GeoPool®

An Ellicott® DREDGE ENTERPRISES Brand

REUSABLE, SCALABLE, NON-MECHANICAL DEWATERING TECHNOLOGY TO REDUCE DEWATERING COSTS

# GeoPool® Technology

The GeoPool® system is an innovative dewatering system that is reusable, scalable, non-mechanical, cost effective, easy to operate, and can receive variable flow. GeoPool systems are comprised of a series of rigid steel support frames that are linked together with heavy-duty steel footing connections and a series of four steel cables with turnbuckle connections. The interior frame structure is lined with a hi-tech geosynthetic fabric used to filter out water from slurries delivered via hydraulic pipeline. The sediments are collected in the GeoPool and the effluent water filters through the fabric via natural settling and gravity. The effluent is directed towards a sump by simply creating a trench 4-5 ft. (1.2-1.5 m) away from the rear base of the GeoPool frames. The effluent can then be pumped back to its original water source or treated if necessary.

The patented Dump Doors are a series of shutters inserted into several of the GeoPool frames at different heights and are opened to release bulk surface water from the pool to increase storage capacity. This greatly speeds up the dewatering process as a large portion of the water will not need to filter through the fabric during the dry down process which is required when using less efficient geotextile tubes.

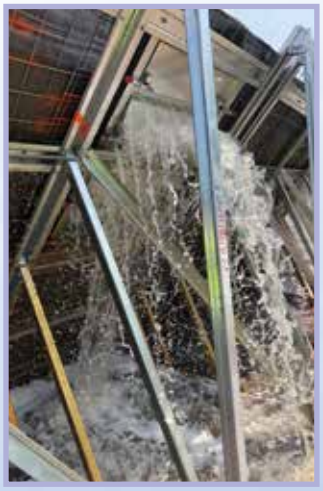
The patented Clean Out Gates allow the GeoPool to be opened after the material is dewatered to the desired percent moisture level. After the Gates are dropped and pulled to the side, tracked earth moving equipment can access the material through a 20 ft. 6 in. entry point and remove the material from the pool. After the pool is emptied the gates are raised and locked and the next fill cycle begins. For large scale projects, it is recommended to use multiple pools so one pool can be filled while another pool is cleaned out after the dry down process is complete.

## Versatility

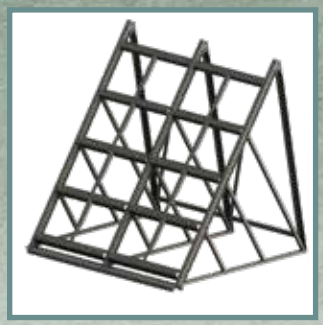
The GeoPool can be used for a wide variety of applications including the following:

- Environmental Dewatering
- Industrial Dewatering
- Dredged Material Dewatering
- CDFs (Confined Disposal Facilities)
- Aggregate Wash Plants
- Sand
- Power Plants
- Municipal Wastewater
- Mine Tailings
- Food Production Waste
- Agriculture Waste (poultry, dairy, and hog sludge)

**GEOPOOL DUMP DOORS**



**GEOPOOL MODULAR FRAMES**



*Modular Panels for Faster Assembly*

GEOPOOL COLLAPSIBLE CLEAN-OUT GATES

# Competitive Advantages

Geotextile bags are ideal for smaller projects and shoreline stabilization. GeoPool systems are more economical the larger the project gets. The recognized savings of a GeoPool dewatering operation over a geotextile bag operation grows exponentially as the volume of material grows as the capital investment is limited to the fabric for relining the GeoPool. More and more geotextile tubes must be purchased, which quickly increases project costs. GeoPool dewatering volumes are inherently higher than geotextile bags, so the per cubic yard is greatly reduced over time.

The GeoPool® system has several competitive advantages that save time and money including:

| FEATURES | BENEFITS |
|---|---|
| **Inexpensive** | Since the GeoPool® fabric can be easily replaced after it wears out, dewatering costs can be reduced significantly. The price to re-line the largest GeoPool which can handle up to 14,000 $yds^3$ (10,704 $m^3$) is less than the price of a geotextile tube in many cases. |
| **Reusable** | GeoPool's robust steel construction is galvanized and made to last. The patented Clean Out Gates allow the pool to be cleaned out and put immediately back into service again and again. |
| **Scalable** | GeoPool's modular frames allow it to be sized up or sized down for specific site dimension requirements or required dewatering capacity. |
| **Flow Range** | GeoPool can handle flows from 4 in. (102 mm) to 14 in. (355 mm) dredges and pumping systems without splitting the flow. If multiple pools are used, then only a couple of valves will be required vs. geotextile tubes which need to be set up with expensive manifolds with dozens upon dozens of expensive valves that take a lot of time and cost to set up in the field. |
| **Rapid Dewatering** | The patented Dump Door technology allows for rapid release of settled surface water instead of having to wait for it to pass directly through the fabric. This bulk dewatering advantage sets GeoPool apart from other fabric based dewatering technologies and mechanical dewatering technologies. |
| **Non-Mechanical** | GeoPool has no moving mechanical parts, reducing overall maintenance and service costs over the lifespan of the equipment. Additionally, there are no mechanical breakdowns that can lead to costly downtime, especially where there is a lead time for parts. |
| **No Power Required** | Since GeoPool systems require no power, they have lower operating costs than mechanical dewatering systems including centrifuges, filter presses, and dryers. |
| **Versatility** | GeoPool can be used to dewater a wide range of slurries from various industries. |

# Process

1 > ASSEMBLE MODULAR FRAMES

2 > CONNECT FRAMES AND ADD FABRIC

3 > FILL WITH MATERIAL

4 > DEWATER

5 > DRY DOWN

6 > CLEANOUT

# Sample Projects

*City of Lorain, OH*

*Meredosia, IL*

*Kansas City, MO*

*Algeria*

*Fullerton, ND*

*Indonesia*

*Indonesia*

*Mozambique*

# GeoPool® Model Specifications

| MODEL | Volume (est.) | | Inner Circumference | | Outer Circumference | | Inner Diameter | | Outer Diameter[1] | | Depth | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SAE | *Metric* | SAE | *Metric* | SAE | *Metric* | SAE | *Metric* | SAE | *Metric* | SAE | *Metric* |
| **V1.5 GeoPool** | 1,500 $yds^3$ | *1,147 $m^3$* | 235 ft | *71.6 m* | 293.1 ft | *89.4 m* | 75 ft | *22.9 m* | *93.3 ft* | *28.4 m* | *8 ft* | *2.44 m* |
| **V2.5 GeoPool** | 2,500 $yds^3$ | *1,911 $m^3$* | 311 ft | *94.8 m* | 317 ft | *113 m* | 99 ft | *30.2 m* | *118.1 ft* | *36 m* | *8 ft* | *2.44 m* |
| **V4 GeoPool** | 4,050 $yds^3$ | *3,096 $m^3$* | 401.7 ft | *122.5 m* | 450 ft | *139.9 m* | 127.8 ft | *39 m* | *146.1 ft* | *44.5 m* | *8 ft* | *2.44 m* |
| **V5 GeoPool** | 5,100 $yds^3$ | *3,899 $m^3$* | 451.7 ft | *137.7 m* | 509 ft | *155.2 m* | 143.8 ft | *43.8 m* | *162 ft* | *49.4 m* | *8 ft* | *2.44 m* |
| **V6 GeoPool** | 6,075 $yds^3$ | *4,642 $m^3$* | 493.4 ft | *150.4 m* | 550.7 ft | *167.9 m* | 157 ft | *47.8 m* | *175.3 ft* | *53.4 m* | *8 ft* | *2.44 m* |
| **V8 GeoPool** | 8,000 $yds^3$ | *6,116 $m^3$* | 567.9 ft | *173.1 m* | 625.5 ft | *190.7 m* | 180.8 ft | *55.2 m* | *199.1 ft* | *60.7 m* | *8 ft* | *2.44 m* |
| **V10 GeoPool** | 10,150 $yds^3$ | *7,760 $m^3$* | 643.3 ft | *196.1 m* | 700.3 ft | *213.5 m* | 204.8 ft | *62.4 m* | *222.9 ft* | *68 m* | *8 ft* | *2.44 m* |
| **V12 GeoPool** | 12,000 $yds^3$ | *9,175 $m^3$* | 701.5 ft | *213.9 m* | 758.7 ft | *231.3 m* | 223.4 ft | *68.2 m* | *241.5 ft* | *73.6 m* | *8 ft* | *2.44 m* |
| **V14 GeoPool** | 14,000 $yds^3$ | *10,704 $m^3$* | 759.8 ft | *231.6 m* | 816.8 ft | *249 m* | 241.8 ft | *73.9 m* | *260 ft* | *79.3 m* | *8 ft* | *2.44 m* |

[1] Add 6 ft. (1.8 m) to Outer Diameter measurement to create an activation platform before swale/trench.

| MODEL | Frame Count 8.25 ft (2.51 m) each | Dump Doors (fits inside frame assembly) | Clean Out Gates 10.25 ft (3.3 m) each | Days of Set-Up, Supervision & Training | Estimated Clean Out Hours w/ Tracked Excavators[2] | Estimated Export Ocean Containers | Domestic Trucking |
|---|---|---|---|---|---|---|---|
| **V1.5 GeoPool** | 26 qty. | 2 qty. | 2 qty. | 5 days | 5 hrs. | (2) 40 ft High Cube | (2) 48 ft Flat |
| **V2.5 GeoPool** | 35 qty. | 2 qty. | 2 qty. | 5 days | 8 hrs. | (2) 40 ft High Cube | (2) 48 ft Flat |
| **V4 GeoPool** | 46 qty. | 2 qty. | 2 qty. | 5 days | 12.5 hrs. | (2) 40 ft High Cube | (1) 53 ft Step (1) 48 ft Flat |
| **V5 GeoPool** | 52 qty. | 2 qty. | 2 qty. | 5 days | 16 hrs. | (3) 40 ft High Cube | (2) 53 ft Step |
| **V6 GeoPool** | 57 qty. | 2 qty. | 2 qty. | 5 days | 19 hrs. | (3) 40 ft High Cube | (2) 53 ft Step |
| **V8 GeoPool** | 66 qty. | 2 qty. | 2 qty. | 6 days | 25 hrs. | (3) 40 ft High Cube | (2) 53 ft Step (1) 48 ft Flat |
| **V10 GeoPool** | 75 qty. | 2 qty. | 2 qty. | 6 days | 31.5 hrs. | (4) 40 ft High Cube (1) 20 ft | (2) 53 ft Step (1) 48 ft Flat |
| **V12 GeoPool** | 82 qty. | 2 qty. | 2 qty. | 7 days | 38 hrs. | (4) 40 ft High Cube (1) 20 ft | (2) 53 ft Step (1) 48 ft Flat |
| **V14 GeoPool** | 89 qty. | 2 qty. | 2 qty. | 7 days | 44 hrs. | (4) 40 ft High Cube (1) 20 ft | (2) 53 ft Step (1) 48 ft Flat |

[2] Varies depending on the size of excavators. Estimates based on 5.05 $yds^3$ (3.86 $m^3$) bucket using tracked excavator on multi-pool site (using average of 3 pools excavated).

**Included with each GeoPool:**

> GeoPool Filter Fabric
> Assembly tool kit
> Assembly hardware kit
> Assembly supervision and on-site training by a factory technician

ISO 9001:2015 BUREAU VERITAS Certification

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