



Capacity Chart Clamshell Dredge

Project:

Bucket size:

10.5

Type:

MBK200

DRIVE SYSTEM:

Variable Frequency Drive

PARAMETERS:

Bucket capacity **10.5 cy**
 Average dredging depth **100.0 ft**
 Lifting above water **26.0 ft**
 Trolley travel **20.0 ft**
 Bulk density **1.65 t / cy**

Grab closing		18.0 sec
Lifting under water	240.0 ft / min	25.0 sec
Lifting above water	212.0 ft / min	7.4 sec
Drain time		0.0 sec
Trolley travel	130.0 ft / min	9.2 sec
Grab opening		9.0 sec
Trolley travel	130.0 ft / min	9.2 sec
Lowering above water	212.0 ft / min	7.4 sec
Lowering below water	350.0 ft / min	17.1 sec
Acceleration/Deceleration		8.0 sec

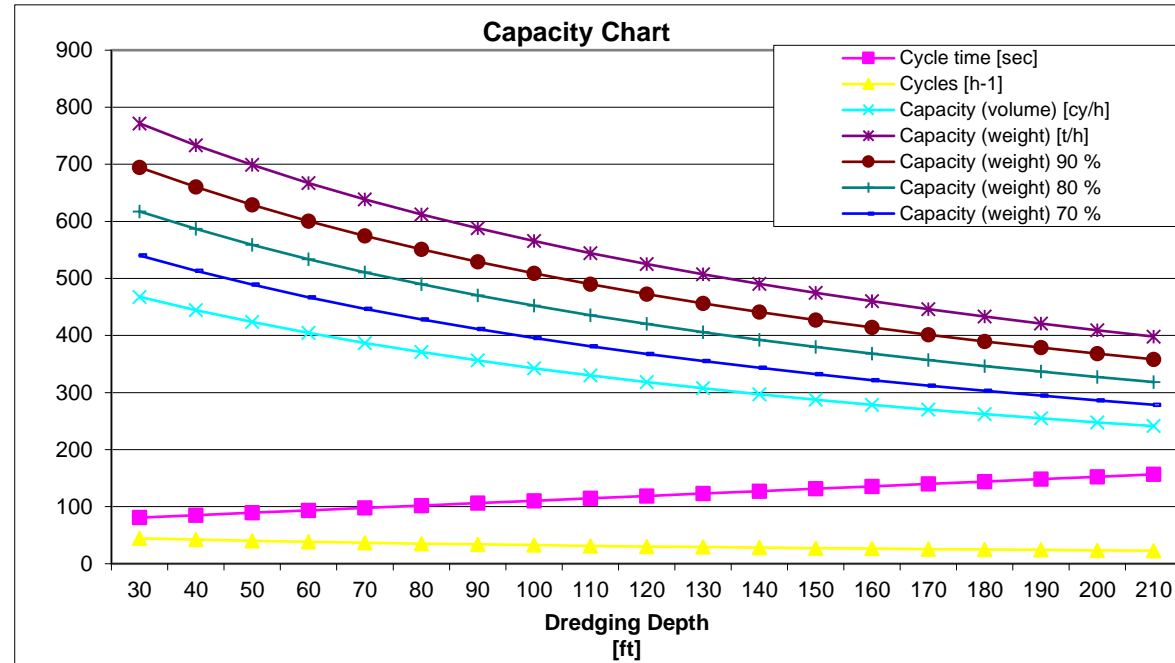
SUM:

110.3 sec

THEORETICAL PRODUCTION CAPACITY (100 %):

$$\begin{aligned}
 3600 \text{ sec.} / 110.3 \text{ sec. / cycle} &= 32.6 \text{ cycles / h} \\
 32.6 \text{ cycles / h} \times 10.5 \text{ cy} &= 342.6 \text{ cy / h} \\
 342.6 \text{ cy / h} \times 1.65 \text{ t / cy} &= 565.3 \text{ t / h}
 \end{aligned}$$

Calculation based on easily dredgable and free flowing sand & gravel



Dredging Depth [ft]	Cycle time [sec]	Cycles [h ⁻¹]	Capacity (volume) [cy/h]	Capacity (weight) [t/h]			
				90 %	80 %	70 %	
30	81	45	468	772	695	617	540
40	85	42	445	733	660	587	513
50	89	40	424	699	629	559	489
60	93	39	404	667	601	534	467
70	98	37	387	639	575	511	447
80	102	35	371	612	551	490	428
90	106	34	356	588	529	470	411
100	110	33	343	565	509	452	396
110	115	31	330	545	490	436	381
120	119	30	318	525	473	420	368
130	123	29	307	507	456	406	355
140	127	28	297	490	441	392	343
150	131	27	288	475	427	380	332
160	136	27	279	460	414	368	322
170	140	26	270	446	401	357	312
180	144	25	262	433	390	346	303
190	148	24	255	421	379	337	294
200	152	24	248	409	368	327	286
210	157	23	241	398	358	318	279