Andam, Lani@Waterboards

From: Richard Ross <richard@summit-sr.com>
Sent: Wednesday, April 17, 2013 6:35 PM
To: Andam, Lani@Waterboards; Olson, Anne@Waterboards
Cc: Berryhill, Kevin; Panganiban, Ryan; Miller, Phillip; Kelly Crowe; 2011152 @newforma.summit-sr.com
Subject: NBRID - PWB Alternate Scenario
Attachments: PWB, NBRID, Alternate Scenario, 2013-04-17.pdf

Lani,

Per NBRID request, we have prepared an alternate pond water balance (PWB) scenario. Changes include reducing the amount of water from the concessionaire during the winter and shoulder months with an assumed increase in peak residential flows during the summer months. The goal was to examine the effects and if the ponds could handle larger peak events (up to 4.5 million gallons per month). As you find in the attached document, the pond system can accommodate increased peak flows by managing the levels in the ponds being built without increasing their capacity beyond what was previously submitted in the RWD package. In this alternate scenario, the total annual flow was capped at the 36.392 MG previously submitted to remain consistent. Disposal values were tweaked accordingly to show how the pond system can handle the various monthly flows including rain. No change to anticipated I/I values were made versus previous submitted information.

Please let me know if there are any questions. We are preparing comments for the draft WDR's published and I wanted to get you this spreadsheet in advance to facilitate a request from the District to increase the limitation of peak monthly discharge to 4.5 MG/month.

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SUMMIT ENGINEERING, INC. Consulting Civil Engineers	NBRID Pond Storage Wastewater Effluent Design Criteria Siting Study	PROJECT NO. 2011152 BY: RR CHK: AS Revised: 4/12/13

DESIGN CRITERIA

FULL PRODUCTION

	2011 (NBRID only)	2020 (NBRID only)
Annual Average Flow	52,526 gal SS/day	86,063 gal SS/day
Peak Monthly Flow	118,013 gal/day	193,363 gal/day
	2011 (NBRID w/ Lupine)	2020 (NBRID w/ Lupine)
Annual Average Flow	66,168 gal SS/day	99,705 gal SS/day
Peak Monthly Flow	133,013 gal/day	208,363 gal/day
Pond 1 Volume	2.89 Mgal	2.89 Mgal
Pond 2 Volume	3.95 Mgal	3.95 Mgal
Pond 3 Volume	4.08 Mgal	4.08 Mgal
Pond 4 Volume	9.34 Mgal	9.34 Mgal
Total Volume	20.27 Mgal	20.27 Mgal
Pond 1 HRT (NBRID Only, Peak Monthly)	24.5 days	14.9 days
Pond 2 HRT (NBRID Only, Peak Monthly)	33.5 days	20.5 days
Pond 3 HRT (NBRID Only, Peak Monthly)	34.6 days	21.1 days
Pond 4 HRT (NBRID Only, Peak Monthly)	79.2 days	48.3 days
Total Pond HRT (NBRID Only, Peak Monthly)	58.0 days	104.8 days
Pond 1 HRT (NBRIDw/ Lupine, Peak Monthly)	21.7 days	13.9 days
Pond 2 HRT (NBRIDw/ Lupine, Peak Monthly)	29.7 days	19.0 days
Pond 3 HRT (NBRIDw/ Lupine, Peak Monthly)	30.7 days	19.6 days
Pond 4 HRT (NBRIDw/ Lupine, Peak Monthly)	70.2 days	44.8 days
Total Pond HRT (NBRID Only, Peak Monthly)	152.4 days	97.3 days

Flow[1] (MGAL/month)

	Berryessa Highlands Residences[2]	WTP Backwash[3]	Lupine Shores[4]	I/I[5]	Tailwater Return	Total Influent Flow
Jan	1.416	0.045	0.116	1.505	0	3.082
Feb	1.279	0.041	0.105	1.172	0	2.597
Mar	1.416	0.045	0.279	1.532	0	3.272
Apr	1.370	0.044	0.270	0.897	0	2.581
May	1.416	0.226	0.465	0.559	0	2.666
Jun	1.901	0.219	0.450	0.072	0	2.643
Jul	3.474	0.226	0.465	0.000	0	4.165
Aug	3.680	0.226	0.465	0.130	0	4.501
Sep	2.420	0.219	0.450	0.133	0	3.222
Oct	1.416	0.226	0.465	0.905	0	3.012
Nov	1.370	0.044	0.270	0.790	0	2.474
Dec	1.416	0.045	0.116	0.601	0	2.178
Totals	*22.572*	*1.607*	*3.917*	*8.296*	*0.000*	*36.392*

Notes:
1. PWB values based on PWB spreadsheet forwarded to the RWQCB, revised 10/30/12. Full Build-out scenario with concessionaire.
2. Assumed increase in sewage flows due to increased activity in residences due to visitation from out of town guests during the summer and early fall months (Jun-Sep) due to good weather and close proximity to the Lake.
3. Backwash based on full build-out peak usage of 200,000 gpd water during the less rainy months (May-Oct) and 50,000 gpd average during the rainy months (Nov-Apr). Estimated based on feedback from Roberts Filter anticipated backwash volumes per gallon of finished water produced.
4. Lupine Shores flows were estimated from the concessionaire to be variable in nature with onsite equalization limiting wastewater discharged to 15,000 gpd max. Assumed 25% peak flow during winter months (Dec-Feb) and 60% peak flow during shoulder months (Mar-Apr, Nov) due to less visitation to the lake due to weather.
5. RDII estimates based on recent I/I findings and statistical distribution for assumed storm contributions annually.

DESIGN WASTEWATER TP FLOWS

Month	Days per Month	Monthly Percentage of Annual SS Flow[c] (%)	Average WWTP Monthly Flow (Mgal)	Average Steele Park contribution (Mgal)	NBRID Contribution (Mgal)	2011 WWTP Monthly Flow (Mgal)	2020 WWTP Monthly Flow (Mgal)	2011 WWTP w/ Lupine Monthly Flow (Mgal)	2020 WWTP w/ Lupine Monthly Flow (Mgal)
January	31	9.4%	1.573	0.629	0.944	1.808	2.962	2.277	3.082
February	28	8.0%	1.335	0.534	0.801	1.534	2.513	1.932	2.597
March	31	9.5%	1.585	0.634	0.951	1.822	2.985	2.295	3.272
April	30	7.6%	1.266	0.506	0.759	1.454	2.383	1.832	2.581
May	31	7.3%	1.222	0.489	0.733	1.404	2.301	1.769	2.666
June	30	7.1%	1.188	0.475	0.713	1.365	2.237	1.720	2.643
July	31	9.7%	1.611	0.644	0.967	1.852	3.034	2.333	4.165
August	31	10.0%	1.670	0.668	1.002	1.920	3.146	2.418	4.501
September	30	8.9%	1.477	0.591	0.886	1.697	2.781	2.138	3.222
October	31	8.3%	1.381	0.552	0.828	1.587	2.600	1.999	3.012
November	30	7.3%	1.216	0.487	0.730	1.398	2.291	1.761	2.474
December	31	6.9%	1.158	0.463	0.695	1.331	2.181	1.677	2.178
Total	**0**	**100%**	**16.681**	**6.672**	**10.009**	**19.172**	**31.413**	**24.151**	**36.392**

[b] Monthly percentage based on average WWTP flow data from Summit report.
[c] Monthly flows are calculated as average of 1990-1995 data from Summit Report 1996

SUMMIT ENGINEERING, INC. Consulting Civil Engineers	NBRID Pond Storage Pond Worksheet	PROJECT NO. 2011152 BY: RR CHK: AS

Pond No. 1

Bottom Width	N/A	Bottom Radius	N/A
Bottom Length	N/A	Top Radius	N/A
Interior Side Slope (x:1)	2.0	Depth	21.8'
Length:Width	N/A	Freeboard	2.0'

Elevation (ft)	Depth (ft)	Surface Area (ft^2)	Total Volume (Mgal)
572.0	0.0	7,323	0.000
573.0	1.0	8,072	0.058
574.0	2.0	8,884	0.121
575.0	3.0	9,720	0.191
576.0	4.0	10,582	0.267
577.0	5.0	11,469	0.349
578.0	6.0	12,381	0.438
579.0	7.0	13,318	0.534
580.0	8.0	14,280	0.638
581.0	9.0	15,267	0.748
582.0	10.0	16,280	0.866
583.0	11.0	17,318	0.992
584.0	12.0	18,380	1.125
585.0	13.0	19,468	1.267
586.0	14.0	20,581	1.417
587.0	15.0	21,719	1.575
588.0	16.0	22,882	1.742
589.0	17.0	24,071	1.917
590.0	18.0	25,284	2.102
591.0	19.0	26,523	2.296
592.0	20.0	27,787	2.499
593.0	21.0	29,076	2.711
593.8	21.8	30,127	2.889
594.0	22.0	30,390	2.934
595.0	23.0	31,728	3.166
595.8	23.8	32,816	3.360

Pond No. 2

Bottom Width	N/A	Bottom Radius	N/A
Bottom Length	N/A	Top Radius	N/A
Interior Side Slope (x:1)	2.0	Depth	28.5'
Length:Width	N/A	Freeboard	2.0'

Elevation (ft)	Depth (ft)	Surface Area (ft^2)	Total Volume (Mgal)
526.8	0.0	5,905	0.000
527.8	1.0	6,383	0.046
528.8	2.0	7,082	0.096
529.8	3.0	7,806	0.152
530.8	4.0	8,556	0.213
531.8	5.0	9,330	0.280
532.8	6.0	10,130	0.353
533.8	7.0	10,955	0.432
534.8	8.0	11,805	0.517
535.8	9.0	12,680	0.608
536.8	10.0	13,580	0.707
537.8	11.0	14,505	0.812
538.8	12.0	15,456	0.924
539.8	13.0	16,431	1.043
540.8	14.0	17,432	1.170
541.8	15.0	18,459	1.304
542.8	16.0	19,509	1.446
543.8	17.0	20,586	1.596
544.8	18.0	21,687	1.754
545.8	19.0	22,813	1.920
546.8	20.0	23,965	2.095
547.8	21.0	25,142	2.279
548.8	22.0	26,344	2.472
549.8	23.0	27,571	2.673
550.8	24.0	28,823	2.884
551.8	25.0	30,100	3.105
552.8	26.0	31,403	3.335
553.8	27.0	32,730	3.575
554.8	28.0	34,083	3.824
555.3	28.5	34,772	3.955
555.8	29.0	35,461	4.085
556.8	30.0	36,864	4.355
557.3	30.5	37,576	4.496

Pond No. 3

Bottom Width	N/A	Bottom Radius	N/A
Bottom Length	N/A	Top Radius	N/A
Interior Side Slope (x:1)	2.0	Depth	28.5'
Length:Width	N/A	Freeboard	2.0'

Elevation (ft)	Depth (ft)	Surface Area (ft^2)	Total Volume (Mgal)
526.8	0.0	5,640	0.000
527.8	1.0	6,367	0.045
528.8	2.0	7,114	0.095
529.8	3.0	7,886	0.151
530.8	4.0	8,683	0.213
531.8	5.0	9,505	0.281
532.8	6.0	10,352	0.356
533.8	7.0	11,225	0.436
534.8	8.0	12,122	0.524
535.8	9.0	13,045	0.618
536.8	10.0	13,993	0.719
537.8	11.0	14,966	0.827
538.8	12.0	15,964	0.943
539.8	13.0	16,987	1.066
540.8	14.0	18,035	1.197
541.8	15.0	19,109	1.336
542.8	16.0	20,208	1.483
543.8	17.0	21,331	1.639
544.8	18.0	22,480	1.802
545.8	19.0	23,654	1.975
546.8	20.0	24,853	2.156
547.8	21.0	26,078	2.347
548.8	22.0	27,327	2.547
549.8	23.0	28,602	2.756
550.8	24.0	29,901	2.975
551.8	25.0	31,226	3.203
552.8	26.0	32,576	3.442
553.8	27.0	33,951	3.691
554.8	28.0	35,351	3.950
555.3	28.5	36,063	4.085
555.8	29.0	36,776	4.220
556.8	30.0	38,227	4.500
557.3	30.5	38,958	4.646

Pond No. 4

Bottom Width	N/A	Bottom Radius	N/A
Bottom Length	N/A	Top Radius	N/A
Interior Side Slope (x:1)	2.0	Depth	22.6'
Length:Width	N/A	Freeboard	2.0'

Elevation (ft)	Depth (ft)	Surface Area (ft^2)	Total Volume (Mgal)
525.0	0.0	28,052	0.000
526.0	1.0	30,480	0.219
527.0	2.0	32,711	0.455
528.0	3.0	34,967	0.708
529.0	4.0	37,250	0.979
530.0	5.0	39,559	1.266
531.0	6.0	41,894	1.570
532.0	7.0	44,254	1.893
533.0	8.0	46,641	2.233
534.0	9.0	49,053	2.591
535.0	10.0	51,491	2.967
536.0	11.0	53,955	3.361
537.0	12.0	56,445	3.774
538.0	13.0	58,960	4.206
539.0	14.0	61,501	4.656
540.0	15.0	64,069	5.126
541.0	16.0	66,662	5.615
542.0	17.0	69,281	6.123
543.0	18.0	71,926	6.651
544.0	19.0	74,597	7.199
545.0	20.0	77,294	7.768
546.0	21.0	80,017	8.356
547.0	22.0	82,765	8.965
547.6	22.6	84,430	9.342
548.0	23.0	85,540	9.594
549.0	24.0	88,452	10.245
549.6	24.6	90,274	10.649

SUMMIT ENGINEERING, INC. Consulting Civil Engineers	NBRID Pond Storage Pond Water Balance	PROJECT NO. 2011152 BY: RR CHK: AS Revised: 4/12/13

Pond No. 1

Month	Initial Volume (Mgal)	Pond Evaporation (Mgal)	Inflow (Mgal)	100 Year Precipitation (Mgal)	Volume Change (Mgal)	Total Volume (Mgal)	Divert Volume (Mgal)	Final Volume (Mgal)	Final Pond Depth (ft)
January	0.307	-0.007	3.082	0.347	3.423	3.730	2.582	1.148	12.1
February	1.148	-0.019	2.597	0.284	2.862	4.010	1.995	2.015	17.5
March	2.015	-0.045	3.272	0.177	3.404	5.419	2.530	2.889	21.7
April	2.889	-0.085	2.581	0.126	2.623	5.512	2.787	2.725	21.0
May	2.725	-0.126	2.666	0.019	2.559	5.284	2.559	2.725	21.0
June	2.725	-0.154	2.643	0.013	2.502	5.226	2.466	2.760	21.2
July	2.760	-0.190	4.165	0.000	3.975	6.735	4.747	1.989	17.3
August	1.989	-0.142	4.501	0.013	4.372	6.361	4.920	1.441	14.1
September	1.441	-0.086	3.222	0.013	3.148	4.589	4.589	0.000	0.0
October	0.000	-0.020	3.012	0.082	3.074	3.074	2.611	0.463	6.2
November	0.463	-0.015	2.474	0.189	2.648	3.111	2.611	0.500	6.6
December	0.500	-0.011	2.178	0.253	2.420	2.920	2.613	0.307	4.4
Total		**-0.900**	**36.392**	**1.516**	**37.008**		**37.008**		

Pond No. 2

Month	Initial Volume (Mgal)	Pond Evaporation (Mgal)	Inflow (Mgal)	100 Year Precipitation (Mgal)	Volume Change (Mgal)	Total Volume (Mgal)	Divert Volume (Mgal)	Final Volume (Mgal)	Final Pond Depth (ft)
January	1.402	-0.005	2.582	0.375	2.952	4.354	2.263	2.091	19.9
February	2.091	-0.007	1.995	0.307	2.295	4.386	1.605	2.780	23.5
March	2.780	-0.014	2.530	0.191	2.707	5.487	1.605	3.882	28.2
April	3.882	-0.024	2.787	0.137	2.900	6.781	2.902	3.879	28.2
May	3.879	-0.036	2.559	0.020	2.543	6.422	2.467	3.955	28.5
June	3.955	-0.045	2.466	0.014	2.435	6.390	2.435	3.955	28.5
July	3.955	-0.055	4.747	0.000	4.692	8.647	5.760	2.887	24.0
August	2.887	-0.045	4.920	0.014	4.889	7.776	5.953	1.823	18.4
September	1.823	-0.029	4.589	0.014	4.573	6.396	5.001	1.395	15.6
October	1.395	-0.018	2.611	0.089	2.682	4.077	4.077	0.000	0.0
November	0.000	-0.007	2.611	0.205	2.809	2.809	2.144	0.665	9.5
December	0.665	-0.005	2.613	0.273	2.880	3.546	2.144	1.402	15.6
Total		**-0.290**	**37.008**	**1.638**	**38.356**		**38.356**		

Pond No. 3

Month	Initial Volume (Mgal)	Pond Evaporation (Mgal)	Inflow (Mgal)	100 Year Precipitation (Mgal)	Volume Change (Mgal)	Total Volume (Mgal)	Divert Volume (Mgal)	Final Volume (Mgal)	Final Pond Depth (ft)
January	1.742	-0.005	2.263	0.405	2.662	4.404	1.876	2.529	21.9
February	2.529	-0.008	1.605	0.331	1.929	4.457	1.142	3.315	25.4
March	3.315	-0.015	1.605	0.206	1.796	5.111	1.066	4.045	28.3
April	4.045	-0.025	2.902	0.147	3.025	7.070	2.985	4.085	28.5
May	4.085	-0.038	2.467	0.022	2.451	6.536	2.494	4.042	28.3
June	4.042	-0.046	2.435	0.015	2.404	6.446	2.376	4.069	28.4
July	4.069	-0.056	5.760	0.000	5.704	9.773	6.320	3.453	26.0
August	3.453	-0.048	5.953	0.015	5.920	9.373	6.536	2.837	23.3
September	2.837	-0.032	5.001	0.015	4.983	7.820	6.485	1.336	14.9
October	1.336	-0.018	4.077	0.096	4.155	5.490	5.490	0.000	0.0
November	0.000	-0.007	2.144	0.221	2.358	2.358	1.484	0.873	11.3
December	0.873	-0.005	2.144	0.294	2.433	3.306	1.564	1.742	17.6
Total		**-0.302**	**38.356**	**1.766**	**39.820**		**39.820**		

Pond No. 4

Month	Initial Volume (Mgal)	Pond Evaporation (Mgal)	Inflow (Mgal)	100 Year Precipitation (Mgal)	Volume Change (Mgal)	Total Volume (Mgal)	Divert Volume (Mgal)	Final Volume (Mgal)	Final Pond Depth (ft)
January	6.528	-0.033	1.876	0.968	2.812	9.340	1.041	8.299	20.9
February	8.299	-0.049	1.142	0.792	1.886	10.185	0.797	9.387	22.6
March	9.387	-0.091	1.066	0.493	1.468	10.855	2.272	8.584	21.3
April	8.584	-0.135	2.985	0.352	3.203	11.786	2.444	9.342	22.5
May	9.342	-0.215	2.494	0.053	2.332	11.674	5.919	5.755	16.2
June	5.755	-0.218	2.376	0.035	2.193	7.948	5.755	2.193	7.8
July	2.193	-0.213	6.320	0.000	6.107	8.300	6.851	1.449	5.6
August	1.449	-0.182	6.536	0.035	6.389	7.838	6.390	1.447	5.5
September	1.447	-0.131	6.485	0.035	6.389	7.837	7.837	0.000	#N/A
October	0.000	-0.077	5.490	0.229	5.642	5.642	1.818	3.824	12.1
November	3.824	-0.044	1.484	0.528	1.968	5.792	1.000	4.792	14.2
December	4.792	-0.033	1.564	0.704	2.236	7.028	0.500	6.528	17.7
Total		**-1.421**	**39.820**	**4.226**	**42.624**		**42.624**		

SUMMIT ENGINEERING, INC. Consulting Civil Engineers	NBRID Pond Storage Irrigation & Effluent Application Rates	PROJECT NO. 2011152 BY: RR CHK: AS Revised: 4/12/13

Applied Irrigation Area	Zone 1	16.0	acres
	Zones 2-4	44.0	acres
Total Area Available for Irrigation	Zone 1	16.0	acres
	Zones 2-4	44.0	acres

Month	Reference ET[a] (in)	Pasture Coeff[b]	Zone 1 ET[d] (in)	Zones 2-4 ET[d] (in)	Precip[e] (in)	Irrigation Demand[f] Zone 1 (in)	Irrigation Demand[f] Zone 1 (Mgal)	Irrigation Demand[f] Zones 2-4 (in)	Irrigation Demand[f] Zones 2-4 (Mgal)	Operating Days per Month[g] (d)	Percolation Capacity[h] Zone 1 (in)	Percolation Capacity[h] Zone 1 (Mgal)	Percolation Capacity[h] Zones 2-4 (in)	Percolation Capacity[h] Zones 2-4 (Mgal)	Assimilative Capacity[i] Zone 1 (in)	Assimilative Capacity[i] Zone 1 (Mgal)	Assimilative Capacity[i] Zones 2-4 (in)	Assimilative Capacity[i] Zones 2-4 (Mgal)	Effluent Applied (Mgal)	Effluent Applied (in)	Total Remaining Capacity Zones 1-4 (Mgal)
January	0.9	0.8	0.7	0.7	17.0	0.0	0.000	0.0	0.000	6	0.75	0.326	0.75	0.895	0.7	0.326	0.7	0.895	1.041	0.64	0.18
February	1.2	0.8	0.9	0.9	13.9	0.0	0.000	0.0	0.000	5	0.62	0.271	0.62	0.746	0.6	0.271	0.6	0.746	0.797	0.49	0.22
March	2.6	0.8	2.1	2.1	8.6	0.0	0.000	0.0	0.000	12	1.50	0.651	1.50	1.790	1.5	0.651	1.5	1.790	2.272	1.39	0.17
April	4.9	0.9	4.4	4.4	6.2	0.0	0.000	0.0	0.000	13	1.62	0.705	1.62	1.940	1.6	0.705	1.6	1.940	2.444	1.50	0.20
May	6.1	0.9	5.5	5.5	0.9	4.6	1.992	4.6	5.478	16	2.00	0.868	2.00	2.387	6.6	2.860	6.6	7.865	5.919	3.63	4.81
June	6.6	0.9	5.9	5.9	0.6	5.3	2.306	5.3	6.342	17	2.12	0.922	2.12	2.536	7.4	3.228	7.4	8.878	5.755	3.53	6.35
July	7.0	0.9	6.3	6.3	0.0	6.3	2.727	6.3	7.500	30	3.74	1.628	3.74	4.476	10.0	4.355	10.0	11.976	6.851	4.21	9.48
August	5.7	0.9	5.2	5.2	0.6	4.5	1.974	4.5	5.427	31	3.87	1.682	3.87	4.625	8.4	3.655	8.4	10.053	6.390	3.92	7.32
September	4.4	0.9	4.0	4.0	0.6	3.3	1.449	3.3	3.985	30	3.74	1.628	3.74	4.476	7.1	3.077	7.1	8.462	7.837	4.81	3.70
October	3.4	0.9	3.0	3.0	4.0	0.0	0.000	0.0	0.000	16	2.00	0.868	2.00	2.387	2.0	0.868	2.0	2.387	1.818	1.12	1.44
November	1.1	0.8	0.9	0.9	9.3	0.0	0.000	0.0	0.000	14	1.75	0.760	1.75	2.089	1.7	0.760	1.7	2.089	1.000	0.61	1.85
December	1.5	0.8	1.2	1.2	12.4	0.0	0.000	0.0	0.000	5	0.62	0.271	0.62	0.746	0.6	0.271	0.6	0.746	0.500	0.31	0.52
Total	**45.3**		**40.1**	**40.1**	74.1	**24.0**	**10.4**	**24.0**	**28.7**	**195.0**	**24.3**	**10.6**	**24.3**	**29.1**	**48.4**	**21.0**	**48.4**	**57.8**	**42.6**	**26.2**	**36.2**

(a) Average monthly reference evapotranspiration rates, see Climate Data Worksheet.
(b) Kc coefficients for pasture from Table 5-1, "Irrigation with Reclaimed Municipal Wastewater-A Guidance Manual"- California State Water Resources Control Board, July 1984 (San Joaquin Valley).
(c) Kc coefficients for vineyards from Table 5-12, Irrigation with Reclaimed Municipal Wastewater - A Guidance Manual, 84-1 wr, SWRCB.
(d) ET=ETo x Kc. A weighted value is determined on the basis of the available irrigated acreage of vineyard and pasture.
(e) Precipitation, 100-year rainfall event, see Climate Data Worksheet.
(f) Irrigation Demand = ET-Precipitation, inches. A weighted value is determined on the basis of the available irrigated acreage of vineyard and pasture.
(g) Number of operating days per month based on estimated irrigation days available based on 24-hr post storm criteria for a 100-year return period. Summit Engineering, NBRID Capacity Study, April 1996.
(h) Design percolation rate is a maximum of 0.19 inches per day for the number of operating day per month. Design perc rate adjusted by a 0.04 safety factor to account for typical slow rate land application design methodology.
(i) Assimilative capacity is the sum of irrigation demand and percolation applied.