

Mayor
NELSON P.
CRABB

October 30, 2015

HONORABLE MAYOR & CITY COUNCIL MEMBERS

City
Administrator
SCOTT
FLORY

The next regular meeting of the Clear Lake City Council is scheduled for Monday, November 2, 2015, at 6:30 p.m., in the Council Chambers, at City Hall. Please refer to the attached agenda for the items discussed below.

COUNCIL MEMBERS

DANA
BRANT
Ward 1

TONY J.
NELSON
Ward 2

JIM
BOEHNKE
Ward 3

MIKE
CALLANAN
At Large

GARY
HUGI
At Large

ITEM #6A. **Water Treatment Plant Chemical Storage Evaluation Report.** At its regular meeting on August 3, 2015, the Council approved a professional services agreement to conduct an independent evaluation of the City's existing practices, equipment, and conditions relative to chlorine storage and make recommendations for improvements at the Water Treatment Plant. This was determined by the City to be an appropriate response to the chlorine leak experienced at the Water Treatment Plant on July 17, 2015. It should be noted, that was the first leak that had occurred at the Plant in more than 40 years, if ever. The source of the leak was later identified to be a gasket that connects a valve from the cylinders to the feed system. The Plant was operated normally, via automation, throughout this time, however.

The consultant has completed the evaluation and prepared the report and will present the findings, conclusions, and recommendations to the City Council.

ITEM #6C. **Social Security# Confidentiality & Utility Services Privacy Policy.** The City's utility billing department requests customer's social security numbers when new accounts are established with the City. The purpose for this is primarily related to debt collection on delinquencies. The City's utility billing clerk contacted many Iowa cities and, while most did request customer's social security #'s, none had a formal policy adopted by their governing board related to the request. The City recently had a customer request to examine the City's policy related to the request for their social security #. After discussing the matter internally, staff believed that it is appropriate to draft a proposed policy related to the use of a customer's social security # and present that to Council for consideration.

ITEM #6D. **Early Retirement Incentive Program – Post Retirement Sick Leave Conversion Credit.** The City has offered early retirement incentive programs in previous years, but had not anticipated offering a similar program in the foreseeable future. However, recently at least two City employees have indicated interest in retiring this year, if they were able to receive some form of an early retirement incentive from the City. The proposed "2015 Early Retirement Incentive Program" is a different iteration from previous offerings approved by the Council. This



opportunity would enable eligible employees to convert their accumulated sick leave hours to a "dollar-based credit" to pay future premiums for health insurance coverage under the City's group health insurance program. The City allows employees to carry a maximum of 800 hours of sick leave (848 public safety personnel).

Interested employees would have to provide written notice of their intent to retire by 11/30/15 and then retire by 12/31/15. In order to be eligible, the employee must meet one of the following criteria:

- a. terminates employment at age 60 or older and has 15 years or more of employment with the City of Clear Lake; or
- b. terminates employment at age 60 or older because of their, or their spouse/domestic partner's, serious health/medical issue that is covered under the Family and Medical Leave Act and has at least 10 years or more employment with the City of Clear Lake and has been an IPERS covered employee for at least 15 years; or
- c. terminates employment at age 55 or older and has at least 10 years or more employment with the City of Clear Lake and is qualified to receive Social Security disability payments.

ITEM #6E. **S. 3rd Street Property.** At its previous meeting, the Council set the date for a public hearing on the proposal to sell the property it owns at 1123 S. 3rd Street (including south ½ of 1119 S. 3rd Street). The property is generally 84' wide x 128' deep and is located at the intersection of 12th Ave S. and S. 3rd street.

The highest proposal offer was submitted by Jim & Judy Hilgendorf (2508 N. Shore Drive – Clear Lake) in the amount of \$40,100. The purchaser proposes to construct a twin home on the site.

The Council must conduct a public hearing on the proposal to dispose of its interest by sale in the real estate. Public notice of the hearing was published in the Clear Lake Mirror reporter on October 21st. Back in May of 2014, the City sold the north half of the 3 lots it had previously acquired to Opportunity Village for \$40,000.

Smart Quote: *"People won't have time for you if you are always angry or complaining."* – Stephen Hawking, Theoretical Physicist

Scott Flory
City Administrator

PUBLIC NOTICE IS HEREBY GIVEN that the following governmental body will meet at the date, time, and place herein set out. The tentative agenda for said meeting is as follows:

TENTATIVE AGENDA
CLEAR LAKE CITY COUNCIL
CITY HALL – 15 N. 6TH STREET
MONDAY, NOVEMBER 2, 2015
6:30 P.M.

1. Call to Order and Pledge of Allegiance led by Mayor Nelson P. Crabb.
2. Approval of Agenda.
3. Consent Agenda:
 - A. Minutes – October 19, 2015.
 - B. Approval of the bills & claims.
 - C. Licenses & Permits:
 - Liquor License: Class C Liquor License (LC) (Commercial) with Sunday Sales, Bikerz; Class C Liquor License (LC) (Commercial) with Outdoor Service & Sunday Sales, SIPS; (renewals).
 - Excavator's License: Barker Lemar & Associates, Mitchellville, (new).
 - Tax Abatement Application: Bobbie Jo Engebretson & Lisa Floy, 1012 Pine Brooke Court.
4. Citizens opportunity to address the Council on items not on the agenda:
 - In conformance with the City Council's Rules of Procedure, no action can occur on items presented during the Citizens forum.
 - Please walk to the lectern, state your name (spell last name), address, and subject of your discussion.
 - Speakers are limited to a maximum of five (5) minutes per person.
5. Unfinished Business:
6. New Business:
 - A. Water Treatment Plant Chemical Storage Evaluation Report:
 - Introduction by Scott Flory, City Administrator.
 - Review of report and findings, conclusions, and recommendations, Jason Petersburg, P.E., Veenstra & Kimm.
 - Questions and discussion by City Council.

B. Annual Appropriation Development Agreements:

- Review by Scott Flory, City Administrator.
- **Motion** to approve **Resolution #15-52**, “Resolution obligating funds from the Clear Lake Consolidated Urban Renewal Area Tax Fund for the appropriation of payment of annual appropriation tax increment financed obligations which shall become due in the next succeeding fiscal year (Wess Inc.).
- Discussion and consideration of **Motion** by City Council.
- **Motion** to approve **Resolution #15-53**, “Resolution obligating funds from the Clear Lake Consolidated Urban Renewal Area Tax Fund for the appropriation of payment of annual appropriation tax increment financed obligations which shall become due in the next succeeding fiscal year (Titan Pro SCI).
- Discussion and consideration of **Motion** by City Council.
- **Motion** to approve **Resolution #15-54**, “Resolution obligating funds from the Clear Lake Consolidated Urban Renewal Area Tax Fund for the appropriation of payment of annual appropriation tax increment financed obligations which shall become due in the next succeeding fiscal year (North Iowa Cultural Center & Museum).
- Discussion and consideration of **Motion** by City Council.
- **Motion** to approve **Resolution #15-55**, “Resolution obligating funds from the Clear Lake Consolidated Urban Renewal Area Tax Fund for the appropriation of payment of annual appropriation tax increment financed obligations which shall become due in the next succeeding fiscal year (Snyder Construction Partnership).
- Discussion and consideration of **Motion** by City Council.

C. Social Security Number Confidentiality & Utility Services Privacy Policy:

- Review by Scott Flory, City Administrator.
- **Motion** to approve **Resolution #15-56**, “Resolution approving and adopting a Social Security# Confidentiality & Utility Services Privacy Policy for the City of Clear Lake, Iowa, by the City Council.
- Discussion and consideration of **Motion** by City Council.

D. 2015 Early Retirement Incentive Program:

- Review by Scott Flory, City Administrator.
- **Motion** to approve **Resolution #15-57**, “Resolution approving an Early Retirement Incentive Program, 2015” by City Council.
- Discussion and consideration of **Motion** by City Council.

E. Proposal to sell City-owned property locally known as: 1123 (including S ½ of 1119) S. 3rd Street:

- Review by Scott Flory, City Administrator.
- Opening of the public hearing by Mayor Crabb.
- **Motion** to close public hearing by City Council.
- Discussion and consideration of **Motion** by City Council.
- **Motion** to approve **Resolution #15-58**, “Resolution authorizing the sale and disposal of the City’s interest in certain real property owned by the City of Clear Lake, Iowa, locally known as: 1123 (including S ½ of 1119) S. 3rd Street, Clear Lake, Iowa.”
- Discussion and consideration of **Motion** by City Council.

F. Presentation from the Association for the Preservation of Clear Lake:

- Introduction by Scott Flory, City Administrator.
- Review and update by Deb Tesar, Association for the Preservation of Clear Lake
- Questions and discussion by City Council.

G. Eagle Avenue Properties 1st Subdivision – Utility Easement Vacation:

- Review by Scott Flory, City Administrator.
- **Motion** to approve **Resolution #15-59**, “Resolution of intention to vacate a public utility easement and setting a public hearing date.”
- Discussion and consideration of **Motion** by City Council.

7. Chief of Police’s Report:

8. Mayor’s Report:

- Reminder of Municipal election November 2nd and voting locations.

9. Public Works Director’s Report:

- Project update: W. 7th Avenue N. Watermain Improvement Project; Water Treatment Plant High Service Pump(s) Replacement Project; and N. Shore Drive Street Tree Planting.
- Pre-construction conference: 2015 Buddy Holly Place Storm Sewer Extension Project.

10. City Administrator’s Report:

11. Other Business:

12. Adjournment.

NEXT REGULAR MEETING – NOVEMBER 16, 2015

This notice is given pursuant to Chapter 21.4(1) of the Code of Iowa and the local rules of said governmental body.

APPLICATION FOR TAX ABATEMENT UNDER THE PINE BROOKE
URBAN REVITALIZATION PLAN FOR

CLEAR LAKE, IOWA

Date 10-29-15

Prior Approval for Intended Improvements Approval of Improvements Completed

Address of Property: 1012 Pine Brooke Ct

Legal Description: Lot # 12 Block #

Pine Brooke²⁷⁹ Address to City of Cl

Title Holder or Contract Buyer: Bobbie Jo Engelbrecht and Lisa M. Ploy

Address of Owner (if different than above): (Same)

Phone Number (to be reached during the day): 641-430-9515 cell 641-357-4997 home

Proposed Property Use: Single Family Home

Nature of Improvements: New Construction

Specify: _____

Estimated or Actual Date of Completion: 10-16-15

Estimated or Actual Cost of Improvements: \$260,000

Tax Exemption Schedule is attached.

Signed: Bobbie Jo Engelbrecht



October 29, 2015

Mr. Scott Flory
City Administrator
City of Clear Lake
15 North Sixth Street
Clear Lake, IA 50428

**PRELIMINARY ENGINEERING REPORT
WATER TREATMENT PLANT CHEMICAL STORAGE CODE UPDATES
CLEAR LAKE, IA
#383147**

Dear Scott:

This letter is offered to summarize the findings of the Water Treatment Plant (WTP) Chemical Storage Code Review. There are six (6) sections to this report and they include the following:

1. Background
2. Existing Chlorine Room Conditions
3. Code Compliance
4. Evaluation of Chlorination Systems
5. Chlorine Gas Scrubber Options
6. Recommendations

1. Background

The existing Chlorine Room is located in the 1948 side of the building adjacent to the garage with an entrance on the north side. The Chlorine Room was set up during the 1972 plant and building expansion when that space was opened up. Very little of the original equipment in the room is in use today and could be removed.

The facility experienced a chlorine leak on July 17, 2015 which staff reported was about 10 lbs. / hour over a 3 hour period. When a leak like this occurs with chlorine vapor lingering in the room, there can be damage to electronics and even metal equipment. Even more of a concern is the toxic nature of chlorine and potential health issues it can cause.

2. Existing Chlorine Room Conditions

Figure 1 shows the location of Chlorine Room with pictures to illustrate conditions and several points of interest. Access to the Chlorine Room in itself has some inherent issues:

- Stairs and loading dock have severe deterioration with loose materials being a tripping hazard.

- Exhaust ventilation is over the steps of loading dock, near the existing garage door and louvered intake to the water treatment filter area.
- Located near the steps for the loading dock are:
 - Roof down spout with precast splash block that is a tripping hazard along with the potential to cause wet or icy conditions on the drive.
 - Gas service meter and piping
 - Electrical service entrance for the Water Treatment Plant

The overall room condition itself is adequate / satisfactory with tile walls and floor but there are open vents and abandoned pipes in the floor and ceiling that need to be plugged to create an air tight space. The hollow metal door and frame have severe corrosion and should be replaced with an anodized aluminum door and frame with new panic hardware. Veenstra & Kimm, Inc. also has some concerns with the location of the door and loading dock which will be evaluated in the next section of this report.

The light and fan switch are in the room interior. Code requires these switches must be mounted both outside the door and the observation window. Exhaust fan operation must have a "run" light. The chlorine detector must have audible and visible alarms outside the Chlorine Room.

3. Code Compliance

Table 1 below is a summary of the 2012 Ten States Standards (TSS) Design Guidelines regarding Chlorine Rooms. There are many mandatory updates required along with some suggested updates.

Table 1 – Code Compliance

<u>TSS</u>	<u>Description</u>	<u>Current Condition</u>
2.14	Color code chlorine gas and solution, yellow with labels	None
2.18	Safety protective equipment and clothing, gas masks, safety shower and eye wash, warning signs, toxic gas detectors	Updates needed, chlorine alarm non-functioning
2.19	Security considerations – locking door, signage, video monitoring, intrusion alarm	Locked door, sign
4.4	Chlorination Equipment	
4.1.1	Type of gas or liquid	Gas
4.1.2	Capacity – produce 2.0 mg/l chlorine residual	Yes
4.1.3	Standby equipment – backup and spare parts	Minimal
4.1.4	Automatic switchover of chlorine cylinders	Yes

<u>TSS Section</u>	<u>Description</u>	<u>Current Condition</u>
4.1.5	Automatic proportioning	Not available
4.1.6	Vacuum Educator with gauges	No
4.4.b.c	Automated Residual Analyzer is recommended	None
4.5.2	Pipe materials for chlorine per Chlorine Institute	Ok
5.0.2	Chemical Application	
c.	Provide maximum safety to operators	Improvements Needed
e.	Provide maximum flexibility of operation	Improvements Needed
5.0.3	General Equipment Design	
a.	Feeders supply at all times, necessary dosage rate	Need improvements, Manual control only
5.1	Feed Equipment	
5.1.1.a	Backup capacity	Yes
5.1.1.b	Separate feeder	Yes
5.1.1.c	Spare parts available	Yes
5.1.2.a	Manual or automatic control	Manual
5.1.2.b	Feed rate proportional to flow	Manual
5.1.2.c	Raw water flow rate measured	Yes
5.1.2.d	Chemical use measured	Yes, dosage and weight
5.1.2.e	Weighing scales for chlorine cylinders	Yes
5.3	Operator Safety	
5.3.1	Ventilation provided	Yes, needs improvements
5.3.2	Respiratory protection equipment with 30 minute supply compressed air near Chlorine Room	Needs improvement
5.3.3	Chlorine leak detection with audible alarm and light	Not operable
5.3.4	Other protective equipment	Improvements Needed
5.4	Specific Chemicals	
5.4.1.a	Chlorinators housed in room separate from chlorine storage	No, not practical to do
5.4.1.b	Chlorine Room in corner of building, prevailing downwind side, away from entrance, louvers, walkway	Yes, as can be practical to do
5.4.1.c	Chlorine Room heated to 60°F	Yes
5.4.1.d.1	Shatter resistant inspection window on interior wall	Yes
5.4.1.d.2	All openings to room sealed	No, improvements needed

<u>TSS Section</u>	<u>Description</u>	<u>Current Condition</u>
5.4.1.d.3	Door equipped with panic hardware	Yes
5.4.1.d.4	Ventilation capacity with one air change per minute when room occupied	No, improvements needed
5.4.1.d.5	Ventilation from near floor to exhaust	Yes
5.4.1.d.6	Air inlets, corrosion resistant louvers, near ceiling	Yes
5.4.1.d.7	Air intake and exhaust facilitate airtight enclosure	Yes, but improvements needed
5.4.1.d.8	Separate switches for fan and lights both at door and inspection window. Signal light indicating fan operation.	No, No
5.4.1.d.9	Vents from chlorinator must be screened and discharge above grade	Yes, but improvements needed
5.4.1.d.10	Floor drains are discoured	None
5.4.1.d.11	Provisions should be made to neutralize chlorine gas if residential or developed area is located nearby. Size equipment for largest storage container. (150 lb. cylinder).	None
5.4.1.e.1	Vacuum regulators on all cylinders in service	Yes
5.4.1.e.2	Adequate water supply and pressure for chlorine injectors	Yes
5.4.1.f	No pressurized chlorine gas lines outside of Chlorine Room	None
5.4.1.g	No pressurized feed lines in air tight conduit	None
5.4.1.h.1	Full and empty gas cylinders in storage room separate.	No, not practical
5.4.1.h.2	Cylinders isolated from operating areas	Yes
5.4.1.h.3	Restrained in position	Yes
5.4.1.h.4	Stored in locked, secure room	Yes
5.4.1.h.5	Protect from sunlight and excess heat	Yes

4. Evaluation of Chlorination Systems

Disinfection of drinking water is commonly done with gas chlorine put into solution or by pumping liquid chlorine (sodium hypochlorite) solution into the water supply. Pre-chlorination at the Clear Lake Water Plant serves to oxidize iron and manganese in the raw water and precipitate these elements out for settling in the contact clarifier or filters. The chlorine residual throughout the treatment system keeps the filter media and equipment clean and disinfected. Post chlorination is done to maintain a chlorine residual throughout the water distribution system to maintain disinfection and a clean system.

Chlorine Disinfection Options include:

- A. Liquid Feed – Commercial Sodium Hypochlorite with Storage
- B. Liquid Feed - Self-Generated
- C. Chlorine Gas into Solution

Each of the Disinfection Options are further discussed below.

- A. **Liquid Feed:** Sodium Hypochlorite would require purchase of prepared chemical (sodium hypochlorite).

Flow Events	Estimated Chlorine Dose	Prechlorination Chlorine Use (lbs. / day)	Equiv. 12.5% Chemical	Total Use
1.5 MGD	2.0 mg/l	25	30 gpd	60 gpd
2.0 MGD	3.0 mg/l	50	50 gpd	100 gpd
2.5 MGD	3.0 mg/l	63	60 gpd	120 gpd

Chemical storage is required, but only a limited amount since sodium hypochlorite is not stable beyond 30 days causing unpredictable disinfection results. 30 day storage would be on the order of a 4,000 gallon fiberglass tank which would also require heated storage and spill containment. There are many disadvantages of this type of system, including the space required, which rule it out from further consideration.

- B. **Liquid Feed Self-Generated:** Liquid Feed Self-Generated is illustrated by the MicroClor System in Appendix A. There are a number of installations with this system in California, Texas, and certain selected areas where regulation for chlorine gas have become more restrictive. There is one Iowa installation of this type in Council Bluffs which was installed in 2013, manufactured by MicroClor. Veenstra & Kimm, Inc. has installed another system of this type with a different manufacturer in Storm Lake's Water Treatment Plant.

Operation of the MicroClor unit involves using soft water with salt brine fed to a series of electrolytic cells. This generates a steady sodium hypochlorite solution

but only 0.8% solution compared to commercial 12% that is discussed above. This chemical process also generates hydrogen gas which must be carefully vented from the pressurized electrolytic cells and the storage tank. Production requirements would be:

- Produce 100 lbs. / day chlorine equivalent consumes:
- a. 300 lbs. / day Morton white crystal pure salt
 - b. Consumes 200 KWH continuous Power demand
 - c. Consumes 1,500 gallons / day softened water

Layout of the system is best in a new Water Treatment Plant with access for salt storage. Controls are more automated but there are safety considerations involved with a hydrogen gas management system. Equipment capital cost is estimated \$150,000. Backup storage of commercial chemical and chemical feed equipment is also recommended.

- C. **Chlorine Gas Disinfection:** The current chlorine gas system is typical of most Iowa municipal Water Treatment Plant Facilities. The pictures in Figure 1 show the current equipment which is due for an upgrade to achieve regulatory compliance. Figure 2 illustrates the proposed improvements and includes the following:

<u>W&T Model</u>	<u>Size / Description</u>	<u>Quantity</u>
VRICACX	Vacuum Regulators with Switchover	4
VIOKI	10" Rotameter Valve with Controller and Transmitter	2
INJFTOCA	¾" Injector with anti-siphon	2
Series 50-320	Solution and Distribution ¾" Manifold, varemeter	2
Acutec 35	Chlorine Gas Detector with 2 Detection Points, Audible Horn, Battery Backup	1
Miscellaneous	Check Valves, Ball Valves, Solenoid Valves, Tubing, Pressure Gauges, etc.	1
Force Flow G Indicator		2
Chlor-Scale 150		2

The current water plant is setup for a chlorine gas system and staff is very familiar with its operational requirements. A budget price for the Wallace & Tienan equipment shown in Appendix B would be \$50,000. This can be competitively bid with 2-3 vendors.

Recommended Chlorine System Improvements:

The current water plant is setup for chlorine gas system with a dedicated chlorine room and solution lines to remote feed locations. The capital cost for a new updated gas chlorine system at \$50,000 versus a self-generating liquid sodium hypochlorite system at \$150,000 suggests that staying with a chlorine gas system is a better fit. A scrubber is recommended for the chlorine system and will be evaluated in the next section of the report. The self-generating chlorine system (MicroClor) has a larger layout than the garage space allows and would require a backup system with a commercial system and small storage as well as containment and compliance with regulatory requirements.

In addition to updating the gas chlorination equipment within the chlorine room itself, Veenstra & Kimm, Inc. also recommends that the chlorine gas or chlorine solution piping be updated by installing the piping in a properly colored and labeled conduit that will act as secondary containment should the main pipe develop a leak and also help in protecting the main piping.

5. Chlorine Gas Scrubber Options

With a chlorine gas system a chlorine scrubber is recommended to eliminate the chance of a chlorine leak escaping the room. The system must be automated with a leak detector turning the scrubber on and sending an alarm to notify staff of the emergency. Any scrubber system evaluated must have capacity to accommodate a 150 lb. cylinder of chlorine gas.

For purposes of this report two different types of chlorine scrubbers have been evaluated. Option A is a wet scrubber and Option B is a dry scrubber.

- A. **Wet Scrubber:** A wet scrubber is one option that has been used and exhausts a steady flow of air and chlorine gas mix from the room and through a chemical scrubber that will neutralizes the chlorine gas. The ventilation rate is around 200 scfm and would be required to run a minimum of 30 minutes which would be about 5 air changes of the room volume, or until the chlorine leak detector stops alarming. If it is a small leak then the scrubber would continue to run and a staff person would enter with a respiratory compressed air unit and shut the 150 lb. cylinder off. Figure 3 shows a proposed wet scrubber installation. Appendix C is a wet scrubber system example offered by Integrity Municipal Systems.

Wet Scrubber Advantages

- Capital Cost for Initial Installation is Slightly Less
- Smaller Space for "Foot Print" Required

Wet Scrubber Disadvantages

- Handling and Containment of Hazardous Chemicals (sodium hydroxide)
- Chemical Replacement Required
- Higher Operation and Maintenance Costs
- More Complicated Control System
- Installation in a Heated Enclosed Room (Figure 3)
- Chlorine Room Ventilation System is Still Required

B. **Dry Scrubber:** The second option is a dry scrubber system that can be installed outdoors if need be. The dry scrubber is sized for room ventilation requirements and operated daily when room entry is required. Normal ventilation has no effect on media beds until a leak occurs. The media bed must be kept dry so the unit needs to be sealed and insulated for that purpose. The media used is pelletized activated alumina which absorbs and neutralizes chlorine gas. This reaction is exothermal, meaning heat is given off which must be removed by the ventilation rate of the scrubber. Figure 4 shows the layout required for the dry scrubber. Appendix D is a dry scrubber system offered by Unisorb-Canada.

Dry Scrubber Advantages

- Lower Operation and Maintenance Costs
- Media is in Beds with the Initial Shallow Bed Neutralizing Small Chlorine Leaks
- Dry Scrubber System Provides Normal Ventilation Needs of One Air Change per Minute, Operates Daily
- No Chemical Handling Required

Dry Scrubber Disadvantages

- Initial Capital Cost is Slightly Higher
- Unit is Insulated for Outdoor Installation
- Larger "Foot Print" is Required

6. Recommendations

A cost comparison was developed in Table 2 on the next page to show the project cost for new chlorination equipment in the existing chlorine room and the option of a wet scrubber versus a dry scrubber. Since the type of scrubber affects a variety of cost issues for the installation, a comparison by construction division was made.

Table 2 – Project Cost Estimate & Scrubber Installation Comparison

<u>Division of Work</u>	<u>Wet Scrubber</u>	<u>Dry Scrubber</u>
1 – Bond, Ins, Mobilization	\$13,000	\$13,000
2 – Site work / Demolition	\$23,500	\$23,000
3 – Concrete	\$1,800	\$4,500
5 – Metals	\$500	\$2,000
7 – Sealants	\$1,000	\$1,000
9 – Coatings	\$1,500	\$1,000
10 – Special Equipment	\$2,500	\$2,500
11 – Process Equipment	\$139,800	\$157,000
13 – Piping, Valves	\$14,000	\$14,000
15 – Mechanical	\$42,000	\$27,500
16 – Electrical	\$14,500	\$12,500
17 – I&C	<u>\$18,000</u>	<u>\$15,000</u>
Subtotal	\$272,100	\$273,000
Contingencies (15%)	<u>\$40,900</u>	<u>\$41,000</u>
Construction Total	\$313,000	\$314,000

The cost comparison ultimately is very close. However, with the advantages of the dry scrubber being included in the evaluation Veenstra & Kimm, Inc. recommends the dry scrubber over the wet scrubber equipment.

Veenstra & Kimm, Inc. recommends re-fitting the Gas Chlorination Disinfection System along with a new dry scrubber as shown on Figure 4. The advantages include:

- **One Ventilation System**
- **Lower O & M Cost for the Plant**
- **No Chemical Handling other than Chlorine Cylinders**
- **New Loading Dock with all Controls Meeting Current Code Requirements**

The cost estimate above includes the cost of all new chlorination equipment, replacement of the furnace, and electrical upgrades to replace the components damaged by the July 17, 2015 chlorine leak. It is understood that the City Water Department Staff has already pursued some of these upgrades. As such it is estimated the costs provided above can be lowered at least \$50,000 if City staff completes the upgrades that are identified. It is also worth noting that the cost of the dry scrubber equipment is \$80,000.

After reviewing these preliminary findings with City Staff, Veenstra & Kimm, Inc. is confident that the dry scrubber installation and other code compliance upgrades can be completed at an estimated cost less than what is listed above, however the amount of the reduction will be dependent upon how much of the work City staff can complete prior to the scrubber project being completed.

Mr. Scott Flory
October 29, 2015
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Please feel free to contact the undersigned if you have any questions or need any additional information regarding the City's chlorination system or proposed scrubber improvements.

Sincerely,

VEENSTRA & KIMM, INC.



Jason Petersburg, P.E.
Project Engineer

Enclosure: Figures 1 – 4
Appendices A – D

JAP;bd;V:\VEENSTRA & KIMM\Clients\Municipal\Clear Lake\Project Files\Water Treatment Plant Chemical Storage Eval\383147\Client Corresp\Clear Lake - Chlorine Room Evaluation

Figures

X-REFS: BASE EXISTING FILE PATH: \\WKMCS\PROJECTS\CLEAR LAKE\PROJECT FILES\WATER TREATMENT PLANT CHEMICAL STORAGE EVAL\1383147\DRAWINGS\FIGURE 1

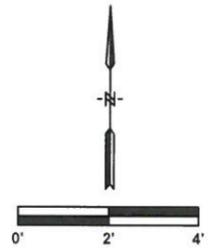
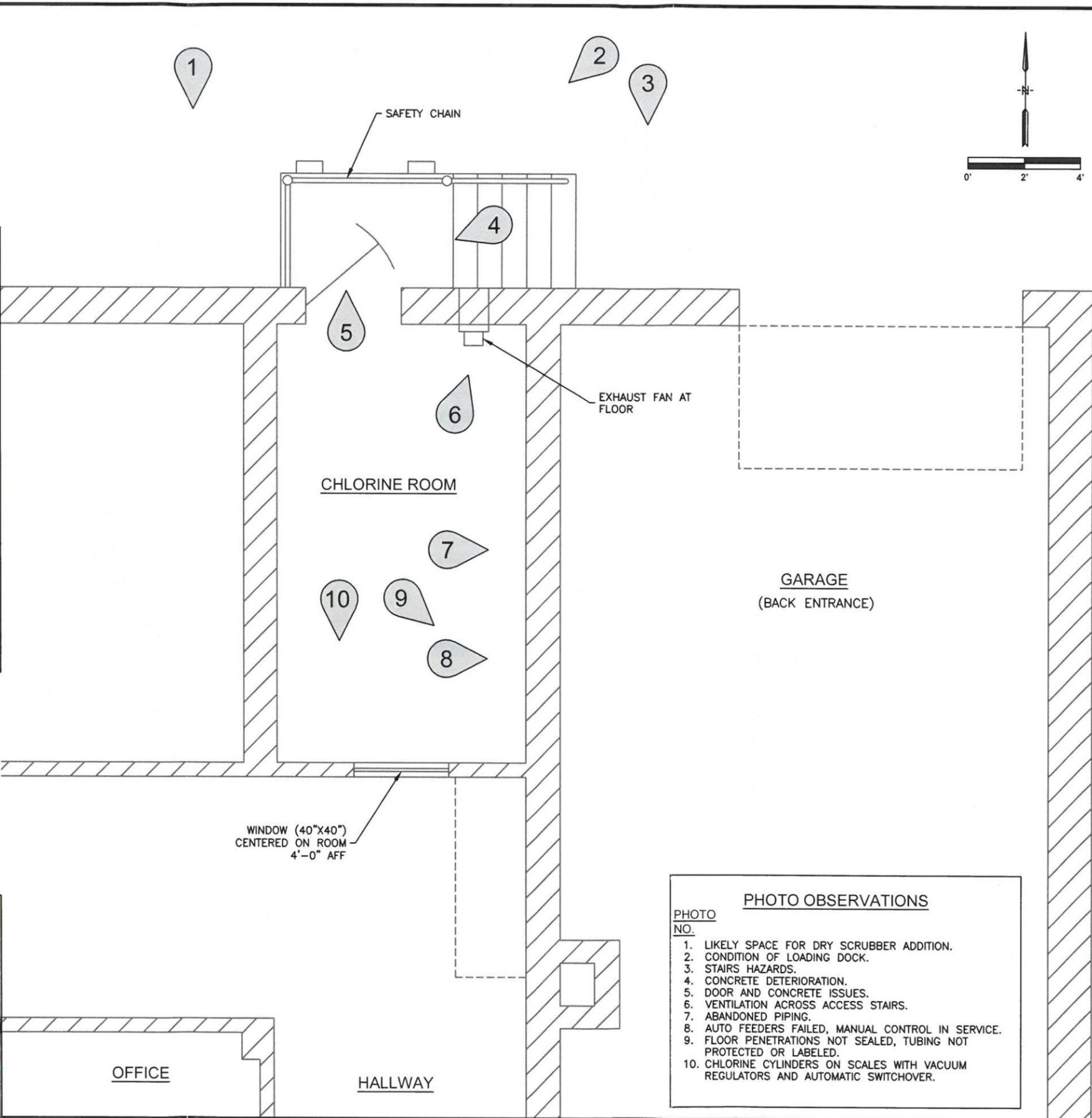
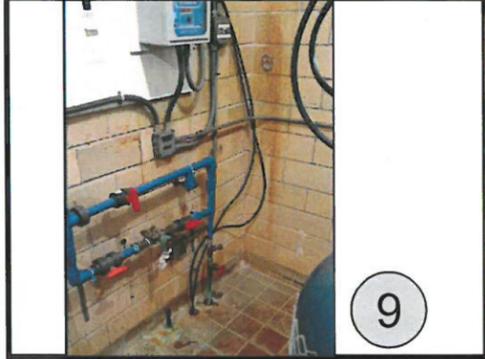
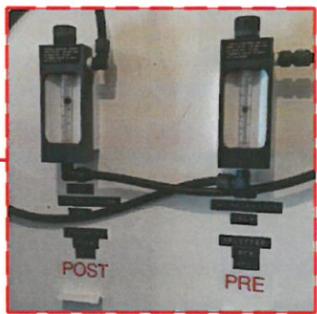
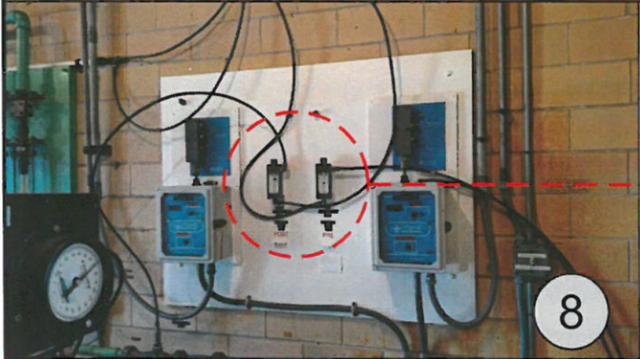
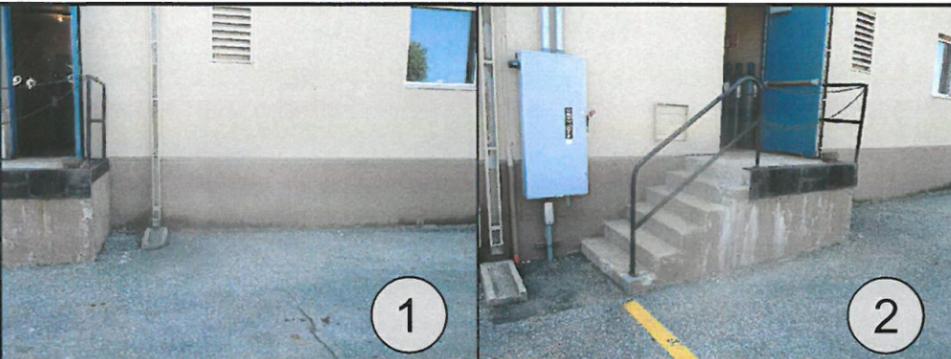


PHOTO OBSERVATIONS	
PHOTO NO.	
1.	LIKELY SPACE FOR DRY SCRUBBER ADDITION.
2.	CONDITION OF LOADING DOCK.
3.	STAIRS HAZARDS.
4.	CONCRETE DETERIORATION.
5.	DOOR AND CONCRETE ISSUES.
6.	VENTILATION ACROSS ACCESS STAIRS.
7.	ABANDONED PIPING.
8.	AUTO FEEDERS FAILED, MANUAL CONTROL IN SERVICE.
9.	FLOOR PENETRATIONS NOT SEALED, TUBING NOT PROTECTED OR LABELED.
10.	CHLORINE CYLINDERS ON SCALES WITH VACUUM REGULATORS AND AUTOMATIC SWITCHOVER.

DATE	REVISIONS
	△

SCALE	AS NOTED
DRAWN	JAS
CHECKED	MAS
APPROVED	MAS
DATE	—
ISSUED FOR	—

VERIFY SCALE
 BAR IS ONE INCH ON ORIGINAL DRAWING.
 0" — 1"
 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

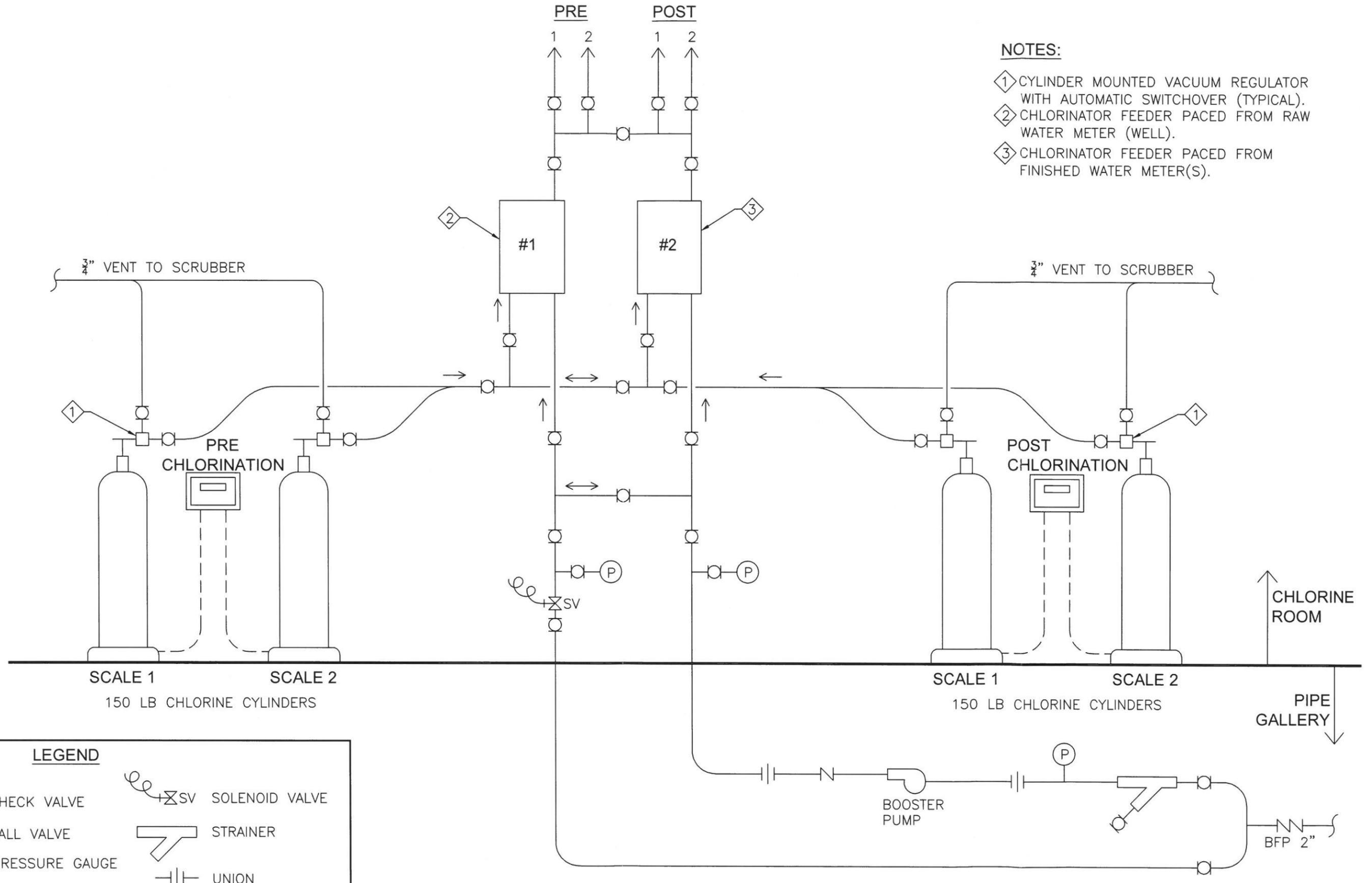


WATER TREATMENT PLANT CHEMICAL STORAGE EVALUATION
 CITY OF CLEAR LAKE, IOWA

2800 Fourth Street SW • Suite 9 • Mason City, Iowa 50401-1596
 641-421-8008 • 641-380-0313(FAX) • 877-241-8008(WATS)

EXISTING FLOOR PLAN CONDITIONS

FIGURE
1
 PROJECT 383147



- NOTES:**
- ① CYLINDER MOUNTED VACUUM REGULATOR WITH AUTOMATIC SWITCHOVER (TYPICAL).
 - ② CHLORINATOR FEEDER PACED FROM RAW WATER METER (WELL).
 - ③ CHLORINATOR FEEDER PACED FROM FINISHED WATER METER(S).

LEGEND

- |—| CHECK VALVE
- BALL VALVE
- ⊙ PRESSURE GAUGE
- ⊗ SV SOLENOID VALVE
- ⊏ STRAINER
- |— UNION

DATE	REVISIONS	SCALE	AS NOTED	VERIFY SCALE
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WATER TREATMENT PLANT CHEMICAL STORAGE EVALUATION
CITY OF CLEAR LAKE, IOWA

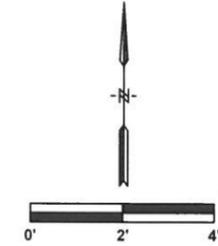
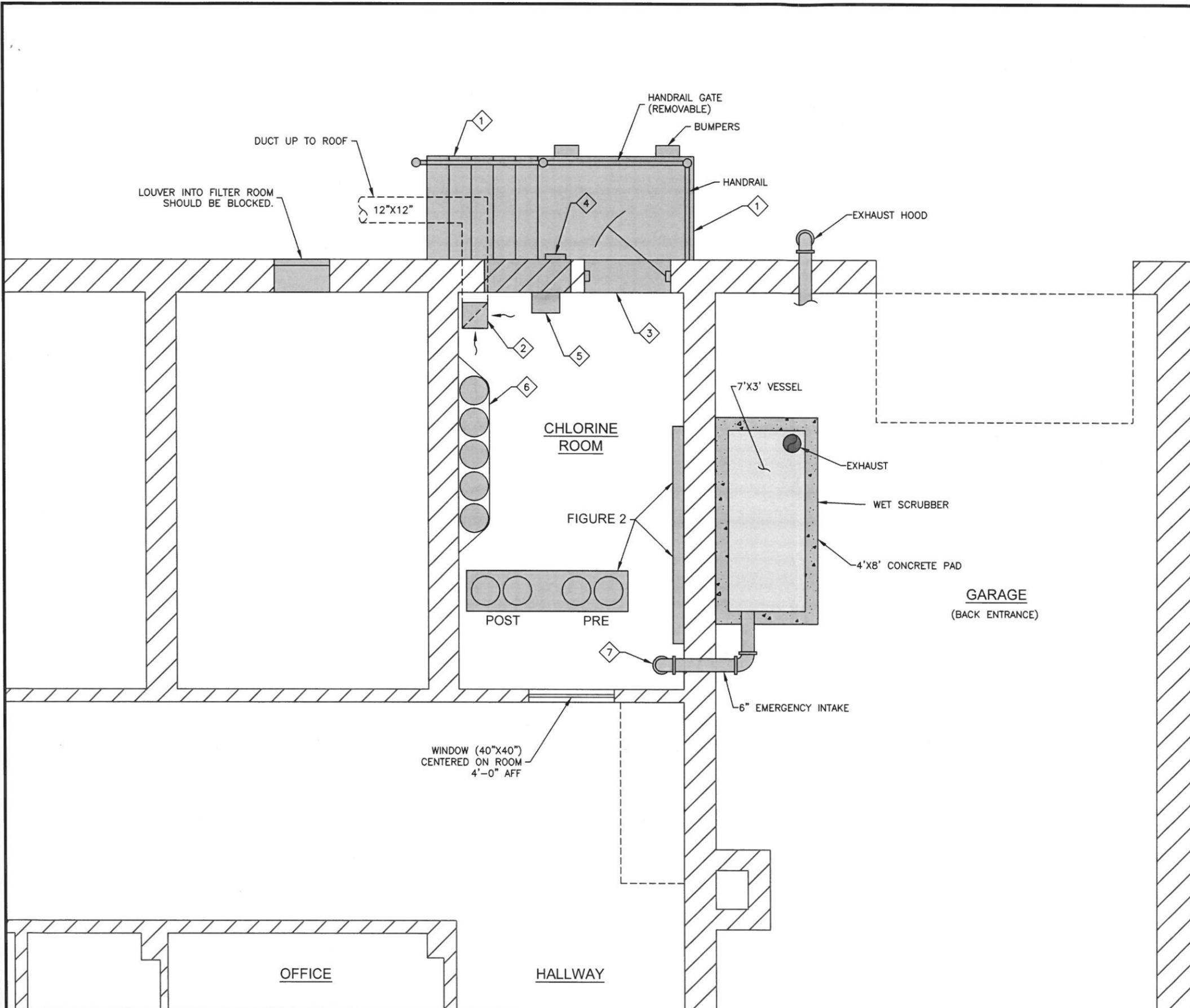
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641-421-8008 • 641-380-0313(FAX) • 877-241-8008(WATS)

**CHLORINE ROOM
PROPOSED CHLORINE SYSTEM SCHEMATIC**

FIGURE
2
PROJECT
383147

PLOTTED: Wednesday, October 28, 2015 8:27:24 AM

X-REFS: BASE_EXISTING
 FILE PATH: \\V\K\GIS\PROJECT FILES\WATER TREATMENT PLANT CHEMICAL STORAGE EVAL\383147\DRAWINGS\FIGURE 3



- KEY NOTES**
1. NEW CONCRETE LOADING DOCK WITH ALUMINUM STAIRS.
 2. EXHAUST DUCT FROM FLOOR (1305cfm-AIR CHANGE/MINUTE)
 3. ANODIZED ALUMINUM DOOR AND FRAME WITH PANIC HARDWARE.
 4. EXTERIOR SWITCHING PROTECTED WITH AUDIBLE ALARM AND LIGHTS.
 5. CHLORINE DETECTOR.
 6. CYLINDER STORAGE - CHAINED TO WALL.
 7. EMERGENCY EXHAUST CONTROLLED BY CHLORINE LEAK DETECTOR.

DATE	REVISIONS	SCALE	AS NOTED
		DRAWN	JAS
		CHECKED	MAS
		APPROVED	MAS
		DATE	
		ISSUED FOR	

VERIFY SCALE
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 0 1"
 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.



WATER TREATMENT PLANT CHEMICAL STORAGE EVALUATION
 CITY OF CLEAR LAKE, IOWA

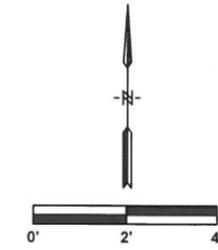
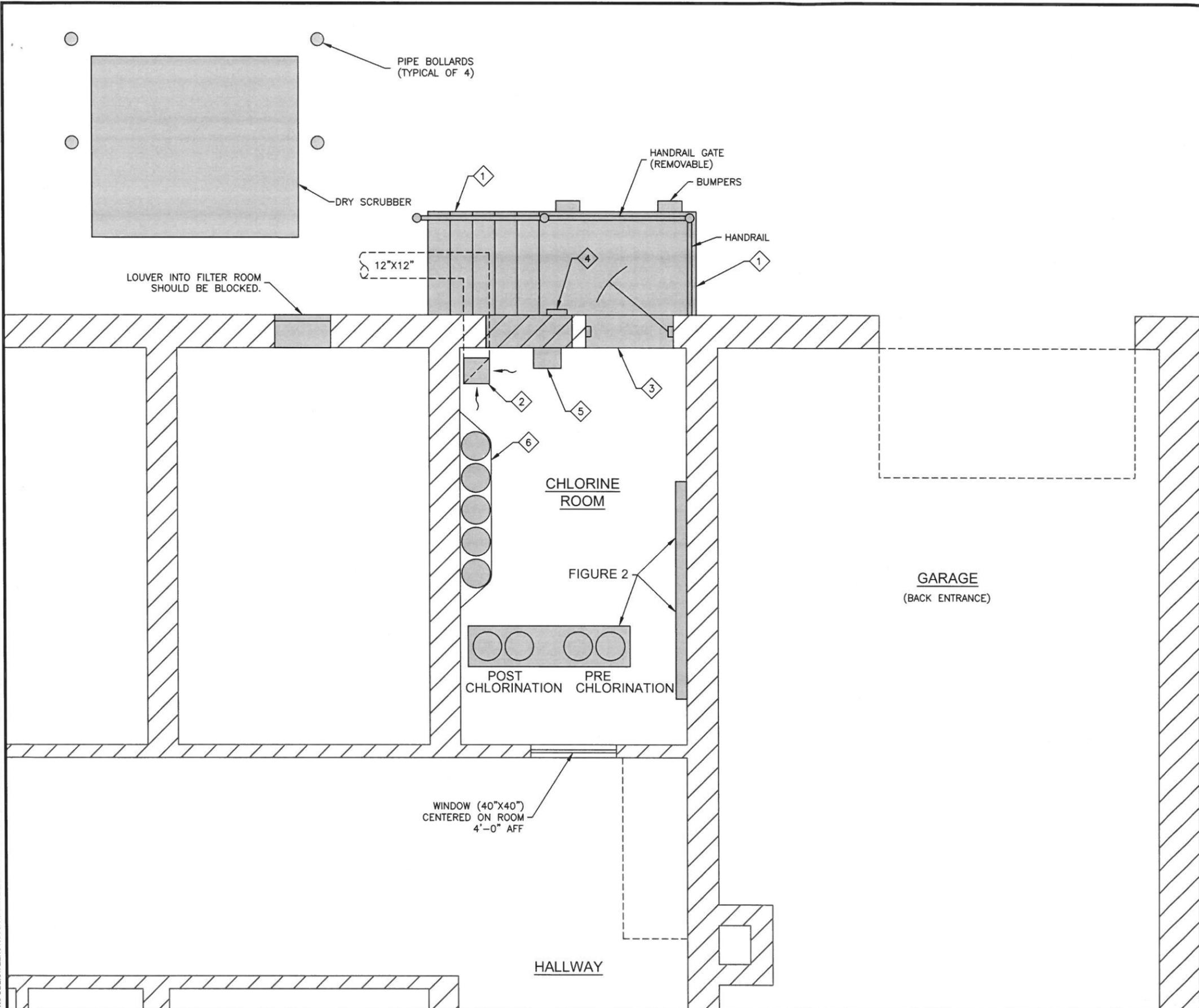
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FLOOR PLAN - WET SCRUBBER

FIGURE
 3
 PROJECT 383147

PLOTTED: Wednesday, October 28, 2015 8:24:19 AM

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 FILE PATH: \\KIMMCS\PROJECTS\CLEAR LAKE\PROJECT FILES\WATER TREATMENT PLANT CHEMICAL STORAGE EVAL\383147\DRAWINGS\FIGURE 4



- KEY NOTES**
1. NEW CONCRETE LOADING DOCK WITH ALUMINUM STAIRS.
 2. EXHAUST DUCT FROM FLOOR (1305cfm-AIR CHANGE/MINUTE)
 3. ANODIZED ALUMINUM DOOR AND FRAME WITH PANIC HARDWARE.
 4. EXTERIOR SWITCHING PROTECTED WITH AUDIBLE ALARM AND LIGHTS.
 5. CHLORINE DETECTOR.
 6. CYLINDER STORAGE - CHAINED TO WALL.

DATE	REVISIONS	SCALE	AS NOTED
		DRAWN	JAS
		CHECKED	MAS
		APPROVED	MAS
		DATE	---
		ISSUED FOR	---

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FLOOR PLAN - DRY SCRUBBER		FIGURE 4
PROJECT	383147	

Appendix A

Liquid Feed Self-Generated System

MICROCLOR

YOUR BEST DISINFECTION OPTION: ON-SITE SODIUM HYPOCHLORITE GENERATION



MC-300, 300 pounds per day



MAKING BLEACH MADE EASY

- Safest OSHG Design
- Low Cost, High Quality Hypochlorite
- Vertical V-Ray Cell Design
- Multi Cell Configuration
- Immediate/Passive Hydrogen Removal
- No Hydrogen Containment
- Small Footprint
- Low Maintenance
- 24 Hour Service Provided



MC-1000
1000 pounds per day

MAKING BLEACH MAKES SENSE

MicOclor On-Site Hypochlorite Generation (OSHG) is the safe, sound, clean & green disinfection option.

As concerns mount and regulations change regarding the safety and security of using chlorine gas for water disinfection, many utilities are choosing sodium hypochlorite (bleach) as a safer disinfection alternative. Once the decision to convert to a safer alternative has been made the question remains whether to purchase or produce sodium hypochlorite. MicOclor is the right choice to meet your disinfection requirements.

The items listed below are the most significant of the many benefits realized by upgrading to MicOclor OSHG. We encourage you to contact the many Utilities currently using MicOclor for further evidence supporting their decision to purchase a MicOclor upgrade.

SAFETY

MicOclor's dilute (0.8%) hypochlorite solution is below the hazardous material concentration threshold of 1%. This reduces operator HazMat exposure and eliminates the need for diluting commercial hypochlorite to compensate for degradation which results in inconsistent solution strength.

FEWER DELIVERIES

The only raw material required for the OSHG process is common salt. This will reduce vendor deliveries by 66% compared to commercial bulk hypochlorite. Less truck traffic through the community and at the facility will reduce the potential for accidents and eliminate the associated carbon footprint. This furthers efforts towards Green Facility Management and improves the water security profile.

CONTINUITY OF OPERATIONS

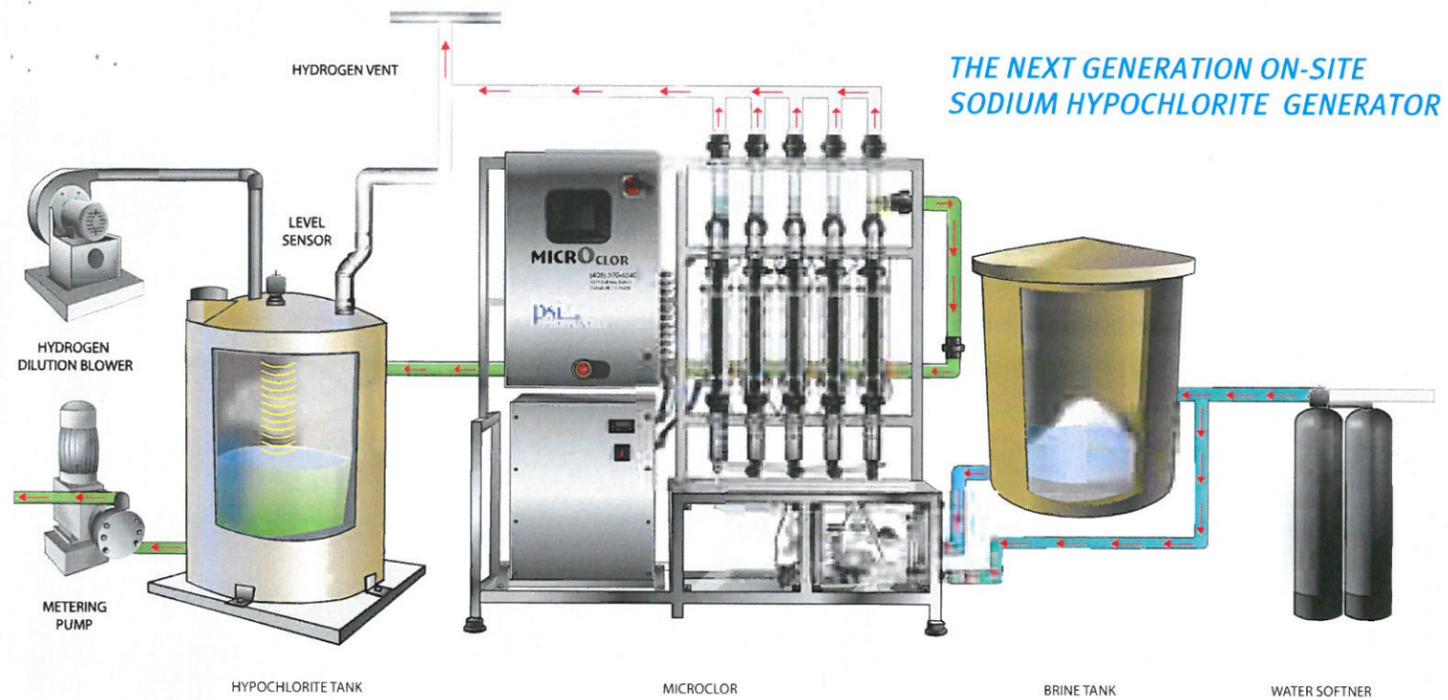
MicOclor OSHG will enable storage of larger quantities of raw materials (salt) necessary for your disinfection process. This will result in a more sustainable and robust treatment facility better able to withstand the demands imposed by a natural disaster or health emergency. OSHG is the only available disinfection technology that enables compliance with the Department of Homeland Security recommendations for Pandemic Flu Planning Guidelines.

REDUCED OPERATIONAL COSTS

Since all chlorine compounds are derived from salt, electrolytic conversion at the facility will result in significant savings to the owner. Typically, it costs 50-70% less to produce sodium hypochlorite compared to buying it.



MC-40 , 40 pounds per day



THE NEXT GENERATION ON-SITE SODIUM HYPOCHLORITE GENERATOR

MicOclor is modular in design and utilizes standard components, which are easily customized to meet a wide range of requirements.

A typical MicOclor system includes:

- Stainless Steel Skid Assembly
- Water Softener
- Brine Tank
- Brine Pump
- Electrolytic Cells
- Skid mounted PLC Control Panel
- D.C. Rectifier
- Hypochlorite Storage Tank
- Hypochlorite Metering Pump
- Hydrogen Dilution Blower

- Capacities:** 20-2400 pounds per day chlorine equivalent
- Control:** Automatic, regulated by storage tank level
- Percentage Sodium Hypochlorite:** 0.8% + 0.05%
- Consumables per pound of chlorine produced:** <3lbs of salt, 2KWH (AC), 15 gallons of water
- Water Input:** Potable water, 30-80 PSI, 45°F-85°F (5°C-27°C)
- Salt:** 99.7% pure dry weight Morton White Crystal or equivalent
- Power:** 20-80ppd systems - 208V or 240V AC, 1PH, 60HZ
60-2400ppd systems - 480V, 3PH, 60HZ
- Control Cabinet:** 304 stainless steel NEMA 4x
- Operator Interface:** 6" Color Touchscreen
- Programmable Logic Controller:** Allen Bradley Micrologix 1400 or equal

Brine & Hypochlorite Storage Tank, will be appropriately sized for each application.

MICROCLOR PRODUCT PARAMETERS

CAPACITY			FLOW				WATER		BRINE			EU			CAN			
PPD	KgPD	FORMAT	CELL	VOLTS	NOM. AMPS	GPM	LPM	GPM	LPM	GPM	LPM	KVA	208-1 FLA	240-1 FLA	240-3 FLA	380-3 FLA	480-3 FLA	600-3 FLA
20	9	1X20	2X12	60	30	0.2	0.8	0.18	0.7	0.016	0.061	2.4	12	10	6	3.7	2.9	2.3
40	18	2X20	2X12	120	30	0.4	1.5	0.37	1.4	0.03	0.121	4.8	23	20	12	7.3	5.8	4.6
60	27	3X20	2X12	180	30	0.6	2.3	0.55	2.1	0.05	0.182	7.2	35	30	17	11.0	8.7	6.9
80	36	4X20	2X12	240	30	0.8	3.0	0.7	2.8	0.06	0.242	9.6	46	40	23	15	12	9
100	45	5X20	2X12	300	30	1	3.8	0.9	3.5	0.08	0.303	12	58	50	29	18	14	12
160	73	4X40	4X12	240	60	1.6	6.1	1.5	5.6	0.13	0.484	19.2			46	29	23	18
200	91	5X40	4X12	300	60	2	7.6	1.8	7.0	0.16	0.606	24			58	37	29	23
300	136	5X60	6X12	300	90	3	11.4	2.8	10.4	0.24	0.908	36				55	43	35
400	182	5X80	8X12	300	120	4	15.1	3.7	13.9	0.32	1.211	48				73	58	46
600	273	5X120	12X12	300	180	6	22.7	5.5	20.9	0.48	1.817	72				110	87	69
800	364	5X160	12X16	300	240	8	30.3	7.4	27.9	0.64	2.422	96				146	116	92
1000	455	5X200	12X20	300	300	10	37.8	9.2	34.8	0.80	3.028	120				183	145	116
1200	545	5X240	12X24	300	360	12	45.4	11.0	41.8	0.96	3.634	144				219	173	139
1600	727	10X160	12X16	300	480	16	60.6	14.7	55.7	1.28	4.845	192				292	231	185
2000	909	10X200	12X20	300	600	20	75.7	18.4	69.6	1.60	6.056	240				365	289	231
2400	1091	10X240	12X24	300	720	24	90.8	22.1	83.6	1.92	7.267	288				438	347	277

NOTE: NOMINAL RUNNING AMPERAGE IS APROX. 75% OF KVA RATING

MAKING BLEACH MADE EASY

The safety and cost effectiveness of On-Site Hypochlorite Generation makes it the best option for disinfecting water.

Since 1988 On-Site Hypochlorite Generation has been recognized as an effective method for water treatment. Through the efforts of the team now at Process Solutions this technology has developed over three generations into the robust and durable design of today's MicrOclor System.

The patented MicrOclor design is the result of over twenty five years of experience in the manufacturing, installation and servicing of hypochlorite generation equipment. Advancements in system safety and ease of operation make MicrOclor the overwhelming choice for facilities.

The combined benefits of the following unique features make MicrOclor the most robust and durable system available today:

- Vertical/Multi Cell Configuration
- Direct Hydrogen Management
- Continuous Process Control
- Full Wave DC Power
- Compact Cell Design
- High-Velocity Electrolyte Circulation

VERTICAL/MULTI CELL CONFIGURATION

MicrOclor's vertical "V-Ray" cell arrangement is the most significant of the many features that distinguish it from the earlier generations of equipment.

DIRECT HYDROGEN MANAGEMENT

The V-Ray electrolytic cells are configured in a vertical array and vented directly to atmosphere. This prevents the chance of over pressurization by releasing all hydrogen directly from each cell. Other systems use the storage tanks as hydrogen separators which can contribute to excessive cell pressure and vibration in the discharge piping.

CONTINUOUS PROCESS CONTROL

MicrOclor's integral brine pump is controlled by the PLC to optimize salt conversion efficiency and hypochlorite production. Automating precise brine control reduces operator intervention and improves system efficiency.

FULL WAVE DC POWER

Automated brine control allows full wave rectification which greatly reduces excess heat and the number of parts utilized in the rectifier. This reduces HVAC loads and improves system reliability.

COMPACT CELL DESIGN

The V-Ray cell's vertical orientation not only allows better hydrogen separation but is also more compact, resulting in a more space-efficient footprint. The clear acrylic cell body supports the electrode array and eliminates the need for internal baffles and fasteners which reduces maintenance and repair costs over the life of the system.

HIGH-VELOCITY ELECTROLYTE CIRCULATION

The hydraulic lift created by the hydrogen separation circulates electrolyte through the cell loop at 3 FPS. This reduces the requirement for cell cleaning and minimizes heat buildup in the cell.



MC-1000. 1000 pounds per day

COMPREHENSIVE WARRANTY

It is our policy to provide every customer with a state of the art, fully tested system. Each MicroClor Hypochlorite Generation System carries a full three-year support agreement covering all parts and labor. In addition, the electrolytic cells and cell housings are warranted on a prorated basis for years 4-7.

SERVICE & SUPPORT

PSI prides itself on our service and technical support. If you need assistance, we're here to help. We offer complete support for your MicroClor Hypochlorite Generation System including all peripheral components. 24/7 phone support and next day parts are available for your MicroClor System. PSI guarantees next day field service, 7 days a week, with technicians located in all major markets plus an extensive factory trained representative network.



LC-40S, 40 pounds per day

LEARN MORE ABOUT MICROCLOR

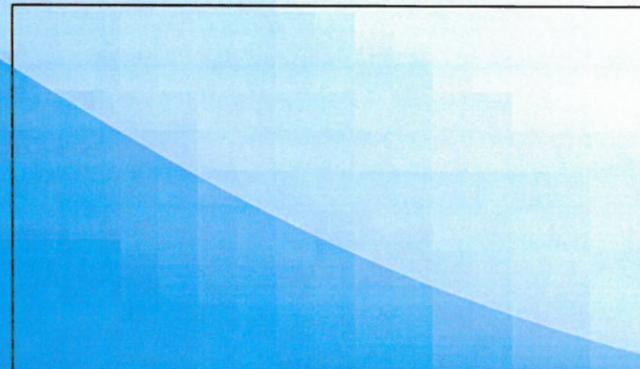
www.4psi.net/products/microclor/video/

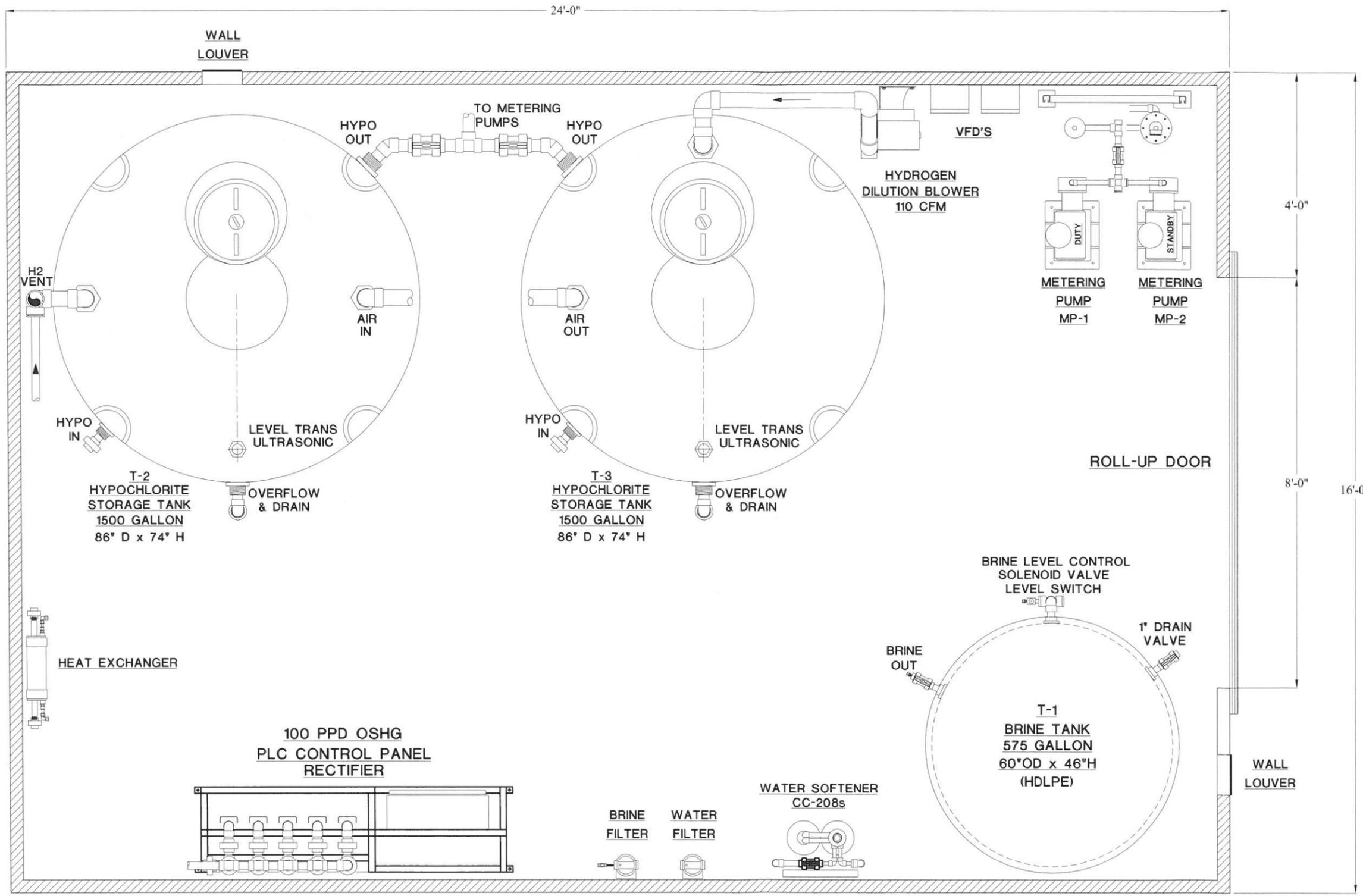


process solutions, inc.

1077 Dell Avenue, Suite A | Campbell, CA 95008
Toll Free: (888) 774 4536 (PSI HELP)
Tel: (408) 370 6540 | Fax: (408) 866-4660
Email: mail@4psi.net | www.4psi.net
Offices in Campbell CA, Temecula CA, Payson AZ,
San Antonio TX, Conroe TX, and Clearwater FL

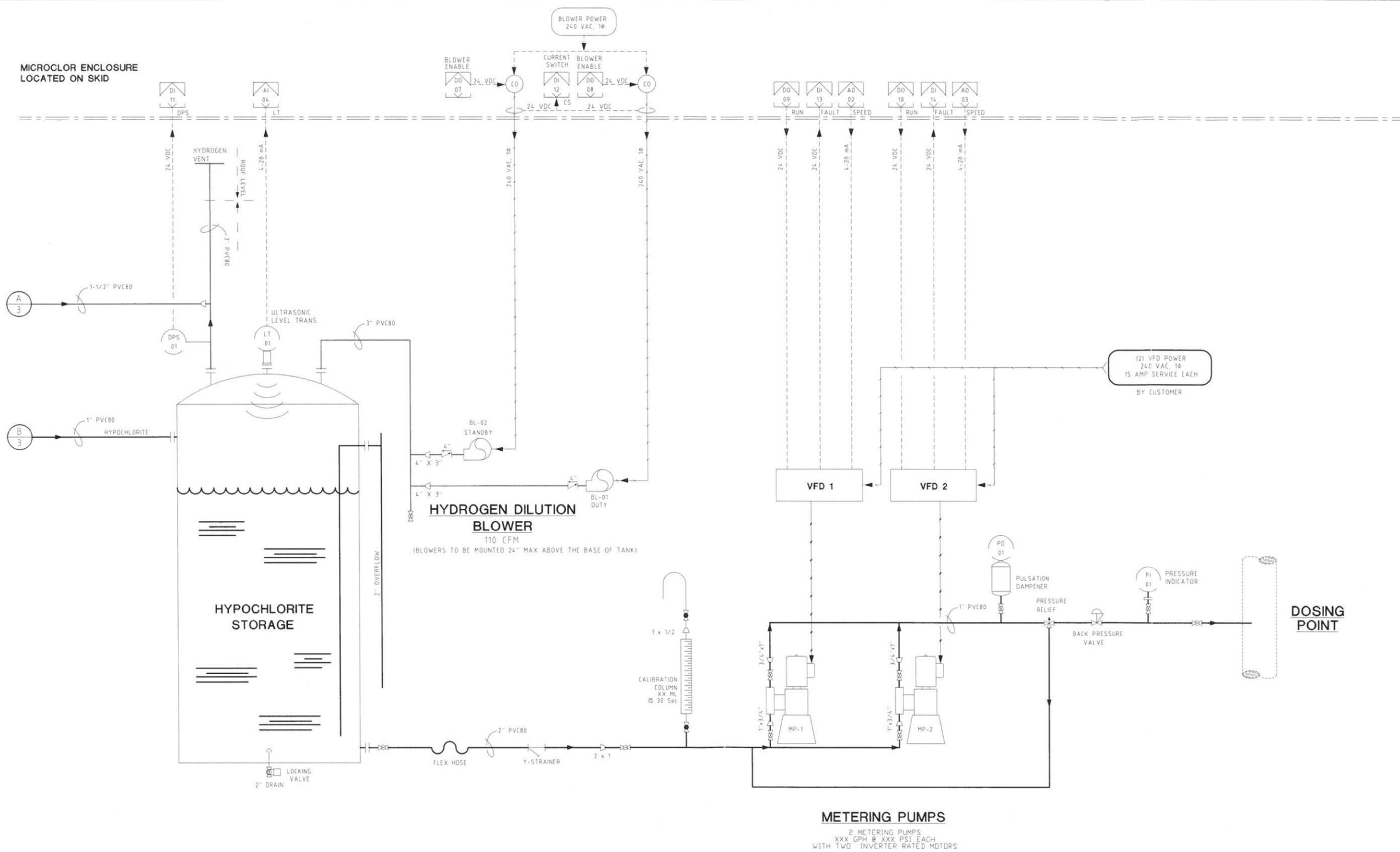
Represented By:





PLAN VIEW
ON-SITE HYPOCHLORITE GENERATOR BUILDING

△				This drawing represents an investment by PROCESS SOLUTIONS INC. of substantial sums, including our engineering skills and experience. It is, therefore, loaned without consideration other than the agreement and condition that it is not to be used in whole or in part to assist in making or to furnish any information to others for the making of drawings, print apparatus, or parts thereof. The acceptance of this drawing will be construed as an acceptance of the foregoing conditions and as an admission of the exclusive ownership in and to the drawings of PROCESS SOLUTIONS INC.	 process solutions, inc 1077 DELL AVE., SUITE A, CAMPBELL, CA 95008	PROJECT	PROCESS SOLUTION INC 1077 DELL AVE CAMPBELL, CA, 95008	
△			DRAWN BY			F JAVANSHIR	DATE	03/03/09
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△	03/03/09	F J	RELEASED FOR INFORMATION			SCALE	1"=1'-0"	SIZE
REV	△	DATE	BY	DESCRIPTION			DWG # 0060-MC0100-LA SHEET 1 OF 1 REV A	



△				This drawing represents an investment by PROCESS SOLUTIONS INC of substantial sums, including our engineering skills and experience. It is, therefore, loaned without consideration other than the agreement and condition that it is not to be used in whole or in part to assist in making or to furnish any information to others for the making of drawings, print apparatus, or parts thereof. The acceptance of this drawing will be construed as an acceptance of the foregoing conditions and as an admission of the exclusive ownership in and to the drawings of PROCESS SOLUTIONS INC.	 1077 DELL AVE, SUITE A, CAMPBELL, CA 95008 DRAWN BY: F. J. ANSHIR CHECKED BY: SCALE: N/A SIZE: D	PROJECT: PROCESS SOLUTIONS INC.
△			SUBJECT: STANDARD 100 PPD SYSTEM			
△			RELEASED FOR REVIEW			PIPING & INSTRUMENTATION DIAGRAM
△	03/12/09	F. J.				DWG # 0000-MC00100-PI SHEET 4 OF 4 REV A
REV	△	DATE	BY	DESCRIPTION		

Appendix B

Gas Chlorination System

Wallace & Tiernan® Gas Chlorination V10K™ Gas Feed System

Product Overview

The V10k™ system is a remote vacuum solution feeder for use with four of the most commonly used gases for the disinfection and treatment of municipal and industrial water and wastewater. This unit has been built to continue the long standing proven design and features of its predecessor and adds more. The versatility of wall mounting, front access of all components and maximum capacity of 750 PPD (340 kg/day chlorine) have all been enhanced by this new design.

The V10k™ gas feed system consists of a vacuum regulator mounted at the gas supply, a wall-mounted gas control unit with a rotameter for indication of feed rate and a water-operated injector that provides the vacuum source to drive the entire system. Using automatic switchover regulators, the V10k™ provides an uninterrupted supply of gas to maintain continuous disinfection/treatment.

Features

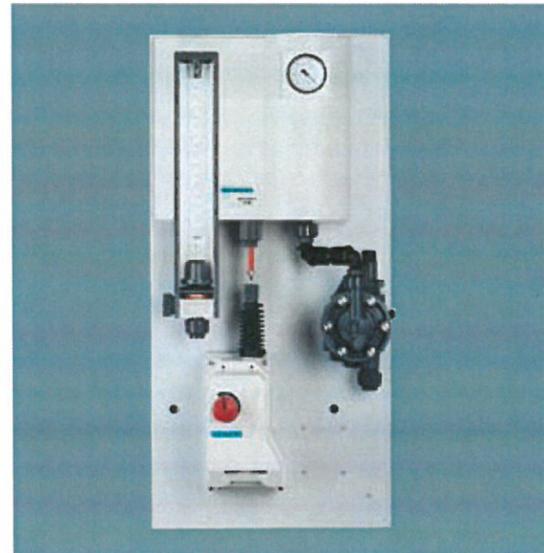
- Versatility – a wall-mounted gas feeder available in a configuration to meet your water treatment requirements
- Proven V-Notch Flow Control Technology – for accuracy and repeatability
- Premium Construction – features a one-piece molded headblock for reliability and endurance
- Large 5" and 10" Rotameters -- available in 14 capacities up to 750 PPD Cl₂ for the highest degree of readability
- Serviceability – components easily accessible for servicing without tools
- Flexible Control Modes – manual to fully automatic control schemes
- Differential-Type Regulation – allows for lower vacuum levels and efficient, economical injector operation
- Handles All Water Treatment Gases – Chlorine, Ammonia, Sulfur Dioxide and Carbon Dioxide

Key Benefits

- Unique, versatile wall-mounted configuration provides for operator convenience and stable control platform
- Integral, automatic switchover to a fresh gas supply insures continuous operation
- Large 5" and 10" flowmeters for the highest degree of readability and accurate indication of feed rate
- Flexible control options from manual to fully automatic systems
- Easily serviced without the need for special tools

Applications

- Municipal and Industrial water and wastewater treatment
- Treatment of industrial waste from chemical processing
- Industrial process water
- Recreational pools



Product Sheet

Water Technologies

SIEMENS

Control Methods

Feed rate of any V10k™ Chlorinator is controlled by either one or both of these methods: interrupting the injector-water supply to shut off the chlorinator's operating vacuum; changing v-notch-orifice area (by positioning the v-grooved plug in its ring) while holding vacuum differential across the orifice constant.

Manual Control

Manual control by changing orifice area (v-notch-plug position) via an adjustment knob on the chlorinator.

Start-Stop or Program Control

This type of control is achieved with simple implementation. A V10k™ Chlorinator's operating vacuum is started and stopped by interrupting the injector water supply. A solenoid valve or motorized valve is wired into the control circuit of a pump, switch, controller, or timer. Similar to this, a special vacuum line solenoid valve can be used in the gas line to the injector.

Automatic Control

The V10k™ system can be provided with automatic feed rate control ranging from simple to complex control schemes. The control system can consist of a simple direct mA control V-notch actuator or a more sophisticated control including an actuator and a controller (choice of either an SFC-SC (signal Conditioning unit) or aSFC-PC(Process Control Unit). Either controller can be remote mounted or on the panel with the V10k™ system.

Direct 4-20 mA input control

(see WT.040.050.000.UA.PS)

- Direct 4-20mA input signal from an external control device
- Compact integral design
- Internal dosage capability

SFC-SC (See WT.050.590.010.IE.PS)

- Operating Modes: flow proportional, manual
- Inputs: 4-20 mA DC (from flow transmitter)
- Outputs: Control out to actuator; also 4-20 mA output for retransmission of gas feed rate (actuator position)
- Control Capability: Dosage and flow scaling

SFC-PC (See WT.050.590.020.IE.PS)

- Operating Modes: Direct residual feed back, compound loop, feed forward, flow proportional, manual
- Ranges: Setpoints up to 50 mg/L and center- zero capability for dechlorination
- Inputs: Up to 3 analog (flow, residual, spare); 2 digital
- Outputs: Control out to actuator; plus user- configurable 4-20 mA; RS-485 serial communications
- Control Logic: Proportional and integral with lag
- Alarms: Four user-configurable for 16 different conditions

Operation

The V10k™ gas feed system operates under a vacuum that is produced at the injector and transmitted through the control unit to the vacuum regulating valve located at the gas supply. Gas enters the vacuum regulating valve and moves toward the flow control components under a vacuum.

Gas next passes through the rotameter, where its flow rate is measured and the V-Notch orifice, where feed rate is controlled manually or by an automatic positioner. At the injector, the metered gas is dissolved in the water stream. The resultant solution is discharged to the point of application.

1.) Vacuum Regulators

Vacuum regulating valves, mounted on the gas supply containers, immediately reduce the pressurized gas to a vacuum. Three capacity regulators are available for both standard and switchover applications: 200 PPD, 500 PPD, and 3000 PPD.

The 200 and 500 PPD regulators feature:

- Positive Indication of Operating Status – A unique lever mechanism and front panel knob provide the operator with a quick indication of 3 or 4 operation modes (operating, low gas supply, off, and standby for automatic switchover arrangements). An additional built-in indicator becomes visible in the low/out-of-gas situation and an optional contact is available for remote indication.
- Secondary Pressure Check – The 500 PPD regulator has a unique, built-in additional check valve, designed to confine gas under pressure should dirt build up on the primary valve seat
- Local or Remote Vent Valve – The pressure relief vent is built into the regulator housing to keep all vent lines in the gas supply room

2.) Rotameter

Large scale, 5" and 10" rotameter tubes provide clear and accurate indication of feed rate, with 13 capacities available in each size (14 for chlorine).

3.) Differential Regulating Valve

Maintains the proper vacuum differential across the V-Notch orifice for consistent feed rate, regardless of changes in operating vacuum.

4.) Automatic Positioner

For automatic control, this positioner moves the V-Notch plug up to 3" (compared to a fraction of an inch for competitive systems) in precise response to the application requirements.

Features include:

- NEMA 4X enclosure
- Manual override is achieved by simply pulling the knob to disengage the drive motor
- Three sets of customer contacts for system interface: Manual Override, MAX position and MIN position.
- Internal feedback potentiometer for precise operation with the SCU or PCU controllers.

5.) Vacuum Gauge

Provides indication of operating vacuum level. A direct acting diaphragm mechanism eliminates liquid-filled chambers.

6.) Injectors

Fixed throat, differential-type injectors create a powerful operating vacuum to drive the V10k system. Three capacity

injectors are available: 3/4" for capacities up to 200 PPD (90 kgs/day), 1" up to 500 PPD (225 kgs/day), and a 2" up to 750 PPD (340 kgs/day) (not shown).

These injectors feature:

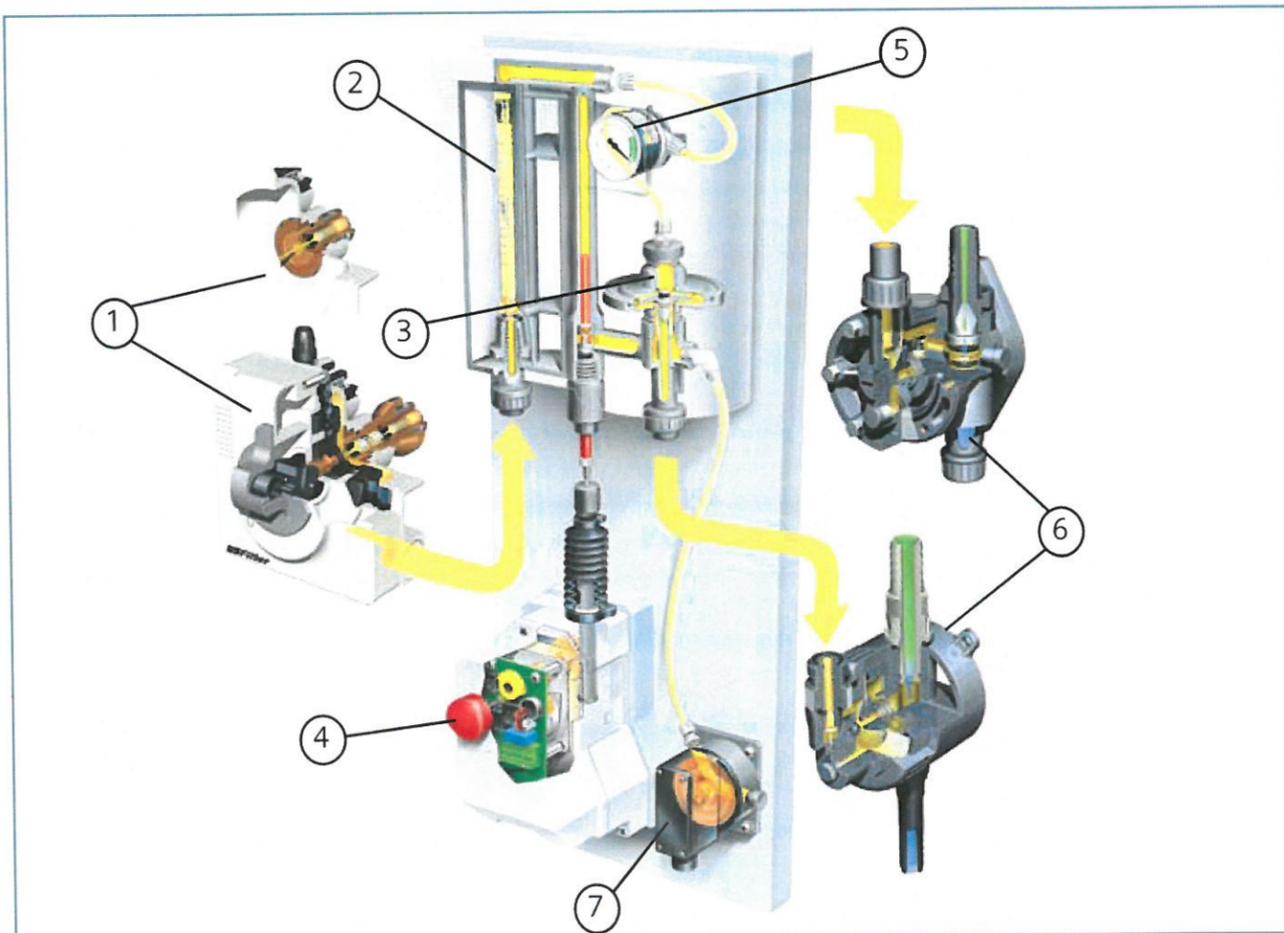
- Built-in Double Check Valves for superior protection against backflooding. A spring-loaded diaphragm with a spherical seat for positive sealing and a spring-loaded poppet check work together to maintain system integrity.
- Flexible Mounting Orientation for convenient installation. The gas inlet connection can be rotated to provide pipe entry at selected angles. The injector can also be mounted in horizontal or vertical planes. It features an integral mounting bracket and can be disassembled for service without removal from the wall or disconnecting the inlet/outlet piping.
- Optional Anti-siphon Arrangement for swimming pools and negative backpressure applications. These injectors require a minimum inlet water pressure of 20 psi (1.4 Bar) for operation.

7.) Vacuum Switch

A local or remote mounted vacuum switch provides an alarm in the event of a high or low vacuum condition signifying a loss of gas feed.

Technical Data

Accuracy	Gas feed is ±4% of the indicated flow
Operating Range	Manual 20:1 for any rotameter; Automatic 10:1
Rotameters	Choice of 5" or 10" scale length
Operating Vacuum	10 to 50" water
Operating Temperature Range	10° to 130°F (-12° to 55°C)
Mounting	Wall or panel mounted. Panel mounted arrangement can be configured with a panel mounted injector or a panel mounted controller (for automatic control version). An optional vacuum switch can also be mounted on the panel.
Control Modes	Manual control, start-stop or program, flow proportional, direct residual and compound-loop control
Distance, Supply to Control Panel	For flexibility, it is not necessary to install the vacuum regulating valve close to the control panel. They can be a few feet to several hundred feet apart, depending on maximum feed rate, the diameter of the connecting pipe or tubing and system performance requirement.



Technical Data (continued)

Injectors	For capacities up to 200 PPD (90 kgs/day), a 3/4" injector is used. For capacities up to 500 PPD (225 kgs/day), a 1" injector is used. Injectors can be panel mounted or remote. For capacities up to 750 PPD (340 kgs/day), a 2" injector is used.
Injector Operating Water	This must be reasonable clean. Injectors are fixed-throat differential type. Maximum inlet pressure is 300 psi to 100°F; 150 psi to a maximum of 130°F
Pressure at Application Point	Maximum pressure with hose or polyethylene tubing is 75 psi, but high-pressure hose or rigid pipe will allow application against backpressure of 75 to 160 psi.
Electrical Requirements	Controller requires 120 volts +/- 10% (200 mA) or 230 volts +/- 10% (100 mA), 50/60 Hz, single phase.

Options

Gas Flow Transmitter

Non-inferential measurement of the rate of gas flow through any V10k™ gas feeder. Consists of a NEMA 4X sensor transmitter with a 4-20 mA output directly proportional to gas flow. See publication WT.050.114.000.UA.PS.

Automatic Switchover

A pair of vacuum-regulating valves designed to switch to a fresh gas supply from an empty container.

Connections

Pipe and plastic tubing sizes given.

Vacuum Regulating Valves			
Tubing to	200 lb	500 lb	3000 lb
control panel	3/8" x 1/2"	1/2" x 5/8"	1/2" NPT
container valve	gas inlet is yoke connection to a cylinder or header valve or, with optional adaptor, to a ton container valve		

Injectors			
Connection	200 lb	500 lb	750 lb
water inlet	3/4" male NPT or 3/4" flexible pipe	1" female NPT	2" female NPT
water outlet	same as inlet	3/4" NPT with adapters for 3/4", 1" or 1 1/2" pipe or hose	1-1/2" male NPT or 2" hose

Ton-Container Kit

Adapts the vacuum-regulating valve for mounting on a ton container for gas withdrawal.

Vacuum Switch

A low vacuum switch or a high, high/low vacuum switch is available to indicate loss of gas feed. Each switch contains two, s.p.s.t. contacts rated 5 amps at 250V.

Related Options

Related options include: cylinder and ton container valves and connections; header valves with manifolding and connections; vent, injector-water and injector outlet lines and clamps; main connections; solenoid valves; water-line pressure gauge; gas mask; on-line residual analyzers; residual test kits; injector vacuum gauge; spare parts; booster pumps; chlorine detector; two cylinder scale.

Chlorine Gas Warning

All unattended chlorine gas containers and chlorination equipment should be monitored for leaks. Sensitive chlorine detectors, which respond quickly to chlorine in the atmosphere, should be installed at each site. Request publications WT.050.130.000.UA.PS.

Carbon Dioxide Warning

Because of the high pressure in carbon dioxide containers, the vacuum regulating valve cannot be mounted directly on the cylinder. A pressure-reducing valve must be installed between the cylinder and the vacuum regulating valve.

Compliance

Gas feeder, controller and actuator are designed to conform to all applicable NEC and NEMA specifications and Chlorine Institute and Compressed Gas Association recommendations.

Overall Dimensions

	Weight	Dimensions
Chlorinator Panel mounted	manual: 20 lbs (9 kg) automatic: 25 lbs (11 kg)	manual: 34-5/8" x 17" 7-5/16" automatic: 34-5/8" x 17" x 10"
Chlorinator Wall mounted	10 lbs (4.5 kg)	5": 12-3/8" x 13-7/16" x 6" 10": 19-7/8" x 13-7/16" x 6"
Controller		SCU: 8-3/4" x 6-1/2" x 3-5/8" PCU: 8-3/4" x 6-1/2" x 9-1/8"

Gases and Capacities*

Max. Capacity	Chlorine lb/24 hr	Carbon Dioxide lb/24 hr	Sulfur Dioxide lb/24 hr	Ammonia lb/24 hr
5" & 10" 200 PPD	3/10/20/30/ 50/75/100/ 150/200	2.4/8/15/24/35/ 58/75/116/150	3/10/20/30/ 50/75/100/ 150/200	1.4/4.5/9/ 14/24/35/45/ 70/95
5" & 10" 200 PPD	3/10/20/30/50/ 75/100/150/ 200/250/300/ 400/500/750	2.4/8/15/24/ 35/58/75/116/ 150/200/230/ 300/390	3/10/20/30/50/ 75/100/150/ 200/250/300/ 400/475	1.4/4.5/9/14/ 24/35/45/70/ 95/120/140/ 190/240

* A selection of tubes is also available in metric calibrations

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Wallace & Tiernan® Analyzers/Controllers SFC SC

Flow proportional control

General

The Wallace & Tiernan® SFC SC system is used for flow proportional controlled dosing of chemicals used in water treatment and for similar industrial process applications. It can control automatic v-notch positioners in gas feed systems, such as the V10k™ and V2000™ systems, or automatic stroke length positioners and variable speed drives in dosing pump systems.

The SFC SC system is available either as stand alone wall-mounted unit, equipment-mounted, or as a panel-mountable unit for installation in a control enclosure.

The SFC SC flow proportional control complements the SFC series of products which measure and control various parameters, including free and total chlorine, chlorine dioxide, ozone, fluoride, ORP (redox) and pH value.

Typical applications

- Potable water treatment
- Waste water treatment
- Cooling water circuits
- Industrial and process water treatment
- Swimming pools

Features

- Determines the control signal for the positioner/dosing pump from the control variable and the dosing factor
- Sets the position of the positioner accurately using a feedback signal
- Automatic correction in the event of non-linearity of the gas feeder
- Wide dosage range: 10 – 400 %
- Electronic override
- Milliamp or relay output control signals
- Security access

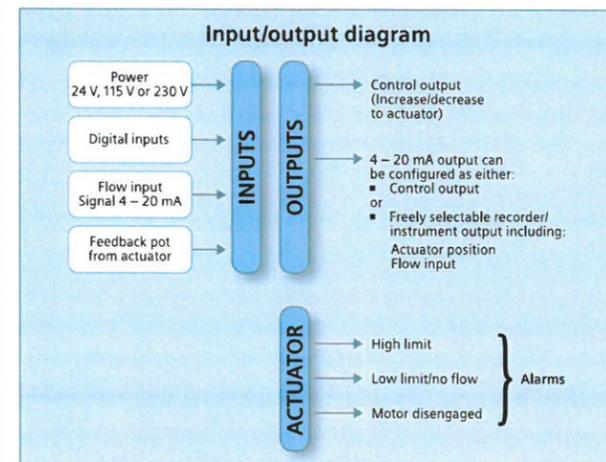
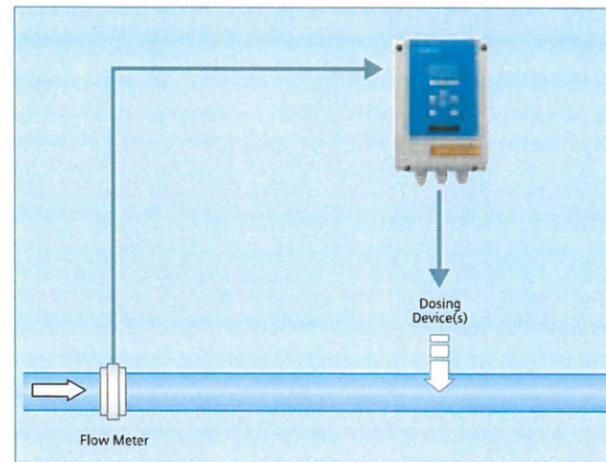
Benefits:

- Easy to operate thanks to intuitive menu navigation, diagnostics menu to simplify maintenance and installation, automatic display of any faults
- Multiple correction values can be used for linearization of the dosing feedback
- Graphical display of all parameters and process variables
- User-selectable units for flow and dosing
- Galvanically isolated inputs and outputs



The intuitive menu structure is controlled via 3 function keys, 4 navigation keys and an escape and acknowledge key.

SFC electronic module	
Display	Back-lit LCD display, resolution 128 x 64 pixels
Measurement input	0/4 – 20 mA, 47 Ω impedance, isolated
Feedback input	0/4 – 20 mA or 0 – 1 V or 1 kΩ, 5 kΩ potentiometer, linearization over maximum 11 correction values
Digital inputs	2 x inputs for voltage-free contact (< 100 Ω) power supply via SFC SC (12 V)
Switching relay outputs	2 alarm contacts/controller outputs
▪ Switching values	5 A, 250 V AC, 1250 VA max 5 A, 220 V DC, 150 W max
▪ UL/CSA-rating	5 A, 1/6 HP 125, 250 V AC 5 A, 30 V DC, 30 W max 1 A, 30 V DC – 0.24 A, 125 V DC
Analog output	0/4 – 20 mA; load protected ≤ 500 Ω; Accuracy < 0.5 % FS; Galv. isolated up to 50 V relative to earth
Sensitivity	Actuator deadband adjustable from 0.1 to 0.5 % of full scale
Speed of response	Completes a step change in input over full scale within 75 sec
Interface	RS 232 for firmware updates
Characteristics	Dosage factor adjustable from 10 – 400 %; Flow scaling factor free selectable; Sensitivity speed of response
Power supply	24 V DC or 100 – 240 V AC, 50/60 Hz
Ambient temperature	0 – 50 °C (32 – 122 °F)
Enclosure	IP 66, designed to meet NEMA 4X
Installation options	Wall-mounted, equipment-mounted (e.g. V10k, V2000), or panel-mounted in a control enclosure
Weight (incl. packaging)	approx. 2.5 kg (5.5 lbs)
Dimensions (W x H x D)	185 x 265 x 145 mm (7.3 x 10.4 x 5.7 ")
Testing and marking	CE, EMC-EN 61326 LUD-EN 61010 UL listed/CSA certified



Dosing is directly proportional to the measured flow rate.

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Water Technologies

Wallace and Tiernan® Analytical Instrumentation

Acutec™ 35
Gas Detection System

SIEMENS

The Acutec™ 35 system utilizes the latest on-line gas monitoring technology to provide a flexible and reliable, self-testing detection system in a compact modular design. With sensors to detect the presence of chlorine, ammonia, or sulfur dioxide gases in ambient air, the Acutec™ 35 system is ideal for detecting leaks from storage containers, process piping, or gas feed equipment in any type of water, wastewater, or industrial plant environment.

The Best Gas Detection System Under the Sun

The Acutec™ 35 system's modular design allows for a wide range of configurations that can be simply and neatly installed, using standard enclosures.

The receiver module is available in a choice of either a Detector or Monitor version, which has an LED display, and an mA output signal. Both provide two selectable levels of alarm. A low level warning alarm may simply indicate transient leak conditions, whereas a second alarm can initiate a full alert in the event of more serious leaks. And, for real peace of mind, there is an optional Auto-Test unit. This incorporates an integral gas generator that automatically tests the sensor each day, sounding alarms in the event of sensor failure. This added safety feature also reduces the costs incurred with manual procedures.

Combine the features of the Acutec™ 35 system with the fact that it comes with the backing and technical support of one of the world's most respected chemical feed and disinfection companies, and you will see why the Acutec™ 35 system is the best gas detection system under the sun. Every single component in the Acutec™ 35 system is precision manufactured and vigorously tested to ensure accuracy and reliability.

Key Benefits:

- Gas detection for Chlorine, Ammonia or Sulfur Dioxide
- Simple and neat installation of module components
- Easy access to control panel via a hinged cover on the NEMA 4X enclosure
- Audible horn to provide local warning.
- Choice of Detector or Monitor version
- Sunlight readable 4 digit LED on the monitor
- Single or multipoint gas detection systems
- Automatic integral gas generator



Installation

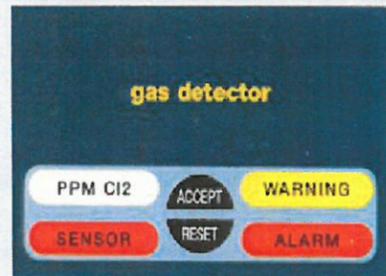
The flexibility of the modular system allows for simple installation of single or multipoint gas detection systems. Each point of detection requires the installation of one sensor/transmitter and one receiver module. The sensor/transmitter is installed in the area to be monitored and the receiver module can be located up to 1000 feet away. A power supply module, sufficient for use with up to two receivers, is housed with the Receivers in a NEMA 4X enclosure.

All enclosures are provided with knockouts on all four sides to facilitate wiring using the 1/2" FNPT (12.7 mm) conduit hubs provided. Equally suitable for indoor or outdoor applications, these NEMA 4X-rated polystyrene enclosures are fitted with a tough hinged polycarbonate window for clear visibility of all indicators and easy access to the control panel. Included within the enclosure is a piezoelectric horn to provide audible local warning.

Receiver Module

Two versions of the receiver are available:

The detector signals the presence of specified gas and includes two gas alarm set points and three configurable and assignable gas alarm relays. It is also supplied with a separate sensor alarm and relay.



The monitor provides, in addition to the above, an LED display of gas concentrations in PPM and an isolated 4-20mA output.



Each module is switch-programmable for full scale range. A single switch on the front panel provides alarm acknowledgement, reset functions, alarm relay inhibition, on-demand activation of Auto-Test, and LED indicator testing. In addition, LED light bars provide a visual indication of alarm status.

Power Supply Mode

This module, designed for installation alongside the receiver module, can accept any AC input between 85-25, 5 VAC, transforming the supply to a 12 VDC output for the receiver module without and modification or adjustment. Loss of input power is indicated by a built-in power failure alarm relay. One module provides the power to operate one or two receiver modules, an integral audible alarm and the charging of the optional battery back-up.

Control Enclosure

A single or dual point standard enclosure is provided for housing the power supply module and either one or two receiver modules. The enclosure is rated NEMA 4X with a ringed polycarbonate window. An integral audible alarm horn is included as standard.

Sensor/ Transmitter

A highly efficient electrochemical gas sensor for location in areas where gas leakage could occur is combined with an equally efficient transmitter; both housed in a NEMA 4X enclosure. Digitally converted measurements of gas concentrations are then sent to the receiver module located anywhere up to 1000 feet away.



An optional auto-test facility is available for fitting to a sensor. Consisting of an electrochemical generator, it automatically tests the sensor everyday, triggering an alarm if a fault is found. The auto-test option also provided early warning of reduced sensitivity that can occur over time, allowing users to determine when sensors need replacing.

Battery Back-Up System

The battery back-up option consists of a sealed lead-acid battery mounted in its own enclosure. In the event of power failure, it will maintain all receiver functions for a minimum of 12 hours on a single point system, or six hours on a dual point system. Battery charging is fully automatic and continuous through the power supply module.

Technical Data

Gases Detected

Chlorine, Sulfur Dioxide, Ammonia

Gas Ranges

	Std. Range	Min. Range	Max. Range
Cl ₂	0-10 ppm	0-5 ppm	0-50 ppm
SO ₂	0-20 ppm	0-10 ppm	0-100 ppm
NH ₃	0-100 ppm	0-50 ppm	0-500 ppm

Power Requirements

85-255 VAC, 50/60 HZ
1 Amp - Self-regulating

Ambient Temperature

0° to 105°F (-18° to 40°C) continuous
-10° to 120°F (-23° to 49°C) intermittent

Humidity

0-99% non-condensing

Gas Alarm Setpoints

2 independent setpoints
Warning Level - adjustable from 5% to 100% of range
Alarm Level - adjustable from 5% to 100% of range

Alarm Indicators

High intensity LED bars
Function
- WARNING indicator non-latching
- Alarm indicator latching

Alarm Relays

Three assignable alarm relays for either alarm setpoint 10A at 120 VAC, 5A at 250 VAC, resistive, SPDT configurable for normal/fail-safe, latching/non-latching, and fast/slow operation

Alarm Relay and Indicator Reset

Activated from front panel switch or through remote reset.

Sensor Alarm

Indicates loss of sensor/transmitter input or failure of Optional sensor Auto-Test.

Sensor Alarm Relay and Indicator

Front panel LED indicator and relay; 10A, at 120 VAC, 5A at 250 VAC, resistive SPDT factory set to fail-safe operation.

Monitor Concentration Display

4-digit LED, sunlight readable.

Monitor Concentration Output Signal

Isolated 4-20 mA DC, 1000 ohms maximum load.

Power Supply Output Voltage

Regulated 13.7 VDC, 1A supplied to 1 or 2 receivers. Also, for recharging external battery, audible back-up and for integral Alarm horn power.

Audible Alarm Horn

Weatherproof 12 VDC piezoelectric horn 85-dB output Signal for local alarming.

Power Failure Alarm Relay

Loss of AC input power.
1 relay 10A at 120 VAC, 5A at 250 VAC, SPDT resistive.

Enclosure

NEMA 4X Polystyrene with knockouts on four sides for 1/2" (12.7 mm) FNPT conduit hubs.

Four single point enclosure -4 conduit hubs are provided.

Four dual point enclosure -7 conduit hubs are provided.

Gas Sensor Type

Electrochemical gas diffusion

Gas Sensor Connection Distance

Up to 1000 feet (300 m) to receiver.

Two wire cable.

For a dual point unit, 50 ft. (15 m) of cable is provided.

For a single point unit, 25 ft. (8 m) of cable is provided.

Sensor Operating Life

2 years

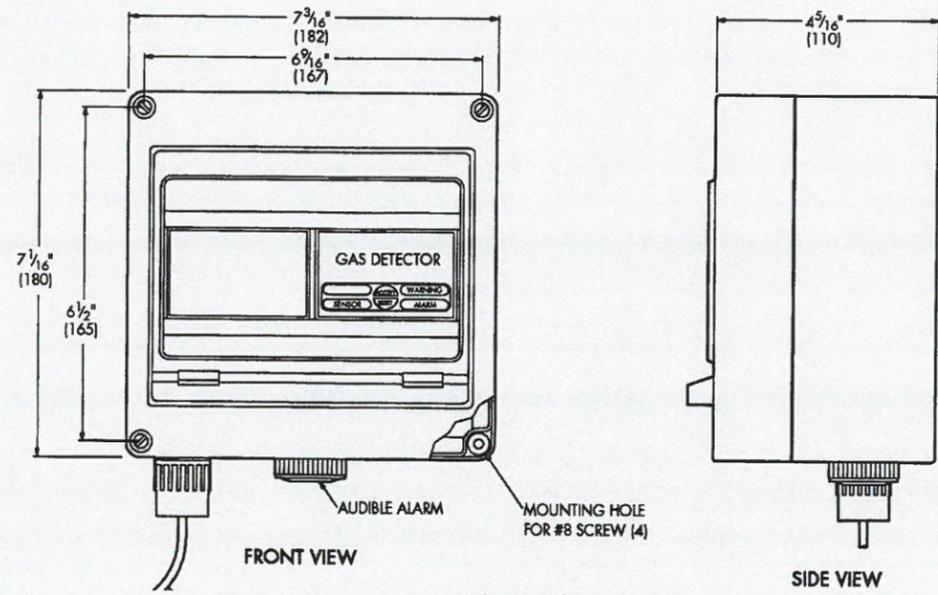
Sensor Storage Life

1 year

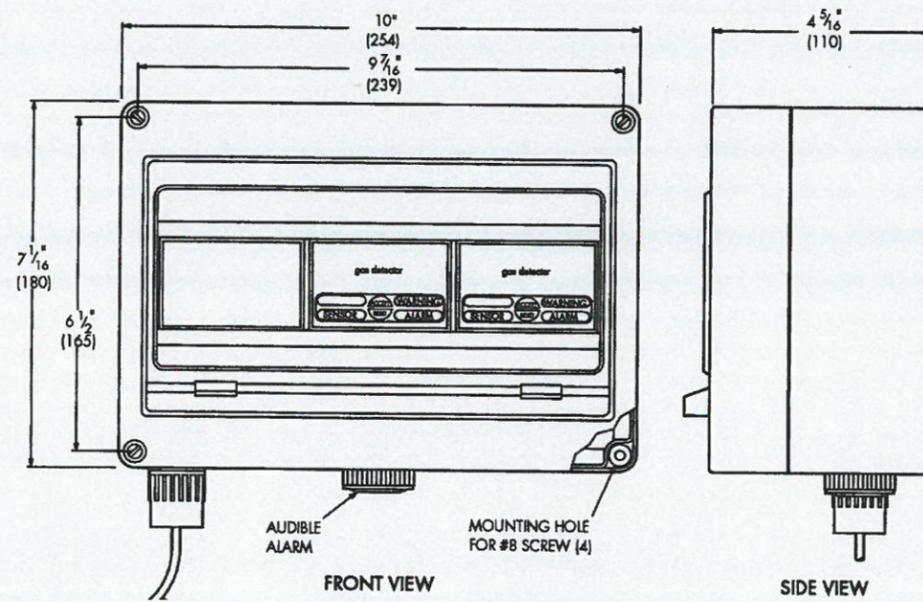
Optional Battery Back-Up

Battery Type:	12 VDC, 4 Amp HR sealed lead acid
Battery Capacity:	For single point unit, min. 12 hrs. (avg. 24 hrs.) For dual point unit, min. 6 hrs. (avg. 12 hrs.)
Charge Control:	Current limited to 0.75A max.
Charge Time:	10 hours typically from fully discharged
Low Voltage Cutoff:	Relay disconnect at 10 VDC
Fault Protection:	Relay disconnect on shorted charger wiring
Battery Life:	Min. 3 yrs. in operation

Dimensions*



Single Point



Dual Point

* For complete dimensions, see WT.050.130.100 for single point, WT.050.130.102 for dual point, and WT.050.130.104 for battery backup.

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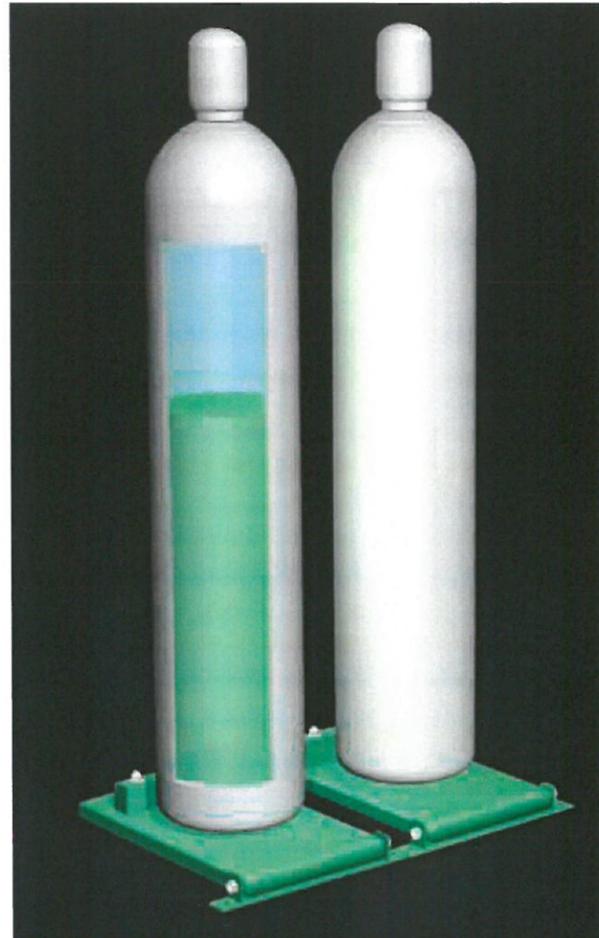
FOR CHLORINE AND SO₂ 150 LB CYLINDERS

- CORROSION RESISTANT PVC PLATFORM AND STAINLESS STEEL LOAD CELL
- WALL MOUNTED CHAINING BRACKET / TOOL RACK
- 4-20MA OUTPUT INCLUDED
- SIMPLE, RUGGED DESIGN - NO MOVING PARTS!

THE CHLOR-SCALE 150 IS DESIGNED TO WEIGH 150 LB CHLORINE AND SO₂ CYLINDERS USED AT WATER TREATMENT PLANTS, WELL HEADS, BOOSTER STATIONS AND VARIOUS INDUSTRIAL PLANTS. A LOW OVERALL HEIGHT OF 1-5/8" ALLOWS CYLINDERS TO BE EASILY ROLLED ON AND OFF WITHOUT LIFTING, AND A WALL MOUNTED CHAINING BRACKET PROVIDES THE SAFEST POSSIBLE INSTALLATION BY SECURING CYLINDERS TO THE BUILDING STRUCTURE ITSELF.

BECAUSE THE CHLOR-SCALE 150 HAS AN ALL PVC PLATFORM WITH CORROSION RESISTANT FASTENERS AND FITTINGS, YOU CAN FORGET ABOUT CORROSION NORMALLY ASSOCIATED WITH CHLORINE AND SWEATING CYLINDERS. OUR INCREDIBLY SIMPLE "PIVOTED PLATFORM" DESIGN HAS NO MOVING PARTS. THIS MEANS THAT THERE ARE NO FLEXURES, LEVERS OR MECHANICAL LINKS THAT ARE SUSCEPTIBLE TO CORROSION, BENDING OR BREAKING.

OUR SOLO® G2 DIGITAL WEIGHT INDICATOR CAN INDEPENDENTLY MONITOR ONE OR TWO CYLINDERS AND INCLUDES A 4-20MA OUTPUT SIGNAL FOR EACH SCALE TO ALLOW REMOTE MONITORING. HOUSED IN A NEMA 4X ENCLOSURE, THE SOLO G2 IS COMPLETELY PROTECTED AGAINST HARSH ENVIRONMENTS SUCH AS CHEMICAL ROOMS AND OUTDOOR INSTALLATIONS. START-UP AND NORMAL OPERATION ONLY REQUIRES THE SIMPLE ADJUSTMENT OF A ZERO/TARE ADJUST KNOB LOCATED WITHIN EASY REACH BUT OUT OF NORMAL LINE-OF-SITE TO REDUCE TAMPERING. THE CHLOR-SCALE 150 COMES PRE-CALIBRATED AND IN MOST INSTANCES INSTALLATION CAN EASILY AND QUICKLY BE ACCOMPLISHED BY PLANT PERSONNEL.



THE SOLO G2 DIGITAL WEIGHT INDICATOR IS SIMPLE TO OPERATE AND INCLUDES 4-20MA OUTPUTS



WALL MOUNTED CHAINING BRACKET INCORPORATES TOOL HOOKS TO STORE CYLINDER CHANGE-OUT TOOLS.



ELECTRONIC CHLOR-SCALE 150® WITH SOLO® G2

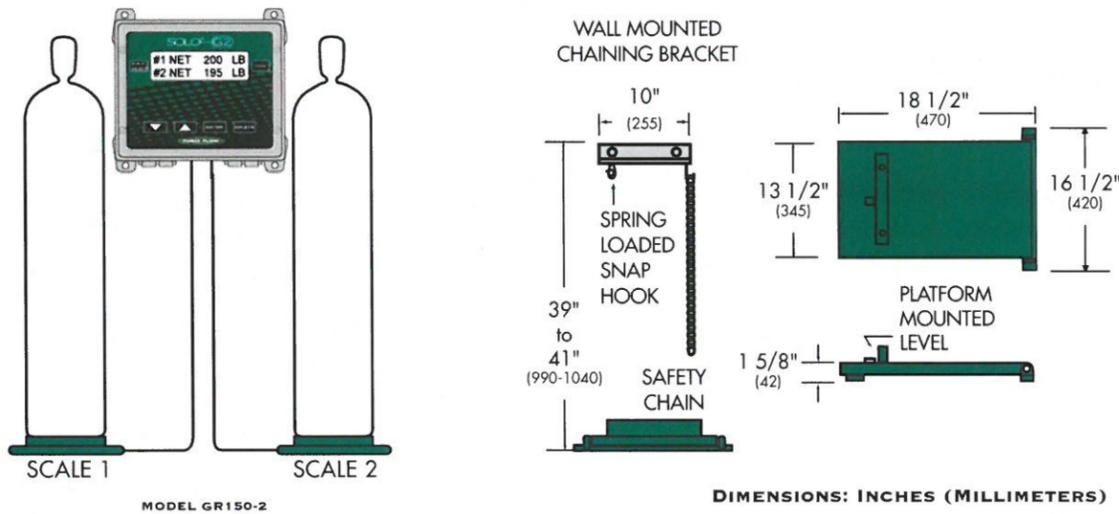
MODELS AND ORDERING INFORMATION

UNITS COME STANDARD WITH PVC PLATFORM(S), LOAD CELL(S) WITH 10 FEET OF CABLE, CHAINING BRACKET/TOOL RACK(S), AND SOLO G2™ DIGITAL INDICATOR WITH 4-20mA OUTPUT SIGNAL(S). FOR CABLE LENGTHS OVER 10 FEET, ADDITIONAL CHAINING BRACKETS OR ALARM RELAYS, PLEASE CONSULT FACTORY AT (800) 893-6723. FOR MORE INFORMATION ON SOLO G2 DIGITAL INDICATOR, SEE SOLO G2 BULLETIN, No. 516.

MODEL	NUMBER OF CYLINDERS	CAPACITY	STANDARD INCREMENTS	SHIPPING WEIGHT
GR150-1	1	300 LBS	0.2 LBS	21 LBS
GR150-2	2	600 LBS	0.2 LBS	50 LBS
METRIC				
GR100K-1	1	150 KG	0.1 KG	10 KG
GR100K-2	2	300 KG	0.1 KG	23 KG

FOR OTHER INCREMENTS, CONSULT FACTORY

ELECTRONIC CHLOR-SCALE 150 ACCOMMODATES MOST INTERNATIONAL CYLINDER SIZES.
EXAMPLE 33KG., 68KG., 70KG., 100KG.



TYPICAL SPECIFICATION FOR ELECTRONIC SCALE FOR 150 LB. CHLORINE AND SO2 CYLINDERS

A QUANTITY OF _____ CHLORINE/SO2 SCALES SHALL BE PROVIDED AND SHALL BE OF THE ELECTRONIC READOUT/ELECTRONIC LOAD CELL TYPE. SCALE PLATFORM(S) SHALL BE CONSTRUCTED OF NON-CORROSIVE PVC PLASTIC AND SIZED TO ACCEPT ONE (1) 150 LB. (68 KG) CYLINDER. SCALE PLATFORM SHALL MEASURE 13-1/2" X 18-1/2" (345MM X 470MM). INDICATOR SHALL INDEPENDENTLY MONITOR _____ (1 OR 2) CYLINDER(S).

SCALE SHALL BE OF THE SINGLE LOAD CELL DESIGN. WEIGHT SHALL BE TRANSFERRED VIA A PIVOTED PLATFORM TO A SINGLE STAINLESS STEEL CANISTER LOAD CELL OF THE ELECTRONIC STRAIN GAUGE TYPE. LOAD CELL SHALL BE MECHANICALLY SEALED WITH VITON O-RINGS. POTTED-TYPE LOAD CELLS SHALL NOT BE ACCEPTED.

FLEXIBLE CABLE SHALL CONNECT LOAD CELL TO INDICATOR TO ALLOW EASY REMOTE INSTALLATION OF THE READOUT. CABLE LENGTH SHALL BE _____ FEET (10'/3M STANDARD). CYLINDER CHAINING BRACKET SHALL BE WALL-MOUNTED AND USE A DOUBLE COIL CHAIN AND A SPRING LOADED SNAP HOOK TO SECURE CYLINDER. CHAINING BRACKET SHALL HAVE AN INTEGRAL TOOL RACK FOR STORING CYLINDER CHANGE-OUT TOOLS.

INDICATOR SHALL CARRY CE MARKING AND SHALL BE HOUSED IN A NEMA 4X, UL APPROVED ENCLOSURE. LCD READOUT SHALL HAVE BACKLIGHTING FOR READABILITY IN LOW LIGHT CONDITIONS. NUMERICAL DISPLAY SHALL HAVE 6 FULL ACTIVE DIGITS AND ADJUSTABLE BAR GRAPH DISPLAY SHALL READ 0-100%. TARE ADJUST SHALL BE ACCOMPLISHED USING A KEYPAD AND INDICATOR SHALL OUTPUT NET WEIGHT VIA A 4-20 MA SIGNAL FOR REMOTE MONITORING.

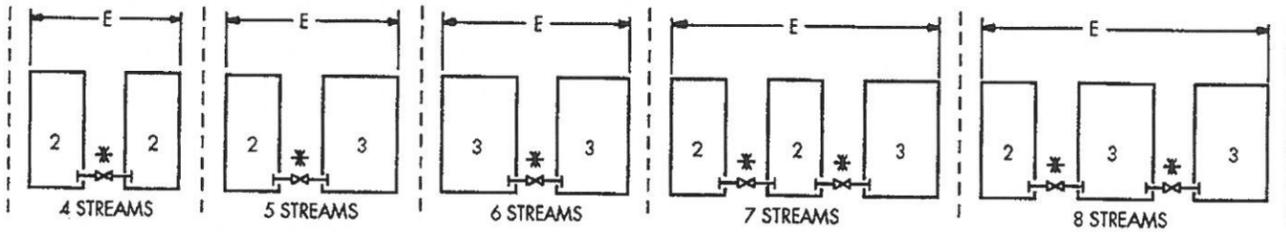
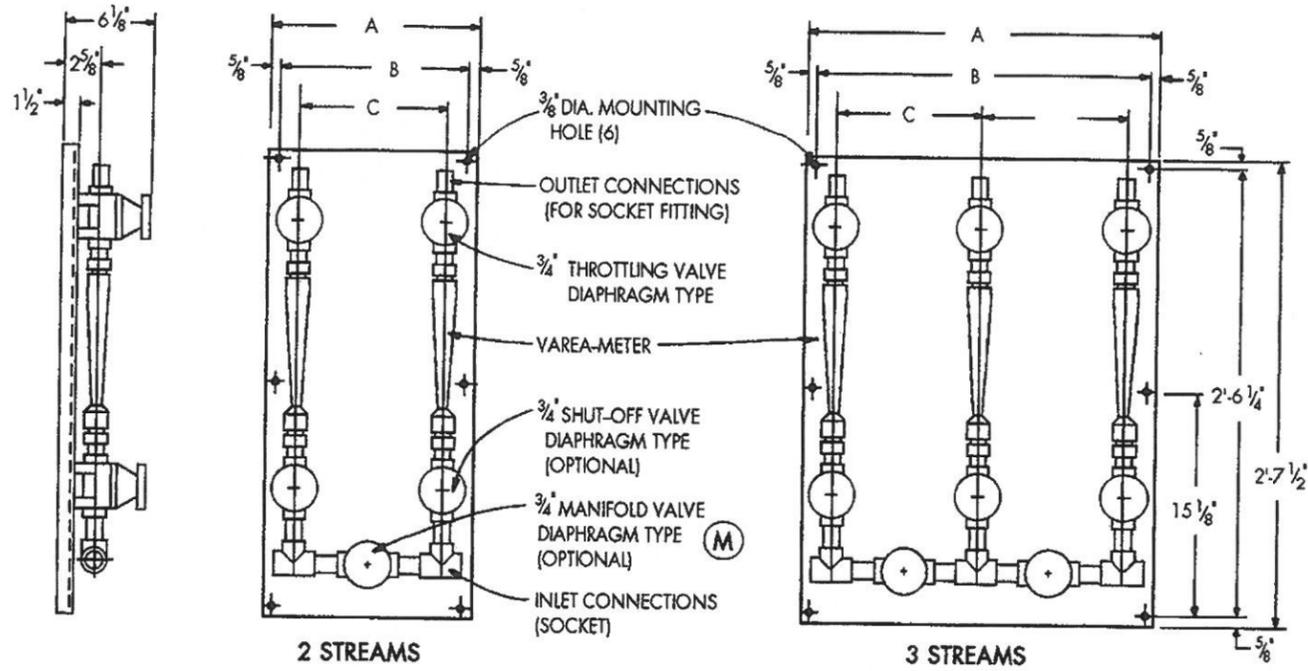
SCALE SHALL CARRY A FULL FIVE (5) YEAR FACTORY WARRANTY. "LIMITED" WARRANTIES SHALL BE CONSIDERED UNACCEPTABLE.

FULL SCALE ACCURACY SHALL BE BETTER THAN 1%. SCALE SHALL BE CHLOR-SCALE® 150 WITH ELECTRONIC SOLO® G2 DIGITAL INDICATOR, MODEL GR150-_____, AS MANUFACTURED BY FORCE FLOW / FLOQUIP, 2430 STANWELL DR , CONCORD, CA 94520 USA (WWW.FORCEFLOW.COM), OR EQUAL.

OPTIONAL FEATURE SET POINTS SHALL ACTIVATE _____ 0.5A DRY CONTACT RELAYS.

PROPORTIONING SOLUTION DISTRIBUTORS

3/4" MANIFOLD WITH VAREA-METERS®



* 3/4" MANIFOLD VALVE OR 3/4" UNION FURNISHED

NO. OF STREAMS	A		B		C		E (W/O PANEL (M))		E (WITH PANEL (M))	
	W/O (M)	WITH (M)	W/O (M)	WITH (M)	W/O (M)	WITH (M)	WITH VALVE BETWEEN PANELS	WITH UNION BETWEEN PANELS	WITH VALVE BETWEEN PANELS	WITH UNION BETWEEN PANELS
2	12"	12"	10 3/4"	10 3/4"	7 1/2"	7 9/16"	—	—	—	—
3	12"	19 5/8"	10 3/4"	18 3/8"	3 3/4"	7 9/16"	—	—	—	—
4	FOR MORE THAN 3 STREAMS COMBINE PANELS AS ABOVE.						2'-4 3/4"	2'-3 5/8"	2'-4 3/16"	2'-3 1/16"
5							2'-4 3/4"	2'-3 5/8"	3'-0 13/32"	2'-11 9/32"
6							2'-4 3/4"	2'-3 5/8"	3'-8"	3'-6 7/8"
7							3'-9 1/2"	3'-7 1/4"	4'-5 7/32"	4'-2 31/32"
8							3'-9 1/2"	3'-7 1/4"	5'-2 5/32"	4'-10 9/16"

VAREA-METER	
TUBE SIZE	MAX. CAPACITY G.P.M.
3/8"	.64, 1.10, 1.80
1/2"	2.60, 4.50
3/4"	5.10, 7.70, 10.60, 13.00

WARNING: TO BE USED WITH CHLORINE, CHLORINE DIOXIDE, SULFUR DIOXIDE AND CARBON DIOXIDE SOLUTIONS ONLY.

NOTE: MANIFOLD MAXIMUM PRESSURE 150 P.S.I.

U.S. FILTER
WALLACE & TIERNAN

Taking care of the world's water.

United States Filter Corporation
1901 West Garden Road
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CN 140.046
REVISED 6/97

Appendix C

Wet Scrubber



COST PROPOSAL

EVS-150-2
EMERGENCY CHLORINE GAS SCRUBBER SYSTEM
FOR
CLEAR LAKE WTP, IA

IMS File No.: C15-019

Prepared on: August 19, 2015

IMS SALES REPRESENTATIVE CONTACT

VESSCO
Mr. Cory A. Sonner
Tel: (515) 509-0470
Email: csonner@vessco.com



TABLE OF CONTENTS

Forwarding Letter

Section 1: Commercial Proposal



August 19, 2015

Mark Seip
V&K

RE: EVS-150-2 Emergency Chlorine Gas Scrubber System
Clear Lake WTP, IA

Dear Mark,

Thank you for your interest in Integrity Municipal Systems, LLC (IMS).

Per your request, we have prepared this cost proposal for providing one (1) EVS-150-2 Emergency Chlorine Gas Scrubber System for Clear Lake, IA. Our proposal is based on the following design criteria:

Design Criteria

Storage Gas	Chlorine
Storage Gas Stored Capacity	up to 300 lbs
Liquid Leak Rate	28 lbs/min
Flash-off Rate	28 lbs/min (100% of Liquid Leak Rate)
Ventilation Rate	250 cfm
Maximum Inlet Concentration	607,443 ppm
Maximum Allowable Outlet Concentration	5 ppm
Minimum Scrubber Efficiency	99.999%
Caustic Requirements, 20%	275 gal

Each system is pre-assembled, piped, wired, and factory tested with water to facilitate installation and start-up at the jobsite.

The major system components are as follows:

1. Three Stage FRP Scrubber with Integral Caustic Storage
2. All Internals including Media and Mist Eliminator
3. Vertical Seal-less Recirculation Pump
4. FRP Exhaust Fan
5. Piping, Valves and Instrumentation (Level Switch, Pressure Gauge)
6. Scrubber Mounted FRP Control Panel
7. FRP Exhaust Stack

The footprint of the complete system is 7'-0" long by 3'-0" wide with an overall height of 4'-10".

We have attached our detailed scope of work in section 1. The equipment price for the complete system (Items 1 through 7), is also listed below in Section 1.



We look forward to working with you on this project. If we can be of any further assistance, please do not hesitate to contact Mr. Cory Sonner at VESSCO at (515)-509-0470.

Thank you.

Sincerely,

Khaled Roueiheb
Director of Sales

Cc: Cory Sonner; VESSCO



SECTION 1

COMMERCIAL PROPOSAL

Proposal: C15-019

Date: August 19, 2015

ORDER

The undersigned authorized representative of the below named purchaser ("Buyer") hereby orders the Equipment described in the accompanying Seller's Documentation on the terms and conditions specified therein.

Buyer: _____

Signed by: _____

Print Name: _____

Print Title: _____

All orders are subject to prior acceptance by Integrity Municipal Systems, LLC at its offices in Poway, CA.

IMPORTANT NOTICE: All the information in this Proposal is confidential and has been prepared for Buyer's use solely in considering the purchase of the Equipment described. Transmission of all or any part of this Proposal to others or use by Buyer for other purposes is unauthorized without Seller's advance written consent.



SCOPE OF WORK BY INTEGRITY MUNICIPAL SYSTEMS, LLC (“SELLER”)

The following equipment and services are included in seller’s scope of work. All the equipment will be manufactured in accordance with our standard specifications and installed indoors in a non-hazardous area.

<u>No.</u>	<u>Item Description</u>	<u>Qty.</u>
1.	EVS-150-2 Three-Stage Emergency Chlorine Scrubber- up to 300 lb. Capacity, Completely Assembled, Piped, Wired and Shipped as One-Piece, including: a) FRP Scrubber Vessel with Integral Caustic Storage b) Vertical Seal-less Recirculation Pump with TEFC Motor c) Scrubber Internals including Media and Mist Eliminator d) FRP Exhaust Fan with TEFC Motor e) Recirculation Piping and Valves f) Sump Low Level Switch g) Recirculation Pump Pressure Gauge h) Nema 4X FRP Control Panel with Switches, Hard Wired Relays, Motor Starters and Transformer [Suitable for 480V, 3 phase, 60 Hz] i) All Connecting Hardware (nuts, bolts)	1
2.	Exhaust Stack above Fan Outlet (~5 ft Tall)- Shipped Loose	1
3.	Neoprene Pad for Placement Underneath the Scrubber	1
4.	Scrubber Anchor Bolts	1
5.	Design Submittal and Operation and Maintenance Manuals	1
6.	Manufacturer's Services for Installation Inspection, System Start-up and Operator Training - up to 3 days at the jobsite	1
7.	F.O.B. Factory with Full Freight Allowed to the jobsite	1
	EQUIPMENT PRICE [ITEMS 1-7]	\$57,000

SCOPE OF WORK BY BUYER

1. Equipment unloading, storage and installation
2. All civil works and concrete pad for equipment
3. Electrical power to emergency chlorine scrubber control panel (480V/3 ph/60Hz)
4. All electrical conduit, wiring, electrical material, etc. from control panel to plant SCADA, etc.
5. All chlorine gas detectors/analyzers and their installation in chlorine storage room, including all electrical materials and wiring including signal wiring to scrubber control panel
6. Design, supply, and installation of all chlorine gas ductwork and associated fasteners and gaskets including duct, dampers, flexible connectors, and transitions up to scrubber inlet
7. Design, supply, and installation of all duct supports and any required wall penetrations and flashing
8. All fill and drain piping



9. Initial fill of caustic (275 gallons)
10. Any items not explicitly listed under Integrity Municipal Systems, LLC's scope of work

FIELD SERVICES

Should additional services be required for work beyond Seller's Scope of work, buyer may purchase such services from seller at a standard rate of \$1,500 per eight (8) hour day, plus expenses.

WARRANTY TERM

The Warranty Period is one (1) year from Equipment acceptance or 18 months from shipment, whichever occurs first, and is subject to the Standard Terms of Sale included with this Proposal.

TAXES

Seller's proposal does not include any sales, use, federal, state, local, excise, or other similar taxes or duties unless expressly stated in this quotation. All applicable taxes shall be paid by buyer.

PAYMENT TERMS

Subject to prior credit approval, the terms of payment are:

- 90% of contract amount upon equipment shipment (or shipment ready notification), net 30 days
- 10% of contract amount upon beneficial occupancy, not to exceed 120 days from shipment

PROPOSAL VALIDITY

Seller's Cost Proposal dated August 19, 2015 is valid until December 30, 2015. The stated price is predicated on shipment no later than December 30, 2016. In the event Buyer desires to extend the delivery date or the Warranty Period beyond the time period set forth in this proposal, Seller can offer extended terms for an additional charge which will be provide upon request.

SCHEDULE

As part of any binding Agreement that results from this proposal, seller and buyer shall mutually agree upon a production and delivery schedule (not to exceed the outside delivery dated stated above). Our normal lead time for this type of equipment is:

- Design Submittal: 3 weeks after receipt of a fully executed purchase order
- Equipment Shipment: 12 weeks after seller's written receipt of submittal approval and release for fabrication.

TERMS & CONDITIONS

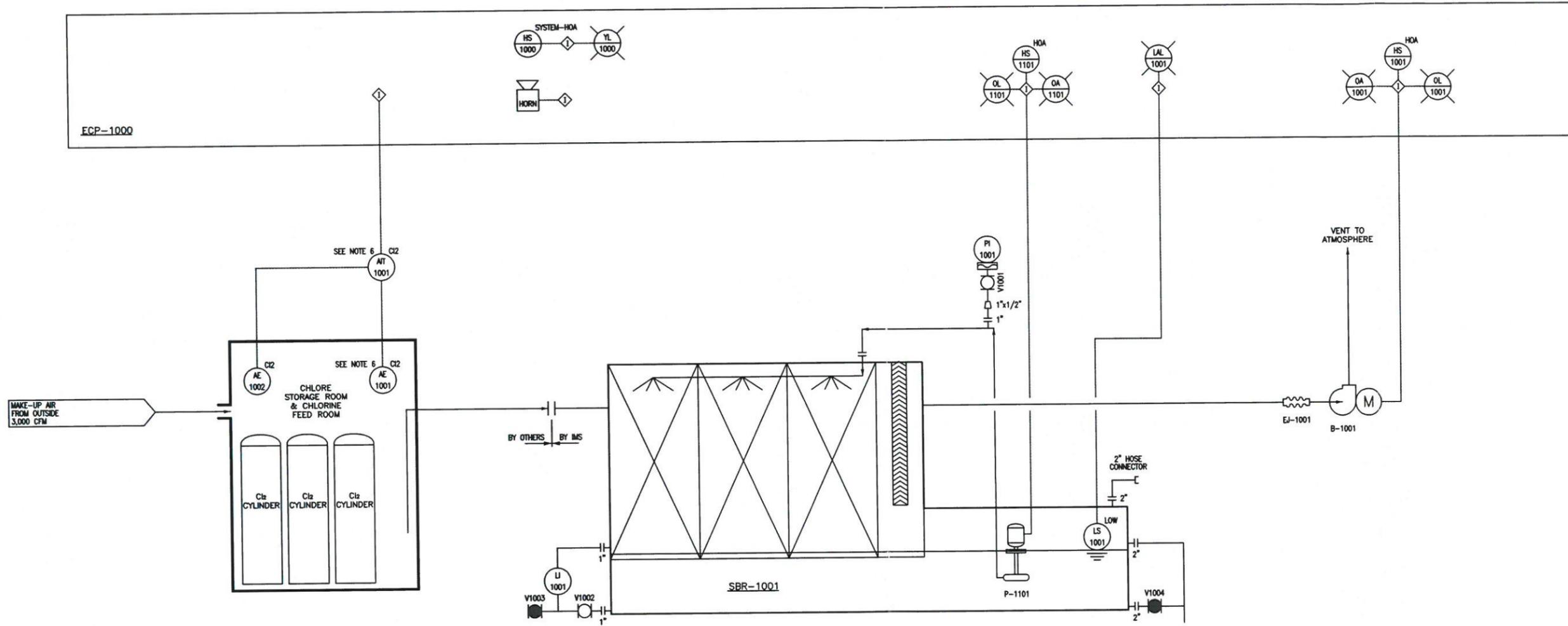
NOTE 1: Seller's Standard Terms of Sale, attached to this Proposal and incorporated herein by this reference, will apply to any order resulting from this Proposal and are factored into the purchase price set forth in this Proposal.



STANDARD TERMS OF SALE

1. Applicable Terms. These terms govern the purchase and sale of the equipment and related services, if any (collectively, "Equipment"), referred to in Seller's quotation, proposal or acknowledgment, as the case may be ("Seller's Documentation"). These terms together with Seller's Documentation comprise the complete and exclusive agreement between the parties (the "Agreement"). The Agreement may only be modified by a written instrument signed by authorized representatives of both parties. Any additional, different or conflicting terms contained in Buyer's request for proposal, specifications, purchase order or in any other written or oral communication from Buyer are hereby rejected by Seller and shall not be binding in any way on Seller.
2. Price and Payment. Buyer shall pay Seller the full purchase price as set forth in Seller's Documentation. Unless Seller's Documentation provides otherwise, freight, storage, insurance and all taxes, duties or other governmental charges relating to the Equipment shall be paid by Buyer. If Seller is required to pay any such charges, the amount so paid shall become immediately due and payable to Seller by Buyer. Unless otherwise stated in Seller's Documentation, all payments are due within 30 days after receipt of invoice. Buyer shall be charged 1½% interest per month on all amounts not received by the due date and shall pay all of Seller's costs (including attorneys' fees) of collecting amounts due but unpaid. If Buyer fails to make any payment when due, Seller may, without advance notice, terminate this order without liability; or condition such order on such modifications to the terms of payment as Seller, in its discretion, deems appropriate. In such case, Seller may also, in its discretion, withhold further manufacture or shipment; require immediate cash payments for past and future shipments; or require other security satisfactory to Seller before further manufacture or shipment is made.
3. Delivery. Delivery of the Equipment shall be in material compliance with the schedule in Seller's Documentation. Unless Seller's Documentation provides otherwise, delivery terms are F.O.B. Seller's facility. Risk of loss shall transfer to the Buyer upon tender of goods to Buyer, Buyer's representative, or common carrier. Claims for damage, shortage or errors in shipping must be reported within two business days following delivery to Buyer. Buyer shall have one business day from the date Seller completes start-up of the Equipment to inspect such Equipment for defects and nonconformance which are not due to damage, shortage or errors in shipping, and notify Seller, in writing, of any defects, nonconformance or rejection of such Equipment. After such one business day period, Buyer shall be deemed to have irrevocably accepted the Equipment, if not previously accepted. After such acceptance, Buyer shall have no right to reject the Equipment for any reason or to revoke acceptance.
4. Ownership of Materials. All devices, designs (including drawings, plans and specifications), estimates, prices, notes, electronic data and other documents or information prepared or disclosed by Seller, and all related intellectual property rights, shall remain Seller's property. Seller grants Buyer a non-exclusive, non-transferable license to use any such material solely in connection with Buyer's use of the Equipment. Buyer shall not disclose any such material to third parties without Seller's prior written consent.
5. Changes. Seller shall not implement any changes in the scope of work described in Seller's Documentation unless Buyer and Seller agree in writing to the details of the change and any resulting price, schedule or other contractual modifications. This includes any changes necessitated by a change in applicable law occurring after the effective date of the Agreement.
6. Warranty. Seller warrants to Buyer that during the period that ends 18 months from delivery or one year from acceptance, whichever occurs first (the "Warranty Period"), the Equipment shall materially conform to the specifications set forth in Seller's Documentation and shall be free from defects in material and workmanship. If Buyer gives Seller prompt written notice of breach of this warranty within the Warranty Period, Seller shall, at its sole option and as Buyer's sole and exclusive remedy, repair or replace the Equipment or any non-conforming parts thereof. If Seller determines that any claimed breach is not, in fact, covered by this warranty, Buyer shall pay Seller's then customary charges for any repair or replacement made by Seller. The warranty on repaired or replaced Equipment or parts is limited to the remainder of the Warranty Period. The foregoing warranty shall not apply to any Equipment or part thereof (x) that is (a) not operated and maintained in accordance with Seller's instructions, (b) damaged as a result of any unauthorized repairs or alterations, (c) damaged by chemical action or abrasive material, misuse, (d) damaged by improper installation (unless installed by Seller), and (e) specified or otherwise demanded by Buyer and is not manufactured or selected by Seller, as to which Seller hereby assigns to Buyer, to the extent assignable, any warranties made to Seller; and (y) if Buyer is in default of any payment obligation to Seller under this Agreement. Seller's warranty does not cover any adsorbing media or other consumables used in the Equipment, regardless of whether such media or consumables were supplied by Seller. THE WARRANTIES SET FORTH IN THIS SECTION ARE SELLER'S SOLE AND EXCLUSIVE WARRANTIES AND ARE SUBJECT TO SECTION 9 BELOW. SELLER MAKES NO OTHER WARRANTIES OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR PURPOSE. The warranty set forth herein, subject to any limitations set forth elsewhere in Seller's Documentation, shall be transferable during the Warranty Period to the initial end-user of the Product.
7. Force Majeure. Neither Seller nor Buyer shall have any liability for any breach (except for breach of payment obligations) caused by extreme weather or other act of God, strike or other labor shortage or disturbance, fire, accident, war or civil disturbance, delay of carriers, failure of normal sources of supply, act of government or any other cause beyond such party's reasonable control.
8. Cancellation. If Buyer cancels or suspends its order for any reason other than Seller's breach, Buyer shall promptly pay Seller for work performed prior to cancellation or suspension and any other direct costs incurred by Seller as a result of such cancellation or suspension.
9. LIMITATION OF LIABILITY. NOTWITHSTANDING ANYTHING ELSE TO THE CONTRARY, SELLER SHALL NOT BE LIABLE FOR ANY CONSEQUENTIAL, INCIDENTAL, SPECIAL, PUNITIVE OR OTHER INDIRECT DAMAGES, AND SELLER'S TOTAL LIABILITY ARISING AT ANY TIME FROM THE SALE OR USE OF THE EQUIPMENT OR PARTS SHALL NOT EXCEED ONE HUNDRED PERCENT (100%) OF THE PURCHASE PRICE PAID UNDER THIS AGREEMENT. THESE LIMITATIONS APPLY WHETHER THE LIABILITY IS BASED ON CONTRACT, TORT, STRICT LIABILITY, OR ANY OTHER THEORY. THE REMEDIES SET FORTH IN THIS AGREEMENT ARE INTENDED TO CONSTITUTE A COMPLETE ALLOCATION OF THE RISKS BETWEEN THE PARTIES AND LIMITS THE REMEDIES THAT MIGHT OTHERWISE BE AVAILABLE. BECAUSE THIS AGREEMENT AND THE PRICE PAID REFLECT SUCH ALLOCATION, THE REMEDIES PROVIDED TO BUYER HEREUNDER WILL NOT HAVE FAILED OF THEIR ESSENTIAL PURPOSE EVEN IF THEY OPERATE TO BAR RECOVERY FOR CERTAIN DAMAGES THAT BUYER MAY INCUR.
10. Set-off and Backcharges. Buyer will not be entitled to set-off any amounts due Buyer against any amount due Seller from Buyer. Seller will not be responsible for any backcharges unless approved in writing in advance by an authorized representative of Seller. Any request for backcharges must be submitted by Buyer to Seller at least three business days prior to the date on which Buyer desires to assess such backcharge to enable Seller to conduct a site visit or to conduct such other investigation as it deems reasonably appropriate.
11. Export Compliance. Buyer acknowledges that Seller is required to comply with applicable export laws and regulations relating to the sale, exportation, transfer, assignment, disposal and usage of the Equipment provided under this Agreement, including any export license requirements. Buyer agrees that such Equipment shall not at any time directly or indirectly be used, exported, sold, transferred, assigned or otherwise disposed of in a manner which will result in non-compliance with such applicable export laws and regulations.
12. Miscellaneous. If these terms are issued in connection with a government contract, they shall be deemed to include those federal acquisition regulations that are required by law to be included. If any provision of the Agreement is held to be invalid, illegal or unenforceable, the validity, legality and enforceability of the remaining provisions thereof will not in any way be affected or impaired, and such provision will be deemed to be restated to reflect the original intentions of the parties as nearly as possible in accordance with applicable law. Buyer may not assign or permit any other transfer of the Agreement without Seller's prior written consent. The Agreement shall be governed by the laws of the State of California without regard to its conflict of law provisions. The application of the United Nations Convention on Contracts for the International Sale of Goods is specifically disclaimed and excluded.

SBR-1001
CAUSTIC STORAGE TANK
MATERIAL: FRP



P-1101
NaOH RECIRCULATION PUMP
TYPE: VERTICAL CENTRIFUGAL

B-1001
EXHAUST FAN
TYPE: CENTRIFUGAL FAN
MATERIAL: FRP

NOTES:

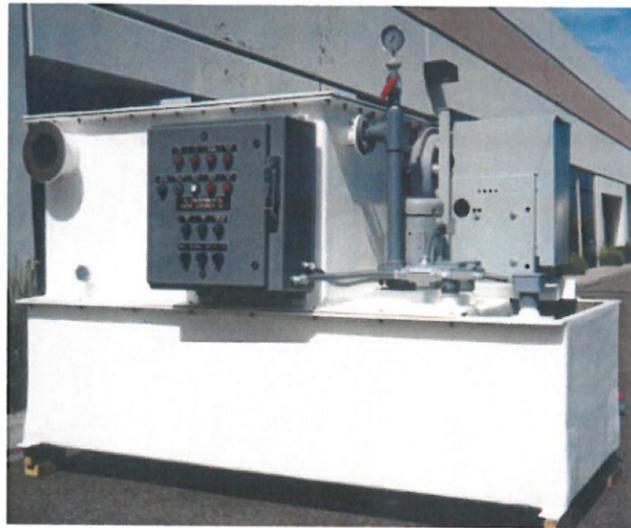
1. INLET DUCT FROM CHLORINE STORAGE ROOM TO THE SCRUBBER PROVIDED AND INSTALLED BY OTHERS.
2. EXHAUST STACK TO BE PROVIDED BY OTHERS AND INSTALLED BY OTHERS.
3. ALL DRAIN AND FILL PIPING BY OTHERS.
4. 380V/3 PH/50 HZ POWER SUPPLY TO CONTROL PANEL BY OTHERS.
5. WIRING FROM CONTROL PANEL TO REMOTE INSTRUMENT, PLANT SCADA, ETC. BY OTHERS, IF NECESSARY.
6. ALL ROOM CHLORINE SENSORS/DETECTORS/TRANSMITTER PROVIDED AND INSTALLED BY OTHERS.

COMPANY CONFIDENTIAL
THIS DOCUMENT AND ALL INFORMATION CONTAINED HEREIN ARE THE PROPERTY OF INTEGRITY MUNICIPAL SYSTEMS AND/OR ITS AFFILIATES. THE DESIGN CONCEPTS AND INFORMATION CONTAINED HEREIN ARE PROPRIETARY TO INTEGRITY MUNICIPAL SYSTEMS AND ARE SUBMITTED IN CONFIDENCE. THEY ARE NOT TRANSFERABLE AND MUST BE USED ONLY FOR THE PURPOSE FOR WHICH THE DOCUMENT IS EXPRESSLY LOANED. THEY MUST NOT BE DISCLOSED, REPRODUCED, LOANED OR USED IN ANY OTHER MANNER WITHOUT THE EXPRESS WRITTEN CONSENT OF INTEGRITY MUNICIPAL SYSTEMS. IN NO EVENT SHALL THEY BE USED IN ANY MANNER DETRIMENTAL TO THE INTEREST OF INTEGRITY MUNICIPAL SYSTEMS. ALL PATENT RIGHTS ARE RESERVED. UPON THE DESIGN OF INTEGRITY MUNICIPAL SYSTEMS, THIS DOCUMENT, ALONG WITH ALL COPIES AND EXTRACTS AND ALL RELATED NOTES AND AMENDMENTS, MUST BE RETURNED TO INTEGRITY MUNICIPAL SYSTEMS OR DESTROYED, AS INSTRUCTED BY INTEGRITY MUNICIPAL SYSTEMS. ACCEPTANCE OF THE DELIVERY OF THIS DOCUMENT CONSTITUTES AGREEMENT TO THESE TERMS AND CONDITIONS.

DESIGNER ZA	DATE	TITLE WET EMERGENCY CHLORINE SCRUBBER SYSTEM PROCESS AND INSTRUMENTATION DIAGRAM EVS-150-2			
CHECKER ZA	DATE	CLIENT			
ENGINEER ZA	DATE				
MANAGER ZA	DATE	13135 DANIELSON ST., SUITE 204 POWAY, CA 92064, USA TEL: 858-486-1620			
FILED					
SCALE: NTS	PROJECT	CODE	DRAWING	SHEET 2 OF 2	REV

The EVS-150 emergency chlorine scrubber is a multi-stage wet scrubber system designed to treat chlorine vapors from a bank of 150lb (70kg) chlorine cylinders, at leak rates of 28 lbs/min or more, exceeding the requirement of the Uniform Fire Code. The EVS-150 system is designed to maintain negative pressure in the chlorination and chlorine storage rooms, while limiting the atmospheric release of chlorine to less than 1 ppm.

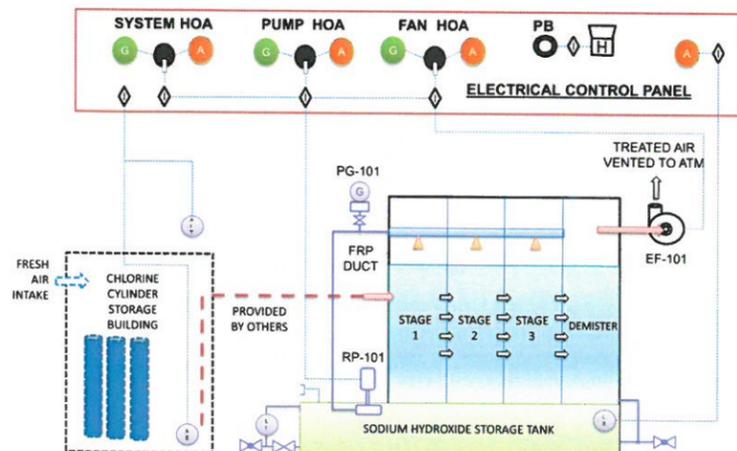
The factory-assembled EVS-150 system is very compact, with low profile suitable for either indoor or outdoor installation. It is designed by Roop Jain, the founder of RJ Environmental, and a renowned leader and innovator in chlorine scrubber technology for the last 25 years.



EVS-150-2

GUARANTEED PERFORMANCE

- The EVS-150 scrubber is capable of reducing the inlet chlorine gas concentration to less than 1 ppm at the outlet.
- A pre-treatment stage handles extremely high concentrations while subsequent high-efficiency stages remove the remainder of the toxic vapors.
- During catastrophic releases, the EVS-150 achieves more than 99.999% chlorine vapor removal efficiency.



EVS-150 - Process & Instrumentation Diagram

MAJOR SYSTEM COMPONENTS

- FRP Scrubber Vessel
- Integral FRP Caustic Storage Tank
- FRP Exhaust Fan
- Caustic Recirculation Pump
- FRP Control Panel
- FRP Exhaust Stack

HOW IT WORKS

The emergency chlorine vapor scrubbing system is a three-stage chemical absorption system consisting of a horizontal crossflow spray system followed by two horizontal crossflow packed bed sections. An induced draft fan pulls vapors through the scrubber, where intimate contact with a recirculating caustic solution results in the complete absorption and removal of chlorine or sulfur dioxide vapors. A high efficiency mist eliminator is located in the gas stream, prior to exhaust, to remove any residual caustic solution.

A chlorine detector or manual remote start switch activates the system in two steps. The caustic pump is activated first to permit proper wetting of packing in the scrubber stages before starting the exhaust fan, with a 0 to 5 second adjustable time delay. The time delay is typically set for 3 to 5 seconds. This feature allows the scrubber to be ready prior to passing any chlorine laden gases through it.

The exhaust fan is placed downstream of the scrubber. This feature allows the complete system to be under negative pressure until the gases are completely scrubbed. The absorber is placed on top of a caustic storage tank, which is an integral part of the system.

SYSTEM FEATURES

SYSTEM BENEFITS

Factory-assembled, Packaged System

- System is assembled, piped, wired and tested at factory
- Enables better quality control at the factory
- Easier transportation, handling and installation

Minimum Installation Cost and Time

- Installation time of less than 8 hours
- Installation requires only provision of concrete pad, inlet ductwork, utility connections and fill of caustic soda

Superior Design and High Performance

- Excess liquid to absorb heat of absorption for maximum chlorine release
- Low pressure recirculation of scrubber liquid enhances safety
- Three-stage chemical process ensures efficiency greater than 99.999%
- Random packing provides large surface area for gas-liquid contact

Low Cost of Operation & Easy Maintenance

- Low profile with top and side access for easy maintenance
- Vertical seal-less pump
- Low horsepower for pump and fan motors

Automatic and Manual Operation

- System can run in manual mode for maintenance purposes and in fully automatic mode for standby emergency operation

Optional Features for Maximum Safety

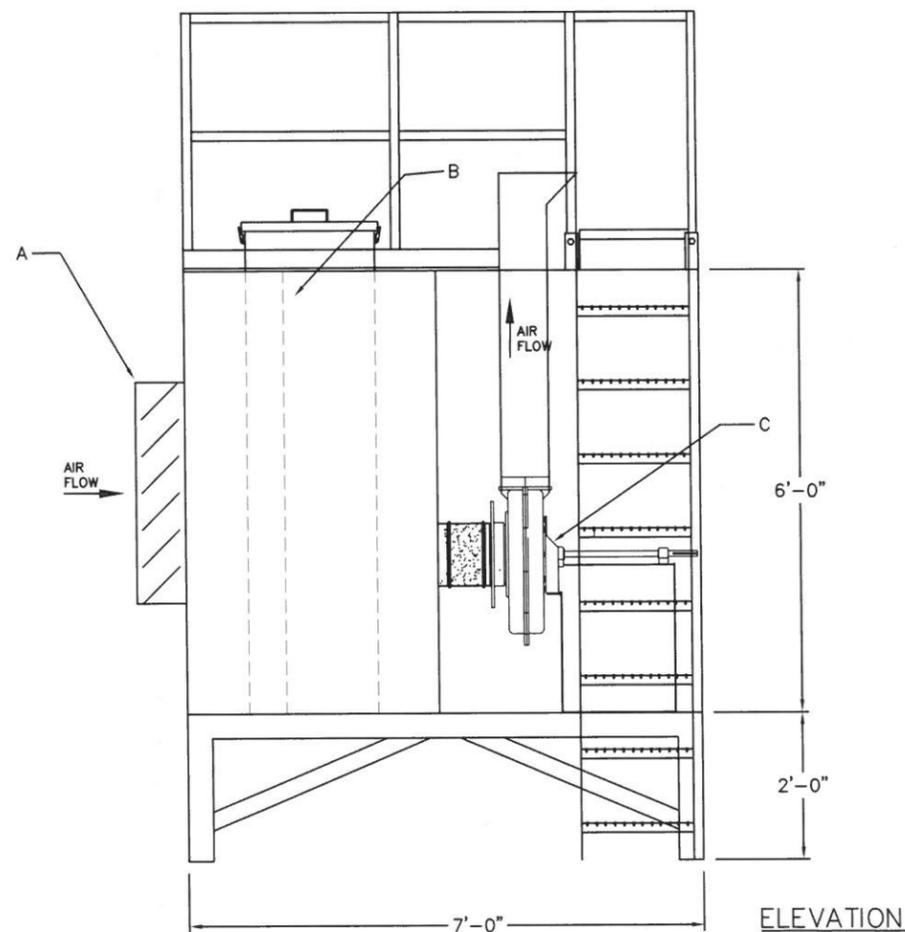
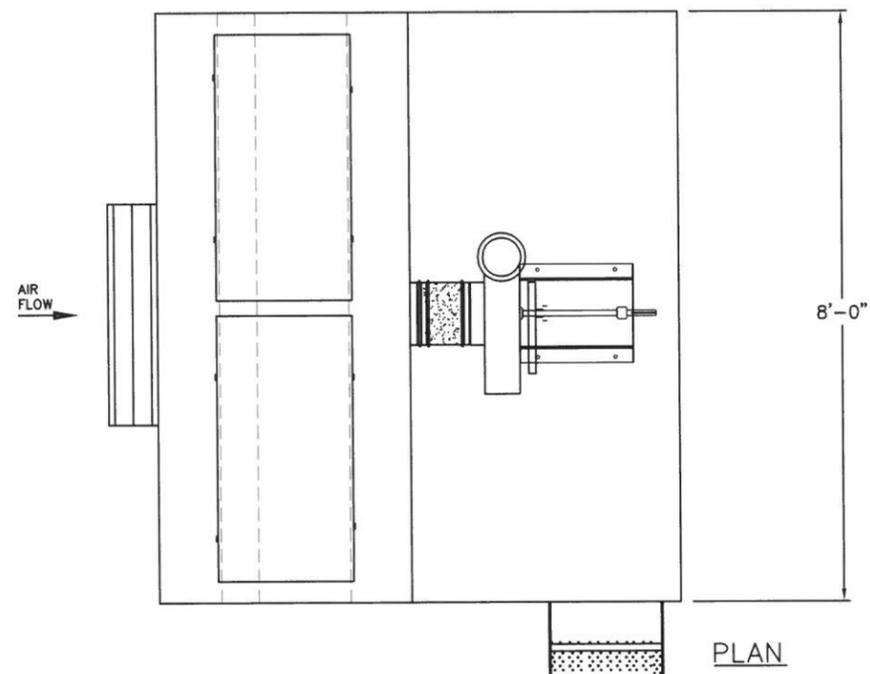
- Standby recirculation pump
- Standby induced exhaust fan
- Sump insulation / sump heater

EVS-150 DESIGN INFORMATION

System	Design Capacity lbs (kg)	Airflow Rate cfm (m ³ /h)	Caustic Volume Gallons (Liters)	Dimensions L x W x H ft (m)	Shipping Weight lbs (kg)	Operating Weight lbs (kg)	Pump Motor HP (kW)	Fan Motor HP (kW)
EVS-150-2	300 (135)	250 (425)	275 (1040)	7.0 x 3.0 x 4.8 (2.1 x 0.9 x 1.5)	1,000 (450)	4,000 (1800)	3.0 (2.2)	1.0 (0.75)
EVS-150-4	600 (270)	250 (425)	550 (2082)	7.0 x 3.0 x 6.5 (2.1 x 0.9 x 2.0)	1,500 (700)	7,500 (3400)	3.0 (2.2)	1.0 (0.75)
EVS-150-6	900 (400)	250 (425)	660 (2500)	7.0 x 3.0 x 7.5 (2.1 x 0.9 x 2.3)	2,000 (900)	9,200 (4200)	3.0 (2.2)	1.0 (0.75)

Appendix D

Dry Scrubber



NOTES

- A: INTAKE SECTION WITH ISOLATION DAMPER SIZED ACCORDING TO FLOWRATE..
- B: 2 MEDIA BED SECTIONS, FIRST SECTION IS 6" DEEP, SECOND IS 15" DEEP. BOTH SECTIONS CONTAIN UNISORB MK5 MEDIA.
- C: BELT DRIVE ALUMINUM, FAN C/W FLEX CONNECTOR AT INLET & RIS ISOLATORS AND DISCHARGE GOOSENECK.

CONSTRUCTION

- 14 GA 316L STAINLESS STEEL
- 2" INSULATION AND DW CONSTRUCTION
- DRAW THRU DESIGN
- STRUCTURAL STEEL PAINTED BASE
- DOORS SEALED WITH CLOSED CELL NEOPRENE GASKETING
- 1/4 TURN COMPRESSION DOOR LATCHES
- LIFTING LUGS AND ANCHOR BOLTS AS REQUIRED
- REMOTE MOUNTED CONTROL PANEL

**Unisorb
Canada**

12944 - 148 STREET NW
EDMONTON, ALBERTA, CANADA
T5L 2H8
(780) 447-1141



CLIENT:

PROJECT: CLEAR LAKE WTP

MODEL: PBS608-16-115-SS-DT-MB

DRAWING: M-1

SCALE: N.T.S.	DRAWN BY: QA	REVISION: 0	DATE: SEP 2, 2015
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PROPRIETARY INFORMATION

THIS DOCUMENT CONTAINS UNISORB CANADA LTD. PROPRIETARY AND CONFIDENTIAL INFORMATION. IT IS LOANED FOR LIMITED PURPOSES ONLY AND REMAINS THE PROPERTY OF UNISORB CANADA. IT MAY NOT BE REPRODUCED IN WHOLE OR PART OR DISCLOSED TO THIRD PARTIES WITHOUT THE PRIOR WRITTEN CONSENT OF UNISORB CANADA LTD. THE DOCUMENT IS TO BE RETURNED TO UNISORB CANADA LTD. UPON REQUEST AND IN ALL EVENTS UPON COMPLETION OF THE USE FOR WHICH IT WAS LOANED.

RESOLUTION _____

Obligating funds from the Clear Lake Consolidated Urban Renewal Tax Fund for appropriation to the payment of annual appropriation tax increment financed obligations which shall come due in the next succeeding fiscal year.

WHEREAS, the City of Clear Lake, Iowa (the "City"), pursuant to and in strict compliance with all laws applicable to the City, and in particular the provisions of Chapter 403 of the Code of Iowa, has adopted an Urban Renewal Plan for the Consolidated Urban Renewal Area (the "Urban Renewal Area"); and

WHEREAS, this Council has adopted an ordinance providing for the division of taxes levied on taxable property in the Urban Renewal Area pursuant to Section 403.19 of the Code of Iowa and establishing the fund referred to in Subsection 2 of Section 403.19 of the Code of Iowa (the "Urban Renewal Tax Revenue Fund"), which fund and the portion of taxes referred to in that subsection may be irrevocable pledge by the City for the payment of the principal and interest on indebtedness incurred under the authority of Section 403.9 of the Code of Iowa to finance or refinance in whole or in part projects in the Urban Renewal Area: and

WHEREAS, the City has scheduled payments in an amount which represent the incremental property taxes paid with respect to the project estimated amount of \$16,000 (the "Annual Payment") which shall come due in the fiscal year beginning July 1, 2016 with respect to the City's Development Agreement with Wess Inc. dated January 2011; and

WHEREAS, it is now necessary for the City Council to obligate for appropriation to the Annual Payment, funds anticipated to be received in the Urban Renewal Tax Revenue Fund in the fiscal year beginning July 1, 2016;

NOW, THEREFORE, it is resolved by the City Council of the City of Clear Lake, Iowa, as follows:

Section 1. The City Council hereby obligates an estimate of \$16,000 for appropriation from the Urban Renewal Tax Revenue Fund to the Annual Payment in the fiscal year beginning July 1, 2016.

Section 2. The City Clerk is hereby directed to certify the amount obligated for appropriation in Section 1 above, on the City's December 1, 2015 certification of debt payable from the Urban Renewal Tax Revenue Fund and to reflect such amount in the City's budget for the next succeeding fiscal year.

Section 3. All resolutions or parts of resolutions in conflict herewith are hereby repealed.

Passed and approved _____.

Nelson P. Crabb, Mayor

Attest:

Jennifer Larsen, City Clerk

RESOLUTION _____

Obligating funds from the Clear Lake Consolidated Urban Renewal Tax Fund for appropriation to the payment of annual appropriation tax increment financed obligations which shall come due in the next succeeding fiscal year.

WHEREAS, the City of Clear Lake, Iowa (the "City"), pursuant to and in strict compliance with all laws applicable to the City, and in particular the provisions of Chapter 403 of the Code of Iowa, has adopted an Urban Renewal Plan for the Consolidated Urban Renewal Area (the "Urban Renewal Area"); and

WHEREAS, this Council has adopted an ordinance providing for the division of taxes levied on taxable property in the Urban Renewal Area pursuant to Section 403.19 of the Code of Iowa and establishing the fund referred to in Subsection 2 of Section 403.19 of the Code of Iowa (the "Urban Renewal Tax Revenue Fund"), which fund and the portion of taxes referred to in that subsection may be irrevocable pledge by the City for the payment of the principal and interest on indebtedness incurred under the authority of Section 403.9 of the Code of Iowa to finance or refinance in whole or in part projects in the Urban Renewal Area: and

WHEREAS, the City has scheduled payments in an amount which represent the incremental property taxes paid with respect to the project estimated amount of \$130,000 (the "Annual Payment") which shall come due in the fiscal year beginning July 1, 2016 with respect to the City's Development Agreement with Titan Pro SCI dated March 2010 and amended November 2012 ; and

WHEREAS, it is now necessary for the City Council to obligate for appropriation to the Annual Payment, funds anticipated to be received in the Urban Renewal Tax Revenue Fund in the fiscal year beginning July 1, 2016;

NOW, THEREFORE, it is resolved by the City Council of the City of Clear Lake, Iowa, as follows:

Section 1. The City Council hereby obligates an estimate of \$130,000 for appropriation from the Urban Renewal Tax Revenue Fund to the Annual Payment in the fiscal year beginning July 1, 2016.

Section 2. The City Clerk is hereby directed to certify the amount obligated for appropriation in Section 1 above, on the City's December 1, 2015 certification of debt payable from the Urban Renewal Tax Revenue Fund and to reflect such amount in the City's budget for the next succeeding fiscal year.

Section 3. All resolutions or parts of resolutions in conflict herewith are hereby repealed.

Passed and approved _____.

Nelson P. Crabb, Mayor

Attest:

Jennifer Larsen, City Clerk

RESOLUTION _____

Obligating funds from the Clear Lake Consolidated Urban Renewal Tax Fund for appropriation to the payment of annual appropriation tax increment financed obligations which shall come due in the next succeeding fiscal year.

WHEREAS, the City of Clear Lake, Iowa (the "City"), pursuant to and in strict compliance with all laws applicable to the City, and in particular the provisions of Chapter 403 of the Code of Iowa, has adopted and Urban Renewal Plan for the Consolidated Urban Renewal Area (the "Urban Renewal Area"); and

WHEREAS, this Council has adopted an ordinance providing for the division of taxes levied on taxable property in the Urban Renewal Area pursuant to Section 403.19 of the Code of Iowa and establishing the fund referred to in Subsection 2 of Section 403.19 of the Code of Iowa (the "Urban Renewal Tax Revenue Fund"), which fund and the portion of taxes referred to in that subsection may be irrevocable pledge by the City for the payment of the principal and interest on indebtedness incurred under the authority of Section 403.9 of the Code of Iowa to finance or refinance in whole or in part projects in the Urban Renewal Area: and

WHEREAS, the City has scheduled payments in an amount which represent the incremental property taxes paid with respect to the project estimated amount of \$11,000 (the "Annual Payment") which shall come due in the fiscal year beginning July 1, 2016 with respect to the City's Development Agreement with North Iowa Cultural Center & Museum dated February 2011; and

WHEREAS, it is now necessary for the City Council to obligate for appropriation to the Annual Payment, funds anticipated to be received in the Urban Renewal Tax Revenue Fund in the fiscal year beginning July 1, 2016;

NOW, THEREFORE, it is resolved by the City Council of the City of Clear Lake, Iowa, as follows:

Section 1. The City Council hereby obligates an estimate of \$11,000 for appropriation from the Urban Renewal Tax Revenue Fund to the Annual Payment in the fiscal year beginning July 1, 2016.

Section 2. The City Clerk is hereby directed to certify the amount obligated for appropriation in Section 1 above, on the City's December 1, 2015 certification of debt payable from the Urban Renewal Tax Revenue Fund and to reflect such amount in the City's budget for the next succeeding fiscal year.

Section 3. All resolutions or parts of resolutions in conflict herewith are hereby repealed.

Passed and approved _____.

Nelson P. Crabb, Mayor

Attest:

Jennifer Larsen, City Clerk

RESOLUTION _____

Obligating funds from the Clear Lake Consolidated Urban Renewal Tax Fund for appropriation to the payment of annual appropriation tax increment financed obligations which shall come due in the next succeeding fiscal year.

WHEREAS, the City of Clear Lake, Iowa (the "City"), pursuant to and in strict compliance with all laws applicable to the City, and in particular the provisions of Chapter 403 of the Code of Iowa, has adopted an Urban Renewal Plan for the Consolidated Urban Renewal Area (the "Urban Renewal Area"); and

WHEREAS, this Council has adopted an ordinance providing for the division of taxes levied on taxable property in the Urban Renewal Area pursuant to Section 403.19 of the Code of Iowa and establishing the fund referred to in Subsection 2 of Section 403.19 of the Code of Iowa (the "Urban Renewal Tax Revenue Fund"), which fund and the portion of taxes referred to in that subsection may be irrevocable pledge by the City for the payment of the principal and interest on indebtedness incurred under the authority of Section 403.9 of the Code of Iowa to finance or refinance in whole or in part projects in the Urban Renewal Area: and

WHEREAS, the City has scheduled payments in an amount which represent the incremental property taxes paid with respect to the project estimated amount of \$35,000 (the "Annual Payment") which shall come due in the fiscal year beginning July 1, 2016 with respect to the City's Development Agreement with Snyder Construction Partnership dated December 2009; and

WHEREAS, it is now necessary for the City Council to obligate for appropriation to the Annual Payment, funds anticipated to be received in the Urban Renewal Tax Revenue Fund in the fiscal year beginning July 1, 2016;

NOW, THEREFORE, it is resolved by the City Council of the City of Clear Lake, Iowa, as follows:

Section 1. The City Council hereby obligates an estimate of \$35,000 for appropriation from the Urban Renewal Tax Revenue Fund to the Annual Payment in the fiscal year beginning July 1, 2016.

Section 2. The City Clerk is hereby directed to certify the amount obligated for appropriation in Section 1 above, on the City's December 1, 2015 certification of debt payable from the Urban Renewal Tax Revenue Fund and to reflect such amount in the City's budget for the next succeeding fiscal year.

Section 3. All resolutions or parts of resolutions in conflict herewith are hereby repealed.

Passed and approved _____.

Nelson P. Crabb, Mayor

Attest:

Jennifer Larsen, City Clerk

RESOLUTION NO. _____

**A RESOLUTION APPROVING AND ADOPTING A SOCIAL SECURITY NUMBER
CONFIDENTIALITY & UTILITY SERVICES PRIVACY POLICY
FOR THE CITY OF CLEAR LAKE, IOWA**

Disclosure of Social Security Number

The City of Clear Lake, Iowa, adopts the following policy pertaining to the confidentiality of social security numbers (SSN). Personal information, including an SSN, is requested when utility services are initiated. SSNs are maintained in a secure environment by the utility billing department. The SSN is used as a means of identification, internal verification, or other administrative purposes, and debt collection.

The SSN is confidential and available only to those city employees requiring access to perform their duties. City records are disposed of in accordance with the state law, the provisions of the City government, and the administrative rules adopted under its authority.

The following statement shall be included on the City's application for Utility Services:

"Your social security number is required by the City utility department in order to activate your account and commence service, and the SSN may be used by the City for collection purposes if your account becomes delinquent. Under the Iowa Open Records Act, social security numbers are designated as confidential, and as such the City cannot release your number to any person or entity. [As an alternative to providing your social security number, you may make a cash deposit in the amount of _____. When your service is terminated, the deposit will be returned to you if all billings have been satisfied and the account is not delinquent.]

PASSED and **APPROVED** by the Mayor and City Council of the City of Clear Lake, Iowa, this 2nd day of November, 2015.

Nelson P. Crabb, Mayor

Attest:

Jennifer Larsen, City Clerk

- MASON City -

Erin Dedor - City of Clear Lake

From: Connie Price <cprice@masoncity.net>
Sent: Friday, October 16, 2015 8:27 AM
To: Erin Dedor - City of Clear Lake
Subject: RE: Social Security Numbers

Hi Erin,

A few years ago (possibly 2008), Jeannett and I went to a meeting that was a state wide meeting for water utilities. They discussed the 'Red Flag' policy which was intended for each city to use as guidelines for their individual policies regarding the confidentiality for customers. One result of the meeting was that we changed from the billing cards to mailing bills in envelopes.

~~Tasked Jeannett if we had anything in writing since I don't believe it is addressed in code.~~ She reminded me this was a 'Red Flag' policy. You may be able to find this online at state level.

~~We began asking~~ for driver's license and ~~social security card~~ for ID for an individual to have the utilities put into their name. We tell them this is for identification reasons. Most people are ok with this. If they do not have their social security card, we can take a passport or birth certificate in addition to their DL (or photo ID). Occasionally, we can take another photo ID or ID with a signature, as long as they know their SS#.

Also, having the social security # allows us to collect bad debts thru State Collection. I can have you speak to Krystal about how this is done if you have questions with that. We have had good results with State Collections.

Hope this helps,
Connie

From: Erin Dedor - City of Clear Lake [mailto:erin@cityofclearlake.com]
Sent: Thursday, October 15, 2015 10:40 AM
To: Connie Price
Subject: Social Security Numbers

Hey Connie-

Do you guys have anything in writing (policy or code) that say

They do ask for SSN's - no written policy.

Erin Dedor
City of Clear Lake
15 N 6th St. PO Box 185
Clear Lake, IA 50428
Phone: (641) 357-5267 Fax: (641) 357-8711
erin@cityofclearlake.com
Visit us online at <http://cityofclearlake.com>

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is on, error, his

- Charles City -

Erin Dedor - City of Clear Lake

From: Trudy O'Donnell - City of Charles City <trudy@cityofcharlescity.org>
Sent: Tuesday, October 20, 2015 1:52 PM
To: 'Erin Dedor - City of Clear Lake'
Subject: RE: Privacy Policy & Social Security Number

Hi Erin

~~We do not require SSN for utility accounts.~~ But our public housing department does, it's a requirement for anyone that wants to be on the program. We have talked about asking for SSN for utility accounts so we could possibly utilize the income offset program through the state, but that's as far as we've gotten! That is a concern for me if we do, keeping the information secure and private.

Trudy

From: Erin Dedor - City of Clear Lake [<mailto:erin@cityofclearlake.com>]
Sent: Tuesday, October 20, 2015 1:00 PM
To: trudy@cityofcharlescity.org
Subject: Privacy Policy & Social Security Number

Hi Trudy,

I'm Erin with the City of Clear Lake,

I am doing some research to see what other towns do as far as a policy for requiring SSN #'s and if they issue a privacy policy - do you guys have a written policy stating that you require SSN #'s to put utilities into a citizens name, and if you do, do you issue a privacy policy?

Erin Dedor

City of Clear Lake
15 N 6th St. PO Box 185
Clear Lake, IA 50428
Phone: (641) 357-5267 Fax: (641) 357-8711
erin@cityofclearlake.com
Visit us online at <http://cityofclearlake.com>

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- Iowa City -

Erin Dedor - City of Clear Lake

From: Cyndi Ambrose <Cyndi-Ambrose@iowa-city.org>
Sent: Tuesday, October 20, 2015 1:37 PM
To: 'Erin Dedor - City of Clear Lake'
Subject: RE: Social Security Numbers & Privacy Policy

Hi Erin,

No, we don't require a SSN to open a utility account therefore, we don't issue a privacy policy statement.

Have a good day,

Cyndi Ambrose
Finance Secretary

City of Iowa City
410 E. Washington St.
Iowa City, IA 52240
Ph. 319.356.5050
FAX 319.341.4008

***IMPORTANT WARNING:** Attached documents are intended for the use of the person(s) or entity to which this message is addressed and may contain information that is privileged and confidential, the disclosure of which is governed by applicable law. If the reader of this message is not the intended recipient, or the employee or agent responsible to deliver it to the intended recipient, you are hereby notified that any dissemination, distribution or copying of this information is STRICTLY PROHIBITED. If you have received this communication in error, please immediately notify me by telephone and return this original message or destroy it.*

From: Erin Dedor - City of Clear Lake [<mailto:erin@cityofclearlake.com>]
Sent: Tuesday, October 20, 2015 12:46 PM
To: Cyndi Ambrose
Subject: Social Security Numbers & Privacy Policy

Hi Cyndi,

I'm Erin with the City of Clear Lake,

I am doing some research to see what other towns do as far as a policy for requiring SSN #'s and if they issue a privacy policy - do you guys have a written policy stating that you require SSN #'s to put utilities into a citizens name, and if you do, do you issue a privacy policy?

Erin Dedor

City of Clear Lake

Erin Dedor - City of Clear Lake

From: Amy Colwell <AColwell@city.ames.ia.us> on behalf of Ames Utilities
<AmesUtilities@city.ames.ia.us>
Sent: Tuesday, October 20, 2015 3:17 PM
To: Erin Dedor - City of Clear Lake
Subject: Re: SSN #'s & Privacy Policy

Erin,

We don't always require a SSN # from our customers, we have a statement that says this online:

"Your date of birth and your social security number. If married, you will need the same information for your spouse. **If you do not have a social security number or do not wish to provide your social security number**, then you will need to come to the Utility Customer Service office at 515 Clark Avenue and complete an application for service and present a photo identification. "

We do give them the option to decline giving us their SSN but they need to show a driver's license or passport to show proof of identity.

Hope this helps,

Thank you,
Amy

Ames Municipal Utilities - Customer Service
515 Clark Ave.
Ames, IA 50010
515-239-5120

-----"Erin Dedor - City of Clear Lake" <erin@cityofclearlake.com> wrote: -----

To: <amesutilities@city.ames.ia.us>
From: "Erin Dedor - City of Clear Lake" <erin@cityofclearlake.com>
Date: 10/20/2015 12:40PM
Subject: SSN #'s & Privacy Policy

Hi Amy,

I'm Erin with the City of Clear Lake,

I am doing some research to see what other towns do as far as a policy for requiring SSN #'s and if they issue a privacy policy - do you guys have a written policy stating that you require SSN #'s to put utilities into a citizens name, and if you do, do you issue a privacy policy?

Erin Dedor

Erin Dedor - City of Clear Lake

From: Laura Schaefer <LSchaefer@cityofcarroll.com>
Sent: Tuesday, October 20, 2015 3:12 PM
To: Erin Dedor - City of Clear Lake
Subject: RE: Privacy Policy and SSN

Erin,

We do ask for SSN when residents are putting utilities in their name. And amazingly we don't have many people who don't give it to us. I imagine if we have some who puts up much of a fuss we will probably not push it and just leave the SSN field blank. We don't have a privacy policy. We do most of our utility service orders over the phone and don't require the customer to fill out any forms or sign anything...I know, still pretty trusting here.

Laura

From: Erin Dedor - City of Clear Lake [<mailto:erin@cityofclearlake.com>]
Sent: Tuesday, October 20, 2015 2:32 PM
To: Laura Schaefer
Subject: Privacy Policy and SSN

Hi Laura,

I'm Erin with the City of Clear Lake,

I am doing some research to see what other towns do as far as a policy for requiring SSN #'s and if they issue a privacy policy - do you guys have a written policy stating that you require SSN #'s to put utilities into a citizens name, and if you do, do you issue a privacy policy?

Erin Dedor

City of Clear Lake
15 N 6th St. PO Box 185
Clear Lake, IA 50428
Phone: (641) 357-5267 Fax: (641) 357-8711
erin@cityofclearlake.com
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- Decorah -

Erin Dedor - City of Clear Lake

From: Deb Hagensik <hagensik@decorahia.org>
Sent: Tuesday, October 20, 2015 1:49 PM
To: Erin Dedor - City of Clear Lake
Subject: RE: SSN #'s & Privacy Policy

Hi Erin,

~~We require their SSN's on our water/sewer application but do not have a written policy for that.~~ Let me know if you need anything further. Have great rest of your day :) Deb

From: Erin Dedor - City of Clear Lake [<mailto:erin@cityofclearlake.com>]
Sent: Tuesday, October 20, 2015 12:38 PM
To: Deb Hagensik <hagensik@decorahia.org>
Subject: SSN #'s & Privacy Policy

Hi Debra,

I'm Erin with the City of Clear Lake,

I am doing some research to see what other towns do as far as a policy for requiring SSN #'s and if they issue a privacy policy - do you guys have a written policy stating that you require SSN #'s to put utilities into a citizens name, and if you do, do you issue a privacy policy?

Erin Dedor

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- Algona -

Erin Dedor - City of Clear Lake

From: Rexann McEnroe <rmcenroe@ci.algona.ia.us>
Sent: Tuesday, October 20, 2015 1:33 PM
To: Erin Dedor - City of Clear Lake
Subject: RE: Privacy Policy and SS# Policy

Our utilities is separate from the City. The phone number for Algona Municipal Utilities is 515-295-3584 or their website is www.netamu.com where you could find email addresses.

Rexann

From: Erin Dedor - City of Clear Lake [<mailto:erin@cityofclearlake.com>]
Sent: Tuesday, October 20, 2015 12:56 PM
To: Rexann McEnroe <rmcenroe@ci.algona.ia.us>
Subject: Privacy Policy and SS# Policy

Hi Rexann,

I'm Erin with the City of Clear Lake,

I am doing some research to see what other towns do as far as a po a privacy policy - do you guys have a written policy stating that you citizens name, and if you do, do you issue a privacy policy?

Erin Dedor

City of Clear Lake
15 N 6th St. PO Box 185
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called 10/20/15 -
- They do require
SSN but do
not have a
written policy
or privacy policy.

Iowa Falls -
ASKS for SSN#
No policy.

RESOLUTION # _____

EARLY RETIREMENT INCENTIVE

RESOLUTION TO OFFER RETIREMENT INCENTIVE
TO CITY EMPLOYEES

NOVEMBER 3, 2015 – DECEMBER 31, 2015

POST-RETIREMENT ACCUMULATED SICK LEAVE CONVERSION CREDIT

WHEREAS, this “Post-Retirement Accumulated Sick Leave Conversion Credit” retirement incentive will assist City Employees who want to retire but cannot do so because of medical insurance concerns; and

WHEREAS, this voluntary retirement incentive program may additionally save the City money by reducing salary costs.

NOW, THEREFORE, BE IT RESOLVED, by the City Council of the City of Clear Lake, Iowa:

1. Post-Retirement Accumulated Sick Leave Conversion Credit Program

Full-time eligible employees can convert accumulated sick leave hours to a dollar-based credit to pay premiums for coverage under the City’s Group Health Insurance Program. Accumulated sick leave is converted to credits only for the payment of City group health insurance premiums. The sick leave credits are computed as: hours x highest “base” pay rate = Sick Leave Credits. Employees must sever the employee/employer relationship if they wish to convert sick leave balances to pay for post-retirement health insurance premiums.

A. Eligibility

The following individuals are eligible to use sick leave credits to pay for post-retirement health insurance coverage:

1. A full-time employee enrolled in the City’s Group Health Insurance Program at time of voluntary retirement who:
 - a. terminates employment at age 60 or older and has 15 years or more of employment with the City of Clear Lake; or
 - b. terminates employment at age 60 or older because of their, or their spouse/domestic partner’s, serious health/medical issue that is covered under the Family and Medical Leave Act and has at least 10 years or more employment with the City of Clear Lake and has been an IPERS covered employee for at least 15 years; or
 - c. terminates employment at age 55 or older and has at least 10 years or more employment with the City of Clear Lake and is qualified to receive Social Security disability payments.

2. To qualify for this early retirement incentive, a City employee must retire between December 1, 2015 and December 31, 2015.
3. The City Administrator must receive the qualifying City Employee's written notice of retirement no later than 4:00 p.m. on Monday, November 30, 2015.
4. The provisions of this Resolution shall expire on December 31, 2015, at 5:00 p.m.

PASSED and **APPROVED** by the City Council and Mayor of the City of Clear Lake, Iowa, this 2nd day of November 2015.

Nelson P. Crabb, Mayor of Clear Lake

ATTEST:

Jennifer Larsen, City Clerk of Clear Lake

RESOLUTION _____

A RESOLUTION AUTHORIZING THE SALE AND DISPOSAL OF THE CITY'S INTEREST IN CERTAIN REAL PROPERTY OWNED BY THE CITY OF CLEAR LAKE, IOWA, LOCALLY KNOWN AS 1123 (INC. SOUTH ½ OF 1119) S. THIRD STREET CLEAR LAKE, IOWA

WHEREAS, the City of Clear Lake, Iowa, owns property located at 1123 (inc. south ½ of 1119) S. 3rd Street, Clear Lake, Iowa, for which it has heretofore proposed to sell said property; and

WHEREAS, a Resolution was adopted by the City Council of the City of Clear Lake, Iowa, on October 19, 2015, concerning the proposed sale of the City's rights, title, and interest in and to the property described as:

L4 & S ½ L3 AUD PL L 33 Serrines SUB L'S 1 & 4 GOVT L 5 13-96-22 EXC W 20', an official Plat in Cerro Gordo County, Iowa; also known as 1123 (including the south ½ of 1119) S. 3rd Street, Clear Lake, IA; and

WHEREAS, the Resolution provided that notice of intention to sell and dispose of the real property be given by publication of a public notice, as required by law, and such public hearing was set November 2, 2015, at 6:30 o'clock p.m.; and

WHEREAS, said Public Notice was published in the Clear Lake Mirror Reporter on October 21, 2015.

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Clear Lake, Iowa, that:

1. The City of Clear Lake will dispose, sell, and convey its rights, title, and interest in and to the real property described in this Resolution, public notice and Purchase Agreement to Jim and Judy Hilgendorf for the sum of \$40,100.
2. The Mayor, City Clerk, and City Attorney are hereby authorized and empowered to prepare the deed and sign all necessary documents related to the disposal, sale, and conveyance.
3. Any Resolution, or part thereof, in conflict with the provisions of this Resolution are hereby repealed to the extent of such conflicts.

PASSED AND APPROVED, the 2nd day of November, 2015.

Nelson P. Crabb, Mayor

Attest:

Jennifer Larsen, City Clerk

RESOLUTION NO.

A RESOLUTION OF INTENTION TO VACATE A PUBLIC UTILITY
EASEMENT AND SETTING THE TIME AND PLACE FOR HEARING

BE IT RESOLVED by the City Council of the City of Clear Lake, Iowa, that:

THAT said City does hereby elect to proceed under the provisions of Section 354.22 of the Code of Iowa, to vacate a portion of the Final Plat of Eagle Avenue Properties 1st Subdivision, Clear lake, Iowa, filed May 27, 2009, and that pursuant to said provisions of said Code, the said City Council does hereby declare its intention to vacate a 10' public utility easement on the west boundary of Lot 2 of Eagle Avenue Properties 1st Subdivision and a 10' wide public utility easement on the east boundary of Lot 1 of Eagle Avenue Properties 1st Subdivision.

IT IS FURTHER RESOLVED by said City Council that Monday, the 16th day of November, 2015, at the hour of 6: 30 p. m., at the City Hall, be, and the same hereby is fixed as the time and place for hearing all interested persons; and

IT IS FURTHER RESOLVED by said Council that notice of hearing be published in the manner provided by law; and

PASSED and APPROVED this 2nd day of November, 2015.

Nelson P. Crabb, Mayor

Attest:

Jennifer Larsen, City Clerk

HEINY, McMANIGAL, DUFFY,
STAMBAUGH & ANDERSON, P.L.C.

JOHN L. DUFFY
GERALD M. STAMBAUGH
J. MATHEW ANDERSON
JACQUELINE R. CONWAY
MICHAEL S. VERVAECKE
JACQUELYN K. ARTHUR
NICOLE ROGNES OLSON
COLLIN M. DAVISON

ANDREW C. JOHNSTON

ATTORNEYS AT LAW
11 FOURTH STREET N.E.
P.O. BOX 1567
MASON CITY, IOWA 50402-1567
TELEPHONE (641) 423-5154
FAX (641) 423-5310
E-MAIL jduffy@heinyllaw.com

JAMES R. HEINY
RICHARD R. WINGA
GILBERT K. BOVARD
RETIRED

MORRIS E. LAIRD
1908-2002
DON W. BURLINGTON
1909-1998
CHARLES W. McMANIGAL
1939-2013

October 19, 2015

Scott L. Flory
City Administrator
City of Clear Lake
15 North Sixth Street
P.O. Box 185
Clear Lake, IA 50428

Re: Petition of Eagle Avenue Properties, LLC and K & H Cooperative
Oil Company for Vacation of Portion of Utility and Surface
Water Flowage Easements on Lot 2 and Lot 1 Eagle Avenue
Properties First Subdivision, Clear Lake, Iowa

Dear Scott:

I enclose the Petition of Eagle Avenue Properties, LLC and K & H
Cooperative Oil Company for partial vacation of utility easements and
surface water flowage easements on Lots 1 and 2 of Eagle Avenue
Properties First Subdivision pursuant to §354.22(1) of the Iowa Code.

Please note that the mortgagees of Eagle Avenue and K & H
Cooperative have signed a Consent to the Petition.

Please advise me of the time and date when the Petition will be
considered by the City Council.

Eagle Avenue must serve "proprietors and mortgagees" within 300
feet of the area to be vacated.

Notice of the proposed vacation must be published twice within 14
days between publication stating the date, time, and place of the
hearing.

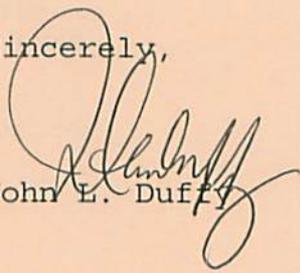
Therefore, we will need some lead time between your receipt of this
Petition and the scheduling of the hearing.

October 19, 2015

Page 2

I will call to discuss the hearing date with you.

Sincerely,


John E. Duffy

cc: Stephen J. Gannon
P.O. Box 11
Clear Lake, IA 50428
(SENT BY EMAIL: sgan555@gmail.com)

Michael A. Sonderman
925 North 16th Street West
Clear Lake, IA 50428
(SENT BY EMAIL: mikesonderman@unitedsuppliers.com)

Steve Schaller, General Manager
K. & H. Cooperative Oil Company
1740 US-18
Clear Lake, IA 50428

John E. Udelhofen
Senior Vice President
First Citizens National Bank
2601 Fourth Street SW
P.O. Box 1708
Mason City, IA 50402-1708
(SENT BY EMAIL: judelhofen@firstcitizensnb.com)

Jason Wartick
Senior Vice President
Iowa State Bank
5 East Call Street
Algona, IA 50511

Jason Petersburg
Veenstra & Kimm, Inc.
2800 Fourth Street SW, Suite 9
Mason City, IA 50401
(SENT BY EMAIL: jpetersburg@v-k.net)

PETITION TO VACATE PORTION OF UTILITY EASEMENTS AND
SURFACE WATER FLOWAGE EASEMENTS PURSUANT TO §354.22(1)
OF THE IOWA CODE

TO: City of Clear Lake, Iowa
15 North Sixth Street
P.O. Box 185
Clear Lake, IA 50428

1. This Petition is filed by Eagle Avenue Properties, LLC (hereafter "Eagle Avenue") and K. & H. Cooperative Oil Company (hereafter "K. & H.") pursuant to §354.22(1) of the Iowa Code for purpose of requesting the City Council of Clear Lake to vacate a portion of the Final Plat of Eagle Avenue Properties First Subdivision, Clear Lake, Iowa filed May 27, 2009, as Document #2009-3921 in the office of the Cerro Gordo County Recorder.

2. A copy of the Final Plat is attached.

3. Eagle Avenue specifically requests vacation of the utility easement on the west boundary of Lot Two (2) of Eagle Avenue Properties First Subdivision. It also requests vacation of the surface water flowage easement on the north boundary of Lot 2 west of the area shown as "Detention Easement."

4. K. & H. Cooperative Oil Company joins in this Petition as the owner of Lot One (1) of Eagle Avenue Properties First Subdivision. It requests vacation of the utility easement encumbering the east ten (10) feet of its Lot 1 adjacent to Lot 2. It consents to vacation of the surface water flowage easement on the north boundary of Lot 2 west of the area shown as "Detention Easement."

5. First Citizens National Bank signs this Petition as mortgagee of Eagle Avenue Properties, LLC.

6. Iowa State Bank signs this Petition as mortgagee of K. & H. Cooperative Oil Company.

7. Attached is a copy of a drawing by Veenstra & Kimm, Inc. showing replacement of the easements requested to be vacated by alternate easements.

8. The proposed vacation will not affect assessment of the properties by the Cerro Gordo County Auditor.

9. This Petition is signed on separate counterpart signature pages by the petitioners and mortgagee, First Citizens National Bank.

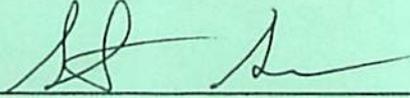
WHEREFORE, Eagle Avenue Properties, LLC and K. & H. Cooperative Oil Company join in requesting the City of Clear Lake to partially vacate the above easements on the Final Plat of Eagle Properties First Subdivision.

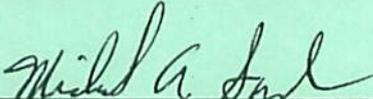
The remainder of this page is intentionally left blank.

COUNTERPART SIGNATURE PAGE TO PETITION

Dated this 7 day of October, 2015.

EAGLE AVENUE PROPERTIES, LLC

By 
Stephen J. Gannon, Manager

By 
Michael A. Sonderman, Manager

"EAGLE AVENUE"

COUNTERPART SIGNATURE PAGE TO PETITION

Dated this 7th day of October, 2015.

K. & H. COOPERATIVE OIL COMPANY

By Steve Schaller
Steve Schaller, General Manager

"K. & H."

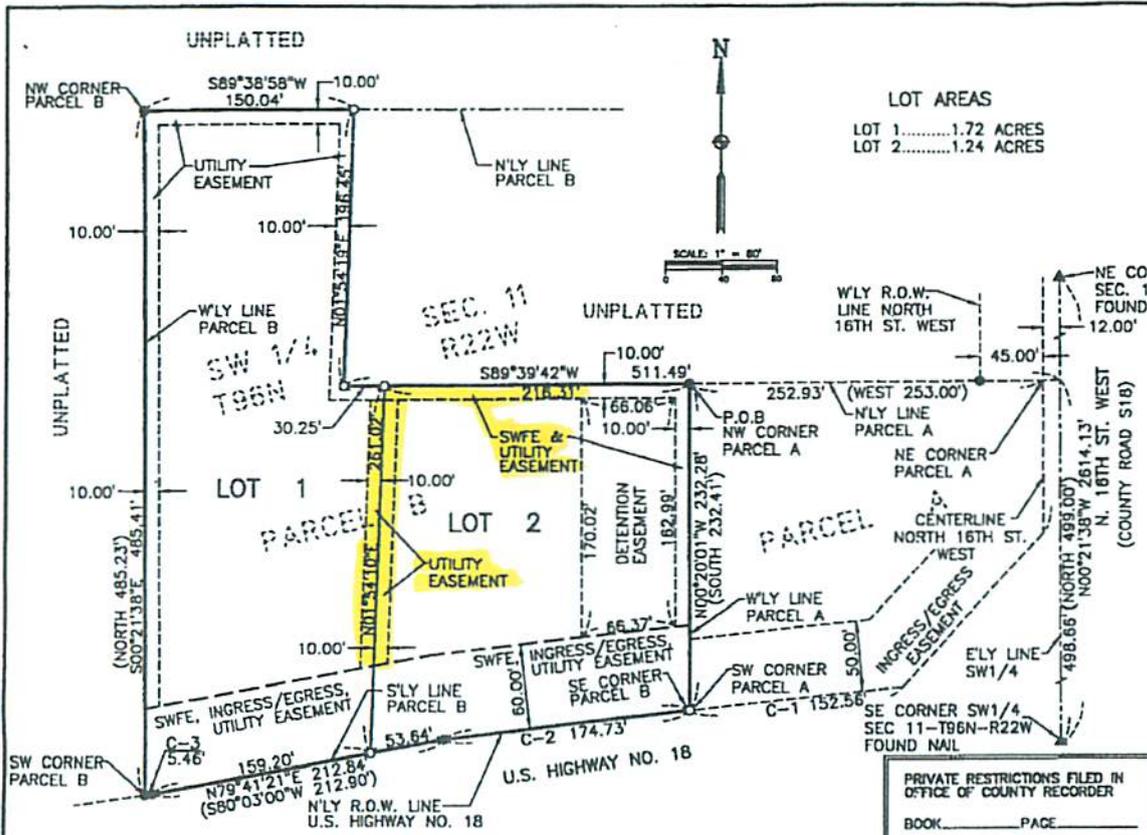
FINAL PLAT
EAGLE AVENUE PROPERTIES
FIRST SUBDIVISION

CLEAR LAKE, IOWA

PLATTER: EAGLE AVENUE PROPERTIES, LLC
 MR. STEPHEN J. GANNON AND
 MR. MICHAEL A. SONDERMAN, MANAGERS
 P.O. BOX 534
 CLEAR LAKE, IOWA 50428

APRIL, 2009

LOT AREAS
 LOT 1.....1.72 ACRES
 LOT 2.....1.24 ACRES



NOTES

- 1) THIS SUBDIVISION IS LOCATED IN THE SW1/4 SECTION 11-T96N-R22W OF THE 5TH P.M., CITY OF CLEAR LAKE, CERRO GORDO COUNTY, IOWA.
- 2) THE E'LY LINE OF THE SW1/4 WAS ASSUMED TO BEAR N00°21'38"W.
- 3) TOTAL AREA OF SUBDIVISION.....2.96 ACRES
- 4) ZONING: CI-1 INTENSIVE COMMERCIAL ZONE
 BUILDING LINES:
 FRONT YARD.....25'
 SIDE YARD.....NONE
 REAR YARD.....NONE
- 5) THE UNADJUSTED ERROR OF CLOSURE, AS PER SECTION 355.8 (15) OF THE CODE OF IOWA, MEETS 1:10,000 FOR THE SUBDIVISION BOUNDARY AND 1:5,000 FOR THE BOUNDARIES OF THE INDIVIDUAL LOTS.

LEGEND

SET IRON T-BAR MON.
 NO. 13644.....O
 FOUND MONUMENT WITH L.S.
 CAP NO. 11306.....@
 FOUND SECTION CORNER
 AS NOTED.....▲
 RECORD.....()

CURVE TABLE

CURVE	SUB-CURVE	Δ	RADIUS	ARC LENGTH	CHORD	CHORD BEARING
C-1		00°45'03"	11640.00	152.56'	152.56'	N 84°08'28" E
C-2		00°51'36"	11640.00	174.73'	174.73'	N 83°20'08" E
C-3	C-3A	00°01'37"	11630.00	5.46'	5.46'	N 81°50'42" E

PRIVATE RESTRICTIONS FILED IN
 OFFICE OF COUNTY RECORDER
 BOOK _____ PAGE _____

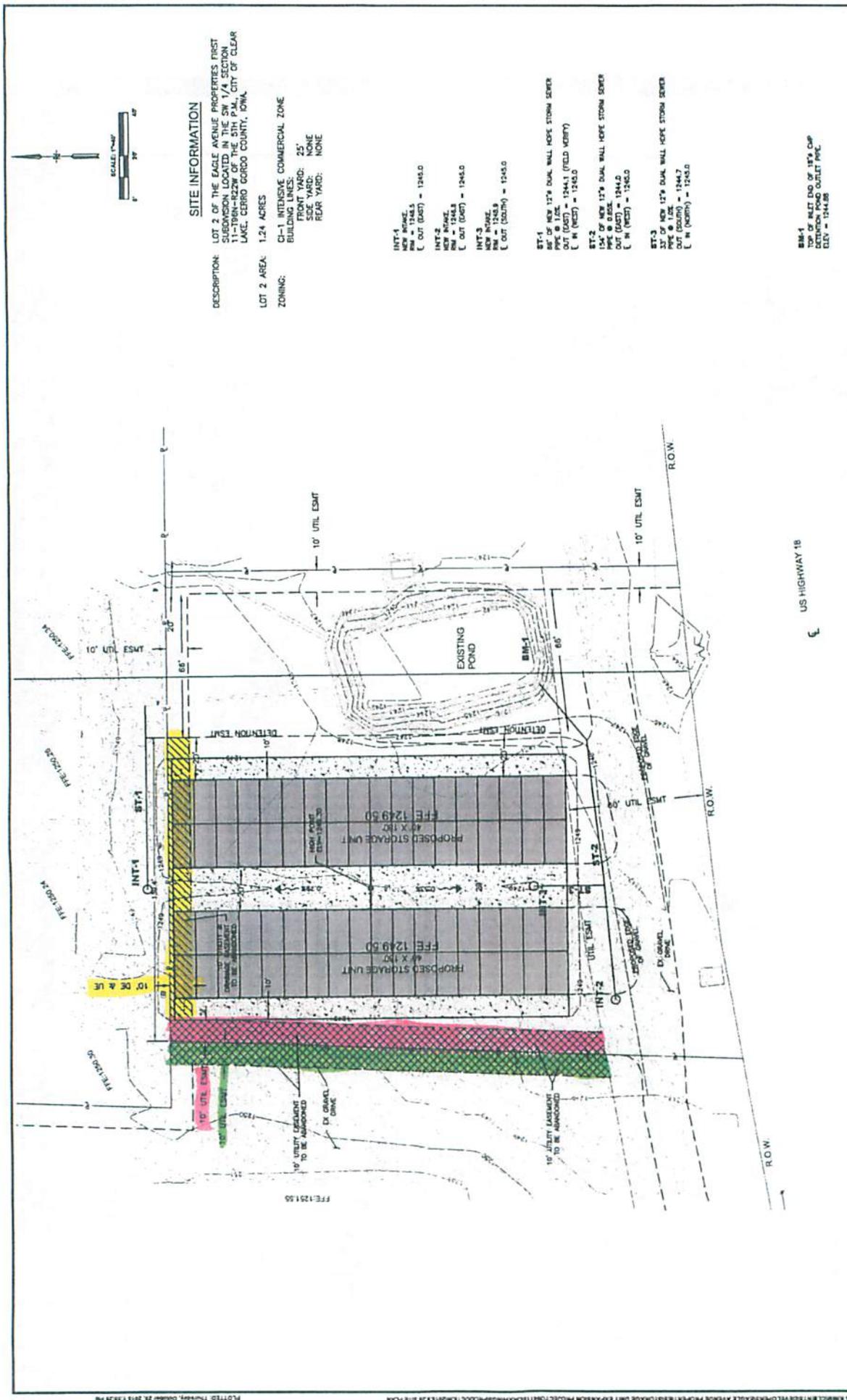
APPROVED:
 PLANNING & ZONING COMMISSION
 CITY OF CLEAR LAKE, IOWA
 BY *[Signature]*
 BY *[Signature]* Secretary

APPROVED BY CITY COUNCIL
 DATE *May 1, 2009*
 BY *[Signature]* Mayor



I hereby certify that this plat was made under my direct personal supervision, that all monuments are set or will be set prior to November 1, 2009, and that I am a duly licensed Land Surveyor under the laws of the State of Iowa.
 BY *[Signature]* Brian J. Diehl Date *May 1, 2009*
 License number 13644.
 My license renewal date is December 31, 2009
 Sheets covered by this plat: 2

WHKS & CO.
 ENGINEERS PLANNERS LAND SURVEYORS
 1412 - 8th STREET S.W. P.O. BOX 1467 MASON CITY, IOWA 50403-1467
 562-2237



SITE INFORMATION

DESCRIPTION: LOT 2 OF THE EAGLE AVENUE PROPERTIES FIRST SUBDIVISION LOCATED IN THE SW 1/4 SECTION 11--T8N-R22W OF THE 5TH P.M., CITY OF CLEAR LAKE, CERRO GORDO COUNTY, IOWA.

LOT 2 AREA: 1.24 ACRES

ZONING: C1-1 INTENSIVE COMMERCIAL ZONE

BUILDING LINES: 25'

FRONT YARD: NONE

REAR YARD: NONE

INT-1
NEW 12" S.W. PIPE
L (OUT (EAST)) = 1245.0

INT-2
NEW 12" S.W. PIPE
L (OUT (EAST)) = 1245.0

INT-3
NEW 12" S.W. PIPE
L (OUT (EAST)) = 1245.0

BT-1
15" OF NEW 12" DUAL WALL HOPE STORM SEWER
PIPE @ 1.2%
OUT (EAST) = 1244.1 (FIELD MODIFY)
L (IN (WEST)) = 1245.0

BT-2
15" OF NEW 12" DUAL WALL HOPE STORM SEWER
PIPE @ 1.2%
OUT (EAST) = 1244.0
L (IN (WEST)) = 1245.0

BT-3
33" OF NEW 12" DUAL WALL HOPE STORM SEWER
PIPE @ 1.2%
OUT (EAST) = 1244.7
L (IN (WEST)) = 1245.0

BM-1
TOP OF INLET DIO OF 12" S. CHP
ELEVATION = 1244.8
ELEV = 1244.8

DATE	REVISIONS	SCALE	AS NOTED	VERIFY SCALE	VENSTR & KIMM, INC.	PROJECT	DWG. NO.
					VENSTR & KIMM, INC.	STORAGE UNIT EXPANSION PROJECT	SP.01
					EAGLE AVENUE PROPERTIES, CLEAR LAKE, IA		
					850 22nd Avenue • Suite 4 • Clear Lake, Iowa 52411-1445 319-466-1000 • 319-466-1000/FAX • 319-466-1000/WWW		

US HIGHWAY 18

HEINY, McMANIGAL, DUFFY,
STAMBAUGH & ANDERSON, P.L.C.

JOHN L. DUFFY
GERALD M. STAMBAUGH
J. MATHEW ANDERSON
JACQUELINE R. CONWAY
MICHAEL S. VERVAECKE
JACQUELYN K. ARTHUR
NICOLE ROGNES OLSON
COLLIN M. DAVISON

ANDREW C. JOHNSTON

ATTORNEYS AT LAW
11 FOURTH STREET N.E.
P.O. BOX 1567
MASON CITY, IOWA 50402-1567
TELEPHONE (641) 423-5154
FAX (641) 423-5310
E-MAIL jduffy@heinyllaw.com

JAMES R. HEINY
RICHARD R. WINGA
GILBERT K. BOVARD
RETIRED
MORRIS E. LAIRD
1908-2002
DON W. BURINGTON
1909-1998
CHARLES W. McMANIGAL
1939-2013

October 26, 2015

Amy Palmer
Clear Lake Mirror Reporter
12 North Fourth Street
Clear Lake, IA 50428
(SENT BY E-MAIL: amy@clreporter.com)

COPY

Re: NOTICE OF HEARING ON PETITION TO VACATE PORTION OF UTILITY
EASEMENTS AND SURFACE WATER FLOWAGE EASEMENTS IN EAGLE AVENUE
PROPERTIES FIRST SUBDIVISION, CLEAR LAKE, IOWA

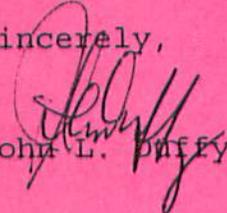
Dear Amy:

I enclose Notice of Hearing on Petition to Vacate to be published
in the Clear Lake Mirror Reporter on October 28 and November 11, 2015.

Iowa law provides that the Notice must be published 14 days apart
prior to the hearing scheduled for November 16, 2015.

Please call me to confirm that Clear Lake Mirror Reporter can
publish this Notice on those two dates.

Sincerely,


John L. Duffy

cc: Stephen J. Gannon
P.O. Box 11
Clear Lake, IA 50428
(SENT BY EMAIL: sgan555@gmail.com)

Michael A. Sonderman
925 North 16th Street West
Clear Lake, IA 50428
(SENT BY EMAIL: mikesonderman@unitedsuppliers.com)

Scott L. Flory
City Administrator
City of Clear Lake
15 North Sixth Street
P.O. Box 185
Clear Lake, IA 50428

**NOTICE OF HEARING ON
PETITION TO VACATE PORTION OF UTILITY EASEMENTS AND
SURFACE WATER FLOWAGE EASEMENTS IN EAGLE AVENUE
PROPERTIES FIRST SUBDIVISION, CLEAR LAKE, IOWA**

You are hereby notified that Eagle Avenue Properties, LLC and K. & H. Cooperative Oil Company have filed a Petition pursuant to §354.22(1) of the Iowa Code with the City Council of Clear Lake, Iowa, requesting vacation of a portion of utility easements and surface water flowage easements in the Plat of Eagle Avenue Properties First Subdivision, Clear Lake, Iowa.

Hearing on the Petition is scheduled for November 16, 2015, at 6:30 p.m. at City Hall, 15 North Sixth Street, Clear Lake, Iowa 50428.

Objections to the proposed Petition should be filed in writing with the City Administrator, City of Clear Lake, 15 North Sixth Street, Clear Lake, Iowa 50428 prior to the hearing, or presented to the City Council at the hearing.

Dated this October 26, 2015.

EAGLE AVENUE PROPERTIES, LLC
1620 Highway 18 West
Clear Lake, IA 50428

K. & H. COOPERATIVE OIL COMPANY
1740 U.S. Highway 18
Clear Lake, IA 50428