Servosteel

Environmental Accident prevention measures

Hazard	Probability of Occurrence	Pathway, receptor and consequence	Measures to Reduce the Risk
Accidental spillage of hydrochloric acid during refilling of bulk storage tanks by pumping from a delivery tanker.	Low	Liquid run-off into bulk acid bunded area which would then be pumped directly to effluent treatment plant for treatment. If spillage was of a large quantity, Emergency response assistance would be required to pump the contained chemicals to a tanker for off-site disposal. Due to high acid concentration, spilt liquid would have fumes of significant odour.	All tanker unloading operations are supervised at all times. A small length of pipe work leads from each tank to a padlocked connector located within the bulk acid and delivery/collection bunded area, which is used to refill the tank. Any small amounts of spilt liquor would be hosed down with water to reduce fumes to atmosphere.
Accidental spillage of ferrous chloride during filling of collecting tanker.	Low	Liquid run-off into bulk acid bunded area which would then be pumped to effluent treatment plant for treatment. If spillage was of a large quantity, Emergency response assistance would be required to pump the contained chemicals to a tanker for off-site disposal. Due to very low acid concentration, spilt liquid may have fumes of minor odour.	All tanker loading operations are supervised at all times. A length of pipe work leads from the ferrous chloride process bund storage tanks to a padlocked connector located within the bulk acid and delivery/collection bunded area, which is used to fill the collecting tanker. Any small amounts of spilt liquor would be hosed down with water to reduce fumes to atmosphere, if necessary.
Failure of pipe work used to pump hydrochloric acid to the bulk storage tanks and from bulk storage tanks to the process tanks, or from ferrous chloride storage to collecting tanker	Low	Liquid run-off into bulk acid or process bunded areas which would then be pumped to effluent treatment plant for treatment. If spillage was of a large quantity, Emergency response assistance would be required to pump the contained chemicals to a tanker for off-site disposal. Due to high acid concentration, spilt liquid would have fumes of significant odour.	All pipe work, tanks, supports, motors, pumps and filters are visually inspected each month as part of the maintenance management system. All external pipe work is located inside the bulk acid bunded area. Any small amounts of spilt liquor would be hosed down with water to reduce fumes to atmosphere, if necessary.
Accidental spillage of small quantities of general chemicals from damage to containers during delivery or movement around site.	Low	There is a designated area for offloading of small deliveries of chemicals in IBC's. Any damaged container with spilt liquid may enter the surface water drainage system if significant.	Designated spill kits located nearby for any accidental damage. All forklift operators that handle chemicals also undertake regular spill training. If any amount of chemical were to enter the system, the containment pool value would be shut off to prevent it entering the local SSSI and arrangements would be made to empty. All containers of general chemicals are stored inside the factory on designated bunds or in an area to run off to the process bunded pit.
Escape of hydrochloric acid from damage to storage tanks during storage and collection from site, or from catastrophic failure of storage tanks	Low	Liquid run-off into process bunded area which would then be pumped to effluent treatment plant for treatment. If spillage was of a large quantity, Emergency response assistance would be required to pump the contained chemicals to a tanker for off-site disposal. Due to high acid concentration, spilt liquid would have fumes of significant odour.	Hydrochloric acid is contained in storage tanks which are located within the process bunded area to prevent escape into the drainage system. If possible, depending on the volume of liquid fuming off, it would be hosed with water to dilute & reduce odour.

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Escape of ferrous chloride from damage to storage tanks during storage and collection from site, or from catastrophic failure of storage tanks	Low	Liquid run-off into process bunded area which would then be pumped to effluent treatment plant for treatment.	Ferrous chloride is contained in storage tanks which are located within the process bunded area.
Release of hydrochloric acid fumes to air from failure of wet scrubber systems	Low	Airborne dispersion. Potential receptors – Housing located 50m away and Hospital located 200m away	All pipe work, tanks, supports, motors, pumps and filters are visually inspected each month as part of the maintenance management system.
Release of metal ions to sewer from failure of neutralisation and flocculation process	Low	Metal ions could impact the sewage treatment works via the foul sewer	pH is monitored automatically by numerous pH probes throughout the process. Effluent plant is manned by an effluent engineer during its use and checks are made at least every two – four hours.
Fire associated with flammable materials within the facility creating noxious fumes and smoke and giving rise to contaminated fire-fighting water	Low	Run-off into bunded areas. Emergency response assistance would be required to pump the contained chemicals to a tanker for off-site disposal.	All chemical storage areas and hazardous waste storage areas are located within the site bunded area. Site emergency plans include fire prevention practices.
Fire associated with flammable materials within the facility creating noxious fumes and smoke and giving rise to contaminated fire-fighting water	Low	Run-off into surface water drainage system resulting in entry to Oil/Solid Interceptor and then Containment Pool. Emergency response assistance would be required to pump the contained chemicals to a tanker for off-site disposal	Containment Pool is designed to provide emergency containment for such an incident. The outlet valve can be closed to prevent any release of spilled materials. Provisions have been made to facilitate Emergency response assistance as this would be required to pump the contained pollutant to a tanker for off-site disposal, as the situation could not be dealt with onsite. Extensive washing out of drainage system would be required to remove all traces of pollutant.
Vandalism resulting in uncontrolled release of oils, chemicals or wastes.	Low	Run-off into bunded areas. Emergency response assistance would be required to pump the contained chemicals to a tanker for off-site disposal	All chemical storage and waste storage areas are located inside bunded areas. External Bulk Acid Storage Area is security fenced. Site is surrounded by a high level security fence. There are no public rights of way (footpaths etc) adjacent to the perimeter of the site bunded area. Vehicle access to the site is controlled by a Weighbridge. Delivery and collection points are located in the bunded area and are kept locked at all times. Out of hours the site has static security guarding

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Catastrophic Tanker failure during either delivery or collection of bulk chemicals such as Hydrochloric Acid or Caustic Soda outside of Bulk Acid Receipt Area	Low	Liquid run-off into surface water drainage system resulting in entry to Oil/Solid Interceptor and then Containment Pool. Emergency response assistance would be required to pump the contained chemicals to a tanker for off-site disposal.	Traffic plan for site in place with designated route for tankers only. Designated sand bunkers are around site to divert spilt liquid into the drainage system. Containment Pool is designed to provide emergency containment for such an incident. The outlet valve can be closed to prevent any release of spilled materials. Provisions have been made to facilitate Emergency response assistance as this would be required to pump the contained chemicals to a tanker for off-site disposal, as the situation could not be dealt with onsite. Extensive washing out of drainage system would be required to remove all traces of acid/alkali.
Catastrophic Tanker failure during collection of Ferrous Chloride outside of Bulk Acid Receipt Area	Low	Run-off into surface water drainage system resulting in entry to Oil/Solid Interceptor and then Containment Pool. Emergency response assistance would be required to pump the contained chemicals to a tanker for off-site disposal	Traffic plan for site in place with designated route for tankers only. Designated sand bunkers are around site to divert spilt liquid into the drainage system. Containment Pool is designed to provide emergency containment for such an incident. The outlet valve can be closed to prevent any release of spilled materials. Provisions have been made to facilitate Emergency response assistance as this would be required to pump the contained chemicals to a tanker for off-site disposal, as the situation could not be dealt with onsite. Extensive washing out of drainage system would be required to remove all traces of acid/alkali.
Noise is created by the steam generators	Moderate	Potential receptors – Housing located 50m away	Roller shutter doors are to be kept closed whenever possible.