



3101 New Haven Ave
Fort Wayne, IN 46803

Barge Configuration Calculation & Engineering Analysis

12/23/09

QTY	Description	Weight/ea [lbs]	Total Weight [lbs]	Vert C of G [ft]
DECK LOAD				
1	Crane	90,000	90,000	9
1	Crane Mats	20,000	20,000	5.2
1	Pick Load	15,000	15,000	92
0	Misc Equipment	0	0	0
Total Deck Load			125,000	

HULL WEIGHT				
3	40' x 10' x 5' Barge	24,000	72,000	2.5
2	20' x 10' x 5' Barge	13,100	26,200	4
20	Connector Pins	55	1,100	2.5
Total Hull Weight			99,300	

OPERATIONAL DETAILS				
Lift Radius	40	ft		
Boom Length	100	ft		
Track Width Center-to-Center	12	ft		
Pick Load	16,000	lbs		
Effective Pick Height	92	ft		
Complete Weight of Rig	224,300	lbs		
Net Vertical Center of Gravity of Rig	11.5	ft		
Overturning Moment	315,600	ft-lbs		



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HYDROSTATICS

Waterplane Area	1600 ft ²	
Vertical Center of Buoyancy	1.13 ft	
Pounds Per Inch Immersion	8,320 lbs	
Average Draft in Seawater	2.19 ft	26.3 inches
Average Draft in Freshwater	2.25 ft	27.0 inches
Displaced Volume in Seawater	3,505 ft ³	26,215 gal
Displaced Volume in Freshwater	3,600 ft ³	26,930 gal
Longitudinal Moment of Inertia	443333 ft ⁴	
Transverse Moment of Inertia	133333 ft ⁴	
BM _L	123 ft	
BM _T	37 ft	
GM _L	113 ft	
GM _T	27 ft	
TRIM ANGLE DUE TO OVERTURNING MOMENT	0.72 degrees	(longitudinal)
LIST ANGLE DUE TO OVERTURNING MOMENT	3.03 degrees	(transverse)