

**Table 4-1
 Mid-channel
 DO Deficit
 Grid Average Calculations**

Calculated Grid Average - RM 4 to 20, Full depth					Calculated Grid Average - RM 13 to RM 16, Full depth				
River Mile Range	Date	DO Concentration (mg/L)	DO Deficit (mg/L)	DO Percent Saturation (%)	River Mile Range	Date	DO Concentration (mg/L)	DO Deficit (mg/L)	DO Percent Saturation (%)
Low Tide Event									
13-16	7/9/2007	-	-	-	13-16	7/9/2007	3.65	3.75	49.29
13-16	8/6/2007	-	-	-	13-16	8/6/2007	3.46	3.91	46.91
13-16	8/11/2007	-	-	-	13-16	8/11/2007	3.35	3.72	47.36
13-16	8/20/2007	-	-	-	13-16	8/20/2007	3.54	3.30	51.67
13-16	9/4/2007	-	-	-	13-16	9/4/2007	3.74	3.56	51.22
4-19	9/6/2007	4.32	2.94	59.5	4-19 Subset (13-16)	9/6/2007	4.12	3.22	56.1
4-19	9/7/2007	4.50	2.76	62.1	4-19 Subset (13-16)	9/7/2007	4.10	3.26	55.7
4-19	9/25/2007	4.41	3.02	59.5	4-19 Subset (13-16)	9/25/2007	3.93	3.64	51.9
13-16	9/26/2007	3.71	3.86	49.0	13-16	9/26/2007	3.68	3.90	48.6
High Tide Event									
13-16	7/16/2007	-	-	-	13-16	7/16/2007	3.46	3.91	46.91
13-16	8/14/2007	-	-	-	13-16	8/14/2007	3.71	3.19	53.81
13-16	8/27/2007	-	-	-	13-16	8/27/2007	3.67	3.22	53.23
13-16	9/10/2007	-	-	-	13-16	9/10/2007	4.14	3.02	57.86
4-19	9/13/2007	4.76	2.27	67.9	4-19 Subset (13-16)	9/13/2007	4.50	2.64	63.1
13-16	9/17/2007	-	-	-	13-16	9/17/2007	4.14	3.02	57.86
4-19	9/19/2007	5.32	1.74	75.4	4-19	9/19/2007	4.95	2.15	69.7

Notes:
 mg/L milligram per liter
 % Percent

Table 4-2
Cross Section Transect
Point Average Calculations

Transect	DATE	Tide Event	Average Point DO Percent Saturation (%)	Average Point DO Concentration (mg/L)	Average Point DO_Deficit (mg/L)	Count of points
T1	7/10/2007	low	50.08	3.71	3.70	14
T2	7/10/2007		48.05	3.56	3.84	14
T3	7/10/2007		50.16	3.73	3.69	14
T4	7/10/2007		51.65	3.84	3.59	14
T5	7/10/2007		52.01	3.86	3.55	14
Total Average	7/10/2007		50.39	3.74	3.67	
T1	7/17/2007	high	54.39	3.87	3.25	14
T2	7/17/2007		53.45	3.83	3.33	14
T3	7/17/2007		53.74	3.84	3.30	14
T4	7/17/2007		54.15	3.90	3.30	14
T5	7/17/2007		53.34	3.85	3.37	14
Total Average	7/17/2007		53.81	3.86	3.31	
T1	8/7/2007	low	46.29	3.35	3.88	14
T2	8/7/2007		47.89	3.51	3.81	14
T3	8/7/2007		46.16	3.39	3.94	14
T4	8/7/2007		47.80	3.52	3.83	14
T5	8/7/2007		47.92	3.53	3.82	14
Total Average	8/7/2007		47.21	3.46	3.86	
T1	8/10/2007	low	44.69	3.19	3.95	14
T2	8/10/2007		49.36	3.56	3.63	14
T3	8/10/2007		44.41	3.17	3.96	14
T4	8/10/2007		45.53	3.26	3.89	14
T5	8/10/2007		45.99	3.30	3.86	14
Total Average	8/10/2007		46.00	3.30	3.86	
T1	8/13/2007	high	56.14	3.87	3.02	14
T2	8/13/2007		55.49	3.82	3.07	14
T3	8/13/2007		58.19	4.01	2.88	14
T4	8/13/2007		55.00	3.80	3.11	14
T5	8/13/2007		54.01	3.76	3.20	14
Total Average	8/13/2007		55.77	3.85	3.06	
T1	8/21/2007	low	55.06	3.77	3.07	14
T2	8/21/2007		57.43	3.94	2.91	14
T3	8/21/2007		57.07	3.89	2.92	14
T4	8/21/2007		54.56	3.75	3.11	14
T5	8/21/2007		55.88	3.85	3.03	14
Total Average	8/21/2007		56.00	3.84	3.01	
T1	8/28/2007	high	50.99	3.52	3.38	14
T2	8/28/2007		50.54	3.50	3.42	14
T3	8/28/2007		53.52	3.70	3.21	14
T4	8/28/2007		51.64	3.58	3.35	14
T5	8/28/2007		50.63	3.52	3.43	14
Total Average	8/28/2007		51.46	3.56	3.36	
T1	9/5/2007	low	49.44	3.65	3.73	14
T2	9/5/2007		54.88	4.06	3.33	14
T3	9/5/2007		51.97	3.83	3.54	14
T4	9/5/2007		55.04	4.07	3.33	14
T5	9/5/2007		54.76	4.03	3.33	14
Total Average	9/5/2007		53.22	3.93	3.45	

Table 4-2
Cross Section Transect
Point Average Calculations

Transect	DATE	Tide Event	Average Point DO Percent Saturation (%)	Average Point DO Concentration (mg/L)	Average Point DO_Deficit (mg/L)	Count of points
T1	9/11/2007	high	60.03	4.32	2.88	14
T2	9/11/2007		60.32	4.36	2.87	14
T3	9/11/2007		61.26	4.43	2.80	14
T4	9/11/2007		59.23	4.32	2.97	14
T5	9/11/2007		58.09	4.24	3.06	14
Total Average	9/11/2007		59.79	4.33	2.92	
T1	9/18/2007	high	63.66	4.59	2.62	14
T2	9/18/2007		64.14	4.62	2.58	14
T3	9/18/2007		63.21	4.54	2.64	14
T4	9/18/2007		63.35	4.58	2.65	14
T5	9/18/2007		63.99	4.64	2.61	14
Total Average	9/18/2007		63.67	4.59	2.62	
T1	9/24/2007	low	52.04	3.90	3.59	14
T2	9/24/2007		51.15	3.84	3.67	14
T3	9/24/2007		50.08	3.77	3.76	14
T4	9/24/2007		50.32	3.80	3.75	14
T5	9/24/2007		51.01	3.86	3.70	14
Total Average	9/24/2007		50.92	3.83	3.69	

Notes:

mg/L milligrams per liter
 % percent

**Table 5-1
 ReOx Station Installation ROM Cost Estimate**

Data Release : Year 2007

Description	Well Option		Above Ground Option	
	Liquid Oxygen	Oxygen Generator	Liquid Oxygen	Oxygen Generator
Speece Cone	\$720,000	\$720,000	\$720,000	\$720,000
Oxygen Generator	Not Applicable	\$125,000	Not Applicable	\$125,000
Compressor	Not Applicable	\$10,000	Not Applicable	\$10,000
Air Dryer	Not Applicable	\$5,000	Not Applicable	\$5,000
Liquid Oxygen (installation of tank & evaporator only)	\$50,000	Not Applicable	\$50,000	Not Applicable
Concrete Slab	\$180,000	\$125,000	\$180,000	\$125,000
Concrete Well	\$500,000	\$500,000	\$50,000	\$50,000
Pumps (2 per cone)	\$185,000	\$185,000	\$185,000	\$185,000
Piping	\$80,000	\$80,000	\$80,000	\$80,000
Electrical	\$125,000	\$200,000	\$125,000	\$200,000
Cofferdam	\$1,856,000	\$1,856,000	\$75,000	\$75,000
Contengency (30%)	\$1,108,800	\$1,141,800	\$439,500	\$472,500
Total	\$4,804,800	\$4,947,800	\$1,904,500	\$2,047,500

Prepared by: DGU 11/19/07

Checked by: SAL 11/19/07

Notes:

1. This estimate based on Costs provided by RS Means Costworks 2007 and actual vendor pricing where possible. These costs are preliminary in nature and are intended to give a rough order of magnitude (ROM) for construction of the two types of facilities. Actual costs may differ depending on location, existing conditions, and unknown elements not yet included in the proposed design.
2. Temporary dam for construction of well will need to be designed, as placement in the river at bottom depth exceeds design limits on prefabricated cofferdams. Cost here is conceptual, based on known elements required to allow excavtion and construction of the well. Costs may vary considerably once an actual site specific designs are developed.

**Table 5-2
 Annual Operations and Maintenance ROM Cost Estimate**

Projected Yearly Costs per Cone		
	Oxygen Generator	Liquid Oxygen
Maintenance		
Motors	\$1,320	\$1,320
Pump	\$1,320	\$1,320
Oxygen Generator	\$1,320	\$0
Compressor	\$1,320	\$0
Screen	\$3,119	\$3,119
Building	\$1,361	\$1,361
Subtotal	\$8,442	\$5,801
Operation		
Pump	\$5,500	\$5,500
Lighting	\$1,500	\$1,500
Oxygen Generator	\$3,500	\$0
Liquid Oxygen	\$0	\$92,120
Subtotal	\$10,500	\$99,120
25% Contengency	\$4,735	\$26,230
Total Estimated Yearly Expense	\$23,677	\$131,151

Notes:

1. Cost are based on RS Means Costwork 2007 where possible and inteded to provide a rough order of magnitude (ROM) annual operations cost estimate
2. Maintenance costs based on national averages for state employees. Costs also assume standard maintenance for a three (3) month period during operations.
3. Screen costs reflect cost of diver and crew to clean and service fish screen. Also includes 2 additional dives for service during operation and are based on national average wage rates
4. Electrical costs are representative of normal operations using current pricing structure
5. Liquid oxygen based on 15,000 pounds per day and include the use of temporary tank and evaporater provided by oxygen supplier.