ENVIRONMENTAL MANAGEMENT SYSTEM (EMS)

THIS IS A SUB-SECTION TO THE QES HOLDINGS GROUP INTEGRATED MANAGEMENT SYSTEM (IMS) WHICH IS APPLICABLE TO ALL QES SUBSIDIARY COMPANIES INCLUDING QUALICHEM LTD AND QUALITECH ENVIRONMENTAL SERVICES LTD
NB: SEE THE SITE SPECIFIC IMS FOR DOCK ROAD, BIRKENHEAD.
NOTE: CROSS REFERENCES TO THE ENVIRONMENT AGENCY'S APPROPRIATE MEASURES GUIDANCE

Contents

1. Site details and information

See site specific IMS

2. **Waste Activity.**

SEE EXISTING WASTE MANAGEMENT LICENCE

3. Permitted wastes

SEE EXISTING WASTE MANAGEMENT LICENCE

OUTGOING

PERMIT

Merseyside Waste Disposal Authority

Established under the Local Government Act 1985

Licence No 385/05

Date of Application 16th April 1992

CONTROL OF POLLUTION ACT 1974

LICENCE FOR A WASTE DISPOSAL FACILITY

Name and Address of Licensee

Panocean Storage & Transport Limited
Chester House
Chertsey Road
Woking, GU21 5BJ

Name and Address of Agent (if any)

Address or Location of Facility

Dock Road
Wallasey

GRID REFERENCE

S	J	3	0	5	9	0	5

Nature of Facility Oil Storage

In accordance with the provisions of the Control of Pollution Act 1974, the Merseyside Waste Disposal Authority **HEREBY LICENCE** Panocean Storage & Transport Limited

to operate the above facility, subject to the conditions set out in **the attached schedule.**

The licence is effective from the date hereon and will remain in full force and effect until the completion of the facility (if a land-fill site) or for the life-time of the facility (if a waste treatment plant) unless the licence is modified, revoked or cancelled.

Signed

F D Newberry
ASSISTANT DIRECTOR REGUALTION

Date 24 June 1992

NOTHING IN THIS LICENCE MAY BE CONSTRUED AS ABSOLVING THE WASTE DISPOSAL FACILITY OPERATOR OR HIS MANAGEMENT & OPERATIVES FROM THEIR OBLIGATIONS UNDER THE HEALTH AND SAFETY AT WORK, etc., ACT 1974.

Licence No. 385/05

SCHEDULE OF CONDITIONS

GENERAL

1. This licence shall refer to the use of storage tanks on the Block Plan No. BR.89.A2.007 at the site in Dock Road, Wallasey, Merseyside.

2. This licence shall only be valid when there is appropriate planning consent for the activities.

3. (a) At all times the site shall be operational in accordance with a current working plan which has been agreed with the Waste Disposal Authority (WDA).

   (b) Any change to the working plan shall be agreed with the W.D.A. before it is put into effect.

4. There shall be an office on the site where records are kept.

5. A copy of this schedule of conditions together with a copy of the working plan shall be displayed in the site office and be made known to all personnel.

WASTES

6. The site may accept for storage any liquid waste which is compatible with the materials of construction of the tanks.

OPERATION

7. The site shall be supervised at all operating times by a person whose name shall be notified in writing to the W.D.A. This person shall be adequately trained and shall have been made aware of his/her duties which shall include.

   (a) Checking the nature and quantities of waste delivered to the site.

   (b) Ensuring that the wastes deposited are permissible within the terms of this licence.

   (c) Ensuring that accurate and up to date records are kept.

   (d) Ensuring that the site is operated in a safe manner and in conformity with the conditions of this licence and the working plan.

8. (a) A record shall be kept of the dates, sources, or destinations, types and quantities of waste deposited on or dispatched from the site. The record shall be available for inspection by authorised officers of the W.D.A. at all reasonable times.

(b) A record of the type of material stored in these tanks at any time shall be available for inspection by the Fire Brigade officers should they attend the site.

(c) A monthly return of the types and quantities of waste deposited at the site shall be made to the W.D.A. before the 15th of the following month, either on forms provided by the W.D.A. or as a computer print-out.

9. Wastes which may inter-react so as to give rise to heat, toxic, inflammable or offensive gases shall not be mixed in the tanks.

10. No operations shall take place during the hours of darkness unless lighting adequate for safe working is provided.

11. (a) The site shall be securely fenced and gated so as to prevent intrusion or illegal deposit of waste.

(b) When the site is unmanned the gates shall be locked.

12. The tanks containing waste shall be properly bunded.

13. The line to each tank containing waste shall be marked so as to show its contents.

14. Offensive or toxic vapours shall not be discharged from the tanks during filling. If necessary an appropriate scrubbing or absorption system(s) shall be installed.

15. Adequate supplies of fire fighting media appropriate to the materials stored shall be available at all times.

16. Contaminated water shall not be discharged to any sewers without the consent of North West Water Plc or to any water course without the consent of the National Rivers Authority.

17. Any spillage or leakage shall be cleaned up without delay so as to avoid contamination of land.

18. The site shall be operated in such a manner as to prevent pollution of water, danger to public health or serious detriment to the amentities of the locality and so as to comply with the Environmental Protection (Duty of Care) Regulations 1991.

CONTROL OF POLLUTION ACT 1974, SECTION 5
APPLICATION FOR A WASTE DISPOSAL FACILITY LICENCE
FACILITIES OTHER THAN LANDFILL

Panocean Storage & Transport Ltd. is a wholly owned subsidiary of Ocean Group plc, engaged in the business of bulk liquid storage. A copy of our brochure is attached outlining our activities.

Panocean does not own any of the products stored which are the property of third parties, generally major chemical, lubricating oil and latex companies. Panocean does not engage in any process, being merely a storage company.

Panocean does not store waste on behalf of third parties, but we have been advised by the Merseyside Waste Authority that the following circumstances fall within the category of waste under the Duty of Care even though the products are used for their original purpose :

1. Lubricating Oil purchased by Chapelsvant from Shell Oils and sold by Chapelsvant to third parties under the trade name "Lubemix".

2. Products which may not conform to their original specification for whatever reason.

3. Products which arise from line slopping to/from ships ; in many cases these products are returned to the storage tank, but sometimes they are returned to the owner for use in-house or re-working.

Movement of any of the foregoing is controlled by the customer under his own commercial product movement documentation which usually takes the form of a "Delivery Order" either brought by the vehicle driver when delivering to Panocean, or given to the driver by Panocean when collecting product from tank ; in this latter case the documentation is sent to Panocean by mail or computer link.

Panocean has an NRA Discharge Consent authorisation for both Eastham and Birkenhead Terminals allowing discharge of effluent to river within consent limits. Tank washings which do not meet consent limits are collected by licensed waste disposal companies under controlled exchange documentation. Such washings would only be on site for a minimum period until the licensed disposal company can collect.

Panocean has BS 5750 accreditation for all its procedures and working practices which govern the storage and handling of bulk liquid products.

Emergency procedures are contained in a Company Health, Safety & Environement Manual. Eastham and Birkenhead sites are registered under NIHHS Regulations and Eastham is registered under CIMAH Regulations.

All vehicles are weighed in and out over a weighbridge and computerised records kept. Panocean employs 37 people at Eastham and 13 people at Birkenhead.

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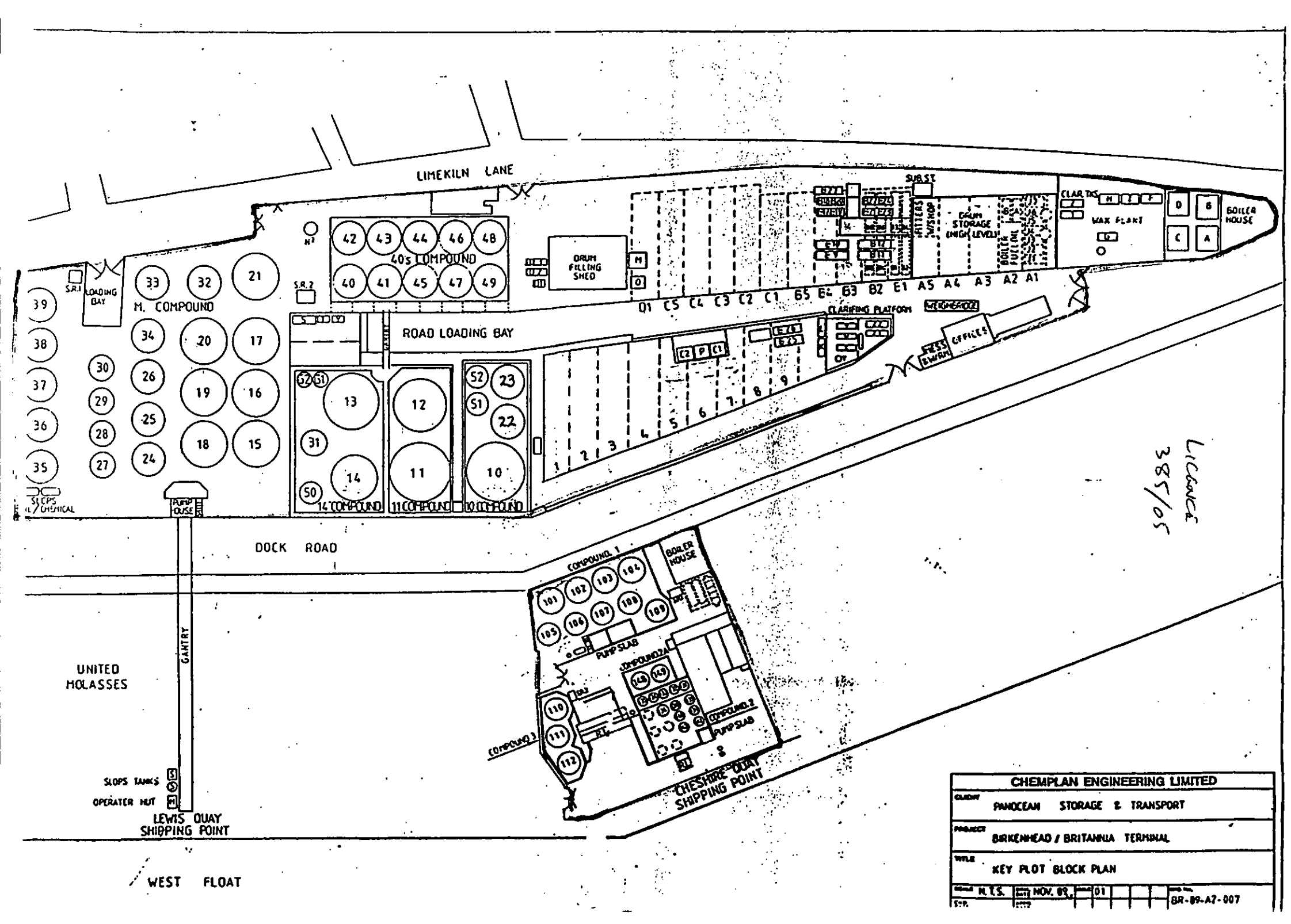
J.C. HURST
GENERAL MANAGER MERSEYSIDE

Date : 16 April 1992.

JCH/JH



CHEMPLAN ENGINEERING LIMITED							
CLIENT	PANOCEAN STORAGE & TRANSPORT						
PROJECT	BIRKENHEAD / BRITANNIA TERMINAL						
TITLE	KEY PLOT BLOCK PLAN						
SCALE N.T.S.	DATE NOV. 89		01				DWG No. BR-89-A2-007

Licence No. 385/05

SCHEDULE OF CONDITIONS

GENERAL

1. This licence shall refer to the use of storage tanks on the Block Plan No. BR.89.A2.007 at the site in Dock Road, Wallasey, Merseyside.

2. This licence shall only be valid when there is appropriate planning consent for the activities.

3. (a) At all times the site shall be operational in accordance with a current working plan which has been agreed with the Waste Disposal Authority (WDA).

   (b) Any change to the working plan shall be agreed with the W.D.A. before it is put into effect.

4. There shall be an office on the site where records are kept.

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WASTES

6. The site may accept for storage any liquid waste which is compatible with the materials of construction of the tanks.

OPERATION

7. The site shall be supervised at all operating times by a person whose name shall be notified in writing to the W.D.A. This person shall be adequately trained and shall have been made aware of his/her duties which shall include.

   (a) Checking the nature and quantities of waste delivered to the site.

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14. Offensive or toxic vapours shall not be discharged from the tanks during filling. If necessary an appropriate scrubbing or absorption system(s) shall be installed.

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18. The site shall be operated in such a manner as to prevent pollution of water, danger to public health or serious detriment to the amentities of the locality and so as to comply with the Environmental Protection (Duty of Care) Regulations 1991.

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Panocean does not store waste on behalf of third parties, but we have been advised by the Merseyside Waste Authority that the following circumstances fall within the category of waste under the Duty of Care even though the products are used for their original purpose :

1. Lubricating Oil purchased by Chapelsvant from Shell Oils and sold by Chapelsvant to third parties under the trade name "Lubemix".

2. Products which may not conform to their original specification for whatever reason.

3. Products which arise from line slopping to/from ships ; in many cases these products are returned to the storage tank, but sometimes they are returned to the owner for use in-house or re-working.

Movement of any of the foregoing is controlled by the customer under his own commercial product movement documentation which usually takes the form of a "Delivery Order" either brought by the vehicle driver when delivering to Panocean, or given to the driver by Panocean when collecting product from tank ; in this latter case the documentation is sent to Panocean by mail or computer link.

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Emergency procedures are contained in a Company Health, Safety & Environement Manual. Eastham and Birkenhead sites are registered under NIHHS Regulations and Eastham is registered under CIMAH Regulations.

All vehicles are weighed in and out over a weighbridge and computerised records kept. Panocean employs 37 people at Eastham and 13 people at Birkenhead.

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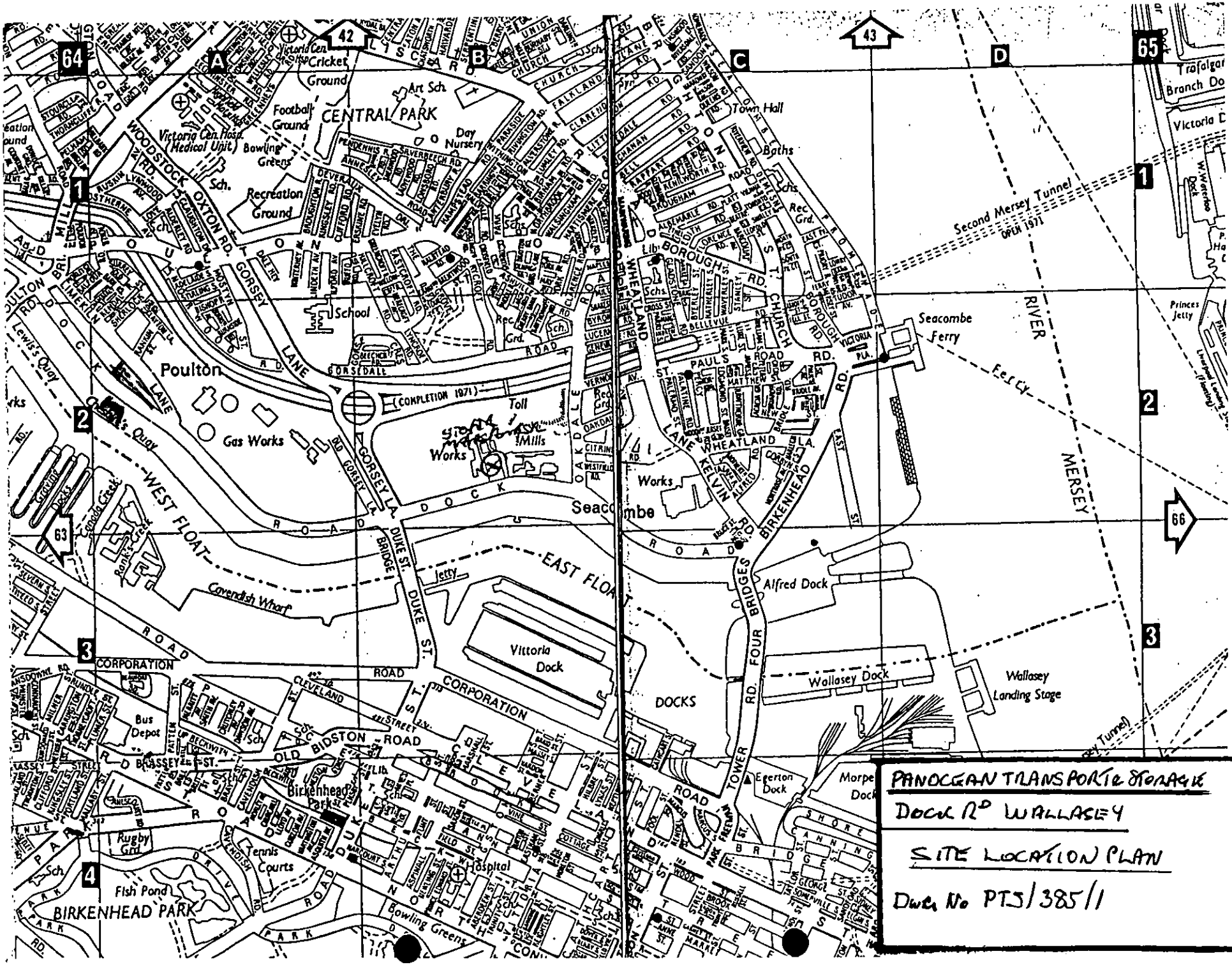
J.C. HURST
GENERAL MANAGER MERSEYSIDE

Date : 16 April 1992.

JCH/JH



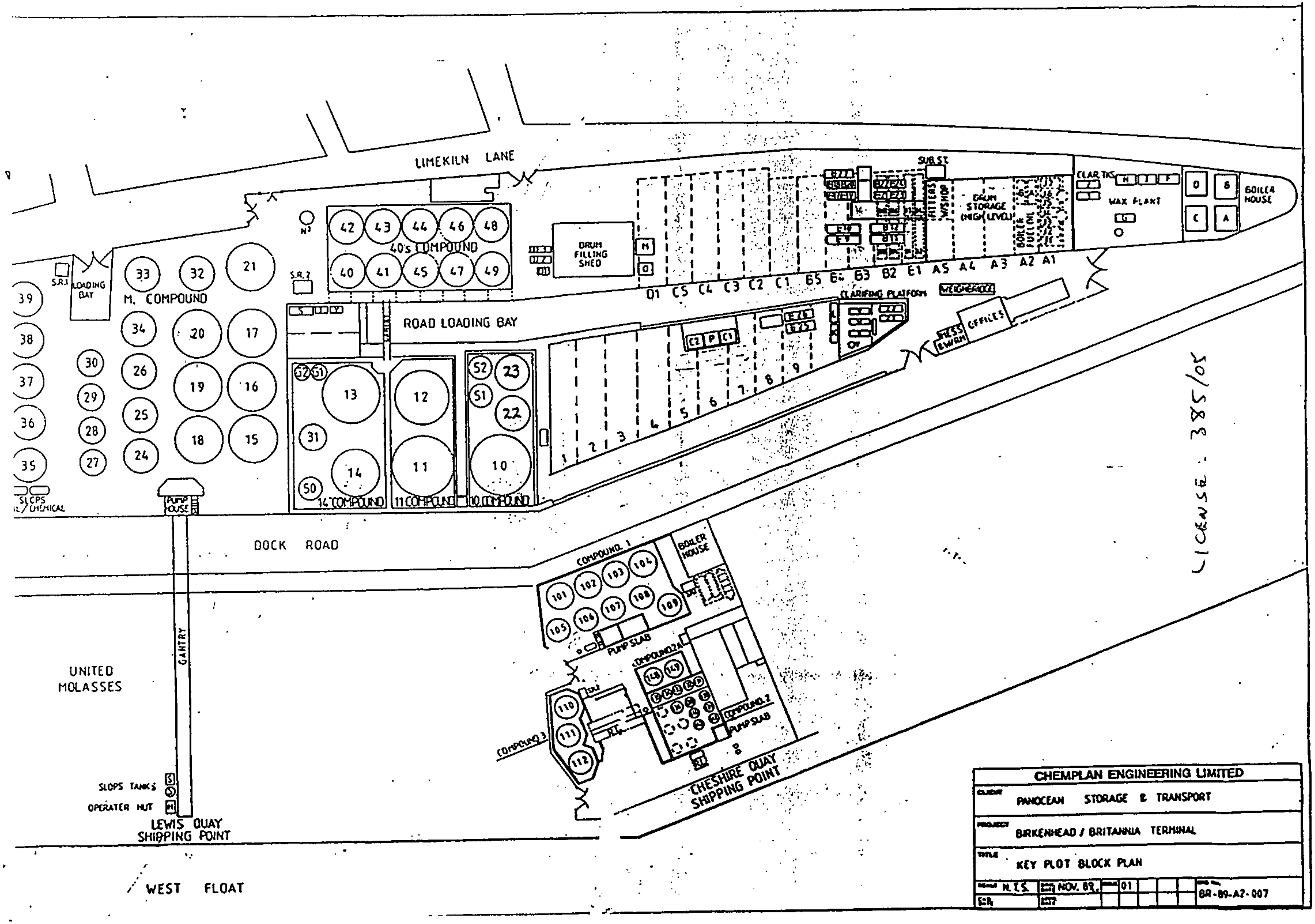
PANOCEAN TRANSPORT & STORAGE

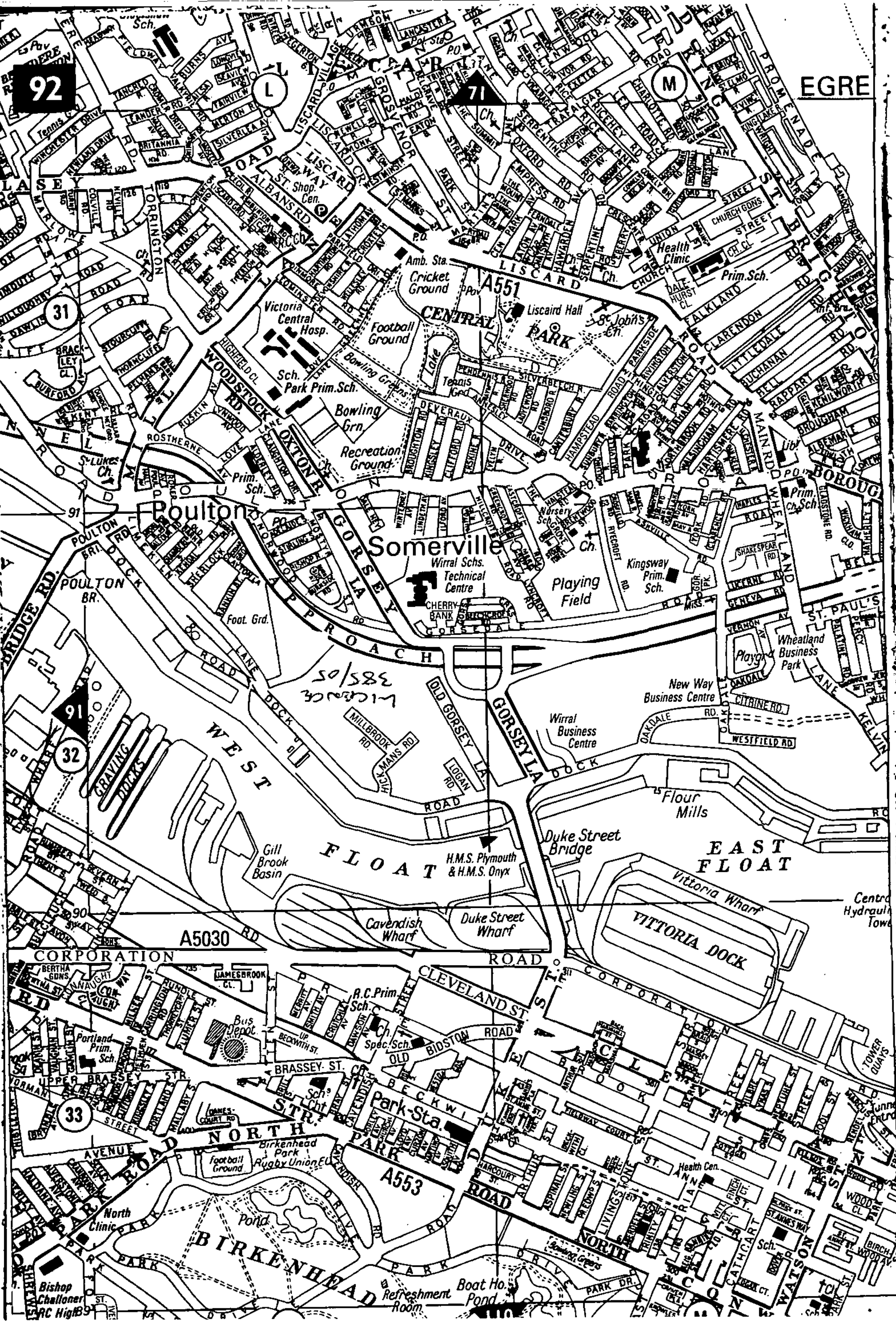
DOCK RD WALLASEY

SITE LOCATION PLAN

Dwg No PTS/385/1

LICENCE : 385/05


LIMEKILN LANE
40's COMPOUND
M. COMPOUND
DRUM FILLING SHED
ROAD LOADING BAY
LOADING BAY
CLARIFING PLATFORM
WEIGHBRIDGE
OFFICES
DRUM STORAGE (HIGH LEVEL)
WAX PLANT
BOILER HOUSE
14 COMPOUND
11 COMPOUND
10 COMPOUND
PUMP HOUSE
DOCK ROAD
COMPOUND 1
BOILER HOUSE
PUMP SLAB
COMPOUND 2A
COMPOUND 2
COMPOUND 3
GANTRY
UNITED MOLASSES
SLOPS TANKS
OPERATER HUT
LEWIS QUAY SHIPPING POINT
CHESHIRE QUAY SHIPPING POINT
WEST FLOAT
LICENSE : 385/05
CHEMPLAN ENGINEERING LIMITED
PANOCEAN STORAGE & TRANSPORT
BIRKENHEAD / BRITANNIA TERMINAL
KEY PLOT BLOCK PLAN
N.T.S.
NOV. 89
01
BR-89-A2-007


92
71
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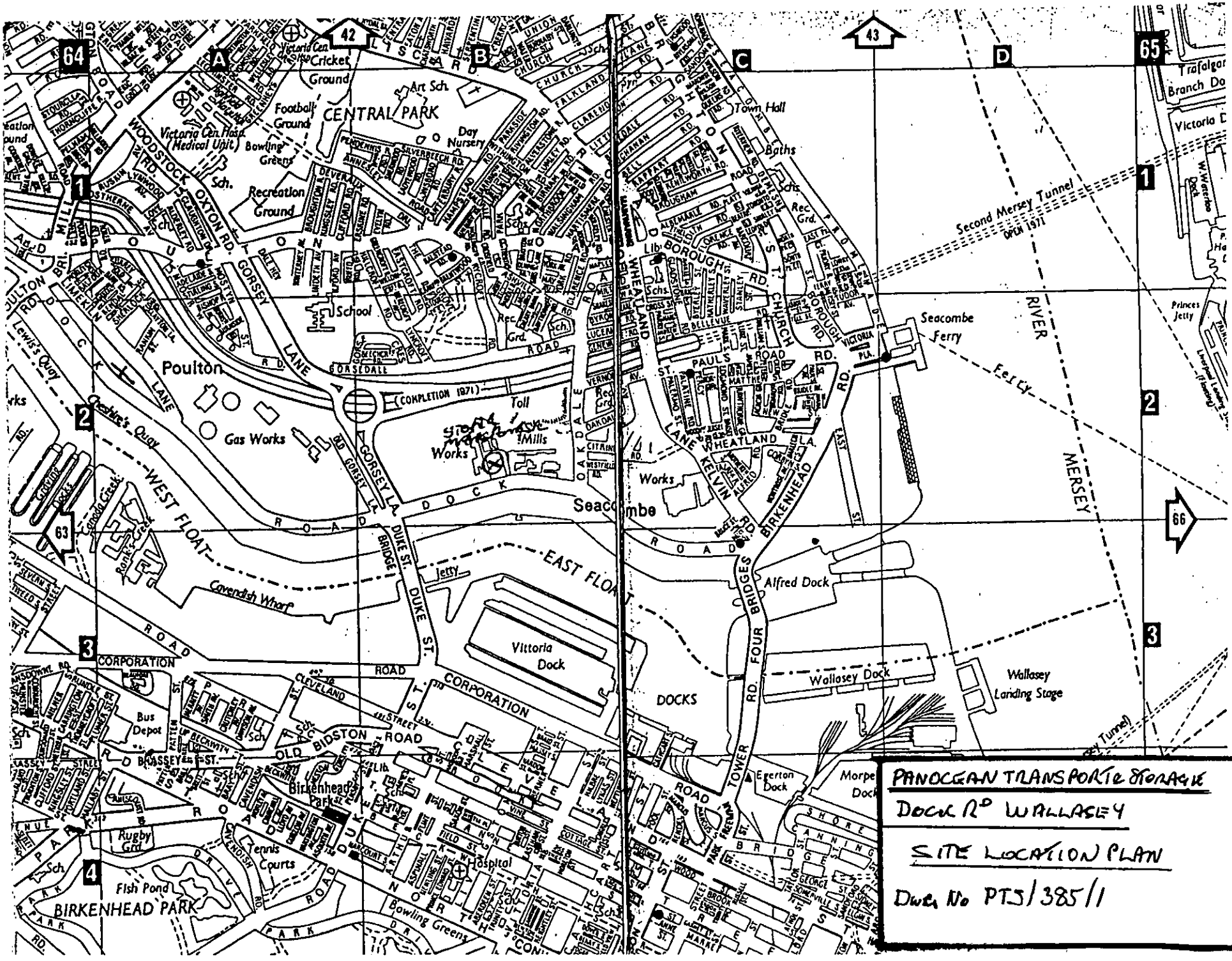
EGRE
Somerville
Poulton
Liscard
Central Park
Liscaird Hall
St. John's Ch.
Victoria Central Hosp.
Park Prim. Sch.
Football Ground
Cricket Ground
Amb. Sta.
Bowling Grn.
Recreation Ground
Wirral Schs. Technical Centre
Kingsway Prim. Sch.
Playing Field
Wheatland Business Park
New Way Business Centre
Wirral Business Centre
Flour Mills
Duke Street Bridge
East Float
West Float
H.M.S. Plymouth & H.M.S. Onyx
Gill Brook Basin
Cavendish Wharf
Duke Street Wharf
Vittoria Wharf
Vittoria Dock
Centre Hydraulic Tower
Graving Docks
Poulton Br.
Bridge Rd.
Corporation Road
A5030
A551
A553
Cleveland St.
Bidston Road
Bus Depot
Park Sta.
North Clinic
Birkenhead Park Rugby Union Football Ground
Birkenhead Park
Pond
Boat Ho.
Refreshment Room
Bishop Challoner RC High
Health Cen.
Health Clinic
Prim. Sch.
St. Shop. Cen.
Tower Quays
Gorsey La
Old Gorsey La
Approach Road
Wheatland La
Oxton Rd
Woodstock Rd
Torrington Rd
Millbrook Rd
Hickmans Rd
Logan Rd
Westfield Rd
Citrine Rd
Oakdale Rd
Borough Rd
Clarendon Rd
Falkland Rd
Church St
Serpentine Rd
Trafalgar Rd
Promenade
Brighton St
Grosvenor St
North Road
Beckwith St
Brassey St
Upper Brassey St
Jamesbrook Cl.
Watson St
Cathcart St
Livingstone St
Licence 385/05


PANOCEAN TRANSPORT & STORAGE
DOCK RD WALLASEY
SITE LOCATION PLAN
Dwg No PTS/385/1
CENTRAL PARK
Victoria Cricket Ground
Football Ground
Art Sch.
Day Nursery
Bowling Greens
Recreation Ground
Victoria Gen. Hosp. (Medical Unit)
Town Hall
Baths
Second Mersey Tunnel OPEN 1971
Seacombe Ferry
Ferry
RIVER MERSEY
Princes Jetty
Poulton
Gas Works
Toll
(COMPLETION 1971)
Mills
Works
Seacombe
WEST FLOAT
EAST FLOAT
Cavendish Wharf
Jetty
Alfred Dock
Vittoria Dock
Wallasey Dock
DOCKS
Wallasey Landing Stage
Bus Depot
Rugby Grd
Tennis Courts
Fish Pond
BIRKENHEAD PARK
Bowling Greens
Hospital
Egerton Dock
Morpeth Dock
Second Mersey Tunnel
CORPORATION ROAD
OLD BIDSTON ROAD
DOCK ROAD
GORSEY LA
DUKE ST.
DUKE ST. BRIDGE
FOUR BRIDGES
TOWER RD.
BIRKENHEAD RD.
WHEATLAND LA.
BOROUGH RD.
CHURCH RD.
ST PAULS ROAD
OXTON RD.
WOODSTOCK RD.
MILL LANE
GORSEDALE
BORDESLEY
Lewis's Quay
Cheshire's Quay
Carroad Creek
Ranks Creek
Graving Docks
Lib.
Schs
Rec Grd
Sch.
Works
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63
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A
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D
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OUTGOING

PERMIT

Environmental Protection Act 1990

Section 37

Notice of Modification of Licence Conditions

Notice is hereby given that Merseyside Wast Disposal Authority modifies the conditions of Licence No: 385/05 as follows :

The following paragraph shall be added to licence Condition 1 (for charging purposes only) :

This licence shall allow the keeping of any controlled waste , which consists of or includes Special Waste , for the purpose of recycling , up to a maximum annual tonnage of 5000 tonnes.

Such modification shall take effect on 30th May 1994 at 0800hrs .

Dated 25 May 1994. (Signed)
(Designation) Assistant Director Regulation

Merseyside Waste Disposal Authority
Steers House , Canning Place ,
Liverpool L1 8JW.

OUTGOING

PERMIT

ENVIRONMENTAL PROTECTION ACT 1990

Section 37

Notice of Modification of Waste Management Licence Condition(s)

Panocean Storage & Transport Ltd
Chester House
Chertsey Road
Woking
GU21 5BJ

WHEREAS on 24 June 1992 you were granted a Waste Management Licence by the Merseyside Waste Disposal Authority relating to the waste management facility at Dock Road, Wallasey . (Licence Number 385/05)

subject to the conditions set out therein

NOTICE is **HEREBY GIVEN** that the Merseyside Waste Disposal Authority (hereafter called "The Authority") modifies the said conditions as follows:-

Condition 2 [which relates to planning consent] shall be deleted from the licence.

Such modification shall take effect on 25 March 1996 at 08:00 hours.

DATED 18 March 1996

F D Newberry
Director of Waste Regulation

Merseyside Waste Disposal Authority
4th Floor, Steers House, Canning Place, Liverpool, L1 8JW.

NB.-The person served with this notice may appeal against the Authority's decision to the secretary of State within six months or such period as the Secretary of State may allow. (*See notes overleaf.*)

DOC005b

OUTGOING

PERMIT

THE ENVIRONMENTAL PROTECTION ACT 1990
WASTE MANAGEMENT SITE LICENCE
(MODIFICATION)

Tate & Lyle Industries Ltd
Dock Road
West Float
Birkenhead
Wirral
L41 1DF

Colour Original
Available in this
Document.

385/05/MO1

ENVIRONMENT AGENCY

ENVIRONMENTAL PROTECTION ACT 1990

ENVIRONMENT AGENCY

MODIFICATION OF WASTE MANAGEMENT SITE LICENCE

Modification Number : 385/05/MO1

for Tate & Lyle Industries Ltd ("the Licence Holder")

whose Registered Office is :

Sugar Quay
Lower Thames St
London EC3R 6DQ

This Licence is modified in accordance with the Notice dated 6 January 2000. The modification authorises the Licence Holder to keep and treat Controlled Waste as specified in the attached conditions at the premises occupied by the Licence Holder at:

Dock Road
West Float
Birkenhead
Wirral
L41 1DF

GRID REF SJ 3303 3908

as delineated on the Site Plan subject to the conditions of this licence.

Signed

D Fleming
Team Leader – Waste Licensing & Planning

Dated 6 January 2000

The Environment Agency
Appleton House
430 Birchwood Boulevard
Birchwood, Warrington WA3 7WD
Telephone 01925 840000

ENVIRONMENT AGENCY

Licence No. 385/05/M01
SCHEDULE OF CONDITIONS

GENERAL

1. This licence shall allow the keeping and treatment of controlled waste, which consists of or includes Special Waste. The total quantity of waste accepted at the site per year shall not exceed 50,000 tonnes.

2. The area which is the subject of this licence is shown outlined in blue on attached drawing no. BR.89.A2.007. The deposit of waste shall only take place in tanks situated within the area outlined in red on attached drawing no. DRAIN/A.

3. (a) At all times the site shall be operated in accordance with a current working plan which has been agreed with the Environment Agency except where any element of the working plan contradicts or is otherwise inconsistent with the conditions of this licence, in which case the licence conditions shall prevail.

   (b) Any change to the working plan shall be agreed with the Environment Agency before it is put into effect.

4. There shall be an office on the site where records are kept.

5. A copy of this schedule of conditions together with a copy of the working plan shall be displayed in the site office and be made known to all appropriate personnel.

WASTES

6. No wastes other than those specified in section 5.1 of the working plan shall be accepted at the site. The site may accept for storage any liquid waste which is compatible with the materials of construction of the tanks.

OPERATION

7. The site shall be supervised at all operating times by a person whose name shall be notified in writing to the Environment Agency. This person shall be adequately trained and shall have been made aware of his/her duties which shall include.

   (a) Checking the nature and quantities of waste delivered to the site.

   (b) Ensuring that the wastes deposited are permissible within the terms of this licence.

   (c) Ensuring that accurate and up to date records are kept.

   (d) Ensuring that the site is operated in a safe manner and in conformity with the conditions of this licence and the working plan.

8. (a) A record shall be kept of the dates, sources, or destinations, types and quantities of waste deposited on or dispatched from the site. The record shall be available for inspection by authorised officers of the Environment Agency at all reasonable times.

(b) A record of the type of material stored in these tanks at any time shall be available for inspection by authorised officers of the Environment Agency should they attend the site.

(c) A monthly return of the types and quantities of waste deposited at the site shall be made to the Environment Agency before the 15th of the following month, either on forms provided by the Environment Agency or as a computer printout.

(d) A site diary shall be kept secure and available for inspection at the site when required by an authorised officer of the Environment Agency. This shall include a record of the following events:

(i) emergencies – fire, spillage
(ii) plant maintenance and breakdown
(iii) start and finish dates of construction works and certification
(iv) site inspections, findings and remedial responses
(v) dispatch of records to the Environment Agency
(vi) environmental problems and remedial actions
(vii) problems with waste received and action taken.

Each record shall be completed within 24 hours of the relevant event.

9. Wastes which may inter-react so as to give rise to heat, toxic, inflammable or offensive gases shall not be mixed in the tanks.

10. No operations shall take place during the hours of darkness unless lighting adequate for safe working is provided.

11. (a) The site shall be securely fenced and gated so as to prevent intrusion or illegal deposit of waste.
(b) When the site is unmanned the gates shall be locked.

12. The tanks containing waste shall be bunded so as to prevent the transmission of fluids through the pavement or bund.

13. The line to each tank containing waste shall be marked so as to show its contents.

14. Offensive or toxic vapours shall not be discharged from the tanks during filling or treatment. If necessary an appropriate scrubbing or absorption system(s) shall be installed.

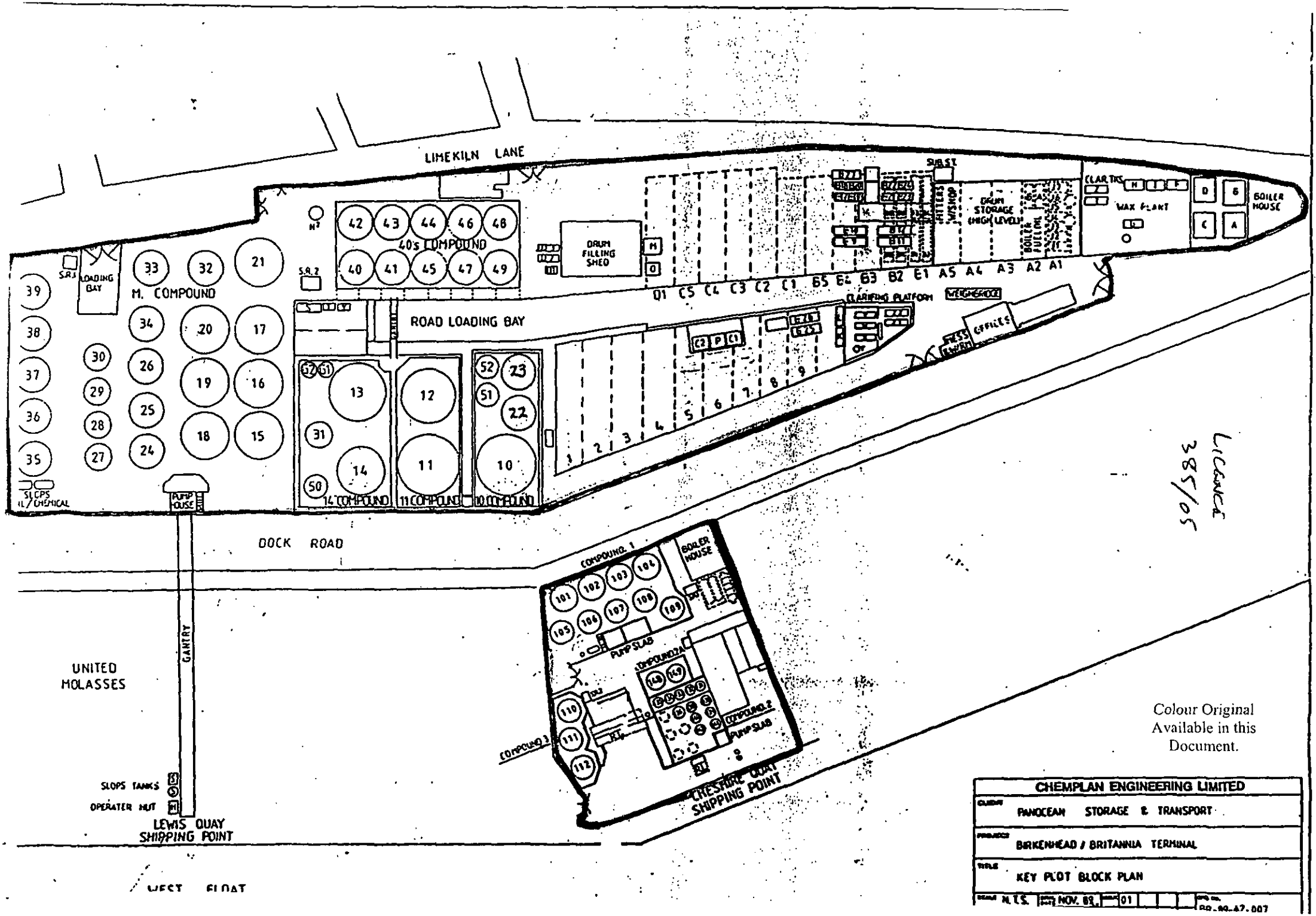
15. Adequate supplies of fire fighting media appropriate to the materials stored shall be available at all times.

16. Contaminated water shall not be discharged to any watercourse without the consent of the Environment Agency.

17. Any spillage or leakage shall be cleaned up without delay so as to avoid contamination of land. A record shall be made of the spillage in the site diary and the Environment Agency informed.

18. The site shall be operated in such a manner as to prevent pollution of water, danger to public health or serious detriment to the amenities of the locality.

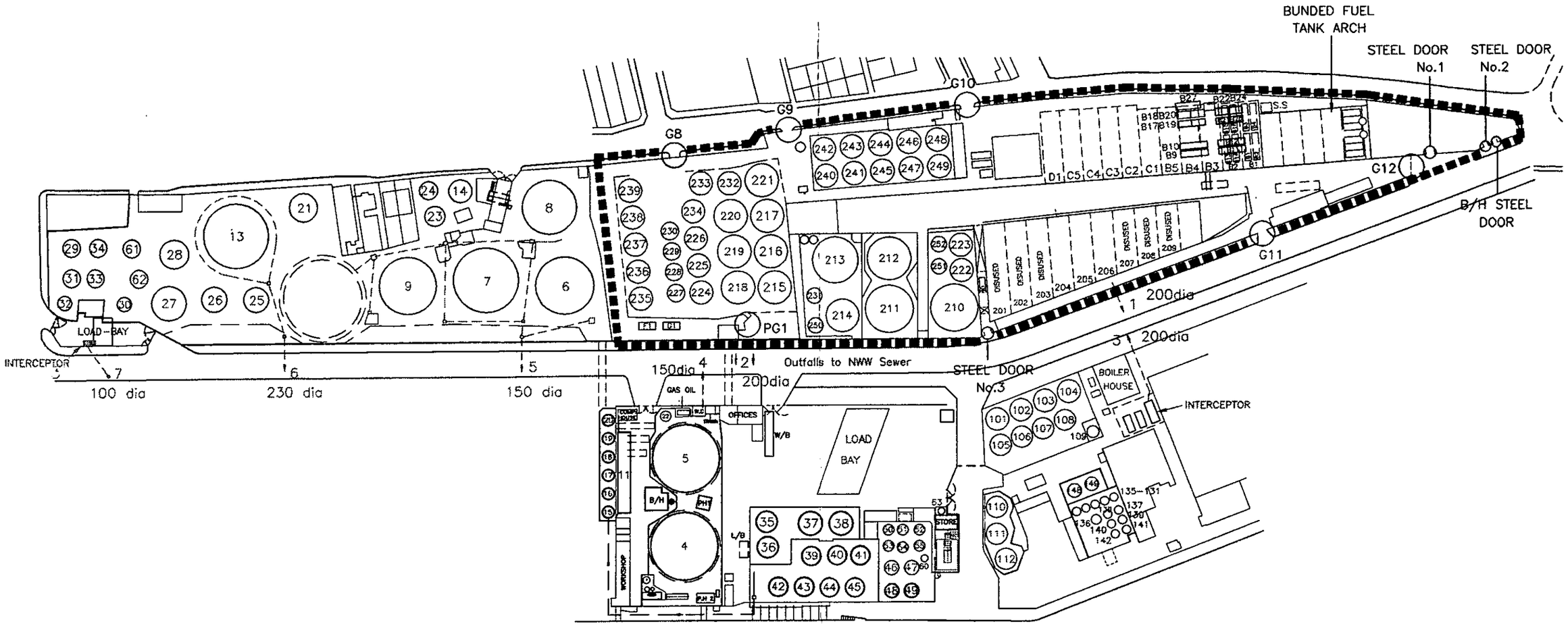
19. No waste treatment operations shall be authorised by this licence unless specified in and undertaken in accordance with Appendices 9 and 10 of the working plan.



LICENCE 385/05

Colour Original Available in this Document.

CHEMPLAN ENGINEERING LIMITED					
CLIENT	PANOCEAN STORAGE & TRANSPORT				
PROJECT	BIRKENHEAD / BRITANNIA TERMINAL				
TITLE	KEY PLOT BLOCK PLAN				
SCALE N.T.S.	DATE NOV. 89.	NO. 01			DRG. No. PP-89-47-007



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OD	BY	DATE	APPD	TITLE	LAYOUT SHOWING DRAINAGE OUTFALL LOCATIONS	DRAWN BY	mpe	25.11.97	INSTALLATION
A	mpe	APR99	GRR/DH		GATES/DOORS ADDED(BRITTANIA)	CH'KD/APP'D	AD	25.11.97	BIRKENHEAD
						1ST ISSUED		27.11.97	Project
						SCALE	1:2000	DATE	DRG. No. (A3) DRAIN MOD: A

UM GROUP
DEXTER HOUSE,
2 ROYAL MINT COURT
LONDON EC3N 4PE

RIGHTS OF APPEAL

Section 43(1) of the Environmental Protection Act 1990 provides that:

Where, except in pursuance of a direction given by the Secretary of State,

(a) an application for a licence or a modification of the conditions to the licence is rejected

(b) a licence is granted subject to conditions

the applicant may appeal from the decision to the Secretary of State.

Therefore if you feel aggrieved by the decision or any of the conditions to the licence as granted you may obtain the appropriate form on which to give written notice of an appal from:

The Planning Inspectorate
Room 10/13
Tollgate House
Bristol
BS10 9DJ

Tel 0117 987 8812
Fax 0117 987 8406

This notice of appeal should be accompanied by the following information; a copy of the licence; a copy of any correspondence relevant to the appeal; a copy of any other document relevant to the appeal including, in particular, any relevant consent, determination, notice, planning permission, established use certificate or certificate of lawful use or development; and a statement indicating whether you wish to appeal to be in the form of a hearing or on the basis of written representations. You are also required to serve a copy of your notice of appeal, together with copies of any the above documents that have accompanied your notice of appeal, on the Environment Agency (at the address overleaf). You should appeal within 6 months of the date that this notice takes effect but the Secretary of State may allow notice of appeal to be given after the expiry of this time period.

ENVIRONMENT AGENCY
SECTIONS 37(1)(a) and 37(1)(b)
of the
ENVIRONMENTAL PROTECTION ACT 1990

ENVIRONMENT AGENCY

Notice Modifying Waste Management Site Licence 385/05

United Molasses (Division of Tate & Lyle Industries Ltd)
Dock Road
West Float
Birkenhead
Wirral
L41 1DF

The Environment Agency hereby gives Notice under Section 37(4) of the Environmental Protection Act 1990 of the modification of Waste Management Licence 385/05, originally issued to Panocean Storage and Transport Ltd on 24 June 1994, and last modified on 18 March 1996, in exercise of its powers under Sections 37(1)(a) and 37(1)(b) of the Environmental Protection Act 1990.

This Notice has the effect of deleting all existing Conditions, Plans and Annexes and replacing them with the Conditions, Plans and Annexes in the document 385/05/MO1 enclosed with this Notice.

You may APPEAL against this Notice by making written notification to The Planning Inspectorate, Room 14/13, Tollgate House, Houlton Street, Bristol BS2 9DJ, within 6 months of the date of service of this Notice.

If you appeal, this Notice shall be of no effect pending the determination of the appeal.

Signed

D Fleming
Team Leader – Waste Licensing & Planning

Dated 6 January 2000

The Environment Agency
Appleton House
430 Birchwood Boulevard
Birchwood, Warrington WA3 7WD
Telephone 01925 840000

Notice of transfer with introductory note

Environmental Permitting (England & Wales) Regulations 2010

UM Storage Limited

UM Storage Birkenhead
Dock Road
West Float
Birkenhead
Merseyside
CH41 1DF

Transfer application number
EPR/TP3499VK/T001

Permit number
EPR/TP3499VK

UM Storage Birkenhead
Permit number EPR/TP3499VK

Introductory note

This introductory note does not form a part of the notice

The following notice gives notice of the transfer of an environmental permit to a new operator (the transferee).

The status log of a permit sets out the permitting history, including any changes to the permit reference number.

Status Log of the permit		
Detail	**Date**	**Response Date**
Licence 385/05 issued	24/06/92	
Licence 385/05 transferred	01/03/94	
Licence modified	30/05/94	
Licence modified	25/03/96	
Licence modified	06/01/00	
Application EPR/TP3499VK/T001 (full transfer of permit 385/05)	Duly made 17/03/11	
Transfer determined (EPR/TP3499VK)	25/03/11	

End of Introductory Note

Notice of transfer

The Environmental Permitting (England and Wales) Regulations 2010

The Environment Agency in exercise of its powers under regulation 21 of the Environmental Permitting (England and Wales) Regulations 2010 transfers

Permit number
EPR/TP3499VK to:

UM Storage Limited ("the operator")

Whose registered address is:

Clarendon House
23 Clarendon Road
Belfast
BT1 3BG

company registration number **NI605352**

to operate a regulated facility at:

UM Storage Birkenhead
Dock Road
West Float
Birkenhead
Merseyside
CH41 1DF

from **Tate and Lyle Industries Limited**

This notice shall take effect from 25/03/2011

Name	Date
Helen Smith	**25/03/2011**

Authorised on behalf of the Environment Agency

4. Waste acceptance and control systems procedures

Pre-acceptance

See Appendix 1 – Appropriate Measures Guidance 3.1 – note sub sections 6.2 & 6.3

Acceptance

See Appendix 1 – Appropriate Measures Guidance 3.2 – note paragraph 34.

5. Waste quantity measurement

All road tankers delivering to the site are fitted with quantity measurement systems so that the quantity to be offloaded is known prior to offload.

The site storage tanks are fitted with ultrasonic gauges that provides a local read out and with telemetry for remote monitoring. Therefore, the gauging system confirms that the available capacity exceeds the amount to be offloaded, prior to offload commencing.

When tanker loads are dispatched, the gauging system confirms the quantity loaded onto the outbound tanker.

See Appendix 1 – Appropriate Measures Guidance Section 4 – note paragraphs 53 to 70.

6. Storing wastes

See Appendix 1 – Appropriate Measures Guidance Section 4

7. Infrastructure – inspection and maintenance

See Appendix 1 – Appropriate Measures Guidance, note:

Section 2.1 paragraph 1

Section 2.2 paragraph 2

Section 2.4 paragraphs 20 and 21

Section 2.5 paragraph 1 and 7

Section 4 paragraphs 38, 45, 50, 69

Section 5.1 paragraph 2, 8

Section 6.2 paragraph 7, 8

Section 6.5 paragraphs 6, 17, 18 and 19

8. Control of odour

See Appendix 1 – Appropriate Measures Guidance, note Sections 3.1, Section 4 paragraph 55 and Section 6.

9. Security and availability of records

All waste consignment records are held electronically using cloud-based bespoke software.

See Appendix 1 – Appropriate Measures Guidance Sections 2.1 and 2.4, note sections 3.2, 3.3, 4 and 6.5.

10. Management and staffing

QES group management system is certified to ISO9001, ISO14001 and ISO45001. Refer to that management system for any clarification.

See Appendix 1 - Appropriate Measures Guidance Section 1.1 sets out the scope applicable to transfer stations:

- General management
- Waste pre-acceptance, acceptance and tracking
- Waste storage, segregation and handling

See also Sections 2 & 6.2 and note paragraph 30 in Section 3.2, paragraph 3 in Section 3.3, paragraphs 1, 54, 57 & 61 in Section 4, and paragraphs 11, 13 & 16 in Section 6.5.

11. Potential leaks and spills

See Appendix 1 - Appropriate Measures Guidance Sections 2.4, 3.2, 4, 6.4 and 6.5

12. Fire management plan

See Appendix 1 - Appropriate Measures Guidance Sections 1.1, 2.1, 2.3, 2.4 and 4.

The flashpoints of the liquids stored are well over the limit specified in HSG176 'Storage of Flammable Liquids in Tanks', and they will not be handled at temperatures above this limit, so this standard does not apply to this facility. However, the precautions listed in the section on 'Higher Flashpoint Liquids have been considered in the design of the facility.

A Fire Risk Assessment (FRA) has also been prepared which included an assessment of the potential risks of fires from the Facility.

- The facility will install appropriate fire suppression equipment throughout the high-risk areas of the building and high risk items of plant such as the bulk oil tank.
- The facility will install appropriate fire detection equipment in order to give early warning of fires in order that they may be tackled early, before getting out of control.
- Ignition sources will be kept away from stored combustible materials such as paper rolls and rags used for cleaning, and signage will be maintained in areas where these combustible materials are stored - both in unused and in waste form.
- The facility will have a designated smoking area outside of the building.
- No hot work will be carried out on-site routinely. Should maintenance require hot work to be carried out, procedures will be in place to minimise fire risk and the site supervisor will approve the procedures and complete a permit to work before any works are undertaken.
- Visitors will be informed of the correct safety and fire prevention procedures; information will be provided as part of the site-specific induction and by appropriate signage on-site.
- A maintenance and inspection programme will be in place following commencement of operations.
- Site security measures are in place to prevent unauthorised access and include total fencing of the site, CCTV and security doors. Security doors are kept locked and secured outside normal working hours and when no one is present at the site.
- Firefighting equipment will be maintained on site in accordance with fire regulations. All site staff will be trained in the Fire Management Plan and some (if not all) in the use of firefighting equipment. Any incidents of fire will be reported to the Environment Agency and recorded in the site diary.
- Fire extinguishers located at the Facility will be clearly marked and tested to ensure that they are safe and in good working order. Site personnel will

be made aware of their location and trained in their correct use with training records maintained.

- No plant or machinery will operate when site is not staffed.
- Maintenance operations, routine or otherwise, may increase the risk of fire by introducing potential ignition and heat sources. Separation distances between any ignition sources and combustible materials (such as new/used consumables like paper rolls) will be therefore be adhered to, and during maintenance operations additional inspections shall take place with an increased frequency if thought required by management.

The site containment has been designed following Ciria 736 principles and guidelines for the containment of fire water in the event of a fire. A risk analysis has been undertaken for the site to give the facility a site hazard rating which places it in the 'Low Risk' category, provided the operating assumptions are met and appropriate procedures are followed.

13. Site security

See Appendix 1 - Appropriate Measures Guidance Section 2.4, note Security Measures.

14. Accidents on site

See Appendix 1 - Appropriate Measures Guidance Sections 2.3 and 2.4.

The accident management plan forms part of the ISO45001 management system.

15. Complaints from neighbours

See Appendix 1 - Appropriate Measures Guidance Section 6.2

The complaints handling process forms part of the ISO14001 management system.

Chemical waste: appropriate measures

This content is available as HTML guidance on GOV.UK: https://www.gov.uk/guidance/chemical-waste-appropriate-measures-for-permitted-facilities

Guidance for regulated facilities with an environmental permit to treat or transfer chemical waste.

Contents

This guidance explains the standards (appropriate measures) that are relevant to regulated facilities with an environmental permit to treat or transfer chemical waste. Chemical waste includes:

- hazardous chemical wastes (for example sulphuric acid or engine oil)
- wastes that contain, or are contaminated with, hazardous chemicals (for example contaminated soils)
- non-hazardous chemical wastes (for example non-hazardous sludges from physico-chemical treatment) that are treated chemically

1. When appropriate measures apply

There is a lot of overlap between best available techniques (BAT) for waste installation facilities and necessary measures for waste operation facilities. The Environment Agency uses the term ‘appropriate measures’ to cover both sets of requirements.

Appropriate measures are the standards that operators should meet to comply with their environmental permit requirements. This guidance sets out what you must consider when you assess the appropriate measures for your site. It is not definitive and it does not replace your obligation to assess appropriate measures fully.

Some measures may not be suitable or relevant for your operation. Appropriate measures will depend on the:

- activities being carried out
- size and nature of the activities
- location of the site

For installations there are additional requirements for using energy and raw materials (including water) efficiently. These are called process efficiency measures.

Where a measure is not suitable, an operator can propose alternative measures that achieve the same level of environmental protection. Or they can provide an explanation of why the specific measure is not relevant.

In certain situations, you may need to provide a higher standard of environmental protection, for example:

- where there are local sensitive receptors
- if there is a risk that an operation may exceed an Environmental Quality Standard

1.1. Measures that apply to different types of facilities

This is how the standards in this technical guidance apply to different types of facilities that treat or transfer chemical waste.

The following sections apply to transfer stations:

- General management
- Waste pre-acceptance, acceptance and tracking
- Waste storage, segregation and handling
- Emissions control
- Emissions monitoring and limits
- Process efficiency (measures for using energy, raw materials and water apply to Industrial Emissions Directive (IED) installations only)

The following sections apply to treatment activities (treating chemical wastes by a method other than incineration):

- General management
- Waste pre-acceptance, acceptance and tracking
- Waste storage, segregation and handling
- Waste treatment
- Emissions control
- Emissions monitoring and limits
- Process efficiency (measures for using energy, raw materials and water apply to IED installations only)

For waste incineration activities, the following sections apply in addition to the incineration sector guidance:

- Waste pre-acceptance, acceptance and tracking
- Waste storage, segregation and handling

Other generic technical guidance also applies to chemical waste facilities, including guidance on emissions, odour and noise.

Specific technical guidance may also be appropriate. For example, there is additional technical guidance for operators of sites that incinerate waste, and operators who store or treat healthcare wastes.

We consider the accident and fire prevention measures specified in this guidance are appropriate measures for managing the fire risks of chemical waste. If you have a permit to carry out an activity involving the storage of other non-hazardous combustible wastes, you may need an approved fire prevention plan that meets the requirements of our fire prevention plan guidance.

Combustion plant with a rated thermal input less than 50 megawatts must comply with the relevant requirements of the Medium Combustion Plant Directive and specified generator regulations. See guidance on the requirements for medium combustion plant and specified generators.

If you operate an exempt site that transfers or treats chemical waste, you should also follow this guidance.

1.2. Implementing appropriate measures at new and existing facilities

The appropriate measures in this guidance apply to both new and existing facilities that treat or transfer chemical waste.

For new facilities the appropriate measures must be in place before operations start.

For existing facilities, if the cost of complying with the appropriate measures is disproportionate to the environmental benefit, immediate compliance may not be reasonable. Through permit reviews, the Environment Agency will assess the current operating techniques of existing facilities against the relevant appropriate measures.

Where an operator is not using appropriate measures, we will expect them to provide improvement plans and timetables for implementing the relevant appropriate measures. We will review these proposals and set formal timescales for making the improvements needed. We will do this by varying the environmental permit to include improvement conditions.

Improvements at existing facilities are likely to fall into one of the following 2 categories.

1. Standard good practice requirements

For example, these could be:

- updated management systems
- waste, water and energy efficiency measures
- measures to prevent fugitive or accidental emissions
- waste handling techniques
- appropriate monitoring equipment

Where these improvements are relatively low cost, operators should implement them as soon as possible and within 12 months.

2. Larger, more capital intensive improvements

For example, these could be:

- installing significant abatement equipment
- the significant redesign of facility layout, including the design and installation of new buildings or treatment plant

Operators should complete these improvements as soon as practicable and within 3 years.

Local environmental impacts (for example, having sensitive receptors or an air quality management area close by) may mean an operator has to take action more quickly than the timescales provided here.

By August 2022, unless we approve a derogation, existing installations must comply with relevant BAT associated emission levels (AELs). These are set out in the waste treatment BAT conclusions.

New installations (including new or replacement plant at existing facilities) must comply with any relevant BAT AELs from when operations begin, unless we approve a derogation.

UNDERSTAND THE DIFFERENCES BETWEEN 'MUST', 'SHOULD' AND 'MAY'

2. General management appropriate measures

These are the appropriate measures for the environmental management of a regulated facility with an environmental permit for treating or transferring chemical waste.

2.1. Management system

1. You must have and follow an up-to-date, written management system that incorporates the following environmental performance features:

You have:

- management commitment, including from senior managers
- an environmental policy that is approved by senior managers and includes the continuous improvement of the facility's environmental performance

You plan and establish the resources, procedures, objectives and targets needed for environmental performance alongside your financial planning and investment.

You implement your environmental performance procedures, paying particular attention to:

- staff structure and relevant responsibilities
- staff recruitment, training, awareness and competence
- communication (for example, of performance measures and targets)
- employee involvement
- documentation
- effective process control
- maintenance programmes
- managing change
- emergency preparedness and response
- making sure you comply with environmental legislation

You check environmental performance and take corrective or preventative action, paying particular attention to:

- monitoring and measurement
- learning from incidents, near misses and mistakes, including those of other organisations
- records maintenance
- independent (where practicable) internal or external auditing of the management system to confirm it has been properly implemented and maintained

Senior managers review the management system to check it is still suitable, adequate and effective.

You review the development of cleaner technologies and their applicability to site operations.

When designing new plant, you make sure you assess the environmental impacts from the plant's operating life and eventual decommissioning.

You consider the risks a changing climate poses to your operations. You have appropriate plans in place to assess and manage future risks.

You compare your site's performance against relevant sector guidance and standards on a regular basis, known as sectoral benchmarking.

You have and maintain the following documentation:

- inventory of emissions to air and water
- residues management plan
- accident management plan
- site infrastructure plan
- site condition report
- odour management plan, if required
- noise and vibration management plan, if required
- dust management plan, if required
- pest management plan, if required
- fire prevention plan, if required
- climate change risk assessment, if required

Your management system can also include, for example, product or service quality, operational efficiency and health and safety in the workplace.

2.2. Staff competence

1. Your site must be operated at all times by an adequate number of staff with appropriate qualifications and competence.
2. The design, installation and maintenance of infrastructure, plant and equipment must be carried out by competent people.
3. You must have appropriately qualified managers for your waste activity who are members of a government-approved technical competency scheme.
4. The person carrying out the technical appraisal of a waste's suitability for receipt at pre-acceptance must have the minimum of a Higher National Certificate (HNC) in chemistry (or equivalent qualification). For the following wastes, technical appraisals must be carried out by a person who has had enough training to determine the suitability of the waste for the site:

- asbestos
- contaminated clothing and rags
- 'articles', for example waste electronic equipment or batteries

- contaminated wood
- solid non-hazardous waste other than ‘mirror entries’ (where waste may be allocated to a hazardous entry or to a non-hazardous entry according to the European List of Waste)

5. If you need to sample, check (other than visually), or test a hazardous waste when you accept it, acceptance must be supervised by someone with the minimum of an HNC in chemistry (or equivalent qualification). At sites where the waste needs only a visual check, the person who receives the waste must have had enough training to be able to identify and manage any non-conformances in the load received.
6. You must make sure that any required sample is representative of the waste and has been taken by someone technically competent to do so.
7. Any required analysis must be done by someone with the minimum of an HNC in chemistry (or equivalent qualification).
8. Non-supervisory staff must be reliable and technically skilled. Their skills may be based on experience and relevant training.

2.3. Accident management plan

1. As part of your written management system you must have a plan for dealing with any incidents or accidents that could result in pollution.
2. The accident management plan must identify and assess the risks the facility poses to human health and the environment.
3. Particular areas to consider may include:

- waste types
- vessels overfilling
- failure of plant and equipment (for example over-pressure of vessels and pipework, blocked drains)
- failure of containment (for example, bund failure, or drainage sumps overfilling)
- failure to contain firefighting water
- making the wrong connections in drains or other systems
- preventing incompatible substances coming into contact with each other
- unwanted reactions and runaway reactions
- checking the composition of an effluent before emission
- vandalism and arson
- extreme weather conditions such as flooding or very high winds

4. You must assess the risk of accidents and their consequences. Risk is the combination of the likelihood that a hazard will occur, and the severity of the impact resulting from that hazard. Having identified the hazards, you can assess the risks by addressing 6 questions:

- how likely is it that the accident will happen?
- what may be emitted and how much?
- where will the emission go – what are the pathways and receptors?

- what are the consequences?
- what is the overall significance of the risk?
- what can you do to prevent or reduce the risk?

5. In particular, you must identify any fire risks, for example from:

- arson or vandalism
- self-combustion, for example due to chemical oxidation
- plant or equipment failure and electrical faults
- naked lights and discarded smoking materials
- hot works (for example welding or cutting), industrial heaters and hot exhausts
- reactions between incompatible materials
- neighbouring site activities
- sparks from loading buckets
- hot loads deposited at the site

6. The depth and type of accident risk assessment you do will depend on the characteristics of the plant and its location. The main factors to take into account are the:

- scale and nature of the accident hazard presented by the plant and its activities
- risks to areas of population and the environment (the receptors)
- nature of the plant and complexity of the activities, and how difficult it is to decide and justify adequate risk control techniques

7. Through your accident management plan, you must also identify the roles and responsibilities of the staff involved in managing accidents. You must give them clear guidance on how to manage each accident scenario, for example, whether to use containment or dispersion to extinguish fires, or let them burn.
8. You must appoint one facility employee as an emergency co-ordinator who will take lead responsibility for implementing the plan. You must train your employees so they can perform their duties effectively and safely and know how to respond to an emergency.
9. You must also:

- establish how you will communicate with relevant authorities, emergency services and neighbours (as appropriate) both before, during and after an accident
- have appropriate emergency procedures, including for safe plant shutdown and site evacuation
- have post-accident procedures that include making an assessment of the harm that may have been caused by an accident and the remediation actions you will take
- test the plan by carrying out emergency drills and exercises

2.4. Accident prevention measures

You must take the following measures, where appropriate, to prevent events that may lead to an accident.

Segregating waste

1. You must keep apart incompatible or segregated wastes and substances by their hazardous properties.
2. You must segregate incompatible waste types into bays or store them in dedicated buildings. The minimum requirement is to use a kerbed perimeter and separate drainage collection. You must also have measures in place to prevent containers falling over into other storage areas.

Preventing accidental emissions

3. You must make sure you contain the following (where appropriate) and route to the effluent system (where necessary):

- process waters
- site drainage waters
- emergency firefighting water
- chemically contaminated waters
- spillages of chemicals

4. You must be able to contain surges and storm water flows. You must provide enough buffer storage capacity to make sure you can achieve this. You can define this capacity using a risk-based approach, for example, by taking into account the:

- nature of the pollutants
- effects of downstream waste water treatment
- sensitivity of the receiving environment

5. You can only discharge waste water from this buffer storage after you have taken appropriate measures, for example, to control, treat or reuse the water.
6. You must have spill contingency procedures to minimise the risk of an accidental emission of raw materials, products and waste materials, and to prevent their entry into water.
7. Your emergency firefighting water collection system must take account of additional firefighting water flows or firefighting foams. You may need emergency storage lagoons to prevent contaminated firefighting water reaching a receiving water body.
8. You must consider and, if appropriate, plan for the possibility that you need to contain or abate accidental emissions from:

- overflows
- vents
- safety relief valves
- bursting discs

If this is not advisable on safety grounds, you must focus on reducing the probability of the emission.

Security measures

9. You must have security measures (and staff) in place to prevent:

- entry by intruders
- damage to equipment
- theft
- fly-tipping
- arson

10. Facilities must use an appropriate combination of the following measures:

- security guards
- total enclosure (usually with fences)
- controlled entry points
- adequate lighting
- warning signs
- 24-hour surveillance, such as CCTV

Fire prevention

11. There are 3 fire prevention objectives. You must:

- minimise the likelihood of a fire happening
- aim for a fire to be extinguished within 4 hours
- minimise the spread of fire within the site and to neighbouring sites

12. You must have appropriate systems for fire prevention, detection and suppression or extinction.
13. You must have suitable procedures and provisions (such as fire resistant stores, automatic alarms and sprinklers) to store certain types of hazardous waste.
14. Your facility must have enough water supplies to extinguish fires. You must have an alternative type of fire protection system if you store or treat any water-reactive waste, for example dry powder extinguishers.
15. You must isolate drainage systems from flammable waste storage areas to prevent fire spreading along the drainage system by solvents or other flammable hydrocarbons.
16. You must regularly inspect and clean your site to prevent the build-up of loose combustible material (including waste and dust), particularly around treatment plant, equipment and other potential sources of ignition.
17. You should share and communicate accident management and fire prevention plans with your local fire and rescue service.

Other accident prevention measures

18. You must assess areas of the site where explosive atmospheres could occur and, where appropriate, classify them into hazardous zones in accordance with the Dangerous Substances and Explosive Atmospheres Regulations. Plant and equipment used in these zones must be ATEX compliant.
19. You must maintain plant control in an emergency – use one or a combination of the following measures:

- alarms
- process trips and interlocks
- automatic systems based on microprocessor control and valve control
- tank level readings such as ultrasonic gauges, high level warnings, process interlocks and process parameters

20. You must:

- make sure all the measurement and control devices you would need in an emergency are easy to access and will operate in an emergency
- maintain the plant so it is in a good state through a preventive maintenance programme and a control and testing programme
- use techniques such as suitable barriers to prevent moving vehicles damaging equipment
- have procedures in place to avoid incidents due to poor communication between operating staff during shift changes and after maintenance or other engineering work

Record keeping and procedures

21. You must:

- keep an up-to-date record of all accidents, incidents, near misses, changes to procedures, abnormal events, and the findings of maintenance inspections
- investigate accidents, incidents, near misses and abnormal events and record the steps you take to stop them reoccurring
- maintain an inventory of substances, which are present (or likely to be) and which could have environmental consequences if they escape – many apparently innocuous substances can damage the environment if they escape
- have procedures for checking raw materials and wastes to make sure they are compatible with other substances they may accidentally come into contact with

2.5. Contingency plan and procedures

1. You must have and implement a contingency plan, which makes sure you:

- comply with all your permit conditions and operating procedures during maintenance or shutdown at your site, or elsewhere
- do not exceed storage limits in your permit and you continue to apply appropriate measures for storing and handling waste
- stop accepting waste unless you have a clearly defined method of recovery or disposal and enough permitted storage capacity

2. You should have contingency procedures to make sure that, as far as possible, you know in advance about any planned shutdowns at waste management facilities where you send waste.
3. You must make your customers aware of your contingency plan, and of the circumstances in which you would stop accepting waste from them.
4. You should consider whether the sites or companies you rely on in your contingency plan:

- can take the waste at short notice
- are authorised to do so in the quantities and types likely to be needed – in addition to carrying out their existing activities

5. You should not discount alternative disposal or recovery options on the basis of extra cost or geographical distance if doing so means you could exceed your permitted storage limits, or compromise your storage procedures.
6. You must not include unauthorised capacity in your contingency plan. If your contingency plan includes using temporary storage for additional waste on your site, you must make sure your site is authorised for this storage and you have the appropriate infrastructure in place.

Treatment sites only

7. Your management procedures and contingency plan must:

- identify known or predictable malfunctions associated with your technology and the procedures, spare parts, tools and expertise needed to deal with them
- include a record of spare parts held, especially critical spares – or state where you can get them from and how long it would take
- have a defined procedure to identify, review and prioritise items of plant which need a preventative maintenance regime
- include all equipment or plant whose failure could directly or indirectly lead to an impact on the environment or human health
- identify ‘non-productive’ or redundant items such as tanks, pipework, retaining walls, bunds, mobile plant, reusable waste containers (for example wheeled carts), ducts, filters and security systems
- make sure you have the spare parts, tools, and competent staff needed before you start maintenance

8. If you produce an end-of-waste material at your facility, your contingency planning must consider issues with storage capacity for end-of-waste products and materials that fail the end-of-waste specification.
9. Your management system must include procedures for auditing your performance against all of these contingency measures and for reporting the audit results to the site manager.

2.6. Plant decommissioning

1. You must consider how you will decommission the plant at the design stage, and plan how you will minimise risks during decommissioning.
2. For existing plants where potential risks are identified, you must have a programme of design improvements. These design improvements need to make sure you:

- avoid using underground tanks and pipework – if it is not economically possible to replace them, you must protect them by secondary containment or a suitable monitoring programme
- drain and clean out vessels and pipework before dismantling
- use insulation which you can dismantle easily without dust or hazard
- use recyclable materials, taking into account operational or other environmental objectives

3. You must have and maintain a decommissioning plan to demonstrate that:

- plant will be decommissioned without causing pollution
- the site will be returned to a satisfactory condition

4. Your decommissioning plan should include details on:

- whether you will remove or flush out pipelines and vessels (where appropriate) and how you will empty them of any potentially harmful contents
- site plans showing the location of all underground pipes and vessels
- the method and resources needed to clear any on-site lagoons
- the method for closing any on-site landfills
- how asbestos or other potentially harmful materials will be removed, unless we have agreed it is reasonable to leave such liabilities to future owners
- methods for dismantling buildings and other structures, and for protecting surface water and groundwater during construction or demolition at your site
- any soil testing needed to check for pollution caused by site activities, and information on any remediation needed to return the site to a satisfactory state when you stop activities, as defined by the initial site condition report
- the measures proposed, once activities have definitively stopped, to avoid any pollution risk and to return the site of operation to a satisfactory state (including, where appropriate, measures relating to the design and construction of the plant)
- the clearing of deposited residues, waste and any contamination resulting from the waste treatment activities

5. You should make sure that equipment taken out of use is decontaminated and removed from the site.

3. Waste pre-acceptance, acceptance and tracking appropriate measures

These are the appropriate measures for waste pre-acceptance, acceptance and tracking at regulated facilities with an environmental permit for treating or transferring chemical waste. They do not apply when waste will be received directly from a householder.

3.1. Waste pre-acceptance

1. You must implement waste pre-acceptance procedures so that you know enough about a waste (including its composition) before it arrives at your facility. You need to do this to assess and confirm the waste is technically and legally suitable for your facility. Your procedures must follow a risk-based approach, considering:

- the source and nature of the waste
- its hazardous properties
- potential risks to process safety, occupational safety and the environment (for example, from odour and other emissions)
- knowledge about the previous waste holder

2. When you receive a customer query, and before the waste arrives at your facility, you must obtain the following in writing or in an electronic form:

- details of the waste producer including their organisation name, address and contact details
- the source of the waste (the producer's business and the specific process that has created the waste)
- where the holder of the waste is not the producer, details of the waste holder including their organisation name, address and contact details
- information on the nature and variability of the waste production process and the waste

You must also obtain (in writing or electronic form) details about the waste including:

- a description
- the List of Waste code (European Waste Classification (EWC) code)
- its physical form
- its composition (based on safety data sheets, where appropriate, or representative samples and robust laboratory analysis)
- any hazardous properties
- any persistent organic pollutants (POPs) present
- the potential for self-heating, self-reactivity or reactivity to moisture or air
- any odour
- its age, that is when it first became waste
- the type of packaging
- an estimate of the quantity you expect to receive in each load and in a year

You must also obtain confirmation that the waste does not contain a radioactive source. If there is a risk of radioactive contamination you must obtain confirmation that the waste is not radioactive, unless your facility is permitted to accept such waste.

3. You must consider whether specific wastes, from among those you are permitted to receive, have properties that can pose unacceptable risks to the site or process, for example due to:

- a risk of explosion (for example, if ammunition or aerosol canisters are present, or mixing processes that could lead to explosion)
- corrosion caused by strong acids
- a risk of uncontrolled reactions (for example, if peroxides or strong oxidants are present, or polymerising components such as certain isocyanates)
- a risk of the evolution of gases (for example if cyanides, sulphides or dissolved gas are present)

You should establish a list of such wastes.

4. You can verify the pre-acceptance information by contacting or visiting the producer. Dealing with staff directly involved in waste production will help to fully characterise a waste.
5. You must obtain and analyse a representative sample of a waste if:

- the chemical composition or variability of the waste is unclear from the information supplied by the customer
- there are doubts about whether the sample analysed is representative of the waste
- you will treat the waste at your facility (this allows you to carry out tests to determine if the planned treatment will be safe and effective)

Where you rely on a customer sample you must record that you have done this and the reason why the customer sample is acceptable.

6. You may not need a representative sample where, for example, the waste is:

- asbestos
- a pure product chemical or aerosol where the chemical composition and hazardous properties are available in a REACH compliant safety data sheet
- packaged cosmetics and pharmaceuticals
- contaminated clothing, packaging or rags
- an ‘article’, for example batteries, lighting tubes, waste electrical or electronic equipment, end-of-life vehicles or parts of vehicles, metal waste and scrap metal
- solid non-hazardous waste (except for mirror entries when the waste composition is unknown)
- contaminated wood and roofing material
- produced in an emergency – you must not treat or offload such wastes until you have completed a full characterisation

6.1 You also may not need a representative sample if the waste is laboratory smalls in containers of less than 5 litres.

Laboratory smalls generally contain pure chemical elements and compounds from laboratories or arise when laboratory stores are cleared.
When drums are used for laboratory smalls, a list of the contents must be stored within the drum below the lid, or attached to the drum. Similarly for other types of packages containing laboratory smalls, a list of contents is appropriately stored within (or attached to) the packaging. Each packed drum (or other package) is then labelled with the hazard for carriage (for example under the International Carriage of Dangerous Goods by Road (ADR) treaty.
You should provide packaging guidance to your customer or their intermediary if the person packing the laboratory smalls does not work for you.

6.2 You also may not need a representative sample of waste oil for treatment.
Pre-acceptance sampling is not critical for a waste oil treatment plant, but it would be required if the waste will be treated at a mineral oil refinery.
Typically waste oil comes from a large number of small volume sources, such as garages, but its composition is essentially fixed. Waste oil is any mineral-based or synthetic lubrication, or industrial oil which has become unfit for its original use. Waste oil includes:

- used combustion engine oils
- gearbox oils
- mineral lubricating oils
- oils for turbines
- hydraulic oils

Waste oil contaminated with more than 50 ppm of polychlorinated biphenyls (PCBs) is not included as a waste oil.

6.3 You should obtain a representative sample of the following types of waste oil, from:

- industrial sites that do not normally produce waste oil
- other sources where chemicals and potential contaminants may be handled, for example from chemical manufacturing

You should advise your customers that they must avoid contaminating waste oil. This is because during treatment low flashpoint solvents or petrol will cause handling difficulties, increase volatile organic compound (VOC) emissions and increase the risk of accidents.

Contamination with PCBs can transfer those PCBs either to the:

- product (which may cause dioxin formation if used in a subsequent combustion process)
- tank bottom oil sludges
- effluent

If you suspect that waste oil has become contaminated, for example by solvents, petrol or PCBs, you must identify the contamination.

6.4 If you do not take a pre-acceptance sample of any hazardous waste you must record the reason.

6.5 If the customer has a number of containers holding the same waste, you can apply ‘the square root of (N) + 1’ rule to sampling those containers. Producing a composite sample of this waste may be appropriate. If the waste is variable you will need a sample from each container.

7. After fully characterising a waste, you must technically assess the waste’s suitability for treatment or storage to make sure you can meet permit conditions. You must also do this to meet any Control of Major Accident Hazards (COMAH) requirements, because wastes, raw materials and end-of-waste materials all contribute to COMAH limits. You must make sure that the waste complies with the site’s treatment capabilities. In the case of water based liquid waste, you may perform laboratory scale tests to predict the treatment’s performance, for example on breaking of emulsion or biodegradability.
8. You can use material flow analysis to help identify the flow and fate of the components in the waste. This analysis can be helpful in choosing the most appropriate forms of treatment for the waste, either directly at the site or at any subsequent treatment site.
9. You must keep pre-acceptance records for at least 3 years (in a computerised waste tracking system) following receipt of the waste. If an enquiry from a waste producer does not lead to the receipt of waste, you do not need to keep records.
10. You must reassess the information required at pre-acceptance if the:

- waste changes
- process giving rise to the waste changes
- waste received does not conform to the pre-acceptance information

In all cases, you must reassess the information required at pre-acceptance on an annual basis.

11. You must apply odour criteria to decide whether to accept wastes that are already releasing, or have the potential to release:

- mercaptans or other VOCs
- low molecular weight amines
- acrylates
- other similarly highly odorous materials

These substances are only suitable for acceptance under special handling requirements.

12. You must keep the roles and responsibilities of sales staff and technical staff separate. If sales staff are involved in waste enquiries then technical staff must do a final technical check before approval. You must keep this final technical check independent of commercial considerations, to make sure you:

- only accept wastes that are suitable for the site
- avoid accumulating waste
- have enough storage and treatment capacity

13. Fully characterising the waste’s composition is an essential step in the pre-acceptance procedure because hazardous wastes can be very complex. You must be sure you know what is in the waste so that you can safely handle or

treat it. You must select analytical tests based on knowing the process that generates the waste. You must characterise the waste's composition at the pre-acceptance stage. You need to do this to make sure you comply with regulatory requirements and to work out the most appropriate waste storage, transfer or treatment route.

14. For liquid waste, any or all of the following may be appropriate:

- measure the density of the sample
- measure the water content
- measure the ash content after calcination at 550°C
- test whether the stream might inhibit biological treatment
- test for cyanide, and if present determine the free and complexed cyanide levels
- test for POPs
- check the content of volatile and semi volatile substances
- check the mass balance of liquid waste

You can also measure the pH, redox potential and electrical conductivity of liquid wastes. For pastes and oils, perform these measurements on a water extract of crude sample using a ratio of 10 l/kg of dry matter. You should mix the water with the sample in a closed container to limit exchanges with the atmosphere.

You can also test for the 12 heavy metals (As, Ba, Cd, Cr, Cu, Hg, Mo, Ni, Pb, Sb, Se, Zn) and determine their levels individually and quantitatively. You may use any specific classical method of (partial) extraction of these metals. Where it is present, check specifically for chromium (VI). If the waste is saline (conductivity > 0.15 S/m), measure the chlorides and preferably all the halogens that are soluble in water to make sure you correctly speciate the metals.

You can also test for other metal content and other elements (for example silicon, sulphur and phosphorous).

15. If you suspect the analysis methods applied to a liquid sample will not extract and quantify the compounds present in any solid particles or in any separate phases, separate the sample into 2 fractions by a suitable method. For example, this could be by filtration, centrifugation or decantation. Then you can determine the mass of each fraction, and perform a comprehensive analysis of the separated liquid fraction and solid fraction, or of each phase.

16. For solid waste, any or all of the following may be appropriate:

- measure the bulk density of the sample, without pre-treatment of the sample
- measure the water content
- measure the ash content after calcination at 550°C
- test for cyanide, and if present determine the free and complexed cyanide levels
- test for POPs
- check the content of volatile and semi volatile substances
- check the mass balance of solid waste

You can also measure the pH, redox potential and electrical conductivity on a water extract of crude sample using a ratio of 10 l/kg of dry matter.

You can also test for the 12 heavy metals (As, Ba, Cd, Cr, Cu, Hg, Mo, Ni, Pb, Sb, Se, Zn) and determine their levels individually and quantitatively. You may use any specific classical method of (partial) extraction of these metals. Where it is present, check specifically for chromium (VI). If the waste is saline (conductivity > 0.15 S/m), measure the chlorides and preferably all the halogens to make sure you correctly speciate the metals.

You can also test for other metal content and other elements (for example silicon, sulphur and phosphorous).

17. When multiple immiscible phases or fractions are present in a waste, you can perform the analysis on each phase and combine them to provide the final result.
18. Analyses must be carried out by laboratories that have robust quality assurance procedures and use recognised test methods. The EN ISO 17025 accreditation represents best practice.
19. When you agree that you will accept waste from a customer, you should decide and record what parameters you will check at the acceptance stage. The checks could be visual (for example colour, phase, fuming), physical (for example pumpability, form), chemical (for example pH range, maximum acceptable metals content) or odour based parameters. You should define the acceptable tolerance for each acceptance test result and record which of these criteria could lead to further testing, non-conformance or rejection. The person checking the waste for acceptance can also decide on their own additional parameters.

3.2. Waste acceptance

1. You must follow waste acceptance procedures to check that the characteristics of the waste you receive match your pre-acceptance information. This is to confirm that the waste is as expected and you can accept it. If it is not, you must confirm that you can accept it as a non-conforming waste, or you must reject it.
2. Your procedures should follow a risk-based approach, considering:

- the source, nature and age of the waste
- the waste’s hazardous properties
- potential risks to process safety, occupational safety and the environment (for example, from odour and other emissions)
- potential for self-heating, self-reactivity or reactivity to moisture or air
- knowledge about the previous waste holder(s)

3. Other than in an emergency (for example, taking waste from an emergency incident clean-up), you must only receive pre-booked wastes onto site that have been adequately pre-accepted and are consistent with the pre-acceptance information.
4. All relevant storage areas (quarantine, reception and general) and treatment processes in your facility must have physical capacity for the waste you

receive. You must not receive wastes if this capacity is not available. The amount of waste you receive must also comply with storage limits in your permit and the limits set under COMAH.

5. You must visually check wastes or their packaging and verify them against pre-acceptance information and transfer documentation before you accept them on site. The extent of the initial visual check is determined by the waste type and how it is packaged.
6. You must check and validate all transfer documentation and resolve discrepancies before you accept the waste. If you believe the incoming waste classification and description is incorrect or incomplete, then you must address this with the customer during waste acceptance. You must record any non-conformances. If you have assessed the waste as acceptable for on-site storage or treatment, you must document this.
7. You must have clear criteria for non-conforming wastes including rejection of such waste. You must also have a written procedure for recording, reporting and tracking non-conforming wastes, including notifying the relevant customer or waste producer, and the regulator.
8. You must weigh each load of waste on arrival to confirm the quantities against the accompanying paperwork, unless alternative reliable systems are available (for example, based upon density and volume). You must record the weight in the computerised waste tracking system.
9. The person carrying out waste acceptance checks must be trained to effectively identify and manage any non-conformances in the loads received, complying with this guidance and your permit conditions.
10. If there is a known risk of radioactive contamination, you must check the waste to determine that it does not include radioactive material, unless you are permitted to accept these materials.
11. You must minimise the manual handling of waste. You should use mechanical unloading technologies where it is possible, safe and practicable to do so.
12. Offloading, sampling, general storage, reception and quarantine areas must have an impermeable surface with self-contained drainage, to prevent any spillage entering the storage systems or escaping off site.
13. The designated sampling point or reception area must be close to the laboratory or checking area and needs to be visible.

Acceptance of containerised waste

14. After you have completed the initial visual inspection and confirmatory checks, you must offload waste containers into a dedicated reception area to await detailed checks or sampling. Wastes that do not require further checking can go directly into the appropriate storage area. You must not unload wastes if you do not have enough space.
15. All waste containers must be fit for purpose, and, where appropriate, be:

- in sound condition
- undamaged
- not corroded, if metal

- have well-fitting lids
- suitable for the contents
- with caps, valves and bungs in place and secure

  You must risk assess containers, particularly those made of plastic, if they have exceeded the manufacturer's use by date.

  You must quarantine non-conforming containers and deal with them immediately and appropriately. You must record all non-conformances.

16. You must check, and where appropriate sample and analyse, the contents of all containers in the reception area within one working day of receipt. You must then transfer compliant containers to the relevant appropriate storage area on site.
17. You must move non-compliant containers to a dedicated quarantine area unless you can safely store the waste in a general storage area with other compatible wastes whilst you investigate the non-conformance. You must label non-compliant containers to identify that they are quarantined. You must record the non-conformance and where the waste is stored. If you use a dedicated quarantine area, you must segregate or isolate incompatible wastes. You must contain and abate wastes which are quarantined due to odour.
18. Quarantine storage must be for a maximum of 5 working days. You must have written procedures for dealing with wastes you hold in quarantine, and a maximum storage volume. For some limited and specific cases (for example the detection of radioactivity), you can extend quarantine storage time if the Environment Agency agrees.
19. Where containers hold laboratory smalls, you must open each container held in reception within one working day of receipt to check that the contents remain undamaged and that the inventory is as expected. All of the contents in each drum must be compatible. Once checked the container can be moved to the appropriate storage area. Laboratory smalls that need to be sorted must be moved to a dedicated repackaging area and repackaged immediately.
20. You must make sure that all waste packages you receive are marked or labelled with:

- a description of the waste that also gives its chemical identity and composition
- a unique tracking system reference
- the date of arrival on site
- a hazard code or codes (using a product or transport symbol)

  The unique reference must allow you to track the waste and easily identify the producer of the waste.

21. If waste containers are received shrink-wrapped on pallets, or you shrink-wrap containers, you can label the shrink wrap with all the relevant information. If a shrink wrapped load is split, you must make sure you mark or label each individual container with all the relevant information.
22. Where bar code systems are used for labelling, the hazardous property of the waste and the date of receipt of the container must be directly visible.

23. You should, wherever possible, keep wastes segregated in reception, to minimise the risk of incompatible materials reacting together.

Acceptance of bulk wastes

24. Bulk loads (liquid or solid) can only be offloaded after they have been fully verified as compliant. You must not accept a non-compliant bulk load for interim storage except in an emergency. Verification testing should include:

- checking consistency with the pre-acceptance information
- compatibility with the receiving vessel contents
- where appropriate, checking treatability by using laboratory scale simulation

25. Deliveries in a tanker must be accompanied by a ‘wash out’ certificate or a declaration of the previous load so that contamination by this route can be checked.
26. Samples from tankers should wherever possible be taken representatively by taking a core sample from the top hatch and from a suitable gantry. You must sample from each compartment where the tanker is divided into multiple compartments. If you have to take a sample from the back valve, you must take precautions to avoid spillages.

Acceptance sampling

27. You must representatively sample all wastes, bulk or containerised (including from every container) at the acceptance stage, and carry out verification and compliance testing. You must not just rely on the written information supplied. The requirement to sample does not apply to some wastes, for example:

- pure product chemicals
- asbestos
- contaminated clothing, packaging or rags
- ‘articles’
- laboratory smalls
- packaged cosmetics and pharmaceuticals
- solid non-hazardous waste (except for mirror entries when the waste composition is unknown)
- contaminated wood and roofing material
- waste received directly from a householder
- green wastes and food wastes

Where a sample is not required, you must still visually check the waste is as expected and that no contrary materials are present. You must record the reason why you did not sample the waste in your computerised waste tracking system.

You must empty and repack containers of contaminated clothing, packaging or rags to check for items that should not be there.

You must obtain a representative sample and analyse of waste oil, from:

- industrial sites that do not normally produce waste oil
- other sources where chemicals and potential contaminants may be handled, for example from chemical manufacturing

For other waste oil you must obtain a representative sample of the waste but you do not have to analyse it unless a problem is found at the treatment plant.

28. A representative sample is one that takes account of the full variation and any partitioning of the load so you can account for worst case scenarios.
29. You must take a sample from every container. You can make a composite sample if each of the containers making up the composite holds the same waste and the waste is known not to be variable. You must obtain a representative sample by taking a core sample down to the base of the container. You must make sure you replace lids, bungs and valves immediately after sampling.
30. On-site sampling must take place under the supervision of the site's qualified staff. Where a driver arrives at the site with a sample taken elsewhere, the sample:

- must be verified as representative, reliable and obtained by a person technically competent to take it
- is only acceptable if it was taken for specific health or safety purposes

31. Sampling must not increase the risk of incompatible substances coming into contact with one another, for example within a sump serving the sampling point, or due to contaminated sampling equipment.
32. You must have suitable absorbents and spill kit material available to deal with any spills.
33. You must keep a record of the sampling regime, process and justification in your computerised waste tracking system.
34. You should keep acceptance samples on site for at least 2 working days after you have:

- treated a waste and removed its treatment residues from the facility
- transferred a waste from your site

Where you are transferring waste oil from your site you must keep acceptance samples for at least 2 working days after the waste has been treated off site. You must analyse the waste oil sample if a problem is found at the off-site treatment plant. You only need to keep samples that you did not analyse at acceptance.

35. You must have a sampling and analysis procedure. You must design it based on the risk factors for the waste, for example:

- the type of waste (for example hazardous or non-hazardous)
- knowledge of the customer (for example waste producer)
- the impact of potential mixing or blending and the possibilities for subsequent treatment

36. You must check any relevant physico-chemical parameters using, for example, viscometry, infrared, chromatography and mass spectrometry.
37. Sampling procedures must be customised for:

- bulk liquid
- bulk solids
- large and small containers or vessels (the number of samples increases with the number of containers or vessels and the variability of the waste)
- laboratory smalls

38. You must determine and record the following information:

- the sampling regime for each load, together with your justification for selecting each option
- where and how the sample was taken
- the capacity of the sampled vessel (for samples from drums, an additional parameter would be the total number of drums)
- the number of samples and degree of consolidation
- the operating conditions at the time of sampling

39. Wherever possible you should sample waste in accordance with:

- EN 14899 Characterization of waste. Sampling of waste materials. Framework for the preparation and application of a sampling plan
- CEN/TR 15310-1 Characterization of waste. Sampling of waste materials. Guidance on the selection and application of criteria for sampling under various conditions
- CEN/TR 15310-2 Characterization of waste. Sampling of waste materials. Guidance on sampling techniques
- CEN/TR 15310-3 Characterization of waste. Sampling of waste materials. Guidance on procedures for sub-sampling in the field
- CEN/TR 15310-4 Characterization of waste. Sampling of waste materials. Guidance to the packaging procedures for storage, conservation, transportation and delivery of samples
- CEN/TR 15310-5 Characterization of waste. Sampling of waste materials. Guide on the process of developing a sampling plan

  For more information see guidance on the classification and assessment of waste WM3.

Testing and analysis

40. You must test each waste for acceptance according to the parameters decided at pre-acceptance, plus any appropriate additional checks. You should record the results of the tests in the computerised waste tracking system. You should note and investigate any discrepancies.
41. Analysis of waste must be carried out by a laboratory with suitably recognised test methods. Where the waste received is hazardous, the laboratory should be on site, or routinely available at another site capable of providing test results within one working day of receipt of the waste at your site.

3.3. Waste tracking

1. You must use a computerised tracking system to hold up-to-date information about the available capacity of the waste quarantine, reception, general and bulk storage areas of your facility including treatment residues and end-of-waste product materials.
2. Your waste tracking system must hold all the information generated during:

- pre-acceptance
- acceptance
- non-conformance or rejection
- storage
- repackaging
- treatment
- removal off site

This information must be easily accessible.

3. You must create records and update them to reflect deliveries, on-site treatment and despatches. Your tracking system will also operate as a waste inventory and stock control system. It must include this information as a minimum:

- the date the waste arrived on site
- the original producer's details
- the previous holder
- a unique reference number
- waste pre-acceptance and acceptance information
- any analysis results
- the package type and size
- the intended treatment or transfer route
- accurate records of the nature and quantity of wastes held on site, including all hazards – and identifying the primary hazards
- where the waste is located on site
- where the waste is in the designated treatment or transfer route

- the names of staff who have taken any decisions about accepting or rejecting waste streams and who have decided on recovery or disposal options
- details that link each container accepted to its consignment or transfer note
- details of any non-conformances and rejections

4. The tracking system must be able to report:

- the total quantity of waste present on site at any one time
- a breakdown by type of the waste quantities you are storing pending treatment or transfer
- a breakdown of the waste quantities by hazardous property
- an indication of where a batch or consignment of waste is located on a site plan
- the quantity of waste on site compared with the limits authorised by your permit
- the length of time the waste has been on site
- the quantity of end-of-waste product materials on site at any one time, where applicable

5. You must store back-up copies of computer records off site. Records must be easily accessible in an emergency.
6. You must hold acceptance records for a minimum of 2 years after you have treated the waste or removed it off site. You may have to keep some records for longer if they are required for other purposes, for example, hazardous waste consignment notes.

4. Waste storage, segregation and handling appropriate measures

These are the appropriate measures for waste storage, segregation and handling at regulated facilities with an environmental permit for treating or transferring chemical waste.

1. You must store waste in locations that minimise the handling of waste. Waste handling must be carried out by competent staff using appropriate equipment.
2. Where possible, you should locate storage areas away from watercourses and sensitive perimeters (for example, those close to public rights of way, housing or schools). You must store all waste within the secure area of your facility to prevent unauthorised access and vandalism.
3. Where relevant, you must conform to HSE standards and in particular to:

- HSG51 The storage of flammable liquids in containers
- HSG71 Chemical warehousing: The storage of packaged dangerous substances
- HSG76 Warehousing and storage
- HSG140 Safe use and handling of flammable liquids
- HSG176 The storage of flammable liquids in tanks
- CS21 The storage and handling of organic peroxides

4. You must clearly document the maximum storage capacity of your site and the designated storage areas. You must not exceed these maximum capacities. You should define capacity in terms of, for example, maximum tank or vessel capacities, tonnage and numbers of skips, pallets or containers. You must regularly monitor the quantity of stored waste on site and designated areas and check against the allowed maximum capacities.
5. You must clearly mark hazardous waste storage areas and provide signs showing the maximum quantity and hazardous properties of wastes that can be stored there.
6. Storage area drainage infrastructure must:

- contain all possible contaminated run-off
- prevent incompatible wastes coming into contact with each other
- make sure that fire cannot spread

7. Secondary and tertiary containment systems must conform to CIRIA guidance C736 Containment systems for the prevention of pollution.
8. You must store containerised wastes that are sensitive to air, light, heat, moisture or extreme ambient temperatures under cover, protected from such ambient conditions. Covered areas must have good ventilation. This applies to any such container:

- held in general storage, reception storage (pending acceptance) or quarantine
- being emptied, repackaged or otherwise managed

For example, waste held in fibre or cardboard primary or secondary packaging should be stored under cover in a dry area and not exposed to rain or moisture. It must be kept off floors to prevent damage by damp.

9. You must store wastes in sealed metal containers under cover if they have the potential for self-heating or self-reactivity. You must monitor the containers for heat build-up. Such wastes include rags and filter materials contaminated with metal swarf, low boiling point oils or low flash point solvents.
10. Wherever practicable you should store all other wastes under cover. Covered areas must have good ventilation. This applies to any such container:

- held in general storage, reception storage (pending acceptance) or quarantine
- being emptied, repackaged or otherwise managed

Under cover storage provides better protection for containers than open air storage and minimises the generation of contaminated water. Covered storage also:

- lowers temperature fluctuations that can cause pressure build up in containers
- reduces the degradation of containers through weathering

11. You must not store hazardous waste in open-topped containers. Empty open-topped containers should be kept in a building or undercover to prevent rainwater ingress.
12. You must not store or hold wastes on site in vehicles or vehicle trailers unless you are receiving them or preparing them for imminent transfer (meaning that you will remove them from site within 24 hours, or 72 hours if over a weekend).
13. You should pay particular attention to avoid the build-up of static electricity when you are storing or handling flammable wastes and materials. You should use leak detection systems and alarms (for example VOC alarms) and automatic fire suppression equipment based on a recorded risk assessment.
14. You must provide adequate bunding of all storage areas, and containment and treatment of any water run-off.
15. You must not accumulate waste. You must treat wastes, or remove them from the site, as soon as possible. Generally you should do this within one month of receipt but all wastes must be removed within 6 months of receipt. This applies even when the waste might be used as a reactant. Where a shorter time period is given in a permit condition you must comply with the permit for that waste. Where a waste is stored for longer than allowed you must inform the Environment Agency.
16. All stored containers must keep the labelling they had at acceptance. If the label is damaged or no longer legible you should replace the label with that same information.
17. You must handle and store containers so that the label is easily visible and continues to be legible.
18. You should keep solid waste dry and avoid the dilution of hazardous waste.
19. You must keep clean rainwater and clean cooling water separate from wastes and waste waters.
20. You must keep incompatible wastes segregated so that they cannot come into contact with one another. You must store flammable wastes apart from

other wastes to prevent fire spreading between them and other materials. You must use sealed drainage systems to prevent leaks and spillages contaminating other wastes.

21. There must be pedestrian and vehicular access (for example, forklift) at all times to the whole storage area so that you can retrieve containers without removing others that may be blocking access – other than removing those in the same row.
22. You must store all waste containers in a way that allows easy inspection. You must maintain safe access, with a gap of at least 0.7m between rows of bulk containers or palletised wastes.
23. You must move drums and other mobile containers between different locations (or loaded for removal off site) following written procedures. You must then amend your waste tracking system to record these changes.
24. You must stack bags and boxes of waste no more than 1m high on a pallet. You must not stack pallets more than 2 high.
25. You must stack containers specifically designed for stacking and no more than 2.2m high on a pallet.
26. You must store all other containers on pallets. You must not stack these pallets more than 2 high, except for empty containers which can be stacked 3 high.
27. Stacked bags, boxes and containers must be stable. They must be secured with, for example, banding or shrink-wrap, if required. The packages must not extend beyond (over-hang) the sides of the pallet. Any shrink-wrap used must be clear or transparent so that you can identify waste types, damaged containers, leaks or spillages and incorrectly stacked containers. You must be careful not to damage any packages during stacking.
28. All waste containers must remain fit for purpose. You must check any containers (and pallets they may be stored on) daily and record non-conformances. Non-compliant containers and pallets must be made safe. You must immediately and appropriately manage any unsound, poorly labelled or unlabelled containers (for example, by relabelling, over drumming and transferring the container's contents). You must risk assess, approve and record the use of containers, tanks and vessels:

- beyond their specified design life
- where you use them for a purpose, or substances, other than the ones they were designed for

29. You must not handle waste or its packaging in a way that might damage its integrity, unless it is appropriate to destroy a waste or its packaging, for example by shredding. You must not, for example, walk on or throw waste or waste packages.
30. You should, where applicable and based on a recorded risk assessment, make inert the atmosphere of tanks containing organic liquid waste with a flashpoint less than 21°C. This can be done, for example, by using nitrogen gas.
31. You must store asbestos waste double bagged or wrapped, in sealed, closed and locked containers. You must not store asbestos waste loose. You must

not put asbestos wastes into bays or transfer it between different skips or containers. You must not use mechanical equipment, for example loading shovels, chutes and conveyors to move asbestos waste.

32. You must not stack wheeled containers on top of one another. Do not stack empty wheeled containers into one another more than 2.2m high.
33. All containers that need them should have a lid or bung, and the lid or bung must be closed except when the container is being sampled, having waste added into it or having waste removed from it.
34. You must not stack skips containing waste. Skips containing hazardous waste must be enclosed when not being loaded or unloaded. You should store loose bulk hazardous wastes under cover.
35. You can use racking systems to store waste but you must consider segregation, ability to inspect, separation and fire suppression measures. Racking systems must be designed and constructed in accordance with HSG76 Warehousing and storage.
36. You must:

- contain wash waters within an impermeable area and either discharge them to foul sewer or dispose of them appropriately off site.
- prevent run-off into external areas or to surface water drains

37. You must manage waste in a way that prevents pests or vermin. You must have specific measures and procedures in place to deal with wastes that are identified as causing pests or vermin.
38. You must inspect storage areas, containers and infrastructure daily. You must deal with any issues immediately. You must keep written records of the inspections. You must rectify and log any spillages of waste.
39. You must train forklift drivers in the handling of palletised goods, to minimise forklift truck damage to the integrity of containers and infrastructure.
40. You must not carry out activities that represent a clear fire risk within any storage area. Examples include:

- grinding
- welding or brazing of metalwork
- smoking
- parking normal road vehicles, except while unloading or loading
- recharging batteries

Bulk storage

41. Where relevant, bulk storage systems must conform to CIRIA guidance, and in particular to:

- C535 Above ground proprietary prefabricated oil storage tank systems
- C598 Chemical storage tank systems - good practice
- C736 Containment systems for the prevention of pollution

42. You must use tanks and associated equipment that are suitably designed, constructed and maintained. You must do a risk assessment to validate the

design and operation of bulk storage systems. Before you use new tanks and equipment you must check they are working correctly. You must periodically examine and test that your tanks meet the standards set out in EEMUA Publication 231: The mechanical integrity of plant containing hazardous substances.

43. You should vent bulk storage tanks and silos through suitable abatement.
44. You must locate bulk storage vessels on an impermeable surface which is resistant to the material being stored. The surface must have self-contained drainage to prevent any spillage entering the storage systems or escaping off site. Impermeable surfaces must have sealed construction joints.
45. You must provide bunds for all tanks containing liquids (whether waste or otherwise) which could be harmful to the environment if spilled. Bunds must meet the CIRIA C535 or C736 standard and:

- be impermeable, stable and resistant to the stored materials
- have no outlet (that is, no drains or taps), and drain to a blind collection point
- have pipework routed within bunded areas with no penetration of contained surfaces
- be designed to catch leaks from tanks or fittings
- have a capacity calculated following the relevant CIRIA guidance
- have regular visual inspections – you must pump out or remove any contents under manual control after you have checked for contamination
- be fitted with a high level probe and an alarm (as appropriate) if not frequently inspected
- have tanker connection points within the bund where possible – if not possible you must provide adequate containment for spillages or leakage
- have programmed engineering inspections (extending to water testing if structural integrity is in doubt)
- be emptied of rainwater regularly to maintain the containment capacity

46. You must control sludge build up and foam in tanks, for example by regularly sucking out the sludge and using anti foaming agents.
47. You should equip storage and treatment tanks with an automatic level monitoring system and an associated alarm or trip system. These systems must be sufficiently robust (for example, be able to work if sludge and foam are present) and regularly maintained. You must fit tanks with suitable overfill protection.
48. You must be able to close all connections to vessels, tanks and secondary containment via suitable valves. You must fit a valve close to the tank if you have bottom outlets, and have at least 2 isolation points in case of valve failure.
49. You must direct overflow pipes to a contained drainage system (for example the relevant secondary containment) or to another vessel where suitable control measures are in place.
50. Tanks, pipework and fittings must be examined by a competent person, following a written scheme. The scope and frequency of examination must also be determined by a competent person. You must work out how often to

carry out these internal examinations using a risk assessment approach. This should be based on:

- tank service
- maintenance history
- known and potential damage mechanisms and their rates of attack

You should also do intermediate external examinations. You must act on the results of the examinations and do any necessary repairs to ensure the tanks remain fit for service. You must keep the results of examinations and repairs.

51. You must have systems in place to make sure that loading, unloading and storage are safe, considering any associated risks. This can include:

- having piping and instrumentation diagrams
- using ticketing systems
- using key locked coupling systems
- having colour coded points, fittings and hoses
- using specific coupling or hose sizes for certain waste transfers

52. As a general rule, you must not use open topped tanks, containers, vessels or pits to store or treat hazardous or liquid wastes.

Transfer of waste into and from tankers

53. All pipes, hoses, connections, couplings and transfer lines must be fit for purpose and resistant to the wastes being stored. You must use a suitable pipework coding system (for example, RAL European standard colour coding).
54. Site staff must supervise loading and unloading activities, either directly or via CCTV.
55. You must make sure that transfers into and from tankers only take place after you have completed any relevant verification and compatibility testing, and then only with the approval of an appropriate chemist or manager. The approver must specify:

- which batch or load of material is to be transferred
- the receiving storage vessel
- the equipment required, including spillage control and recovery equipment
- any special provisions relevant to that batch or load including minimising odour and other fugitive emissions

56. You must have in place systems to prevent ‘tanker drive off’ (a vehicle pulling away whilst still coupled).
57. You must make sure that the transfer of waste from tankers is only carried out by competent staff. You must give them enough time, so they are not under pressure to work more quickly than is deemed acceptable.
58. You must have measures in place to make sure that couplings are a correct fit. This will prevent couplings from loosening or becoming detached. You should provide, maintain and clean your own couplings and hoses to guarantee their integrity and fitness. You should also:

- make sure you take special care so that a coupling is able to withstand the maximum shut valve pressure of the transfer pump
- maintain a sound coupling at each end of the transfer hose, even when a gravity feed system is in place, and protect the transfer hose
- control potential leaks from coupling devices by using simple systems such as drip trays

59. You must make sure that transfers into and from tankers only take place in bunded areas designed to contain a worst case spillage. You must have emergency storage for leaking vehicles to minimise any acute incidents caused by a seal on a tanker failing.
60. You should have systems and procedures in place to make sure that wastes due to be transferred comply with the safe carriage of dangerous goods when they are packaged and transported.
61. You must make sure that the transfer of waste from a tanker to a drum or vice versa is done in a dedicated area. A minimum of 2 trained and competent staff, working to formal written instructions, must perform the transfer. They must check any pipes and valves before and during the transfer. You must fit dip pipes with a shut-off valve to control the dispensing into containers and prevent overfilling.
62. You must make a record of any spillages. You must retain spillages within the bunded areas and collect them promptly using, for example, pumps or absorbents.
63. You must make sure that tankers are not used as blending or reaction vessels as this is not their designed purpose.
64. You must take operational and design precautions when mixing or blending wastes, depending on the composition and consistency of the wastes (for example when vacuuming dusty or powdery wastes).
65. Where you use rotary-type pumps, they must be equipped with a pressure control system and safety valve.
66. You must pump sludges. Do not pour them.
67. When loading and offloading odorous, flammable or volatile liquids between bulk storage tanks and tankers, you must use vapour balance lines to transfer the displaced vapours from the receiving vessel to the vessel you are pumping from.
68. You must follow safe operating procedures designed to reduce the risk of explosion and fugitive emissions when you transfer waste from powder tankers into silos. You must use trained and competent personnel.
69. You must carry out routine maintenance to prevent failure of the plant or equipment. This may include the failure of a pump seal or the blockage of a filter pot commonly used at transfer points.
70. You must continue using the waste tracking system that began at the pre-acceptance stage, for the whole time waste is kept at the site.

Aerosol storage

71. You must store aerosol canisters under cover in secure, well-ventilated containers, and within caged storage areas. You must also store them in a well-vented place that is not subject to extreme temperatures or direct sunlight. You must not store canisters in open containers to prevent the risk of them spreading fires by ‘missiling’ or ‘ejection’.
72. You must segregate aerosol canisters from other flammable wastes and potential sources of ignition. Preferably put them in a separate building, or use a fire resistant enclosure or fire wall. You must not hold any combustible material within the storage area, other than the canister’s packaging, containers and the pallets on which they stand.
73. You must provide suitable containment measures (for example drip trays) for aerosol canisters held in containers which cannot collect and hold free liquids released from the canisters. Or you should transfer them to secure containers that are able to hold free liquid.
74. During storage, lids on containers holding aerosol canisters must remain securely closed at all times when not being filled, emptied or internally inspected. When not in use, the doors or hatches of cages must remain closed and locked.
75. You must not overfill containers used to store canisters. Overfilling can result in canisters being actuated and discharging their contents, either:

- under the weight of the canisters above them
- when the container lid is closed
- when containers are stacked

76. Cages used to store aerosol canister containers must be robust, fire resistant and of an appropriate mesh size (based upon the size of the canisters being stored). This is to constrain the canisters and prevent any ejection. Where the cage is not constructed with a mesh roof, the mesh wall panels must extend into the roof space of the storage area to make sure that the structure is completely enclosed.
77. You should store aluminium canisters separately from steel canisters (especially rusting canisters). This will:

- prevent thermite sparks during storage, handling and treatment
- allow the different metals to be more easily recovered

Sorting, repackaging and bulking

78. Sorting is the placing together of containers with other waste containers of the same type, without emptying the contents from the container. You must have a permit that specifically allows you to carry out storage activities (coded D15 or R13).
79. Repackaging is the removal of waste from a container, or into a container. This may involve bulking it with other wastes of the same type from other containers. You must have a permit that specifically allows you to carry out repackaging activities (coded D14 or R12).
80. Bulking of waste that is not regarded as repackaging includes:

- discharging from a tanker to bulk storage of wastes of the same type

- tank to tank transfer where both tanks contain wastes of the same type

These activities are storage (coded D15 or R13).

81. You must only bulk or repackage wastes together if they are materially the same. They must not react when they are bulked and they must not change the waste's composition.
82. If a waste is mixed with other similar wastes, where the resulting mixture does not have significantly different characteristics from the mixed wastes (for example blending compatible combustible or flammable wastes as a fuel), this activity is mixing or blending (coded D13 or R12). Any other mixing that changes a waste is treatment.
83. You must have a permit that specifically allows you to mix hazardous waste with any:

- non-hazardous waste
- hazardous waste in a different category
- non-waste

84. You must not mix, bulk or repackage:

- wastes which could be recovered with other wastes if this means that the waste must now be sent for disposal or a lower form of recovery
- liquid wastes or infectious wastes with other wastes for the purpose of landfilling
- oils where this could affect their regeneration or recycling
- wastes containing Persistent Organic Pollutants (POPs) with another material solely to generate a mixture below the defined low POPs content
- waste to deliberately dilute it

85. You must transfer wastes from containers into other storage vessels using a dip pipe, not by pouring.
86. Repackaging or mixing must only take place in a dedicated area or store which has the plant and equipment needed to deal with the specific risks of that process. For example, this could include abatement or local exhaust ventilation.
87. Except for small packages with a volume less than 5 litres, or damaged containers, you must move containers using mechanical means. For example, use a forklift truck with a rotating drum handling fitting, or using pumps for liquids.
88. You must label containers of repackaged or mixed wastes so that you can identify their contents and origin through the tracking system. After repackaging, you must move the bulked materials and emptied containers to an appropriate segregated storage area.
89. You must have a risk assessment and carry out appropriate compatibility testing to make sure that bulked wastes will not react with each other, or with the container into which they are being placed.

Laboratory smalls

90. Where possible, you should sort and segregate laboratory smalls at source so that you do not need to reopen or re-sort containers.
91. If you sort laboratory smalls for compatibility reasons you must carry this out in a dedicated area of a building, with self-contained drainage.
92. You must write and follow procedures for the segregation, sorting and repackaging of laboratory smalls.

5. Waste treatment appropriate measures

These are the appropriate measures for waste treatment at regulated facilities with an environmental permit for treating chemical waste.

5.1. General waste treatment

1. Waste treatment must have a clear and defined benefit. You must fully understand, monitor and optimise the waste treatment process to make sure that you treat waste effectively and efficiently. You must not treat waste to deliberately dilute it. The treated output material must meet your expectations and be suitable for its intended disposal or recovery route. You must identify and characterise emissions from the process, and take appropriate measures to control them at source.
2. You must have up-to-date written details of your treatment activities, and the abatement and control equipment you are using. This should include information about the characteristics of the waste you will treat and the waste treatment processes, including:

- simplified process flowsheets that show the origin of any emissions
- details of emission control and abatement techniques for emissions to air and water, including details of their performance
- diagrams of the main plant items where they have environmental relevance, for example, storage, tanks, treatment and abatement plant design
- details of chemical reactions and their reaction kinetics and energy balance
- details of physical treatment processes for example thermal desorption, distillation, phase separation, shredding, filtration, compaction, centrifuging, heating, cooling or washing
- details of biological treatment processes
- details of any effluent treatment
- a description of any flocculants or coagulants used
- an equipment inventory, detailing plant type and design parameters, for example, time, temperature, pressure
- waste types to be subjected to the process
- the control system philosophy and how the control system incorporates environmental monitoring information
- process flow diagrams (schematics)
- venting and emergency relief provisions
- a summary of operating and maintenance procedures
- process instrumentation diagrams
- monitoring points and monitoring schedules

3. You must have up-to-date written details of the measures you will take during abnormal operating conditions to make sure you continue to comply with your permit. Abnormal operating conditions include:

- unexpected releases
- start-up

- momentary stoppages
- shut-down

4. You should use material flow analysis for relevant contaminants in the waste to help identify their flow and fate. You should use the analysis to determine the appropriate treatment for the waste either directly at the site or at any subsequent treatment site.

   Material flow analysis considers the contaminant quantity in the:

- waste input
- different waste treatment outputs
- waste treatment emissions

   You should use the analysis and your knowledge of the fate of the contaminants to make sure you correctly treat and either destroy or remove them.

   The use of material flow analysis is risk-based, considering:

- the hazardous properties of the waste
- the risks posed by the waste in terms of process safety
- occupational safety and environmental impact
- knowledge of the previous waste holder(s)

   A treatment process may destroy certain substances in the waste. It could also put substances into the air, water or ground, or have residues which are sent for disposal. The weight of these outputs should be minimised. The treatment may produce residues for recovery or reuse and the weight of these substances should be maximised.

5. You must not proceed with the treatment if your risk assessment or material flow analysis indicates that losses from a process will cause:

- the breach of an environmental quality standard
- the breach of a benchmark
- a significant environmental impact

6. You must clearly define the objectives and reaction (chemical, physical or biological) processes for each treatment process. You must define the end point to the process so that you can monitor and control the reaction. You must define the suitable inputs to the process, and the design must take into account the likely variables expected within the waste stream. You must sample and analyse the waste to check that an adequate end point has been reached.

7. For each new reaction, you must assess the proposed mixes of wastes and reagents before treatment by carrying out a scale laboratory test mix of the wastes and reagents to be used. You must predetermine a batch ‘recipe’ for all reactions and mixes of wastes. You must also take into account the potential scale up effects, for example, the increased:

- heat of reaction with increased reaction mass relative to the reactor volume
- residence time within the reactor and modified reaction properties

   Your treatment must comply with HSG143 Designing and operating safe chemical reaction processes.

8. The reactor vessel and plant must be specifically designed, commissioned and operated to be fit for purpose. The designs need to consider chemical process hazards and a hazard assessment of the chemical reactions. They also need to consider prevention and protective measures and process management, such as:

- working instructions
- staff training
- appropriate process control measures
- monitoring systems, alarms and interlocks
- plant maintenance
- checks
- audits
- emergency procedures

9. To track and control the process of change, you must have a written procedure for proposing, considering and approving changes to technical developments, or procedural or quality changes.
10. Where an emission is expected, all treatment or reactor vessels must be enclosed. Only vent them to the atmosphere via an appropriate scrubbing and abatement system (subject to explosion relief).
11. You must monitor the reaction to make sure it is under control and proceeding towards the anticipated result. Vessels used for treatment must be equipped appropriately, for example with high level, pH and temperature monitors. These monitors must be automatic and continuous, linked to a clear display in the control room or laboratory, and have an audible alarm. Your risk assessment may require you to link process monitors to cut-off devices.

5.2. Aerosol canister treatment

1. Any aerosol treatment process must be fit for purpose. It must be specifically designed to:

- treat canisters and recover their materials and residues
- manage potentially flammable substances
- prevent explosive atmospheres

2. You must design and operate the treatment process (for example, the waste feed rate, duration of treatment cycle and gas or liquid extraction) so that the canisters' residual contents are fully discharged and removed safely and efficiently.
3. You must locate the treatment plant in a designated covered area or ventilated building. This must:

- have impermeable surfaces and sealed drainage
- be located away from stored combustible materials, other sources of ignition and sensitive receptors

  You must design the treatment area to avoid the potential build-up of flammable gases that are heavier than air, for example in sumps or similar sunken areas.

4. The treatment process must be:

- designed by a competent person
- carried out in an enclosed and sealed system, fitted with an appropriate gas extraction system
- provided with a means to contain or control an explosion
- strong enough to contain an explosion (typically up to 10 bar over-pressure), or have explosion relief directed to a safe space or explosion suppression fitted.

  Design, operation and explosion relief provisions must satisfy the requirements of relevant health and safety legislation. The gas extraction system must be interlocked with plant operation, so that the plant cannot operate unless the system is working.

5. You must carry out the aerosol treatment process, including tipping and loading, within a controlled inert atmosphere. For example, you could use gas extraction and nitrogen gas injection to displace air from the plant and purge it before and after a treatment cycle. If the inerting system fails or high oxygen levels are detected, the treatment should stop automatically. Similarly, if you use ventilation to prevent an explosive atmosphere forming, the equipment should automatically stop operating when the lower explosion limit is approached.
6. You must make sure you have checked and sorted all canisters before feeding them into the treatment process. This makes sure you exclude incompatible or untreatable wastes (for example, expanding foams).
7. You should process batches of aluminium and steel cans separately to make it easier to recycle the metals recovered from the treatment process and prevent thermite reactions.
8. You must keep waste sorting and storage distinct and separate from the treatment process.
9. For safety, and to prevent wastes accumulating on site, you must make sure you identify available and reliable recovery or disposal routes. You should have contracts in place to take:

- the residues or materials recovered from the treatment process
- any canisters you have accepted but cannot treat on site

10. You must make sure that as a minimum all LPG piping systems comply with UKLPG Code of Practice 22. They must be securely sealed and tested and have a procedure in place for regular inspection.
11. Containers and tanks holding liquids collected from the treatment process should be:

- compatible with the materials held
- fully earthed
- UN tested
- integrally sound

- designed and constructed to prevent the release of fugitive emissions to air (including odour) and ground, whilst allowing for emergency venting where necessary

12. You should store containers that cannot be enclosed (for example skips containing recovered metal which are open to allow ventilation and drying) in well-ventilated, covered storage areas. This will prevent:

- rainwater collecting (and becoming contaminated)
- the materials held corroding or deteriorating

13. You should not collect or hold flammable liquids in plastic drums or non-conductive plastic IBCs. Containers used to collect and hold flammable liquids from the treatment process should preferably be constructed from steel, or at least anti-static plastic. They should be designed so that they can be sealed for handling and storing. You must only use anti-static plastic containers to collect and hold flammable liquids if you are holding them separate from other wastes, within a self-contained bund.
14. You must collect, and allow to dry, any residues that remain on the recovered metals before they are stored or sent for recycling.

5.3. Record keeping for all treatment residues

1. You must record in the computerised waste tracking system:

- that a waste has been treated
- what the treatment residues are and their weight
- what end-of-waste products have been made and their weight

6. Emissions control appropriate measures

These are the appropriate measures for emissions control at regulated facilities with an environmental permit for treating or transferring chemical waste.

You must identify, characterise and control emissions from your activities that may cause pollution.

6.1. Point source emissions to air

1. You must contain storage tanks, silos and waste treatment plant (including shredders) to make sure you collect, extract and direct all process emissions to an appropriate abatement system for treatment before release.
2. You must identify the main chemical constituents of the site's point source emissions as part of the site's inventory of emissions to air.
3. You must make an assessment of the fate and impact of the substances emitted to air, following the Environment Agency's air emissions risk assessment methodology.
4. To reduce point source emissions to air (for example, dust, volatile organic compounds and odour) from the treatment of waste, you must use an appropriate combination of abatement techniques, including one or more of the following systems:

- adsorption (for example, activated carbon)
- biofiltration
- wet scrubbing
- fabric filters
- high efficiency particulate (HEPA) filtration
- condensation and cryogenic condensation
- cyclonic separation
- electrostatic precipitation
- thermal oxidation

5. You must assess and design vent and stack locations and heights to make sure dispersion capability is adequate. Where monitoring is required, including for odour, you must install suitable monitoring points.
6. Your procedures must make sure you correctly install, operate, monitor and maintain abatement equipment. For example, this includes monitoring and maintaining:

- appropriate flow and chemical concentration of scrubber liquor
- the handling and disposal or regeneration of spent scrubber or filter medium

7. You should design and operate abatement systems to minimise water vapour plumes.

6.2. Fugitive emissions to air (including odour)

1. You must use appropriate measures to prevent emissions of dust, mud and litter and odour.

2. You must design, operate and maintain storage and treatment plant in a way that prevents fugitive emissions to air, including dust, organic compounds and odour. Where that is not possible, you must minimise these emissions. Storage and treatment plant includes associated equipment and infrastructure such as:

- shredders
- conveyors
- skips or containers
- building fabric, including doors and windows
- pipework and ducting

3. To make sure fugitive emissions are collected and directed to appropriate abatement, your treatment plant must use high integrity components (for example, seals or gaskets). Your treatment plant must be fully enclosed, with air extraction systems located close to emission sources where possible.
4. You must use your waste pre-acceptance, waste acceptance and site inspection checks and procedures to identify and manage wastes that could cause, or are causing, fugitive emissions to air. When you identify any of these wastes you must:

- take appropriate, risk assessed measures to prevent and control emissions
- prioritise their treatment or transfer

5. Where necessary, to prevent fugitive emissions to air from the storage and handling of wastes, you should use a combination of the following measures:

- store and handle such wastes within a building or enclosed equipment
- keep buildings and equipment under adequate negative pressure with an appropriate abated air circulation or extraction system
- where possible, locate air extraction points close to potential emissions sources
- use fully enclosed material transfer and storage systems and equipment, for example, conveyors, hoppers, containers, tanks and skips
- use fast-acting or ‘airlock’ doors that default closed
- keep building doors and windows shut to provide containment, other than when access is required
- minimising drop height
- use misting systems and wind barriers to prevent dust

6. You must set up a leak detection and repair programme and use it to promptly identify and mitigate any fugitive emissions from treatment plant and associated infrastructure (for example, pipework, conveyors, tanks).
7. You must regularly inspect and clean all waste storage and treatment areas, equipment (including conveyor belts) and containers. You must have an appropriate regular maintenance programme covering all buildings, plant and equipment. This must also include protective equipment such as air ventilation and extraction systems, curtains and fast-action doors used to prevent and contain fugitive releases.

8. Your inspection, maintenance and cleaning schedules must make sure that tanks and plant are regularly cleaned to avoid large-scale decontamination activities.
9. You must take measures to prevent the corrosion of plant and equipment (for example, conveyors or pipes). This includes selecting and using appropriate construction materials, lining or coating equipment with corrosion inhibitors and regularly inspecting and maintaining plant.
10. If you wash containers or tanks, you must design and operate the washing process and associated equipment in a way that prevents fugitive emissions to air. For example, you could do this activity in a contained or enclosed system.
11. You must fully enclose and contain pre- and post-treatment shredder plant to prevent emissions. You must design and operate the shredder plant using appropriate process interlocks. The plant should not operate unless it is enclosed and contained, for example, only working when the loading door on the hopper has been closed or sealed. Dust and microbial emissions from the shredder plant must be contained and extracted to an appropriate abatement system, for example HEPA air filtration.
12. Where a dust management plan is required, you must develop and implement it following our guidance.
13. You must have procedures to minimise the amount of time odorous wastes spend in your storage and handling systems (for example, pipes, conveyors, hoppers, tanks). In particular, you must have provisions to manage waste during periods of peak volume.
14. You must have measures to contain, collect and treat odorous emissions, including using contained buildings and plant or equipment with appropriate air extraction and abatement. We do not consider masking agents to be appropriate measures for the treatment of odorous emissions.
15. You must monitor and maintain odour abatement systems to ensure optimum performance. For example, you should make sure that scrubber liquors are maintained at the correct pH and replenished or replaced at an appropriate frequency.
16. You must store contaminated waters that have potential for odours in covered or enclosed tanks or containers vented through suitable abatement.
17. Where odour pollution at sensitive receptors is expected, or has been substantiated, you must periodically monitor odour emissions using European (EN) standards, for example either:

- dynamic olfactometry according to EN 13725 to determine the odour concentration
- EN 16841-1 or -2 to determine the odour exposure

If you are using alternative methods for which no EN standards are available (for example, estimating odour impact), you should use ISO, national or other international standards to make sure you use data of an equivalent scientific quality. You must set out the monitoring frequency in the odour management plan.

18. Where odour pollution at sensitive receptors is expected, or has been substantiated, you must also set up, implement and regularly review an odour management plan. It must be part of your management system and include all of the following elements:

- actions and timelines to address any issues identified
- a procedure for odour monitoring
- a procedure for responding to odour incidents, for example, complaints
- an odour prevention and reduction programme designed to identify the source(s), characterise the contributions of the sources and prevent and reduce them

19. Where an odour management plan is required, you must develop and implement it following our guidance.

6.3. Emissions of noise and vibration

1. You should design the facility so that potential sources of noise (including building exits and entrances) are away from sensitive receptors and boundaries. You should locate buildings, walls, and embankments so they act as noise screens.
2. You must employ appropriate measures to control noise, for example, including:

- adequately maintaining plant or equipment parts which may become more noisy as they deteriorate – for example, bearings, air handling plant, building fabric, and specific noise attenuation kit associated with plant or machinery
- closing doors and windows of enclosed areas and buildings
- avoiding noisy activities at night or early in the morning
- minimising drop heights and the movement of waste and containers
- using broadband (white noise) reversing alarms and enforcing the on-site speed limit
- using low-noise equipment, for example, drive motors, fans, compressors and pumps
- adequately training and supervising staff
- where possible, providing additional noise and vibration control equipment for specific sources of noise – for example, noise reducers or attenuators, insulation, or sound-proof enclosures

3. Where noise or vibration pollution at sensitive receptors is expected, or has been substantiated, you must create, use and regularly review a noise and vibration management plan. This must be part of the environmental management system, and must include:

- actions and timelines to address any issues identified
- a procedure for noise and vibration monitoring
- a procedure for responding to identified noise and vibration events, for example, complaints

4. Your noise and vibration management plan should also include a noise and vibration reduction programme designed to:

- identify the sources of noise and vibration
- measure or estimate noise and vibration exposure
- characterise the contributions of the sources
- implement prevention and reduction measures

5. Where a noise and vibration management plan is required, you must develop and implement it following our guidance.

6.4. Point source emissions to water and sewer

1. You must identify the main chemical constituents of the site's point source emissions to water and sewer as part of the site's inventory of emissions.
2. You must assess the fate and impact of the substances emitted to water and sewer following the Environment Agency's risk assessment guidance.
3. Discharges to water or sewer must comply with the conditions of an environmental permit or trade effluent consent. Relevant sources of waste water include:

- water or condensate collected from treatment processes
- waste compactor run-off
- vehicle washing
- vehicle oil and fuel leaks
- washing of containers
- spills and leaks in waste storage areas
- loading and unloading areas

4. To reduce emissions to water and sewer, if you need to treat waste water before discharge or disposal, you must use an appropriate combination of treatment techniques, including one or more of the following:

- preliminary or primary treatment – for example, equalisation, neutralisation or physical separation
- physico-chemical treatment – for example, adsorption, distillation or rectification, precipitation, chemical oxidation or reduction, evaporation, ion exchange, or stripping
- biological treatment – for example, activated sludge process or membrane bioreactor
- nitrogen removal – for example, nitrification and denitrification
- solids removal – for example, coagulation and flocculation, sedimentation, filtration or flotation

5. You must direct wash waters from cleaning containers to a foul sewer or sealed drainage system for on-site re-use or off-site disposal. You may need to pre-treat the waters to meet any limits on the effluent discharge consent. Discharges of wash waters to surface water or storm drains are not acceptable.

6.5. Fugitive emissions to land and water

1. You must use appropriate measures to control potential fugitive emissions and make sure that they do not cause pollution. See the guidance on emissions to water and leaks from containers.
2. You must have these in all operational areas of the facility:

- an impermeable surface
- spill containment kerbs
- sealed construction joints
- a sealed drainage system

3. You must have measures in place to prevent overflows and failures from tanks and vessels, including where relevant:

- overflow detectors and alarms
- directing over-flow pipes to a contained drainage system
- locating tanks and packaged liquids in suitable secondary containment (bunds)
- providing isolation mechanisms (for example, closing valves) for tanks, vessels and secondary containment

4. You must collect and treat separately each water stream generated at the facility, for example, surface run-off water or process water. Separation must be based on pollutant content and treatment required. In particular you must make sure you segregate uncontaminated water streams from those that require treatment.
5. You must use suitable drainage infrastructure to collect surface drainage from areas of the facility where you store, handle and treat waste. You must also collect wash waters and occasional spillages. Depending on the pollutant content, you must either recirculate what you have collected or send it for further treatment.
6. You must have design and maintenance provisions in place to detect and repair leaks. These must include regularly monitoring, inspecting and repairing equipment and minimising underground equipment and infrastructure.
7. You should provide appropriate buffer storage capacity at your facility to store waste waters, taking into account:

- potential abnormal operating scenarios and incidents
- the nature of any polluting substances and their impact on the downstream waste water treatment plant and receiving environment

8. You must have appropriate measures in place to monitor, treat and reuse water held in the buffer storage before discharging.
9. You must take measures to prevent emissions from washing and cleaning activities, including:

- directing liquid effluent and wash-waters to foul sewer or collecting them in a sealed system for off-site disposal – you must not discharge them to surface or storm drains

- where possible, using biodegradable and non-corrosive washing and cleaning products
- storing all detergents, emulsifiers and other cleaning agents in suitable bunded or containment facilities, within a locked storage area, or in a building away from any surface water drains
- preparing cleaning solutions in contained areas of the site and never in areas that drain to the surface water system

10. Where relevant, you must have measures to prevent pollution from the on-site storage, handling and use of oils and fuels.
11. You must produce and implement a spillage response plan and train staff to follow and test it.
12. Your procedures and associated training must make sure you deal with spillages immediately.
13. You must keep spill kits at locations close to areas where a spillage could occur and make sure relevant staff know how to use them. Make sure kits are replenished after use.
14. You must stop spillages from entering drains, channels, gullies, watercourses and unmade ground. You must make proprietary sorbent materials, sand or drain mats available.
15. You must make sure your spillage response plan includes information about how to recover, handle and correctly dispose of waste produced from a spillage.
16. Container washing equipment must be contained and located in a designated area of the facility that has self-contained drainage. The equipment must be designed to collect and contain all wash waters, including any spray. Trained staff must operate, inspect and maintain it regularly.
17. For sub-surface structures, you must:

- establish and record the routing of all site drains and sub-surface pipework
- identify all sub-surface sumps and storage vessels
- engineer systems to minimise leakages from pipes and make sure they are detected quickly if they do occur, particularly where hazardous substances are involved
- provide secondary containment or leakage detection for sub-surface pipework, sumps and storage vessels
- establish an inspection and maintenance programme for all sub-surface structures, for example, pressure tests, leak tests, material thickness checks or CCTV

18. For surfacing, you must design appropriate surfacing and containment or drainage facilities for all operational areas, taking into account:

- collection capacities
- surface thicknesses
- strength and reinforcement
- falls
- materials of construction

- permeability
- resistance to chemical attack
- inspection and maintenance procedures

19. You must have an inspection and maintenance programme for impermeable surfaces and containment facilities.

7. Emissions monitoring and limits appropriate measures

These are the emissions limits and appropriate measures for monitoring emissions to air and water at regulated facilities with an environmental permit for treating or transferring chemical waste.

We may set emission limits and monitoring requirements in your permit, based on your emissions inventory and environmental risk assessment.

1. Where you are required to monitor emissions to comply with the requirements of your environmental permit, you must follow our monitoring guidance.
2. You must create and maintain an emissions inventory of point source emissions to air and water (including emissions to sewer) for your facility.

7.1. Emissions to air

1. Your facility's emissions inventory must include information about the relevant characteristics of point source emissions to air, such as the:

- average values and variability of flow and temperature
- average concentration and load values of relevant substances and their variability
- flammability, lower and higher explosive limits and reactivity
- presence of other substances that may affect the waste gas treatment system or plant safety – for example, oxygen, nitrogen, water vapour, dust

7.2. Emissions to water or sewer

1. Your facility's emissions inventory must include information about the relevant characteristics of point source emissions to water or sewer, such as:

- average values and variability of flow, pH, temperature, and conductivity
- average concentration and load values of relevant substances and their variability – for example, COD (chemical oxygen demand) and TOC (total organic carbon), nitrogen species, phosphorus, metals, priority substances or micropollutants
- data on bio-eliminability – for example, BOD (biochemical oxygen demand), BOD to COD ratio, Zahn-Wellens test, biological inhibition potential, for example, inhibition of activated sludge

2. For relevant emissions to water or sewer identified by the emissions inventory, you must monitor key process parameters (for example, waste water flow, pH, temperature, conductivity, or BOD) at key locations. For example, these could either be at the:

- inlet or outlet (or both) of the pre-treatment
- inlet to the final treatment
- point where the emission leaves the facility boundary

8. Process efficiency appropriate measures

These are the appropriate measures for process efficiency at regulated facilities with an environmental permit for treating or transferring chemical waste.

1. For your facility, you must monitor and review the annual quantity of:

- water, energy and raw materials used
- residues and waste water produced

You must do this at least once a year.

8.1. Energy efficiency (installations only)

1. You must create and implement an energy efficiency plan at your facility. This must:

- define and calculate the specific energy consumption of the activity (or activities) you do and waste stream(s) you treat
- set annual key performance indicators – for example, specific energy consumption (expressed in kWh/tonne of waste processed)
- plan periodic improvement targets and related actions

2. You must regularly review and update your energy efficiency plan as part of your facility's management system.
3. You must have and maintain an energy balance record for your facility. This must provide a breakdown of your energy consumption and generation (including any energy or heat exported) by the type of source (electricity, gas, conventional liquid fuels, conventional solid fuels and waste). You should provide Sankey diagrams or energy balances to show how energy is used in your waste treatment processes.
4. You must regularly review and update your energy balance record as part of your facility's management system, alongside the energy efficiency plan.
5. You must have operating, maintenance and housekeeping measures in place in relevant areas, for example for:

- air conditioning, process refrigeration and cooling systems (leaks, seals, temperature control, evaporator or condenser maintenance)
- the operation of motors and drives
- compressed gas systems (leaks, procedures for use)
- steam distribution systems (leaks, traps, insulation)
- space heating and hot water systems
- lubrication to avoid high friction losses
- boiler operation and maintenance, for example, optimising excess air
- other maintenance relevant to the activities within the facility

6. You must have measures in place to avoid gross energy inefficiencies. These should include, for example:

- insulation
- containment methods (such as seals and self-closing doors)

- avoiding unnecessary discharge of heated water or air (for example, by fitting timers and sensors)

7. You should implement additional energy efficiency measures at the facility as appropriate, following our guidance.

8.2. Raw materials (installations only)

1. You must maintain a list of the raw materials used at your facility and their properties. This includes auxiliary materials and other substances that could have an environmental impact.
2. You must regularly review the availability of alternative raw materials and use any suitable ones that are less hazardous or polluting. This should include, where possible, substituting raw materials with waste or waste-derived products.
3. You must justify the continued use of any substance for which there is a less hazardous alternative.
4. You must have quality assurance procedures in place to control the content of raw materials.

8.3. Water use (installations only)

1. You must make sure you optimise water consumption to:

- reduce the volume of waste water you generate
- prevent or, where that is not practicable, reduce emissions to soil and water

2. Measures you must take include:

- implementing a water saving plan (involving establishing water efficiency objectives, flow diagrams and water mass balances)
- optimising the use of wash waters (for example, dry cleaning instead of hosing down and using trigger controls on all washing equipment)
- recirculating and reusing water streams within the plant or facility, if necessary after treatment
- reducing the use of water for vacuum generation (for example, using liquid ring pumps with high boiling point liquids), where relevant

3. You must review water use (a water efficiency audit) at least every 4 years.
4. You must also:

- produce flow diagrams and water mass balances for your activities
- establish water efficiency objectives and identify constraints on reducing water use beyond a certain level (usually this will be site specific)
- identify the opportunities for maximising reuse and minimising use of water
- have a timetabled improvement plan for implementing additional water reduction measures

5. To reduce water use and associated emissions to water, you should apply these general principles in sequence:

- use water efficient techniques at source where possible

- reuse water within the process, by treating it first if necessary – if not practicable, use it in another part of the process or facility that has a lower water quality requirement
- if you cannot use uncontaminated roof and surface water in the process, you should keep it separate from other discharge streams – at least until after you have treated the contaminated streams in an effluent treatment system and have carried out final monitoring

6. You should establish the water quality requirements associated with each activity and identify whether you can substitute water from recycled sources. Where you can, include it in your improvement plan.
7. Where there is scope for reuse (possibly after some form of treatment) you should keep less contaminated water streams, such as cooling waters, separate from more contaminated streams.
8. You must minimise the volume of water you use for cleaning and washing down by:

- vacuuming, scraping or mopping in preference to hosing down
- reusing wash-water (or recycled water) where practicable
- using trigger controls on all hoses, hand lances and washing equipment

9. You must directly measure fresh water consumption and record it regularly at every significant usage point, ideally on a daily basis.

8.4. Waste minimisation, recovery and disposal

1. You must have and implement a residues management plan that:

- minimises the generation of residues from waste treatment
- optimises the reuse, regeneration, recycling or energy recovery of residues, including packaging
- makes sure you properly dispose of residues where recovery is technically or economically impractical

2. Where you must dispose of waste, you must do a detailed assessment to identify the best environmental options for waste disposal.
3. You must regularly review options for recovering and disposing of waste produced at the facility. You must do this as part of your management system to make sure you are using the best environmental options and promoting the recovery of waste where technically and economically viable.

APPENDIX 2 - SITE SPECIFIC IMS

IMS Manual

Rev.	Amendment Detail	Author	Reviewer	Approver	Effective Date
01]	Initial Release	M. Potter			[Effective Date]

CONTENTS

Section 1 - Introduction

Qualichem (Birkenhead) is bulk material storage and distribution facility. The facility transports bulk materials inbound and outbound via ships and bulk tankers.

The facility services multiple customers providing storage and distribution of customer owned products.

The company endeavours to be the industry's first choice and excel in customer satisfaction, by being responsive, solution orientated and adaptable.

Section 2 – Scope of the integrated management system

Thie IMS covers the activities associated with, Bulk storage and transportation of various oils and chemicals, repacking, quality control, decanting and includes the administration and purchasing functions associated with such activities.

This document defines the procedures and controls that have been implemented to ensure that all products provided by Qualichem are completed under controlled conditions ensuring conformance to customer requirements, continual product improvement, environmental and health and safety improvement, minimal impact on the environment and in accordance with current legislative requirements.

Every supervisor and manager have a responsibility for ensuring that the policies are understood and implemented in all areas and that the procedures are always followed.

The scope of this management system will encompass the following sites.

Qualichem – Birkenhead (Dock road)

The full organisation structure (organogram) is detailed within appendix 4.

Section 3 - Definitions

The following definitions are appropriate to this manual.

Accident – an unplanned event giving rise to death, ill-health, injury, damage, or other loss.

Auditor – person with the competence to conduct an internal or external audit.

Continual improvement – a recurring process of enhancing the business management system to achieve improvements in the overall quality, environmental and health and safety performance consistent with the organisation's desire and policies.

Corrective Action – action to eliminate the cause of a detected non-conformity.

Document – information and its supporting medium

Environment – surroundings in which an organisation operates, including air, water, land, natural resources, flora, fauna, humans, and their interrelation (NOTE – *surroundings in this context extend from within an organisation to the global system*)

Environmental aspect – element of an organisation's activities, products or services that can interact with the environment.

Environmental impact – any change to the environment, whether adverse or beneficial, wholly, or partially resulting from an organisation's environmental aspects.

Environmental target – detailed performance requirement, quantified where practicable, applicable to the organisation or parts thereof, that arises from the environmental objectives and that needs to be set and met to achieve those objectives.

Environmental performance – measurable results of an organisation's management of its environmental aspects *(in the context of environmental management systems, results can be measured against the organisation's environmental policy, environmental objectives, environmental targets, and other environmental performance requirements)*.

Hazard – source or situation with a potential for harm in terms of injury or ill-health, damage to property, damage to the workplace environment, or a combination of these.

Incident – event that gave rise to an accident or had the potential to lead to an accident. (Note – an incident where no ill-health, injury, damage, or other loss occurs is also referred to as a 'near-miss'. The term 'incident' includes 'near-misses'.

Internal audit – systematic, independent, and documented process for obtaining audit evidence and evaluating it objectively to determine the extent to which the management system audit criteria set by the organisation are fulfilled.

Management system – processes and procedures used to develop and implement an organisation's policies and manage its business and health and safety risks and its environmental aspects.

Non-conformance – any deviation from work standards, practices, procedures, regulations, management system performance, etc that could either directly or indirectly lead to a defect, injury or illness, property damage, damage to the environment or workplace environment, or a combination of these. Non-fulfilment of a requirement.

Objective - overall quality/environmental/health and safety goal, consistent with the policies that an organisation sets itself to achieve (And which is quantified where practical)

Organisation – company, corporation, firm, enterprise, authority or institution, or part or combination thereof, whether incorporated or not, public, or private, that has its own functions and administration. NOTE – for organisations with more than one operating unit, a single operating unit may be defined as an organisation.

Occupational health & Safety Opportunity – Circumstance/set of circumstances that can lead to an improvement of OH&S performance.

Performance – measurable results of an organisation's management of its business risks and environmental aspects.

Policy – overall intentions and direction of an organisation, related to its quality, environmental or health and safety performance, as formally expressed by top management.

Preventive action - action to eliminate the cause of a potential non-conformity.

Prevention of pollution – use of processes, practices, techniques, material, products, services, or energy to avoid, reduce or control (separately or in combination) the creation, emission, or discharge of any type of pollutant or waste, in order to reduce adverse environmental impacts.

Procedure - a document which details the purpose and scope of an activity and specifies how it is to be properly carried out (defined way to carry out an activity or process)

Record – document stating results achieved or providing evidence of activities performed.

Risk – combination of the likelihood and consequence(s) of a specified hazardous event occurring.

Risk assessment – overall process of estimating the magnitude of risk and deciding whether the risk is tolerable.

Safety – freedom from unacceptable risk of harm.

Standard - the International Standards ISO 9001:2015 and ISO 14001:2015 and occupational health and safety standard ISO 45001:2018

Target – detailed performance requirement applicable to the organisation or parts thereof, that arises from the business objectives and that needs to be set and met to achieve those objectives.

Stakeholder Requirements

To achieve its vision, mission and quality, health & safety and environmental policy aspirations the directors recognise that Qualichem's stakeholders must be identified and their needs and expectations and associated risks and opportunities understood and managed to ensure requirements are consistently met. These have been summarised below and are reviewed during management reviews (or sooner if circumstances demand) to check that Qualichem continues to meet its requirements and remain a successful business.

Stakeholder Requirements:
For Associated Interested Parties:

See Register QCB-F-Q--002 – Interested Parties Matrix / risk register.

4 Context of the Organisation (ISO 9001- 4.1, ISO 14001 - 4.1, ISO 45001 – 4.1)

In line with the requirements of the standard detailed above, the company has identified (see risk register reference detailed above) the following.

- The environment in which Qualichem operates.
- The risks/threats (both internal/external) relating to the company.
- The opportunities for improvement to the management system and company as a whole

4.1 General Requirements (ISO 9001- 4.1, ISO 14001 - 4.1, ISO 45001 – 4.1)

Processes

The general requirements of the business management system are in line with the Standards ISO 9001:2015, ISO 14001:2015 and ISO 45001:2018 and are detailed within this manual and associated procedures and forms. Internal audits and reviews will be carried out against the clauses of the Standards to ensure that this documented system meets the applicable requirements.

The management processes and their interaction are identified on diagram shown on page 20 of this manual. These processes are applicable to the operations at the office's and to all site activities.

Outsourced processes

Outsourced processes are required by the company as part of its operational activities. These are expected to be but not limited to; Training, NDT inspections, emissions monitoring, occupational health & hygiene monitoring, hire of supplementary equipment.

4.2 Documentation

4.2.1 General (ISO 9001- 4.2.1, ISO 14001 - 4.4.4, ISO 45001 – 7.5.1)

The IMS contains or references the following documentation:

a) Integrated Management System Manual
b) Policies
c) Objectives, Targets and Management Programmes
d) Registers
e) IMS Procedures - see appendix 2
f) Documents as identified in procedure QCB-MP-Q-001
g) Standard operating procedures (SOPs)

4.2.2 IMS Manual

The company has compiled and will maintain/control an IMS manual which includes the information required under the Standards. Whilst this is not a requirement of the standards Qualichem has deemed it necessary for the effective operation of the system. In particular, the scope of the IMS, reference to relevant system procedures and a description of the interaction of the processes of the business system will be included.

4.2.3 Control of documented information (ISO 9001- 7.5.3, ISO 14001 – 7.5.3, ISO 45001 – 7.5.3)

IMS documents shall be controlled in the manner detailed in procedure (QCB-MP-Q-001)

Section 5 – Leadership & Worker Participation

5.1 Leadership & Commitment (ISO 9001- 5.1, ISO 14001 – 5.1, ISO 45001 5.1)

The Managing Director shall ensure that all employees are aware of the importance of meeting customer requirements, preventing pollution and complying with statutory and regulatory requirements by communicating the appropriate information via memos and meetings.

In addition, the Managing Director shall ensure that policies and procedures are in place and revised as necessary, objectives are established, management reviews are conducted, and adequate resources are available to deliver a quality service, minimise the company's impact on the environment and prevent accidents.

5.2 Customer focus and legal and other requirements (ISO 9001- 5.1.2, ISO 14001 – 6.1.3, ISO 45001 – 6.1.3)

5.2.1 The Directors and Managers shall liaise with customers as appropriate via meetings and written communications and shall undertake appropriate market observations to ensure that customer requirements are determined/understood and that the company remains conversant with current needs and expectations. Processes shall be put in place to facilitate the determination of contract requirements during estimating and ongoing contract control - see QCB-MP-Q-006

5.2.2 The aspects of the company's operations which impact significantly on the environment shall be identified and compiled into a register. Procedure QCB-MP-E-002 details the mechanism for compiling the aspects and impacts register. Similarly, a register of applicable environmental legislation (and other applicable requirements) shall be compiled and maintained. Procedure. QES-MP-Q-007 details the mechanism for compiling

the legislation register. Changes in legislation and other applicable requirements shall be examined at management review and any necessary actions taken.

5.2.3 Health and safety planning for risk management shall be carried out to ensure that the customer requirements are not jeopardised by unsafe acts or conditions and accidents or incidents – see section 8.5.3.

5.3 Policies (ISO 9001- 5.2, ISO 14001 - 5.2, ISO 45001 – 5.2)

The company has put in place policies which address the requirements of the International Standards and the Health and Safety at Work etc. Act 1974. The policies demonstrate the company's commitment to complying with legislation and continually improving the effectiveness of the business management system. Policies are signed by the Managing Director to demonstrate top management commitment and reviewed at Management Review and revised as necessary.

The policies are displayed in prominent positions at the company's offices and within the company documentation made available to employees and clients. Copies of the policy statements are also available on the website.

The Quality and Environmental and Health and Safety Policy Statements is given in **appendix 5.**

5.4 Planning - (ISO 9001- 5.4, ISO 14001 - 4.3, ISO45001 – 8.1)

5.4.1 Quality, health and safety and environmental objectives (ISO 9001- 6.1, ISO 14001 – 6.1, ISO 45001 6.1)

The management team will determine the risks and opportunities for the management system. Quality, health and safety and environmental objectives shall be established by the management team, in line with the requirements of the International Standards, the business goals, current market conditions, and the risk and opportunities identified on such assessment.
These objectives and associated management programmes shall be presented on appropriate documentation. The process for establishing quality, health and safety and environmental objectives is shown on form QCB-F-Q-004.

When setting environmental objectives, the results of reviews of the environmental aspects and impacts of the company's operations shall be examined and legislative requirements shall also be taken into consideration. When setting health and safety objectives consideration shall be given to the requirements of the policy, legislative duties, hazards and risks within the business, and views expressed by interested parties and / or other Stakeholders.

5.4.2 Business management system planning (ISO 9001 – 6.25, ISO 14001 – 6.2, ISO 45001 – 6.2)

The management team shall plan the business management system to take account of the appropriate inputs and outputs necessary to meet the company's objectives and legislative duties imposed. In carrying out such planning, consideration shall be given to the processes required within the management system, the customer's needs and expectations, experience gained, statutory and regulatory requirements, risk assessment findings, environmental aspects and impacts identified, training requirements, documentation requirements, performance data evaluated, responsibilities and resources.

5.5 Responsibility, authority, and communication

5.5.1 Responsibility, authority, and communication

Senior management shall ensure the availability of adequate resources to establish, implement and maintain the IMS. The organisational structure and the responsibilities of all key personnel to fulfil this commitment are given in procedure QCB-MP-Q-007 Organisational responsibility. Additional responsibilities are given within other policies and specific procedures and processes as necessary. The organisational structure of the company is input into the effective management system, an online management system to control the IMS Records. This system forms part of this manual and the health and safety policy.

5.5.2 HSEQ manager

Whilst the standard does not state the need for an elected management representative, the HSEQ manager has been appointed as the person responsible for the day-to-day management of the IMS. The elected duties include (not exhaustive)

- To ensure that the requirements for the business management system are established, implemented, and maintained.
- To report to the management team on the performance of the IMS and identify any need for improvement making recommendations where possible.
- To ensure that awareness of customer and environmental requirements throughout the organisation is promoted.

Other duties of all Company Managers are detailed in QCB-MP-Q-007 Organisational Responsibility and the Health and Safety Policy (Organisation Section).

5.5.3 Internal communication (ISO 9001 – 7.4, ISO 14001 – 7.4.2, ISO45001 - 7.4.2)

Communication within the company shall be carried out via the company line management function and internal written and verbal processes. Where appropriate, meetings shall be convened to assist in the internal communication process. The effectiveness of the business management system shall be considered as part of the internal communication arrangements. The company has established a communication system whereby information can be shared between the offices/admin functions and the operational staff.
See QCB-F-Q-021 for information.

Where appropriate, toolbox talks will be used to reinforce legislative and business management system requirements.

QCB-F-Q-021 details the mechanism in place to ensure communication and consultation is carried out in line with health and safety legislative requirements.
The company does not intend to communicate externally on its environmental aspects.

5.5.4 External communication

All communication outside of the company will be managed using QCB-F-Q-021

5.6 Management Review (ISO 9001 – 9.3, ISO 14001 – 9.36, ISO 45001 – 9.3)

The Managing Director shall ensure that a full review of the IMS is carried out at least annually. The review inputs and outputs shall be in line with the requirements of the Standards. The agenda for the review meetings shall contain, but is not restricted to, that given in procedure QCB-MP-Q-007 Organisational responsibility. The monthly board meetings and safety, quality and environmental meetings shall provide the forums and mechanisms for addressing the requirements of management review.

Section 6 - Resource Management

6.1 Provision of resources (ISO 9001 – 7.1, ISO 14001 – 7.1, ISO 45001 – 7.1)

The company has determined the resources necessary for the implementation, maintenance, and improvement of the IMS. The Managing Director shall ensure the satisfactory implementation, maintenance, and improvement of the management system by allocating adequate staff time and shall call upon external support to assist in this requirement when necessary. Sufficient site operatives and appropriate resources shall be allocated to contracts to ensure that projects are completed on time, legislative requirements are met, and business objectives are achieved and that all required work is addressed.

6.2 Human Resources (ISO 9001 – 7.1.2)

6.2.1 General

During recruitment of personnel, due consideration shall be given to the education, training, skills, and experience necessary to ensure that all personnel carrying out work which affects product quality are of a satisfactory competence. A HR department exists to produce the administrative requirements required with this function.

6.2.2 Competence, awareness, and training (ISO 9001 – 7.2/7.3, ISO 14001 – 7.2/7.3, ISO 45001 – 7.2/7.3)

Competence requirements for all employees and the method of training, communication, and record keeping are given in QCB-MP-Q-008 Training & development.

6.3 Infrastructure (ISO 9001 – 7.1.3)

Works are carried out in a variety of areas of the plant dependant on the type of activity required and within our offices.
Suitable access, workspace and services shall be put in place to enable all works to be completed in a safe environment.
Process equipment including hand tools, power tools, plant, etc and vehicles, shall be regularly monitored by the Management team and adequate facilities made available to undertake repairs and maintenance activities. Sub-contractors will be proactively monitored before and during any contracted period of engagement in keeping with IMS Procedure QCB-MP-S-009

Section 7 – Operation

7.1 Hazard Identification, assessment of risks and opportunities (ISO 9001 6.1.1, ISO 14001 6.1.1, ISO45001 6.1.2)

The identification of hazards/assessment of the business risks & opportunities will be handled using QCB-F-Q-002

7.2 Aspects, Impacts & Objectives (ISO 9001 – 6.2.1, ISO 14001 – 6.1.2/6.2.1, ISO 45001 – 6.2.1)

The identification of environmental aspects/impacts and HSEQ objectives will be managed using procedure QCB-MP-E-002

7.3 **Management of Change** (ISO 9001 8.5.6, ISO 45001 – 8.1.3)
Management of change will be managed using QCB-MP-Q-002

7.4 **Emergency Preparedness & Response** (ISO 14001 – 8.2, ISO 45001 – 8.2)
Managed using procedure QCB-MP-S-004

7.5 **Customer-related processes** (ISO 9001 – 8.2 to 8.6)

7.5.1 Determination of Requirements – Product & Services (ISO 9001 – 8.2.2)

Customer requirements shall be determined during estimating and recorded on the appropriate documentation - see process QCB-MP-Q-006 Tender and Contract Review. During the determination process, consideration shall be given to the health and safety requirements, legislative duties, and environmental aspects.

7.5.2 Review of requirements – Product & Services (ISO 9001 – 8.2.3.1)

On receipt of an order or confirmation of work to be carried out, a review shall be undertaken, and the findings recorded on the appropriate documentation. All customer requirements shall be confirmed written or verbally before work commences - see process QCB-MP-Q-006 Tender and Contract Review. Health and safety requirements and environmental aspects and impacts shall also be examined and, where necessary, documented.

All amendments to contracts shall be recorded within contract files as appropriate.

7.5.3 Customer communication (ISO 9001 – 8.2.1)

Information relating to the customer's requirements – product, health, and safety and environmental - shall be obtained during estimating and recorded on the appropriate documentation.

Regular communication with customers shall be carried out via appropriate liaison meetings and reviews. Customer feedback shall be compiled and collected for review and attention by the relevant contract personnel. Records relating to customer feedback shall be maintained where appropriate in the form of a satisfaction report given to them upon completion. Corrective action reports shall be compiled to address complaints.

7.6 Design and Development (ISO 9001)

The company does not undertake design and development activities as part of its in-house operations and therefore this section is considered as excluded.

7.7 Production & Service Provision

7.7.1 Control of production and service provision (ISO 9001 – 8.5.1)

The mechanism for the controlling of production activities and operational control of health, safety and environmental requirements is given in the QCB-MP-Q-006 Tender and Contract Review. Health and safety and environmental matters are also controlled via the appropriate procedures as detailed in the Health & Safety Policy manual, further supported by safe systems of work detailed in product/service specific policy and guidance documents.
QCB-MP-S-008 risk assessment outlines the process for undertaking routine and non-routine activities.

7.7.2 Identification and traceability (ISO 9001 – 8.5.2)

Any requirements for product identification and/or traceability within a contract shall be determined at contract review and appropriate records maintained. All materials and components purchased or supplied by the customer shall be retained in the original packaging or suitably labelled to ensure identification and traceability is maintained and any health and safety or environmental considerations are readily available. Other items shall be suitably marked to facilitate identification throughout its life or use. Any situation which may lead to an unsafe or environmentally damaging condition shall be appropriately marked.

Appropriate labelling or marking of materials or construction works shall be put in place to indicate the inspection status where necessary to prevent adverse quality conditions or unsafe/environmentally damaging conditions.

Where required certificates of analysis shall be provided for each batch produced.

7.7.3 Customer property (ISO 9001 – 8.5.3)

Much of the work carried out by the company is using customer raw materials, appropriate control and protection shall be put in place to prevent any loss (intentional or unintentional) of any intellectual property, materials, recipes, data sheets etc.
Items supplied by the customer to be included in the manufacturing process shall be suitably identified and protected. Materials provided by the client for incorporation into the work shall be appropriately protected and controlled to prevent damage or incorrect use.

7.7.4 Preservation of product (ISO 9001 – 8.5.4)

All materials to be incorporated into the work shall be suitably stored, packed, and transported to prevent damage or deterioration or present a hazard to persons or the environment and marked appropriately to ensure correct use.

Section 8 – Monitoring, Measurement, Analysis and Evaluation (ISO 9001 – 9.1, ISO 14001 – 9.14.5.1, ISO 45001 – 9.1)

8.1 General

Monitoring, measurement, analysis, and evaluation processes shall be planned and implemented so as to demonstrate conformity of product, ensure conformity of the management system and continually improve the effectiveness of the system. Complex statistical techniques for monitoring and measurement are not considered applicable for the products and services provided by QES.

8.2 Monitoring and measurement (ISO 9001 – 9.1.2, ISO 14001 – 9.1.1, ISO 45001 – 9.1.1)

8.2.1 Customer satisfaction (ISO 9001 – 9.1.2)

Information relating to customer's perception as to whether the company has met customer requirements shall be monitored. The mechanism for obtaining this information is given in QCB-MP-Q-009 monitoring & measurement.

8.2.2 Internal audits (ISO 9001 – 9.2., ISO 14001 – 9.2, ISO -45001 – 9.2)

Internal audits are carried out at a suitable frequency to ensure that all clauses of the Standards are audited at least once in a twelve-month period. Internal audits are carried out by appropriately trained personnel ensuring that auditors do not audit their own work. The internal auditing arrangements are given in procedure QCB-MP-Q-005 internal audit.

8.2.3 Monitoring and measurement of processes

Methods for monitoring the business management processes shall be put in place to demonstrate the ability of the processes to achieve planned results. Such methods shall include internal audits, external audits, management reviews (board meetings), quality, health, safety and environmental meetings and contract review meetings.

Evaluation of compliance (with legislation and other requirements)

The company shall at least once per year examine the duties imposed on it by current legislation and other requirements, and carry out an evaluation of the systems, mechanisms, and arrangements in place to ensure compliance with those duties. A Legal Register & other requirements register will be kept and evaluated at least annually. QCB-F-Q-001.

To identify changes with applicable health and safety and environmental legislation the Company seek proactive methods to ensure currency with Health, Safety and Environmental methods as described in QCB-MP-Q-009 monitoring & measurement.

Monitoring of effective implementation of the systems, mechanisms and arrangements shall be carried out as part of the regular inspections.

8.3 Incident/Nonconformity – control of non-conforming product (ISO 9001 – 10.2, ISO 14001 – 10.2, ISO 45001)

Non-conforming product whether produced internally or supplied externally shall be identified and controlled to prevent its unintended use or delivery. The arrangements for handling and controlling non-conforming product are given in company procedure QCB-MP-Q-003
Non-conformance associated with health and safety, or environmental performance shall be addressed in line with emergency preparedness and response and accident/incident reporting procedures QCB-MP-S-003 and QCB-MP-S-004.

8.4 Analysis of data (ISO 9001 – 9.1.3, ISO 14001 – 9.1.2, ISO 45001 – 9.1.2)

Appropriate data shall be collected and analysed to demonstrate the suitability and effectiveness of the IMS and to evaluate where continual improvement of the effectiveness of the business management system can be made. Such data shall include – financial performance, supplier performance, purchasing information, inspection and test records, internal audit findings, customer complaints, corrective action reports, management review minutes, site safety inspection findings, accidents/incidents, etc. Analysis shall be limited to examination of simple tabulated data.

8.5 Improvement

8.5.1 Continual improvement (ISO 9001 – 10.1, ISO 14001 – 10.1, ISO 45001 – 10.1)

The company shall ensure continual improvement of the effectiveness of the IMS via the policies, the setting and achievement of objectives, the investigation of accidents and incidents, and the completion of actions resulting from the analysis of audit and corrective/preventive action data, and management review meetings.

8.5.2 Corrective & Preventative action (ISO 9001 – 10.2, ISO 14001 – 10.2, ISO 45001 – 10.2)

The arrangements for taking corrective action to eliminate the causes of non-conformities are given in company procedure QCB-MP-Q-004 Corrective and Preventative Action.

The arrangements for determining action to eliminate the causes of potential non-conformities are given in company procedure QCB-MP-Q-003 Preventive action and procedures to assess health and safety risks.

Appendix 1 - Company Policies

Policy	Details
QCB-P-001	Health, Safety, Environment & Quality
QCB-P-002	Information Security
QCB-P-003	Corporate Social Responsibility
QCB-P-004	GDPR
QCB-P-005	Equal Opportunities
QCB-P-006	Modern Slavery
QCB-P-007	Right To Work
QCB-P-008	Anti Bribery and Corruption
QCB-P-009	Ethical Purchasing
QCB-P-010	Recruitment & Selection
QCB-P-011	Whistle Blowing
QCB-P-012	Business Continuity
QCB-P-013	COMAH
QCB-P-014	Occupational Health
QCB-P-015	Smoking
QCB-P-016	Drug & Alcohol
QCB-P-017	Anti-Tax Evasion Facilitation
QCB-P-018	Driving
QCB-P-019	Ignition

Appendix 2 - IMS Procedures

Number	Details	Reference (ISO)		
		ISO 9001:2015	ISO 14001:2015	ISO 45001:2018
QCB-MP-Q-007	Organisational responsibility	5.1, 5.2, 5.3	5.1, 5.2, 5.3	5.1, 5.2, 5.3
QCB-MP-Q-001	Document and Data Control	7.5.1, 7.5.2, 7.5.3	7.5.1, 7.5.2, 7.5.3	7.5.1, 7.5.2, 7.5.3
QCB-MP-Q-003	Control of non-conforming product	10.2	10.2	10.2
QCB-MP-Q-004	Corrective and preventative action	10.2	10.2	10.2
QCB-MP-Q-005	Internal audit	9.2	9.2	9.2
QCB-MP-Q-008	Training & development	7.2	7.2	7.2
QCB-MP-S-012	Safe Operating Procedures	8.5.3	4.5.3	4.5.2
QCB-MP-E-002	Environmental aspects		6.1.2	
QCB-F-Q-001	Legal Requirements		6.1.3	6.1.3
QCB-F-Q-021	Consultation and communication	7.4	7.4	7.4
QCB-MP-S-004	Emergency preparedness and response		8.2	8.2
QCB-MP-S-003	Accident/incident reporting and investigation		10.2	10.2
QCB-MP-Q-009	HSEQ monitoring and measurement		9.1	9.1
QCB-MP-S-008	Hazard Identification & Risk Assessment		8.1	8.1
QCB-MP-S-010	COSHH assessment			8.1
QCB-MP-S-011	Manual handling assessment			8.1
QCB-MP-S-002	Fire Procedure		8.2	8.2
QCB-MP-Q-010	Supplier Approval	8.1.4	8.1.4	8.1.4
QCB-MP-Q-002	Management of Change			
QCB-MP-Q-006	Tender and Contract Review, Resource Allocation and Project Completion.	8.2		
QCB-MP-ENG-003	Inspection, Test, Maintenance & Calibration	7.6	4.5.1	4.5.1
QCB-MP-Q-011	Management Review			

Appendix 3 - Operating Procedures

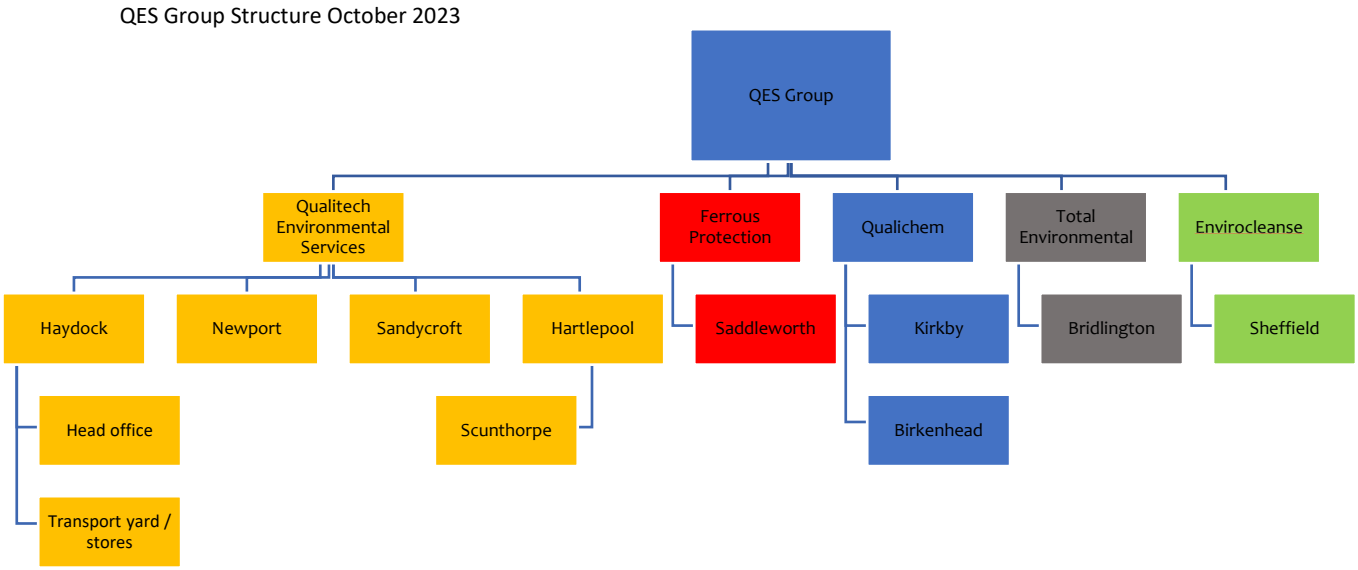
The operating procedures are identified within the document control register. They consist of

- Manufacturing instructions
- QC test control methods
- QC inspection plans
- Safety SOP
- Environmental SOP
- Warehouse SOP
- Manufacturing SOP
- Area SOP
- Risk assessments
- Safe systems of work

Due to the number of SOP's / instructions please refer to the document register.
QCB-F-Q-003 - Document Register .xlsx

Appendix 4

Organisation Structure



Appendix 5 – SHEQ Policy

APPENDIX 3 - SITE SPECIFIC RISK ASSESSMENTS

Task Risk Assessment

Department	*Birkenhead Site*	*Task Description*	*Loading Koh into road tanker*	*Risk Assessment Reference*	SRA001
Area	*tanker loading area*			*Assessed By*	M. Potter
Equipment	Pipework	*Isolation Requirements*	NA	*Issue Date*	21/11/23
Substance(s)	Pottasium Hydroxide Solution 40-51%			*Revision No*	1

It is preferable to undertake risk assessments as a team activity. The team must include a person familiar with the hazards and risks.

QCB-F-S-002 v1

Possible Hazards	Persons at risk	Nature of Task	Possible Hazards / Effects description	Existing controls & defences	Probability (B)	Severity (B)	Risk (B)	Additional controls & defences	Probability (A)	Severity (A)	Risk (A)
Contact with road tanker.	All site operatives	Routine	Contact with road tanker - Crush injury/possible fatality. Damage to equipment.	Trained and licensed Tanker driver, Traffic management system, pedestrian walkways.	2	8	H	Adequate lighting, PPE high viz clothing, one way traffic system, No reversing without a banksman.	1	8	M+
Connecting pipework.	Operative/Driver	Routine	Possible loss of containment and exposure to chemical. Possible entanglement/trapping injuries to hands and fingers.	Trained operative and drivers.	4	4	M+	PPE to be worn, MSDS for material, Pre use checks on all pipework and seals. Inspection of all valves to ensure they are in the correct position before work commences.	2	4	L
Overloading of road tanker	Operative/Driver	Routine	Overloading the capacity of the road tanker - could cause spillage, tank rupture, vehicles over legal weight.	Operative to check collection note for tanker load weight to ensure there is sufficient capacity within the road tanker. Loading continuously monitored, loading undertaken via calibrated pumps.	2	6	M	Operative to conduct visual check of the road tanker once driver has opened manway lids.	1	6	L
Vehicle movement during loading/unloading process.	Operative	Routine	Vehicle movement during process could cause injury to operative and damage to equipment.	Once parked in loading area driver must isolate the vehicle (remove keys) and immobilise (apply hand brake) before exiting the vehicle.	4	6	M+	Driver to hand ignition Key to Operative before loading/unloading process begins.	1	6	L
Contact by FLT	Operatives	Routine	FLT operates in area, risk of contact if uncontrolled causing serious injuries.	Area to be restricted during loading process.	2	6	M		2	6	M
Exposure to inclement weather.	Operatives	Routine	Effects of exposure to cold, rain, heat.	Regular breaks, correct PPE for activity.	4	2	L		4	2	L
Exposure to Koh	Operative/Driver	Routine	Exposure to Koh - could cause serious burns, eye injuries & inhalation exposure.	PPE to be worn - Chemical suit, chemical gloves, hard hat, Chemical resistant boots, chemical goggles.	4	4	M+	Ensure operatives have been made aware of the risk, controls and emergency response procedures for handling this material - See cosh assessment BCA001	2	4	L
Not following procedures and risk assessment.	Operatives	Routine	Potential for procedures not to be followed.	Supervisor to provide adequate supervisor of the activity	1	8	M+		1	8	M+
Exhaustion / fatigue	Operatives	Routine	Activity is physically demanding and could result in over exertion leading to exhaustion.	Additional breaks to be taken and job rotation to be utilised.	1	6	L		1	6	L
Working at height	Operative/Driver	Routine	Accessing top of road tanker via gantrys could lead to fall injuries.	Ensure stairs / gantry is free from obstructions, ensure rails are in postion around lids prior to accessing.	2	6	M		2	6	M
							0				0

Action Required	When	Responsible	Complete

History: Reason for assessment / review	Date

New Qualichem format	*21/11/23*

Risk Ranking Matrix

	S = Severity of Harm						
	S	Delay Only	Minor injury (FAC), Minor damage	Lost Time Injury, Illness, damage & Multiple Minor injury	Major injury, Disabling illness, Major damage & Multiple Rocordable injuries	Single Death	Multiple Deaths
P = Probability of Harm	**P**	**1**	**2**	**4**	**6**	**8**	**10**
Certain or imminent=10	**10**	L	H	VH	VH	VH	VH
Very Likely =8	**8**	L	M+	H	VH	VH	VH
Likely =6	**6**	L	M	M+	H	VH	VH
May Happen =4	**4**	VL	L	M+	M+	H	VH
Unlikely =2	**2**	VL	VL	L	M	H	H
Very Unlikely =1	**1**	VL	VL	L	L	M+	H

P = Likelihood of Harm	Guideline for application			
	EXPOSURE	EXISTING CONTROLS	SITE OPERATIONAL EXPERIENCE	UNILEVER OPERATIONAL EXPERIENCE
Certain or Imminent =10	CONSTANT	No existing Control in place	2-3 times in last 1 year	-
Very Likely =8	HOURLY	One Admin Control – Not monitored/ not well implemented	1 time in last 1 year	-
Likely =6	DAILY	One Admin Control – well monitored/ implemented	1 time in past 3 years	-
May Happen = 4	WEEKLY	Two Admin Controls – well monitored/implemented **AND/ OR** One Engineering Control – well maintained	None	2- 3 times in last 1 year
Unlikely =2	MONTHLY	Two independent Engineering Controls - At least one well maintained	None	1 time in last 1 year
Very Unlikely =1	YEARLY(Or More)	Two Independent Engineering Controls – both well maintained	None	1 time in past 3 years

Note: **Exposure** relates to "how often does the hazardous situation occur/ exists?". **Existing Controls** are the Engineering and Administrative Controls in place (only Controls to be considered and not Defenses). **Operational Experience** column indicates the number of past incidents related to the specific hazard and includes Recordable injuries and illnesses and also FAC, Near Miss etc.

Very low - These risks are considered acceptable. No further action is necessary other than to ensure that the controls are maintained.

Low - No additional controls are required unless they can be implemented at very low cost (in terms of time, money, and effort). Actions to further reduce these risks are assigned low priority. Arrangements should be made to ensure that the controls are maintained.

Medium & Medum +- Consideration should be as to whether the risks can be lowered, where applicable, to a tolerable level and preferably to an acceptable level, but the costs of additional risk reduction measures should be taken into account. **The risk reduction measures should be implemented within a defined time period. Arrangements should be made to ensure that controls are maintained, particularly if the risk levels area associated with harmful consequences.**

High - Substantial efforts should be made to reduce the risk. **Risk reduction measures should be implemented urgently within a defined time period and it might be necessary to consider suspending or restricting the activity, or to apply interim risk control measures, until this has been completed.** Considerable resources might have to be allocated to additional control measures. Arrangements should be made to ensure that controls are maintained, particularly if the risk levels are associated with extremely harmful consequences and very harmful consequences.

Very high - These risk are unacceptable. Substantial improvements in risk control measures are necessary so that the risk is reduced to a tolerable or acceptable level. **The work activity should be halted until risk controls are implemented that reduces the risk so that it is no longer very high. If it is not possible to reduce the risk, the work should remain prohibited.**

A Hierarchy of Hazard Controls

Hierarchy	Example(s)
Avoid (A)	- Avoid work at height where it is reasonably practicable to do so
Elimination (E)	- remove the chemical or process creating the risk
	- cease doing the activity or task
	- change the method of working
	- automate
Substitution (Reduction) (S/R)	- use a safer substitute if one is available
	- use a less hazardous material or chemical
	- reduce the frequency of the activity
	- reduction of inventory (quantity stored) of chemical or material creating the risk
Isolation (Enclosure)(I/E)	- separate the working area from the hazard, for example a soundproof control room in an otherwise noisy area
Segregation(S)	- segregate, e.g. place noisy equipment away from working areas
	- segregation of incompatible chemicals
Control (C)	- use an effective engineering control to reduce the exposure
	- guarding on machinery
	- interlocking of guards
	- local exhaust ventilation / extraction
	- dilution ventilation
	- encapsulation of particulate materials
	- administrative measures (e.g. restricting exposure duration or exposure levels)
Defences (Protection) (D/P)	- Additional to any of the above, the wearing of PPE should be considered after implementation of controls of the working area and equipment

Task Risk Assessment

Department	*Birkenhead Site*	*Task Description*	*Unloading Koh from ships*	*Risk Assessment Reference*	SRA002
Area	*Barrel loading area*			*Assessed By*	M. Potter
Equipment	Pipework	*Isolation Requirements*	NA	*Issue Date*	21/11/23
Substance(s)	Potassium Hydroxide Solution 40-51%			*Revision No*	1

It is preferable to undertake risk assessments as a team activity. The team must include a person familiar with the hazards and risks.

QCB-F-S-002 v1

Possible Hazards	Persons at risk	Nature of Task	Possible Hazards / Effects description	Existing controls & defences	Probability (B)	Severity (B)	Risk (B)	Additional controls & defences	Probability (A)	Severity (A)	Risk (A)
Working around water	Operatives	Routine	Fall into water resulting in drowning.	Quayside restricted to authorised employees. Life jackets to be work at all ties during quayside operations.	2	8	H	Only access quayside for the connection phase of the operation. Ensure life rings in situ prior to any activities commencing.	1	8	M+
Positioning flexible pipework into position.	Operatives	Routine	Handling / positioning the pipework into position could result in MSK injuries.	Follow controls identified on MH assessment, utilise mechanical aids to position pipework.	4	4	M+	PPE to be worn, MSDS for material, Pre use checks on all pipework and seals. Inspection of all valves to ensure they are in the correct position before work commences.	2	4	L
Overloading of land tanks	Operatives	Routine	Overloading the capacity of the land tanks could cause spillage, tank rupture, environmental incident.	Follow "preparation of land tanks" procedure. Physical dips on each of the receiving tanks, Periodic dip checks during the unloading process, operative in position to ensure stop dip is attained.	2	6	M		2	6	M
Ship movement during loading/unloading process.	Operatives	Routine	Ship movement during process could cause injury to operative and separation of the connecting pipework.	Ship/shore safety checklist is completed prior to any connections, ships officer authorises connection.	2	4	L		2	4	L
Contact with koh from split / leaking pipework	Operatives	Routine	Activity is of an extended duration under high pressure, leaks / ruptures from pipework could cause serious injuries / incidents.	Ship / shore checklist to be completed after connection. Hourly integrity checks to be completed for the off load duration, check flange / ferrule for any movement (unpainted gap)	2	6	M	Discharge pressure to be agreed on the discharge plan, pressure must not exceed 7bar.	2	6	M
Exposure to inclement weather.	Operatives	Routine	Effects of exposure to cold, rain, heat.	Regular breaks, correct PPE for activity.	4	2	L		4	2	L
Exposure to Koh	Operatives	Routine	Exposure to Koh - could cause serious burns, eye injuries & inhalation exposure.	PPE to be worn - Chemical suit, chemical gloves, hard hat, Chemical resistant boots, chemical goggles.	4	4	M+	Ensure operatives have been made aware of the risk, controls and emergency response procedures for handling this material - See cosh assessment BCA002	2	4	L
Not following procedures and risk assessment.	Operatives	Routine	Potential for procedures not to be followed.	Supervisor to provide adequate supervisor of the activity	1	8	M+		1	8	M+
Exhaustion / fatigue	Operatives	Routine	Activity is physically demanding and could result in over exertion leading to exhaustion.	Additional breaks to be taken and job rotation to be utilised.	1	6	L		1	6	L
Working at height	Operatives	Routine	Access to top of land tanks required during unloading activity, could lead to fall injuries.	Ensure stairs / gantry is free from obstructions, ensure handrails are secure. No access if winds above 7 on the Beaufort scale (32mph)	2	6	M		2	6	M
							0				0

Action Required	When	Responsible	Complete
Assess flex pipework installation for improvements.	*Next shipment*	*M. Power*	

History: Reason for assessment / review	Date
New Qualichem format	*21/11/23*

Risk Ranking Matrix

	S = Severity of Harm						
	S	Delay Only	Minor injury (FAC), Minor damage	Lost Time Injury, Illness, damage & Multiple Minor injury	Major injury, Disabling illness, Major damage & Multiple Rocordable injuries	Single Death	Multiple Deaths
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Very Likely =8	**8**	L	M+	H	VH	VH	VH
Likely =6	**6**	L	M	M+	H	VH	VH
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P = Likelihood of Harm	Guideline for application			
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	- cease doing the activity or task
	- change the method of working
	- automate
Substitution (Reduction) (S/R)	- use a safer substitute if one is available
	- use a less hazardous material or chemical
	- reduce the frequency of the activity
	- reduction of inventory (quantity stored) of chemical or material creating the risk
Isolation (Enclosure)(I/E)	- separate the working area from the hazard, for example a soundproof control room in an otherwise noisy area
Segregation(S)	- segregate, e.g. place noisy equipment away from working areas
	- segregation of incompatible chemicals
Control (C)	- use an effective engineering control to reduce the exposure
	- guarding on machinery
	- interlocking of guards
	- local exhaust ventilation / extraction
	- dilution ventilation
	- encapsulation of particulate materials
	- administrative measures (e.g. restricting exposure duration or exposure levels)
Defences (Protection) (D/P)	- Additional to any of the above, the wearing of PPE should be considered after implementation of controls of the working area and equipment