

Area of bottom trapizoid =	64	ft ²
Area of top trapizoid =	84	ft ²
Area total =	148	ft ²
Slope =	0.00015	
Square root 3 (power2)	2.089	
Wetted perimeter =	49.03	ft
R =	3.018560065	ft

Q =	112.8397328	ft ³ /s
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Dimentions of channel
2.83
10
5.66
12
5.66
10
2.88

Diameter pipe = 0.6651 ft
Area of pipe = 0.3472 ft²
specific weight = 62.4 lbf/ft³
Q = 3.387 ft³/s
v = 1.20E-05 ft²/s

Forces in y 125250

Forces in x 2746.72

Pump discharge pressure 55.58 psi 8003.5 lb ft²
Vessel inlet 0.649 psi 92.428 lb ft²

8" Pipe Full of Water 50.1 lbs/ft
Discharge Pipe Length 2500 ft

lbs

62.625 tons

lbs

1.3733621 tons

Diameter pipe = 0.6651 ft
Area of pipe = 0.3472 ft²
Diameter of nozzle = 0.3326 ft
Area of nozzle = 0.0869 ft²
specific weight = 62.4 lbf/ft³
Q = 3.387 ft³/s
v = 1.20E-05 ft²/s

hL = ΔP
hL nozzle =
hL total =
 ΔZ =
New hL total =
Hp old =

P =

HP new =

V1 = 9.755184332 ft/s
Re = 540681.09
B = 0.500075177
C = 0.991219991
Delt P = 1496.625861 lbf/ft²
Conversion Delt P = 10.39323515 lbf/in²

Percent difference =

23.9843888	ft	
97.53	ft	(test 1 solution)
50	ft	
171.5143888	ft	(test 1 solution)
94.48		

60415.60043	lbf-ft/s
109.8465462	
15.04%	

Bulk Modules = 2.18E+09 N/m²
 Elastic Modules = 2.00E+11 N/m²
 Q = 3.387 ft³/s
 Density = 999.88 kg/m³
 Diameter = 0.2027 m
 thickness = 0.0082 m
 Y = 0.4
 E = 1
 S = 1.38E+08 N/m²
 V = 2.97 m/s
 outer diameter = 0.2 m
 Po = 383000.00 N/m²

C = 1310.53
 Deta P = 3891814.112 N/m²
 P max = 4274814.11 N/m²

	t =	0.00306
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	p2/specific we	-326.818563
	p2 =	-5.09063182
	psat =	0.2563
	psat > p2	efore no Cavita

m

lbf/ft^2 = -0.03535161 lbf/in^2

ation

Circular gate (D) = 10 in
 y = 4.33 in
 hc = 42.33 in
 Lc = 48.8799076 in
 Area of gate = 78.5398163 in²
 specific weight = 62.4 lbf/ft³
 Force = 120.054654 lbf
 Ic = 490.873852 in⁴
 Lp-Lc = 0.1278644 in
 Force cable = 123.128053 lbf
 Force bouy = 123.128053

	Volume displacement =	1.97320598	ft ³
	r =	0.7777	ft
	D bouy =	1.5554	ft
	Area of bouy =	7.60035822	ft ²

I = 0.28730175
 MB = 0.1456015
 Cg = 0.7777
 Cb = 0.7777

Cb + MB = 0.9233015
 Cb+MB>Cg Therefore its Stable

D=	1.556
v =	1.97
MB	0.146192893
Moment of Intertia	0.288
centroid	0.778
Stable because centroid is greater than MB	