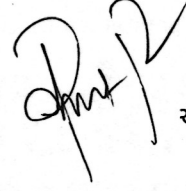


સાદર રજૂ:-

માનનીય અધ્યક્ષશ્રી / જીલ્લા કલેક્ટરશ્રી, કચ્છ જીલ્લાનો ઓફસાઇટ ઈમરજન્સી પ્લાન
ડીસેમ્બર - ૨૦૨૪ અધતન કરી આપ સાહેબની મંજૂરી અર્થે સહી માટે રજૂ.



અધ્યક્ષશ્રી
તથા
કલેક્ટરશ્રી,
ડિસ્ટ્રીક કાઉસીસ ગ્રુપ,
ભુજ-કચ્છ.

૦૧/૧૨

Offsite Emergency Plan Kutch District

Updated on Dec-2024

**-: Prepared by:-
Office of the
Deputy Director,
Industrial Safety and Health,
Kutch**

Enforcement of Plan

1.1 Statement by the Officer Appointed to Carry Out the Maintenance and Upkeep tasks of the Plan

The activities of storage and transportation in huge quantities of hazardous chemicals are increasing day by day. Systematic approach is required to tackle any emergency due to hazardous chemicals. Government authorities and emergency services are required to prepare themselves and be in a state of readiness at all times to limit the consequences of any such emergency to protect the people and the environment. The process of updating and reviewing of exiting off-site industrial emergency plan is necessary to incorporate change, amendments, and statutory requirements as well such certain guidelines issued by various authorities.

The various statutory provisions as well as guidelines issued by MoEF- New Delhi in June 2011 and by different authorities as well as information provided by MAH units in the District are considered to prepare this plan.

1. The Factories Act 1948(1987) and The Gujarat Factories Rules 1963 (2004)
2. The Disaster Management Act 2005 and Disaster Management Rules 2006
3. The Gujarat State Disaster Management Act 2003
4. Chemical Accidents (Emergency Planning, Preparedness and Response) Rules-1996 (2000).
5. Manufacture, Storage and Important of Hazardous Chemicals Rules 1989(2000)
6. APELL; Awareness and preparedness for Emergency at Local Level –Chemical Emergency Prevention, Preparedness & Response (1995)-National Response Team- National Safety Council, Mumbai.
7. Major Accident Hazards Control and Techniques. CLI-Mumbai.
8. Planning Off Off-Site Response for Chemical Hazards –Circulated by Environmental and forest Department, New Delhi.
9. Major Hazard Control – I. L. O. Geneva
10. The guideline on the preparation on Off-Side Emergency Plan issues by Director- Industrial Safety & Health, Ahmadabad, Gujarat State.

I am thankful for extending valuable guidance provided by Mr. P.M. Shah, Director-Industrial Safety & Health; Gujarat State. Further, I am thankful for the positive response extended by Shri H. S. PATEL Joint Director-Industrial Safety & Health, Rajkot Region, and my colleagues, Mr. D. B. Modi, Mr. S. R. Oza, Mr. A. P. Jhala, and Others office staff.

"I take responsibility for the maintenance and upkeep of the plan and shall: Possess a Master Copy of this Plan and ensure at all times that it is up-to-date

- Ensure distribution of the latest plan copy to the key responders
- Maintain the signatures of the responders in the Master Copy of the plan
- Communicate changes in the plan to all the possessors of the plan
- Initiate revision of plan whenever it is due

And perform other tasks that may needed for up-to-date maintenance and sufficiency of this plan"


Member Secretary – DCG
Dy. Director, Industrial Safety & Health
Kutch

TABLE OF CONTENT

1	Directory of Key Responders in the District	07
2.	Introduction, Use, and Control of Off-site Emergency Plan	10
2.1	Background to Off-site Emergency	10
2.2	Off-site Emergency	11
2.3	Off-site Emergency Plan and its Use	11
2.4	Scope of Off-site Emergency Plan	11
2.5	Declaration of Off-site Emergency and Enforcement of Plan	13
2.6	Possessors of the Off-site Emergency Plan and the Maintenance Officer of the Off-site Emergency Plan	13
2.7	Review and Amendment of Plan	13
2.8	Dovetailing of On-site Emergency Plans with this Plan	13
2.9	Annexing of this Plan with District Disaster Management Plan	14
3.	District Profile	15
3.1	Map of District	15
3.2	Description of Map and other Geographic Information	15
3.3	Demographic Information	17
3.4	Meteorological Information	17
3.5	Important Activities/Events/Festive Events in District	19
4.	Identification of Hazards	20
4.1	Introduction to Hazards	20
4.2	MAH Unit Installations	20
4.3	Transportation of Hazardous Goods	23
5.	Identification of Emergency Scenarios and Delineation of Vulnerable Zones	24
5.1	Introduction to Emergency Scenarios and Vulnerable Zones	24
5.2	Emergency Scenarios in MAH Installations	27
5.3	Effect Emergency Scenarios	29
5.4	Other Emergency Scenarios Including Fall-Outs of Natural Disasters	30
5.5	Development of Vulnerability Templates	30
6.	Identification of Emergency Resources	34
6.1	Introduction to Emergency Resources	34
6.2	Police	34
6.3	Fire	35
6.4	Medical Aid	40
6.5	Other Emergency Infrastructure	47
6.6	Evacuation – Sheltering	48
6.7	Technical Resources	48
6.8	Media Resources	50
6.9	Other Emergency Resources	51

7.	Roles and Responsibilities	61
7.1	Introduction	61
7.2	Responsibilities of Authorities and Agencies	61
7.3	Emergency Organisation Chart of Roles.....	65
7.4	Emergency Behaviour of the Public at Large	66
7.5	Specific Actions Required by the Public at Large and Communication to Them	67
8.	Emergency Response Plan.....	68
8.1	Introduction	68
8.2	Enforcement and Implementation of Plan	68
8.3	Marriage of Chapters 5, 6, 7	68
8.4	Discharging and Co-Ordination of Roles and Responsibilities	68
9.	Post-Emergency Restoration	69
9.1	Calling off Emergency.....	69
9.2	Controlling Long-Term Damage.....	69
9.3	Investigation Studies and Reporting	69
9.4	Compensation and Settlements.....	69
9.5	Past Accidents in the District	69
9.6	Mock Drills.....	70
9.7	Role of Incident Controller and Site Controller.....	71
	ANNEXURE 1: Declaration of Off-site Emergency	73
	ANNEXURE 2: Possessors of the Copy of Off-site Emergency Plan.....	76
	ANNEXURE 3: Communication of Change in Copy of this Plan to all Possessors of the Copy of the Plan	78
	ANNEXURE 4: Communication of Change in Positions, Address	81
	ANNEXURE 5: Calling off the Declared Off-site Emergency	82
	ANNEXURE 6: MSDS FOR HAZ MAH CHEMICALS.....	84
	Glossary of Terms	85
	Appendix.....	87

INDEX OF TABLE

Table No		Page No
1	Directory of Key Responders	7
2	Population Distribution	17
3	Meteorological Information	18
4	List of Important Events in the District	19
5	Natural Disaster History	19
6	Information on MAH Unit Installation	20
7	Information on Hazmat Transportation by Road	23
8	Information on Hazmat Transportation by Rail	23
9	Information on Hazmat Transportation by Water	23
10	Emergency Scenarios in MAH Installations	27
11	Domino Effects of Emergency Scenarios	30
12	Emergency Scenarios arising out of Natural Disasters	30
13	Vulnerability	31
14	Police Information	34
15	Fire Department Information	35
16	Resources with MAH units forming part of Mutual Aid Resources	36
17	Medical Aid Information	40
18	Emergency Response Vehicles	47
19	Evacuation Information – Sheltering	48
20	Technical Experts Directory	48
21	Media Resources Information	50
22	Other Emergency Resources- Equipments	51
23	Other Emergency Resources – Antidote Available	53
24	Other Emergency Resources – NGOs	53
25	Assembly Points	55
26	MAH Unit Statutory Compliance Status	58
27	Lessons from Past Accidents	70
28	Lessons from Mock Drills	70

Directory of Key Responders in the District

Table 1 Directory of Key Responders

Sr No	Designation	Position in DCG	Telephone Numbers		
			Office	Office	Residence/Mobile
1	District Collector	Chairman	Collector Office, Bhuj	(02832) 250020	9978406213
2	District Development Officer	Vice Chairman & Materials Coordinator	Office of the DDO, District Panchayat Office, S.T. Road, Bhuj.	(02832) 250080	9978406238
3	Dy. Director (IS&H), Kutch	Member Secretary	Plot No. 66, ward 1-b Adipur, Kutch.	(02836) 260020	8980029190
4	Suptd. of Police – West	Security Coordinator	SP Office, Bhuj	(02832) 250444	9978405073
4-A	Suptd. of Police - East	Security Coordinator	SP Office, Gandhidham	(02836) 280233	9978405690
5-A	SDM & Dy. Collector, Bhuj	Chairman LCG, Bhuj	Office of the SDM & Dy. Collector, Bhuj	(02832) 251007	9978405099
5-B	SDM & Dy. Collector, Anjar	Chairman LCG, Anjar	Office of the SDM & Dy. Collector, Anjar	(02836) 243345	9978405069
5-C	SDM & Dy. Collector, Mudra	Chairman LCG, Mundra	Office of the SDM & Dy. Collector, Mundra	(02838) 223112	942723570
6	Fire Dept. Bhuj Nagarpalika	Fire Service Coordinator	Fire Station, Bhuj, Kutch.	101 (02832) 247030	9925170506 9925428576
6-A	Fire Dept. Gandhidham Nagarpalika	Fire Service Coordinator	Fire Dept. Gandhidham Nagarpalika	(02836) 226573	-

6-B	Fire Station, KPT, Kandla.	Fire Cum Safety Officer	Fire Station, KPT, Kandla.	(02836) 270176	9825227041
7	Dist. Health Officer	Medical Coordinator	Jilla Panchayat Office, S.T. Road, Bhuj.	(02832) 252207	6354264142
8	Distt. Agricultural Officer	Associate Utilities Coordinator	Jilla Panchayat Office, S.T.Road, Bhuj	(02832) 221155	70960 62781
9	Gujarat Pollution Control Board, West-Regional Officer	Safety Coordinator	Gujarat Pollution Control Board, Bhuj	(02832) 250620	8980024227
9-A	Gujarat Pollution Control Board, East-Regional Officer	Safety Coordinator	GPCB, DPT Office, Gandhidham	(02836)	6359961891
10	Dy. Director of Information	Liaison & Public Relations Coordinator	Opp. Mahumali Bhavan, Bhuj.	(02832) 224859 250954	9429199886
11	RTO Bhuj	Transport Coordinator	RTO OFFICE, BHUJ	02832- 221950	80002 56555
12	ARTO Anjar	Transport Coordinator	ARTO OFFICE, ANJAR		99252 85598
13	DGM (Fire and Safety), IFFCO- Kandla	Technical Coordinator Kandla	IFFCO, Old Kandla	-	9979026415
14	DGM-HSE, Dorf ketal industries, Mundra	Technical Coordinator Mundra	Dorf ketal industries ,Mundra	-	9637681288
15	GM-Ops,	Technical Coordinator Kandla	Ahir Salt & Allied Products Pvt. Ltd. Kandla	-	9925247904

	Ahir Salt & Allied Products Pvt. Ltd. Kandla				
16	EHS Head, Agrocel Industries Ltd, Bhuj,	Technical Coordinator Bhuj	Agrocel Industries Ltd, Bhuj	-	6354917258
17	AGM, Aarati Industries, Bhachau,	Technical Coordinator Bhachau	Aarti Chemicals & Drugs Ltd.	-	6354910232
18	EHS Head, Balkrishna Industries, Bhuj	Technical Coordinator Bhuj	Balkrishna Industries, Bhuj	-	8779990100

N.B.: The names of the govt. officials have not been mentioned as they are transferable

Introduction, Use, and Control of Off-site Emergency Plan

2.1 Background to Off-site Emergency

Manufacture, storage, and use of hazardous substances pose a serious risk to industry, people in the neighborhood, and the environment. The accidental release of hazardous chemicals, which are flammable, explosive, or toxic, may lead to emergencies. Depending upon the nature of the substance and magnitude of the release, an emergency could either be confined within the industry (On-site Emergency) or could transgress the boundary of the industry and affect the public in the neighborhood in which case it would be an Off-site Emergency. The Off-site emergency Plan is a document detailing how emergencies relating to a possible major accident involving a hazardous chemical in an industry, which may have ramifications outside the boundary walls of that industry will be dealt with.

The rule 14(1) of MSIHC Rules read with Schedule 5 requires the District Authorities to prepare an Offsite Emergency Plan in consultation with the Chief Inspector of Factories and assistance from the Chief Controller of Explosives.

The details to be furnished in the Off-site Emergency Plan are given in Schedule 12 of the Rules. These are:

- The type of accidents and release to be taken into account.
- Organizations involved including key personnel and responsibilities and liaison arrangements between them.
- Information about the site including likely locations of dangerous substances, personnel, and emergency control rooms.
- Technical information such as chemical and physical characteristics and dangers of the substances and plant.
- Identification of the facilities and transport routes.
- Contact for further advice e.g. meteorological information, transport, temporary food and accommodation, first aid and hospital services, water and agricultural authorities.
- Communications links including telephones, radios, and standby methods.
- Special equipment including fire fighting materials, damage control, and repair items.
- Details of emergency response procedures.
- Notification to the public.
- Evacuation arrangements.
- Arrangements for dealing with the press and other media interests.
- Long-term clean up.

Transportation of hazardous chemical by road or pipeline may pose a threat to the population and environment. Such accidents also belong to the category of off-site emergency. The definition of major chemical accident includes accidents during transportation vide rule 2(f) of the CA (EPPR) Rules

2.2 Off-site Emergency

The chemical release, fire, explosion or spillage in an industrial unit including isolated storages that may have ramifications outside the boundary of that particular industrial unit or such a chemical release, fire, explosion or spillage during the transportation of hazardous chemicals by road or by pipeline, all of which may pose a threat to life and property of public at large, is a situation qualifying to be an offsite emergency With the declaration to this effect by the DEA.

2.3 Off-site Emergency Plan and its Use

Off-site Emergency Plan foresees the possible emergency scenarios leading to Off-site Emergency Plan. The following are the use of Off-site Emergency Plan

- The plan identifies the resources required for dealing with likely emergencies and draws attention to additional resources that may be required.
- The plan helps to inform the necessary authorities and stake-holders of their responsibilities during the emergency.

During Emergency Use

The plan gives the procedures to be executed by various roles during the off-site emergency for its control and mitigation.

The plan serves as a ready-reckoned for all vital and factual information that is required during emergency.

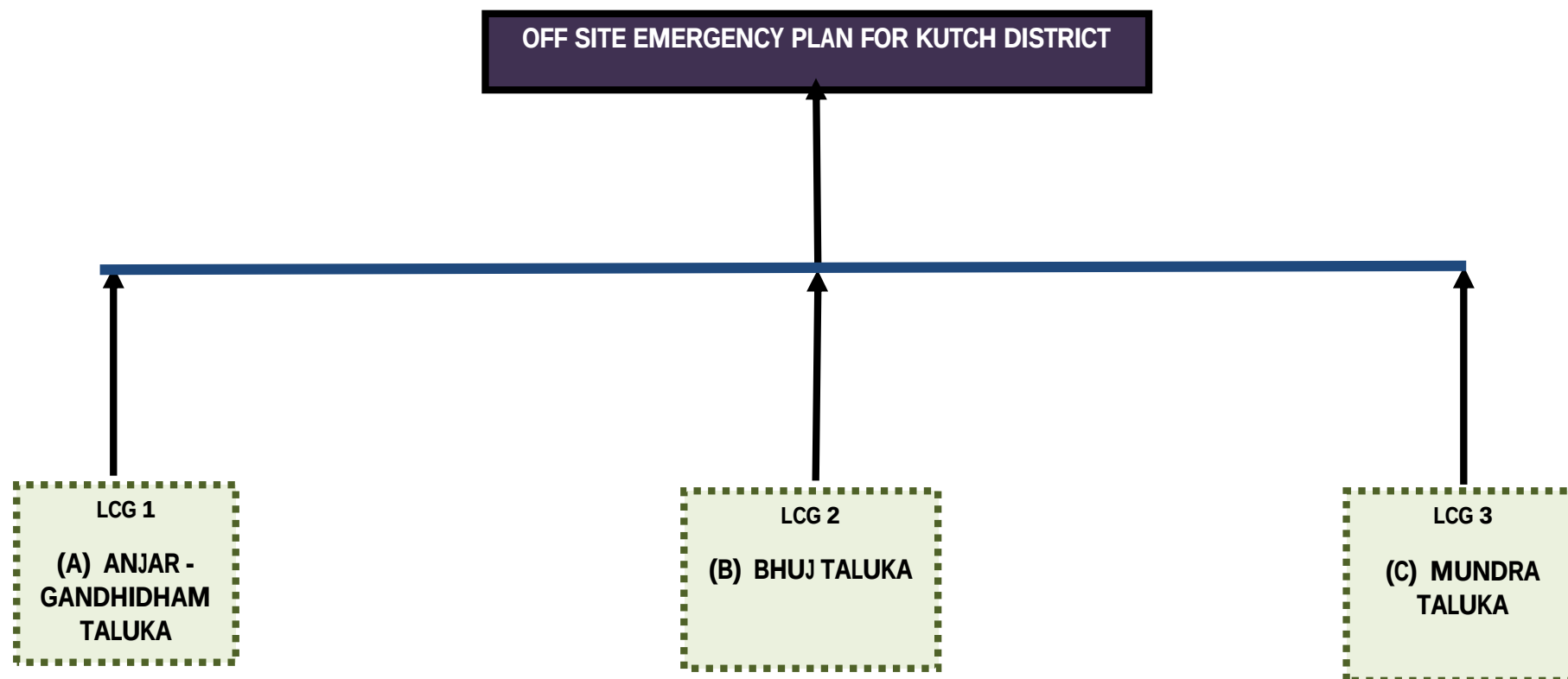
2.3.1 Post-Emergency Use

The plan gives procedures for prevention of damage in the long term that may arise as effect of an emergency.

The plan lays for review of emergency to draw necessary observations and lessons for self-enrichment of plan for future emergencies.

2.4 Scope of Off-site Emergency Plan

The Off-site Emergency Plan applies to the entire district. The Off-site Emergency Plan compiles all the possible emergency scenarios pertaining to industrial or transportation hazards that may arise within the district boundaries and provides for the response mitigation of the same. The inter-relationship Off-site Emergency Plan is depicted in the diagram below



2.5 Declaration of Off-site Emergency and Enforcement of Plan

The responsibility and the power of declaring the off-site emergency in the district vests with the DEA. In his absence, the responsibility and power vests with the authority appointed in lieu of the DEA. The declaration of emergency shall be made via Annexure 1.

2.6 Possessors of the Off-site Emergency Plan and the Maintenance Officer of the Off-site Emergency Plan

The copy of the off-site plan must be possessed by all the responders who contribute in the off-site planning process or in mitigation response. The list of all the possessors of the off-site plan is as following: The District Collector (or the DEA) is responsible for the maintenance and upkeep of the Off-site Emergency Plan. He may designate one officer to carry out the tasks pertaining to this role.

2.7 Review and Amendment of Plan

The Off-site Emergency Plan shall be distributed to all people listed in Annexure 2. It shall be the duty of the District Collector (or the DEA) to ensure distribution of up-to-date copy of this plan to all people listed in Annexure 2. It shall also be the duty of all authorities listed in Annexure 2 to see to it that they receive an up-to-date copy of subsequent versions of the plan. This Off-site Emergency Plan is a dynamic document

And must at all times reflect the ground realities by changing when these change. For this purpose, the Off-site Emergency Plan is set to expire after a period of 2 years from the date on which it is affected. A new version of the plan shall be prepared, released and distributed before the expiry of the current version. Should there be any major changes such as upcoming of new industrial units, identification of new hazards among others or an instance of an off-site emergency the Off-site Emergency Plan shall be revised even before its due expiry. Should there be any minor changes such as changes in person(s) holding particular authorities, changes in phone numbers among others, these shall be communicated to all the possessors of the Off-site Emergency Plan via Annexure 3 by the DEA. The stakeholders of the plan undergoing change in positions or having changed their phone numbers should inform the same to the DEA via Annexure 4.

2.8 Dovetailing of On-site Emergency Plans with this Plan

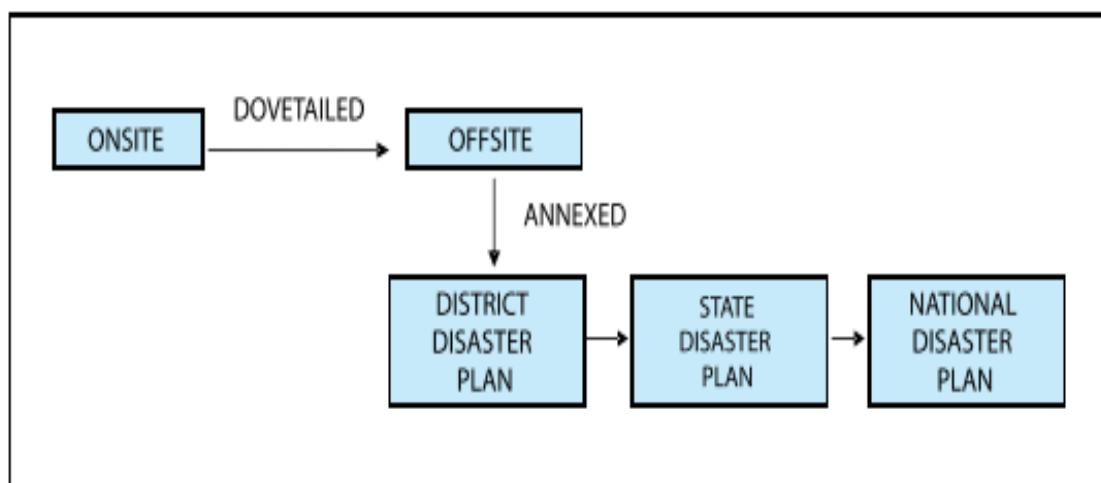
This Off-site Emergency Plan is put use when an industrial on-site emergency is expected to or has already transcended the boundaries of the industrial unit. It is necessary that the actions enlisted in the on-site plan are consistent with the plan of action in this Off-site Emergency Plan. For this purpose it is necessary for the MAH units to ensure that their plans agree to and is consistent with the Off-site Emergency Plan. The dovetailing to this effect needs to be ensured in the following areas among others:

- Communication to the District Authorities/Agencies (see Chapter 8: Emergency Scenarios)
- Line of command (See Chapter 7: Organisation of Roles)

2.9 Annexing of this Plan with District Disaster Management Plan

The offsite plan should be annexed to the district disaster management plan.

The diagram below shows the relation of offsite plan with in the schema of disaster management plans.

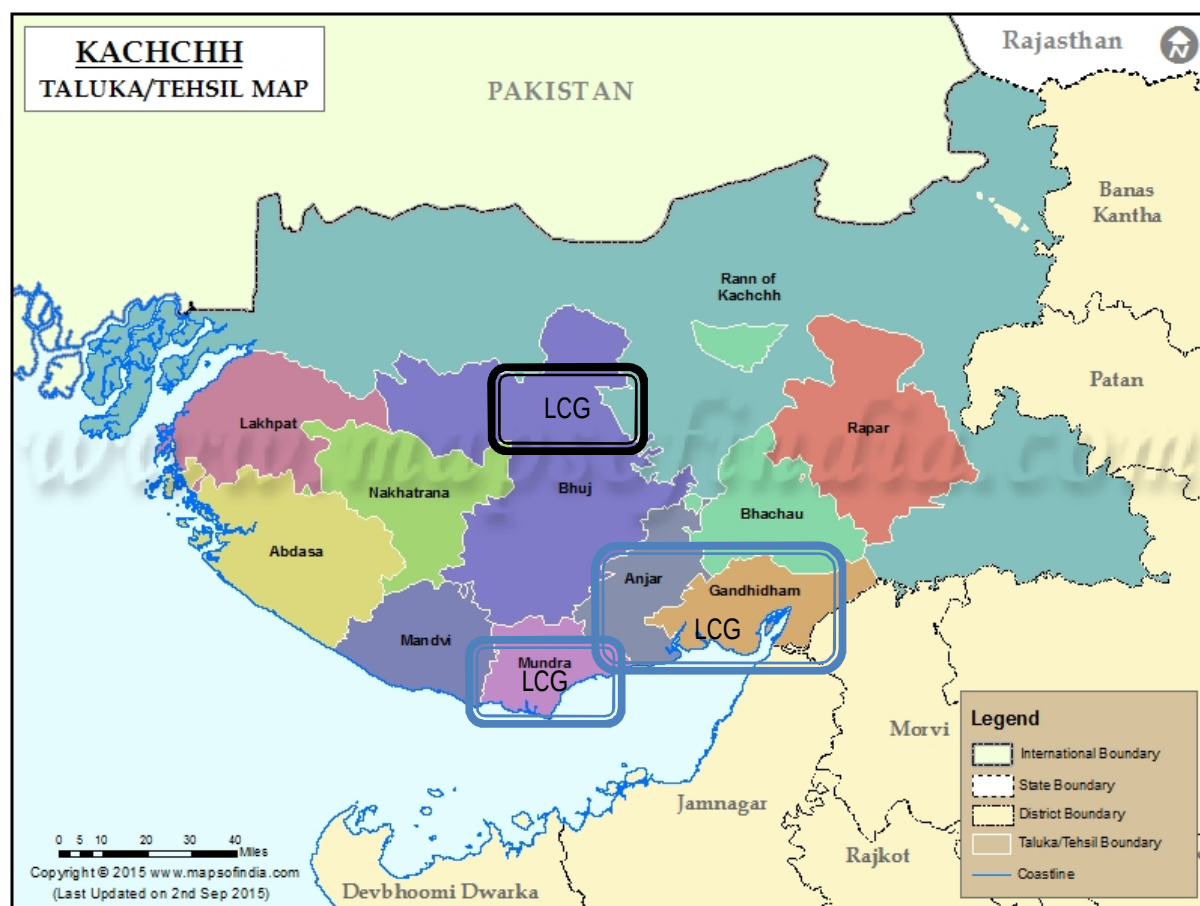


The Onsite Plans and Offsite Plans are chemical disaster plans as stipulated in the MSIHC Rules, 1989. The District Disaster, State Disaster and National Disaster Plans are general disaster plans as stipulated in the Disaster Management Act, 2005.

3.1 Map of District

The map should be to scale 1:50000. The map should indicate political boundaries with neighbouring districts, Talukas, major cities/villages within district, major roads, railways, rivers, wells and other important features. It should indicate the locations of MAH units and other hazardous areas. Police stations, Fire Services, Hospitals shall also be located on the map. Evacuation areas, Schools, Colleges, Community Centres around MAH units shall be identified and indicated on the map. Other resources useful in emergency mitigation such as Emergency Response Centres etc. shall be indicated. The routes of transportation of hazardous chemicals, pipelines transporting hazardous chemicals shall also be shown on the map

3.2 Description of Map and other Geographic Information



Kutch District is located on the West side of Gujarat. The District is spread between 22° 44' & 24° 41' of northern latitude and 68° 07' & 71° 4' of eastern longitude. The District is surrounded by Big Rann of Kach on the North and west and after that Sindh area of Pakistan, Rajasthan on the North and East, Banaskantha & Malia Taluka of Rajkot district on East, Gulf

on Kutch on South and Arabian Sea on the East & West Side. The Map of the District with location of Major Accident Hazard (MAH) units and surrounding areas

3.3 Demographic Information

Table 2 : Population Distribution

Sr no	Taluka	Polpulation	Remarks
1	Abdasa	117,538	
2	Anjar	235,537	
3	Bhachau	186,035	
4	Bhuj	443,269	
5	Gandhidham	327,166	
6	Lakhpat	62,552	
7	Mandvi	203,373	
8	Mundra	153,219	
9	Nakhatrana	146,367	
10	Rapar	217,315	

- Data as per Census 2011

3.4 Meteorological Information

The meteorological factors which govern the dispersion of toxic releases are temperature, humidity and wind-speed. It is important to record the indicative values of these for use of dispersion calculations. The maximum and minimum value for the district on whole is recorded. The maximum value of a parameter is the maximum value of that parameter observed anywhere in the district during the past 10 years. Same applies to the minimum value. Should there extreme variations in the above parameters suitable seasonal or geographic classifications shall be made.

Table 3 Meteorological Information

The climate of the District is broadly distributed in three climates.

July to September – Hot& humid season

October to February – Cold and dry season

March to June – Much Hot & dry season.

There are no big hills and forest in the district so monsoon season is very short duration July to September. January is the coldest month of the year, with the mean daily maximum and minimum temperatures of 24.3oC and 6.8oC respectively. May is the hottest month of the year with the mean daily maximum and minimum temperatures of 45.1oC and 24.5oC respectively. Being closer to the sea the climate is generally hot and humid throughout the year.

The Meteorological Data of the District (30 years average) collected by IMD is presented at Table 2

SR.	PARAMETER	MAXIMUM	Remarks
1	2	3	4
1	Maximum Temperature	45.1 ° C	
2	Minimum Temperature	6.1 ° C	
3	Maximum Wind velocity	180 Km/ Hr. N-NW(09-06-1998)	
4	Maximum Gust.	200 Km/ Hr.N-NW(09-06-1998)	
5	Maximum rain fall	73-60 mm	
6	Minimum Rain fall	1993 mm 1979	
7	Maximum relative Humidity	100 %	
8	Minimum Dew point	-33.30° C	
9	Range of sea water temperature	16.8 ° C – 31.8 ° C	
10	Range of sea water Specific Gravity	1.002 to1.034	
11	Range of SPM in Sea Water	94 – 863 mg/L	
12	Seasonal wind direction Jan- Feb Mar – Sep. Oct. – Dec.	N/N-NW/E-NE S-W/W-SW N/N- NE	

The data pertaining to the table 5 may be obtained from the local meteorological department. The meteorological department shall provide the necessary data available for the district.

3.5 Important Activities/Events/Festive Events in District

Table 4 List of Important Events in the District

SR.	EVENT NAME	DATE	LOCATION	POPULATION INVOLVED
1	2	3	4	5
1.	ROAD SAFETY WEEK	1 ST TO 7 TH JANUARY	ENTIRE DISTRICT	LARGE NUMBER OF PEOPLES INVOLVES IN SUCH EVENT
2.	NEW YEAR'S DAY	1 ST JANUARY	ALL SCHOOLS AND GOVT OFFICES	DO
3.	REPUBLIC DAY	26 TH JANUARY	ALL SCHOOLS AND GOVT OFFICES	DO
4.	NATIONAL SAFETY DAY	4 TH MARCH	ALL MAJOR INDUSTRIES	DO
5.	FIRE DAY	4 TH APRIL	ALL MAJOR INDUSTRIES	DO
6.	LABOUR DAY	1 ST MAY	LABOUR IND.ASSO	DO
7.	WORLD ENVIRONMENT DAY	5 TH JUNE	ALL MAJOR INDUSTRIES	DO
8.	INDEPENDENCE DAY	15 TH AUGUST	ALL SCHOOLS AND GOVT OFFICES	DO
9.	GANDHI JAYANTI	2 ND OCTOBER	ALL SCHOOLS AND COLLEGES	DO

Table 5 Natural Disaster History

SR.	NATURAL DISASTER NAME AND LOCATION	DESCRIPTION, MAGNITUDE AND EFFECTS
1	2	3
1.	EARTH QUAKE- 2001	THE 2001 GUJARAT EARTHQUAKE OCCURRED ON JANUARY 26, 2001, AT 08:46 AM LOCAL TIME AND LASTED FOR OVER TWO MINUTES. THE EARTHQUAKE REACHED A MAGNITUDE OF BETWEEN 7.6 AND 7.7 ON THE MOMENT MAGNITUDE SCALE. THE QUAKE KILLED AROUND 20,000 PEOPLE, INJURED ANOTHER 167,000 AND DESTROYED NEARLY 400,000 HOMES. BUT THERE WAS NO MAJOR DAMAGE OR NOTICEABLE REPORTED IN BHARUCH DISTRICT
2	CYCLONE - 2023	On June 12, the IMD issued alerts to local authorities in Gujarat, encouraging them to prepare for possible evacuations. Residents in coastal areas were warned to stay indoors as the storm approached. Gujarat's government responded by dispatching national and state disaster response teams to the affected areas. More than 1,50,000 people were evacuated. At least 23 people were injured as well as 4,600 villages were affected by power outages in India. A total of 12 people were confirmed to have been killed in India.

Identification of Hazards

4.1 Introduction to Hazards

Hazard is the existence of a situation that can potentially lead to disaster. The offsite emergency plan identifies the hazards that can lead to a chemical disaster. The hazards identified are primarily the MAH installations including isolated storages. However hazards are not restricted to MAH installations alone. Therefore, identification of hazards other than those at MAH installations is important as well. This chapter identifies the hazards in the district.

4.2 MAH Unit Installations

All MAH units including isolated storages have been listed and detailed in the table below:

Table 6 Information on MAH unit Installation

SR.	Name of the Unit	Location	Activity/Product
1	AARTI IND.LTD. (ANUSHAKTI CHEMICAL AND DRUGS PVT.LTD)	Bhachau	CHLORINE BENZENE PETROLEUM CLASS-A
2	AEGIS LOGISTICS LTD	Mundra	LPG PROPANE
3	AGROCEL IND. LTD.	Kandla	CHLORINE
4	AMW AUTOCOMPONENT LTD ,	Bhuj	LPG
5	AMW MOTORS LTD. , BHUJ-	Hajipir	PROPANE
6	ARCHEAN CHEMICAL IND.PVT.LTD.	Kandla	BROMINE CHLORINE
7	ASSOCIATES HIGH PRESSURE TECHNOLOGY PVT. LTD.	Bhuj	LPG LIQUID OXYGEN
8	BHARAT PETROLEUM CORPN. LTD.	Bhuj	MOTOR SPIRIT
9	C.R.L.TERMINAL PVT. LTD.	Kandla, Sez, Gandhidham	ACRYLONITRILE ETHYL ALCOHOL ACETONE BENZENE TOLUENE METHANOL BUTANOL CYDO HAZANAR DI-CHLORO ETHANE ISO-BUTANOL ISO-PROPANAL STYRENE MONOMER

10	DORF KETAL SPECIALITY CATALYSTS PVT.LTD.	Kandla	AMMONIA HEPTANE BUTANOL ETHANOL IPA (ALCOHOL)
11	DYNA GLYCOLS PVT. LTD.	Mundra	ETHYLENE OXIDE PROPYLENE OXIDE
12	EVEREST KANTO CYLINDERS LTD.	Bhuj	LPG LIQUID OXYGEN
13	FRIENDS OIL & CHEMICAL TERMINAL PVT. LTD.	Old Kandla	CLASS A FLAMMABLE LIQUIDS
14	FRIENDS SALT WORKS AND ALLIED INDUSTRIES	Adani Port & SEZ	FLAMMABLE CHEMICALS
15	GREENSEA INDUSTRIES PVT. LTD.	KASEZ	CHLORINE
16	HINDUSTAN PETROLEUM CORPN. LTD.	KASEZ	MOTOR SPIRIT
17	HINDUSTAN PETROLEUM CORPO LTD	KASEZ	PETROLEUM PRODUCTS CLASS-A
18	HMPL-HINDUSTAN MITTAL PIPELINES LTD. ,	Kandla	CRUDE OIL (PETROLEUM)
19	I. M. C. LTD (GAS)	Kandla	BUTADIENE (1)
20	I. M.C. LTD (LIQUID)	APSEZ	FLAMMABLE CHEMICALS
21	IFGL EXPORT LTD, PLOT NO-	Samakhiali	LPG
22	INDIAN FARMERS FERTILISER CO-OP. LTD.	Kandla	AMMONIA
23	INDIAN OIL CORPN. LTD. FORESHORE TERMINAL,	Mundra	NAPHTHA MOTOR SPIRIT HSD ATF
24	INDIAN OIL CORPN. LTD. LPG IMPORT PLANT	Mundra	PROPANE BUTANE
25	AMNS GANDHIDHAM LIMITED	Old Kandla	LPG
26	INDO NIPPON CHEMICAL CORPORATION LTD.	KASEZ	HEPTANE
27	J.R. E. TANK TERMINUS PVT. LTD.	New Kandla	CLASS A FLAMMABLE LIQUIDS
28	JINDAL SAW LTD (INTEGRATED PIPE UNIT)	Kandla	LPG
29	KESAR TERMINALS AND INFRASTRUCTURES LTD. UNIT-2,	Old Kandla	PETROLEUM PRODUCTS CLASS-A/B/C

30	KESAR TERMINALS AND INFRASTRUCTURES LTD.	Bhimasar	VERY HIGHLY FLAMMABLE LIQUIDS
31	KUTCH CHEMICAL INDUSTRIES LTD	Old Kandla	ETHYLENE OXIDE BENZENE
32	LYZERS CYLINDERS LTD.	Kandla	LPG
33	MUNDRA PORT & SEZ LTD.	KASEZ	FLAMMABLE CHEMICALS
34	RAMA CYLINDERS PVT. LTD.	Samaghogha, Mundra	PROPANE OXYGEN
35	RISHIKIRAN LOGISTIC PVT. LTD.	Old Kandla	ACRYLONITRILE
36	SOLARIS CHEMTECH LIMITED	Anjar	BROMINE CHLORINE
37	EURO INDIA CYLINDERS LTD.	Old Kandla	LPG
38	WELSPUN CORP LIMITED	Old Kandla	LPG
39	JSW Steel Ltd.	Gandhidham	LPG
40	AHIR SALT & ALLIED PRODUCTS PVT. LTD.	Mundra	ACN TOLUENE METHANOL ACETONE
41	MUNDRA LPG TERMINAL PVT. LTD.	Chandrani, Ta. Anjar	PROPANE ETHYL MERCAPTAN
42	MANAKSIA COTTED METAL & INDUSTRIES LTD.	KASEZ, Gandhidham	PROPANE SKO
43	BRITANNIA INDUSTRIES LTD	Kandla	LPG
44	GSPC LNG LTD	Kandla	LNG
45	M/S SATYESH BRINECHEM PVT LTD.	Rann of kutch	BROMINE CHLORINE H2SO4 NAOH
46	SNF FLOPAM INDIA PVT. LTD	Padana	ACRYLONITRILE
47	SHREE RAM TRADING CO.	Khavda, Bhuj	BROMINE CHLORINE
48	RISHI KIRAN TERMINALS PVT. LTD.	Varsana	ACRYLONITRILE
49	BALKRISHNA INDUSTRIES LTD.	Anjar	PROPANE

4.3 Transportation of Hazardous Goods

Table 7
Information on Hazmat Transportation by Road

SR.	ROAD NO. FROM- TO	DETAILS OF HAZARDOUS CHEMICALS FLOW WITH QUANTITY	VILLAGES / TOWNS ENROUTE	REMARKS
1	STATE HIGHWAY TO ALL OVER INDIA	DIFFERENT TYPE OF CHEMICALS , PETROCHEMICALS , CRUDE AND PETROLEUM PRODUCTS	VILLAGES AND TOWN NEAR HIGHWAY	
2	NATIONAL HIGHWAY TO ALL OVER INDIA	DIFFERENT TYPE OF CHEMICALS , PETROCHEMICALS , CRUDE AND PETROLEUM PRODUCTS	VILLAGES AND TOWN NEAR HIGHWAY	

Table 8
Information on Hazmat transportation by rail

SR.	STRETCH FROM – TO	LENGTH	DETAILS OF HAZARDOUS CHEMICALS FLOW WITH QUANTITY	STATIONS ENROUTE	REMARKS
1)	KUTCH TO MANY PLACES IN INDIA	➤ 1000 KM	DIFFERENT TYPE OF CHEMICALS , PETROCHEMICALS , CRUDE AND PETROLEUM PRODUCTS	KUTCH TO MANY PLACES IN INDIA	

Table 9
Information on Hazmat transportation by Water

Sr.	Stretch From -to	Length	Details of Hazardous Chemicals flow with Quantity	Coastal Areas Enroute	Remarks
1)	DIFFERENT COUNTRY TO MUNDRA AND KANDLA THROUGH SEA BY SHIPS / VESSELS	➤ 1000 KM	DIFFERENT TYPE OF CHEMICALS , PETROCHEMICALS , CRUDE AND PETROLEUM PRODUCTS	DIRECT	

Identification of Emergency Scenarios and Delineation of Vulnerable Zones

5.1 Introduction to Emergency Scenarios and Vulnerable Zones

Emergency Scenarios Major industrial hazards are generally associated with the potential for toxic chemical release, fire or explosion

Events involving release of toxic materials

- Slow or intermittent release of toxic substance from a leaking valve,
- Rapid release for limited duration due to fracture of pipe leading to a toxic cloud which may travel or dissipate,
- Massive release of toxic substance due to failure of large storage or process vessel or uncontrolled chemical reaction.
- Loss of containment for a plant threatened by a fire

Events involving spillage of flammable liquids or loss of containment of flammable gases

- Confined spill
- Unconfined spill

Major fires with no danger of explosion Hazards from high levels of thermal radiation and smoke, for example:

- Pool fire,
- Flash fire,
- Jet fire etc
- Explosion

Explosion Events

Hazards from blast waves, flying debris, high level of thermal radiation. Serious emergencies that can be envisaged are

- Confined explosions,
- Unconfined vapour cloud explosion,
- BLEVE

Assessment of possible incidents is to be carried out for each MAH installation, in terms of:

- The quantity of hazardous material which could be released
- The rate of release

- Effects of such a release
- Thermal radiation from a fire at different distances
- Blast over-pressures due to an explosion as function of distance from the incident spot
- Toxic effects affecting the vulnerable zone (circle showing concentrations)
- Number of people likely to be affected

Methodology for Calculation of Vulnerable Zones Prescribed by MOEF

The injury criteria or level of concern is used to determine vulnerable zones. The consequence distances for Toxic Release, Fire and Explosion scenario are worked out as per micro-methodology evolved by the MOEF.

Toxic Exposure

The IDLH (immediately dangerous to life and health) concentration value is taken as the criterion for identifying vulnerability zone. Accidents giving rise to toxic clouds from each of the MAH units in the area need to be considered. The calculations for consequence distances should be done for weather stability class D with wind speed of 3 m/s and also for class F with wind speed of 1 to 2 m/s. The circles with radii equal to the consequence distances should be drawn on maps to indicate vulnerable zones for planning and preparedness purpose. The toxic cloud arrival and departure time should also be indicated on the map for each circle.

Heat Radiation (Pool Fire, Flare, BLEVE)

The heat radiation equal to 10 kW/m produces second-degree burns on unprotected parts of the human body. The heat radiation of 5 kW/m

2 produce first-degree burns. These intensities of radiation are chosen as the limit value to identify vulnerable zones. The radiation intensity of 10 kW/m is taken as a limit value to identify fatality zone and that of 5 kW/m is taken for the injury zone.

Explosion 2

It is assumed that everyone inside an area in which the peak over-pressure is greater than 0.1 bar will be wounded. This area is and will be represented by a circle drawn around the explosion centre and having radius equal to the (calculated) distance from explosion centre at which peak over-pressure = 0.1 bar is expected.

In the case of a vapour cloud explosion, the explosion centre, which coincides with the cloud centre, will vary depending upon the prevailing weather conditions and the time when it gets source of ignition.

Use of Vulnerability Templates

The Maps showing the location of likely emergencies and corresponding vulnerable zones are to be included in the Plan. The maps are useful for planning and preparing, in advance, for the likely emergencies. The maps are also useful to identify area under threat in an actual emergency. To assess the impact of toxic release, use of computer software along with the real time input of meteorological data would be an ideal method to identify the area under threat. However, it may not be always possible to have such sophisticated facility available at every place. Under such circumstances, transparent “Templates” can be developed and used to assess the effects of spread of the toxic cloud with concentration levels as function of distance from the point of origin. The transparent templates for each scenario which are to be used in the following manner.

Place the transparency on the relevant map with

- The toxic release source on the map and the plume source on the transparency coinciding.
- The X-axis of the plume pointing in the prevailing wind direction.
- Injuries requiring medical attention will extend up to the contours of the transparency superimposed on the area map.

Templates should be developed for the Hazardous Chemicals used, stored or transported in the MAH Units to provide the District Emergency Authority and the Local Crisis Group with a tool for rapid assessment of vulnerable zones.

Templates should be drawn on transparent sheets and indicate the shape and extent of a vulnerable zone. The vulnerable zone in the event of a given toxic release scenario is assessed by using the appropriate template in conjunction with its associated map. The scale of the template needs to be the same as that of the map.

It may be noted that the templates will be useful for identifying the vulnerability zone in case of toxic cloud.

Computer Models

MOEF in association with National Informatics Centre (NIC) is in process of evolving computer software model for calculation of vulnerable zone and its projection on digital maps. Wherever available this computerized model may be used for delineation of vulnerable zones.

Use of specific information

The use of specific information regarding wind velocity, temperature etc. at the site during the actual occurrence of emergency can be made

Wherever the computer software model is in use. In its absence the standard calculations of Class D with wind speed of 3 m/s and Class F with wind speed 1 to 2 m/s as prescribed by MOEF shall be used accordingly for delineation of vulnerable zones.

5.2 Emergency Scenarios in MAH Installations

L1: A district level disaster within the capabilities of the district administration to deal with.

L2: A state level disaster within the capabilities of the state government to deal with.

L3: A National level disaster requiring major direct intervention of the Central Government.

Also, the guidelines define fourth category 'L0' as 'No disaster situation. This is a level at which surveillance, preparedness and mitigation activities must be carried out.' Since the off-site plan is a district-level plan, the possible emergencies within a district of higher magnitude (L2, L3) should get identified in the off-site plan.

Table 10
Emergency Scenarios in MAH Installations

SR.	Name of the Unit	Chemicals Stored	Type of Scenario
1	AARTI IND.LTD. (ANUSHAKTI CHEMICAL AND DRUGS PVT.LTD)	CHLORINE BENZENE PETROLEUM CLASS-A	Toxic release / fire / explosion
2	AEGIS LOGISTICS LTD	LPG PROPANE	fire / explosion
3	AGROCEL IND. LTD.	CHLORINE	Toxic release
4	AMW AUTOCOMPONENT LTD ,	LPG	fire / explosion
5	AMW MOTORS LTD. , BHUJ-	PROPANE	fire / explosion
6	ARCHEAN CHEMICAL IND.PVT.LTD.	BROMINE CHLORINE	Toxic release
7	ASSOCIATES HIGH PRESSURE TECHNOLOGY PVT. LTD.	LPG LIQUID OXYGEN	fire / explosion
8	BHARAT PETROLEUM CORPN. LTD.	MOTOR SPIRIT	fire / explosion
9	C.R.L.TERMINAL PVT. LTD.	ACRYLONITRILE ETHYL ALCOHOL ACETONE BENZENE TOLUENE METHANOL BUTANOL CYDO HAZANAR DI-CHLORO ETHANE ISO-BUTANOL ISO-PROPANAL STYRENE MONOMER	Toxic release / fire / explosion

10	DORF KETAL SPECIALITY CATALYSTS PVT.LTD.	AMMONIA HEPTANE BUTANOL ETHANOL IPA (ALCOHOL)	Toxic release / fire / explosion
11	DYNA GLYCOLS PVT. LTD.	ETHYLENE OXIDE PROPYLENE OXIDE	fire / explosion
12	EVEREST KANTO CYLINDERS LTD.	LPG LIQUID OXYGEN	fire / explosion
13	FRIENDS OIL & CHEMICAL TERMINAL PVT. LTD.	CLASS A FLAMMABLE LIQUIDS	fire / explosion
14	FRIENDS SALT WORKS AND ALLIED INDUSTRIES	FLAMMABLE CHEMICALS	fire / explosion
15	GREENSEA INDUSTRIES PVT. LTD.	CHLORINE	Toxic release
16	HINDUSTAN PETROLEUM CORPN. LTD.	MOTOR SPIRIT	fire / explosion
17	HINDUSTAN PETROLEUM CORPO LTD	PETROLEUM PRODUCTS CLASS-A	fire / explosion
18	HMPL-HINDUSTAN MITTAL PIPELINES LTD. ,	CRUDE OIL (PETROLEUM)	fire / explosion
19	I. M. C. LTD (GAS)	BUTADIENE (1)	Toxic release / fire / explosion
20	I. M.C. LTD (LIQUID)	FLAMMABLE CHEMICALS	fire / explosion
21	IFGL EXPORT LTD, PLOT NO-	LPG	fire / explosion
22	INDIAN FARMERS FERTILISER CO-OP. LTD.	AMMONIA	Toxic release
23	INDIAN OIL CORPN. LTD. FORESHORE TERMINAL,	NAPHTHA MOTOR SPIRIT HSD ATF	fire / explosion
24	INDIAN OIL CORPN. LTD. LPG IMPORT PLANT	PROPANE BUTANE	fire / explosion
25	AMNS GANDHIDHAM LIMITED	LPG	fire / explosion
26	INDO NIPPON CHEMICAL CORPORATION LTD.	HEPTANE	fire / explosion
27	J.R. E. TANK TERMINUS PVT. LTD.	CLASS A FLAMMABLE LIQUIDS	fire / explosion
28	JINDAL SAW LTD (INTEGRATED PIPE UNIT)	LPG	fire / explosion
29	KESAR TERMINALS AND INFRASTRUCTURES LTD. UNIT-2,	PETROLEUM PRODUCTS CLASS-A/B/C	fire / explosion

30	KESAR TERMINALS AND INFRASTRUCTURES LTD.	VERY HIGHLY FLAMMABLE LIQUIDS	fire / explosion
31	KUTCH CHEMICAL INDUSTRIES LTD	ETHYLENE OXIDE BENZENE	Toxic release / fire / explosion
32	LYZERS CYLINDERS LTD.	LPG	fire / explosion
33	MUNDRA PORT & SEZ LTD.	FLAMMABLE CHEMICALS	fire / explosion
34	RAMA CYLINDERS PVT. LTD.	PROPANE OXYGEN	fire / explosion
35	RISHIKIRAN LOGISTIC PVT. LTD.	ACRYLONITRILE	Toxic release / fire / explosion
36	SOLARIS CHEMTECH LIMITED	BROMINE CHLORINE	Toxic release
37	EURO INDIA CYLINDERS LTD.	LPG	fire / explosion
38	WELSPUN CORP LIMITED	LPG	fire / explosion
39	JSW Steel Ltd.	LPG	fire / explosion
40	AHIR SALT & ALLIED PRODUCTS PVT. LTD.	ACN TOLUENE METHANOL ACETONE	Toxic release / fire / explosion
41	MUNDRA LPG TERMINAL PVT. LTD.	PROPANE ETHYL MERCAPTAN	Toxic release / fire / explosion
42	MANAKSIA COTTED METAL & INDUSTRIES LTD.	PROPANE SKO	fire / explosion
43	BRITANNIA INDUSTRIES LTD	LPG	fire / explosion
44	GSPC LNG LTD	LNG	fire / explosion
45	SATYESH BRINECHEM PVT LTD.	BROMINE CHLORINE H2SO4 NAOH	Toxic release
46	SNF FLOPAM INDIA PVT. LTD	ACRYLONITRILE	Toxic release / fire / explosion
47	SHREE RAM TRADING CO.	BROMINE CHLORINE	Toxic release
48	RISHI KIRAN TERMINALS PVT. LTD.	ACRYLONITRILE	Toxic release / fire / explosion
49	BALKRISHNA INDUSTRIES LTD.	PROPANE	Toxic release

5.3 Effect Emergency Scenarios

Table 11
Domino Effects of Emergency Scenarios

SR.	DISASTER SCENARIO (TABLE NO., SR. AND DESCRIPTION)	TRIGGERED SCENARIO 1	TRIGGERED SCENARIO 2	TRIGGERED SCENARIO 3	REMARKS
1	2	3	4	5	6
1	TOXIC GAS RELEASE – CHLORINE / AMMONIA / BROMINE / STYRENE/ EO ETC.	EXPOSURE CAUSE IRRITATION AND CHOKING OF RESPIRATORY TRACK	SPRAYING OF THE TOXIC GAS IN DOWN WIND DIRECTION	SAFE SHUT DOWN OF THE PLANT AND ON SITE RESPONSE ACTIONS START TO MITIGATE	
2	FIRE AND EXPLOSION FROM CRUDE / PETROLEUM PRODUCTS ETC	EMISSION OF BLACK SMOKE AND OR TOXIC GAS	SPRAYING OF THE TOXIC GAS IN DOWN WIND DIRECTION	SAFE SHUT DOWN OF THE PLANT AND ON SITE RESPONSE ACTIONS START TO MITIGATE	

5.4 Other Emergency Scenarios Including Fall-Outs of Natural Disasters

Table 12
Emergency Scenarios arising out of Natural Disasters

sr.	Natural Disasters Likely	Vulnerable MAH Unit, Disaster Scenario	Remarks
1	2	3	4
1	FLOOD	ALL INDUSTRIES WHERE CHANCES OF HEAVY RAIN FALL	
2	CYCLONE	ALL INDUSTRIES NEAR SEA FACE	
3	STORM / CYCLONE	ALL INDUSTRIES NEAR SEA FACE	
4	EARTHQUAKE	ALL INDUSTRIES	
5	TSUNAMI	ALL INDUSTRIES NEAR SEA FACE	
6	LIGHTNING	ALL INDUSTRIES	

5.5 Development of Vulnerability Templates

Table 13
Vulnerability

Sr.	MAH Unit Disaster Scenario Ref No: and Description	Type of Vulnerability	Remarks
1.	AARTI IND.LTD. (ANUSHAKTI CHEMICAL AND DRUGS PVT.LTD)	Toxic release / fire / explosion	
2.	AEGIS LOGISTICS LTD	fire / explosion	
3.	AGROCEL IND. LTD.	Toxic release	
4.	AMW AUTOCOMPONENT LTD ,	fire / explosion	
5.	AMW MOTORS LTD. , BHUJ-	fire / explosion	
6.	ARCHEAN CHEMICAL IND.PVT.LTD.	Toxic release	
7.	ASSOCIATES HIGH PRESSURE TECHNOLOGY PVT. LTD.	fire / explosion	
8.	BHARAT PETROLEUM CORPN. LTD.	fire / explosion	
9.	C.R.L.TERMINAL PVT. LTD.	Toxic release / fire / explosion	
10.	DORF KETAL SPECIALITY CATALYSTS PVT.LTD.	Toxic release / fire / explosion	
11.	DYNA GLYCOLS PVT. LTD.	fire / explosion	
12.	EVEREST KANTO CYLINDERS LTD.	fire / explosion	
13.	FRIENDS OIL & CHEMICAL TERMINAL PVT. LTD.	fire / explosion	
14.	FRIENDS SALT WORKS AND ALLIED INDUSTRIES GREENSEA INDUSTRIES PVT. LTD. HINDUSTAN PETROLEUM CORPN. LTD.	fire / explosion	
		Toxic release	
		fire / explosion	
15.	HINDUSTAN PETROLEUM CORPO LTD	fire / explosion	
16.	HMPL-HINDUSTAN MITTAL PIPELINES LTD. ,	fire / explosion	
17.	I. M. C. LTD (GAS)	Toxic release / fire / explosion	
	I. M.C. LTD (LIQUID)	fire / explosion	
18.	IFGL EXPORT LTD, PLOT NO-	fire / explosion	

19.	INDIAN FARMERS FERTILISER CO-OP. LTD.	Toxic release	
20.	INDIAN OIL CORPN. LTD. FORESHORE TERMINAL,	fire / explosion	
	INDIAN OIL CORPN. LTD. LPG IMPORT PLANT	fire / explosion	
21.	AMNS GANDHIDHAM LIMITED	fire / explosion	
22.	INDO NIPPON CHEMICAL CORPORATION LTD.	fire / explosion	
23.	J.R. E. TANK TERMINUS PVT. LTD.	fire / explosion	
24.	JINDAL SAW LTD (INTEGRATED PIPE UNIT)	fire / explosion	
25.	KESAR TERMINALS AND INFRASTRUCTURES LTD. UNIT-2,	fire / explosion	
	KESAR TERMINALS AND INFRASTRUCTURES LTD.	fire / explosion	
26.	KUTCH CHEMICAL INDUSTRIES LTD	Toxic release / fire / explosion	
27.	LYZERS CYLINDERS LTD.	fire / explosion	
28.	MUNDRA PORT & SEZ LTD.	fire / explosion	
29.	RAMA CYLINDERS PVT. LTD.	fire / explosion	
30.	RISHIKIRAN LOGISTIC PVT. LTD.	Toxic release / fire / explosion	
31.	SOLARIS CHEMTECH LIMITED	Toxic release	
32.	EURO INDIA CYLINDERS LTD.	fire / explosion	
33.	WELSPUN CORP LIMITED	fire / explosion	
34.	JSW Steel Ltd.	fire / explosion	
35.	AHIR SALT & ALLIED PRODUCTS PVT. LTD.	Toxic release / fire / explosion	
36.	MUNDRA LPG TERMINAL PVT. LTD.	Toxic release / fire / explosion	
37.	MANAKSIA COTTED METAL & INDUSTRIES LTD.	fire / explosion	
38.	BRITANNIA INDUSTRIES LTD	fire / explosion	
39.	GSPC LNG LTD	fire / explosion	
40.	M/S SATYESH BRINECHEM PVT LTD.	Toxic release	

41.	SNF FLOPAM INDIA PVT. LTD	Toxic release / fire / explosion	
42.	SHREE RAM TRADING CO.	Toxic release	
43.	RISHI KIRAN TERMINALS PVT. LTD.	Toxic release / fire / explosion	
44.	BALKRISHNA INDUSTRIES LTD.	Toxic release	
45.	AARTI IND.LTD. (ANUSHAKTI CHEMICAL AND DRUGS PVT.LTD)	Toxic release / fire / explosion	
46.	AEGIS LOGISTICS LTD	fire / explosion	
47.	AGROCEL IND. LTD.	Toxic release	
48.	AMW AUTOCOMPONENT LTD ,	fire / explosion	
49.	AMW MOTORS LTD. , BHUJ-	fire / explosion	

Identification of Emergency Resources

6.1 Introduction to Emergency Resources

Prompt availability of emergency resources is vital to mitigating an offsite emergency. The emergency resources required should be identified with the sources of their availability and the means to call for them. The emergency resources and their sources are identified in this chapter.

6.2 Police

Table 14
Police Information

Sr. No	Name	Code	Phone No.
1	Bhuj	02832-253050	A-63596 25794 B-63596 29203
2	Mandavi	02834-231508	63596 25791
3	Mundra	02838-222121	63596 25801
4	Anjar	02836-242517	63596 26855
5	Gandhidham	02836- 229513/232500	A-63596 26840 B-63596 26836
6	Bhachau	02837- 224036/291136	63596 26858
7	Rapar	02830-220013	63596 26862
8	Nakhatrana	02835-222133	63596 25787
9	Abdasa(Naliya)	02831-222122	63596 25773
10	Lakhpat(Dayapar)	02839-233333	94283 94576

6.3 Fire

Table 15
Fire Department Information

SR.	FIRE STATION WITH ADDRESS AND PHONE NUMBER	DESIGNATED CONTACT PERSONS WITH ADDRESS (O, R) AND PHONE:- NUMBERS (O, R, M)	TYPE AND NUMBERS OF FIRE TENDERS, (WATER, FOAM, MIST TENDERS)	OTHER EQUIPMENTS AND MATERIALS (SCBA, PPE, CRY CHEMICAL POWDER ETC)	REMARKS
1	2	3	4	5	7
1	Fire Station Bhuj Municipality	02832-247030 99254 28576	ADEQUATE NUMBER AVAILABLE	ADEQUATE NUMBER AVAILABLE	
2	Fire Station Mandavi Municipality	02834-224910	ADEQUATE NUMBER AVAILABLE	ADEQUATE NUMBER AVAILABLE	
3	Fire Station Bhachau	02837-224028	ADEQUATE NUMBER AVAILABLE	ADEQUATE NUMBER AVAILABLE	
4	Fire Station Gandhidham	02836-226573	ADEQUATE NUMBER AVAILABLE	ADEQUATE NUMBER AVAILABLE	
5	Fire Station Rapar	02830-220011	ADEQUATE NUMBER AVAILABLE	ADEQUATE NUMBER AVAILABLE	
6	Fire Station Anjar	02836-242544 240325	ADEQUATE NUMBER AVAILABLE	ADEQUATE NUMBER AVAILABLE	
7	Fire Station Kandal Port, Kandla	02836-270176 02836 270176	ADEQUATE NUMBER AVAILABLE	ADEQUATE NUMBER AVAILABLE	
8	Fire Station Control Room Adani Port Mundra	02838-289440 289200	ADEQUATE NUMBER AVAILABLE	ADEQUATE NUMBER AVAILABLE	
9	Fire Station IFFCO Kandla	02836-270352 99790 26415 02836 270642	ADEQUATE NUMBER AVAILABLE	ADEQUATE NUMBER AVAILABLE	
10	Fire Station F.O.C.T. Kandla	02836- 270987/270178	ADEQUATE NUMBER AVAILABLE	ADEQUATE NUMBER AVAILABLE	

		89800 18340 270814			
11	Fire Station Control Room GAIL(India) Lakadia (Bhachau)	02837-293009 72111 03012	ADEQUATE NUMBER AVAILABLE	ADEQUATE NUMBER AVAILABLE	

Table 16
Resources with MAH units forming part of Mutual Aid Resources

Sr. No.	Name Of MAH Unit	STD Code	Phone1	Phone2	Fire Tenders	Fire Water Storage (m3)	Fire E Suits	Fire P Suits	Water Hoses (15 mtrs & 30 mtrs Nos)
1	Aarti Chemicals & Drugs Ltd., Bhachau.	02837	6354910235	6354390651	NA	800	1	1	15 mtrs - 125
2	Adani Port & Special Economic Zone Limited	02838	255946	-	-	17000	1	2	15 Mtr - 250
3	Aegis Vopak Terminals Kandla	02836	25600	70430008	0	9800 x2 KL	1	1	15 Mtr - 140
4	Agrocel Industries Ltd., Dohro, Bhuj	370510	9426738561	-	0	749 KL	0	0	42 (15mtr)
5	Archean Chemical Industries Limited	02836-234259	9409104656	9429892747	0	600	1	1	30 Mtrs-20
6	Ahir Salt & Allied Products Pvt. Ltd.	02836	220421	220103	NA	12900	NA	NA	15 Mtr - 106 30 Mtr - 10
7	Amw Autocomponent Ltd	-	-	-	-	-	-	-	-
8	Amw Motors Ltd. , Bhuj	-	-	-	-	-	-	-	-
9	Associates High Pressure Technology Pvt. Ltd.	-	-	-	-	-	-	-	-
10	BPCL	NA	7211109056	-	NIL	10934	NIL	03 NOS	15 mtr hoses = 200 Nos.
11	Britannia Industries Limited	02838	263400	263445	mutual aid facility arrangment	546	0	0	39

					with APSEZ fire Station				
12	Balkrishna Industries Limited	02832	248300	248300	6	1600 KL X 2 Nos Water Reservior with Fire hydrant network.	2 Nos	1 Nos	1120 Nos
13	CRL Terminals Pvt Ltd(CRL)	02836	256555	270181	1	8000	1	2	98 (15 m); 04 (12 mtr); 08 (30mtr)
14	Dorf Ketel Chemicals (I) Pvt. Ltd. Mundra	02838	Direct : 8460056502	02838- 660532 9054499504	aproximate distance of 4 KM from site at Adani SEZ Fire Station. Our Own fire tender is under procurement	On site fire water reservoir storage : 900	0	2	150 numbers of 15 mt long Fire hydrant Hoses are avialable
15	Dyna Glycols Pvt.Ltd	0-2836	253086	250087	NIL	250 KL	NIL	2 Set	15 x 48 =720 Mtrs 30 x 2 = 60
16	Euro Global Gas Cylinders LLT	02836	253244	253344		300000 Ltr			15 Mtr - 10
17	Everst Kanto Cylinders Ltd.				0	3 Lakh (Liter)	0	0	15 Mtr - 6
18	Friends Salt Works & Allied Ind.	02836	266001 (Internal 125, 225, 325, 425 & 525)	266002 (Internal 126, 226, 326, 426 & 526)	1	17804	2	2	15 Mtr - 285 no's
19	Friends Oil & Chemical Ter. Pvt. Ltd.	02836	266024 (Internal 725)	266025 (Internal 726)	1	4760	2	1	15 Mtr - 50 no's
20	GSPC LNG Ltd.		9909942707	9099026522	2	6210	2	10	15Mtr-132Nos. 22.5Mtr-23Nos 30Mtr-10Nos
21	Greensea Industries Pvt.Ltd.	----	9909929968	9726599973	NA	20 KL	NA	NA	NA
22	HPCL KANDLA TERMINAL	Nil	8866004507	8866064355	NA	15000	Nil	1	15 Metre Hose -136 No.s. & 30 m Fire Hose -Nil.
23	HPCL Terminal Mundra	91	8980082521	8980036465	1	17600	2	1	15 Mtr - 74

24	HPCL Mittal Pipelines Ltd.		9727747288	8150827793	2	15420	2	8	15 MTR - 250 NOS. 30 MTR - 24 Nos.
25	IMC Ltd, (Liquid)	02836	271221	271223	-	7556 KL (3 Nos)		2	15 Mtr - 56 Nos
26	IFGL Refractories Ltd.	283625	3900	-	0	0	0	0	15 mtrs- 2
27	IMC Ltd, (Gas terminal)	02836	271203	271204	-	1300 M3+ (1800 kl x 2 Nos)=4900 (m3)		2	15Mtr - 13 Nos
28	Indian Farmers Fertiliser Cooperative Ltd. Kandla	02836	270352	254555	One	11500	One	2	15 Mtr – 140 nos.
29	Indian Oil Corp. Ltd. Foreshore Terminal	02836	270628	9687669985	-	13450	0	2	200 nos :- 15 metres
30	Indian Steel Corp.Ltd Bhimasar	2836	285370	285371	1	6000	1	1	81
31	Indo-Nippon Chemical Co.Ltd.	02836	270795	270295	1	748.8	1	2	15 Mtr - 25
32	Indian oil Corp.Ltd. (LPG Import Plant)	02836	270262	9638913111	-	10000	-	2	268 nos :- 15 metres
33	JAY FE CYLINDER LTD	02836	270352	254555	1	11500	1	1	15 Mtr - 2
34	JINDAL SAW LIMITED	2838	263300	9925150770	02 Nos	Water Reservoir Within plant 40000 M3 , dedicated fire tank 1250 KL , 1300 KL and 650 KL Overhead Tank nearer to pump House.	10 Nos (Fire Proximity suit)	10 Nos (Fire Proximity suit)	12 nos (15 mtrs) in Fire Tender 12 nos (15 mtrs) in reserve stock 10 nos (30 mtrs) in reserve stock 117 nos (15 mtrs) deployed in plants area.
35	J.R.E Tank terminal Pvt Ltd	02836	270356	8169198220	-	3600 KL	-	2	(15 Mtr) 20
36	JSW STEEL LTD	02836	5607	5699	1	10.5	2	5	15 Mtr - 63
37	Kesar Enterprises Ltd. Terminal No.I	02836	270548	270296	-	1200KL	-	2	14NosX15mtrs.length

38	Kesar Enterprises Ltd. Terminal No.II	02836	270177	270851	-	2550.0	-	-	12NosX15mtrs.length
39	Kutch Chemical Industries Ltd	02836	9377701047	6358732796	1	2000	1	1	15 Mtr Hose - 120
40	Mundra LPG Terminal Pvt. Ltd.	02838	255926	-	NIL	9000	2	6	15 mtr = 184 nos
41	Manaksia Cotted Metal & Industries Ltd	02836	9909018101	-	NIL	250 KL X 2 Nos Water Resevior with Fire hydrant network	N/A	N/A	30 Nos
42	RAMA CYLINDERS PVT.LTD.	02836	253122	253133	0	220 m3	NIL	NIL	15 Mtr - 24 30 Mtr-01
43	Rishi Kiran Logistices Pvt Ltd	02836	270223	270443	NIL	1808	1	2	15 Mtr - 14
44	Rishi Kiran Terminals Pvt. Ltd.	02836	270223	9099089703	NIL				
45	Satyesh Brinechem Pvt Ltd		(Emergency mobile No Of EHSF DEPT.) 8200735375	-	0	600	1	1	15 mtr- 103 Nos 30mtr-44 Nos
46	Shree Ram Trading Co.		9099567755	-	NIL				
47	Solaris Chemtech Industries Limited – Khavda	2803	268255	268216	NIL	1000	NIL	NIL	15 MTRS 40 NOS
48	SNF Flopam India Pvt. Ltd.	02836	272222	272221	01 (Fire Trailer Pump)	1240	10	10	15 Mtr - 110 30 Mtr - 08
49	Welspun Corp Limited	02836	664000	663000	1	10,500	0	2	15 Mtr - 50

6.4 Medical Aid

Table 17
Medical Aid Information

Sr No	Name of Factory	STD Code	Phone1	Phone2	Ambulance	OHC (>=5bed)	First aid boxes	Stretchers	Availability of		Details of other facilities/equipment
									Doctor	Nurses	
1	Aarti Industries Ltd. (Anushakti Div)	2837	6354910235	6354390651	Yes	Yes	Yes	Yes	Yes	Yes	All medical instrument
2	Adani Port & Special Economic Zone Limited	02838	255710	-	25 at APSEZ	OHC 1 with 4 bed	Total APSEZL - 178 Liquid Terminal - 4	9 (Including Ambulance)	-	-	Available at OHC Oxygen Saturation machine - 01, Oxygen Cylinders - 13, ECG Machine - 1, Section Machine - 3, Nebulizer - 3, Ambu Bag - 2, AED - 1, Snell Chart - 1, BP Apparatus - 4 Stethoscope - 3
3	Aegis Vopak Terminal Ltd	02836	25600	-	1	>5	6	2	-	-	OHC IS AVIALBLE
4	Agrocel Industries Pvt. Ltd, Dhordo	370510	Mobile Number : 9426738561	-	1	OHC 1 with 2 bed	21	3	-	-	Oxygen Saturation machine - 01, Oxygen Cylinders - 10, ECG Machine - 1, Nebulizers-02, Suction machine-01
5	Archean Chemical Industries Limited	-	9879200002	9428506441	1	3	23	2	-	-	1-B.P.mercury manual instrument, Stethoscope, Torch, Digital-Thermometer, -Mercury thermometer, weighing-machine, Measuring Tape, I.V. Stand, Formaline Chamber, Ambubag, Autoclave machine, -Dressing drum, S.S tray with lid 9x6, - Artery forcep, Needle Holder, Stitch cutting heath scissor, D/scissor (6"), D/scissor (4"), S.Skidny tray(8"), Chetal forcep(10"), D% forcep(6")sup, Spot helogen light Dual-bulb, Sthretcher Cloth, Oxygen cylinder "B", Oxygen

											Trolley, F.A.valve with gauge 8 FM, Oxygen mask, Oxygen cylinder key, Electric Suction machine, Lancet for glucometer, Nebulizer pulmo aid, Laryngoscope Handle, Laryngoscope blade all size, accucheck active kit, Surgical scissor 6"S/B, surgical scissor 6"B super, Suction catheter No 16', St.Artery forcep 6, Needle Holder s' fs, Teeth forecep(6"), Suture needle, Oxygen Cylinder Big, Schiller ECG Machine, Oxygen Concentrator, S.S Bowl 3"
7	Amw Auto Component Ltd										
8	Amw Motors Ltd. , Bhuj										
9	Associate's High Pressure Technology Pvt. Ltd.										
10	BPCL	NA	7211109056	NA	1	1 BED	5	2			NIL
11	Britannia Industries Limited	02838	263452	263499	1	1	6	5	1	3	Mobile Eye Washer, Eye wash station at Lab area
12	Balkrishna Industries Limited	2832	(02832) 248300	-	4	Full fledged OHC Centre with 2 Nos. Full time Factory Medical Officer & Qualified medical staff with ICU Facilities .	32	4			ICU Facilities with Medical Examination Centre along inside the OHC.

13	CRL Terminals Pvt Ltd(CRL)	02836	256555	256558	1	OHC 1 bed	20	6	-	-	Oxygen Saturation machine - 02, Oxygen Cylinders - 02
14	Dorf Ketel Chemicals (I) Pvt. Ltd. Mundra	02838	Direct : 8460056502 9054499504	02838-660530	One dedicated well equipped ambulance with round the clock manned by driver	Zero bed . 1. One examination bed 2. One examination Table	Total -9 nos of First Aid boxes are stritigall provided at diffrent places in plant. First aid Boxes location as below. 1. FAB-01 Plant 1 Control Room 2. FAB-02 QC 3. FAB-03 Utility 4. FAB-04 Boiler 5. FAB-05 Sub Station 6. FAB-06 Warehouse 7. FAB-07 ETP Lab 8. FAB-08 Plant 2 Control Room 9. FAB-09 Plant 3 Control Room & Diphoterie n Kit 2 Nos.	8 Nos of Stretcher	A Team of FMO, Round the clock ambulance driver.	male nurses & dedicated ambulance driver.	1. AED Machine 2. Antidotes 3. Nebulizer facility 4. Oxygen cylinder 4 nos
15	Dyna Glycols Pvt.Ltd	02836	253086	250087	Not Applicable	Tie Up with private Clinic	4	2	-	-	Ambu Bag
16	Euro Global Gas Cylinders LLP	02836	253244	253344		OHC 1 with 1 bed	6	1	-	-	Oxygen Cylinders - 01 , Oxymeter Machine - 1
17	Everest Kanto	02836			1	OHC 1 with 1 bed	5	1	-	-	Oxygen Saturation machine - 01, Oxygen Cylinders - 15

	Cylinder Ltd.										
18	Friends Salt Works & Allied Ind.	02836	266001 (Internal 206)	266002 (Internal 203)	0	OHC 1 with 1 bed	10	4	-	-	NIL
19	Friends Oil & Chemical Ter. Pvt. Ltd.	02836	266024 (Internal 728)	266025 (Internal 725)	0	0	3	1	-	-	NIL
20	GSPC LNG LTD.		9909038085	9909038086	1	3 Bed	6	4	1 Visiting Doctor,	1 Male nurse on 24x7 basis	1 ECG 1 AED 1 BP Machine 1 Gluco meter 1 Syringe Pump
21	Greensea Industries Pvt.Ltd.	----	9909929968	9726599973	NA	NA	1	1	-	-	SCBA-3 Fire Extinguishers-28
22	HPCL KANDLA TERMINAL	nil	8866004507	8866064355	Nil	Nil	4	2	Visting Doctor	-	-
23	HPCL Terminal Mundra	91	8980082521	8980036465	1	OHC 1 with 1 bed	5	2	-	-	-
24	HPCL Mittal Pipelines Ltd.	-	9427785319	-	1	2 bed OHC available	15 Nos.	2 nos.	-	-	-
25	IMC Ltd, (Liquid)	02836	271221	271223	-	-	4	4	-	-	SBA Set - 03 Nos
26	IFGL Refractories Ltd.	2836	253900	-	0	0	4	0	-	-	-
27	IMC Ltd, (Gas terminal)	02836	271203	271204	-	-	2	1	-	-	SBA Set - 03 Nos.
28	IFFCO Kandla	02836	254574	254777	1	OHC 1 with 2 bed	28	10	-	-	Oxygen Saturation machine - 01, Oxygen Cylinders - 03, ECG Machine - 1
29	IOCL, Kandla Foreshor	2836	270628	9687669985	NIL	NIL	7	2	-	-	-

	e Terminal										
30	Indian Steel Corp.Ltd Bhimasar	02836	8511144288	222	1	OHC 1 with 2 bed	15	1	-	-	Oxygen Saturation machine - 01, Oxygen Cylinders - 02 ,
31	Indo-Nippon Chemical Co. Ltd.	02836	270795	270295	0	0	3	0	-	0	-
32	Indian oil Corp.Ltd. (LPG Import Plant)	02836	270262	9638913111	1	1	1	1	-	-	-
33	Jay Fe Cylinder Ltd	02836	9687943010	9687943010	0	0	4	0	0	0	-
34	Jindal Saw Limited	2838	263300	9925150226	2	10	90	3	2	9	OHC facility available round the clock
35	J.R.E Tank Terminals Pvt Ltd	02836	270356		-	-	3	1	-	-	-
36	JSW Steel Ltd.	02836	665604	665613	1	OHC available. 1 no. of Bed for rest only.	17	2	NA	NA	NA
37	Kesar Enterprises Ltd. Terminal No.I	02836	270202	270548	---	---	2	---	Dr.Raiyani (M.D.)	---	Antidote for phenol i.e. polyethylene glycol 1000, Milk of Magnesia against Alkaline solutions
38	Kesar Enterprises Ltd. Terminal No.II	02836	270177	270851	---	---	2	---	Dr.Raiyani (M.D.)	---	Antidote for ACN i.e. Cyanide antidote kit.
39	Kutch Chemical Industries Limited	2836	9377701047	6358732796	1	Yes	0	1	-	-	-
40	Mundra LPG Terminal Pvt. Ltd.	02838	255926	7574848415	1	Less than 5 Bed = 1 No.	14	1	-	-	-

41	Manaksia Cotted Metal & Industries Ltd.	02836		9909018101	1	Monthly two times arranged visiting doctor at site and tie up with MM Hospital Adipur & Lilavati Hospital Anjar For sending injured employees.	8	1	-	N/A	8
42	Rama Cylinders Pvt.Ltd	02836	253122	253133	company vehicle	OHC 1 with 1 bed	4	1	-	-	strecher ,01,B.P.Instrument,Thermal Scanner
43	Rishi Kiran Logistics Pvt Ltd	02836	270223	270443	nil1	1	3	1	-	-	Oxygen Saturation machine - 01, Oxygen Cylinders - 03 , BP M/C - 1
44	Rishi Kiran Terminals Pvt. Ltd.	02836	270223	270443	nil1	-	-	-	-	-	-
45	Satyesh Brinechem Pvt Ltd				1	SBPL OHC 1 Bed	10	3	NA	NA	Patient Monitor, BP Instrument , O2 cylinder 3 nos with trolley, Nebulization machine,Ambulances with basic life support system and round the clock driver available
46	Shree Ram Trading Co.	-	-	-	-	-	-	-	-	-	-
47	Solaris Chemtech Industries Limited – Khavda	2803	268255	268216	01	OHC	09 NOS	01 NO	At Site	-	OHC
48	SNF Flopam India Pvt. Ltd.	02836	272222	272221	1	OHC 1 with 5 beds	15	2	-	-	Oxygen Saturation machine - 03, Oxygen Cylinders - 03, ECG Machine - 1, AED -02
49	Welspun Corp Limited,	02836	662063	661041	3	OHC 1 with 5 bed	53	4	-	-	Oxygen Saturation machine - 01, Oxygen Cylinders - 03 , ECG Machine - 1

*** MAJOR HOSPITAL AND RESOURCES (Near By)**

Sr No	Name	Location	STD Code	Phone No.	Beds	Burn Ward	Chemical Poisoning Treatment Facility	Ambulance
1	DPT Hospital Kandla Port	Kandla	02836	270205 270633	30		Yes	One
4	DPT Hospital,	Gopalpuri, Kandla	02836	270587	10	No	Yes	01
2	St Joseph Hospital	Gandhidham	02836	230160	50	-	-	01
3	RamBag Hospital	Adipur, Gandhidham	02836	261626	-	-	-	01
5	Railway Hospital	Gandhidham	02836	231874	-	-	-	-
6	Divin Life Hospital	Adipur	02836	260577	-	-	-	-
7	P.H.C., Mundra	Mundra	02838	222144	-	-	-	-
8	Medical Officer Hospital	Adipur	02836	260608	-	-	-	-
9	Civil Hospital Adipur	Adipur	02836	222232	-	-	-	-
10	Navjivan Hospital	Mandvi Gandhidham	02834 02836	295628 281471	- -	- -	- -	- -
11	P.H.C. Khavda	Khavda, Bhuj	02832	288229	-	-	-	-
12	New G. K. General Hospital.	Bhuj	02832	220852 229500 229617	-	-	-	-
13	Applo Mundra SEZ Health Centre	Shantivan Colony	02838	287206	02	No	No	01

*** OTHER HOSPITALS In Town/ City**

Sr. No.	Name	Location	Incharge	Specialization	STD Code	Phone No.	
						Office	Residence
1	Government Hospital, Rambaugh	Gandhidham			02836	220263	
2	Civil hospital	Bhuj			02832	220191	220129
3	Railway hospital	Gandhidham			02836	231874	
4	IFFCO township dispensary	Gandhidham	Dr.S.S. Senapati		02836	220164	234483
5	Tolani eye Hospital	Adipur			02836	260497	

6	DPT Hospital, gopalpuri	gandhidham			02836	220497	
7	Divine life Hospital	Adipur			02836	260577	
8	St. joseph Hospital	Gandhidham			02836	230166	
9	Dr. shyamsunder Hospital	Anjar			02836	242571	
10	Government Hospital, rambaugh	Gandhidham			02836	220263	
11	Civil hospital	Bhuj			02832	220191	220129
12	Railway hospital	Gandhidham			02836	231874	
13	Dr. Gosai, Omkar Hospital	Gandhidham	Dr. Gosai	M.D	02836	230333	239944
14	Patel Hospital,	Gandhidham	Dr. H.A. Patel	M.D.	02836	230202	
15	Dr. Morakia Hospital	Gandhidham	Dr. Morakia	M.D.	02836	222008	232161
16	Karva Musthafa Hospital	Mundra			02838	223708	
17	CHC Mundra (Govt.)	--do--	Dr. Y A Dhua	MBBS	02838	222544	
18	Dr. Sorathia Hospital	--do--	Dr. P D Sorathia	Surgeon	02838	222370	
19	Lilavati Hospital	--do--	Dr. Naresh	MBBS	02838	222681	
20	Sarva Seva Sangh	--do--	Dr. M K Mishra	MBBS	02838	223573	
21	Dr. Dulari Shah	--do--	Dr. Dulari Shah	BAMS	02838	223732	
22	Dr. M R Zala	--do--	Dr. M R Zala	BAMS	02838	222302	
23	Poornima Nursing Home	Anjar	Dr. ShyamSunder	M.S.	02836	242571	

6.5 Other Emergency Infrastructure

Table 18
Emergency Response Vehicles

Sr No	Name	Buses	Trucks	Car / Jeep
1	All 49 Units	Ambulance/ Car/ Jeep /four wheelers available round the clock with driver		

6.6 Evacuation – Sheltering

Table 19
Evacuation Information – Sheltering

SR.	EVACUATION AREA LOCATION	CONTACT AUTHORITY NAME WITH ADDRESS (O, R) AND PHONE-NUMBERS (O, R, M)	REMARKS
1	2	3	4
1.	KPT SCHOOL	221104	
2.	AUM VIDYA MANDIR, GANDHIDHAM	221288	
3.	CENTRAL SCHOOL, IFFCO TOWNSHIP	220705	
4.	M.P. PATEL KANYA VIDYALAY	234262	
5.	MOUNT CARMEL SCHOOL	231277	
6.	SINDHI DHARMSHALA, GANDHIDHAM	220925	
7.	LOHANAMAHAJAN VADI, GANDHIDHAM	220835	
8.	JAIN DHARMSHALA, GANDHIDHAM	220242	
9.	SARDAR PATEL VIDYALAY	220284	
10.	MORDERNSCHOOL, GANDHIDHAM	271223 271224	
11.	IMC LTD, Administrative Office, Kandla.	271049	
12.	Bhartiya Vidyamandir, Kandla	-	

6.7 Technical Resources

Table 20
Technical Experts Directory

Sr.	Expert Name	Expertise Details, Qualification, Designation	Address	Phone Number (O,R,M)	Remarks
1	2	3	4	5	6
1.	Shri Nitin C Patel	CHEMICAL ACCIDENT, FIRE PREVENTION	DGM (Fire and Safety), IFFCO-Kandla	9979026415	
2.	Shri Nitin Varade	CHEMICAL ACCIDENT, FIRE PREVENTION	DGM-HSE, Dorf ketal industries, Mundra	9637681288	

3.	Shri Dharmashi B Agaria	CHEMICAL ACCIDENT, FIRE PREVENTION	GM-Ops, Ahir Salt & Allied Products Pvt. Ltd.Kandla	9925247904	
4.	Shri Nitin Tripathi	CHEMICAL ACCIDENT	EHS Head, Agrocel Industries Ltd, Bhuj	6354917258	
5.	Shri Sudhir Ramesh Shete	CHEMICAL ACCIDENT, FIRE PREVENTION	AGM, Aarati Industries, Bhachau	6354910232	
6.	Shri Bhavesh Pathak	FIRE PREVENTION	EHS Head, Balkrishna Industries, Bhuj	8779990100	

Emergency Response Data Sheets (ERDS)

PRESTELS recommends maintenance of Emergency Response Data Sheets (analogous to Material Safety Data Sheets - MSDS) for all the hazardous chemicals handled in the district. The ERDS should contain all the information required by the District Authorities and Agencies to take appropriate emergency response measures. The sample ERDS sheet for MIC is attached in Annexure 9.

ERDS for following chemicals are prepared and kept as Annexure- 6

1. Ethylene Oxide
2. Acetone
3. Butanol
4. Iso Butyl Alcohol
5. Iso Propyl Alcohol
6. Styrene
7. Toluene
8. Vinyl Acetate Monomer
9. Phenol
10. Naphtha
11. Motor Spirit
12. High Speed Diesel
13. Furnace Oil
14. Mixed Xyylene
15. Chlorine
16. Bromine
17. Ammonia
18. LPG
19. Propane
20. LNG
21. Acrylonitrile

6.8 Media Resources

Table 21
Media Resources Information

SR .	AGENCY NAME (RADIO, TELEVISION, MOBILE PUBLIC ANNOUNCEMENT, MASS-SMS)	CONTACT PERSON NAME	PHONE- NUMBERS
1	2	3	4
1)	Kutch Mitra	Mr. Kartikbhai Khatri	(02832) 252090 252091
2)	Gujarat Samachar	-	(02836) 220212
3)	Sandesh	-	(02836) 246469
4)	Kutch Uday	Mr. Gangarm Bhanushali	(02836) 224199 (02832) 251099
5)	Kutch Bharti	Mr. R. G. Chelani	(02836) 231322 223292
6)	Exim India News	-	(02836) 224379 234194
7)	E- TV Gujarati	-	9426303671
8)	All India Radio	-	(02832) 222503 251412

6.9 Other Emergency Resources

Table 22
Other Emergency Resources- Equipments

Sr No	Name of the Unit	Equipment Details	Type	Quantity	Max. Boom Length (m)	Min Radius in m	Capacity in MT
1	BPCL	Boom	Petroleum Product Clean Up	6	3	0.127	
		Boom	Petroleum Product Clean Up	6	3	0.07	
		Fire Proximity Suit	NA	1 set	NA	NA	NA
		Pvc Suit	NA	2 sets	NA	NA	NA
		Leak Control Kit	Consisting of 1 no each of leak arresting pad, leakage control of external pipes, internal pipes, large external pipes up to 8 inch, drums / containers leakages, general purpose leakages, large hole leakages in storage tanks. -1 set	1 set	NA	NA	NA
		Non Sparking Tools	NA	1 set	NA	NA	NA
		Breathing Appartus Set	40 minute duration	2 sets	NA	NA	NA
		Emergency Escape Sets	15 minute duration	2 sets	NA	NA	NA
		Flame Proof Search Light	Rechargeable type suitable for Explosive Environment.	2 nos	NA	NA	NA
		Mega Phone Ex-Proof	Portable battery operated PA System with 1 loud speaker	1 set	NA	NA	NA
		Folding Stretcher	Size 6 feet X 3 feet with tying belts & blanket.	1 no	NA	NA	NA
		Hand Siren With Stand	Approx. range of 1.6 KMS	1 no	NA	NA	NA
		Cold / Low Temperature Hand Gloves	NA	4 pair	NA	NA	NA
		Electrical Rubber Hand Gloves	Suitable upto 11000 V	2 pair	NA	NA	NA
		Electrical Tester	NA	01	NA	NA	NA
		Chemical/Oil Splash Proof Goggles	NA	4 nos	NA	NA	NA

2	Balkrishna Industries Limited	NA	N.A.	N.A.	N.A.	N.A.	N.A.
3	Aarti Industries Ltd. (Anushakti Div)	Hydra	Rented	5	12	-	14
4	APSEZL Mundra - Liquid Terminal	Cuttuer Cum Spreader Power Cutter Lifting Bag	Hydraulic Petrol operated Pneumatic	1 2 1	Power Cutter Can cut upto 14 Inchs	-	8 Tonn Lifting Capacity of Lifting B
5	Britannia Industries Limited	Rescue/Life Line Rope	Polyamide	2 Nos(100 meters)	100 meter	NA	160 Kg
		Mobile Elevated Working Platform	MS Frame	2 Nos	5 Meter	NA	240 Kg
6	Dyna Glycols Pvt.Ltd	Stetcher, Rope	-	-	-	-	-
7	JINDAL SAW LIMITED	Vertical rescue kit	Automatic & Manual	2	NA	NA	200 KG
8	Mundra LPG Terminal Pvt. Ltd.	Gas tight suit	-	2	-	-	-
		Fire suit	-	2	-	-	-
		SCBA	-	4	-	-	-
		Nomax Suit	-	6	-	-	-
9	Adani Port & Special Economic Zone Limited, Mundra	DAMAG AC 265	-	-	-	-	-
		Pay loaders	HM 2021	04	--	--	1.9 cm2
		Tata P & H	-	-	-	-	-
		Hydra truck mounted crane	ACE	03	--	--	1100 – 02 nos. 16 T – 01 nos.
		Groove Industrial Model	-	-	-	-	-
		Coles Crane	-	-	-	-	-
		Beaver (trailer trolley)	-	-	-	-	-
		Swaraj Mazda	-	-	-	-	-
		Tractor Trolley	Massey Fergusson	01	--	--	--
		Fork Lift	Kalmar (32 tonnes)	04	--	--	32 ton
		JCB Crane	-	-	-	-	-
		Cranes	-	-	-	-	-
		HM	-	-	-	-	-
		TIL	-	-	-	-	-

		TIL	-	-	-	-	-
		Escorts	-	-	-	-	-
		Dumpers	-	-	-	-	-
		Bulldozers	-	-	-	-	-
		Plate cutting machine tools	-	-	-	-	-
10	GSPC LNG LTD	Tripod	Confined Space Rescue kit	1	20mtr	1mtr	135kg

Table 23

Other Emergency Resources – Antidote Available

Sr.	Toxic Chemicals Handled in District (esp. in MAH units)	Antidotes Required	Factories - Antidotes Available	Remarks
1	2	3	5	6
1	CHLORINE	MILK OF MAGNESIA	Aarti Industries Ltd. (Anushakti Div) Kutch Chemical Industries Limited Solaris Chemtech Ltd Archean Chemical Industries Ltd Satyesh Brinechem Pvt Ltd	
2	ANILINE & NITROBENZENE	METHYLENE BLUE	Aarti Industries Ltd. (Anushakti Div) Kutch Chemical Industries Limited	
3	ACID	MILK OF MAGNESIA	Aarti Industries Ltd. (Anushakti Div) Kutch Chemical Industries Limited Solaris Chemtech Ltd Archean Chemical Industries Ltd Satyesh Brinechem Pvt Ltd	

Table 24

Other Emergency Resources – NGOs

sr.	NGO Name with Address And Phone:- no.		Contact no.	Remarks
1	2		3	4
1	Rotary Club	Opp.Eng.School, Vijay Nr. Bhuj	02832 224532	
2	Rotary Club	Naya Anjar, Opp. GEB Offi.	02836 247028	
3	Rotary Club	Gandhidham	02836 228680	
4	Lions Club	Gandhidham	02836 229430	
5	Lions Club	Bhuj	02832 255990	
6	Lions Club	Bhachau	02836 207171	
7	Giants Cheritable trust.	Hosp. Road, Bhuj	02832 257999	
8	Manav Seva Samaj Trust	Opp. Apana Bazar, Bhuj	02832 252077	

9	Arya-Smaj Mandir	Bhuj	02832 222088	
10	Arya-Smaj Mandir	Gandhidham	02836 239674	
11	Youth Co-ordinators Nehru Yuva Kendra	Bhuj	02832 299499	
12	Red Cross Society	Gandhidham	02836 230869 231086	
13	Shindhi Seva Trust	Gandhidham	02836 224575	
14	Chamber Of Commerce	Gandhidham	02836 220735	
15	Chamber Of Commerce	Mundra	02838 224951	
16	Indian Medical Association	Gandhidham	02836 233366	
17	Akhil Kutch Seva samaj	Mundra	02838 281174	

Table 25
Assembly Points

SR.	MAH unit	Assembly point (School, Hall and, Ground)	Contact person name , Address And Phone:- no. (O,R,M)		Remarks
1	2	3	4		5
1.	AARTI IND.LTD. (ANUSHAKTI CHEMICAL AND DRUGS PVT.LTD)	DEDICATED SAFE AREA IN PREMISES	K Madhusoodhanan	6354910235	
2.	AEGIS LOGISTICS LTD	DEDICATED SAFE AREA IN PREMISES	Pratik Yadav	7043300008	
3.	AGROCEL IND. LTD.	DEDICATED SAFE AREA IN PREMISES	Yoginder Singh	9909922704	
4.	AMW AUTOCOMPONENT LTD ,	DEDICATED SAFE AREA IN PREMISES	Close		
5.	AMW MOTORS LTD. , BHUJ-	DEDICATED SAFE AREA IN PREMISES	Close		
6.	ARCHEAN CHEMICAL IND.PVT.LTD.	DEDICATED SAFE AREA IN PREMISES	Rajendra Tak	9409104656	
7.	ASSOCIATES HIGH PRESSURE TECHNOLOGY PVT. LTD.	DEDICATED SAFE AREA IN PREMISES	Close		
8.	BHARAT PETROLEUM CORPN. LTD.	DEDICATED SAFE AREA IN PREMISES	Tushar Paimode	9866671367	
9.	C.R.L.TERMINAL PVT. LTD.	DEDICATED SAFE AREA IN PREMISES	Mr. Yogendra Prasad	9979624969	
10.	DORF KETAL SPECIALITY CATALYSTS PVT.LTD.	DEDICATED SAFE AREA IN PREMISES	Mr. Yogesh Ranade,	9821611185	
11.	DYNA GLYCOLS PVT. LTD.	DEDICATED SAFE AREA IN PREMISES	S.G. Hegde,	8197303625	
12.	EVEREST KANTO CYLINDERS LTD.	DEDICATED SAFE AREA IN PREMISES	Sandeep	9924839698	
13.	FRIENDS OIL & CHEMICAL TERMINAL PVT. LTD.	DEDICATED SAFE AREA IN PREMISES	Jitendra Sanghavi	9825226018	
14.	FRIENDS SALT WORKS AND ALLIED INDUSTRIES	DEDICATED SAFE AREA IN PREMISES	Chirag Vithlani	9727750647	
15.	GREENSEA INDUSTRIES PVT. LTD.	DEDICATED SAFE AREA IN PREMISES	Dhaval P.Gami	9909929968	
16.	HINDUSTAN PETROLEUM CORPN. LTD.	DEDICATED SAFE AREA IN PREMISES	Hemant Gauntury	7702382929	
17.	HINDUSTAN PETROLEUM CORPO LTD	DEDICATED SAFE AREA IN PREMISES	Jitendra Mishra	9501609559	
18.	HMPL-HINDUSTAN MITTAL PIPELINES LTD. ,	DEDICATED SAFE AREA IN PREMISES	Mr.N.Kartik	9982288833	

19.	I. M. C. LTD (GAS)	DEDICATED SAFE AREA IN PREMISES	Mahesh N. Shah.	9898500289	
20.	I. M.C. LTD (LIQUID)	DEDICATED SAFE AREA IN PREMISES	Anil Majethiya	989850029	
21.	IFGL EXPORT LTD, PLOT NO-	DEDICATED SAFE AREA IN PREMISES	Jagdish Padhiyar	9727700913	
22.	INDIAN FARMERS FERTILISER CO-OP. LTD.	DEDICATED SAFE AREA IN PREMISES	Sh. O P Dayama	9925008234	
23.	INDIAN OIL CORPN. LTD. FORESHORE TERMINAL,	DEDICATED SAFE AREA IN PREMISES	Sadnand Mishra,	9426416108	
24.	INDIAN OIL CORPN. LTD. LPG IMPORT PLANT	DEDICATED SAFE AREA IN PREMISES	Shri. P L Kaim,	9426416088	
25.	AMNS GANDHIDHAM LIMITED	DEDICATED SAFE AREA IN PREMISES	Mr. R.P Gupta	9725500540	
26.	INDO NIPPON CHEMICAL CORPORATION LTD.	DEDICATED SAFE AREA IN PREMISES	Ramesh Pathak	9879571295	
27.	J.R. E. TANK TERMINUS PVT. LTD.	DEDICATED SAFE AREA IN PREMISES	Sanjeev Gupta	8169198220	
28.	JINDAL SAW LTD (INTEGRATED PIPE UNIT)	DEDICATED SAFE AREA IN PREMISES	Anurag Danayak	9891427914	
29.	KESAR TERMINALS AND INFRASTRUCTURES LTD. UNIT-2,	DEDICATED SAFE AREA IN PREMISES	Sanjeev Parashar	9375349181	
30.	KESAR TERMINALS AND INFRASTRUCTURES LTD.	DEDICATED SAFE AREA IN PREMISES	Mahendra Shah	9374020516	
31.	KUTCH CHEMICAL INDUSTRIES LTD	DEDICATED SAFE AREA IN PREMISES	Dinesh Purohit	9377701047	
32.	LYZERS CYLINDERS LTD.	DEDICATED SAFE AREA IN PREMISES	MR. PRMOD NAGPURE	7875758229	
33.	MUNDRA PORT & SEZ LTD.	DEDICATED SAFE AREA IN PREMISES	Shri Anand Marathe	6359883088	
34.	RAMA CYLINDERS PVT. LTD.	DEDICATED SAFE AREA IN PREMISES	M.W.KHADKE -	9879607602	
35.	RISHIKIRAN LOGISTIC PVT. LTD.	DEDICATED SAFE AREA IN PREMISES	S P Singh, General	9099089703	
36.	SOLARIS CHEMTECH LIMITED	DEDICATED SAFE AREA IN PREMISES	Nilesh Sevekari	9909922717	
37.	EURO INDIA CYLINDERS LTD.	DEDICATED SAFE AREA IN PREMISES	Alpesh B.Shah	9099035427	
38.	WELSPUN CORP LIMITED	DEDICATED SAFE AREA IN PREMISES	Atul Pandhare	9538891571	
39.	JSW Steel Ltd.	DEDICATED SAFE AREA IN PREMISES	Pratik Jain	7046077222	

40.	AHIR SALT & ALLIED PRODUCTS PVT. LTD.	DEDICATED SAFE AREA IN PREMISES	Dharmasi Agariya	9925247904	
41.	MUNDRA LPG TERMINAL PVT. LTD.	DEDICATED SAFE AREA IN PREMISES	Udayan Jain	6359930007	
42.	MANAKSIA COTTED METAL & INDUSTRIES LTD.	DEDICATED SAFE AREA IN PREMISES	Shakesh Soni	7211100822	
43.	BRITANNIA INDUSTRIES LTD	DEDICATED SAFE AREA IN PREMISES	Mukesh Sharma	9998344059	
44.	GSPC LNG LTD	DEDICATED SAFE AREA IN PREMISES	Dinesh Shah	9909914844	
45.	M/S SATYESH BRINECHEM PVT LTD.	DEDICATED SAFE AREA IN PREMISES	Rajesh Chettiyar Sr.	8356853223	
46.	SNF FLOPAM INDIA PVT. LTD	DEDICATED SAFE AREA IN PREMISES	Shital Bapu Khot	9638044222	
47.	SHREE RAM TRADING CO.	DEDICATED SAFE AREA IN PREMISES	Jayant Nakumb	9099567755	
48.	RISHI KIRAN TERMINALS PVT. LTD.	DEDICATED SAFE AREA IN PREMISES	S P Singh	9099089703	
49.	BALKRISHNA INDUSTRIES LTD.	DEDICATED SAFE AREA IN PREMISES	Bhaves Pathak	8779990100	

Table 26
MAH Unit Statutory Compliance Status

SR.	MAH UNITNAME	GOVT AGENCY MONITORING COMPLIANCES	REMARKS
1	2	3	5
1.	Aarti Chemicals & Drugs Ltd., Bhachau.	DISH / GPCB / PESO / DSO / PLOCE/FOOD AND DRUG/FIRE	
2.	Adani Port & Special Economic Zone Limited	DISH / GPCB / PESO / DSO / PLOCE/FOOD AND DRUG/FIRE	
3.	Aegis Vopak Terminals Kandla	DISH / GPCB / PESO / DSO / PLOCE/FOOD AND DRUG/FIRE	
4.	Agrocel Industries Ltd., Dohro, Bhuj	DISH / GPCB / PESO / DSO / PLOCE/FOOD AND DRUG/FIRE	
5.	Archean Chemical Industries Limited	DISH / GPCB / PESO / DSO / PLOCE/FOOD AND DRUG/FIRE	
6.	Ahir Salt & Allied Products Pvt. Ltd.	DISH / GPCB / PESO / DSO / PLOCE/FOOD AND DRUG/FIRE	
7.	Amw Autocomponent Ltd	DISH / GPCB / PESO / DSO / PLOCE/FOOD AND DRUG/FIRE	
8.	Amw Motors Ltd. , Bhuj	DISH / GPCB / PESO / DSO / PLOCE/FOOD AND DRUG/FIRE	
9.	Associates High Pressure Technology Pvt. Ltd.	DISH / GPCB / PESO / DSO / PLOCE/FOOD AND DRUG/FIRE	
10.	BPCL	DISH / GPCB / PESO / DSO / PLOCE/FOOD AND DRUG/FIRE	
11.	Britannia Industries Limited	DISH / GPCB / PESO / DSO / PLOCE/FOOD AND DRUG/FIRE	
12.	Balkrishna Industries Limited	DISH / GPCB / PESO / DSO / PLOCE/FOOD AND DRUG/FIRE	
13.	CRL Terminals Pvt Ltd(CRL)	DISH / GPCB / PESO / DSO / PLOCE/FOOD AND DRUG/FIRE	
14.	Dorf Ketal Chemicals (I) Pvt. Ltd. Mundra	DISH / GPCB / PESO / DSO / PLOCE/FOOD AND DRUG/FIRE	
15.	Dyna Glycols Pvt.Ltd	DISH / GPCB / PESO / DSO / PLOCE/FOOD AND DRUG/FIRE	
16.	Euro Global Gas Cylinders LLT	DISH / GPCB / PESO / DSO / PLOCE/FOOD AND DRUG/FIRE	
17.	Everst Kanto Cylinders Ltd.	DISH / GPCB / PESO / DSO / PLOCE/FOOD AND DRUG/FIRE	
18.	Friends Salt Works & Allied Ind.	DISH / GPCB / PESO / DSO / PLOCE/FOOD AND DRUG/FIRE	
19.	Friends Oil & Chemical Ter. Pvt. Ltd.	DISH / GPCB / PESO / DSO / PLOCE/FOOD AND DRUG/FIRE	
20.	GSPC LNG Ltd.	DISH / GPCB / PESO / DSO / PLOCE/FOOD AND DRUG/FIRE	

21.	Greensea Industries Pvt.Ltd.	DISH / GPCB / PESO / DSO / PLOCE/FOOD AND DRUG/FIRE	
22.	HPCL KANDLA TERMINAL	DISH / GPCB / PESO / DSO / PLOCE/FOOD AND DRUG/FIRE	
23.	HPCL Terminal Mundra	DISH / GPCB / PESO / DSO / PLOCE/FOOD AND DRUG/FIRE	
24.	HPCL Mittal Pipelines Ltd.	DISH / GPCB / PESO / DSO / PLOCE/FOOD AND DRUG/FIRE	
25.	IMC Ltd, (Liquid)	DISH / GPCB / PESO / DSO / PLOCE/FOOD AND DRUG/FIRE	
26.	IFGL Refractories Ltd.	DISH / GPCB / PESO / DSO / PLOCE/FOOD AND DRUG/FIRE	
27.	IMC Ltd, (Gas terminal)	DISH / GPCB / PESO / DSO / PLOCE/FOOD AND DRUG/FIRE	
28.	Indian Farmers Fertiliser Cooperative Ltd. Kandla	DISH / GPCB / PESO / DSO / PLOCE/FOOD AND DRUG/FIRE	
29.	Indian Oil Corp. Ltd. Foreshore Terminal	DISH / GPCB / PESO / DSO / PLOCE/FOOD AND DRUG/FIRE	
30.	Indian Steel Corp.Ltd Bhimasar	DISH / GPCB / PESO / DSO / PLOCE/FOOD AND DRUG/FIRE	
31.	Indo-Nippon Chemical Co.Ltd.	DISH / GPCB / PESO / DSO / PLOCE/FOOD AND DRUG/FIRE	
32.	Indian oil Corp.Ltd. (LPG Import Plant)	DISH / GPCB / PESO / DSO / PLOCE/FOOD AND DRUG/FIRE	
33.	JAY FE CYLINDER LTD	DISH / GPCB / PESO / DSO / PLOCE/FOOD AND DRUG/FIRE	
34.	JINDAL SAW LIMITED	DISH / GPCB / PESO / DSO / PLOCE/FOOD AND DRUG/FIRE	
35.	J.R.E Tank terminal Pvt Ltd	DISH / GPCB / PESO / DSO / PLOCE/FOOD AND DRUG/FIRE	
36.	JSW STEEL LTD	DISH / GPCB / PESO / DSO / PLOCE/FOOD AND DRUG/FIRE	
37.	Kesar Enterprises Ltd. Terminal No.I	DISH / GPCB / PESO / DSO / PLOCE/FOOD AND DRUG/FIRE	
38.	Kesar Enterprises Ltd. Terminal No.II	DISH / GPCB / PESO / DSO / PLOCE/FOOD AND DRUG/FIRE	
39.	Kutch Chemical Industries Ltd	DISH / GPCB / PESO / DSO / PLOCE/FOOD AND DRUG/FIRE	
40.	Mundra LPG Terminal Pvt. Ltd.	DISH / GPCB / PESO / DSO / PLOCE/FOOD AND DRUG/FIRE	
41.	Manaksia Cotted Metal & Industries Ltd	DISH / GPCB / PESO / DSO / PLOCE/FOOD AND DRUG/FIRE	
42.	RAMA CYLINDERS PVT.LTD.	DISH / GPCB / PESO / DSO / PLOCE/FOOD AND DRUG/FIRE	
43.	Rishi Kiran Logistics Pvt Ltd	DISH / GPCB / PESO / DSO / PLOCE/FOOD AND DRUG/FIRE	
44.	Rishi Kiran Terminals Pvt. Ltd.	DISH / GPCB / PESO / DSO / PLOCE/FOOD AND DRUG/FIRE	

45.	Satyesh Brinechem Pvt Ltd	DISH / GPCB / PESO / DSO / PLOCE/FOOD AND DRUG/FIRE	
46.	Shree Ram Trading Co.	DISH / GPCB / PESO / DSO / PLOCE/FOOD AND DRUG/FIRE	
47.	Solaris Chemtech Industries Limited – Khavda	DISH / GPCB / PESO / DSO / PLOCE/FOOD AND DRUG/FIRE	
48.	SNF Flopam India Pvt. Ltd.	DISH / GPCB / PESO / DSO / PLOCE/FOOD AND DRUG/FIRE	
49.	Welspun Corp Limited	DISH / GPCB / PESO / DSO / PLOCE/FOOD AND DRUG/FIRE	

7.1 Introduction

Meticulous role playing and effective discharging of responsibilities is crucial to management of off-site emergency. The responsibilities of various authorities and agencies are provided in this chapter. It is important that the concerned authorities and agencies know, understand and

accept their responsibilities. The issues pertaining thereof should be resolved in peace times. Apart from the assigned responsibilities, the specifics of situation may call for prudent action. It is however envisaged to foresee various tasks and assign the respective responsibilities. The list of responders to off-site emergency is provided in Chapter 4 of Part A of this guideline document. The responsibilities of the responders listed therein are provided below.

7.2 Responsibilities of Authorities and Agencies

The general responsibilities of the various authorities and agencies involved in mitigation of off-site emergency are listed below. In addition, the authorities and agencies should perform all such tasks as per the demands of emergency situation at hand.

7.2.1 District emergency Authority (DEA – District Collector)

- Take overall responsibility for combating the Off-site emergency
Ensure the Police and Fire, personnel combat the emergency
- Arrange, if necessary, for warning and evacuating the public, through the Department of Police
- Communicate with Media to disseminate vital information to public
- Arrange for dispensing vital information to public using arrangements like mass-sms, public announcement using pre-recorded tapes
- Direct the team of Doctors headed by the Medical Officer
- Direct the local chief of State Transport Corporation to arrange for transport of victims and evacuation of people trapped within the hazard zone, if necessary
- Direct the Electricity Board officials to give uninterrupted power supply
- Direct the official in-charge to provide uninterrupted water supply as required
- If evacuation of population is necessary direct the Revenue officer and the Supply officer to provide safe shelters, food and other life sustaining requirements for the evacuees, if required
- Co-ordinate with the media
- Arrange for, release and provide necessary funds at various stages of disaster mitigation
- Direct railways to stop train, if required

7.2.2 Police

Communicate and co-ordinate with

- MAH unit
- DEA
- Fire Services
- Transport authorities
- Medical Department
- Media
- Civil Defence and Home Guards
- Local Army establishment as required
- Warn and advice the people in the affected area
- Regulate and divert traffic
- Arrange for evacuation
- Maintain law and order in the area
- Ensure protection of life and property of evacuees
- Deal sternly with people exploiting opportunism in wake of a disaster

7.2.3 Fire Service Department

- Perform fire-fighting operations by deploying men and appliances
- Perform rescue operation in the affected area.
- Communicate and co-ordinate with Police, Medical Department of necessary information
- Keep knowledge on appropriate response to different chemical emergency scenarios
- Keep adequate stock and resource information on necessary means, material, appliances required to deal with particular emergency situations with updated details of suppliers and stockists

7.2.4 Medical Department

- Arrange for preparing casualties to be sent to government/private hospitals
- Set up temporary medical camp and ensure medical facilities at affected location and neighbourhood
- Keep knowledge on appropriate response to different cases of toxic consumption and injuries
- Set up temporary mortuary, identification of dead bodies and post-mortem

7.2.5 Factory Inspectorate Department

- Provide necessary direction to MAH unit and assistance to DEA, Fire Department, Medical Department among others
- Seek help from and involve assistance of Technical Experts of relevant and appropriate expertise and specialization

- Initiate, facilitate and provide for investigation into the accident

7.2.6 Occupier of MAH Unit

- Possess up-to-date copy of Off-site Emergency Plan
- Communicate promptly, any foreseeable disaster, to the DEA, Police, Fire Service and Inspector of Factories in-charge of the District
- Communicate changes within the factory that may require inclusion or suitable modification in the off-site plan to the DEA (Maintenance Officer) of the Plan

7.2.7 Technical Experts

- Promptly respond to provide the necessary technical advice to MAH unit, DEA, Factory Inspectors, Fire Department, Medical Department among others
- Provide on-phone help after properly understanding and assessing the situation
- Make visit to the site in co-ordination with DEA, Factory Inspector(s) to provide for appropriate technical assistance

7.2.8 Mutual AID Groups

- To quickly mobilize the resources required to emergency mitigation at the site or wherever required

7.2.9 Pollution Control Board

- Project likely areas to be polluted.
- Carry out pollution assessment at suspected locations including soil, river and air assessment
- Ensure controlling of long-term pollution damage
- Identify unidentified substances, chemical releases, if any

7.2.10 Transport Fleet Owners Including State Transport

- Act on the direction of DEA or Police
- Ascertain the extent of transport required with pick-points, routes and destinations to transport people
- Promptly arrange for dispatch of vehicles with sufficient fuel for evacuation purposes
- Arrange vehicles to transport water and other provision to camps set up

7.2.11 Media

- Disseminate vital information to public on direction of DEA, Police and other Authorities
- Act responsibly in disseminating vital information and dispel rumours, if any

7.2.12 Railways

- Act as per the direction of DEA to stop incoming trains, if required
- Arrange for evacuation, if required

7.2.13 Transporters of Hazardous Chemical

- Possess up-to-date copy of Off-site Emergency Plan
- Communicate promptly, any foreseeable disaster during transportation to the DEA, Police, Fire Service and Inspector of Factories in-charge of the District
- Communicate new assignments, newly added routes or other changes that may require inclusion or suitable modification in the off-site plan to the DEA (Maintenance Officer) of the Plan

7.2.14 Electricity Board

- Arrange for uninterrupted power supply to the plant, as required
- Arrange for lighting; at temporary medical camps etc
- Arrange for switching off power supply on request from District Authorities
- Take care of electrical equipment within the damaged zone

7.2.15 Telecommunication Department

- Ensure working of communication lines to enable effective communication between various responder agencies

7.2.16 Aviation Department

- Mobilise resources such as helicopters for knocking down vapour clouds etc

7.2.17 Civil Defence

- Co-ordinate with Police authorities
- Extend help in evacuation
- Arrange for round the clock security arrangements in the affected and evacuation areas
- Safeguard the properties and belongings of evacuees

7.2.18 Home Guards

- Co-ordinate with Police authorities.
- Extend help in evacuation.
- Arrange for round the clock security arrangements in the affected and evacuation areas.
- Safeguard the properties and belongings of evacuees

7.2.19 National Disaster Response Force

- Carry out tasks for disaster mitigation as required

7.2.20 Local Government Bodies

- Mobilise necessary resources in emergency mitigation
- Provide for community halls, town halls for evacuees

7.2.21 NGOs

- Act as per the direction of DEA, Police and other District Authorities
- Aid and assist the district authorities in emergency mitigation

7.2.22 Public Works Department

- Ensure adequate water supply for fire- fighting
- Arrange for drinking water for evacuated persons at rallying posts, parking yards and evacuation centres Arrange water for cattle.

7.2.23 Water Supply Board

- Arrange for supply of water to evacuees and all others involved in emergency control operations

7.2.24 Civil Supplies Department

- Arrangement to provide food and clothing as necessary, to the evacuees and all others involved in emergency controlling operations

7.2.25 Animal Husbandry Department

- Arrange for taking care of cattle - especially milch animals living in affected zone
- If evacuation of cattle is required, identify the evacuation area and shelter
- Transport arrangements for evacuation
- Fodder, drinking water arrangements for cattle.
- Arrange for veterinary doctor

7.2.26 Agriculture Department

- Arrange for protection of food grains and standing crops in the vulnerable zone. Give instructions, to farmers, if any

7.2.27 Regional Transport Authority

- To investigate into the cause of road accident involving hazardous goods carrier and take necessary action

7.2.28 Other Members of DCG

- Assist and act as per directions of the District Collector

7.2.29 Coasts Guards and Port Trusts (in case of emergency situation in coastal areas)

- Co-ordinate with Police authorities.
- Provide necessary help in emergency mitigation

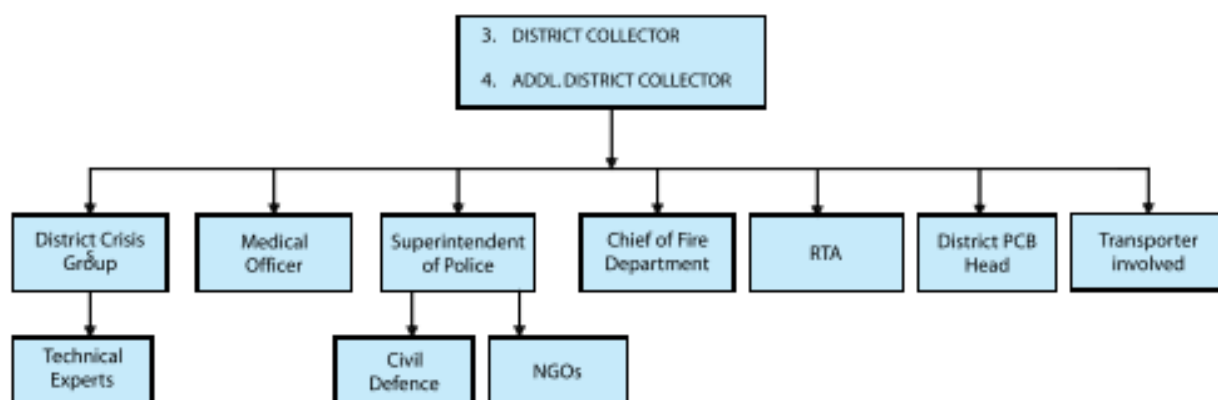
7.3 Emergency Organisation Chart of Roles

The emergency organization chart of roles must be clearly defined. The emergency organization and line of command may differ from the operational line of command during peace times.

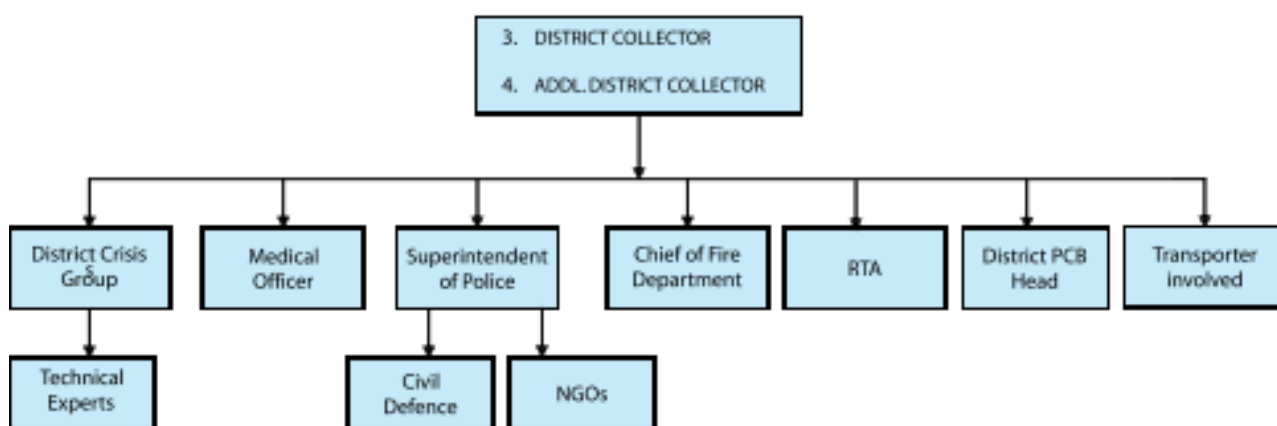
A sample emergency organization of roles is attached here for reference:

The emergency organization chart of roles must be clearly defined. The emergency organization and line of command may differ from the operational line of command during peace times.

EMERGENCY ORGANISATION FOR INDUSTRIAL DISASTER – Example



EMERGENCY ORGANISATION FOR ROAD TRANSPORT DISASTER – Example



7.4 Emergency Behaviour of Public at Large

The extent of damage control in an emergency situation can improve greatly if the public at large conducts itself in a responsible and intelligent manner. The possible reasons for disadvantageous behaviour by the public is Panic Curiosity or Excitement Purposeful exploitation of the situation . The following are the ways and means of addressing the above causes of disadvantageous behaviour

1. Panic

Panic arises out of sense of urgency coupled with lack of knowledge and information to deal with the situation. Panic can be dealt with effectively by dissemination of important knowledge, information and instructions on response behaviour. A toxic gas leak may require people to stay confined than run out in helter-skelter. Such useful response instruction can be disseminated to public at large through mass education campaigns. Such campaigns shall be periodically conducted by vulnerable industrial units. Educational syllabus for schools shall include lesson on response behaviour in case of emergency. Chemistry lessons shall include simple tips on responding to various gases. For instance,

in case of MIC leak at Bhopal, the magnitude of toxic consumption could have greatly reduced had people put a wet handkerchief on their nose since MIC dissolves in water.

2. Curiosity or Excitement

Uproar, noise, mass gatherings bring curiosity to the mind of people who add to the number of on-lookers. Police should play an active role in cordoning off the emergency area and judiciously allow volunteers who are willing to act to mitigate the disaster.

3. Purposeful Exploitation of situation

Unfortunately some people seek opportunism for themselves in wake of a disaster. Such people contribute only to the reducing the efficacy of mitigation effort. Such people should be identified and dealt sternly with by the Police and other authorities involved in mitigation.

7.5 Specific Actions Required by Public at Large and Communication to them

An emergency situation may call for the public at large to act on information such as evacuation to a particular area or confinement of themselves in their houses with all windows closed. The dissemination of such information shall be made using media such as Radio, Television, Mass-SMS, Mobile Public Announcement System.

8.1 Introduction

The emergency response plan is the detailed plan to be executed in case of an emergency. The emergency response plan is drawn for the emergency scenario

under consideration. No two emergency scenarios are alike and as such the possible emergency scenarios at any given time can be infinite. Laying down common emergency response plan is not possible and also not advisable as different scenarios will call for different plans. It is therefore prudent to begin with emergency response planning for most critical emergency scenarios. The emergency response planning can be put to test during the mock drill. This should ensure preparation of emergency response plan for new emergency scenario every time a mock drill is conducted. PRESTELS has developed PAC analysis for emergency response planning, which is attached and explained in Part C of this document. The PAC analysis yield emergency response plan for the emergency scenario under consideration

8.2 Enforcement and Implementation of Plan

The responsibility for enforcement and implementation of the plan rests with the DEA. In event of offsite emergency, the DEA will declare the emergency via Annexure 1 and communicate the same to the authorities and agencies listed there under along with other responders. The various authorities and agencies shall discharge their responsibility and carry out all such tasks that the situation on hand may call for.

8.3 Marriage of Chapter 5, 6, 7

- Chapter 5 deals with projection of emergency scenarios
- Chapter 6 deals with identification of resources
- Chapter 7 deals with roles and responsibilities

An emergency scenario is an undesired event that may occur. Resources both material and intellectual are required to mitigate the possible effect of an emergency scenario. The people involved in applying the resources for mitigation should discharge their expected roles and responsibilities intelligently and faithfully. Thus, we must in advance keep the resources and roles-responsibilities mapped to the emergency scenario. This mapping is determinedly referred to as the 'Marriage of Chapter 5, 6 and 7). PRESTELS recommends PAC analysis for developing a complete course of response in case of an emergency.

(see information on PAC analysis attached in Part C)

8.4 Discharging and Co-Ordination of Roles and Responsibilities

It is of utmost importance that all authorities and stakeholders involved in disaster mitigation discharge their roles and responsibilities in letter and spirit. It is for this purpose necessary to ensure that the authorities and stakeholders know with full awareness their roles and responsibilities

9.1 Calling off Emergency

Having satisfied himself that the emergency is over, the DEA shall call off the emergency via Annexure 5. The calling off of emergency shall restore life to normalcy and curtail the spread of misinformation, rumours giving opportunism for exploitation of the situation. The emergency camps set up shall continue to function after calling off of emergency till they provide all the needed support to the aggrieved.

9.2 Controlling Long-Term Damage

The emergency may affect natural resources of soil, water and air. The PCB unit shall make assessment of the areas adjoining the emergency scene where such a damage may take place. The PCB shall submit their report to the DEA via Annexure 6. The DEA shall act on the information and recommendation provided by the PCB.

9.3 Investigation Studies and Reporting

The DEA shall appoint a committee constituting the necessary stakeholders who may be necessary to carry out thorough investigation into the emergency as well as introspection of the response actions and measures. The investigation reporting shall be via Annexure 7. The investigation report shall become a part of Chapter 10 of this report. The lessons drawn from the investigation shall be incorporated into this plan in the appropriate chapters.

9.4 Compensation and Settlements

The compensation and settlements shall be carried out by the DEA. The DEA shall process compensations as claimed under the PLIA.

9.5 Past Accidents in the District

The investigation reports of offsite emergencies made via Annexure 7 shall be filed in this chapter. The notes of changes made in the plan drawing lessons from the off-site emergency shall be recorded in this plan

Table 27
Lessons from Past Accidents

Sr.	Off-Site Emergency Reference with Investigation Report No-	<i>Note of Changes made in Plan</i>	<i>Remarks</i>

9.6 Mock Drills

Mock drills are exercises to test the effectiveness of plan. Mock drills must be carried out at periodic intervals as specified in the MSIHC rules (i.e. once in a year). The lessons drawn from Mock drills must be used to improve the plan. The Mock drill reports via Annexure 8 shall be filed in this chapter. The notes of changes made in the plan drawing lessons from the mock drills shall be recorded in this plan

Table 28 Lessons from Mock Drills

Sr	Off-Site Emergency Reference with Investigation Report No	Notes of Changes made in the Plan	Remarks

9.7 Role of Incident Controller and Site Controller

The Site Controller and the Incident Controller are the two vital roles in the management of emergency. This note seeks to clarify the two roles.

Incident Controller

The incident controller is responsible for attending to the source or the cause of emergency. He leads the team involved in repairing, controlling and preventing escalation at the source. He is expected to have the required technical knowledge, skill and resources required to attend to the incident causing emergency. For example, if there is a crack in a pipeline carrying toxic gas, he ensures that the valve on the supply line is closed and repairs the damaged pipeline. If a bulk storage tank has a crack, transfer of the contents to a spare tank is started and repairs undertaken.

The incident controller co-ordinates with only the 'Site Controller' (see below). The incident controller must ask for any additional help (staff, tools, material, equipment etc required for dealing with the incident) from the Site controller. The site controller will arrange for the same at the earliest. This enables incident controller to concentrate on his job of attending to the incident without being burdened by communication tasks. Also, in the normal course, the incident controller does not directly interact with the outside industry authorities and agencies such as the District Collector, Fire brigade, Police etc. This is done by the site controller.

The incident controller gives continuous feedback about the status of the operation to the site controller.

Site Controller

The 'Site Controller' is overall in-charge of the operation at the incident-site. While the incident controller attends to the source or the cause of emergency, the site controller will be in the Emergency Control Room (ECR). The ECR is a place to be well equipped with telephones, drawings and maps, computer programs for dispersion modelling etc.

The site controller ensures that the off-site responders (District Collector, Police, Fire Brigade etc) are given quick intimation. He also ensures prompt assistance to the requirements of the incident controller. He may have to arrange the assistance from the factory itself or get help from outside (from fire brigade, mutual aid member, stockiest etc). He will continuously monitor the progress and give information to the offsite responders. He will identify the areas likely to be affected and communicate the same to the responders. He will update all concerned responders with the emergency status. For example: Escalation in the emergency, change in wind direction etc. The site controller will also communicate the necessary information to the media and public at large. In short, the site controller acts as the focal point who on the one hand interacts with the incident controller to give him required assistance and know the status and on the other hand, interacts with other district authorities and agencies to give information.

Temporary Assumption of Roles

It needs to be noted that 'Incident Controller' and 'Site Controller' are emergency roles. It is not necessary that only the one person will act as incident controller / site controller from beginning to end. For example le, when a valve fails and toxic gas starts leaking, the person on the spot assumes the charge of incident controller till a senior expert, personnel (appointed incident controller) reaches the spot and takes over from him. This will be especially true when the incident happens during a late night shift, when only the skeleton staff may be present. Similarly, a senior person present will assume the charge of site controller till the manager / CEO (appointed Site Controller) reaches the factory and takes over.

For a transport emergency, the driver may be the first incident controller till the Police team and subsequently a technical team reaches with tools to take care of the emergency. Then the police and later the technical team leader will be incident controller.

It may be mentioned that it is difficult to lay down specific and rigid guidelines in this respect. What is important is that the relevant functions are carried out efficiently, smoothly and promptly. There should be no loss of time, there should be no conflict, and the aim should be to bring the emergency control as fast as possible with least damage or loss.

ANNEXURE

ANNEXURE-1

Declaration of Off-site Emergency

I declare Off-site Emergency in the district of Gujarat starting at this _____ hour on this day of _____.

DEA:[NAME, SIGNATURE AND SEAL]

Date: ---/-----/2024

Information to the following be made via phone followed by written communication

SR.	AUTHORITY	NAME OF CURRENT OFFICE HOLDER	ADDRESS (O, R)	TELEPHONE(O, R, M)	EMAIL
1	DISTRICT COLLECTOR (OR DEA)	Shri Amit Arora IAS	(O) DISTRICT COLLECTOR OFFICE, BHUJ	(O) 02832-250020 (M) 9978406213 9978405212	collector-kut@gujarat.gov.in
2	DISTRICT DEVELOPMENT OFFICER, BHUJ	Shri S.K.prajapati	Office of the DDO, District Panchayat Office, S.T. Road, Bhuj	(O) 02832 – 250080 (M) 99784 06238	ddo-kut@gujarat.gov.in
3	SUPERINTENDENT OF POLICE WEST-SP	Shri Vikas Suda IPS	SP Office, Near District court, Bhuj-370001	(O) 02832-250960 (M) 99784 05073	sp-kut@gujarat.gov.in
4	SUPERINTENDENT OF POLICE East-SP	Shri Sagar Bagmar IPS	SP Office, Near Court, DC-5, Gandhidham	(O) 02832-280233 (M) 99784 05690	sp-east-kut@gujarat.gov.in
5	Resident Additional Collector-Kutch	Shri Mitesh Pandya	(O) DISTRICT COLLECTOR OFFICE, BHUJ	(O) 02832-250650 99784 05212	
6	CHAIRMAN-LOCAL CRISIS GROUP, AND SDM & DY. COLLECTOR	Shri A. B. Jadav	DISTRICT COLLECTOR OFFICE, Bhuj	99784 05099 02832 251007	pobhuj@gmail.com

	Bhuj				
7	CHAIRMAN-LOCAL CRISIS GROUP, AND SDM & DY. COLLECTOR Anjar	Shri. Sunil Kumar, IAS	SDM & DY. COLLECTOR OFFICE Anjar	02836 243345 99784 05069	sdmanjar @gmail.co m
8	CHAIRMAN-LOCAL CRISIS GROUP, AND SDM & DY. COLLECTOR Mundra	Shri B.H.Zala	SDM & DY. COLLECTOR OFFICE Mundra	02838 223112	dcmundra 45@gmail .com
9	DIST. HEALTH OFFICER	-	Jilla Panchayat Office, S.T. Road, Bhuj.	(O) (02832) 252207 (R) (02832) 251623 (M) 63542 64142	CDMO- BUR@JUJ ARAT.GOV .IN
10	CIVIL SURGEON	-	Civil Hospital, Bhuj	(O) (02832) 250544 (M) 9727734013	
11	INSPECTOR OF FACTORIES DY. D I S H, Adipur	Shri R.H. Solanki	Plot No. 66, Ward 1-b Adipur, Kutch	(O) 02836 -260020 (M) 8980029190	Dydish- kutch@gu jarat.gov.i n
12	POLLUTION CONTROL BOARD-Gandhidham (REGIONAL OFFICER)	Shri. F.M. MODI	KPT OFFICE, GANDHIDHAM	(M) 6359961891	ee-brch- gpcb@guj arat.gov.i n
13	POLLUTION CONTROL BOARD -Bhuj (REGIONAL OFFICER)	Shri Naresh Chaudhary	-	(R) 02832-250620 (M) 89800 24227	ee-brch- gpcb@guj arat.gov.i n
14	RTO Bhuj	Shri Pradipsinh Vaghela	RTO OFFICE, BHUJ	80002 56555 02832-221950	
15	ARTO Anjar	Shri P.M.Chaudhary	ARTO OFFICE, ANJAR	99252 85598	
16	PETROLEUM AND EXPLOSIVE SAFETY ORGANISATION	Mr. Pavnesh Singh Verma	(O) 8 TH FLOOR, YASHKAMAL BIL. VADODARA	0265-2361035	PAVNESH VERMA@ EXPLOSIV ES.GOV.IN
17	Deputy Director Information	Shri Ghanshyam Pedava	-	02832-22485994291 99886	
18	FIRE DEPARTMENT- BHUJ NAGARPALIKA Emergency Response Center Gandhidham		Fire Station, Bhuj	(O) 02832 247020 02832 299080 (M)9925170506 9925170254 98255 72188	

19	FIRE DEPARTMENT- GANDHIDHAM NAGARPALIKA	-	Fire Station,Gandhidham	02836-226573	
Expert Persons					
20	Shri Nitin C Patel	CHEMICAL ACCIDENT, FIRE PREVENTION	DGM (Fire and Safety), IFFCO-Kandla	9979026415	
21	Shri Nitin Varade	CHEMICAL ACCIDENT, FIRE PREVENTION	DGM-HSE, Dorf ketal industries, Mundra	9637681288	
22	Shri Dharmashi B Agaria	CHEMICAL ACCIDENT, FIRE PREVENTION	GM-Ops, Ahir Salt & Allied Products Pvt. Ltd.Kandla	9925247904	
23	Shri Nitin Tripathi	CHEMICAL ACCIDENT	EHS Head, Agrocel Industries Ltd, Bhuj	6354917258	
24	Shri Sudhir Ramesh Shete	CHEMICAL ACCIDENT, FIRE PREVENTION	AGM, Aarati Industries, Bhachau	6354910232	
25	Shri Bhavesh Pathak	FIRE PREVENTION	EHS Head, Balkrishna Industries, Bhuj	8779990100	

ANNEXURE-2

Possessors of the Copy of Off-site Emergency Plan

SR.	AUTHORITY	NAME OF CURRENT OFFICE HOLDER	ADDRESS (O, R)	TELEPHONE(O, R, M)	REMARK
1	DISTRICT COLLECTOR (OR DEA)	Shri Amit Arora IAS	(O) DISTRICT COLLECTOR OFFICE, BHUJ	(O) 02832-250020 (M) 9978406213 9978405212	collector-kut@gujarat.gov.in
2	DISTRICT DEVELOPMENT OFFICER, BHUJ	Shri S.K.prajapati	Office of the DDO, District Panchayat Office, S.T. Road, Bhuj	(O) 02832 – 250080 (M) 99784 06238	ddo-kut@gujarat.gov.in
3	SUPERINTENDENT OF POLICE WEST-SP	Shri Vikas Suda IPS	SP Office, Near District court, Bhuj-370001	(O) 02832-250960 (M) 99784 05073	sp-kut@gujarat.gov.in
4	SUPERINTENDENT OF POLICE East-SP	Shri Sagar Bagmar IPS	SP Office, Near Court, DC-5, Gandhidham	(O) 02832-280233 (M) 99784 05690	sp-east-kut@gujarat.gov.in
5	Resident Additional Collector-Kutch	Shri Mitesh Pandya	(O) DISTRICT COLLECTOR OFFICE, BHUJ	(O) 02832-250650 99784 05212	
6	CHAIRMAN-LOCAL CRISIS GROUP, AND SDM & DY. COLLECTOR Bhuj	Shri A. B. Jadav	DISTRICT COLLECTOR OFFICE, Bhuj	99784 05099 02832 251007	pobhuj@gmail.com
7	CHAIRMAN-LOCAL CRISIS GROUP, AND SDM & DY. COLLECTOR Anjar	Shri. Sunil Kumar, IAS	SDM & DY. COLLECTOR OFFICE Anjar	02836 243345 99784 05069	sdmanjar@gmail.com
8	CHAIRMAN-LOCAL CRISIS GROUP, AND SDM & DY. COLLECTOR Mundra	Shri B.H.Zala	SDM & DY. COLLECTOR OFFICE Mundra	02838 223112	dcmundra45@gmail.com
9	DIST. HEALTH OFFICER	-	Jilla Panchayat Office, S.T. Road, Bhuj.	(O) (02832) 252207 (R) (02832) 251623 (M) 63542 64142	CDMO-BUR@JUJARAT.GOV.IN
10	CIVIL SURGEON	-	Civil Hospital, Bhuj	(O) (02832) 250544 (M) 9727734013	
11	INSPECTOR OF FACTORIES DY. D I S H, Adipur	Shri R.H. Solanki	Plot No. 66, Ward 1-b Adipur, Kutch	(O) 02836 -260020 (M) 8980029190	Dydish-kutch@gujarat.gov.in
12	POLLUTION CONTROL BOARD-Gandhidham (REGIONAL OFFICER)	Shri. F.M. MODI	KPT OFFICE, GANDHIDHAM	(M) 6359961891	ee-brch-gpcb@gujarat.gov.in
13	POLLUTION CONTROL BOARD -Bhuj (REGIONAL OFFICER)	Shri Naresh Chaudhary	-	(R) 02832-250620 (M) 89800 24227	ee-brch-gpcb@gujarat.gov.in

14	RTO Bhuj	Shri Pradipsinh Vaghela	RTO OFFICE, BHUJ	80002 56555 02832-221950	
15	ARTO Anjar	Shri P.M.Chaudhary	ARTO OFFICE, ANJAR	99252 85598	
16	PETROLEUM AND EXPLOSIVE SAFETY ORGANISATION	Mr. Pavnesh Singh Verma	(O) 8 TH FLOOR, YASHKAMAL BIL. VADODARA	0265-2361035	PAVNESHVERMA@EXPLOSIVES.GOV.IN
17	Deputy Director Information	Shri Ghanshyam Pedava	-	02832-22485994291 99886	
18	FIRE DEPARTMENT-BHUJ NAGARPALIKA Emergency Response Center Gandhidham		Fire Station, Bhuj	(O) 02832 247020 02832 299080 (M)9925170506 9925170254 98255 72188	
19	FIRE DEPARTMENT-GANDHIDHAM NAGARPALIKA	-	Fire Station,Gandhidham	02836-226573	
Expert Persons					
20	Shri Nitin C Patel	CHEMICAL ACCIDENT, FIRE PREVENTION,	DGM (Fire and Safety), IFFCO-Kandla	9979026415	
21	Shri Nitin Varade	CHEMICAL ACCIDENT, FIRE PREVENTION,	DGM-HSE, Dorf ketal industries, Mundra	9637681288	
22	Shri Dharmashi B Agaria	CHEMICAL ACCIDENT, FIRE PREVENTION,	GM-Ops, Ahir Salt & Allied Products Pvt. Ltd.Kandla	9925247904	
23	Shri Nitin Tripathi	CHEMICAL ACCIDENT	EHS Head, Agrocel Industries Ltd, Bhuj,	6354917258	
24	Shri Sudhir Ramesh Shete	CHEMICAL ACCIDENT, FIRE PREVENTION	AGM, Aarati Industries, Bhachau,	6354910232	
25	Shri Bhavesh Pathak	FIRE PREVENTION	EHS Head, Balkrishna Industries, Bhuj	8779990100	

ANNEXURE-3

Communication of Change in Copy of this Plan to all Possessors of the Copy of the Plan

The following change(s) are made to the version _____ of the Off-site Emergency Plan dated _____.

Sr. No.	Page Number	Exiting Information	Change(s) Made

Communication to the following:

SR.	AUTHORITY	NAME OF CURRENT OFFICE HOLDER	ADDRESS (O, R)	TELEPHONE(O, R, M)	EMAIL-ID
1	DISTRICT COLLECTOR (OR DEA)	Shri Amit Arora IAS	(O) DISTRICT COLLECTOR OFFICE, BHUJ	(O) 02832-250020 (M) 9978406213 9978405212	collector-kut@gujarat.gov.in
2	DISTRICT DEVELOPMENT OFFICER, BHUJ	Shri S.K.prajapati	Office of the DDO, District Panchayat Office, S.T. Road, Bhuj	(O) 02832 – 250080 (M) 99784 06238	ddo-kut@gujarat.gov.in
3	SUPERINTENDENT OF POLICE WEST-SP	Shri Vikas Suda IPS	SP Office, Near District court, Bhuj-370001	(O) 02832-250960 (M) 99784 05073	sp-kut@gujarat.gov.in
4	SUPERINTENDENT OF POLICE East-SP	Shri Sagar Bagmar IPS	SP Office, Near Court, DC-5, Gandhidham	(O) 02832-280233 (M) 99784 05690	sp-east-kut@gujarat.gov.in
5	Resident Additional Collector-Kutch	Shri Mitesh Pandya	(O) DISTRICT COLLECTOR OFFICE, BHUJ	(O) 02832-250650 99784 05212	
6	CHAIRMAN-LOCAL CRISIS GROUP, AND SDM & DY. COLLECTOR Bhuj	Shri A. B. Jadav	DISTRICT COLLECTOR OFFICE, Bhuj	99784 05099 02832 251007	pobhuj@gmail.com

7	CHAIRMAN-LOCAL CRISIS GROUP, AND SDM & DY. COLLECTOR Anjar	Shri. Sunil Kumar, IAS	SDM & DY. COLLECTOR OFFICE Anjar	02836 243345 99784 05069	sdmanjar@gmail.com
8	CHAIRMAN-LOCAL CRISIS GROUP, AND SDM & DY. COLLECTOR Mundra	Shri B.H.Zala	SDM & DY. COLLECTOR OFFICE Mundra	02838 223112	dcmundra45@gmail.com
9	DIST. HEALTH OFFICER	-	Jilla Panchayat Office, S.T. Road, Bhuj.	(O) (02832) 252207 (R) (02832) 251623 (M) 63542 64142	CDMO- BUR@JUJARAT.GOV.I N
10	CIVIL SURGEON	-	Civil Hospital, Bhuj	(O) (02832) 250544 (M) 9727734013	
11	INSPECTOR OF FACTORIES DY. D I S H, Adipur	Shri R.H. Solanki	Plot No. 66, Ward 1-b Adipur, Kutch	(O) 02836 -260020 (M) 8980029190	Dydish- kutch@gujarat.gov.in
12	POLLUTION CONTROL BOARD-Gandhidham (REGIONAL OFFICER)	Shri. F.M. MODI	KPT OFFICE, GANDHIDHAM	(M) 6359961891	ee-brch- gpcb@gujarat.gov.in
13	POLLUTION CONTROL BOARD -Bhuj (REGIONAL OFFICER)	Shri Naresh Chaudhary	-	(R) 02832-250620 (M) 89800 24227	ee-brch- gpcb@gujarat.gov.in
14	RTO Bhuj	Shri Pradipsinh Vaghela	RTO OFFICE, BHUJ	80002 56555 02832-221950	
15	ARTO Anjar	Shri P.M.Chaudhary	ARTO OFFICE, ANJAR	99252 85598	
16	PETROLEUM AND EXPLOSIVE SAFETY ORGANISATION	Mr. Pavnesh Singh Verma	(O) 8 TH FLOOR, YASHKAMAL BIL. VADODARA	0265-2361035	PAVNESHVERMA@EX PLOSIVES.GOV.IN
17	Deputy Director Information	Shri Ghanshyam Pedava	-	02832- 22485994291 99886	
18	FIRE DEPARTMENT- BHUIJ NAGARPALIKA Emergency Response Center Gandhidham		Fire Station, Bhuj	(O) 02832 247020 02832 299080 (M)9925170506 9925170254 98255 72188	

19	FIRE DEPARTMENT- GANDHIDHAM NAGARPALIKA	-	Fire Station,Gandhidham	02836-226573	
Expert Persons					
20	Shri Nitin C Patel	CHEMICAL ACCIDENT, FIRE PREVENTION,	DGM (Fire and Safety), IFFCO-Kandla	9979026415	
21	Shri Nitin Varade	CHEMICAL ACCIDENT, FIRE PREVENTION,	DGM-HSE, Dorf ketal industries, Mundra	9637681288	
22	Shri Dharmashi B Agaria	CHEMICAL ACCIDENT, FIRE PREVENTION,	GM-Ops, Ahir Salt & Allied Products Pvt. Ltd.Kandla	9925247904	
23	Shri Nitin Tripathi	CHEMICAL ACCIDENT	EHS Head, Agrocel Industries Ltd, Bhuj,	6354917258	
24	Shri Sudhir Ramesh Shete	CHEMICAL ACCIDENT, FIRE PREVENTION	AGM, Aarati Industries, Bhachau,	6354910232	
25	Shri Bhavesh Pathak	FIRE PREVENTION	EHS Head, Balkrishna Industries, Bhuj	8779990100	

ANNEXURE-4
Communication of Change in Positions, Address and Phone
Numbers to the Maintenance Officer of the Plan

To,
The DEA,
(The Maintenance Officer)
Off-site Emergency Plan,

[NAME AND ADDRESS]

Date: _____

Sub: Change information for updating Off-site Emergency Plan

Dear Sir/Madam,

Please note the following change(s) in the Off-site Emergency Plan:

Please incorporate the above changes in the plan with effect from

(Date): _____

Thanking you,

Yours Faithfully,

[NAME, SIGNATURE AND SEAL OF THE AUTHORITY AND DATE]

ANNEXURE-5

Calling off the Declared Off-site Emergency

I **call off** the declared Off-site Emergency in the district of *[NAME OF THE DISTRICT]* starting at this
 _____ hour on this day of _____.

DEA: *[NAME, SIGNATURE AND SEAL]*

Date: *[DATE]*

Information to the following be made via phone followed by telegram

SR.	AUTHORITY	NAME OF CURRENT OFFICE HOLDER	ADDRESS (O, R)	TELEPHONE(O, R, M)	EMAIL-ID
1	DISTRICT COLLECTOR (OR DEA)	Shri Amit Arora IAS	(O) DISTRICT COLLECTOR OFFICE, BHUJ	(O) 02832-250020 (M) 9978406213 9978405212	collector-kut@gujarat.gov.in
2	DISTRICT DEVELOPMENT OFFICER, BHUJ	Shri S.K.prajapati	Office of the DDO, District Panchayat Office, S.T. Road, Bhuj	(O) 02832 – 250080 (M) 99784 06238	add-collector-kut@gujarat.gov.in
3	SUPERINTENDENT OF POLICE WEST-SP	Shri Vikas Suda IPS	SP Office, Near District court, Bhuj-370001	(O) 02832-250960 (M) 99784 05073	sp-kut@gujarat.gov.in
4	SUPERINTENDENT OF POLICE East-SP	Shri Sagar Bagmar IPS	SP Office, Near Court, DC-5, Gandhidham	(O) 02832-280233 (M) 99784 05690	sp-east-kut@gujarat.gov.in
5	Resident Additional Collector-Kutch	Shri Mitesh Pandya	(O) DISTRICT COLLECTOR OFFICE, BHUJ	(O) 02832-250650 99784 05212	ddo-kut@gujarat.gov.in
6	CHAIRMAN-LOCAL CRISIS GROUP, AND SDM & DY. COLLECTOR, Bhuj	Shri A. B. Jadav	DISTRICT COLLECTOR OFFICE, Bhuj	99784 05099 02832 251007	
7	CHAIRMAN-LOCAL CRISIS GROUP, AND SDM & DY. COLLECTOR ,Anjar	Shri. Sunil Kumar, IAS	SDM & DY. COLLECTOR OFFICE Anjar	02836 243345 99784 05069	
8	CHAIRMAN-LOCAL CRISIS GROUP, AND SDM & DY. COLLECTOR ,Mundra	Shri B.H.Zala	SDM & DY. COLLECTOR OFFICE Mundra	02838 223112	
9	DIST. HEALTH OFFICER	-	Jilla Panchayat Office, S.T. Road, Bhuj.	(O) (02832) 252207 (R) (02832) 251623 (M) 63542 64142	CDMO-BUR@JUJARAT.GOV.IN
10	CIVIL SURGEON	-	Civil Hospital, Bhuj	(O) (02832) 250544	

				(M) 9727734013	
11	INSPECTOR OF FACTORIES DY. D I S H, Adipur	Shri R.H. Solanki	Plot No. 66, Ward 1-b Adipur, Kutch	(O) 02836 -260020 (M) 8980029190	Dydish- kutch@gujarat.gov.in
12	POLLUTION CONTROL BOARD-Gandhidham (REGIONAL OFFICER)	Shri. F.M. MODI	KPT OFFICE, GANDHIDHAM	(M) 6359961891	ee-brch- gpcb@gujarat.gov.in
13	POLLUTION CONTROL BOARD -Bhuj (REGIONAL OFFICER)	Shri Naresh Chaudhary	-	(R) 02832-250620 (M) 89800 24227	pobhuj@gmail.com
14	RTO Bhuj	Shri Pradipsinh Vaghela	RTO OFFICE, BHUJ	80002 56555 02832-221950	sdmanjar@gmail.com
15	ARTO Anjar	Shri P.M.Chaudhary	ARTO OFFICE, ANJAR	99252 85598	dcmundra45@gmail.c om
16	PETROLEUM AND EXPLOSIVE SAFETY ORGANISATION	Mr. Pavnesh Singh Verma	(O) 8 TH FLOOR, YASHKAMAL BIL. VADODARA	0265-2361035	Dydish- kutch@gujarat.gov.in
17	Deputy Director Information	Shri Ghanshyam Pedava	-	02832- 22485994291 99886	Dydish- kutch@gujarat.gov.in
18	FIRE DEPARTMENT- BHUJ NAGARPALIKA Emergency Response Center Gandhidham	-	Fire Station, Bhuj	(O) 02832 247020 02832 299080 (M) 9925170506 9925170254 98255 72188	Dydish- kutch@gujarat.gov.in
19	FIRE DEPARTMENT- GANDHIDHAM NAGARPALIKA	-	Fire Station, Gandhidham	02836-226573	
Expert Persons					
20	Shri Nitin C Patel	CHEMICAL ACCIDENT, FIRE PREVENTION	DGM (Fire and Safety), IFFCO-Kandla	9979026415	
21	Shri Nitin Varade	CHEMICAL ACCIDENT, FIRE PREVENTION,	DGM-HSE, Dorf ketal industries, Mundra	9637681288	
22	Shri Dharmashi B Agaria	CHEMICAL ACCIDENT, FIRE PREVENTION,	GM-Ops, Ahir Salt & Allied Products Pvt. Ltd.Kandla	9925247904	
23	Shri Nitin Tripathi	CHEMICAL ACCIDENT	EHS Head, Agrocel Industries Ltd, Bhuj,	6354917258	
24	Shri Sudhir Ramesh Shete	CHEMICAL ACCIDENT, FIRE PREVENTION	AGM, Aarati Industries, Bhachau,	6354910232	
25	Shri Bhavesh Pathak	FIRE PREVENTION	EHS Head, Balkrishna Industries, Bhuj	8779990100	

ANNEXURE-6

MSDS FOR HAZ MAH CHEMICALS

(Attached as Appendix)

1. Ethylene Oxide
2. Acetone
3. Butanol
4. Iso Butyl Alcohol
5. Iso Propyl Alcohol
6. Styrene
7. Toluene
8. Vinyl Acetate Monomer
9. Phenol
10. Naphtha
11. Motor Spirit
12. High Speed Diesel
13. Furnace Oil
14. Mixed Xylene
15. Chlorine
16. Bromine
17. Ammonia
18. LPG
19. Propane
20. LNG
21. Acrylonitrile

Glossary of Terms

Blast wave: A pressure wave generated from explosion.

BLEVE: Boiling Liquid Expanding Vapour Explosion usually occurs from a sudden release of large mass of liquid under pressure. The most likely scenario is a flame of fire impinging on a vessel above the liquid level thereby weakening the vessel and causing sudden rupture.

Consequence: The outcome of an incident.

Consequence analysis: The analysis of the possible manifestation and effect of an incident.

Dispersion model: The mathematical model describing the dispersion of a material release, usually in free atmosphere.

Domino effect: The triggering of secondary incidents from a primary incident, thus leading to increase in the consequence or the vulnerable zone. For example: Explosion of a tank producing high pressure wave leading rupture and subsequent toxic release from a neighbouring tank.

Dovetailing: The process of aligning a sub-level plan to higher level plan. For example, the onsite plan of a factory should be in line and agreement to the offsite plan of the district in which the factory is situated. The onsite procedure or part thereof should not be in conflict with the offsite procedure or a part thereof.

Explosion: Sudden release of energy that causes pressure disturbance.

Fireball: The atmospheric burning of fuel-air mixture in which thermal energy is radiated.

Flash point: The lowest temperature at which the liquid can produce sufficient flammable vapour to ignite in presence of external source of ignition.

Hazard: A chemical or physical condition that has the potential for causing damage to people, property, or the environment.

Hazard Analysis: A process used to identify hazards and select means to controlling or eliminating them.

Incident: The undesirable loss of containment of material or energy. For example, gas release, fire or explosion.

IDLH: Immediately Dangerous to Life and Health is an estimate of the maximum concentration in the air to which a healthy person could be exposed for a specified period of time (30 minutes as per NIOSH standards) without suffering permanent health effects.

Lower Explosive Limit (LEL): The concentration of a flammable vapour in air below which the air – vapour mixture will not ignite.

Maximum Credible Loss Scenario (MCLS): A loss scenario with a maximum damage effect, which is believed to be possible.

Over pressure: The pressure above the normal atmospheric pressure, usually arising from a blast wave.

Plume: The gas cloud resulting from a continuous release.

Pool fire: The combustion of material evaporating from a layer of liquid underneath.

Risk: A measure of human, property or environmental damage in terms of both the magnitude and the likelihood of damage.

Risk assessment: The quantitative estimate of risk.

Upper Explosive Limit (UEL): The concentration of a flammable vapour in air above which the airvapour mixture will not ignite.

UVCE: Unconfined Vapor Cloud Explosion is open explosion of flammable vapour and air. The term is also referred to as Vapor Cloud Explosion.

Vulnerable zone: The area that can get affected by an incident. For toxic release, it is the area over which the airborne concentration of toxic gas exceeds certain accepted level of oncentration. For fire, it is the area over which the intensity of heat radiation exceeds certain accepted levels. For explosion, it is area over which the pressure of blast wave excess certain accepted level.