MAURER ▲ STUTZ, INC.
ENGINEERS SURVEYORS

PROJECT: Hill Crest Dairy
PROJECT NO.: 238-04006B
COMPUTATION BY: JEO DATE: 8/13/10 SH. NO.: 1
CHECKED BY: TLF DATE: _____ OF: 1

Subject: Animal Waste Produced

Animal Data

	Animals	Actual Quantity	Actual Weight lbs	ASAE D384.2 Manure cf/d-a	ASAE D384.2 Weight lbs	Manure cf/d/AU	Manure CF/day	VS lbs/d/AU	VS lbs/day	TS lbs/d/AU	TS lbs/day	AU
1	Lact. Cow	1170	1400	2.40	1400	1.71	2808.0	8.50	######	10.00	16380.0	1638.0
2	Dry Cows	300	1400	1.30	1400	0.93	390.0	8.10	3402.0	9.50	3990.0	420.0
3	Heifers	100	1000	0.78	970	0.80	80.4	7.77	777.0	9.14	914.0	100.0
4	Lact. Cow	40	1400	2.40	1400	1.71	96.0	8.50	476.0	10.00	560.0	56.0
5				0.00	0	0.00	0.0	0.00	0.0	0.00	0.0	0.0
6				0.00	0	0.00	0.0	0.00	0.0	0.00	0.0	0.0
7				0.00	0	0.00	0.0	0.00	0.0	0.00	0.0	0.0
8				0.00	0	0.00	0.0	0.00	0.0	0.00	0.0	0.0
9				0.00	0	0.00	0.0	0.00	0.0	0.00	0.0	0.0
	Total	1610					3374		18578		21844	2214

Existing Population

Rainfall Data	
County, State	Peoria, Illinois
Precip for storage period	34.2 in
Annual Lake Evap	34.0 in
% Evap for storage period	93%
1 Yr 2 Hr Storm Event	1.48 in
2 Yr 24 Hr Storm Event	3.02 in
25 Yr 24 Hr Storm Event	5.3 in
Storage Period	9.0 Months

VS Loading Rate	3.75 lb/d*1000 CF
ODOR Loading Rate	2.27 lb/d*1000 CF

Rainfall Data (Indiana Only)	
Location	Peoria, Illinois
50 Yr 24 Hr Storm Event	6.1 in
IDEM 50 Yr 24 Hr Storm	6.0 in
Greater of Storm Events	6.1 in

Manure Density	62.40 lb/CF
Soilds Density	45.00 lb/CF

Location Data

Animals	Holding Pond	Covered Stack	Uncovered Stack	Rect. Tank		Circular Tank	Pasture	Settling Basin
	E12	E1	E9	E8	E7			
1: Lact. Cow	100%							
2: Dry Cows	95%	5%						
3: Heifers	95%	5%						
4: Lact. Cow	100%							
Parlor								
Sprinkler Waters								
Silage leach								
Other								
Solid Removal	75%							
Lagoon treat								
Runoff	100%							
25Y Runoff	100%							
Solid Stored			45%		30%			
Wash Water	100%							
Flush Water	100%							
Bedding		20%	80%					
50Y Runoff								

digesta = Solids destroyed & Turned into Biogas/Methane

*Values calculated above are based on data from the Livestock Waste Facilities Handbook

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Subject: Animal Waste Produced

Facility Volumes (CF/day)

	Holding Pond					Covered Stack					Uncovered Stack					Rect. Tank							Circular Tank				Pasture	Settling Basin	
Facility	E12	0	0	0	0	E1	0	0%	0	0	E9	0	0	0	0	E8	E7	0	0	0	0	0	0	0	0	0	0	0	0
Solids Remov	364.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manure	2986.83	0.00	0.00	0.00	0.00	23.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Wash	2284.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Flush	320.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bedding	0.00	0.00	0.00	0.00	0.00	53.11	0.00	0.00	0.00	0.00	212.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Runoff	1574.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Solids Store	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	218.44	0.00	0.00	0.00	0.00	0.00	145.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily Vol	7166.19	0.00	0.00	0.00	0.00	76.63	0.00	0.00	0.00	0.00	430.87	0.00	0.00	0.00	0.00	0.00	145.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual Vol	2615659	0	0	0	0	27969	0	0	0	0	157267	0	0	0	0	0	53154	0	0	0	0	0	0	0	0	0	0	0	0
Density lb/cf	0	0	0	0	0	45	50	50	50	50	45	60	60	60	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Annual Tons	0	0	0	0	0	629	0	0	0	0	3539	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Annual Gal	1.96E+07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0	0	0	0	0	0	0	0	0	0	397430	0	0	0	0	0	0	0	0	0	0	0	0
# LOADS	19558	0	0	0	0	52	0	0	0	0	288	0	0	0	0	0	398	0	0	0	0	0	0	0	0	0	0	0	0
TIME	326	0	0	0	0	26	0	0	0	0	144	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0

Facility	Manure	Wash	Flush	Bedding	Runoff	Solids Rem	Solids Sto	Total V
Total CF/d	3010.3	2284.2	321.0	265.5	1574.2	364.1	364.1	7819.3

Annual Manure & Wates Water Volumes

Facility	Manure	Wash	Flush	Bedding	Runoff	Solids Rem	Solids Sto	Total V
Total CF	1098776	833721	117159	96921	574588	132884	132884	2854049

Storage Volumes (CF/Period)

	Holding Pond					Covered Stack					Uncovered Stack					Rect. Tank							Circular Tank				Pasture	Settling Basin	
Storage	E12	0	0	0	0	E1	0	0%	0	0	E9	0	0	0	0	E8	E7	0	0	0	0	0	0	0	0	0	0	0	0
Period (M)	9.00					6.00					6.00						6.00												
Period (D)	270	0	0	0	0	180	0	0	0	0	180	0	0	0	0	0	180	0	0	0	0	0	0	0	0	0	0	0	0
Required Vol																													
CF	1934871	0	0	0	0	13793	0	0	0	0	77556	0	0	0	0	0	26213	0	0	0	0	0	0	0	0	0	0	0	0
GALLONS	14467031	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	195993	0	0	0	0	0	0	0	0	0	0	0	0
TONS	0	0	0	0	0	310	0	0	0	0	1745	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Designed Vol																													
CF	2653511	0	0	0	0	17364	0	0	0	0	99696	0	0	0	0	0	113373	0	0	0	0	0	0	0	0	0	0	0	0
GALLONS	19840305	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	847690	0	0	0	0	0	0	0	0	0	0	0	0
TONS	0	0	0	0	0	391	0	0	0	0	2243	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Extra																													
CF	718640	0	0	0	0	3571	0	0	0	0	22140	0	0	0	0	0	87160	0	0	0	0	0	0	0	0	0	0	0	0
GALLONS	5373274	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	651697	0	0	0	0	0	0	0	0	0	0	0	0
TONS	0	0	0	0	0	80	0	0	0	0	498	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Storage Volumes	Required Vol CF	Required Vol GALLONS	Designed Vol CF	Designed Vol GALLONS	Extra CF
Total	2052433	14663024	2883944	20687995	831511

	AVAILABLE	REQUIRED
PASTURE 1 ACRES		0.0 ac

(FIGURES 0.25 IN COVER ON ENTIRE PASTURE)

Annual Storage Volumes Hauled		
Type	UNITS	Volume
LIQUID	GAL	21,340,162
SOLID	TONS	4,111

(MANURE & PRECIP)

APPLICATION INFROMATION					
TYPE	SIZE	UNITS	LOAD/HR	# LOADS	TIME
LIQUID	1000	GAL	60	21341	356
SOLID	440	bu	2	340	170

Storage Volumes (CF/Period)

	Holding Pond					Covered Stack					Uncovered Stack					Rect. Tank							Circular Tank				Pasture	Settling Basin	
Storage	E12	0	0	0	0	E1	0	0%	0	0	E9	0	0	0	0	E8	E7	0	0	0	0	0	0	0	0	0	0	0	0
Working	1934871	0	0	0	0	13792.997	0	0	0	0	77556.34	0	0	0	0	0	26212.8	0	0	0	0	0	0	0	0	0	0	0	0	0
24 hr runoff	137847.47	0	0	0	0	-	-	-	-	-	-	-	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0			
24 hr storm	152094.21	0	0	0	0	-	-	-	-	-	-	-	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0			
Precip	166390.47	0	0	0	0	-	-	-	-	-	-	-	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0			
Treatment	1771996.7	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residuals	574728.49	0	0	0	0	-	-	-	-	-	-	-	-	-	-	0	8721	0	0	0	0	0	0	0	0	0	0			
Freeboard	652617.52	0	0	0	0	-	-	-	-	-	-	-	-	-	-	0	17442	0	0	0	0	0	0	0	0	0	0			
Total	6109192.8	0	0	0	0	13793	0	0	0	0	77556	0	0	0	0	0	139536	0	0	0	0	0	0	0	0	0	0			
Gal to Haul	15711132	0	0	0	0	-	-	-	-	-	-	-	-	-	-	0	195993.1	0	0	0	0	0	0	0	0	0	0	-		
Tons to Haul	-	-	-	-	-	310	0	0	0	0	1745	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0
Annual gal	20948176	0	0	0	0											0	391986.2	0	0	0	0	0	0	0	0	0	0			
Annual tons						620.68487	0	0	0	0	3490.035	0	0	0	0													0	0	0

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Additions Data							
			Bedding				
Animals	Wash Gal/day	Flush Gal/day	Type	Rate lbs/d/AU	Amount lbs/day	Density lb/CF	Amount CF/day
1: Lact. Cow*			SAW DUST	3.00	3510	24	146.25
2: Dry Cows*			STRAW	4.00	1200	14	85.71
3: Heifers*			STRAW	4.00	400	14	28.57
4: Lact. Cow*			SAW DUST	3.00	120	24	5.00
*					0	24	0.00
*					0	0	0.00
*					0	0	0.00
*					0	0	0.00
*					0	0	0.00
Parlor**	12100	2400				0	0.00
Sprinkler**	3615					0	0.00
Waters**	754					0	0.00
Silage leach**	609					0	0.00
Other**						0	0.00
Total	17079				5230		265.54

*Values calculated above are based on data from the Livestock Waste Facilities Handbook

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Subject: Waste Water Produced

Sprinkler System Volumes

Temp Range	# of Days	Duration	Freq	Hr/yr	Nozzle #	# of Nozzles	Press (PSI)	Flow Rate (GPM)	Total Flow (GPM)
80-85	180	3	7	398		304	10	0.25	76
85<	180	3	7	268		304	10	0.25	76

Temp Range	Annual Volume (gal)	Daily Water Volume (gal/day)	% Evap	Annual Volume (gal)	Daily Waste Volume (gal/day)
80-85	777806	4321	50%	388903	2161
85<	523749	2910	50%	261874	1455
Total Volumes		7231			3615

Waters		Days Between Cleaning / Week	
#	Size	Winter	Summer
24	110	7	3.5
		7	3.5
		7	3.5

Cattle		Water	
Type	Head	Wash gal/hd	Feed gal/hd
Dry	400	0	2
Milking	1210	10.000	2
Total	1610		

Plate Cooler	
# milk	70
Milk/Water	1.5

Volume Calcs		Volumes (gal/Day)	Waste (winter)	Waste (summer)	Water Usage
Facilities (gal/day)	Feed Mix	3220	0	0	3220
	Plate Cooler	15216	0	0	0
	Cooling	7231	0	3615	7231
	Parlor	12100	12100	12100	12100
	Waterer Cleaning	755	377	754	754.29
Cows (gal/day)	Evap	8372	0	0	8372
	Milk	9801	0	0	9801
	Excreta	24308	24308	24308	24308
	Total (gal/day)		36785	40777	65786
	Meter Reading				
	Total Spillage (gal/Day)				-

*Values calculated above are based on data from the Livestock Waste Facilities Handbook

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Subject: Runoff Calculations

Normal Runoff

Area = 185476 Area = 175149 Area =

	Concrete (CN=97)			
	Months	R	P	Total CF
	JAN	46	1.37	0
	FEB	39	1.9	0
X	MAR	49	3.06	23175
X	APR	52	4.01	32230
X	May	56	4.79	41460
X	June	60	4.32	40063
X	July	62	4.44	42548
X	AUG	59	3.64	33194
X	SEPT	61	3.55	33471
X	OCT	57	3.03	26695
X	NOV	53	3.32	27197
	DEC	45	2.42	0
	Total		34.2	300032

Earth (CN=90)			
Months	R	P	Total CF
JAN	19	1.37	0
FEB	10	1.9	0
MAR	17	3.06	7592.7
April	23	4.01	13462
May	23	4.79	16080
June	27	4.32	17024
July	29	4.44	18793
AUG	28	3.64	14876
SEPT	30	3.55	15544
OCT	27	3.03	11941
NOV	20	3.32	9691.6
DEC	16	2.42	0
Total			125005

Roof (CN=100)			
Months	R	P	Total CF
JAN	100	1.37	0
FEB	100	1.9	0
MAR	100	3.06	0
April	100	4.01	0
May	100	4.79	0
June	100	4.32	0
July	100	4.44	0
AUG	100	3.64	0
SEPT	100	3.55	0
OCT	100	3.03	0
NOV	100	3.32	0
DEC	100	2.42	0
Total			0

Net Normal Ruoff = 425,037 CF

25 YR - 24HR Storm Event

Concrete (CN=97)		
CN	97	
S	0.31	in
I_{25}	5.32	in
Q_{25}	4.97	in
Vol_{25}	76756.88	CF

Earth (CN=90)		
CN	90	
S	1.11	in
I_{25}	5.32	in
Q_{25}	4.19	in
Vol_{25}	61090.59	CF

Roof (CN=100)		
CN	100	
S	0.00	in
I_{25}	5.32	in
Q_{25}	5.32	in
Vol_{25}	0.00	CF

25yr Storm Event Runoff = 137,847 CF

Notes

Concrete Areas: Earthen Areas: Roofed Areas:

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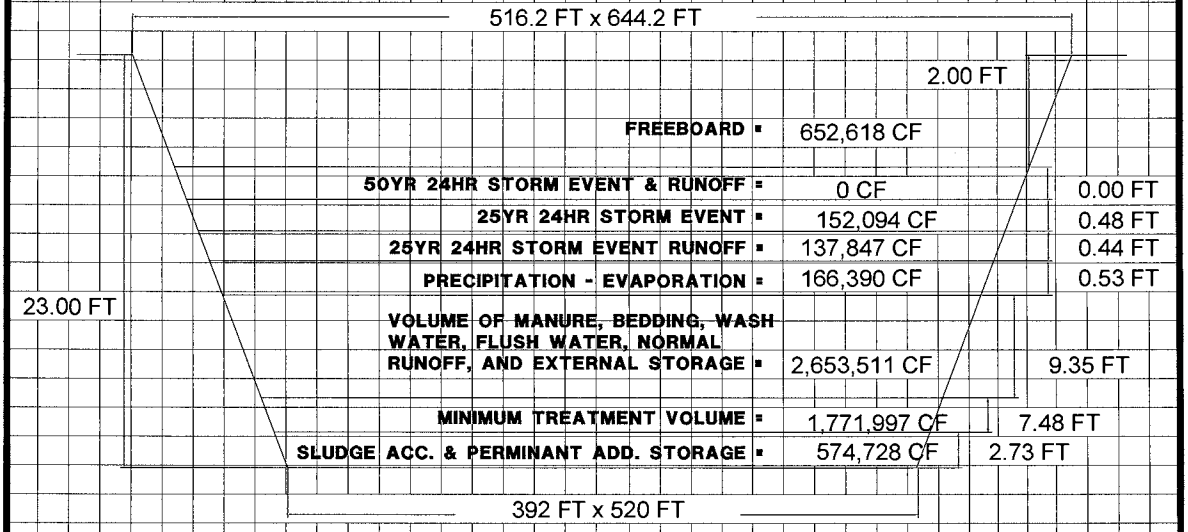
Subject: Lagoon 1 Design Sheet, E12



EARTHEN STORAGE

TOTAL DEPTH	23.00 FT		
FREEBOARD	2.00 FT		
RESIDUAL SOLIDS	2.73 FT		
MINIMUM TREATMENT	7.48 FT		
PRECIP-EVAP DEPTH	0.53 FT		
25 YR, 24-HR Runoff V	137,847 CF		
25 YR, 24-HR Runoff D	0.44 FT		
25 YR, 24-HR EFF	0.48 FT		
50 YR, 24-HR Runoff V	0 CF		
WORKING DEPTH	9.35 FT		
50 YR, 24-HR VOL	0 CF	≈	0.00 MG
25 YR, 24-HR VOL	152,094 CF	≈	1.14 MG
PRECIP-EVAP VOL	166,390 CF	≈	1.24 MG
WORKING VOLUME	2,653,511 CF	≈	19.84 MG
MINIMUM TREATMENT	1,771,997 CF	≈	13.25 MG
RESIDUAL SOLIDS	574,728 CF	≈	4.30 MG
TOTAL RAMP VOL	0 CF	≈	0.00 MG
FREEBOARD	652,618 CF	≈	4.88 MG
TOTAL VOLUME	6,109,193 CF	≈	45.68 MG

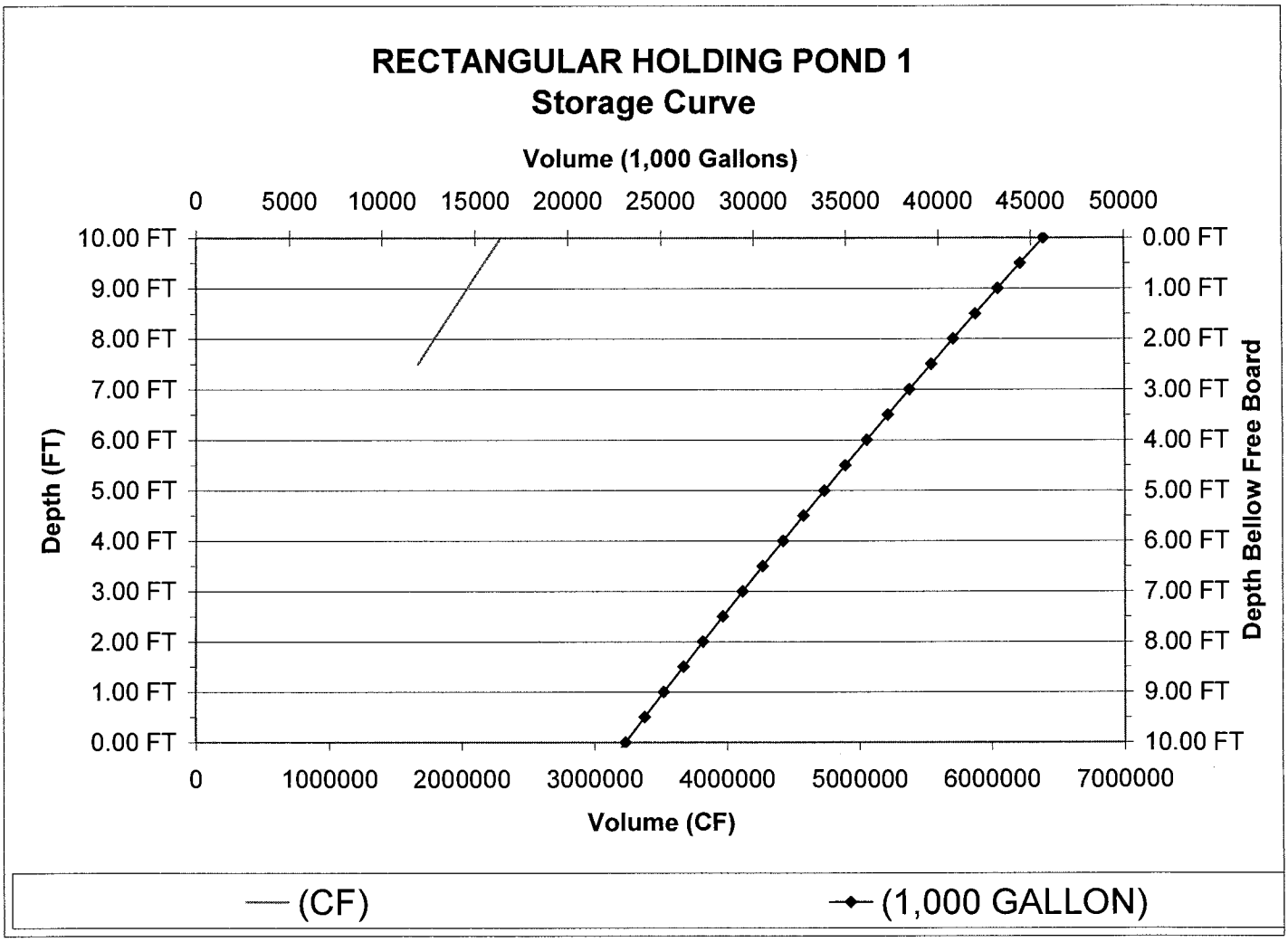
Deminsions	
BOTTOM WIDTH	392 FT
BOTTOM LENGTH	520 FT
INSIDE SLOPE	3 FT
TOP WIDTH	516 FT
TOP LENGTH	644 FT

START PUMPING	676.7 FT
STOP PUMPING	665.7 FT

ACTUAL PRECIP	34.2 in
ACTUAL EVAP	31.6 in
25 YR, 24-HR ACT	5.3 in
50 YR, 24-HR ACT	0.0 in
50 YR, 24-HR Runoff D	0.00 FT
50 YR, 24-HR EVENT D	0.00 FT

CALCULATE

POND 1 - STAGE STORAGE				
TOTAL DEPTH	VOLUME (CF)	VOLUME (1,000 GALLON)	DEPTH BELOW	VOLUME (1,000 GAL / 1/2 FT)
23.00 FT	6109193	45678	0.00 FT	0.0
22.50 FT	5943707	44441	0.50 FT	1237.3
22.00 FT	5779780	43215	1.00 FT	1225.7
21.50 FT	5617405	42001	1.50 FT	1214.1
21.00 FT	5456575	40799	2.00 FT	1202.5
20.50 FT	5297283	39608	2.50 FT	1191.0
20.00 FT	5139520	38428	3.00 FT	1179.6
19.50 FT	4983280	37260	3.50 FT	1168.2
19.00 FT	4828556	36103	4.00 FT	1156.9
18.50 FT	4675340	34958	4.50 FT	1145.6
18.00 FT	4523625	33823	5.00 FT	1134.4
17.50 FT	4373403	32700	5.50 FT	1123.2
17.00 FT	4224668	31588	6.00 FT	1112.1
16.50 FT	4077412	30487	6.50 FT	1101.0
16.00 FT	3931628	29397	7.00 FT	1090.0
15.50 FT	3787308	28318	7.50 FT	1079.1
15.00 FT	3644445	27250	8.00 FT	1068.2
14.50 FT	3503032	26192	8.50 FT	1057.3
14.00 FT	3363062	25146	9.00 FT	1046.6
13.50 FT	3224527	24110	9.50 FT	1035.8
13.00 FT	3087420	23085	10.00 FT	1025.1
12.50 FT	2951734	22070	10.50 FT	1014.5
12.00 FT	2817462	21066	11.00 FT	1004.0
11.50 FT	2684595	20073	11.50 FT	993.4
11.00 FT	2553128	19090	12.00 FT	983.0
10.50 FT	2423052	18117	12.50 FT	972.6
10.00 FT	2294360	17155	13.00 FT	962.2
9.50 FT	2167045	16203	13.50 FT	951.9
9.00 FT	2041100	15261	14.00 FT	941.7
8.50 FT	1916518	14330	14.50 FT	931.5
8.00 FT	1793290	13408	15.00 FT	921.4
7.50 FT	1671411	12497	15.50 FT	911.3


RECTANGULAR HOLDING POND 1
Storage Curve
Volume (1,000 Gallons)
0
5000
10000
15000
20000
25000
30000
35000
40000
45000
50000
10.00 FT
9.00 FT
8.00 FT
7.00 FT
6.00 FT
5.00 FT
4.00 FT
3.00 FT
2.00 FT
1.00 FT
0.00 FT
Depth (FT)
0.00 FT
1.00 FT
2.00 FT
3.00 FT
4.00 FT
5.00 FT
6.00 FT
7.00 FT
8.00 FT
9.00 FT
10.00 FT
Depth Bellow Free Board
0
1000000
2000000
3000000
4000000
5000000
6000000
7000000
Volume (CF)
(CF)
(1,000 GALLON)

MAURER ▲ STUTZ, INC.
ENGINEERS SURVEYORS

PROJECT: Hill Crest Dairy
PROJECT NO.: 238-04006B
COMPUTATION BY: JEO DATE: 8/13/10 SH. NO.: 1
CHECKED BY: TLF DATE: OF: 1

Subject: Manure Stack Pad Volume

UNCOVERED STACK PAD 1, E9 - Solids Stack

	Side 1	Side 2	Side 3	Side 4	Summation	
			Match to open	Open Side		
Wall Length	130	130	67	67		
Wall Height	12	12	12	0		
Max Stack Height	12	12	12	12		
Slope of repose	1	1	1	1		
Side Length	0	0	0	67		
Side Calc Ft^3	**0**	**0**	**0**	**4824**		
Corner Calc	**0.00**	**0.00**	**0.00**	**0.00**		
	Length	Width	Height			
Top Bulk	0	0	0	**0**		
Bot Bulk	118	67	12	**94872**		
			Volume	**99696**	**ft^3**	
			Area	8710	**ft^2**	

UNCOVERED STACK PAD 2,

	Side 1	Side 2	Side 3	Side 4	Summation	
			Match to open	Open Side		
Wall Length						
Wall Height				0		
Max Stack Height						
Slope of repose						
Side Length	0	0	0	0		
Side Calc Ft^3	**0**	**0**	**0**	**0**		
Corner Calc	**0.00**	**0.00**	**0.00**	**0.00**		
	Length	Width	Height			
Top Bulk	0	0	0	**0**		
Bot Bulk	0	0	0	**0**		
			Volume	**0**	**ft^3**	
			Area	0	**ft^2**	

MAURER ▲ STUTZ, INC.
ENGINEERS SURVEYORS

PROJECT: Hill Crest Dairy
PROJECT NO.: 238-04006B
COMPUTATION BY: JEO DATE: 8/13/10 SH. NO.: 1
CHECKED BY: TLF DATE: OF: 1

Subject: Manure Stack Pad Volumes

COVERED STACK PAD 1, E1 – Bedding Pack - Maternity

	Side 1	Side 2	Side 3	Side 4	
			Match to open	Open Side	
Wall Length	60	60	120	120	
Wall Height	1	1	1	0	
Max Stack Height	2.5	2.5	2.5	2.5	
Slope of repose	1	1	1	1	
Side Length	56	56	117	117	
Side Calc Ft^3	**63**	**63**	**131.625**	**365.625**	
Corner Calc	**1.13**	**1.13**	**5.21**	**5.21**	
	Length	Width	Height		
Top Bulk	56	117	1.5	**9828**	
Bot Bulk	57.5	120	1	**6900**	
			Volume	**17364**	**ft^3**
			Area	7200	**ft^2**

COVERED STACK PAD 2,

	Side 1	Side 2	Side 3	Side 4	
			Match to open	Open Side	
Wall Length					
Wall Height				0	
Max Stack Height					
Slope of repose					
Side Length	0	0	0	0	
Side Calc Ft^3	**0**	**0**	**0**	**0**	
Corner Calc	**0.00**	**0.00**	**0.00**	**0.00**	
	Length	Width	Height		
Top Bulk	0	0	0	**0**	
Bot Bulk	0	0	0	**0**	
			Volume	**0**	**ft^3**
			Area	0	**ft^2**

MAURER ▲ STUTZ, INC.
ENGINEERS SURVEYORS

PROJECT: Hill Crest Dairy
PROJECT NO.: 238-04006B
COMPUTATION BY: JEO DATE: 8/13/10 SH. NO.: 1
CHECKED BY: TLF DATE: OF: 1

Subject: Rectangular Tank Volumes

Covered	X	Precip	

RECEPTION TANK 1, E8

TOTAL DEPTH	12.00
SPACE	2.00
Bottom not pumpable	1.00
25 YR, 24-HR	0.00
PRECIP-EVAP	0.00
WORKING DEPTH	9.00
Inside Width	24.00
Inside Length	53.50
25YR 24HR Runoff	0.00
Working Volume	11556.00
Total Volume	15408.00
Lid Thickness	0.00
Wall Thickness	0.00
Footing Overhang	0.00
Footing Overhang Thickness	0.00
Floor Thickness	0.00
C Y Footings	0.00
C Y Floor (to Outside of Wall)	0.00
C Y Walls	0.00
C Y Lid	0.00
CY Total	0.00
Allowance %	0.0
*Concrete work walls cost Est.	0
*Concrete flat work cost Est.	0
*includes allowance for rebar, waterstop, and labor	lump sum
Excavation/backfill, perimeter tile and monitoring port	
Total Estimated cost	$ -
Allowances %	0
Grand Total Estimated Cost	$ -

Covered	X	Precip	

RECEPTION TANK 2, E7

TOTAL DEPTH	16.00
SPACE	2.00
Bottom not pumpable	1.00
25 YR, 24-HR	0.00
PRECIP-EVAP	0.00
WORKING DEPTH	13.00
Inside Width	57.00
Inside Length	153.00
25YR 24HR Runoff	0.00
Working Volume	113373
Total Volume	139536.00
Lid Thickness	0.00
Wall Thickness	0.00
Footing Overhang	0.00
Footing Overhang Thickness	0.00
Floor Thickness	0.00
C Y Footings	0.00
C Y Floor (to Outside of Wall)	0.00
C Y Walls	0.00
C Y Lid	0.00
CY Total	0.00
Allowance %	0.0
*Concrete work walls cost Est.	0
*Concrete flat work cost Est.	0
*includes allowance for rebar, waterstop, and labor	lump sum
Excavation/backfill, perimeter tile and monitoring port	
Total Estimated cost	$ -
Allowances %	0
Grand Total Estimated Cost	$ -