Table of Contents

List of Drawings

Section 1: General Provisions

1.000 TITLE

These General Regulations shall be known as the Susanville Sanitary District Operations Code, and are General Regulations of the District.

1.100 CONTINUATION OF EXISTING LAW

The provisions of the Code which are substantially the same as existing regulations, shall be construed as restatements and continuations, and not as new enactments. Existing regulations and Ordinances of the District not referenced in this Code are in no manner waived, amended, or affected hereby.

1.200 PENDING PROCEEDINGS

Any action or proceeding commenced before this Code takes effect and any right accrued is not affected by this Code, but all procedure, thereafter taken therein, shall conform to the provisions of this Code.

1.300 SEVERABILITY

If one or more provisions of these General Regulations are for any reason held to be invalid, the Board of Directors hereby declare that they would nevertheless have adopted the remainder of these General Regulations.

1.400 MISDEMEANOR

Every person violating any provision of these General Regulations, including failure to pay any fees, charges, or surcharges imposed hereby, or any condition or limitation of a permit or plan approval issued pursuant thereto, is, pursuant to State Law, guilty of a misdemeanor.

1.500 PROTECTION FROM DAMAGE

It is unlawful for any person to maliciously or willfully break, damage, destroy, uncover, deface, or tamper with any structure, appurtenance, or equipment which is a part of the District sewage works.

1.600 SEPARABILITY

If any section, subsection, sentence, clause, or phrase of this Code or the application thereof to any person or circumstance is for any reason held to be unconstitutional or invalid, such decision shall not affect the validity of the remaining portions of this Code or the application of such provision to other persons or circumstances. The District hereby declares that it would have passed this Code and every section, subsection, sentence, clause, or phrase hereof irrespective to the fact that any one or more sections, subsections, sentences, clauses, or phrases be declared unconstitutional.

Section 2: Definitions

2.000 BOARD OR DISTRICT BOARD

"Board or District Board" is the governing body of said District.

2.010 BOD

"BOD" means Biochemical Oxygen Demand, which is the measurement of oxygen utilized in the biochemical oxidation of organic matter under standard laboratory procedure in five days at 20°C, expressed in milligrams per liter (mg/L) by weight.

2.020 BUILDING

"Building" shall mean any structure used for human habitation, a place of business, recreation, or other purposes.

2.030 BUILDING DRAIN

"Building Drain" shall mean that part of the lowest horizontal piping of a building drainage system which receives the discharge from drainage pipes inside the walls of the building and conveys it to the building sewer.

2.040 BUILDING SEWER

"Building Sewer" shall mean a single sewer lateral or side sewer conveying wastewater from a single parcel/lot and/or building to the Susanville Sanitary District's sewer system. In no case or circumstance shall two or more parcels/lots share a common sewer lateral or side sewer.

2.050 CHEMICAL OXYGEN DEMAND

"Chemical Oxygen Demand" (COD) shall mean the measure of the chemically decomposable material in domestic or industrial wastewater as represented by the oxygen utilized as determined by the appropriate procedure described in "Standard Methods".

2.060 CITY

"City" shall mean the City of Susanville, California.

2.070 COMBINED SEWER

"Combined Sewer" shall mean a sewer receiving both surface runoff and sewage.

2.080 PUBLIC SEWER SYSTEM

Public sewer system means a system of collection and treatment of wastewater located within a public right-of-way and /or utility easements where the Susanville Sanitary District has the responsibility for operation and maintenance of that system.

2.090 CONTRACTOR

"Contractor" shall mean any Contractor licensed by the State of California to enter into contracts to perform the work of installing, repairing, replacing, or relocating sewers under District jurisdiction, or the owner of private property performing his own sewer work on his private property only.

2.100 COUNTY

"County" shall mean the County of Lassen, California.

2.105 DISTRICT

The word "District", as used herein, shall mean the Susanville Sanitary District.

2.110 DISTRICT INSPECTOR

"District Inspector" shall mean the inspector acting for the District and appointed by the District Board or General Manager.

2.115 DOMESTIC SEWAGE

"Domestic Sewage" shall mean sewage from residences, business buildings, and institutions as distinct from industrial waste.

2.120 SINGLE-FAMILY RESIDENTIAL UNIT

Single-Family Residential Unit means one or more rooms in a residential building or residential portion of a building which are arranged, designed, used or intended for use as a complete independent facility for one family and which included permanent provisions for living, sleeping, eating, cooking, and sanitation. Any duplication of the above permanent provisions, specifically cooking, eating or laundry facilities, will be considered in excess of a single E.R.U. allocation for a single parcel and in excess of the allowed sewer service capacity for one E.R.U.

Garages, shops, hobby rooms or any outbuilding with kitchens or cooking facilities, shower stalls, bathtubs or laundry facilities are not to be connection or served by the sewer system without first purchasing an additional E.R.U. A sink and toilet are permissible if connected to the existing sewer system. A laundry facility could also be permitted if one does not exist in the residential unit.

2.125 GENERAL MANAGER

"General Manager" shall mean the person appointed by the Board to administer and enforce the rules and regulations of the District.

2.130 INDUSTRIAL WASTE

"Industrial Waste" shall mean the liquid waste from industrial manufacturing processes, trade, or business as distinct from domestic sewage.

2.135 NATURAL OUTLET

"Natural Outlet" shall mean any outlet into a watercourse, pond, ditch, lake, or other body of surface or ground water.

2.140 pH

"pH" shall mean the logarithm of the reciprocal of the weight of hydrogen ions in grams per liter of solution.

2.145 PERSON

The term "person", as used and referred to herein, shall mean and include individuals, partnerships, associations and corporations, or combinations of more than one such entities.

2.150 PREMISES

"Premises", as used herein, refers to and shall include a lot or parcel of land, a building, or an establishment.

2.155 EQUIVALENT RESIDENTIAL UNIT (E.R.U.)

An equivalent residential unit (E.R.U.) means:

- one separate single-family residence; or
- With respect to residential multi-family structures, one per single-family unit.
- With respect to mobile home or trailer parks having more than two single-family residential units or spaces. One single-family unit or space shall be equivalent to one E.R.U.
- With respect to uses other than residential, one E.R.U. shall be designated for each 250 gallons of sewage discharged daily.
- Business space, commercial, and industrial uses are based on calculation using the uniform plumbing code based on fixture units whichever is deemed to be the most appropriate by the District General Manager.

2.160 RADIOACTIVE MATERIAL

"Radioactive Material" shall mean material containing chemical elements that spontaneously change their atomic structure by emitting any particles, rays, or energy forms.

2.165 SANITARY SEWER

"Sanitary Sewer" shall mean a sewer which carries sewage and to which storm, surface, and groundwater are not intentionally admitted.

2.170 SEWAGE

The term "sewage", as used and referred to herein, is defined as a combination of water or waterborne wastes conducted from a premises.

2.175 SEWAGE TREATMENT PLANT

"Sewage Treatment Plant" shall mean any arrangement of devices and structures used for treating sewage.

2.180 SEWER PIPE

"Sewer Pipe" shall mean a pipe or conduit for carrying sewage.

2.185 SEWERAGE SYSTEM

"Sewerage System", sometimes referred to as Sewage Works, shall mean all facilities for collecting, pumping, treating, and disposing of sewage.

2.190 SHALL

"Shall" is mandatory, "May" is permissive.

2.195 STORM DRAIN

"Storm Drain" (sometimes termed "storm sewer") shall mean a sewer which carries storm and surface waters and drainage, but excludes sewage and industrial wastes, other than unpolluted cooling water.

2.200 STREET

"Street" shall mean any public highway, road, street, avenue, alley way, public place, public easement, or right-of-way.

2.205 SUSPENDED SOLIDS

"Suspended Solids" shall mean solids that either float on the surface of or are in suspension in water, sewage, or other liquids and which are removable by laboratory filtering.

2.210 WASTEWATER

"Wastewater" shall mean the same as sewage.

2.215 WATERCOURSE

"Watercourse" shall mean a channel in which a flow of water occurs, either continuously or intermittently.

NOTE: This is a broad overview of Operations. The District reserves the right to implement Ordinances and/or Resolutions as needed to clarify, change and/or update policies and operation requirements. The District also reserves the right for final decisions on any project to be made by the General Manager and/or the Board.

Section 3: Organizational Information

3.000 AUTHORITY

The Susanville Sanitary District was organized in 1949 under the provisions of the Health and Safety Code of California. The Susanville Sanitary District (previously known as Susanville Consolidated Sanitary District) is the consolidation of the Milwood Sanitary District and the Susanville Sanitary District formed under the 1923 Sanitary District Act.

3.100 DISTRICT BOARD

The District Board consists of five Directors, including the President.

3.200 ELECTION OF DIRECTORS

General District Elections are held in even numbered years pursuant to the Uniform District Election Law. Elections are held pursuant to the Health and Safety Code and Election Code.

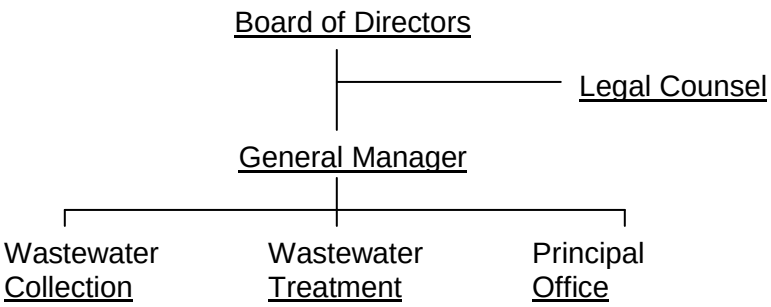
3.300 BOARD MEETINGS

Regular meetings shall be held once a month on the second Tuesday of each month at 1:00 pm in the Board Room of the Susanville Sanitary District Office, located at 45 South Roop Street, Susanville, California. Special meetings will be held as called by the President or three Directors, or Legal Counsel.

3.400 PRINCIPAL OFFICE

The principal office of the District is at 45 South Roop Street, Susanville, California (Mailing address: P.O. Box 152, Susanville, California, 96130).

3.500 DISTRICT ORGANIZATIONAL CHART



Section 4: General Regulations Respecting Construction, Use and Disposal

4.000 RULES AND REGULATIONS

The following rules and regulations respecting sewer construction and disposal of sewage and drainage of buildings and connection to the sewage works of the District are hereby adopted, and all work in respect shall be performed as herein required and not otherwise.

4.100 VIOLATION UNLAWFUL

Except as otherwise provided by Ordinance, it shall be unlawful for any person to connect to, construct, install or provide, maintain, and use any other means of sewage disposal from any building in said District except by connection to a public sewer in the manner as herein provided.

4.200 PERMITS AND FEES

No public sewer, building sewer, or other sewage facility shall be installed, altered, or repaired within the District until a permit for the work has been obtained from the District and all fees paid in accordance with the rules, regulations, and Ordinances of the District.

4.300 EXTENSIONS OR ANNEXATIONS OF SEWER MAINS

The District shall be furnished with detailed engineered drawings of all lines with all connections with all easements conveyed to the District by a registered civil engineer licensed in the State of California.

4.400 CONNECTIONS TO MAIN LINES AND REFUNDABLE REPAIRS DEPOSITS

The Board of Directors of the Susanville Sanitary District deem that imposing a refundable "repair deposit" at the time a connection permit is issued is in the best interest of the District, which, upon satisfactory completion would be returned to the user less any repair costs found necessary.

It was decided by the Board of Directors that standard conditions be implemented for sewer line extensions and lateral connection to the Susanville Sanitary District and impose a refundable "repair deposit" upon all users desiring to connect or repair a lateral connection to the Susanville Sanitary District in accordance with Resolution 92.2.

4.500 OWNERSHIP OF LINES

When all sewer lines have been completed, inspected, and approved by the District, the same shall become the property of the District, so far as all lines are contained within public rights-of-way or easements, and the Subdivider, or Developer, shall execute any instruments necessary to convey the same to the District, together with any easements as required by the District, save and except service laterals from a premises to where it connects to the community sewer. (S.C.S.D. Ordinance #25).

Building Sewers and Connections

5.000 PERMIT REQUIRED

No person shall uncover, make any connections with or opening into, use, alter, or disturb any public sewer or appurtenance thereof without first obtaining a written permit form the District and paying all fees and connection charges of the District. There will be a $1,000.00 penalty fee for any illegal connection to the District's sewer system (per Ordinance No. 66).

5.050 PERSONS AUTHORIZED TO PERFORM WORK

Permits shall be issued only to Contractors as said Contractors are defined in Section 2, Number 2.090, hereof. Applicants for sewer permits shall provide plans, specifications, or other information considered pertinent in the judgment of the District.

5.100 ALL COSTS PAID BY OWNER

All costs and expense incident to the construction, installation, and connection of the building sewer shall be borne by the Owner. The acceptance of any permit shall constitute an agreement by the Contractor to comply with all the provisions, terms, and requirements of this and other Ordinances, rules, and regulations of the District. The Owner and Contractor shall indemnify the District from any loss or damage that may directly or indirectly be occasioned by the installation of the building sewer including the negligent or unlawful act of any person installing or maintaining the building sewer.

5.150 SEWER TOO LOW

In all buildings in which a building sewer is too low to permit gravity flow to the public sewer, sanitary sewage carried by such building sewer shall be lifted by mechanical means, approved by the District and discharged into the public sewer, all at the expense of the owner. The owner shall own and operate their pumping facility.

5.200 MAINTENANCE OF BUILDING SEWER

Building sewers, sewer laterals, and/or side sewers shall be maintained by the owner of the property served thereby (See Ordinance No. 74).

5.250 PLANS, PROFILES, AND SPECIFICATIONS

The application for a permit for public sewer construction shall be accompanied by three complete sets of plans, profiles, and specifications, complying with all applicable Ordinances, rules, and regulations of the District, prepared by a registered Civil Engineer showing all details of the proposed work based on an accurate survey of the ground. The application, together with the plans, profiles, and specifications, shall be examined by the District who shall, within 20 days, approve them as filed or require them to be modified as it deems necessary for proper installation. After examination by the District for conformity to District standards, a permit shall be issued for the project predicated upon the payment of all connection charges, fees,

and deposits as required by the District. The permit shall prescribe such terms and conditions as the District finds necessary in the public interest.

5.300 EASEMENTS OR RIGHTS OF WAY

In the event that an easement is required for the construction or extension of the public sewer or the making of connections, the applicant shall procure for and have accepted by the District a proper easement or grant of right-of-way having a minimum width of 20 feet and sufficient to allow the construction and maintenance of such sewer, extension, or connection. No structures may be built within the 20 foot sewer easement or within 10 feet of any sewer main that is owned and operated by the Susanville Sanitary District.

5.350 DESIGN AND CONSTRUCTION STANDARDS

Minimum standards for the design and construction of sewers within the District shall be in accordance with the STANDARD DISTRICT SPECIFICATIONS heretofore or hereafter adopted by the District, copies of which are on file in the District office. The General Manager, with the consent of the District Board, may permit modifications or may require higher standards where unusual conditions are encountered. Two complete sets of "as-built" drawings showing the actual location of all mains, structures, "Y"'s, and laterals shall be filed with the District before final acceptance of the work.

5.400 COMPLETION OF SEWER REQUIRED

Before any acceptance of the sewer line by the District, and prior to the admission of sewage into the system, the sewer line shall be tested and shall be complete and in full compliance with all requirements of the District's specifications and to the satisfaction of the District and a full set of “as built” drawings must be provided to the Susanville Sanitary District.

5.450 DRAINAGE INTO SANITARY SEWERS PROHIBITED

No persons shall make connection of roof down spouts, exterior foundation drains, area-way drains, or other sources of surface runoff or groundwater to a building sewer or building drain which, in turn, is connected directly or indirectly to a public sanitary sewer.

5.500 DESIGN AND CONSTRUCTION REQUIREMENTS

The connection of the building sewer into a public sewer shall conform to the requirements of the District. All such connections shall be made watertight. Any deviation from the prescribed procedures and materials must be approved by the District in writing before installation. A full set of “as built” drawings must be provided to the Susanville Sanitary District once construction is complete.

5.550 NOTIFICATION

The applicant for a building sewer permit shall notify the General Manager when the building sewer is ready for inspection and connection to the public sewer. The sewer lateral must be exposed from the structure to the sewer main line for inspection. The connection shall be made under the supervision of the General Manager or his

representative. Any damage to the public sewer shall be repaired at the cost of the applicant to the satisfaction of the District.

5.600 PROTECTION OF PUBLIC

All excavations for building sewer installation shall be adequately guarded with appropriate barricades so as to protect the public from hazard. Streets, sidewalks, parkways, and other public property disturbed in the course of the work shall be restored in a manner satisfactory to the District.

5.650 COMPLIANCE WITH LOCAL REGULATIONS

Any person constructing a sewer within a street shall comply with all state and local laws, ordinances, rules, and regulations pertaining to the cutting of pavement, opening, barricading, lighting, and protection of trenches, backfilling, and repaving thereof, and shall obtain all permits and pay all fees required by the agency having jurisdiction prior to the issuance of a permit by the District.

5.700 FLOW ANALYSIS REQUIRED

For any development larger than a single family Residential, the Contractor or Developer shall provide the District with a flow analysis prepared by a registered Civil Engineer showing the projected flow in gallons per day and the estimated strength of the sewage expressed in mg/L BOD and Suspended Solids, and any other constituents as may be required by the General Manager.

Section 6: Prohibition on Discharges

6.000 No person shall discharge, or cause to be discharged, any of the following described materials, substances, liquids, water, or waste into the public sewer system of the District:

6.050 STORM AND COOLING WATER

Any rainwater, storm water, groundwater, street drainage, subsurface drainage, roof drainage, yard drainage, or water from yards shall not drain into the sewer system.

6.100 DILUTION WATER

Any water added for the purpose of diluting wastes which would otherwise exceed applicable maximum concentration limitations.

6.150 SOLIDS OR VISCOUS MATTER

Any solids or viscous substances of such size or in such quantity that they may cause obstruction to the flow in the sewer or be detrimental to proper wastewater treatment plant operations. These objectionable substances include, but are not limited to, asphalt, dead animals, offal, ashes, rock, cement, mud, straw, industrial process shavings, metal, glass, rags, feathers, tar, plastic, wood, whole blood, paunch manure, bones, hair and fleshing, entrails, paper dishes, paper cups, milk containers, or other similar paper products, either whole or ground.

6.200 FLAMMABLE OR EXPLOSIVE SUBSTANCES

This includes but is not limited to: any gasoline, benzene, naphtha, solvent, fuel oil, or any liquid, solid or gas that would cause, or tend to cause, flammable or explosive conditions to result in the sewage works.

6.250 HOT SUBSTANCES

This includes but is not limited to: any liquid, vapor, solid, gas, or thing having or developing a temperature of one hundred fifty degrees Fahrenheit (150°F) or more.

6.300 GREASE, OIL, AND FATS

Any liquid or other waste containing floatable and/or dispersible grease, oil, or fat of animal, vegetable, or mineral origin in excess of 100 parts per million by weight.

6.350 CORROSIVE SUBSTANCES

Any waters or wastes having pH lower than 6.0 or higher than 8.5 or having any other corrosive property capable of causing damage or injury to structures, equipment, or personnel of the District.

6.400 TOXIC SUBSTANCES

Any wastes, including those listed below, containing toxic or poisonous solids, liquids, or gases in such quantities that, alone or in combination with other waste substances, may create a hazard for humans, animals, or the local environment, interfere detrimentally with wastewater treatment processes, cause a public nuisance, or cause any hazardous conditions to occur in the sewage works:

Antimony	Cyaniades	Arsenic, Arsenicals	Fatty Acids
Barium Beryllium	Fluorides	Bromines, Chlorine, Formaldehydes	
Iodine (Total)	Lead	Boron	Manganese
Cadmium	Mercury		
Total Identifiable Phenol and Chlorinated Hydrocarbons Derivatives			
Chromium (Total)	Nickel	Cobalt	Selenium
Copper	Silver		

POLLUTANT LIMITS

PARAMETER	mg/L (PPM)	ug/L (PPB)
Benzene	0.119 mg/L	119 ug/L
Ethyl benzene	0.070 mg/L	70 ug/L
Toluene	0.376 mg/L	376 ug/L
Xylene	0.276 mg/L	276 ug/L
Chloroform	0.023 mg/L	23 ug/L
1,1 dichloromethane	0.009 mg/L	9 ug/L
1,2 dichlorobenzene	0.062 mg/L	62 ug/L
1,3 dichlorobenzene	0.021 mg/L	21 ug/L
1,4 dichlorobenzene	0.081 mg/L	81 ug/L
Methylene Chloride	0.049 mg/L	49 ug/L
BOD (Biochemical Oxygen Demand)	no limit (typical values for BOD are 150-300 mg/L)	
COD (Chemical Oxygen Demand)	no limit (typical values for COD are <1000 mg/L)	
Cyanide	0.796 mg/L	
Oil & Grease	100.0 mg/L	
pH	5.0 - 12.5 pH Units	
Phenols	0.392 mg/L	
Total Suspended Solids (TSS or NFR)	no limit (typical values for TSS are 150-300 mg/L)	
Total Petroleum Hydrocarbons	25.0 mg/L	
Arsenic (Total)	0.131 mg/L	131 ug/L
Cadmium (Total)	0.044 mg/L	44 ug/L
Chromium (Total)	1.438 mg/L	1438 ug/L
Copper (Total)	0.692 mg/L	692 ug/L
Lead (Total)	3.915 mg/L	3915 ug/L
Mercury (Total)	0.009 mg/L	9 ug/L
Nickel (Total)	0.574 mg/L	574 ug/L
Silver (Total)	0.146 mg/L	146 ug/L
Silver (Total from a silver recovery unit)	1.0 mg/L	1000 ug/L
Zinc (Total)	0.678 mg/L	678 ug/L

Notes:

- Concentrations apply at the point where the waste is discharged to the POTW (Publicly Owned Treatment Works) unless indicated otherwise.
- At his discretion, the General Manager may impose mass limitations in addition to or in place of the concentration based limitations above.
- NFR (Non-Filterable Residue) is the same analytical testing method as TSS (Total Suspended Solids).

6.450 INSECTICIDES

Any liquids or wastes containing algaecides, fungicides, antibiotics, insecticides, strong oxidizing agents, or strong reducing agents.

6.500 SUSPENDED AND DISSOLVED SOLIDS

Any liquids or wastes containing suspended solids or dissolved matter of such character or quantity that unusual attention or expense is required to handle, process, or treat such matter at the treatment plant.

6.550 SULFIDES

Any wastes containing over 1.1 milligram/liter of dissolved sulfides.

6.600 NOXIOUS ODORS

Any noxious or malodorous gas or substance capable of creating a public nuisance either by itself or by interaction with other substances.

6.650 CHLORINE DEMAND

Any wastes requiring an excessive quantity of chlorine or other chemical compound used for disinfection purposes.

6.700 DISCOLORATION

Any waste producing excessive discoloration of wastewater or treatment plant effluent.

6.750 RADIOACTIVE WASTES

Defined as any radioactive waste(s) unless a permit has been issued by the District and the County Health Officer. No such permit shall be issued unless:

a) The person is authorized to use radioactive materials by the State Department of Health or other governmental agency empowered to regulate the use of radioactive materials; and
b) The waste is discharged in strict conformity with current California Radiation Control Regulations (California Administrative Code, Title 17) and the Atomic Energy Commission regulations and recommendations for safe disposal; and
c) The person is in compliance with all rules and regulations of all other applicable agencies.

6.800 MISCELLANEOUS WASTES

Any liquid or wastes containing recognizable portions of the human anatomy.

6.850 UNTREATABLE WASTES

Any liquid or waste containing substances which are not amenable to treatment or which cause the treatment plant effluent to fail to meet the discharge requirements established by the State Water Resources Control Board, the California Regional Water Quality Control Board, or any other state or regulatory agency.

6.900 "SLUGS"

Any unusual volume of flow or concentration of waste constituting a "slug", where "slug" is defined as any discharge of liquid, water, sewage, or industrial waste, which in concentration of any given constituent or in quantity of flow, exceeds for any period of duration longer than 15 minutes more than five times the average 24-hour concentration or flow during normal operation.

Section 7: Sewer Use

7.000 BACK-FLOW PREVENTION

A back-flow prevention device, or check valve, shall be installed in each sewer lateral where the finish floor elevation of the building served thereby is lower in elevation than the cover of the nearest up-stream manhole or cleanout. Such back-flow prevention device shall be installed by each respective owner of property affected hereby, at his own cost and expense. In event that a property owner does not install such back-flow prevention device, the District shall not be liable for any damages to real or personal property of the owner, or personal injury to the owner or the occupants of such real property due to the back-flow of sewage from the main sewer lines. (SSD Ordinance No. 74, superseding SCSD Ordinance No. 58)

7.100 CAPPING OF ABANDONED SEWER LATERALS

It shall be unlawful for any owner of private property or for any lessee, tenant, or agent of any such owner to destroy, demolish, or remove the plumbing system in any structure upon such private property, unless after such demolition, removal, or destruction of any lateral sewer line, which connects or did connect such structure and the plumbing system therein contained to a main sewer line of the Susanville Sanitary District, is so capped or sealed off at the sewer main as to prevent the entry of soil, water, and debris into such lateral sewer line.

7.200 INDUSTRIAL SEWAGE

All sewage discharged into District lines shall be subject to all of the existing Ordinances and requirements of the Susanville Sanitary District and such as may hereafter be established.

7.300 PROHIBITION

No cesspools, septic tanks, or other private sewage facility shall be emptied into District lines.

7.400 SWIMMING POOLS

No swimming pool shall be emptied into District lines.

7.500 RESPONSIBILITY

Owners of real property shall be liable for payment of sewer service charges for their premises, although payments may be accepted from tenants.

7.600 LINES ON PRIVATE PROPERTY

All persons shall keep their house sewer connections in good order at their own expense and shall be liable for damages which may result from failure to do so. A District Inspector shall be admitted at all reasonable hours at all parts of any premises connected with the sewerage system for the purpose of checking any facilities herein mentioned and establishing sewer service charges as herein provided.

7.700 HEALTH HAZARD

All persons using private sewage disposal systems in the District shall, on order in the discretion of the Board of Directors of this District, cease and discontinue the use of said private sewage disposal systems and shall connect to the sewage disposal system of the District, when in the opinion of the Health Officer of the County of Lassen, the use of said private disposal system constitutes a health hazard and discontinuance of the use of said system is deemed reasonably necessary by him. (Health and Safety Code 6520).

7.800 GREASE, OIL, OR SAND INTERCEPTORS

Grease, oil, or sand interceptors shall be provided, when in the opinion of the General Manager, they are necessary for the proper handling of liquid wastes containing grease in excessive amounts, sand, and other harmful ingredients. Type and capacity shall be approved by the General Manager before installation. Interceptor shall be cleaned and maintained by the owner. (See Drawing No. 2, 15, & 16)

a) Design - Sizing of grease traps is based on wastewater flow and can be calculated from the number and kind of sinks and fixtures discharging to the trap. In addition, a grease trap should be rated on its grease retention capacity, which is the amount of grease (in pounds) that the trap can hold before its average efficiency drops below 90%. Current practice is that grease-retention capacity in pounds should equal at least twice the flow capacity in gallons per minute. In other words, a trap rated at 20 gpm (1.31/sec) should retain at least 90% of the grease discharged to it until it holds at least 40 lb. (18 kg) of grease. Most manufacturers of commercial traps rate their products in accordance with this procedure.

   Recommended minimum flow-rate capacities of traps connected to different types of fixtures are given on Drawing No. 14.

   Another design method has been approved through years of field experience. The following two equations are used for restaurants and other types of commercial kitchens:

1. RESTAURANTS

$$\frac{(D) \times (GL) \times (ST) \times (HR) \times (LF)}{2} = \text{Size of Grease Interceptor, gallons*}$$

where:

D = Number of seats in dining area

GL = Gallons of wastewater per meal, normally 5 gallons

ST = Storage capacity factor - minimum of 1.7 Onsite disposal - 2.5

HR = Number of hours open

LF = Loading factor -

1.25	interstate freeways
1.0	other freeways
1.0	recreational areas
0.8	main highways
0.5	other highways

2. HOSPITALS, NURSING HOMES, OTHER TYPE COMMERCIAL KITCHENS, WITH VARIED SEATING CAPACITY:

$$\frac{(D) \times (GL) \times (ST) \times (HR) \times (LF)}{2} = \text{Size of Grease Interceptor, gallons*}$$

where:

M = Meals per day

GL = Gallons of wastewater per meal, normally 4.5

SC = Storage capacity factor - minimum of 1.7 Onsite disposal - 2.5

LF = Loading Factor -

1.25	garbage disposal and dish washing
1.0	without garbage disposal
0.75	without dish washing
0.5	without dish washing and garbage disposal

*Minimum size grease interceptor should be 750 gallons.

Thus, for a restaurant with a 75-seat dining area, an eight hour per day operation, a typical discharge of five gallons per meal, a storage capacity factor of 1.7 and a loading factor of 0.8, the size of the grease interceptor is calculated as follows:

$$\frac{(75) \times (5) \times (1.7) \times (8) \times (0.8)}{2} = 2{,}040 \text{ gallons (7.800.1) See Above.}$$

Other design considerations include: facilities for insuring that both the inlet and outlet are properly baffled; easy manhole access for cleaning; and inaccessibility of the trap to insects and vermin.

b) Construction Features - Grease traps are generally made of pre-cast concrete, and are purchased completely assembled. However, very large units may be field constructed. Grease traps come in single- and double-compartment versions. Drawing No. 15 shows a typical pre-cast double-compartment trap. Grease traps are usually buried so as to intercept the building sewer. They must be level, located where they are easily accessible for cleaning, and close to the wastewater source. Where efficient removal of grease is very important, an improved two-chambered trap has been used which has a primary (or grease-separating) chamber and a secondary (or grease-storage) chamber. By placing the trap as close as possible to the source of wastewaters, where the wastewaters are still hot, the separating grease at the surface of the first chamber can be removed by means of an adjustable weir and conveyed to the separate secondary chamber, where it accumulates, cools, and solidifies. This decreases the requirement for cleaning and allows better grease separation in the first chamber.

   The inlet, outlet, and baffle fittings are typically of "T" design with a vertical extension 12 inches (30cm) from the tank floor and reaching well above the water line.

   To allow for proper maintenance, manholes to finished grade should be provided. The manhole covers should be of gas-tight construction and should be designed to withstand expected loads.

   A check of local ordinances and codes should always be made before the grease trap is designed or purchased.

c) Operation and Maintenance - In order to be effective, grease traps must be operated properly and cleaned regularly to prevent the escape of appreciable quantities of grease. The frequency of cleaning at any given installation can best be determined by experience based on observation. Generally, cleaning should be done when 75% of the grease-retention capacity has been reached. At restaurants, pumping frequencies range from once a week to once every 2 or 3 months.

Section 8: Permits and Fees

8.000 SEWER CONNECTION PERMIT PROCEDURE

a) All available sewer connection permits will be issued to applicants on a "first come, first served" basis.

b) The computation of the number of available permits shall be within the sole discretion of the General Manager of the Susanville Sanitary District based upon treatment plant capacity and per capita use, such computation to be pursuant to the generally accepted formula in the industry, as applied by the District in the past.

c) Upon receipt of the sewer connection permit construction shall be stared within 90 days and construction shall be completed within 1 year or the sewer connection fee will forfeited. Refer to Article 4 Connection Permit Application Procedure of Ordinance No. 53.

d) Sewer connection permits when issued are assigned to a specific parcel and, therefore, are non-transferable to other parcels.

e) The charges imposed shall be paid in accordance with Ordinance No. 50 at the time application is made for a building permit. Any and all such charges shall be paid to the Susanville Sanitary District at the business office of the District.

f) No such connection to the said system of the District shall be made until the charges imposed hereby are paid. A violation of the Ordinance is punishable as a misdemeanor pursuant to the Health and Safety Code of the State of California.

8.100 CONNECTION FEES (Ordinance No. 78, effective March 9, 2010)

There is hereby imposed, pursuant to Health and Safety Code §5474 and §5474.10, upon each lot, piece, or parcel of land within or outside the boundaries of the Susanville Sanitary District to which connection is made to the sewage collection and treatment system of the Susanville Sanitary District. The charge or charges of which the exact sum shall be determined by the Board as it deems it appropriate, pursuant to the following formula:

Formula:

C = (A/F) x R

C = Connection Fee per Equivalent Residential Unit

A = Total Local Share Value of All Assets Invested in the Waste Water Treatment Plant and Appurtenances or $14,145,799.00.

F = Waste Water Treatment Flow Capacity (gpd) 2,100,000 (Source: Project Report for Waste Water Treatment Plant improvements for SSD, April 2000)

R = Average Daily Flow per Residential Unit or 184 G.P.D. (Source: Rate and Revenue Plan Study, June 2000)

Based on the foregoing, the following connection fees (Connection Fees) are deemed sufficient to satisfy the needs of the District, and pursuant thereto the Board approves and adopts the same as follows:

(1) Connection Fee for Single Family Residence: $1,612.00

(2) Connection Fee Single Family Residence: $1,000.00

(3) Connection Fee per Residential Unit for Multi-Family Residence: $1,447.00

8.101 The General Manager shall, from time to time, make a determination as to (1) the current value of investments in the waste water treatment plant multiplied by the percent increase or decrease in the Construction Cost Index; (2) the waste water treatment plant capacity (gpd); (3) the average daily flow per residential unit based upon information available to him (e.g., the present information from the waste water treatment facility design criteria and the City and County planning departments which would indicate that the average daily flow per capita is 100 gpd; that the average number of persons per residential unit is 2.5; and that, therefore, the average daily flow per residential unit is 250 gallons).

8.102 Equivalent Residential Units, as the basic unit for determining the applicable connection fee shall be as follows:

Use or Type of Improvement	***Equivalent Residential Unit***
Single family residence, apartment, townhouse or condominium unit, trailer space or other Residential unit as defined by the Uniform Building Code	1.0 Unit
Hotel/Motel with Kitchen Facilities	1.0 Unit per Room
Hotel/Motel without Kitchen Facilities	0.6 Unit per Room
Bars	2.7 Units per each 30 Seats*
Restaurants and other similar eating establishments	2.7 Units per each 20 Seats*

Snack bars, paper service	1.0 Unit per each 24 Fixture Units (Uniform Plumbing Code)*
Markets	1.0 Unit per each 24 Fixture Units (Uniform Plumbing Code)*
Laundries, self service	1.5 Units per each Machine
Theaters	.6 Units per each 50 Seats
Church	.4 Units per each 50 Seats
Beauty Shops	.4 Units per Chair
Barber Shops	1.0 Units per each 24 Fixture Units (Uniform Plumbing Code)*
Assembly Halls	.4 Units per each 50 Seats*
Schools	1.0 Units per 20 Students
Hospital	.8 Units per Bed
Business Retail	1.0 Units per each 24 Fixture Units (Uniform Plumbing Code)*
Gas Station without Mini Mart	2.0 Units Commercial 1
Gas Station with Mini Mart	4.0 Units Commercial 1
Recreation Vehicle Park	.5 Units per Site
Other	As May Be Determined
Home Based Business	Usage to be determined by General Manager

*(Note: Above the initial unit fee shall be determined proportionately.)

8.103 If the lot, piece, or parcel of land is located outside the boundaries of the Susanville Sanitary District to which connection is to be made, there shall be imposed an additional charge consisting of $150.00 for each Residential unit equivalent. Fractional unit equivalents shall be rounded off to the next highest whole number for purposes of determining the additional charges imposed under this section.

This additional charge shall be referred to as the "Out of District Connection Fee".

8.104 Whenever in the opinion of the General Manager the application of the above described method of determining sewer connection fees are grossly unreasonable or inappropriate, he may calculate an appropriate sewer connection fee, taking into account the anticipated waste water flow and strength characteristics for the structure in question, and present the matter to the Susanville Sanitary District Board of Directors.

8.105 Where an existing building is remodeled or extended and such existing building is already served by an existing sewer connection, and the remodel or extensions results in adding additional sewer units to the building, an additional connection fee shall be charged. This fee will be computed on the basis of the total sewer units for the remodeled or extended building less the sewer units previously existing and paid for in the building prior to its remodeling or extension.

8.106 In addition to the above fee or charge of connecting to the District's sewage facilities, whenever a person, firm or corporation connects to or conveys sewage through a designated Special Asset of the District, paid for by, or specially serving, only a limited or designated area, then a Special Asset Fee, multiplied by the number of equivalent residential units being connected, shall also be charged as part of the sewer connection fees, as follows:

Special Asset	Fee
East Side Pumping Station	$ 74.00

This additional charge shall be referred to as the "Special Asset Fee".

8.107 The charges imposed hereby shall be paid pursuant to Article 4 of Ordinance No. 53 entitled “Connection Permit Application Procedure”. Any and all such charges shall be paid to the Susanville Sanitary District at the business office of the District.

8.108 No such connection to the said system of the District shall be made until the charges imposed hereby are paid. A violation of this Ordinance is punishable as a misdemeanor pursuant to the Health and Safety Code of the State of California.

8.109 An applicant to whom a sewer connection permit has been issued must begin actual construction of the Residential or structure for which the permit was issued within ninety (90) days of the date the said connection permit was issued. All connection permits which have been issued shall expire and be automatically revoked at the close of the business of the 30th day of the 12th month following the date of issuance of the permit, unless a “notice of completion” has been duly recorded, or unless a “permit extension” has been approved by the District. Upon expiration and revocation of any permit pursuant to this section, the connection fee paid shall be deemed forfeited.

8.110 Sewer connection permits when issued are assigned to a specific parcel and are non-transferable to other parcels.

8.111 For any development larger than single family Residential units, the General Manager may require the developer to provide the District with a waste water flow analysis prepared by a registered Civil Engineer showing the projected flow in gallons per day and the estimated strength of the sewage expressed in B.O.D. mg/L and suspended solids mg/L and any other constituents as may be required by the General Manager.

8.112 This fee described in this Article shall generally be referred to as the "connection fee" and shall be the monetary exaction which shall be charged upon each lot, piece or parcel of land within or outside the District. The District shall charge the fee, as determined pursuant to Article 6 of this Ordinance, for the privilege of said lot, piece or parcel of land to connect to the District sanitation or sewage facilities.

8.113 From time to time, by way of Resolution, the Board of Directors of the Susanville Sanitary District shall adopt a Capital Improvement Plan which shall indicate the approximate location, size, time of availability, and estimates of costs for all facilities or improvements to be financial with the connection fees.

8.114 The Board of Directors of the District have concluded that a reasonable relationship exists between the fees used and the contemplated development and expansion described in 8.113.

8.200 NO WAIVER OF SEWER FEES

No discount, waiver, or relief from the imposition of user service fees shall be allowed any user of the District services upon vacancy, non-use of plumbing, or change in use of any structure or premises connected to the District's sewage system.

The only exception would be a condemned structure or "Red Tagged" by the City.

8.300 RECONNECTION OF AN EXISTING SERVICE

Refer to Chapter 4, Section 4.200 and Chapter 5, Section 5.000.

8.400 BILLING PROCEDURE FOR NEWLY CONSTRUCTED BUILDINGS

a) The imposition of user service fees shall begin as of the date on which physical connection is made between the user's premises and the District's sewage system, and continue thereafter until such time as the premises is disconnected from the sewage system.

8.500 INSPECTION FEES

Before granting any permit for the construction of a main line sewer, appurtenance, house service, and any industrial waste pre-treatment facility and whenever required by the Susanville Sanitary District, the District shall collect the following fees from the applicant to cover the cost of a field inspection of the proposed construction.

Lateral Inspection	Fee
New or Reconnection	$ 75.00 (2 inspections)

Main Line Sewer	Fee
50' or less	$150.00
50' to 350'	$150.00 + .50/ft over 50'
351' to 1350'	$300.00 + .40/ft over 350'
over 1350'	$700.00 + .30/ft over 350'

These additional charges shall be referred to collectively as "Construction and Inspection Fees".

8.600 MAP REVIEW FEES

A Map Review Fee of $125.00 shall be paid to the District upon presentation of each land division parcel map required to be reviewed by the Susanville Sanitary District; said fee is to be paid upon presentation of any such map.

8.700 PLAN CHECKING FEES

Any person desiring plan checking shall pay to the Susanville Sanitary District the fee or fees as below defined:

Total Lineal Feet of Main Line Sewer	Fee
1000' or less	$75.00
1001' to 2000'	$75.00 + .06/ft over 1000'
2001' to 3000'	$135.00+.06/ft over 1000'
3001' to 4000'	$195.00+.05/ft over 3000'
4001' to 5000'	$245.00+.05/ft over 4000'
5001' to 6000'	$295.00+$30.00/1000' or a portion thereof.

If any portion of the plans after having been checked is required to be re-drawn or re-checked, as a result of additional footage of main line sewer, the applicant shall pay re-checking fee based on $0.075 per foot of additional main line sewer. However, there will be a minimum re-checking fee of $25.00. No plan checking will be done until the required re-checking fee is paid. This additional charge shall be referred to as the "Plan Checking Fee".

8.800 SEWER EASEMENT FEES

For each private contract requiring the processing of sewer easements, the District shall collect from the applicant a fee of $150.00 for each parcel through which a sewer easement is required. In addition, a policy of title insurance insuring the easement in favor of the District shall be furnished at the sole cost of the applicant and the applicant shall pay any other costs associated with said easement.

This additional charge shall be referred to as the "Sewer Easement Processing Fee".

8.900 REFUNDS

In the event any person shall have paid a fee for plan checking, inspection fee, for processing a sewer easement, annexation fees and no work or processing has been done on these functions, such person, upon presentation to the District of a written request, shall be entitled to a refund of the fees actually paid. In the event that the person shall have paid a fee for inspection and subsequently shall request and receive permission to revise the work so as to appreciably reduce the amount thereof, he or she shall be entitled to a refund of the difference between the original fee, said portion shall be the difference between the original amount of the fee and a new amount to be determined from the revised total footage of main line sewers. The District shall satisfy itself as to the right of such refund to such person, and each such refund shall not be paid until approved by the Board of Directors.

Section 9: Sewer Service Charges

9.000 There is imposed upon each lot, piece, or parcel of land, within or without the boundaries of the Susanville Sanitary District, upon which there exists an improvement, building, or structure, which said improvement, building, or structure is directly or indirectly connected to the sewage collection system of this Sanitary District, the charge or charges set forth below for services and facilities furnished by this Sanitary District to or for the benefit of such lot, piece, or parcel of land (Health and Safety Code 6520.5). The charges imposed and the type or kind of improvement, building, or structure which determines the amount thereof are as follows:

9.100 SERVICE CHARGES (effective September 1, 2007)

User Class Code	User Class Description	Monthly Fee
A	Minimum Charge (Based Rate per EDU)	$ 15.15
B	3 or more Bedrooms EDU	$ 19.50
C	School (per Student Enrollment)	$ 1.00
D	Lassen Community College (per Student Enrollment)	$ 1.00
E	Pump Station	$ 2.70

Commercial Rates	Unit Rate
Commercial Group I	$ 21.40
Commercial Group II	$ 43.80
Commercial Group III	$ 18.35
Institutional Use	$ 20.90

(Commercial Rates can be based on Water Usage)

Connection Fees Per Ordinance No. 77

Wastewater Treatment Plant:	
Single Family Residential Unit	$1,612.00 per ERU
Multi-Family Residential Unit	$1,447.00 per ERU
Collection System	$1,000.00 per ERU
Inspection Fee	$ 75.00 2 trips to site
Special Assessment Fee	
Eastside Pumping Station	$ 74.00

Refundable Repairs Deposit (Per Resolution No. 92.2):

4-inch pipe	$200.00
6-inch pipe	$200.00
8-inch pipe	$250.00
10-inch pipe	$250.00
12-inch pipe	$300.00
14-inch pipe	$800.00
15-inch pipe	$800.00
16-inch pipe	$800.00
18-inch pipe	$800.00

Commercial I

Professional Offices, Retail Stores, Car Washes, Service Stations, Repair Shops, Barber Shops, Beauty Shops, Recreation Halls, Bowling Allies, Bars, Clubs, Lodges, Theaters, Public Office Buildings, Churches, Hotels, Motels, Commercial Laundries, Markets.

Commercial Group II

Industrial Laundries, Bowling Allies with Dining Facilities, Hotels - Motels with Dining Facilities, Markets with Garbage Disposal or Bakeries, Drive-ins, Wholesale Bakeries, Restaurants, and Mortuaries.

Commercial Group III

Laundromats, including private laundries operated by an apartment complex, trailer parks, etc.

Institutional User Groups

Mental and/or Medical Hospitals, Convalescent Homes and Hospitals.

School User Groups

Schools shall be defined as any entity that houses students, teachers, aides, volunteers and/or any other incidental staff. It is understood that some schools are in session for a limited time in a one-year period. It is understood that some schools are year around. This will be left to the discretion of the General Manager and/or the Board of Directors as to how the fees are determined for a particular school. This includes but is not limited to: Pre-schools, Elementary Schools, Junior High Schools, High Schools, Daycares, and Private Schools. Sewer charges will be based on the total enrollment at the beginning of the school year (Fall). (NOTE: The enrollment number will be assumed the same as the ADA plus all teachers, aides, volunteers and/or other incidental staff throughout the school year). The fees will be based on a 10 month service for the limited schools. The District will take:

$$\frac{(\text{Total enrollment} \times \text{current school fee}) \times 10}{12}$$

This will give us equal monthly sewer fees. These fees will be multiplied by 2 and billing will be bimonthly.

It is the responsibility of the School District(s) to accurately report annually an actual unduplicated head count enrollment of full time and part time students at the beginning of each school year.

Any errors or inaccurate reporting which results in loss of revenue to the District will result in penalties and/or late fees.

Lassen Community College

Lassen Community College or any College in Lassen County or City of Susanville, shall be defined as a main campus entity housing full time students, part time students, teachers, aides, volunteers, maintenance workers, grounds keepers, and/or any other incidental staff. It is understood that the college is considered a year around campus but, with limited enrollment during the summer months. It is understood that the Daycare facility, CO-Generation Plant, Dormitories and any other separate "on campus" site will be billed separately. This will be left to the discretion of the General Manager and/or the Board of Directors as to how the fees will be determined and/or established for a particular facility. Sewer charges will be based on the total enrollment at the beginning of the school year (Fall). (NOTE: The enrollment number will be assumed the same as the ADA plus all teachers, aides, volunteers and/or other incidental staff throughout the school year). The fees will be based on a 10 month service for the limited schools. The District will take:

$$\frac{(\text{Total enrollment} \times \text{current school fee}) \times 10}{12}$$

This will give us equal monthly sewer fees. These fees will be multiplied by 2 and billing will be bimonthly.

It is the responsibility of the College to accurately report annually an actual unduplicated head count enrollment of full time and part time students at the beginning of each school year.

Any errors or inaccurate reporting which results in loss of revenue to the District will result in penalties and/or late fees.

Industrial User Groups

Rates will be established for each industrial user at the time application is made for a sewer connection permit.

Pumping Station Fee

All user groups which must utilize one of the District's sewage pumping stations will be charged a pro-rata share of the operation and maintenance of the sewage pumping station.

9.200 USER GROUP CLASSIFICATIONS

The below classifications are based on a combination of factors which include principal use of the building or Residential, average water consumption, characteristic strength of wastewater generated by the use of the building or Residential as more specifically set forth from Appendix F-2, Clean Water Grant Program Bulletin Number 54C entitled “Revenue Program Guidelines for Wastewater Agencies”, and representative data from District records of the Susanville Sanitary District. Water consumption rates are based on a running average for a particular type of user classification (less irrigation use). In the case of commercial water users, actual water use (less irrigation) is used. The term “per 1,000 cubic feet of water used” as set forth above is defined herein as the measure of water delivered to a lot, piece or parcel of land as measured at the metering device at the point of delivery thereto, based upon the user’s average monthly water use for the preceding calendar year, or more recent average if use for a calendar year has not occurred.

STANDARD CLASSIFICATIONS	CHARACTERISTIC	
	BOD (ppm)	SS (ppm)
Average Residential (varies depending on average water usage per capita)	175-200	175-200
Auto Steam Cleaning	1,150	1,250
Bakery, Wholesale	1,000	1,000
Bars Without Dining Facilities	200	200
Car Wash	20	150
Department & Retail Stores	150	150
Hospital & Convalescent	250	100
Hotel With Dining Facilities	500	600
Hotel Without Dining Facilities	310	120
Industrial Laundry	670	680
Laundromat	150	110
Commercial Laundry	450	240
Market with Garbage Disposals	800	800
Mortuaries	800	800
Professional Office	130	80
Repair Shop & Service Stations	180	280
Restaurant	1,000	600
School & College	130	100
Soft Water Service	3	55
Septage	5,400	12,000

9.300 BILLING

The fee imposed by this Ordinance is a monthly fee, and shall be billed, in advance, and on a bi-monthly basis. Said fee is due and payable when billed and becomes delinquent after close of business on the last working day of the billing period. The Board of Directors shall from time to time designate an employee or agent of the District to send bills at times determined by the Board for the charges imposed by this Ordinance to the owner, or his personal representative, of each lot, piece, or parcel of land upon which charges are imposed at the address shown upon the last equalized assessment role of the County of Lassen for such owner; all such bills shall show the date upon which such charges are due, the amount of such charges, the period covered by such bills, when such charges become delinquent and, pursuant to Section 5473.11 of the Health and Safety Code of the State of California and Ordinance No. 75 of the Susanville Sanitary District, there shall appear in each such billing substantially the following language:

1. This is a monthly billing in advance.

2. Fees due to the District shall become delinquent if not paid by close of business on the last working day of the billing period. Owners of each lot, piece, or parcel of land upon which such charges are imposed are responsible for sewer service charges.

3. Fees not paid on or before the expiration of the last working day of the billing period shall be subject to a penalty of ten percent (10%) of the amount then due.

4. The District shall, in addition to the penalty described in Paragraph 3, above, assess a further penalty [interest charge] of ½ of one percent (1%) per month for each month, or part thereof, for any fee due to the District that remains delinquent, beginning on the first day of delinquency and computed after imposition of the penalty as set forth in Paragraph 3, above.

5. On or after the 80th day after billing, the District shall send a demand letter. A charge of $5.00 representing the costs associated with the preparation of said letter shall be added to the delinquent fee of the user.

6. On or after the 90th day after billing, the District may either commence a service disconnection procedure [Disconnect Procedure], as more specifically described in Paragraphs 8 and 9, below, or, it may in initiate collection efforts by the filing of a Small Claims Court action against the delinquent user in the Lassen County Superior Court. A charge of $5.00 representing the costs associated with the preparation of said letter shall be added to the delinquent fee of the user.

7. On or after the 100th day after billing, the District may record a lien for the amount of the delinquent fee on the real property of the delinquent user, in accordance with Health an Safety Code § 6520.12. The costs, if any, of recordation of any lien in accordance with this Paragraph shall be added to the delinquent fee of the user.

8. On or after the 100th day after billing, the District may serve upon the delinquent user a “Notice of Service Disconnection” [Disconnect Notice]. Upon sending the Disconnect Notice, an additional penalty of $15.00 shall be charged to the delinquent user. This penalty shall be in addition to the penalties, interest and other charges outlined in Paragraphs 3 through 7, above.

9. The Board of Directors of the Susanville Sanitary District, upon holding a public hearing as described herein, may direct that the real property for which payment of fees is delinquent be disconnected from the District’s sewer system.

10. Any user of the District services who is delinquent on or after a public hearing has been held on the matter shall be charged an additional penalty of $15.00. These charges shall be in addition to all other charges outlined in Paragraphs 3 through 8, above.

11. The District Manager may, at any time, refer any collection procedure or issue to District Counsel for appropriate legal action.

12. On or before August 1st of each year, the Board may certify to the Lassen County Board of Supervisors and Lassen County Auditor a statement of any delinquent and unpaid charges of users of the District facilities that have remained delinquent and unpaid for a period of 60 days or more on the preceding July 1st. The amount of said charges included in the statement of delinquent and unpaid charges shall be added to and become a part of the annual taxes next levied upon the property for which the sewer service was provided and upon the property subject to the charges for any other District services and shall constitute a lien on that property as of the same time and in the same manner as does the tax lien securing the annual taxes.

13. Pursuant to Resolution No. 04.12 of the Susanville Sanitary District adopted on October 18, 2004, (repealing Resolution No. 92.8, adopted July 13, 1992), a “fee” of $25.00 will be imposed to any user of the District’s services for the return of any dishonored check.

9.400 RATE CHANGES

The Board of Directors of this District may, from time to time, alter, fix, change, amend or revise the charges and rates for services and facilities in connection with the sewerage system as herein, or hereafter, established and fixed.

9.500 DISCONNECTION

In the event that any person(s) shall fail to pay any charges herein provided when the same becomes due, the District may, in addition to any other remedies it has, cut off any of its services and shall not resume the same until all charges together with any charges necessitated by resumption of such services and facilities have been paid. (Health and Safety Code §6523.2).

9.600 DISPOSITION OF SEWER SERVICE CHARGES

All revenue received from the collection of Sewer Service Charges as herein established shall be deposited with the District Treasurer. Revenues derived by the District for Sewer Service may be used for any purposes except the acquisition of cost of additional local street sewers or laterals which are an augmentation to the existing sewer system.

Should the whole or any portion of this Ordinance be held unenforceable or void by a court of competent jurisdiction, Ordinance No's. 72 and 73, (repealing Ordinance No.'s 61 and 63), concerning the same subject, shall not be repealed and shall continue in full force and effect as to those subjects.

This Ordinance shall take effect as provided in Sections §6490 and §6491.3 of the Health and Safety Code of the State of California on July 1, 2007.

Section 10: Annexation

10.000 When unsewered areas make requests for annexation to the Susanville Sanitary District, the District requires that the area residents requesting annexation build, at no cost to the Susanville Sanitary District, all necessary sewer laterals, mains, and appurtenances to serve the proposed annexation area. Additionally, the area residents requesting annexation must bear costs related to any enlargement required of the Susanville Sanitary District sewer mains to transport wastewater from the development to the treatment facility.

The Susanville Sanitary District Board of Directors may set additional requirements for a particular annexation or development after a review of the matter.

Section 11: Construction of Sewers

11.000 DESIGN CRITERIA

a) Design flow - Average flow shall be taken at 100 gallons per person per day with the design flow two and one-half times the average flow. In larger collecting systems, consideration should be given to concentration of peak flows. All sewer shall be designed with sufficient capacity to have peak flows with pipes running full but without surcharging the line.

Population densities will vary, being controlled largely by the number of residential lots per acre, zoning, and other land uses. All design population estimates, including equivalent population for schools, commercial, and industrial uses, shall be submitted with the improvement plans for approval. Normal design population will be considered at the rate of three homes per acre and 3.5 persons per home.

b) Sanitary Sewers - Shall be designed to flow between 2 fps and 10 fps wherever practicable. They shall be designed using Manning's Formula with "n" = 0.013.

c) Minimum Sewer Size - Sanitary sewer shall be a minimum of six inches in diameter. Building sewers shall be a minimum of four inches in diameter for a single residential connection. Building sewers shall be a minimum of six inches in diameter for a single commercial property connection.

d) Oversizing and Extra Depth - Sewers which can logically serve upstream tributary area will be required to be oversized and/or installed at extra depth when necessary to serve such tributary area.

e) Minimum Sewer Slopes - Standard minimum acceptable slopes for sanitary sewers shall be as specified below except for asbestos cement pipe which shall also be subject to those requirements set forth in Section 11.000 f.

Minimum Slope in ft./ft. (N=0.013)	
Diameter	2 Feet/Second Flow
6"	.0050
8"	.0035
10"	.0025
12"	.0020
15"	.0015
18"	.0012

House Service Line ¼-inch per foot (.02 per foot).

If slopes below the standard minimum slopes must be used in order to avoid pumping, the designer shall advise the General Manager before proceeding with design. Pipe in substandard slope areas and pipe in all areas, to the point where the number of equivalent Residential connections is four times that in the section with substandard slope, shall be P.V.C. or other corrosion resistant pipe.

f) Type of Pipe

1. Gravity Sewers - All gravity sewer lines up to and including 24 inches in diameter shall be polyvinyl chloride, Ductile Iron, or Cast Iron pipe. Sewer lines larger than 24 inches in diameter may be of the above material or reinforced concrete pipe.

2. Force Mains - Force mains shall be Ductile iron, cast iron, steel cylinder concrete pipe, or polyvinyl chloride pressure pipe.

11.100 LOCATION AND ALIGNMENT

a) General - All sanitary sewers shall be located within rights-of-way dedicated for public streets or roads unless an alternate location is approved by the General Manager.

b) Main line extensions/lateral connections – In no cases shall a building sewer, sewer lateral be installed parallel to a road right of way to get to a sewer main line. If a sewer main line does not extend to the property to be served it will be the property owner's responsibility to pay all costs to engineer and construct the main sewer line extension so that the building sewer, sewer lateral crosses perpendicular to the road right of way to connect to the sewer main line.

Sanitary sewers shall be designed so that they do not conflict with other utilities, and shall be designed to comply with all applicable codes.

Sanitary sewers and building sewers shall not be located within 50 feet of a water-well. When any sanitary sewer or building sewer is located between 50 feet and 100 feet of a well, it shall be constructed of cast iron pipe with approved water tight joints.

b) Future Extensions - Whenever area outside the tract can be logically served by future extension of a tract sewer, the tract sewer shall extend to the tract boundary.

c) Alignment - Sewers shall be laid on a straight alignment and grade between manholes.

11.200 DEPTH OF SEWERS

a) Gravity Service - Sewers shall be installed at a depth which will provide gravity service from all properties to be served.

b) Minimum Depth - Sanitary sewer main lines shall have a minimum of 60 inches of cover and shall be adequate to obtain a minimum cover of 48 inches for the house service line at the property line.

11.300 STRUCTURES

a) End of Sanitary Sewers - All sanitary sewers shall terminate in a manhole or cleanout except as provided below:

1. If the sanitary sewer is 200 feet or less in length and if the sewer can logically be extended, a cleanout may be used if the future extension of the sewer will be on the same alignment and grade.

2. Sanitary sewers installed for future extensions shall have a cleanout installed at the end of the sewer line.

3. In all cases not provided for above, the sanitary sewer shall terminate in a manhole.

b) Manholes

1. Manholes shall be located at all changes in alignment or grade and at all junctions.

2. Manholes on sanitary sewers less than 24 inches in diameter shall be located at normal maximum spacing of 300 feet along all sewers. Spacing on sewers 24 inches in diameter or larger may be extended with the approval of the General Manager.

3. Connections of existing manholes shall be made by core drilling through the manhole and link seal shall be used to provide a water tight seal. Mortar shall be trowelled smooth and flush with the interior surface of the manhole, channelizing of the flow through the manhole shall conform to the details shown on Drawing 9.

   The Contractor shall notify the General Manager 24 hours in advance before any connection is made to existing structures. He shall schedule his work so that interruption of flow is held to a minimum.

4. A drop connection shall be constructed whenever any sewer enters a manhole more than four feet above the flow line of the manhole, as shown on Drawings 3 and 4 and may include a connection to either an existing manhole or a new manhole. Care shall be taken that the riser portion is vertical, and that the elbow is firmly supported by concrete.

5. All manholes shall be set ½ inch below finish pavement grade. In rock shoulders the manhole shall be set 4 inches below rock shoulder grade or may be placed ½ inch below finish grade providing an area 10 feet on each side of the manhole and for the full shoulder width is paved with two feet of Asphaltic Concrete.

6. Grade through Manholes:

   a. In sewers of uniform size passing through manholes without a major change in direction or slope, the pipe shall be carried through the manhole on a uniform slope.

   b. Where a change in the size of the pipe, the invert of the entrance pipe(s) shall be a minimum of 0.17 feet above the invert of the outlet pipe, or an amount necessary to match the inside crown of the pipe, whichever is greater.

c) Cleanouts - Cleanouts shall be constructed in accordance with Drawing 7.

7. Manholes shall be constructed as shown on Drawings 1, 5, and 9 with Drop Manholes being constructed in accordance with Drawings 3 and 4.

11.400 BUILDING SEWERS

a) General - In all new sewer construction the building sewer from the sanitary sewer to the property line shall be installed wherever it can be reasonably assumed that a building sewer connection is or will be required. Each building sewer shall be shown on the plans and referenced to the plan stationing. If the elevation of the building sewer at the property line is other than 48 inches below ground level as required in Section 11.200b such elevation shall show on the plans.

When a building sewer line is to be connected to an existing trunk sewer, cutting into the trunk line and the connection thereto shall be done by a licensed Contractor. All excavation and backfill, and the installation of the remainder of the service line shall remain the responsibility of the Contractor. The General Manager must be notified 48 hours in advance when a tap is required.

The location of building sewer lines shall be permanently indicated by embedding the letter "S" in the curb directly above the line. It shall be the Contractor's responsibility to place the "S" in the curb after it is poured. When house service lines are constructed in existing easements or streets where curbing does not exist, a property line backwater valve and traffic box shall be installed at the property line. Every building sewer line shall be so marked before final acceptance will be given of any job.

It is the designer's responsibility to recognize the possibility of reverse flow in building sewers serving lots in hilly areas. Where hydraulic relief is not afforded by upstream manholes or cleanouts, suitable protective measures may be required.

For all building sewers six inches or larger, a plan and profile shall be submitted in accordance with these specifications.

Building sewers shall not be connected to sanitary sewer 18 inches or larger in diameter unless such connection is approved by the General Manager.

b) Sampling Wells - Building sewer from laundromats, restaurants, and commercial and industrial establishments having waste of non-human origin may be required to provide a sampling well.

c) Oil and Sand Separator - Service stations, maintenance shops, and other potential sources of oil, grease, and inert solids shall be equipped with an oil and sand separator. See Drawing 2.

11.500 STRUCTURAL

All structures and pipes placed under roads shall be of sufficient strength to support, with an adequate factor of safety, the backfill, H-20 truck loading with impact, and any other anticipated loads.

11.600 SEWERAGE LIFT STATIONS AND FORCE MAINS

a) Sewered by Gravity - Whenever possible sewerage shall flow by gravity. Where an extreme hardship condition exists and a substantial area can not be sewered by gravity in accordance with the requirement, a sewerage pumping station may be installed. No pumping facilities shall be incorporated in sewer plans without prior approval. The following data shall be furnished with a request for approval of a pumping station:

1. Design Standards

Every phase of pump station design, including force mains, shall be closely coordinated with the District.

Location

The design computations for the pumps or ejectors, the type to be used, and a plot plan showing the dimensions of the site and its location with respect to homes and/or other structures.

Design Capacity

Depending upon the size of the service area and extent of development at the time of station design, the station's initial pumping capacity may be less than the ultimate. In such an installation, allowances for larger or additional pumping equipment must be made for future requirements. If the initial design capacity is in excess of anticipated initial flow, the effects of the minimum flow conditions must be estimated to be sure that the retention of sewage in the wet well will not create a nuisance and that the pumping equipment will operate with reasonable frequency.

Wet Well

Unless the station is for such size that variable speed drive pumps are justified, the shape of the wet well shall be cylindrical and the detention time should be such that the deposition of solids is minimized and the sewage does not become septic. Access hatches (4' x 4' minimum) shall be provided at the top of the deck and located as required by the District. The bottom of the wet well shall slope toward a flat bench area wide enough for the worker to stand on without depending on the sloped area as a footing surface.

Type of Pump Station

For a permanent station, an above ground factory-built unit or concrete structure shall be used, depending upon station capacity. Temporary

stations, if of limited size, may utilize manhole installed submersible pumps, subject to the approval of the District. In all stations, applicable safety codes shall be complied with, including but not limited to those pertaining to electrical installation, ventilation and the location of railings and equipment guards.

Pumps

The pumping equipment shall consist of centrifugal or wet well mounted submersible pumps (larger pump stations may require different pumps). Pump suction and discharge size shall be a minimum of 4-inch diameter. Pump drive units shall be electric. A sufficient number of pumping units shall be installed such that station capacity can be maintained with any one unit out of service. When required by the District, provisions for telemetry may be included in the station control system.

Station Piping

Discharge and header piping within the station shall be sized to adequately handle flows. Piping less than 4-inches in diameter should not be used for conveying sewage. Valves shall be readily accessible for maintenance. The discharge main leaving the station shall be equipped to receive discharge from a bypass line through a tee riser, flow valve and blank flange.

Odor Control

If required, the station shall have equipment and/or space provided for the purpose of chlorinating the upstream gravity line and/or the force main. Adequate provisions shall be made for the safe handling and storage of chlorine containers. As an alternate for force main odor control, provision shall be made, if directed for introducing air into the main. To facilitate this, the force main shall be designed to maintain a continuous uphill grade or, as a minimum, to be level. All force mains shall have a tap for introduction of either air or chlorine whether or not the odor control equipment is initially installed. The District will require odor control design features as deemed necessary.

Force Mains

Force main designs shall be such that velocities normally fall within a range of from 3 to 5 feet per second. If initial capacity of the state is considerably less than the ultimate, consideration should be given to the undesirable effect of extensive detention time within the force main. The feasibility of installing dual force mains to accommodate initial and ultimate flows should be investigated in such situations. Provision shall be made for introducing a cleaning pig into all force mains.

Electrical

All electrical components shall be protected from wet weather, station flooding, and corrosion to the satisfaction of the District. An emergency electrical receptacle that will run a minimum of one pump from a generator shall be provided.

General Design Details

1. Lift stations shall be provided with adjustable sewerage level control, sump pump, dehumidifier, ventilation, lights, locking entrance door, running time meter, emergency power connection, and, in the case if a steel shell station, cathodic corrosion control.

2. The design computations for the pumps or ejectors, the type to be used, and a plot plan showing the dimensions of the site and its location with respect to homes, and/or other structures.

3. The size and type of pipe to be used and the tentative alignment of the force main.

Section 12: Installation of Sewers

12.000 LINE AND GRADES

All necessary lines and grades will be provided by a Civil Engineer. Flow line elevations shall be established at all changes in grade and at 50 foot intervals.

12.100 TRENCH WIDTHS

The maximum width of trench measured at the top of pipe shall be governed in all cases by the size of the pipe to be installed therein.

The trench width shall not exceed the outside diameter of the pipe plus 12 inches. The sides of the trench shall be as nearly vertical as possible. If the trench widths at the top of the pipe are exceeded by any amount, for any reason, the Contractor shall provide at his own expense, stronger pipe, or improved bedding condition as approved by the General Manager.

12.200 EXCAVATION FOR SEWERS

Unless otherwise specified, the excavation for sewer pipe shall be an open trench, excavated to three inches below the flow line grade shown on the plans, or one inch below the outside diameter of the bell, whichever is greater. This undercutting shall be refilled with clean sand, pea gravel of granular material having a S.E. or 30, thoroughly compacted into place. Where the trench is in granular or sandy material with a sand equivalent of 30, the pipe may be bedded in the native material in lieu of importing bedding material as required above. The General Manager will be the sole judge of the suitability of the native material.

When the trench is in an existing paved area, the pavement shall be sawed or scored and broken ahead of the trenching operations. The proper tools and equipment shall be used in marking and breaking so that the pavement will be cut accurately on neat and parallel lines at the width required for the trench. If the existing pavement is concrete, it shall be sawed to a neat line six inches wider on each side than the trench width.

When water is encountered, the trench shall be kept dry in a manner approved by the General Manager, until the placing of the bedding material, laying and jointing of the pipe, and placing of the shading material has been completed and approved. Ground water pumped from the trench shall be disposed of in such manner as will not cause injury to public or private property or constitute a nuisance or menace to the public. The manner employed to dispose of water pumped from an excavation shall be subject to the approval of the General Manager.

12.300 BRACING AND SHORING

As required by the "Trench Construction Safety Orders" of the California State Industrial Accident Commission, sufficient bracing and shoring shall be installed in trenches to insure the safety of workmen and to protect and facilitate the work. Where practicable, all such bracing and shoring shall be removed from the trench as the backfilling proceeds.

12.400 TUNNELING

Tunneling shall not be permitted unless specified in the Special Provisions and indicated on the improvement plans; or approved by the General Manager during construction.

12.500 LAYING SEWER PIPE

The pipe shall be laid in conformity to the prescribed line and grade, with grade bars set and each pipe length checked to the grade lines. Three consecutive points shown on the same rate of slope shall be used in common, in order to detect any variation from a straight grade. In case any such discrepancy exists, the work shall be used either in the bottom or top of the trench to insure a straight alignment of pipe between manholes.

Pipe shall be laid continuously upgrade with the bell of the pipe forward. Each length of pipe shall be laid on a firm bed and shall have a true bearing for the entire length between bell holes. No wedging or blocking up of the pipe will be permitted.

Both bell and spigot and inside of pipe shall be clean before the joint is made and care shall be taken that nothing but the joint-making material enters the joints.

When, for any reason pipe laying is discontinued for an hour or more, the open end of all lines shall be closed with a closefitting stopper.

All pipe, shall be of an approved type and shall be in accordance with accepted best practice and/or recommendations of the manufacturer. Care shall be used to prevent chipping or cracking of either end of the pipe during installation. Both joint surfaces shall be clean before the joints are made.

12.600 BORING AND JACKING

Where specified or permitted, the sewer, usually in a conductor pipe, shall be placed under a roadway, railroad, or other obstruction by boring and jacking. The equipment and method of operation shall be approved by the General Manager before proceeding with the work.

Excavation for the boring operation shall be the minimum necessary to satisfactorily complete the work. Bracing and shoring shall be adequate to protect workmen and any adjacent structure or roadbed.

a) Installation of Conductor - The conductor shall closely follow the boring operation. The bored hole shall not be more than 0.1 foot larger in diameter than the outside diameter of the conductor. Guide rails shall be accurately set to line and grade to insure installation of the conductor within allowable limits. Conductor diameter shall be sufficient to allow adjustment of line and grade of the sanitary sewer pipe to meet allowable tolerances and to allow sand to be placed between the conductor and the sewer pipe. Tunnel liner ribs shall have minimum of three inches clearance from the sanitary sewer pipe. See Drawing 13.

b) Placing Sewer Pipe in Conductor - If necessary, to establish correct line and grade, cement mortar shall be placed on the invert of the conductor. Sewer pipe, of which any part of the joint is larger in diameter than the barrel of the pipe, shall be strapped to two redwood skids with steel straps. The redwood skids shall be near the center of each pipe section and shall be large enough to prevent any part of the joint from bearing on the conductor.

Sewer pipe with joints not larger than the pipe barrel shall be slid into place on two redwood skids which have been securely fastened to the invert of the conductor or strapped to the barrel of the pipe. In lieu of redwood skids, pipe with joints smaller than the pipe barrel shall be placed on a cement motor bed which has been shaped to hold the pipe on correct line and grade. Pipe sections shall be joined outside the conductor and then slid into place. The space between the sewer pipe and conductor shall be completely filled with clean, dry sand blown into place, or sand which has been sluiced into place. The method of placing sand shall be subject to the General Manager's approval.

c) Backpacking of Voids - Whenever, in the opinion of the General Manager, the nature of the soil indicates the likelihood of ground loss which would result in a greater space between the outer surface of the conductor or RCP than herein allowed, the Contractor shall take immediate steps to prevent such occurrences by installing a jacking head extending at least 18 inches from the leading edge of the conduit. The jacking head shall cover the upper two-thirds of the conduit and project not more than 1/2 inch beyond the conduit's outer surface. Excavation shall not be made in advance of this jacking head.

Voids greater than allowable shall be filled with sand, soil, cement, or grout as directed by the General Manager. Where voids are suspected, the General Manager may direct the Contractor to drill the conduit, to pressure inject grout to refusal, and then to repair the drilled hole. Grouting pressure shall not exceed 50 PSI at the nozzle.

When tunnel liner is used as the conductor, the space between the outer earth and the tunnel liner shall be pressure grouted to fill all voids. Grout shall consist of one part Portland Cement to three parts clean concrete sand, by volume, injected at a pressure as directed by the General Manager.

d) Tolerances - Extreme care shall be exercised by the Contractor to maintain line and grade during jacking operations. Maximum deviation from stated line and grade of tunnel liner or conductor pipe shall be such that the sanitary sewer pipe can be adjusted a sufficient amount within the conductor pipe or tunnel liner to achieve the line and grade shown on the plans. This adjustment shall be made to all pipe or tunnel liner to achieve the line and grade shown on the plans. This adjustment shall be made to all pipe deviating from line and grade and not merely to the sections of pipe nearest the end of the conductor or tunnel liner.

Directly jacked R.C.P. will be allowed a maximum deviation of 0.25 feet per 100 feet from intended line and grade unless more stringent tolerances are shown on the plans or indicated by the General Manager.

13.000 BEDDING AND INITIAL BACKFILL

Unless otherwise indicated on the drawings and in the Special Provisions, the pipe shall be placed on a firm, prepared bed of imported material. All loose material shall be removed from the new trench bottom before placing the bedding material. Bedding shall extend at least three inches below the pipe barrel for pipe diameters 10 inches and smaller and four inches below for larger diameters. Other requirements shall be as follows:

a) Sewer - Pipe in sizes up to 12 inches in diameter shall be bedded uniformly throughout their length to a width of at least 60 percent of the pipe's internal diameter. This bearing shall be achieved by shaping the bedding or by lightly "bouncing" the pipe to set it in to the bedding. The bedding material for pipes larger than 12 inches in diameter shall be shaped to provide uniform support the full length of the pipe to a width of at least 60 percent of the pipe's internal diameter. In lieu of shaping the bedding material, the Contractor may place bedding material to the spring line of the pipe, compacting it by shovel, slicing if gravel or by light tamping if sand, to provide this support. Care shall be sure not to disturb the pipe.

When the trench bottom is cobbled, or of any other material which, in the opinion of the General Manager, might allow loss of sand bedding, the bedding material shall be crushed rock or gravel graduated so that 100 percent will pass the 3/4 inch sieve and not more than 15 percent will pass the No. 8 sieve.

Where solid rock is encountered, the blasting is required near the pipe bottom. The rock shall be removed to a minimum depth of 12 inches below the bottom of the pipe, and the trench backfilled and compacted to a minimum relative compaction of 90 percent.

Pipe shall not bear on bells or joints. The trench shall be excavated at the pipe joints as necessary to provide at least 1½ -inches of bedding material below the bell. No wedging or blocking of the pipe will be permitted.

Initial backfill shall be the material placed from the top of the bedding to a point 6 inches above the top of the pipe and pipe bell. Pipe bedding and initial backfill for sewers shall be Type I, II, III, or IV, as shown on Drawing No. 11 and used as indicated on the plans; or shall be directed by the General Manager. Unless otherwise noted on the plans, bedding and initial backfill shall be Type I.

Type I Bedding and Initial Backfill (Sewer) - Bedding material shall be imported crushed rock, gravel, or sand, of which 100 percent shall pass the ¾ inch sieve and which shall have a minimum sand equivalent of 50, as determined by Test Method No. Calif. 217, except that for pipe 10 inches or less in diameter, 100 percent shall pass the ½-inch sieve. Initial backfill shall be selected from job excavated material so as to be finely divided and free from debris, organic matter, and pieces larger than one inch. The material shall be placed immediately after pipe joints have been completed, inspected, and passed by the General Manager. The material shall be carefully placed so as not to disturb or damage the pipe, and shall be brought up evenly on both sides. No special compaction need be provided.

Type II Bedding and Initial Backfill (Sewer) - Bedding material shall be imported crushed rock or gravel of which 100 percent shall pass the ¾ inch sieve and not more than 10 percent will pass the No.8 sieve, except that for pipe 10 inches or less in diameter, 100 percent shall pass the ½ inch sieve.

Initial backfill shall consist of materials as specified for Type II bedding placed to at least the spring line of the pipe, taking care to completely fill all spaces under the haunches. Compaction shall be obtained by shovel slicing, using care not to disturb the pipe. The remainder of the initial backfill shall be either material as specified for 12 inch or larger pipe, Type I bedding, compacted by shovel slicing if gravel, or by light tamping if sand, or job excavated material as specified for Type I initial backfill, carefully placed evenly on both sides of the pipe, so as not to disturb or damage the pipe and compacted to a density of at least 90 percent. Jetting will not be allowed.

Type III Bedding and Initial Backfill (Sewer) - Bedding material shall be the same as for Type II.

A Class "B" concrete partial cradle shall be placed above the bedding for a depth of ½ (one-half) the outside diameter of the pipe for Type III A, and ¾ (three-quarters) the outside diameter of the pipe for Type III B. The concrete shall be brought up evenly on both sides, with care being taken not to disturb or damage the pipe.

13.100 INITIAL BACKFILL

The trench shall be backfilled to a point six inches above the top of pipe using sand, fine earth, or other finely divided materials free from debris, organic matter, or pieces larger than one inch. The initial backfill shall be carefully placed so as not to disturb or damage the pipe, and shall be brought up evenly on both sides. It shall be placed in layers not exceeding four inches in depth and hand tamped to the spring line of the pipe. Compaction may be performed by flooding, jetting, or tamping.

13.200 INTERMEDIATE BACKFILL

Trench backfill above the initial backfill and to a point two feet below the top of the trench in highway rights-of-way or traveled areas, or one foot below the top of the trench in areas of horticulture; may be job-excavated material placed in any manner determined by the Contractor. However, until the total backfill above the top of the pipe exceeds three feet, machine- placed backfill material shall not be allowed to "free-fall" more than two feet.

Upon completion of the intermediate backfilling, the trench shall be jetted. Jetting shall be performed with suitable pipe jets approved by the General Manager, but in no case shall the jet pipe be less than one and one-half inches in diameter, nor shall the flow be less than 20 gpm. The jetting pipe shall be long enough to reach the bottom of the backfill layer. The jet pipe shall be sent to the bottom of the backfill layer and water shall be discharged continuously as the pipe is slowly withdrawn in order to thoroughly saturate the material and cause it to slump to its maximum compaction. Proceeding upgrade, jet points shall be staggered from side to side of the ditch at intervals not to exceed six feet, or closer if necessary to insure that the backfill takes all possible subsidence. All "bridges" in the backfill material shall be completely broken down during the jetting process.

No jetting operations will be allowed that will, in the opinion of the General Manager, jeopardize in any manner the stability of the pipe line in the trench. Jetting operations done any time except during regular working hours shall have prior approval of the General Manager.

The General Manager may designate the use of "Imported Select Backfill" in lieu of job-excavated material.

13.300 TOP BACKFILL

In highway rights-of-way or other traveled areas, the top two feet of backfill shall be placed and compacted to a minimum relative compaction of 95 percent. Jetting will not be allowed in the upper two feet in highway rights-of-way or traveled areas.

If the excavation is through an open area or area used for horticulture, the final 12 inches of backfill shall be essentially the original topsoil which shall have been removed and stockpiled separately. The top backfill shall be thoroughly compacted by wheel rolling, then refilled with topsoil, as necessary, to bring the trench up to the level of the surrounding ground.

13.400 OTHER BACKFILL REQUIREMENTS

Where cribbing is used in the trench, the fill shall be carried to a height sufficient to prevent the surrounding ground from cracking or caving into the trench before the cribbing is removed. Backfill around manholes and the pit excavated for boring operations shall be made in the same manner as above specified for trenches. However, whenever the excavated space between the outer wall of the manhole and the undisturbed earth is 12 inches or less, the backfill shall be sand, well compacted.

In highway rights-of-way or traveled areas where cover over the top of the pipe is 24 inches or less, backfill shall consist of aggregate base material.

If, at any time during a period of one year from the date of final acceptance of the project, there is any settlement of the trenches requiring repairs to be made, the General Manager may notify the Contractor to immediately make such repairs at the Contractor's expense.

Section 14: Manholes

14.000 MANHOLES

Manholes shall be watertight structures constructed by placing precast concrete bases and manhole barrows sections on a compacted base. Poured-in-place manholes shall not be used unless specifically called for in the Special Provisions and approved by the General Manager.

a) Whenever the excavation for a manhole exceeds the outside diameter of the manhole by 10 inches, measured along a radius line, the backfill shall be placed in layers not to exceed eight inches uniformly tamped to a relative compaction of not less than 90 percent for each layer. Compacted sand backfill for the entire depth may be substituted for the above.

b) The poured concrete base shall be made of Class "B" concrete with 1½ (one and one-half) inch maximum size aggregate. It shall rest on firm, undisturbed soil and shall be of the dimensions shown on the Standard Drawings.

c) All joint surfaces of precast sections and the face of the manhole base shall be thoroughly cleaned and wet down immediately before setting of the precast sections. All precast section joints shall be set in Kent seal or equivalent. Both the inside and outside of these joints shall be plastered with grout and the inside brushed to a smooth finish with a wet brush.

   Ram-Nek gaskets, Igas Rope sealer, Kent-Seal No. 2, or equal shall be used for bonding of manholes and grade rings.

d) Where sewer lines pass through manholes, the pipe shall be laid continuously as a whole pipe. After the manhole base and precast sections have been placed and sufficient time has elapsed to allow all concrete and grout to set, the top half of the pipe within the manhole shall be carefully cut off and the sides mortared, as shown on the Standard Drawings. All channels so formed shall be checked with a template and shall form a smooth flowing channel at all flow depths.

e) Temporary covers of three-eighths inch steel drawing of sufficient size to adequately cover the opening may be placed on the cone until the pavement is completed. Suitable locating ribs shall be welded to the underside of the cover to hold it in place during the grade and paving operations.

f) The throat of the manhole shall be made of precast concrete rings of the proper inside diameter. The minimum depth of throat permitted shall be one 3-inch ring between the cone and the frame. The maximum depth permitted shall be 12-inches of rings between the cone and frame.

g) When adjusting an existing manhole to grade the total depth of the throat from the top of the frame to the bottom of the throat exceeds 24 inches, the upper portion of the manhole shall be removed to the first full-sized manhole section. The upper portion shall then be reconstructed as outlined in Paragraphs f and g.

h) Before any work is started on adjusting or repairing a manhole, the channels in the base shall be covered with a heavy piece of canvas. This cover shall be kept in place during all work. Upon completion of the work, the wood strips and the canvas shall be removed from the manhole allowing no debris to fall or remain in the manhole, leaving the manhole in a clean condition.

15.000 ACCEPTANCE TEST

All sewers shall be tested for obstructions and for leakage unless otherwise specified.

a) Tests for Obstructions - All sewer lines shall be tested for obstructions and cleaned by balling and flushing. The ball shall be controlled by a tag line or rope, or sewer rods, and permitted to move slowly through the sewer.

Any obstructions or irregularities shall be removed or repaired by the Contractor. All testing, cleaning, and repairing shall be done to the satisfaction of the District. The Contractor shall provide all necessary materials and utilities for the tests and shall dispose of all waste, including water, at his own expense.

b) Tests for Leakage - After laying, backfilling, and compacting, all sewers shall be tested for leakage. The program of testing must fit the conditions as mutually determined by the District and the Contractor. The Contractor shall furnish all labor, tools, and equipment necessary to make the tests and to perform any work incidental thereto. The Contractor shall take all necessary precautions to prevent any joints from drawing while the pipelines or their appurtenances are being tested. He shall, at his own expense, correct any excess leakage and repair any damage to the pipe and its appurtenances or to any structures indicated by or resulting from these tests.

1) Air Test for Leakage - The Contractor shall test all sewers by means of the air test specified herein unless otherwise directed by the General Manager. Length of line tested at one time shall be limited to the length between adjacent manholes.

Air test procedure shall be as follows: Pressurize the test section to 3.5 psi and hold above 3.0 psi for not less than five minutes. Add air if necessary to keep the pressure above 3.0 psi. At the end of this five minute saturation period, note the pressure (must be 3.0 psi/min.) and begin the time period. If the pressure drops 0.5 psi in less than the time given in the following table the section of pipe shall not have passed the test.

Pipe Size	Minimum Time
4	2 min. 32 sec.
6	3 min. 50 sec.
8	5 min. 6 sec.
10	6 min. 22 sec.
12	7 min. 39 sec.
15	9 min. 35 sec.

For larger diameter pipe use the following formula:

Minimum time in seconds = 370 x pipe diameter in ft.

When the prevailing ground water is above the sewer being tested, air pressure shall be increased 0.43 psi for each foot the water table is above the flow of the sewer.

If the time for the pressure to drop 0.5 psi is 125 percent or less of the time given in the table, the line shall immediately be repressurized to 3.0 psi and the test repeated.

For eight inch and smaller pipe, only; if during the five minute saturation period, pressure drops less than 0.5 psi after the initial pressurization and air is not added, the section undergoing the test shall have passed.

If the test is not passed, the leak shall be found and repaired to the satisfaction of the District.

Building sewers shall be considered part of the lateral to which they are connected and no adjustment of test shall be allowed to compensate for the small diameter of the house sewers.

The pressure gauge used shall be supplied by the Contractor, shall have a minimum division of 0.10 psi, and shall have an accuracy of 0.05 psi. Accuracy and calibration of the gauge shall be certified by a reliable testing firm at six month intervals or when requested by the District. In addition, the General Manager may compare the Contractor's gauge with a District owned gauge at any time.

2) Hydrostatic Test - The hydrostatic test may be used in lieu of the air test only when authorized by the General Manager.

All sections of sewer shall be tested by inserting stoppers in the lower end of the sewer, the inlet sewer of the upper manhole, and any side sewers at intervening manholes, and filling the pipe and manholes with water to a point in the upper manhole not less than five feet above the invert of the pipe or prevailing groundwater elevation, whichever is higher. The maximum length of section tested shall be 1,000 feet.

The line shall be filled approximately four hours prior to testing. It shall be tested for at least two hours, maintaining the head specified above by measured additions of water. The sum of these additions shall be the leakage for the test period.

Maximum allowable head of water above any portion of sewer being tested shall be 15 feet. Where the difference in elevation between successive manholes exceeds 15 feet, a test tee shall be installed between manholes, and testing shall be carried on between the tee and the manhole.

The allowable leakage shall not exceed 0.066 gallon per minute per inch diameter, per 1,000 feet of mainline sewer being tested. This is equivalent to 500 gallons per day, per inch diameter, per mile.

Where the actual leakage in a section tested exceeds the allowable, the Contractor shall discover the cause and remedy it before the sewer is accepted. If the leakage is less than allowable and leaks are observed, such leaks shall be repaired.

c) Force Mains - Each section of pipe to be tested shall be slowly filled with water and all air expelled from the pipe. After the pipe has been filled, it shall be allowed to set for a period of not less than 24 hours. The pipe shall then be refilled to the original water level and subjected to a pressure of not less than 100 pounds per square inch or the service pressure plus 50 pounds, whichever is greater, for a period of two hours.

All exposed joints, bends, angles, and fittings shall be closely examined during the test. Any part of the line which proves to be defective shall be replaced and the line retested.

The maximum allowable leakage shall not exceed 100 gallons per 24 hours per mile of pipe per inch of nominal diameter.

d) Television Inspection - Each section of sewer main shall be televised to inspect new pipe construction prior to acceptance by the District.

The minimum allowable standing water in new construction shall not exceed the following:

6 inch pipe = ½-inch water
8 inch pipe = ½-inch water
10 inch pipe = ¾-inch water
12 inch pipe = 1-inch water

For pipes larger than 12 inches in diameter, standing water shall not exceed eight percent of the pipe diameter.

Pipes failing to meet the above minimum standards shall be corrected to the satisfaction of the District at the expense of the Contractor or Developer.

Section 16: Clean-Up and Public Convenience

16.000 CLEAN-UP

During the progress of the work, the Contractor shall keep the entire job site in a clean and orderly condition. Excess or unsuitable backfill material, broken pipe, or other waste material shall be removed from the job site. Spillage resulting from hauling operations along or across existing streets or roads shall be removed immediately by the Contractor. All gutters and roadside ditches shall be kept clean and free from obstructions. Any deviation from this practice shall have prior approval from the District.

16.100 PUBLIC CONVENIENCE

It shall be the Contractor's responsibility to provide the passage of public traffic through the work during construction. When work is to be done in existing traveled streets or roads, trench spoil shall be placed so as to offer the least possible obstruction and inconvenience to public traffic, and he shall have under construction no greater length or amount of work than he can prosecute properly with regard to the rights of the public.

The Contractor shall furnish such barricades, warning signs, and lights as required to protect traffic and, when deemed necessary by the General Manager, provide and station competent flagmen whose sole duty shall consist of directing through or around the work, and shall take all other necessary precautions to prevent damage or injury to persons or property. Bridges of approved construction shall be installed and maintained across trenches at all cross walks, intersections, and such other points where, in the opinion of the General Manager, traffic conditions make it advisable.

All fences, mailboxes, signs, etc., subject to interference shall be maintained by the Contractor until the work is completed, at which time they shall be restored to the condition existing prior to starting the work, or as shown on the plans or specified in the Special Provisions.

Convenience of abutting owners along the road or sewers shall be provided for as far as practicable. Convenient access to driveways, houses, and buildings along the line of the work shall be maintained, and temporary approaches to crossings of intersecting highways shall be provided and kept in good condition.

CONFINED SPACE PROCEDURE

FOR

SUSANVILLE SANITARY DISTRICT (SSD)

WASTEWATER TREATMENT PLANT
And
Collection System

2013

Table of Contents

Management Approval

Approving authority: This Confined Space Procedure for the SSD Wastewater Treatment Plant and collection system is approved by the following individuals:

_____ _____

Dale Soule (Date)
Vice-President, Board of Directors

_____ _____

Randall L. Harr (Date)
Legal Counsel

_____ _____

Randy O'Hern (Date)
General Manager
Chief Plant Operator

ATTEST:

_____ _____

Deborah L. Stampfli (Date)
Office Administrator

CONFINED SPACE PROCEDURE

Document Overview

Introduction
The intent of this document is to effectively communicate the requirements for SSD personnel to work in confined spaces.

Purpose

Purpose
This procedure is for use by personnel at SSD to protect employees from potential hazards associated with entering and working in confined spaces.

This document provides a general approach for work in confined spaces to satisfy the requirements of Title 8 of the California Code of Regulations, General Industry Safety Orders, Article 108, Confined Spaces.

Scope

Scope
The procedure covers the methods necessary to;

- Prevent employee injury, illness, or death from confined space hazards.
- Control confined space activity while performing inspection, repair, maintenance, etc.
- Comply with applicable state and federal regulatory standards for confined space activity.

Definitions

Attendant
A trained employee, stationed outside the confined space area who monitors Entrant working in the confined space.

Entrant
An employee who is trained and authorized to enter a confined space.

Blanking or Blinding
The absolute closure of a pipe or duct by the fastening of a solid drawing that completely covers the bore and that is capable of withstanding the maximum pressure of the pipe, line or duct with no leakage beyond the drawing.

Confined Space
A *Confined Space* is a space that;

- is large enough and so configured that an employee can bodily enter and perform assigned work; and
- has limited or restricted means for entry or exit (for example, tanks, vessels, storage bins, hoppers, vaults, and pits are spaces that may have limited means of entry); and
- is not designed for continuous employee occupancy.

A *Permit Required Confined Space (Permit Space)* is a confined space which requires a permit for entry because it;

- contains or has the potential to contain a hazardous atmosphere;

- contains a material that has the potential for engulfing an Entrant;
- has an internal configuration such that an Entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross-section; or
- contains any other recognized serious safety or health hazard.

A (c) (5) Confined Space is a confined space which;

- poses an actual or potential atmospheric hazard that can be eliminated through the use of continuous forced ventilation;
- *does not* contain engulfment hazards, entrapment hazards, or any other recognized serious safety hazard(s)
- monitoring and inspection data is available that documents and validates the two previous criteria.

A Non-Permit Confined Space is a confined space where;

- there are no physical or atmospheric hazards and no potential atmospheric hazards.

Emergency

An emergency is any occurrence (including any failure of hazard control or monitoring equipment) or event internal or external to the permit space that could endanger Entrants.

Engulfment

Engulfment is the surrounding and effective capture of a person by a liquid or finely divided (flowable) solid substance. The engulfment material can be aspirated to cause death by filling or plugging the respiratory system or it can exert enough force on the body to cause death by strangulation, constriction, or crushing.

Entry

Entry is the action by which a person passes through an opening into a confined space. Entry includes ensuing work activities in that space and is considered to have occurred as soon as any part of the Entrant's body breaks the plane of an opening into the space.

Entry Permit

A written or printed document which identifies the confined space where work is to be done and potential hazards that need to be evaluated and controlled before authorization is given for entry.

Entry Supervisor

A trained employee who verifies that all requirements for confined space entry have been met and cancels permits following completion of work.

Facility Management

The General Manager/Chief Plant Operator or designee

Gas Detector Functional Test

The gas detector functional test is sometimes referred to as a "Bump Test". The test includes the following steps:

STEP	ACTION
1	Verify that the detector has been calibrated according to manufacturer's guidelines
2	Insure that the battery charge is adequate
3	Purge the detector with clean air
4	Check the oxygen sensor with ambient air
5	Expose the detector to calibration gas and verify hydrogen sulfide, oxygen and L.E.L. alarm operation

Gas or Atmospheric Testing

Gas or atmospheric testing is the use of a gas detector to measure concentrations of certain toxic or explosive/flammable gases or oxygen in the atmosphere. The minimum parameters to be monitored and the order in which they shall be monitored are;

- oxygen concentration,
- lower explosive limit (LEL) and
- hydrogen sulfide concentrations.

A direct reading gas detector shall be used and by persons whose training is current for the detector used.

Hazardous Atmosphere

An atmosphere which exposes employees to harm from one or more of the following conditions:

- A flammable gas, vapor, or mist in excess of 10% of its lower explosive limit (LEL).
- An airborne combustible dust at a concentration that obscures vision at 5 feet or less.
- An atmospheric oxygen concentration below 19.5 percent or above 23.5 percent.
- The presence of toxic gases exceeding its permissible exposure limit or other governing criteria. Including but not limited to:
  - Equal to or more than 10ppm of hydrogen sulfide
  - 0.5 ppm of chlorine
  - 2 ppm of sulfur dioxide).
  - Specific monitoring programs will be developed if the presence of other toxic contaminants is suspected.
- The presence of any substance which could result in employee exposure in excess of its dose or permissible exposure limit (PEL).
- Any atmospheric condition recognized as immediately dangerous to life or health.

Hot Work Permit

A hot work permit is the employer's written authorization to perform operations (riveting, welding, cutting, burning and heating) capable of providing a source of ignition.

Inerting

Inerting is the process of removing a combustible atmosphere by displacing air in the confined space with a noncombustible gas (e.g. nitrogen).

Isolation

Isolation is the process of protecting a confined space from the release of energy and material into the space by such means such as:

- Blanking or blinding.
- Misaligning or removing sections of lines, pipes or ducts.
- A double block and bleed system.
- Disconnecting all mechanical linkages.

Training

Training is the formal instruction in this procedure and potential hazards that may be encountered. There shall be on file a list, verified by the SSD Safety Office, identifying the areas of training successfully completed by employees. Additional training subjects include:

- Gas detecting
- Respiratory protection
- First aid
- Cardiopulmonary resuscitation
- Powered communication
- Ventilation for safety
- Rescue

PROGRAM REQUIREMENTS

The hazardous nature of confined space work requires that facility management monitor and control such activity whether performed by employees or outside contractors. The following elements form the procedure as to how that monitor and control will be accomplished and controlled.

Written Program

Each facility with confined spaces and a need to enter them will establish a written program containing the following:

- Identification of confined space(s).
- Evaluation of potential hazards associated with specific confined spaces.
- Control plans for addressing physical and atmospheric hazards prior to authorizing entry into the confined space.
- Confirmation that potential confined space hazards have been addressed and procedures are in place to monitor conditions prior to entry.
- Emergency response plan in the event of a mishap.

Confined Space Survey

Facility management will conduct a survey of the premises to locate and identify those spaces meeting the Permit Required Confined Space definition. The inventory will be recorded on the Confined Space Survey form. The facility will maintain a confined space inventory and have it reviewed and updated annually.

Posting And Labeling Confined Spaces

All confined spaces listed in the Permit Required Confined Space Survey form will be posted and labeled as follows:

- Will be in English and predominant language of non-English speaking workers.
- Contain the following wording: "Danger - Permit Required Confined Space, Do Not Enter".
- Include the Emergency phone numbers.

Hazard Identification And Evaluation

Facility management will identify and evaluate the potential or known hazards that need to be controlled in each confined space. The evaluation will include any work activity that has the potential to increase existing hazards or generate additional ones. The Hazard Identification and Evaluation form will be used for assessing each confined space listed in the Permit Required Confined Space Survey form.

The following hazards will be considered:

- Flammable or explosive hazards
- Oxygen level (deficiency or excess)
- Toxic substances (by contact or inhalation)

- Physical hazards other than from the atmosphere in the confined space which may result in traumatic injuries, e.g., hot surfaces, sharp edges, pinch points, etc.
- Engulfment or entrapment conditions

Hazard Control

The facility confined space program will include procedures and work practices that protect employees who enter and work in confined spaces. If it becomes necessary for a person to enter a confined space, safeguards will be provided that prevent an employee from entering until the identified potential hazards have been checked, found safe and proper precautions taken. To ensure that all areas of the confined space are safe, readings will be taken within various locations of the confined space using approved equipment and techniques. These readings are to be taken simultaneously or in the order shown below.

Oxygen level (Deficiency or Excess)

The atmosphere within the confined space will be tested with approved testing equipment, by personnel trained in the use of that equipment, to determine that the air is breathable and contains sufficient oxygen to support normal function. employees will not be permitted to work without approved respiratory equipment where the oxygen content of the air is less than 19.5% by volume. A Positive Pressure Continuous Flow Respirator, self-contained breathing apparatus (SCBA) or a Supplied Air Respirator (SAR) with a 10-minute escape pack are considered approved respiratory equipment.

If the atmosphere is found to be non-breathable or does not contain sufficient oxygen to support life, the confined space is to be flushed with equipment of sufficient air ventilation. The intake of air for ventilators will be located so as to prevent contamination of the air by the exhaust of the air compressor unit. The air supply will also be free from harmful dusts, fumes, mists, vapors, gases or other hazardous substances. This air supply will be tested in the same manner and with the same equipment as used to test air within the confined space itself.

Oxygen excess (23.5 %) spaces will not be entered until the source of the enrichment is determined and controlled and further tests reflect normal values.

Flammable or Explosive

The atmosphere within the confined space will be tested with approved testing equipment to determine the presence of combustible gases, vapors or dust. Entry will not be permitted until, at least, all of the following have been accomplished:

- The source of the combustibles has been isolated.
- The confined space flushed or purged to the extent that testing indicates the combustible gases or vapors of less than 10% of their LEL are present.
- Airborne combustible dust does not obscure vision to less than 5 feet.
- A Confined Space Entry Permit has been issued and posted near the entry to the confined space.

When work to be done within the confined space involves the use of flame, arc, spark or other sources of ignition, frequent testing or continuous monitoring will be done to determine the concentration of combustible vapors as the work progresses. If the concentration reaches or exceeds 10% of the LEL of the vapor present, all sources of ignition will be extinguished and employees removed until the concentration is
reduced below 10% of the LEL.

Toxic Substances

When toxic materials are determined, or suspected, which could result in employee exposure when entering the confined space, the following will apply:

- The atmosphere within the confined space will be tested with approved testing equipment to determine the presence of toxic substances. The presence of hydrogen sulfide and carbon monoxide will be specifically tested for, along with any other potentially toxic substance within the space. Entry will not be permitted until:
  - The source of the toxic substances has been isolated.
  - The confined space flushed or purged to the extent that testing indicates less than the PEL is present.
  - A Confined Space Entry Permit has been issued.
- If it is practical, the confined space will be emptied, flushed or otherwise purged of the hazardous substance until safe limits are reached. If it is not practical to purge the confined space, the employee will be protected from exposure by the use of appropriate protective clothing and breathing apparatus.
- Welding, burning or heating in a confined space may generate toxic fumes and gases and may result in hazardous atmospheric conditions. All employees in such a confined space will be protected with adequate ventilation and/or air supplied Personal Protective Equipment (PPE). A "Hot Work Permit" is also required to perform such work in the confined area.

Note: Air readings within the space will be taken at 4 foot vertical intervals above the ground or floor level. Due to stratification of gases resulting from different vapor densities, readings are to be taken every four (4) feet in vertical spaces and taken every four (4) feet horizontally in advance of the Entrants' direction of travel in horizontal spaces containing baffles.

Physical Hazards

Existing or potential work area hazards such as slippery floors, unguarded openings, temperature, darkness, pinch points, sharp edges, compressed steam, gases and liquids, hot materials, etc. need to be controlled.

Any equipment or machinery, which if accidentally activated may create a hazard in the confined space, will be locked and/or tagged out. Pipes or lines leading into the confined space, which may accidentally discharge into the confined space will be blanked or disconnected. Isolation of the confined space will be achieved as much as is feasible by purging, inerting, flushing, or ventilating as necessary to eliminate or control hazards. Non-sparking tools, low-voltage lighting and low-voltage electrical used in hazardous and/or wet confined spaces.

Engulfment or Entrapment

A confined space where a finely divided solid substance or liquid is stored can ' surround and bury a person working in the area. Such materials stored in bins, hoppers, silos, etc., can asphyxiate the Entrant as the engulfing material is inhaled, or through compression of the torso. A safety lifeline with full body harness and mechanical advantage retrieval device will be used by employees whenever entering confined spaces where the potential for engulfment exists.

Duties Of Permit Confined Space Entry Personnel

Confined space activity requires the team work of trained individuals to ensure that the work required is done safely. Work in such areas will be considered hazardous and a buddy system, using an Entrant and Attendant is required whenever entry is made. In addition, management needs to periodically check on confined space work as it progresses to ensure that the safest possible conditions exist.

The following assigned duties are necessary to ensure that confined space activity is controlled and done safely.

Attendant

Facility procedures will ensure that each Attendant;

- knows the hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of the exposure.
- is aware of possible behavioral effects of hazard exposure in Entrant.
- continuously maintains an accurate count of Entrants in the confined space.
- remains outside the confined space during entry operations until relieved by another Attendant.
- communicates with Entrant as necessary to monitor Entrant status and to alert Entrants of the need to evacuate the confined space (general and powered communication training required).
- monitors activities inside and outside the confined space to determine if it is safe for Entrant to remain in the confined space and orders the Entrant to evacuate the confined space immediately under any of the following conditions:
    - If the Attendant detects a prohibited condition.
    - If the Attendant detects the behavioral effects of hazard exposure in an Entrant.
    - If the Attendant detects a situation outside the confined space that could endanger the Entrants.
    - If the Attendant cannot effectively and safely perform all the duties required.
- summons rescue and other emergency services as soon as the Attendant determines that Entrants may need assistance to escape the confined space.

- takes the following actions when unauthorized persons approach or enter a confined space while entry is underway:
  - Warn the unauthorized persons that they must stay away from the confined space.
  - Advise the unauthorized persons that they must exit immediately if they have entered the confined space.
  - Inform the Entrant and the Entry Supervisor if unauthorized persons have entered the confined space.
- performs non-entry rescues as specified by the facility's rescue procedure. Performs no duties that might interfere with the Attendant's primary duty to monitor and protect the Entrant.
- are trained in basic First Aid and Cardiopulmonary Resuscitation (CPR).

Entrant

Facility procedures will ensure that all Entrants;

- know the hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of the exposure.
- is provided with, and is trained to use equipment properly as required.

- communicate with the Attendant as necessary to enable the Attendant (General and powered communication training required):
  - To monitor Entrant status.
  - To enable the Attendant to alert Entrant of the need to evacuate the space as required.
- alerts the Attendant whenever;
  - the Entrant recognizes any warning signs or symptoms of exposure to a hazard.
  - the Entrant detects a prohibited condition.
- exits from the confined space as quickly as possible whenever:
  - An order to evacuate is given by the Attendant or the Entry Supervisor.
  - The Entrant recognizes any warning signs or symptoms of exposure to a hazard.
  - The Entrant detects a prohibited condition.
  - An evacuation alarm is activated.

Entry Supervisors

Facility procedures will ensure that each Entry Supervisor;

- knows the hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of the exposure.
- verifies by checking before certifying the Entry Permit and allowing entry to begin that;
  - the appropriate entries were made on the Confined Space Entry Permit.
  - that all tests specified by the Entry Permit have been conducted.
  - that all procedures and equipment specified by the Entry Permit are in place.
- terminates the entry and cancels the Confined Space Entry Permit as required.
- verifies that rescue services are available and that the means for summoning them are operable.
- removes unauthorized persons who enter or who attempt to enter the permit space during entry operations.
- determines that entry operations remain consistent with the terms of the Confined Space Entry Permit and that acceptable entry conditions are maintained whenever responsibility for a Confined Space Entry Permit operation is transferred between individuals and at intervals dictated by the hazards and operations performed within the confined space.

Rescue Service

The following requirements apply to facilities that have employees enter confined spaces to perform rescue service. Facility procedures will ensure that each member of the rescue service;

- is provided with, and is trained to use properly, the Personal Protective Equipment (PPE) and rescue equipment necessary for making rescues from confined spaces.
- will be trained to perform the assigned rescue duties. Each member of the rescue service will also receive the training required of Entrant.
- will practice making confined space rescues at least once every 12 months, by means of simulated rescue operations in which they remove dummies, mannequins, or actual persons from actual confined spaces or from representative confined spaces. Representative confined spaces will simulate the types of permit spaces from which rescue is to be performed with respect to opening size, configuration, and accessibility.
- will be trained in basic first-aid and in Cardiopulmonary Resuscitation (CPR). At least one member of the rescue service holds current certification in first-aid and in CPR will be available.

When a facility arranges to have persons other than the facility's employees perform confined space rescue service, facility procedures will;

- confirm the contractor is equipped and capable of making rescue entries, extractions, provide aid and all other required duties.
- inform the rescue service of the hazards they may confront at the facility.
- provide the rescue service with access to all confined spaces from which rescue may be necessary so that the rescue service can develop appropriate rescue plans and practice rescue operations.
- have retrieval systems or methods to facilitate non-entry rescue whenever an Entrant enters a confined space unless the retrieval equipment would increase the overall risk of entry or would not contribute to the rescue of the Entrant. Retrieval systems will meet the following requirements:
- require Entrants to use a chest or full body harness, with a retrieval line attached at the center of the Entrant's back near shoulder level, or above the Entrant's head.
    - Wristlets/anklets may be used in lieu of the chest or full body harness if the Safety Coordinator can demonstrate that the use of a chest or full body harness is infeasible or creates a greater hazard and that the use of Wristlets/anklets is the safest and most effective alternative.
    - The other end of the retrieval line, which extends outside of the entry to the confined space, will be attached to a mechanical device or fixed point outside of the confined space in such a manner that rescue can begin as soon as the rescuer becomes aware that rescue is necessary.
    - A mechanical device will be available to retrieve personnel vertically from a top entry to a confined spaces more than 5 feet deep.
- provide a Material Safety Data Sheets (MSDS) or other similar written information if an injured Entrant is exposed to a substance that requires an MSDS at the work site. That MSDS or written information will be made available to the medical facility treating the exposed Entrant.

Confined Space Entry Permit

The Confined Space Entry Permit will contain all of the necessary information for managing safe entry into the confined space. The Confined Space Entry Permit will, as a minimum, contain all of the following:

- The permit space to be entered.
- The purpose of the entry.
- The date and the authorized duration of the Entry Permit.
- The Entrant within the permit space are stated by name or by such other means, e.g., through the use of rosters or tracking systems, as will enable the Attendant to determine quickly and accurately, for the duration of the Entry Permit, which Entrant are inside the permit space.
- The names of the personnel to serve as Attendants.

- The name of the individual to serve as Entry Supervisor, with a space for the signature or initials of the Entry Supervisor who authorized entry.
- The hazards of the permit space to be entered.
- The measures used to isolate the permit space and to eliminate or control permit space hazards before entry.
- The acceptable entry conditions.
- The results of initial and periodic tests performed, accompanied by the names or initials of the testers and by an indication of when the tests were performed.

- The Rescue and Emergency Services that can be summoned and the equipment to use and the numbers to call for summoning the Rescue and Emergency Services.
- The communication procedures used by Entrant and Attendants to maintain contact during the entry.
- Equipment provided, e.g., PPE, testing equipment, communications equipment, alarm systems, and rescue equipment.
- Any other information whose inclusion is necessary, given the circumstances of the particular confined space, to ensure employee safety.
- Any additional permits, e.g., Hot Work Permit, that have been issued to authorize work in the permit space.
- The Entry Permit will be displayed prominently at the job site for visual inspection.
- Keep completed and canceled permits on file for one year.

Training

The Confined Space Procedure will include training of the Attendants, Entrant and the Entry Supervisors so they can work safely in and around a confined space and assist in rescue operations. This training will provide the understanding, knowledge, and skills necessary to perform their duties assigned under this subsection. General training will be provided annually and specific procedures reviewed prior to authorizing work in confined spaces. Training will be provided to each affected employee:

- Before the employee is first assigned confined space duties.
- Before there is a change in assigned duties.
- Whenever there is a change in permit space operations that presents a hazard about which an affected employee has not previously been trained.
- Whenever the Safety Coordinator has reason to believe either that there are required deviations from the Confined Space Entry Permit procedure or that there are inadequacies in the affected employee's knowledge or use of these procedures.

The training will establish employee proficiency in the duties stated in this subsection. This may result in additions or revisions needed to be made to the existing Confined Space Procedure to achieve compliance with the requirements of this subsection.

Facility will certify that the required training has been accomplished. The certification will contain each employee's name, the signatures or initials of the trainers, and the dates of training. The certifications will be available for inspection by employees and their authorized representatives.

Equipment

The Confined Space Procedure will include methodology to provide, maintain and ensure the proper use of communication and warning equipment, PPE, rescue equipment, respiratory equipment, and testing and monitoring equipment. Examples of these equipment are as follows:

Communication and Warning Equipment

- A voice or alarm activated explosion-proof equipment

Personal Protective Equipment

- Body protection
- Eye and face protection Hand protection

- Head protection
- Hearing protection
- Floatation devices

Rescue Equipment

- Full Body or chest harness
- Life lines
- Retrieval system with mechanical advantage system
- Winch with fall arrest capabilities
- Fire extinguishers

Respiratory Protection

- Filter masks
- Self Contained Breathing Apparatus (SCBA}
- Positive Pressure Continuous Flow Respirator (PPCFR)
- Supplied Air Respirators (SAR) with a 10 minute escape pack

Testing and Monitoring Equipment

- Oxygen levels
- Flammability and explosibility limits
- Toxicity levels (CO & H_2S minimum)

General Instructions

Emergency egress will be provided for employees working within the confined space and adequate fire extinguishing equipment to cope with the potential hazard will be nearby.

Prior to entry into a confined space, consideration will be given to life support systems in the event of equipment and power failure. A plan of action is required. For example, in the event of an electrical failure, air supply pumps, lights, warning systems and other electronically powered devices would be inoperative.

A plan of action will be prepared to provide a means of rescue from the confined space in the event of emergency. Consideration will be given that a person may be unconscious or not able to assist in being rescued. The action plan will also protect the rescue service from exposure to the same hazards as the person being rescued.

Prior to entry into the confined space, emergency equipment such as life lines, safety belts, fire extinguishers, breathing equipment and other devices appropriate to the situation will be ready and available. At least one person will be immediately available who has been instructed in CPR techniques. This person's knowledge of life support systems and life saving techniques will be verified.

A set of general confined space Rules are given in Appendix B of this subsection of the PSM program. The CAL/OSHA regulations for confined space are given in Appendix C of this subsection of the PSM program.

Contractors Work

When the facility arranges to have contractor employees perform work that involves permit space entry, facility management will:

- Inform the contractor that the workplace contains permit spaces and that permit space entry is allowed only through compliance with the facility's Confined Space Procedure.
- Apprise the contractor of the hazards identified and the facility's experience with the confined space that requires a Confined Space Entry Permit for work in the confined space in question.

- Apprise the contractor of any precautions or procedures that the facility -has implemented for the protection of employees in or near the confined space where contractor employees will be working.
- Coordinate entry operations with the contractor, when both facility employees and contractor employees will be working in or near confined spaces.
- Debrief the contractor at the conclusion of the entry operations regarding the Confined Space Procedures followed and any hazards confronted or created in the confined spaces during entry operations.
- In addition to complying with the confined space requirements that apply to all employees, each contractor who is retained to perform confined space entry operations will:
  - Obtain any available information regarding confined space hazards and entry operations from the facility's Safety Coordinator.
  - Coordinate entry operations with the Entry Supervisor, when both facility employees and contractor employees will be working in or near confined spaces.
  - Inform the facility management, through a debriefing, of the Confined Space Procedures that the contractor will follow and any hazards confronted or created in the confined space.

Record Keeping

The following records of the Confined Space Procedure will be kept on file for at least five years:

- Confined Space Survey forms
- Hazard Identification and Evaluation forms
- Confined Space Qualified Personnel forms
- Confined Space Entry Permits that are canceled
- Confined Space Entry Problem forms
- Documents for inspection, repair, and calibration of all monitoring equipment
- Documents for inspection and maintenance of all retrieval systems, ropes, harnesses, and other entry equipment
- Medical evaluation and surveillance records will be retained for the duration of the worker's employment (plus an additional five years)

Training records will be kept on file**,** for at least five years that contain the following:

- Date of training
- Names and signatures of instructors
- Location of training
- Objectives of training
- Names and signatures of students
- Additional miscellaneous comments section
- Training reports and certificates will be available for inspections by employees and authorized representatives

Management Of Confined Space Entry

Facility's Confined Space Procedures will contain a Confined Space Entry Permit system that controls all aspects of confined space activity. The Entry Permit will have sufficient information on the characteristics of the confined space and potential hazards to implement effective controls prior to entry. The Entry Permit system will contain the following:

- A Facility Manager will initiate the Entry Permit system by selecting individuals for the positions of Entry Supervisor, Attendant(s), Entrant, and, if applicable, the rescue service from the list of people given in the Confined Space Qualified Personnel form. The list will have been complied by the Safety Coordinator based upon the training records in the PSM files.

- A Facility Manager will complete the Confined Space Pre-Entry Checklist form and submit it to the Entry Supervisor.
- The Entry Supervisor will review the Confined Space Pre-Entry Checklist and request the submitting Facility Manager to provide further information and complete activities that need to be done before the Confined Space Entry Permit can be issued.
- The Entry Supervisor will certify and issue the Confined Space Entry Permit to the checklist submitter when these requests have been accomplished and is satisfied that all required precautions have been taken and the necessary equipment is provided for safe entry and work in the confined space.
- The completed Entry Permit will be made available at the time of entry to all Entrants, by posting it at the entry portal or by any other equally effective means, so that the Entrant can confirm that pre-entry preparations have been completed.
- The duration of the Entry Permit may not exceed the time required to complete the assigned task or job identified on the Entry Permit.
- The Entry Supervisor will terminate entry and cancel the Entry Permit when:
  - The entry operations covered by the Entry Permit have been completed.
  - The duration of the Entry Permit stated on the Entry Permit has been
  - exceeded.
  - A condition that is not allowed under the Entry Permit arises in or near the subject confined space.
- Any problems encountered during the entry operation will be noted and documented by the Entry Supervisor for the Safety Coordinator on the Confined Space Entry Problems form.
- The canceled Entry Permit, the Confined Space Entry Problems form, the associated Confined Space Pre-Entry Checklist and any other related documentation will be submitted to the Safety Coordinator to be filed in the PSM files**.** The Safety Coordinator will retain each canceled Entry Permit and associated documentation for at least five (5) years.
- The Safety Coordinator will convene a meeting of the Environmental Engineer, Wastewater Treatment Plant Manager, Mechanical/I&C Supervisors and the Safety Coordinator for an annual review of the Entry Permit problems and other concerns with the Confined Space Procedure. Any necessary revisions to the Confined Space Procedure will be determined based upon the results of this review.

Personnel Responsibilities

The following describes the persons who will be involved in the Confined Space Procedure and summarizes their responsibilities.

General Manager / Chief Plant Operator

- Assisted by the Entry Supervisor conduct confined space inventory and do hazard identification and evaluation for each confined space.
- Submit Confined Space Survey and their Hazard Identification and Evaluation results to the Safety Coordinator. Update as necessary and resubmit.
- Train personnel for confined space assignments as Entry Supervisor, Attendant(s), Entrant, and, if applicable, the rescue service.
- Initiate request for Confined Space Entry Permit by selecting individuals for Entry Supervisor, Attendant(s), Entrant(s), and, if applicable, the rescue service.
- Complete the Confined Space Pre-Entry Checklist and submit to the Entry Supervisor.
- Provide information and complete activities requested by Entry Supervisor from checklist.
- Attend annual meeting for review of Entry Permit problems and other Confined Space Procedure.
- Help determine necessary revisions to the Confined Space Procedure from the review meeting.

Attendant

- Attend and satisfactorily complete confined space training when notified.
- Perform Attendant duties when required by Confined Space Entry Permits.
- Review the Confined Space Entry Permit to confirm that pre-entry preparations have been completed.
- Notify Entry Supervisor of any problems that occurred during the entry operation.

Entrant

- Attend and satisfactorily complete confined space training when notified.
- Perform Entrant duties when required by Confined Space Entry Permits.
- Review the Confined Space Entry Permit to confirm that pre-entry preparations have been completed.
- Notify Entry Supervisor of any problems that occurred during the entry operation.

Entry Supervisor

- Attend and satisfactorily complete confined space training when notified.
- Perform Entry Supervisor duties when required by Confined Space Entry Permits.
- Review submitted Confined Space Pre-Entry Checklist and request information and activities as necessary of the submitter to provide sufficient information to be able to complete a Confined Space Entry Permit.
- After satisfactory accomplishment of requests from checklist, certify and issue the Confined Space Entry Permit to the checklist submitter.
- Post the Confined Space Entry Permit at the entry portal to the confined space.
- Cancel the Confined Space Entry Permit when required and submit to the Safety Coordinator.
- Document any problems encountered during entry operation and submit to the Safety Coordinator.
-

Safety Coordinator

- Request Facility Managers to conduct confined space inventory and do hazard identification and evaluation for each confined space. -
- Receive and file results of Confined Space Survey and their Hazard Identification and Evaluation from the Facility Managers.
- Provide materials to the General Manager / Chief Plant Operator for training personnel for confined space assignments as Entry Supervisor, Attendant(s), Entrant, and, if applicable, the rescue service.
- Compile list of individuals for Entry Supervisor, Attendant(s), Entrant, and, if applicable, the rescue service from training records and distribute to the Facility Managers. Update as necessary and distribute.
- Receive the Confined Space Entry Permit and file in the PSM records.
- Receive documentation on Confined Space Problems and file in the PSM records.
- Convene annual meeting for review of Entry Permit problems and other Confined Space Procedure meetings.
- Determine necessary revisions to the Confined Space Procedure from the review meeting.

Forms

Confined Spaces forms include:

- Confined Space Survey
- Hazard Identification And Evaluation
- Confined Space Qualified Personnel
- Confined Space Pre-Entry Checklist
- Confined Space Entry Permit
- Confined Space Problems.

Document Management

The documentation associated with the Confined Space Procedure will be managed as follows:

Confined Space Survey
The survey of the confined spaces in the facility will be conducted by the General Manager and the Entry Supervisor for those areas with which they are responsible. They will document their results in the Confined Space Survey form and submit the forms to the Safety Coordinator. They will update and distribute the forms as necessary. The forms will be filed by the Safety Coordinator in the Operating Procedures for confined spaces in the PSM files.

Hazard Identification and Evaluation
Each of the confined spaces listed in the Confined Space Survey will have their hazards identified and evaluated by testing and observation by the General Manager and the Entry Supervisor for the areas with which they are responsible. They will document the results in the Hazard Identification and Evaluation form and submit the forms to the Safety Coordinator. They will update and distribute the forms as necessary. The forms will be filed by the Safety Coordinator in the operating procedures for confined spaces in the PSM files.

Confined Space Qualified Personnel
The Safety Coordinator will compile a list of individuals who are qualified as Entry Supervisor, Attendant(s), Entrant, and, if applicable, the rescue service from the training records in the training files of the PSM program. - These names will be listed in the Hazard Identification And Evaluation form and copies distributed to the General Manager. The form will be filed by the Safety Coordinator in the Operating Procedures for confined spaces in the PSM files. The Safety Coordinator will update and distribute the form as necessary.

Confined Space Pre-Entry Checklist
The General Manger will prepare a Confined Space Pre-Entry Checklist when a confined space is required to be entered in the areas with which they are responsible. They will submit the checklist to the Entry Supervisor which they have selected from the list of Entry Supervisors in the Confined Space Qualified Personnel form. The Entry Supervisor will review the checklist and request information be provided and activities as necessary of the submitter to provide sufficient information to be able to complete a Confined Space Entry Permit. When the Entry Supervisor is satisfied that the checklist related effort is completed, the checklist will be sent to the Safety Coordinator to be put in the Operating Procedures for confined spaces file in the PSM files.

Confined Space Entry Permit
The Entry Supervisor will certify and issue the Confined Space Entry Permit to the checklist submitter when the requests from the checklist have been accomplished and is satisfied that all required precautions have been taken and the necessary equipment is provided for safe entry and work in the confined space. The completed Entry Permit will be made available at the time of entry to all Entrants by posting it at the entry portal, or by any other equally effective means, so that the Entrants can confirm that pre-entry preparations have been completed.

The Entry Supervisor will terminate entry and cancel the Entry Permit when the entry operations covered by the Entry Permit have been completed; the duration of the Entry Permit stated on the Entry Permit has been exceeded; or a condition that is not allowed under the Entry Permit arises in or-near the subject confined space. The canceled Confined Entry Permit will be sent to the Safety Coordinator to be put in the Operating Procedures for confined spaces file in the PSM files.

Confined Space Problems
Any problems encountered during the entry operation will be noted and documented by the Entry Supervisor on the Confined Space Entry Problems form. The form will be filed by the Safety Coordinator in the Operating Procedures for confined spaces in the PSM files**.** It will be

reviewed in the annual meeting to consider entry problems and possible revisions needed with the Confined Space Procedure.

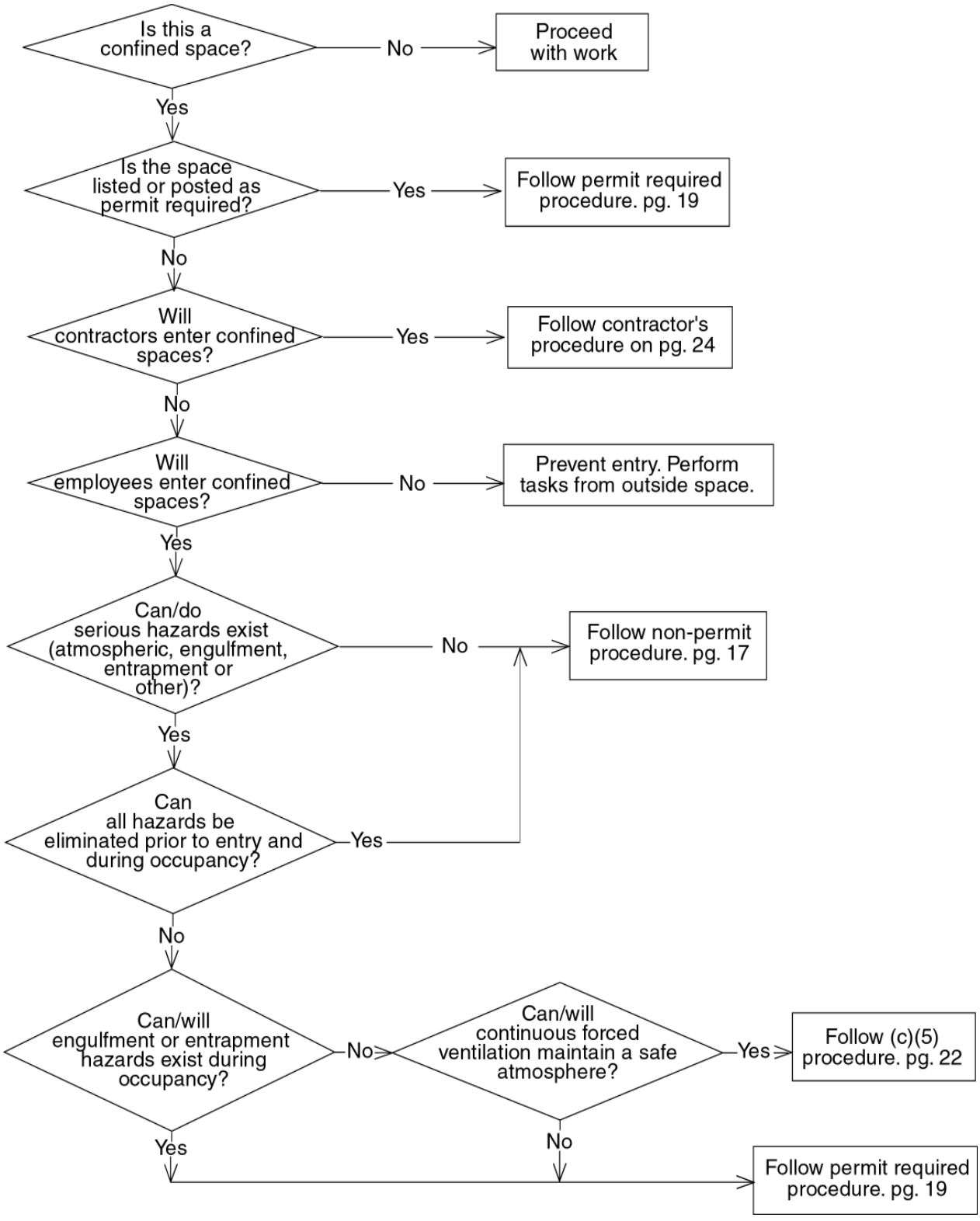
The Safety Coordinator will file the list of attendees, meeting minutes and results from the meetings along with all other documentation in the Operating Procedures for confined spaces in the PSM files. These files will be kept for a period of at least five (5) years.

Confined Space Decision Flow Chart

Purpose

This Confined Space Decision Flow Chart is provided to assist in the selection of the appropriate Confined Space Procedure to use depending upon existing and/or potential hazards in the space.

Continued on next page


Is this a confined space?
No
Proceed with work
Yes
Is the space listed or posted as permit required?
Yes
Follow permit required procedure. pg. 19
No
Will contractors enter confined spaces?
Yes
Follow contractor's procedure on pg. 24
No
Will employees enter confined spaces?
No
Prevent entry. Perform tasks from outside space.
Yes
Can/do serious hazards exist (atmospheric, engulfment, entrapment or other)?
No
Follow non-permit procedure. pg. 17
Yes
Can all hazards be eliminated prior to entry and during occupancy?
Yes
No
Can/will engulfment or entrapment hazards exist during occupancy?
No
Can/will continuous forced ventilation maintain a safe atmosphere?
Yes
Follow (c)(5) procedure. pg. 22
Yes
No
Follow permit required procedure. pg. 19

Non-permit Confined Space

General

All confined spaces shall be considered permit-required confined spaces until the pre-entry procedures identified below demonstrate otherwise.

Pre-Entry Procedures

The following steps shall be followed before any employee is required or permitted to enter a non-permit confined space:

STEP	ACTION
1	A pre-entry check list (see appendix) must be completed by the General Manager before entry. The checklist: • verifies completion of steps 2 through 6 listed below; and • shall be kept at the job site for the duration of the job; • shall be voided and a new checklist completed if the space is left unattended.
2	All pumps and lines, which may reasonably cause contaminates to enter into the space, shall be doubly isolated whenever possible. The pumps and lines shall be isolated to prevent engulfment, the development of dangerous air contamination, or oxygen deficiency/enrichment by: • Blinding, or • Disconnecting, or • Locking/Blocking out, or • By use of other effective means • Relieve stored energy Laterals to sewers or storm drains shall require isolation if experience or knowledge of industrial use indicates that a reasonable potential for dangerous air contamination or engulfment hazards exist. NOTE: *If isolation requires entry into the space, the provisions identified in the Permit required Confined Space section must be implemented.*
3	Assess the surrounding area for hazards such as drifting vapors from tanks, piping, sewers, etc. Remove or provide safeguards for all hazards before proceeding.
4	Any condition(s) making it unsafe to remove an entrance cover shall be eliminated before the cover is removed.
5	Promptly guard, the opening with a railing, temporary cover, or other suitable temporary barrier which is appropriate to prevent an accidental fall through the opening and to protect employees working in the manhole from foreign objects entering the manhole.
6	The non-permit confined space atmosphere shall be tested to determine if: • Oxygen deficiency / enrichment exists • Dangerous air contamination exists A Entry Supervisor who has successfully completed gas detector training for the detector used shall perform the testing.
7	When unsafe conditions are detected by testing or other means, the work area shall be ventilated by mechanical means and otherwise made safe before entry. Continuous ventilation is always required while work is performed when: • Combustible or explosive gas vapors have been initially detected. • Organic solvents are used in the work procedure. • An open flame is used in the work procedure. • The manhole or vault is located in that portion of a public right-of-way open to vehicular traffic and/or exposed to a seepage of gas or gases. • A toxic gas or oxygen deficiency is found.
8	Atmospheric test results shall be recorded on the Pre-Entry Checklist. Affected employees shall be able to review test results.

9	The Entry Supervisor shall certify, by signing the Non-Permit Confined Space Pre-Entry Checklist that, based upon the results of the pre-entry testing, all hazards have been eliminated. NOTE: *The most hazardous conditions shall govern when work is being performed in adjoining, connected spaces.*

Entry

Entry into and work within a non-permit confined space may proceed if:

- no physical hazards exist; and
- pre-entry tests verify that oxygen deficiency/enrichment and/or no dangerous air contamination exists within the space; and
- there is no reason to believe that any atmospheric hazards are likely to develop.

Occupancy Requirement

The following actions are required during occupancy of a non-permit confined space:

- Continuous atmospheric testing of the atmosphere in the immediate vicinity of the Entrant; and
- Ventilation shall be monitored when utilized; and
- Occupants shall immediately evacuate the space if any of the gas detector alarm set points.

Re-entry Following Emergency Evacuation

Evacuated workers shall not re-enter the space until after a facility manager has evaluated the space to determine how the hazardous atmosphere developed. The facility manager must have successfully completed gas detector training for the detector used. Measures shall be implemented to protect employees from the hazardous atmosphere before any subsequent entry is allowed.

Permit Required Confined Space Pre-Entry

General

All confined spaces shall be considered permit required confined spaces until the pre-entry procedures identified below demonstrate otherwise.

Training

Any employee required or permitted to work in a permit required confined space shall have successfully completed the training identified in the definitions section of this procedure.

Pre-Entry

The following steps shall be followed before any employee is required or permitted to enter a permit required confined space:

STEP	ACTION
1	A Permit Required Confined Space Entry Permit (See Appendix) must be completed before approval can be given to enter a permit required confined space. The permit: • verifies completion of steps 2 through 7 below; and • shall be kept at the job site for the duration of the job; and

	• shall be voided and a new permit completed if an interruption in the work occurs, or the alarm conditions for which the entry was approved change. NOTE: *A Entry supervisor or higher shall approve entry into a permit required confined space, based on satisfactory completion of the permit.*
2	The surrounding area shall be assessed to avoid such hazards as drifting vapors from tanks, piping, sewers, etc.
3	Any condition(s) making it unsafe to remove an entrance cover shall be eliminated before the cover is removed.
4	Promptly guard, the opening with a railing, temporary cover, or other suitable temporary barrier which is appropriate to prevent an accidental fall through the opening and to protect employees working in the manhole from foreign objects entering the manhole.
5	The permit required confined space atmosphere shall be tested to determine if: • Oxygen deficiency/enrichment exist, and/or • Dangerous air contamination exists. A supervisor who has successfully completed gas detector training for the detector used shall perform the testing.
6	Atmospheric test results shall be recorded on the Permit Required Confined Space Permit. Affected employees shall be able to review the test results. NOTE: *The most hazardous conditions shall govern when work is being performed in adjoining, connected spaces.*
7	Installed ventilation systems shall be set at 100% outside air if possible. Portable blowers shall be used to augment natural ventilation. Additional manholes shall be opened to increase air circulation whenever possible.
8	After a suitable ventilating period testing shall be repeated. If decontamination is effective and it can reasonably be assumed that the space will remain free of hazardous contaminants and no engulfment, internal configuration or other recognized serious safety hazard exists, then the space shall be treated as a non-permit confined space.
9	A rescue procedure shall be established for the situation at hand. A copy of the Confined Space Procedure and the rescue procedure established for the specific entry shall be at the work site for the duration of the job.

Permit Required Confined Space Entry

Introduction
The requirements in this section shall be observed under any condition(s) listed below:

- Testing demonstrates the existence of dangerous air contamination or oxygen deficient/enriched conditions and additional ventilation cannot reduce concentrations to safe levels; or
- The atmosphere tests as safe but unsafe conditions can reasonably be expected to develop; or
- The space contains a material that has the potential for engulfing an Entrant; or
- The space has an internal configuration such that an Entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross section; or
- The space contains any other recognized serious safety or health hazard; or
- An emergency exists and it is not feasible to wait for pre-entry procedures to take effect.

Point of Entry
When practical, permit required confined spaces shall be entered through side openings (those within 3 ½ feet of the bottom).

Training
All personnel shall be trained per the definition section of this procedure.

Required Documents
A satisfactorily completed Permit Required Confined Space Entry Permit shall be issued. A copy of the permit, Confined Space Procedure, and the rescue procedure for the specific task shall be at the work site for the duration of the job.

Minimum Personnel Required
For each permit required confined space task, there shall be a minimum of :

- An entry worker; and
- A worker standing by the outside of the space ready to give assistance in case of emergency; and
- At least one additional worker within sight or call of the standby worker.

Respiratory Protection
Any person entering the space shall wear supplied air or self contained breathing apparatus. The standby worker shall have supplied air or self contained breathing apparatus available for immediate use.

Safety Harness/Hoisting Device
All workers entering the space shall use a safety harness with attached lifeline. The free end of the line shall be secured outside the entry opening.

When entry must be through a top opening, the safety harness shall suspend a person upright, and a hoisting device shall be available for lifting workers out of the space.

NOTE: In any situation where their use may endanger the worker, use of a hoisting device or safety harness and attached lifeline may be discontinued.

Communications
Contact must be maintained between workers in the confined space and the attendant outside. If powered communication equipment is used, ensure that batteries are in good working order.

Lines of contact should also be established to summon rescue personnel if the need arises.

Where direct voice contact is not practical tether lines may be used for communication in addition to or instead of powered communication. The communication standard for tether lines is the OATH system in which the number of tugs conveys the following messages:

1. **O**K.
2. **A**dvancing; Attendant is to feed line to the Entrant.
3. **T**ake up slack.
4. **H**elp; Attendant will:
    - Signal other entrants, if present to exit the space.
    - Attempt to retrieve entrant who signaled for help via tether.
    - Activate the rescue plan if the entrant cannot be retrieved via tether.

Gas Monitoring
Continuous gas monitoring shall be performed near entrant(s).

Entry personnel must allow for gas monitor response time when walking into an unmonitored area

If alarm conditions change adversely, entry personnel shall exit the space and contact their supervisor.

NOTE: A new Permit Required Confined Space Permit must be issued prior to re-entry.

Electrical

When dangerous air contamination is attributable to flammable and/or explosive substances, lighting and electrical equipment shall be Class I, Division I, Groups A, B, C, & D rated per the National Electrical Code. No ignition sources shall be introduced into the area.

Permit Required Confined Space Rescue

Mishap or Disabling Injury
In the event of a mishap or disabling injury within a permit required confined space, Fire Department personnel shall be notified immediately to accomplish personnel evacuation.

Immediate Hazard
Where immediate hazards to injured personnel exist (e.g. flooding, air supply depletion, etc.), workers at the site shall implement emergency evacuation procedures to fit the situation.

Questionable Action/Non-Movement
If at anytime there is questionable action or non-movement by the worker inside, a verbal check shall be made. If there is no response, the worker shall be removed immediately by the following criteria.

Criteria For Standby Entry
The standby worker shall attempt to remove a disable worker via the lifeline before entering the space. The standby worker may only enter the permit required confined space in case of an emergency (wearing a self-contained breathing apparatus) and only after being relieved by another.

(c)(5) Confined Space Pre-Entry

Introduction

The requirements in this section shall be followed when:

- The only hazard posed by the confined space is an actual or potentially hazardous atmosphere, and
- Continuous forced air ventilation alone is sufficient to maintain the permit space safe for entry.

Operations such as coatings application or welding are examples of tasks that could create controllable atmospheric hazards within a confined space.

Training

Any employee required or permitted to work under the (c) (5) alternative to permit required confined spaces shall receive effective instruction in the use of gas detection equipment and the entry/occupancy requirements in the following sections.

Pre-Entry

The following steps shall be followed before any employee is required or permitted to enter a (c) (5) confined space:

STEP	ACTION
1	A (c) (5) certification (see appendix) must be completed by the General Manager before entry. The checklist: • verifies completion of steps 2 through 7 listed below; and • shall be kept at the job site for the duration of the job; and • shall be voided and a new certification completed if an interruption in the work occurs.
2	All pumps and lines, which may reasonably cause contaminants to enter into the space, shall be isolated. The pumps and lines shall be isolated to prevent engulfment, the development of dangerous air contamination, or oxygen deficiency/enrichment by: • Blinding, or • Disconnecting, or • Locking/Blocking out, or • By use of other effective means Laterals to sewers or storm drains shall require isolation if experience or knowledge of industrial use indicates that a reasonable potential for dangerous air contamination or engulfment hazards exist. *NOTE: If isolation requires entry into the space the provisions identified in the Permit Required Confined Space section must be implemented.*
3	The surrounding area shall be assessed. The assessment is done to avoid hazards such as drifting vapors from tanks, piping, sewers, etc.
4	Any condition(s) making it unsafe to remove an entrance cover shall be eliminated before the cover is removed.
5	Promptly guard, the opening with a railing, temporary cover, or other suitable temporary barrier which is appropriate to prevent an accidental fall through the opening and to protect employees working in the manhole from foreign objects entering the manhole.
6	The (c) (5) confined space atmosphere shall be tested to determine if: • Oxygen deficiency/enrichment exists • Dangerous air contamination exists A Entry Supervisor who has successfully completed the gas detector training for the detector used shall perform the testing.
7	When unsafe conditions are detected by testing or other means, the work area shall be ventilated by mechanical means and otherwise made safe before entry. Continuous ventilation is always required while work is performed when: • Combustible or explosive gas vapors have been initially detected.

	• Organic solvents are used in the work procedure. • An open flame is used in the work procedure. • The manhole or vault is located in that portion of a public right-of-way open to vehicular traffic and/or exposed to a seepage of gas or gases. • A toxic gas or oxygen deficiency is found.
8	Atmospheric test results shall be recorded on the (c) (5) Pre-Entry Certification. Affected employees shall be able to review the test results.
9	The Entry Supervisor shall certify by signing the (c) (5) Pre-Entry Certification that, based upon the results of the pre-entry testing, all hazards have been eliminated. NOTE: *The most hazardous conditions shall govern when work is being performed in adjoining, connected spaces.*

(c)(5) Confined Space Entry

Entry

Entry into and work within a (c) (5) confined space may proceed if:

- No serious non-atmospheric hazards exist; and
- Pre-entry tests verify that oxygen deficiency/enrichment and/or no dangerous air contamination exists within the space; and
- There is no reason to believe that any atmospheric hazards are likely to develop.

Occupancy Requirements

The following actions are required during occupancy of a (c) (5) confined space:

- Continuous atmospheric testing of the atmosphere in the immediate vicinity of the worker(s) within the space; and
- Continuous ventilation shall be used to supply air from a clean source directly to the area where the Entrant(s) are; and
- Occupants shall immediately evacuate the space if any of the gas detector alarm set points (as previously defined) are reached.

Re-Entry Following Emergency Evacuation

Evacuated workers shall not re-enter the space until after a supervisor has evaluated the space to determine how the hazardous atmosphere developed. The supervisor must have successfully completed gas detector training for the detector used. Measures shall be implemented to protect employees from the hazardous atmosphere before any subsequent entry is allowed.

Contractor Work In Permit Required Confined Spaces

General

Specific actions are required by SSD and contractors whenever SSD arranges to have non-District personnel perform work that involves permit required space entry.

Actions required of SSD

The table below identifies the specific actions required of SSD
whenever non-SSD (contractor) personnel perform work that involves permit space entry.

If….	Then SSD Shall
only contractor personnel perform work that involves permit space entry	Apprise the contractor: • that the workplace contains permit spaces and that permit space entry is allowed only through compliance with a permit space program meeting the requirements of the California Code of Regulations, Title 8, General Industry Safety Orders, Article 108; and • of hazards identified and experiences that make the space a

	permit required space; and • of precautions or procedures that SSD has implemented for the protection of employees in or near the spaces where contractor personnel will be working; and Debrief the contractor at the conclusion of the entry regarding the permit space program followed and any hazards confronted or created during the entry operation.
contractor and SSD personnel will be working in or near the same permit space(s)	Comply with all of the above requirements; and • coordinate entry operations with the contractor so that simultaneous work does not endanger personnel of either employer.

Actions Required by the Contractor

The table below identifies the specific actions required of non-Division (contractor) personnel when performing work for SSD that involves permit space entry.

If…	Then the Contractor Shall…
only contractor personnel perform permit space operations	• comply with all permit space requirements; and • obtain any available information regarding permit space hazards and entry operations from SSD; and • inform SSD of the permit space program that the contractor will follow, and of any hazards confronted or created in permit spaces, either through a debriefing or during entry operation.
contractor and SSD personnel will be working in or near the same permit spaces	• comply with all of the above requirements; and • coordinate entry operations with SSD so that simultaneous work does not endanger personnel of either employer

SSD Confined Space Pre-Entry Checklist

Date:_____Location:_____

Purpose of entry:_____

Pre-entry check conducted by:_____

Check as completed or mark as N/A and explain: Reason for N/A

❑ Clear area around the entry to the space..... N/A ❑ _____

❑ Isolate the space from other spaces ..... N/A ❑ _____

❑ Implement appropriate Lockout/Tagout ..... N/A ❑ _____

❑ Block, choke and/or disengage mechanical equipment ..... N/A ❑ _____

❑ Assess and eliminate hazards in the surrounding areas ..... N/A ❑ _____

❑ Assess and eliminate hazards associated with removing entrance cover

..... N/A ❑_____

❑ Guard opening to prevent people and objects from falling into space N/A ❑_____

❑ Space is free of engulfment, entrapment or other hazards..... N/A ❑ _____

❑ Clean the interior of the space ..... N/A ❑ _____

❑ Bump test gas monitor (& verify alarm points) ..... N/A ❑ _____

Gas testing equipment
Brand:_____Model:_____Serial #:_____

Gas testing by:_____Certification expires:_____

Test for	O_2	LEL	H_2S	CO	Cl_2	SO_2	Other:_____
Limits / Time	>19.5 % & <23.5	<10%	10ppm	35ppm	1ppm	2ppm	_____ _____

Space requires: ❑ Inerting ❑ Purge & clean ❑ Ventilation

N/A ❑ _____

Type of entry: ❑ Non-permit ❑ (C)(5) ❑ Permit

SSD CONFINED SPACE ENTRY PERMIT

Date:_____Location:_____

Purpose of entry:_____

Authorized duration of Permit: Date:_____to_____

Time:_____❑ AM ❑ PM to_____❑ AM ❑ PM

Time:_____❑ AM ❑ PM to_____❑ AM ❑ PM

Permit Space Hazards

❑ Oxygen deficiency (<19.5%)	❑ Oxygen enrichment (>23.5%)
❑ Flammable gases or vapors (>10% LEL)	❑ Airborne combustible dust (>20% LEL)
❑ Toxic gases or vapors (>PEL)	❑ Electrical hazards
❑ Engulfment	❑ Entrapment

❑ Skin harmful hazards other than atmosphere

❑ Other, specify:_____

Preparation for Entry

❑ Inert	❑ Purge & clean	❑ Ventilation	❑ Atmospheric tests	❑ Barriers
❑ Traffic control	❑ Clean space	❑ Clear space	❑ Blank/bind	❑ Lockout/Tagout
❑ Energy control		❑ Isolate space	❑ Drain space	❑ Heat/cool space
	❑ Disconnects used			

❑ Additional permits required: ❑ Hot work ❑ Line breaking ❑ Other_____

Equipment Required for Entry

PPE:_____

Respiratory protection:_____

*Medical & Training Expires:*_____

Gas testing and monitoring: _____

Communication (and describe method): _____

Rescue equipment: _____

Lighting:_____

Other:_____

❑ All electrical equipment listed as Class 1 division 1, groups A,B,C & D

❑ Non-sparking tools _____

Test for	O_2	LEL	H_2S	CO	Cl_2	SO_2	**Other**:_____
Limits / Time	>19.5 % & <23.5	<10%	10ppm	35ppm	1ppm	2ppm	_____ – _____

Rescue plan:_____

Emergency Service:_____Phone_____

Emergency Service:_____Phone_____

Personnel				Time	Time
Attendants	Start	**Relieved**	Entrants	In	Out
Standby	Start	**Relieved**			

Authorization by Entry Supervisor

I certify that all required precautions have been taken and necessary equipment is provided for entry and work in this confined space.

_____ _____

Signature Printed Name

_____ _____ ❑ AM ❑ PM

Date Time