



Production & Treatment Chemical Safety for Contractors

2012

“Your Safety is Our
Concern”

SAWS Emergency Contacts

- Emergency Ops Center 233-2015
- Production Control 233-2016
- SAWS Security 233-3338
- Gate guard, Dos Rios 233-3186
- Gate guard, Leon Creek 233-3898
- Control Room, Twin Oaks 233-3986

Chemical Safety Hazards at Production and Treatment Sites

At most of our Production and Treatment facilities, we use or create chemicals that can cause serious illness/injury to the respiratory system and skin

- Chlorine gas
- Sulfur Dioxide gas
- Corrosive materials
- Strong Oxidizers
- Natural gas production
- Laboratory Wastes
- Other chemicals

SAWS has Many Hazard Controls in Place

- Risk Management Plan
- Chemical Storage Buildings
- Gas Leakage Detection
- Gas Scrubbing at some Large Facilities
- Security Systems and Monitoring
- Emergency Response Training

Chlorine/Sulfur Dioxide

- Chlorine provides disinfection for drinking water and waste water
- Sulfur dioxide neutralizes chlorine at waste water treatment facilities
- Both are severe irritants to eyes/nose/lungs
 - Can be lethal at relatively low concentrations

Chlorine and Sulfur Dioxide are Stored in DOT-approved Containers

- Heavier than air and tends to settle in low spots
- Reacts readily with water vapor in air to make acid
- Pungent, irritating odor



Common Properties of Chlorine and Sulfur Dioxide

Property	Chlorine	Dioxide
Odor	“Swimming Pool”	“Burning matches”
Color of gas	Greenish yellow	No color
1 liter of liquid makes	460 liters of gas	535 liters of gas

Sulfur Dioxide and Chlorine Health Hazards

- Severe irritant to eyes, nose, lungs (anything wet)
- Chemical burns to skin
- Frostbite from liquid contact
- Pulmonary edema and pneumonitis from inhalation (dry-land drowning)
- Death from suffocation (oxygen displacement)
- Click here for: [Chlorine MSDS](#) [SO2 MSDS](#)

HazMat Emergency – Production Sites

If you hear or see the storage building alarm system, or detect an irritating odor:

- Observe the wind sock
- Travel up wind away from site
- Shelter in a nearby building
- Call EOC (233-2015) for S.A. Fire Dept response
- If no building readily available, use vehicle for shelter; close/seal windows/vents; drive away
- For more information: [Chlorine Release Fact Sheet](#)



HazMat Emergencies – Treatment Plants

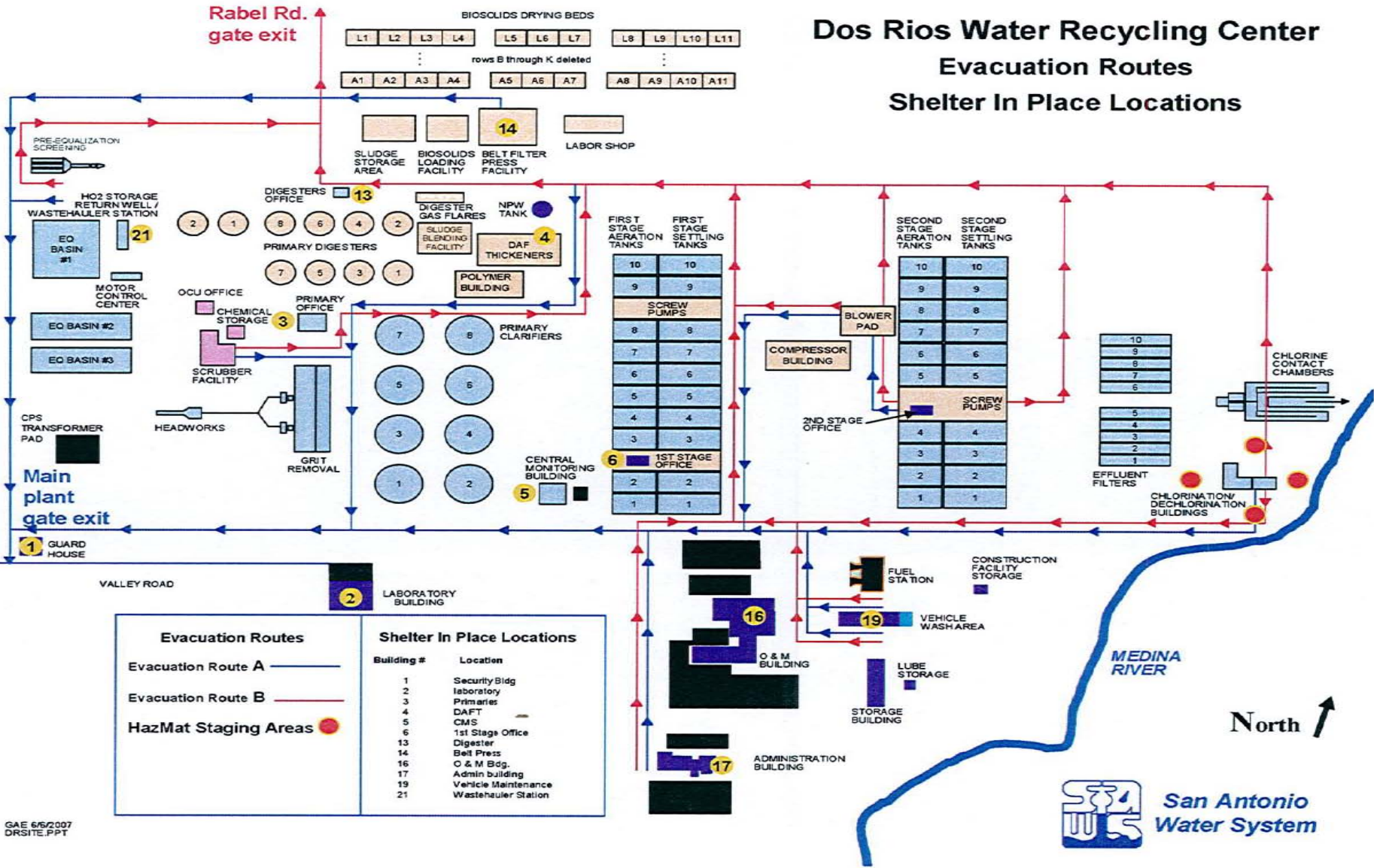
If you hear or see the storage building alarm system, or detect an irritating odor:



- Observe the wind sock; travel upwind away from the storage building
- Go to the closest shelter-in-place building
 - Ask your supervisor where the shelters are
- Keep building doors closed/turn off vents
- Call Emergency Operations at 233 - 2015

Dos Rios Water Recycling Center Evacuation Routes Shelter In Place Locations

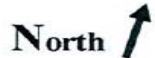
Rabel Rd. gate exit



Evacuation Routes	
Evacuation Route A	
Evacuation Route B	
HazMat Staging Areas	

Shelter In Place Locations	
Building #	Location
1	Security Bldg
2	Laboratory
3	Primaries
4	DAFT
5	CMS
6	1st Stage Office
13	Digester
14	Belt Press
16	O & M Bdg.
17	Admin Building
19	Vehicle Maintenance
21	Wastehauler Station

GAE 6/5/2007
DRSITE.PPT



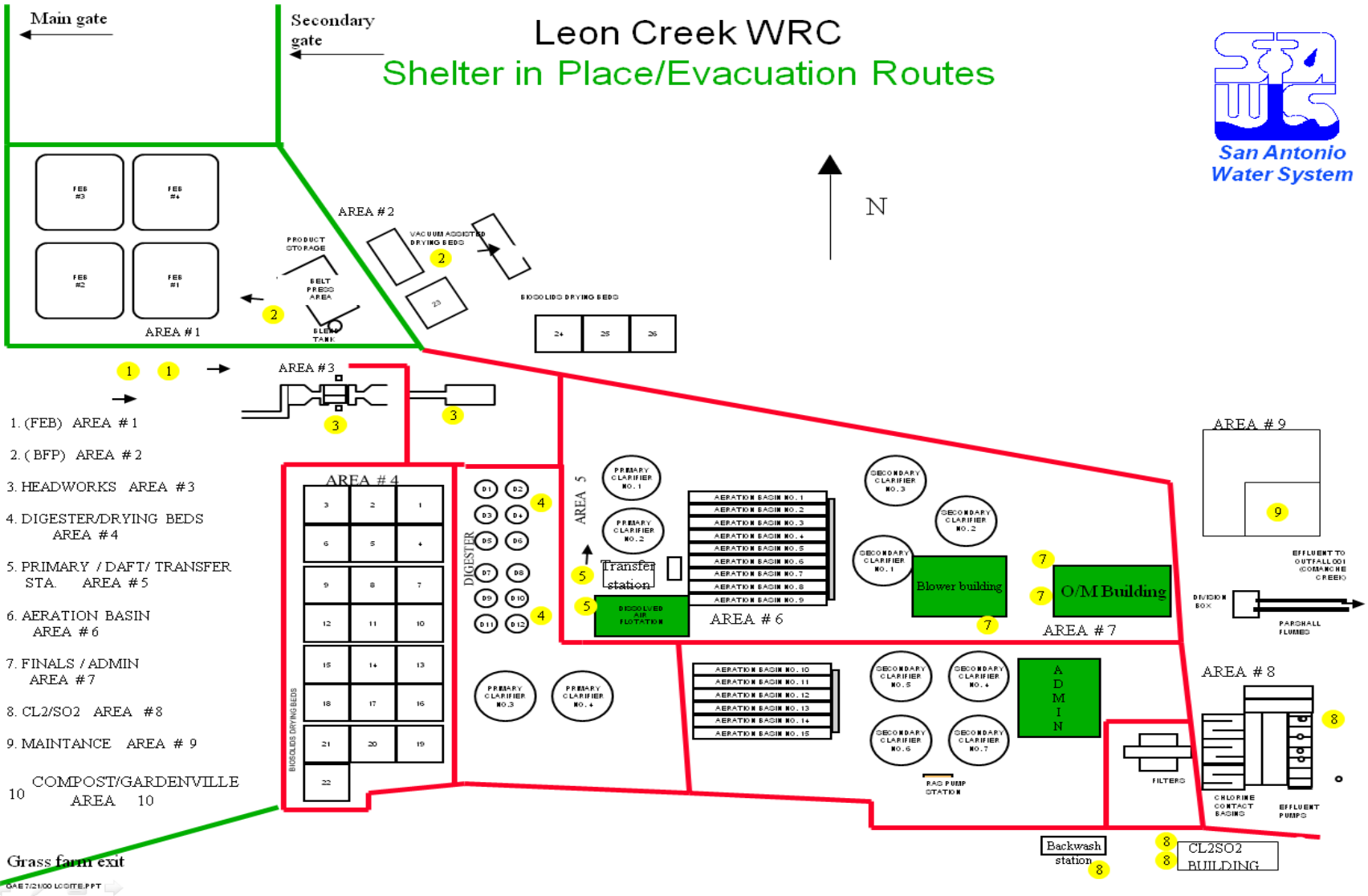
Shelter – in – Places at Dos Rios



Shelter-in-place/Evacuation for Leon Creek WRC



Leon Creek WRC Shelter in Place/Evacuation Routes



Shelter – in – Places at Leon Creek



Admin Building

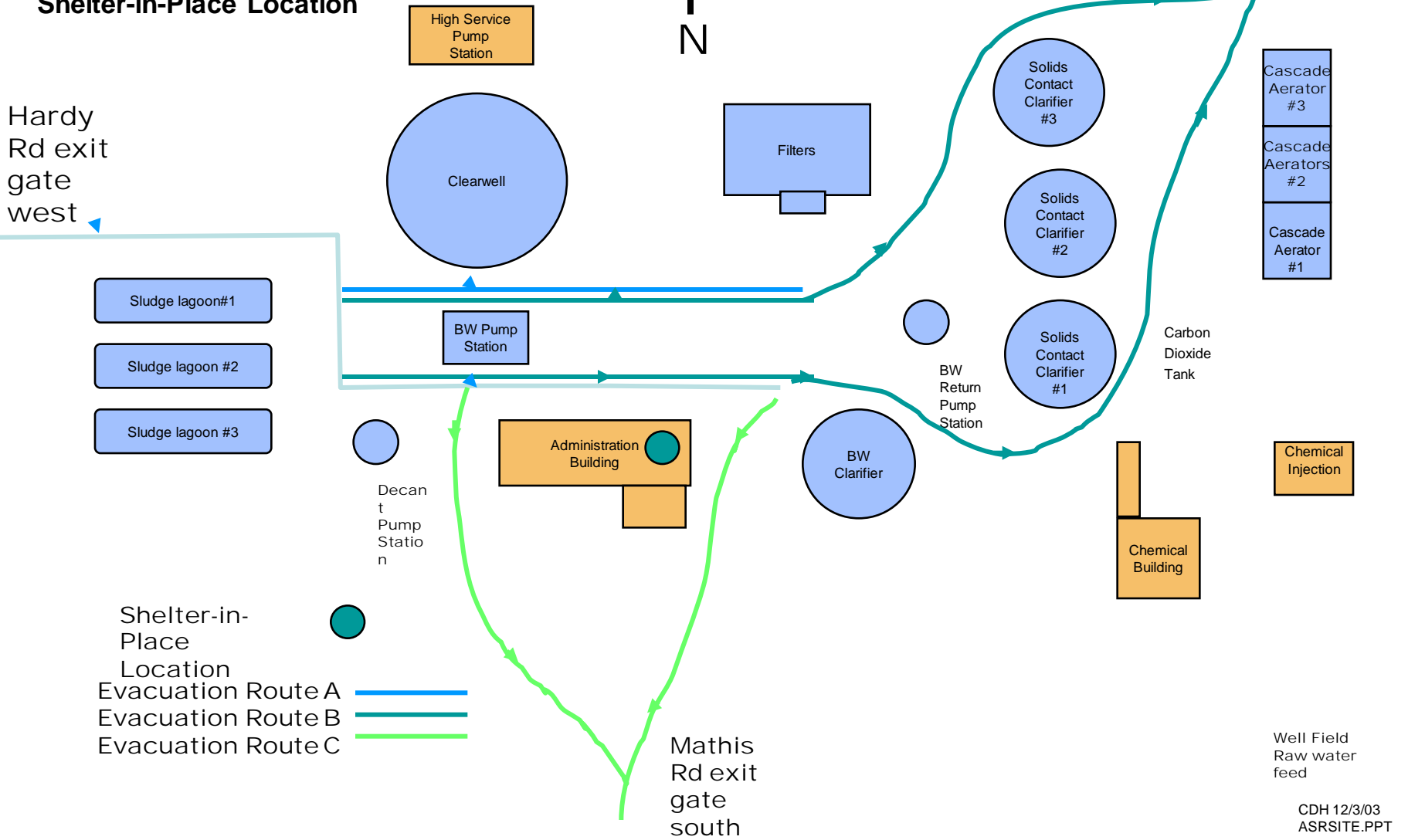


O & M Building


ASR Water Treatment Facility Evacuation routes Shelter-in-Place Location


Hardy Rd exit gate west


Hardy Rd Exit Gate East



Shelter-in-Place Location

Evacuation Route A 

Evacuation Route B 

Evacuation Route C 

Well Field Raw water feed

CDH 12/3/03
ASRSITE.PPT



Shelter – in – Place at ASR



First Aid for Chlorine and Sulfur Dioxide Gases

- Decontaminate skin/clothing with lots of water; remove contaminated clothing
- Wash eyes with water for 15 minutes
- Call 911 for ambulance
- Give CPR if not breathing (use a one-way valve if available)
- Keep victim calm; reassure



[Red Cross CPR Skill Sheet](#)

Other Chemical Hazards

- Hydrofluorosilicic Acid (fluoride)
 - Very irritating to eyes, nose, and lungs but not lethal under SAWS storage conditions

[Click for Hydrofluorosilicic Acid MSDS](#)

- Sodium Bisulfite (dechlorination)
 - Very irritating to eyes, nose, and lungs but not lethal under SAWS storage conditions

[Click for Sodium Bisulfite MSDS](#)



Other Chemical Hazards

- Hydrogen Peroxide (odor control)
 - Severe irritant to eyes, lungs, skin
 - [Click for Hydrogen Peroxide MSDS](#)
- Ferrous Sulfate (odor control)
 - Moderate irritant to eyes, lungs, skin
 - [Click for Ferrous Sulfate MSDS](#)

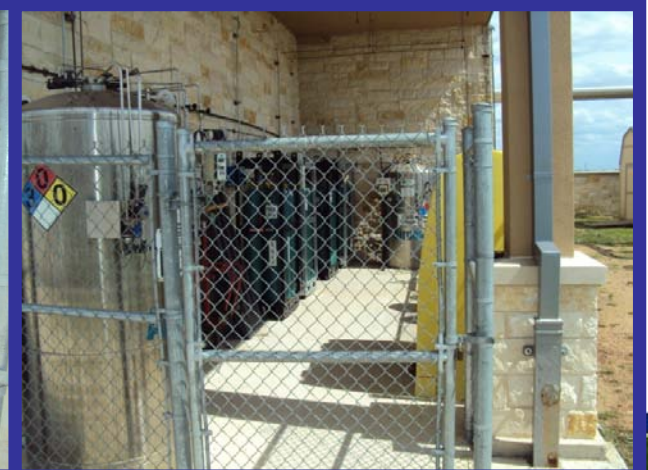
First Aid for Chemical Irritants:

- Use shower for skin contamination; remove contaminated clothing
- Wash eyes with water for 15 minutes
- Consult MSDS
- Get medical attention



Other Chemical Hazards

- Natural gas (Produced in Digesters)
 - Explosive in high concentrations, may also contain hydrogen sulfide (affects central nervous system)
- Environmental Services Lab
 - Hydrogen (explosive) and Nitrogen (asphyxiant)
 - Laboratory Wastes (affects central nervous system)



First Aid for Asphyxiants and Central Nervous System Effects:

- Move to fresh air
 - If employee cannot self-rescue, then rescuer must wear air-supplied respirator
- Consult MSDS
- If employee is conscious, but has persistent symptoms (confused, dizzy, weak, euphoric, headache, nausea):
 - Keep calm and warm, transport for medical care
- If employee is/was unconscious:
 - Start CPR if not breathing
 - Get immediate medical attention (911)



Wash Hands

- Water recycling treatment plants may harbor several disease-causing bacteria
- Wash hands with soap and warm water before eating and after work is complete at SAWS facilities



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For More Information, please contact:

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