

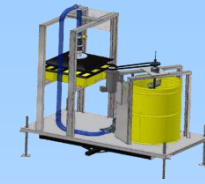
# SmartFeed™ Steps To Project Success



**Customer Application**



**RDT Testing**  
RDT Procedures  
Sample RDT Test Log



**P-GDT Testing**  
P-GDT Procedures  
Sample P-GDT Test Log

P-GDT Testing / Geotube® Estimator Filtration Quantity									
Version 1.1 - Jan. 2010									
Client: [ ]									
Project: [ ]									
Site: [ ]									
Date of Report: [ ]									
Item	Unit	Value	Unit	Value	Unit	Value	Unit	Value	Unit
1.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
2.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
3.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
4.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
5.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
6.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
7.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
8.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
9.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
10.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
11.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
12.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
13.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
14.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
15.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
16.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
17.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
18.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
19.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
20.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
21.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
22.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
23.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
24.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
25.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
26.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
27.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
28.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
29.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
30.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
31.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
32.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
33.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
34.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
35.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
36.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
37.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
38.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
39.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
40.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
41.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
42.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
43.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
44.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
45.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
46.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
47.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
48.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
49.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
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51.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
52.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
53.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
54.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
55.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
56.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
57.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
58.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
59.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
60.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
61.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
62.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
63.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
64.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
65.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
66.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
67.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
68.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
69.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
70.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
71.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
72.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
73.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
74.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
75.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
76.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
77.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
78.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
79.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
80.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
81.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
82.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
83.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
84.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
85.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
86.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
87.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
88.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
89.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
90.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
91.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
92.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
93.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
94.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
95.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
96.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
97.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
98.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
99.00	kg	1000	kg	1000	kg	1000	kg	1000	kg
100.00	kg	1000	kg	1000	kg	1000	kg	1000	kg

**Geotube© Estimators**  
Filling Phase | Dewatered Phase



**SmartFeed™ System & Geotube® Containers**  
 Maintains Parameters Throughout Project  
SmartFeed™ System Flyer



**Project Success**

**Mineral Processing Services LLC**

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**TENCATE**  
**Geotube**

**TenCate Geotube RDT Test**

A Fast And Easy Way To Measure  
Dewatering Efficiency and Polymer Selection

**Prueba TenCate Geotube RDT**

Un medio rápido y fácil de medir la  
Eficiencia en el desagüe y la selección del polímero

**Test de Déshydratation Rapide (TDR) de TenCate Geotube**

Une méthode simple et rapide pour choisir le polymère et évaluer  
l'efficacité de la déshydratation

**TenCate Geotube RDT Teste**

Uma maneira simples e rápida de medir



Protective & Outdoor Fabrics  
Aerospace Composites  
Armour Composites

Geosynthetics  
Industrial Fabrics  
Synthetic Grass

**TENCATE**  
materials that make a difference

**CAUTION!**

Do Not Exceed Fill Height Printed On Geotube® Unit.  
Always Install Geotube® Containers On A Flat, Level Surface.  
If any questions, contact your TenCate Geotube Representative.

**¡PRECAUCION!**

No exceda la altura de llenado impresa en el Geotube®  
Siempre instale el Geotube® en una superficie plana y nivelada  
Para cualquier duda o ampliación contacte a su  
representante de TenCate Geotube.

**ATTENTION!**

Ne pas dépasser la hauteur limite de remplissage imprimée sur chaque Geotube®.  
Toujours installer les containers Geotube® sur une surface plane et au niveau.  
Pour toute question, contacter votre représentant TenCate Geotube.

**Atenção!**

Não exceda a altura máximas de enchimento  
impressa nas unidades Geotube®.  
Sempre instale as unidades Geotube® em superfície plana.  
Para quaisquer esclarecimentos, contate seu  
representante TenCate Geotube.

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**TENCATE**  
materials that make a difference



### Required Equipment for the Geotube® RDT

1. One five-gallon (20L) plastic bucket
2. Plastic cups
3. Two 500ml clear beakers
4. 100ml graduated cylinder
5. 3.75" (9.5cm) diameter Geotube® GT 500 fabric
6. RDT Test Kit
7. Hand mixer (to make down neat polymer to solution)
8. Syringes
9. Latex gloves
10. Hand sanitizer
11. Stopwatch

### Equipo requerido para la prueba Geotube® RDT

1. Una cubeta plástica de 20 litros (5 galones)
2. Tazas plásticas
3. Dos vaso graduados transparentes de 500ml
4. Un cilindro graduado de 100ml
5. Círculos de Geotube® GT 500 de 9.5 cm de diámetro (3.75")
6. El Prueba RDT el kit
7. Mezcladores manuales (para diluir polímero puro a solución)
8. Jeringas
9. Guantes de látex
10. Limpiador para desinfección de manos
11. Cronómetro

### Matériel requis pour le TDR de TenCate Geotube

1. Un seau en plastique de 20 litres (5 gallons)
2. Récipients en plastique
3. Deux béchers de 500 ml
4. Un cylindre gradué de 100 ml
5. Un morceau de membrane Geotube® GT 500 de 9.5 cm de diamètre (3.75 pouces)
6. Kit de test TDR
7. Un mixer (pour mettre le polymère en solution)
8. Seringues
9. Gants de latex
10. Désinfectant pour les mains
11. Un chronomètre

### Equipamentos necessários para a realização do teste Geotube® RDT

1. 1 balde plástico de 20L
2. Recipientes plásticos
3. 2 beakers transparentes de 500ml
4. Cilindro graduado de 100ml
5. Amostra cilíndrica de geotêxtil Geotube® GT 500 com diâmetro de 9.5cm
6. Kit de teste RDT
7. Misturador manual para o preparo da solução de polímero
8. Seringas
9. Luvas de látex
10. Desinfetante para as mãos
11. Cronômetro

## A Fast and Easy Way to Evaluate Sludge Dewatering and Polymer Selection

The Geotube® RDT (Rapid Dewatering Test) is a fast and easy test to determine how well a sludge sample dewater through the GT 500 textile. The test is designed to:

- Evaluate the efficiency of the candidate polymers
- Measure the volume of effluent filtered from the sludge
- Record the time for filtration
- Analyze the quality of effluent water

### Step 1

Measure 100ml of water into cups in which to make down polymer solution. This is usually an ample amount to conduct several 1-liter sludge tests. If sludge sample is high in solids by weight, a higher dose of polymer will be required.



### Step 2

Make down neat polymer into 1.0%, 0.5%, 0.3%, or 0.25% solution by adding neat polymer to each cup of 100ml of water. Make down charts are available from TenCate Geotube. Vigorous shaking or mechanical mixing is required to invert the neat polymer into solution. If using an electric hand mixer, mix for about 10-15 seconds only. Allow the polymer solution to age for 15-20 minutes before adding polymer solution to the sludge samples. Repeat this make down procedure with other candidate polymers being tested.



### Step 3

Assemble the RDT test kit by inserting a 3.75 in. (9.5 cm) diameter piece of Geotube® GT 500 fabric into the plastic funnel. Assemble funnel and place on top of the collection beaker.



### Step 4

Fill a 500ml beaker with the sludge to be tested. Determine a starting point for the polymer dosage in PPM and draw the required amount of polymer into a syringe. Example: Start with 40 PPM. If this dosage creates a good floc, test a lower dosage until the optimum dose is determined. A chart of dosages is available from TenCate Geotube. Add the polymer solution to the 500ml of sludge and begin to pour the sample back and forth between the two beakers until a floc forms.



### Step 5

Slowly pour the 500ml of conditioned sludge into the RDT funnel.

### Step 6

Using a stopwatch, time the free water flow through the funnel. Record the effluent volume at 30-second intervals up to 5 minutes.



### Step 7

Examine the filtrate for clarity and suspended solids. Remove the RDT from the beaker, and unscrew the top of the funnel.

Slowly remove the Geotube® GT 500 fabric from the plastic funnel and collect the dewatered sludge. Examine how the cake releases from the fabric.

Repeat this procedure for all the candidate polymers to determine the most efficient polymer in terms of time to dewater, volume of filtrate, and clarity of filtrate.



### Step 8

Collect a sample of dewatered sludge. Conduct a moisture content test to determine percent dewatered solids.

# RDT Rapid Dewatering Test Log

Project : \_\_\_\_\_  
 Date: \_\_\_\_\_  
 Fabric: \_\_\_\_\_  
 Sample Type: \_\_\_\_\_



250 mg/l Starting Volume

Filtrate Volume (mL) at t-sec

Test	Product	Dose #/T	Sample % D.S.	Poly % Dil	Floc Type	Mixer Speed /Sec	30 sec	60 sec	90 sec	120 sec	150 sec	180 sec	Filtrate Clarity	Cake	Comments
1															
2															
3															
4															
5															
6															
7															
8															
9															
10															
11															

**SMARTFEED™**



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# P-GDT

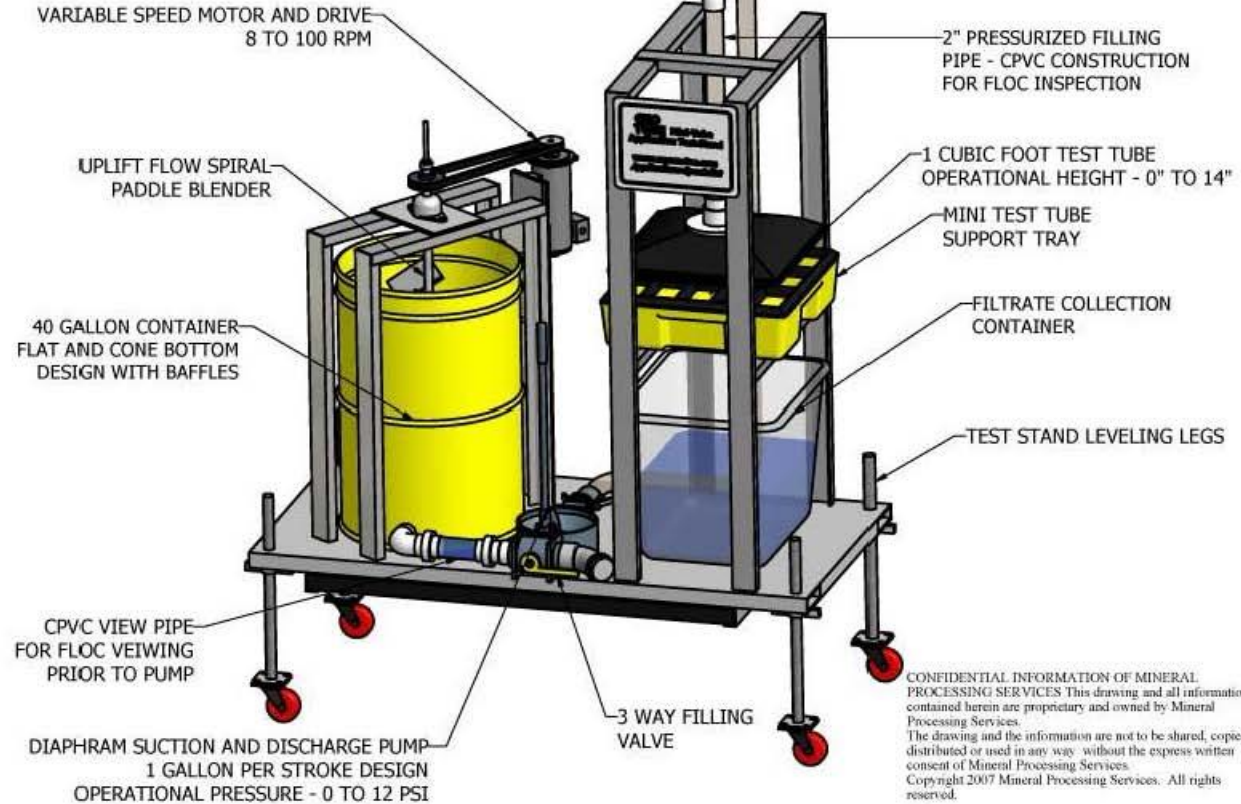
## Pressure-Geotube® Dewatering Test Procedures

Steps For A Successful Test Of SmartFeed™ Technology  
When Used In A Geotube® Slurry Dewatering Project



SmartFeed™ is a patent-pending technology of Mineral Processing Services, LLC.  
Geotube® is a registered trademark of TenCate. Used with permission.

## P-GDT Test Stand



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Copyright 2007 Mineral Processing Services. All rights reserved.

SmartFeed™ P-GDT (Pressure-Geotube® Dewatering Test) uses a small sample of slurry to simulate full-scale field conditions for a chemically conditioned slurry dewatering project.



Once complete, the P-GDT will establish baseline measurements for the use of SmartFeed™ technology that can then be carried forward and applied to an entire dewatering project.

The purpose of the test is to:

- » Visualize the dewatering process
- » Simulate physical force interaction between permeability of filter fabric selection and polymer performance under full-scale application pressure
- » Confirm chemical program (polymer) dosage is representative of full-scale application
- » Create samples of filtrate and filter cake
- » Confirm application mass-balance of Geotube® filtration area required for project

*Prior to P-GDT testing, a Geotube® distributor needs to conduct a Rapid Dewatering Test (RDT) for polymer screening of the project.*

*Protective eyewear and face shields are required for personnel operating the P-GDT test unit.*

## Step 1



Insert 2" hose supplied with test unit in to sample storage container using test stand pump for transfer slurry to mix tank. *Place Valve 1 handle in suction position*

Turn on tank mixer remove 300ml sample from mix tank for dry-solids testing.

Record gallons measurement on side of mix tank.

Install Geotube® 1cf capacity container on stand support tray and connect piping.

Turn on mixer at 50% speed.

## Step 2



Add polymer to mix tank at dose rate determined by Rapid Dewatering Test (RDT).

Adjust mixer until floc is evenly distributed in tank.

Pump slurry through piping; recirculate to mix tank. *Connect pump discharge hose to mix tank re-circulation fitting.*

Once recirculated, discharge slurry has similar floc as mix tank, stop pumping and connect hose to container fill manifold.

Confirm gallon measurements on side of mix tank.

## Step 3



First phase fill: Operate fill pump until pressure gauge located on pump discharge achieves discharge pressure of container circumference. *30' circ 2.6 psi; 45' circ 3.0 psi; 80' circ 3.5 psi.*

Maintain test pressure on container for 60 seconds, then stop pumping.

Stop slurry mixer.

Allow container to drain for 20 minutes.

## Step 4



Record level in mix tank and subtract amount from previous volume to attain gallons of slurry processed in first phase fill.

Record volume in filtrate collection tray after 20 minutes as filtrate from first phase fill.

## Step 5



Start mixer.

Second phase fill: Operate fill pump until container achieves pressure as in first phase fill and hold for 60 seconds.

Stop mixer.

Record volume in mix tank as volume processed in second fill phase.

Allow container to drain for 20 minutes and record volume as second fill phase.

## Step 6



Start mixer.

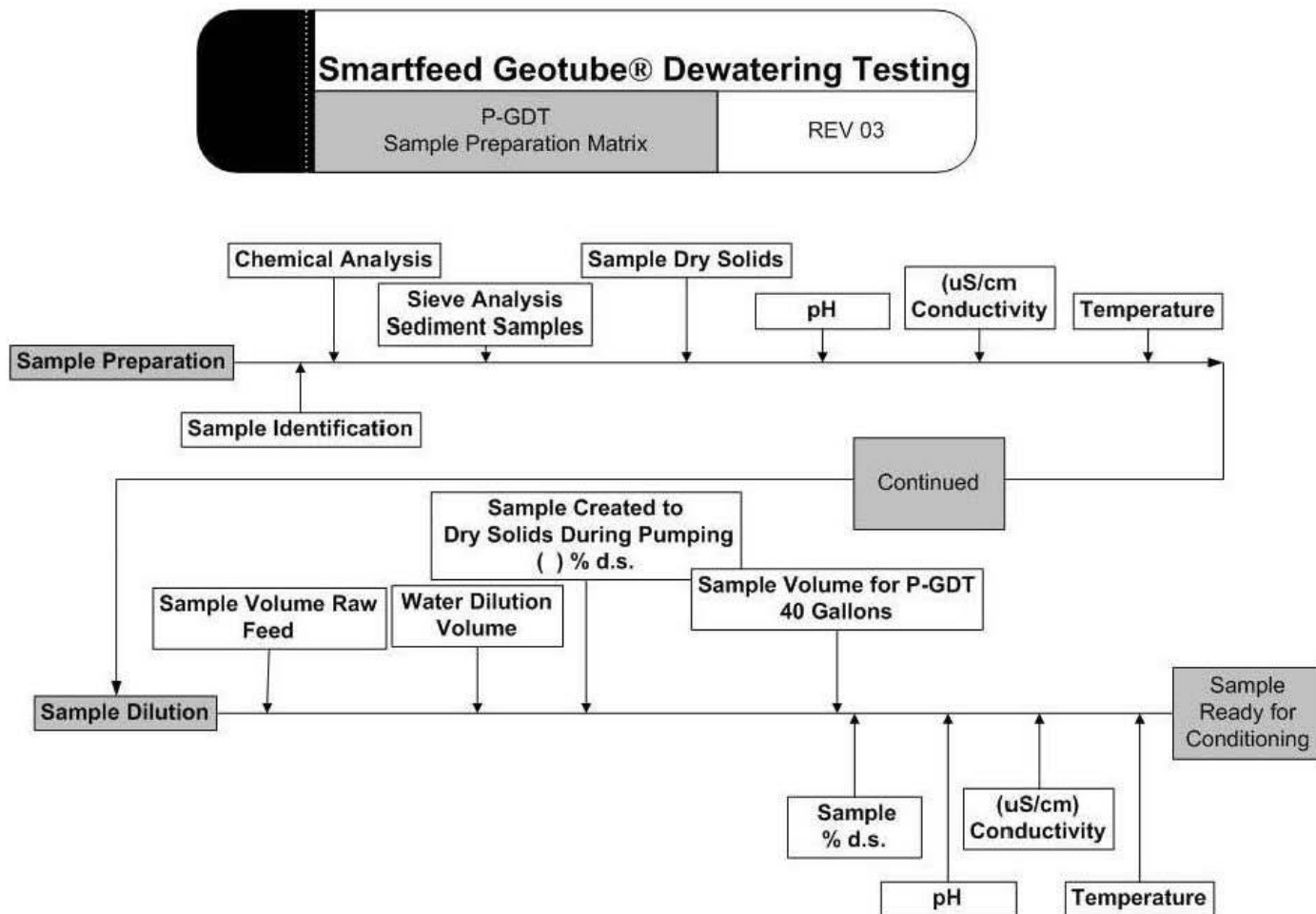
Third phase fill: Operate fill pump until container achieves pressure as in second phase fill and hold for 60 seconds.

Stop mixer.

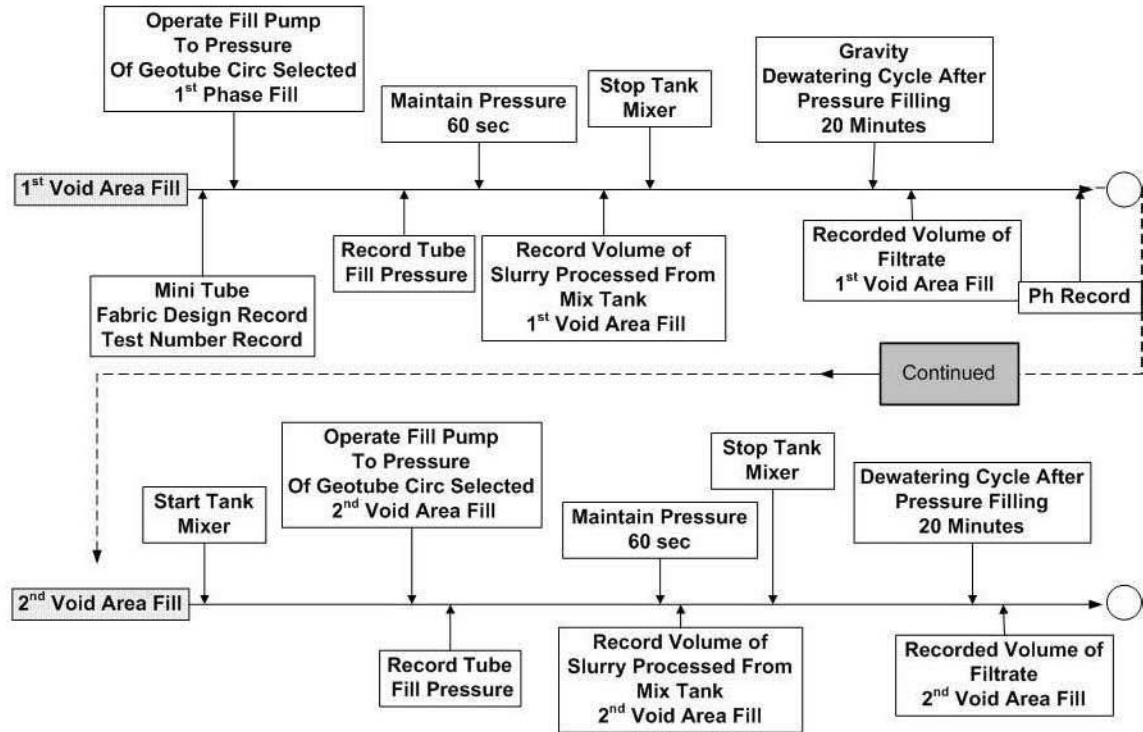
Record volume in mix tank as volume processed in third fill phase.

Allow container to drain for 20 minutes and record volume as third fill phase.

The data collected and samples resulting from P-GDT test will allow Geotube® distributor to estimate filtration area required for project. Samples can be used for further testing in a physical and chemical analysis to support permitting requirements.



**P-GDT**  
**Smartfeed™ Geotube® Dewatering Testing**  
*P-GDT Testing Data Collection Matrix*  
*Fill 1<sup>st</sup> Fill Phase* REV 3

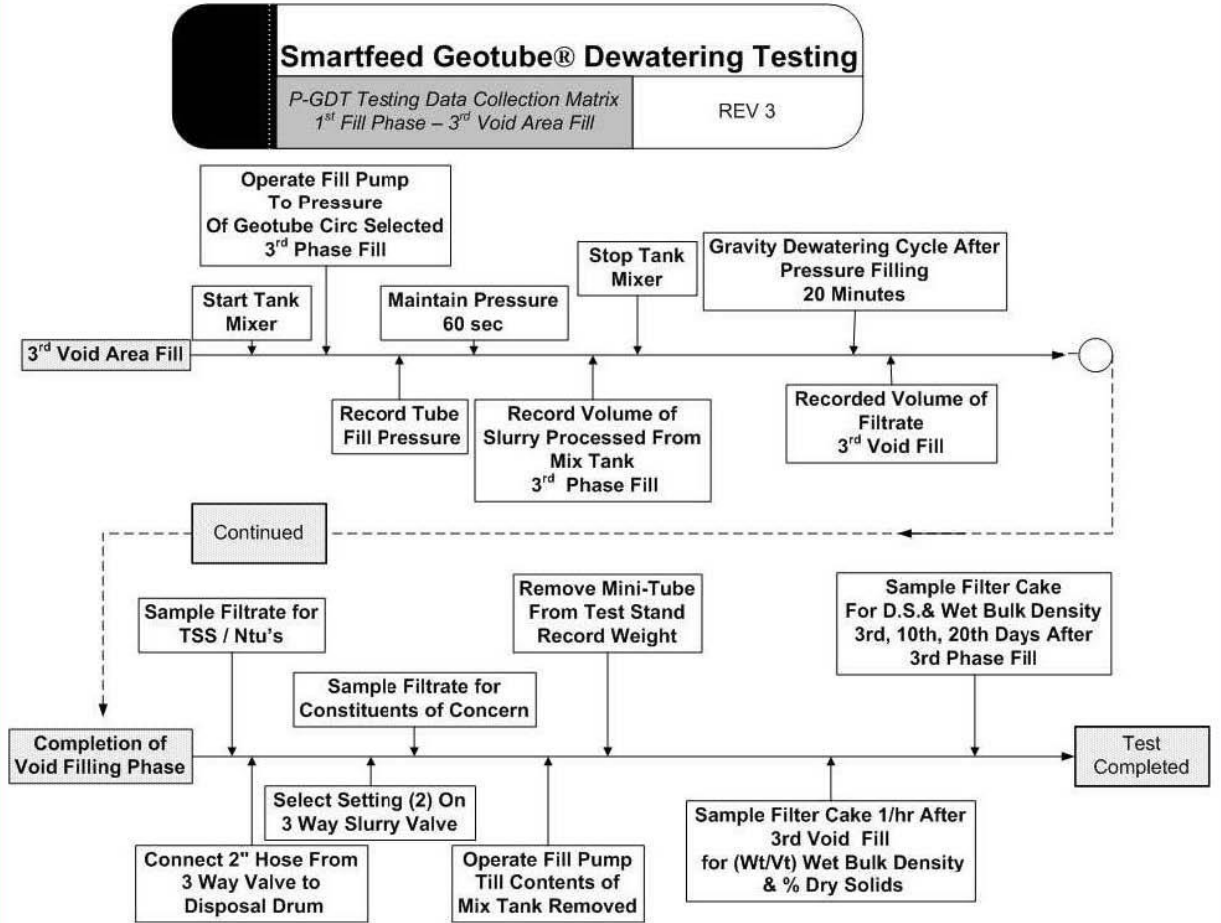


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SmartFeed™ P-GDT Dewatering Procedures: Page 8



## P-GDT Pressure Gravity Dewatering Test

P-GDT LOG

Short Form



Project: \_\_\_\_\_  
 Date: \_\_\_\_\_  
 Fabric Type: \_\_\_\_\_  
 Sample Type: \_\_\_\_\_  
 Geotube® Mini Tube Size:   
 Geotube® Application Size: \_\_\_\_\_  
 Sample Percent Dry Solids:   
 Test #: \_\_\_\_\_

### 1st Fill Phase 1st Void Fill

Slurry Sample Volume 1st Phase Processed:  gallons  
 Filtrate Ntu's:

### 1st Fill Phase 2nd Void Fill

Slurry Sample Volume 2nd Phase Processed:  gallons  
 Filtrate Ntu's:

### 1st Fill Phase 3rd Void Fill

Slurry Sample Volume 3rd Phase Processed:  gallons  
 Filtrate Ntu's:

Filter Cake % Dry Solids 24/hrs After Dewatering:  % d.s.  
**(Geotube® Estimator Target Solids 1st Phase Fill)**

*Note: Larger Geotube® having longer drainage path will result lower % solids in 24/hr dewatering*

Filter Cake % Dry Solids 7 Days After Dewatering:  % d.s.  
*1st Option( Geotube® Estimator Target Dewatered % Solids)*

Filter Cake % Dry Solids 14 Days After Dewatering:  % d.s.  
*2nd Option( Geotube® Estimator Target Dewatered % Solids)*

Dry Pounds Solids Per ft² Of Filtration Area:  lbs/d.s. per ft²

Dry Pounds Solids Per yd² Of Filtration Area:  lbs/d.s. per yd²



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# P-GDT Testing / Geotube® Estimator Filtration Quantity

English Units Input-Know Volume

Version 5.1

Licensed to : Jim Meagher 11-22-05

Project Name:	Geotube Estimator- Filling Phase
Location:	
Contact:	
Date:	
Type of Material:	

Input		Units	Output		Units
Volume	100	Cubic Yards	Total Volume Pumped	124,002	Gallons
Specific Gravity	1.70		Wet Volume per day	48,000	Gallons
% Solids in Place	42.0%		Wet Volume per day	237.6	CY
% Solids During Pumping	8.0%		Total Bone Dry Tons	42.8	Tons
P-GDT Test 1st Phase Filling Target % Solids*	18%		Estimated Pumping Days	2.6	Days
% Coarse grain & sand*	1.0%		Estimated Dewatered Volume	259.6	CY
			Estimated Dewatered Weight	237.7	Tons

\* % Coarse grain & sand is removed from the calculation for volume reduction due to dewatering and added back in at the end in required Geotube® volume.

\* P-GDT test % solids in the Geotube® at completion of 1st phase filling to design height is the filtration rate Geotube® quantity.

### Production

Pumping Rate (GPM)	100
Hours per Day	8.0
% Efficiency	100%

### Estimated Geotube® Quantity

Circumference	Feet
30'	130
45'	73
60'	48
75'	35
90'	27
120'	19

Legal Hauling Capacity	15	Tons	MDS Dimension	Each
			22.5' X 26'	15.8

Disclaimer: No warranty or guarantee expressed or implied is made regarding the performance of any product since the manner of handling and use is beyond our control. This document should not be construed as engineering advice, and the final design should be the responsibility of the project engineer and/or the project manager.

# P-GDT Testing / Geotube® Estimator Dewatered Quantity

English Units Input-Know Volume

Version 5.1

Licensed to : Jim Meagher 11-22-05

Project Name:	Geotube Estimator- Dewatered Phase
Location:	
Contact:	
Date:	
Type of Material:	

Input		Units	Output		Units
Volume	100	Cubic Yards	Total Volume Pumped	124,002	Gallons
Specific Gravity	1.70		Wet Volume per day	48,000	Gallons
% Solids in Place	42.0%		Wet Volume per day	237.6	CY
% Solids During Pumping	8.0%		Total Bone Dry Tons	42.8	Tons
P-GDT Target dewatered % Solids*	45%		Estimated Pumping Days	2.6	Days
% Coarse grain & sand*	1.0%		Estimated Dewatered Volume	92.0	CY
			Estimated Dewatered Weight	95.1	Tons

\* % Coarse grain & sand is removed from the calculation for volume reduction due to dewatering and added back in at the end in required Geotube® volume.

\* P-GDT test % solids in the Geotube® at completion of dewatering period provides Geotube quantity after consolidation.

### Production

Pumping Rate (GPM)	100
Hours per Day	8.0
% Efficiency	100%

### Estimated Geotube® Quantity

Circumference	Feet
30'	47
45'	26
60'	17
75'	13
90'	10
120'	7

Legal Hauling Capacity	15	Tons	MDS Dimension	Each
			22.5' X 26'	6.3

Disclaimer: No warranty or guarantee expressed or implied is made regarding the performance of any product since the manner of handling and use is beyond our control. This document should not be construed as engineering advice, and the final design should be the responsibility of the project engineer and/or the project manager.

# SMARTFEED™

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## Process Control and Reporting For Geotube® Chemically Conditioned Slurry Dewatering

Mineral Processing Services, LLC —  
Manufacturer of Supporting Technologies for Geotube® Applications



### Model 4000 EM

- \* Treats up to 4,000 gpm slurry flow
- \* Process slurry up to 25% d.s.
- \* Can deliver up to 1,200 gpm .5% polymer dilution

#### Site Requirements

- \* 12" pipe connection for slurry feed
- \* 4" pipe connection 600 gpm @ 100 psi "dilution water"
- \* 4" pipe connection 600 gpm @ 100 psi "post dilution"
- \* Power 200 amps 480 volts 3 phase
- \* Lay-down area 80' x 40'



### Model 2500 EM

- \* Treats up to 2,500 gpm slurry flow
- \* Process slurry up to 12% d.s
- \* Can deliver up to 400 gpm of .5% polymer dilution

#### Site Requirements

- \* 8" pipe connection for slurry feed
- \* 4" pipe connection 400 gpm @ 80 psi
- \* Power 100 amps 480 volts 3 phase
- \* Lay-down area 40' x 30'



### Model 1200 EM

- \* Process up to 1,200 gpm slurry flow process
- \* Condition up to 12% d.s. raw feed
- \* Deliver up to 70 gpm of .5% polymer dilution

#### Site Requirements

- \* 6" pipe connection for slurry feed
- \* 2" pipe connection 100 gpm @ 80 psi
- \* Power 60 amps 480 volts 3 phase
- \* Lay-down area 40' x 12'

Dewatering using Geotube® containers is a cost-saving technology for many slurry dewatering projects.

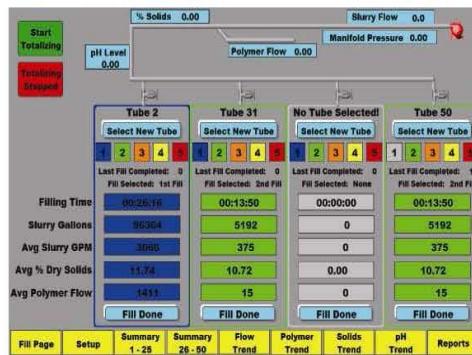
SmartFeed™ process controls contribute to a successful Geotube® application, maintaining benefits throughout the project.

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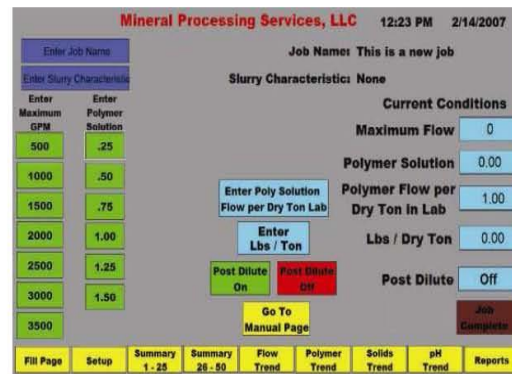


## Knowing Your Project Parameters



The SmartFeed™ system monitors slurry characteristics, such as density, percent dry solids, flow, pH, pressure and polymer induction shear velocity, and recalculates the dose rate every 15 seconds based on these changing parameters — maintaining optimum performance of the Geotube® containers and polymer.

The SmartFeed™ system's computer operational interface provides gpm, percent dry solids average, total dry tons of solids and polymer volumes processed to each Geotube® container selected on the project.



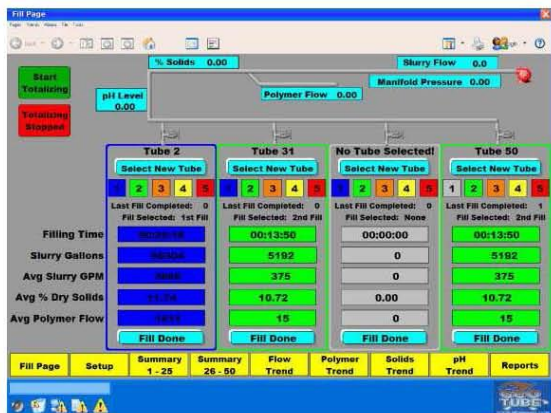
- \*Cost-Saving Polymer Preparation Systems
- \*Real-Time Polymer Demand Dosing Based On Actual Dry Solids
- \*Polymer-To-Slurry Induction Mixers With Shear Monitoring
- \*Daily Project Mass-Balance Reporting

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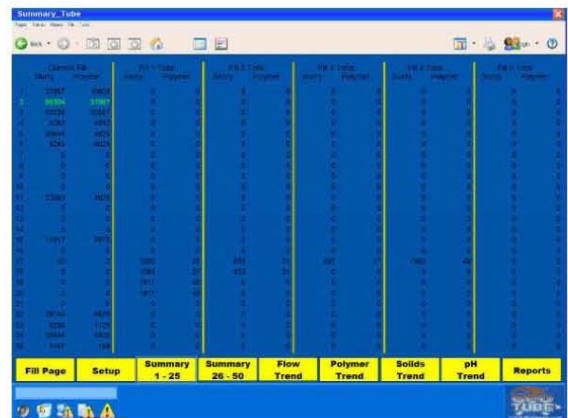
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## SF SMARTFEED Risk Management And Reporting



The SmartFeed™ system provides full reporting of dewatering performance for each Geo-tube® container in the project – including filling time, gallons of slurry pumped, average gpm, average percent dry solids and average polymer flow.

This data can be exported to Excel spreadsheets and charted, to provide quality management reports to stakeholders.

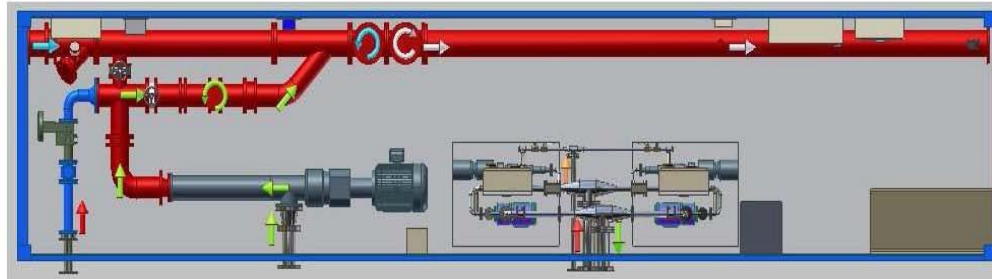


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## Process Flow



### SmartFeed™ System Features

- \* ANSI pipe connections for dredge or pump system slurry feed
- \* ANSI pipe connections for water supply
- \* NEMA 4-fuseable disconnect for primary power supply
- \* Water treatment test equipment for TSS, DS, pH, turbidity, salinity
- \* Slurry flow meter
- \* Water flow meters
- \* Emulsion polymer preparation systems
- \* Positive-cavity polymer feed pumps
- \* Density meters
- \* Dry solids meters
- \* Post-dilution water to polymer inline variable-velocity static mixers
- \* Polymer to slurry inline variable-velocity static mixers self-cleaning
- \* Computer operator interface for process functions
- \* Data acquisition for daily process mass-balance reporting
- \* Filtration technicians to maintain and operate SmartFeed™ systems

### SmartFeed™ System Benefits

- \* Replicates P-GDT bench-test parameters for full-scale application
- \* Reduces polymer consumption up to 30% over non-SmartFeed™ applications
- \* Reduces Geotube® container area up to 20% over non-SmartFeed applications
- \* Maintains filtrate quality standards 100% of the operational period
- \* Provides process parameters reports daily to support project production rates
- \* **SmartFeed™ Cost-Saving Benefits Increase Project Profitably and Successes!**

SmartFeed™ is a Patent Pending Technology of Mineral Processing Services, LLC

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