

APPENDIX G- ANNUAL ENERGY CONSUMPTION BY ALTERNATIVE

TABLE 1
Energy Consumption Data

Storage Pond	Storage Volume (MG)	Normal Fill Rate (mgd)	Max Fill Rate (mgd)	Normal Drain Rate (mgd)	Max Drain Rate (mgd)	Max Drain Rate Basis (mgd)	Normal Days to Fill (days)	Normal Days to Drain (days)	Pump Station Hp	Energy to Fill kw-hrs	Incremental Power to Fill kw-hrs	Power to Drain kw-hrs	Total Power Required kw-hrs	Total Power per MG kw-hrs/MG	Horsepower to Fill (hp)	Horsepower to Drain (hp)
KF1	282	5	8	2	7	20.2	56	141	80	44,304	19,138	63,442	225	44	8	
KF2	185	5	8	2	7	13.2	37	93	80	29,065	12,179	41,244	223	44	7	
BF1	226	7	10	2	5	16.1	32	113	60	35,506	17,358	52,864	234	61	9	
BF2	105	7	10	2	5	7.5	15	53	60	16,496	8,929	25,425	242	61	9	
AF1	177	3	4	1	5	12.7	59	177	60	27,808	14,323	42,131	238	26	5	

Storage Pond	Pond Bottom (ft)	Top of Embankment (ft)	Pond Depth Midpoint (ft)	HGL Elev (ft)	HGL (ft)	TDH (ft)	Qdrain (MGD)	Horsepower to Drain
KF1	80.25	105	92.63	< top of embankment	105	13.607	2	7.58
KF2	81.5	105.5	93.5	< top of embankment	105.5	13.2	2	7.35
BF1	83	111	97	< top of embankment	111	15.4	2	8.58
BF2	83	100	91.5	107	107	17.05	2	9.50
AF1	80.5	98	89.25	104	104	16.225	1	4.52

Assumptions:

Incremental Power to Fill: 35 total dynamic head from "E" pump station

Horsepower to Drain includes 90% motor efficiency

TABLE 2
Miscellaneous Energy Consumption Data

KF1

Electrical Load	Load (A)	Load (W)	Duration (hr/day)	Daily Energy (kWh)	Yearly Energy (kWh)
Lighting, Interior		260	1	0.260	94.900
Lighting, exterior		100	12	1.200	438.000
Pump station controls	2	240	24	5.760	2,102.400
Gate operator	4.6	1656	0.017	0.028	10.074
Air compressor, 20hp	27	22437	0.083	1.870	682.459
Ventilation*	3.4	2825	12	33.905	4,780.577
Miscellaneous	1	120	24	2.880	1,051.200
Total				45.902	9,159.610

*Used only on days pumps are running; pumping days range depending on site.

KF2

Electrical Load	Load (A)	Load (W)	Duration (hr/day)	Daily Energy (kWh)	Yearly Energy (kWh)
Lighting, Interior		260	1	0.260	94.900
Lighting, exterior		100	12	1.200	438.000
Pump station controls	2	240	24	5.760	2,102.400
Gate operator	4.6	1656	0.017	0.028	10.074
Air compressor, 20hp	27	22437	0.083	1.870	682.459
Ventilation*	3.4	2825	12	33.905	3,153.146
Miscellaneous	1	120	24	2.880	1,051.200
Total				45.902	7,532.179

BF1

Electrical Load	Load (A)	Load (W)	Duration (hr/day)	Daily Energy (kWh)	Yearly Energy (kWh)
Lighting, Interior		260	1	0.260	94.900
Lighting, exterior		100	12	1.200	438.000
Pump station controls	2	240	24	5.760	2,102.400
Gate operator	4.6	1656	0.017	0.028	10.074
Air compressor, 20hp	27	22437	0.083	1.870	682.459
Ventilation*	3.4	2825	12	33.905	3,831.242
Miscellaneous	1	120	24	2.880	1,051.200
Total				45.902	8,210.275

BF-2

Electrical Load	Load (A)	Load (W)	Duration (hr/day)	Daily Energy (kWh)	Yearly Energy (kWh)
Lighting, Interior		260	1	0.260	94.900
Lighting, exterior		100	12	1.200	438.000
Pump station controls	2	240	24	5.760	2,102.400
Gate operator	4.6	1656	0.017	0.028	10.074
Air compressor, 20hp	27	22437	0.083	1.870	682.459
Ventilation*	3.4	2825	12	33.905	1,796.954
Miscellaneous	1	120	24	2.880	1,051.200
Total				45.902	6,175.987

AF1

Electrical Load	Load (A)	Load (W)	Duration (hr/day)	Daily Energy (kWh)	Yearly Energy (kWh)
Lighting, Interior		260	1	0.260	94.900
Lighting, exterior		100	12	1.200	438.000
Pump station controls	2	240	24	5.760	2,102.400
Gate operator	4.6	1656	0.017	0.028	10.074
Air compressor, 20hp	27	22437	0.083	1.870	682.459
Ventilation*	3.4	2825	12	33.905	6,001.150
Miscellaneous	1	120	24	2.880	1,051.200
Total				45.902	10,380.182