



June 20, 2016

**REQUEST FOR BID  
BP16-19**

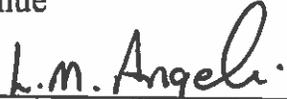
**MARQUETTE AREA WASTEWATER TREATMENT FACILITY  
HYPOCHLORITE TANK REPLACEMENT**

Deadline and Bid Package opening will be on **July 12, 2016 at 2:00 p.m.** Location of the bid opening will be at Marquette City Hall, Room 103, 300 W. Baraga Ave. The Bid must be in a sealed envelope clearly identifying the bid number and title. No fax or electronic bids will be accepted. The bid documents can be found on the City website at [www.mqtcty.org/bids](http://www.mqtcty.org/bids).

For technical inquiries or further information, contact:

Mark O'Neill – Supervisor  
Marquette Wastewater Treatment Facility  
(906) 225-4054  
[moncill@mqtcty.org](mailto:moncill@mqtcty.org)

City of Marquette  
BP 16-19  
Attn: Katie Burnette  
Finance Department  
300 W. Baraga Avenue

  
\_\_\_\_\_  
L. Michael Angeli, City Manager  
City of Marquette

## **REQUEST FOR BID**

### **INTRODUCTION**

The Marquette Area Wastewater Treatment Facility (MAWWTF) disinfects wastewater effluent through the addition of approximately 12.5% sodium hypochlorite (NaOCl), which is stored in a 4,300 gallon bulk tank. The tank has been confirmed by staff to have a leak in the bottom. The leaking tank resides within a containment area on an elevated concrete pad. The MAWWTF has determined the best option is to replace the tank in kind. The work entails replacement of the existing NaOCl bulk tank with a new tank of same or greater volume and connection dimensions. Existing piping, ductwork, handrail and other items will need to be removed and replaced to facilitate NaOCl tank replacement.

### **BIDDING DOCUMENTS**

Bidding documents attached to this Request for Proposals include the following:

- Section 01110 – Summary of Work
- Section 11341 – Polyethylene Chemical Storage Tank
- Existing NaOCl Tank As-Built Data
- MAWWTF Sodium Hypochlorite Tank Replacement Photolog
- City of Marquette Chapter 2 Proposal (Bid Form)

### **PREPARATION OF PROPOSAL**

1. Bids shall be completed on the attached Chapter 2 Proposal (Bid Form). Numbers shall be stated in figures and the form signed. Any corrections to entries made on bid forms shall be initialed by the person(s) signing the bid.
2. Before submitting a bid, bidders shall carefully examine the project documents, fully inform themselves as to all existing conditions and limitations and shall include a total cost figure on the bid proposal form.
3. A site visit is recommended, but not mandatory. Contact Mark O'Neill, Supervisor at (906) 225-4054 to arrange for a site walk through.
4. The Bidder, having familiarized himself/herself with the local conditions affecting the cost of the work, and with the Contract Documents, shall propose to perform everything required to be performed, and to provide and furnish all labor, materials, tools, expendable equipment, and all utility and transportation services necessary, taxes and fees necessary to complete work, all in accordance with the prepared drawings, bidding documents and specifications.

5. In submitting this bid, it is understood that the right is reserved by the Owner to reject any and all bids or any portion thereof. It is agreed that this bid may not be withdrawn for a period of sixty (60) days from the opening thereof.

### SELECTION CRITERIA

The selection committee will recommend contract award to the lowest responsive qualified bidder.

### RESERVATION OF RIGHTS

1. The City of Marquette reserves the right to waive or disregard any informality, irregularity or deficiency in any proposal received.
2. The City reserve the right to reject any or all proposals received for whatever reason it deems appropriate.
3. The City reserves the right to require the successful participant to retain ten (10%) percent of all progress payments until completion. Project is not deemed complete until all work items are completed and the Owner has received and approved As-Built documents.

### INSURANCE REQUIREMENTS

The Contractor shall purchase and maintain Workman's Compensation and Liability Insurance coverage as required by law and deemed necessary for its own protection. Said insurance shall be written by an insurance carrier having at least an "A, VII" rating. The Contractor shall further name the City as an additional named insured on all certificates of insurances covering the project. Said insurance shall be in minimum limits of at least \$1,000,000.00 for both general liability and automobile liability. The Contractor shall further maintain such insurance as will protect it from claims under worker's compensation acts and other employee benefits acts, from claims for damages because of bodily injury, including death, and from claims for damages to property which may arise both out of and from claims for damages to property which may arise both out of and during operations under this contract, whether such operations are by Contractor or by anyone directly or indirectly employed by the Contractor. This insurance shall be written for not less than any limits of liability specified as part of the Contract Documents. Certificates of such insurance shall be filed with the City. Insurance certificates shall be submitted to the City upon request in advance of contract award.

## OWNER / CONTRACTOR AGREEMENT

An agreement between the Owner and Contractor will be presented to the recommended bidder for their consideration following evaluation of bids.

### PROJECT COMPLETION AND WARRANTY REQUIREMENTS

1. The Bidder agrees, if awarded the contract, to start work within 14 calendar days after issuance of contract award, and to complete same, ready for substantial and unobstructed use by Owner within 84 calendar days of issuance of contract award. Bid award is anticipated July 25<sup>th</sup>, 2016. Substantial and final completion is anticipated October 17<sup>th</sup>, 2016.
2. The Contractor is required to submit a project schedule to the City accompanying tank manufacturer shop drawings. The following draft schedule is proposed to complete the work:
  - a. Contract Award: July 25<sup>th</sup>, 2016
  - b. Contract Signed (all parties): August 1<sup>st</sup>, 2016
  - c. Shop Drawings Issued & Approved: August 15<sup>th</sup>, 2016
  - d. Tank Shipped: September 12<sup>th</sup>, 2016
  - e. Tank Installation: September 26<sup>th</sup> – October 3<sup>rd</sup>, 2016.
  - f. Project Substantial / Final Completion: October 17<sup>th</sup>, 2016.
3. Liquidated Damages: The Bidder agrees that if awarded the contract, as damages for delay (but not as a penalty), the Bidder will pay the Owner \$200.00 for each day that expires after the Substantial / Final Completion Date until the work is completed and ready for final payment. The amount paid by the Owner to the Contractor would be the contract amount less any liquidated damages incurred.
4. Warranty: In the event any work is found to be defective or damages to the Owner's existing facilities and/or land as made available for the Contractor's use are discovered within 365 days of the substantial / final completion date, Contractor shall promptly and at no cost the Owner and in accordance with the Owner's written instructions:
  - a. Repair or satisfactorily correct damages to Owner's existing facilities and/or land as made available for Contractor's use.
  - b. Correct defective work and/ or remove and replace damaged work.

**SECTION 01110  
SUMMARY OF WORK**

**PART 1 – GENERAL**

**1.01 SUMMARY**

- A. The Marquette Area Wastewater Treatment Facility (MAWWTF) disinfects wastewater effluent through the addition of approximately 12.5% sodium hypochlorite (NaOCl), which is stored in a 4,300 gallon bulk tank. The tank has been confirmed by staff to have a leak developing in the bottom, which is exacerbated when the tank is filled by the chemical delivery truck. The leaking tank resides within a containment area on an elevated concrete pad. The MAWWTF has determined the best option is to replace the tank in-kind. The work entails replacement of the existing NaOCl bulk tank with a new tank of same or greater volume and connection dimensions.
- B. **CONTRACTOR** Work Includes:
1. The work to be performed under this Contract shall consist of furnishing all tools, equipment, materials, supplies, and manufactured articles; furnishing all transportation and services; and performing all labor, work, or other operations required for the fulfillment of the Contract. The work shall be complete, and all work, materials, and services not expressly shown or called for in the Contract Documents that may be necessary for the complete and proper construction and testing of the NaOCl tank shall in good faith be performed, furnished, and installed by the **CONTRACTOR** as though originally so specified or shown, at no increase in cost to the **OWNER**.
  2. The **CONTRACTOR** is responsible for temporarily disconnecting and subsequent reconnection of electrical (including conduit, conductors, service disconnect and other items as needed), water, chemical and other utility services, temporary removal and re-installation of all conduits, piping, ductwork, handrail and other facilities as required for removing and replacing the NaOCl tank. All items that are disconnected then reconnected or removed then reinstalled shall be of an equal or better condition than the existing condition.
  3. Upon removal of the existing tank, the **CONTRACTOR** shall inspect the existing 12'-0" diameter crosslinked polyethylene tank pad and concrete pad for defects which may have caused premature failure of the existing tank. Inspection shall be completed in the presence of the **OWNER**.
  4. The existing tank concrete pad shall be clean, free of debris, shall have a smooth finished surface, and shall be suitable for continued service prior to installing the new NaOCl tank pad and tank. The **CONTRACTOR** is responsible for grinding patching or otherwise correcting any finished surface defects observed on the existing concrete pad.
  5. The **CONTRACTOR** shall furnish and install the new tank and all piping, piping connections, gaskets, seals, conduit as well as all other items necessary to restore a complete and functioning system. All piping and duct flange connections disassembled shall receive new gaskets when reassembling. All materials in contact with NaOCl shall receive an "excellent" rating per Cole Palmer chemical compatibility chart considering NaOCl solutions less than 20%.
  6. While an in-kind tank replacement is expected, new piping and electrical conduit connections to the new tank may be required to accommodate installation of the new tank. The **CONTRACTOR** is responsible to field verify all dimensions and to communicate any variance between field measurements and the manufacturer's as-built tank dimensions (attached to the Contract Documents) to the **OWNER** and tank manufacturer.

7. Hauling and off-site disposal of the existing NaOCl tank and all other items permanently removed from service will be the responsibility of the **CONTRACTOR**.
8. Upon completion of installation and tank testing, the **CONTRACTOR** shall clean up the work area to an equal or better condition prior to demobilizing from the site.

C. Wage Rates: The project is not a prevailing wage job.

#### 1.02 PROJECT CONDITIONS

##### A. Activities by Others:

1. **OWNER** will be responsible for emptying the bulk tank and establishing temporary NaOCl tanks and metering pump(s) for uninterrupted effluent disinfection to allow the **CONTRACTOR** to perform work on the existing NaOCl facilities. The adjacent liquid chemical feed must continuously remain in operation.
2. The **CONTRACTOR** shall cooperate fully with all utility forces, regulating agencies, personnel of the **OWNER**, and the **OWNER'S** REPRESENTATIVE.
3. Electricity, water and sanitary sewer facilities will be available to the **CONTRACTOR** by the **OWNER** for the duration of the project as is required to complete the work.

##### B. **CONTRACTOR** Use of the Project Sites:

1. The **CONTRACTOR'S** use of the project site shall be limited to the construction operations, including on-site storage of materials, sanitary facilities, and field offices.
2. The **CONTRACTOR** shall return the site to its approximate original condition at no additional cost to the **OWNER**. This includes removal and proper disposal of any soils, debris, water, construction materials or other materials that may result from the **CONTRACTOR'S** equipment or activities.

C. Safety: the **CONTRACTOR** is responsible for the safety of their staff and to develop a site specific safety program for their use.

#### 1.03 CONTRACTOR SCHEDULE NOTIFICATION

A. Schedule: A minimum of 5 working days prior to commencing the work, the **CONTRACTOR** shall submit a brief schedule identifying when the work will be carried out. The schedule shall contain sufficient detail to allow the **OWNER** to schedule personnel, equipment, and operations activities. Work shall not commence until the schedule has been submitted. Upon commencing the work, the **CONTRACTOR** is expected to notify the **OWNER** daily of the progress of work and any scheduling changes.

PART 2 – MATERIALS (Not Used.)  
PART 3 – EXECUTION (Not Used.)

**END OF SECTION**

**SECTION 11341  
POLYETHYLENE CHEMICAL STORAGE TANK**

**PART 1 – GENERAL**

**1.01 Requirements**

1. The work entails replacement of the existing 4,300 gallon bulk tank with a new tank of equal or greater volume. The existing concrete tank pad, process connections and level sensing element will be retained for reinstallation with the new tank.
2. The CONTRACTOR shall provide an integrally molded flanged outlet, high density cross-linked polyethylene tank and accessories per section 2.05, complete and in place, in accordance with the Contract Documents.
3. Unit Responsibility: The CONTRACTOR shall be responsible for furnishing the integrally molded flanged outlet tank and its accessories for chemical storage as indicated.
4. Owner approval of Manufacturer's Shop Drawings is required in advance of releasing the tank and appurtenances to production.
5. As-Built Drawings documenting the tank dimensions and specifications are required prior to Owner releasing final payment and project closeout.
6. The CONTRACTOR is responsible to confirm the dimensions of the tank are suitable to fit within the available facility space. Dimensional considerations shall include physically moving the proposed tank into place as well as the available space within the containment area as well as the diameter of the existing concrete pad. If a tank larger than 4,300 gallons is proposed, the CONTRACTOR shall verify the existing containment area is suitable to meet Michigan Department of Environmental Quality requirements. Should the CONTRACTOR propose a tank varying in dimension and capacity from the existing tank, the CONTRACTOR shall at no additional cost to the OWNER construct an appropriately sized concrete pad and containment area as necessary to accommodate the tank dimensions and volume.

**1.02 REFERENCES, CODES AND STANDARDS**

- A. American Society of Testing Materials (ASTM).
1. D638 Tensile Properties of Plastics
  2. D883 Standard Definitions of Terms Relating to Plastics
  3. D1505 Density of Plastics by the Density-Gradient Technique
  4. D1525 Test Method for Vicat Softening Temperature of Plastics
  5. D1693 ESCR Specification Thickness 0.125" F50-10% Igepal
  6. F412 Standard Terminology Relating to Plastic Piping Systems
- B. ANSI Standards: B-16.5, Pipe Flanges and Flanged Fittings
- C. Building Code: International Building Code - IBC 2009
- D. ARM: Low Temperature Impact Resistance (Falling Dart Test Procedure).
- E. ASTM D-1998, Standard Specification for Polyethylene Upright Storage Tanks

**1.03 SUBMITTALS**

- A. Shop Drawings: Shop drawings shall be approved by the engineer or contractor prior to manufacturing the tank(s). Submit the following as a single complete initial submittal. Sufficient data

shall be included to show that the product conforms to Specification requirements. Provide the following additional information:

1. Integrally molded flanged outlet tank and Fitting Material:
  - a. Resin manufacturer data sheet
  - b. Fitting material
  - c. Gasket style and material
  - d. Bolt material
2. Dimensioned Tank Drawings:
  - a. Location and orientation of molded in fitting, openings, fittings, accessories, restraints and supports.
  - b. Details of inlet and molded outlet fitting, manways, flexible connections, and vents.
- B. Manufacturer's warranty
- C. Manufacturer's unloading procedure (see manufacturer's Installation Manual)
- D. Manufacturer's installation instructions (see manufacturer's Installation Manual)
- E. Supporting information of Quality Management System
- F. Manufacturer's Qualifications: Submit to engineer a list of 5 installations in the same service as proof of manufacturer's qualifications.
- G. Factory Test Report
  1. Material, specific gravity rating at 600 psi @ 100 degrees F. design hoop stress.
  2. Wall thickness verification.
  3. Fitting placement verification including molded in outlet
  4. Visual inspection
  5. Impact test
  6. Gel test
  7. Hydrostatic test

#### 1.04 QUALITY ASSURANCE

- A. The CONTRACTOR shall provide a vertical, high density cross-linked polyethylene tank with full drain capability and molded in flange. The integrally molded flanged outlet tanks of the same material furnished under this Section shall be supplied by a manufacturer who has been regularly engaged in the design and manufacture of chemical storage tanks for over 10 years.
- B. Tanks shall be manufactured from virgin materials.

1.05 WARRANTY

- A. A limited 5 year warranty shall be provided for the specific service application beginning the date of shipment from the manufacturer.

PART 2 – PRODUCTS

2.01 General

- A. Tanks shall be rotationally-molded, integrally molded flanged outlet, high density cross-linked polyethylene, one-piece seamless construction, cylindrical in cross-section and vertical with flat / sloping bottoms in axis. Tanks shall be adequately vented as prescribed in the manufacturer's Technical Bulletin, Venting-Design for ACFM (air cubic feet per minute). Where indicated, tanks shall be provided with ancillary mechanical fittings and accessories. Tanks shall be marked to identify the manufacturer, date of manufacture and serial numbers must be permanently embossed into the tank.

2.02 MANUFACTURER

- A. Tanks shall be manufactured by Poly Processing Company or Engineer approved equal.

2.03 POLYETHYLENE STORAGE TANKS

- A. Service: Chemical storage tanks shall be suited for the following operating conditions per this section.
- B. High Density Cross-linked Polyethylene resin used in the tank manufacture shall be Poly CL™ or equal and shall contain ultraviolet stabilizer as recommended by resin manufacturer. The tank material shall be rotationally molded and be a resin that is commercially available at the time of tank manufacture.
- C. Resin shall include additional medium density polyethylene (OR-1000 or Equal) with four times the antioxidant properties of a standard polyethylene bonded to the interior surface during the manufacturing process.
- D. **Wall thickness** for a given hoop stress is to be calculated in accordance with ASTM D 1998. Tanks shall be designed using a hoop stress no greater than 600 psi. In NO case shall the tank thickness be less than design requirements per ASTM D 1998.

- 1. The wall thickness of any cylindrical portion at any fluid level shall be determined by the following equation:

$$T = P \times OD / 2SD \text{ or } 0.433 \times SG \times H \times OD / 2SD$$

|        |    |   |                                    |
|--------|----|---|------------------------------------|
| Where: | T  | = | wall thickness, in                 |
|        | P  | = | pressure, psi                      |
|        | SG | = | specific gravity, gm/cc            |
|        | H  | = | fluid head, ft                     |
|        | OD | = | outside diameter, ft               |
|        | SD | = | hydrostatic design stress, 600 psi |

- a. The minimum wall thickness shall be sufficient to support its own weight in an upright position without external support but shall not be less than 0.187" thick.
- 2. On closed top tanks the top head shall be integrally molded with the cylindrical wall. Its minimum thickness shall be equal to the thickness of the top of the straight sidewall. In most cases, flat areas shall be provided for attachment of large fittings on the dome of the tank.
- 3. The bottom head shall be integrally molded with the cylindrical wall. Knuckle radius shall be:

| Tank Diameter, ft       | Min Knuckle Radius, in |
|-------------------------|------------------------|
| less than or equal to 6 | 1                      |
| greater than 6          | 1-1/2                  |

- 4. Tanks with 3000 gal capacity or larger shall have at least 3 lifting lugs. Lugs shall be designed for lifting the tank when empty.
  - a. For indoor pneumatic fill, manways shall be 24-in diameter or greater and equipped with an emergency pressure relief device or SAFE-Surge™ Manway with pressure relief at 6" water column to prevent over-pressurization. The SAFE-Surge manway shall be chemically compatible with the chemical being stored. Gaskets shall be closed cell, cross-linked polyethylene foam, Viton, or EPDM materials.
- E. Tank colors shall be natural (un-pigmented).

2.04 TANKS

- A. Tank Schedule per the attached existing as-built tank drawing (Polyprocessing Company Drawing No. DEI25207J).
- B. Pad: Provide crosslinked polyethylene pad equal to or larger than the tank diameter to cushion the tank and elevate the integrally molded flange outlet from the concrete pad.
- C. Fittings:
  - 1. Tank fittings shall be according to the fitting schedule shown in the as-built drawings referenced above. Threaded fittings shall use American Standard Pipe Threads. If tanks are insulated, fittings shall be installed at the factory prior to application of the insulation.
  - 2. Integrally Molded Flanged Outlet Fittings. These outlets must be an integral part of the tank, molded from the same material as the tank and provide complete drainage of liquid through the sidewall of the tank. Metal and alloy inserts shall not be used.
  - 3. Bolted flange fittings shall be constructed of one 150 lb. flange with ANSI bolt pattern, one flange gasket and stud bolts with gaskets. Stud bolts to have chemical resistant polyethylene injection molded heads and gaskets to provide a sealing surface between the bolt head and the interior tank wall. Stud bolt heads are to be color coded for visual ease of identifying the bolt material by

onsite operators. Green- 316 Stainless Steel, Black- Titanium, Red- Alloy C-276, Blue- Monel. All materials shall be compatible with chemical service and as indicated in the fitting schedule above.

4. For sodium hypochlorite and sulfuric acid storage, Bolted One-Piece Sure Seal (B.O.S.S.), double flange fittings constructed of virgin polyethylene shall be supplied. Bolts will be welded to a common backing ring and encapsulated with polyethylene preventing fluid contact with the metal material. Flange will have one full face gasket to provide a sealing surface against inside tank wall. All materials shall be compatible with chemical service and as indicated in the fitting schedule above. For NSF/ANSI 61 certification, EPDM or Viton GF gaskets shall be supplied.
5. Down Pipes and Fill Pipes: Down pipes and fill pipes shall be supported at 6-ft max intervals. Down pipes and fill pipes shall be PVC or material compatible with the chemical stored.
6. U-Vents: Each tank must be vented for the material and flow and withdrawal rates expected. Vents should comply with OSHA 1910.106(F) (iii)(2)(IV)(9). U-vents shall be sized by the tank manufacturer and be furnished complete with insect screen if required (Insect screen lessens the vent capacity by 1/3) in accordance with the venting schedule listed above.
7. All fittings on the 1/3 lower sidewall of tanks with capacities > 1000 gallons shall have 100% virgin PTFE Flexi-joint® expansion joint. Expansion joint to have a minimum of 3 convolutions, stainless steel limit cables and FRP composite flanges. Galvanized parts will not be accepted.
8. Expansion joint to meet the following minimum performance requirements:

Axial Compression  $\geq 0.67''$

Axial Extension  $\geq 0.67''$

Lateral Deflection  $\geq 0.51''$

Angular Deflection  $\geq 14^\circ$

Torsional Rotation  $\geq 4^\circ$

## 2.05 LEVEL INDICATION

- A. Float Indication: The existing level float indicator shall be retained and reinstalled.
- B. Ultrasonic Level Indicator: The existing ultrasonic level indicator shall be retained and reinstalled.

## 2.06 FACTORY TESTING

- A. Material Testing:
  1. Perform gel and low temperature impact tests in accordance with ASTM D 1998 on condition samples cut from each polyethylene chemical storage tank.
  2. Degree of Cross-linking. Use Method C of ASTM D 1998- Section 11.4 to determine the ortho-xylene insoluble fraction of cross-linked polyethylene gel test. Samples shall test at no less than 60 percent.
- B. Tank Testing:
  1. Dimensions: Take exterior dimensions with the tank empty, in the vertical position. Outside diameter tolerance, including out-of-roundness, shall be per ASTM D 1998. Fitting placement tolerance shall be +/- 1/2-in vertical and +/- 1 degree radial.

2. Visual: Inspect for foreign inclusions, air bubbles, pimples, crazing, cracking
3. Hydrostatic test: Following fabrication, the bottom tanks, including inlet and outlet fittings, shall be hydraulically tested with water by filling to the top sidewall for a minimum of 1 hour and inspected for leaks. Following successful testing, the tank shall be emptied and cleaned prior to shipment.

### PART 3 – EXECUTION

#### 3.01 DELIVERY, STORAGE, AND HANDLING

- A. The tank shall be shipped upright or lying down on their sides with blocks and slings to keep them from moving. AVOID sharp objects on trailers.
- B. All fittings shall be installed and, if necessary, removed for shipping and shipped separately unless otherwise noted by the contractor.
- C. Upon arrival at the destination, inspect the tank(s) and accessories for damage in transit. If damage has occurred, the manufacturer shall be notified immediately.

#### 3.02 INSTALLATION

- A. Install the tanks in strict accordance with the manufacturer's Tank Installation Manual and shop drawings.
- B. Installation will be inspected by manufacturer to verify system flexible connections, venting and fittings are properly installed. In addition to on-sight inspection tank system(s) to be reviewed using tank manual check list as supplied by manufacture as listed below.
- C. Tank Operation and Maintenance manual will consist of installation check lists, tank drawing(s) as built, fitting drawings referencing nozzle schedule on tank drawing, materials of construction, recommended maintenance program, warranty information (including the date enacted and expired), installation date, and CONTRACTOR contact information.

#### 3.03 FIELD TESTING

- A. Tanks shall be hydro-tested for 12 hours and shown to be without leaks prior to commissioning. Water to be provided by Owner. Contractor is responsible to fill and empty tank of water prior to placing the tank in service.

END OF SECTION

Existing NaOCl Tank As-Built Data

| SERVICE  | PK | STOCK NO./SIZE   | NOZZLE SCHEDULE & ACCESSORIES                    | DEG ELEV   |
|----------|----|--|--|------------|
| MANWAY   | A  | 3218<br>24" BOLT COVER/BLACK PE<br>W/GSKT/PE                             | (B) BOLT COVER/BLACK PE                          | 0° DOME    |
| FILL     | B  | 2788<br>2" UNIVERSAL BALL DOME FITTING/PVC<br>W/GSKT/VITON               | UNIVERSAL BALL DOME FITTING/PVC                  | 240° DOME  |
|          |    | 3162<br>W/INTERIOR DROP PIPE/PVC   | W/INTERIOR DROP PIPE/PVC                         |            |
|          |    | 3203<br>W/INTERIOR PIPE SUPPT/PE/TI                                      | W/INTERIOR PIPE SUPPT/PE/TI                      |            |
|          |    | 2759<br>W/GSKT/VITON   | W/GSKT/VITON                                     |            |
|          |    | 6817<br>W/48" LG HOSE W/HNPT UHMWPE<br>W/KING NIPPLE/PVC                 | W/48" LG HOSE W/HNPT UHMWPE<br>W/KING NIPPLE/PVC |            |
| SONIC    | C  | 2848<br>3" UNIVERSAL BALL DOME FITTING/PVC<br>W/BOLTS/TI W/GSKT/VITON    | UNIVERSAL BALL DOME FITTING/PVC                  | 240° DOME  |
| OVERFLOW | D  | 2065<br>3" BOLTED FLANGE BULKHEAD FITTING/PVC<br>W/BOLTS/TI W/GSKT/VITON | BOLTED FLANGE BULKHEAD FITTING/PVC               | 45° 4"-18" |
|          |    | 4850<br>W/6" LG NIPPLE/PVC   | W/6" LG NIPPLE/PVC                               |            |
|          |    | 4631<br>W/90° S X T ELBOW/PVC  | W/90° S X T ELBOW/PVC                            |            |
|          |    | 4899<br>W/PIPE/PVC   | W/PIPE/PVC                                       |            |
|          |    | 3204<br>W/EXTERIOR PIPE SUPPT/SS/TI                                      | W/EXTERIOR PIPE SUPPT/SS/TI                      |            |
|          |    | 2759<br>W/GSKT/VITON   | W/GSKT/VITON                                     |            |
| VENT     | E  | 7135<br>6" BULKHEAD FITTING/PVC W/GSKT/VITON                             | BULKHEAD FITTING/PVC W/GSKT/VITON                | 120° DOME  |
|          |    | 2129<br>W/FLANGE ADAPTER/PVC   | W/FLANGE ADAPTER/PVC                             |            |
| DRAIN    | F  | 7935<br>4" FLEX JOINT INFO ASSEMBLY<br>W/BOLTS/TI W/GSKT/VITON           | FLEX JOINT INFO ASSEMBLY                         | 175° 3"    |
|          |    | 7960<br>W/FLG MATE ASSEMBLY/PVC  | W/FLG MATE ASSEMBLY/PVC                          |            |
| PAD      | P  | 14800012610 --- R2"9 PAD/XLPE/NATURAL                                    | R2"9 PAD/XLPE/NATURAL                            | ALL 18TH   |

- NOTES
- THIS IS A COMPUTER GENERATED DWG. DO NOT REVISE BY HAND. DIMENSIONS WILL VARY ±3% DUE TO VARIATIONS IN MULTIPLE MOLDS & CONDITIONS PREVALENT DURING MANUFACTURE & USAGE.
  - NO MOLDED IN GALLONAGE MARKERS THIS TANK.
  - TANK DESIGNED FOR 1.9 SPG NAT'L @ 100°F/ATMOS PRESSURE
  - TAG ALL PAPERWORK JOB #70900

REV 'B' MARK F WAS @ 13" BY JB 1/28/08 CRJG  
 REV 'A' MARK C WAS 4" SIZE BY JB 1/28/08 CRJG  
 DWG TITLE: 4300 GALLON INFO TANK  
 TANK: 010-T-1301

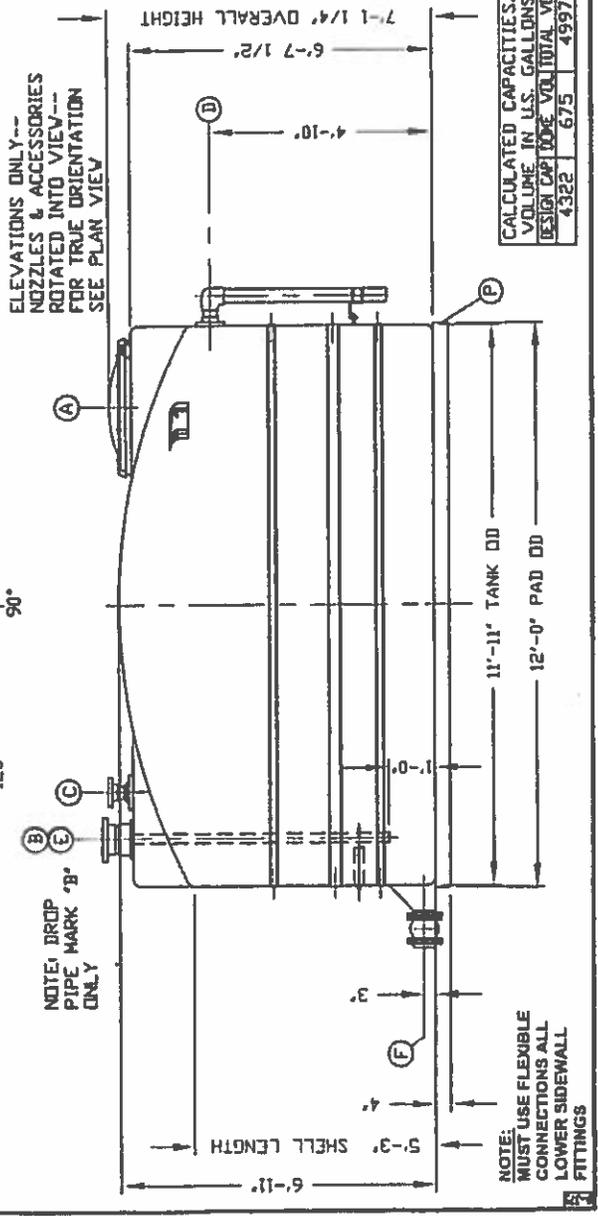
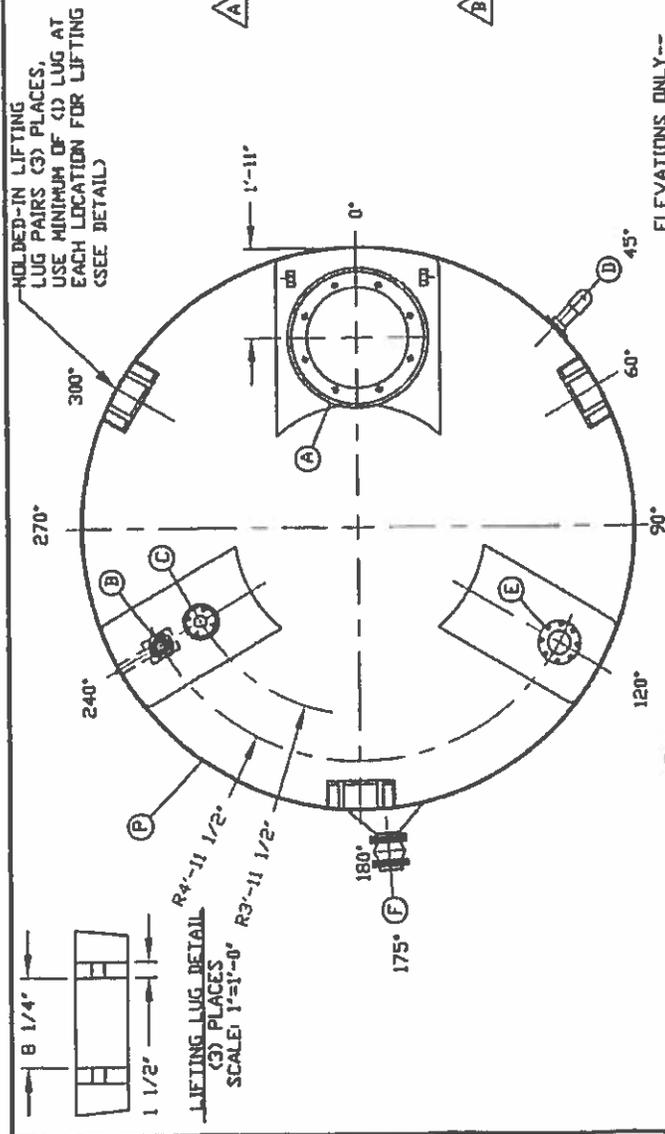
SERVICE: SODIUM HYPOCHLORITE  
 1.9 SPG/XLPE V/DR 1000/NATURAL  
 STOCK NO. 41104300440

SCALE: 3/8"=1'-0"

DATE: 1/21/08  
 POLYPROCESSING COMPANY  
 1000 W. 10th Street  
 Grand Rapids, MI 49508  
 DR: J. BRANTLEY  
 CR: J. GONZALEZ

DRYDOR EQUIPMENT PDR 25207  
 FDR: MIRON CONSTRUCTION CO.  
 C/O HARQUETTE AREA VTF

SHEET: 1 OF 1  
 REV: DE125207 J B



**FORM 2 TO SECTION 01785  
EQUIPMENT DATA FORM**

|                  |  |                |    |
|------------------|--|----------------|----|
| PROJECT NAME     |  |                |    |
| CONTRACT NO.     |  |                |    |
| CONTRACTOR       |  |                |    |
| EQUIPMENT NO.    |  | ASSET NO.*     |    |
| DESCRIPTION      | 4300 Vert IMFO 1.90 Spg XLPE Nat /<br>OR1000 Nat | MAINT. NO.*    |    |
| LOCATION         |  |                |    |
| MANUFACTURER     | PolyProcessing Company                           |                |    |
| PURCHASED FROM   |  |                |    |
| VENDOR ORDER NO. |  |                |    |
| DATE OF PURCHASE |  | PURCHASE PRICE | \$ |
| LOCAL SUPPLIER   |  |                |    |
| ADDRESS          |  |                |    |
| PHONE NO.        |  |                |    |
| MODEL NO.        | 41104300440                                      |                |    |
| NO. OF UNITS     | 1  |                |    |
| SERIAL NUMBERS   | L-08-00554                                       |                |    |
|                  |  |                |    |
|                  |  |                |    |
|                  |  |                |    |
| *By Owner        |  |                |    |

Existing NaOCl Tank As-Built Data

# Marquette Area Wastewater Treatment Facility Sodium Hypochlorite Tank Replacement

Date: 6/10/16

GEI Project No.: 1608600

Owner: City of Marquette



|   |           |
|---|-----------|
| <i>Photo No. 1 – NaOCl Tank looking Northeast.</i>  | <u>2</u>  |
| <i>Photo No. 2 – Liquid chemical room overview looking East-Southeast.</i>                          | <u>3</u>  |
| <i>Photo No. 3 – Liquid chemical room overview looking Southeast.</i>                               | <u>4</u>  |
| <i>Photo No. 4 – Liquid chemical room overview looking South-Southeast.</i>                         | <u>5</u>  |
| <i>Photo No. 5 – NaOCl tank (left) and Sodium bisulphite tank (right). Looking South-southeast.</i> | <u>6</u>  |
| <i>Photo No. 6- NaOCl Tank. Looking Southwest.</i>  | <u>7</u>  |
| <i>Photo No. 7 – NaOCl tank 4-inch drain with flexible connection.</i>                              | <u>8</u>  |
| <i>Photo No. 8 – NaOCl tank looking Southwest.</i>  | <u>9</u>  |
| <i>Photo No. 9 – Sodium bisulfite tank looking Southwest.</i>                                       | <u>10</u> |
| <i>Photo No. 10 – Handrail looking Southeast.</i>   | <u>11</u> |

# Marquette Area Wastewater Treatment Facility Sodium Hypochlorite Tank Replacement

Date: 6/10/16

GEI Project No.: 1608600

Owner: City of Marquette

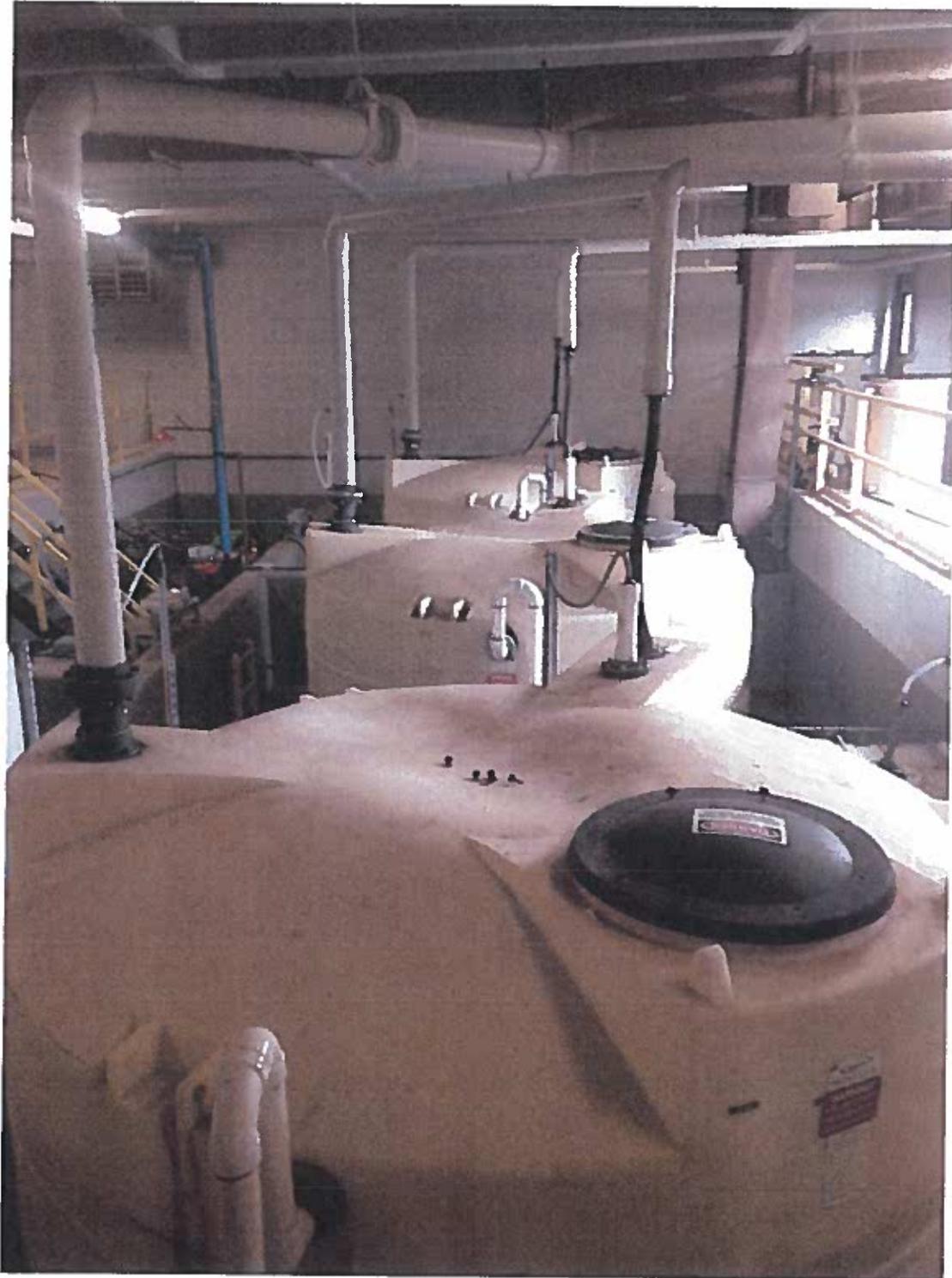


Photo No. 3 – Liquid chemical room overview looking Southeast.

# Marquette Area Wastewater Treatment Facility Sodium Hypochlorite Tank Replacement

Date: 6/10/16

GEI Project No.: 1608600

Owner: City of Marquette

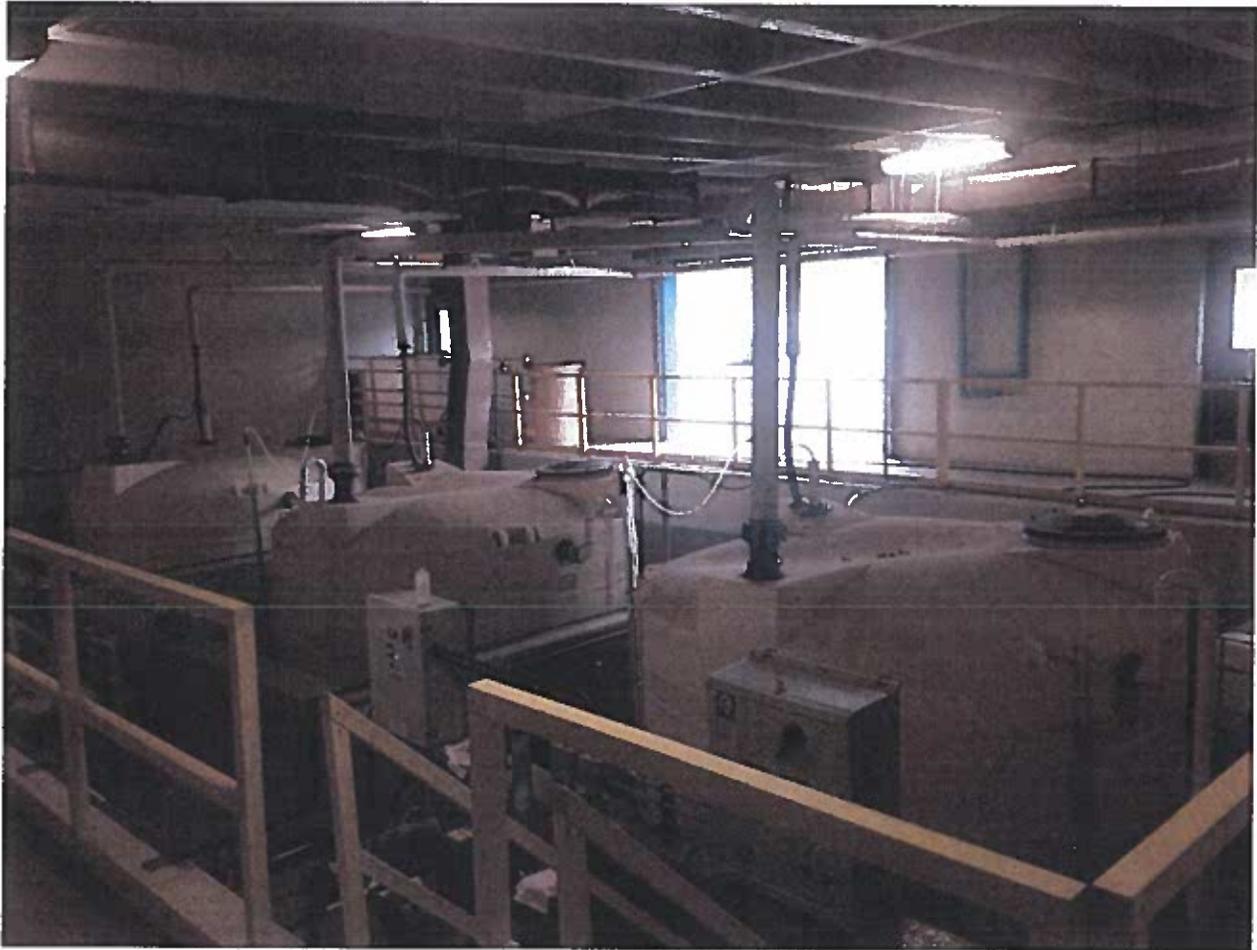


Photo No. 4 – Liquid chemical room overview looking South-Southeast.

Note the sodium bisulfite tank (pictured center) sight gauge, fill line, ultrasonic level sensor EMT conduit, and vent line will at minimum need to be temporarily removed to facilitate NaOCl tank replacement.

# Marquette Area Wastewater Treatment Facility Sodium Hypochlorite Tank Replacement

Date: 6/10/16

GEI Project No.: 1608600

Owner: City of Marquette

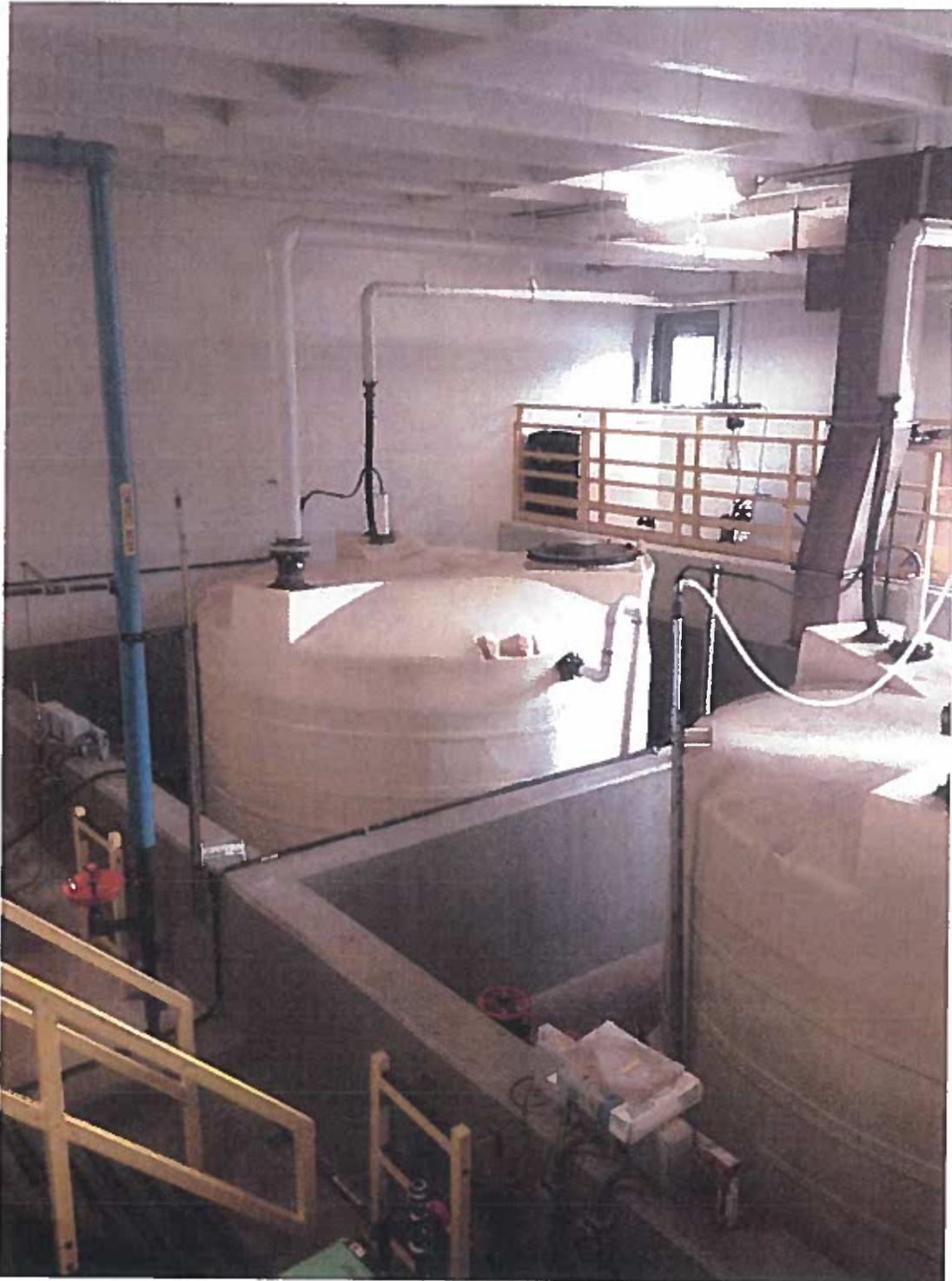


Photo No. 5 – NaOCl tank (left) and Sodium bisulphite tank (right). Looking South-southeast.

# Marquette Area Wastewater Treatment Facility Sodium Hypochlorite Tank Replacement

Date: 6/10/16

GEI Project No.: 1608600

Owner: City of Marquette

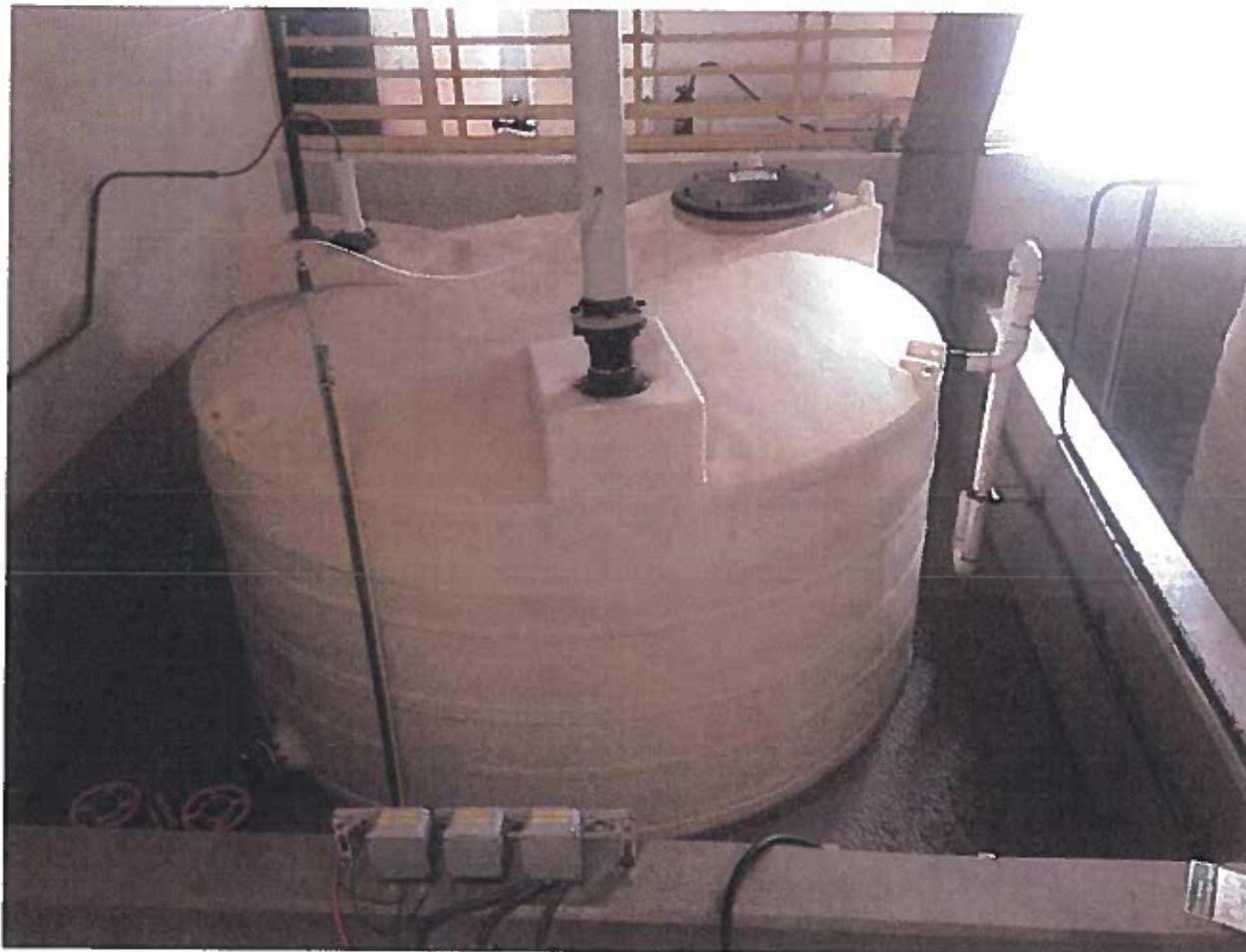


Photo No. 6- NaOCl Tank. Looking Southwest.

# Marquette Area Wastewater Treatment Facility Sodium Hypochlorite Tank Replacement

Date: 6/10/16

GEI Project No.: 1608600

Owner: City of Marquette



Photo No. 7 – NaOCl tank 4-inch drain with flexible connection.

Flange connection and the unistrut sight gauge support stanchion may need to be removed to facilitate tank replacement.

# Marquette Area Wastewater Treatment Facility Sodium Hypochlorite Tank Replacement

Date: 6/10/16

GEI Project No.: 1608600

Owner: City of Marquette

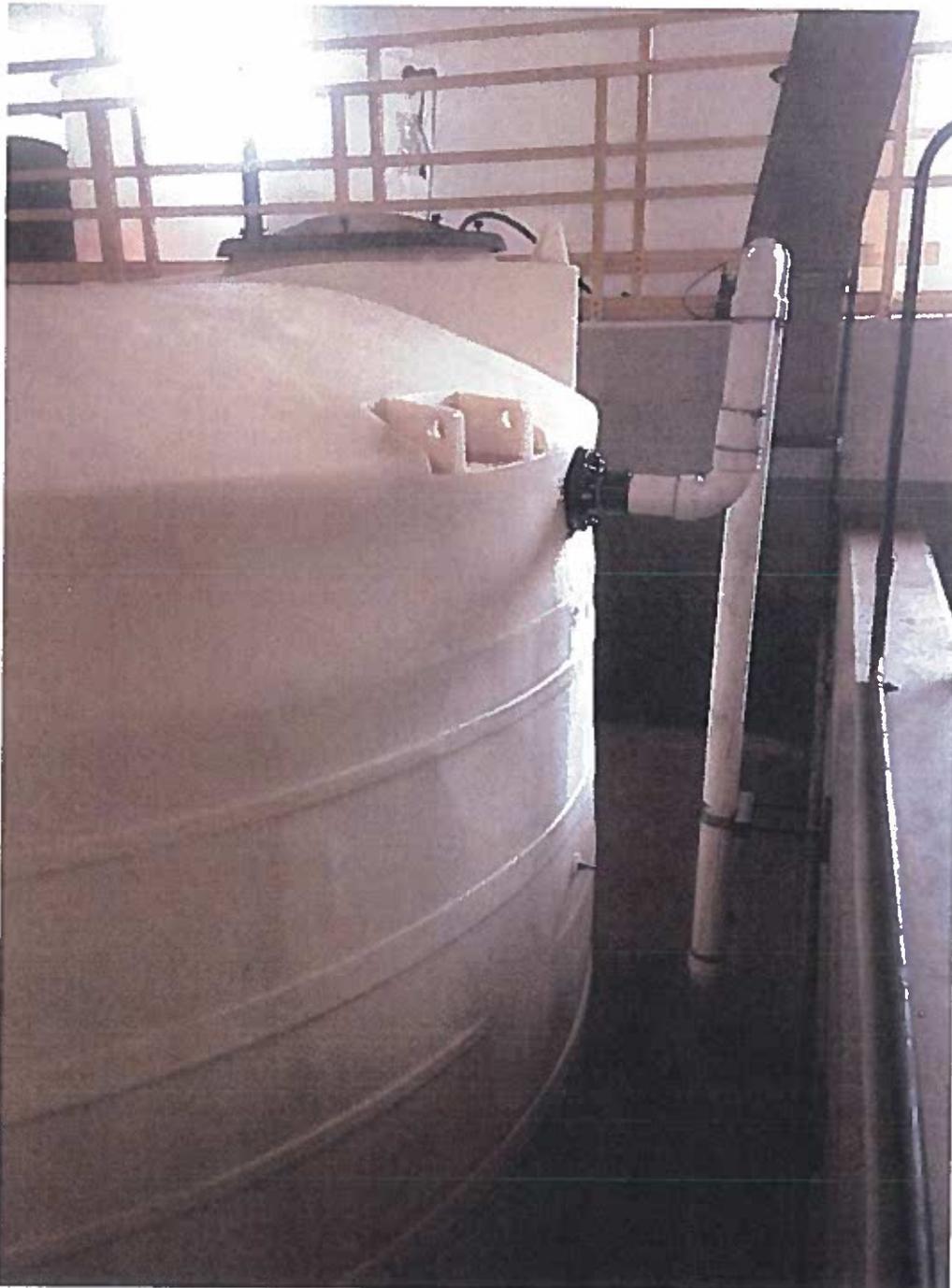


Photo No. 8 – NaOCl tank looking Southwest.

Note the pictured NaOCl overflow pipe, sodium bisulfite tank ultrasonic level sensor EMT conduit, ductwork and handrail will at minimum need to be temporarily removed to facilitate NaOCl tank replacement.

# Marquette Area Wastewater Treatment Facility Sodium Hypochlorite Tank Replacement

Date: 6/10/16

GEI Project No.: 1608600

Owner: City of Marquette

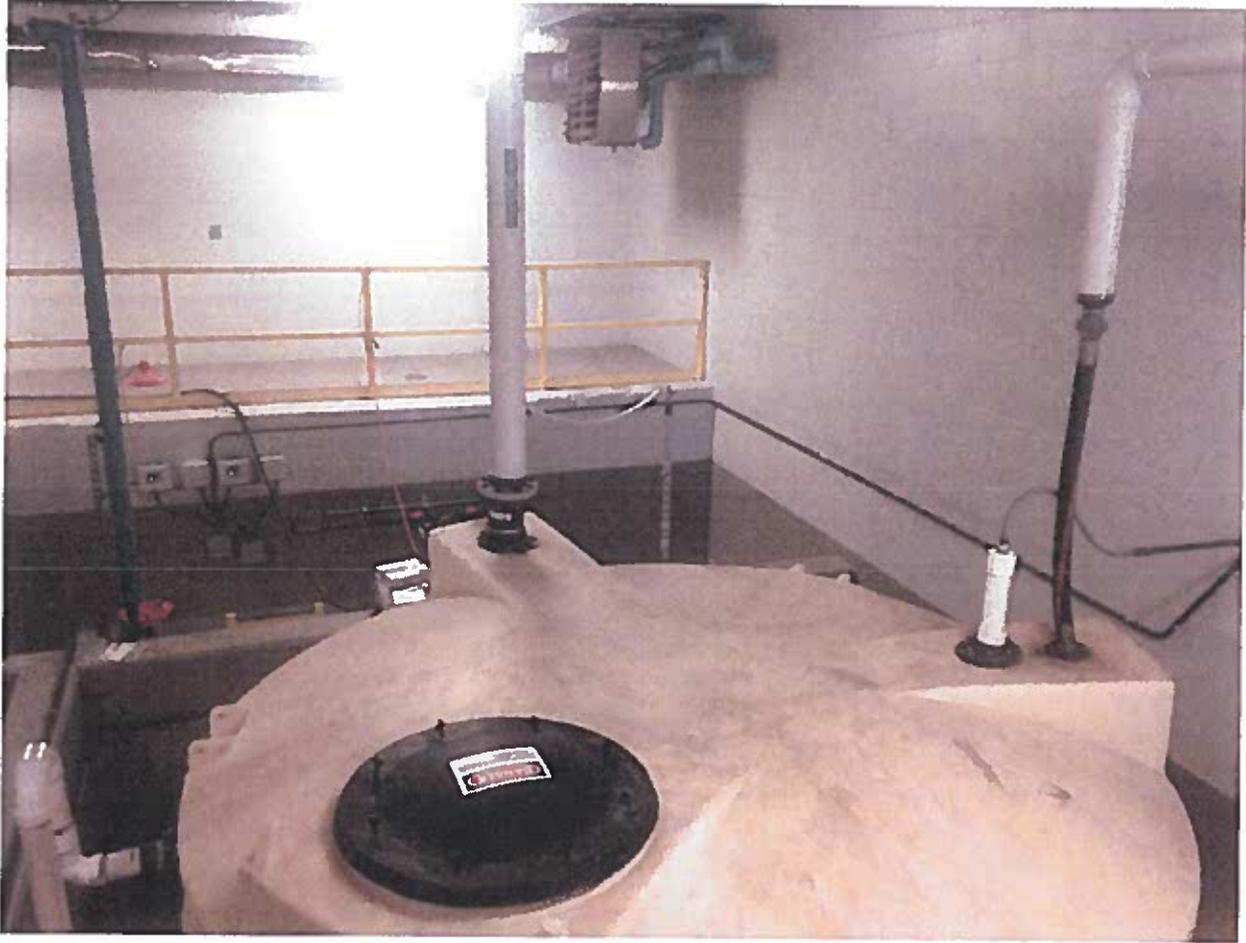


Photo No. 1 – NaOCl Tank looking Northeast.

Top of tank connections right to left: 2-inch fill, 3-inch ultrasonic, 6-inch vent, 24-inch manway, and 3-inch overflow. Note the overflow pipe, sodium bisulfite tank ultrasonic level sensor EMT conduit, ductwork and handrail will at minimum need to be temporarily removed and reinstalled to facilitate NaOCl tank replacement.

# Marquette Area Wastewater Treatment Facility Sodium Hypochlorite Tank Replacement

Date: 6/10/16

GEI Project No.: 1608600

Owner: City of Marquette



Photo No. 2 – Liquid chemical room overview looking East-Southeast.

# Marquette Area Wastewater Treatment Facility Sodium Hypochlorite Tank Replacement

Date: 6/10/16

GEI Project No.: 1608600

Owner: City of Marquette

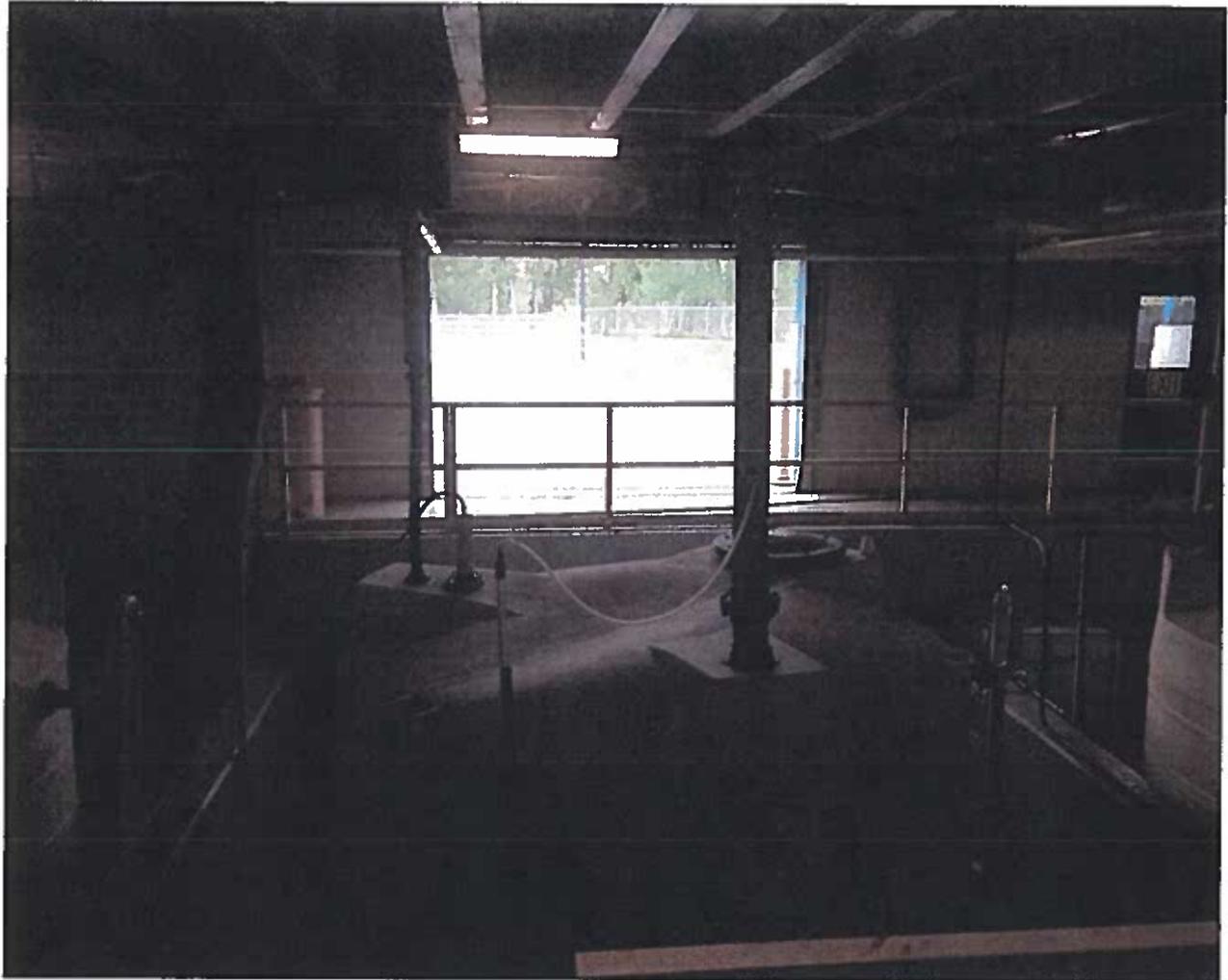


Photo No. 9 – Sodium bisulfite tank looking Southwest.

The overhead door dimensions are approximately 12'-0" (Wide) x 8'-0" (Height).

# Marquette Area Wastewater Treatment Facility Sodium Hypochlorite Tank Replacement

Date: 6/10/16

GEI Project No.: 1608600

Owner: City of Marquette

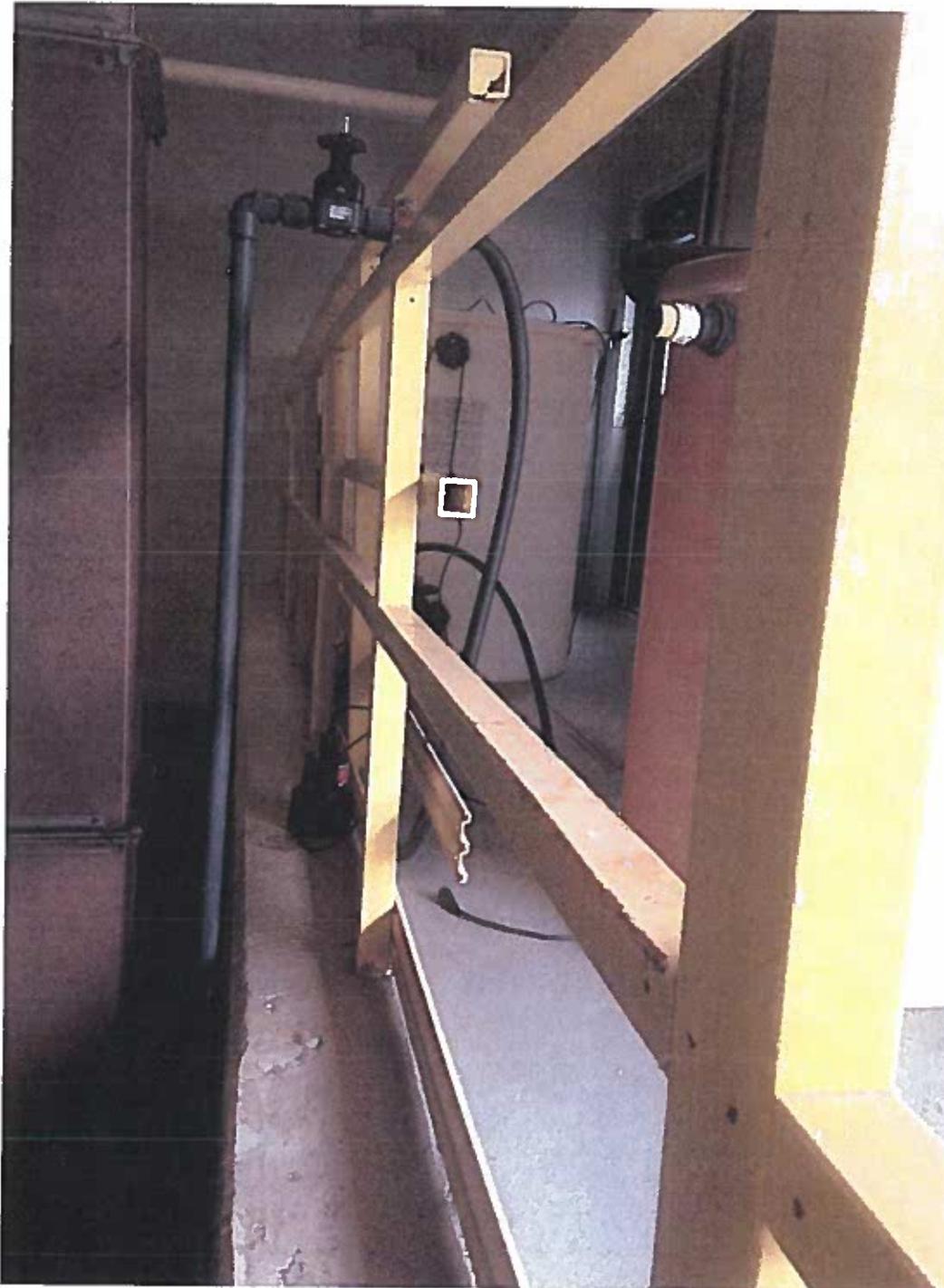


Photo No. 10 – Handrail looking Southeast.

Note the handrail is bolted at the base for removal and replacement. New hardware (by Contractor) may be required for handrail reinstallation.

**CITY OF MARQUETTE  
CHAPTER 2  
PROPOSAL**

Proposal of \_\_\_\_\_ (hereinafter called Bidder), organized and existing under the laws of the State of \_\_\_\_\_, doing business as \_\_\_\_\_, to the City of Marquette, Michigan (hereinafter called City). (corp., partnership, individual, etc.)

1. In compliance with the City's Invitation to Bid, Bidder hereby proposes to perform all work in accordance with the Plans and Specifications at the lump sum price, as submitted herein, for the several parts of this contract.

2. The undersigned, as Bidder, hereby declares the Proposal is made in good faith, without fraud or collusion with any person or persons bidding on the same contract, that he has read and examined the Request for Bid, Summary of Work, Technical Specifications, Existing Tank As-Built Documents, Photolog documenting site conditions, and this Proposal, and understands all of the same; that he/she has informed himself/herself fully with regard to conditions to be met in executing this Contract, and the undersigned agrees to furnish all labor, materials, power, transportation and equipment necessary for the construction of the Project.

3. Bidder acknowledges receipt of the following Addenda:

| <u>Addendum #</u> | <u>Date of Addendum</u> |
|-------------------|-------------------------|
| _____             | _____                   |
| _____             | _____                   |

4. Bidder will complete the work in compliance with the Contract Documents for the following price:

Lump Sum Bid: \_\_\_\_\_ \$ \_\_\_\_\_  
(use words) (use figures)

Respectfully Submitted:

Seal-if-Bid by Corporation

\_\_\_\_\_  
Signature

ATTEST:

\_\_\_\_\_  
Address

\_\_\_\_\_  
Title Date