



# PRODUCT SOLUTIONS

for a Cleaner World

## What does 'Providing Product Solutions' Mean?

At GEI Works, providing product solutions is more than just a phrase. When working with our customers, we consider all of their concerns, restrictions, budgets and requirements. If a standard product will not meet their needs, we work with our manufacturing team and technical experts to tailor a solution. **We thrive on finding innovative ways to meet the needs of our customers.**

We realized long ago that not all sites or projects are created equal. Each has unique conditions, outside factors and underlying goals. For this reason, our company does more than just supply products.

We listen. We make sure we understand the factors involved so the product solution we supply will meet the exact needs and requirements of your site.

**Call us today! 772.646.0597**



[www.geiworks.com](http://www.geiworks.com)  
Phone: 888.703.9889 Fax: 772.589.3343  
Email: [info@geiworks.com](mailto:info@geiworks.com)



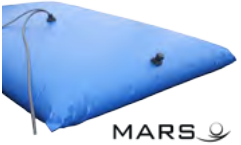
Visit [www.geiworks.com](http://www.geiworks.com) for specifications, photos and more.  
Consult your local GEI Works dealer for product availability.



## SECONDARY CONTAINMENT

Spill control for sites handling or storing hazardous liquids.

|                        |                      |
|------------------------|----------------------|
| Containment Sumps      | Mini Basins          |
| Decon Decks and Pools  | Aluminum Angle Berms |
| Pallet Containment     | Foam Wall Berms      |
| IBC Pallet Containment | Drive Thru Berms     |
| Spill Trays            |                      |



## STORAGE TANKS

Flexible or Rigid liquid storage tanks for everything from diesel fuel to potable water.

|                  |                  |
|------------------|------------------|
| Pillow Tanks     | Steel Tanks      |
| Frame Tanks      | Fiberglass Tanks |
| Onion Tanks      | Poly Tanks       |
| Corrugated Tanks | Water Trailers   |



## TARPS AND LINERS

Protection under, around and above objects or liquids.

|                     |                    |
|---------------------|--------------------|
| Containment Liners  | Tarp Covers        |
| Pond Liners         | Welding Curtains   |
| Tank/Cistern Liners | Curtain Partitions |
| Liner Underlayment  | Truck Covers       |



## OIL SPILL CLEAN UP

Spill clean up solutions for oil, HAZMAT, or general spills.

|                                |                       |
|--------------------------------|-----------------------|
| Oil Absorbents                 | Spill Kits            |
| General Maintenance Absorbents | Skimmers              |
| HAZMAT Absorbents              | Boom Reels            |
| Universal Absorbents           | Oil Containment Booms |



## EROSION CONTROL

Synthetic and natural fiber products to prevent erosion, stabilize soil and restore vegetation.

|                                    |                       |
|------------------------------------|-----------------------|
| Coir, Straw and Excelsior Logs     | Woven Geotextiles     |
| Coir, Straw and Excelsior Wattles  | Non Woven Geotextiles |
| Coir, Straw and Excelsior Blankets | Silt Fence            |
| Coir and Jute Mats                 | Breakwater Tubes      |
| Coir Blocks                        | Silt Checks           |
| Compost Filter Socks               |                       |



## INCINERATORS

Disposal solutions for all kinds of waste streams including illicit drugs, trash and hazardous/biological waste.

|                               |                             |
|-------------------------------|-----------------------------|
| Little Helios Barrel Burner   | Solid Waste Incinerators    |
| Small Scale Incinerators      | Hospital Waste Incinerators |
| Crematories                   | Drug Disposal Incinerators  |
| Industrial Waste Incinerators | Metal Recovery Incinerators |



## BOOM AND BARRIERS

Water perimeter control for debris, silt or turbidity.

|                               |                     |
|-------------------------------|---------------------|
| DOT Turbidity Curtains        | Debris Booms        |
| Heavy Duty Turbidity Curtains | Oil Booms           |
| Economy Turbidity Curtains    | Aquatic Plant Booms |
| Contractor Turbidity Curtains | Water Baffles       |



## STORMWATER BMP

BMP's that work to filter stormwater runoff before it enters a drain or leaves your site.

|                          |                                  |
|--------------------------|----------------------------------|
| Drain Guards and Filters | Dewatering Bags                  |
| Drain Covers/Seals       | Dewatering Socks                 |
| Drain Berms              | Pipe Filters                     |
| Gutter Logs              | Over Grate & Under Grate Filters |
| Inlet Guards and Filters | Oil and Debris Blocker           |
| Gravel Bags              | Downspout Guards                 |



## DEWATERING

Helping keep sites in compliance by quickly and easily removing silt and sediment from runoff or discharge.

|                  |                  |
|------------------|------------------|
| Dewatering Bags  | Dewatering Tubes |
| Dewatering Socks | Sludge Tubes     |
| Pipe Socks       | Drain Berms      |



**GEI**  
WORKS





## SYSTEM TECHNICAL DESCRIPTION & SPECIFICATIONS

### MODEL: HELIOS 0.3

**System Overview:** The Helios 0.3 is a modular, dual chambered, controlled air, solid waste thermal oxidizer system (incinerator), engineered for solid waste disposal. An advanced cyclonic secondary combustion chamber provides superior, turbulent thermal oxidation of combustion gases with over 1 second retention std., for environmentally safe stack exhaust to atmosphere. This packaged system is provided fully assembled (except stack), factory tested and ready to use. Simply set the stack sections, fill the diesel tank and plug in power, with no special factory commissioning or training required.

**System Capacity:** .3 MMBtu/hr waste combustion, providing 30-50 lb/hr processing capacity for solid waste streams with an average gross HHV range of 5500-8500 Btu/lb.

**Batch Capacity:** Approx. 9-10 cu.ft. per 4-6 hr. batch cycle.

**Electrical required:** Single point - 120 VAC, 25 amp

**Fuel Capacity:** 25 gal. - diesel or #2 fuel oil

**Primary chamber:**

|                   |                                                               |
|-------------------|---------------------------------------------------------------|
| Type:             | fixed hearth, with controlled over & under-fire air injection |
| Chamber volume:   | 13.5 cu. ft.                                                  |
| Hearth Area:      | 5 sq. ft.                                                     |
| Burners capacity: | .25 MMBtu/hr. nom. (modulated control)                        |
| Construction:     | skid - 4", 6.25#/ft., A36 channel                             |
|                   | shell - 10 ga., A569 carbon steel                             |
|                   | lining - 3", 3000°F 750 psi, (Plicast 3000KK)                 |
|                   | insulation - .25", 550K, 2000°F ceramic fiber                 |

**Secondary chamber:**

|                  |                                               |
|------------------|-----------------------------------------------|
| Type:            | cyclonic thermal oxidizer with 1+ sec. r/t    |
| Chamber volume:  | 13.5 cu. ft. (std.)                           |
| Burner capacity: | .25 MMBtu/hr. (modulated control)             |
| Construction:    | shell - 10 ga., A569 carbon steel             |
|                  | lining - 3", 3000°F 750 psi, (Plicast 3000KK) |
|                  | insulation - .25", 550K, 2000°F ceramic fiber |

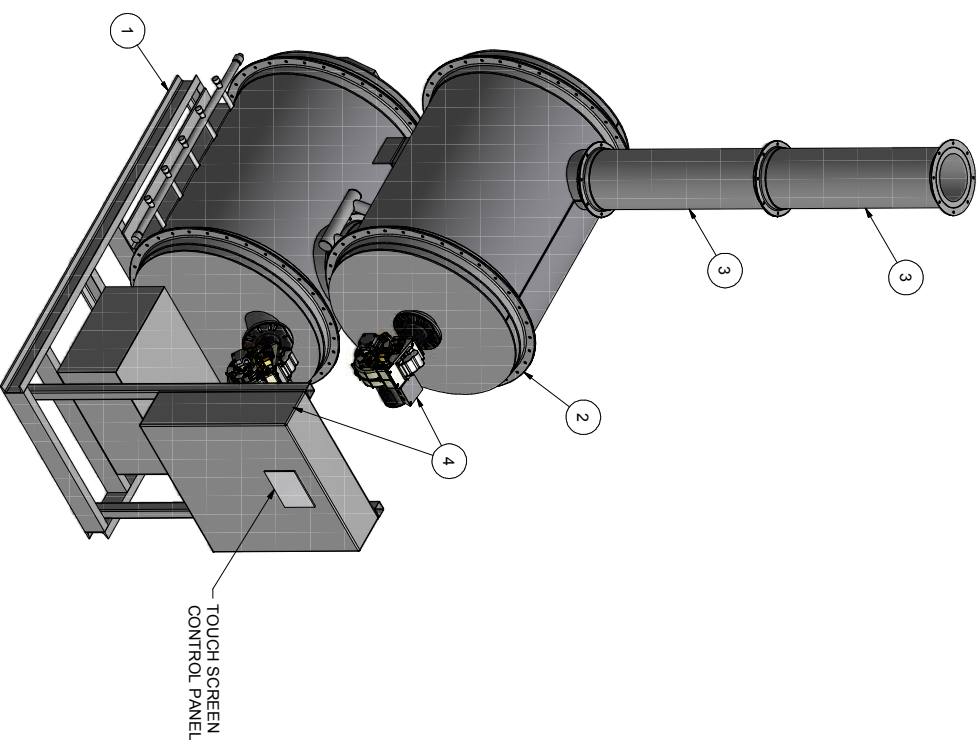
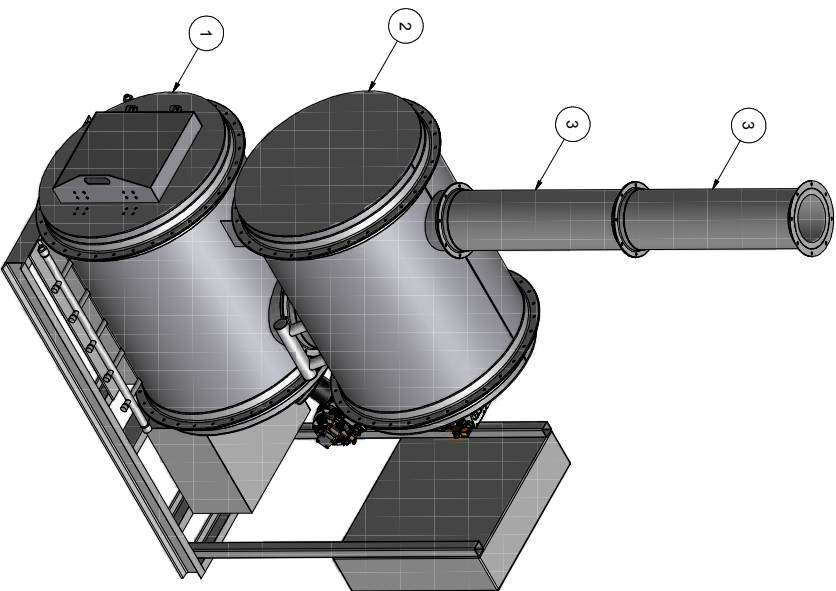
**Combustion air:** Supply to burners, under-fire and secondary air injection  
.33 hp, 120VAC, 60 cfm

**Systems Control:** Siemens PLC with Touch-screen operator interface  
To include:

- Primary & secondary chamber temperature control
- Temperature actuated fuel and air control
- Burner interface\*\*
- System status and alarm display
- Hydraulic systems control (applicable with optional loader)

*\*\* Discrete, UL, CSA, FM & IRI burner monitoring/control w/CAD cell flame supervision provided for each burner*

**Exhaust breaching:** 10" dual wall, s.s., insulated stack (6' std.)



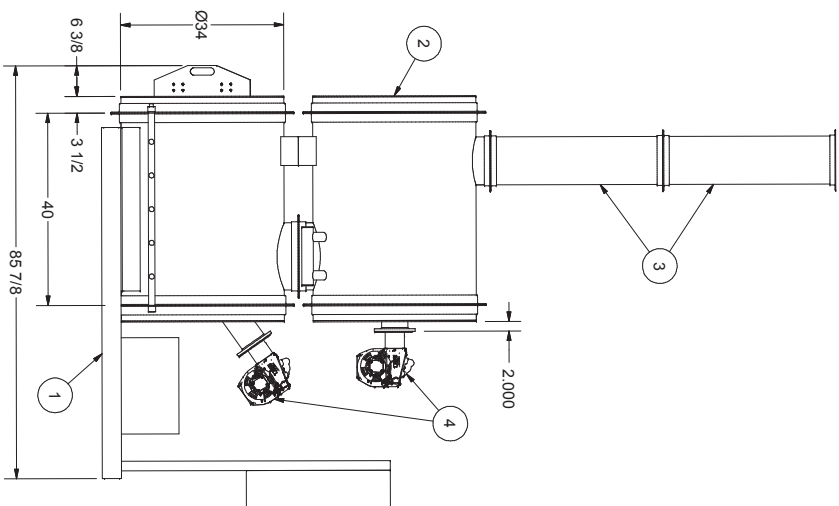
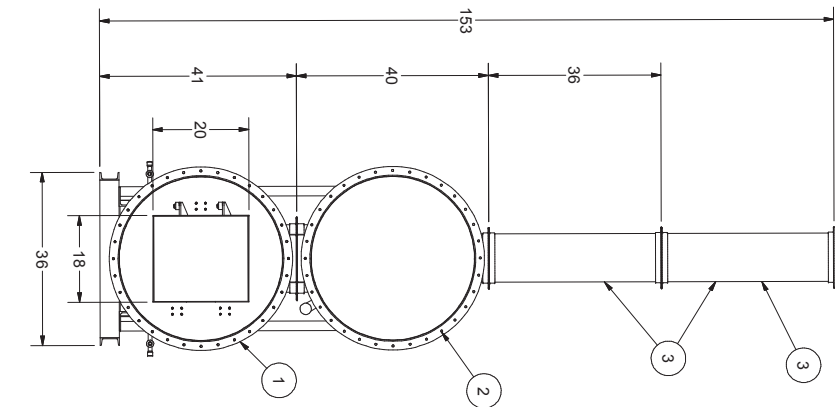
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|------|-----|-------------|----------------------------------------|
| 4    | 2   | CF375       | OIL BURNER, LIGHT COMMERCIAL           |
| 3    | 2   | 1716K138    | CHIMNEY VENT, INSULATED, Ø10 X 36 LONG |
| 2    | 1   | 0.3-SC-1000 | CHAMBER ASSEMBLY, SECONDARY            |
| 1    | 1   | 0.3-PC-1000 | CHAMBER ASSEMBLY, PRIMARY              |
| ITEM | QTY | PART NUMBER | DESCRIPTION                            |

Parts List

|            |               |                                                                                                                                                                                                                                                                                                        |                                            |          |                                  |
|------------|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|----------|----------------------------------|
| WHERE USED | NEXT ASSEMBLY | THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION THAT IS THE SOLE PROPERTY OF GEI WORKS AND IS TENDERED SUBJECT TO THE FOLLOWING CONDITIONS. THE INFORMATION (A) WILL BE RETAINED IN CONFIDENCE. (B) WILL NOT BE COPIED OR REPRODUCED IN ANY MANNER WITHOUT THE EXPRESS WRITTEN AGREEMENT WITH GEI WORKS | DRAWN<br>J. BODJACK<br>CHECKED<br>APPROVED | 4/1/2012 | www.GEIWorks.com<br>772.646.0597 |
|------------|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|----------|----------------------------------|

SOLID WASTE THERMAL OXIDIZER SYSTEM

|       |     |        |            |              |
|-------|-----|--------|------------|--------------|
| SIZE  | C   | DWG NO | HELIOS-0.3 | REV          |
| SCALE | N/A |        |            |              |
|       |     |        |            | SHEET 1 OF 2 |



|                                     |            |              |  |
|-------------------------------------|------------|--------------|--|
| TITLE                               |            |              |  |
| SOLID WASTE THERMAL OXIDIZER SYSTEM |            |              |  |
| SIZE                                | DWG NO     | REV          |  |
| C                                   | HELIOS 0.3 |              |  |
| SCALE                               | N/A        | SHEET 2 OF 2 |  |



### Emission Calculations for Helios 0.3: Solid Waste Incinerator

***\*Based on AP-42, Table 2.1-9 emissions factors for Modular Starved-Air Combustors***

| Pollutant       | Rated<br>capacity (lb/hr) | Rated<br>capacity (ton/hr) | Emissios<br>lb/ton burned | Emissions<br>lb/hr | Operation<br>hrs/yr | Emissions<br>tons/yr. |
|-----------------|---------------------------|----------------------------|---------------------------|--------------------|---------------------|-----------------------|
| PM              | 50                        | 0.025                      | 3.43 E+00                 | 0.086              | 2500                | 0.1075                |
| HCl             | 50                        | 0.025                      | 2.15 E+00                 | 0.054              | 2500                | 0.0675                |
| SO <sub>2</sub> | 50                        | 0.025                      | 3.23 E+00                 | 0.081              | 2500                | 0.10125               |
| NO <sub>x</sub> | 50                        | 0.025                      | 3.16 E+00                 | 0.079              | 2500                | 0.09875               |
| CO              | 50                        | 0.025                      | 2.99 E-01                 | 0.007              | 2500                | 0.00875               |

Notes:

1. Flow = 145 scfm (per heat & mass balance calculations for 200 lb. batch)
2. VOC destruction efficiency of the proposed system: 99+%
3. Visible Emission: 0% normal (not to exceed 10% for a period aggregating more than 3 minutes in any hour)



| Date        | Estimate # |
|-------------|------------|
| Sep-28-2018 | 518002     |

## Name / Address

Duke University

## Ship to:

Duke University  
Ex-Works Factory

Environmental Compliance Product Solutions ~ Metal Storage Cabinets ~ Industrial Supply Products ~ Site Supplies

Rep: MR

Terms: Due with Order

| Item    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Qty | U/M  | Cost        | Total           |
|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|------|-------------|-----------------|
| 550-V03 | <p>One (1) Helios 0.3 Incinerator System : System Capacity: .3 MMBt<br/>.3 MMBtu/hr waste combustion, providing 30-50 lb/hr processing capacity for solid waste streams with an average gross HHV range of 5500-8500 Btu/lb.<br/>Batch Capacity: Approx. 9-10 cu.ft. per 4-6 hr. batch cycle.</p> <p>Electrical required: Single point - 120 VAC, 25 amp</p> <p>Fuel Capacity: 25 gal. - diesel or #2 fuel oil</p> <p>Primary chamber: Type: fixed hearth, with controlled over &amp; under-fire air injection<br/>Chamber volume: 13.5 cu. ft.<br/>Hearth Area: 5 sq. ft.<br/>Burners capacity: .25 MMBtu/hr. nom. (modulated control)<br/>Construction: skid - 4in., 6.25lbs/ft., A36 channel<br/>shell - 10 ga., A569 carbon steel<br/>lining - 3in., 3000 degrees F 750 psi, (Plicast 3000KK)<br/>insulation - .25in., 550K, 2000 degrees F ceramic fiber</p> <p>Secondary chamber: Type: cyclonic thermal oxidizer with 1+ sec. r/t<br/>Chamber volume: 13.5 cu. ft. (std.)<br/>Burner capacity: .25 MMBtu/hr. (modulated control)<br/>Construction: shell - 10 ga., A569 carbon steel<br/>lining - 3in., 3000 degrees F 750 psi, (Plicast 3000KK)<br/>insulation - .25in., 550K, 2000 degrees F ceramic fiber</p> <p>Combustion air: Supply to burners, under-fire and secondary air injection<br/>.33 hp, 120VAC, 60 cfm</p> <p>Systems Control: Siemens PLC with Touch-screen operator interface<br/>To include: Primary &amp; secondary chamber temperature control<br/>Temperature actuated fuel and air control<br/>Burner interface**<br/>System status and alarm display<br/>Hydraulic systems control (applicable with optional loader)<br/>** Discrete, UL, CSA, FM &amp; IRI burner monitoring/control<br/>w/CAD cell flame supervision provided for each burner</p> <p>Exhaust breaching: 10" dual wall, s.s., insulated stack (6ft. std.)</p> | 1   | each | \$43,137.50 | \$43,137.50 Tax |
| NOTE    | *****Availability: Typically available in 6-8 weeks from date of payment.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 1   | each | \$0.00      | \$0.00 Tax      |

Credit terms available to existing approved customers only. All other customers can prepay via check, eCheck, Bank Transfer, or Credit Card. Engineering Services available through partners. Purchaser is solely responsible for product selection, suitability, engineering, design, performance, installation, and maintenance.

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**NO WARRANTY PROVIDED WITHOUT AN APPROVED MSDS, CANCELLATION FEES MAY APPLY**

GEI Works

Sebastian, FL, 32958



**Quote**

| Date        | Estimate # |
|-------------|------------|
| Sep-28-2018 | 518002     |

|                                              |
|----------------------------------------------|
| <b>Name / Address</b><br><br>Duke University |
|----------------------------------------------|

|                                                            |
|------------------------------------------------------------|
| <b>Ship to:</b><br><br>Duke University<br>Ex-Works Factory |
|------------------------------------------------------------|

Environmental Compliance Product Solutions ~ Metal Storage Cabinets ~ Industrial Supply Products ~ Site Supplies

Rep: MR

Terms: Due with Order

| Item                                                                                                                                                                                                                                                                                               | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Qty | U/M  | Cost         | Total              |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|------|--------------|--------------------|
|                                                                                                                                                                                                                                                                                                    | <p>If this is a quantity or custom purchase the lead time may vary. (please re-confirm lead times at the time of your order....) *****</p> <p>All orders are Ex-Works unless otherwise noted. Prices exclude freight options - FOB Origin, Freight Prepaid and Add (please provide delivery address in order to provide freight rate).</p> <p>--&gt; Please note: Due to changing regulations and potential tariff changes, material cost increases or rising fuel costs, prices may be subject to change without notice. We price as competitively as possible. We appreciate your continued business!</p> |     |      |              |                    |
| Contact 7                                                                                                                                                                                                                                                                                          | <p>For more information on this estimate or your project please contact: Mario Ross - at GEI Works</p> <p>PH: 772-646-0597 FX: 772-589-3343<br/>EM: MRoss@GEIWorks.com</p>                                                                                                                                                                                                                                                                                                                                                                                                                                  | 1   | each | \$0.00       | \$0.00 Tax         |
| <p>Visit Us: <a href="http://www.ErosionPollution.com">www.ErosionPollution.com</a> ~ <a href="http://www.Silt-Barriers.com">www.Silt-Barriers.com</a> ~ <a href="http://www.GraniteEnvironmental.com">www.GraniteEnvironmental.com</a><br/>           "Product Solutions for a Cleaner World"</p> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |     |      |              |                    |
|                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |     |      | Tax 0.00%    | \$0.00             |
|                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |     |      | <b>Total</b> | <b>\$43,137.50</b> |

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