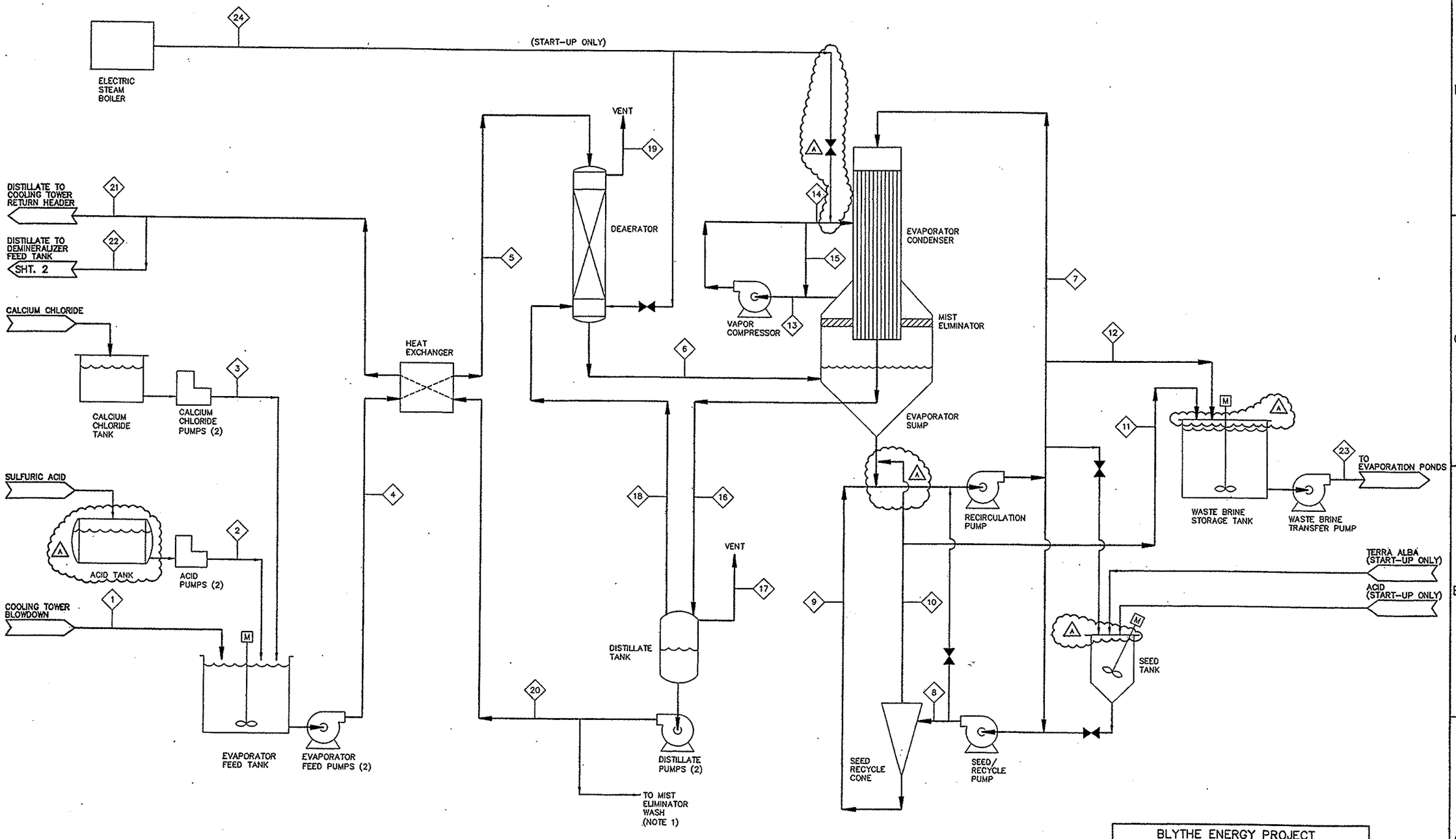


LTR	REVISIONS	BY	CHK	APP	DATE
A	ISSUE FOR CONSTRUCTION	DHJ	PJO	[illegible]	2/14/02

LTR	REVISIONS	BY	CHK	APP	DATE

PROPRIETARY
This drawing is the property of Resources Conservation Company and the information contained herein is proprietary information which is not to be disclosed to anyone without prior written consent of said company. This drawing is to be used exclusively for the purposes expressly authorized by Resources Conservation Company through its officers and qualified representatives and for no other purpose. Neither this drawing, nor any portion thereof, shall be reproduced without the prior written consent of said company, and any such reproduction shall bear this notice.
© 2002 Resources Conservation Company. All Rights Reserved.

REGISTERED PROFESSIONAL ENGINEER PETER J. DONATTER No. M22653 Exp. 11/30/03 MECHANICAL STATE OF CALIFORNIA

ENG RECORD	
DRAWN	D. JONES
CHECKED	T. O'NEAIL
PROJ ENGR	M. ZIMBERG
APPROVED	D. KANENAGA

DRAWING STATUS		
	ISSUED	DATE
PRELIMINARY		
FOR COMMENTS AND/OR APPROVAL	B. KASNITZ	11/5/01
APPROVED FOR CONSTRUCTION	B. KASNITZ	2/14/02
REVISED FOR CONSTRUCTION		

BLYTHE ENERGY PROJECT
PROJECT NUMBER: 19216

PROCESS FLOW DIAGRAM
BRINE CONCENTRATOR SYSTEM

WATER TREATMENT FACILITY

CUSTOMER ORDER NO. 01-3358

RESOURCES CONSERVATION COMPANY

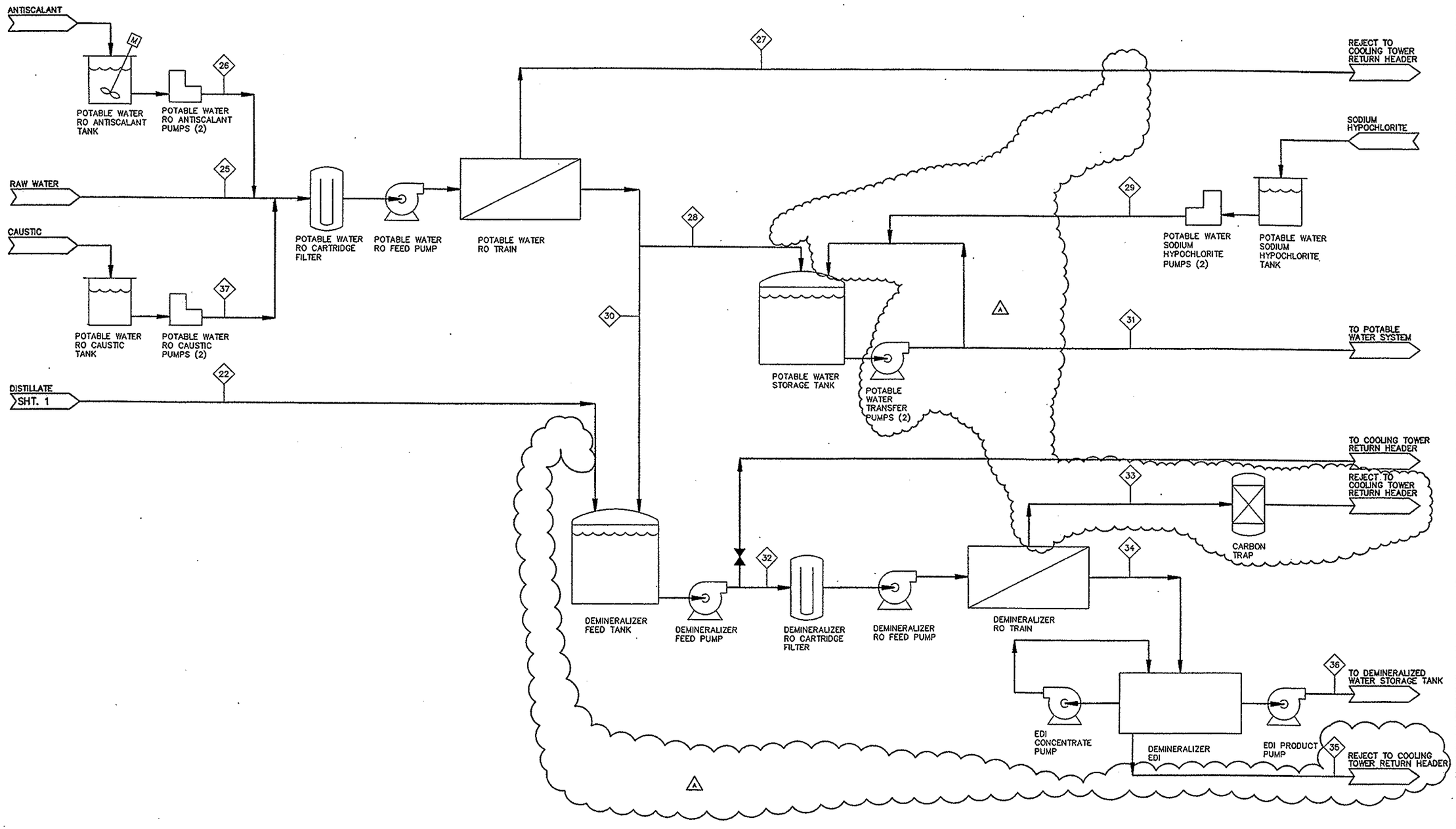
DRAWING NO. 858-M3-1

SHEET NO. 1 OF 3

SCALE -

REV A

19216-04D-X2458 P1



LTR	REVISIONS	BY	CHK	APP	DATE
A	ISSUE FOR CONSTRUCTION	DHJ	PJO	BKK	2/14/02

LTR	REVISIONS	BY	CHK	APP	DATE

REGISTERED PROFESSIONAL ENGINEER PETER J. DONSBERG No. M27658 Exp. 12/31/03 MECHANICAL STATE OF CALIFORNIA
STAMP 3/15/02

PROPRIETARY
This drawing is the property of Resources Conservation Company and the information contained herein is proprietary information which is not to be disclosed to anyone without prior written consent of said company. This drawing is to be used exclusively for the purposes expressly authorized by Resources Conservation Company through its officers and qualified representatives and for no other purpose. Neither this drawing, nor any portion thereof, shall be reproduced without the prior written consent of said company, and any such reproduction shall bear this notice.
© 2002 Resources Conservation Company. All Rights Reserved

ENG RECORD	
D. JONES	DRAWN
T. O'NEAIL	CHECKED
M. ZIMBERG	PROJ ENGR
D. KANENAGA	APPROVED

DRAWING STATUS		DATE
ISSUED		
PRELIMINARY	B. KASNITZ FOR COMMENTS AND/OR APPROVAL	11/5/01
	B. KASNITZ APPROVED FOR CONSTRUCTION (A)	2/14/02
	REVISE FOR CONSTRUCTION	

BLYTHE ENERGY PROJECT
PROJECT NUMBER: 19216

PROCESS FLOW DIAGRAM
POTABLE WATER/DEMINERALIZER SYSTEM

WATER TREATMENT FACILITY

CUSTOMER ORDER NO. 01-3358

RESOURCES CONSERVATION COMPANY

DRAWING NO. 858-M3-1
SHEET NO. 2
SCALE -
REV A

P2

STREAM NUMBER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
DESCRIPTION	COOLING TOWER BLOWDOWN	SULFURIC ACID	CALCIUM CHLORIDE	FEED HEAT EXCHANGER INLET	DEAERATOR INLET	DEAERATOR OUTLET	RECIRCULATING BRINE SLURRY	SEED RECYCLE FEED	SEED RECYCLE UNDERFLOW	SEED RECYCLE OVERFLOW	DISSOLVED SOLIDS BLOWDOWN	SUSPENDED SOLIDS BLOWDOWN	COMPRESSOR INLET	COMPRESSOR DISCHARGE	COMPRESSOR BYPASS
MASS FLOW, LB/HR	209,530	33	150	209,710	209,710	210,520	6,845,300	10,960	2,400	8,560	8,540	3,150	205,765	200,840	4,925
VOLUME FLOW, GPM	416	0.036	0.23	416	434	436	12,500	20	3.8	16.2	12.4	5.8	- - -	- - -	- - -
VOLUME FLOW, CFM	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	93,053	78,485	1,924
TOTAL DISSOLVED SOLIDS, MG/L	7,360	- - -	- - -	7,360	7,360	7,360	140,300	140,300	140,300	140,300	140,300	140,300	- - -	- - -	- - -
TOTAL SUSPENDED SOLIDS, MG/L	<35	- - -	- - -	<35	<35	<35	73,800	73,800	358,500	7,910	7,910	73,800	- - -	- - -	- - -
TEMPERATURE, DEGREE F	60	60	60	60	210	213	216	216	216	216	216	216	217	267	267
PRESSURE, PSIA	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	14.63	18.23	18.23
VISCOSITY, CENTIPOISE	1.17	22	1.43	1.17	0.29	0.29	0.52	0.52	2.25	0.50	0.50	0.52	0.013	0.014	0.014
SPECIFIC GRAVITY (REF H20 AT 60F)	1.007	1.840	1.314	1.007	0.965	0.964	1.095	1.095	1.261	1.058	1.058	1.095	0.0006	0.0007	0.0007
NOTES		93% H2SO4	30% CaCl2												

STREAM NUMBER	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
DESCRIPTION	DISTILLATE TANK INLET	DISTILLATE TANK VENT	DEAERATOR STRIPPING STEAM	DEAERATOR VENT	DISTILLATE HEAT EXCHANGER INLET	DISTILLATE TO COOLING TOWER	DISTILLATE TO DEMINERALIZER	WASTE TO EVAPORATION PONDS	MAKE-UP/ START-UP STEAM	POTABLE RO RAW WATER FEED	POTABLE RO ANTI-SCALANT	POTABLE RO REJECT TO COOLING TOWER	PERMEATE TO POTABLE WATER TANK	SODIUM HYPO-CHLORITE TO POTABLE WATER	PERMEATE TO DEMINERALIZER FEED TANK
MASS FLOW, LB/HR	200,840	1,190	1,860	1,050	197,790	197,790	0	9,690	0	49,235	0.48	12,345	5,024	0.03	31,902
VOLUME FLOW, GPM	- - -	- - -	- - -	- - -	414	396	0	18.1	- - -	98	0.0008	24.5	10	0.00008	63.5
VOLUME FLOW, CFM	- - -	440	689	457	- - -	- - -	- - -	- - -	0	- - -	- - -	- - -	- - -	- - -	- - -
TOTAL DISSOLVED SOLIDS, MG/L	- - -	- - -	- - -	- - -	<5	<5	<5	140,300	- - -	1,010	- - -	4,217	19	- - -	19
TOTAL SUSPENDED SOLIDS, MG/L	- - -	- - -	- - -	- - -	0	0	0	28,850	- - -	<5	0	0	0	0	0
TEMPERATURE, DEGREE F	222	222	222	213	222	64	64	216	250	55	60	55	55	60	55
PRESSURE, PSIA	17.93	- - -	- - -	15.07	- - -	- - -	- - -	- - -	29.5	- - -	- - -	- - -	- - -	- - -	- - -
VISCOSITY, CENTIPOISE	- - -	0.013	0.013	0.013	0.27	1.05	1.05	0.51	- - -	1.23	14	1.25	1.22	1.00	1.22
SPECIFIC GRAVITY (REF H20 AT 60F)	- - -	0.0007	0.0007	0.0006	0.954	0.998	0.998	1.070	- - -	1.004	1.169	1.007	1.004	1.20	1.004
NOTES	2-PHASE FLOW						NOTE 5		NOTE 2		35% ANTISCALANT NOTE 4		NOTE 5	12% NaOCl NOTE 6	NOTE 5

STREAM NUMBER	31	32	33	34	35	36	37
DESCRIPTION	POTABLE WATER TO USERS	DEMINERALIZER RO FEED	DEMINERALIZER RO REJECT TO COOLING TOWER	DEMINERALIZER RO PERMEATE TO EDI	EDI WASTE TO COOLING TOWER	EDI PRODUCT TO STORAGE TANK	CAUSTIC TO POTABLE RO
MASS FLOW, LB/HR	5,024	33,660	6,782	26,878	1,758	25,120	0.06
VOLUME FLOW, GPM	10	67	13.5	53.5	3.5	50	0.0001
VOLUME FLOW, CFM	- - -	- - -		- - -	- - -	- - -	- - -
TOTAL DISSOLVED SOLIDS, MG/L	19	19	126	<1	150	<0.2	- - -
TOTAL SUSPENDED SOLIDS, MG/L	0	0	0	0	0	0	- - -
TEMPERATURE, DEGREE F	55	55	55	55	55	55	60
PRESSURE, PSIA	- - -	- - -	- - -	- - -	- - -	- - -	- - -
VISCOSITY, CENTIPOISE	1.22	1.22	1.22	1.22	1.22	1.22	10
SPECIFIC GRAVITY (REF H20 AT 60F)	1.004	1.004	1.004	1.004	1.004	1.004	1.261
NOTES			NOTE 5	NOTE 5			25% NaOH NOTE 7

NOTE 1: MIST ELIMINATOR WASH SEQUENCE -- 5 MINUTE CYCLE FOR 10 SECONDS DURATION AT 2.9 GPM.

NOTE 2: START-UP STEAM REQUIRED TO HEAT CONTENTS OF THE UNIT.
START-UP FROM COLD SHUTDOWN: 2500 LB/HR FOR 24 HOURS.
START-UP FROM HOT STANDBY: MINIMAL.

NOTE 3: SITE ATMOSPHERIC PRESSURE IS 14.51 PSIA (350 FT. ABOVE MSL)

NOTE 4: SIZE PUMP/PIPING FOR MAXIMUM 0.001 GPM.

NOTE 5: SIZE PIPING FOR MAXIMUM 80 GPM.

NOTE 6: SIZE PUMP/PIPING FOR MAXIMUM 0.0006 GPM.

NOTE 7: SIZE PUMP/PIPING FOR MAXIMUM 0.001 GPM.

LTR	REVISIONS	BY	CHK	APP	DATE	LTR	REVISIONS	BY	CHK	APP	DATE
A	ISSUE FOR CONSTRUCTION	DHJ	PJD	DKH	2/14/02						

REGISTERED PROFESSIONAL ENGINEER PETER J. DORSETTE No. M32652 Exp. 12/31/03 MECHANICAL STATE OF CALIFORNIA 2/14/02

PROPRIETARY
This drawing is the property of Resources Conservation Company and the information contained herein is proprietary information which is not to be disclosed to anyone without prior written consent of said company. This drawing is to be used exclusively for the purposes expressly authorized by Resources Conservation Company through its officers and qualified representatives and for no other purpose. Neither this drawing, nor any portion thereof, shall be reproduced without the prior written consent of said company, and any such reproduction shall bear this notice.
© 2002 Resources Conservation Company. All Rights Reserved

ENG RECORD		DRAWING STATUS	
DRAWN	D. JONES	ISSUED	DATE
CHECKED	T. O'NEAIL	PRELIMINARY FOR COMMENTS AND/OR APPROVAL	11/5/01
PROJ ENGR	M. ZIMBERG MSZ	APPROVED FOR CONSTRUCTION	2/14/02
APPROVED	D. KANENAGA	REVISED FOR CONSTRUCTION	

BLYTHE ENERGY PROJECT
PROJECT NUMBER: 19216

MASS BALANCE DIAGRAM

WATER TREATMENT FACILITY

CUSTOMER ORDER NO. 01-3358

RESOURCES CONSERVATION COMPANY

DRAWING NO. 858-M3-1

SHEET NO. 3

SCALE -

REV A

File: 858-M3-103A Date/Time: February 14, 2002 8:35 a.m.

P3