Control of Major Accident Hazards Involving Dangerous Substances Regulations 2006 – 2015

External Emergency Plan 2021

CBE West Ltd.

Oranmore, Co. Galway

15th January 2021

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SECTION 1: INTRODUCTION

1.1 General

This is the External Emergency Plan for CBE West Limited, Oranmore, County Galway. The Plan has been prepared in accordance with the requirements of the Control of Major Accident Hazards Involving Dangerous Substances Regulations 2006 - 2015 (Seveso III Directive) by the following Principle Response Agencies (PRA) and Principle Emergency Services (PES):

- Galway County Council,
- An Garda Síochána,
- The Health Service Executive,
- The National Ambulance Service, and
- Galway Fire and Rescue Service,

The implementation of European Seveso III Directive in Ireland is through the:

- European Communities (Control of Major Accident Hazards Involving Dangerous Substances) Regulations 2006 (S.I. 74 of 2006), and 2015 (SI 209 of 2015)
- Planning and Developments Acts 2000 – 2002 and Regulations 2001 – 2006.

1.2 Additional Information

The Plan should be read and implemented in conjunction with:

- The Internal Emergency Plan of CBE West, Oranmore Ltd (Appendix 7)
- The Major Emergency Plans of the Principle Response Agencies
  1. Galway County Council,
  2. An Garda Síochána – Galway Division,
  3. HSE-West
- Galway Fire and Rescue Service - Major Incident Plan for CBE West, Oranmore.

In addition to other relevant sources of information, responding organisations/agencies should refer to this External Emergency Plan when responding to a major incident at CBE West, Oranmore.

1.3 Glossary of Terms and Acronyms

A glossary of relevant terms and acronyms used in the External Emergency Plan is included as Table 1.1 below.

Term	Description
ADR	The European Agreement concerning the International Carriage of Dangerous Goods by Road, which was made at Geneva in 1957 by the United Nations Economic Commission for Europe and amended in April 1985. For enforcement in Ireland see page 33.
Ambulance Loading Point	An area close to the Casualty Clearing Station, where casualties are transferred to ambulances for transport to hospital.
Body Holding Area	An area under the control of An Garda Síochána, where the dead can be held temporarily until transferred to a Mortuary or Temporary Mortuary.
Casualty	Any person killed or injured during the event. (For the purpose of the Casualty Bureau, it also includes survivors, missing persons and evacuees).
Casualty Bureau/ Casualty Information Centre	Central contact and information point, operated by An Garda Síochána, for all those seeking or providing information about individuals who may have been involved.
Casualty Clearing Station	The area established at the site by the ambulance service, where casualties are collected, triaged, treated and prepared for evacuation.
COMAH	European Communities (Control of Major Accident Hazards Involving Dangerous Substances) Regulations, SI 74 of 2006 &SI 571 of 2014
Controller of Operations	The person given authority by a Principal Response Agency (AGS, HSE, Local Authority including Fire & Rescue Service) to control all elements of its activities at and about the site.

Co-ordination	Bringing the different elements of a complex activity or organisation into an efficient relationship through a negotiated process.
Cordons	The designated perimeters of an emergency site, with an Outer Cordon, an Inner Cordon, a Traffic Cordon and a Danger Area Cordon, as appropriate.
Crisis Management Team	A strategic-level management group, which consists of senior managers from within the principal response agency, which is assembled to manage a crisis and deal with issues arising for the agency both during the emergency and the subsequent recovery phase.
Danger Area	An area where there is a definite risk to rescue personnel, over and above that which would normally pertain at emergency operations.
Decontamination	A procedure employed to remove hazardous materials from people and equipment.
Emergency Response	The short-term measures taken to respond to situations which have occurred.
Evacuation	The process whereby people are directed away from an area where there is danger, whether immediate or anticipated.
Evacuation Assembly Point	A building or area to which evacuees are directed for onward transportation.
Friends and Relatives Reception Area	A secure area, operated by An Garda Síochána, for the use of friends and relatives arriving at or near the site of the emergency.
Hazard	Any phenomenon with the potential to cause direct harm to members of the community, the environment or physical infrastructure, or being potentially damaging to the economic and social infrastructure.
Hazard Identification	A stage in the Risk Assessment process where potential hazards are identified and recorded.

Hazard Analysis	A process by which the hazards facing a particular community, region or country are analysed and assessed in terms of the threat /risk which they pose.
Holding Area	An area at the site to which resources and personnel, which are not immediately required, are directed to await deployment.
Impact	The consequences of a hazardous event being realised, expressed in terms of a negative impact on human welfare, damage to the environment or the physical infrastructure, or other negative consequences.
Information Management Officer	A designated member of the support team of a principal response agency who has competency/training in the area of information management.
Incident Control Point	The location at the site of the emergency from which the AGS, GFRS and CBE West. control, direct and co-ordinate their organisations' response to the emergency.
Information Management System	A system for the gathering, handling, use and dissemination of information.
Lead Agency	The Principal Response Agency that is assigned the responsibility and mandate for the co-ordination function.
Likelihood	The probability of an event occurring.
Local Authority	In Galway County, the local authority is Galway County Council encompassing GFRS which is a shared service with Galway City Council.
Local Co-ordination Centre	A pre-nominated building, typically at county or sub-county level, with support arrangements in place and used for meetings of the Local Co-ordination Group; located in Room G01 in County Hall.
Local Co-ordination Group	A group of senior representatives from the three principal response agencies (An Garda Síochána, HSE and Local Authority) whose function is to facilitate strategic level co-ordination, make policy decisions, liaise with regional/national level co-ordination centres, if

	appropriate, and facilitate the distribution of information to the media and the public.
Major Emergency Management	The range of measures taken under the five stages of Major Emergency Management, i.e. Hazard Analysis and Risk Assessment; Mitigation/Risk Management; Planning and Preparedness; Co-ordinated Response; Recovery.
Major Emergency Plan	A plan prepared by one of the Principal Response Agencies.
Major Emergency	Any event which, usually with little or no warning, causes or threatens death or injury, serious disruption of essential services, or damage to property, the environment or infrastructure beyond the normal capabilities of the principal emergency services in the area in which the event occurs, and requiring the activation of specific additional procedures to ensure effective, co-ordinated response.
Media Centre	A building/area specifically designated for use by the media, and for liaison between the media and principal response agencies.
Media Holding Statement	A statement that contains generic information that has been assembled in advance, along with preliminary incident information, that can be released in the early stages of the emergency.
Mitigation	A part of risk management and includes all actions taken to eliminate or reduce the risk to people, property and the environment from the hazards which threaten them.
On-Site Co-Ordinator	The person (controller of operations) from the lead agency with the role of co-ordinating the activities of all agencies responding to an emergency.
On-Site Co-Ordination Centre	Location where the On-Site Co-ordination Group meet.
On-Site Co-Ordination Group	Group that includes the On-Site Co-ordinator, the Controllers of Operations of the other PRAs and a senior manager of CBE West, Information Management Officers,

	Action Management Officers, Media Liaison Officers and others as appropriate.
Operational Level	The level at which the management of hands-on work is undertaken at the incident site(s) or associated areas.
Principal Emergency Services (PES)	The services which respond to normal emergencies in Ireland, namely An Garda Síochána, the Health Service Executive Ambulance Service, and (in Galway City and County) the GFRS Galway Fire & Rescue Service.
Principal Response Agencies (PRA)	The agencies designated by the Government to respond to Major Emergencies i.e. An Garda Síochána, the Health Service Executive and the Local Authority.
Protocol	A set of standard procedures for carrying out a task or managing a specific situation.
Recovery	The process of restoring and rebuilding communities, infrastructure, buildings and services after an emergency incident.
Rendezvous Point	The location to which all resources responding to the emergency site are directed in the first instance
Response	The action taken immediately before, during and/or directly after an emergency.
Resilience	The inherent capacity of communities, services and infrastructure to withstand the consequences of an incident, to recover and to restore normality.
Rest Centre	Premises where persons evacuated during an emergency are provided with appropriate welfare and shelter.
Risk	The combination of the likelihood of a hazardous event and its potential impact.
Risk Assessment	A systematic process of identifying and evaluating, either qualitatively or quantitatively, the risk resulting from specific hazards.
Risk Management	Actions taken to reduce the probability of an event occurring or to mitigate its consequences.

Risk Matrix	A matrix of likelihood and impact on which the results of a Risk Assessment are plotted.
Scenario	A hypothetical sequence of events, usually based on real experiences or on a projection of the consequences of hazards identified during the risk assessment process.
SEVESO Sites	Industrial sites that, because of the presence of dangerous substances in sufficient quantities, are regulated under Council Directives 96/82/EC and 2003/105/EC and 2012/18/EU, commonly referred to as the Seveso III Directive. Implementation in Ireland: European Communities Control of Major Accident Hazards involving Dangerous Substances Regulations 2006 (S.I. 74 of 2006) (COMAH) & 2014(SI 571 of 2013); also Planning & Development Acts 2000-2002 and Regulations 2001-2006.
Site Management Plan	The arrangement of the elements of a typical major emergency site, matched to the terrain of the emergency, as determined by the On-Site Co-ordination Group.
Standard Operating Procedures	Sets of instructions covering those features of an operation that lend themselves to a definite or standardised procedure to optimise effectiveness.
Support Team	A pre-designated group formed to support and assist individuals operating in key roles, such as On-Site Co-ordinator, Chair of Local Co-ordination Group, etc.
Survivor Reception Centre	Secure location to which survivors not requiring hospital treatment can be taken for shelter, first aid, interview and documentation.
Temporary Mortuary	A building or vehicle adapted for temporary use as a mortuary in which post-mortem examinations can take place.
Thermal Dose Unit, TDU	Thermal Radiation, effect on a person: the thermal dose is dependent on the distance that a person has to travel to reach shelter, the terrain over which the person needs to traverse and the speed of escape.

Acronyms	**Description**
AEGL	Acute Exposure Guidance Level
AGS	An Garda Síochána
BLEVE	Boiling Liquid Expanding Vapour Explosion
CBE	Colas Bitumen Emulsions
CCA	Central Competent Authority; (HSA)
CCBRN	Conventional explosive, Chemical, Biological, Radiological or Nuclear
CCS	Casualty Clearing Station
CD	Civil Defence
CMT	Crisis Management Team
COMAH	The Control of Major Hazards Regulations; see above
CP	Check Points, Garda Traffic Control
CVCE	Confined Vapour Cloud Explosion
DECLG	Department of the Environment, Community and Local Government
ECAS	Emergency Call Answering Service, 999/112
EEC	Emergency Evacuation Centre(s)
EOD	Explosives Ordnance Disposal
ESD	Emergency Shut Down
GCC	Galway County Council
GFRS	Galway Fire & Rescue Service
HSA	Health & Safety Authority
HSE	Health Service Executive
IRCG	Irish Coast Guard (Department of Transport)
ICP	Incident Control Point
LPG	Liquid Petroleum Gas

MGO	Marked Gas Oil
(M)ETHANE	(Major Emergency Declared) Exact Location of the Emergency Type of Emergency (Transport, Chemical etc) Hazards present and potential Access/egress routes Number and Types of Casualties Emergency services present and required
NEOC	National Emergency Operations Centre, National Ambulance Service
PDF	Permanent Defence Forces
PES	Principle Emergency Services
PRA	Principle Response Agency
RSFO	Rostered Senior Fire Officer
RVP	Rendezvous Point
TDU, tdu	Thermal Dose Unit
UCVE	Unconfined Vapour Cloud Explosion

Table 1.1 - Glossary and List of Acronyms

SECTION 2: SITE DESCRIPTION

2.1 CBE West, Oranmore Site Location

2.2 CBE West, Oranmore Site Description

2.3 Chemoran Site Description

2.4 Road Maintenance Services (RMS) Site Description

SECTION 2: SITE DESCRIPTION

2.1 CBE West Site Location

The site belonging to the COLAS Group is situated in an industrial area in Oranmore (Grid 38143 25833 or GPS 53.279433, -8.9281868) on the R381 alongside the Dublin – Athlone rail line and close to the Maldron Hotel. The site contains three related companies as follows:

- **CBE West** – producing bitumen emulsions and binders using refined bitumen transported from the CBE West Terminal in Galway Harbour
- **Chemoran** – producing raw materials for the CBE West production process
- **Road Maintenance Services** (RMS) – providing road maintenances services

2.2 CBE West Site Description

CBE West is the main occupant of the site. The CBE West production and storage site runs along the Galway-Athlone rail line. Refined bitumen is transported to the site by road tanker from the CBE West terminal in Galway Harbour. On-site the refined bitumen is stored in six storage tanks and is piped to the CBE West production area where it is combined with other raw materials including Hydrochloric acid (HCL) which is stored in a storage tank to the rear of the production area. Other raw materials are also stored in storage tanks and IBCs. Finished product is stored in smaller heated horizontal tanks adjacent to the production area and there are six road tanker loading gantries. The remainder of the CBE West site consists of offices, laboratories, workshops and truck parking areas.

2.3 Chemoran Site Description

The Chemoran site is located at the rear of the site and also along the Galway-Athlone rail line. It consists of a boiler house, three reactors (2 no. 10 tonne and 1 no. 3 tonne), a control room, three tank farms, an IBC storage area and a domed storage shed. Raw materials are stored in sheds, IBCs and vertical storage tanks. Finished product is stored in vertical storage tanks and IBCs. The production area is an ATEX designated area.

2.4 Road Maintenance Services Site Description

RMS is located at the rear of the site and there are no significant hazards in this area except LPG cylinders in storage or on vehicles.

Figure 2.1 - CBE West Oranmore Site Location

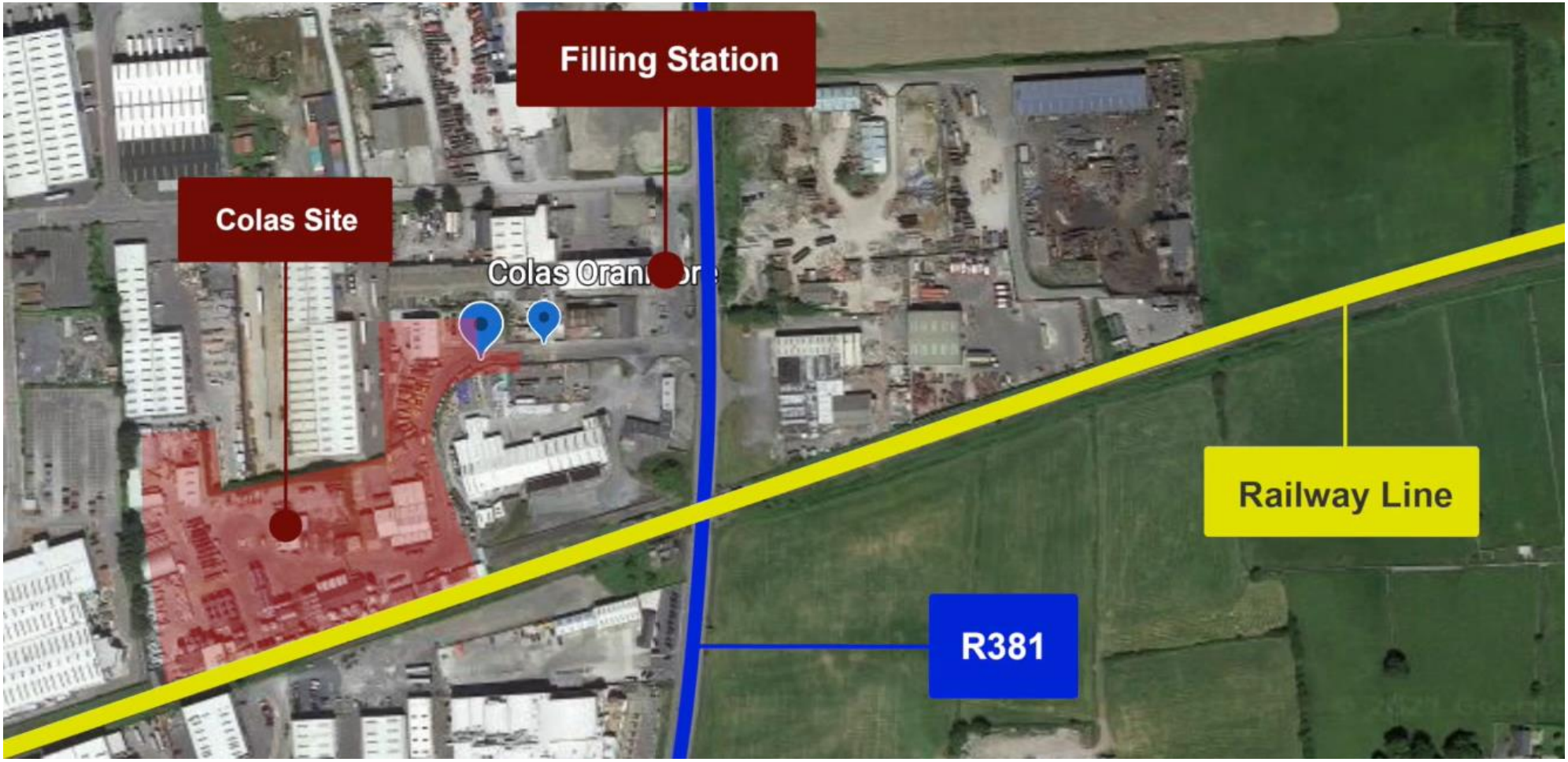
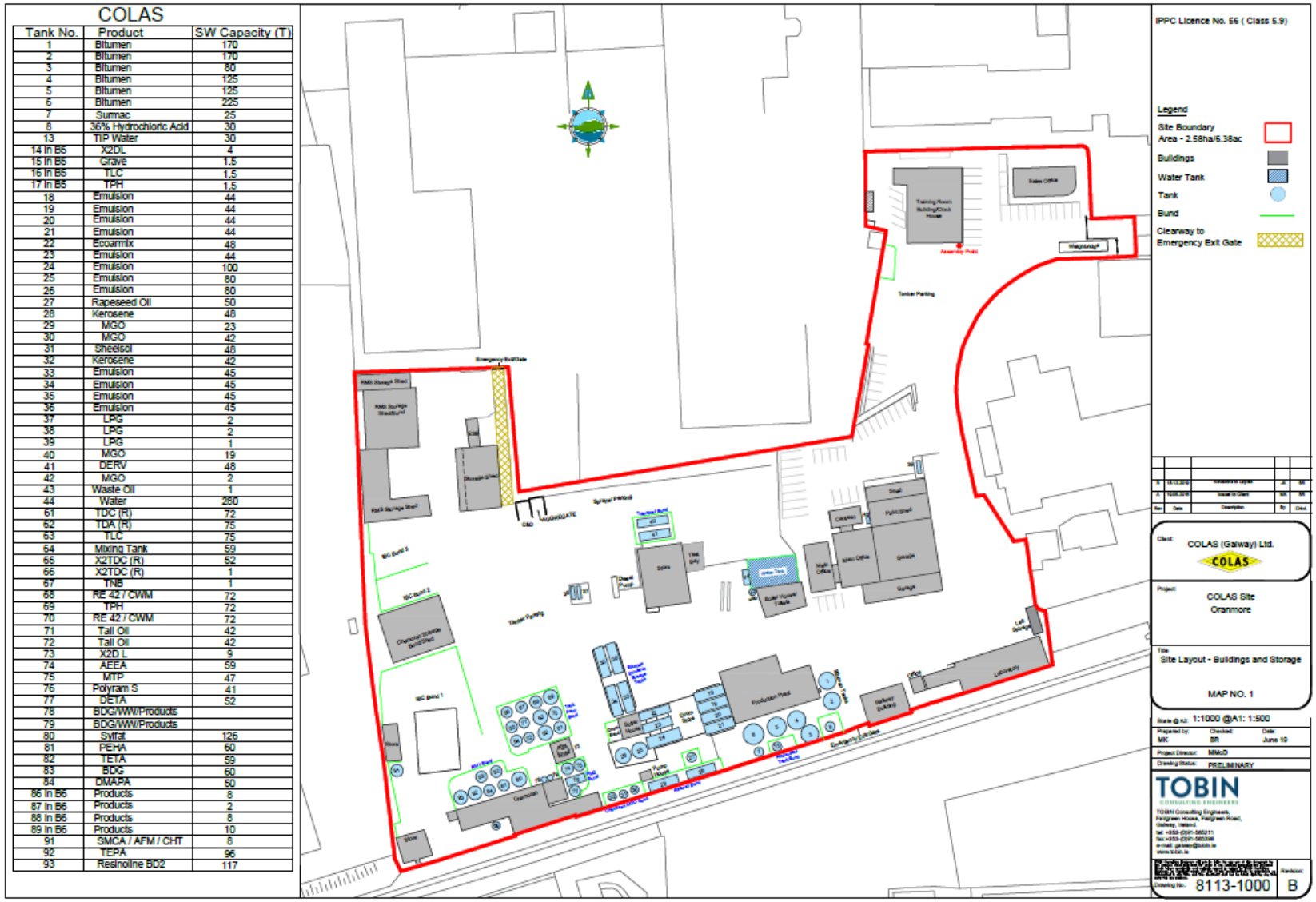


Figure 2.2 - CBE West Oranmore Site Boundary



COLAS

Tank No.	Product	SW Capacity (T)
1	Bitumen	170
2	Bitumen	170
3	Bitumen	80
4	Bitumen	125
5	Bitumen	125
6	Bitumen	225
7	Sumac	25
8	36% Hydrochloric Acid	30
13	TIP Water	30
14 in B5	X2DL	4
15 in B5	Grave	1.5
16 in B5	TLC	1.5
17 in B5	TPH	1.5
18	Emulsion	44
19	Emulsion	44
20	Emulsion	44
21	Emulsion	44
22	Ecoarmix	48
23	Emulsion	44
24	Emulsion	100
25	Emulsion	80
26	Emulsion	80
27	Rapeseed Oil	50
28	Kerosene	48
29	MGO	23
30	MGO	42
31	Sheelsol	48
32	Kerosene	42
33	Emulsion	45
34	Emulsion	45
35	Emulsion	45
36	Emulsion	45
37	LPG	2
38	LPG	2
39	LPG	1
40	MGO	19
41	DERV	48
42	MGO	2
43	Waste Oil	1
44	Water	280
61	TDC (R)	72
62	TDA (R)	75
63	TLC	75
64	Mixing Tank	59
65	X2TDC (R)	52
66	X2TDC (R)	1
67	TNB	1
68	RE 42 / CWM	72
69	TPH	72
70	RE 42 / CWM	72
71	Tall Oil	42
72	Tall Oil	42
73	X2D L	9
74	AEEA	59
75	MTP	47
76	Polyram S	41
77	DETA	52
78	BDG/WW/Products	
79	BDG/WW/Products	
80	Sylfat	126
81	PEHA	60
82	TETA	59
83	BDG	60
84	DMAPA	50
86 in B6	Products	8
87 in B6	Products	2
88 in B6	Products	8
89 in B6	Products	10
91	SMCA / AFM / CHT	8
92	TEPA	96
93	Resinoline BD2	117

Figure 2.3 - CBE West Oranmore Site Layout

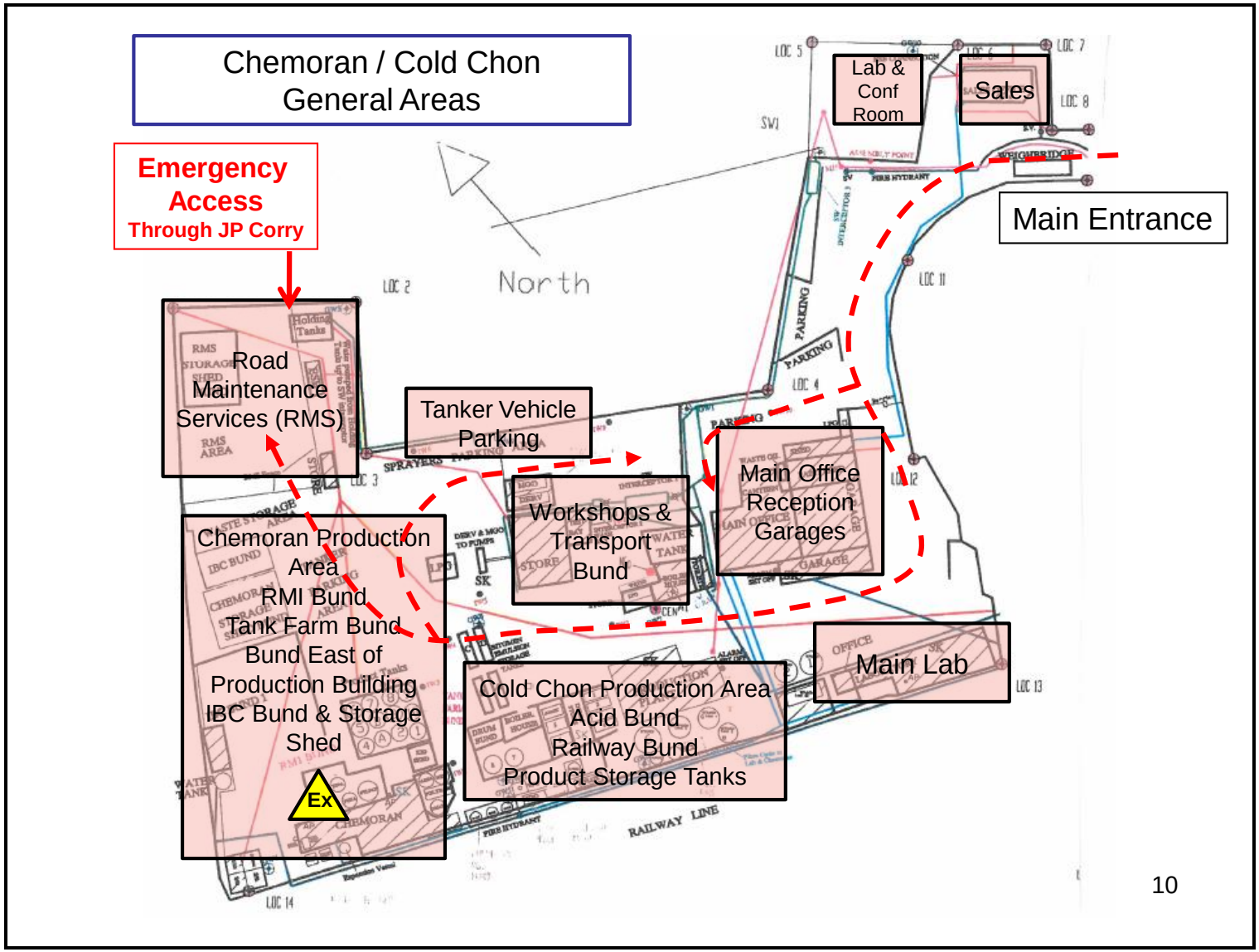


Figure 2.4 - CBE West Oranmore Site Layout - Principle Areas

SECTION 3: EEP ACTIVATION AND STAND DOWN

3.1 When will this Plan be Activated?

3.2 Responsibility for Activating this Plan.

3.3 How will this Plan be Activated?

3.4 Information to be Provided.

3.5 Evacuation Procedure.

3.6 On-site Co-Ordination Centre, OSCC.

3.7 Standing Down of the Plan.

SECTION 3: EEP ACTIVATION AND STAND DOWN

3.1 When will this Plan be Activated?

This Plan will be activated immediately if:

- A major accident occurs, or
- An uncontrolled event occurs which could reasonably be expected to lead to a major accident.

A major accident is an occurrence (including in particular, a major emission, fire or explosion) resulting from uncontrolled developments in the course of the operation of the CBE West site, leading to serious danger to human health or the environment, immediate or delayed, inside or outside the establishment, and involving one or more of the dangerous substances listed in **Appendix 1.**

3.2 Responsibility for Activating this Plan

Those who shall be responsible for activating the External Emergency Plan are shown in Table 3.1 below.

	Name	Contact Number
1	**Site Manager**	**See Emergency Contact Directory, Appendix 8**
2	**Site Emergency Coordinator**	**See Emergency Contact Directory, Appendix 8**
3	**Senior Officer, Principle Emergency Services**	**Via ECAS 999/112**

Table 3.1 Persons Responsible for Activation of the EEP

3.3 How will this Plan be Activated?

Once a major accident has occurred or is considered likely to occur, the CBE West Emergency Coordinator / Site Manager shall formally declare that the EEP is being activated and will do this by making a '999/112' telephone call to the Emergency Call Answering Service (ECAS) to alert one of the following Principle Emergency Services (PES):

- **Fire Service:** Galway Fire & Rescue Service will be alerted through the West Regional Communication Centre (WRCC), by means of the 999/112 call to ECAS.
- **Garda Divisional HQ / Communications Centre:** An Garda Síochána will be alerted via the Divisional Communications Room at the Garda Station, Murrough, Galway by means of a 999/112 call to ECAS.
- **Ambulance Control:** The HSE National Ambulance Service will be alerted through the National Emergency Operations Centre (NEOC) in Tallaght, Co. Dublin by means of a 999/112 call to ECAS.

The CBE West representative will ask initially for the most relevant PES and in most cases (but not exclusively) this is likely to be the Fire Service. On receipt of a call from ECAS informing them of an incident at CBE West, Oranmore and that the External Emergency Plan is / or is likely to be activated, the receiving PES control centre will mobilise their own emergency service and then contact the control centres of the other PES as a matter of urgency. They will ensure that the other Principle Response Agencies (PRAs) and other agencies are alerted as shown in Tables 3.2 to 3.4. If the CBE West representative has the time, he / she may also call the other PES directly in turn.

WRCC (Fire Service) - EEP Activation Actions		
1	Mobilise the predetermine attendance (PDA)	
2	Inform the Rostered Senior Fire Officer	
3	Pass the ETHANE Message via ECAS to: Ambulance Service National Emergency Operations Centre (NEOC) Garda Divisional Communications Room, Galway Division, Mill Street, Galway	
4	Activate the Saadian Message system and send the ETHANE message to Galway County Council Customer Services Section on 091 509000	
5	Pass the ETHANE Message to the Controller of Operations – Galway County Council	
6	On a Stop Trains Request Contact Irish Rail	
	Central Traffic Control, Dublin Athlone Signalman	**(01) 8555 454** **(0906) 497709**

Table 3.2 WRCC (Fire Service) - EEP Activation Actions

3.3.1 West Region Communications Centre – Fire (WRCC)

WRCC will carry out the following actions as summarised in Table 3.2 above.

3.3.2 National Emergency Operations Centre (NEOC) - HSE

NEOC will carry out the following actions summarised in Table 3.3 below:

NEOC (National Ambulance Service / HSE) - EEP Activation Actions	
1	Mobilise the predetermine attendance (PDA)
2	Pass the ETHANE message to the HSE Controller of Operations (Ambulance Officer)
3	Activate the HSE alert system
4	Pass the ETHANE Message without delay to: West Region Communications Centre (WRCC) - Fire Garda Divisional Communications Room, Galway Division, Mill Street, Galway

Table 3.3 NEOC (National Ambulance Service) - EEP Activation Actions

Divisional Communications Room (Garda) - EEP Activation Actions		
1	Mobilise the predetermine attendance (PDA)	
2	Pass the ETHANE message to the Garda Controller of Operations (Inspector)	
3	Activate the Garda alert system	
4	Pass the ETHANE Message without delay to: Ambulance Service National Emergency Operations Centre (NEOC) WRCC	
5	Alert the following other agencies	
	Galway City Council	**091 536400 (24 hours)**
	Irish Rail – Central Traffic Control, Dublin	**(01) 8555 454**
	Irish Coastguard	**999 / 112**

Table 3.4 Divisional Communications Room (Garda) - EEP Activation Actions

3.3.3 Garda Divisional Communications Room

The Garda Divisional Communications Room, Galway Division will carry out the following actions summarised in Table 3.4 above:

3.3.4 CBE West Emergency Coordinator / Site Manager

The **CBE West Emergency Coordinator / Site Manager** will also inform the following:

- The Environmental Protection Agency.
- The Health and Safety Authority

3.4 Information to be Provided to the PES

When making the '999/112' telephone call as described above CBE West will report the accident/event at the site by providing the necessary information to the relevant Principle Emergency Service control room using the **ETHANE** message outlined in Table 3.5 below. The PES Control will be asked to confirm that they will pass the message to the other PES. Where possible CBE West should make contact with all of the PES.

On receipt of the EEP ETHANE message and when informing other control rooms, individual control rooms will use the following message before repeating the ETHANE message:

"A major incident has occurred at CBE West, Oranmore, County Galway. The External Emergency Plan has been activated. Stand by for an ETHANE message".

This is _____ Emergency Coordinator / Site Manager at CBE West, Oranmore, County Galway. A serious incident has occurred/is likely to occur at the CBE West site, which is an Upper Tier SEVESO site. As an authorised person, I am activating the CBE West, Oranmore External Emergency Plan. I will now give you an ETHANE message:		
E	**Exact Location**	**Site name and address**: CBE West Ltd, Deerpark Industrial Estate, Oranmore, County Galway and specify building or installation on site. Eircode H91 D934 Phone Number 091 484 800
T	**Type of Incident**	**Fire, Explosion, Leak** (Describe the incident in as much detail as possible and actions taken): Major accident (involving a fire / explosion / chemical spill) and **activation of the External Emergency Plan is required.**
H	**Hazards**	**Describe the Hazards** e.g. Smoke, fire, explosion, chemical incident, pollutants etc; **Current and potential.**
A	**Access**	**Describe the Access Route & Point** From which direction to approach (Red, Green, Yellow route) use main / secondary entrance. Current wind direction is _____.
N	**Number of Casualties**	**Number of Casualties** and their type/severity of injuries
E	**Emergency Services**	**Emergency Services** present and required (Fire, Ambulance, Garda) also Irish Rail are required to stop all rail traffic
Can you confirm that you will inform the other (Garda and Ambulance) control rooms?		

Table 3.5 Activating the EEP - The ETHANE Message

3.5 PES On-Site Prior to Activation of the EEP

It is possible that the PES may be mobilised initially to a routine incident at CBE West and that this incident could escalate to an extent that the External Emergency Plan needs to be activated. In such cases the PES will activate the EEP in conjunction with CBE West using the ETHANE message format through the relevant PES control centre. The actions of the relevant control rooms will be the same.

3.6 Activation of the EEP

On activation of this External Emergency Plan, PRAs / PESs will implement their key actions as outlined in **Section 4**. GCC, AGS, HSE, GFRS and CBE West will convene at the **Incident Control Point (ICP)**, which will normally be the office at the main entrance to CBE West. If this location is unusable then an alternative is located at either **RVP 1 or RVP 2** on the R381 (as appropriate depending on the approach route nominated)**.**

The Principle Response Agencies also have their own Major Emergency Plans, which can **only** be activated by an Authorised Officer of an individual PRA in the event that the incident escalates into a Major Emergency under the MEM Framework. The PRAs have their own mobilisation procedures (for example Galway County Council uses a Saadian message alert system through WRCC) in such an event.

3.7 Immediate Evacuation Procedure

Detailed evacuation procedures including maps are contained in **Section 6** and **Appendices 4 and 5**.

3.7.1 On-Site Evacuation

In accordance with the CBE West Internal Emergency Plan (see **Appendix 7**) the internal continuous fire / evacuation alarm will be sounded which will indicate that the site must be evacuated to either the main entrance or secondary entrance. A roll call is taken and compared to the site time and attendance system. The CBE West **Emergency Coordinator** will go to the **Incident Control Point** (ICP) located initially at the office at the main entrance. At the I**CP** he/she will brief the PES. All other CBE West personnel

will remain at the assembly points unless they are instructed to move off site to **RVP 1** or **RVP 2** as necessary and depending on the situation.

3.7.2 Off-Site Evacuation

For any incident at CBE West, consideration should be given to warning the public advising as necessary; to stay indoors, close all windows and doors, and switch off all ventilation systems. There are two evacuation scenarios as follows:

- A HCL spill evacuation, and
- A progressive off-site evacuation.

3.7.3 HCL Spill Off-Site Evacuation

The most significant off-site scenario is likely to be a large HCL leak. If the leak cannot be stopped or diluted, it is possible that a vapour cloud could form and migrate off-site and evacuation of certain buildings may be necessary depending on the situation, the extent of the spill and the weather. Given a Northerly wind the most vulnerable area is likely to be **Zone 1** (180m) (**see Appendix 4**). If this zone is to be evacuated the external evacuation siren will sound. Occupants of buildings in **Zone 1** should immediately evacuate to assembly points on the Southern (Oranmore) side of the Maldron Hotel or to the Cold Move premises to the North. Premises fire wardens will inform CBE West that their building has been evacuated using the agreed procedure and text messaging system. A CBE West representative, and Civil Defence personnel when available, will be dispatched to the assembly points to assist evacuees.

3.7.4 Progressive Off-Site Evacuation

In the event that the situation deteriorates, additional evacuation of surrounding premises / areas may be required. To assist AGS with progressive evacuation, check points and evacuation zones have been identified as **Zone 2** (300m), **Zone 3** (500m), **Zone 4** (700m). Evacuees would be directed to Emergency Evacuation Centres away from the site (see **Section 6 & Appendix 4**). Civil Defence personnel will be mobilised to care for evacuees at Emergency Evacuation Centres. Transport will be provided by Civil Defence, the Defence Forces or private operators as necessary.

3.7.5 Outer Traffic Cordon

To assist with traffic management, an outer traffic management cordon may be required. This will require checkpoints on road arteries considerable distances from the CBE West site (see **Section 6 & Appendix 4**).

3.7.6 Segmental Evacuation

Depending on the situation, weather and weather forecast, it is possible that that a segmental evacuation approach might be appropriate as outlined in **Appendix 5.** Such a strategy must be carefully considered by the OSCG. Acute exposure guidance levels **(AEGL)** indicate that some effects may potentially be experienced beyond **Zone 4** (700m), however these guidance levels do not account for terrain and the presence of buildings or obstacles. Housing estates due South of the site towards Oranmore Village should be considered in this context. In other directions the land is primarily agricultural or low density commercial.

3.8 On-Site Co-ordination Centre, OSCC.

Initially the Controllers of Operations of the PRAs should report to and make contact with the **ICP** unless otherwise advised. If the use of the CBE West conference building is not appropriate, the **OSCC** will be activated and located at least initially at the Oranmore Lodge Hotel. Even if the incident does not materialise into a Major Emergency under the MEM Framework, the **OSCG** will still be convened for the duration of the incident. The HSE, AGS and Galway County Council will be represented at the **OSCC** with the following personnel:

- Controller of Operations
- Information Management Officer
- Action Management Officer
- Media Liaison Officer
- Other support personnel as deemed necessary

GFRS, Civil Defence and CBE West will be represented at the OSCC, as will Irish Rail where the incident involves a train or significantly effects the rail network.

Evacuation of **Zone 3** would compromise the **OSCC** at the Oranmore Lodge Hotel and

the alternative **OSCC** location at Oranmore Community Hall would be activated. The Mobile On-Site Coordination Unit (GY15C4) will be mobilised and Civil Defence personnel may also be mobilised to assist in the setting up of the **OSCC**.

3.9 Standing-down of the Plan.

The decision to stand down the External Emergency Plan at the site and to announce an **'All-Clear'** to the public will be taken by the On-Site Co-ordinator, in consultation with the other Controllers of Operations (at the **OSCC**) and CBE West.

Where a Major Emergency has also been declared under the Framework for Major Emergency Management, the decision to stand down the incident at the site and to announce an 'All-Clear' to the public will be taken by the On-Site Co-ordinator, in consultation with the other Controllers of Operations (at the **OSCC**), and the Local Co-ordination Group, at the Local Coordination Centre (**LCC**) at Room G01 County Hall.

SECTION 4: MAJOR ACCIDENT MANAGEMENT & KEY ACTIONS

4.1 Major Accident Management Plan - Summary

4.2 Responsibilities and Key Actions of the Site Operator CBE West

4.3 Key Actions: Galway Fire & Rescue Service (GFRS)

4.4 Key Actions: Galway County Council

4.5 Key Actions: An Garda Siochana (AGS)

4.6 Key Actions: Health Service Executive Ambulance Service (HSE)

4.7 Key Actions: Irish Rail

4.8 Key Actions: Defence Forces

4.9 Decontamination

SECTION 4: MAJOR ACCIDENT MANAGEMENT & KEY ACTIONS

4.1 Major Accident Management Plan - Summary

The generic plan to manage a Major Accident Scenario at CBE West Oranmore is summarised in Table 4.1 below. The plan should be agreed by the Controllers of Operations of the PRAs and should be confirmed following the incident risk assessment.

Serial	Description	Responsibility
1	Discovery of incident and site evacuation	CBE West
2	Activation of EEP notification of PES	CBE West / PES
3	Notification of other PES / PRA	PES Control Rooms
4	Response by EC and PES to ICP	CBE West / PES
5	GFRS activate CP1 until relieved by AGS who activate CP1, CP2 & CP3	GFRS / AGS
6	Other PES assets to RVP as advised	PES
7	Confirm scenario, site evacuation, danger area, weather and need for off-site evacuation	GFRS / AGS / CBE West
8	Consider evacuation of Zone 1 & a CBE West representative to the Maldron Hotel. AGS send a representative to this location also	CBE West / AGS / CD
9	Confirm rail traffic has been stopped	PES / Irish Rail
10	Activate OSCC at Oranmore Lodge Hotel	PRA / PES/CBE West/IR
11	Issue initial warning to members of the public	AGS Press Office
12	Mobilise Civil Defence to OSCC, assembly points & temporary evacuation centres	GCC/CDO
13	Consider need for progressive / segmental evacuation Zones 2 – 4 and associated cordons	OSCG/ AGS / GFRS /CD
14	Consider activation of temporary evacuation centres	GCC / CD / AGS / HSE
15	Deal with incident – with advice from HSE Public / Environmental Health & GCC Environment Section	CBE West / GFRS / GCC / HSE
16	Deal with resulting casualties including establishing a CCS as necessary	HSE / NAS / CD
17	Establish temporary morgue and Casualty Information Bureau as necessary	AGS /GCC / CD
18	Declare a Major Emergency & activate the LCG	OSC / PRA
19	Issue media updates	OSCG / LCC / MLO
20	Manage on-site media	OSCG / MLO
21	Establish on site decontamination	HSE / GFRS
22	Manage recovery phase	OSCG / CBE West
23	Declare All Clear	OSCG

Table 4.1 Major Accident Management Plan – Summary

4.2 Responsibilities and Key Actions: Site Operator CBE West

CBE West shall:

- Ensure that the IEP is kept up to date and the PRAs are informed of any significant changes
- Ensure that all CBE West personnel are familiar with the IEP and that appointment holders are trained and prepared for their roles
- Notify the PES of a major accident having occurred or being imminent using the ETHANE message to ECAS via 999/112
- Cease operations and conduct an on-site evacuation and progressive onward evacuation as necessary
- For incidents involving a HCL spill and vapour cloud and a Northerly wind, consider the off-site evacuation of **Zone 1** using the external siren (personnel to move to the Maldron Hotel or Cold Move assembly areas)
- Where appropriate isolate the HCL spill and dilute using the on-site cannon
- If **Zone 1** is evacuated **c**onfirm with fire wardens that all buildings have been evacuated. Dispatch a representative to the assembly area at the Maldron Hotel to confirm evacuation
- Ensure that the **Initial Control Point (ICP)** and **Rendezvous Points (RVPs)** are agreed with the Emergency Services. The Initial Control Point will be at the office at the Site Entrance. In the event that the facility has been evacuated fully, the **ICP** will be relocated to **RVP 1** or **RVP 2** depending on the situation
- Dispatch the Emergency Coordinator to the **ICP** and brief and liaise with the PES as soon as they arrive
- Inform **Irish Rail / Iarnrod Eireann, Central Traffic Control** or Athlone Signalman to stop all trains. This may be done by phoning Irish Rail as per Appendix 7 or by using the emergency phone at the railway level crossing
- Inform the **Health & Safety Authority (HSA)** of the incident, as required
- Inform the **Environmental Protection Agency (EPA)**, as required
- Monitor ground/surface water inspection points where possible and conduct indicative pollution tests as necessary or as requested
- Provide a representative to the **OSCC** once it has been activated

- Ensure adequate liaison between **Media Liaison Officers (MLO)** and the CBE West media team at the **OSCC** and jointly agree the public information process
- Provide personnel / operators and a forklift truck for fire-fighting operations (as directed by the GFRS Fire Incident Commander)
- Provide support and technical advice for GFRS operations as required including fuel for extended operations
- Ensure that CBE West personnel carry identification for passing cordons and key emergency personnel wear identification tabards
- If a Major Emergency is declared send a representative to the **LCC** at County Hall
- In conjunction with the PRAs ensure the management of the recovery phase including the appointment of any necessary specialist contractors

4.3 Key Actions: Galway Fire and Rescue Service (GFRS)

Galway Fire and Rescue Service shall:

- Mobilise resources through the WRCC in accordance with pre-determined attendance (PDA) contained in GFRS Major Incident Plan – CBE West, Oranmore
- Inform the RSFO (Rostered Senior Fire Officer) of the incident
- Activate the GFRS Major Incident Plan (MIP) – CBE West, Oranmore
- The first responding appliance should report to the **ICP** at the Main Office and the second appliance should activate **CP1** at the entrance to the CBE West site until relieved by AGS. If the site has been fully evacuated the **ICP** will move to **RVP1** or **RVP2** as appropriate
- The Incident Commander will make contact with the CBE West Emergency Coordinator at the **ICP** and obtain more detail regarding the incident from CBE West or other PES at the **ICP.** The Incident Commander should also obtain a read out of tank contents and gauge levels from the CBE West Emergency Coordinator
- Carry out a dynamic risk assessment for the incident (with CBE West) and determine an incident management (tactical) plan in conjunction with GCC Environment Section and HSE Public Health officials (where appropriate)
- Confirm that the EEP has been activated
- Establish a Danger Area and confirm cordons (consider the site perimeter as an initial Inner Cordon). Obtain / refer to chemical plume prediction as necessary

- Liaise with AGS in relation to an initial public information / safety message
- In the event of a HCL leak determine the need for off-site evacuation. In the event of a Northerly wind consider evacuation of **Zone 1**
- Confirm that the HCL leak is being diluted using the on-site water cannon and pump
- Advise on sheltering and the need for progressive evacuation
- Identify potential contamination by fire run-off water.
- Establish own agency liaison with:
    - CBE West
    - An Garda Síochána
    - The National Ambulance Service
    - The HSE (public and environmental health)
    - Galway County Council (water services & environment section)
    - GCC Controller of Operations
    - Irish Rail
    - Irish Water
    - Health & Safety Authority (where appropriate)
    - The Environmental Protection Agency (where appropriate)
- Mobilise the mobile on-site coordination unit (GY15C4) to site and set up the **OSCC**
- Send a representative to the **OSCC** to assist the GCC Controller of Operations
- Deal with the incident in order to mitigate the effects of the major accident in accordance with the GFRS Major Incident Plan and Standard Operational Guidance issued by the National Directorate for Fire and Emergency Management (NDFEM)
- Given the hazardous nature of the products, GFRS in consultation with CBE West and the HSE will assess the requirement for on-site decontamination.
- Provide under HSE supervision on-site public decontamination as necessary
- Consider the requirement to declare a Major Emergency (under the Framework for Major Emergency Management and as per the Galway County Council Major Emergency Plan) and to activate the plan if deemed necessary,
- If a Major Emergency is declared and Galway County Council's Major Emergency Plan is activated, the RSFO will initially assume the role of LA Controller of

Operations until relieved by the GCC Controller of Operations (This is also the case for the EEP).

- Consider what action should be taken to communicate the conclusion of the incident and the “All-Clear” to the public
- In conjunction with the other PRAs and CBE West ensure the management of the recovery phase

Figure 4.1 GFRS Incident Command Unit – GY11C1

Figure 4.2 GFRS Mobile On-Site Coordination Unit– GY15C4

4.4 Key Actions: Galway County Council

Galway County Council shall:

- Ensure that all relevant personnel are familiar with the CBE West EEP
- On notification of a major accident at CBE West Oranmore ensure that other PES and PRAs are notified immediately
- Activate the Saadian message alert system to mobilise nominated personnel
- Mobilise GFRS, Civil Defence, an Environmental Officer, and a member of water services
- Despatch designated personnel as required to the Local Co-ordination Group, On-Site Co-ordination Centre and Crisis Management Team **(CMT)** *(controller of operations, information managers, action managers, media liaison officers, log keeper),*
- Appoint a Controller of Operations who, as this is a hazardous materials incident, will also act at least initially as the On-Site Coordinator while GCC are the Lead Agency. The **COO** should report initially to the **ICP** and then move to the **OSCC**
- Establish communications with the Principal Emergency Services and CBE West
- Establish communications with GCC personnel who have been designated key roles under GCC's MEP and Civil Defence personnel
- Provide all responding staff with information pertaining to the situation, danger area, safe approach routes and the need for personal protective equipment
- Consider the requirement to declare a Major Emergency under the MEM Framework and Galway County Council's Major Emergency Plan and if necessary, activate the plan
- Convene and chair the **LCC** at County Hall as necessary or as required
- Mobilise sufficient resources including labour and plant from various Galway County Council sections as deemed necessary
- Liaise with Controllers of Operations of other PRAs, and CBE West personnel at the **OSCC** located *initially* at the Oranmore Lodge Hotel. GCC personnel other than GFRS personnel will not be in attendance at the initial Incident Control Point (unless requested)
- Establish a Tetra communications link between the **OSCC, ICP** and **LCC**

- GCC **MLO** to coordinate dissemination of information to the media and to manage on-site media personnel
- In consultation with Controllers of Operations of other PRAs
    1. Agree locations for Casualty Clearing Station, Ambulance Loading Point, Body Holding Area and Holding Area(s), as appropriate,
    2. Agree a Traffic Management Plan specific to the scenario. Assist Gardai in implementing and maintaining cordons, advising on evacuation and the provision of shelter
    3. Agree the Public Information process, including the setting up of an Emergency Information Helpline
    4. Request a representative from Irish rail if applicable.
- Manage water and air pollution incidents referring to the Galway County Council Procedure for Pollution Incidents contained in Appendix 2: Summary of Environmental Impact
- Where an off-site release occurs all relevant water treatment facilities should be informed through GCC Environment / Water Services Sections.
- Manage the evacuation and relocation of persons
- Mobilise Civil Defence personnel to assist in evacuation, the setting up of the **OSCC**, temporary mortuary if necessary, and the manning of temporary evacuation centres
- Deploy the multiple fatality container and fleximort system to site as required and mobilise fleximort units from other local authorities as required
- Deploy GFRS MFU-01 & GFRS MFU-02 Mass Fatality Refrigerated Transport Trucks to site if necessary and as required
- Operate and maintain the normal infrastructure of the County during the emergency,
- In consultation with the Controllers of Operations of other PRAs and CBE West, agree what action should be taken to communicate the conclusion of the incident and the “All-Clear” to the public,
- In conjunction with the other PRAs and CBE West ensure the management of the recovery phase

4.5 Key Actions: An Garda Síochána

An Garda Siochana shall:

- Ensure that all relevant personnel are familiar with the CBE West EEP
- On notification of a major accident at CBE West Oranmore ensure that other PES and PRAs are notified immediately
- Activate AGS mobilisation procedures and deploy assets to site
- On activation of the CBE West EEP, initially respond to CBE West as follows:
  - An officer to report to the **ICP** at the Main Office or if the site is fully evacuated at the alternate **ICP** at either **RVP1** or **RVP2** as appropriate
  - Establish **CP1, 2 and 3** to allow the PES to respond to the incident
  - Ensure that sufficient Garda resources are deployed to the incident jointly with CBE West and other responding agencies.
- Identify locations for the Garda Incident Command Vehicle if present and if necessary, a Holding Area (usually between **CP2 and 3)**
- Establish communications with the Principal Emergency Services and CBE West
- Provide all responding staff with information pertaining to the situation, danger area, safe approach routes and the need for personal protective equipment
- Pass to the Garda Press Office any necessary initial warning to the public, in accordance with the West Region Media Plan: Inter-agency Public Communication Plan
- Depending on the information received as to the risk scenario, consider the need for progressive evacuation and implement cordons / checkpoints as appropriate
- Where available deploy personnel at the assembly areas (Maldron Hotel and Cold Move), **OSCC** and any temporary evacuation centres in operation. Consider the need for an outer traffic management cordon
- Appoint a Garda Controller of Operations who will take command of Garda resources at the **OSCC**. Initially the Controller should report to the ICP and then move to the **OSCC**
- Despatch designated personnel as required to the Local Coordination Centre, On-Site Co-ordination Centre and Crisis Management Team (CMT) *(controller of*

operations, information managers, action managers, media liaison officers, log keeper),

- Liaise with Controllers of Operations of other PRAs, and CBE West personnel at the **OSCC** located *initially* at the Oranmore Lodge Hotel.
- In consultation with Controllers of Operations of other PRAs
  - Agree locations for Casualty Clearing Station, Ambulance Loading Point, Body Holding Area and Holding Area(s), as appropriate,
  - Agree and implement a Traffic Management Plan specific to the scenario. Agree the Public Information process,
- Consider the requirement to declare a Major Emergency (under the Framework for Major Emergency Management and An Garda Síochána Major Emergency Plan) and activate the AGS Major Emergency Plan if required,
- Send a representative to the **LCC** at County Hall
- In consultation with the Controllers of Operations of other PRAs and CBE West, agree what action should be taken to communicate the conclusion of the incident and the "All-Clear" to the public
- In conjunction with the other PRAs and CBE West ensure the management of the recovery phase
- Conduct any necessary investigations including those in conjunction with other agencies as appropriate and necessary

4.6 Key Actions: Health Service Executive & National Ambulance Service

The HSE / Ambulance Service shall;

- Ensure that all relevant personnel are familiar with the CBE West EEP
- On notification of a major accident at CBE West Oranmore ensure that other Principle Emergency Services and Principle Response Agencies are notified immediately
- Activate the HSE mobilisation procedures
  1. The Ambulance Service will execute Ambulance Service Standing Orders for the site of a Major Emergency and mobilise and dispatch the pre-determined attendance (PDA) to the site

- On activation of the CBE West EEP, initially respond to CBE West as follows:
  1. An Ambulance officer to report to the **ICP** at the Main Office or if the site is fully evacuated at the alternate **ICP** at either **RVP1** or **RVP2** as appropriate
  2. Report to Ambulance Control using (M)ETHANE,
  3. Act as HSE Controller of Operations at the **OSCC**, if required,
- Identify locations for the HSE Command Vehicle if present and if necessary, a Holding Area (usually between **CP2 and 3**)
- Establish communications with the Principal Emergency Services and CBE West
- Provide all responding staff with information pertaining to the situation, danger area, safe approach routes and the need for personal protective equipment
- Appoint a HSE Controller of Operations who will take command of HSE resources at the **OSCC**. Initially the Controller should report to the **ICP** and then move to the **OSCC**
- Despatch designated personnel as required to the Local Co-ordination Centre, On-Site Co-ordination Centre and Crisis Management Team (CMT) *(controller of operations, information managers, action managers, media liaison officers, log keeper),*
- Liaise with Controllers of Operations of other PRAs, and CBE West personnel at the **OSCC** located *initially* at the Oranmore Lodge Hotel.
- In consultation with Controllers of Operations of other PRAs
  1. Agree locations for Casualty Clearing Station, Ambulance Loading Point, Body Holding Area and Holding Area(s), as appropriate,
  2. Agree a Traffic Management Plan specific to the scenario. Assist Gardai in implementing and maintaining Cordons, advising on evacuation and provision of shelter
  3. Agree the Public Information process, particularly in respect of types of casualties, despatch of casualties to hospitals, etc.
- Consider the requirement to declare a Major Emergency (under the Framework for Major Emergency Management and An Garda Síochána Major Emergency Plan) and activate the AGS Major Emergency Plan if required,
- Send a representative to the **LCC** at County Hall
- Provide relevant information to responding units as it becomes available,
- Alert Galway University Hospital, Newcastle Rd, Galway,

- Alert adjoining Ambulance Control Centres and liaise with other HSE services if required,
- Provide specialist Public Health and Environmental Health advice when required,
- Alert the HSE Area Crisis Management Team **(ACMT)** as per HSE Major Emergency Plan.
- Continually provide information for the HSE Area Crisis Management Team **(ACMT),**
- Request the activation of additional HSE services through the HSE Area Crisis Management Team if required,
- Continually update Ambulance Control, with information on the status of the incident, numbers etc.,
- Ensure that all HSE personnel carry identification for passing cordons and wear identification tabards
- Provide or supervise on-site decontamination as necessary
- Coordinate aero-medical evacuation as necessary
- In consultation with the Controllers of Operations of other PRAs and CBE West, agree what action should be taken to communicate the conclusion of the incident and the "All-Clear" to the public
- In conjunction with the other PRAs and CBE West ensure the management of the recovery phase

4.7 Key Actions: Irish Rail

Irish Rail shall;

- Ensure that all relevant Irish Rail staff are familiar with the EEP
- Stop all rail traffic on notification of a major accident at CBE West, Oranmore and on receipt of a request from CBE West or the PES to do so. It is important that a train is not allowed to stop within the Danger Area at the CBE West site
- Confirm to the PES and **OSCC** that all rail traffic is stopped (including maintenance trains)
- Only resume rail traffic on receipt of the "All Clear" signal from the **OSCC**

- Where the incident involves an Irish Rail train, significantly effects Irish Rail infrastructure or a request is received from PRAs deploy an Incident Officer to the **ICP**
- Provide a representative to the **OSCC** or maintain communications with the **OSCC** through AGS
- Ensure all Irish Rail personnel carry identification and wear identification tabards

4.8 Key Actions: Defence Forces

The Defence Forces shall:

- Provide transport to the CBE West site if requested in order to assist in the evacuation of the site and surrounding areas
- Provide a representative to the **OSCC** or **LCC** as requested

4.9 Decontamination

The decontamination of members of the public is normally the responsibility of the National Ambulance Service. It is possible that in the event of significant public contamination, HSE decontamination resources may be deployed at receiving hospitals. In such situations, or where HSE decontamination resources are unavailable, decontamination of members of the public may be undertaken by GFRS with advice from the HSE. GFRS public decontamination equipment is carried on the Hazmat Unit (GY11G1) which will be at scene from an early stage.

Under normal circumstances GFRS are responsible for the decontamination of Fire Service personnel and equipment and other Emergency Services as appropriate in accordance with Standard Operational Guidelines issued by the National Directorate of Fire and Emergency Management (NDFEM).

Where decontamination is required a decontamination area will be located upwind and in the warm zone as shown in Figure 4.3 below.

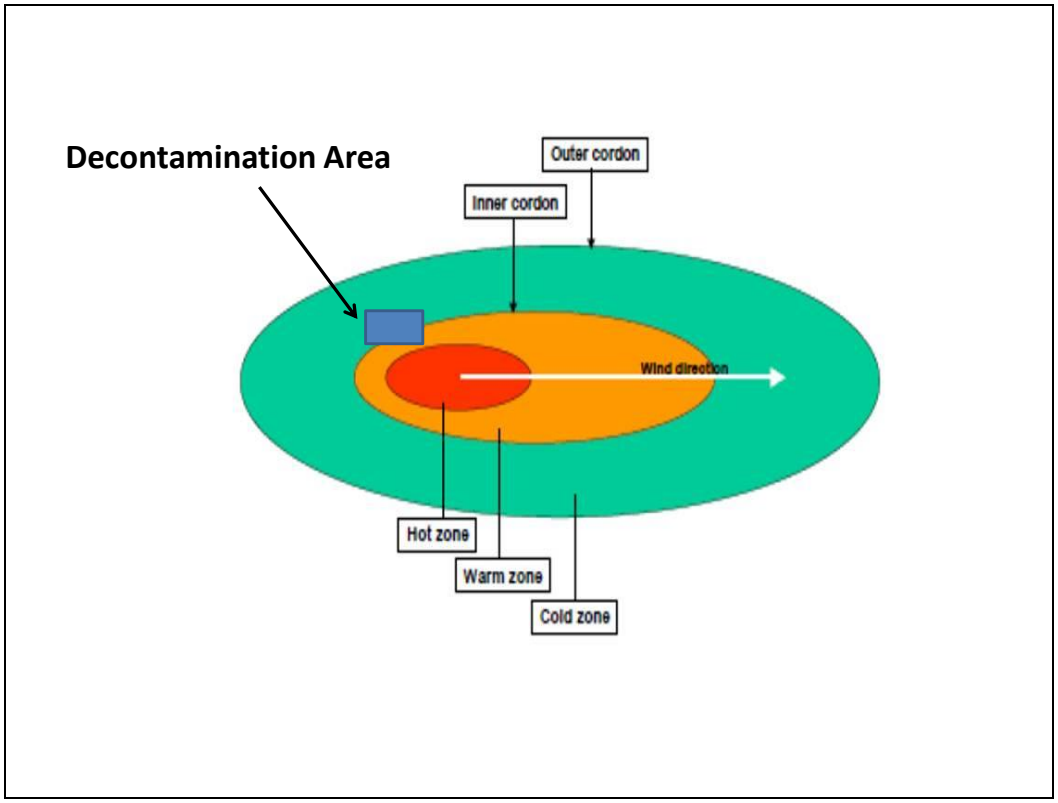


Figure 4.3 The Decontamination Area

SECTION 5: INTERNAL INFORMATION

5.1 Details of Dangerous Substances present at CBE West

5.2 Harmful Effects of the Dangerous Substances at CBE West

5.3 Details of Site Access and Egress

5.4 Location of the Incident Control Point.

5.5 Initial Cordons

5.6 Rendezvous Points

5.7 Possible Major Accident Scenarios at CBE West

5.8 Pool Fires

5.9 Vapour Cloud Explosions

5.10 Jet / Pressure Fires

5.11 Boiling Liquid Expanding Vapour Explosions

5.12 Acetylene

5.13 Bitumen Fires

5.14 HCL Spill and Vapour Cloud

5.15 Domino Effect

5.16 On-site Firefighting Equipment / Systems

SECTION 5: INTERNAL INFORMATION

5.1 Details of Dangerous Substances Present at CBE West

This plan has been prepared to respond to major accidents involving certain dangerous substances that are present at the CBE West, Oranmore site. The Notification submitted to the Health and Safety Authority under COMAH, "Notification of an Establishment", Regulation 11 & Schedule 3, is contained in **Appendix 6.**

The dangerous substances concerned have been the subject of a Hazard Identification process by external consultants as detailed in the site Safety Report submitted under regulation to the Health and Safety Authority (HSA) and listed in **Appendix 1**. In general terms, dangerous substances consist of the following:

- Ultra-low sulphur road diesel (ULSD) or DERV
- DETA which is classed as very toxic to the environment (T^+).
- HCL which can produce a toxic vapour cloud on release.
- Marked gas oil (MGO)
- Kerosene
- DMAPA (flammable and toxic)
- Bitumen (pavement grade & non-cut back) and Bitumen Emulsions
- LPG classed as very flammable (F^+)
- Acetylene classed as very flammable (F^+)
- Nitrogen (asphyxiation risk)
- Other substances that are toxic to the environment

HCL is included based on the HAZID contained in the site safety report. DERV and MGO are not considered flammable at normal temperatures except where the release involves an aerosol. Acetylene is used only in small amounts and is included based on the potential for domino effects within the site. The Bitumen stored at the CBE West terminal is not a cut-back bitumen and is therefore considered to be lower risk although under certain circumstances flammable atmospheres (Hydrogen Sulphide) can result. A large Bitumen fire may pose an off-site risk due to large amounts of smoke.

Materials on-site are stored as liquids, solids and gases. Liquids are stored in vertical or horizontal storage tanks, IBCs and road tankers. Product risk phrases, physical form, and means of storage are shown in Tables A1.1 of **Appendix 1.**

5.2 Harmful Effects of the Dangerous Substances Present at CBE West

5.2.1 Human Health

The harmful effects to humans of the Dangerous Substances listed previously are summarised in **Appendix 1,** and Safety Data Sheets (SDS) for these substances are included in the CBE West Internal Emergency Plan included as **Appendix 7**. SDS for substances of most concern are included in **Appendix 6** with all others available on-site and in the site grab pack at the ICP.

As HCL represents the most likely off-site hazard, guidance on dealing with HCL incidents from the HPA UK is also included in **Appendix 1.**

5.2.2 Environmental Impact

The majority of Dangerous Substances stored on site pose a risk to the environment in terms of a product release. Of these substances DETA poses the greatest risk as it is classified as very toxic to the environment. Additionally, a release of fire-fighting water directly to the environment could lead to contamination of the ground and should be avoided where possible. All on-site releases should be contained on-site due to on-site containment and the impervious site floor, perimeter walls and ramps. All surface water is passed through an interceptor which can be isolated in the event of a spill. Off-site effects can result from a fire or HCL release. The GCC Inland Pollution Plan is included as **Appendix 2. Where an off-site release occurs all relevant water treatment facilities should be informed through GCC Environment / Water Services Sections.**

5.3 Details of Site Access and Egress

There are two entrances to the site as follows:

- The main entrance off the R381, and
- A secondary entrance for emergency use only, at the rear and North of the site through the TJ O Mahoney premises in the Deerpark Industrial Estate

- Additional entry points can be created around the site perimeter as required by GFRS / CBE West including via the railway line

5.4 Location of the Incident Control Point

The **Incident Control Point** (ICP), will be located initially at the office at the site entrance and will be attended by AGS, HSE, GFRS personnel and the CBE West Emergency Coordinator. Tank stock levels, CCTV, and the site fire alarm panel are located here. In the event that the CBE West site has been evacuated fully, personnel will move to and re-establish the **Incident Control Point** at **RVP1** (at the R381 Level Crossing) or **RVP 2** (North of the petrol station on the R381) as appropriate. As the situation evolves, and if progressive evacuation is required, the ICP may have to be further relocated.

5.5 Initial Cordons

The initial cordon should be considered as the site boundary. Additionally, AGS will set up three check points **CP1 -3** on the R381 to assist the PES response as follows:

- **CP1 –** R381 at entrance to CBE West
- **CP2 –** R381 at level crossing
- **CP3 –** R381 junction North of petrol station

CP1 will initially be set up by GFRS until the arrival of the AGS. As the incident progresses consideration can be given to dispensing with CP1.

5.6 Rendezvous Points

There are two initial RVPs as follows:

- **RVP1 –** R381 at level crossing (CP2)
- **RVP2 –** R381 junction North of petrol station (CP3)

If progressive evacuation is necessary, the locations of these RVPs may move towards CP 5 and CP 8 respectively and even beyond.

5.7 Possible Major Accident Scenarios at the CBE West Site

A number of major accident scenarios have been identified by the Site Operator through a hazard identification (HAZID) and risk assessment process conducted by external consultants. In addition, a number of other scenarios have been identified by GFRS as

being typical of such sites based on the hazardous substances stored on-site. Scenarios are summarised in Table 5.6. It should be noted that the site is well run and has a very good safety record and therefore the probability of the occurrence of a major accident scenario is considered low. Irrespective of the probability, this EEP must plan for the worst-case scenarios as follows:

- Major accident hazards associated with the storage and handling of DETA (very toxic material) primarily a loss of containment in the event of a spill from a pipe, storage tank or road tanker. The spill can be contained within the bund or not and the bund may also be overtopped
- Major accident hazards associated with the storage and handling of Hydrochloric acid (HCL) (toxic material) with the formation of a Hydrogen Chloride vapour cloud (heavier than air) in the event of a spill from a pipe, storage tank or road tanker. The spill can be contained within the bund or not and the bund can be overtopped. Road tanker capacity is typically 25 tonnes
- Major accident hazards associated with the storage and handling of material classified as dangerous to the environment (toxic material) primarily a release to the environment due to a spill from a pipe, storage tank or road tanker. The spill can be contained within the bund or not and the bund can be overtopped
- Major accident hazards associated with the storage and handling of flammable materials (MGO, DERV, Kerosene) including a tank fire, bund fire or pressure fire
- Major accident hazards associated with the storage and handling of very flammable materials (LPG and Acetylene) including a tank fire, bund fire or pressure fire. Flammable vapours are heavier than air and if ignited can result in an explosion (confined or unconfined). The former includes a pressure vessel explosion at Chemoran.

5.7.1 Material Toxic to the Environment

Toxic material is stored in horizontal or vertical bulk tanks or IBCs (primary containment). The tanks are located within bunded areas (secondary containment). The site has an impervious concrete floor and concrete perimeter walls / kerbs with ramped exits (tertiary containment). As part of the site IPC licence, there are boreholes around the site to monitor ground water. Chemicals are delivered to site and removed from site in bulk road tankers or IBCs.

Toxic materials are summarised along with relevant control measures in Table 5.1. DETA has been identified as the most toxic substance and it is stored in liquid form. All surface water passes through a valved interceptor before leaving site. **The critical action for any chemical release is the closure of the site interceptor valves** see Figure 2.3. The most likely off-site scenario identified is a HCL liquid leak resulting in a toxic Hydrogen Chloride vapour cloud which is discussed in Section 5.14.

5.7.2 Flammable Material

Flammable product is contained in storage vessels and the majority of major accident hazards result from some loss of product containment. Loss of containment with ignition will result in a fire and potential explosion. Loss of containment without ignition can result in the formation of a flammable vapour cloud. This cloud can be dispersed due to the wind and delayed ignition can result in an explosion and fire. There are a number of potential major accident scenarios broadly categorised as follows:

- Pool fires (including tank surface and bund fires)
- Jet or pressure fires
- Boiling liquid expanding vapour explosion (BLEVE)
- Vapour cloud with ignition and explosion either confined or unconfined
- Vapour cloud with delayed ignition and explosion either confined or unconfined (the former may result in blast overpressure)
- Other fires such as vehicle or building fires with the potential to impinge on flammable liquid storage
- Bitumen fires possibly resulting in a large smoke plume

5.8 Pool Fires

5.8.1 Tank Fire

A fire in a vertical storage tank surface is a type of pool fire where there has been no prior loss of containment. The only flammable liquid storage tank on site is the DMAPA tank in the Chemoran RMI Bund. Unlike flammable storage tanks in Galway Harbour this tank does not have a floating deck beneath the fixed cone roof to prevent flammable vapour formation in the tank ullage space nor does it have fixed foam pourers or drenchers. DMAPA has a flash point of approximately 28^{o}C. A flammable atmosphere can result in the ullage space which could lead to a vent fire. Potential ignition sources are static

electricity, non-intrinsically safe equipment, or an ignition source projected towards the tank such as a flare. Ignition can cause a vapour space explosion followed by a full surface tank fire. The weak wall to roof welds are designed to fail and ventilate the tank. DMAPA is stored in the RMI Bund which forms part of the ATEX area. A burning tank will regress at a rate of approximately 300mm per hour and the tank sides are designed to fold inwards unless external cooling is not completed uniformly. An external attack by GFRS may be possible or else the tank can be left to burn down and adjacent exposures are cooled at the appropriate rate. The risk to persons (indoors / outdoors) from thermal radiation is summarised in Tables 5.1 and 5.2 below.

Fatality Risk %	Thermal Flux kW/m^2
1	6.8
10	9.23
50	13.4
Policy and Approach of the HSA to COMAH Risk-Based Land Use Planning, March 2010	

Table 5.1 - Risk to Persons Outdoors - Thermal Radiation Effects

Thermal Flux kW/m^2	Fatality Risk %
<12.7	0
12.7 – 25.6	As per outdoor risk
>25.6	100
Policy and Approach of the HSA to COMAH Risk-Based Land Use Planning, March 2010	

Table 5.2 - Risk to Persons Indoors - Thermal Radiation Effects

5.8.2 Bund Fire

Where there is a loss of containment from a storage vessel, or tank over-filling, the product will spill into the secondary containment or bund, which should be devoid of ignition sources. The bunds, in certain circumstances, are liable to be overtopped by a small amount. The vapour formed from the spilled flammable liquid should also be contained. A spill in a bund is not usually foamed due to the potential ignition from static electricity generated by foam streams, unless ignition is imminent or the vapour cloud is likely to spread beyond the bund. Where ignition occurs the resulting bund fire is tackled using medium expansion bund pourers. If foam cannons are used, the foam streams must be

deflected first onto tank sides or bund walls to avoid static electricity. Application rates for monitors will also be significantly higher requiring significant additional foam stocks.

Catastrophic failure of a storage tank may result in significant amounts of product overtopping the secondary containment bund into the tertiary bund (bounded by the site perimeter wall). The HSA consider that the maximum pool diameter in a bund over-topping scenario is 100m. In such situations any vapour cloud formed may drift further off site. The risk to persons (indoors / outdoors) from thermal radiation is summarised in Tables 5.1 and 5.2.

5.8.3 Off-Site Effects – Worst Case Pool / Bund Fire

The worst-case off-site effects from a bund / pool fire results from the modelling of a reactor overspill (Chemoran) and subsequent yard pool fire. The mortality contours and pain threshold are shown in Figures 5.1 and 5.2 respectively

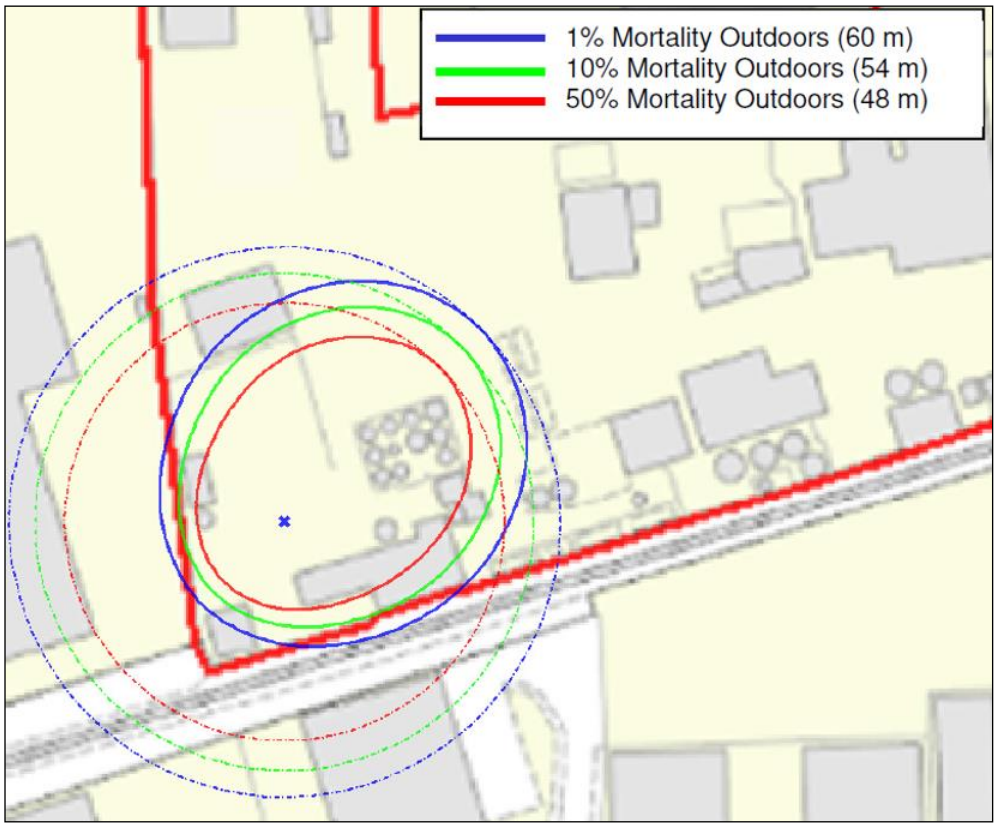


Figure 5. 1 DMAPA Yard Pool Fire – Mortality Contours (2015)

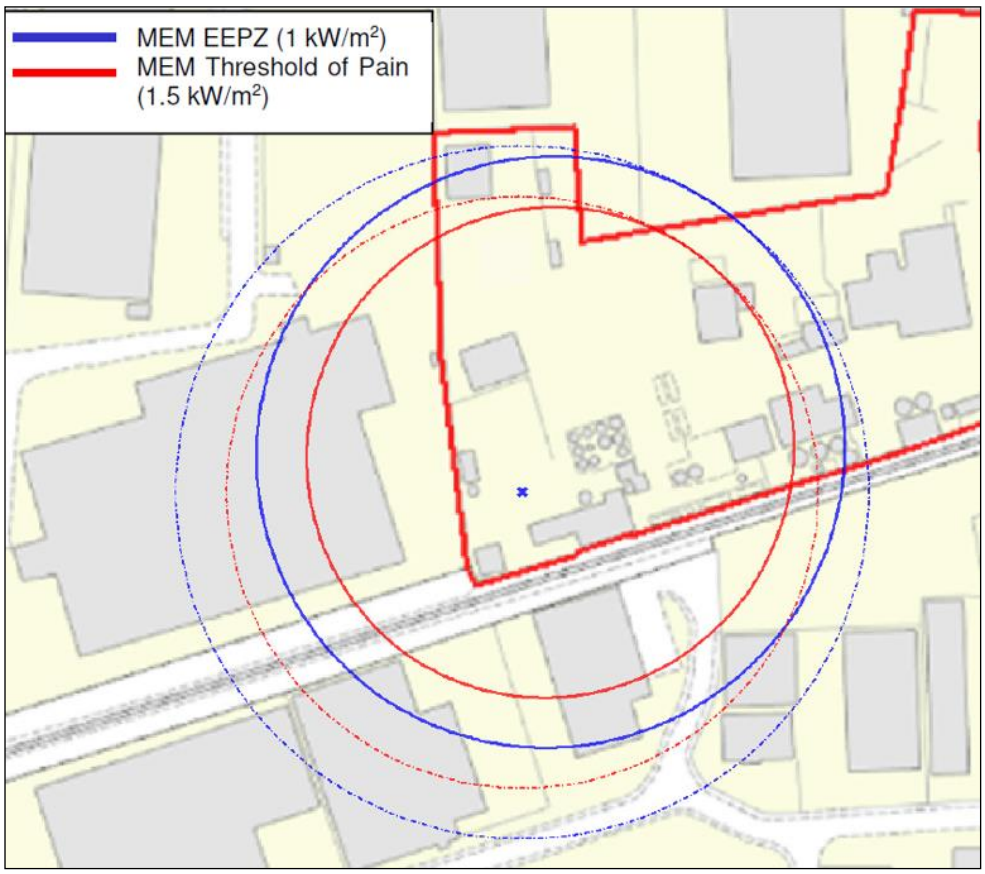


Figure 5. 2 DMAPA Yard Pool Fire – Pain Threshold (2017)

5.9 Vapour Cloud Explosions

Where a release of flammable product takes place and a pool is formed, a vapour cloud can form over the product pool. As the vapour is heavier than air it can move or slump over the ground and can be dispersed laterally by the wind. Low wind speed or no wind and flat ground will see the maximum cloud travel distance. Increased wind speeds and rougher terrain will provide more opportunity for the cloud to disperse to below the lower flammability limit. In the open, ignition would normally result in a flash fire and then a sustained pool fire and this scenario is often termed an unconfined vapour cloud explosion (***UVCE***).

Where the vapour enters a building and subsequently ignites, combustion is confined and an internal explosion results, with overpressure in the region of 8 bar. Such an event is often referred to as a ***bang box explosion.*** Where the vapour cloud encounters a congested area (for example the tanker loading gantry, the pump area, areas with significant arrays of pipe work, car parks and even fences and trees) and ignition occurs, turbulence in the cloud around obstacles causes the flame speed to increase significantly.

An explosion can result with significant overpressure, and in some cases a detonation can occur. In the Buncefield incident it is suggested that a bang box ignition in the pump house is likely to have ignited a vapour cloud, with the flame speed increasing to detonation due to turbulence encountered in the tree / fence line. This scenario is termed a confined vapour cloud explosion (***CVCE***). Where possible, vapour clouds should be prevented from entering confined areas, buildings or areas with ignition sources, water courses or drains. Consider use of a fine water spray or a water wall using multiple ground monitors orientated vertically. Likely overpressure effects and risks to persons are summarised in Tables 5.3 and 5.4. Explosion scenarios were not modelled in the Safety Report.

5.10 Jet or Pressure Fires

A pressure release of product can result in a pool of product and a vapour aerosol cloud. If ignited a pressure release can result in a jet or pressure fire with significant momentum and levels of thermal flux. This can be difficult to extinguish and may require a dual attack. Jet fires are possible at pipes, pipe flanges and tanks. For pipelines, emergency shut down (ESD) procedures should reduce the effects of the jet

Over-Pressures mbar	Damage
700-1000	Significant Damage to Control Rooms.
140	Partial collapse of walls and roofs of houses. 30% of trees blown down. Dangerous levels of over-pressure to people. Threshold of fatality (1-5%). Threshold of ear damage.
70	Lower threshold for partial demolition of houses, made uninhabitable. Most windows shattered. Threshold of fatality for vulnerable population.
40	Light damage (Threshold for light damage – 35 mbar).
7-10	Threshold for glass breakage.

Table 5.3 – Summary of Over-Pressure Damage Radii

Overpressure mbar	Outdoor Risk (% fatalities)	Indoor Risk (%) Typical Domestic Building
3000	94.00%	100.00%
1000	53	100
600	27	70
300	6	50
100	0.1	5
50	0	1
10	0	0
Policy and Approach of the HSA to COMAH Risk-Based Land Use Planning, March 2010		

Table 5.4 - Risk to Persons – Overpressure Effects

fire by reducing pressure and ultimately the product available to the fire. Tank release is more difficult to deal with and it is extremely hazardous to attempt to seal the tank with a tank sealer without suitable precautions. The modelling of such incidents at the LPG storage tanks does not result in off-site effects.

5.11 Boiling Liquid Expanding Vapour Explosion (BLEVE)

The heating of cylinders and tanks can cause explosive failure with the formation of missiles. Where the contents of the tank are flammable this can also result in a significant fireball. On-site bulk LPG tanks are particularly vulnerable particularly the tanks used for the filling of domestic capacity cylinders used on road tankers. This scenario was not modelled in the Safety Report.

5.12 Acetylene Fires

Small amounts of acetylene gas are stored on site usually as part of Oxy-Acetylene sets. Acetylene is a highly flammable gas with a wide flammability range. Incidents involving acetylene can involve fire and explosion with the potential for blast overpressure and missiles. Cylinders heated in a fire can be unstable and volatile and require specific procedures – notably cooling in-situ for 24 hours. A generic Danger Area of 200m is usually employed.

5.13 Bitumen Fires

Bitumen, particularly pavement grade or non-cut back grades, is generally considered lower risk compared with other flammable products. The primary hazards are

considered to be tank froth over or bitumen burns. However, flammable atmospheres can occur in the storage tank ullage space due the formation of Hydrogen Sulphide and bitumen incidents should be approached with similar caution to incidents at flammable product storage sites. Bitumen fires can produce large amounts of dense smoke in a plume.

5.14 HCL Spill and Resulting Vapour Cloud

A spill involving Hydrochloric acid (34% concentration) can produce a vapour cloud of Hydrogen Chloride which is heavier than air and highly toxic and corrosive. Hydrogen Chloride in contact with water can from Hydrochloric Acid, and in contact with certain bases and oxidants can react violently. In the presence of water Hydrogen Chloride can react with certain metals to produce Hydrogen which is highly flammable with a wide flammability range. For a large uncontained spill the resulting vapour cloud has the potential to migrate off-site with potential effects a significant distance from the site. Two scenarios were modelled as follows:

- A loss of tank containment with a spill into the tank bund, and
- A catastrophic tank failure resulting in the over-topping of the bund

The results of the HAZID model (2015) showing the 1% and 50% fatality contours are shown in Figure 5.3.

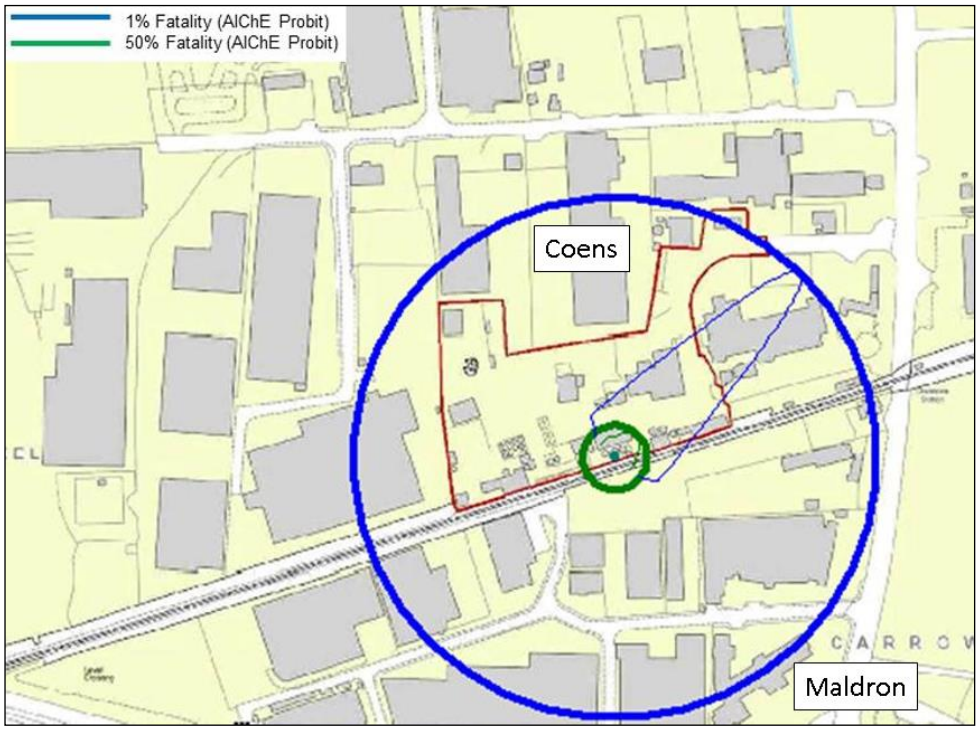


Figure 5.3 HCL Consequences of an Unconfined Spill (HAZID CBE West - 2015)

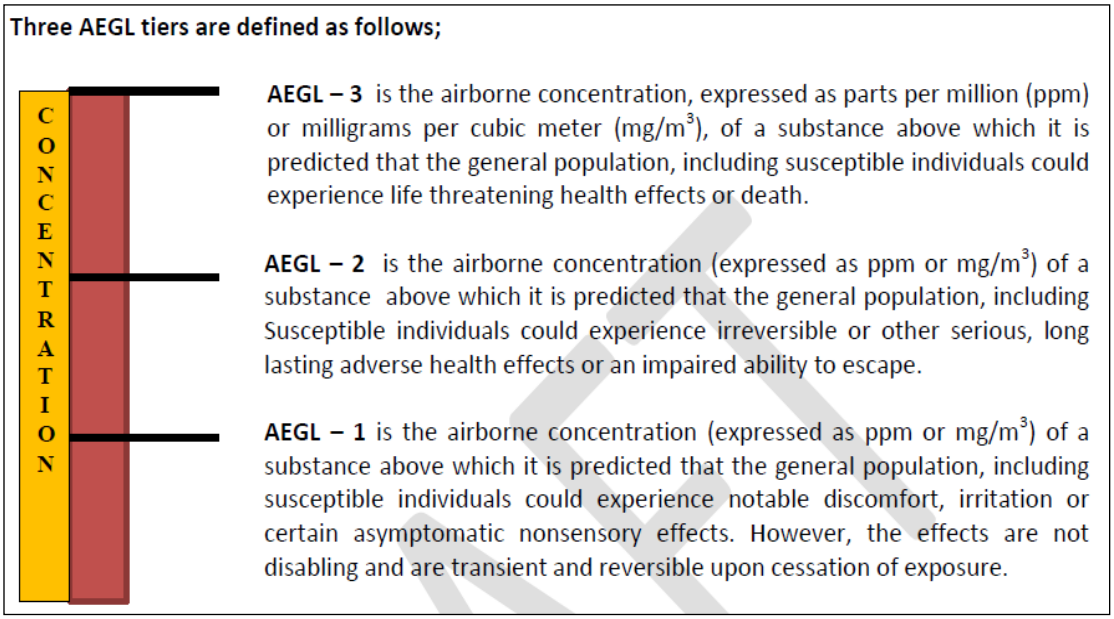


Figure 5.4 Acute Exposure Guidance Levels (AEGL)

In 2017 modelling based on Acute Exposure Guidance Levels (AEGLs) as outlined in Figure 5.4 above was conducted by external consultants (based on National guidance) and the results for the worst cases are summarised in Table 5.5 below and shown in Figure 5.5 and 5.6 for a spill contained within the bund and a bund overtopping scenario resulting in a yard spill.

Scenario	AEGL 1(m)	AEGL 2 (m)	AEGL 3 (m)
Spill in Bund	1831	282	73
Spill Overtopping Bund	2585	1218	438

Table 5.5 AEGL Summary – HCL Spill

It can be seen that a HCL spill may result in off-site effects over a significant distance, although the model does not account for terrain, buildings or obstacles. An uncontrolled road tanker spill (capacity 25,000 litres) is considered similar to a catastrophic storage tank failure.

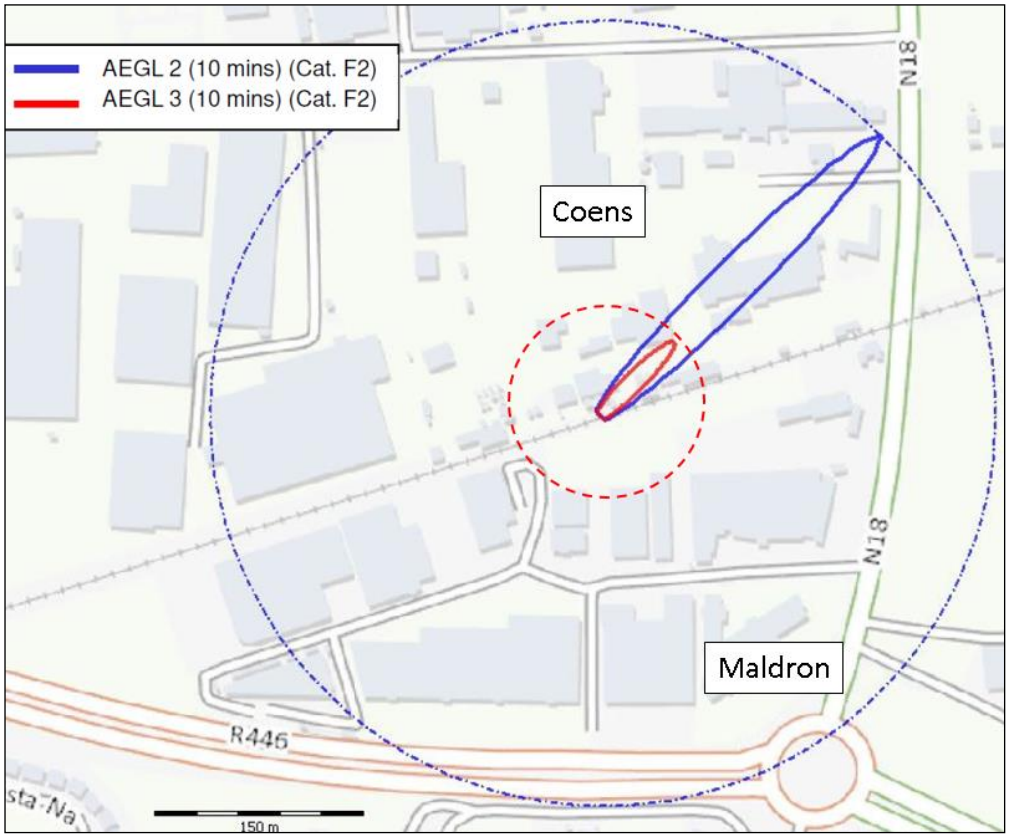


Figure 5.5 HCL Bund Spill Worst Case AEGL 2 (382m) & 3 (72m)

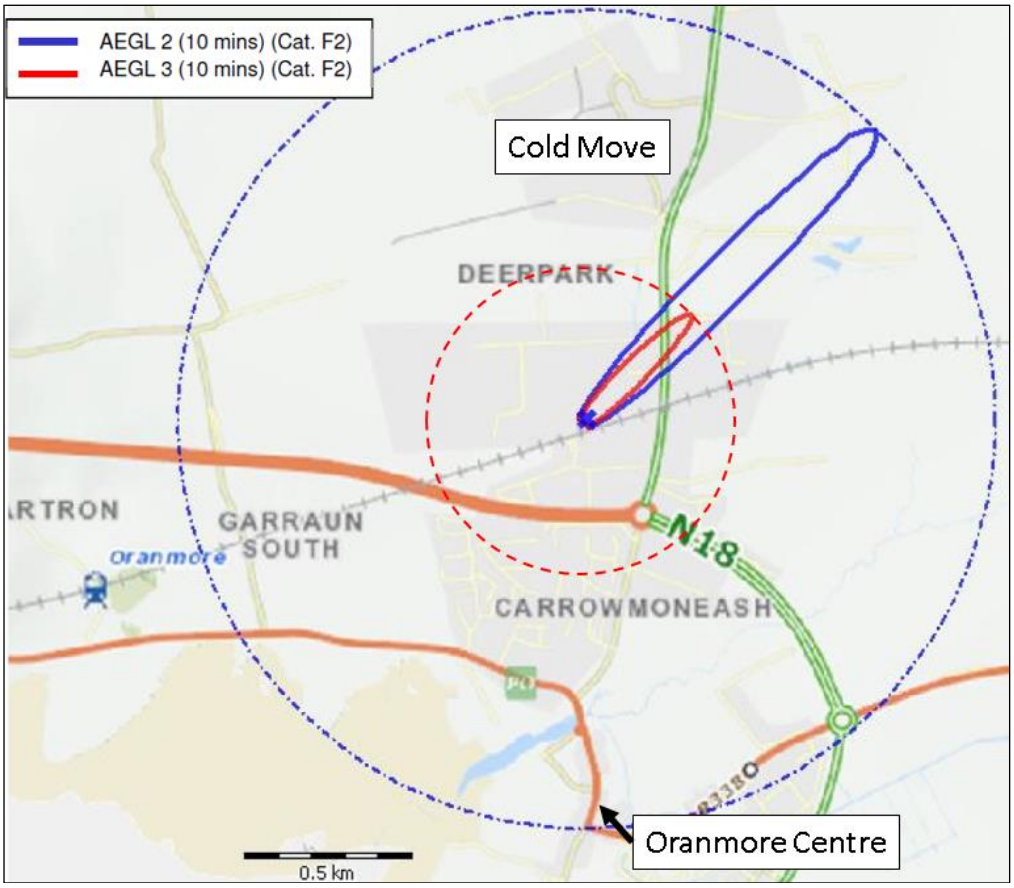


Figure 5.6 HCL Bund Overtop Worst Case AEGL 2 (1218m) & 3 (438m)

The generic response to a HCL spill incident is as follows:

- Stop the spill at source where safe to do so
- Dilute the spill using the on-site water cannon to below 17% in order to prevent fuming and the formation of a vapour cloud, although this may result in further liquid spread
- Warn the public to initially stay indoors and to close all windows / doors and shut down any ventilation systems
- Assess the need for evacuation of Zone 1 (180m) and assess the need for further progressive / segmental evacuation accounting for the prevailing wind as per **Appendices 4 and 5.**

5.15 Domino Effect

The HAZID study undertaken on behalf of CBE West looks at individual substances and scenarios involving them. It is possible that an incident involving a single substance could develop to such an extent that it begins to impinge on another substance or substances (for example an LPG tank BLEVE resulting in an adjacent tank fire and possible loss of containment). This domino effect could result in a much more severe scenario than previously anticipated. Additionally, an incident occurring at the CBE West site might affect other adjacent sites, and conversely an incident at an adjacent premise may have implications for the CBE West site. On-site evacuation and cooling of exposures will be considered in this situation. There are no other COMAH sites in the vicinity of the CBE West site and therefore there is no risk of domino effects between sites. There is an explosive store at *Gowan and Bradshaw* just West of Cold Move in the Glenscaul Business Park to the North of the site, but this is located at the extremity of Zone 3 (500m) and is not deemed significant.

5.16 On-Site Fire Fighting Equipment / Systems

The site has a fire detection system which in high hazard areas consists of automatic detection, with break glass units in other areas. The fire control panel is located in the Reception building with a slave panel at the main entrance **(ICP)**. On-site firefighting equipment consists of:

- Standard fire points and extinguishers in all buildings
- 2 emergency fire points with 50kg dry powder extinguishers and spill kits

- 3000 litres of ARFFFP foam (for Fire Service use) in 3 IBCs located at the garage area
- 1 Number 1800 lpm mobile water / foam cannon located at the HCL unloading area and connected to a fire fighting pump at the water reservoir for immediate use if there is a HCL spill.
- On-site fire hydrants and those in adjacent premises
- On-site water reservoir 480,000 litres

Scenario	Category	Description	Effects	Risk (CBE West HAZID)	Primary Control Measures
1	HCL	Bulk tank over-fill, Bulk tank leak to bund Spill contained, pool formation & vapour cloud dispersion	Injury or fatality on/off site due to exposure / inhalation as per AEGLs	Tolerable	On-site Systems /ERT Dilution GFRS MIP EEP / Evacuation Pollution Contingency Plans
2	HCL	Catastrophic Bulk tank failure, road tanker overturning, pipe guillotine failure. Bund overtopping. Large spill uncontained, pool formation & vapour cloud dispersion	Injury or fatality on/off site due to exposure / inhalation (170m)	Tolerable	On-site Systems / ERT GFRS MIP EEP / Evacuation Pollution Contingency Plans
3	DETA	Bulk tank over-fill, Bulk tank leak to bund Spill contained, evaporation & dispersion of very toxic material	Injury or fatality on/off site due to exposure	Tolerable	On-site Systems / ERT GFRS MIP EEP / Evacuation Pollution Contingency Plan
4	DETA	Catastrophic Bulk tank failure, road tanker overturning, pipe guillotine failure. Bund overtopping. Large spill uncontained, evaporation & dispersion of very toxic material	Injury or fatality on/off site due to exposure	Tolerable	On-site Systems / ERT GFRS MIP EEP / Evacuation Pollution Contingency Plan
5	FLAM	Bulk tank over-fill, Bulk tank leak to bund. Spill contained, pool formation, ignition & pool fire	Thermal radiation effects up to 30m	Tolerable	On-site Systems / ERT GFRS MIP EEP / Evacuation Pollution Contingency Plan
6	FLAM	Catastrophic Bulk tank failure, road tanker overturning, pipe guillotine failure. Bund overtopping. Process vessel overfill.	Thermal radiation effects up to 40m VCE Blast, missile threat	Tolerable	On-site Systems / ERT GFRS MIP EEP / Evacuation Pollution Contingency Plan

Scenario	Category	Description	Effects	Risk (CBE West HAZID)	Primary Control Measures
		Large spill uncontained, pool formation & vapour cloud dispersion. Pool fire or vapour cloud explosion (confined or unconfined)			
7	LPG	Pipe rupture, leak during bottle filling, PRD leak. Direct ignition & jet fire Delayed ignition and VCE (contained or uncontained)	Thermal radiation effects up to 40m VCE Blast, missile threat	Tolerable	On-site Systems / ERT GFRS MIP EEP / Evacuation Pollution Contingency Plans
8	LPG	Catastrophic tank rupture, BLEVE	Thermal radiation effects up to 40m BLEVE Blast, missile threat	Tolerable	On-site Systems / ERT GFRS MIP EEP / Evacuation Pollution Contingency Plans
10	ACETYLENE	Equipment fault Cylinders exposed to fire	Thermal radiation effects / VCE Blast, missile threat 200m	Not Considered	On-site Systems / ERT GFRS MIP EEP / Evacuation Pollution Contingency Plans
11	DOMINO	One incident effecting other site areas resulting in multiple incidents	Domino	Not Considered	On-site Systems / ERT GFRS MIP EEP / Evacuation Pollution Contingency Plans

Table 5.6 Identified Potential Major Accident Scenarios (CBE West IEP 2018)

SECTION 6: EXTERNAL INFORMATION

6.1 The Specified Area

6.2 Danger Areas

6.3 Location of the Incident Control Point

6.4 Location of Rendezvous Points and Checkpoints

6.5 Approach routes

6.6 On-Site Coordinator / On-Site Coordination Centre Location

6.7 Evacuation and Cordons

6.8 Location of the Off-Site Local Co-Ordination Centre (LCC).

6.9 Crisis Management Teams (CMT)

6.10 Adjacent Sites and Buildings

6.11 Location of Holding Areas

6.12 Hazards to People in the Immediate Area

6.13 Specific Hazards to the Environment

6.14 Helicopter Landing Sites

6.15 Casualty Clearance Station

6.16 Multiple Fatality Units

6.17 Water Supplies

6.18 Weather

SECTION 6: EXTERNAL INFORMATION

6.1 The Specified Area

The **Specified Area** for the CBE West site is 700m. The area consists of a number of commercial / industrial, leisure and residential premises including a hotel and cinema complex (see A**ppendix 5**). The Galway-Dublin or Limerick railway line also runs past the Southern perimeter of the site.

6.2 Danger Areas

A Danger Area will be declared for all incidents and will reflect the type and seriousness of the incident. It is the distance from the incident at which members of the public are considered to be at no or very low levels of risk and equates to Acute Exposure Guidance Level 2 (AEGL 2). The Danger Area may have to be adjusted during the incident and may have to be increased in a particular direction to allow for weather / wind effects. The Danger Area will be determined by the On-Site Coordinator advised by the Rostered Senior Fire Officer (RSFO) / Fire Service Incident Commander. Account will be taken of information from effects and consequence models that may be available and the on-site HAZID study. Generic danger radii / zones are shown in **Appendix 3** for guidance purposes.

6.3 Location of the Incident Control Point

The Incident Control Point (**ICP**) will initially be located at the office at the main entrance to CBE West. Should the site be fully evacuated the **ICP** will move to either **RVP 1** or **RVP 2** on the R381 dependant on the situation. GFRS Incident Command vehicle GY11C1 will be deployed at the **ICP**.

6.4 Location of Rendezvous Points and Checkpoints

RVP and CP locations and description are summarised in Table 6.1 below which should be read in conjunction with the maps contained in **Appendices 3 & 4**. **CP1** at the entrance to CBE West will be activated by GFRS / AGS on arrival in order to restrict access to the site. **CP2** (also **RVP 1**) and **CP 3** (also **RVP2**) will be activated by AGS as soon as possible in order to further restrict access to the vicinity of CBE West and to create a holding area for emergency service vehicles. Additional checkpoints may need to be activated to

restrict access to the Oranmore Business Park (South), Westlink Industrial Estate (East) and the Deerpark Industrial Estate (North) in the event of a HCL spill and off-site vapour cloud or other serious incident. Access should be restricted until off-site effects can be ruled out conclusively. Additional check points are activated based on the requirement for progressive evacuation around the site and the need for an outer traffic management cordon. Initial checkpoints may have to be deactivated on the grounds of safety.

CP / RVP	Location	Coordinates (X,Y)	GPS Coordinates (lat/long)
ICP	Normally at the office at the main entrance to CBE West	38161 : 25987	53.280821, -8.927941
CP 1	CBE West entrance off R381	38274 : 25977	53.280742, -8.926509
CP 2 RVP1	Railway level crossing R381 Number Irish Rail XG 165	38281 : 25868	53.279763, -8.926125
CP 2A	South of railway level crossing R381 entrance to Oranmore industrial estate at Maldron Hotel	38256 : 25699	53.278242, -8.926467
CP 3 RVP2	Junction North of CBE West North of petrol station on R381	38283 : 26079	53.281659, -8.926136
CP 4	Oranmore industrial estate South of CBE West across railway line	37952 : 25675	53.277991, -8.931019
CP4A	Oranmore industrial estate South of CBE West across railway line (roadway between buildings at Langan Logistics)	38030 : 25669	53.277946, -8.929849
CP 5	Roundabout junction of N67 and R381 North & West bound at Maldron Hotel	38200 : 25536	53.276771, -8.927275
CP 6	N67 roundabout at Galway Clinic East bound	35196 : 25862	53.279341, -8.972372
CP 7	South of Maldron Hotel at entrance to Oranmore Lodge Hotel Roundabout junction of N67 and R381 West bound at Maldron Hotel	38165 : 25319	53.274817, -8.927757
CP 8	R381 Junction North of CP3 at entrance to IDA estate	38281 : 26285	53.283510, -8.926206
CP 8A	R381 North of CP8 beyond entrance to rifle range	38327 : 26471	53.285187, -8.925552
CP 9	Roundabout junction on N67 at Oranmore community centre West bound	38779 : 24985	53.271887, -8.918489
CP 10	Junction on R338 (coast road) at Oranmore Garda Station North bound	38040 : 25039	53.272287, -8.929576
CP 11	M6 exit 19 South bound along R381	38461 : 27492	53.294376, -8.923741

Table 6.1 RVPS and Checkpoints

All RVPs / CPs will be under the control of An Garda Síochana. All emergency, specialist and voluntary services will be directed to the relevant RVP. The On-Site Co-ordinator will confirm all locations and the extent of the Danger Area on the advice of the RSFO / Fire Service Incident Commander, based on the prevailing situation and weather conditions. All RVPs and checkpoints are physically marked on the ground as per Figure 6.1.

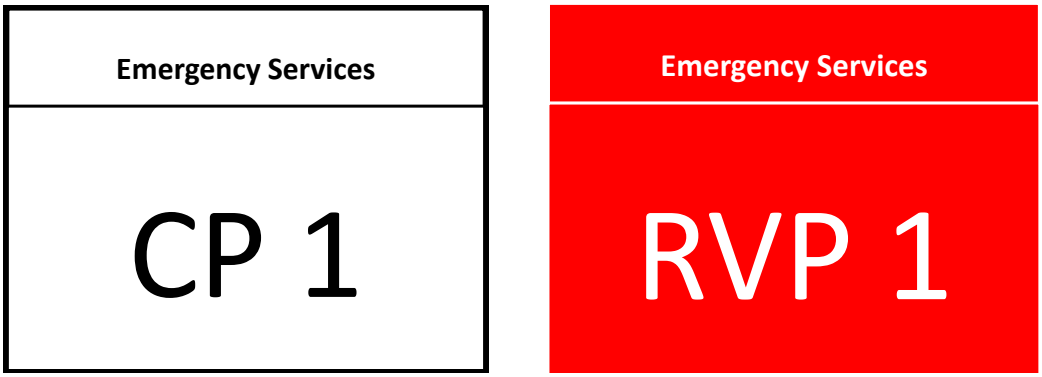


Figure 6.1 Checkpoint and RVP Markers

6.5 Approach Routes

There are three approach routes to the site which may be used depending on the scenario and wind direction (see **Appendix 3**) as follows:

- **Red route** – the normal approach route along the N67 to the roundabout at the Maldron Hotel and then North on the R381 to **RVP1** (South of the level crossing)
- **Green route** – an alternative approach route along the coast road R338 and then North at Oranmore Garda Station to the R381 to **RVP1** (South of level crossing)
- **Yellow route** – an alternative approach route along the N6 to Junction 19 and South along the R381 to **RVP 2** (junction North of the petrol station)

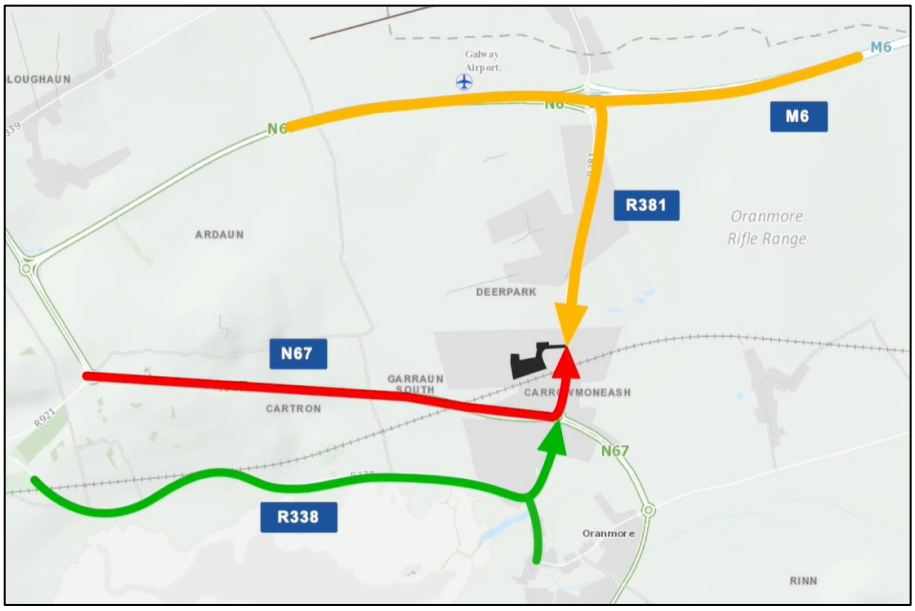


Figure 6.2 Approach Routes

6.6 On-Site Co-ordinator / On-Site Coordination Centre Location

As an incident at the CBE West site is classed as a hazardous materials incident, the On-Site Coordinator will initially be the Local Authority Controller of Operations, or in his/her absence the AGS Controller of Operations. If the CBE West Conference Centre cannot be safely used the OSCC will be located off-site at the Oranmore Lodge Hotel to the South, with an alternate as the Oranmore Community Centre to the East.

6.7 Evacuation and Cordons

6.7.1 Initial & Phased Evacuation

Phase 1

In the event of an incident at the CBE West site all non-essential employees will be evacuated. Members of the public will initially be advised to stay indoors, close all windows and doors, and switch off all ventilation systems. It is possible that evacuation of certain buildings close to the perimeter may be necessary depending on the situation, the extent of the spill and the weather. GFRS will advise AGS / CBE West of buildings to be evacuated and assist them as necessary. At the same time CBE West will inform Fire Wardens in each relevant building using their text message alert system. Evacuees will initially be directed to assembly areas at the Maldron Hotel (South) or Cold Move premises (North). A CBE West representative, and when available Civil Defence personnel, will be dispatched to the assembly areas to care for evacuees.

Phase 2-4

In the event of an escalation of the situation requiring an extended danger area, the need for progressive evacuation (**see Appendix 3**) will be considered as follows;

- Phase 3 - Zone 2 – 300m
- Phase 4 - Zone 3 – 500m
- Phase 5 - Zone 4 – 700m

Evacuation should be in line with the Danger Area in force and should be completed by AGS with the assistance of GFRS as necessary. Decisions in relation to evacuation should take account of any downwind effects which may enlarge the danger area in a particular direction or might encroach on an evacuation route. Generic Segmental

Evacuation may be appropriate in accordance with **Appendix 4**. Advice to residents to continue shelter in buildings may also be considered.

When members of the public are being evacuated, they will be directed along the R381 towards the nearest Emergency Evacuation Centre as per Table 6.2 below. Civil Defence personnel will assist in the evacuation on these routes using their own transport, Defence Forces' transport or private transport if necessary. A full evacuation procedure summary is contained in **Appendices 3 and 4.**

Centre	Location	Direction
Emergency Evacuation Centre, EEC 1	Oranmore Secondary School	South
Emergency Evacuation Centre EEC 2	Oranmore Community Centre	East
Emergency Evacuation Centre EEC 3	Galway Airport	North

Table 6.2 - Emergency Evacuation Centres

Consideration should also be given to an outer traffic management cordon.

HCL Spill Evacuation

In the event of a serious HCL spill resulting in an off-site vapour cloud and given a Northerly wind the external evacuation siren will be activated to evacuate **Zone 1** (180m) South of CBE West (see Figure 5.3 and **Appendix 4**). Fire Wardens in each of the buildings in **Zone 1** will be informed and will confirm to the CBE West Emergency Coordinator when evacuation is complete.

Personnel from these premises will proceed to the assembly area to the rear (South) of the Maldron Hotel. Personnel in a small number of buildings in Zone 1 North of CBE West will proceed to the assembly area at the Cold Move premises (North) of the site. Fire wardens of these premises will report to the CBE West Emergency Coordinator that the buildings have been evacuated using the agreed text message system. A CBE West representative, and when available Civil Defence personnel, will go to the assembly areas to confirm evacuation of Zone 1 and assist evacuees.

If necessary Irish Rail should be notified to stop all trains either via:

- Central Traffic Control Dublin (Emergency Services National Protocol), or

- The Athlone Signalman
- The PES

It is critical that a train is not allowed to stop within the Danger Area. See **Appendix 8** for Irish Rail contact details.

6.7.2 Cordons

Cordons will be essential in order to restrict access, facilitate the evacuation of members of the public, and facilitate the setting up of the various RVPs to allow emergency services to respond effectively. Cordons should reflect the Danger Area prevailing at the time and all personnel should be evacuated to a safe area outside the cordon. All cordons will be under command of the Controller of Operations of An Garda Siochana. Advice in relation to movement of the cordon will be provided by the RSFO / Fire Service Incident Commander through the On-Site Coordinator. Locations of Check Points for various evacuation strategies are shown in **Appendix 3** (progressive - zonal evacuation) and **Appendix 4** (wind dependant segmental evacuation & HCL spill).

6.8 Location of the Off-site Local Co-ordination Centre (LCC)

Should a Major Emergency be declared, the Local Coordination Group (LCG) will be activated and located at the Local Coordination Centre (LCC) at Galway County Council, County Hall, Prospect Hill, in Room G 01.

6.9 Crisis Management Teams (CMT)

Consideration should be given by each PRA to the activation of their individual Crisis Management Teams in order to support the EEP.

6.10 Adjacent Sites and Buildings

An adjacent sites / buildings map is shown in **Appendix 5.** Building occupancy numbers and contact details broken down into **Zones 1 to 4** are contained in the CBE West Internal Emergency Plan included as **Appendix 7**.

6.11 Location of Holding Areas

Initial Emergency Services holding areas will be located between **RVP 1** and **RVP 2** on the R381 East of CBE West**.** These locations may change based on the need for progressive evacuation but are likely to be based on sections of adjacent roads.

6.12 Hazards to People in the Immediate Area

The area is generally non-residential with the exception of the Maldron Hotel. All other sleeping risks are in excess of 500m from the site. There is a multiplex cinema in **Zone 1** South of CBE West. There are housing estates within **Zone 4 (700m)** to the South towards Oranmore Village.

6.13 Specific Hazards to the Environment

The hazards to the environment arising from an incident at the CBE West site are summarised in **Appendices 1 & 2.** There are a number of very toxic substances stored on-site, however the site is well bunded.

6.14 Helicopter Landing Sites

Helicopter landings can be facilitated at the football pitch and IDA Business Estate East of the CBE West entrance on the R381 (shown in **Appendix 3**). An alternative is the football pitch at the Oranmore Community Centre to the East. Ballybrit Racecourse is the designated 5-kilometre landing site for the Aero Desk in NECO.

6.15 Casualty Clearance Station

Possible locations of a casualty clearance station **(CCS)** (shown in **Appendix 3**) are as follows:

- **Westlink Industrial Estate** East of the Maldron Hotel
- **Cunningham Autopoint** on the R381 between the Maldron Hotel and the level crossing
- **Greenstar Ltd** opposite Hygeia on the R381
- The entrance to the IDA **Business Park** North East of CBE West on the R381.

6.16 Multiple Fatality Units

The GCC multiple fatality storage container (20 casualties) and Fleximort unit (12 casualties) may be deployed on-site (see Figure 6.2 below) and these will be operated by Civil Defence personnel. An additional Fleximort unit (12 casualties) can be sourced from Sligo or Westmeath County Councils as necessary.

Figure 6.3 Multiple Fatality Container and Fleximort Unit

In addition, GFRS have 2No. mass fatality refrigerated truck units (GFRS MFU-01 & GFRS MFU-02) each with a capacity of 24 casualties. These are mobile units which can be used for both storage and transportation such the need arise (see Figure 6.4).

Figure 6.4 GFRS MFU-01 & GFRS MFU-02 Refrigerated Trucks

6.17 Water Supplies

Water supplies for firefighting operations (see **Appendix 3**) are available as follows:

- On-site hydrants fed from the LA main (100mm)
- Adjacent off-site hydrants in adjacent premises fed from the LA main (100mm)
- Hydrants on the R381 (LA Trunk main)
- On-site water storage tank 480,000 litres
- 4 x GFRS water tankers (each 10,000 litres)

6.18 Weather

Weather conditions may be a significant factor in the management of incidents at CBE West. Weather information can be obtained from a number of sources as follows:

- Met Eireann METWEB
- Met Eireann direct contact as follows:
  - Duty forecaster - 01 8064255
  - Forecasting office - 01 8064217
- NUI Galway weather station at www.nuigweather.ie providing real time information for Galway City as shown in Figure 6.5 below.

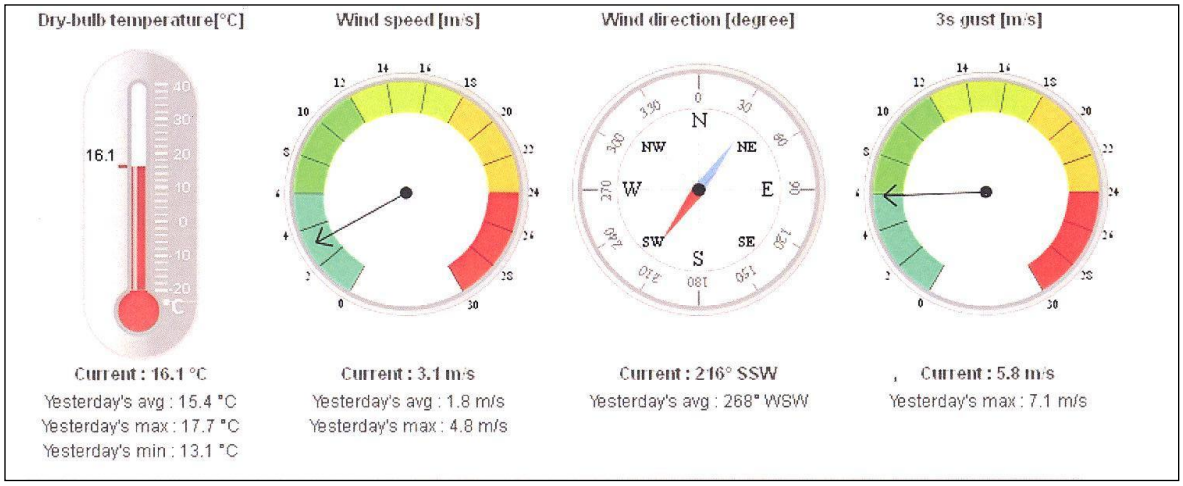


Figure 6.5 NUI Galway Weather Station Information (Galway City)

SECTION 7: INFORMATION AVAILABLE TO THE PUBLIC PRIOR TO AND DURING AN INCIDENT

7.1 Pre-Incident Information Disseminated to Members of the Public

7.2 When Will the Information be Disseminated to the Public?

7.3 How Will the Information be Disseminated to the Public.

7.4 How Will the Public be Notified of an Incident.

7.5 How Will the Public be Kept Informed During an Incident.

7.6 How Will the Public be Notified of the 'All Clear'

7.7 EEP Public Consultation

SECTION 7: INFORMATION AVAILABLE TO THE PUBLIC PRIOR TO AND DURING AN INCIDENT

7.1 Pre-Incident Information Disseminated to Members of the Public

Information issued by CBE West to adjacent sites beforehand advises the public that in in the event of a major accident and the activation of the EEP, the public should;

- Remain calm, stay indoors and close all windows and doors and shut down all ventilation systems where possible. Await any further instructions from the emergency services and act on them
- Occupants of buildings in Zone 1 if the evacuation siren sounds or if instructed to evacuate, should immediately evacuate to the assembly area to the assembly point at the front (South) of the Maldron Hotel
- Fire Wardens from Zone 1 to report that their buildings have been evacuated to CBE West personnel by pre-arranged text message. Confirm evacuation to the CBE West or Civil Defence representative at the Maldron Hotel
- Occupants of buildings in remaining Zones 2 & 3 if instructed to evacuate should immediately evacuate to the assembly area at the front (South) of the Maldron Hotel or the assembly point at the Cold Move premises (North)
- Fire Wardens from Zones 2 & 3 to report that their buildings have been evacuated to CBE West personnel by pre-arranged text message. Confirm evacuation to the CBE West or Civil Defence representative at the assembly point
- Listen to the local radio for information updates
- If further progressive evacuation (Zone 4) is necessary - follow any instructions from the Emergency Services to evacuate and proceed to the appropriate assembly area
- Be advised that onward evacuation may be necessary from the assembly points or individual premises to emergency evacuation centres staffed by members of Civil Defence and the HSE. Transportation will be provided by Civil Defence or the Defence Forces.

7.2 When Will the Information be Disseminated to the Public

This information will be issued to the public from CBE West on an annual basis, in accordance with the CBE West Internal Emergency Plan.

7.3 How Will the Information be Disseminated to the Public

The information will be disseminated to the public by means of a public information meeting conducted at CBE West and by an information leaflet drop. CBE West will provide laminated versions of leaflets to commercial premises for placing on company, business, office, apartment, building lobby Notice Boards etc. A copy of the leaflet is included as Figure 7.1.

7.4 How Will the Public be Notified of an Incident

CBE West will where necessary notify the public in the event of an incident by means of an **external evacuation siren**, or via public safety messages issued through AGS.

7.5 How Will the Public be Kept Informed During an Incident

CBE West has a procedure in place for public communications during an incident via their representative at the OSCC.

The Principal Response Agencies have a procedure in place to keep the public informed during and after an incident through the media as follows:

- Local (National as appropriate) radio broadcasts including Galway Bay FM,
- Television broadcasts,
- Newspapers,
- Galway County Council website, social media and text alert system
- Dedicated Emergency Help and Information Line (Galway County Council) – number to be advertised on local radio, social media and on-line.

7.6 How Will the Public will be Notified of the "All-Clear"

Where a Major Emergency has been declared under the Framework for Major Emergency Management, the decision to announce an "All-Clear" to the public will be taken by the On Site Co-ordinator, in consultation with the other Controllers of Operations in the OSCC and the Local Co-ordination Group at the LCC.

Where a *Major* Emergency has not been declared, the decision to announce an "All-Clear" to the public will be taken by the Controller of Operations of the lead responding agency, (Galway County Council as the Local Authority), and CBE West, in consultation with the Controllers of Operations of the other Principal Response Agencies.

The methods chosen to notify the “All-Clear” to the Public for an incident at the CBE West site will depend on the nature and extent of the incident and its impact on the public. It will normally be via the media as described previously and also through vehicle public address announcements. It may be necessary to leave various command vehicles in–situ in order to communicate with the public.

Notwithstanding that the site has been declared clear, the Controllers of Operations together with the lead agency's Media Liaison Officer (and as appropriate, a representative from CBE West) should consider the effect of the incident on the public, and prepare and issue advice on any measures necessary for the public to manage the aftermath of the incident and to return to normality.

A media press conference(s) may be considered during or at the end of the incident.

7.7 EEP Public Consultation

Prior to adoption of the External Emergency Plan (EEP) and in compliance with the COMAHDS Regulations, the EEP will be displayed at the principal offices of Galway County Council, the HSE and An Garda Siochana for a period of one month to facilitate public consultation. The consultation process will be advertised in the print media in accordance with the regulations.

Community Safety Leaflet

10th April 2020

Colas Bitumen Emulsions West (Oranmore site) has prepared and is circulating this leaflet to our neighbours to advise you about our operations, the associated hazards, and how we manage safety.

Colas Bitumen Emulsions West supply and manufacture Bitumen Emulsions for the road industry. Our chemical division, Chemoran, manufactures adhesive agents for the Bitumen industry.

A number of materials are stored onsite in Oranmore, which may give rise to major accident hazards, with the following characteristics,

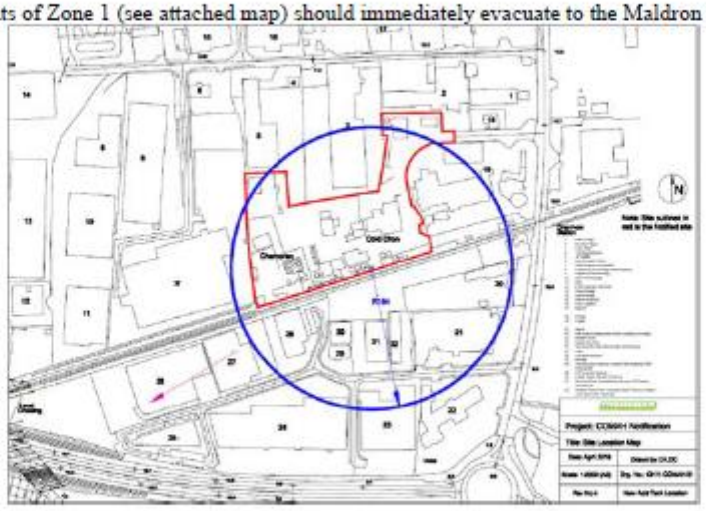
- Very Toxic
- Toxic
- Extremely Flammable
- Dangerous to the Environment

The storage of these materials are regulated by the "Chemicals Act (Control of Major Accident Hazards Involving Dangerous Substances) Regulations 2015". In accordance with these regulations, Colas Ireland has notified the Health and Safety Authority (HSA) of the materials stored on site, has submitted a Safety Report to the HAS and as per the regulations it has been determined that the Colas Bitumen Emulsions West site in Oranmore is an Upper Tier site.

In the unlikely event of a major incident, it is possible that fumes or smoke form a large fire / spill could be carried on the wind beyond the site.

A neighbourhood siren is fitted on site, which is tested at 10am on the first Tuesday of each month. Should a major incident occur, this siren will sound continuously. The following steps should be taken:

All occupants of Zone 1 (see attached map) should immediately evacuate to the Maldron Hotel.



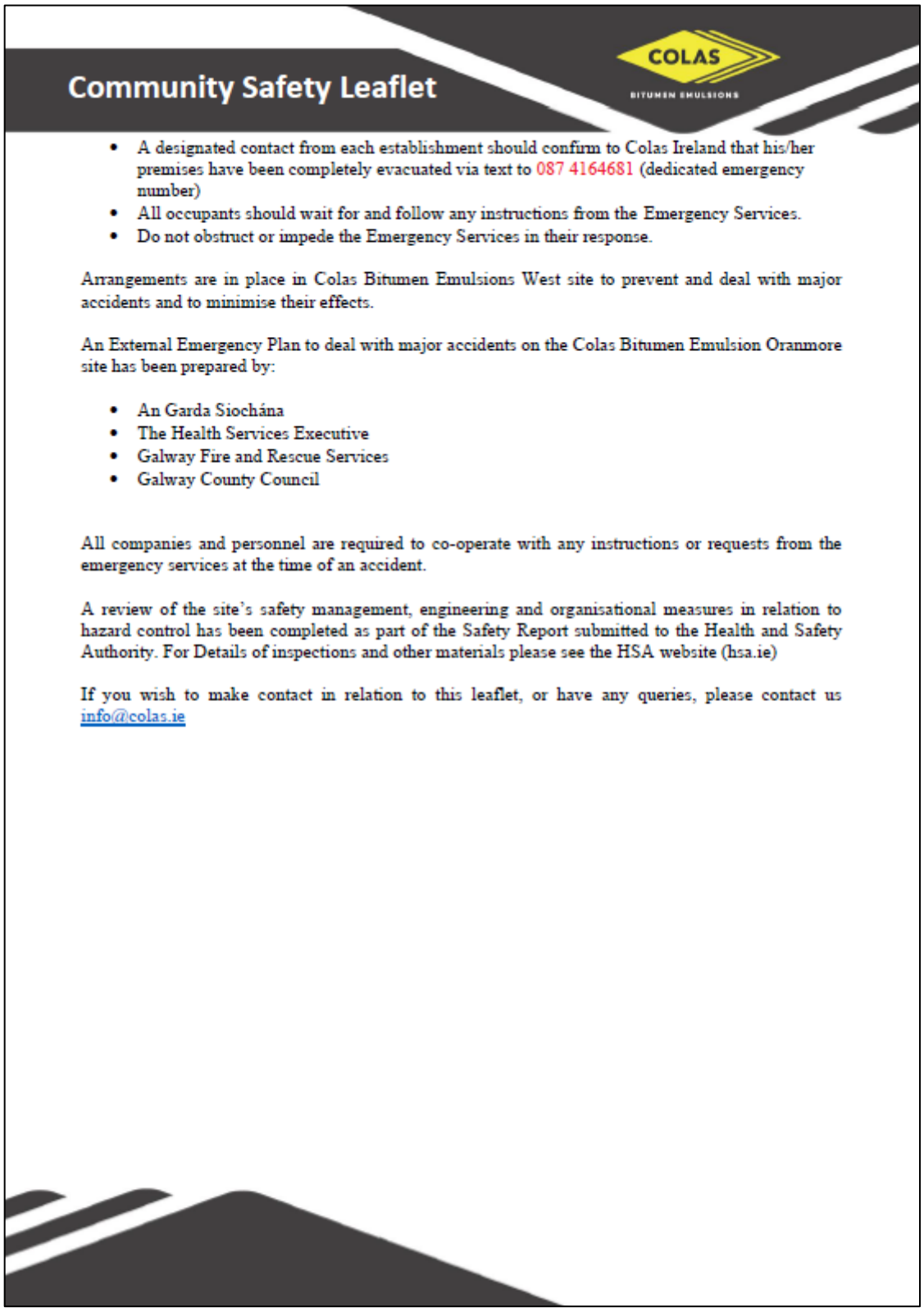


Figure 7.1 - CBE West Public Information Leaflet

SECTION 8: WORKING WITH THE MEDIA

8.1 Inter-Agency Public Communications Plan.

8.2 Co-ordination with the CBE West Media Strategy.

8.3 Initial Holding Statement / Public Safety Messages

8.4 Media Statements / Updates

8.5 Media Reception Centres

SECTION 8: WORKING WITH THE MEDIA

8.1 Inter-Agency Public Communications Plan.

The Public Communications (Media) Plan will conform in general to the ***Western Region Emergency Services Inter-Agency Public Communication Plan*** of September 2012.

8.2 Co-ordination with the CBE West Media Strategy

The MLO of the Lead Agency should maintain liaison with CBE West's media liaison officer to ensure that there is a co-ordinated response to the media, insofar as is appropriate and in the interests of public safety. The CBE West media liaison contact is contained in **Appendix 8**.

8.3 Initial Holding Statement / Public Safety Messages

As soon as is practicable after the occurrence of a major incident an **Initial Holding Statement** will be issued by the OSCC via AGS through the Garda Press Office. Any subsequent **Public Safety Messages** will be issued in the same way. Such messages will aim to:

- **Inform** the public that an incident has occurred and is ongoing
- **Reassure** the public as to their safety and that the incident is being attended by the Emergency Services and all measures necessary are being implemented
- **Advise** the public in relation to sheltering, evacuation and restrictions on movement

8.4 Media Statements / Updates

The Major Emergency Management Framework recommends that the activities of the Media Liaison Officers (MLOs) at the site will be co-ordinated by the MLO of the Lead Agency. All statements to the media must be cleared by the On-Site Coordination Centre (OSCC) or where a Major Emergency has been declared by the Local Co-ordination Centre (LCC). The Major Emergency Plans of the other PRAs contain Media Plans which may also be referred to. Regular media update statements should be issued as deemed

necessary. Consideration should be given to the setting up of a Media Reception Point on-site. At the end of the incident a media press conference should be considered.

8.5 Media Reception Centres

During any major accident scenario at CBE West, it may be necessary to designate a Media Reception Centre in order to provide a focal point for media personnel and to assist MLOs in managing the media. This may be particularly relevant at extended incidents and to facilitate press conferences. The selection of the Media Reception Centre will depend very much on the nature of the incident. Possible locations include:

- The Oranmore Lodge Hotel – but in a location remote from the OSCC and with measures taken to secure the OSCC
- Oranmore Community Centre – if the alternate OSCC has not been activated
- Oranmore Garda Station

SECTION 9: RECOVERY

9.1 General.

9.2 Key Amelioration Actions by CBE West

9.3 Details of Organisations to be Consulted

9.4 Arrangements by CBE West to Support the Community

9.5 Arrangements by An Garda Siochána to Support the Community

9.6 Arrangements by the Health Service Executive to Support the Community

9.7 Arrangements by Galway County Council to Support the Community

SECTION 9: RECOVERY

9.1 General

Where a Major Emergency under the Framework has been declared, the management of the recovery from the effects of a Major Accident at CBE West Oranmore will conform in general to Section 6 of the MEM Framework and the Major Emergency Plans of:

- Galway County Council
- An Garda Síochána
- The Health Service Executive

In the case of any activation of this External Emergency Plan, the following will specifically apply:

9.2 Key Amelioration Actions by CBE West

CBE West will take the following key actions for the protection, management and clean-up of the environment:

9.2.1 Planned and Agreed Measures to Protect the Environment.

The CBE West **Safety Report** details the measures to ensure that suitable and sufficient resources can be mobilised to minimise the release of, and mitigate the consequences of, airborne toxic and /or flammable substances, and substances which are dangerous to the environment.

Loss of containment of some of the products on this site may result in the airborne release of toxic substances, other than smoke as a result of fire. Loss of containment of some of the products on this site may result in the release of flammable substances. Depending on the scale and intensity of the incident, including fire and the prevailing weather conditions, it may be necessary to evacuate persons from the downwind area.

9.2.2 Measures to Contain a Spill

Primary, secondary and tertiary containment is provided on site including drainage interceptors and shut offs. Primary Containment on the site is by means of Storage Tanks. Secondary Containment on the site has been provided by bunds to tank farm areas. Tertiary containment is provided by an impervious site surface, perimeter walls and ramps. All storage tanks are provided with shut-off valves.

9.2.3 Details of On-Site Containment Measures

The general procedure in order to contain a spill is as follows:

- Isolate the spill at source by operating the shut-off valve if safe to do so
- Confirm that containment (primary, secondary, tertiary) is functioning and adequate
- Close surface water interceptor valves at the water reservoir and clock room
- Monitor the situation and commence evacuation as necessary and in consultation with the PES

9.2.4 Specific Measures to Manage the Clean-Up &Restore the Environment

Spills will be dealt with by CBE West personnel. Where necessary the services of specialist and regulated contractors will be engaged to restore the environment and dispose of contaminated material.

9.2.5 Waste Disposal

Disposal of waste or contaminated material will be by specialist and regulated contractors who are contracted to CBE West.

9.2.6 Temporary Storage

Temporary storage where necessary will be provided by CBE West in the form of road tankers or IBCs as appropriate.

9.3 Details of Organisations to be Consulted

Details of organisations to be consulted in the aftermath of an incident at CBE West in the recovery phase are listed in Table 9.1.

9.4 Arrangements by CBE West to Support the Community

To support the community following the incident, CBE West will ensure that relevant insurances are in place. CBE West will undertake a public consultation process for affected neighbouring sites.

Contact Numbers		
Name	**Address**	**Contact No.**
Environmental Protection Agency (EPA)	**P.O. Box 3000, Johnstown Castle Estate, Wexford**	**1890 33 55 99 (Out-of-Hours Emergency Pager)**
Health Service Executive (HSE)	**Health Service Executive, Public Health Dept., Merlin Park, Galway**	**091 775200**
Environment Section, Galway County Council	**Galway County Council, County Buildings, Prospect Hill, Galway**	**091-509000**
Health & Safety Authority (HSA)	**The Metropolitan Building, James Joyce Street, Dublin 1.**	**1890 289 389**
National Parks and Wildlife Service (NPWS)	**90 North King Street Dublin 7**	**01 888 3074**
Coast Guard - IRCG	**Dept of Transport Leeson Lane, Dublin 2**	**999 / 112**

Table 9.1 External Agency Contacts

9.5 Arrangements by An Garda Siochána to Support the Community

To support the community following an incident at CBE West Oranmore, An Garda Síochána will provide all necessary and appropriate information on the investigations as soon as practicable. Otherwise, An Gárda Siochána will comply with the provisions of the Major Emergency Framework, as applicable in the circumstances, during the Recovery phase.

9.6 Arrangements by the Health Service Executive to Support the Community

To support the community following an incident at CBE West, the HSE will assess the health needs of the community and consider the scale of immediate and ongoing needs for assistance in the circumstances of the emergency. In particular the following will be considered:

- The health needs of evacuees, persons displaced by the emergency and others

affected by the emergency

- The health needs of vulnerable persons and groups of people
- Provide a point of contact for the provision of information and for dealing with the health concerns of the community
- Provide advice on environmental health in the circumstances and context of the emergency

9.7 Arrangements by Galway County Council to Support the Community

To support the community following an incident at CBE West Oranmore, Galway County Council will make arrangements to provide appropriate support, assistance and advice to people affected by the emergency and shelter for people displaced, as required. Galway Council will work with other statutory agencies including the Department of Social Protection and the Irish Red Cross as appropriate. Details of evacuee shelter, accommodation and welfare arrangements are contained in the Evacuation Plan of Galway County Council's Major Emergency Plan. Galway County Council's Housing Plan will also be consulted and utilised as required.

Details of Local Authority arrangements for environmental clean-up are contained in **Appendix 2**. Galway County Council shall establish a list of priorities for remedial and restorative works and actions, with a view to dealing with such works and actions in an efficient manner. Galway County Council will maintain an Emergency Help and Information Line until recovery has been substantially achieved.

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