

APPENDIX **C**

SAS Code Used  
to Calculate PLL  
from  $K_d$ , TSS, DIN  
and DIP

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```

*calculate PLL;

*Z IS RESTORATION DEPTH IN METERS, vary among 1, 0.5, 0.25, & 0;
*halfgtr is half the greater tropic or diurnal tidal range in meters,
see listing in other table;

Z =1 + halfgtr;
OD = KD*Z;

*CALC BEM;
IF OD NE . THEN DO;
IF OD < 5.8 THEN BEM = 2.2 - (0.251*(OD**1.23));
ELSE BEM = 0.01;
END;

IF din ne . and din<(dip*7.2) then nutr =(din*71.4);
IF dip ne . and din>=(dip*7.2) then nutr = (dip*515.9);

KNOD = -2.32 * (1 - 0.031*(OD**1.42));

EPBIOSAV = BEM / (1 + (208*(nutr**KNOD)));

MGCHL = (EPBIOSAV * 5);

EPDWSAV = (0.832 * MGCHL) + (0.107 * TSS);

*NExt line had to be edited to avoid Div. by 0 error;

if epdwsav > 0 then CHLDW = MGCHL / EPDWSAV;

CHLCMSQ = MGCHL / 3.7;

KEXT = -0.07 - (0.322 * CHLDW**(-0.88));

PCT_REDU = EXP(KEXT * CHLCMSQ);

PLL = EXP((-Z * KD) + (KEXT * chlCMSQ));

*>>need the if statement for comparing pll to plw, otherwise can use second equation;
if (din ne . and dip ne . and tss ne .) then PLW = EXP(-Z*KD);
*PLW = EXP(-Z*KD);
*END OF PLL.FRAG;

```