MacDermid
ENVIO SOLUTIONS

REGULATORY COMPLIANCE
PLATING WASTE
BT7500+

PROPOSAL #13792R6

PRESENTED TO:

CBE+
CHESTERFIELD, DERBYSHIRE
542 5UZ, UK

BY

MACDERMID ENVIO SOLUTIONS
ROCK HILL, SOUTH CAROLINA 29732

June 17, 2021

BRYAN MCLAUGHLIN
REGIONAL SALES MANAGER

MES Proposal #13792R6 Summary

Executive Summary:

CBE+ is relocating an electroless nickel process operation to their main production facility. The wastewater generated from this process must be treated prior to discharge to meet effluent guidelines. The system detailed is this proposal will accomplish this task. Please refer to Page 13 (Schedule of Conditions) for additional information relative to the limitations of reducing Chemical Oxygen Demand in the effluent.

Design Summary:

The goal of the design is to treat plating wastewater to meet local discharge limits. The MES BT7500+ batch treatment precipitation and solids removal system was selected as the optimal choice for this application. This system provides enhanced through-put by utilizing a separate clarifier system for clarifying the waste and thickening the solids prior to dewatering.

MES will provide our exclusive sumpless pump system to automatically transfer the wastewater directly from the process plating line manifolds to the designated holding tanks in the WWT area.

The rinses will be collected in a 15,000-liter FRP equalization tank T-1 and a programmable pump is provided to transfer the waste to the batch tank. The spent alkaline concentrates will be collected in a 10,000-liter FRP tank T-2, while the spent acid concentrates will be collected in a 10,000-liter FRP tank T-3. Spent EN waste will be collected in a 12,000-liter FRP Tank T-4. Programmable pumps will bleed the concentrates at a controlled volume to ensure proper control.

The 7500-liter BT7500 will then adjust the pH to the optimum value, add a precipitant and coagulant to precipitate metals and TSS, then add a flocculant to enhance settling. The flocculated waste will then be pumped to a 11,500-liter clarifier with built-in thickener to settle the solids. The clarified treated water overflows to a 7500-liter final pH neutralization reactor prior to being pumped to discharge.

A 5 ft3 filter press (with an additional 2 ft3 expansion capability) will be utilized for filtration of the treated waste and for sludge dewatering. The MES Press Manager is included to optimize press operation and minimize operator attention.

Fully automated chemical feed systems ensure proper treatment and optimize chemical usage.

Includes a 5 GPM city water reverse osmosis (RO) system to provide high quality water for the process. Tap water will be collected in a covered 1900-liter LHDPE tank prior to treatment.

Chlorine compounds will be removed by carbon cartridge filters on the tap water supply line. A manual reverse osmosis system featuring six 4”-diameter brackish water RO elements will operate at up to 75% recovery over the full expected range of incoming water temperatures. Permeate will be stored in a covered 7500-liter LHDPE tank with UV disinfection provided. A distribution pump to return permeate to use points is included.

An MES E10 Allen Bradley control system with 15” touch screen provides fully automated control of the process. MES TECHLink for remote service by MES is included.

Includes installation supervision, installation materials, start-up, and training by MES.

- Installation labor by customer

Option #1 – Media Filter System -The effluent will be polished to remove any remaining TSS through a dual multi-media filtration system

Solution Overview:

- 15,000 liter per day batch treatment system with enhanced throughput capability
- MES sumpless collection system to automatically transfer the rinses and concentrates directly from the process line manifolds to the designated holding tank in the wastewater treatment area
- 15,000-liter rinse waste equalization tank
    - Includes programmable transfer pump
- 10,000-liter spent alkaline and spent acid concentrate holding tanks T-2 and T-3. A 12,000-liter FRP Tank T-4 holds the EN concentrate.
    - Includes programmable pumps to bleed at a controlled volume to ensure control of the treatment process
- MES BT7500+ batch metals precipitation and solids removal system
    - 7500-liter per batch treatment reactor
    - Includes a separate 11,400-liter clarifier for solids settling and separation to provide additional treatment capacity
        - Includes turbulence-preventing flow distribution system
        - Provides thickening of the solids prior to dewatering
        - Automated multi-port sludge draw-off system

- Filter press for sludge dewatering sized at 5 FT3 capacity
    - Includes 2 ft3 expansion capability
    - Press feed pump
    - Self-dumping hopper
    - MES Press Manager to optimize press operation and minimize operator attention
- 7500-liter final pH neutralization reactor to allow flexibility in the treatment system while ensuring the pH meets specification prior to discharge
- Automated chemical feed systems
    - Includes 200-gallon flocculant mix tank
- City Water RO System
    - 1900-liter LHDPE RO feed tank
    - 7500-liter finished water storage tank
    - UV disinfection of stored water
    - 5 GPM manual valved Reverse Osmosis unit
        - Six brackish water elements (4” diameter)
        - Antiscalant addition for fouling free 75% target recovery
        - Pump soft-start
- MES state of the art E10 Allen Bradley control system with 15” HMI
    - Includes MES TECHLink for remote service by MES
    - Includes CE certification of the entire system
- Includes installation supervision, installation materials, start-up, and training by MES.
    - Installation labor by customer
    - 10 MES service days included for supervision, start-up, and training

Pricing:

- **15,000 LPD Batch Treatment and City Water RO System $ 375,000.00**
  (Includes installation supervision, installation materials, start up, and training)

- **Option #1 – Media Filtration System $ 24,600.00**

Additional Key Terms:

Shipment: Equipment will be shipped INCOTERM 2020 EXW. Freight collect.

Payment Terms:

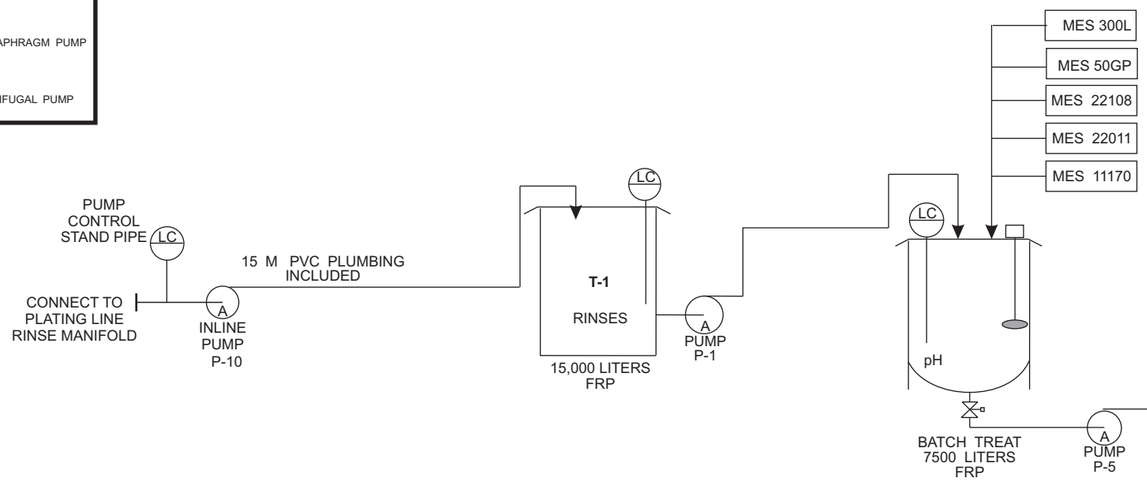
- **30%** down payment due with purchase order
- **30%** after completion of engineering
- **30%** prior to shipment
- **5%** after installation
- **5%** after start-up and acceptance of an operating system

DESCRIPTION OF WASTEWATER TREATMENT PROCESS
BT7500+ (15,000 LITERS PER DAY)
METAL FINISHING WASTE

MES E-CONTROLLER/10 USES
ALLEN BRADLEY PLC WITH
ALLEN BRADLEY COLOR GRAPHICS
A 15" TOUCHSCREEN WITH AIR CONDITIONER
TECHLINK

SCHEMATIC A

LEGEND
- = CONTROL VALVE
- LC = LEVEL CONTROL
- = MIXER
- A = AIR DIAPHRAGM PUMP
- C = CENTRIFUGAL PUMP



NOTES: ALL INTERCONNECTING PLUMBING IS SCHEDULE 80 PVC.

ALL CONDUIT IS PVC UNLESS OTHERWISE NOTED.

MacDermid ENVIO SOLUTIONS

400 Bryant Blvd
Rock Hill, SC, USA 29732
Business: 803/324-2401
Fax: 803/324-5773

FLOW SCHEMATIC
CBE +

DATE: 06/17/2021 DWG NO. 13792D1R6

LEGEND

= CONTROL VALVE

= LEVEL CONTROL

= MIXER

= AIR DIAPHRAGM PUMP

= CENTRIFUGAL PUMP

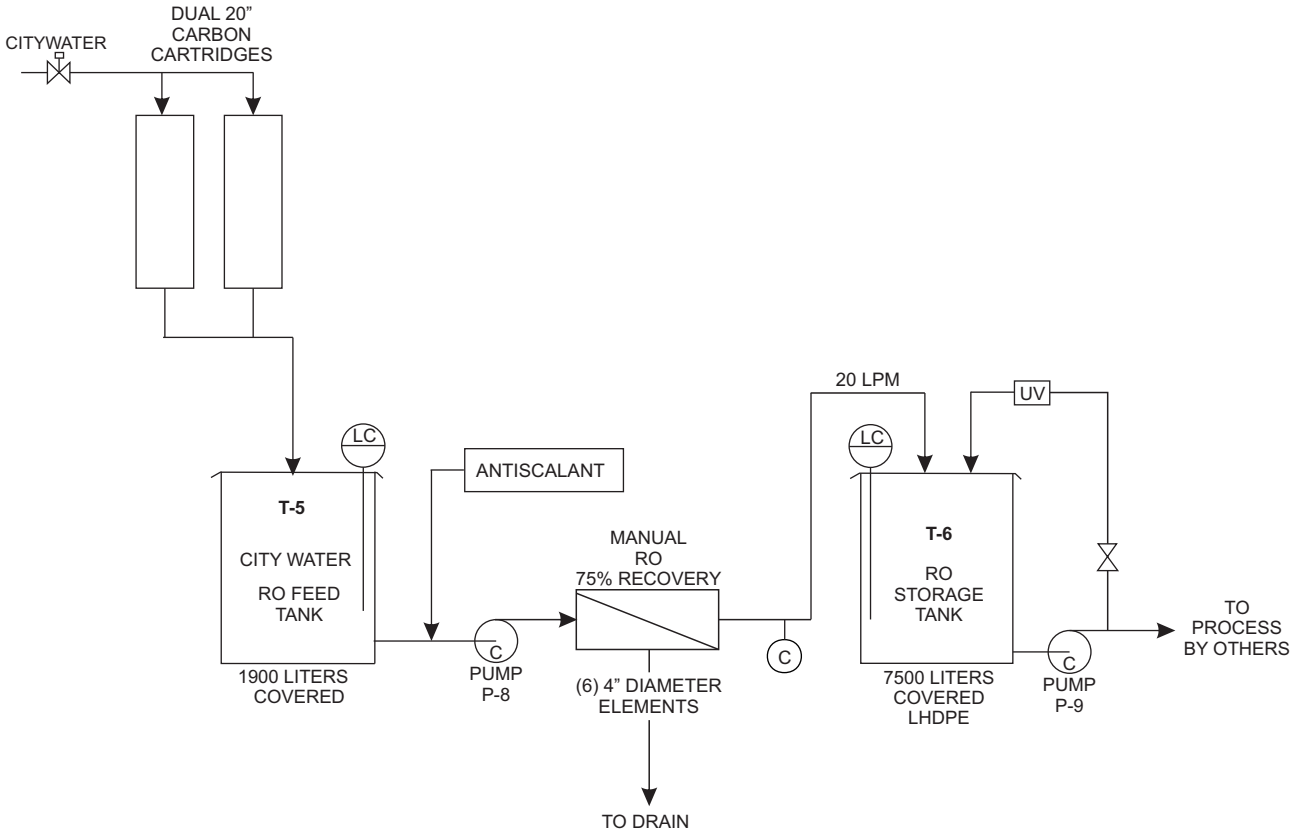
= CONDUCTIVITY

= ULTRA VIOLET

SCHEMATIC B

DESCRIPTION OF THE CITY WATER RO SYSTEM
CITY WATER REVERSE OSMOSIS
20 LPM (20,000 LPD)

CONTROLS ON SCHEMATIC A



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MES Standard Limited One (1) Year Product Warranty

MES warrants that at the time of delivery this product shall conform to MES'S quotation and/or the standard written specifications for such product. This warranty applies only to product which is used in accordance with all instructions as to maintenance and operation set forth in the manuals and instruction sets furnished by MES with the product.

Repair or replacement will be furnished for product or parts found to be defective in workmanship or materials within one (1) year from the date of shipment.

MES has no liability for any warranty claims: 1) submitted after expiration of the claim period; or 2) if MES is not given reasonable opportunity to examine the product or part to which the claim relates and customer does not return such product or part to MES. Customer's failure to give MES written notice of any claim within the applicable time period shall constitute an absolute and unconditional waiver of such claim.

Upon receipt of the written return authorization the claimant shall deliver the product or part to which the claim relates to MES with freight prepaid. MES assumes no responsibility for products or parts which are returned without its prior written authorization.

Upon receipt of the product or part to which the claim relates, an examination will be conducted by MES to determine the cause of failure and whether it is covered by the warranty. This determination will be made by MES at its sole discretion. If the product or part is not covered by the warranty, a statement of MES's findings will be sent to the claimant.

MES's liability for any damage caused by a product which fails due to defective materials or workmanship and the claimant's only recourse shall be limited (at MES's option) to the replacement or repair of the defective product, part or parts as originally furnished by MES. It is expressly understood that MES is not responsible for damage or injury caused to other products, machinery, buildings, property, or persons by reason of the installation or use of its products. This warranty does not obligate MES to bear any costs of removal, installation, transportation or any other charges which may arise in connection with a warranty claim.

This warranty shall be null and void and of no effect if in the judgment of MES any component of a product has been (a) tampered with, disassembled, repaired or altered (except as may be authorized by MES in writing); (b) subjected to misapplication, misuse, neglect, or accident; or (c) used in a manner for which it was not designed, which may damage or compromise the materials used in construction of the product, or which may otherwise negatively affect the operation of the product. The warranty shall not apply to repairs or service adjustments required because of lack of reasonable and proper maintenance or lubrication.

MES shall not be responsible for nonperformance or delays in performance due to causes beyond MES'S control, including but not limited to the acts or omissions of customer, acts of God, strikes or other labor disputes, acts of terror, war, plant shutdowns, voluntary or involuntary compliance with any law, order, regulation, recommendation or request of any governmental

authority, inability to obtain fuel, material or parts, delays or unavailability of transportation, breakdowns of machinery or equipment, fires, explosions or accidents.

No distributor or other person is authorized to assume any liability or obligation for MES other than expressly provided herein.

Determination of the suitability of the product for the uses and applications contemplated by customer shall be the sole responsibility of customer. Any suggestions or recommendations made by MES concerning uses or applications of the product are believed to be reliable, but MES makes no warranty or guarantee of the results to be obtained since the conditions of the use and application by customer and others are beyond MES'S control.

THIS IS MES'S SOLE WARRANTY AND IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, NO MATTER WHETHER ARISING BY OPERATION OF LAW OR OTHERWISE, INCLUDING BUT NOT LIMITED TO ALL WARRANTIES OF MERCHANTABILITY AND/OR FITNESS FOR A PARTICULAR PURPOSE AND/OR AGAINST INFRINGEMENT WHICH ARE HEREBY EXCLUDED. CUSTOMER ASSUMES ALL RISKS RESULTING FROM THE USE OF THE PRODUCT, WHETHER USED SINGLY OR IN COMBINATION WITH OTHER SUBSTANCES OR IN ANY PROCESS.

All accessory items or equipment furnished by MES with this equipment are subject to the warranty or guarantee issued by or considered standard practice by the respective manufacturers.

There will be a charge for service calls made by our technicians. If these calls are proven unnecessary due to a failure to follow corrective measures given during telephone conversations with MES'S Engineering Department, the charges will be based on $1,500.00 per day within the continental United States ($1,850.00 per day outside North America) plus expenses from portal to portal. **Rates are subject to change. Please contact MES for a current price sheet.**

One (1) Year Performance Guarantee. For customers who do not participate in the Performance Guarantee Service Program (PGSP), MES provides a one (1) year performance guarantee for the purchased system to the customer. MES requires a complete understanding of the chemistry program and monthly system information (service logs and chemical usage) for the guarantee to apply. In the event that the system fails to meet said guarantee or to comply with applicable regulatory authority within the guarantee period, MES will make such adjustments as MES determines to be necessary, up to and including furnishing a complete system. MES's One (1) Year Performance Guarantee applies only to systems used in accordance with all instructions as to maintenance and operation set forth in the manuals and with software and instructions furnished by MES. MES assumes no liability for any errors that are caused by the inaccuracy or incompleteness of customer supplied data. Changes in the customer's business subsequent to the establishment of performance standards may invalidate the guarantee. The One (1) Year Performance Guarantee is only applicable to customers whose account is in good standing. The One (1) Year Performance Guarantee does not include participation in the PGSP and the associated benefits of being a PGSP customer.

MES Performance Guarantee Service Program

MES offers customers the opportunity to participate in our one-of-a-kind **Performance Guarantee Service Program (PGSP).** Participation in the PGSP creates an ongoing arrangement between MES and our customers to assist our customers in achieving their effluent and regulatory goals with reduced effort and at reduced cost. For participants in this program, ***MES guarantees that the system furnished hereunder will operate in the manner set forth in MES'S quotation and/or standard written specifications. If it does not operate as promised due to issues with MES'S design, MES will fix the system at our cost, up to and including the provision of a new system*.**

Participation in the PGSP:
There are two ways to participate in the PGSP.

1) Purchase ***ALL*** wastewater chemistry and replacement equipment (spare parts) exclusively from MES.
2) Purchase ***ALL*** replacement equipment (spare parts) and an annual service contract from MES to manage the wastewater treatment program. MES must approve the chemical program in use for the PGSP to apply.

The Performance Guarantee Service Program is designed to ensure compliance while lowering total operating costs for the wastewater treatment system. PGSP customers also enjoy the following benefits:

1) MES's standard limited one (1) year warranty is extended to two (2) years
2) Spare part discount of 10%
3) Technical Staff On-Site Call discount of 20% off standard rates
4) Discount for Treatability studies if required due to process changes

Additionally, each PGSP participating customer will be assigned a MES Account Manager and together a mutually agreed upon service plan will be developed which may include the following:

1) Agreed upon number of Account Manager visits each quarter
2) Option to include service visits by a technician on a weekly or other agreed upon frequency
3) Option for a full-time operator to help run your systems
4) Chemical Inventory Management
5) Daily, Weekly and Monthly automated reporting
6) Operator Training at start-up and as needed
7) Annual confirming jar testing or as needed during Account Manager visits
8) Option for Hands-Free chemical delivery in select geographies
9) Prioritization for phone/remote service technical support over non PGSP participating customers

Term:
The initial term of the PGSP is five (5) years. Renewal eligibility and period of renewal is based upon a review of the system's operating condition at the end of the five (5) years. Customers may opt-out of the program at any time by notifying MES in writing with thirty (30) days notice. If customers do not fully comply with the conditions of participation in the PGSP (including but not limited to use of non-approved chemistry or parts in the system), they will no longer be eligible for the Performance Guarantee from the date of non-compliance.

Five (5) Year Performance Guarantee. In the event that the system fails to meet the Performance Guarantee or to comply with applicable regulatory authority within the five (5) year guarantee period, MES will make such adjustments as MES determines to be necessary, up to and including furnishing a complete system. MES'S Performance Guarantee applies only to systems used in accordance with all instructions as to maintenance and operation set forth in the manuals and with software and instructions furnished by MES. MES assumes no liability for any errors that are caused by the inaccuracy or incompleteness of customer supplied data. Changes in the customer's business subsequent to the establishment of performance standards, including changes in regulatory discharge limits may invalidate the guarantee. The Performance Guarantee is only applicable to customers whose account is in good standing. The Performance Guarantee is separate from MES'S Standard Limited One (1) Year Product Warranty.

MES'S SOLE LIABILITY, AND CUSTOMER'S EXCLUSIVE REMEDY AGAINST MES FOR ANY AND ALL CLAIMS, WHETHER FOR BREACH OF CONTRACT, WARRANTY, TORT (INCLUDING NEGLIGENCE) OR OTHERWISE, IS LIMITED, AT MES'S ELECTION, TO: (a) SHIPMENT OF REPLACEMENT PRODUCT, (b) MODIFICATION OF THE PRODUCT, OR (c) REFUND OR ISSUANCE OF A CREDIT TO CUSTOMER IN AN AMOUNT EQUAL TO THE PRODUCT'S PURCHASE PRICE. NOTWITHSTANDING THE FOREGOING, IN NO EVENT SHALL MES BE LIABLE TO CUSTOMER FOR ANY CONSEQUENTIAL, INDIRECT, INCIDENTAL, SPECIAL, PUNITIVE OR ENHANCED DAMAGES, INCLUDING, WITHOUT LIMITATION, LOSS OF PROFITS, LOSS OF OPPORTUNITY OR DIMINUTION IN VALUE, RESULTING OR ARISING FROM OR IN CONNECTION WITH BREACH OF THIS WARRANTY OR ANY CAUSE ARISING FROM OR IN CONNECTION WITH THE PRODUCT. TO THE EXTENT PERMITTED BY LAW, ANY STATUTORY REMEDIES WHICH ARE INCONSISTENT WITH THIS PROVISION ARE EXPRESSLY WAIVED BY CUSTOMER.

PROPRIETARY Statement

This proposal contains proprietary and confidential information. Any such proprietary or confidential information disclosed herein is provided at buyer's request and solely for the purpose of enabling buyer to evaluate and purchase this proposal.

In receiving and reading this proposal, buyer agrees that it will not reveal or otherwise distribute its contents to any third party without MES's prior written consent. The foregoing limitation shall not preclude buyer from disclosing the contents of this proposal to its employees, on a need to know basis, who have the responsibility to evaluate and/or implement the program set forth in this proposal. This proposal shall at all times remain the exclusive property of MES's until accepted by the party to which it was tendered.

It is the Responsibility of CUSTOMER to determine if this data is acceptable. MES will provide changes if required. These changes or redesign of the system can result in a change in price.

Regulatory compliance is the goal. This proposal covers the services as well as the equipment that will be necessary to achieve and maintain compliance.

Wastewater treatment is a chemical process in which chemicals are added to wastewater in a reactor to destroy or precipitate the contaminants. MES's Advanced Electronics control the chemical reactions with accuracy and reliability. The systems mechanical components support the controller to assure the most efficient use of chemicals, energy, and manpower.

Treatment System Specifications

MES is providing one treatment system with the following specifications:

1. System Flow Rate	15,000 liters per day. Typical batch time as one per shift. Peak flow of waste is absorbed by the equalizing tank (T-1).
2. Filter Cake	20-30% solids (non-pourable
3. Effluent	Effluent will meet the following regulatory requirements:

SCHEDULE OF CONDITIONS

1. The temperature of the effluent shall not exceed 43.3 degrees Celsius at the time of discharge.
2. The pH value of the effluent shall not be less than 6 nor more than 10.5 at the approved measuring point.
3. Settled Chemical Oxygen Demand shall not exceed 3000 milligrammes per litre.*
4. Free Cyanide (as CN) shall not exceed 2 milligrammes per litre.*
5. Settleable Solids shall not exceed 250 miligrammes per litre.
6. Total Copper (as Cu) shall not exceed 1 milligramme per litre.
7. Total load of Copper (as Cu) discharged in twenty-four hours shall not exceed 0.015 kilogrammes.
8. Total Nickel (as Ni) shall not exceed 4 milligrammes per litre.
9. Total load of Nickel (as Ni) discharged in twenty-four hours shall not exceed 0.06 kilogrammes.
10. Total Zinc (as Zn) shall not exceed 1 milligramme per litre.

***These items are not expected to be treated in the wastewater treatment system design. If there are changes, MES can design the system, which may result in a change in price.**

Note: The system is not designed to reduce soluble chemical oxygen demand (COD) concentration in the effluent. Levels of COD in the wastewater will vary based on the concentrate age prior to dumping and the rinse water blend ratio.

Utility Services Provided By Customer

- *Electrical*

  Customer will provide connection to service at the main control panel which consists of the following:
  - 208/220/440 volts/3 phase/60 hertz
  - Other voltages for destination country available
  - 240/415 Volts/3 phase/50 hertz

- *Air*
  - Customer will provide connections to services indicated on MES equipment layout drawing (typically 3-10 locations)
  - Compressed air at 85 - 115 PSI (6-8 BAR)
  - Dry air protected to 40°F dew point level

- *Tap Water*
  - Customer will provide connection to services indicated on MES equipment layout drawing
  - Typically 1-3 location(s) use Chemical Makeup and Pump priming

- *Communications Line*
  - Customer will provide connection to high speed internet/VPN/phone line at the main control panel.

- *Untreated Water*
  - Customer to provide

- *Final Discharge*
  - Customer to provide final sewer connection for discharge of treated water.

- *Main Panel*
  - Location

    MES recommends against installing the main control panel in locations exposed to the elements. If the panel is located outside, shields from the sun and rain are necessary. The optioned panel air conditioner is also necessary. Advanced electronic control systems are capable of operating with ambient temperatures no greater than 40°C (104°F). If temperatures are expected to be excessive, an optional air conditioner will be required for the control panel.

- *Refuse*
  - Customer to provide a container for shipping material, assembly debris, and general trash. MES to leave facility “broom clean”. No hazardous material disposed of in waste bin

Treatment System Operation

Control Center

The MES advanced solid-state control center operates the treatment system. It coordinates flows, waste loads, chemical demands, and monitors the systems' operation. The steady flow of digital and analog data is analyzed and the control response is computed. Correct treatment is carefully monitored. If treatment failure occurs, the control center senses the failure and initiates corrective action. Treatment will automatically continue if the condition is temporary. The human operator is notified when the condition cannot be corrected.

Human Operator

The primary duties of the human operator include:

- Periodic Jar Testing
- Refilling treatment chemical reservoirs
- Removing dewatered waste products
- Perform scheduled and preventative maintenance
- Ordering treatment supplies
- Simple testing of treated water
- Filling in reports
- Keeping records
- Monitoring the general operation of the water treatment system
- Obtaining trouble-shooting assistance from MES

MES Service Center

All MES controllers are shipped with TECHLink installed. MES's start-up personnel use it to obtain real-time start-up assistance if needed, from the MES Service Center in South Carolina. If TECHLink is purchased the operator, using TECHLink, gets required help from the MES Service Center**.** (800) 845-5019.

Spare Parts Package

MES strongly recommends that an adequate spare parts package be maintained in the customer's maintenance inventory so that a rapid response can be made to a critical equipment failure. Though equipment failures are rare they do happen and in many states, treatment permits require that adequate spare parts be stocked. The spare parts package contains a selection of spare parts that will facilitate rapid repair or replacement of failed components.

A spare parts package is developed during engineering and it typically includes both components and consumables.

Electronics

- Instrument Components
- PLC Batteries
- PLC I/O Spares

Electrical

- Level Control Components
- Solenoid Valves
- Pressure Switches

Pumps

- Chemical Feed Spare
- Repair Components
- Sump Pump Spare
- Sump Pump Repair Comp.
- Sludge Pump
- Sludge Pump Repair Comp.

Mixers

- Spare Mixer
- Chemical Mixer Shaft

Valves

- Chemical Control Valves
- Metering Valves

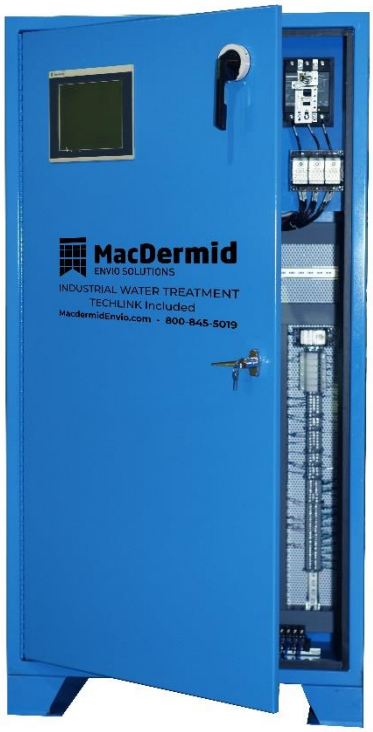
Consumables

- Chart Papers
- Chemical Test Kits
- Flocculant Supply
- Gasket Materials
- Filter Press Cloths

MES will include a recommended critical and extended spare parts list as well as a complete list of spare parts. This list will be sent to the end user around the time of commissioning of the equipment. MES maintains an inventory of nearly all parts found in your system. They may be ordered by phone, fax or email. Stock items are shipped within 24 hours.

Phone: (800) 845-5019
Fax: (803) 324-5773
Email: Martha.Rosales@macdermidenvio.com

MES E-Controller/10 Advanced Solid State Control Center



E-Controller/10 is the heart of a MES system. It turns a collection of water treatment equipment into a functional system. The E/10 controller consists of an industrially hardened PLC (Programmable Logic Controller) and a touch-screen HMI (Human-Machine Interface). The controller has an Allen Bradley PLC with Allen Bradley software based 15" touch screen. The Windows based PC HMI provides active graphics with a status bar to displayed critical information on every operating page. MES Controller uses Ethernet for communications.

All MES Control Panels are designed, built and programed in house by our team of experts for each client system. By building the controls in house our Account Managers and Field Service teams can provide optimal and efficient long-term support.

System Operator

E-Controller/10 operates the system. The Controller coordinates flows, loads, chemical demands and monitors the reaction environment. This constant flow of digital and analog data is analyzed and the control response is computed. Correct treatment is carefully monitored. If treatment failure occurs, the control logic senses the failure and visually and audibly notifies the operator. Several alarms are self-correcting, treatment will automatically continue if the condition was temporary.

MES incorporates a simple indicator stack lights for reference. The Green, Yellow and Red lights provide a convenient method to check the status of the system.

- Green indicates all is good/ready
- Yellow indicates Warning
- Yellow blinking indicating waiting on operator input/action
- Red blinking new alarm
- Red alarm condition

The MES E-Controller/10 can include but is not limited to the following;

- AB PLC
- AB Operator Interface
- Touch Screen

- Visual and audible warnings of critical alarms
- Industrial harden hardware
- Pump settings, pump rates and control
- Single power drop (3-phase)

Human Operator

The advanced technology of the MES Control Center makes operating the treatment easy. MES has developed screens which are very intuitive in nature for operations. Information includes;

- Alarms with date and time
- Warnings with date and time
- Sensor calibration with step by step instructions
- Critical data displayed via the HMI
- All-important parameters are adjustable on the HMI
- All operations can be controlled on the HMI

Security

Multilevel password protected access allows only qualified personnel to change set-points, or to manipulate components for diagnostics or maintenance. By tracking what actions are taken by the log in users, allow accountability of operations.

- View only
- Turn the system on and off
- Calibrate the sensors, turn on and off bleed pumps
- Administration includes set password, change log ins, change pH set points, change bleed rates.

Preventive Maintenance Screens (PM)

MES includes screens for preventive maintenance that includes but not limited to;

- Gallons pumped by air diaphragm pumps (set PM based on average life cycles)
- Sensors set for hours of operation
- Mixers and electric pumps set for hours of run time

Event Logging

This valuable diagnostic page identifies the following;

- Date and time for alarms
- Date and time for warnings
- Date and time for operator-initiated controls changes
- Date and time for operator response to alarms

Data Acquisition

E-Controller/10 incorporates data acquisition into the panel. That data that is collected at the main panel include;

- Sensor trends
- Flow rates
- Logged data
- Alarms

MES Analytics (optional)

MES E-Controller/10 can supply data to a cloud base server (client provided connection to the internet and subscription) for the purpose of supplying addition analytical analysis of the system operations. The client can then log into the Web based application and retrieve data in graph form which then would allow a deep drive into the details as needed. These reports can include the following but not limited to;

- Daily operational reports
- Weekly operational reports
- Executive reports
- Etc.

TECHLink™ Service including remote notification

MES's TECHLink makes it possible for MES's Service Center to provide real-time client support for trouble shooting and diagnostics of the treatment system.
MES can provide the following support via TECHLink to our clients;

- PLC live view of the logic
- PLC software modifications
- PLC program upgrades/updates
- HMI program upgrades/updates
- HMI status/diagnostics

MES Text Alerts and E-Mail Notifications (Optional)

The MES Control Panel can provide critical notifications about system operations. (client provided connection to the internet)

MES Chemical Consumption Reporter

An important function built into the E-Controller is the chemical consumption reporter. It displays operational data in a form that becomes a "benchmark" of operating efficiency.

Alarms Designed into the MES System

All MES System alarms are designed to take a corrective action to prevent discharges exceeding regulatory requirements. All alarms are visual and audible and include:

A. **Treatment Failure** (Instrument Controlled)
The MES logic circuit detects abnormal conditions and stops the system flow or diverts it to temporary holding.

B. **Chemical Feed Failure** (Non-instrument controlled)
The MES logic circuit detects instrument controlled chemical additions. Blockage or insufficient chemical causes the system flow to stop or diverts it to temporary holding.

C. **Low Level in the Chemical Holding Tank** (optional)
Proper treatment cannot occur without available chemical. Low level in the chemical tank stops the system flow.

D. **Filter Press Manager** (optional)
MES Press Manager detects inefficient operation, which could include;
- Dirty filter cloths
- Plugged filter feed lines
- Poor treatment/settling
- Sludge channeling in the thickener/clarifier

E. **Loss of Air Pressure in the System**
Air is critical to system operations. Loss of air is detected by low air pressure and the alarm stops the system flow.

F. **Circuitry Failure**
This logic circuit monitors the correct functioning of the controllers and the computer. A failure in this self-diagnostic alarm stops the system flow.

Additional alarms dependent on system configuration could include;
- Flow rate
- Turbidity
- Temperature
- Conductivity
- Sump or tank levels
- Critical instrument failures
- ECT

Optional Controls panel up enhancements

MES has optional features depending on client requirements

- UL inspected panel (MES is a UL approved panel shop)
- NEMA 4 / IP 69 panel
- 304 SS panel shell
- FRP panel shell

Sumpless Wastewater Collection

Modern metal processing equipment is often provided with rinse waters and spent solutions flowing to built-in discharge manifolds. MES connects in-line pumps to the manifolds to transfer the waste directly to the rinse water or spent solution holding tanks. This process eliminates the need for sumps and avoids RCRA mandated double containment.

Flow Equalization and Emergency Holding (Tank T-1; 15,000 Liters Capacity)

MES is providing flow equalization and emergency holding capacity. It is designed to handle peak flows or surges of any quantity and provide a constant rate to the wastewater treatment system.

The holding capacity further provides storage for wastewater in the event of treatment components failure or system alarm. The MES E-Controller monitors water levels in emergency holding.

The transfer system consists of a collection tank (T-1), level controls, an air diaphragm pumps (P-1) equipped with a MES exclusive counter. Transfer-rate and proportion are set at the controller.

The tank is constructed of fiberglass.

The tank has a cover.

Spent Solution (Alkaline) Programmable Bleed System (Tank T-2; 10,000 Liters Capacity)

Spent solutions are usually 100 to 200 times stronger than rinse waters. This extreme difference in strength affects the amount of chemical and flocculant needed for proper treatment.

MES provides a programmable process for bleeding this spent solution to the rinse water treatment system. The E-Controller regulates the flow and adjusts chemical and floc feeds to accommodate the proportioned bleed of concentrated waste. When all the concentrated

waste has been treated, the E-Controller readjusts chemical and floc. Therefore, the treatment process uses only the amount necessary for treatment. E-Controller monitors and reports the bleed-rate and the total quantity of spent solution processed. Cost reporter, a function of the E-Controller, provides this operating data as a "benchmark" of operating efficiency.

The bleed system consists of a collection tank (T-2), level controls, an air diaphragm pump (P-2 equipped with a MES exclusive counter. Bleed-rate and proportion are set at the controller.

Spent Solution (Acid Concentrates) Programmable Bleed System (Tank T-3; 10,000 Liters Capacity)

Spent solutions are usually 100 to 200 times stronger than rinse waters. This extreme difference in strength affects the amount of chemical and flocculant needed for proper treatment.

MES provides a programmable process for bleeding this spent solution to the rinse water treatment system. The E-Controller regulates the flow and adjusts chemical and floc feeds to accommodate the proportioned bleed of concentrated waste. When all the concentrated waste has been treated, the E-Controller readjusts chemical and floc. Therefore, the treatment process uses only the amount necessary for treatment. E-Controller monitors and reports the bleed-rate and the total quantity of spent solution processed. Cost reporter, a function of the E-Controller, provides this operating data as a "benchmark" of operating efficiency.

The bleed system consists of a collection tank (T-3), level controls, an air diaphragm pump (P-3) equipped with a MES exclusive counter. Bleed-rate and proportion are set at the controller.

The tank is constructed of fiberglass.

The tank has a cover.

Spent Solution (EN Concentrates) Programmable Bleed System (Tank T-4; 12,000 Liters Capacity)

Spent solutions are usually 100 to 200 times stronger than rinse waters. This extreme difference in strength affects the amount of chemical and flocculant needed for proper treatment.

MES provides a programmable process for bleeding this spent solution to the rinse water treatment system. The E-Controller regulates the flow and adjusts chemical and floc feeds to

accommodate the proportioned bleed of concentrated waste. When all the concentrated waste has been treated, the E-Controller readjusts chemical and floc. Therefore, the treatment process uses only the amount necessary for treatment. E-Controller monitors and reports the bleed-rate and the total quantity of spent solution processed. Cost reporter, a function of the E-Controller, provides this operating data as a "benchmark" of operating efficiency.

The bleed system consists of a collection tank (T-4), level controls, an air diaphragm pump (P-4) equipped with a MES exclusive counter. Bleed-rate and proportion are set at the controller.

The tank is constructed of fiberglass.

The tank has a cover.

Chemical Feed System

The MES treatment system is equipped with a chemical dosing system that is optimized to feed the MES treatment chemistry. The chemical feed system is fully integrated into the main MES control panel, thus allowing the chemical delivery rates to be regulated and tracked.

- The first part of the chemical feed system is designed for chemistry that is controlled via instrumentation. This would include pH and ORP; being the most common. The treatment chemicals can include the following:

  - MES 22108 – lower pH
  - MES 22011 Soda – raise pH
  - Lime – raise pH
  - MES 20018 – convert Hex Chrome to Tri Chrome
  - Etc.

  This feed system is modularized with all Sch 80 feed lines and service valves pre mounted, labeled, and tested. The chemical feed pump is an air diaphragm pump. The air supply from the controller is filtered and pressure regulated. The pump is equipped with a MES exclusive counter. This allows the control center to regulate and monitor flow and specify exact additions. Chemical use is determined and displayed as total gallons used and total cost is calculated.

  MES is including 3 feed systems for MES 22108, and MES 22011.

- The next part of the chemical feed system is for treatment chemicals which are fed based on volume. This would typically be the coagulants. This portion of the chemical feed is fed as neat chemistry.

The feed system is modularized with all feed lines and service valves pre mounted, labeled, and tested. The chemical metering feed pump(s) are factory mounted. The pump is equipped with a MES exclusive counter. This allows the control center to regulate and monitor flow and specify exact additions.

MES is including 2 feed systems for MES 50GP and MES 11170.

- The final part of the chemical feed system is for polymer/flocculant. This system is designed to provide proper dilution of the concentrated polymer/flocculant and correct unwind and aging time for the polymer once it is diluted. The day tank is modularized with all Sch 80 feed lines and service valves pre mounted, labeled and tested. The covered chemical tank is equipped with a mixer, level control, water makeup and chemical feed pump factory mounted. The chemical feed pump is an air diaphragm pump. The air supply for the controller is filtered and pressure regulated. It is equipped with a MES exclusive counter. This allows the control center to regulate and monitor flow and specify exact additions. Flocculants are proportioned to system flow. Chemical use is determined and displays as total gallons used and total cost is calculated.

  MES has included 1 polymer feed system with an aging tank size at 200 gallons.

Batch Treatment Reactor (BT; 7,500 Liters Capacity)

A batch treatment reactor is described on the flow schematic in this proposal. It is functionally tied into the MES Control Center and the chemical feed system.

The tank is constructed of fiberglass.

The tank has a cover.

Single Air Pump (Modular) (Pump P-5)

The MES pump system is modularized. The air diaphragm pump is frame mounted. It is pre plumbed with inlet and outlet service valves, flex couplings, and service unions. The pump is equipped with a MES exclusive counter. This allows the control center to regulate and monitor flow and totalize the gallons transferred.

MES Clarifier with Built-In Thickener

Treated water is pumped from the batch treatment tank to the clarification system. The system includes a MES non-metallic clarifier complete with turbulence-preventing flow distribution and uniform surface decanting feature to prevent erratic operation. The built-in thickener produces a high-density sludge which is properly conditioned for rapid and efficient dewatering.

The system includes MES's automated multiport sludge draw-off system to the filter press.

Filter Press (Semi Auto Closure)

The filter press (plate and frame) is used as a method for dewatering solids which the wastewater treatment system generates. The filter press will take sludge/solids from the clarifier or thickener via an air diaphragm pump and put the solids into the press. The fill cycle is controlled by the MES Control panel to provide optimal cake dryness and filling time. The press is equipped with polypropylene chamber plates, which are gasketed for leak proof operation. The press is equipped with a hydraulic ram that is used to keep the plates together (does not squeeze the sludge or cake). The cake solids removed from the press will typically pass a paint filter test.

Opening and closing of the press is performed by an air operated hydraulic system which automatically compensates for varying temperatures and pressures that can expand or contract the plate stack. Hydraulic lines are stainless steel. Side rails are key locked. Automotive quality welding and painting is used.

The fill cycle is done as a batch operation. Typically, the system operator decides that there are sufficient solids in the clarifier/thickener to fill the press. The operator starts the cycle, the main control panel controls the fill rate and blowdown. The operator is then notified the cycle is complete and time for the press to be emptied.

The capacity of the press is $5ft^3$. The typical cycle time can vary based on several factors but is around four (4) - five (5) hours can be expected. Time can vary to be as little as 2 ½ to as much as 12 hours. MES generally sizes a press to be emptied one time per shift of system operation. Other factors can affect size as well.

Press Feed Pump Module (Pump P-6)

The feed pump system is modularized. The air diaphragm pump is frame mounted. It is pre-plumbed with inlet and outlet service valves, 316 ss flex couplings, and service unions.

The frame mounted air diaphragm pump comes with the blow down manifold pre-piped with the pump. This is designed to remove any excess water in the piping prior to opening of the press (will not dry wet cake). Most of the pumps come equipped with MES's exclusive stroke monitor system to allow the PLC to control the operation of the pump and pressure. There is an "Air Relay" that is used to control the pressure to the pump.

Press Expander Piece

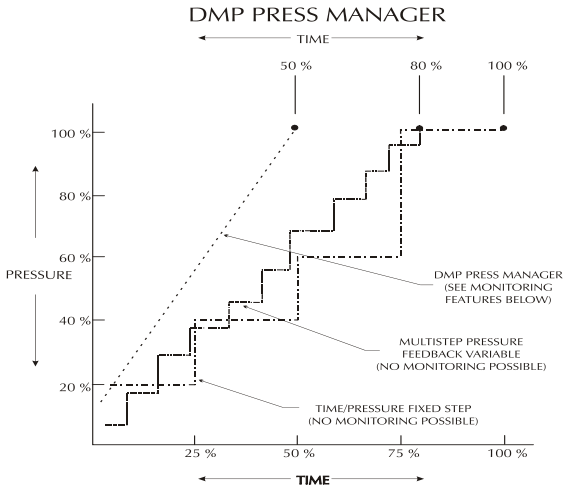
The 2 cubic foot expander piece provides built-in press expandability.

Press Manager

The **MES Press Manager** is a process that reacts to the variable characteristics of the precipitate and fills the press in the shortest possible time.

This is accomplished by integrating feed pressure, feed flow rate, and feed volume. Feed pressure is continuously adjusted to maintain the maximum feed volume. The press fills uniformly and dewatering is maximized by preventing premature plate surface blinding that causes soft cakes.

The result is the ability to consistently produce the highest filter cake solids possible in the shortest time.



DMP PRESS MANAGER INCLUDES MONITORING FEATURES TO ASSIST YOUR PLANT OPERATOR AND DMP CUSTOMER SERVICE DEPARTMENT IN DIANOSING PROBLEMS SUCH AS DETECTING DIRTY FILTER CLOTHS, PLUGGED FILTER PRESS FEED LINES, HASTY OR POOR SETTLING, OR A CONDITION KNOWN AS CHANNELING.

The wastewater treatment operator is fully informed about the condition of the dewatering process. **MES Press Manager** also detects dirty filter cloths, plugged filter press feed lines, hasty or poor settling, or a condition known as channeling or rat hole.

All functions of the press manager reside in the control center. MES's TECHLink allows a MES Service Center expert to analyze the press and sludge condition if necessary to help the operator.

Final pH Neutralizer (N-1; 7500 Liter Capacity)

Treated waste is pH adjusted in this treatment reactor. The neutralizer balances flows, waste loads, reagent demands, and monitors the environment.

MES is supplying treatment neutralizer of nonmetallic construction throughout. This neutralizer is equipped with a mixer, removable probe holders, and easily accessible reagent feed ports. Positioning of inlet, outlet, probes, reagent feeds, and mixer are matched to prevent short-circuiting of untreated material.

The neutralizer is constructed of linear high density polyethylene (LHDPE).

TAP WATER RO SYSTEM

City Water Feed Tank (Tank T-5; 1900 Liter Capacity)

A city water feed tank is provided. Its function is described on the schematic in this proposal.

The tank is equipped with fill ports, discharge outlets, level controls, and functionally ties into the DMP control logic circuits for proper usage.

The transfer system consists of a storage tank (T-5), level controls, a centrifugal pump (P-8). Transfer-rate is controlled via the main panel.

The tank is equipped with an automatic valve to add water to the tank. This is controlled via the main panel.

The tank has a cover.

The tank is constructed of linear high density polyethylene (LHDPE).

Duplex Carbon Cartridge Unit

The carbon cartridges remove organics and chlorine from the water

DMP is providing a duplex carbon cartridge filter unit with manual valves. In normal operation, the lead filter is in operation and the second unit is in standby. When the pressure is at set point or the chlorine level starts to increase, the operator switches the valve to the standby unit and continues to produce de-chlorinated water.

Reverse Osmosis

Reverse osmosis (RO) is a filtration method that removes many types of large molecules and ions from solutions by applying pressure to the solution when it is on one side of a selective membrane. The result is that the solute is retained on the pressurized side of a selective membrane and the pure solvent is allowed to pass to the other side. To be "selective," this membrane should not allow large molecules or ions through the pores (holes), but should allow smaller components of the solutions (such as the solvent) to pass freely.

The process is similar to membrane filtration. However, there are key differences between reverse osmosis and filtration. The predominant removal mechanism in membrane filtration is straining, or size exclusion, so the process can theoretically achieve perfect exclusion of particles regardless of operational parameters such as influent pressure and concentration. Reverse osmosis, however involves a diffusive mechanism so that separation efficiency is dependent on solute concentration, pressure and water flux rate.

Process

Formally, reverse osmosis is the process of forcing a solvent from a region of high solute concentration through a semipermeable membrane to a region of low solute concentration by applying a pressure in excess of the osmotic pressure.

The membranes used for reverse osmosis have a dense barrier layer in the polymer matrix where most separation occurs. In most cases, the membrane is designed to allow only water to pass through this dense layer, while preventing the passage of solutes (such as salt ions). This process requires that a high pressure be exerted on the high concentration side of the membrane, usually 2-17 bar (30-250 psi) for fresh and brackish water, and 40-70 bar (600-1000 psi) for seawater, which has around 24 bar (350 psi) natural osmotic pressure that must be overcome. This process is best known for its use in desalination (removing the salt from sea water to get fresh water), but since the early 1970s it has also been used to purify fresh water for medical, industrial, and domestic applications.

The tap water RO will have six 4-inch diameter brackish water membranes in series.

An anti-scalant feed system is included.

RO Permeate Water Storage Tank (Tank T-6; 7500 Liter Capacity)

An RO Permeate storage tank is provided. Its function is described on the schematic in this proposal.

The tank is equipped with fill ports, discharge outlets, level controls, and functionally ties into the DMP control logic circuits for proper usage.

The transfer system consists of a storage tank (T-6), level controls, a centrifugal pump (P-9).

The tank has a cover.

The tank is constructed of linear high density polyethylene (LHDPE).

UV (ultraviolet) Recirculation Loop

DMP is providing a UV loop with Tank T-6 to help keep biological growth out of the water. The UV is typically sized for a turn of the tank once every three hours. The UV is tied into the main panel and tracks hours left in the usefulness of the bulb life.

Equipment Access

MES provides all inspection decks, access platforms, tank supports, mixer mounts, and other assemblies necessary to provide a complete system. All decks, guardrails and stairways meet OSHA standards. Stairways are a comfortable 45° rise.

All structural steel meets ASTM A36 (UNS K02600) standards. Joints are mig welded. All structural components are shot blasted to white metal. Finish consists of 1 mil of synthetic primer sealer and 2.5 mils of catalyzed polyurethane acrylic enamel.

MES Standard Documentation

1) The following represents the engineering information provided by MES:
   - Approval Documents are issued in order to inform the end user of essential information, as well as to maintain an organized, efficient, and cost effective project.

   - All engineering drawings will be available as hard copy, AutoCAD 2008 or newer and/or PDF files. MES would recommend that copies are printed in color. Transmittals can be made by way of E-Mail.

   - Submittal for customer approval:
     a) Submittal includes Proposed Equipment Layout, and Process Flow Schematic. This submittal occurs within a few weeks of receipt of purchase order. The intent of this submittal is to allow major components to be ordered, further define space considerations, further define individual unit processes as well as instrumentation and automation.

     b) Upon receipt of approval of the submittal, MES proceeds with Electrical Schematics, Wiring Diagrams, Detailed Structural Steel Drawings, Weight Loading, Tank Drawings and Pre-modulizing Shop Drawings.

        These documents are given directly to Electrical, Mechanical, and Structural Divisions at the MES Manufacturing Facility in order to meet the established project schedule.

     c) Additional documentation includes PLC ladder logic diagrams, HMI screen documentation, instruction manuals (with manufacturers literature), and detailed spare parts list. These documents are presented to the end user during start-up and operator training.

2) Operation Manual
   The operation manual consists of verbal descriptions of unit processes along with annotated drawings and diagrams.

   Includes preventive maintenance such as pH probe calibration and automated preventive maintenance such as timed backwash of media pressure filters. The manual also includes Manufacturers Maintenance Instructions.

3) Spare Parts List
   The spare parts list consists of a listing of all MES supplied components with a recommendation on quantity to keep on hand at the job site.

Typically major items include pumps, pump repair kits, pH and ORP probes.

MES coordinates and expedites all services from our vendors and therefore we are the only contact necessary.

I. Service Options

1. System Installation — **By Customer**
   Flow Schematic interconnecting installation labor for project as outlined.

   MES is providing modularization of the system after manufacturing and before shipment. — **Included**

   MES is providing interconnecting parts of the system after manufacturing and before shipment. — **Included**

2. Supervision of System Installation — **Included**
   MES will provide installation supervision as described in the quotation section of this proposal. Supervision time includes travel.
   - **Note:** Labor was based on normal working hours (8:00 a.m. – 5:00 p.m.) Monday through Friday, except legal holidays.

3. System Check-out and System Start-up — **Included**
   MES will provide installation check-out followed by start-up and operator training as described in the quotation section of this proposal. Check-out and start-up time includes travel.
   - **Note:** Labor was based on normal working hours (8:00 a.m. – 5:00 p.m.) Monday through Friday, except legal holidays.

   Reference and Maintenance manuals are normally delivered at startup.

4. Equipment will be shipped INCOTERMS 2020 EXW. — **Customer**
   Freight Collect.

5. Receive Freight (Unload Truck) — **Customer**

6. Material handling of equipment (Crane, 5000# forklift, ladders, scissor lift, and other equipment as necessary). — **Customer**

7. Moving the received shipments to the installation location. — **Customer**
   This includes placing the equipment in the approximate location per the approved layout drawings.

II. Scheduling Startup

A proper and efficient startup is possible only when the customer provides:

1. Complete utility hook ups, including power, air, tap water, and high speed VPN line.

2. Wastewater available to be treated.

3. Reagent chemicals on site. With necessary transfer equipment.

4. The designated operator(s) available full time during training. If through no fault of MES, the required time exceeds the days given above, all further time will be billed at $1,500.00 per day within the continental United States ($1,850.00 outside the continental United States) plus living and travel expenses. Time billed includes time required for travel.

III. Customer Responsibilities

1. Interconnection of computer, data processing, modem, RS-232, or telephone lines between the control panel and terminal equipment is the responsibility of the customer. MES will assist in the design requirements of such lines.

2. Provide a clear area for the installation of the system.

3. Provide the final hookups, (connections) to:
   a) Electrical Power
   b) Water
   c) Air
   d) Sewer

4. Any facility structural modifications.
   a) System containment
   b) Weather Protection

5. Trash Dumpster:
   Customer will place the shipping and packaging materials in the customer's dumpster.

6. Customer will supply labor for installation.

7. All laboratory equipment required for sample analysis.

8. Safety related equipment:
   a) Fire extinguishers
   b) Safety showers
   c) Breathing apparatus
   d) Eyewash station
   e) Shower station
   f) Site specific requirements, such as fencing

Quotation

Equipment
When a process schematic is established, the MES engineers produce a layout consistent with the customer needs. The layout includes factory-built assemblies designed for easy access and maintenance. This shortens installation and startup time. To eliminate errors all assemblies are quality checked before shipment. The experience of the MES engineers produces systems with the most efficient use of available space.

MES will provide the system for Equipment **$ 375,000.00**

Installation Material **INCLUDED**
Interconnecting material for the installation of our equipment. This material includes conduit, wire, pipe and typical hardware.

Installation Labor **CUSTOMER**
Customer will provide labor for the installation.

Installation Supervision **INCLUDED**
MES will provide supervision of local labor for 7 consecutive days to install the above equipment. Time includes travel.

- **Note:** Labor is based on normal working hours (8:00 am – 5:00 pm) Monday through Friday, except legal holidays.
- **Note:** Travel and living expenses are included.

Installation Check-Out and Start-Up **INCLUDED**
MES will provide 1 day of installation checkout followed by 3 days of start-up; operator training. The 4 consecutive days include travel and living expenses.

Critical Spare Parts **$ 8,000.00**
MES will provide a spare parts package for the system.

TECHLink Service **INCLUDED**
MES's Electronic Service Call Option (TECHLink) makes it possible for MES's Service Center to provide real-time operator assistance, trouble shooting, and diagnostics for the treatment system as well as program modifications.

TECHLink is provided to the customer for one year. Renewal annual subscription will be invoiced to the customer on the anniversary of startup.

Cost Reporter **INCLUDED**

The MES Control center includes a chemical cost page. This management tool provides accurate information on operating costs.

Option #1 – Media Filtration System **$ 24,600.00**

Pressure Media Filter (PMF) Modular

Treated and clarified water meets most discharge standards. However, the nature of clarification produces clear water, which can contain trace suspended solids. They are removed with an MES Pressure Media Filter (PMF) system.
The PMF is modularized. It consists of a treated wastewater 7500 liter collection tank (N-1), a pump (P-7) module, pre-plumbed frame with distribution pipes and automated valving, and multiple filter vessels. Pressure is continuously monitored. A high-pressure alarm and a pressure change rate alarm are incorporated in the DMP Controller. The controller also initiates and controls the backwash process automatically by time or pressure. It may be activated manually at any time.

Filter Backwash

The PMF system keeps one clean filter in stand-by. When signaled, the system switches to the stand-by unit and provides backwash for another vessel. The stand-by unit becomes a lead unit and continues to process treated and clarified water. The backwash is returned to tank T-1.

Shipment: Equipment will be shipped INCOTERMS 2010 EXW. Freight collect.

Payment Terms:

- **30%** down payment due with purchase order
- **30%** after completion of engineering
- **30%** prior to shipment
- **5%** after installation.
- **5%** after startup and acceptance of an operating system.

If, through no fault of MES, the project is delayed, and MES has completed the contract to the next payment term, this payment becomes due upon the completion. If, through no fault of MES, installation and start-up do not occur within ninety days of original scheduled shipping date, all payments become due and payable. This does not affect warranties as written in this proposal.

This quotation is good for sixty days from the date of this quotation.

The above prices do not include: shipping, taxes, duties (where applicable), or other local fees. This proposal does not include any provisions for specific seismic calculations, anchoring designs, permitting, or airfreight.

MES Corporation does not collect taxes, therefore it is the sole responsibility of the customer to pay all taxes to the state where the equipment will be shipped and/or located.

Condition of Sale

Payments: Any price quoted by MES shall be payable in U.S. Currency. MES's price does not include any taxes or fees, all of which must be paid by Customer. Any clerical errors in any MES proposal, including the price, are subject to correction in the sole discretion of MES.

If shipment of material is delayed through no fault of MES, regardless of whether such delay is due to any act or omission of Customer, payment of any invoices to MES shall become due within thirty days after the equipment is ready for shipment. Customer agrees to pay interest of 1 1/2% per month on all past due invoices.

Confidential Information: MES hereby reserves its rights of ownership with respect to any material(s) generated by it, whether or not for Customer, and whether or not otherwise protected by any statutory and/or common laws relating to intellectual property rights, including, but not limited to, quotations, drawings, equipment and any other data tangible and/or capable of being perceived. Such materials are confidential and may not be used, copied, duplicated, or made available for reuse without MES's written consent.

Warranties: For a period of one year after shipment of its equipment, MES warrants to repair or replace, in its discretion, any equipment or parts thereof shown by Customer to be defective in materials or workmanship under normal use in accordance with the applicable MES operation and maintenance manual, if returned promptly F.O.B. to MES's factory. MES shall not be responsible for any removal or reinstallation of any defective equipment or parts thereof, or for any costs incurred by Customer with respect thereto. MES shall not be responsible for any repair or replacement costs incurred by Customer unless authorized in writing by MES.

MES hereby excludes any liability to Customer for incidental or consequential damages, including, but not limited to, loss of time, loss of profits, waste disposal expenses, excess or unexpected treatment costs, regulatory fines and/or penalties.

Title Risk of Loss. Title to any equipment sold by MES to Customer shall pass to Customer upon its receipt thereof, unless Customer assumes the responsibility for shipment of the equipment, in which event title passes at the time of shipment; and until Customer has received such equipment or assumed responsibility for the shipment thereof, title thereto shall remain with MES, except as otherwise provided by law, in which event MES retains a security interest in the equipment. The risk of loss or damage to any equipment shall belong to Customer once it has title thereto, as defined herein, except as otherwise provided by law.

MES's Remedies: Upon the failure by Customer to comply in full with any of the terms hereof, including failure to make any payment due hereunder on a timely basis, Customer shall be in default; and MES shall have all rights and remedies available at law, including, but not limited to, those remedies available under the Uniform Commercial Code, if applicable, the right to retain any and all partial payments which may have been made, and the right to take immediate possession of any confidential information, any equipment and any materials delivered to Customer hereunder. If requested by MES, Customer shall execute UCC Financing Statements and any other documents that may be reasonably necessary to evidence MES's security interest and rights as a secured creditor to any equipment delivered to customer. In the event MES takes legal action to enforce any of its rights hereunder, including the collection of any sums due, Customer shall be liable to MES for any and all costs or expenses incurred, including an attorney's fee of not less than 15% of the total contract amount, reflecting any change orders thereto.

Cancellation: After acceptance of the proposal by Customer, the contract between Customer and MES may be canceled only with MES's written consent and upon terms satisfactory to it.

Governing Law; Choice of Forum: The contract between MES and Customer shall be governed by and subject to the laws of the State of South Carolina, with York County as the sole venue and exclusive place of jurisdiction for any legal action arising from any dispute related to any contract with MES.

Entire Agreement. The contract between Customer and MES shall be deemed to incorporate, without exception, all the terms and conditions hereof. The contract shall include all change orders. All prior and/or contemporaneous agreements and understandings between Customer and MES shall be of no force or effect, and the contract shall represent the entire agreement between them. No modification of these terms and conditions shall be of any force or effect unless reduced to writing and either signed by an officer of MES or not the subject of any timely objection thereto by MES.