

**APPENDIX C – PARADISE MATRIX OF OPERATIONAL FLOWS
FOR PAF 3 FGD ADDITION AND DBA/AA TOXICITY TESTING**

Paradise Matrix of Operational Flows for PAF 3 FGD Addition and DBA/AA Toxicity Testing								
JCAP DSN001 mgd Basis	FGD & DBA Basis	Units 1 & 2 FGD Effluent		Unit 3 FGD Effluent		JCAP mgd	% FGD in JCAP	mg/L DBA or AA
		FGD Effluent (mgd)	% Slurry Density	mgd	% Slurry Density			
Maximum mitigation using no extra water flow (38 mgd, pre-PAF Unit 3 addition and no thickeners on 1 & 2 FGD)	Pre-PAF Unit 3 FGD DBA without thickeners	3.3	12	0.0	----	38.0	8.7	69.5
	Pre-PAF Unit 3 FGD DBA with thickeners	0.7	15	0.0	----	37.3	1.8	14.6
	With PAF Unit 3 FGD DBA without thickeners	3.3	12	1.0	30	39.0	11.0	67.7
	With PAF Unit 3 FGD DBA with thickeners	0.7	15	1.0	30	38.3	4.4	14.2
Flow used for Aug/Sep pond testing (33 mgd, pre-PAF Unit 3 addition, no thickeners on 1 & 2 FGD, and max NPDES flows)	With PAF Unit 3 FGD DBA with Thickeners (assumed thickeners dropped discharge to 0.3 times 3.6 mgd)	1.08	29.5	1.2	30	31.7	7.2	28.3 (See Note #1)
Expected water flow (26 mgd, pre-PAF Unit 3 addition, no thickeners on 1 & 2 FGD)	Pre-PAF Unit 3 FGD DBA without thickeners	3.3	12	0.0	----	26.0	12.7	101.5
	Pre-PAF Unit 3 FGD DBA with thickeners	0.7	15	0.0	----	25.3	2.7	21.5
	With PAF Unit 3 FGD DBA without thickeners	3.3	12	1.0	30	27.0	15.9	97.8
	With PAF Unit 3 FGD DBA with thickeners	0.7	15	1.0	30	26.3	6.4	20.7
Low flow range (18 mgd, pre-PAF Unit 3 addition, no thickeners on 1 & 2 FGD)	Pre-PAF Unit 3 FGD DBA without thickeners	3.3	12	0.0	----	18.0	18.3	146.7
	Pre-PAF Unit 3 FGD DBA with thickeners	0.7	15	0.0	----	17.3	3.9	31.5
	With PAF Unit 3 FGD DBA without thickeners	3.3	12	1.0	30	19.0	22.6	138.9
	With PAF Unit 3 FGD DBA with thickeners	0.7	15	1.0	30	18.3	9.2	29.7
Unit 3 Off – extremely low flow range (12 mgd, pre-PAF Unit 3 addition, no thickeners on 1 & 2 FGD)	Pre-PAF Unit 3 FGD DBA without thickeners	3.3	12	0.0	----	12.0	27.5	220.0
	Pre-PAF Unit 3 FGD DBA with thickeners	0.7	15	0.0	----	11.3	6.0	48.2
	With PAF Unit 3 FGD DBA without thickeners	3.3	12	1.0	30	13.0	33.1	203.1
	With PAF Unit 3 FGD DBA with thickeners	0.7	15	1.0	30	12.3	13.7	44.3
Note: Some operation of Unit 3 fly ash pumps and/or stilling pumps would be required to get 12 mgd								
Note 1: The pond flows were set at the 7.2 percent FGD flow ratio that would be present after PAF Unit 3 FGD addition and with Units 1 & 2 discharging only 0.3 times 3.6 mgd due to addition of thickeners, with thickener discharge going straight to disposal with no additional dilution. Due to slightly higher-DBA concentration prior to PAF Unit 3 FGD going into operation, the DBA concentration was calculated without the 1.2 mgd PAF Unit 3 FGD flow.								
Note 2: Assume PAF Unit 3 FGD slurry discharge flow is 1.2 mgd								
Note 3: Assume thickener slurry density is 40 percent for Units 1 & 2.								