

Appendix 12.2 Historical Chlorine Incident Records

Records from MHIDAS database (extract from EIA report “North East New Territories New Development Areas”, AEIAR-175/2013)

Native Number	Date of Incident	Country	Details
<u>Pipework</u>			
5039	7/27/1991	UK	Spill from two 30kg cylinders in <u>chlorine</u> building of <u>water treatment plant</u> released chlorine. Incident caused by small crack in pipework which was replaced. Leak stemmed by water authority engineers with BA.
2023	8/27/1985	FRANCE	Cloud of toxic <u>chlorine</u> gas caused by leak at <u>water treatment plant</u> dispersed after hovering for nearly three hours over the countryside of western france.2 employees were hurt,1 seriously when 37000 cubic meters billowed from the plant.
1788	9/30/1977	USA	Cloud of <u>chlorine</u> escaped from faulty connection at <u>water treatment plant</u> . Low dense cloud dispersed by wind.
1683	9/18/1978	UK	Leak from faulty pipe on <u>chlorine</u> cylinder at <u>water treatment plant</u> .3 injured.
5867	9/9/1992	Hong Kong	Leakage of <u>chlorine</u> from <u>water treatment works</u> holding twice recommended safety inventory. 150kg chlorine leaked from 3mm hole in dented pipe during transfer operation. Lime powder sprinkled on pipe to neutralize release.
7029	8/14/1994	UK	<u>Chlorine</u> gas leaked from pipe connected to chemical drums at <u>water treatment works</u> . 1 treated at hospital for breathing problems & 4 families living on site evacuated. Leak believed to have been caused by faulty pressure gauge.
1740	5/8/1969	USA	Release of <u>chlorine</u> from <u>water treatment plant</u> led to cloud over residential area. One man sleeping affected by fumes later died as did his wife. Safety equipment at plant locked away. Damages claim awarded to children orphaned by deaths.
<u>Tank/Drum</u>			
1853	7/1969	USA	<u>Chlorine</u> gas alarm alerted employees to release from unattended discharging tank container at <u>water treatment plant</u> . Time = 2130. Valve isolated 1 hour later. Cloud dispersed inside 3 hours. 100 people evacuated from nearby restaurant.
1909	7/10/1981	USA	<u>Chlorine</u> leak when fitting broke on tank at rolling hills <u>water treatment facility</u> , owned by fort worth water dept. Leak stopped before evacuation ordered. Two hospitalized workers were not wearing gas masks in violation of plant regulations.
3442	9/2/1987	USA	Rupture of 1te container of <u>chlorine</u> gas at <u>water treatment plant</u> caused 1000 residents to be evacuated from homes ahead of an advancing chlorine gas cloud. 2 company employees & 2 fire-fighters injured.
3636	5/19/1981	PUERTO RICO	Spill of nearly 4 te liquid <u>chlorine</u> at <u>water purification plant</u> gave toxic cloud causing evacuation of 1500. 200 people received emergency treatment in 6 San Juan hospitals. Contents of 3 tanks & most of fourth escaped.
5044	7/31/1991	UK	1kg liquid chlorine spilled at <u>chlorine</u> drum store at <u>water treatment works</u> because of faulty valve.

Native Number	Date of Incident	Country	Details
5232	11/08/1991	UK	85 families evacuated because of gas cloud from <u>water treatment works</u> as hundreds of gallons of <u>chlorine</u> leaked, supposedly from barrel. Wall of water set up to prevent cloud from spreading. Village sealed off.
<u>Cylinder</u>			
10733	2/10/2001	FRANCE	A <u>chlorine</u> leak at a <u>water treatment plant</u> forced the evacuation of a village in southern France.
9050	5/29/1998	UK	<u>Chlorine</u> leaked from a cylinder at a <u>water treatment works</u> . Fire crews were called. It was a small leak and no-one was affected. An investigation has been launched.
1819	9/9/1978	UK	Leak from <u>chlorine</u> cylinder at <u>water treatment plant</u> . Cause thought to be faulty equipment. No injuries reported.
5232	11/8/1991	UK	85 families evacuated because of gas cloud from <u>water treatment works</u> as hundreds of gallons of <u>chlorine</u> leaked, supposedly from barrel. Wall of water set up to prevent cloud from spreading. Village sealed off.

Records from ARIP (USA) database

ARIP no.	Date of Incident	Facility Name	City	State	Primary Product	Chemical	Physical State	Amount Release to Air (lbs)	Causes of Accident	Remarks
419	10/27/1988	Laytonville Co Water District	Laytonville	CA	Water Treatment and Delivery	Chlorine	Gas	20	Equipment failure	1 employer injured
2069	9/13/1990	Mocho Well Field	Pleasanton	CA	Public Water Utility	Chlorine	Gas	60	Equipment failure	150 people evacuated
3333	11/2/1990	Coatesville Water Treatment	Coatesville	PA	Public Drinking Water Supply	Chlorine	Gas	2	Equipment failure	1 employer injured
3803	6/25/1991	Heavener Water Plant	Heavener	OK	Water Treatment (Drinking)	Chlorine	Gas	101	Equipment failure	1 employer injured
4347	8/18/1992	Minneapolis Water Works	Minneapolis	MN	Water Treatment	Chlorine	Vapor	10	Equipment failure	2 employer injured and 1 employer evacuated
4642	3/4/1992	Hiawatha Water	Hiawatha	IA	Water Treatment and Distribution	Chlorine	Gas	75	Equipment failure	35 people evacuated
4977	7/20/1995	City of Richland Hills	Richland Hills	TX	Water Treatment and Distribution	Chlorine	Gas	27	Operator error	2 employer injured
5007	6/26/1997	Manhattan Water Treatment Plant	Manhattan	KS	Water Treatment	Chlorine	Gas	5	Equipment failure	-

Records from UNEP database

Date	Location	Origin of accident	Material Involved	Consequences
8/4/1981	MEXICO, Montanas	Accident during road transportation of chlorine	Chlorine	28 people died, 1,000 people injured and 5,000 people evacuated
7/7/1987	USSR, Annau	Accident during transportation of chlorine	Chlorine	200 people injured
1/17/1990	GERMANY, Ahlsfeld	Release of chlorine from a truck	Chlorine	More than 182 people injured
1/1997	PAKISTAN, Lahore	Transportation accident	Chlorine	32 people died, 900 people injured and 1,000 people. evacuated

Records from U.S. Chemical Safety Board

Date	Location	Origin of accident	Material Involved	Consequences
14/8/2002	Festus, Missouri	48,000 pounds of chlorine was released over a 3-hour period during a railroad tank car unloading operation	Chlorine	66 Sought Medical Evaluation
20/7/2003	Baton Rouge, Louisiana	A chlorine cooler at the plant failed, leaking chlorine into the refrigerant coolant system	Chlorine	7 people injured
17/11/2003	Glendale, Arizona	An uncontrolled decomposition reaction in a batch scrubber released chlorine gas into the air	Chlorine	16 Medically Evaluated, Community Evacuated