Accountants of Scotland) with PwC in 2005, having gained experience in the audit and Transaction Services teams. Post qualification, Lian spent nine years in professional services between PwC and Deloitte in the UK and in Australia, mainly within Transaction Services, leading buy and sell side due diligence projects, IPOs and vendor assistance work for corporate and private equity clients.

In 2014, Lian moved into a Group Commercial Manager role at iSentia media monitoring in Sydney immediately post IPO from previous private equity ownership. Key responsibilities included overseeing Group internal and external reporting, budgeting and forecasting, as well as leading finance transformation activity in the Asian division of the business.

From 2017 to 2020, as Head of Commercial Finance at Allied Pinnacle, a major food manufacturing business in Australia and New Zealand, Lian was responsible for the sales, gross profit and supply chain finance teams. This role included contribution to a major integration and cost out project, prior to sale of the enlarged business from private equity to a multinational Japanese milling business.

On return to the UK in 2020, Lian performed Group Financial Project Manager activities at Accomplish Group, adult residential and supported living care home business, prior to assuming the Interim CFO role in January 2022. As CFO Lian was responsible for the Finance, Legal, IT, Estates and Key Projects functions. Whilst in the CFO post, the business commenced a major merger with another care business in the private equity portfolio.

Lian joined Lifecycle Oils as CFO in December 2022 to ready the finance function for major business growth, including optimum structuring of the team and implementation of new controls and processes. Having been heavily involved in the funding process, Lian has detailed knowledge of all aspects of the strategic plan for the business and is therefore well placed to take the business into the next phase of growth.

Head of Compliance – Mick Broadhurst

Previously a Royal Navy officer for over 20 years, during which he received both formal training and extensive working experience in project management, Health and Safety management, risk assessment and management, and environmental awareness.

Joining the Regenesis group of Companies in 2013 after 2 years working with the NHS, he managed a biodiesel plant (Regenesis Biofuels Production Ltd, Telford, UK) from start-up, through commissioning (and EA certification) and into production before moving, in 2015, into an Operational Director role with Regenesis Bioenergy Ltd. In this latter position, he co-ordinated the feedstock and chemical supplies for a range of biodiesel companies that had agreed to work together to meet common supply targets, overseeing their production schedules to meet demand. Key aspects of this role were the provision of directorial oversight to staff training and working practices; the establishment and monitoring of production, administrative and reporting processes; liaison with key external organisations and authorities (HMRC, DfT); the maintenance of ISCC accreditation; and ensuring that EA permitting and statutory HASAW obligations were maintained.

In 2019, he was asked to join Lifecycle Oils Ltd to help prepare the ground for this new start-up business, initially becoming General Manager until more operational staff were engaged, whereupon he moved into the current Compliance role.

Broadhurst holds a CIWM (WAMITAB) Level 4 Medium Risk Operator Competence for Non-Hazardous Waste Treatment and Transfer certificate and will be the initial Technically Competent Manger for this new site.

Operations Director – to be appointed

HR Director – Nigel Farmer

Nigel is a Fellow of the Chartered Institute of Personnel & Development and has over 20 years' experience in senior HR positions principally within manufacturing, supply chain and retail/wholesale sectors.

After an early career in Production Management, Project Management and Training & Development roles with Courtaulds Textiles, he then moved into HR with manufacturing business, Caradon plc. His early roles included being Change Lead for a major business integration/ERP implementation at Caradon before moving into HR Director positions. After Caradon he served as Director of HR at Wickes Building Supplies.

Between 2006 to 2018, Nigel held HR Director/VP HR roles within the supply chain sector with NYK Logistics (now Yusen Logistics) and DHL; at DHL these roles included business units within the UK, Europe and Globally.

In 2018, Nigel joined Alliance Healthcare as UK HR Director, part of the then Wallgreens Boots Alliance Group. Whilst there he led the organisation integration which merged Boots logistics into AH supply chain operations as well as delivering major savings through organisation restructuring. After leaving Alliance, from 2021 he has held a number of interim contract positions including HR Director – Europe for Gilbarco Veeder-Root.

He joined LCO in November 2022 to establish the HR function and put in place the people-related policies, processes and systems to support and enable the Company's planned growth strategy.

IT Director – Dave Hitchmough

Southern Regional Director – Duncan Ross

24 years prior experience in 2 food service businesses, with financial and operational responsibility, managing fresh oil packing plants and waste oil processing facilities, including the set-up and managing of a biodiesel manufacture plant and the application and upkeep of an Environment Agency PPC permit.

All processes incorporated bulk tank storage and processing of vegetable oils and operating in an environment of safe handling, to also include responsibility for safe transport of all materials and the upkeep of a Waste Carriers Licence.

Since joining LCO and the group, this has extended to operational responsibility for 2 processing sites (one for waste handling & processing and one for biofuel manufacture) and responsibility for movements between these plants in bulk tankers. Duncan is also a member of the rollout team responsible for the planning, opening and operation of the Wednesbury Processing site and future sites during 2024.

In 2023 LCO opened four "micro-sites" for collection and aggregation of oil directly from the producers of the waste; this aggerated oil volume is stored and packaged safely for onward movement to processing sites. Duncan takes overall responsibility for these sites from set up to daily operation and all movements of material in and out of each site.

Other Regional Directors – to be appointed

Group Transport Manager – Michael (Billy) Appleby

18 years experience within the transport industry with a proven track record of managing large, multi-million pound, multi-site, state of the art fleets in the scrap metal recycling industry and contract lead for a blue chip customer.

Coming from a military background as a movement specialist prior to working in the private sector, previous roles are:

- Transport Manager and Jaguar Landrover contract manager – European Metal Recycling

- Transport team leader – Walsall council
- British Army – movement specialist (helicopters)

Joined LCO in 2021 to initially run the site and production whilst also being instrumental in bringing transport to LCO before moving to full time Group Transport Manager.

Head of Engineering – Dale Metcalfe

A degree-qualified Senior Engineer with over 20 years' background within Agri, Food & Beverage manufacturing. Extensive experience, managing large footprint, multi-site operations within the UK & Europe.

Working for companies such as Mars Inc., Premer Foods, Carlsberg & AB Agri (a division of Associated British Foods plc), having overall responsibility for Safe, Compliant and Effective operations at:

- Mars Inc. (Pedigree Petfoods) Birstall – Petfood Snacks & Treats facility.
- Mars Petfood Europe (x15 multiple European Sites) – Wet & Dry petfood facilities.
- Mars Inc. (Pedigree Petfoods) Peterborough – 100kT p.a. Dry petfood facility.
- Premier Foods (Mr Kipling), Barnsley – 50kT p.a. cake bakery.
- Carlsberg, Northampton – 6M HL p.a. brewery.
- AB Agri Feed Mills (x11 multiple UK Sites) – 2,000 kT p.a. Animal Feed manufacturer.
- AB Agri (Amur) – Anaerobic Digestion plant, South Milford – 3MWe site; c.60kT p.a. food waste input.

Responsible for overall Maintenance and Asset Care for above, ensuring compliance with all relevant legislation (H&S, Environmental, Food Standards and other governmental requirements); Project implementation for all scales of Projects, ensuring continued compliance and effectiveness; Overall operational responsibility for Amur AD site, including permit compliance.
Ownership of Energy compliance (either through ESOS, Carlsberg or ISO50001, AB Agri) and improvements, including MCPD compliance across an ageing estate.

Joined Lifecycle Oils in 2023 to support the development of the business, specifically around processing sites, focussing on technology identification & development alongside planning, design, and implementation of new sites.

Specific responsibilities for this site will be:

- Project Development from concept to delivery
    - Includes specification and development of process.
    - Specification, Procurement, and Installation of all equipment.
    - Site commissioning and operational handover.
- Ongoing responsibilities post start-up and handover:
    - Plant maintenance schedules and adherence.
    - Operation and maintenance of power generating equipment.
    - Site technical support.

Chapter 4 - Waste Acceptance Plan – v1.0

1. Waste Acceptance procedures will be as dictated by the International Sustainability and Carbon Commission (ISCC), which forms the basis of the Company's management system, and the Environment Agency's Sector Guidance Note S5.06 which sets out best practice requirements for the Recovery and Disposal of Waste.

2. All Senior Management have had previous experience in operating within these parameters and have been involved in the running of a similar site for the past 2 years. As such, they are able to provide initial and continuation training in its procedures to all staff within their employ.

Pre-Acceptance Pre-Requisites:

3. To avoid accumulation of stock and consequent problems with storage, leakage, or other environmental risks, waste will not be accepted at the facility unless there is a clearly defined and costed method of recovery or disposal, and there is sufficient processing and storage capacity available. These checks should be performed before the waste acceptance stage is reached.

4. Staff who may be involved in the checking (and sampling/analysis procedures, if applicable) are to be suitably experienced and adequately trained, and acceptance training is to be updated on a regular basis. Staff members authorised to make decisions of this nature are to be clearly identified and steps are to be taken by senior management to ensure that waste acceptance procedures are being strictly adhered to on an ongoing basis.

5. Clear and unambiguous criteria for the rejection of wastes, together with a written procedure for tracking and reporting non-conformance, are to be in place. This should include notification to the supplier/waste producer. Written/computerised records should form part of the waste tracking system information.

6. It is imperative that a delivery schedule is in place so that concurrent deliveries of waste are avoided, thus allowing:

    - suitably experienced management/staff to be available to meet and assess each delivery.
    - correct pre-acceptance procedures to be followed without undue time pressures being placed on own- or delivering staff.
    - any queries relating to the delivery to be handled fully and correctly with time for consultation with higher-level management if required.

7. ALL waste received by LCO will meet the following criteria:

    - non-hazardous,
    - Used Cooking Oil (or oil derived from the list of acceptable waste at Table 1.1),
    - produced entirely from residue/waste,
    - of known origin,
    - and be accompanied by a correctly completed Duty of Care Waste Transfer Note (WTN) identifying the nature and quantity (volume and/or tonnage) of the material, its origin (the transferor) and the haulier (transferee).

8. The clear majority of UCO received on site will be of ISCC status. Therefore, (unless clearly specified and accepted by management, in advance, as being of non-ISCC status) UCO being accepted on site MUST also be accompanied by the correct ISCC approved paperwork identifying it as sustainable product.

- ISCC Sustainability Declaration for Raw Materials.
- ISCC Self-Declaration for UCO or Food Waste.

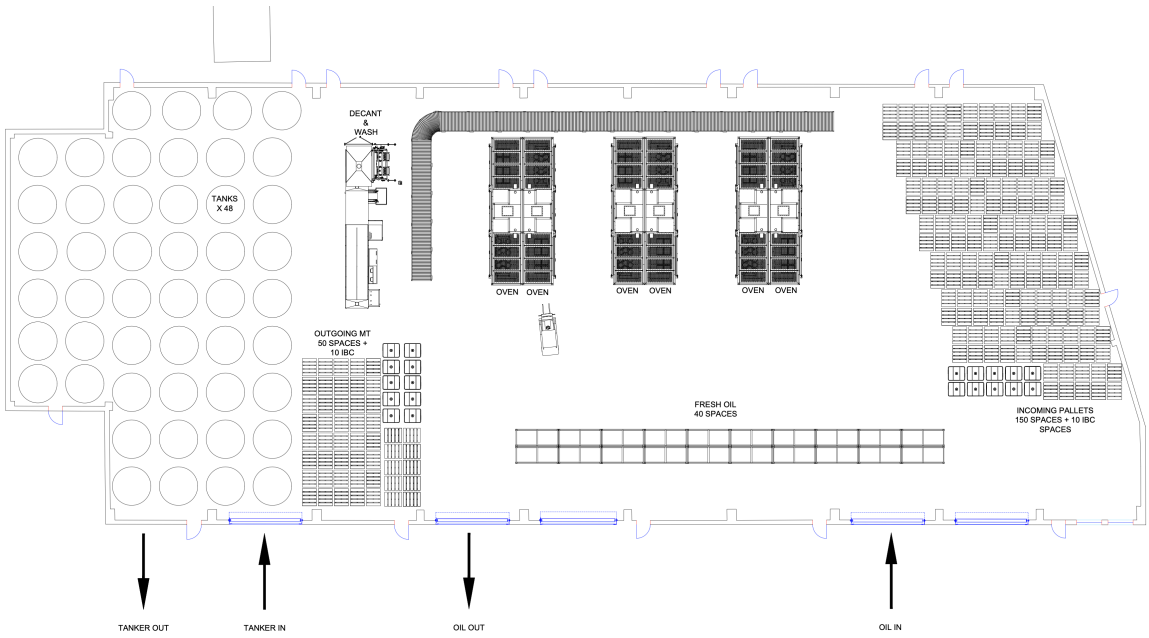
9. In addition, waste received must be:

- correctly 'packaged' and able enter the processing equipment at no risk to staff and/or to the environment. All containers should be clearly labelled and equipped with well-fitting lids, caps and valves that are secure and in place.
- from trusted sources (other ISCC certified suppliers/traders; contracted 'Dependent Collectors' working under LCO's ISCC certification; or identifiable Points of Origin (food manufacturers or restaurants/café's/pubs). Ad hoc or 'drop-in' deliveries are not to be accepted without prior senior management approval.
- of agreed specification (if stated), verified by laboratory report, on-site Moisture and Impurities ((M&I) and Free Fatty Acid (FFA) testing, or visual inspection.
- of a quantity/volume delivered that matches the paperwork provided.
- weighed in (gross) and out (tare) on LCO's weighbridge or pallet scale.

Goods Inwards:

10. The 'goods inward' and offloading areas for incoming consignments are marked on the site layout plan at Fig 4.1 below.

Fig 4.1: Lifecycle Oils Ltd Interior Plant/Equipment Layout



11. The following checks are to be made on arrival of goods inward by the Site Manager (or Other, if delegated):

- Collection/delivery arrives according to schedule/as per Purchase Order.
- Unexpected/unannounced deliveries should not be permitted on site until confirmation of legitimacy has been obtained from sales/senior management.
- Waste Transfer Note confirms originator and volume of supply.
- Delivery vehicle weighed in (and out) on weighbridge.
- Volume received matches (or approximates) volume ordered on PO and/or recorded on WTN.
- Visual inspection to include:
  - Packaging
  - Colour/Appearance
  - Smell
  - Presence of excessive solid matter
  - Must be within parameters agreed during supply discussions.

12. Inadequate or off-specification material should be rejected fully or in part. This may require escalation to Sales or senior management.

13. Delivery volume/tonnage and documents should be promptly passed to Finance and Compliance.

14. Road tanker deliveries/collections are to be checked for quality, (moisture, impurities and temperature) prior to offloading. If accepted, material will be received via the bunded external delivery point directly into the storage/settling tanks *(see Chapter 5: Operational Techniques paras 10-15 for further detail of this process).* Rejected consignments will not be offloaded and will be returned to the supplier.

15. IBC and palletised barrel and/or drum deliveries/collections are to be unloaded by forklift truck and transferred into the reception area where it will undergo a visual assessment to determine its processing requirements ("Hot-Pour" or "Cold-Pour") and product suitability (LF100 or 5&2).

16. All incoming deliveries are expected to be processed within 24 hours of arrival unless mechanical issues intervene.

    Waste deliveries will not be stored for long term in the reception area, which should always be clear overnight. Overnight storage is to be in the bunded 'goods inward' reception and temporary storage area or one of the 6 self-bunded heater/storage units.

17. Containment equipment, absorbents and cleaning materials will be available in all areas in case of spillage.

Criteria for Rejection:

18. Waste not meeting the required criteria, falling short of specifications that can be processed, or are otherwise contaminated, are NOT to be accepted on site and are to be returned to the Supplier. However, with senior management approval:

- damaged, corroded or unlabelled IBCs/drums/tins may be accepted but should be stored in a dedicated quarantine area and dealt with appropriately. Such storage should be for a maximum of 14 working days.
- written procedures are to be in place for dealing with wastes held in quarantine, together with a maximum storage volume.

19. In addition, waste should not be accepted at the facility if:

- there are ANY concerns with mechanical capability of the plant/machinery, or with the technical capability of staff available on-site, identified at the time of delivery, to process it promptly and correctly.
- if there is any doubt as to the nature of the waste being supplied and whether it is suitable for processing by the facility.

Records:

20. Are to be kept of all delivery consignments rejected, to include:

- date and time of rejection,
- reason for rejection,
- name of person rejecting consignment.

Chapter 5 – Operational Techniques – v1.0

Overview:

1. All activities undertaken by LCO during the receipt on-site, storage/processing, and removal to off-site of its processed end products (ultra-filtered "LF100" UCO biofuel; "5 & 2" grade UCO) and bi-products (solid/food waste and wastewater) will be governed by Environment Agency guidelines, primarily:

   - S5.06: Recovery and disposal of hazardous and non-hazardous waste, and,
   - Waste Acceptance Procedures for Waste Recovery on Land (18 Oct 2016).

2. In addition, the monitoring and recording (including confirmation of source/origin of materiel, mass balance of incoming and outgoing materiel, and destination of end- and bi-products) of all consignments received, processed and dispatched will be administered using the protocols set out by the International Sustainability and Carbon Commission (ISCC).

3. Adherence to these procedures will be externally monitored by annual audit.

4. Operation of all equipment on site will be undertaken in accordance with Standard Operating Procedures as set out by management and specific operating procedures as set out in the relevant equipment manual(s).

5. Safety risk assessments for all equipment and activities on-site will be undertaken and will be kept under continual review.

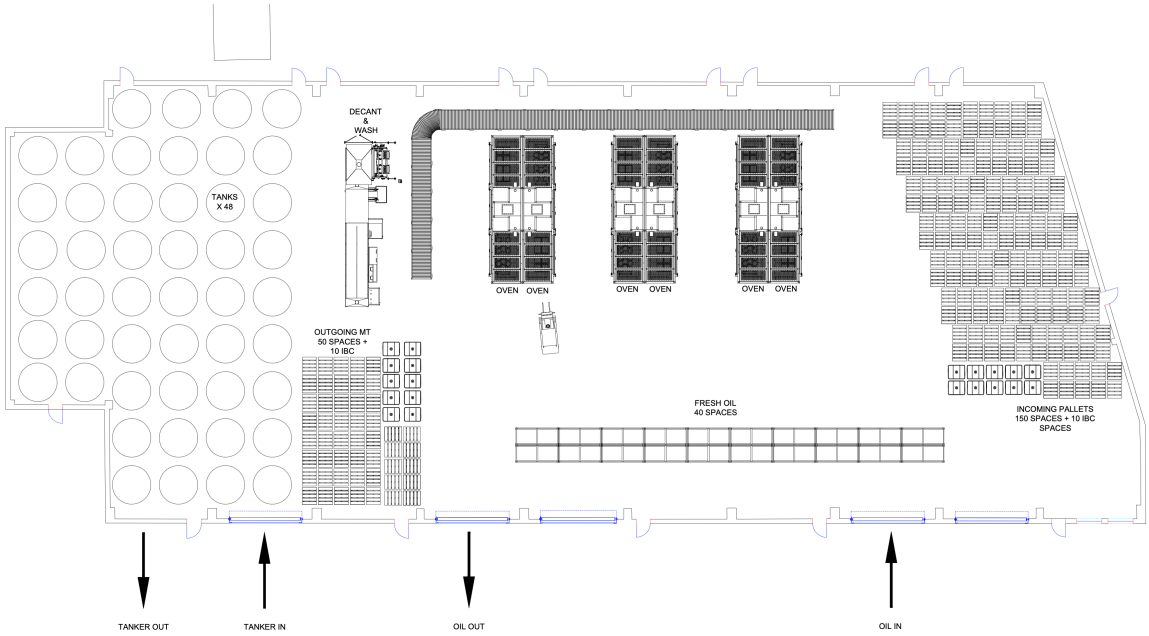
6. At the time of application, final decisions have not been made on the specific make/model of some items of machinery to be procured (ie automated decanting/washing system and water treatment plant). Further detail will be added to this Chapter and Operating Manuals will be added as Appendices once procured.

7. In these cases, the current preferred option (subject to change) has been identified to provide an indication, if needed, of the machinery and process that will be used.

8. Fig 5.1, below, shows the plant/equipment layout on-site.

9. General and specific operating standards for each stage of the process and each item of equipment/machinery (where known at the time of application*) are provided in the following paragraphs.

Fig 5.1: Lifecycle Oils Ltd Interior Plant/Equipment Layout



10. Tanker Loading Point: UCO received on-site in bulk from road tankers will be tested for moisture, impurities and temperature and, if accepted, will be offloaded directly into storage/settling tanks.

11. A single connection point will be used for offloading and loading road fuel tankers. This will be located outside the building and outside the main bunded area but it will have the following features to minimise the risk of spillage to ground:

- A drip tray to catch any oil that may leak during operation.
- a valve at the delivery end that can be fixed open but which will close automatically when the pipe is not in use and have an automatic cut-off mechanism built into the discharge flow-meter.
- an easily accessible shut-off valve will be fitted to stop the operation and close the outlet valve should any urgent issues occur.

12. Fig 5.1, below, shows the plant/equipment layout on-site.

13. The tanker will offload using reinforced pipes and will have a drip and spill-capture facility for use during connecting & disconnecting the hose.

14. Input lines will be blown clear after unloading and threaded pipe caps will be used.

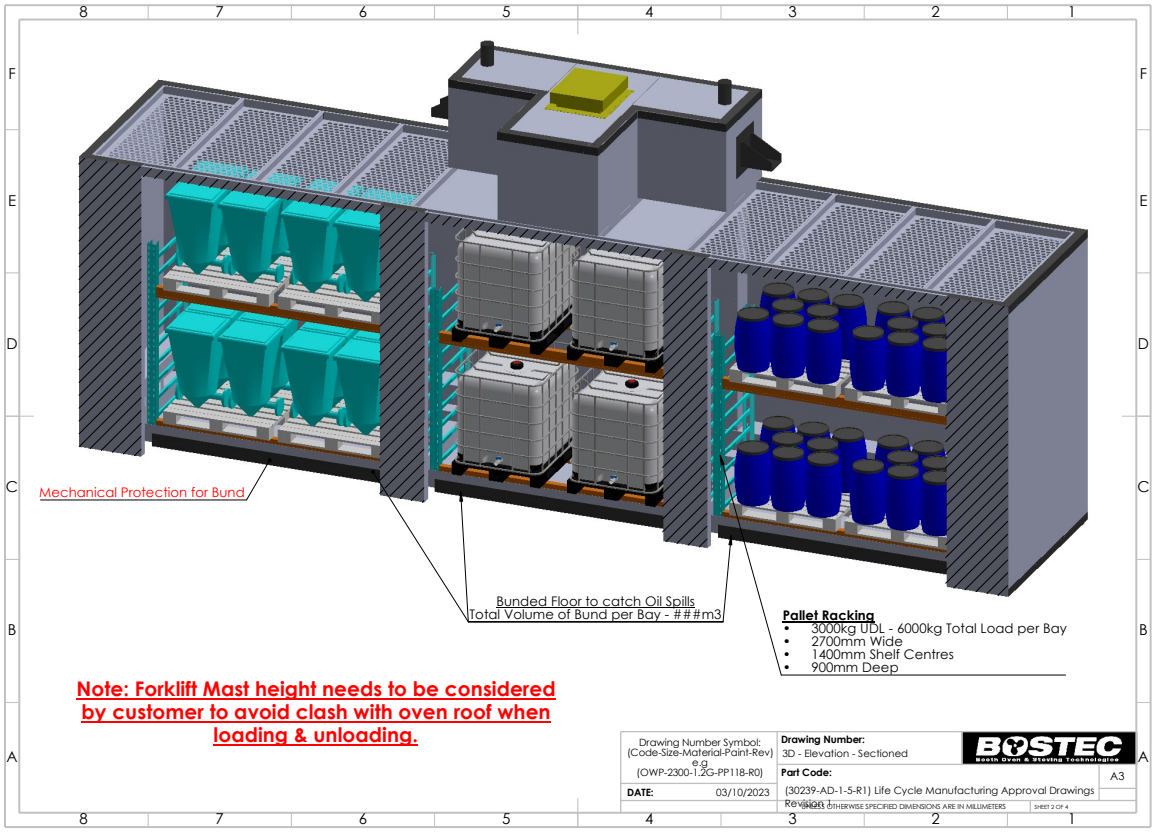
15. The loading/discharge pump and point are not to be left unattended at any stage whilst in operation so that activity can be quickly stopped in the event of an incident.

16. In all cases, containment materials (spill socks/pads/pillows/granules) will be available at the loading/discharge point and any spillages will be dealt with immediately and fully cleaned up before loading/offloading recommences.

17. Reception/storage area: Other incoming units will be received as per *Chapter 4: Waste Acceptance Plan.* Units offloaded into the reception area are to be promptly moved, after visual assessment to the dedicated, bunded storage area, the heater/storage ovens, or directly into the process itself.

18. Storage Units/Ovens: Six purpose-built combined storage/heater units will be installed. Each will be fully bunded and have the capacity to hold 24 pallets or IBCs. Am impression can be seen at Fig 5.2 with further technical detail and drawings at Appendix 7.

Fig 5.2: Bostec oven representation

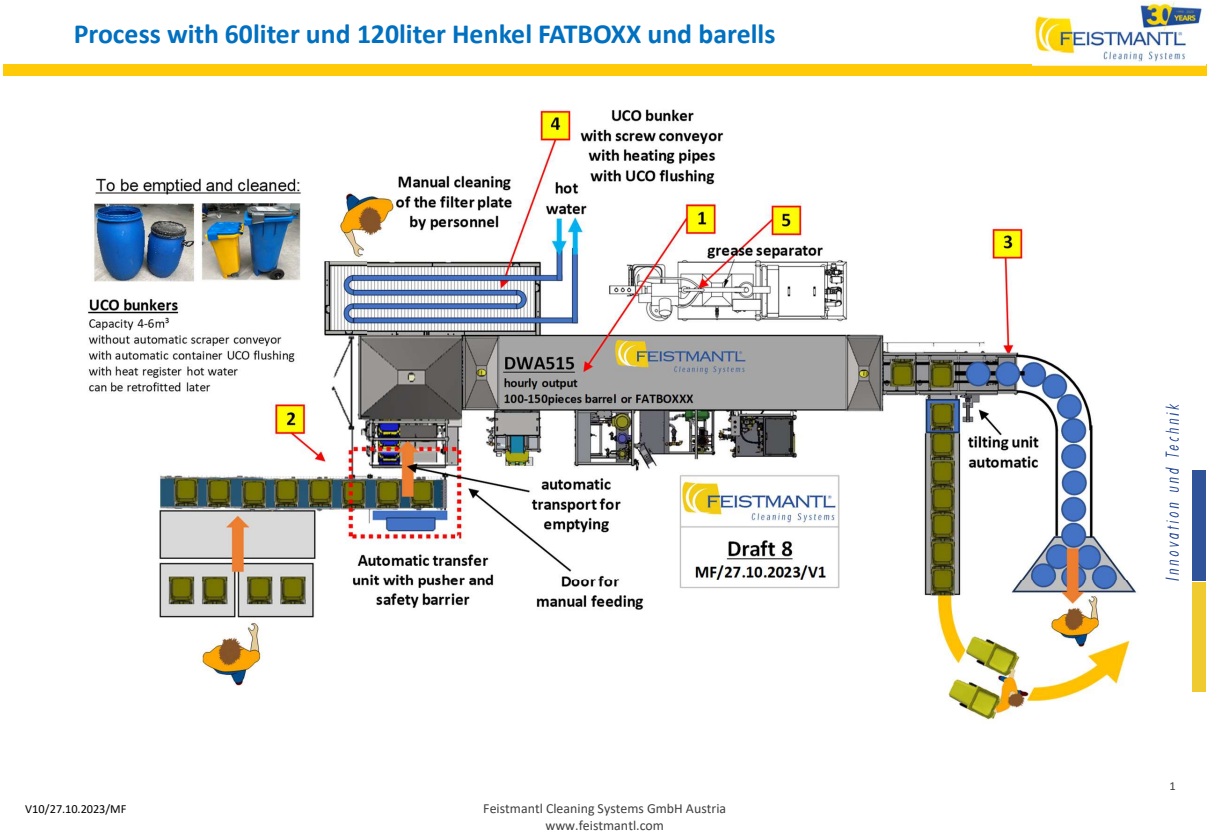


19. Units triaged as "Hot-Pour" will be moved promptly from the reception/triage area into one of these units, either to be heated to melt the solid fats ready for input into the decanter/washer, or for storage until such time as they need to be heated.

20. The heating stage will be conducted using a combination of heated air and Infra-Red (IR) heating onto the units. Temperatures will not exceed 80°C and times will vary (depending on contents) from 2-24 hours.

21. Container Unit Emptying & Cleaning: Decanting of Cold- and heated Hot-Pour UCO will take place through an automated handling system, specifically designed for the purpose and similar to systems already used within the industry. This will be a self-contained, standalone unit, with its own bund produced by Feistmantl GmBH, Austria (see Fig 5.3, below).

Fig 5.3: Lifecycle Oils Ltd Interior Plant/Equipment Layout



22. Blue barrels and Fatboxxes will be loaded onto the automated unloading and cleaning machinery The units are automatically lifted and tipped empty onto a screen, with liquids and small organic solids passing through to a storage bunker.

23. Non-organic solids (packaging and other residue from kitchen/restaurant waste) are collected and automatically deposited into a container. This will be sent out of the facility as general waste.

24. The containers are rinsed out with UCO to remove any remaining debris before proceeding to automated washing.

25. The effluent from the washing is passed through a grease separator. Fats and oils separated from the effluent are deposited into a container to be re-introduced to the production process as feedstock. The remaining effluent is sent to water treatment.

26. IBCs will also be emptied and introduced via a screening process.

27. The IBCs are then to be manually washed with the effluent sent to water treatment. (see paras 35-36 below).

28. Separation of Organic Solids: All material emptied from container units will be fed through a multideck screen to separate out organic solid particulates down to 800μm that would cause downstream fouling/blocking and are otherwise not acceptable in the final product(s).

29. The resulting slurry from the screen will be fed through a screw press to remove moisture, oil and fat content in the solid mass. The solid mass will be collected in an appropriate container and will be removed off-site (possibly as a protein source for animal feed or as an organic feedstock for anaerobic digestion). The extracted moisture, oil and fat is returned to the process for settling.

30. LF100 Cold Settling: If deemed suitable at the reception/visual assessment stage, the screened mixture will be pumped into the cold settling tanks. These vessels will be filled and left undisturbed for a period of days (durations vary from 12 hours to 14 days, depending on the type and quantities of oils/fats within the batch) to enable the different phases (water, fats and oils) to separate out by relative density.

31. Once adequate separation has occurred, the vessels will be emptied with bottom-settled contents ("Heavies") being sent for further treatment. The remaining floating oils will be piped to hot settling.

32. LF100 Hot Settling: The highest quality feedstock from LF100 cold settling will be pre-heated and sent to the hot settling tanks. These vessels will be filled and left undisturbed for a number of days to enable the mixture to settle out. Once adequate separation has occurred, the vessels will be emptied with bottom-settled contents ("Heavies") being sent for further treatment. The remaining liquid will be passed through a final 1μm, prior to dispatch off-site as LF100 biofuel.

33. 5&2 Hot Settling: Any feedstock not suited for LF100 will be heated and sent to the 5&2 settling tanks. These vessels will be filled and left undisturbed for a number of days to enable the mixture to separate out. Once adequate separation has occurred, the vessels will be emptied with bottom-settled contents ("Heavies") being sent for further treatment. The remaining liquid will be passed through a 800μm filter, prior to dispatch off-site as 5&2 (biodiesel or SAF feedstock).

34. Heavies Treatment: The "Heavies" removed during the above stages of the process will first be run through a grease separator. The separated water will be sent to water treatment and the non-water components (fats and oils) will be sent to a "Heavies" storage vessel. The "Heavies" from the storage vessel will be melted and broken down before being sent back to the start of the 5&2 hot settling process.

35. Water Treatment: Effluent from container cleaning and "Heavies" treatment will be piped to a pre-water treatment storage tank. The effluent will then be passed through a packaged water treatment plant (technology and discharge parameters remain TBC at this stage). Cleaned effluent will be piped to a post-water treatment storage tank. The treated water will then be loaded onto tankers to be removed off-site.

36. Where possible, filtered washwater will be recycled back into the system for use in washing. Any wastewater not able to be re-used will be chemically analysed, checked and documented to confirm effluent consent compliance (relevant consent levels such as Total Suspended Solids (TSS), Chemical/Biological Oxygen Demand

(COD/BOD), pH, etc.) before being discharged to a controlled drain. If it does not meet those standards, it will be removed off-site for disposal as per para 35 above.

37. General - Tanks, Pipework and Pumps: All settling/storage tanks will be positioned within the building, providing protection from the elements and a layer of security against accidental or malicious damage from external agents.

38. The tanks will also be located within a secondary containment bund with sufficient volume to contain at least 25% of the total tank volume and that of the associated pipework, pumps, heat exchangers, valves, etc. (262,000L). The bund wall will also minimise the risk of damage by impact from mobile machinery/vehicles (ie delivery tankers & forklifts).

39. The tanks will be constructed/fitted as follows:
- of 32,000L capacity.
- manufactured from either mild steel, stainless steel or glass-reinforced plastic (depending on its position/role within the settling process); designed to the relevant BS EN, or equivalent, depending on material used, and conformity marked to appropriate legislation (CE or UKCA).
- upright, cylindrical, with a dished/conical base.
- vented (not pressurised), with an overflow into the bunded area.
- with instrumentation to constantly monitor tank level/volume/remaining capacity.
- with overflow detection/prevention systems fitted and maintained.
- with bottom offtake for bottom-settling removal.
- with a floating suction pipe, connected to a single, fixed port for top layer removal.
- with 1 x side access and 1 x top access manhole for annual (or other) cleaning).

40. Pipework will be jointed steel throughout, and pressure rated appropriately. A daily routine of leak-checking and resolution will be in place.

41. The majority of pipework will be positioned within the bund to provide containment and minimise the potential impact from mobile machinery/vehicles (ie delivery tankers & fork lifts). Any pipework above the ground will be properly supported, for example by a bracket connected to the floor, tank top or the nearest wall.

42. All pumps used to transfer UCO into the system, between tanks and processing machinery, and to discharge, will have a valve in their feed line that prevents contents emptying if there is damage to the pump or feed line.

43. Full Planned Preventative Maintenance schedules will be developed before commissioning starts. This will be a combination of operator and maintenance technician activities on variable frequencies (daily, weekly, monthly etc) and/or condition based. Full maintenance records will be kept.

44. All process equipment will be tagged/labelled for ease of identification. Sufficient controls and automation will be included to prevent the need for excessive operator checks. The plant design takes into account the limited staff numbers on site and will ensure coverage in key risk areas, to the appropriate control standards, including relevant redundancy and system integrity levels (SILs).

45. Control systems will include password control and level hierarchy, which will be included in the training and competence definition for differing levels of site personnel. Mechanical interventions will utilise a Lock-Off Tag-Out (LOTO) process incorporated into site operating procedures.

46. All actuated valves will be of the "normally closed, spring-return" type, ensuring failsafe closure in the event of power or communications failures. All manual valves will be closed when not in use.

47. Workplace Transport (WPT): The plant design takes into account the requirement to separate WPT, key assets and people to reduce risk. Additional measures will be put in pace as required, particularly to protect bund integrity.

48. Discharge Point: As per paras 6-11 above.

48. Crusher/Baler: Drums/tins that are suitable for crushing will be loaded onto the crusher/baler *(see specification at Appendix 8)*. The crusher/baler will be positioned within its own bund to capture any residual oil/fats that may drain from the crushed receptacles.

49. Oils/fats collected from the bund will be manually returned to the process.

49. Crushed/baled drums/tins will be moved to temporary on-site storage (metal skip) prior to removal off-site and disposal/recycling at an appropriately certified plastic/metal recycling facility.

50. Power & Heat Generation and Supply: The site will be primarily (but not wholly) powered and heated from Generator engines running on LF100 Biofuel produced on-site. The LF100 fuel is manufactured within our operating group and is OFGEM accredited.

51. The engines will be Volvo Penta TWD1643GE and the specification sheet is at Appendix 10. There will be 4 units on the site, in self-contained units, operating at a derated level due to the fuel, and each producing approximately 400kW of electrical energy.

52. The combined engine array will exhaust to a combined stack arrangement incorporating a full Selective Catalytic Reduction (SCR) system, ensuring that NOx emissions remain within the specified ELV. The containers will ensure noise level remains within relevant standards.

53. An estimated 1.2-1.5 MWth of thermal output from the engines will also be utilised within the site. This exceeds the 1MWth threshold (but not the 50MWth threshold). As such, compliance with the Medium Combustion Plant Directive will be ensured and the permit application should include for this allowance.

54. The plant will operate within the specified ELVs (taken from part 2, table 2 of MCPD Annex 2).

55. No additional, permanent gas-fired heat generation is currently being considered as part of this solution.

56. Excess heat requirements for the plant will come from electrical sources, powered by the generator engines.

57. The engines used for this site will be taken from an existing fixed generation site with existing Environmental Permits which include MCPD compliance. All such systems which ensure current compliance will be transferred and operated to the same level of conformance.

58. The engines will be used to solely satisfy the electrical and heat demand needs for the facility.

59. Lifecycle Oils see this solution as a more progressive and environmentally compliant than a gas fired boiler to deliver the heat and increased load on a carbon-heavy grid supply.

Chapter 6 – Accident Management Plan v1.0

1. The following system is to be adhered to in the event of any accident or emergency encountered during the delivery, processing, on-site storage or discharge to sale/off-site for disposal of Used Cooking Oil or its associated waste bi-products (solid food residue and water).

STOP – CONTAIN – CLEAN – RESUME – REVIEW

STOP – switch off any machinery in use in a controlled manner if possible but, in the worst case, by activating the relevant trip switch or main breaker. This will create a stable environment in which to make an assessment of, and take steps to rectify, the situation without it deteriorating further.

CONTAIN – the actions needed to manage the situation, including calling emergency services or specialist assistance if required. In most cases, this will involve using equipment on site to prevent spills and leaks of UCO contaminating sewerage systems or groundwater.

CLEAN – the actions needed to take the situation back to its pre-accident or pre-emergency state. This should normally be achievable with in-house tools but may require specialist support if the situation merits it.

RESUME – resumption of processing is ONLY to be undertaken once the situation has been fully contained and cleaned-up. The priority must always be to ensure minimal damage has been caused.

REVIEW – once the incident has been contained and cleaned-up, a management review should be undertaken to ascertain what happened, why it happened, and what needs to be done to prevent a repetition. The findings of this review should be reported to senior management and any actions noted should be promptly implemented.

Accident Management Plan Development

2. Specific aspects of Accident Management will be developed as the plant is commissioned and specialist guidance is received from external contractors (Fire Risk Management; equipment suppliers and fitters; insurance assessors) but the outline of key areas can be summarised as follows:

3. **Health and Safety at Work**:

- Statutory HASAW posters are to be displayed throughout the workplace and HASAW monitoring is to be carried out by management.
- HASAW awareness training is to be incorporated into all staff initiation and continuation training packages and is to be recorded on individual training records.
- Provision will be made for sufficient First Aid qualified staff to be on site at all times.
- All machinery and equipment on site will be subject to routine checks (ie LOLER) and planned maintenance regimes will be implemented.
- Pre-use checklists will be provided and records kept.

4. **Smoking Policy**:

- To minimise the risk of accidental fire (and to reduce litter) smoking on site is only to take place in designated smoking areas.

5. **Fire Safety**:

- A full Fire Risk Assessment will be carried out by management and an action plan will be produced which will be continually monitored. All actions and recommendations are to be implemented within agreed timescales.
- First aid firefighting equipment is fitted and staff have been trained in its use.
- Actions in the event of a fire tare posted in all working areas.
- Fire awareness and response training are incorporated into all staff initiation and continuation training packages and is recorded on individual training records.
- In the event of a fire occurring, where possible and if at no risk to life, all machinery is to be shut down and processing stopped, all open valves/vents are to be closed, and all buildings are to be closed down.

6. **Flood Response**:

- Not anticipated in view of site location.

7. **Electrical Failure**:

- Specialist advice is to be sought from a qualified electrician.

8. **Mechanical/Equipment Failure**:

- All machinery affected, if not automatically tripped, is to be switched off and isolated so the issue can be investigated and, if needed, specialist external support requested.
- Actions to be taken in the event of a mechanical/equipment failure are incorporated into staff initiation and continuation training packages and is recorded on individual training records.

9. **Spillages & Leaks**:

- Suitable spill management and containment materials are to be provided. An inventory is to be taken at the start of each working day to ensure that sufficient ready use equipment is available on the shop floor before equipment is switched. Replacement stock is to be kept at an agreed level.
- Spillage and leak management training is incorporated into all staff initiation and continuation training packages and is recorded on individual training records.
- In the event of a leak or spillage occurring:
    - any pumps/machinery affected and in operation are to be immediately switched off.
    - first aid measures to be taken to contain leaks.
    - management is to be informed (if not already present).
    - all spills to be fully cleaned up before resuming operations.

10. **RIDDOR (Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 2013)**:

- Accidents/incidents should be investigated to:
  - identify why existing control measures failed and what improvements or additional measures are needed;
  - ensure that corrective action is taken:
  - plan to prevent the incident from happening again;
  - point to areas where a risk assessment needs reviewing;
  - improve risk control in the workplace:
  - share learning & implement improvements.

- Reporting incidents should not stop you from carrying out your own investigation to ensure risks in your workplace are controlled efficiently.

- The investigation is not an end in itself, but the first step in preventing future **adverse events** that includes:
  - accident: an event that results in injury or ill health
  - incident:
    - near miss: an event not causing harm, but has the potential to cause injury or ill health (in this guidance, the term near miss will include dangerous occurrences);
    - undesired circumstance: a set of conditions or circumstances that have the potential to cause injury or ill health, eg untrained staff working unfamiliar equipment/carrying out unfamiliar procedures);
  - dangerous occurrence: one of a number of specific, reportable adverse events, as defined in RIDDOR 2013.

11. **Immediate Actions in the event of accidents involving staff/visitors**:

- First aid measures to be taken.
- Emergency services to be called if situation dictates.
- Incident to be recorded in the Accident Log (maintained by the company Administrator).
- Accident reporting is incorporated into all staff initiation and continuation training packages and is recorded on individual training records.

12. **First Aid Records**:

First Aid Records are held by the Site/Warehouse Manager and include:

- First Aid equipment:
  - Date of purchase
  - Manufacturer/Supplier
  - Expiry/Replacement Due date
  - Means of disposal

- First Aid training
  - List of First Aid trained staff
  - Copies of First Aid Certificates
  - Bring up diary showing when re-qualification needed

13. **PPE Records**:

PPE Records are maintained by the Site/Warehouse Manager and list:

- PPE items purchased
  - Purchase date
  - Manufacturer/Supplier
  - Expiry date

- PPE item(s) issued
- Number of each item issued
- Recipient
- Date item due for Expiry/Return/Exchange (if applicable)
- Signature of recipient confirming he/she has received the item and has been advised how to use/wear it

14. **Intruder:**

If an intruder is spotted when staff are on site, all machinery is to be shut down and processing stopped, all open valves/vents are to be closed, and all buildings are to be closed down. Management and the police are to be informed immediately.

15. **Vandalism:**

The site will be fitted with a monitored alarm and response system run by Verisure. This is considered to be sufficient deterrent to prevent intruders entering the premises out of hours intent on burglary or vandalism. If, however, it is noted that accesses or machinery may have been tampered with, management are to be informed and processing is not to begin until a full investigation has been carried out and all equipment has been confirmed as being fit for purpose.