

8/11/11 1:32 PM 02-F-233.dwg 8/11/11 1:32 PM 02-F-233.dwg

By: Burke, Zack File Location: P:\139000\139197 - Confidential - Sapphire IABR Design\CADD\2-SHEETS\P-PROCESS

Plot Date: 8/11/11

02-R-0901/02-R-1001/02-R-0902/02-R-1002
LOWER PRODUCTION PONDS

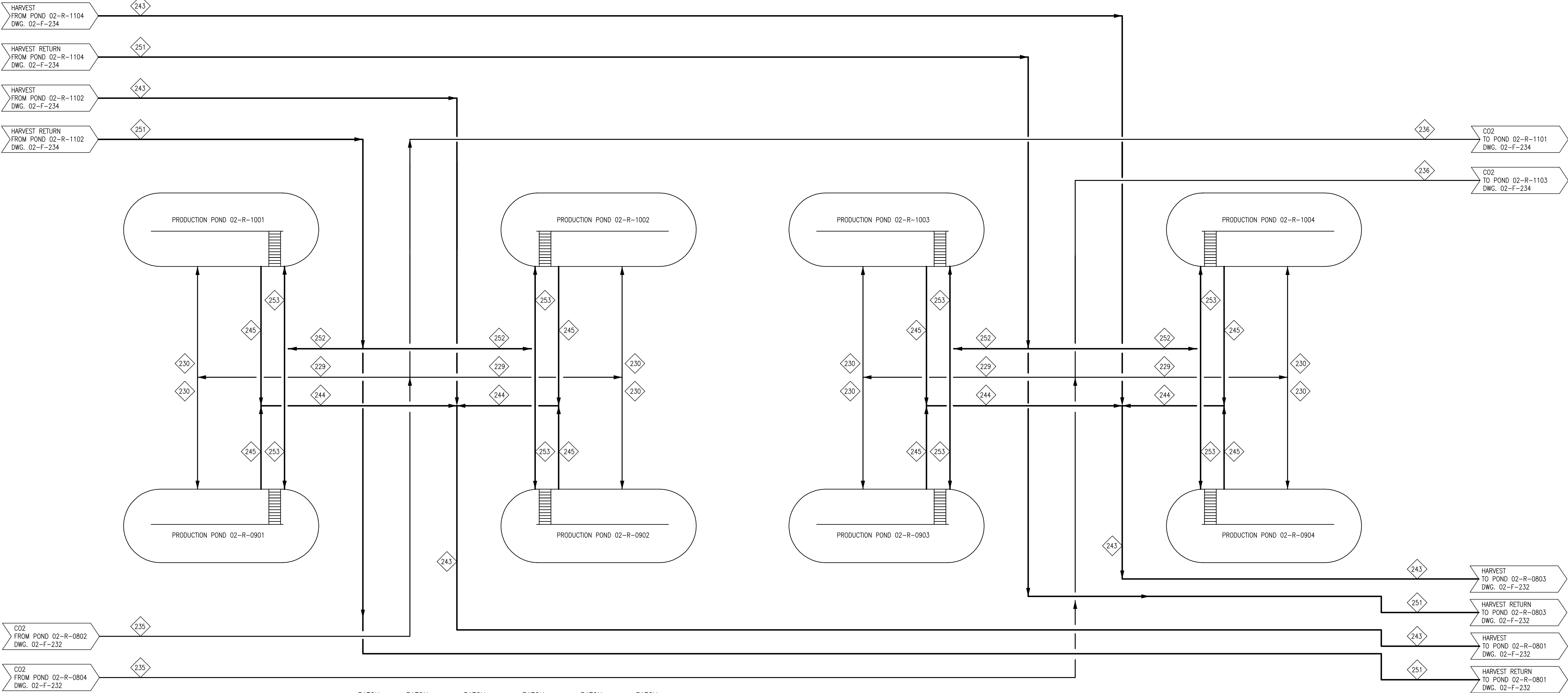
1.1 ACRES EA

02-R-0903/02-R-1003/02-R-0904/02-R-1004
LOWER PRODUCTION PONDS

1.1 ACRES EA

NOTES

1. STREAM DATA IS FOR PEAK FLOW.



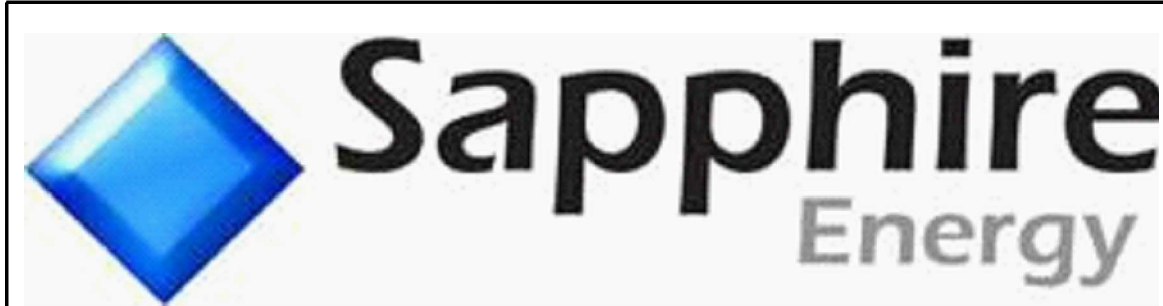
STREAM NO.		229	230	235	236	BATCH	BATCH	BATCH	BATCH	BATCH	BATCH
DESCRIPTION		CO2	CO2	CO2	CO2	243	244	245	251	252	253
						ALGAE HARVEST	ALGAE HARVEST	ALGAE HARVEST	HARVEST RETURN	HARVEST RETURN	HARVEST RETURN
FLOW	LB/HR	500	250	2,000	1,000	1,251,000	625,500	625,500	1,251,000	625,500	625,500
FLOW	GPM					2,500	1,250	1,250	2,500	1,250	1,250
TEMPERATURE	°F	60	60	60	60	68	68	68	68	68	68
PRESSURE	PSIA	15.6	15.6	136.6	136.6	12.6	12.6	12.6	12.6	12.6	12.6
VAPOR FRACTION		100	100	100	100	0	0	0	0	0	0
% SOLIDS IN AQ SOLNS		0	0	0	0	0.05	0.05	0.05	0.020	0.020	0.020
WATER	LB/HR	0	0	0	0	1,250,339	625,170	625,170	1,250,533	625,266	625,266
ALGAE OIL	LB/HR	0	0	0	0	0	0	0	0	0	0
ALGAE BIOMASS	LB/HR	0	0	0	0	589	295	295	203	102	102
ASH	LB/HR	0	0	0	0	71	36	36	47	24	24
CO2	LB/HR	500	250	2,000	1,000	0	0	0	0	0	0
UREA SOLUTION	LB/HR	0	0	0	0	0	0	0	193	96	96
PHOSPHORIC ACID	LB/HR	0	0	0	0	0	0	0	24	12	12
SULFURIC ACID	LB/HR	0	0	0	0	0	0	0	0	0	0
TOLUENE	LB/HR	0	0	0	0	0	0	0	0	0	0
METHANE	LB/HR	0	0	0	0	0	0	0	0	0	0
PROPANE	LB/HR	0	0	0	0	0	0	0	0	0	0
OXYGEN	LB/HR	0	0	0	0	0	0	0	0	0	0
NITROGEN	LB/HR	0	0	0	0	0	0	0	0	0	0
FLOCCULANT	LB/HR	0	0	0	0	0	0	0	0	0	0
COAGULANT	LB/HR	0	0	0	0	0	0	0	0	0	0



XXX DENOTES CHANGE IN STREAM TEMPERATURE ONLY. NO COMPOSITION CHANGE.
XXX DENOTES CHANGE IN STREAM PRESSURE ONLY. NO COMPOSITION CHANGE.

CONFIDENTIAL
CONTAINS PROPRIETARY INFORMATION OF SAPPHIRE ENERGY, INC. ACCESS LIMITED TO NEED TO KNOW. UNAUTHORIZED REPRODUCTION PROHIBITED.

ISSUED FOR CONSTRUCTION



Brown and Caldwell

201 NORTH CMC DRIVE, SUITE 115
WALNUT CREEK, CA 94596

Scale: AS SHOWN
PMgr: B. ZINN
Appr: M. GERHARDT
Drawn: Z. BURKE
Check: M. GERHARDT
Engr: M. GERHARDT
Check: L. SLEZAK

**SAPPHIRE ENERGY
SAN DIEGO
CALIFORNIA**

IABR Columbus, NM.

PROCESS FLOW DIAGRAMS

LOWER PRODUCTION PONDS 5

Project No: 139197
Drawing: 02-F-233
Rev: 0