EXCAVATION TABLES FOR DUGOUT PONDS

EXCAVATION IN CUBIC YARDS AND CAPACITY IN THOUSAND GALLONS

SIDE SLOPES 1.5:1

LENGTH OF POND		POND WIDTH = 50 FEET DEPTH						
		6	7	8	9	10	11	12
60	Cu Yds	470	515	555	585	610	630	645
	Gallons	95	104	112	118	123	127	130
80	Cu Yds	655	720	780	830	870	905	930
	Gallons	132	146	157	167	176	182	188
100	Cu Yds	835	925	1005	1075	1130	1175	1215
	Gallons	169	187	203	217	228	238	245
120	Cu Yds	1015	1130	1230	1315	1390	1450	1500
	Gallons	205	228	248	266	281	293	303
140	Cu Yds	1200	1335	1455	1560	1650	1725	1785
	Gallons	242	270	294	315	333	348	360
160	Cu Yds	1380	1540	1680	1805	1905	1995	2070
	Gallons	279	311	339	364	385	403	418
180	Cu Yds	1565	1745	1905	2045	2165	2270	2350
	Gallons	316	352	385	413	438	458	475
200	Cu Yds	1745	1950	2130	2290	2425	2540	2635
	Gallons	353	394	430	462	490	513	532

LENGTH OF POND		POND WIDTH = 90 FEET DEPTH						
		6	7	8	9	10	11	12
100	Cu Yds	1645	1855	2050	2225	2390	2535	2670
	Gallons	332	374	414	450	482	512	540
120	Cu Yds	2005	2265	2510	2735	2945	3135	3310
	Gallons	405	458	507	553	595	633	669
140	Cu Yds	2365	2680	2970	3245	3500	3735	3950
	Gallons	447	541	600	656	707	754	798
160	Cu Yds	2725	3090	3435	3755	4055	4335	4590
	Gallons	550	624	694	759	819	875	927
180	Cu Yds	3085	3505	3895	4265	4610	4935	5230
	Gallons	623	707	787	862	931	996	1057
200	Cu Yds	3445	3915	4360	4775	5165	5530	5870
	Gallons	696	791	880	965	1043	1117	1186
220	Cu Yds	3805	4330	4820	5285	5720	6130	6510
	Gallons	768	874	974	1068	1156	1238	1315
240	Cu Yds	4165	4740	5285	5795	6280	6730	7150
	Gallons	841	957	1067	1171	1269	1359	1444

LENGTH OF POND		POND WIDTH = 70 FEET DEPTH						
		6	7	8	9	10	11	12
80	Cu Yds	970	1080	1185	1275	1350	1420	1480
	Gallons	196	218	239	257	273	287	299
100	Cu Yds	1240	1390	1525	1650	1760	1855	1945
	Gallons	250	281	308	333	355	375	392
120	Cu Yds	1510	1700	1870	2025	2165	2295	2405
	Gallons	305	343	378	409	438	463	486
140	Cu Yds	1780	2005	2215	2405	2575	2730	2870
	Gallons	360	405	447	485	520	551	579
160	Cu Yds	2055	2315	2560	2780	2980	3165	3330
	Gallons	415	468	517	561	602	639	672
180	Cu Yds	2325	2625	2900	3155	3390	3600	3790
	Gallons	469	530	586	637	684	727	766
200	Cu Yds	2595	2935	3245	3535	3795	4035	4255
	Gallons	524	592	655	713	767	815	859
220	Cu Yds	2865	3240	3590	3910	4205	4475	4715
	Gallons	579	655	725	790	849	903	953

LENGTH OF POND		POND WIDTH = 100 FEET DEPTH						
		6	7	8	9	10	11	12
100	Cu Yds	1845	2085	2310	2515	2705	2880	3035
	Gallons	373	421	466	508	546	581	613
120	Cu Yds	2250	2550	2830	3090	3335	3560	3765
	Gallons	455	515	572	624	673	719	760
140	Cu Yds	2665	3015	3350	3670	3963	4240	4494
	Gallons	536	609	677	741	800	856	908
160	Cu Yds	3060	3480	3873	4244	4595	4920	5225
	Gallons	618	703	782	857	928	993	1055
180	Cu Yds	3465	3945	4395	4820	5220	5600	5950
	Gallons	700	796	888	974	1055	1131	1202
200	Cu Yds	3870	4410	4915	5400	5850	6280	6680
	Gallons	781	890	993	1090	1182	1268	1349
220	Cu Yds	4275	4870	5440	5975	6480	6960	7410
	Gallons	863	984	1098	1207	1309	1405	1496
240	Cu Yds	4675	5335	5960	6550	7110	7640	8140
	Gallons	945	1077	1204	1323	1436	1543	1644

Exhibit 11-6.2

REFERENCE	U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE NORTHEAST NATIONAL TECHNICAL CENTER BROOMALL, PENNSYLVANIA	NTC-NE-ENG. 1115 SHEET 1 OF 4

EXCAVATION TABLES FOR DUGOUT PONDS

EXCAVATION IN CUBIC YARDS AND CAPACITY IN THOUSAND GALLONS

SIDE SLOPES 2:1

LENGTH OF POND		POND WIDTH = 50 FEET DEPTH				
		6	7	8	9	10
60	Cu. Yds.	377	415	445	470	485
	Gallons	76	84	90	94	98
80	Cu. Yds.	585	635	670	700	715
	Gallons	118	128	135	141	145
100	Cu. Yds.	755	820	870	910	940
	Gallons	152	166	176	184	189
120	Cu. Yds.	925	1005	1075	1125	1160
	Gallons	186	203	217	227	234
140	Cu. Yds.	1090	1195	1275	1335	1385
	Gallons	220	241	257	270	279
160	Cu. Yds.	1260	1380	1475	1550	1605
	Gallons	255	279	298	313	324
180	Cu. Yds.	1430	1565	1675	1765	1825
	Gallons	289	316	339	356	369
200	Cu. Yds.	1600	1755	1880	1975	2050
	Gallons	323	354	379	399	414

LENGTH OF POND		POND WIDTH = 90 FEET DEPTH						
		6	7	8	9	10	11	12
100	Cu. Yds.	1535	1710	1865	2005	2125	2225	2315
	Gallons	310	346	377	405	429	450	467
120	Cu. Yds.	1885	2105	2305	2484	2640	2780	2900
	Gallons	380	425	466	502	534	562	586
140	Cu. Yds.	2230	2500	2745	2965	3160	3335	3490
	Gallons	450	505	554	599	638	673	704
160	Cu. Yds.	2575	2895	3185	3445	3680	3890	4075
	Gallons	520	584	642	696	743	785	823
180	Cu. Yds.	2925	3290	3620	3925	4200	4445	4660
	Gallons	590	664	731	792	848	897	941
200	Cu. Yds.	3270	3680	4060	4405	4715	4995	5250
	Gallons	660	744	820	889	952	1009	1060
220	Cu. Yds.	3615	4075	4500	4885	5235	5550	5835
	Gallons	730	823	908	986	1057	1121	1178
240	Cu. Yds.	3965	4470	4937	5365	5755	6105	6420
	Gallons	800	903	997	1083	1162	1233	1297

LENGTH OF POND		POND WIDTH = 70 FEET DEPTH						
		6	7	8	9	10	11	12
80	Cu. Yds.	885	975	1050	1110	1160	1200	1230
	Gallons	179	197	212	224	234	242	248
100	Cu. Yds.	1145	1265	1370	1455	1530	1590	1640
	Gallons	231	256	277	294	309	321	331
120	Cu. Yds.	1405	1555	1690	1805	1900	1980	2050
	Gallons	283	314	341	364	384	400	414
140	Cu. Yds.	1660	1845	2010	2150	2270	2375	2455
	Gallons	335	373	406	434	459	479	496
160	Cu. Yds.	1920	2135	2330	2495	2640	2765	2866
	Gallons	387	432	470	504	534	558	579
180	Cu. Yds.	2175	2425	2650	2845	3010	3155	3275
	Gallons	439	490	535	574	608	637	661
200	Cu. Yds.	2435	2715	2970	3190	3385	3545	3685
	Gallons	492	549	600	644	683	716	744
220	Cu. Yds.	2690	3010	3290	3540	3750	3940	4090
	Gallons	544	607	664	714	758	795	827

LENGTH OF POND		POND WIDTH = 100 FEET DEPTH						
		6	7	8	9	10	11	12
100	Cu. Yds.	1730	1935	2115	2275	2420	2545	2650
	Gallons	350	391	427	460	489	514	536
120	Cu. Yds.	2125	2380	2615	2825	3010	3180	3330
	Gallons	429	481	528	570	608	642	672
140	Cu. Yds.	2515	2825	3110	3370	3605	3815	4005
	Gallons	508	571	628	681	728	771	809
160	Cu. Yds.	2905	3270	3610	3915	4200	4450	4680
	Gallons	587	661	729	791	848	899	945
180	Cu. Yds.	3295	3720	4105	4465	4790	5085	5355
	Gallons	666	751	829	902	967	1027	1081
200	Cu. Yds.	3685	4165	4605	5010	5385	5720	6030
	Gallons	745	841	930	1012	1087	1156	1218
220	Cu. Yds.	4080	4610	5105	5555	5975	6360	6705
	Gallons	824	931	1031	1122	1207	1284	1354
240	Cu. Yds.	4470	5055	5600	6105	6570	6995	7380
	Gallons	903	1021	1131	1233	1326	1412	1491

Exhibit 11-6.2

REFERENCE

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
NORTHEAST NATIONAL TECHNICAL CENTER
BROOMALL, PENNSYLVANIA

NTC - NE - ENG.
1115
SHEET 2 OF 4

11-56.8 Revised

PA Addendums to Engr Field Handbook Folder
EFH p 11-56 7-10, Exh 11-6.2, Exc Tables for Dugout Ponds Page 2 of 4

EXCAVATION TABLES FOR DUGOUT PONDS

EXCAVATION IN CUBIC YARDS AND CAPACITY IN THOUSAND GALLONS

SIDE SLOPES 2:1
END SLOPES 4:1

LENGTH OF POND	POND WIDTH = 50 FEET DEPTH							
		6	7	8	9	10		
60	Cu Yds	325						
	Gallons	66						
80	Cu Yds	495	520	535	540			
	Gallons	100	105	108	109			
100	Cu Yds	665	705	735	755	765		
	Gallons	134	143	149	152	155		
120	Cu Yds	830	895	935	970	990		
	Gallons	168	180	189	195	199		
140	Cu Yds	1000	1080	1140	1180	1210		
	Gallons	202	218	230	239	244		
160	Cu Yds	1170	1265	1340	1395	1430		
	Gallons	236	256	271	282	289		
180	Cu Yds	1340	1455	1540	1610	1655		
	Gallons	270	293	311	325	334		
200	Cu Yds	1510	1640	1745	1820	1875		
	Gallons	304	331	352	368	379		

LENGTH OF POND	POND WIDTH = 90 FEET DEPTH							
		6	7	8	9	10	11	12
100	Cu Yds	1340	1455	1540	1610	1655	1685	
	Gallons	270	293	311	325	334	340	
120	Cu Yds	1685	1845	1980	2090	2175	2235	2285
	Gallons	340	373	400	422	439	452	461
140	Cu Yds	2030	2240	2420	2570	2690	2790	2870
	Gallons	410	453	488	519	544	564	579
160	Cu Yds	2380	2635	2855	3050	3210	3345	3455
	Gallons	480	532	577	616	648	676	698
180	Cu Yds	2725	3030	3295	3530	3730	3900	4045
	Gallons	550	612	666	713	753	787	816
200	Cu Yds	3070	3425	3735	4010	4245	4455	4630
	Gallons	620	691	754	809	858	899	935
220	Cu Yds	3420	3815	4175	4490	4765	5010	5215
	Gallons	690	771	843	906	962	1011	1053
240	Cu Yds	3765	4210	4610	4970	5285	5560	5805
	Gallons	760	850	931	1003	1067	1123	1172

LENGTH OF POND	POND WIDTH = 70 FEET DEPTH							
		6	7	8	9	10	11	12
80	Cu Yds	745	790	820	835			
	Gallons	150	159	165	169			
100	Cu Yds	1000	1080	1140	1180	1210	1225	
	Gallons	202	218	230	239	244	248	
120	Cu Yds	1260	1370	1460	1530	1580	1620	1645
	Gallons	254	277	295	309	319	327	332
140	Cu Yds	1515	1660	1780	1875	1950	2010	2050
	Gallons	306	335	359	379	394	406	414
160	Cu Yds	1775	1950	2100	2220	2320	2400	2460
	Gallons	358	394	424	449	469	485	497
180	Cu Yds	2030	2240	2420	2570	2690	2790	2870
	Gallons	410	453	488	519	544	564	579
200	Cu Yds	2290	2530	2740	2915	3060	3180	3280
	Gallons	462	511	553	589	618	643	662
220	Cu Yds	2550	2820	3060	3260	3430	3575	3685
	Gallons	515	570	618	659	693	722	745

LENGTH OF POND	POND WIDTH = 100 FEET DEPTH							
		6	7	8	9	10	11	12
100	Cu Yds	1510	1640	1745	1820	1875	1910	
	Gallons	304	331	352	368	379	386	
120	Cu Yds	1900	2085	2240	2370	2470	2545	2605
	Gallons	383	421	453	478	499	514	526
140	Cu Yds	2290	2530	2740	2915	3060	3180	3280
	Gallons	462	511	553	589	618	643	662
160	Cu Yds	2680	2975	3235	3460	3655	3820	3955
	Gallons	541	601	654	699	738	771	799
180	Cu Yds	3070	3425	3735	4010	4245	4445	4630
	Gallons	620	691	754	809	858	899	935
200	Cu Yds	3465	3870	4230	4555	4840	5090	5305
	Gallons	699	781	855	920	977	1028	1071
220	Cu Yds	3855	4315	4730	5100	5430	5725	5980
	Gallons	778	871	955	1030	1097	1156	1208
240	Cu Yds	4245	4760	5225	5650	6025	6360	6665
	Gallons	857	961	1056	1141	1217	1284	1344

Exhibit 11-6.2

REFERENCE	U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE NORTHEAST NATIONAL TECHNICAL CENTER BROOMALL, PENNSYLVANIA	NTC-NE-ENG. 1115 SHEET 3 OF 4

EXCAVATION TABLES FOR DUGOUT PONDS

EXCAVATION IN CUBIC YARDS AND CAPACITY IN THOUSAND GALLONS

SIDE SLOPES 3:1

LENGTH OF POND		POND WIDTH = 50 FEET DEPTH 6	7
60	Cu Yds	325	330
	Gallons	65	67
80	Cu Yds	465	480
	Gallons	94	97
100	Cu Yds	605	630
	Gallons	123	128
120	Cu Yds	750	780
	Gallons	151	158
140	Cu Yds	890	935
	Gallons	180	188
160	Cu Yds	1035	1085
	Gallons	209	219
180	Cu Yds	1175	1235
	Gallons	238	249
200	Cu Yds	1320	1385
	Gallons	266	279

$$V = \frac{1}{27}(A + 4M + B)\frac{d}{3}$$

WHERE

V = Volume in cubic yards (Rounded to nearest 5 C.Y.)

A = Area of bottom of pond in square feet

M = Area of Mid-Depth of pond in square feet

B = Area of Surface of pond in square feet

d = Depth of pond in feet

C = Capacity in nearest 1000 gallons (1 C.Y. = 202 gallons)

LENGTH OF POND		POND WIDTH = 90 FEET DEPTH 6	7	8	9	10	11	12
100	Cu Yds	1335	1450	1545	1615	1665	1700	1730
	Gallons	270	293	312	326	337	344	349
120	Cu Yds	1655	1810	1935	2035	2110	2170	2210
	Gallons	334	365	391	411	426	438	446
140	Cu Yds	1975	2165	2325	2455	2555	2635	2690
	Gallons	399	438	470	496	516	532	543
160	Cu Yds	2295	2525	2715	2875	3000	3095	3170
	Gallons	464	510	549	580	606	625	640
180	Cu Yds	2616	2880	3110	3295	3445	3560	3650
	Gallons	528	582	628	665	696	719	737
200	Cu Yds	2935	3240	3500	3715	3890	4025	4130
	Gallons	593	654	707	750	785	813	834
220	Cu Yds	3255	3600	3890	4135	4335	4490	4610
	Gallons	658	727	786	835	875	907	931
240	Cu Yds	3575	3955	4280	4555	4780	4955	5090
	Gallons	722	799	865	920	965	1001	1028

LENGTH OF POND		POND WIDTH = 70 FEET DEPTH 6	7	8	9	10
80	Cu Yds	740	790	820	840	850
	Gallons	150	159	166	170	172
100	Cu Yds	970	1040	1095	1125	1150
	Gallons	196	210	221	228	232
120	Cu Yds	1205	1295	1365	1415	1445
	Gallons	243	262	276	286	292
140	Cu Yds	1435	1550	1640	1700	1740
	Gallons	290	313	331	343	352
160	Cu Yds	1665	1805	1910	1985	2035
	Gallons	336	364	386	401	411
180	Cu Yds	1895	2060	2185	2275	2335
	Gallons	383	416	441	459	471
200	Cu Yds	2125	2310	2455	2560	2630
	Gallons	430	467	496	517	531
220	Cu Yds	2360	2565	2730	2845	2925
	Gallons	476	518	551	575	591

LENGTH OF POND		POND WIDTH = 100 FEET DEPTH 6	7	8	9	10	11	12
100	Cu Yds	1520	1655	1770	1855	1925	1975	2010
	Gallons	307	334	357	375	389	399	406
120	Cu Yds	1885	2065	2220	2345	2445	2525	2580
	Gallons	380	417	448	473	494	509	521
140	Cu Yds	2245	2475	2670	2830	2965	3070	3150
	Gallons	454	500	539	572	598	620	636
160	Cu Yds	2610	2885	3120	3315	3480	3615	3720
	Gallons	527	583	630	670	703	730	751
180	Cu Yds	2975	3295	3570	3805	4000	4160	4290
	Gallons	601	665	721	768	808	840	866
200	Cu Yds	3340	3705	4020	4290	4520	4705	4855
	Gallons	675	748	812	867	913	950	981
220	Cu Yds	3705	4115	4470	4775	5035	5250	5425
	Gallons	748	831	903	965	1017	1061	1096
240	Cu Yds	4070	4525	4920	5265	5555	5800	5995
	Gallons	822	914	994	1063	1122	1171	1211

Exhibit 11-6.2

REFERENCE	U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE NORTHEAST NATIONAL TECHNICAL CENTER BROOMALL, PENNSYLVANIA	NTC-NE-ENG. 1115 SHEET 4 OF 4

PA Addendums to Engr Field Handbook Folder
EFH p 11-56 7-10, Exh 11-6.2, Exc Tables for Dugout Ponds Page 4 of 4