



March 22, 2015

Ms. Patricia Greenstein
Purchasing Manager
City of Margate
Purchasing Division
City Hall
5790 Margate Boulevard
Margate, FL 33063

Re: **BID NO. 2015-006 – CITY OF MARGATE WATER TREATMENT PLANT ON-SITE
SODIUM HYPOCHLORITE GENERATION EQUIPMENT REPLACEMENT**

Dear Ms. Greenstein,

Odyssey Manufacturing Co. ("Odyssey") is pleased to submit its proposal for the subject bid. In accordance with the Bid instructions, we have provided one original and one copy of our proposal. Odyssey views the proposed design build disinfection project bid as a means for one-stop shopping for the City of Margate to accomplish all aspects of work related to the design, engineering, permitting, installation, maintenance and subsequent service for the proposed on-site sodium hypochlorite generation (OSHG) replacement system at the City of Margate water Treatment Plant (the "Work"). Our proposal includes a description of the equipment and services we propose to provide for this project. The following benefits are provided if Odyssey is chosen to perform the Work:

- Odyssey is a licensed plumbing and general contractor who *specializes* in chemical system design, engineering, equipment supply and installation and service work. We have installed over 2,500 turn-key chemical systems most of which are disinfection systems as is the case here. Thus, the company performing the Work is the acknowledged expert in Florida for performing this type of work.
- Odyssey will self-perform all of the on-site Work except for some assistance from Process Solutions (the proposed OSHG manufacturer).
- Odyssey stocks replacement equipment and spare parts for all chemical system equipment it supplies which would be the case here.
- Odyssey has ten full time service personnel to provide service and warranty work after the installation is completed. Our emergency response is at very reasonable rates which are pre-negotiated (see enclosed rate sheet).
- Selection of Odyssey provides an in-place method to handle chemical system service emergencies that may arise in the future.

Odyssey proposes to supply the Process Solutions MicroOclor OSHG system. Odyssey has been the Florida distributor for the Process Solutions MicroOclor OSHG system for the past five (5) years and thus takes total responsibility for the OSHG equipment supply. In addition, Odyssey is a manufacturer and supplier of bulk sodium hypochlorite and operates two manufacturing facilities in Florida. It is an expert in building and operating disinfection systems in its own right and has the longest running large scale OSHG system in North America which has continuously operated since April of 2000. The Odyssey Project Team consists of the following personnel all of whom are experienced and knowledgeable in sodium hypochlorite disinfection systems:

Account Manager – Patrick H. Allman
Project Manager/FDEP Permitting Engineer (as required) – Mike Azzarella
Project Superintendent for Chemical System Installation – David Wing
Electric Journeyman – Andrew Mock
I&C Specialist – Andrew Mock
Scheduling, Procurement and O&M Manual Support – Linnea Isom
Process Solutions Account Manager – Brian Branch
Process Solutions Project Manager – Christian Kucera

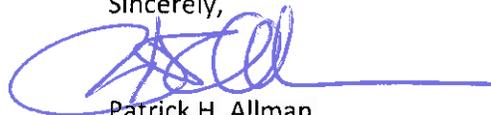
All of the Project Team members have extensive experience with respect to disinfection systems. For example, Mr. Allman has designed over 1,500 systems. Mr. Azzarella has designed and permitted over 250 systems for Odyssey. Mr. Wing and Mr. Mock have all been with Odyssey over ten years and between them have been involved in over 2,000 chemical system installations. Brian Branch has overseen the sale and installation of over five hundred OSHG systems in the past twenty years. Christian has been the project manager for several hundred OSHG system installations.

Lastly, Odyssey warrants that it meets the minimum requirements set forth in the RFP documents:

- Odyssey has been in business for the past fifteen (15) consecutive years and is currently legal to perform services within the State of Florida. Attached are State of Florida documents attesting to these facts. This is well in excess of the minimum three (3) year requirement.
- Odyssey has installed nine OSHG systems at six different locations in the past five (5) years which is well over the minimum requirement of one (1) OSHG system. Additionally, it has installed several hundred hypochlorite disinfection systems. We have attached a reference list outlining over fifty of such projects.
- We have included numerous references for similar projects for the City of Margate's consideration that we are in fact qualified to do the work contemplated herein.

Thank you for your consideration. Please do not hesitate to contact me at (813) ODYSSEY or cellular (813) 335-3444 if I can be of further assistance.

Sincerely,



Patrick H. Allman
General Manager

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- Drug-Free Workplace Program Form
- Compliance with Occupational Safety and Health Act
- Authority to Sign Letter
- Addendums

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- OSHG Manufacturer Contact Information/Local Representative
- OSHG Manufacturer's Installation List
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- OSHG Warranty Service Provider Information
- Referenced Standards, Codes and Specification Affidavits of Compliance
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- Odyssey's List of References
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TAB 3: Schedule of Bid Prices – Bid No. 2015-006

TAB 4: Supporting Documentation

- Odyssey Proof of Insurability
- Proof of Required Licenses
- W-9
- Contractor (Odyssey) Company Brochure
- OSHG Manufacturer (Process Solutions) Microclor Brochure

BID BOND

Bond No.: N/A

KNOW ALL MEN BY THESE PRESENTS:

That we Odyssey Manufacturing Company as Principal, and Travelers Casualty and Surety Company of America as Surety, are held and firmly bound unto City of Margate, hereinafter called "City" in the sum of (\$ 5%) Five Percent of Amount Bid in U.S. dollars, (not less than 5 percent of the total amount of the bid) for the payment of which sum, well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

WHEREAS, said Principal has submitted a bid to said City to perform the Work required under the bidding schedule of the City's Contract Documents entitled:

BID NO. 2015-006 WATER TREATMENT PLANT ON-SITE SODIUM HYPOCHLORITE GENERATION SYSTEM EQUIPMENT REPLACEMENT

NOW THEREFORE, if said Principal is awarded a contract by said City and, within the time and in the manner required in the "Notice Inviting Bids" and the "Instructions to Bidders" enters into a written Agreement on the form of the agreement bound with said Contract Documents, furnishes the required certificates of insurance, and furnishes the required Performance Bond, then this obligation shall be null and void, otherwise it shall remain in full force and effect. In the event suit is brought upon this bond by said City and City prevails, said Surety shall pay all costs incurred by said City in such suit, including a reasonable attorney's fee to be fixed by the court.

SIGNED AND SEALED, this 31st day of March, 2015.

Odyssey Manufacturing Company
(Principal)

Travelers Casualty and Surety Company of America
(Surety)

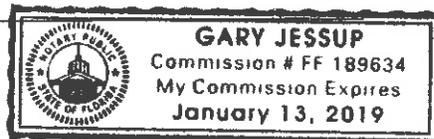
By: [Signature]
(SIGNATURE)

By: [Signature]
David B. Shick (SIGNATURE)
Attorney-in-Fact and Licensed FL Resident Agent #A241176

STATE OF FLORIDA, COUNTY OF BROWARD: BEFORE ME PERSONALLY APPEARED THE ABOVE TO ME WELL KNOWN AND KNOWN TO ME TO BE THE PERSONS DESCRIBED IN AND WHO EXECUTED THE FOREGOING INSTRUMENT, AND ACKNOWLEDGED TO AND BEFORE ME THAT THEY EXECUTED SAID INSTRUMENT FOR THE PURPOSES THEREIN EXPRESSED.

WITNESS MY HAND AND OFFICIAL SEAL, THIS 31st DAY OF March, 2015

NOTARY PUBLIC: [Signature]





POWER OF ATTORNEY

Farmington Casualty Company
Fidelity and Guaranty Insurance Company
Fidelity and Guaranty Insurance Underwriters, Inc.
Seaboard Surety Company
St. Paul Fire and Marine Insurance Company

St. Paul Guardian Insurance Company
St. Paul Mercury Insurance Company
Travelers Casualty and Surety Company
Travelers Casualty and Surety Company of America
United States Fidelity and Guaranty Company

Attorney-In Fact No. 218006

Certificate No. 003084398

KNOW ALL MEN BY THESE PRESENTS: That Seaboard Surety Company is a corporation duly organized under the laws of the State of New York, that St. Paul Fire and Marine Insurance Company, St. Paul Guardian Insurance Company and St. Paul Mercury Insurance Company are corporations duly organized under the laws of the State of Minnesota, that Farmington Casualty Company, Travelers Casualty and Surety Company, and Travelers Casualty and Surety Company of America are corporations duly organized under the laws of the State of Connecticut, that United States Fidelity and Guaranty Company is a corporation duly organized under the laws of the State of Maryland, that Fidelity and Guaranty Insurance Company is a corporation duly organized under the laws of the State of Iowa, and that Fidelity and Guaranty Insurance Underwriters, Inc. is a corporation duly organized under the laws of the State of Wisconsin (herein collectively called the "Companies"), and that the Companies do hereby make, constitute and appoint

David B. Shick, David R. Turcios, and Steven Schumacher

of the City of Tampa, State of Florida, their true and lawful Attorney(s)-in-Fact, each in their separate capacity if more than one is named above, to sign, execute, seal and acknowledge any and all bonds, recognizances, conditional undertakings and other writings obligatory in the nature thereof on behalf of the Companies in their business of guaranteeing the fidelity of persons, guaranteeing the performance of contracts and executing or guaranteeing bonds and undertakings required or permitted in any actions or proceedings allowed by law.

Any and all consents required by the Department of Transportation, or the Orlando-Orange County Expressway Authority, State of Florida, incident to the release of retained percentages and/or final estimates.

IN WITNESS WHEREOF, the Companies have caused this instrument to be signed and their corporate seals to be hereto affixed, this 24th day of June, 2009.

Farmington Casualty Company
Fidelity and Guaranty Insurance Company
Fidelity and Guaranty Insurance Underwriters, Inc.
Seaboard Surety Company
St. Paul Fire and Marine Insurance Company

St. Paul Guardian Insurance Company
St. Paul Mercury Insurance Company
Travelers Casualty and Surety Company
Travelers Casualty and Surety Company of America
United States Fidelity and Guaranty Company



State of Connecticut
City of Hartford ss.

By: [Signature]
George W. Thompson, Senior Vice President

On this the 24th day of June, 2009, before me personally appeared George W. Thompson, who acknowledged himself to be the Senior Vice President of Farmington Casualty Company, Fidelity and Guaranty Insurance Company, Fidelity and Guaranty Insurance Underwriters, Inc., Seaboard Surety Company, St. Paul Fire and Marine Insurance Company, St. Paul Guardian Insurance Company, St. Paul Mercury Insurance Company, Travelers Casualty and Surety Company, Travelers Casualty and Surety Company of America, and United States Fidelity and Guaranty Company, and that he, as such, being authorized so to do, executed the foregoing instrument for the purposes therein contained by signing on behalf of the corporations by himself as a duly authorized officer.

In Witness Whereof, I hereunto set my hand and official seal. My Commission expires the 30th day of June, 2011.



[Signature]
Marie C. Tetreault, Notary Public

This Power of Attorney is granted under and by the authority of the following resolutions adopted by the Boards of Directors of Farmington Casualty Company, Fidelity and Guaranty Insurance Company, Fidelity and Guaranty Insurance Underwriters, Inc., Seaboard Surety Company, St. Paul Fire and Marine Insurance Company, St. Paul Guardian Insurance Company, St. Paul Mercury Insurance Company, Travelers Casualty and Surety Company, Travelers Casualty and Surety Company of America, and United States Fidelity and Guaranty Company, which resolutions are now in full force and effect, reading as follows:

RESOLVED, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President, any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary may appoint Attorneys-in-Fact and Agents to act for and on behalf of the Company and may give such appointee such authority as his or her certificate of authority may prescribe to sign with the Company's name and seal with the Company's seal bonds, recognizances, contracts of indemnity, and other writings obligatory in the nature of a bond, recognizance, or conditional undertaking, and any of said officers or the Board of Directors at any time may remove any such appointee and revoke the power given him or her; and it is

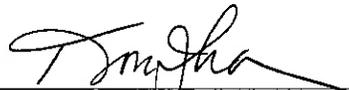
FURTHER RESOLVED, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President may delegate all or any part of the foregoing authority to one or more officers or employees of this Company, provided that each such delegation is in writing and a copy thereof is filed in the office of the Secretary; and it is

FURTHER RESOLVED, that any bond, recognizance, contract of indemnity, or writing obligatory in the nature of a bond, recognizance, or conditional undertaking shall be valid and binding upon the Company when (a) signed by the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary and duly attested and sealed with the Company's seal by a Secretary or Assistant Secretary; or (b) duly executed (under seal, if required) by one or more Attorneys-in-Fact and Agents pursuant to the power prescribed in his or her certificate or their certificates of authority or by one or more Company officers pursuant to a written delegation of authority; and it is

FURTHER RESOLVED, that the signature of each of the following officers: President, any Executive Vice President, any Senior Vice President, any Vice President, any Assistant Vice President, any Secretary, any Assistant Secretary, and the seal of the Company may be affixed by facsimile to any power of attorney or to any certificate relating thereto appointing Resident Vice Presidents, Resident Assistant Secretaries or Attorneys-in-Fact for purposes only of executing and attesting bonds and undertakings and other writings obligatory in the nature thereof, and any such power of attorney or certificate bearing such facsimile signature or facsimile seal shall be valid and binding upon the Company and any such power so executed and certified by such facsimile signature and facsimile seal shall be valid and binding on the Company in the future with respect to any bond or understanding to which it is attached.

I, Kori M. Johanson, the undersigned, Assistant Secretary, of Farmington Casualty Company, Fidelity and Guaranty Insurance Company, Fidelity and Guaranty Insurance Underwriters, Inc., Seaboard Surety Company, St. Paul Fire and Marine Insurance Company, St. Paul Guardian Insurance Company, St. Paul Mercury Insurance Company, Travelers Casualty and Surety Company, Travelers Casualty and Surety Company of America, and United States Fidelity and Guaranty Company do hereby certify that the above and foregoing is a true and correct copy of the Power of Attorney executed by said Companies, which is in full force and effect and has not been revoked.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the seals of said Companies this 31st day of MARCH, 20 15.


Kori M. Johanson, Assistant Secretary



To verify the authenticity of this Power of Attorney, call 1-800-421-3880 or contact us at www.travelersbond.com. Please refer to the Attorney-In-Fact number, the above-named individuals and the details of the bond to which the power is attached.

BID PROPOSAL FORM BID NO. 2015-006

**BID TO: CITY COMMISSION
CITY OF MARGATE**

1. The undersigned bidder proposes and agrees, if this bid is accepted, to enter into an Agreement with the OWNER in the form included in the Contract Documents to perform the WORK as specified or indicated in said Contract Documents entitled:

**BID NO. 2015-006 WATER TREATMENT PLANT ON-SITE SODIUM HYPOCHLORITE GENERATION
SYSTEM EQUIPMENT REPLACEMENT**

2. Bidder accepts all of the terms and conditions of the Contract Documents, including without limitation those in the "Notice Inviting Bids", and "Instructions to Bidders", dealing with the disposition of the bid security.
3. The bid will remain open for the period stated in the "Notice Inviting Bids", unless otherwise required by law. Bidder will enter into an Agreement within the time and in the manner required in the "Notice Inviting Bids" and the "Instructions to Bidders", and will furnish the insurance certificates, Payment Bond and Performance Bond required by the Contract Documents.
4. Bidder has examined copies of all the Contract Documents including the following addenda (receipt of all of which is acknowledged):

Number One (1) Date 3.25.15

5. Bidder has familiarized itself with the nature and extent of the Contract Documents, WORK, site, locality where the WORK is to be performed, the legal requirements (federal, state and local laws, ordinances, rules and regulations), and the conditions affecting cost, progress or performance of the WORK and has made such independent investigations as bidder deems necessary.
6. This bid is genuine and not made in the interest of or on behalf of any undisclosed person, firm or corporation and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation. Bidder has not directly or indirectly induced or solicited any other bidder to submit a false or sham bid. Bidder has not solicited or induced any person, firm or corporation to refrain from bidding and Bidder has not sought by collusion to obtain for itself any advantage over any other bidder or over Owner.

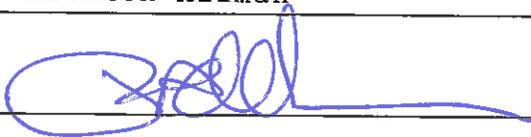
To all the foregoing, and including all Bid Schedule(s) and information required of bidder contained in this Bid Form, said Bidder further agrees to complete the Work required under the Contract Documents within the Contract Time stipulated in said Contract Documents, and to accept in full payment thereof the Contract Price based on the total bid price(s) named in the aforementioned bidding schedule(s).

BID PROPOSAL FORM BID NO. 2015-006

NAME OF FIRM Odyssey Manufacturing Company

ADDRESS: 1484 Massaro Blvd., Tampa, Fl. 33619

NAME OF SIGNER Patrick Allman
(Print or Type)

TITLE OF SIGNER  General Manager

SIGNATURE: _____ DATE: 3/27/15

TELEPHONE NO: 813/635-0339 FACSIMILE NO: 813/630-2589

E-MAIL: pallman@odysseymanufacturing.com

BIDDER'S GENERAL INFORMATION:

The bidder shall furnish the following information. Additional sheets shall be attached as required. Failure to complete Item Nos. 1, 3, and 8 will cause the bid to be non-responsive and may cause its rejection. In any event, no award will be made until all of the Bidder's General Information (i.e., items 1 through 9 inclusive) is delivered to the OWNER.

- (1) Contractor's name and address:
Odyssey Manufacturing Company
1484 Massaro Blvd.
Tampa, Fl. 33619
- (2) Contractor's telephone number: 813/635-0339
- (3) Contractor's license: Primary classification General Contractor/Plumbing Contractor
State License Number CGC1516698/CFC057182
Supplemental classifications held, if any: _____
Name of Licensee, if different from (1) above: _____

- (4) Name of person who inspected site of proposed WORK for your firm:
Brian Branch, Garry Lebeau
Name: Patrick Allman Date of Inspection: 3/19/15
- (5) Name, address, and telephone number of surety company and agent who will provide the required bonds on this contract: The Prosure Group, Inc.
7217 Benjamin Rd., Tampa, Fl. 33634
813/243-1110
- (6) Attach to this bid, the experience resume of the person who will be designated chief construction superintendent or on site construction manager.
Michael Azzarella (see attached)
- (7) Attach to this bid a financial statement, references, and other information, sufficiently comprehensive to permit an appraisal of Contractor's current financial condition.

BID NO. 2015-006

(8) List 3 projects completed as of recent date involving work of similar type and complexity:

PROJECT NAME	CONTRACT PRICE	NAME, ADDRESS AND TELEPHONE NUMBER OF OWNER
On-Site Sodium Hypochlorite Generation System Upgrade	\$175,000	Bonita Springs Util. 11860 E. Terry St. Bonita Springs, FL. 34135 239/390-4820
Cypress Creek Chemical System Rehabilitation Project	\$615,000	Tampa Bay Water 8865 Pump Station Rd. Land O'Lakes, FL. 34639 727/796-2355
On-Site Sodium Hypochlorite Generation Systems Upgrade for Water & WWIP	\$3,000,000	Boca Raton 1301 Glades Rd. Boca Raton, FL. 33432 561/338-7322

(9) Subcontractors: The bidder further proposes that as part of their submittal, attached is a list of subcontracting firms or businesses that will be awarded subcontracts for portions of the work in the event the bidder is awarded the Contract:

Process Solutions, OSHG Manufacturer & On-Site Support
 1077 Dell Ave. Suite A
 Campbell, CA 95008
 (408) 370-6540

Michael Azzarella, P.E.



Education

B.S., Civil Engineering,
SUNY at Buffalo, 1987

Registrations/Licenses

Professional Engineer
Florida 52427, 1998

Professional Engineer
New York 070382,
1993

Certifications

Certified Public Man-
ager (CPM), The Flori-
da Center for Public
Management, at Flori-
da State University,
June 2004

Mr. Azzarella has been a team leader of many professionals who have specialized in the design of water and wastewater related facilities as well as stormwater and solid waste management facilities. He has significant experience in design, project management, and resident engineering for water and wastewater treatment/conveyance facilities and stormwater systems. His work history includes the following projects:

UTILITIES

Polk County Utilities Technical Services Director.

Mr. Azzarella oversaw Utilities Technical Services Division with a Capital Improvement Program budget in excess of \$30 million per year. Professional engineering work included supervising staff and managing utilities development coordination, water, and wastewater systems capacities and related issues, utilities engineering design and permitting, and utilities geographical information system for Division. Managed utilities development coordination to ensure compliance and conformance with County and Division requirements which includes plan review, quality control and approval; regulatory agency permit application review, approval, and execution; and record drawing review, quality control and approval. Managed water and wastewater system capacities and identified problem issues requiring system upgrades/modification and coordinated with regulatory agencies and other Division Sections as required. Obtained and approved all necessary supporting documentation required for County acceptance of utility systems associated with development activity. Coordinated with other County Departments/Divisions, consulting engineers, developers, contractors, and other utility purveyors throughout these processes.

Supervised staff and managed preparation, modification, and maintenance of the County Standards and Specifications for Utility Construction Manual. Supervised staff and managed Utilities Capital Projects Section for development compliance with the Polk County Comprehensive Plan and negotiation of agreements with developers for improvements to utility systems. Coordinated with the Utilities Operations and Maintenance Division to evaluate systems performance problems and provide input and recommendations for correcting problems. Approved, signed and sealed all documents as the professional engineer in responsible charge of in-house design and permitting work which included engineering plan preparation, technical standards and specifications preparation, permitting, design calculations, estimates, and related technical documents. Prepared and managed the Division operational and Capital related budgets.

Cities of Davenport and Polk City, Florida – Miscellaneous Engineering Services.

Mr. Azzarella serves as an extension of the Cities' Public Works Departments. He focuses on environmental compliance, working with staff to improve efficiencies, troubleshoot utility issues, perform technical re-



Michael Azzarella, P.E. (Continued)

City of Avon Park Sodium Hypochlorite Conversion – Wastewater Treatment Facility, Avon Park, Florida. Mr. Azzarella served as Senior Project Manager and was responsible for the design and permitting of converting the disinfection system of the City's wastewater treatment facility from gaseous chlorine to liquid sodium hypochlorite.

Town of Tonawanda Plant Improvements, Tonawanda, New York.

Mr. Azzarella served as Design Engineer to evaluate an existing backwash/air scour operation at a wastewater treatment plant for an Erie County municipality. His work included evaluating the existing system for potential problem points, hydraulic grade line establishment over length of system from backwash pumps to filters based on Bernoulli principles and presentation of results.

SOLID WASTE

Philadelphia Phillies Carpenter Field Training Building Gas Mitigation System, Clearwater, Florida

Mr. Azzarella served as Senior Project Manager for the design of a landfill gas mitigation system under and within the Philadelphia Phillies 20,000 square foot training building to minimize potential gas migration into the building structure. Other project services include bid assistance and construction administration.

Joe DiMaggio Complex Press Box and Storage Building Gas Mitigation System, Clearwater, Florida

Mr. Azzarella is serving as Senior Project Manager for the design of a landfill gas mitigation system under and within the 1,925 square foot Pressbox and Storage Building to minimize potential gas migration into the building structure. Other project services will include bid assistance and construction administration.

CID Group, Inc. Solid Waste Management Company, Blasdell, New York

Mr. Azzarella served as Director of Engineering and was responsible for all environmental compliance and permitting issues for a multi-million dollar solid waste management company. Maintained compliance with SPDES, AST/LIST, SARA, RCRA, NFPA, Clean Air Act and State air, water, wastewater and solid waste regulations.

Mr. Azzarella was also responsible for environmental permitting of various solid waste management facilities including construction and demolition debris and municipal solid waste landfills, solid waste transfer stations, construction and demolition debris processing and transfer facilities, composting facilities and material recovery facilities.

Additional landfill work included the development of construction quality assurance/construction quality control plans for landfill construction and closure, preparation of: closure certification reports, post-closure maintenance programs, stormwater management and sediment control plans, all permit renewal reports and oversight of renewal engineering drawing preparation, and completion of mining/reclamation plans.

Kreher's Poultry Farm Composting Facility, Clarence, New York

Mr. Azzarella was responsible for the design and permitting of a 35 ton per day composting facility in western New York.

STORMWATER

Town of Pendleton Drainage District, Pendleton, New York.

Mr. Azzarella served as Project Engineer which included completing hydraulic drainage calculations for drainage facilities in a Niagara County town as part of the formation of a townwide drainage district. He directed survey crews to perform surveys of existing drainage structures (e.g. culverts, drainage



Michael Azzarella, P.E. (Continued)

channels). Based on the survey information, Mr. Azzarella performed calculations to determine the structures theoretical capacities and compared these capacities to required 25-year recurrence storm capacities. Those existing structures which were not adequate to handle a 25 year storm were designed to increase their capacity to handle the 25-year storm. The design consisted of increasing culvert diameters, changing culvert construction materials, excavating channels, etc.

General Motors Fisher Guide Stormwater Monitoring Program, Syracuse, New York.

Mr. Azzarella served as Design Engineer in the development of a stormwater outfall sampling program to identify point source of stormwater contamination for an automobile components manufacturer. Responsibilities included rain gauge management, first-flush sample collection and documentation and preparation of summary report.

Alligator Creek Channel F Drainage Improvements, Hillsborough County, Florida.

Mr. Azzarella served as Project Manager for the investigation, design, and permitting for a major stormwater drainage channel rehabilitation project. The rehabilitation included the installation of gabions and installation of two large bridge culverts.

Messler Road Drainage Improvements, Hillsborough County, Florida.

Mr. Azzarella served as Project Manager for the investigation, design, and permitting for a major stormwater drainage channel rehabilitation project.

Various Commercial Facilities Stormwater Designs, New York.

Mr. Azzarella served as Project Manager of many stormwater management designs for commercial facilities in Western New York. Work included stormwater design evaluations and calculations via computer models, report preparation and design drawing preparation.

DEVELOPMENT

Jordan Development Group, Inc., Winter Park, Florida

Mr. Azzarella served as the Director of Development & Construction and managed various residential, commercial and condominium projects. Primary focus was preparing estimates and budgets, contracting the work, and managing the contactors while satisfying municipalities and regulatory agencies. Managed a \$50+ million construction of clubhouse, pool, pool house, gate house, tiki bar, and seven condominium buildings adjacent to Disney properties. Included obtaining all State food and liquor licenses. Managed design and construction of various residential subdivisions. Acted as management liaison between developer and hotel management company and homeowner association's management company. Performed due diligence activities for various residential and commercial parcels.



ENTITY: CITY OF MARGATE

**PROJECT NAME: WATER TREATMENT PLANT ON-SITE SODIUM HYPOCHLORITE GENERATION
EQUIPMENT REPLACEMENT**

BID/CONTRACT NO.: 2015-006

SUBJECT: FINANCIAL INFORMATION

About Odyssey

Odyssey Manufacturing Co. is a Delaware corporation licensed to do business in the State of Florida. Odyssey is headquartered in Tampa, Florida and has a manufacturing facility in both Tampa, Florida and in Orlando, Florida. Its principal investor, Stephen Sidelko, also operates a sodium hypochlorite manufacturing and distribution facility in Miami, Florida.

Odyssey Manufacturing is the largest manufacturer and supplier of sodium hypochlorite to the industrial market in Florida with over 70% of the Florida market. In addition, Odyssey is a licensed plumbing, underground and general contractor who specializes in chemical system permitting, design, installation and repairs. Odyssey's contractors' licenses are included in the Bid Submittal. Odyssey has designed, furnished and installed over 2,500 chemical systems in Florida over the past fourteen years and has provided chemical system service work to most of the utilities in Florida.

Odyssey Manufacturing Co. has two manufacturing locations: (1) Located on the east side of Tampa, Florida; and (2) Located on the East side of Orlando. Additionally, we have agreements with Sentry Industries in Miami (because of common ownership) to purchase sodium hypochlorite from them as well. As part of its capabilities, Odyssey has ten full-time service personnel that install and work on chemical systems and three degreed engineers who provide technical support. Odyssey also has eight service trucks all of which are fully stocked with PVC parts, two kynar (a.k.a. PDVF) welders (we are the only entity in Florida who owns kynar welders), six service trailers, two low-boy trailers, one semi-trailer for construction and parts, twenty four tractors and over \$1 million of chemical system parts, pumps and components at its Tampa facility. Odyssey is a 24/7 operation and routinely provides warranty and service work around the clock.

Financial Information

Odyssey Manufacturing Co. is a privately held company that sold over 50 million gallons of sodium hypochlorite last year. Its construction services division which does installation, service and maintenance work did almost \$12 million worth of work in 2014. Odyssey is bondable to \$6 million and our bond rating or premium fee is 1% which is significantly better than most contractors in the water and wastewater treatment industry. We have no long term debt to any third parties and our only debt is a line of credit used in the normal course of our business operations. We have extensive assets including two manufacturing facilities and numerous vehicles, trailers and tankers. The replacement cost on our two plants alone is over \$60 million and the land we own in Tampa is valued at over \$1.2 million.

Local Parts/Service Center

Odyssey Manufacturing Co. main facility is in Brandon, Florida on the east side of Tampa. We are a 24/7, 365-day a year operation and thus are available to ship, send out on our trucks or be available for maintenance personnel to pick-up spare parts at our facilities at any time. Many of our local customers take advantage of this service. Additionally, we provide emergency chemical system service repairs 24/7 and have experienced chemical system personnel on duty at all times to be able to provide this service.

Resources

Odyssey employs 49 personnel all of which may be used at various times to support and provide Work under the proposed contact with the City of Margate. As part of its capabilities, Odyssey has ten full-time service personnel that install and work on chemical systems and three degreed engineers who provide technical support. Odyssey also has eight service trucks all of which are fully stocked with PVC parts, two kynar (a.k.a. PDVF) welders (we are the only entity in Florida who owns kynar welders), six service trailers, one low-boy, one semi-trailer for construction and parts, twenty four tractors and over \$1 million of chemical system parts, pumps and components at its Tampa facility. Odyssey is a 24/7 operation and routinely provides warranty and service work around the clock.

For example, Odyssey maintains in its inventory at least two of every size of every Prominent Gamma L, Delta, Sigma I and Sigma II chemical feed pumps and at least six of the associated rebuild kit for these pumps in its inventory. We also stock all of the components for Grundfos pumps. Both of these pumps are proposed for this application. Thus, Odyssey has about \$250,000 worth of Grundfos and Prominent pumps and rebuild kits and is the only entity in Florida who stocks these parts. Additionally, Odyssey stocks all of the various pipe, valves and fittings used in all of its chemical system installations. Lastly, Odyssey is the only entity in Florida who stocks all of the chemical tank sizes that will be used for this project. In addition, we have a wide variety of loaner tanks and chemical feed pump skids.

REFERENCE SHEET

In order to receive Bid Award consideration on the proposed bid, it is a mandatory requirement that the following "Information Sheet" must be completed and returned with your bid. This information may be used in determining the Bid Award for this contract.

BIDDER (COMPANY NAME): Odyssey Manufacturing Company

ADDRESS: 1484 Massaro Blvd.
Tampa, FL. 33619 TELEPHONE NO: 813/635-0339

CONTACT PERSON: Patrick Allman TITLE: General Manager

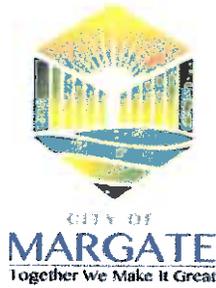
NUMBER OF YEARS IN BUSINESS: 16 yrs

ADDRESS OF NEAREST FACILITY: 1484 Massaro Blvd., Tampa, FL. 33619

LIST THREE (3) COMPANIES OR GOVERNMENTAL AGENCIES WHERE THESE PRODUCTS AND SERVICES HAVE BEEN PROVIDED IN THE LAST YEAR.

1. Company Name: Bonita Springs Utilities
Address: 11860 E. Terry St., Bonita Springs, FL. 34135
Contact Person: Andy Koebel Title: Director of Operations
Phone: 239/390-4820
2. Company Name: Tampa Bay Water
Address: 8865 Pump Station Rd., Land O'Lakes, FL. 34639
Contact Person: Andrew Greenbaum Title: North Operation Manager
Phone: 813/910-3246
3. Company Name: Boca Raton
Address: 201 W. Palmetto Park Rd., Boca Raton, FL. 33432
Contact Person: Norm Wellings Title: Operations Manager
Phone: 561/338-7322

Note: *Additional References Found in TAB 2*



NON-COLLUSIVE AFFIDAVIT FOR BID NO. 2015-006

State of Florida)

)ss.

County of Hillsborough)

Patrick Allman

being first duly sworn, deposes

and says that:

He/she is the General Manager, (Owner, Partner, Officer, Representative or Agent) of Odyssey Mfg. Company, the Offeror that has submitted the attached Proposal;

He/she is fully informed regarding the preparation and contents of the attached Proposal and of all pertinent circumstances regarding such Proposal;

Such Proposal is genuine and is not a collusive or sham Proposal;

Neither the said Offeror nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this affiant, have in any way colluded, conspired, connived or agreed, directly or indirectly, with any other Offeror, firm, or person to submit a collusive or sham Proposal in connection with the Work for which the attached Proposal has been submitted; or to refrain from bidding in connection with such Work; or have in any manner, directly or indirectly, sought by agreement or collusion, or communication, or conference with any Offeror, firm, or person to fix the price or prices in the attached Proposal or of any other Offeror, or to fix any overhead, profit, or cost elements of the Proposal price or the Proposal price of any other Offeror, or to secure through any collusion, conspiracy, connivance, or unlawful agreement any advantage against (Recipient), or any person interested in the proposed Work;

The price or prices quoted in the attached Proposal are fair and proper and are not tainted by any collusion, conspiracy, connivance, or unlawful agreement on the part of the Offeror or any other of its agents, representatives, owners, employees or parties in interest, including this affiant.

Signed, sealed and delivered in the presence of:

Linnea A. Ison

Witness

Tiffany Thaxton

Witness

By

[Signature]

Patrick Allman

Printed Name

General Manager

Title

**ACKNOWLEDGMENT
NON-COLLUSIVE AFFIDAVIT FOR BID NO. 2015-006**

State of Florida

County of Hillsborough

On this the 27 day of March, 2015, before me, the undersigned Notary Public of the State of Florida, personally appeared

Patrick Allman

and

(Name(s) of individual(s) who appeared before notary)

whose name(s) is/are Subscribed to within the instrument, and he/she/they acknowledge that he/she/they executed it.

WITNESS my hand
and official seal.

NOTARY PUBLIC
SEAL OF OFFICE:



MARJORIE O'DONNELL
NOTARY PUBLIC
STATE OF FLORIDA
Comm# EE164394
Expires 3/5/2016

May O'Donnell

NOTARY PUBLIC, STATE OF FLORIDA

Marjorie O'Donnell

(Name of Notary Public: Print,
Stamp, or Type as Commissioned)

- Personally known to me, or
 Produced identification:

(Type of Identification Produced)

- DID take an oath, or DID NOT take an oath

DRUG-FREE WORKPLACE PROGRAM FORM

In accordance with Section 287.087, State of Florida Statutes, preference shall be given to businesses with Drug-free Workplace Programs. Whenever two or more bids which are equal with respect to price, quality and service are received for the procurement of commodities or contractual service, a bid received from a business that certifies that it has implemented a Drug-free Workplace Program shall be given preference in the award process. In the event that none of the tied vendors have a Drug-free Workplace program in effect the City reserves the right to make final Decisions in the City's best interest. In order to have a Drug-free Workplace Program, a business shall:

1. Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition.
2. Inform employees about the dangers of drug abuse in the workplace, the business's policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation, and employee assistance programs, and the penalties that may be imposed upon employees for drug abuse violations.
3. Give each employee engaged in providing the commodities or contractual services that are under bid a copy of the statement specified in subsection (1).
4. In the statement specified in subsection (1), notify employees that, as a condition of working on the commodities or contractual services that are under bid, the employee will abide by the terms of the statement and will notify the employer of any conviction of, or plea of guilty or nolo contendere to, any violation of Chapter 893 or of any controlled substance law of the United States or any State, for a violation occurring in the workplace no later than five (5) days after such conviction.
5. Impose a sanction on, or require the satisfactory participation in a drug abuse assistance or rehabilitation program if such is available in the employee's community by any employee who is convicted.
6. Make a good faith effort to continue to maintain a drug-free workplace through implementation.

If bidder's company has a Drug-free Workplace Program, so certify below:

AS THE PERSON AUTHORIZED TO SIGN THE STATEMENT, I CERTIFY THAT THIS FIRM COMPLIES FULLY WITH THE ABOVE REQUIREMENTS.

SIGNATURE OF BIDDER: _____

DATE: _____

3-23-15

BID NO: 2015-006

COMPLIANCE WITH OCCUPATIONAL SAFETY AND HEALTH ACT

Bidder certifies that all material, equipment, etc. contained in this bid meets all O.S.H.A. requirements. Bidder further certifies that if he/she is the successful bidder, and the material, equipment, etc., delivered is subsequently found to be deficient in any O.S.H.A. requirement in effect on date of delivery, all costs necessary to bring the material, equipment, etc. into compliance with the aforementioned requirements shall be borne by the bidder.

OCCUPATIONAL HEALTH AND SAFETY MATERIAL SAFETY DATA SHEET REQUIRED:

In compliance with Chapter 442, Florida Statutes, any item delivered from a contract resulting from this bid must be accompanied by a MATERIAL SAFETY DATA SHEET (MSDS). The MSDS must include the following information:

- A. The chemical name and the common name of the toxic substance.
- B. The hazards or other risks in the use of the toxic substances, including:
 - 1. The potential for fire, explosion, corrosivity and reactivity
 - 2. The known acute and chronic health effects of risks from exposure, including the medical conditions which are generally recognized as being aggravated by exposure to the toxic substance; and
 - 3. The primary routes of entry and symptoms of overexposure.
- C. The proper precautions, handling practices, necessary personal protective equipment, and other safety precautions in the use of or exposure to the toxic substances, including appropriate emergency treatment in case of overexposure.
- D. The emergency procedure for spills, fire, disposal and first aid.
- E. A description in lay terms of the known specific potential health risks posed by the toxic substances intended to alert any person reading this information.
- F. The year and month, if available, that the information was compiled and the name, address and emergency telephone number of the manufacturer responsible for preparing the information.

Acknowledged:



BID NO: 2015-006

General Manager

Page A-20

Odyssey Manufacturing Co.



ODYSSEY
MANUFACTURING CO.

March 23, 2015

Mr. Marvin Rakes
Odyssey Manufacturing Co.
1484 Massaro Boulevard
Tampa, Florida 33619

Re: **CORPORATE RESOLUTION FOR AUTHORITY TO SIGN BIDS AND
CONTRACTS ON BEHALF OF ODYSSEY MANUFACTURING CO.**

To Whom It May Concern,

Odyssey Manufacturing Co. is a Delaware corporation licensed to do business in the State of Florida. Patrick H. Allman, Odyssey Manufacturing Co.'s General Manager, has the authority to sign all bid documents and contracts on behalf of Odyssey Manufacturing Company.

Sincerely,

Marvin T. Rakes
President

CORPORATE SEAL

MANUFACTURERS OF **ULTRA CHLOR** (800) ODYSSEY
THE CLEAR SOLUTION www.odysseymanufacturing.com

1484 MASSARO BLVD • TAMPA, FL 33619 • (813) 635-0339 • FAX (813) 630-2589

ACKNOWLEDGEMENT FORM

ADDENDUM NO. 1

**BID NO. 2015-006 – ON-SITE SODIUM HYPOCHLORITE
GENERATION EQUIPMENT REPLACEMENT**

I acknowledge receipt of Addendum No. 1 for Bid No. 2015-006 – On-Site Sodium Hypochlorite Generation Equipment Replacement. This addendum contains nineteen (19) pages which includes attachments. Please include the original of this form in your Bid submission.

Company Name: Odyssey Manufacturing Co.

Address: 1484 Musco Blvd., Tampa, FL 33619

Name of Signer Patrick H. Hillman
(please print)

Signature:  Date: _____

Telephone: 813 635-0339 Facsimile: 813 630-2589

Please fax your completed form to (954) 935-5258 or e-mail to purchase@margatefl.com.


Patricia Greenstein
Purchasing Manager
3/23/15



ODYSSEY
MANUFACTURING CO.

ENTITY: CITY OF MARGATE

**PROJECT NAME: WATER TREATMENT PLANT ON-SITE SODIUM HYPOCHLORITE GENERATION
EQUIPMENT REPLACEMENT**

BID/CONTRACT NO.: 2015-006

SUBJECT: 1.06(1) OSHG MANUFACTURER INFORMATION

Proposed OSHG Manufacturer: Process Solutions
1077 Dell Avenue, Suite A
Campbell, CA 95008
(408) 370-6540

Proposed OSHG Model: MicrOclor OSHG System (MC-1500)
Proposed OSHG Rep/Distributor: Odyssey Manufacturing Co.
1484 Massaro Blvd.
Tampa, Florida 33619
(800) ODYSSEY

Local OSHG Service Center: Odyssey Manufacturing Co.
1484 Massaro Blvd.
Tampa, Florida 33619
(800) ODYSSEY

Microclor Onsite Hypochlorite System Base List

Albuquerque Bernalillo County Water Utility Authority

	NM	MC-80
	NM	MC-400
	NM	MC-300
	NM	MC-100
	NM	MC-80
	NM	MC-60
	NM	MC-40
	NM	MC-20
	NM	MC-80
Burton Well	NM	MC-200
Charles Ridgecrest	NM	MC-200
Greigos	NM	MC-200
Lyndecker	NM	MC-200
Miles	NM	MC-200
Southside Water Reclamation Plant	NM	MC-160
Volandia Pump Station	NM	MC-400
Well 1	NM	MC-40
Well 4	NM	MC-40
Well 5	NM	MC-40
Well 8	NM	MC-60

Albuquerque, City of

Puerto Del Sol Golf Course- Southside NP WF	NM	MC-100
Volcano Cliffs Res 1 & 2	NM	MC-210

Alhambra, City of

Groundwater Treatment Plant	CA	MC-100
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Alsip, City of

Water Treatment Plant	IL	MC-100
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Ammon, City of

Well 8 Water Tank	ID	MC-40
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MicOclor Onsite Hypochlorite System Base List

Auburn, City of - Water Works Board

Well #3	AL	MC-60
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Austin, City of

Water Treatment Plant #4	TX	MC-1500
Water Treatment Plant #4	TX	MC-1500
Water Treatment Plant #4	TX	MC-1500

Avondale, City of

Del Rio Ranch Reservoir	AZ	MC-75
Well 20	CA	MC-20
Well 24	CA	MC-20
Well 25	AZ	MC-40

Avra Water Co-Op

Avra Valley Storage Tank	AZ	MC-20, Tank Shark
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Blackfeet Reservation

Water Treatment Plant	MT	MC-75
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Boca Raton, City of

Water Treatment Plant	FL	MC-20, MC-60
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Bonita Springs Utilities, Inc.

Bonita Springs RO Plant	FL	MC-1500
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Broken Arrow, City of

	OK	MC-1000
	OK	MC-1000
	OK	MC-1000

Buhl, City of

Water Treatment Plant	ID	MC-80
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Busch Agricultural Resources, LLC.

Idaho Falls Malt Plant	ID	MC-100
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California City, City of

Well 16	CA	MC-20 w/Ammonia System
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Central Elmore Water & Sewer

Water Treatment Plant	AL	MC-300
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Clark Public Utilities

South Lake Water Treatment Plant	WA	MC-300
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Club Fit

Swimming Pool	NY	MC-20
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MicrOclor Onsite Hypochlorite System Base List

Coastside County Water District

Denniston Creek WTP	CA	MC-40
Nunes Water Treatment Plant	CA	MC-100

Coeur D' Alene Water Department, City of

Landings Well Facility	ID	LC-20
Landings Well Facility	ID	MC-20

Colorado Springs Utilities

LV WWTF	CO	MC-1500
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Columbus Water Works

Fort Benning Water Treatment Plant	GA	MC-500
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Contra Costa Water District

Chloramine Booster Station	CA	MC-100 w/Ammonia System
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Council Bluffs, City of

South Water Treatment Plant	IA	(2) MC-400
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Crestline Sanitation District

Houston WWTP	CA	MC-200
Seeley WWTP	CA	MC-100

Cucamonga Valley Water District

Pump Station 1	CA	MC-200
Reservoir 1B	CA	MC-100
Reservoir 1C	CA	MC-100
Reservoir 3	CA	MC-100
Reservoir 3A	CA	MC-100

Daphne, City of

Wells 10 & 11	AL	MC-100
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Diboll, City of

Water Treatment Plant	TX	MC-100
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Dinuba, City of

Well 14	CA	LC-20
Well 17	CA	LC-20

Dynegy Midwest Generation LLC

Havana Power Station	TX	MC-600
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East Carbon, City of

East Carbon WTP	UT	MC-40
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Microclor Onsite Hypochlorite System Base List

East Valley Water District

Plant 134	CA	MC-300
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Eastern Municipal Water District

Well 81	CA	MC-80
Well 83	CA	MC-160
Well 86	CA	MC-100

Edwards Air Force Base

Bldg 791	CA	MC-300
Marys Well	CA	MC-150

El Toro Water District

R3 Reservoir	CA	MC-20, Tank Shark, & Ammonia System
R-4 Reservoir	CA	MC-20, Tank Shark, & Ammonia System
R5 Reservoir	CA	MC-20, Tank Shark, & Ammonia System

Elsinore Valley Municipal Water District

Back Basin Ground Water Storage	CA	MC-100 w/Ammonia System
Back Basin Groundwater Treatment Plant	CA	MC-200 w/Ammonia System
Cal Oaks - Auld Valley Pump Station	CA	MC-300
Cal Oaks - Auld Valley Pump Station	CA	MC-300
Cereal Well #3	CA	MC-80
Cereal Well #4	CA	MC-80
Joy Street Well	CA	MC-80
La Laguna Booster Station	CA	MC-40 w/Ammonia System
Lincoln Street Well	CA	MC-40
Machado Well	CA	MC-80
Wildomar Booster Pump	CA	MC-40 w/Ammonia System

Entergy Texas

Lewis Creek Power Plant	TX	MC-200
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Enterprise Wastewater Improvement

	UT	MC-80
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Fairmont, City of

Water Treatment Plant	MN	MC-400
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Foxboro Branch YMCA

Swimming Pool	MA	LC-20
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Franklin Sebastian Water Users Association

	AR	MC-20
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Gearhart, City of

Water Treatment Part	OR	MC-40
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Microclor Onsite Hypochlorite System Base List

Gilbert, Town of

Direct System Wells (Willis Well)	AZ	MC-40
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Guyana

	So Am	(3) MC-100
	So Am	(2) MC-100
Shelter Belt	So Am	MC-300

Hawaiian Waters Adventure Park

Waters of Kapolei	HI	MC-200
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Houston Swim Club, The

Swimming Pool (Houston)	TX	LC-20
Swimming Pool (Pearland)	TX	LC-20

Huntington, City of

North WTP & Wells-A	IN	MC-100
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Indiana American Water

Hidden Lake Water Treatment Facility	IN	MC-200
Hidden Lake Water Treatment Facility	IN	MC-200

Jefferson City, City of

Water Treatment Plant	TN	MC-300
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Jurupa Community Services District

Well 25 & 22	CA	MC-150
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Kaanapali Beach Club

Swimming Pool	HI	MC-40
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Kane County Water Conservancy District

Meadow View Heights Well	UT	MC-20
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La Cumbre Mutual Water Company

Nogal Well	CA	MC-100
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Ladera Oaks

Swimming Pool	CA	MC-40
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LaGuardo Water Utility

LaGuardo WTP	TN	MC-300
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Lake Alpine Water

	CA	MC-20
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Lake Arrowhead Community Services District

Bernina Water Treatment Plant	CA	MC-80, Tank Shark
Cedar Glen Water Treatment Plant	CA	MC-60

Microclor Onsite Hypochlorite System Base List

Grass Valley Wastewater Treatment Plant	CA	MC-200
Lakewood Water District		
Scotts Well	WA	MC-80
Lamar, City of		
Water System Improvements	CO	MC-80
Laramie, City of		
City Springs	WY	MC-80
Water Treatment Plant	WY	MC-300
Lodi, City of		
Surface Water Treatment Facility	CA	MC-500
Los Angeles Department of Water & Power		
Mission Wells	CA	MC-200
Love to Swim & Tumble School		
Swimming Pool (San Antonio)	TX	LC-20
Swimming Pool (Schertz)	TX	LC-20
Lyon County Utilities Department		
Well 4	NV	LC-20
Well 5	NV	LC-20
Well 8	NV	LC-20
Mapleton Water District		
Water Treatment Plant	OR	MC-20
Marathon Oil		
Water World	Africa	MC-40 (freight container)
McAllen, City of		
North Wastewater Treatment Plant	TX	MC-100
Meridian, City of		
Meridian WWTF	ID	MC-100
Well #28	ID	LC-20
Mesa, City of		
Brooks Pump Station	AZ	MC-100
Lindsay Pump Station	AZ	MC-160
Midlothian, City of		
Water Treatment Plant #2	TX	MC-1200
Missouri American Water		
Meramec Water Treatment Plant	MO	(3) MC-1850

Microclor Onsite Hypochlorite System Base List

South County Water Treatment Plant	MO	(3) MC-1200
Monterey Park, City of		
Delta Treatment Plant	CA	MC-160
Mountain Reginal Water Special Service District		
Lost Creek Canyon WTF	UT	MC-100
Mountain View, City of		
Rengstorff Swimming Pool	CA	MC-20
Nanaimo - Water Department, Regional District of		
Nanoose Bay WTP	B.C. Canada	MC-200
Naval Base - Guam		
Apra Harbor WWTP	Guam	MC-500
Apra Harbor WWTP	Guam	MC-500
Neenah-Menasha Sewerage Commission		
	WI	MC-1200
New Jersey American Water		
Green Brook	NJ	MC-40
Short Hills Pump Station	NJ	MC-40
NRG Energy, Inc		
Big Cajun	LA	(2) MC-900
Ogden City Public Services		
Water Treatment Plant	UT	MC-500
Ontario, City of		
Wastewater Treatment Plant	OR	MC-60
Water Treatment Plant	OR	MC-500
Opelika Utilities Board		
R.A. Betts WTP	AL	MC-600
Saugahatchee WTP	AL	MC-300
Orange Beach Water, Sewer & Fire Protection Authority		
Orange Beach Water Treatment Plant	AL	MC-400
Oxford Water Works & Sewer Board		
Oxford Quarry Water Treatment Plant	AL	MC-200
Park Water Company		
Central Basin	CA	LC-20
Well 19C	CA	MC-60
Well 28D	CA	LC-20

Microclor Onsite Hypochlorite System Base List

Well 41A	CA	LC-20
Well 46C	CA	LC-20
Well 4B	CA	LC-20
Well 9D	CA	MC40

Portland, City of

Water Treatment Plant	TN	MC-300
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Quartz Hill Water

Well 5A	CA	MC-40
Well 7A	CA	MC-40
Well 9	CA	MC-40

Rancho California Water District

Avocado Mesa Pump Station	CA	MC-20, Tank Shark
Baldaray Reservoir	CA	Tank Shark
Baldaray Reservoir	CA	MC-20
California Oaks PS	CA	MC-40
Carancho Pump Station	CA	MC-20
De Luz Pump Station	CA	MC-40
De Portola Pump Station	CA	MC-60
De Portola Reservoir	CA	Tank Shark
Well	CA	MC-20
Well 120	CA	MC-20
Well 101	CA	MC-40
Well 109/143	CA	MC-20
Well 110	CA	MC-20
Well 113	CA	MC-20
Well 118	CA	MC-40
Well 119	CA	MC-20
Well 122	CA	MC-20
Well 125	CA	MC-20
Well 126	CA	MC-20
Well 130	CA	MC-20
Well 131	CA	MC-20
Well 132	CA	MC-20
Well 133	CA	MC-20
Well 138	CA	MC-40
Well 145	CA	MC-20
Well 151	CA	MC-20
Well 203	CA	MC-20
Well 205	CA	MC-20
Well 210	CA	MC-20
Well 211	CA	MC-20

MicrOclor Onsite Hypochlorite System Base List

Well 215	CA	MC-20
Well 216	CA	MC-20
Well 217	CA	MC-20
Well 232	CA	MC-20
Well 233	CA	MC-20
Well 234	CA	MC-20
Well 235	CA	MC-20
Well 309	CA	MC-40
Winchester Pump Station & Well 108	CA	MC-60

Riverside, City of

6th Street	CA	MC-400
Garner B	CA	MC-200
Sunnyside	CA	MC-400
Tippecance	CA	MC-400

Riverton, City of

Gedge Well	UT	MC-80
Hill Well	UT	MC-80
Maynard Well	UT	MC-40

Salt Lake City Public Utilities

Big Cottonwood Water Treatment Plant	UT	(2) MC-600
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San Bernardino, County of

Lytle Creek North WWTP	CA	MC-80
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Sandpoint, City of

Lake Pend Oreille WTP	ID	MC-300
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Santa Ana, City of

Well 26	CA	MC-60
Well 27	CA	MC-60
Well 28	CA	MC-60
Well 29	CA	MC-60
Well 31	CA	MC-60
Well 33	CA	MC-60
Well 34	CA	MC-60
Well 35	CA	MC-60
Well 36	CA	MC-60
Well 37	CA	MC-60
Well 38	CA	MC-60
Well 39	CA	MC-60
West Station	CA	MC-100

Microclor Onsite Hypochlorite System Base List

Santa Cruz, City of		
Beltz Well	CA	MC-40
WWTP - Dilution Panel	CA	Dilution Panel & Feed System
Santa Rosa, City of		
Ridgway Pool	CA	MC-40
Seal Beach (City of)		
Lampson Avenue Well	CA	MC-200
Sheridan, City of		
Disinfection & Coagulation Improvments	WY	MC-200
Shippensburg Borough Authority		
Well 1	PA	MC-20
Simi Valley, City of		
Tapo Canyon Water Treatment Plant	CA	MC-40 w/Ammonia System
South Coast Water District		
	CA	MC-60
Bradt Reservoir	CA	MC-100, (4) Tank Shark
Groundwater Recovery Facility	CA	MC-20, MC-40
Reservoir 1A	CA	MC-20, Tank Shark
Tank 4B	CA	MC-20, Tank Shark
South Orangetown Middle School		
Swimming Pool	NY	MC-20
Southwest Suburban Sewer District		
Miller Creek WWTP	WA	MC-100
Salmon Creek WWTP	WA	MC-100
Spartanburg Water Systems		
RB Simms WTP	SC	(2) MC-1000
Springfield, City Utilities of		
Blackman WTP	MO	MC-1500
Blackman WTP	MO	MC-1500
Blackman WTP	MO	MC-1500
Stansbury Park Improvement District		
Wastewater Treatment Plant	UT	MC-400
Surprise, City of		
WWTP	AZ	MC-2000

MicOclor Onsite Hypochlorite System Base List

Thermalito Irrigation District

WTP- Microfiltration System Addition	CA	MC-300
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Trussville Utilities Board, City of

Water Treatment Plant	AL	MC-200
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Tullahoma Parks & Recreation

D.W. Wilson Community Center	TN	LC-20
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Turks & Caicos Water Co., Ltd.

2.5 MGD Membrane Plant	British West Indies	MC-40
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Twentynine Palms Water District

Fluoride Removal Plant	CA	MC-40
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Twin Falls, City of

Canyon Springs	ID	MC-100
Hankins	ID	MC-20

TXU Energy

Martin Lake Power Plant	TX	(3) MC-1200
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United States Coast Guard

Kodiak Water Treatment Plant	AK	MC-40
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United Water Idaho

Centennial Well	ID	MC-20
Hilton Well	ID	MC-60

United Water, Inc.

Hilton Well	ID	MC-40
Pine Bluff	AR	MC-300

University of Idaho

Reclaimed Water System	ID	MC-80
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Upper Trinity River Authority

Taylor Regional Water Treatment Plant	TX	MC-2000
Taylor Regional Water Treatment Plant	TX	MC-2000
Taylor Regional Water Treatment Plant	TX	MC-2000

Vacaville, City of

Well 2	CA	MC-20
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Vandenberg Air Force Base

Swimming Pool	CA	MC-100
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Vandenberg Air Force Base

San Antonio Water Plant	CA	MC-100
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MicOclor Onsite Hypochlorite System Base List

San Antonio Water Plant	CA	MC-300
San Antonio Water Plant	CA	MC-300
San Antonio Water Plant	CA	MC-100
Village of Danvers Public Services		
Well	IL	LC-20
Washington County Conservancy District		
Quail Creek WTP	UT	MC-600
Quail Creek WTP	UT	MC-600
Washington County Rural Water District #3		
North Water Treatment Plant	OK	MC-400
Washoe County		
Spring Creek Well #6	NV	MC-40
Washoe County STMGID		
Well 12	NV	MC-40
Well 6	NV	MC-40
Weber Basin Water Conservancy District		
North Davis Water Treatment Plant	UT	MC-1000
South Water Treatment Plant	UT	MC-800
West Memphis Utilities		
Water Treatment Plant	AR	MC-200
Western Sonoma County Swimmers		
Ives Pool	CA	MC-40
Westminster, City of		
107A	CA	MC-60
OC-35 Disinfection Facility	CA	MC-240
Well 4	CA	MC-40
Well 75-A	CA	MC-60
Well R2	CA	MC-40
Williams Lake, City of		
#5 Pump House	B.C. Canada	MC-80
Yorba Linda Water District		
Well #20	CA	MC-100
Well 15	CA	MC-60
Yuma, City of		
Aqua Viva WTP	AZ	MC-500

MicrOclor Onsite Hypochlorite System Base List

Zurex Pharm/PharmAgra LLC

WI	LC-20
WI	LC-20
WI	MC-40
WI	LC-20
WI	LC-20
WI	LC-40
WI	LC-40
WI	LC-20
WI	LC-20
WI	LC-20

DIFFERENCE BETWEEN A DISTRIBUTOR AND MANUFACTURER'S REPRESENTATIVE
The ODYSSEY MANUFACTURING ADVANTAGE

All MicroOclor OSHG systems sold in Florida will be sold by Odyssey Manufacturing and not Process Solutions. We are a distributor and not a manufacturer's representative. We will accept full responsibility for any warranties, spare parts and service support. Process Solutions warranty is in addition to and not in lieu of our warranty. By comparison, the only warranty, spare parts or service support you get from our competitors is from the out-of-state manufacturer. With regard to service support, the only licensed contractor selling OSHG equipment in the State of Florida is Odyssey Manufacturing. We are a licensed plumbing contractor (we have applied to get our general and underground contractor's licenses as well) and we recently hired a high voltage journeyman electrician who is a licensed ABC Master Electrician to go along with two apprentice electricians. In addition, Process Solutions is the only OSHG manufacturer who is a licensed contractor in any state (they are licensed in Florida and Arizona). Odyssey's reputation is unequalled in Florida with regard to installing and servicing chemical systems. To date, we have installed over six hundred sodium hypochlorite systems (I have attached a partial reference list with phone numbers). Odyssey has eight full time and six part time (they work in the plant and/or drive tankers for me) service personnel plus a host of service vehicles and other equipment. No one else selling OSHG equipment in Florida has anywhere close to these resources. We even own a 6,000 pound lull we can bring to a jobsite on an Odyssey owned tractor (we have 22) and low-boy trailer. Odyssey is the only seller of OSHG equipment in Florida who can provide guaranteed backup bleach during maintenance periods or outages at the lowest piggyback price. We can even provide evaporated salt if a customer wants an alternative salt source! Odyssey's business is that of a total provider of disinfection services. This is our only business which contrasts very differently with our competitors! We have been in the disinfection business for over nine years in Florida. Our commitment is best exemplified by our 96% market share of the bulk sodium hypochlorite business for the Florida Utility market (both power plants and WT and WWT plants). Frankly, we have the ability and know how to procure, fabricate and install OSHG systems independent of Process Solutions should they ever go out of business and would continue to support the marketplace should this occur. Remember, Odyssey Manufacturing Co. is selling, servicing and warranting the equipment and we are committed to staying the in the disinfection business of which OSHG is a major piece. We are the disinfection leaders in the Florida marketplace and I believe strongly in the future of the OSHG technology if you give the customer a superior product and actually provide regular service support. Our technical expertise is based demonstrated by the fact we have successfully operated the largest OSHG unit in the southeast for the past nine years and have begun preparations for a second Florida OSHG manufacturing facility. We have two other manufacturing plants in Florida, one on the east side of Orlando and a sister company in Miami both of which make sodium hypochlorite from railcars – these plants only run at about 20% of capacity and are used as a backup to our facility and as "peaking" units. Lastly, our partnership with Process Solutions is based on the fact that they have developed an excellent product and frankly it is less expensive to leverage their combined 100+ years of OSHG knowledge and experience than develop their own. Also, this partnership allows us to leverage the combined experience and capabilities of two very dynamic companies. This partnership in the Florida marketplace puts us head and shoulders above our competitors who could decide the OSHG marketplace carries too much liability because of explosions and exit the business tomorrow since OSHG is only one of hundreds of product lines they sell.



ENTITY: CITY OF MARGATE

**PROJECT NAME: WATER TREATMENT PLANT ON-SITE SODIUM HYPOCHLORITE GENERATION
EQUIPMENT REPLACEMENT**

BID/CONTRACT NO.: 2015-006

SUBJECT: 1.06(4) OSHG ON-SITE WARRANTY SERVICE PROVIDERS

Odyssey Manufacturing agrees to provide the warranties specified in 1.10 as part of its scope of supply. Process Solutions agrees to provide the warranties specified in 1.10B. Odyssey Manufacturing Co. is the local service support and warranty support provider for the State of Florida. Odyssey is based out of Tampa, Florida and has 24-hour contact support. Odyssey has ten full-time service personnel and has been doing OSHG support for Process Solutions for five years and OSHG support for its own manufacturing facility for fourteen years. Odyssey has been providing chemical system service support to utilities in Florida for fourteen years. In addition to ten full time service personnel, Odyssey has 21 tractors, 24 tankers, two low-boy trailers, one 6,000# lull, three equipment trailers and nine service trucks to provide warranty support.

OSHG Manufacturer Warranty Support: **Process Solutions**
1077 Dell Avenue, Suite A
Campbell, CA 95008
(408) 370-6540

OSHG Local Warranty Support: **Odyssey Manufacturing Co.**
1484 Massaro Blvd.
Tampa, Florida 33619
(800) ODYSSEY



ENTITY: CITY OF MARGATE
PROJECT NAME: WATER TREATMENT PLANT ON-SITE SODIUM HYPOCHLORITE GENERATION
EQUIPMENT REPLACEMENT
BID/CONTRACT NO.: 2015-006
SUBJECT: 1.06(5) OSHG AFFIDAVITS OF COMPLIANCE

Odyssey Manufacturing hereby certifies that the proposed Work for this project complies with all referenced standards, codes and the Specification and Odyssey takes no exceptions.

Signature

Title

Date

Attest

Title

Date



NSF Product and Service Listings

These NSF Official Listings are current as of **Monday, August 15, 2011** at 12:15 a.m. Eastern Time. Please contact NSF International to confirm the status of any Listing, report errors, or make suggestions.

Alert: NSF is concerned about fraudulent downloading and manipulation of website text. Always confirm this information by clicking on the below link for the most accurate information:

<http://www.nsf.org/Certified/PwsComponents/Listings.asp?Company=3E440&Standard=061&>

NSF/ANSI STANDARD 61 Drinking Water System Components - Health Effects

NOTE: Unless otherwise indicated for Materials, Certification is only for the Water Contact Material shown in the Listing. Click here for a list of Abbreviations used in these Listings.

Process Solutions Inc.

1077 Dell Avenue
Suite A
Campbell, CA 95008
United States
408-370-6540

Visit this company's website

Facility : Campbell, CA

Mechanical Devices

Trade Designation	Size	Water Contact Temp	Water Contact Material
Chemical Generators[1] [2]			
LC-20	N/A	CLD 23	MLTPL
MC-100	N/A	CLD 23	MLTPL
MC-1000	N/A	CLD 23	MLTPL
MC-1200	N/A	CLD 23	MLTPL
→ MC-1500	N/A	CLD 23	MLTPL
MC-160	N/A	CLD 23	MLTPL
MC-1600	N/A	CLD 23	MLTPL
MC-1850	N/A	CLD 23	MLTPL
MC-20	N/A	CLD 23	MLTPL
MC-200	N/A	CLD 23	MLTPL
MC-2000	N/A	CLD 23	MLTPL
MC-2400	N/A	CLD 23	MLTPL

MC-300	N/A	CLD 23	MLTPL
MC-40	N/A	CLD 23	MLTPL
MC-400	N/A	CLD 23	MLTPL
MC-500	N/A	CLD 23	MLTPL
MC-60	N/A	CLD 23	MLTPL
MC-600	N/A	CLD 23	MLTPL
MC-80	N/A	CLD 23	MLTPL
MC-800	N/A	CLD 23	MLTPL
MC-900	N/A	CLD 23	MLTPL
MicrOclor	N/A	CLD 23	MLTPL

- [1] Certification is based on a sodium hypochlorite solution of 8,000 mg/L with a dosage rate yielding a maximum chlorine concentration of 10 mg/L into potable water.
- [2] Certification of this product has been performed to the health effects requirements of NSF/ANSI Standard 61, which assesses the acceptability of potential extractants from the chemical generator. No evaluation has been performed on the strength or efficacy of the chemical(s) generated. As unit operation, maintenance and the consistency of source ingredients may affect the performance of the unit, the ensuing chemical(s) is not Certified by NSF to NSF/ANSI Standard 60.

Number of matching Manufacturers is 1

Number of matching Products is 22

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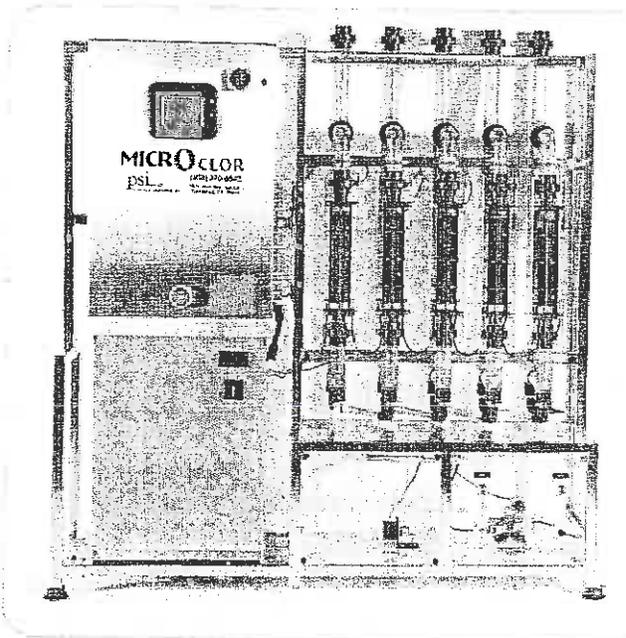
MICROCLOR

The Next Generation

It is well known that chlorine is a powerful disinfectant used in water treatment and plays a vital role in controlling bacteria and viruses that can cause human illness.

More stringent regulations for transportation and storage of bulk chlorine or pressurized chlorine gas have required many to search for alternative methods of disinfection.

Onsite generation of sodium hypochlorite alleviates the safety concerns associated with storing and using bulk sodium hypochlorite or chlorine gas.



300 PPD

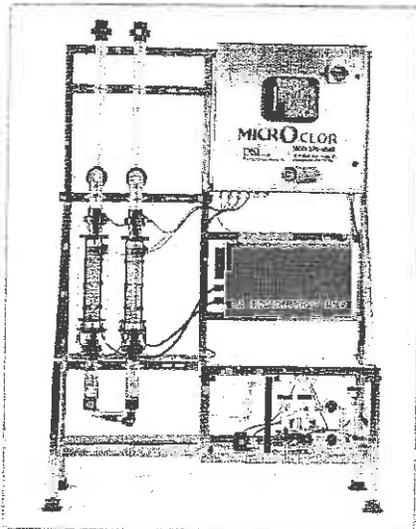
Systems Capable of 20 to 3600 Pounds
per Day Chlorine Equivalent

The MicroClor vertical cell array (V-Ray) allows for the instantaneous passive removal of all hydrogen produced.

Making Bleach Made Easy

- Low Cost Hypochlorite
- Enhanced Performance
- Small Footprint
- 24 Hour Service
- Safe
- Vertical V-Ray Cell Design
- Immediate Hydrogen Removal
- Reduce Scaling
- Low Maintenance

MICROCLOR



40 PPD

The state of the art patent pending MicroClor onsite hypochlorite generation system is a brand new design built upon twenty years of dedicated research and development in the field of onsite hypochlorite generation.

The design incorporates all of the advantages of current industry standards while radically improving all safety aspects of the process. Specifically, the manner in which hydrogen is removed from the electrolytic cell is a huge improvement over more conventional horizontal tubular designs.

The MICROCLOR onsite hypochlorite generation system incorporates a multitude of unique features that are now patent pending. The most significant features are as follows:

1. Passive hydrogen removal.
2. Brine conductivity control.
3. Full wave D.C. rectification.
4. No cell electrode penetrations.
5. High velocity electrolyte flow.
6. Higher performance level.
7. Recirculating cell loop.
8. No internal cell baffles or gasketing.

There is no other onsite hypochlorite system in the marketplace today that possesses even one of the above advantages, no less all eight.

A brief discussion of each feature follows:

Passive Hydrogen Removal

The V-Ray cells are configured in a vertical format with a recirculation loop on each cell that allows for optimized brine utilization and passive release of the hydrogen gas from each cell. Hydrogen gas is not allowed to pass from cell to cell. This design radically increases operator safety and substantially reduces the possibility of hydrogen gas build-up in the cell and the potential of catastrophic failure. Immediate hydrogen removal at the top of each cell loop greatly reduces electrode blinding and associated heat buildup.

Brine Conductivity Control

Constant current is achieved via a current feedback loop where the brine pump speed is controlled by the system programmable logic controller. This feedback loop accounts for variations in temperature, conductivity and water flow. The titanium, Teflon impregnated gear pump is attached to a variable speed drive that continually provides a consistent blended electrolyte flow to the cells maximizing salt efficiency.

Full Wave D.C. Rectification

The DC Rectifier design consists of a fully isolated step-down transformer and bridge rectifier. DC voltage is fixed with primary taps for + 5, 10% voltage correction. DC ripple is less than 4.0% with a power factor of 99% or better. Switching rectifier or phase angle fired SCR voltage correction technology is not utilized as this twenty year old technology has an excessively high failure rate.

No Cell Electrode Penetrations

The V-Ray cells consist of thirteen internal bipolar electrodes while the cell outer plates serve as both terminating anode and cathode. All anodic surfaces are coated with DSA catalytic coating. The design of the cell precludes the need for wet D.C. cable connections or problematic O-ring seals.

High Velocity Electrolyte Flow

The passive hydrogen gas removal provides a hydraulic lift within the V-Ray cell loop which causes a high velocity flow through the recirculation loop and across the V-Ray cell plates. This high velocity flow results in a scouring action between the vertically mounted V-Ray cell plates. This novel self cleaning feature virtually eliminates the need for acid cleaning of the electrolytic cells and reduces heat build up.

Higher Performance Level

PSI's proprietary patent pending vertical V-Ray cell design provides for a far more efficient generation platform than the industry standard of 3.5 pounds salt and 2.5 KWH per pound chlorine equivalent.

The MICROCLOR vertical V-Ray cell produces hypochlorite at 0.8% while consuming less than 3 pounds of salt and 2.0 AC KWH per pound of equivalent chlorine.

There is no competitive open cell process available which is more efficient than the MICROCLOR System.

PSI welcomes a side by side comparison with any manufacturer claiming higher performance levels than MICROCLOR.

No Internal Cell Baffles or Gasketing

There are no internal cell baffles, gaskets or fasteners found inside the cell. The cells are built with clear acrylic guides that support the internal bi-polar plates that allows for direct visual inspection of the plates. Anode and Cathode mono-polar plates are surface mounted to the outside of the acrylic guides.

V-Ray Cell maintenance and replacement

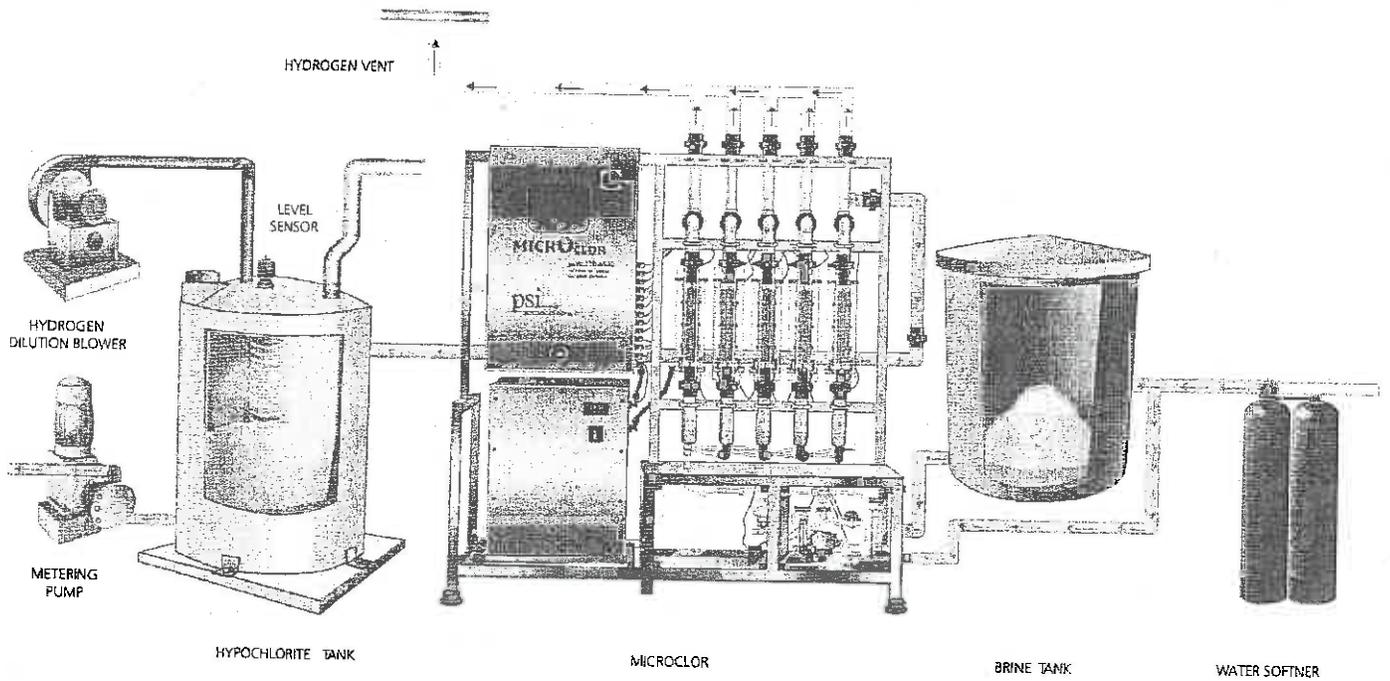
The MicroClor vertical V-Ray cell design allows for the cell to easily be removed from the cell carrier piping by simply breaking two unions. This makes for simple cell maintenance and or replacement.

The MicroClor design has taken into account every imaginable failure scenario including direct operator error in the handling of the process equipment.

Sequential operations logic is provided for all process variables where the change from standby to process is confirmed for all sensor locations at each start sequence. This auto diagnostic routine locks out generation in the event of sensor failure or electrical bypass.

MicroClor hypochlorite systems meet requirements for 20 to 3600 pounds per day chlorine equivalent.

The Next Generation Onsite Hypochlorite Generator



The MicroOlor is modular in design and based on standard components. These components may be customized to meet a wide range of requirements.

Standard components for the MicroOlor system include:

- 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

Model/Capacity	Cell Size W X H	# of Cells	H2O GPM	Brine GPM	DC Amps	KVA	FLA 208/240 1PH	FLA 480 3 PH
20	2 x 12	1	0.2	0.02	40	2.4	11.5/11	-
40	2 x 12	2	0.4	0.03	80	4.8	23/22	-
60	2 x 12	3	0.6	0.05	120	7.2	35/33.5	-
80	2 x 12	4	0.8	0.07	160	9.6	46/44	13
100	2 x 12	5	1	0.08	40	12	-	16
200	4 x 12	5	2	0.17	80	24	-	32
300	6 x 12	5	3	0.25	120	36	-	48
600	12 x 12	5	6	0.50	240	72	-	96
900	18 x 12	5	9	0.75	320	96	-	128
1200	24 x 12	5	12	1.00	480	144	-	192
1800	24 x 18	5	18	1.50	720	216	-	288

Note: Typical Nominal Operating Amperage is 75% of Full Load Amperage

Capacities: 20-3600 pounds per day free available chlorine.
 Control: Automatic, regulated by storage tank level.
 Percentage Sodium Hypochlorite: 0.8 ± 0.05
 Consumables per pound of chlorine produced:
 5lbs salt, 2KWH (AC), 15 gallons water.
 Water Input: Potable water, 30-80 PSI, 40°F-80°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
 80-1800ppd systems - 480V, 3PH, 60HZ
 Control Cabinet: 304 stainless steel NEMA 4X
 Operator Interface: 6" Color Touchscreen
 Programmable Logic Controller: Allen Bradley 1200
 Brine Tank & Hypochlorite Storage Tank shall be appropriately sized for each application.

MICROCLOR

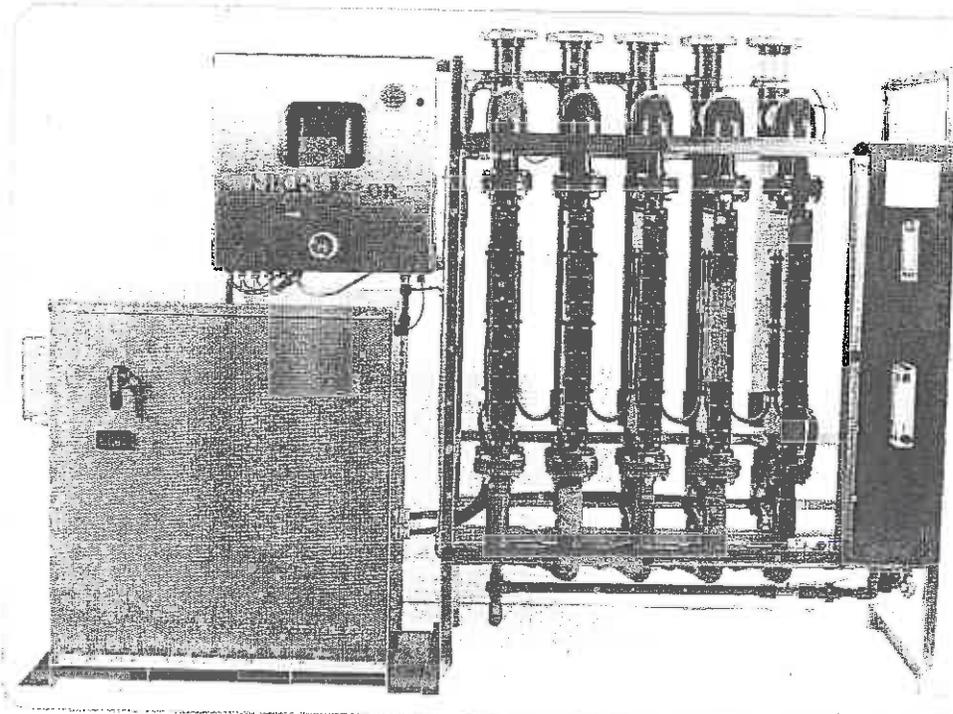
The Next Generation

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. 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. If you need assistance, we're here to help.



1200 PPD

Represented by:

psi
process solutions, inc.

**WATER AND WASTEWATER
TREATMENT TECHNOLOGIES**

1077 Dell Avenue, Suite A, Campbell, CA 95008

Toll Free: (888) 774 4536 (PSI Help)

Telephone: (408) 370-6540 Fax: (408) 866-4660

Email: mail@4psi.net www.4psi.net

with offices in Clearwater, FL, Mesa, AZ, and Temecula, CA.



ENTITY: CITY OF MARGATE

**PROJECT NAME: WATER TREATMENT PLANT ON-SITE SODIUM HYPOCHLORITE GENERATION
EQUIPMENT REPLACEMENT**

BID/CONTRACT NO.: 2015-006

SUBJECT: 1.06(7) OSHG DESCRIPTION AND BILL OF MATERIALS

GENERAL SCOPE OF WORK

- All Required City and FDEP Permitting (Anticipate FDEP Notification Only)
- All Required Engineering and Design
- Any required Performance and Payment Bonds
- Submittals As Specified
- Demolition and Disposal of Existing ClorTec OSHG System including housekeeping pads for Transformer Rectifier and OSHG Skid
- Patch Walls, Clean and Paint OSHG Room
- New 9' x 7' x 6" housekeeping pad for OSHG system
- Furnish and Install One (1) Process Solutions 1,500-ppd OSHG system to include electrolysis cells and transformer rectifier (we will set on new housekeeping pad)
- Replace the water supply piping inside the OSHG Room including the filters to the new water softening units with Schedule 80 PVC piping. The water softeners would remain in the same general area.
- Furnish and install new water softeners.
- Verify operating pressure over 50 psi and then eliminate the existing water booster pumps. These are not required for the MicroClor OSHG if the water pressure is over 50 psi.
- Replace the water supply piping from the softeners to the electrolysis cells with Schedule 80 PVC piping. We would install a pressure regulator to maintain approximately 45 psi to the cells.
- Add piping to flush the brine supply piping with potable water.
- Remove the existing stack vents, associated piping and blowers located immediately outside the OSHG Room.
- Install new hypochlorite stack vent and two blowers on the existing concrete pad on the outside north wall of the OSHG Building.
- Install a whole new backboard with a new PLC and 10" HMI inside the existing Control Panel and re-use the existing SS316 cabinet and conduit runs.
- Install D/P Cells for Loss of Flow on Vent Lines for Storage Tank Blowers
- Install Dilution Panel in Storage Tank Area
- Redo the OSHG and disinfection system SCADA screens.
- Factory Representative Oversight of Installation and Testing
- All interconnecting piping, valves, pipe supports to Owner's existing piping and equipment and all required piping to and from existing OSHG Building

- All required electrical power hookups from Owner's existing panels
- SCADA System Integration and Programming (By Margate)
- Spare Parts
- Cell Cleaning Cart
- Unlimited Startup and Training Services
- "As-Built" Drawings of OSHG Building and PID's of OSHG System
- Six (6) Copies of the O&M Manuals
- Full Three Year Parts and Labor Warranty
- Three Years of Preventative Maintenance Services
- Service Support

DETAILED SCOPE OF WORK

- **One - Skid-Mounted MC-1500 OSHG System**
 - NSF-61 Certified
- **Refurbish PLC Control Panels including:**
 - Install Allen Bradley MicroLogix 1400 PLC
 - Install new 10" Color Touch Screen into existing face panel
 - Add Ethernet Communication Interface
 - Install Cabinet Mounted Electrical Disconnect
 - Provide Dedicated 24 VDC Power Supply for PLC and Display
 - Provide VFD for Brine Pump
 - Provide Emergency Stop Pushbutton
 - Upgrade existing OSHG SCADA screens
- **One - Transformer Rectifier each including:**
 - 316 Stainless Steel Enclosure
 - 192 KVA Step Down Transformer, 480 Three Phase VAC Primary, 300 VDC @ 480 Amps DC Secondary
 - D.C. Bridge Rectifier utilizing 3 Diode Assemblies, Aluminum Heat Sink with 120 VAC Cooling Fan
 - Panel Mount Disconnect
 - 4-20 mA D.C. Current Transducer
 - DC Voltmeter
- **One - Electrolytic Cell Skid Assemblies each including:**
 - 304 Stainless Steel Frame
 - Five (5) 240 PPD Cells, 14 Pass, 1.2 ASI
 - Hydra-Cell Brine Pump
 - Polycarbonate Water & Brine Rotameters
 - GF-Signet Magnetic Flow Meter
 - Five (5) Optical Level Switches
 - Four (4) Temperature Switches
 - One (1) Analog Temperature Sensor
 - Teflon & Kynar Interconnecting Tubing
 - PVC 80 & Acrylic Cell Body Construction
 - Water Solenoid Valve
- **Two - Hydrogen Dilution Blowers (Note that Specification only calls for one blower)**

- Rating: 1350 CFM
- Current Sensor
- Differential Pressure Switch
- **Lot – Kinetics Water Softener**
 - Dual Water Softener Model #CP-216S
 - Associated Piping including cartridge filters
- **Schedule 80 PVC Vent Stack**
 - One PVDF Pressure Transducer, 0 -10 psi (Signet Model #3-2450-5U)
 - One Low Limit Switch (Flowline LU10-2405)
 - One High Limit Switch (Flowline LU10-2405)
- **OSHG Acid Cleaning Cart**
- **Dilution Panel**
- **Miscellaneous**
 - Vent Piping for Storage Tanks
 - One Differential Pressure Switch for each Storage Tank Vent Piping
 - Piping to and From Dilution Panel
 - Hypochlorite Storage Tank Fill Piping from OSHG Unit
 - Replace Brine System Piping around Brine Tank as Required

ITEMS TO BE FURNISHED OR RE-USED BY OWNER

- 480 VAC Electrical Power to OSHG System from existing 400 Amp breaker. We will re-use the existing wiring and install our own disconnect.
- Use of the existing OSHG Control Panel (Odyssey will be responsible for installation of an Allen Bradley PLC, all new wiring and all programming of SCADA)
- Potable Water Supply
- Brine Storage Tank
- Sodium Hypochlorite Storage Tanks
- Hypochlorite Metering Pumps
- Hypochlorite Injection Piping
- Hypochlorite Tank Blowers
- Piping Between Hypochlorite Storage Tanks and existing stack vents
- Piping Between Brine Tank and OSHG Room

BILL OF MATERIALS

The MICROCLOR onsite hypochlorite system consists of the following major components:

- 1 - MicrOclor MC-1500 Cell Rack Assembly (Process Solutions: Part #0000-MC9150-AB)
 - 304 SS Frame
 - Ten 150-ppd cells (14-pass), 1.2 ASI
 - Schedule 80 PVC and acrylic Cell Body Construction
 - Four Sepra-Lite ½” MNPT Molded PFA Teflon Level Sensor Photocell Switch (Model No. GLL100504A)

- Signet Model No. 3-2350-3 Analog Temperature Sensor
- Asco General Service ½” Solenoid Valve (NC) (Model No. SC8210G004)
- Asco Plastic Body ¼” Solenoid Valve (NC) (Model No. 8360G071)
- Flow Meter (GF Signet Model 3-2551-P-0-1-2)
- King Brine Rotameter (Model No. 7520-2-3-0-3C04)
- King Water Rotameter (Model No. 7530-2-3-1-6C06)
- AquaMatic Composite Control Valves (Model No. K521-X200-14000)
- 1 - Transformer/Rectifier Set (Process Solutions: See Drawings for More Details)
 - 316SS Enclosure
 - 192 KVA Step-down transformer (480 VAC 3-Phase Primary, 300 VDC @480 Amps DC Secondary)
 - DC Bridge Rectifier Utilizing Three Diode Assemblies (Powerex Diodes: Model #ND410626)
 - Aluminum Heat Sink with 120 VAC Cooling Fan (NMB: Part #: 5915PC-12T-B30-A00)
 - 4/20 ma DC Current Transducer (NK Technologies: Model #DTC-420-120-U-SP)
 - 4/20 ma DC Voltage Potential Transducer
 - Hawk 3 Digital Panel Meter/Controller (Simpson Electric: Model #H335-1-71-1-0-0)
- 1 – MicroOclor PLC Panel (without enclosure) to be mounted inside existing SS304 enclosure (Process Solutions: Part #11106-MC-150-EL-01 – See Drawings)
 - Allen Bradley MicroLogix 1400 PLC (Model #1766-L32BWAA)
 - ¼ HP, 120 VAC Input, VFD for Brine Pumps (Automation Direct: Model #GS1-10P2)
 - DC Power Supply (Bravo Electric: Model #DR-120-24)
 - Ethernet Switch with MODBUS output
 - ProSoft Converter Box to convert MODBUS to MODBUS PLUS (To go between HMI and Existing Customer SCADA)
 - Two 16-Channel Digital Input Cards (Allen Bradley)
 - Two 4-Channel Analog Input Cards (Allen Bradley)
 - Two 4-Channel Analog Output Cards (Allen Bradley)
 - One 16-Channel Digital Output Cards (Allen Bradley)
 - 10 KVA 480 VAC to 120 VAC transformer
 - Four 480 VAC Motor Starters for Blower Power Supply (ABB: Model #MS116)
 - 120 VAC power supply to TR Set
 - Breakers and Contactors (ABB: Various Model numbers)
- 1 – 10” HMI Color Touch Screen (Magellis: Model #XBT-GT-5330)
- 4 – Existing XLPE w/LPE liner 6,600-gallon Bulk Storage Tanks (Poly Processing)
 - Primary Ultrasonic Level Transmitter (Existing)
- 1 – Existing FRP 66-ton (13,200-gallon) Brine Storage Tank (PLAS Tanks)
 - Primary Ultrasonic Level Transmitter (Existing)
- Existing Chemical Feed Equipment
 - 3 – Prominent Diaphragm Metering Feed Pumps (Double Head)
 - 2 – Prominent Diaphragm Metering Feed Pumps (Single Head)
 - 3 – 1 ½” backpressure valves
 - 3 – 1 ½” pressure relief valves
 - 2 – ¾” backpressure valves
 - 2 – ¾” pressure relief valves
 - 5 – Pressure Gages
 - 3 - 20,000-ml Calibration Column
 - 2 - 2,000-ml Calibration Column
- 2 - Wika Pressure gage (Blue Planet Environmental: Model #PG100-K-V-G)
- 2 - Plastomatic 1” diaphragm check valve

- 1 – 1” Pressure Regulator Valve (Watts: # 25AUB23 - Purchased from Ferguson)
- 1 - Brine Diaphragm Pump (HydraCell: Model M03XKPGSNEPA – Purchased from Wanner Engineering)
- Lot - All piping, fittings and valves outside OSHG System is Schedule 80 PVC except for clear vertical hydrogen separation piping out of OSHG which Schedule 40
- Lot - All system valves outside OSHG system are Asahi Type 21 w/viton o-rings
- 1 - Dilution Panel (Built by Blue Planet Environmental)
 - NaOCl (2 – 20 gpm) Flow Rotameter (Blue-White: F-462)
 - Water (6 – 60 gpm) Flow Rotameter (Blue-White: F-452N)
 - 2” Mazzei PDVF Eductor
 - Valves and Piping as Required
- 1 - Hydrogen Dilution Blower, 1350 CFM, 480 VAC – 3 Phase, 5 HP, Teflon Shaft Seal, 3450 rpm, TEFC, 8” in and 6” out (Cincinnati Fan: Model #PB-14A)
 - One Support Bracket and fabricated Protective Housing
 - Current Sensor
- 3 - Air Flow D/P Switch (Dwyer Model No. 1823-1)
- 1 – 1” Anode Titanium Target (This is the grounded titanium piping section that physically separates the brine piping and the first electrolysis cell)
- 1 – 3” Cathode Titanium Target (This is the grounded titanium piping section that physically separates the hypochlorite piping as it exits the last electrolysis cell)
- 2 - Kinetico dual water softeners 175/000 (Model No. 2000)
- 4 - Brine and Water Cartridge Filter Housing (3/4” NPT, Pentek 10” Clear Filter Housings – purchase from Ryan-Herco Model #6800-110)
- 4 - Brine and Water Cartridge Filters (10”, 50-micron, Claris Model No. CLR20-10DOEE – purchase from Ryan Herco Model #6700-550)
- 4 – Cartridge Filter Housing Brackets (Process Solutions Model #0000-MC0940-AB)
- 1 – Acid Cleaning Cart
 - Polyethylene Tank
 - Reversible Pump
 - Portable Cart
 - Schedule 80 PVC and valves
- 1 – 12” Schedule 80 PVC Stack Vent
 - One PVDF Pressure Transducer, 0 -10 psi (Signet Model #3-2450-5U)
 - One Low Limit Switch (Flowline LU10-2405)
 - One High Limit Switch (Flowline LU10-2405)



ENTITY: CITY OF MARGATE

**PROJECT NAME: WATER TREATMENT PLANT ON-SITE SODIUM HYPOCHLORITE GENERATION
EQUIPMENT REPLACEMENT**

BID/CONTRACT NO.: 2015-006

SUBJECT: 1.06(8) EQUIPMENT CUT SHEETS

As part of its proposal, Odyssey Manufacturing Co. is providing equipment cut sheets for the following pieces of equipment:

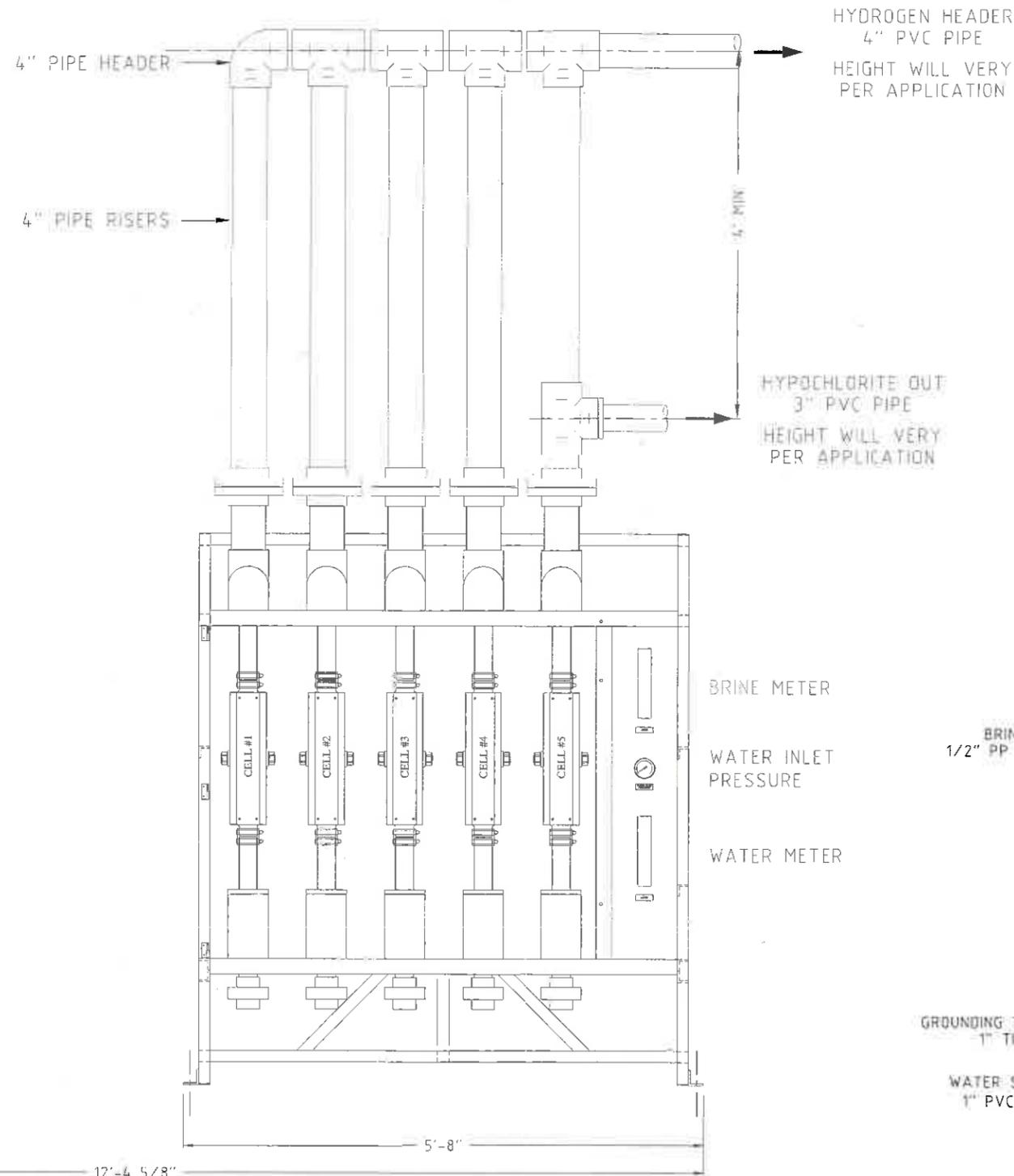
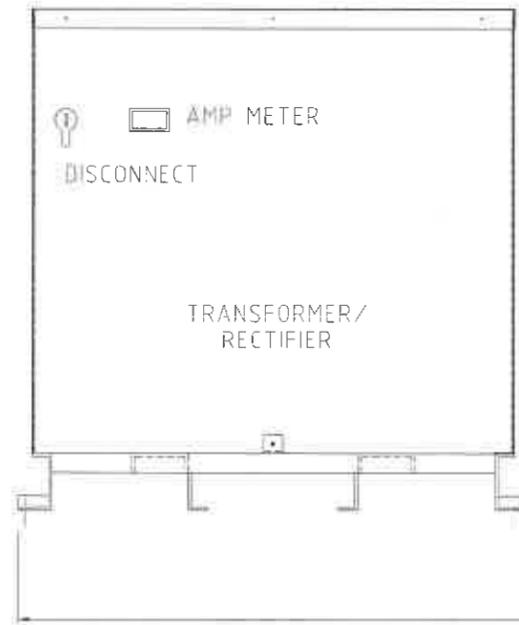
- Transformer Rectifier – See Drawings
- OSHG Cell Rack Assembly – See Drawings
- Control Panel/PLC – See Drawings
- Stack Vent with Instrumentation – See Drawings
- OSHG Skid Drawings
- Electrolyzer Cell
- Vent Stack Blower
- HydraCell Brine Pump
- Kinetico Water Softeners
- Acid Cleaning Cart
- HMI Panel

RACK NOTES:

- WEIGHT:
SHIPPING: 1,375 LBS AS CRATED
OPERATING: 1,525 LBS
- INLETS AND OUTLETS
A. WATER INLET FEED SIZE, MATERIAL: 1" PVC SCH 80
B. BRINE INLET FEED SIZE, MATERIAL: 3/8" PVC SCH 80
C. ELECTROLYTE FEED SIZE, MATERIAL: 1" PVC SCH 80
D. HYDROGEN HEADER SIZE: 4" PVC SCH 80
E. HYPOCHLORITE OUTLET (ON H2 HEADER) SIZE: 3" PVC SCH 80
- FRAME BASE DIMENSIONS: 91 3/8" WIDE x 60" DEEP

TRANSFORMER NOTES:

- WEIGHT:
SHIPPING: 1,650 LBS AS CRATED
OPERATING: 1,400 LBS
- BASE DIMENSIONS: 43 3/4" WIDE x 35" DEEP x 46" H



FRONT ELEVATION

HYDROGEN HEADER
4" PVC PIPE
HEIGHT WILL VARY
PER APPLICATION

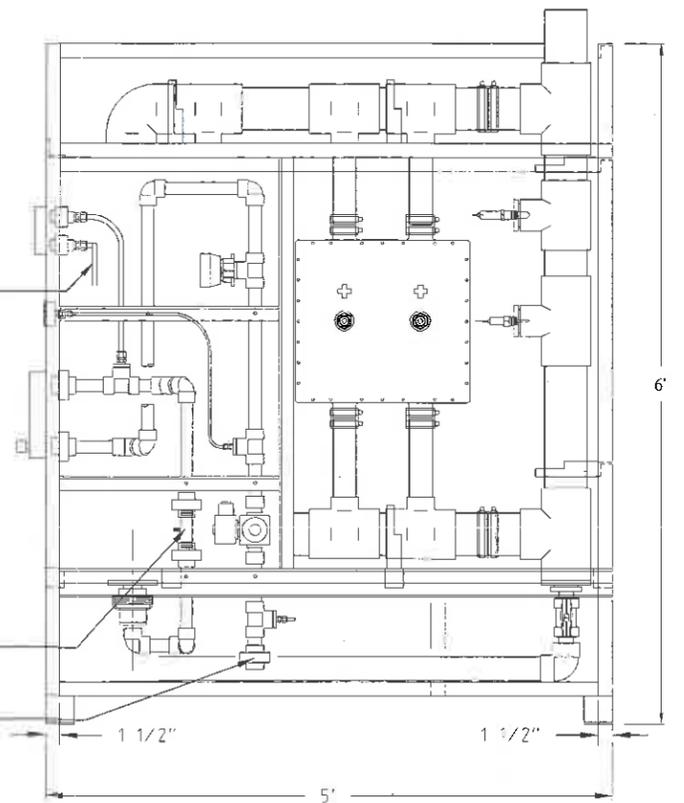
HYPOCHLORITE OUT
3" PVC PIPE
HEIGHT WILL VARY
PER APPLICATION

BRINE METER
WATER INLET
PRESSURE
WATER METER

BRINE FEED
1/2" PP TUBING

GROUNDING TARGET
1" TITANIUM

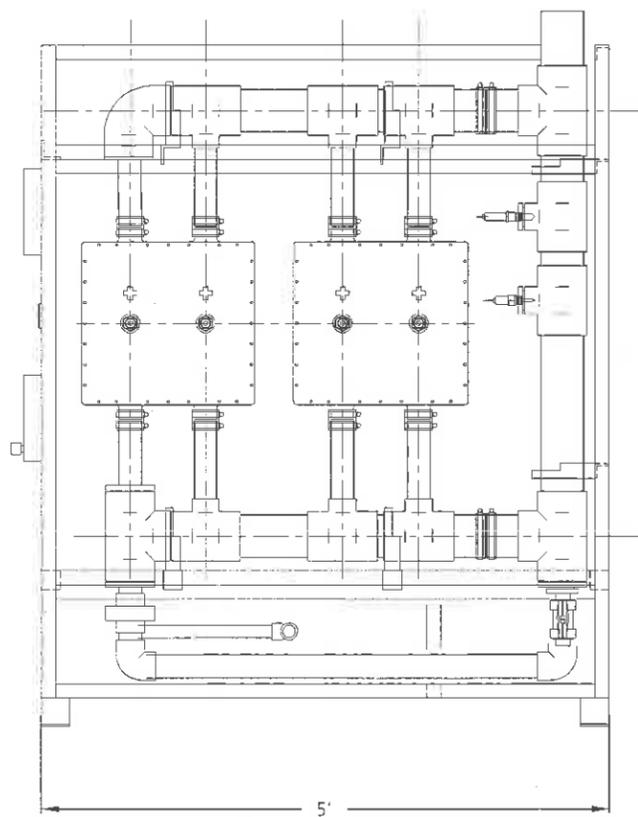
WATER SUPPLY
1" PVC SCH80



RIGHT ELEVATION

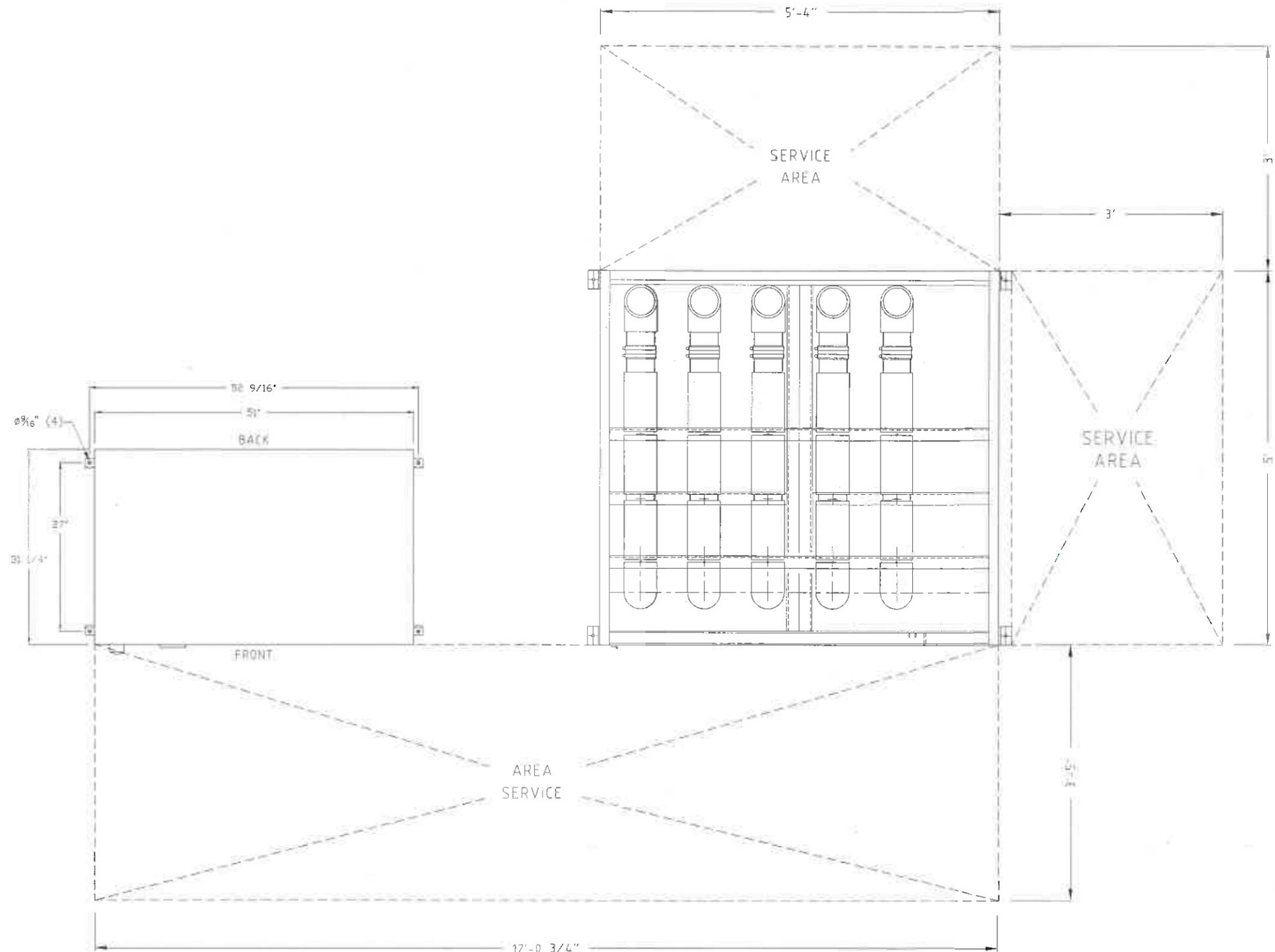
INLET PIPING DETAIL
CELL LOOP REMOVED FOR CLARITY

TB #014a REV. Δ	DATE: 03/27/2015	BY: F.J.	DESCRIPTION: RELEASED FOR PROPOSAL	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.	PSI On-Site Disinfection A UGSJ SOLUTIONS COMPANY	PROJECT: MARGATE WATER TREATMENT PLANT SUBJECT: ON-SITE HYPOCHLORITE GENERATOR 1,500 PPD SYSTEM EQUIPMENT LAYOUT GENERAL ARRANGEMENT / ASSEMBLY	DRAWN BY: F. JAVANSHIR	DATE: 03/27/2015
	DATE:	BY:	DESCRIPTION:				CHECKED BY:	DATE:
	SCALE: 3/8"=1'-0"	SIZE: D	DWG #: P-2293-MC9150-AB				SHEET 1 OF 2	REV. A



RIGHT ELEVATION

WATER / BRINE PIPING REMOVED FOR CLARITY



AREA PLAN VIEW

△ △ △ △				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, printouts, 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.	 A UGSI SOLUTIONS COMPANY	PROJECT	MARGATE WATER TREATMENT PLANT							
						SUBJECT	ON-SITE HYPOCHLORITE GENERATOR 1,500 PPD SYSTEM EQUIPMENT LAYOUT GENERAL ARRANGEMENT / ASSEMBLY							
	03/27/2015	F.J.	RELEASED FOR PROPOSAL			DRAWN BY:	F. JAVANSHIR	DATE:	03/27/2015					
	REV. △	DATE	BY:			DESCRIPTION	CHECKED BY:	DATE:						
TB #014a					SCALE:	3/8"=1'-0"	SIZE:	D	DWG #	P-2293-MC9150-AB	SHEET	2 OF 3	REV	4

MATERIALS:

1. PLATE GUIDE
CAST CLEAR ACRYLIC SHEET, REYNOLDS POLYMER ROOD CLEAR C
2. END CAP
CAST CLEAR ACRYLIC SHEET, REYNOLDS POLYMER ROOD CLEAR C
3. TERMINAL PLATE CAP
CAST CLEAR ACRYLIC SHEET, REYNOLDS POLYMER ROOD CLEAR C
4. ANODE / CATHODE TERMINAL PLATE
TITANIUM CP GRADE 2 WITH DSA COATING ON ONE SIDE
5. INNER BIPOLAR PLATES
TITANIUM CP GRADE 2 WITH DSA COATING ON ALL SIDES
6. O-RINGS
100% VITON GRADE B VIRGIN
7. FASTENING HARDWARE
TITANIUM

CALCULATION FOR ESTIMATING THE ASI ON MICROCLOR ELECTROLYTIC CELLS

NOTE: ACTIVE SURFACE AREA IS A MULTIPLE 14X OF THE PHYSICAL BI-POLAR PLATE. ASI CALCULATION IS BASED ON THE INITIAL BI-POLAR PLATE AREA AND AMPERAGE APPLIED.

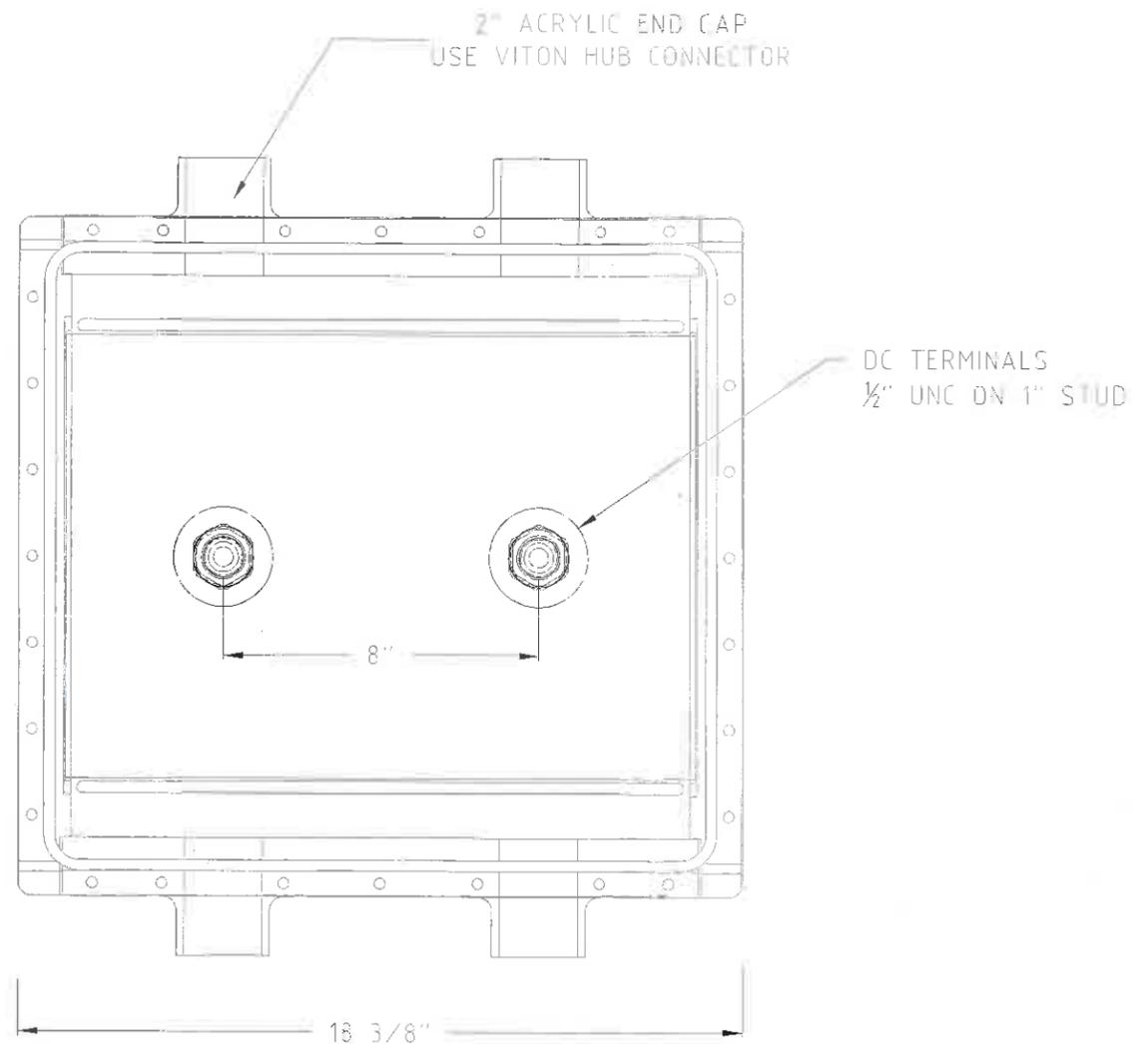
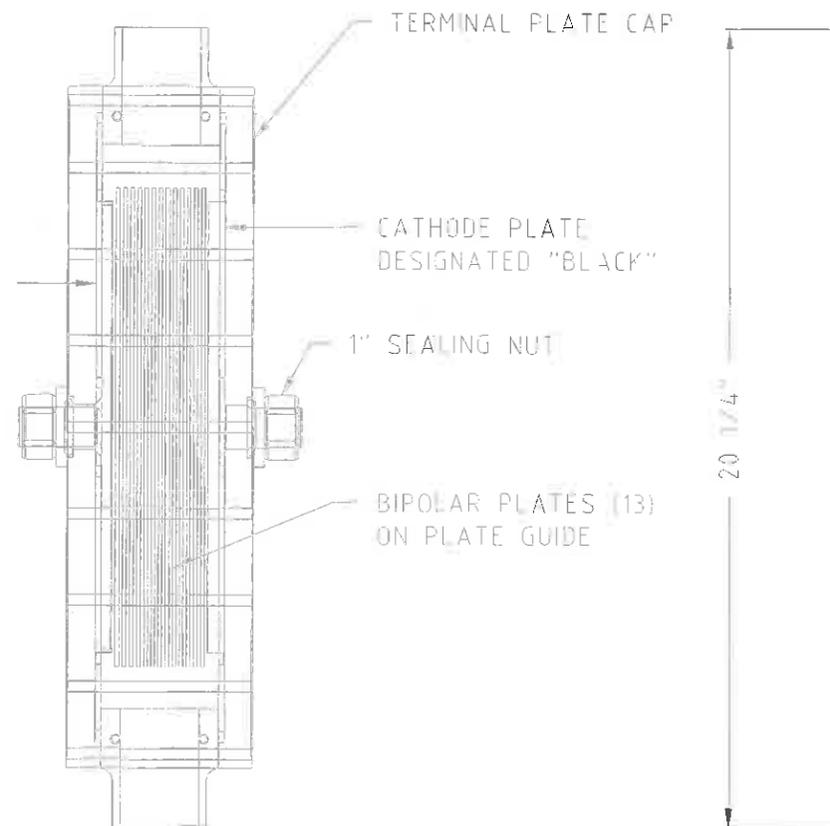
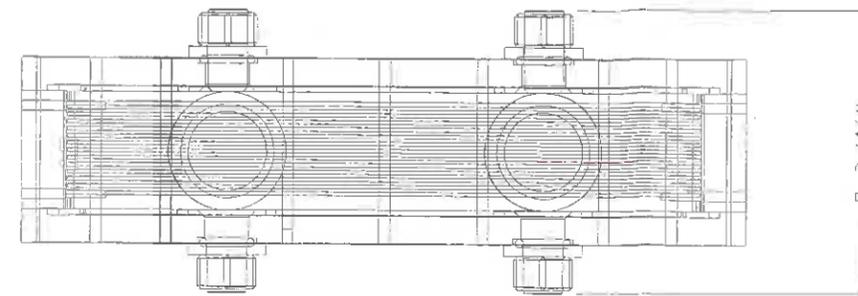
EXAMPLE OF CALCULATION

$$150 \text{ PPD} \frac{\text{DC AMPS}}{\text{INITIAL BI-POLAR PLATE SURFACE AREA}} = \frac{450/2 \text{ AMPS}}{16 \times 12 \text{ PLATE} = 192"} = 1.17 \text{ ASI}$$

$$160 \text{ PPD} \frac{\text{DC AMPS}}{\text{INITIAL BI-POLAR PLATE SURFACE AREA}} = \frac{512/2 \text{ AMPS}}{16 \times 12 \text{ PLATE} = 192"} = 1.33 \text{ ASI}$$

HARDWARE TORQUE SPEC.

1. 1/4-20 UNC (STRUCTURE) = 25 INCH LBS
2. 1/2-13 UNC (TERMINAL) = 35 FT LBS
3. 1-8 UNC (STRUCTURE) = 85 INCH LBS



△				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 2077 DEER AVE, SUITE A, CAMPBELL, CA 95008	PROJECT	PROCESS SOLUTIONS INC		
△							SUBJECT	MICROCLOR 150 160 PPD MCVA CELL GENERAL DIMENSIONS	
△							DRAWN BY	C ROBERTSON	
△	10-11-2010	JCR	RELEASED FOR PUBLICATION			DATE	10-12-2010	CHECKED BY	
REV △	DATE	BY	DESCRIPTION			SCALE	1-1/2" = 1'-0"	SIZE	D
						DWG #	0000-MC0529-AB SHEET 1 OF 1 REV A		



FAN SELECTION And PERFORMANCE

Your Cincinnati Fan Representative:
 Earl White
 Air Handling Equipment Inc.
 PO Box 548
 Suisun CA 94585
 707-425-7305 Phone
 707-425-7236 Fax
 AHEFAN@SBCGLOBAL.NET

Tuesday, November 10, 2009

Job Name: PROCESS SOLUTIONS INC
 Reference: Blowers selections for 3" Quote: 154012

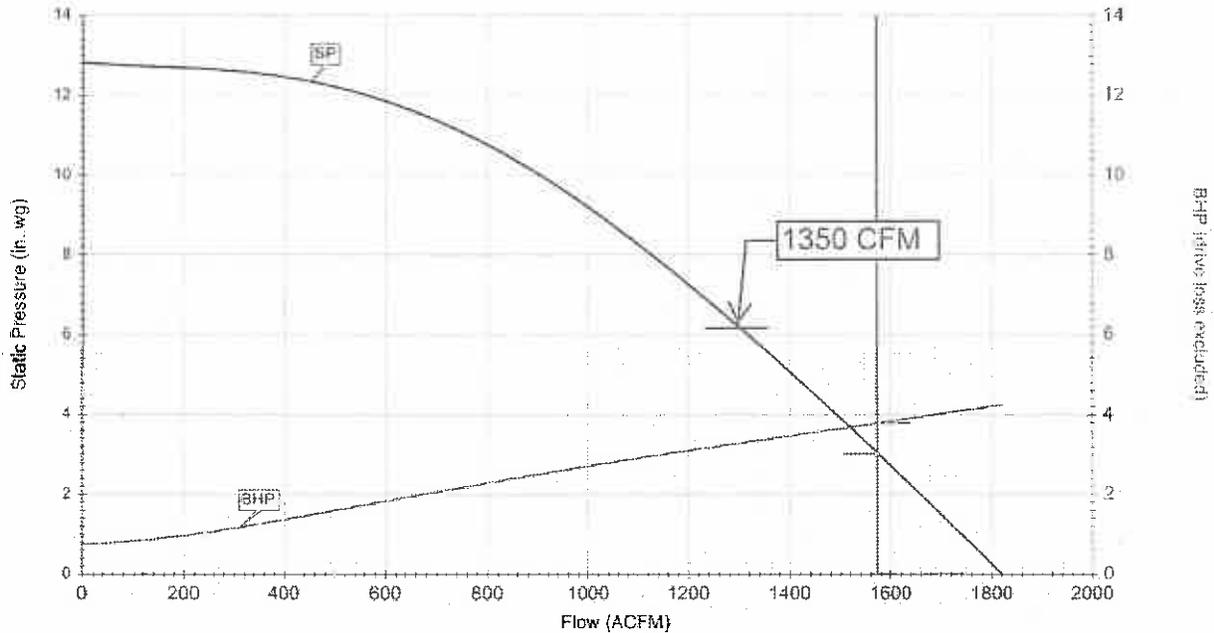
Operating Requirements

Volume, ACFM	1,572 1350 CFM
Static Pressure, in. wg	3.0
Density, lb./ft. ³	0.075
Operating Temperature, °F	70
AMCA Arrangement No.	4
Motor Frequency, Hz	60
Start-Up Temperature, °F	70

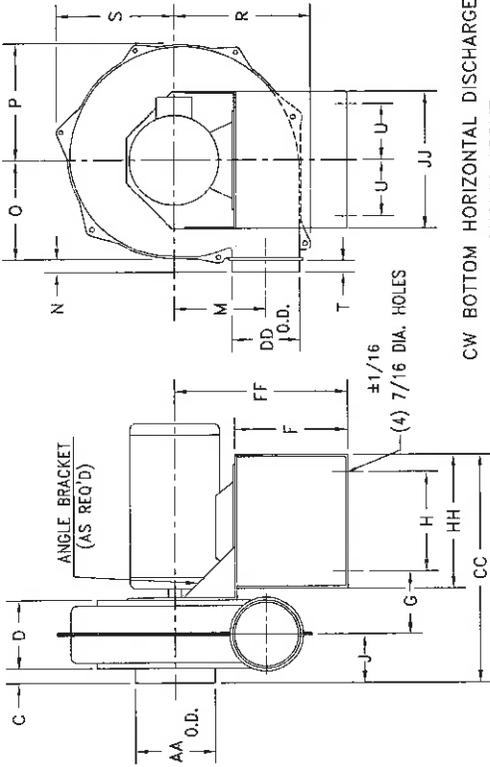
Fan Selection and Specifications

Model	PB-14A	
Fan RPM	3,450	
Wheel Description	Cast Alum. 14 X 3-1/4 BC	
Wheel Width, %	100%	
Wheel Diameter, in.	14.00	
Inlet Diameter, in.	8.00	
Outlet Velocity, ft./min.	8,020	
Fan BHP	3.79	Suggested Motor HP: 5.0
Static Efficiency, %	19.7%	
Cold Start BHP	3.79	
Construction Class	N/A	

Cincinnati Fan PB-14A Cast Alum. 14 X 3-1/4 BC Wheel (Full Width) @ 3,450 RPM
 Rating Point: 1,572 ACFM @ 3.0 in. wg SP, 0.075 lb./ft.³ Density, 3.79 BHP, 8.0 in. Inlet



A PB4



CW BOTTOM HORIZONTAL DISCHARGE SHOWN ABOVE

06/09/2011

OPTIONAL INLET SIZES

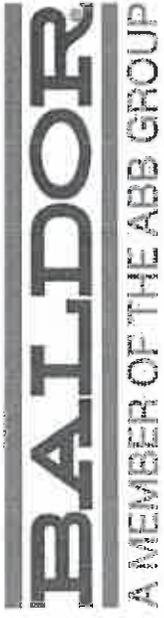
- 6" INLET AVAILABLE FOR PB-14A, PB-15A & PB-18
- 7" INLET AVAILABLE FOR PB-15A
- 8" INLET AVAILABLE FOR PB-14A & PB-18WA
- 10" INLET AVAILABLE FOR PB-15A & PB-18

Page 117 of 142

NOTES:

1. HOUSINGS ARE ROTATABLE IN 45° INCREMENTS.
2. ALL MODELS: DISCHARGE FLANGE NOT AVAILABLE FOR DOWN BLAST DISCHARGE.
- * 3. PB-14A 56 FRAME MOTOR MUST BE 56C ROUND BODY ONLY (NOT FOOT MOUNT).

MODEL	FRAME	HOUSING																F	G	H	U	CC	FF	HH	JJ
		C	D	J	M	N	O	P	R	S	T	AA	DD	AA	DD	AA	DD								
PB-8	56	1 1/4	3 3/4	2 7/8	4 1/8	1 1/8	4 5/8	5 5/8	7 3/8	4 7/8	1 1/8	4	4	5	3 3/16	5	2 3/4	12 1/8	8 9/16	7 1/8	7				
PB-9	56	1 1/8	4 1/8	3 1/8	5 5/8	1 3/8	6 1/8	7 3/8	8 1/2	6 5/8	1	5	4	8 1/4	4 3/8	5	3 3/4	13 5/16	10 7/16	7 7/8	7				
	143T-145T	1 1/8	4 1/8	3 1/8	5 5/8	1 3/8	6 1/8	7 3/8	8 1/2	6 5/8	1	5	4	8 1/4	4 3/8	5	3 3/4	13 5/16	10 7/16	7 7/8	7				
PB-10A	56	1 1/4	4 1/4	3 3/8	6 9/16	1	6 7/8	9 7/16	10 3/16	7 13/16	1	6	5	6 7/8	3 7/16	5 3/4	2 3/4	13 11/16	10 7/16	7 7/8	7				
	143T-145T	1 1/4	4 1/4	3 3/8	6 9/16	1	6 7/8	9 7/16	10 3/16	7 13/16	1	6	5	8 1/4	4 1/4	5	3 3/4	14 1/8	11 7/8	8	9				
PB-12A	56	1 1/4	5	3 3/4	7 9/16	7/8	8	9 5/8	11 11/16	9 7/16	1	7	6	8 1/4	4 5/8	5	3 3/4	14 7/8	11 7/8	8	9				
	143T-145T	1 1/4	5	3 3/4	7 9/16	7/8	8	9 5/8	11 11/16	9 7/16	1	7	6	8 1/4	4 5/8	5	3 3/4	14 7/8	11 7/8	8	9				
PB-14A	56C*	1 1/4	6	4 1/4	8 1/16	1	8 13/16	10 3/8	12 3/16	10 1/4	1	7	6	9 15/16	5 1/2	8 3/4	4 15/16	20	15 3/16	11 3/4	12				
	143T-145T	1 1/4	6	4 1/4	8 1/16	1	8 13/16	10 3/8	12 3/16	10 1/4	1	7	6	9 15/16	5 1/2	8 3/4	4 15/16	20	15 3/16	11 3/4	12				
PB-15A	182T-213T	1 1/4	7 1/4	4 7/8	7 7/8	1	9 13/16	11 3/8	13	10 13/16	1	8	8	9 15/16	6 1/8	8 3/4	4 15/16	21 1/4	15 3/16	11 3/4	12				
	182T-184T	1 1/4	7 1/4	4 7/8	7 7/8	1	9 13/16	11 3/8	13	10 13/16	1	8	8	9 15/16	6 1/8	8 3/4	4 15/16	21 1/4	15 3/16	11 3/4	12				
PB-18	254T-256T	1 1/4	6 1/4	4 3/8	10 1/2	15/16	10 1/2	12 11/16	14 1/2	12 7/16	1	8	6	9 15/16	5 5/8	8 3/4	4 15/16	20 1/4	15 3/16	11 3/4	12				
	182T-184T	1 1/4	6 1/4	4 3/8	10 1/2	15/16	10 1/2	12 11/16	14 1/2	12 7/16	1	8	6	9 15/16	5 5/8	8 3/4	4 15/16	20 1/4	15 3/16	11 3/4	12				
PB-18WA	254T-256T	1 1/4	8 1/16	5 5/16	9 7/8	7/8	11	13 3/16	15 3/8	11 13/16	1	10	8	12 3/4	6 1/2	10 3/4	6 1/4	24 1/2	18	16 1/2	16 1/2				
	182T-184T	1 1/4	8 1/16	5 5/16	9 7/8	7/8	11	13 3/16	15 3/8	11 13/16	1	10	8	12 3/4	6 1/2	10 3/4	6 1/4	24 1/2	18	16 1/2	16 1/2				
284T-286T	284T-286T	1 1/4	8 1/16	5 5/16	9 7/8	7/8	11	13 3/16	15 3/8	11 13/16	1	10	8	11 1/2	11	15 3/4	15 3/4	29 1/16	18 1/2	18 3/4	18 3/4				



BALDOR • RELIANCE

Product Information Packet

CM3613T

5HP, 3450RPM, 3PH, 60HZ, 182, TC, 3626M, TEFC, F

06/09/2011

Part Number	Description	Quantity
SA135204	SA 36A002T850H1	1.000 EA
RA124971	RA 36A002T850H1	1.000 EA
36FN3000C01SP	EXFN, PLASTIC, 5.25 OD, .912 ID	1.000 EA
S/P101-000-000	EPACT PROCEDURES-FS PLANT-POLYREX EM, NO	1.000 EA
36CB3004	36 CB CASTING W/1.09 DIA LEAD HOLE @ 6:0	1.000 EA
36GS1000SP	GASKET-CONDUIT BOX, .06 THICK #SV-330 LE	1.000 EA
51XB1016A08	10-16X 1/2HXWSSLD SERTYB	2.000 EA
11XW1032G06	10-32 X .38, TAPTITE II, HEX WSHR SLTD U	1.000 EA
HW3001B01	003SS CUP WASHER, FOR #8 SCREW	1.000 EA
36EP3104A01	FREP MACH W/GRSR, RAISED FH PADS	1.000 EA
HW4500A01	1641B(ALEMITE)400 UNIV, GREASE FITT	1.000 EA
HW5100A05	WVY WSHR F/205 & 304 BRGS	1.000 EA
36EP3301A23	PU ENDPLATE, ENCL. 182-4TC 206 BRG. W/GR	1.000 EA
HW4500A01	1641B(ALEMITE)400 UNIV, GREASE FITT	1.000 EA
10XN2520A28	1/4-20X 1 3/4 HEX HD	4.000 EA
HW1001A25	LOCKWASHER 1/4, ZINC PLT .493 OD, .255 I	4.000 EA
51XB1214A16	12-14X1.00 HXWSSLD SERTYB	1.000 EA
36FH4009A102SP	IEC FH GREASER W/AUTOPHERETIC PRIMER	1.000 EA
51XW1032A06	10-32 X .38, TAPTITE II, HEX WSHR SLTD S	3.000 EA
36CB4516	36 LIPPED CB LID	1.000 EA
37GS1001SP	GASKET, CONDUIT BOX LID, .06 THICK LEXID	1.000 EA
51XW0832A07	8-32 X .44, TAPTITE II, HEX WSHR SLTD SE	4.000 EA
HW2501E16	KEY, 1/4 SQ X 1.750	1.000 EA
HA7000A02	KEY RETAINER RING, 1 1/8 DIA, 1 3/8 DIA	1.000 EA

Parts List (continued)

Part Number	Description	Quantity
85XU0407S04	4X1/4 U DRIVE PIN STAINLESS	2.000 EA
MJ1000A75	GREASE, POLYREX EM EXXON	0.050 LB
MG1000G27	PAINT- S9282E CHARCOAL GREY 55 GALLONS	0.022 GA
HA3101A25	THRUBOLT 1/4-20 X 11.000 OHIO ROD	4.000 EA
LB1125C04	STD-E (STOCK CTN LABEL STD-E WITH FLAG)	1.000 EA
LC00005E01	CONN.DIA./WARNING LABEL (LC0005/LB1119)	1.000 EA
NP1256L	ALUM, UL CSA CC, W/O THERMAL, LASER	1.000 EA
36PA1000	PACK GROUP W/LB5001	1.000 EA

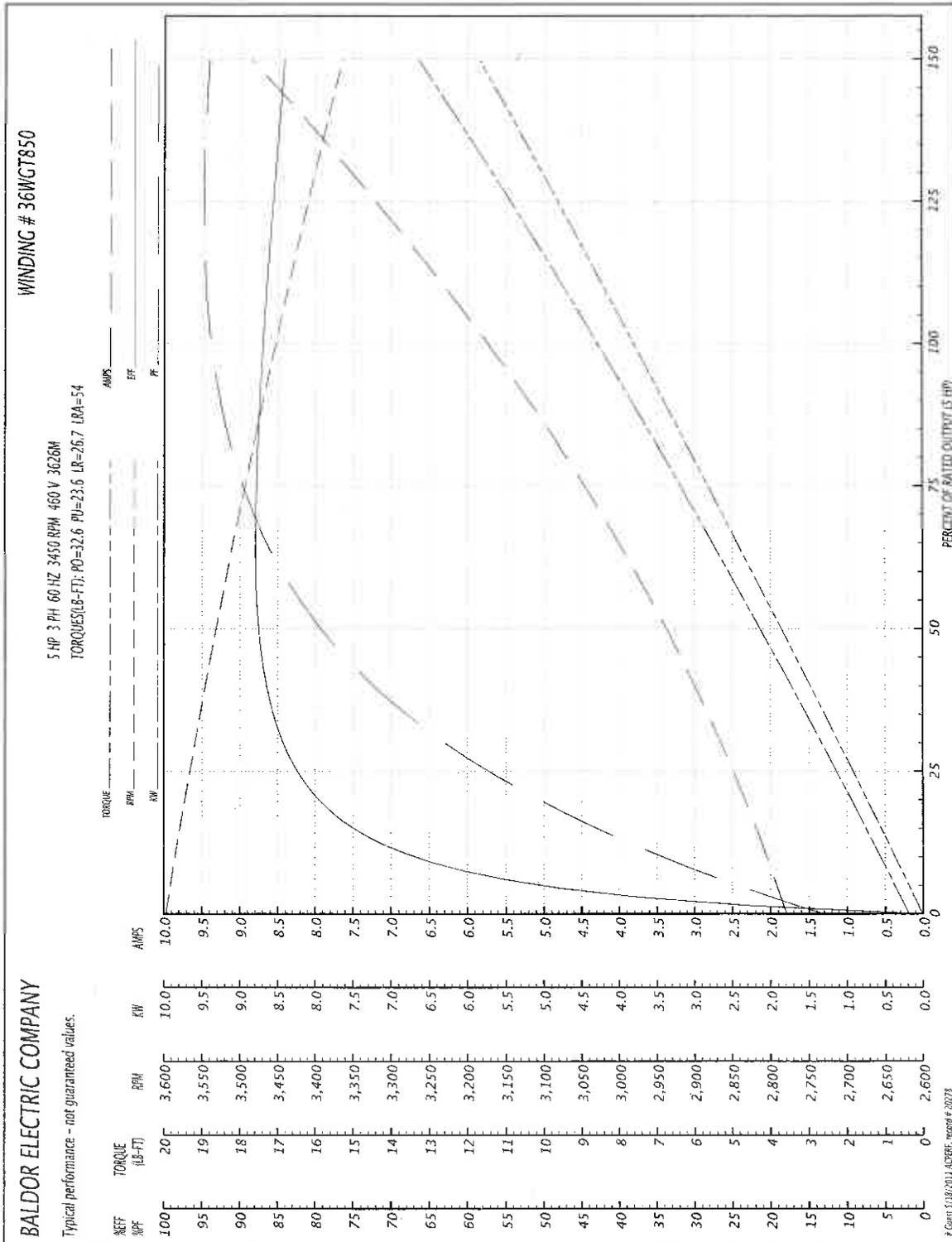


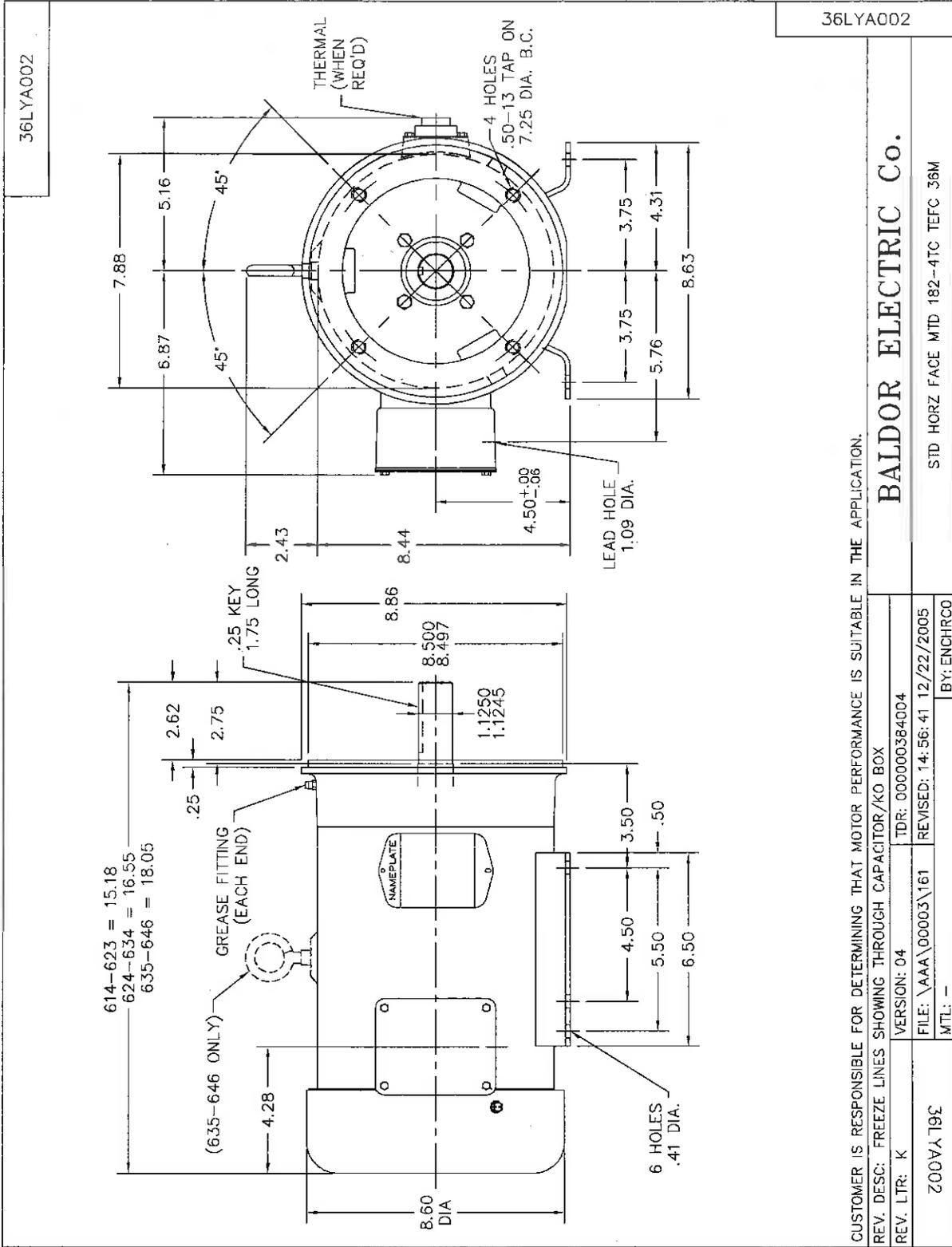
Performance Data at 460V, 60Hz, 5.0HP (Typical performance - Not guaranteed values)

General Characteristics		Start Configuration:		DOL			
Full Load Torque:	7.62 LB-FT	Break-Down Torque:	100	32.6 LB-FT			
No-Load Current:	1.89 Amps	Pull-Up Torque:	93.0	23.6 LB-FT			
Line-line Res. @ 25°C.:	2.44 Ohms A Ph / 0.0 Ohms B Ph	Locked-Rotor Torque:	87.5	26.7 LB-FT			
Temp. Rise @ Rated Load:	71 C	Starting Current:	3454.0	54.0 Amps			
Temp. Rise @ S.F. Load:	90 C		5.79				
Load Characteristics							
% of Rated Load	25	50	75	100	125	150	S.F.
Power Factor:	60.0	81.0	89.0	93.0	94.0	95.0	94.0
Efficiency:	82.4	87.8	88.3	87.5	86.0	84.1	86.6
Speed:	3564.0	3530.0	3494.0	3454.0	3412.0	3363.0	3429.0
Line Amperes:	2.34	3.36	4.52	5.79	7.24	8.8	6.66



Performance Graph at 460V, 60Hz, 5.0HP Typical performance - Not guaranteed values





CUSTOMER IS RESPONSIBLE FOR DETERMINING THAT MOTOR PERFORMANCE IS SUITABLE IN THE APPLICATION.

REV. DESC: FREEZE LINES SHOWING THROUGH CAPACITOR/KO BOX

REV. LTR: K VERSION: 04 TDR: 00000384004

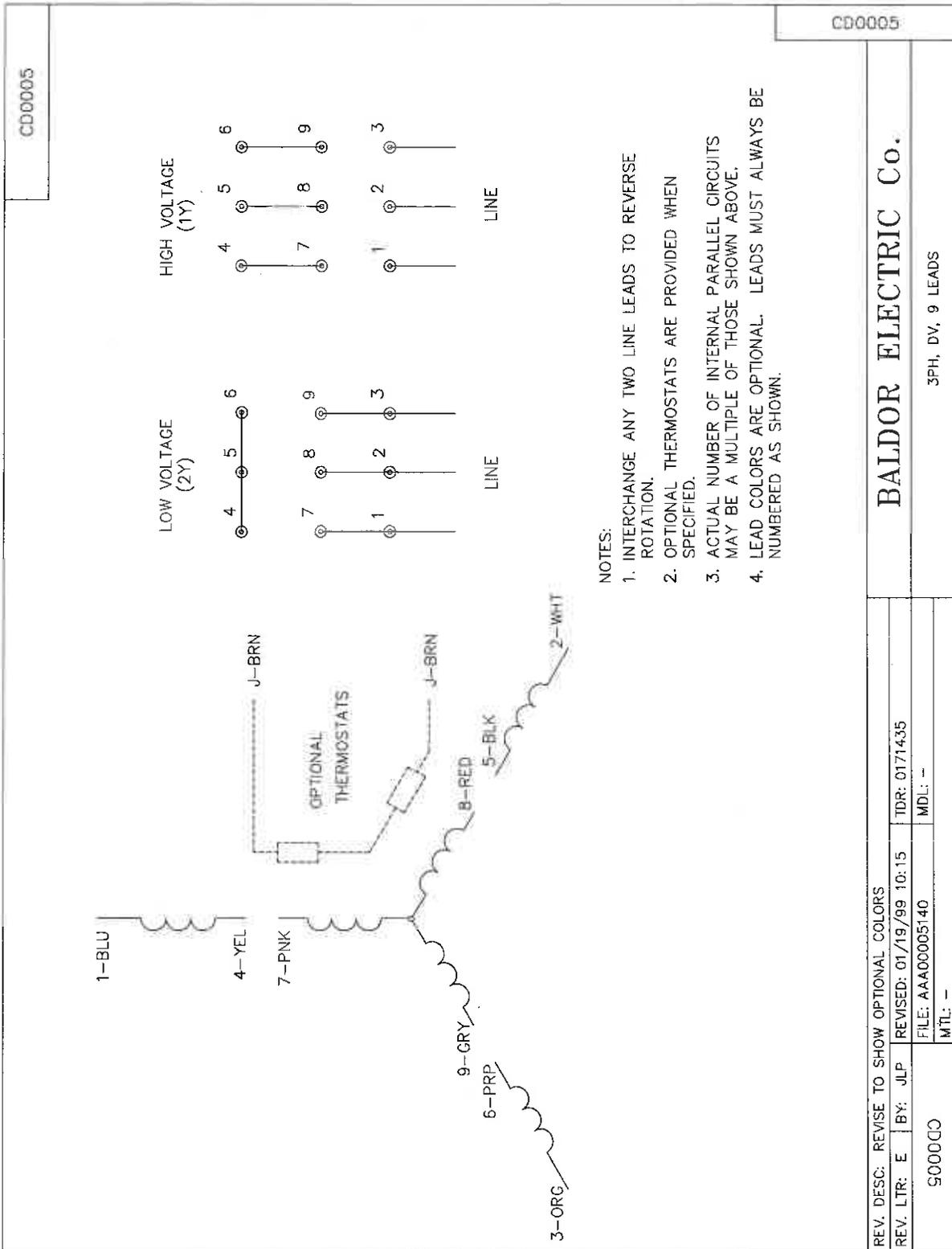
FILE: \AAA\00003\161 REVISED: 12/22/2005

200VA 19C BY: ENCHRCO

MTL: -

BALDOR ELECTRIC Co.

STD HORZ FACE MTD 182-4TC TEFC 36M



NOTES:

1. INTERCHANGE ANY TWO LINE LEADS TO REVERSE ROTATION.
2. OPTIONAL THERMOSTATS ARE PROVIDED WHEN SPECIFIED.
3. ACTUAL NUMBER OF INTERNAL PARALLEL CIRCUITS MAY BE A MULTIPLE OF THOSE SHOWN ABOVE.
4. LEAD COLORS ARE OPTIONAL. LEADS MUST ALWAYS BE NUMBERED AS SHOWN.

CD0005

CD0005

BALDOR ELECTRIC Co.

3PH, DV, 9 LEADS

REV. DESC: REVISE TO SHOW OPTIONAL COLORS

REV. LTR: E BY: JLP REVISED: 01/19/99 10:15 TDR: 0171435

FILE: AA00005140 MDL: --

MFL: --

500000

Series 1800 Low Differential Pressure Switches for General Industrial Service Page 126 of 142

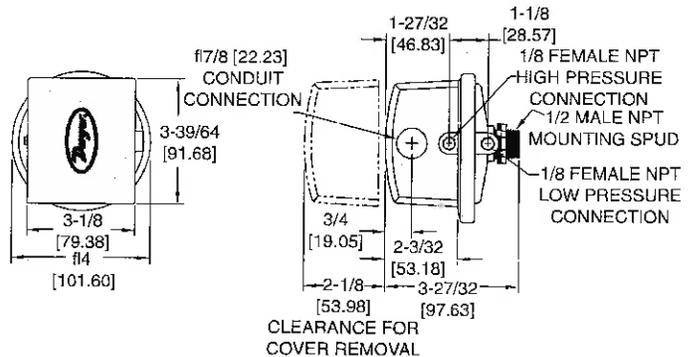


Specifications – Installation and Operating Instructions



Model 1823 pressure switch. UL and CSA Listed, FM and CENELEC approved.

Series 1823 pressure switch. Conduit enclosure removed to show electric switch.



Construction and dimensions. Series 1823 pressure switches.

One of our most popular pressure switches. Combines small size and low price with 2% repeatability for enough accuracy for all but the most demanding applications. Set point adjustment inside the mounting switch on one side of a wall or panel with adjustment easily accessible on the opposite side.

*Model 1823 shown; (1823 replaces 1820, 1821 and 1822 which are similar).

Environmental (MIL) Switch

Unlisted Model 1820 can be furnished with special snap switch sealed against the environment for high humidity and/or for government applications. Similar to standard Model 1823 except dead band is slightly greater. Specify Model 1820 (Range No.) "MIL" in ordering.

SERIES 1823 SWITCHES – OPERATING RANGES & DEADBANDS

Model Number	Operating Range, Inches W.C.	Approximate Dead Band	
		At Min. Set Point	At Max. Set Point
1823-00	0.07 to 0.22	0.05	0.05
1823-0	0.15 to 0.5	0.06	0.06
1823-1	0.3 to 1.0	0.08	0.08
1823-2	0.5 to 2.0	0.10	0.12
1823-5	1.5 to 5.0	0.14	0.28
1823-10	2.0 to 10	0.18	0.45
1823-20	3 to 22	0.35	0.70
1823-40	5 to 44	0.56	1.10
1823-80	9 to 85	1.30	3.0

SPECIFICATIONS

Service: Air and non-combustible, compatible gases.

Wetted Materials: Consult Factory.

Temperature Limits: -30 to 180°F (-34 to 82.2°C). 1823-00, -20 to 180°F (-28.9 to 82.2°C).

Pressure Limits: 10 psig (68.95 kPa) continuous, 25 psig (172.4 kPa) surge.

Switch Type: Single-pole double-throw (SPDT).

Repeatability: ±2%.

Electrical Rating: 15 A @ 120-480 VAC, 60 Hz. Resistive 1/8 HP @ 125 VAC, 1/4 HP @ 250 VAC, 60 Hz. De-rate to 10 A for operation at high cycle rates.

Electrical Connections: 3 screw type, common, normally open and normally closed.

Process Connections: 1/8" female NPT.

Mounting Orientation: Diaphragm in vertical position. Consult factory for other position orientations.

Set Point Adjustment: Screw type inside mounting spud.

Weight: 1 lb, 5 oz (595 g).

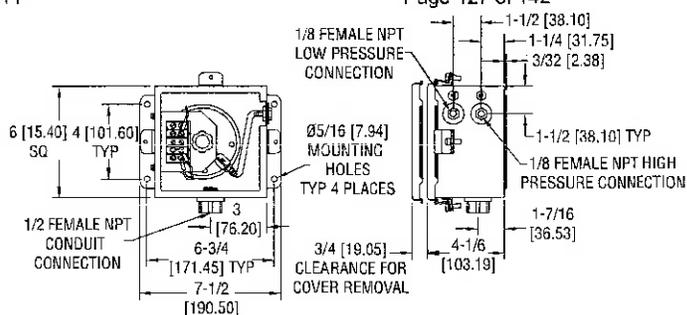
Agency Approvals: CE, UL, CSA, FM.

INSTALLATION

1. Select a location free from excessive vibration and where oil or water will not drip upon the switch. See special housings for unusual conditions.
2. **While not required, positioning the pressure connections down is recommended.** Mount the switch with the diaphragm in a vertical plane. Switch with the diaphragm in a vertical plane. Switch must be recalibrated for each change in operating position.
3. Connect switch to source of pressure differential. Metal tubing with 1/4" O.D. is recommended but any tubing system which will not restrict the air flow is satisfactory. Note that the low pressure connection may be made to the 1/2" spud at the back of the switch if desired. If so connected, drill 1/16" diameter holes in the Spring Retainer flange and the head of Adjustment Screw to provide opening to the switch interior and plug the other low pressure connection.
4. Electrical connections to the standard single pole, double throw snap switch are provided by means of screw terminals marked "common", "norm open", and "norm closed". The normally open contacts close and the normally closed contact open when pressure increases beyond the set point.
5. Switch loads should not exceed the maximum specified current rating of 15 amps resistive. Switch capabilities decrease with high load inductance or rapid cycle rates. Whenever an application involves one or more of these factors, the user may find it desirable to limit the switched current to 10 amps or less in the interest of prolonged switch life.

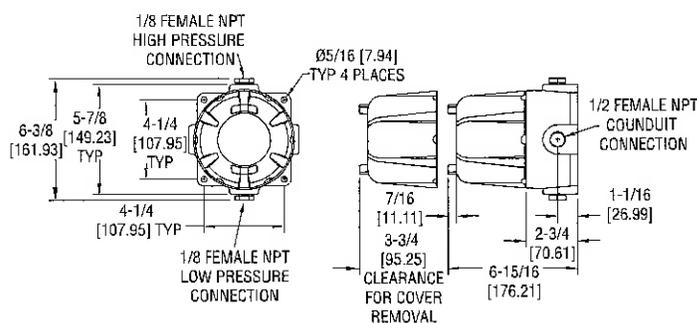
ADJUSTMENT

1. If the switch has been factory preset, check the set-point before placing in service to assure it has not shifted in transit.
2. If switching has not been preset or it is desired to change the point, observe the following procedure:
 - a. To adjust the set point turn the slotted Adjustment Screw clockwise to increase the set point and counterclockwise to decrease the set point.
 - b. The following is a recommended procedure for calibrating or checking calibration: Use a "T" assembly with three rubber tubing leads, all as short as possible and the entire assembly offering minimum flow restriction. Run one lead to the pressure switch, another to a manometer of known accuracy and appropriate range, and apply pressure through the third tube. Make final approach to the set point slowly. Note the manometer and pressure switch will have different response characteristics due to different internal volumes, lengths of tubing, oil drainage, etc. Be certain switch is checked in position it will assume in use, i.e. vertical, horizontal, etc.



Weatherproof Enclosure

16 ga. steel enclosure for unusually wet or oily conditions. Withstands 200 hour salt spray test. Gasketed cover. Weight 5-1/2 lb (2.5 kg). Switch must be installed at factory. Specify "WP" in addition to switch catalog number.



Explosion-Proof Housing

Cast iron base and aluminum dome cover. Approximate weight 7-1/2 lb (3.4 kg). Specify "EXPL" in addition to switch catalog number.

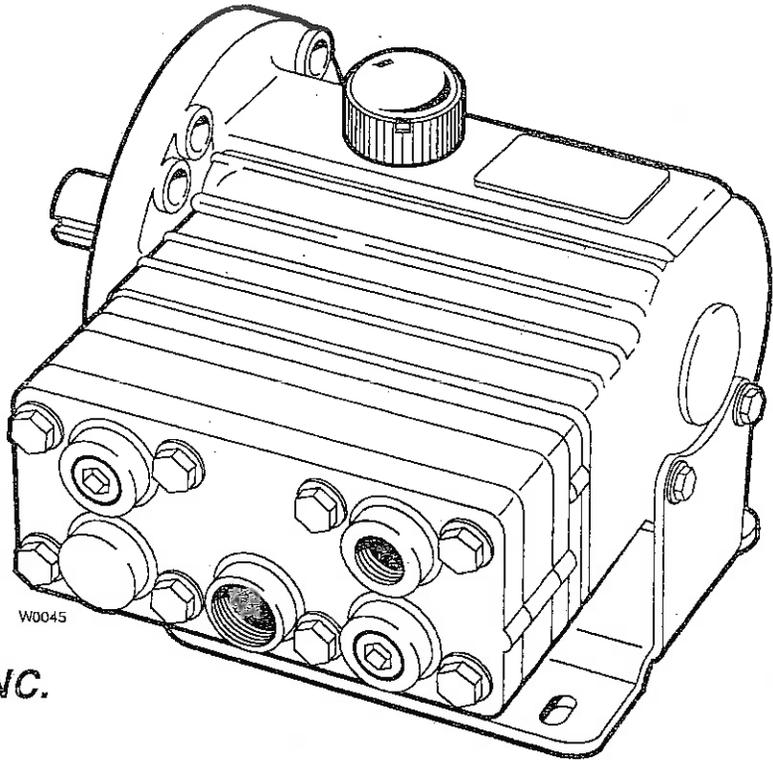
INSTALLATION & SERVICE

D03-991-2400A

Hydra-Cell[®]

INDUSTRIAL PUMPS

Models: D-03, G-03, G-13, M-03 and M-23
Kel-Cell and Standard Versions



WANNER ENGINEERING, INC.

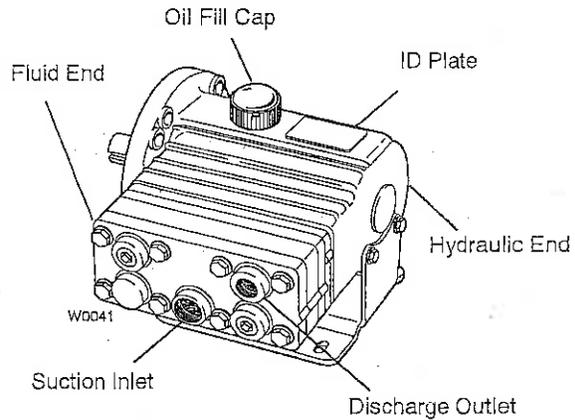
1204 Chestnut Avenue, Minneapolis, MN 55403
TEL: (612) 332-5681 FAX: (612) 332-6937
TOLL-FREE FAX [US only]: (800) 332-6812

www.hydra-cell.com
email: sales@wannereng.com

D/G-03 Contents

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Dimensions.....	4
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Maintenance.....	10
Fluid End Service.....	11
Hydraulic End Service.....	15
Troubleshooting.....	18

Component Identification



D/G-03 Specifications

Max Pressure

Metallic Heads:

- D/G-03-X (including Kel-Cell)*: 1000 psi (70 bar);
- D/G-03-E (Kel-Cell)*: 1000 psi (70 bar),
(non Kel-Cell): 1200 psi (83 bar)
- D/G-03-S, B, G: 1200 psi (83 bar)

Non-Metallic Heads:

- All models: 250 psi (17 bar)

Capacity @ Max Pressure

	rpm	gpm	l/min
→ D/G-03-X (including Kel-Cell)*	1750	3.0	11.3
D/G-03-E (including Kel-Cell)*	1750	2.2	8.3
D/G-03-S	1750	1.8	6.8
D/G-03-B	1750	1.1	4.2
D/G-03-G	1750	0.5	1.9

Delivery @ Max Pressure*

	revs/gal	revs/liter
→ D/G-03-X (including Kel-Cell)*	584	155
D/G-03-E (including Kel-Cell)*	795	204
D/G-03-S	972	258
D/G-03-B	1591	415
D/G-03-G	3500	906

Max Inlet Pressure 250 psi (17 bar)

Max Temperature

- Metallic Heads: 250°F (121°C) – consult factory for temperatures above 160°F (71°C)
- Non-Metallic Heads: 140°F (60°C)

Inlet Port D-03, M-03, M-23: 1/2 inch NPT
G-03, G-13: 1/2 inch BSPT

Discharge Port D-03, M-03, M-23: 3/8 inch NPT
G-03, G-13: 3/8 inch BSPT

* Kel-Cell available in X and E models only.

Shaft Diameter



- D-03/G-03: 7/8 inch (22.22) shaft driven
- M-03: 5/8 inch hollow (for NEMA 56C C-Face motor)
- G-13: 24 mm hollow shaft (for IEC 90L, B5 Flange motor)
- M-23: 20 mm hollow shaft (for use with Honda Engine)

Shaft Rotation

Bi-directional

Bearings

Ball bearings

Oil Capacity

1 US quarts (0.95 liters)

Weight

- Metallic Heads: 28 lbs (12.7 kg)
- Non-Metallic Heads: 19 lbs (8.6 kg)

Note:

Performance and specification ratings apply to all configurations unless specifically noted otherwise. Kel-Cell pumps available in D/G-03-X and D/G-03-E configurations only.

Calculating Required Horsepower (kW)‡

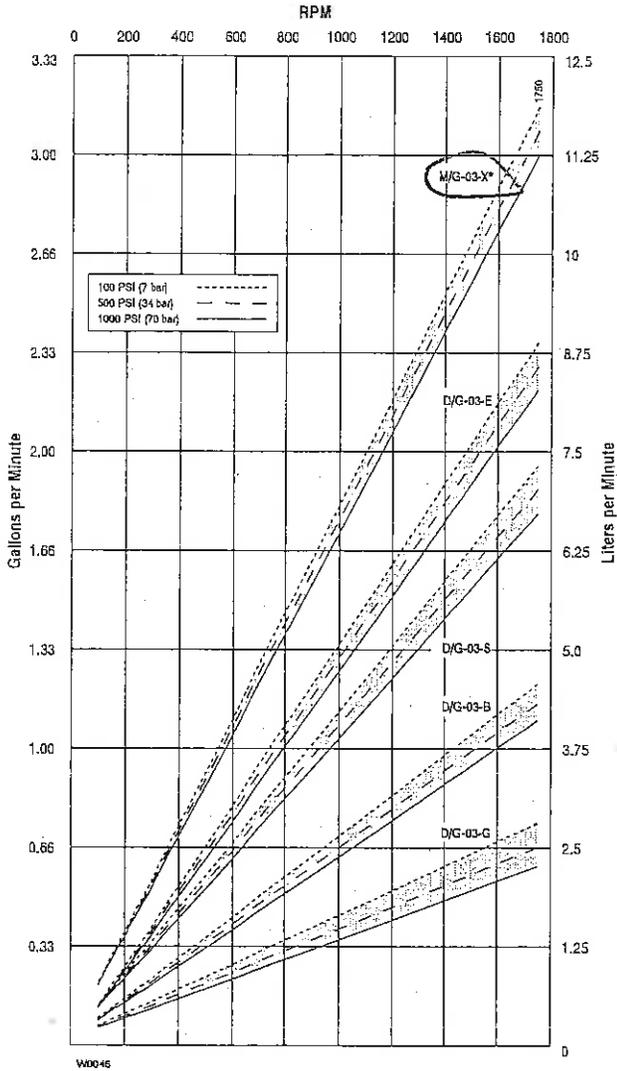
$$\frac{6 \times \text{rpm}}{63,000} + \frac{\text{gpm} \times \text{psi}}{1,460} = \text{electric motor HP}^*$$

$$\frac{6 \times \text{rpm}}{84,428} + \frac{\text{lpm} \times \text{bar}}{511} = \text{electric motor kW}^*$$

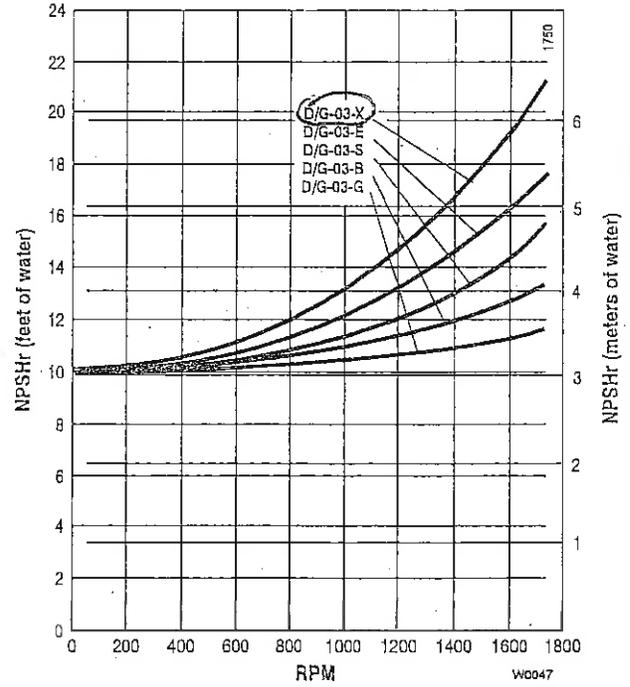
‡ rpm equals pump shaft rpm. HP/kW is required application power. Use caution when sizing motors with variable speed drives. Consult engine manufacturer for gasoline or diesel power requirements.

D/G-03 Specifications

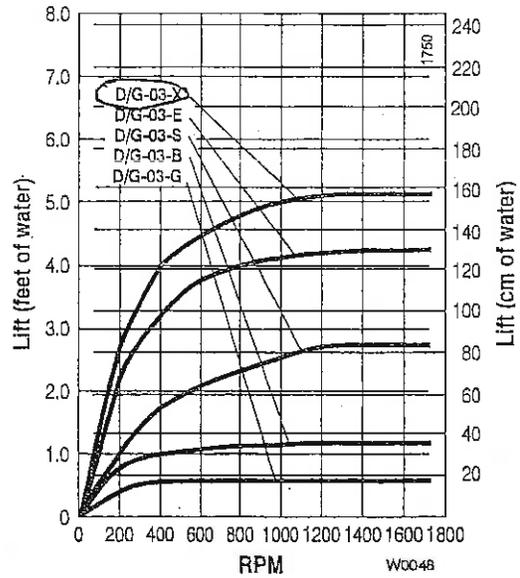
Performance



Net Positive Suction Head – NPSHr



Dry Lift



Note:

Performance and specification ratings apply to all configurations unless specifically noted otherwise. Kel-Cell flow will be about four percent less than that shown in the graph above.

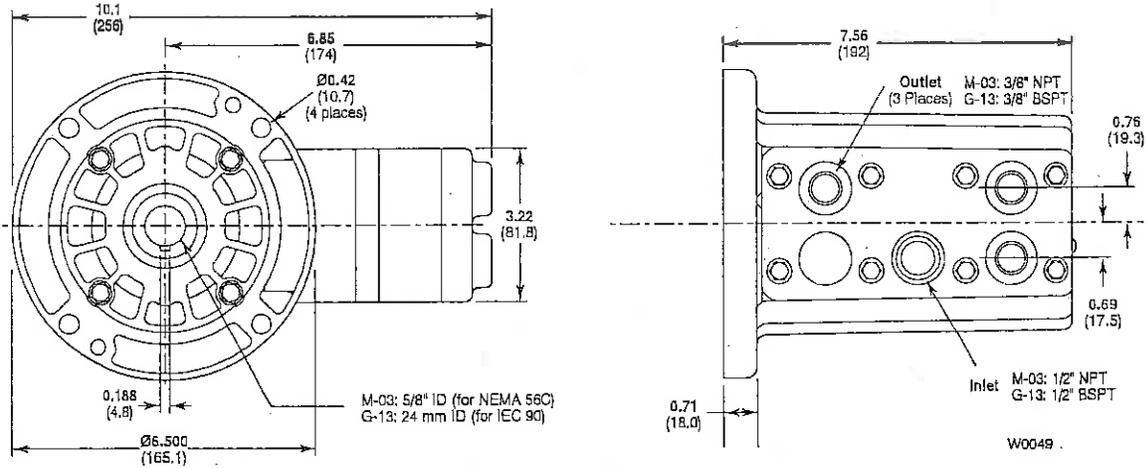
D/G-03 Dimensions

M-03/G-13 Models with Metallic Pumping Head

Brass

316 Stainless Steel

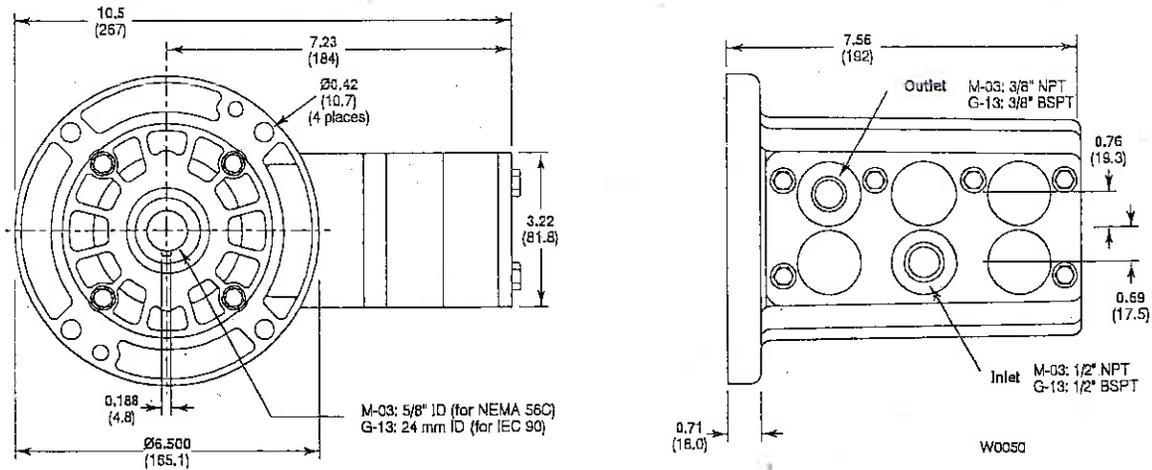
Nickel Alloy (Hastelloy CW12MW)



M-03/G-13 Models with Non-Metallic Pump Head

Kynar®

Polypropylene



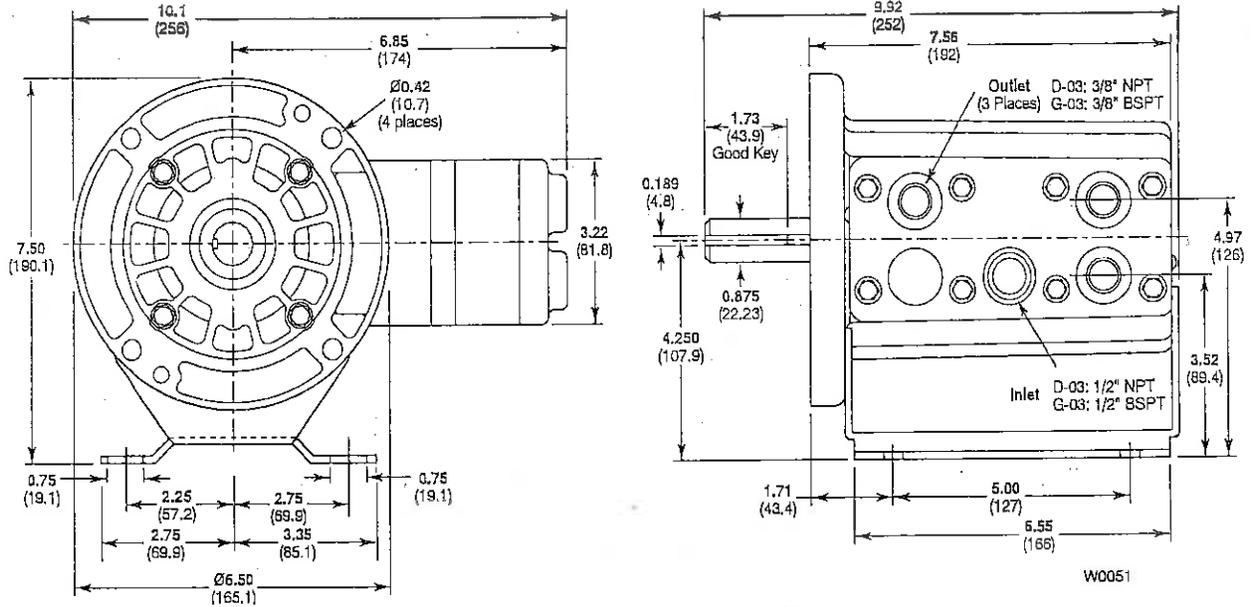
D/G-03 Dimensions

D-03/G-03 Models with Metallic Pumping Head

Brass

316 Stainless Steel

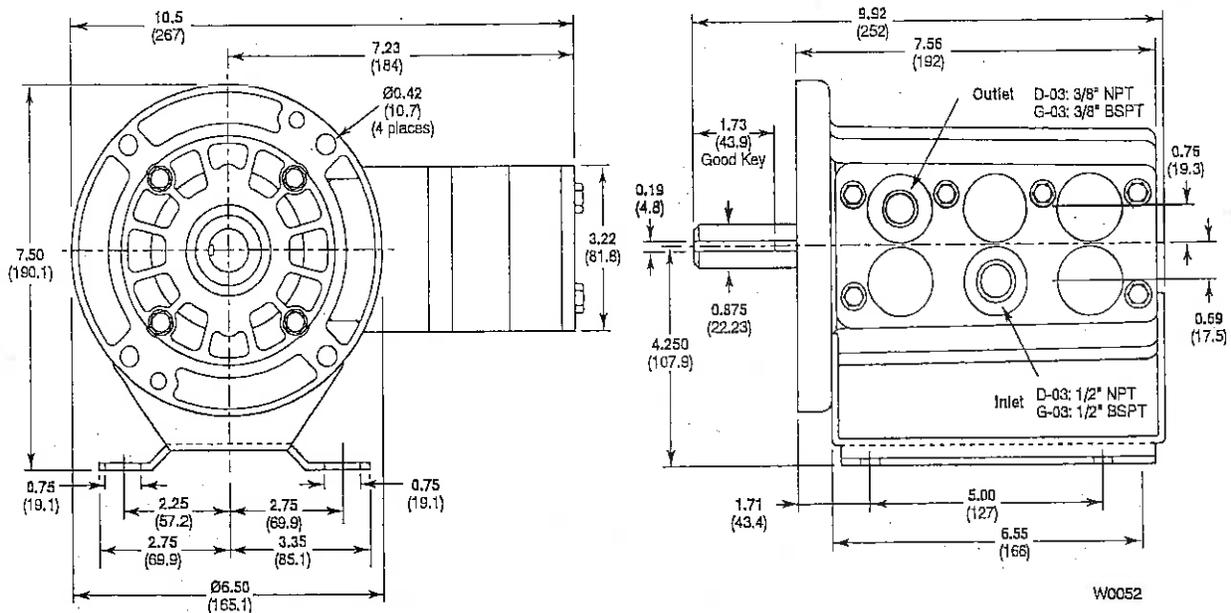
Nickel Alloy (Hastelloy CW12MW)



D-03/G-03 Models with Non-Metallic Pump Head

Kynar®

Polypropylene



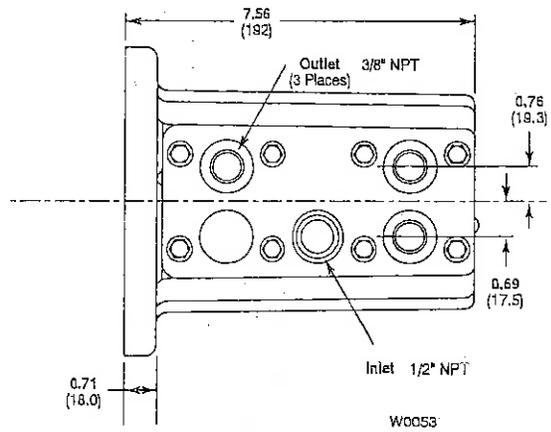
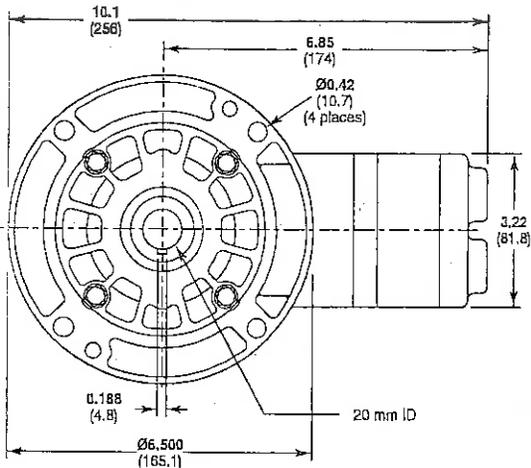
D/G-03 Dimensions

M-23 Models with Metallic Pumping Head

Brass

316 Stainless Steel

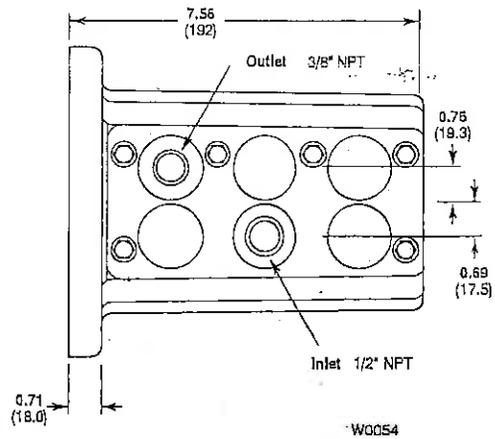
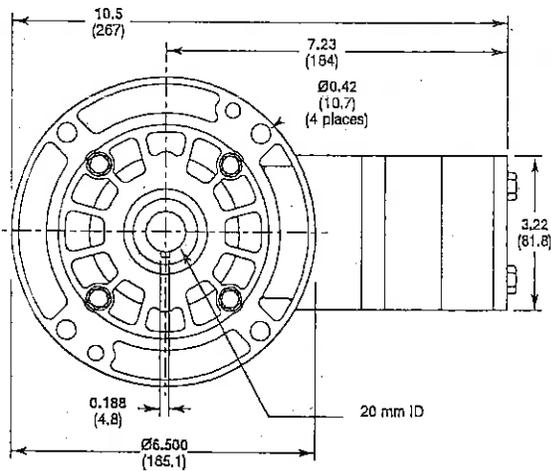
Nickel Alloy (Hastelloy CW12MW)



M-23 Models with Non-Metallic Pump Head

Kynar®

Polypropylene



CP 216s OD

System Components

Media Vessel (qty) Size	(2) 16 x 65"
Media Vessel Construction	Wrapped Polyethylene
Empty Bed Volume	6.55 ft ³
Media	4.0 ft ³ Non Solvent Cation Resin
Bed Depth / Free Board	50" / 15"
Riser Tube	1" ABS
Distributor Upper	0.014" Slots, ABS Basket
Lower	0.014" Slots, ABS Basket
Under bedding	0.75 ft ³ (75 lbs), ¼ x ¼ Gravel
Regeneration Control	Non-electric Use Meter
Regeneration Type	Countercurrent
Meter Type	1.10 - 50.00 gpm Polypropylene Turbine (Kinetico Open Louver Flow Nozzle)

Inlet Water Quality

Pressure Range	25 - 125 psi Dynamic Pressure
Temperature Range	35 - 120° F
pH Range	5 - 10 SU
Free Chlorine Cl ₂ (Max.)	2.0 mg/l
Hardness as CaCO ₃ (Max.)	49 gpg

Operating Specs

Flow Range - Overdrive (15 / 30 psig)	35.0 - 47.0 gpm
Flow Range - Alternating (15 / 30 psig)	23.0 - 33.0 gpm
Dimensions (width x depth x height)	33 x 16 x 71"
Weight (Operating / Shipping)	650 / 450 lbs.

Connections

Inlet / Outlet Connections	Custom Adapter and E-Clip (1 ½" Brass Sweat Fittings Included)
Drain Connection	0.625" Tube
Brine Line Connection	0.375" Tube
Power	None

System Part Numbers

CP 216s OD, 24 X 40 brine tank, media separate	11182
CP 216s OD, no brine tank, media separate	11168
CP 216s OD, empty, no brine tank	11186

Brine Tank Options

Tank Description	24" x 40"
Brine Tank Part Number	10586
Material	HDPE
Salt Capacity	500 lbs.

Regeneration Specifications

Regeneration Volume / Time	160 gallons / 90 minutes
Backwash Flow Control	7.00 gpm
Brine Refill Flow Control	0.70 gpm

Overdrive Operation

Setting	Capacity	Efficiency	Dosing	Meter Disc
24 lbs.	88,000 grains	3,700 gr./lb.	6.0 lbs./ft ³	
40 lbs.	112,000 grains	2,800 gr./lb.	10.0 lbs./ft ³	
Peak flow during regeneration:				
				35

Alternating Operation

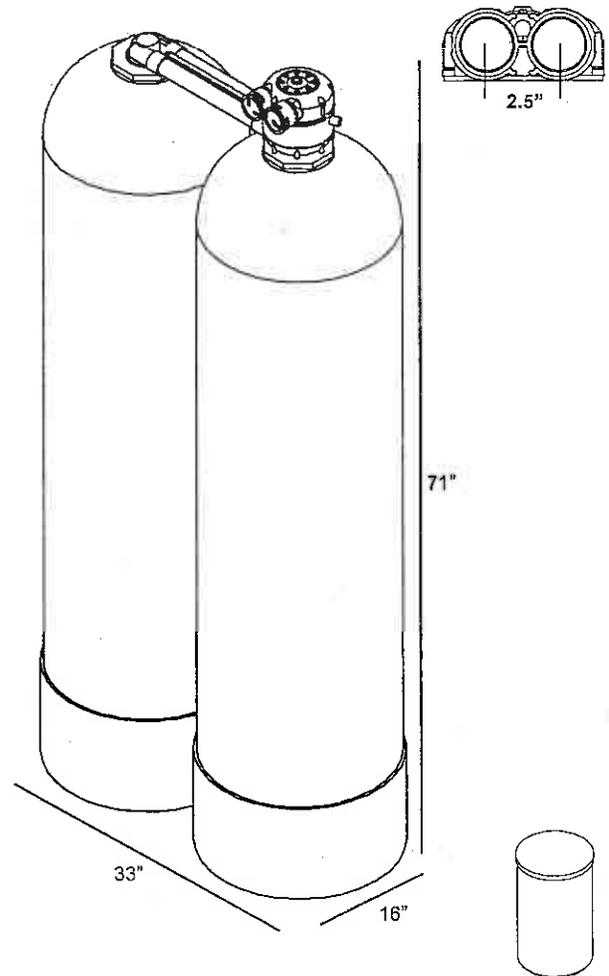
Setting	Capacity	Efficiency	Dosing	Meter Disc
24 lbs.	88,000 grains	3,700 gr./lb.	6.0 lbs./ft ³	
40 lbs.	112,000 grains	2,800 gr./lb.	10.0 lbs./ft ³	
Flow during regeneration (@ 15 psig):				
				23
Gallons/Regeneration:				
				15,192

Disc Selection

(Compensated Hardness*)

1	2	3	4	5	6	7	8
5	9	13	16	19	22	25	30
6	12	16	21	25	30	35	40
35	35	35	35	26.7	21.1	17.1	14.1
5	10	15	20	25	30	35	40
7	13	20	26	32	38	43	49
23	23	23	23	23	21.1	17.1	14.1
15,192	7,596	5,064	3,798	3,038	2,532	2,170	1,899

*Compensated hardness in gpg = Hardness + (3 x Fe in mg/l)



Operating Profile

Softener shall remove hardness to less than 1/2 gpg when operated in accordance with the operating instructions. The system shall include two tanks. This duplex configuration shall be flexible to operate in alternating or parallel mode depending on installed program disc. In alternating mode, one tank will be on-line during service. In parallel mode, both tanks will be on-line during service. With either mode, during regeneration cycles, one tank shall provide water to service and to the regenerating tank. A water meter shall initiate system regeneration. The water meter shall measure the processed volume and be adjustable. Service flow shall be down-flow and regeneration flow shall be up-flow.

Regeneration Control Valve

The regeneration control valve shall be top mounted (top of media tank), and manufactured from non-corrosive materials. Control valve shall not weigh more than four pounds. Control valve shall provide service and regeneration control for two media tanks. Inlet and outlet ports shall accept a quick connect, double o-ring sealed adapter. Interconnection between tanks shall be made through the regeneration valve with a quick connect adapter. Control valve shall operate using a minimum inlet pressure of 25 psi. Pressure shall be used to drive all valve functions. No electric hook-up shall be required. Control valve shall incorporate four operational cycles including; service, brine draw, slow rinse, and a combined fast rinse and brine refill. Service cycle shall operate in a down-flow direction. The brine cycle shall flow up-flow, opposite the service flow, providing a countercurrent regeneration. Control valve shall contain a fixed orifice eductor nozzle and self-adjusting backwash flow control. The control valve will prevent the bypass of hard water to service during the regeneration cycle.

Media Tanks

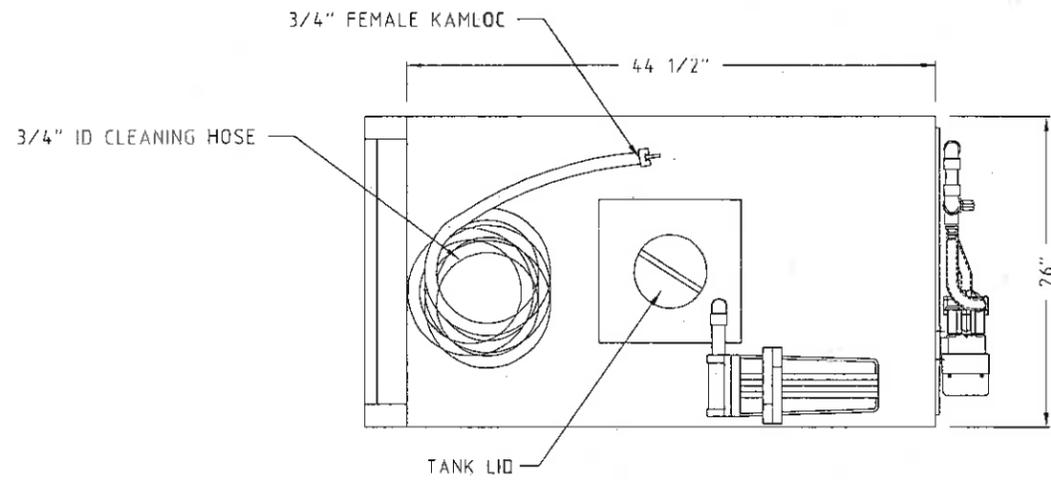
The tanks shall be designed for a maximum working pressure of 125 psi and hydrostatically tested at 300 psi. Tanks shall be made of polyethylene and reinforced with a fiberglass wrapping. Each tank shall include a 4.0 in. threaded top opening and a 2.5" x 4.0" tank adapter fitting. Each tank shall be NSF approved. Upper and lower distribution system shall be of a slot design. Distributors will provide even flow of regeneration water and the collection of processed water.

Conditioning Media

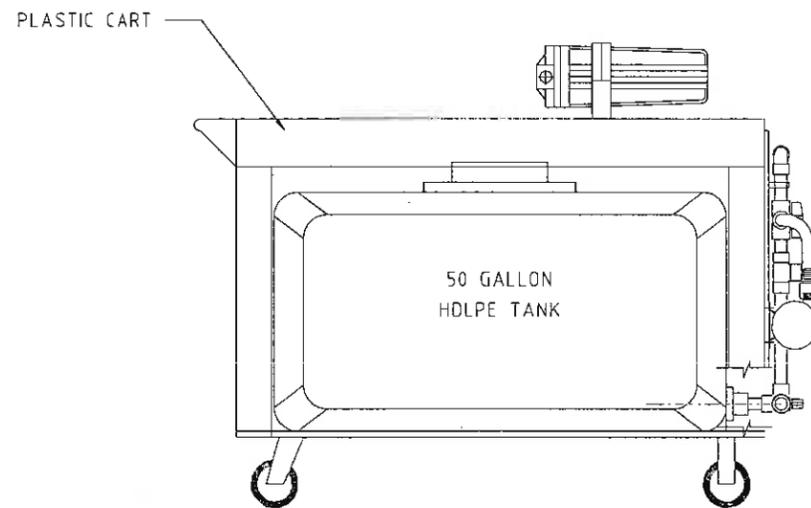
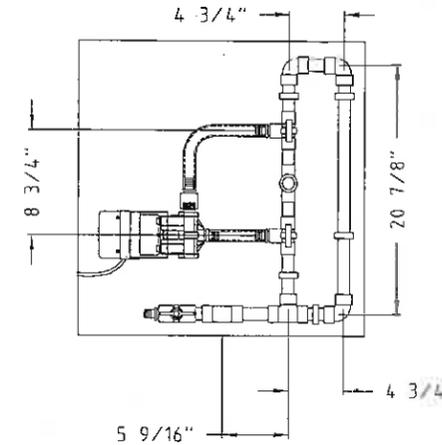
Each softener shall include a non-solvent, high capacity cation resin having a minimum exchange capacity of 30,000 grains/ft³ when regenerated with 15.0 lbs/ft³. The media shall be solid, of a proper particle size and shall contain no plates, shells, agglomerates or other shapes, which might interfere with the normal function of the water softener.

Brine System

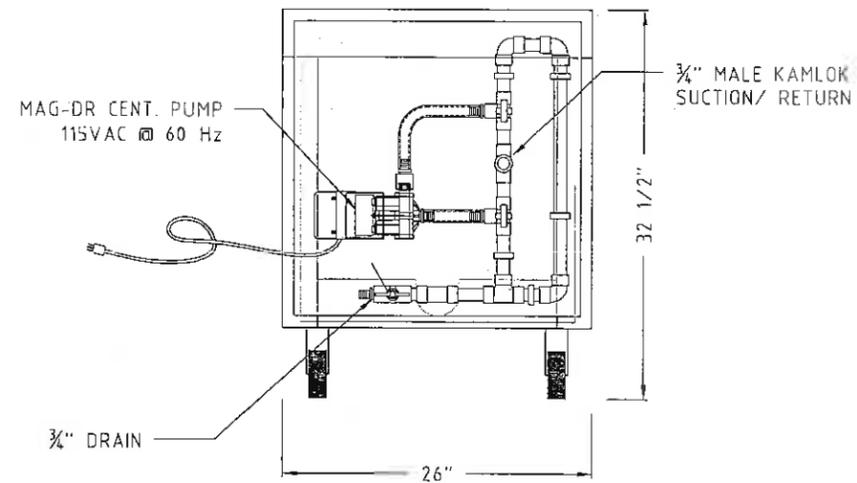
A combination salt storage and brine production tank shall be manufactured of corrosion resistant, plastic. The brine tank shall have a chamber to house the brine valve assembly. The brine float assembly shall allow for adjustable salt settings and shall provide for a shut-off to the brine refill. The brine tank shall include a safety overflow connection to be plumbed to a suitable drain.



PLAN VIEW



SIDE ELEVATION



FRONT ELEVATION

△				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, 95026 DRAWN BY: C. ROBERTSON CHECKED BY:	PROJECT: PROCESS SOLUTIONS INC. 1077 DELL AVE. CAMPBELL, CA. 95026 SUBJECT: ONSITE SODIUM HYPOCHLORITE GENERATOR CELL CLEANING CART GENERAL ARRANGEMENT		
△			DATE: 4-17-08				DATE: 4-17-08	
△		JCR	INITIAL RELEASE				DATE:	DATE:
REV. △	DATE:	BY:	DESCRIPTION				SCALE: N/A	SIZE: D

Need a proven touch screen graphical terminal?

The Magelis™ XBT GT.

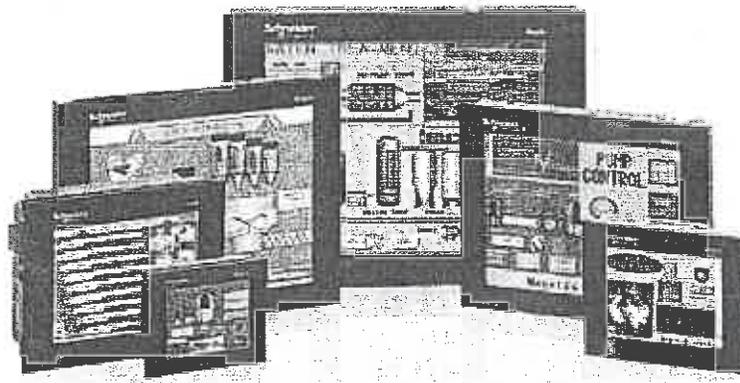


Make the most of
your energy™

Schneider
Electric

Magelis XBT GT

Crystal Clear and Life Like



- Six screen sizes
- Small: 3.8"
 - Medium: 5.7"
 - Large: 7.5", 10.4", 12.1" and 15"

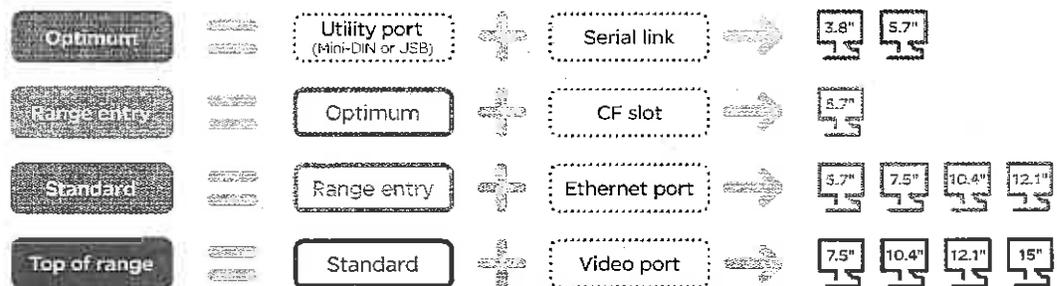
The Magelis XBT GT graphic terminals are the cornerstone of the Magelis line of HMIs. Available in sizes from 3.8" to 15", they feature crystal clear, bright displays and the flexibility to fit your application needs. They also feature complete openness by utilizing the Transparent Ready®* platform to improve your system connectivity, performance and productivity.

Compact, simple and rugged, the Magelis XBT GT is ready when and where you need them.

Make the most of your energy by utilizing Magelis HMI products to monitor, control and manage your critical business applications.

*Thanks to Ethernet TCP/IP and Web technologies, Transparent Ready products, equipment and services provide solutions for optimizing electrical distribution and automation & control performances.

> Magelis XBT GT: four function levels (depending on the number and type of interfaces)



Range

Simplifying Communications

Maglis XBT GT terminals integrate Schneider Electric's proven Transparent Ready technologies, which enables them to simplify their integration to your other automation equipment and enterprise systems.

> Versatile communication

- 1 or 2 serial links with several physical interfaces (RS232C-RS422-RS485) to connect automated systems
- Ethernet to improve external exchanges and access numerous Web services:
 - FTP server to efficiently transfer files with Vijeo Designer
 - Web Gate
 - Web system page server to control applications, with remote terminal diagnostics from the navigator of your PC
- HTML page navigator function
- Multilink on 2 serial ports and an Ethernet option for simultaneous equipment control
- Numerous programmable controller connections and a range of protocols for greater flexibility
- Either USB gateways or cards for Modbus® Plus, Fipio, Profibus DP and DeviceNet™ field bus connections

Maglis XBT GTs are designed to facilitate your operator dialog operations.



- Ethernet
- 2 USB ports
- 1 video input, 1 audio input/output
- Auxiliary terminal block
- 2 serial links
- Compact Flash card

> USB port

- Connect your peripherals such as printer, barcode reader, etc.
- Multiply your connections via a USB hub
- Save time by benefiting from the instant "plug & play" connection and fast loading of your data (speed 12Mbps, 100 times faster than serial link)

> From 7.5", an auxiliary interface

- Connect your equipment such as push button, pilot light, klaxon, rotating beacon, speaker, etc.
- Use the plug-in terminal block with 3 digital outputs (run, system alarm, event buzzer), a reset input and a "sound" output

The Magelis XBT GT range provides users with a combination of elegant displays and impressive power.



- > More realistic and detailed images supporting video
 - * Screens TFT 65,536 colors, STN 4,096 colors or monochrome 8- or 16-level, depending on model
 - * A sensitive analog touch pad for improved transparency and more precise control

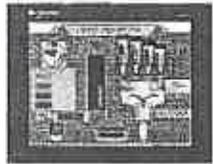
- > A wide choice of displays
 - * Multi-window capability with pop-up management
 - * Adjustable contrast and brightness
 - * Choice of around 40 fonts to respond to international applications
 - * Three flashing speeds to highlight synoptic critical zones (available from 5.7")



- > Real cinema

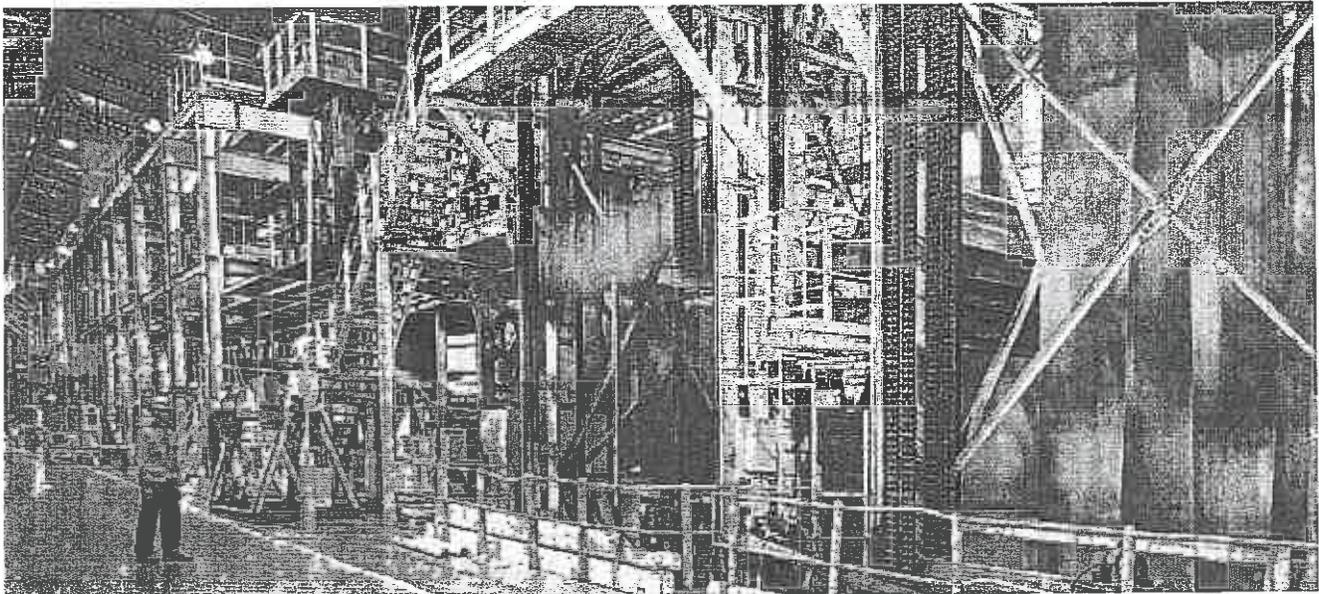
Designed for multimedia, the Magelis XBT GT range offers impressive processing capacity...

- * RISC 64-bit processor for ultra-fast response times
- * High memory capacity 8MB, 16MB or 32MB depending on model, to collect large amounts of data, increase the number of embedded languages and manage complex applications
- * Backup memory 512KB

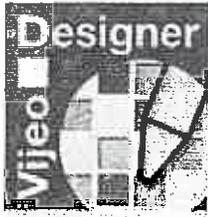


Available on the Vijeo Designer software version, take advantage of the video view and record function...

- * Video
 - * Audio
 - * Speakers
 - * Record function
- * Real time image viewing from a camera connected to your Magelis XBT GT
 - * MPEG encoding/decoding of your sequences with recording on demand on your Magelis XBT GT
 - * Simultaneously record sequences/view real-time images
 - * Jpeg recording for viewing your screen shots



Whether you are a machine manufacturer, operator or user, Magelis XBT GT makes things easy for you at all stages of your HMI application life cycles.



Vijeo Designer, a single software package for the entire Magelis XBT G/GT/GK/GTW and /PC range.

> Easy and quick configuration

Optimize your investments!

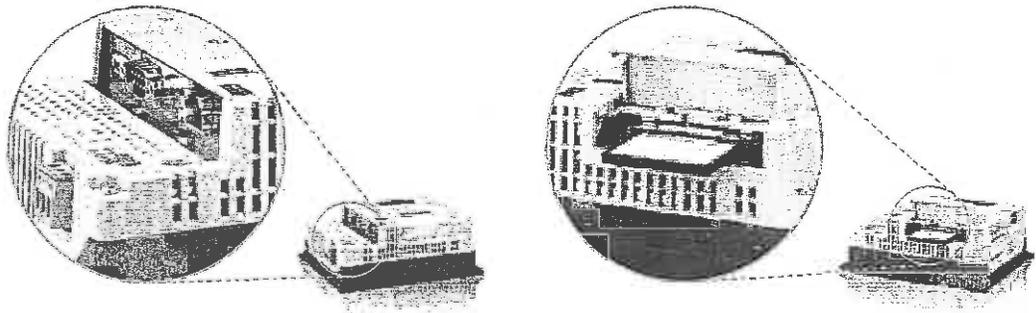
- User-friendly, multi-window, six-language design workshop
- Multi-language, supporting Byzantine, Cyrillic, Chinese, etc.
- Library of over 4,000 objects, customizable and configurable
- PC simulation
- Secure data sharing between 8 terminals
- Video view/record

> Simplified installation

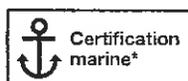
- A range of highly compact products that easily find space in your machines
- IP65 application front-face, no-tool, spring-clip assembly
- Extremely simple “plug & play” connection, plug-in 24VDC supply connector
- USB support delivered with terminal to ensure rugged cable connections
- Dimensions identical to almost all previous ranges, otherwise mechanical adapters to assure trouble-free substitution
- Upgradable, Magelis XBT GT 12" and 15" offer consistent identical dimensions to the Magelis /PC for flexible architectures

> Easy maintenance

- Compact flash card up to 1GB to store applications, recipe and history files, images and video sequences
- An USB memory stick to download your application
- A clever push button-size accessory to transfer USB port to the front face of your terminal while assuring IP65 protection
- Front face LED to view terminal state at a glance
- Upward compatibility with the Magelis XBT G range



Conforming to international standards, this product is also manufactured in conformity with the requirements of the RoHS, (Restriction of Hazardous Substances).



C-Tick



Catégorie 3



Selection guide:

Magelis XBT GT small & medium

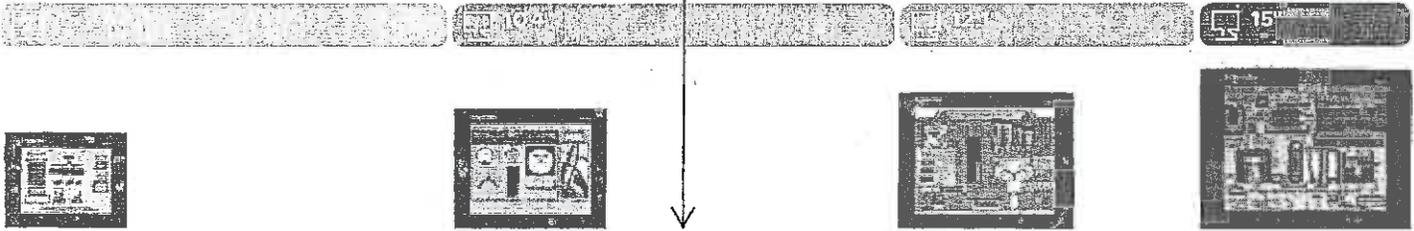


	XBT GT 1100 XBT GT 1130	XBT GT 1105 XBT GT 1135	XBT GT 1335	XBT GT 2110	XBT GT 2120 XBT GT 2130	XBT GT 2220	XBT GT 2330	
Screen	Resolution/type	QVGA/STN Amber & Red	QVGA/STN Amber & Red	QVGA/STN Color	QVGA/STN Blue	QVGA/STN Gray	VGA/STN Color	
	Color	8-levels		256 colors	16-levels		65 536 colors	
	Backlighting	DEL, 50,000 h		DEL, 40,000 h	CFL, 58,000 h		CFL, 75,000 h	
	Entry mode	Bitmap touch pad 8 x 8 + 6 function keys		Analog touch pad, resolution 1,024 x 1,024	Analog touch pad, resolution 1,024 x 1,024			
Memory	Application/backup	8MB/512KB	32MB/512KB	16MB/128KB	16MB/512KB			
	Additional	No			No	Compact flash card: 128KB --> 1GB		
	Supply	24VDC			24VDC			
Interface	Serial	COM1 RJ45 (RS485-232C)			COM1 SubD9 (RS232C-422) & COM2 RJ45 (RS485)			
	USB	No	1 port Type A master		1 port Type A master			
	Ethernet	1 port 10 Base T except XBT GT 1100	1 port 10/100 Base T except XBT GT 1105	1 port 10/100 Base T	No	1 port 10/100 Base T except XBT GT 2120	No	1 port 10/100 Base T
	Auxiliary	No			No			
	Multimedia	No			No			
	External dimensions (mm)	130 x 104 x 41	130 x 104 x 40	130 x 104 x 40	168 x 135 x 60			

Accessories

Description	Reference	
Compact flash card	128MB	XBTZGM128
	256MB	XBTZGM256
	512MB	MPCYN00CFE00N
	1GB	MPCYN00CF100N
Spring clips	XBTZ3002	
USB download cable, XBT GT	XBTZG965	
USB port extension cable	XBTZGUSB	
Mechanical adaptor for substitution	XBT F032*** --> XBTGT2000	XBTZGCO1
	XBTG2110 --> XBTGT2110	XBTZGCO2
	XBT F034*** --> XBTGT5000	XBTZGCO3
	XBTG5330 --> XBTGT5330	XBTZGCO4
Connection cable for Twido/Modicon TSX Micro/Modicon Premium	XBTZ9780	
Connection cable for Modicon Quantum	990NAA26320	
Connection cable for Modicon M340 and Altivar speed drives	XBTZ9980	
Connection cable for Advantys STB	STBXCA4002	
Card for Profibus DP bus connection	XBTZGPDP	
Card for Device Net field bus connection	XBTZGDVN	
USB gateway for Modbus Plus field bus connection	XBTZGUMP	
USB gateway for Fiolo field bus connection	TSXCUSBFIP	

Magelis XBT GT large



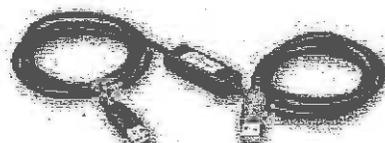
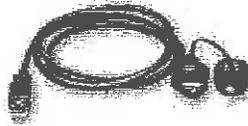
XBT GT 4230	XBT GT 4330	XBT GT 4340	XBT GT 5230	XBT GT 5330	XBT GT 5340	XBT GT 6330	XBT GT 6340	XBT GT 7340
VGA/STN	VGA/TFT		VGA/STN	VGA/TFT		SVGA/IFT		XGA/TFT
Color	Color		Color					
4,096 colors	65,536 colors		4,096 colors	65,536 colors				
CFL, 54,000 h				CFL, 50,000 h				
Analog touch pad, resolution 1,024 x 1,024								
32MB/512KB								
Compact flash card: 128KB --> 1GB								
24VDC								
COM1: SubD9 (RS232C-422) & COM2 RJ45 (RS485)								
1 port Type A master			2 ports Type A master					
1 port 10/100 Base T								
3 digital outputs and 1 digital output, 1 speaker output								
No	1 video/sound input		No	1 video/sound input		No	1 video/sound input	
215 x 170 x 60			313 x 239 x 56	271 x 213 x 57		313 x 239 x 56		395 x 294 x 60

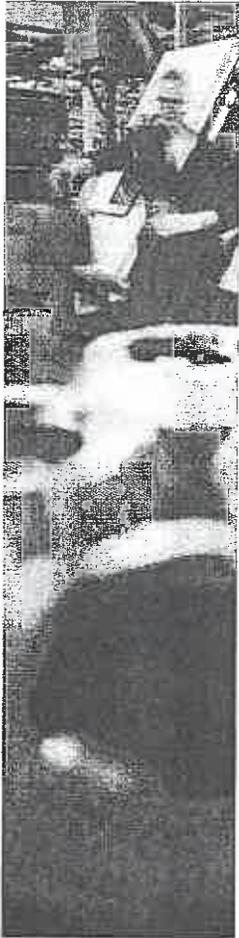
Compact flash card

990NAA26320

XBTZGUSB

XBTZG935





Talk to someone you can trust

It's crystal clear to anyone who uses one of our human machine interfaces that we became the world leader in bright, detailed, easy-to-read HMIs by understanding the needs of our customers. Easy installation and setup, simple operation and brilliant, high-visibility displays are just some of the features engineered into every Magelis HMI.

From the smallest text display to the most sophisticated industrial PC, Schneider Electric's Magelis HMI interfaces give you a clear window into your operations. Not only letting you know when all systems are good, but more importantly, helping to keep them that way.

By focusing on the needs of our customers, we've earned a reputation for dependability, innovation and reliability that is the defining characteristic of Schneider Electric team members from around the world. This includes product specialists, industry experts, distributors, partners and the countless other members of the Schneider Electric family. Each is tasked with continuing our mission to help you make the most of your energy.

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Whatever your need Schneider Electric has the solution. Contact your local sales representative today to learn how Schneider Electric can improve operational performance and help your business to achieve a competitive advantage.

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Schneider Electric - North American Operating Division

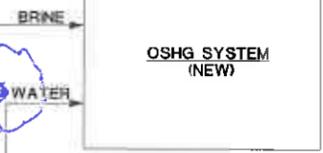
Automation and Control Center of Excellence
8001 Knightdale Boulevard
Knightdale, NC 27545
Tel: 919-266-3671
www.us.Schneider-Electric.com



SALT FILL

BRINE MAKER (EXISTING)

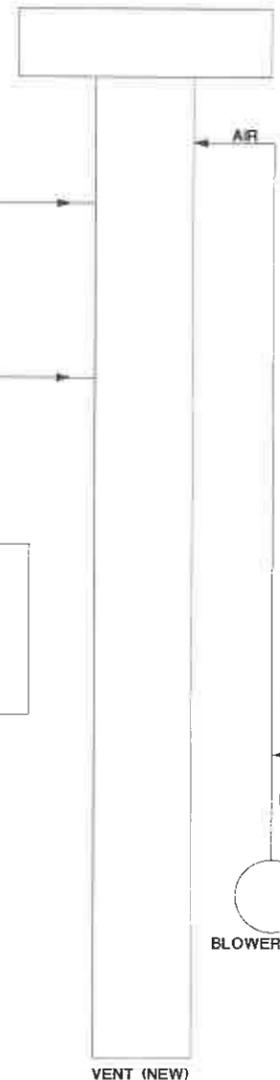
BRINE FOR REGENERATION



OSHG SYSTEM (NEW)

BRINE

SOFT WATER



BLOWER (NEW)

BLOWER (NEW)

BLOWER (EXISTING)

BLOWER (EXISTING)

VENT (NEW)

AIR



HYPOCHLORITE STORAGE TANK #1 (EXISTING)

VENT



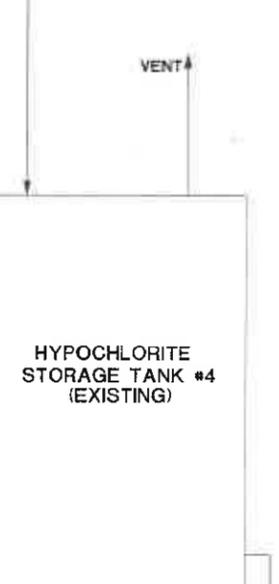
HYPOCHLORITE STORAGE TANK #2 (EXISTING)

VENT



HYPOCHLORITE STORAGE TANK #3 (EXISTING)

VENT



HYPOCHLORITE STORAGE TANK #4 (EXISTING)

VENT

BOOSTER PUMP W/BYPASS VALVE WILL BE ADDED HERE IF INLET WATER PRESSURE TO OSHG IS < 50 PSI

POTABLE WATER

WATER SOFTENERS (NEW)

TO INJECTION POINT (PRE)

TO INJECTION POINT (POST)

TRIPLE PUMP SKID (EXISTING)

TRIPLE PUMP SKID (EXISTING)

TO RAS @ EAST WWTP

TB #014a

REV	DATE	BY	DESCRIPTION
1	03/24/2015	F.J.	RELEASED FOR PROPOSAL

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. JAVANSHIR
 CHECKED BY:
 SCALE: N/A
 SIZE: D

PROJECT:	MARGATE WATER TREATMENT PLANT
SUBJECT:	ON-SITE HYPOCHLORITE GENERATOR 1500 PPD SYSTEM PROCESS FLOW DIAGRAM
DWG #	P-2293-MC0001-PI
SHEET	1 OF 3
REV.	1

MARGATE , FL

WATER TREATMENT PLANT

MC-1500 (1500 LBS/ DAY) RACK MOUNTED
ON-SITE SODIUM HYPOCHLORITE GENERATION SYSTEM

PIPING & INSTRUMENTATION DIAGRAM

   				<small>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 operations, 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.</small>	 <small>A USGI SOLUTIONS COMPANY</small>	PROJECT: MARGATE WATER TREATMENT PLANT	
						1077 DELL AVE, SUITE A, CAMPBELL, CA. 95008	SUBJECT: ON-SITE HYPOCHLORITE GENERATOR 1500 PPD SYSTEM PIPING & INSTRUMENTATION DIAGRAM
	03/24/2015	F.J.	RELEASED FOR PROPOSAL			DRAWN BY: F. JAVANSHIR	DATE: 03/24/2015
	REV. 	DATE:	BY:			CHECKED BY:	DATE:
TB #014a				SCALE: N/A	SIZE: D	DWG # P-2293-MC001-P1 SHEET 1 OF 3 REV. 1	

VALVES

	BALL VALVE
	BUTTERFLY VALVE
	LOCKING BALL VALVE
	DIAPHRAGM VALVE
	CHECK VALVE
	PRESSURE REGULATING VALVE
	PRESSURE RELIEF VALVE
	SOLENOID VALVE
	NEEDLE VALVE
	ACTUATED DIAPHRAGM VALVE
	ACTUATED BALL VALVE
	BUTTERFLY VALVE

PIPING CONNECTIONS

	PIPE REDUCER
	CAPPED LINE
	UNION
	FLANGE CONNECTION
	FLEX CONNECTOR/ VIBRATION ISOLATION
	GAUGE ISOLATOR
	FLOW ARROW
	DRAIN CONNECTION
	SANITARY CLAMP
	SOURCE LEADER
	LINE CONTINUATION TAG

INSTRUMENTATION

	PRESSURE INDICATOR
	PANEL MOUNT PRESSURE INDICATOR
	FLOW ELEMENT
	LEVEL TRANSMITTER
	ANALYTICAL ELEMENT
	PLC TAG REFERENCE
	PLANT HMI TAG REFERENCE

EQUIPMENT

	CARTRIDGE FILTER HOUSING
	FLOW INDICATOR/ ROTO METER
	CENTRIFUGAL PUMP
	BLOWER
	BRINE PUMP

LINE TYPES

	PROCESS FLOW, MAIN FLOW
	LOW CURRENT/ SIGNAL WIRING
	FUTURE EQUIPMENT, LINES, VALVES, ETC.
	SINGLE PHASE WIRING
	3 PHASE WIRING
	SKID LIMITS

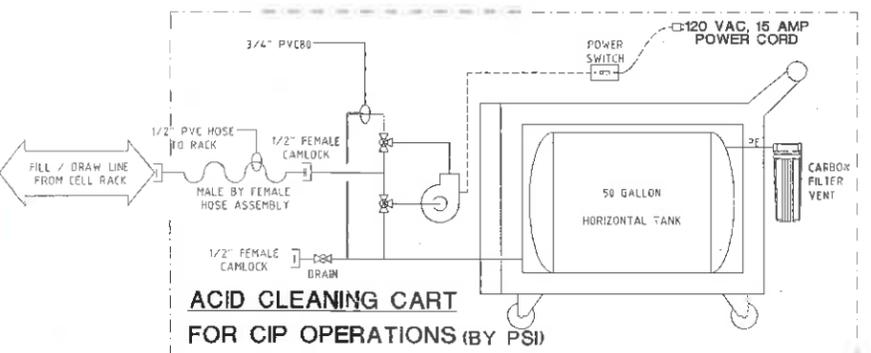
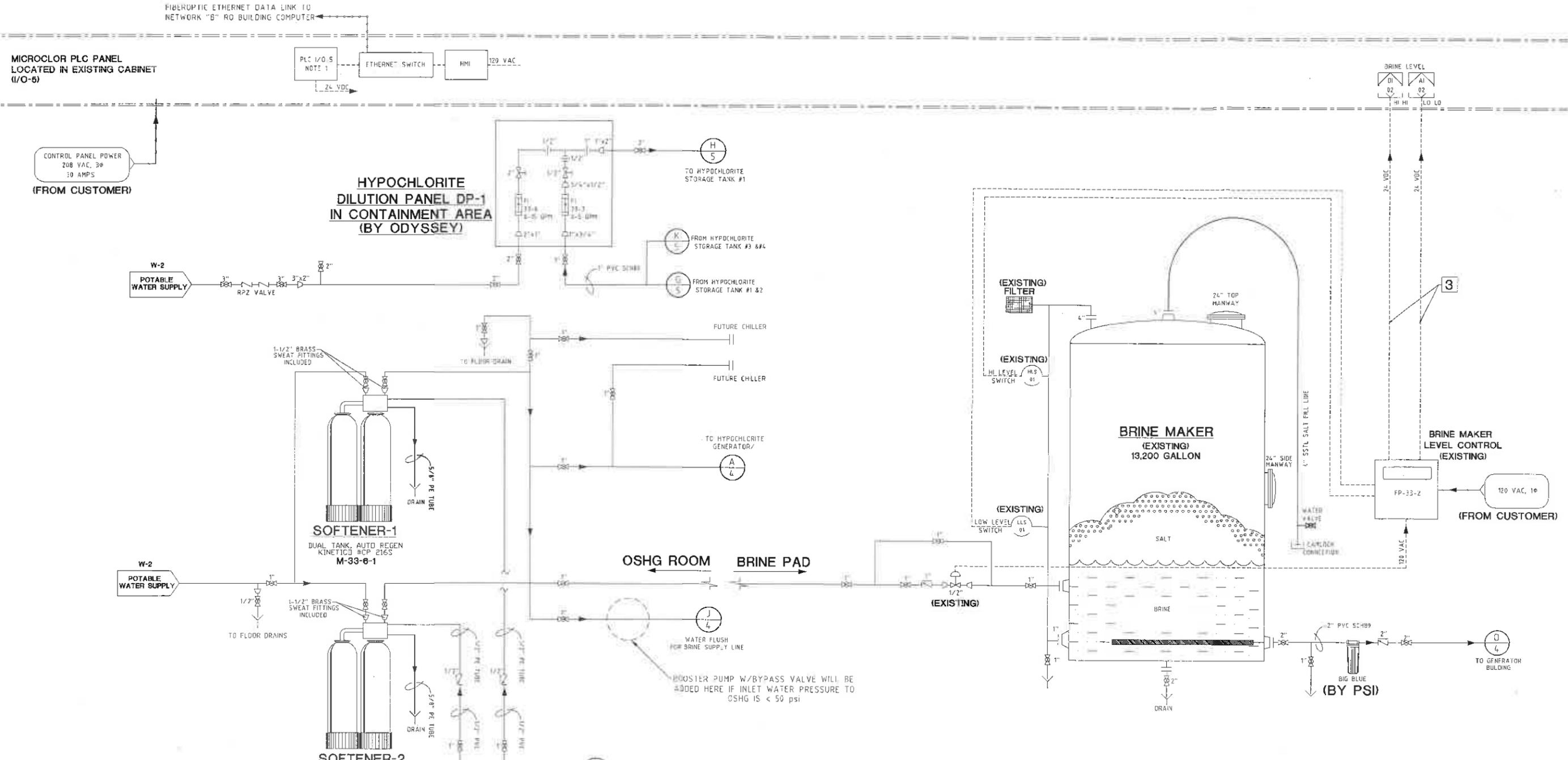
ABBREVIATIONS

AFS	AIR FLOW SWITCH
AC	ACTIVATED CARBON
BFV	BUTTERFLY VALVE
AE	ANALYTICAL ELEMENT
AI	ANALYTICAL INDICATOR
AIT	ANALYTICAL INDICATOR TRANSMITTER
AL	ALARM LIGHT
CP	CHEMICAL PUMP
CV	CHECK VALVE
DPS	DIFF. PRESSURE SWITCH
DV	DIAPHRAGM VALVE
FE	FLOW ELEMENT
FH	FILTER HOUSING
FI	FLOW INDICATOR
FIQ	FLOW INDICATOR/ TOTALIZER
FIT	FLOW INDICATOR TRANSMITTER
GM	GALLON METER METER
LS	LEVEL SWITCH
MV	MOTORIZED VALVE
P	PUMP
PI	PRESSURE INDICATOR
PR	PRESSURE REGULATING VALVE
PRV	PRESSURE RELIEF VALVE
PS	PRESSURE SWITCH
S	SOFTENER
SP	SAMPLE POINT
T	TANK
TE	TEMPERATURE ELEMENT
TI	TEMPERATURE INDICATOR
V	VALVE

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						SUBJECT:	ON-SITE HYPOCHLORITE GENERATOR 1500 PPD SYSTEM PIPING & INSTRUMENTATION DIAGRAM									
						DRAWN BY:	F. JAVANSHIR	DATE:	03/24/2015							
						CHECKED BY:		DATE:								
					SCALE:	N/A	SIZE:	D	DWG #	P-2293-MC0001-PI	SHEET:	2	OF:	5	REV:	1

TB #014a

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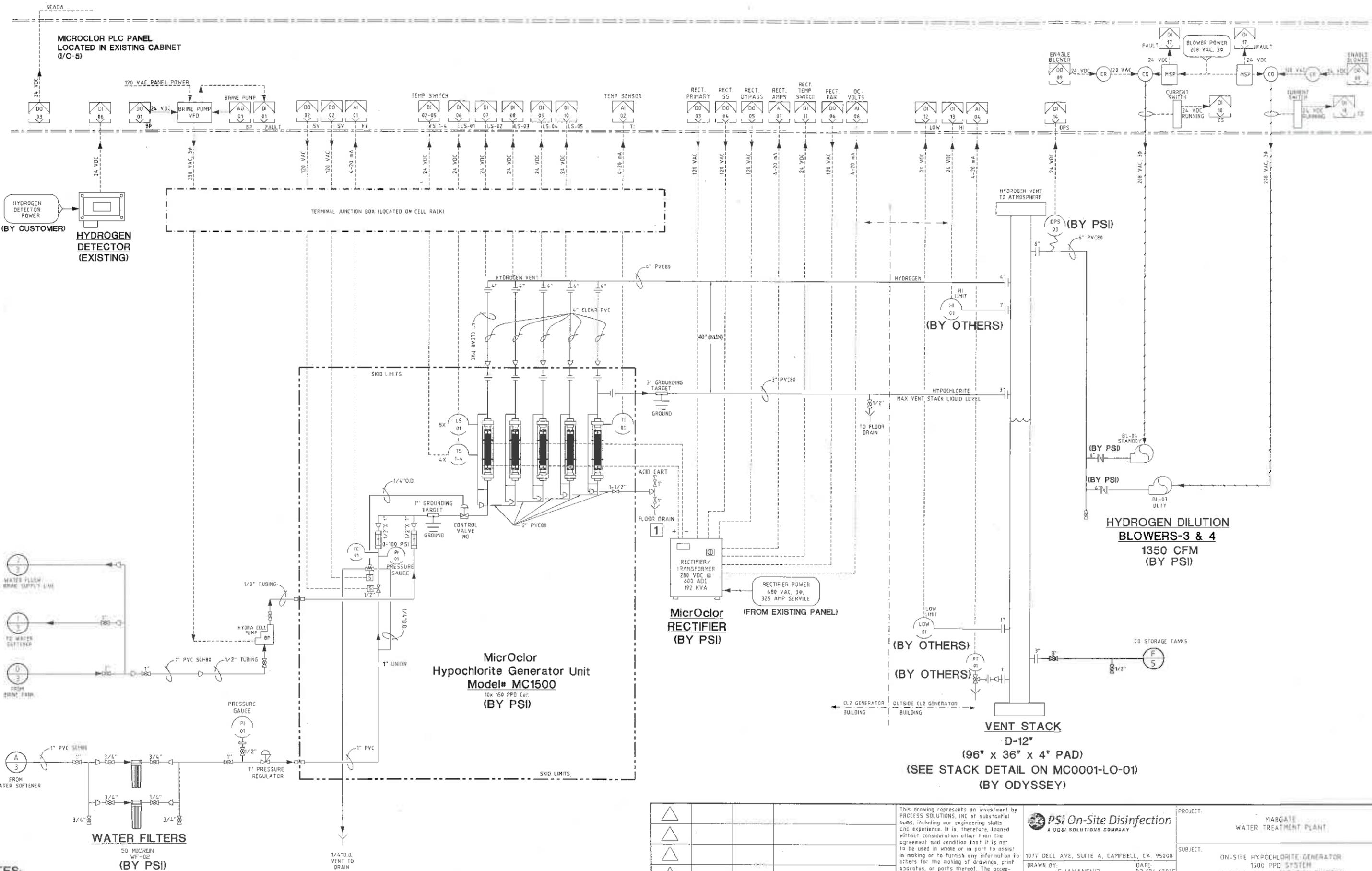


NOTES:

- 1 PLC SHALL BE ALLEN BRADLEY MICROLOGIX 1400.
- 2 ALL PIPING SHALL BE SCHEDULE 80 PVC. OUTDOOR PIPING SHALL BE PAINTED.
- 3 THE HI-HI AND LO-LO SIGNALS FROM THE BRINE MAKER DO NOT CURRENTLY RUN TO THE PLC. ODYSSEY WILL ATTEMPT TO RUN THESE OUTPUTS TO THE PLC IF THERE IS ROOM IN THE EXISTING SIGNAL WIRE CONDUITS FROM THE HYPOCHLORITE STORAGE AREA.

△					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.	 A UGI SOLUTIONS COMPANY	PROJECT:	MARGATE WATER TREATMENT PLANT	
△				DRAWN BY:			F. JAVANSHR	DATE:	03/24/2015
△				CHECKED BY:				DATE:	
△	03/24/2015	F.J.	RELEASED FOR PROPOSAL	SCALE:			N/A	SIZE:	D
1				DWG #			P-2293-MC0001-PI	SHEET	3 OF 5
REV. △	DATE:	BY:	DESCRIPTION:				REV. 1		

TB #014a



**MICROCLOR PLC PANEL
LOCATED IN EXISTING CABINET
(I/O-5)**

HYDROGEN DETECTOR
POWER
(BY CUSTOMER)

**HYDROGEN
DETECTOR
(EXISTING)**

TERMINAL JUNCTION BOX (LOCATED ON CELL RACK)

**MicroOclor
Hypochlorite Generator Unit
Model# MC1500**
10x 150 PPD Cell
(BY PSI)

**MicroOclor
RECTIFIER
(BY PSI)**

RECTIFIER POWER
480 VAC, 30,
325 AMP SERVICIL
(FROM EXISTING PANEL)

**HYDROGEN DILUTION
BLOWERS-3 & 4**
1350 CFM
(BY PSI)

VENT STACK
D=12"
(96" x 36" x 4" PAD)
(SEE STACK DETAIL ON MC0001-LO-01)
(BY ODYSSEY)

NOTES:
1 DRAIN VALVE DRAINS ALL CELLS.

TB #014a

△				
△				
△				
△	03/24/2015	F. J.	RELEASED FOR PROPOSAL	
REV. △	DATE	BY:	DESCRIPTION	

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PSI On-Site Disinfection
A USG SOLUTIONS COMPANY

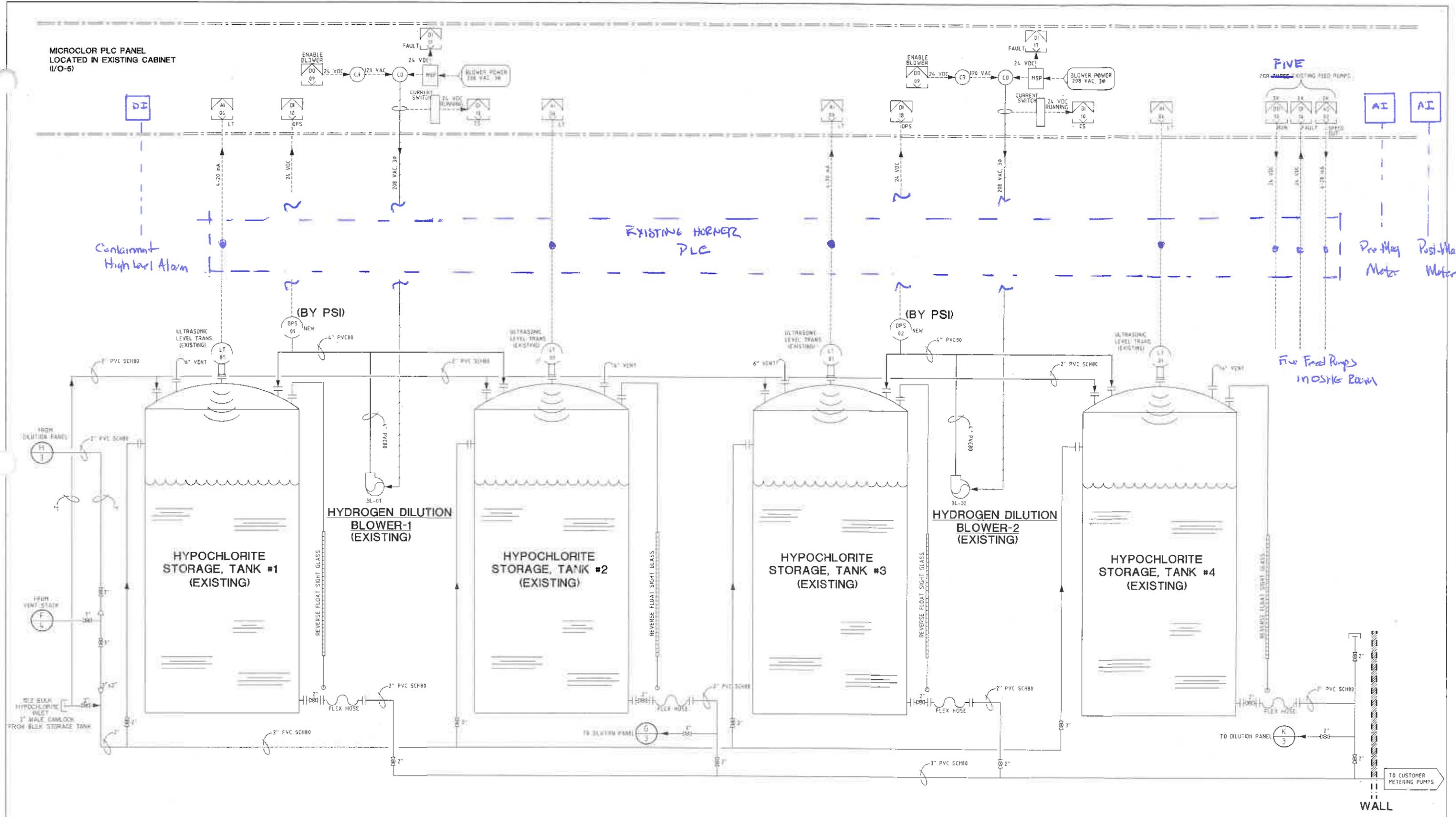
1077 DELL AVE, SUITE A, CAMPBELL, CA. 95008
DRAWN BY: F.JAVANSHIR
CHECKED BY:
SCALE: N/A
DATE: 03/24/2015
DATE:

PROJECT: MARGATE WATER TREATMENT PLANT

SUBJECT: ON-SITE HYPOCHLORITE GENERATOR 1500 PPD SYSTEM PIPING & INSTRUMENTATION DIAGRAM

DWG # P-2293-MC0001-PI SHEET 4 OF 5 REV 1

MICROCLOR PLC PANEL
LOCATED IN EXISTING CABINET
(I/O-5)



TB #014a

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1	03/24/2015	F.J.	RELEASED FOR PROPOSAL

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PSI On-Site Disinfection
A PSI SOLUTIONS COMPANY

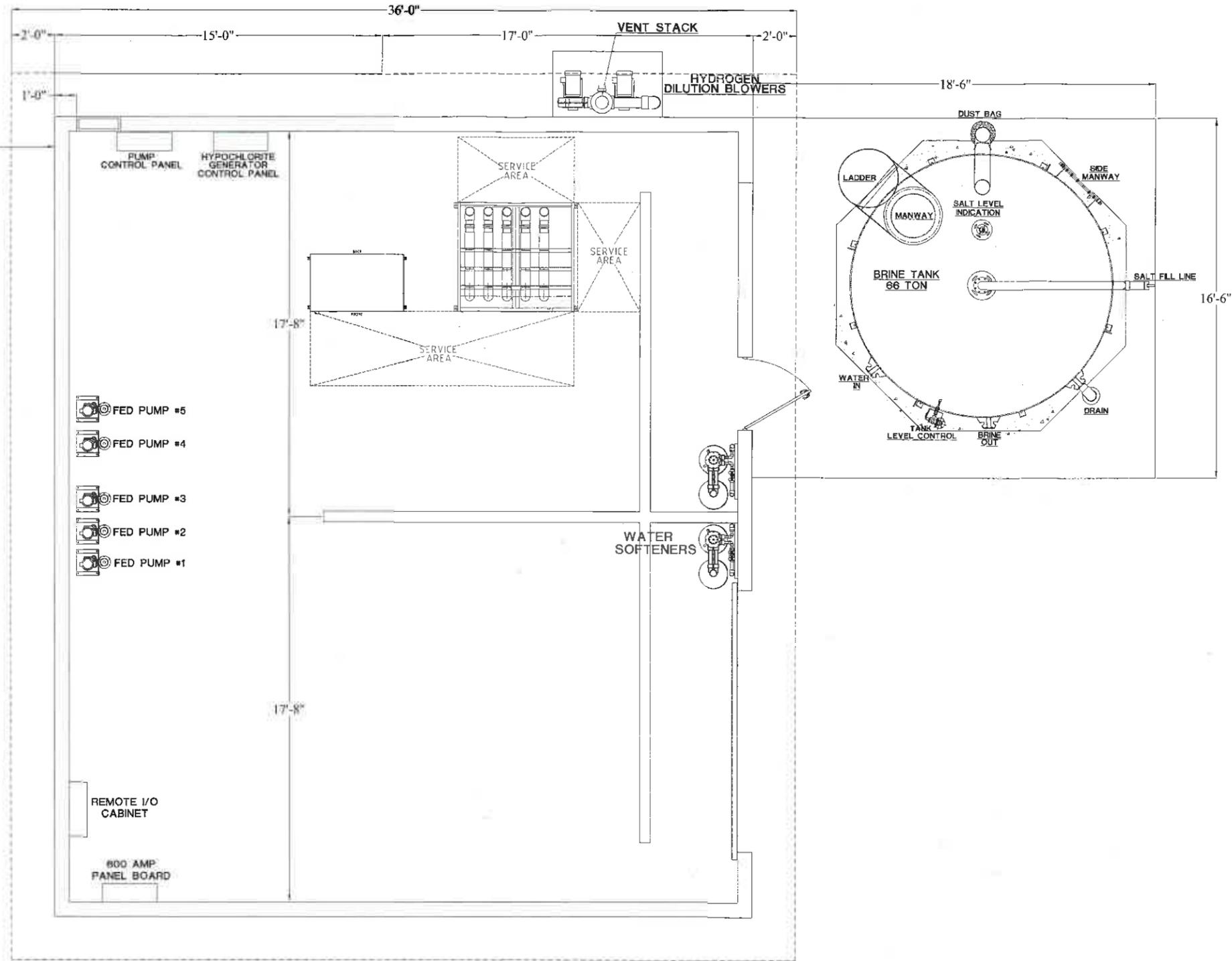
1077 DELL AVE, SUITE A, CAMPBELL, CA. 95008
 DRAWN BY: F JAVANSHIR
 CHECKED BY:
 SCALE: N/A

DATE: 03/24/2015
 DATE:

SIZE: **D**

PROJECT:	MARGATE WATER TREATMENT PLANT
SUBJECT:	ON-SITE HYPOCHLORITE GENERATOR 1500 PPD SYSTEM PIPING & INSTRUMENTATION DIAGRAM
DWG #	P-2293-MC0001-PI
SHEET	5 OF 5
REV.	1

35' X 35' X 8'-9" HIGH CONTAINMENT WALL



HYDROGEN DILUTION BLOWERS

LIT 10.6.1
LIT 10.6.2
LIT 10.6.3
LIT 10.6.4

ACCESS LADDER

FED PUMP #5
FED PUMP #4
FED PUMP #3
FED PUMP #2
FED PUMP #1

REMOTE I/O CABINET
600 AMP PANEL BOARD

WATER SOFTENERS

BRINE TANK 66 TON

TB #014a REV. Δ DATE: BY: DESCRIPTION	Δ			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. JAVANSHIR CHECKED BY: SCALE: 3/8"=1'-0"	PROJECT: MARGATE WATER TREATMENT PLANT SUBJECT: ON-SITE HYPOCHLORITE GENERATOR 1,500 PPD SYSTEM EQUIPMENT LAYOUT DWG # P-2293-MC0001-LO SHEET 1 OF 2 REV A
	Δ					
	Δ					
	Δ	03/27/2015	F. J.			
					DATE: 03/27/2015 DATE: SIZE: D	



ENTITY: CITY OF MARGATE

**PROJECT NAME: WATER TREATMENT PLANT ON-SITE SODIUM HYPOCHLORITE GENERATION
EQUIPMENT REPLACEMENT**

BID/CONTRACT NO.: 2015-006

SUBJECT: 1.06(12) CELL DATA

As part of its proposal, Odyssey Manufacturing Co. is providing the following calculations showing all relevant cell data. Additional information on the cells is found on the cut sheet contained herein:

- The MicroClor 1,500-ppd OSHG system utilizes a cell array consisting of two banks of five (5) 150 ppd cells for a total of ten (10) cells per system. They are configured electrically and hydraulically in series.
- The nominal DC amps for a 1,500-ppd OSHG Unit is 450 DC Amps.
- The 1,500-ppd cells have thirteen (13) bi-polar plates with two additional terminating electrodes in each cell pack. The combination of electrodes results in fourteen (14) active cell junctions.
- All plates are 12" x 16" x 2 banks of cells or 384 square inches total.

Thus, the current density or Amps per square inch (ASI) is as follows:

- $450 \text{ DC Amps} / 384 \text{ square inches} = 1.17 \text{ ASI}$



ODYSSEY
MANUFACTURING CO.

ENTITY: CITY OF MARGATE

**PROJECT NAME: WATER TREATMENT PLANT ON-SITE SODIUM HYPOCHLORITE GENERATION
EQUIPMENT REPLACEMENT**

BID/CONTRACT NO.: 2015-006

**SUBJECT: 1.06(13) DESCRIPTION OF BLAST SHIELD OR AFFIDAVIT STATING IT IS NOT
REQUIRED**

Odyssey Manufacturing hereby certifies that the MicroClor OSHG system does not require a blast shield because it has never had an explosion or overpressure incident leading to cell fracturing. This is due to the fact that its state-of-the-art vertical cell design and the fact that each cell is vented to atmosphere allows the hydrogen produced in the electrolysis process to easily escape the cell so it does not build up and cause the cell to explode or fracture.

Signature

General Manager

Title

3.24.15

Date

Attest

Secretary

Title

3.24.15

Date



ODYSSEY
MANUFACTURING CO.

ENTITY: CITY OF MARGATE

**PROJECT NAME: WATER TREATMENT PLANT ON-SITE SODIUM HYPOCHLORITE GENERATION
EQUIPMENT REPLACEMENT**

BID/CONTRACT NO.: 2015-006

**SUBJECT: 1.06(14) DESCRIPTION AND DRAWINGS OF PROPOSED CELL REMOVAL AND
INSTALLATION HOIST AND SLING EQUIPMENT OR AFFIDAVIT STATING IT IS NOT
REQUIRED BECAUSE CELLS WEIGH LESS THAN 125#**

Odyssey Manufacturing hereby certifies that the MicrOclor OSHG system does not require an installation hoist and sling equipment because its cells weigh less than 125#.

Signature

General Manager

Title

3-25-15

Date

Attest

Secretary

Title

3-25-15

Date



ENTITY: CITY OF MARGATE

**PROJECT NAME: WATER TREATMENT PLANT ON-SITE SODIUM HYPOCHLORITE GENERATION
EQUIPMENT REPLACEMENT**

BID/CONTRACT NO.: 2015-006

SUBJECT: 1.06(15) PREVENTATIVE AND CORRECTIVE MAINTENANCE SERVICES

Odyssey Manufacturing Co. proposes to perform all required preventative and corrective maintenance during the initial three-year warranty period. Note that this does not relieve the Owner from doing maintenance on their systems or performing their own inspections and/or analysis. Odyssey's services include a minimum of a quarterly visit by a qualified factory technician to look at all aspects of the customer's OSHG system including the following:

- Visual inspection of all OSHG Equipment and related equipment and repair any leaks
- Inspection and Replacement of Brine and Water filters and strainers (Owner to purchase filters and change as they see necessary as well)
- Check & Clean Inlet Screens on Blowers
- Check & Clean Ventilation Filters for Control Panel and TR Set
- Clean equipment surfaces
- Verify that both titanium targets are grounded to OSHG frame and that the frame is properly grounded to system ground
- Inspect and clean optical sensors on electrolyzer cell loop
- Check and torque all terminals and cable connections on the rectifier and electrolytic cell
- Open Control Panel and Transformer Rectifier cabinets and do inspection to identify problems; tighten and fasteners or connections as required and clean and vacuum out cabinets
- Measure before and after softener water hardness
- Measure with anemometer air flow CFM for all three blower outputs
- Measure specific gravity of brine
- Measure OSHG sodium hypochlorite strength
- Record, analysis and fine tune OSHG operating parameters:

- DC Amperage
 - DC Voltage
 - Inlet Water Temperature
 - Brine Flow Rate
 - Water Flow Rate
 - Inlet Water Pressure to OSHG
 - Inlet Water Hardness
 - Hypochlorite Strength
 - Hypochlorite Temperature
-
- Visual inspection of electrolyzer cells and analysis of operating parameters to determine if cell cleaning required. If so, return and oversee cell cleaning along with Owner.
 - Thermal Imaging of Cells, Control Panel and Transformer Rectifier to look for hot spots
 - Change Oil in Brine Pump every Year or 2,000 hours
 - Any Other Required Corrective Maintenance



ENTITY: CITY OF MARGATE

**PROJECT NAME: WATER TREATMENT PLANT ON-SITE SODIUM HYPOCHLORITE GENERATION
EQUIPMENT REPLACEMENT**

BID/CONTRACT NO.: 2015-006

SUBJECT: 1.06(16) RECOMMENDED SPARE PARTS

Odyssey Manufacturing Co. has included the following recommended spare parts as part of its scope of supply:

- One Complete Set Spare Fuses for Transformer-Rectifier
- One Electrolytic Cell Optical Assembly
- One Electrolytic Cell Temperature Switch
- One Brine Feed Pump
- One Spare Diode Assembly for Transformer Rectifier



ODYSSEY
MANUFACTURING CO.

SERVICE RATES

As of May 1, 2008

Operator/Mechanic/Driver	\$ 75 per hour per man (Note 1)
Engineering (Permitting Issues)	\$ 95 per hour (Note 2)
Service Vehicle	\$.75 per mile
Service Vehicle with Trailer	\$ 1.00 per mile
Tractor Trailer	\$ 1.25 per mile
Tanker Trailer	\$ 700 per day (Note 3)
6,000 Pound Lull	\$ 300 per day (Note 4)
Boom Truck	\$ 600 per day (Note 5)
Use of Pump Equipment (Includes Filter Bags)	\$ 100 per day
Parts (Miscellaneous Valves/Piping)	10% Off of List
Pumps	List Price
Tanks (HDLPE)	10% Off of List
Containment (HDLPE)	10% Off of List

Note 1: Travel time charged at this same rate and allows for any employee overtime.

Note 2: There is no charge for most engineering. This fee is related to engineering that is used to sign and seal documents for permitting purposes.

Note 3: Any portion of a day is billed at a full-day rate. Odyssey reserves the right to not charge this amount on a weekend. The pickup charge is built into this rate.

Note 4: Odyssey owns the equipment and this charge is for a full day or any portion of a day. There would be an additional cost for labor and mileage for the tractor trailer to take it to the job site.

Note 5: This covers just our cost from a rental company and labor is additional. If any portion of a day is used then a full day is charged unless we can use it for another job on the same day. Mileage at the service vehicle rate is additional.

MANUFACTURERS OF

ULTRA CHLOR

(800) ODYSSEY

THE CLEAR SOLUTION

1484 MASSARO BLVD • TAMPA, FL 33619 • (813) 635-0339 • FAX (813) 630-2589



ODYSSEY
MANUFACTURING CO.

ENTITY: CITY OF MARGATE

**PROJECT NAME: WATER TREATMENT PLANT ON-SITE SODIUM HYPOCHLORITE GENERATION
EQUIPMENT REPLACEMENT**

BID/CONTRACT NO.: 2015-006

SUBJECT: 1.06(18) LIST OF SUBCONTRACTORS

Odyssey Manufacturing Co. proposes to self-perform all work. The only exception is that Process Solutions will provide on-site technical support and thus is the only subcontractor. They are also the OSHG Manufacturer:

Process Solutions

1077 Dell Avenue, Suite A

Campbell, CA 95008

(408) 370-6540

STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION
CONSTRUCTION INDUSTRY LICENSING BOARD



LICENSE NUMBER	
CGC1516698	

The GENERAL CONTRACTOR
Named below IS CERTIFIED
Under the provisions of Chapter 489 FS.
Expiration date: AUG 31, 2016

COGDILL, MICHAEL J
ODYSSEY MANUFACTURING CO
1484 MASSARO BLVD
TAMPA FL 33619



ISSUED: 09/04/2014

DISPLAY AS REQUIRED BY LAW

SEQ # L1409040002397

STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION
CONSTRUCTION INDUSTRY LICENSING BOARD



LICENSE NUMBER	
CFC057182	

The PLUMBING CONTRACTOR
Named below IS CERTIFIED
Under the provisions of Chapter 489 FS.
Expiration date: AUG 31, 2016

WING, DAVID ALBERT
ODYSSEY MANUFACTURING CO
9500 134TH WAY NORTH
SEMINOLE FL 33776



ISSUED: 08/10/2014

DISPLAY AS REQUIRED BY LAW

SEQ # L1408100002256

ENTITY: CITY OF MARGATE

**PROJECT NAME: WATER TREATMENT PLANT ON-SITE SODIUM HYPOCHORITE GENERATOR
REPLACEMENT PROJECT**

BID/CONTRACT NO.: 2015-006

The following "major" projects were completed by Odyssey Manufacturing Co. over the past six years. Odyssey performed over five hundred smaller chemical system projects during this same period and countless amounts of chemical system service work. We have provided fifty seven (57) major projects during this period. In 50 of the 57 we served as the primary contractor (we work as a subcontractor for the chemical systems on many projects) and we have shown 29 projects where we had design responsibility and did the FDEP permitting. We have also shown the major projects we have in progress and six locations for OSHG projects. Thus we have exceeded the requirement for one OSHG system for this Bid/RFP. Additionally, all projects were performed out of Odyssey's Tampa Office and Patrick H. Allman acted as the Project Manager for all of the Projects listed with the exception that Mike Azzarella assumed the Project Manager role for all projects beginning in September of 2012. Mr. Azzarella was responsible for the FDEP permitting for all of the listed projects permitted by Odyssey. The Bid/RFP requests any errors, omissions or deficiencies be listed for these projects and there were not any of these items. Odyssey ensured that all of the systems supplied functioned satisfactorily.

1) Owner: Town of Lake Placid

Project Title: Sodium Hypochlorite Conversions for Two Water Plants

Owner's Representative: Gary Freeman (gary_freeman@mylakeplacid.org)

Utilities Director

Ph.: 863/ 699-3747

Cell: 863/ 441-2014

Engineer: Envisors

Contractor: Flow Line, Inc.

Contract Amount: \$ 78,625.74

Completion Date: March 2008

2) Owner: City of Lake Wales

Project Title: Sodium Hypochlorite Conversions for Three Water Plants

Owner's Representative: Holly Britt (holbritt@cityoflakewales.com)

Water Operations Superintendent

Ph.: 863/ 678,4182, Ext. 249

Cell: 863/ 528-7639

Engineer: Odyssey Manufacturing Co. (Three FDEP Permits)

Contractor: Odyssey Manufacturing Co.

Contract Amount: \$130,740
Completion Date: April 2008

- 3) Owner: Citrus County
Project Title: Sodium Hypochlorite Conversions for Four Plants
Owner's Representative: Gary Loggins (gloggins@bocc.citrus.fl.us)
Utilities Operations Manager
Ph.: 352/ 527-7650
Cell: 352/ 302-6152
Engineer: Odyssey Manufacturing Co. (Four FDEP Permits)
Contractor: Odyssey Manufacturing Co.
Contract Amount: \$ 198,000
Completion Date: August 2008

- 4) Owner: City of Arcadia
Project Title: Water Plant Sodium Hypochlorite and Ammonium Sulfate Conversion
Owner's Representative: Larry Johnson (ljohnson@arcadia-fl.gov)
Lead Water Operator
Ph.: 863/ 494-1626
Cell: 863/ 244-1562
Engineer: Boyle Engineering (now AECOM)
Contractor: Odyssey Manufacturing Co.
Contract Amount: \$ 206,613
Completion Date: September 2008

- 5) Owner: TOHO Water Authority
Project Title: Design, Construction and Permitting of Chloramine System for Harmony WTP
(Sodium hypochlorite and ammonium sulfate systems)
Owner's Representative: Bobby Bennett (bbennett@tohowater.com)
Lead Water Operator
Ph.: 407/ 390-9107
Cell: 407/ 908-4905
Engineer: Odyssey Manufacturing Co. (FDEP Permit)
Contractor: Odyssey Manufacturing Co.
Contract Amount: \$ 86,250
Completion Date: October 2008

- 6) Owner: City of Cocoa
Project Title: Sodium Hypochlorite Tank Replacement
Owner's Representative: Don Stevens (dstevens@cocoafl.org)
WWTP Superintendent

Ph.: 321/ 433-8744

Cell: 407/ Unknown

Engineer: Odyssey Manufacturing Co. (FDEP Notification Only)

Contractor: Odyssey Manufacturing Co.

Contract Amount: \$ 44,800

Completion Date: November 2008

7) Owner: City of Boca Raton

Project Title: On-Site Sodium Hypochlorite Generation Equipment Replacement Project (Bid No. 2008-048)

Owner's Representative: Norm Wellings (nwellings@ci.boca-raton.fl.us)

Utilities Operations Manager

Ph.: 561/ 338-7322

Cell: 561/ 239-3071

Engineer: Odyssey Manufacturing Co. (FDEP Notification Only)

Contractor: Odyssey Manufacturing Co.

Contract Amount: \$ 143,200

Completion Date: February 2009

8) Owner: City of Largo

Project Title: Sodium Hypochlorite Booster Station Conversion Projects

Owner's Representative: David Black (dblack@largo.com)

Trades Foreman - Reuse

Ph.: 727/ 507-4463

Cell: 727/ 439-8428

Engineer: Odyssey Manufacturing Co. (Two FDEP Permits)

Contractor: Odyssey Manufacturing Co.

Contract Amount: \$ 34,200

Completion Date: May 2009

9) Owner: Lee County

Project Title: Waterway Estates WTP - Fluoride Injection System Project

Owner's Representative: Gary Waters (gwaters@leegov.com)

WTP Chief Operator

Ph.: 239/ 997-1861

Cell: 239/ 357-0056

Engineer: Stantec

Contractor: Odyssey Manufacturing Co.

Contract Amount: \$ 107,772.82

Completion Date: June 2009

10) Owner: City of Avon Park

Project Title: Wastewater Treatment Plant Sodium Hypochlorite System Conversion Project

Owner's Representative: Jim Bedingfield (jbedingfield@avonpark.cc)

WWTP Superintendent

Ph.: 863/ 452-4426

Cell: 863/ 449-0610

Engineer: Odyssey Manufacturing Co. (FDEP Permit)

Contractor: Odyssey Manufacturing Co.

Contract Amount: \$ 34,240

Completion Date: September 2009

11) Owner: City of Cocoa

Project Title: Weewahootee Wellfield Sodium Hypochlorite Conversion Project

Owner's Representative: Troy Howell (thowell@cocoafll.org)

Water Treatment Plant Superintendent

Ph.: 321/ 635-7772

Cell: 321/ Unknown

Engineer: Odyssey Manufacturing Co. (FDEP Permit)

Contractor: Odyssey Manufacturing Co.

Contract Amount: \$ 160,000

Completion Date: September 2009

12) Owner: Town of Longboat Key

Project Title: Longboat Key South Key Pump Station Modifications (Furnished and Installed Sodium Hypochlorite and Ammonium Sulfate Systems)

Owner's Representative: Brad "Doc" Walker (bwalker@longboatkey.org)

Water Quality Specialist

Ph.: 941/ 316-1988

Cell: 941/ 650-5271

Engineer: Camp, Dresser & McKee

Contractor: TLC Diversified

Contract Amount: \$ 40,000

Completion Date: May 2010

13) Owner: Immokalee Water & Sewer District

Project Title: Water Treatment Plant Sodium Hypochlorite and Ammonium Sulfate Conversion Project

Owner's Representative: Jerry Warden (jerrywarden@iw-sd.com)

Utility Superintendent

Ph.: 239/ 658-3631

Cell: 239/ Unknown

Engineer: AECOM

Contractor: MAJ Contracting, Inc.

Contract Amount: \$ 232,140
Completion Date: June 2010

- 14) Owner: City of Palm Coast
Project Title: WTP #1 Chemical Storage and Pumping (Sulfuric Acid and Ammonium Sulfate Systems)
Owner's Representative: Mary Kronenburg, P.E. (mkronenburg@ci.palm-coast.fl.us)
Project Manager
Ph.: 407/ 986-2306
Cell: 407/ 931-6348
Engineer: CPH Engineers
Contractor: Odyssey Manufacturing Co.
Contract Amount: \$128,800
Completion Date: August 2010

- 15) Owner: Miccosukee Indian Tribe
Project Title: WTP Sodium Hypochlorite Conversion
Owner's Representative: Guy Barrett (gbarrett@jggservices.com)
Utility Superintendent
Ph.: 305/ 223-8380, Ext. 2275
Cell: 786/ 258-1794
Engineer: Craig A. Smith and Associates, Inc.
Contractor: Odyssey Manufacturing Co.
Contract Amount: \$89,554
Completion Date: October 2010

- 16) Owner: Orlando Utilities Commission (OUC)
Project Title: Brine Concentrate Sodium Hypochlorite Conversion
Owner's Representative: Alan Planeta, P.E. (aplaneta@ouc.com)
Operations Manager
Ph.: 407/ 658-6444, Ext. 43091
Cell: 407/ 579-4837
Engineer: Odyssey Manufacturing Co. (None Required)
Contractor: Odyssey Manufacturing Co.
Contract Amount: \$67,600
Completion Date: January 2011

- 17) Owner: City of West Palm
Project Title: Bulk Hypochlorite Storage and Feed System (Sodium Hypochlorite System)
Owner's Representative: Daniel Roberge, P.E. (droberge@wpb.org)
Engineering Services, 4th Floor
401 Clematis Street, PO Box 3366

West Palm Beach, FL 33402

Ph.: 561/ 494-1088

Fax: 561/ 659-7458

Cell: 561/ 644-7427

Engineer: Jacobs Engineering

Contractor: Odyssey Manufacturing Co.

Contract Amount: \$1,571,477.50

Completion Date: April 2011

18) Owner: Hillsborough County

Project Title: Additional Ammonia Tanks and Roof Replacement Project (Aqueous Ammonia System)

Owner's Representative: Bill Bozeman (Bozemanw@hillsboroughcounty.org)

Ph.: 813/ 272-5977, Ext. 43331

Cell: 813/ Unknown

Engineer: McKim and Creed Engineering

Contractor: Odyssey Manufacturing Co.

Contract Amount: \$342,392

Completion Date: April 2011

19) Owner: City of West Palm

Project Title: Corrosion Control System

Owner's Representative: Rolando Nigaglioni, P.E. (migaglioni@cityofpsl.com)

Ph.: 561/ 494-1086

Cell: 561/ 628-9442

Engineer: Jacobs Engineering

Contractor: Odyssey Manufacturing Co.

Contract Amount: \$179,523.03

Completion Date: May 2011

20) Owner: Sarasota County

Project Title: T. Mabry Carlton WTF Liquid Ammonium Sulfate System

Owner's Representative: Jim Conley (jconley@scgov.net)

Water Operations Manager

Ph.: 941/ 494-1088

Cell: 941/ 650-9162

Engineer: Stantec

Contractor: Odyssey Manufacturing Co.

Contract Amount: \$312,523.02

Completion Date: May 2011

21) Owner: Progress Energy

Project Title: Anclote Power Plant Sodium Hypochlorite, Sodium Bisulfite and Bromine Systems
Owner's Representative: Suzanne Hamilton (suzanne.hamilton@pgnmail.com)

Chemistry Manager

Ph.: 727/ 943-3001

Cell: 407/ Unknown

Engineer: Odyssey Manufacturing Co. (None Required)

Contractor: Odyssey Manufacturing Co.

Contract Amount: \$110,000

Completion Date: May 2011

22) Owner: Town of Longboat Key

Project Title: Longboat Key Mid-Key Pump Station (Furnished and Installed Sodium Hypochlorite and Ammonium Sulfate Systems)

Owner's Representative: Brad "Doc" Walker (bwalker@longboatkey.org)

Water Quality Specialist

Ph.: 941/ 316-1988

Cell: 941/ 650-5271

Engineer: Camp, Dresser & McKee

Contractor: RTD Construction

Contract Amount: \$ 85,123

Completion Date: May 2011

23) Owner: Dunes Community Development District

Project Title: WTP and WWTP Sodium Hypochlorite Conversions

Owner Representative: Tim Sheehan, P.E. (tsdcdd@bellsouth.net)

Utilities Director

Ph.: 386 / 445-9045

Cell: 386 / 569-8543

Engineer: Odyssey Manufacturing Co. (Two FDEP Permits)

Contractor: Odyssey Manufacturing Co.

Contract Amount: \$79,200

Completion Date: August 2011

24) Owner: City of Altamonte Springs

Project Title: Wastewater Treatment Plant Sodium Hypochlorite and Sodium Bisulfite Conversions

Owner's Representative: Jay Diceglie, P.E. (jguiffreda@altamonte.org)

Director of Engineering

Ph.: 407/ 571-8338

Cell: 407/ 383-7462

Engineer: Odyssey Manufacturing Co. (FDEP Permit)

Contractor: Odyssey Manufacturing Co.

Contract Amount: \$125,100
Completion Date: August 2011

25) Owner: Orlando Utilities Commission (OUC)
Project Title: Cooling Towers Sodium Hypochlorite Conversions (Main Unit/CCB)
Owner's Representative: Alan Planeta, P.E. (aplaneta@ouc.com)
Operations Manager
Ph.: 407/ 658-6444, Ext. 43091
Cell: 407/ 579-4837
Engineer: Odyssey Manufacturing Co. (None Required)
Contractor: Odyssey Manufacturing Co.
Contract Amount: \$130,000 / \$41,600
Completion Date: August 2011

26) Owner: Progress Energy
Project Title: North Water Treatment Plant Sodium Hypochlorite Conversion
Owner's Representative: Nick Maltese, Jr. (nick.maltese@pgnmail.com)
Crystal River Maintenance Manager
Ph.: 352/ 563-2943
Cell: 352/ 464-7511
Engineer: Odyssey Manufacturing Co. (FDEP Permit)
Contractor: Odyssey Manufacturing Co.
Contract Amount: \$44,573
Completion Date: September 2011

27) Owner: Bonita Springs Utilities
Project Title: On-Site Sodium Hypochlorite Generation System Upgrade
Owner's Representative: Andy Koebel, P.E. (akoebel@bsu.com)
Director of Operations
Ph.: 239/ 390-4820
Cell: 239/ 872-3514
Engineer: Odyssey Manufacturing Co. (FDEP Notification Only)
Contractor: Odyssey Manufacturing Co.
Contract Amount: \$175,000
Completion Date: October 2011

28) Owner: Cutrale Citrus
Project Title: WWTF Re-Use System Sulfuric Acid System
Owner's Representative: Ed Priest (epriest@cutrale.com)
Maintenance Supervisor
Ph.: 863/ 965-5000

Cell: 352/ 267-9941

Engineer: Odyssey Manufacturing Co. (None Required)

Contractor: Odyssey Manufacturing Co.

Contract Amount: \$46,000

Completion Date: October 2011

29) Owner: Collier County

Project Title: South County WRF Bleach Storage and Feed Facility (Sodium Hypochlorite System)

Owner Representative: Oscar Martinez (oscardmartinez@colliergov.net)

Senior Project Manager

Ph.: 239/252-6214

Cell: 239/ 580-9380

Engineer: Hole Montes

Contractor: Odyssey Manufacturing Co.

Contract Amount: \$537,647

Completion Date: January 2012

30) Owner: City of Maitland

Project Title: Water Treatment Plant #4, #5, #6 Sodium Hypochlorite Conversions

Owner's Representative: Tom Thorne (tthorne@itsmymaitland.com)

Water Plant Chief Operator

Ph.: 407/ 875-2115

Cell: 407/ 448-3691

Engineer: Odyssey Manufacturing Co. (Three FDEP Permits)

Contractor: Odyssey Manufacturing Co.

Contract Amount: \$172,649

Completion Date: January 2012

31) Owner: City of West Palm

Project Title: Aqua Ammonia Chemical Feed and Storage System

Owner's Representative: Rolando Nigaglioni, P.E. (migaglioni@cityofpsl.com)

Ph.: 561/ 494-1086

Cell: 561/ 628-9442

Engineer: MWH / Global Tech

Contractor: Odyssey Manufacturing Co.

Contract Amount: \$614,181.28

Completion Date: February 2012

32) Owner: Indian River County

Project Title: South Reverse Osmosis Plant Chemical System Upgrade (Caustic, Corrosion Inhibitor, Sulfuric Acid, HFS, Anti-scalant system upgrades)

Owner's Representative: Mike Vernon (mvernon@irc.gov)

Water Treatment Superintendent

Ph.: 772/ 770-5068

Cell: 772/ Unknown

Engineer: Odyssey Manufacturing Co. (FDEP Notification)

Contractor: Odyssey Manufacturing Co.

Contract Amount: \$ 132,040

Completion Date: February 2012

33) Owner: Town of Lake Hamilton

Project Title: New Water Treatment Plant (Sodium Hypochlorite, Sulfuric Acid and Corrosion Inhibitor Systems)

Owner's Representative: Harvey Sims (pwlakehamilton@yahoo.com)

Utility Superintendent

Ph.: 863/ 439-1910

Cell: 863/ 651-6062

Engineer: Envisors

Contractor: Odyssey Manufacturing Co. (Vogel Brothers)

Contract Amount: \$ 91,440

Completion Date: March 2012

34) Owner: TOHO Water Authority

Project Title: South Bermuda Water WRF Sodium Hypochlorite Conversion

Owner's Representative: Roger Bihl (rbihl@tohowater.com)

Waste Water Plant Superintendent

Ph.: 407/ 944-5077

Cell: 407/ 709-7111

Engineer: Hydro SC

Contractor: Odyssey Manufacturing Co. (Wharton-Smith)

Contract Amount: \$208,050

Completion Date: September 2012

35) Owner: Hillsborough County

Project Title: Chemical Feed Systems Rehabilitation Project (CIP 10195) (Sodium Hypochlorite, Alum and Sodium Bisulfite Systems Installation/Conversion)

Owner's Representative: Al Martini, P.E. (martinia@hillsboroughcounty.org)

Project Manager

Ph.: 813/ 272-5977, Ext. 43349

Cell: 813/ Unknown

Engineer: Parsons Engineering

Contractor: Odyssey Manufacturing Co.

Contract Amount: \$ 1,312,172

Completion Date: October 2012

36) Owner: Desoto County

Project Title: South Booster Station Conversion – Bid No. 12-07-00ITB (Sodium Hypochlorite and Ammonium Sulfate Retrofits)

Owner's Representative: Mike Vuolo (m.vuolo@desotobocc.com)

Chief Water Operator

Ph.: 863/ 491-7500

Cell: 863/ 990-4976

Engineer: Odyssey Manufacturing Co. (FDEP Permit)

Contractor: Odyssey Manufacturing Co.

Contract Amount: \$39,900

Completion Date: October 2012

37) Owner: Hillsborough County

Project Title: Falkenberg AWWTP Sodium Hypochlorite System Upgrade

Owner's Representative: Katherine McAuliffe, P.E. (mcauliffek@hillsboroughcounty.org)

Project Manager

Ph.: 813/ 272-5977, Ext. 43342

Cell: 813/ Unknown

Engineer: Odyssey Manufacturing Co. (FDEP Notification)

Contractor: Odyssey Manufacturing Co.

Contract Amount: \$ 68,600

Completion Date: October 2012

38) Owner: City of Melbourne

Project Title: Sodium Hypochlorite Feed System Conversion Work (ITB-07-083-0-2012)

Owner's Representative: Harold Nantz, P.E. (hnantz@melbourneflorida.org)

Assistant Public Works and Utility Director

Ph.: 321/ 674-5761, Ext. 5762

Cell: 321/ 288-3591

Engineer: Odyssey Manufacturing Co. (FDEP Permit)

Contractor: Odyssey Manufacturing Co.

Contract Amount: \$ 365,318.50

Completion Date: February 2013

39) Owner: Bonita Springs Utilities

Project Title: Ammonium Sulfate Conversion

Owner's Representative: Andy Koebel, P.E. (akoebel@bsu.com)

Director of Operations

Ph.: 239/ 390-4820

Cell: 239/ 872-3514

Engineer: Odyssey Manufacturing Co. (FDEP Permit)

Contractor: Odyssey Manufacturing Co.
Contract Amount: \$ 92,000
Completion Date: March 2013

40) Owner: City of Plant City
Project Title: Installation of Fluoride Systems at Four Water Plants
Owner's Representative: Frank Coughenhour, P.E. (fcoughenhour@plantcitygov.com)
Director of Utilities
Ph.: 813/ 757-9191
Cell: 813/ Unknown
Engineer: Jones Edmunds
Contractor: Odyssey Manufacturing Co.
Contract Amount: \$ 380,645
Completion Date: March 2013

41) Owner: City of Dade City
Project Title: WWT Modifications - Sodium Hypochlorite Conversion
Owner's Representative: Jeff Lanphere (jlanphere@dadecityfl.com)
Utilities Manager
Ph.: 352/ 523-5054
Cell: 239/ Unknown
Engineer: Baskerville Donovan
Contractor: Vogel Brothers
Contract Amount: \$ 62,500
Completion Date: May 2013

42) Owner: Town of Longboat Key
Project Title: Potable Water Storage Tank Mixer (for Mid-Key and South Booster Stations)
Owner's Representative: Brad "Doc" Walker (bwalker@longboatkey.org)
Water Quality Specialist
Ph.: 941/ 316-1988
Cell: 941/ 650-5271
Engineer: Odyssey Manufacturing Co.
Contractor: Odyssey Manufacturing Co.
Contract Amount: \$ 119,500
Completion Date: August 2013

43) Owner: Tampa Bay Water
Project Title: Cypress Creek Chemical System Rehabilitation Project (Sodium Hypochlorite System Upgrade)
Owner's Representative: Don Howard (dhoward@tampabaywater.org)
Project Manager

Ph.: 727/ 796-2355

Cell: 813/ 929-4565

Engineer: Arcadis

Contractor: Odyssey Manufacturing Co.

Contract Amount: \$ 615,000

Completion Date: November 2014 (Project was completed in December 2013 – extended for additional work in Ammonia Building)

44) Owner: City of Dunedin

Project Title: RO WTP Replacement of Bulk Chemical Storage Tanks

Owner's Representative: Joseph Golbach, P.E. (jgolbach@dunedinfl.net)

City Engineer

Ph.: 727/ 298-3186

Cell: 727/ Unknown

Engineer: Odyssey Manufacturing Co.

Contractor: Odyssey Manufacturing Co.

Contract Amount: \$ 213,101

Completion Date: February 2014

45) Owner: City of Boca Raton

Project Title: On-Site Sodium Hypochlorite Generation Systems Upgrade for WTP and WWTP

Owner's Representative: Norm Wellings (nwellings@ci.boca-raton.fl.us)

Utilities Operations Manager

Ph.: 561/ 338-7322

Cell: 561/ 239-3071

Engineer: Hazen and Sawyer

Contractor: Wharton Smith

Contract Amount: \$ 3,000,000 (Ballpark Amount – Actual Amount Confidential)

Completion Date: Estimate March 2015 (Project is 99% complete as of 3/1/15)

46) Owner: City of Punta Gorda

Project Title: City of Punta Gorda Bal Harbor Booster Station Chlorination Project

Owner's Representative: Brian Fuller

WTP Superintendent

Ph.: 941/ 639-2057

Cell: 941/ 628-4504

Engineer: Odyssey Manufacturing Co.

Contractor: Odyssey Manufacturing Co.

Contract Amount: \$ 87,542.50

Completion Date: February 2014

47) Owner: City of Coconut Creek

Project Title: City of Coconut Creek Chlorine Booster Station Project
Owner's Representative: Carlo Nuesa (cnuesa@coconutcreek.net)
Capital Projects Administrator
Ph.: 954/ 956-1545
Cell: 954/ Unknown
Engineer: Odyssey Manufacturing Co.
Contractor: Odyssey Manufacturing Co.
Contract Amount: \$ 200,500
Completion Date: February 2014 (Chemical Systems were on-line in less 90 days)

48) Owner: City of Wildwood

Project Title: Coleman Water Treatment Plant Upgrades Project
Owner's Representative: Lewis Bryant (lewis.bryant@kimley-horn.com)
Project Engineer
Ph.: 352/ 338-3000
Cell: 352/ 572-5493
Engineer: Kimley-Horn
Contractor: Odyssey Manufacturing Co.
Contract Amount: \$ 1,000,020
Completion Date: December 2014

49) Owner: City of Tampa

Project Title: David L. Tippin Water Treatment Facility Caustic Soda Piping Improvements
Owner's Representative: James King (james.king@tampagov.net)
Project Engineer
Ph.: 813/ 635-3416
Cell: 813/ 781-7023
Engineer: Hazen and Sawyer
Contractor: Odyssey Manufacturing Co.
Contract Amount: \$ 206,500
Completion Date: November 2014

50) Owner: Desoto County

Project Title: Desoto County Correctional Institute Water and Wastewater Treatment Plants
Sodium Hypochlorite Conversions
Owner's Representative: Eddie Miller (e.miller@desotobocc.com)
Utility Director
Ph.: 863/ 491-7500
Cell: 863/ 525-4145
Engineer: Odyssey Manufacturing Co.
Contractor: Odyssey Manufacturing Co.
Contract Amount: \$ 51,900

Completion Date: October 2014

51) Owner: Broward County

Project Title: Broward County Everglades Holiday Park WTP Renovations

Description: Replace wells, hydro tank and all piping and add new sodium hypochlorite and ammonium sulfate chemical systems and new plant control system

Owner's Representative: Martin Gross (mgross@broward.org)

Project Manager

Ph.: 954/ 370-3810

Cell: 954/ Unknown

Engineer: Odyssey Manufacturing Co.

Contractor: Odyssey Manufacturing Co.

Contract Amount: \$ 242,800

Completion Date: Estimated March 2015 (Project is 99% complete as of 3/1/15)

52) Owner: City of Deltona

Project Title: Group A Water Treatment Plant Improvements Project

Description: Install ammonium sulfate systems and piping work to achieve 4-log virus inactivation at six water plants

Owner's Representative: Matt Doan (mdoan@deltonafl.gov)

Project Manager

Ph.: 386/ 878-8973

Cell: 386/ Unknown

Engineer: Tetra Tech

Contractor: Odyssey Manufacturing Co.

Contract Amount: \$ 2,510,000

Completion Date: Estimated March 2015 (Project is 99% complete as of 3/1/15)

53) Owner: City of Deltona

Project Title: Group B Water Treatment Plant Improvements Project

Description: Install ammonium sulfate systems and piping work to achieve 4-log virus inactivation at six water plants

Owner's Representative: Matt Doan (mdoan@deltonafl.gov)

Project Manager

Ph.: 386/ 878-8973

Cell: 386/ Unknown

Engineer: Tetra Tech

Contractor: Odyssey Manufacturing Co.

Contract Amount: \$ 2,690,000

Completion Date: Estimated February 2015 (Project is 99% complete as of 3/1/15)

54) Owner: City of North Port

Project Title: WTP Chemical Tank Replacement
Description: Replace steel horizontal alum and caustic tanks, rebuild hypochlorite feed equipment and replace existing sulfuric acid tank at main water plant
Owner's Representative: Patrick Zoeller (pzoeller@cityofnorthport.com)
Project Manager
Ph.: 941/ 426-9500
Cell: 941/ Unknown
Engineer: Odyssey Manufacturing Co.
Contractor: Odyssey Manufacturing Co.
Contract Amount: \$ 443,000
Completion Date: Estimated June 2015 (Project is 15% complete as of 3/1/15)

55) Owner: City of Margate

Project Title: West WWTP On-Site Sodium Hypochlorite Generation System Replacement
Description: Replace existing OSHG system at West WWTP including new piping controls
Owner's Representative: Wendell Wheeler (wwheeler@margatefl.com)
Project Manager
Ph.: 954/ 972-0828
Cell: 954/ 605-0373
Engineer: Odyssey Manufacturing Co.
Contractor: Odyssey Manufacturing Co.
Contract Amount: \$ 361,000
Completion Date: March 2015

56) Owner: Seminole Tribe

Project Title: Immokalee WTP Chemical System Improvements
Description: Replace all of the existing chemical systems at an RO plant
Owner's Representative: Juan Mata (juanmata@semtribe.com)
Project Manager
Ph.: 954/ 894-1060
Cell: 863/ 228-0070
Engineer: Reiss Environmental
Contractor: Odyssey Manufacturing Co.
Contract Amount: \$ 998,500
Completion Date: Estimated July 2015 (Project is 5% complete as of 3/1/15)

57) Owner: City of Leesburg

Project Title: Main WTP Disinfection System Conversion Project
Description: Replace existing chlorine gas system with sodium hypochlorite system
Owner's Representative: Al Purvis (al.purvis@leesburgflorida.gov)
Project Manager
Ph.: 352/728-9843

Cell: 352/516-7129

Engineer: Hydro Solutions, SC

Contractor: Odyssey Manufacturing Co.

Contract Amount: \$ 243,422

Completion Date: Estimated October 2015 (Project is 1% complete as of 3/1/15)

1 - PRODUCT IDENTIFICATION

PRODUCT NAME: SODIUM HYPOCHLORITE, 0.8% SOLUTION
FORMULA: NaOCl
FORMULA WT: 74.44
CAS NO.: 7681-52-9
NIOSH/RTECS NO.: NH3486300
COMMON SYNONYMS: HYPOCHLOROUS ACID, SODIUM SALT; CLOROX
PRODUCT CODES: 9416
EFFECTIVE: 05/22/86 REVISION #0

PRECAUTIONARY LABELLING
BAKER SAF-T-DATA(TM) SYSTEM

HEALTH - 1 SLIGHT
FLAMMABILITY - 0 NONE
REACTIVITY - 1 SLIGHT
CONTACT - 1 SLIGHT

HAZARD RATINGS ARE 0 TO 4 (0 = NO HAZARD; 4 = EXTREME HAZARD).

LABORATORY PROTECTIVE EQUIPMENT

SAFETY GLASSES; LAB COAT

PRECAUTIONARY LABEL STATEMENTS

WARNING, CAUSES BURNS, HARMFUL IF SWALLOWED
AVOID CONTACT WITH EYES, SKIN, CLOTHING.
AVOID BREATHING VAPOR. KEEP IN TIGHTLY CLOSED CONTAINER. USE WITH
ADEQUATE VENTILATION. WASH THOROUGHLY AFTER HANDLING.

SAF-T-DATA(TM) STORAGE COLOR CODE: ORANGE (GENERAL STORAGE)

2 - HAZARDOUS COMPONENTS

COMPONENT	%	CAS NO.
SODIUM HYPOCHLORITE	0-5	7681-52-9

3 - PHYSICAL DATA

BOILING POINT: N/A VAPOR PRESSURE(MM HG): 18

MELTING POINT: N/A VAPOR DENSITY(AIR=1): 2.5

SPECIFIC GRAVITY: 1.09 EVAPORATION RATE: N/A

(H₂O=1)

(BUTYL ACETATE=1)

SOLUBILITY(H₂O): APPRECIABLE (MORE THAN 10 %) % VOLATILES BY
VOLUME: 100

APPEARANCE & ODOR: LIGHT YELLOW TO CLEAR LIQUID.

4 - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (CLOSED CUP) N/A

FLAMMABLE LIMITS: UPPER - N/A % LOWER - N/A %

FIRE EXTINGUISHING MEDIA

USE EXTINGUISHING MEDIA APPROPRIATE FOR SURROUNDING FIRE.

SPECIAL FIRE-FIGHTING PROCEDURES

FIREFIGHTERS SHOULD WEAR PROPER PROTECTIVE EQUIPMENT AND SELF-
CONTAINED

BREATHING APPARATUS WITH FULL FACEPIECE OPERATED IN POSITIVE
PRESSURE MODE.

TOXIC GASES PRODUCED

CHLORINE AND CHLORINE COMPOUNDS

5 - HEALTH HAZARD DATA

CARCINOGENICITY: NTP: NO IARC: NO Z LIST: NO OSHA REG: NO

EFFECTS OF OVEREXPOSURE

LIQUID MAY CAUSE BURNS TO SKIN AND EYES.
VAPORS MAY BE IRRITATING TO SKIN, EYES, NOSE AND THROAT.
INGESTION MAY CAUSE SEVERE BURNING OF MOUTH AND STOMACH.

TARGET ORGANS

NONE IDENTIFIED

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE

NONE IDENTIFIED

ROUTES OF ENTRY

NONE INDICATED

EMERGENCY AND FIRST AID PROCEDURES

CALL A PHYSICIAN.

IF SWALLOWED, IF CONSCIOUS, GIVE LARGE AMOUNT OF MILK, MILK OF
MAGNESIA OR WHITES OF EGGS BEATEN WITH WATER. INDUCE VOMITING.

IF INHALED, REMOVE TO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL
RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN.

IN CASE OF CONTACT, IMMEDIATELY FLUSH EYES OR SKIN WITH PLENTY OF
WATER FOR AT LEAST 15 MINUTES WHILE REMOVING CONTAMINATED
CLOTHING AND SHOES.
WASH CLOTHING BEFORE RE-USE.

6 - REACTIVITY DATA

STABILITY: STABLE HAZARDOUS POLYMERIZATION: WILL NOT OCCUR

CONDITIONS TO AVOID: MOISTURE, HEAT, LIGHT

INCOMPATIBLES: STRONG ACIDS, CHLORINE, STRONG REDUCING AGENTS,
ORGANIC MATERIALS, ALUMINUM

DECOMPOSITION PRODUCTS: CHLORINE AND CHLORINE COMPOUNDS

7 - SPILL AND DISPOSAL PROCEDURES

STEPS TO BE TAKEN IN THE EVENT OF A SPILL OR DISCHARGE
WEAR SUITABLE PROTECTIVE CLOTHING. TAKE UP WITH SAND OR OTHER
NONCOMBUSTIBLE ABSORBENT MATERIAL AND PLACE INTO CONTAINER FOR
LATER DISPOSAL.
FLUSH SPILL AREA WITH WATER.

DISPOSAL PROCEDURE
DISPOSE IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE, AND
LOCAL ENVIRONMENTAL REGULATIONS.

8 - PROTECTIVE EQUIPMENT

VENTILATION: USE ADEQUATE GENERAL OR LOCAL EXHAUST VENTILATION
TO KEEP VAPOR AND MIST LEVELS AS LOW AS POSSIBLE.

RESPIRATORY PROTECTION: NONE REQUIRED WHERE ADEQUATE
VENTILATION CONDITIONS EXIST. IF AIRBORNE CONCENTRATION IS
HIGH, USE AN APPROPRIATE RESPIRATOR OR DUST MASK.

EYE/SKIN PROTECTION: SAFETY GOGGLES, UNIFORM, APRON, RUBBER
GLOVES ARE RECOMMENDED.

9 - STORAGE AND HANDLING PRECAUTIONS

SAF-T-DATA(TM) STORAGE COLOR CODE: ORANGE (GENERAL STORAGE)

SPECIAL PRECAUTIONS
KEEP CONTAINER TIGHTLY CLOSED. SUITABLE FOR ANY GENERAL
CHEMICAL STORAGE AREA.

10 - TRANSPORTATION DATA AND ADDITIONAL INFORMATION

DOMESTIC (D.O.T.)

PROPER SHIPPING NAME HYPOCHLORITE SOLUTION (< 7% CL BY WT.)(AIR ONLY)

HAZARD CLASS ORM-B

UN/NA NA1791

LABELS NONE

REPORTABLE QUANTITY 100 LBS.

INTERNATIONAL (I.M.O.)

PROPER SHIPPING NAME HYPOCHLORITE, SOLUTION (> 5% AVAILABLE CHLORINE)

HAZARD CLASS 8

UN/NA UN1791

LABELS CORROSIVE

SCHEDULE OF BID PRICES – BID NO. 2015-006

TO: CITY COMMISSION
CITY OF MARGATE

(Please fill in all blanks and return with your proposal.)

In accordance with your request for proposals and the specifications contained herein, the undersigned proposes the following:

Note: City permit fees shall not be waived and should be included in your bid proposal.

DESCRIPTION	TOTAL COST
TOTAL COST OF WTP ON-SITE SODIUM HYPOCHLORITE GENERATION SYSTEM EQUIPMENT REPLACEMENT	\$ <u>452,000.00</u>
ALLOWANCE	\$ 15,000.00
COST OF INDEMNIFICATION	\$ 100.00
GRAND TOTAL FOR ALL ITEMS	\$ <u>467,100.00</u> 

ALL BIDS MUST BE SIGNED WITH THE VENDOR NAME AND BY AN OFFICER OR EMPLOYEE HAVING THE AUTHORITY TO BIND THE COMPANY OR FIRM BY SIGNATURE.

MATERIAL SAFETY DATA SHEETS ENCLOSED? YES NO

SPECIFICATION SHEETS/BROCHURES? YES NO

WILL YOUR FIRM ACCEPT PAYMENT VIA A CITY OF MARGATE PROCUREMENT CARD? YES NO

HAVE YOUR INSURANCE REPRESENTATIVE REVIEW THE SAMPLE INSURANCE CERTIFICATE TO ENSURE COMPLIANCE.

STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION
CONSTRUCTION INDUSTRY LICENSING BOARD



LICENSE NUMBER

CGC1516698

The GENERAL CONTRACTOR
Named below IS CERTIFIED
Under the provisions of Chapter 489 FS.
Expiration date: AUG 31, 2016

COGDILL, MICHAEL J
ODYSSEY MANUFACTURING CO
1484 MASSARO BLVD
TAMPA FL 33619



ISSUED: 09/04/2014

DISPLAY AS REQUIRED BY LAW

SEQ # L1409040002397

STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION
CONSTRUCTION INDUSTRY LICENSING BOARD



LICENSE NUMBER

CFC057182

The PLUMBING CONTRACTOR
Named below IS CERTIFIED
Under the provisions of Chapter 489 FS.
Expiration date: AUG 31, 2016

WING, DAVID ALBERT
ODYSSEY MANUFACTURING CO
9500 134TH WAY NORTH
SEMINOLE FL 33776



ISSUED: 08/10/2014

DISPLAY AS REQUIRED BY LAW

SEQ # L1408100002256

Request for Taxpayer Identification Number and Certification

Give Form to the requester. Do not send to the IRS.

Print or type
See Specific Instructions on page 2.

Name (as shown on your income tax return) Odyssey Manufacturing Company	
Business name/disregarded entity name, if different from above	
Check appropriate box for federal tax classification (required): <input type="checkbox"/> Individual/sole proprietor <input type="checkbox"/> C Corporation <input checked="" type="checkbox"/> S Corporation <input type="checkbox"/> Partnership <input type="checkbox"/> Trust/estate <input type="checkbox"/> Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=partnership) ▶ <input type="checkbox"/> Other (see instructions) ▶	
<input type="checkbox"/> Exempt payee	
Address (number, street, and apt. or suite no.) 1484 Massaro Blvd.	Requester's name and address (optional)
City, state, and ZIP code Tampa, FL 33619	
List account number(s) here (optional)	

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on the "Name" line to avoid backup withholding. For individuals, this is your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the Part I instructions on page 3. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN* on page 3.

Social security number								

Note, if the account is in more than one name, see the chart on page 4 for guidelines on whose number to enter.

Employer identification number								
6	5	-	0	8	4	6	3	4

Part II Certification

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me), and
2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding, and
3. I am a U.S. citizen or other U.S. person (defined below).

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions on page 4.

Sign Here	Signature of U.S. person ▶	Date ▶ 1-16-14
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General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Purpose of Form

A person who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) to report, for example, income paid to you, real estate transactions, mortgage interest you paid, acquisition or abandonment of secured property, cancellation of debt, or contributions you made to an IRA.

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN to the person requesting it (the requester) and, when applicable, to:

1. Certify that the TIN you are giving is correct (or you are waiting for a number to be issued),
2. Certify that you are not subject to backup withholding, or
3. Claim exemption from backup withholding if you are a U.S. exempt payee. If applicable, you are also certifying that as a U.S. person, your allocable share of any partnership income from a U.S. trade or business is not subject to the withholding tax on foreign partners' share of effectively connected income.

Note. If a requester gives you a form other than Form W-9 to request your TIN, you must use the requester's form if it is substantially similar to this Form W-9.

Definition of a U.S. person. For federal tax purposes, you are considered a U.S. person if you are:

- An individual who is a U.S. citizen or U.S. resident alien,
- A partnership, corporation, company, or association created or organized in the United States or under the laws of the United States,
- An estate (other than a foreign estate), or
- A domestic trust (as defined in Regulations section 301.7701-7).

Special rules for partnerships. Partnerships that conduct a trade or business in the United States are generally required to pay a withholding tax on any foreign partners' share of income from such business. Further, in certain cases where a Form W-9 has not been received, a partnership is required to presume that a partner is a foreign person, and pay the withholding tax. Therefore, if you are a U.S. person that is a partner in a partnership conducting a trade or business in the United States, provide Form W-9 to the partnership to establish your U.S. status and avoid withholding on your share of partnership income.