

APPENDIX H

OPCC Lake Kachess Inactive Storage

APPENDIX H.1

OPCC Lake Kachess Inactive Storage - Alternative 1

**Yakima River Basin Water Storage Study
Kachess Inactive Storage
Alternate 1 - Tunnel to Yakima**

**US Department of the Interior
Bureau of Reclamation
Pacific Northwest Region**

HDR Engineering, Inc

9/20/2010

**Appraisal
3rd Qtr 2010 Union
Open Competition**

This Feature involves modifying the existing natural lake reservoir so that water can be taken at depths below the current minimum pool elevation. This would be the equivalent of enlarging the reservoir without requiring additional land to be inundated, allows the current reservoir to remain operational during much of the construction process, and is less costly than enlarging the existing reservoir. Alternative one would be a tunnel aligned from the portal next to the lake approximately 24,200 ft southeast and downstream to a discharge into the Yakima River through a portal next to the river. A 20 cfs pump station would be constructed in the lakeside portal as a minimum in stream flow to the Kachess River.

AACE Classification Accuracy Range

Upper Range +40%

Lower Range -20%

Labor Rate Table - 3rd Qtr 2010 Union
 Equipment Rate Table - 3rd Qtr 2010
 City Index - 989-WA-YAKIMA

Feature Estimate Summary Report

Description	Quantity		Labor	Material	Subcontract	Equipment	Other	Total
			Amount	Amount	Amount	Amount	Amount	Amount
01_TUNNEL	2,900.00	LF	355,388	2,730,509	9,441,731	381,771		12,909,399
02_PUMP STATION	1.00	LS	1,619,413	3,833,789	9,581,981	187,327	106,000	15,328,510
03_PIPELINE	1.00	LS	1,088,045	645,082		1,389,124		3,122,252
04_TUNNEL	24,200.00	LF			85,996,593			85,996,593
05_YR DISCHARGE	1.00	LS	1,904,497	1,700,480		884,402		4,489,379
06_KR DISCHARGE	1.00	LS	129,571	106,138	326,620	23,981		586,311

Upper Range +40%

AACE Classification Accuracy Range

Lower Range -20%

Feature Estimate Summary Report

Estimate Totals

Description	Amount	Totals	Rate
Labor	5,096,915		
Material	9,015,998		
Subcontract	105,346,925		
Equipment	2,866,606		
Other	106,000		
Subtotal		122,432,444	
Contractor's Fld Ovhd	4,897,298		4.000 %
Mobilization	2,448,649		2.000 %
Subtotal w/ mobilization		129,778,391	
Unlisted Items Minor	4,862,604		4.000 %
Design and Scope Changes Minor	4,862,604		4.000 %
Cost Est Refinements Minor	2,431,302		2.000 %
Contractor's Fee	11,354,792		8.000 %
Contractor's Bonds & Insurance	2,129,023		1.500 %
Procurement Strategy-Open Comp			
Contract Cost		155,418,716	
Contingencies	38,854,679		25.000 %
Field Cost		194,273,395	
Sales Tax Estimate (Mat & Eq)	969,982		8.200 %
Escal to NTP (NOTINCL)			

Estimate Totals

Forecasted Feature Bid

195,243,377

Upper Range +40%

AACE Classification Accuracy Range

Lower Range -20%

**Yakima River Basin Water Storage Study
Kachess Inactive Storage
Alternate 1 - Tunnel to Yakima**

**US Department of the Interior
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9/20/2010

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Alternative one would be a tunnel aligned from the portal next to the lake approximately 24,200 ft southeast and downstream to a discharge into the Yakima River through a portal next to the river. A 20 cfs pump station would be constructed in the lakeside portal as a minimum in stream flow to the Kachess River.

989-WA-YAKIMA

AACE Classification Accuracy Range

Upper Range +40%

Lower Range -20%

Labor Rate Table - 3rd Qtr 2010 Union
Equipment Rate Table -3rd Qtr 2010
City Index - 989-WA-YAKIMA

			Total	
Description	Quantity	Unit Cost	Amount	
01_TUNNEL LAKE KACHESS OUTLET TO PUMP STATION				
DIVISION 02 SITE CONSTRUCTION				
02400.100	Tunneling Lake Inlet to Pump Station	1.00 ls	9,216,731.00 /ls	9,216,731
<i>Tunnel from Lake Kachess Outlet to Pump Station; includes but not limited to shaft, tunnel, rock trap, and rock plug</i>				
DIVISION 02 SITE CONSTRUCTION			9,216,731.00 /ls	9,216,731
1.00 ls				
DIVISION 13 SPECIAL CONSTRUCTION				
13300.000	Fish Screens - SS Wedge Wire Cylinders	1,000.00 cfs	3,692.67 /cfs	3,692,668
<i>1000cfs fish screen, 7'dia x 26' long(4ea), mounted on 20' dia. SS Pipe grouted into rock lake bottom</i>				
DIVISION 13 SPECIAL CONSTRUCTION			3,692,668.38 /ls	3,692,668
1.00 ls				
7,936.000	Labor hours			
3,392.00	Equipment hours			
01_TUNNEL LAKE KACHESS OUTLET TO PUMP STATION			4,451.52 /LF	12,909,399
2,900.00 LF				
7,936.000 Labor hours				
3,392.00 Equipment hours				

02_PUMP STATION PUMP STATION_20 CFS

DIVISION 02 SITE CONSTRUCTION				
02400.200	Pump Station Shaft	1.00 ls	4,183,831.00 /ls	4,183,831
<i>70' diameter</i>				

Labor Rate Table - 3rd Qtr 2010 Union
Equipment Rate Table -3rd Qtr 2010
City Index - 989-WA-YAKIMA

			Total	
Description	Quantity	Unit Cost	Unit Cost	Amount
02513.000 Asphaltic Concrete Vehicular Paving	2,670.00 sy	33.941/sy		90,621
DIVISION 02 SITE CONSTRUCTION			4,274,452.27 /ls	4,274,452
1.00 Is 259.19 Labor hours 130.04 Equipment hours				
DIVISION 03 CONCRETE				
03002.111 20cfs Valve Vault_Concrete_Foundations	19.00 cy	401.18 /cy		7,622
<i>Excavation included in Div 15</i>				
03002.300 Concrete_Walls Exterior	6,529.00 cy	375.19 /cy		2,449,610
03002.311 20cfs Valve Vault_Concrete_Walls Exterior	83.00 cy	508.90 /cy		42,238
03002.600 Concrete_Elevated Slab	2,276.00 cy	369.88 /cy		841,835
03002.611 20cfs Valve Vault_Concrete_Elevated Slab	9.00 cy	538.272/cy		4,844
03002.700 Concrete_Slab on Grade	304.00 cy	338.59 /cy		102,931
03002.825 Concrete_Stairs	32.00 cy	1,075.78 /cy		34,425
05900.000 Miscellaneous Metal	1.00 ls	4,077.83 /ls		4,078
DIVISION 03 CONCRETE			381.532/cy	3,487,584
9,141.00 cy 30,771.534 Labor hours 2,400.484 Equipment hours				
DIVISION 05 METALS				
05505.000 Metal Fabrications	1.00 LS	5,316.19 /LS		5,316
05522.000 Aluminum Railings	550.00 LF	120.87 /LF		66,479
DIVISION 05 METALS			71,794.81 /ls	71,795
1.00 Is 293.332 Labor hours				
DIVISION 08 DOORS & WINDOWS				
08305.000 Access Doors	10.00 EA	2,939.51 /EA		29,395

AACE Classification Accuracy Range

Upper Range +40%

Lower Range -20%

Labor Rate Table - 3rd Qtr 2010 Union
Equipment Rate Table -3rd Qtr 2010
City Index - 989-WA-YAKIMA

			Total	
Description	Quantity		Unit Cost	Amount
083450.50	1.00	EA	23,154.57 /EA	23,155
DIVISION 08 DOORS & WINDOWS			52,549.62 /Is	52,550
1.00 Is				
67.56	Labor hours			
8.00	Equipment hours			
DIVISION 11 EQUIPMENT				
11065.000	1.00	ea	168,543.32 /ea	168,543
11072.000	2.00	ea	472,214.19 /ea	944,428
Pumping Equipment: Sump				
Pumping Equipment: Vertical Turbine (Line Shaft)				
DIVISION 11 EQUIPMENT			1,112,971.69 /Is	1,112,972
1.00 Is				
449.000	Labor hours			
74.833	Equipment hours			
DIVISION 13 SPECIAL CONSTRUCTION				
13020.000	1.00	Is	1,204,000.00 /Is	1,204,000
Building Modules				
DIVISION 13 SPECIAL CONSTRUCTION			1,204,000.00 /Is	1,204,000
1.00 Is				
DIVISION 15 MECHANICAL				
02221.000	1,046.00	cy	65.09 /cy	68,079
Trenching, Backfilling and Compacting for Utilities				
<i>Includes excavation for valve vault</i>				
15062.000	1.00	If	42,919.88 /If	42,920
15103.000	4.00	ea	8,583.42 /ea	34,334
15115.000	3.00	ea	247,225.733/ea	741,677
15190.010	4.00	ea	1,856.96 /ea	7,428
Pipe Expansion Joints - Bellows Style				
DIVISION 15 MECHANICAL			894,437.57 /Is	894,438
1.00 Is				
2,503.162	Labor hours			
939.282	Equipment hours			

AACE Classification Accuracy Range

Upper Range +40%

Lower Range -20%

Labor Rate Table - 3rd Qtr 2010 Union
Equipment Rate Table -3rd Qtr 2010
City Index - 989-WA-YAKIMA

Estimate Pay Item Report

				Total	
Description	Quantity	Unit Cost		Unit Cost	Amount
DIVISION 16 ELECTRICAL					
16000.100 Electrical Subcontractor	1.00 ls	394,150.00 /ls			394,150
<i>Pump Station, Discharge Control Building/ Electrical_I&C.</i>					
16000.210 Electrical Subcontractor - Substation Power Feed with Relays	4.00 mile	950,000.00 /mile			3,800,000
<i>Allowance assumes the Power Supplier will perform the cut in at the existing source, ROW cost is not included in the allowance. Assumed distance 4 miles, all pumps are 4160 V, 3 phase. Normal operation for 2, 1200 Hp motors to be operating.</i>					
16230.000 Engine Generator: Diesel	1.00 ls	36,569.34 /ls			36,569
<i>Backup power for emergency functions not for pump operation. Pad included.</i>					
DIVISION 16 ELECTRICAL				4,230,719.34 /LS	4,230,719
<p>1.00 LS 51.282 Labor hours 10.26 Equipment hours</p>					
02_PUMP STATION PUMP STATION_20 CFS				15,328,509.62 /LS	15,328,510
<p>1.00 LS 34,395.054 Labor hours 3,562.90 Equipment hours</p>					
03_PIPELINE PIPELINE_20" FROM PUMP STATION TO KACHESS RIVER DISCHARGE					
DIVISION 01 GENERAL REQUIREMENTS					
01300.000 Administrative Requirements	1.00 ls	21,221.15 /ls			21,221
DIVISION 01 GENERAL REQUIREMENTS				21,221.15 /ls	21,221
<p>1.00 ls 397.87 Labor hours 99.47 Equipment hours</p>					
DIVISION 02 SITE CONSTRUCTION					

AACE Classification Accuracy Range

Upper Range +40%

Lower Range -20%

Labor Rate Table - 3rd Qtr 2010 Union
Equipment Rate Table -3rd Qtr 2010
City Index - 989-WA-YAKIMA

Description		Quantity	Unit Cost	Amount
			Total	
02110.000	Site Clearing	7.46 acre	9,059.042/acre	67,580
<i>Includes 6500LF @ 50FT wide</i>				
02930.000	Seeding, Sodding, and Landscaping	7.46 acre	974.052/acre	7,266
DIVISION 02 SITE CONSTRUCTION			74,846.88 /ls	74,847
1.00 Is				
730.47	Labor hours			
559.930	Equipment hours			
DIVISION 15 MECHANICAL				
02221.000	Trenching, Backfilling and Compacting for Utilities	40,925.00 cy	50.133/cy	2,051,710
<i>Includes excavation for valve vault</i>				
15062.000	Pipe: Ductile	6,599.00 lf	147.67 /lf	974,474
DIVISION 15 MECHANICAL			3,026,183.58 /ls	3,026,184
1.00 Is				
21,067.615	Labor hours			
19,326.58	Equipment hours			
03_PIPELINE PIPELINE_20" FROM PUMP STATION TO KACHESS RIVER DISCHARGE			3,122,251.61 /LS	3,122,252
1.00 LS				
22,195.95	Labor hours			
19,985.974	Equipment hours			
04_TUNNEL TUNNEL FROM PUMP STATION TO YAKIMA RIVER				
DIVISION 02 SITE CONSTRUCTION				
02400.300	Tunnel Main	24,200.00 lf	3,553.58 /lf	85,996,593
DIVISION 02 SITE CONSTRUCTION			85,996,593.000/ls	85,996,593
1.00 Is				

Labor Rate Table - 3rd Qtr 2010 Union
Equipment Rate Table -3rd Qtr 2010
City Index - 989-WA-YAKIMA

			Total	
Description	Quantity		Unit Cost	Amount
04_TUNNEL TUNNEL FROM PUMP STATION TO YAKIMA RIVER			3,553.58 /LF	85,996,593
	24,200.00 LF			
05_YR DISCHARGE YAKIMA RIVER DISCHARGE STRUCTURE				
DIVISION 02 SITE CONSTRUCTION				
02360.000	Cofferdam	3,000.00 sf	22.924/sf	68,773
DIVISION 02 SITE CONSTRUCTION			68,773.240/ls	68,773
1.00 Is				
584.34	Labor hours			
292.17	Equipment hours			
DIVISION 03 CONCRETE				
02200.000	Earthwork	46,998.00 cy	24.86 /cy	1,168,152
<i>Hauling to stockpile 20 mile RT</i>				
03002.100	Concrete_Foundations	4,709.00 cy	391.17 /cy	1,842,001
03002.300	Concrete_Walls Exterior	1,379.00 cy	740.711/cy	1,021,441
03002.600	Concrete_Elevated Slab	556.00 cy	512.912/cy	285,179
03002.700	Concrete_Slab on Grade	194.00 cy	383.06 /cy	74,313
03002.835	Concrete Spillway	28.00 cy	1,054.304/cy	29,521
DIVISION 03 CONCRETE			641.23 /cy	4,420,606
6,894.00 cy				
40,460.75	Labor hours			
10,607.31	Equipment hours			
05_YR DISCHARGE YAKIMA RIVER DISCHARGE STRUCTURE			4,489,379.10 /LS	4,489,379
	1.00 LS			
41,045.09	Labor hours			
10,899.48	Equipment hours			

AACE Classification Accuracy Range

Upper Range +40%

Lower Range -20%

Labor Rate Table - 3rd Qtr 2010 Union
Equipment Rate Table -3rd Qtr 2010
City Index - 989-WA-YAKIMA

			Total	
Description	Quantity	Unit Cost	Unit Cost	Amount
06_KR DISCHARGE KACHESS RIVER DISCHARGE STRUCTURE				
DIVISION 02 SITE CONSTRUCTION				
02360.000	Cofferdam	3,000.00 sf	22.924/sf	68,773
02513.000	Asphaltic Concrete Vehicular Paving	667.50 sy	24.44 /sy	16,310
02930.000	Seeding, Sodding, and Landscaping	1.00 acre	25,250.00 /acre	25,250
DIVISION 02 SITE CONSTRUCTION			110,333.52 /ls	110,334
1.00 Is				
632.81	Labor hours			
313.23	Equipment hours			
DIVISION 03 CONCRETE				
03002.100	Concrete_Foundations	89.00 cy	476.523/cy	42,411
03002.300	Concrete_Walls Exterior	77.00 cy	739.94 /cy	56,975
03002.600	Concrete_Elevated Slab	44.00 cy	517.06 /cy	22,751
03002.700	Concrete_Slab on Grade	59.00 cy	388.992/cy	22,951
03002.835	Concrete Spillway	28.00 cy	1,054.304/cy	29,521
DIVISION 03 CONCRETE			641.94 /cy	174,607
272.00 cy				
2,115.78	Labor hours			
182.265	Equipment hours			
DIVISION 13 SPECIAL CONSTRUCTION				
13020.000	Building Modules	1.00 Is	56,250.00 /ls	56,250
DIVISION 13 SPECIAL CONSTRUCTION			56,250.00 /ls	56,250
1.00 Is				
DIVISION 16 ELECTRICAL				
16000.100	Electrical Subcontractor			245,120
Pump Station, Discharge Control Building/ Electrical_I&C.				

AACE Classification Accuracy Range

Upper Range +40%

Lower Range -20%

Labor Rate Table - 3rd Qtr 2010 Union
 Equipment Rate Table -3rd Qtr 2010
 City Index - 989-WA-YAKIMA

Description	Quantity	Unit Cost	Total
			Amount
DIVISION 16 ELECTRICAL			245,120
06_KR DISCHARGE KACHESS RIVER DISCHARGE STRUCTURE		586,310.65 /LS	586,311
1.00 LS			
2,748.59	Labor hours		
495.492	Equipment hours		

Labor Rate Table - 3rd Qtr 2010 Union
 Equipment Rate Table -3rd Qtr 2010
 City Index - 989-WA-YAKIMA

Estimate Pay Item Report

Estimate Totals

Description	Amount	Totals	Rate
Labor	5,096,915		
Material	9,015,998		
Subcontract	105,346,925		
Equipment	2,866,606		
Other	106,000		
Subtotal		122,432,444	
Contractor's Fld Ovhd	4,897,298		4.000 %
Mobilization	2,448,649		2.000 %
Subtotal w/ mobilization		129,778,391	
Unlisted Items Minor	4,862,604		4.000 %
Design and Scope Changes Minor	4,862,604		4.000 %
Cost Est Refinements Minor	2,431,302		2.000 %
Contractor's Fee	11,354,792		8.000 %
Contractor's Bonds & Insurance	2,129,023		1.500 %
Procurement Strategy-Open Comp			
Contract Cost		155,418,716	
Contingencies	38,854,679		25.000 %
Field Cost		194,273,395	
Sales Tax Estimate (Mat & Eq)	969,982		8.200 %

AACE Classification Accuracy Range

Upper Range +40%

Lower Range -20%

Estimate Pay Item Report

Estimate Totals

Escal to NTP (NOTINCL)
Forecasted Feature Bid

195,243,377

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APPENDIX H.2

OPCC Lake Kachess Inactive Storage - Alternative 2

**Yakima River Basin Water Storage Study
Kachess Inactive Storage
Alternative 2 - 1000 cfs Pump Station to the Kachess River**

**US Department of the Interior
Bureau of Reclamation
Pacific Northwest Region**

HDR Engineering, Inc

8/16/2010

**Appraisal
3rd Qtr 2010 Union
Open Competition**

This Feature involves modifying the existing natural lake reservoir so that water can be taken at depths below the current minimum pool elevation. This would be the equivalent of enlarging the reservoir without requiring additional land to be inundated, allows the current reservoir to remain operational during much of the construction process, and is less costly than enlarging the existing reservoir. Alternative two would be a 1000 cfs pump station located in the portal next to the lake. The pump station would pump water from the shorter lake tap tunnel through a 6500 lf pipeline aligned to the southwest to discharge in to the Kachess River downstream of the existing Kachess Dam outlet channel. The pump station would also include 20 cfs pumps to provide a minimum in stream flow to the Kachess River.

Upper Range +40%

AACE Classification Accuracy Range

Lower Range -20%

Labor Rate Table - 3rd Qtr 2010 Union
 Equipment Rate Table - 3rd Qtr 2010
 City Index - 989-WA-YAKIMA

Feature Estimate Summary Report

Description	Quantity		Labor	Material	Subcontract	Equipment	Other	Total
			Amount	Amount	Amount	Amount	Amount	Amount
01_TUNNEL	2,900.00	LF	355,388	2,730,509	9,441,730	381,771		12,909,398
02_PUMP STATION	1.00	LS	5,088,850	52,333,003	20,811,525	961,518	56,000	79,250,896
03_PIPELINE	6,500.00	LF	2,701,729	6,641,615	650,000	4,521,180		14,514,524
04_KR DISCHARGE	1.00	LS	435,614	363,187	349,250	195,350		1,343,400

Upper Range +40%

AACE Classification Accuracy Range

Lower Range -20%

Feature Estimate Summary Report

Estimate Totals

Description	Amount	Totals	Rate
Labor	8,581,581		
Material	62,068,314		
Subcontract	31,252,505		
Equipment	6,059,818		
Other	56,000		
Subtotal		108,018,218	
Contractor's Fld Ovhd	4,320,729		4.000 %
Mobilization	2,160,364		2.000 %
Subtotal w/ mobilization		114,499,311	
Unlisted Items Minor	4,237,050		4.000 %
Design and Scope Changes Minor	4,237,050		4.000 %
Cost Est Refinements Minor	2,118,525		2.000 %
Contractor's Fee	7,505,516		6.000 %
Contractor's Bonds & Insurance	1,876,379		1.500 %
Procurement Strategy-Open Comp			
Contract Cost		134,473,831	
Contingencies	33,618,458		25.000 %
Field Cost		168,092,289	
Sales Tax Estimate (Mat & Eq)	5,527,320		8.200 %
Escal to NTP (NOTINCL)			

Estimate Totals

Forecasted Feature Bid

173,619,609

Upper Range +40%

AACE Classification Accuracy Range

Lower Range -20%

**Yakima River Basin Water Storage Study
Kachess Inactive Storage
Alternative 2 - 1000 cfs Pump Station to the Kachess River**

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989-WA-YAKIMA

AACE Classification Accuracy Range

Upper Range +40%

Lower Range -20%

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Equipment Rate Table -3rd Qtr 2010
City Index - 989-WA-YAKIMA

				Total	
Description	Quantity	Unit Cost		Unit Cost	Amount
01_TUNNEL LAKE KACHESS OUTLET TO PUMP STATION					
<hr/>					
DIVISION 02	SITE CONSTRUCTION				
02400.100	Tunneling Lake Inlet to Pump Station	1.00 ls		9,216,730.00 /ls	9,216,730
<i>Tunnel from Lake Kachess Outlet to Pump Station; includes but not limited to shaft, tunnel, rock trap, and rock plug</i>					
DIVISION 02 SITE CONSTRUCTION				9,216,730.00 /ls	9,216,730
1.00 ls					
DIVISION 13	SPECIAL CONSTRUCTION				
13300.000	Fish Screens - SS Wedge Wire Cylinders	1.00 ls		3,692,668.38 /ls	3,692,668
<i>1000cfs fish screen, 7'dia x 26' long(4ea), mounted on 20' dia. SS Pipe grouted into rock lake bottom</i>					
DIVISION 13 SPECIAL CONSTRUCTION				3,692,668.38 /sf	3,692,668
1.00 sf					
7,936.000	Labor hours				
3,392.00	Equipment hours				
01_TUNNEL LAKE KACHESS OUTLET TO PUMP STATION				4,451.52 /LF	12,909,398
2,900.00 LF					
7,936.000	Labor hours				
3,392.00	Equipment hours				

02_PUMP STATION PUMP STATION_1,000 CFS

DIVISION 02	SITE CONSTRUCTION				
02400.200	Pump Station Shaft	1.00 ls		8,251,335.00 /ls	8,251,335
<i>110' diameter</i>					

Labor Rate Table - 3rd Qtr 2010 Union
Equipment Rate Table -3rd Qtr 2010
City Index - 989-WA-YAKIMA

Estimate Pay Item Report

			Total	
Description	Quantity		Unit Cost	Amount
02513.000 Asphaltic Concrete Vehicular Paving	2,670.00 sy		33.941/sy	90,621
DIVISION 02 SITE CONSTRUCTION			8,341,956.27 /ls	8,341,956
1.00 Is				
259.19 Labor hours				
130.04 Equipment hours				
DIVISION 03 CONCRETE				
03002.300 Concrete_Walls Exterior	23,781.00 cy		353.57 /cy	8,408,145
03002.600 Concrete_Elevated Slab	5,984.00 cy		366.54 /cy	2,193,361
03002.700 Concrete_Slab on Grade	698.00 cy		355.19 /cy	247,922
03002.825 Concrete_Stairs	32.00 cy		1,075.78 /cy	34,425
DIVISION 03 CONCRETE			357.281/cy	10,883,852
30,463.00 cy				
90,754.212 Labor hours				
7,827.98 Equipment hours				
DIVISION 05 METALS				
05505.000 Metal Fabrications	1.00 ls		25,163.12 /ls	25,163
05522.000 Aluminum Railings	550.00 lf		120.87 /lf	66,479
DIVISION 05 METALS			91,641.75 /ls	91,642
1.00 Is				
332.28 Labor hours				
5.65 Equipment hours				
DIVISION 08 DOORS & WINDOWS				
08305.000 Access Doors	10.00 ea		2,939.51 /ea	29,395
083450.50 Watertight Doors	1.00 ea		23,154.56 /ea	23,155
DIVISION 08 DOORS & WINDOWS			52,549.61 /ls	52,550
1.00 Is				
67.56 Labor hours				
8.00 Equipment hours				

AACE Classification Accuracy Range

Upper Range +40%

Lower Range -20%

Labor Rate Table - 3rd Qtr 2010 Union
 Equipment Rate Table -3rd Qtr 2010
 City Index - 989-WA-YAKIMA

				Total	
Description	Quantity	Unit Cost		Amount	
DIVISION 11 EQUIPMENT					
11065.000	Pumping Equipment: Sump			168,543	
11072.000	Pumping Equipment: Vertical Turbine (Line Shaft)			34,394,020	
DIVISION 11 EQUIPMENT				34,562,563.230/lh	34,562,563
<p>1.00 Is</p> <p>1,889.000 Labor hours</p> <p>314.833 Equipment hours</p>					
DIVISION 13 SPECIAL CONSTRUCTION					
13020.000	Building Modules			3,141,600	
DIVISION 13 SPECIAL CONSTRUCTION				210.00 /sf	3,141,600
14,960.00 sf					
DIVISION 14 CONVEYING SYSTEMS					
14305.000	Bridge Cranes	1.00 ea		199,441.37 /ea	199,441
DIVISION 14 CONVEYING SYSTEMS				199,441.37 /sf	199,441
<p>1.00 sf</p> <p>153.413 Labor hours</p> <p>12.03 Equipment hours</p>					
DIVISION 15 MECHANICAL					
02221.000	Trenching, Backfilling and Compacting for Utilities	12,007.00 cy		57.872/cy	694,873
03002.110	200cfs Valve	178.00 CY		385.022/CY	68,534
03002.111	Vault_Concrete_Foundations 20cfs Valve	19.00 cy		365.48 /cy	6,944
03002.310	Vault_Concrete_Foundations 200cfs Valve	190.00 cy		737.61 /cy	140,146
03002.311	Vault_Concrete_Walls 20cfs Valve	83.00 cy		508.90 /cy	42,238
	Vault_Concrete_Walls Exterior				

AACE Classification Accuracy Range

Upper Range +40%

Lower Range -20%

Labor Rate Table - 3rd Qtr 2010 Union
Equipment Rate Table -3rd Qtr 2010
City Index - 989-WA-YAKIMA

Estimate Pay Item Report

Description		Quantity	Unit Cost	Amount
Total				
03002.605	200cfs Valve Vault_Concrete_Elevated Slab	88.00 cy	521.791/cy	45,918
03002.611	20cfs Valve Vault_Concrete_Elevated Slab	9.00 cy	538.272/cy	4,844
15061.100	Pipe: Steel- 26" and larger	7,000.00 lf	1,298.672/lf	9,090,703
15062.000	Pipe: Ductile	100.00 lf	407.084/lf	40,708
15103.000	Butterfly Valves	16.00 ea	48,760.20 /ea	780,163
15106.000	Check Valves	6.00 ea	94,062.60 /ea	564,376
15115.000	Water Control Gates	5.00 ea	106,473.384/ea	532,367
15190.010	Pipe Expansion Joints - Fabricated	16.00 ea	31,243.70 /ea	499,899
DIVISION 15 MECHANICAL			12,511,712.94 /ls	12,511,713
1.00 Is				
14,955.743	Labor hours			
9,376.820	Equipment hours			
DIVISION 16 ELECTRICAL				
16000.100	Electrical Subcontractor	1.00 ls	5,018,590.00 /ls	5,018,590
<i>Pump Station, PS Substation, Discharge Control Building/ Electrical_I&C.</i>				
16000.210	Electrical Subcontractor - Substation Power Feed with Relays	4.00 mile	1,100,000.00 /mile	4,400,000
<i>Allowance assumes the Power Supplier will perform the cut in at the existing source, ROW cost is not included in the allowance. Assumed distance 4 miles, all pumps are 4160 V, 3 phase. Normal operation for 2, 1200 Hp motors to be operating.</i>				
16230.000	Engine Generator: Diesel	1.00 ea	46,988.71 /ea	46,989
<i>Backup power for emergency functions not for pump operation. Pad included.</i>				
DIVISION 16 ELECTRICAL			9,465,578.710/ls	9,465,579
1.00 LS				
108,475.904	Labor hours			
17,688.25	Equipment hours			
02_PUMP STATION PUMP STATION_1,000 CFS			79,250,896.330/LS	79,250,896

AACE Classification Accuracy Range

Upper Range +40%

Lower Range -20%

Labor Rate Table - 3rd Qtr 2010 Union
Equipment Rate Table -3rd Qtr 2010
City Index - 989-WA-YAKIMA

			Total		
Description	Quantity		Unit Cost	Amount	
03_PIPELINE PIPELINE_PUMP STATION TO KACHESS RIVER DISCHARGE					
DIVISION 01 GENERAL REQUIREMENTS					
01300.000	Administrative Requirements	1.00	ls	44,488.79 /ls	44,489
DIVISION 01 GENERAL REQUIREMENTS			44,488.79 /ls	44,489	
1.00 ls					
836.853	Labor hours				
149.213	Equipment hours				
DIVISION 02 SITE CONSTRUCTION					
02110.000	Site Clearing	11.19	acre	9,058.64 /acre	101,366
02930.000	Seeding, Sodding, and Landscaping	11.19	acre	973.922/acre	10,898
DIVISION 02 SITE CONSTRUCTION			112,264.35 /ls	112,264	
1.00 ls					
1,095.65	Labor hours				
839.853	Equipment hours				
DIVISION 15 MECHANICAL					
02221.000	Trenching, Backfilling and Compacting for Utilities	93,167.00	cy	75.474/cy	7,031,661
15061.100	Pipe: Steel- 26" and larger	6,500.00	lf	1,127.094/lf	7,326,110
DIVISION 15 MECHANICAL			14,357,770.49 /ls	14,357,770	
1.00 ls					
54,088.45	Labor hours				
84,921.804	Equipment hours				
03_PIPELINE PIPELINE_PUMP STATION TO KACHESS RIVER DISCHARGE			2,233.004/LF	14,514,524	
6,500.00 LF					
56,020.95	Labor hours				
85,910.87	Equipment hours				

AACE Classification Accuracy Range

Upper Range +40%

Lower Range -20%

Labor Rate Table - 3rd Qtr 2010 Union
Equipment Rate Table -3rd Qtr 2010
City Index - 989-WA-YAKIMA

				Total	
Description		Quantity		Unit Cost	Amount
04_KR DISCHARGE KACHESS RIVER DISCHARGE STRUCTURE					
DIVISION 02 SITE CONSTRUCTION					
02360.000	Cofferdam	4,160.00	sf	37.37 /sf	155,443
02513.000	Asphaltic Concrete Vehicular Paving	667.50	sy	33.02 /sy	22,041
02950.000	Site Restoration & Rehabilitation	1.00	ls	25,250.00 /ls	25,250
DIVISION 02 SITE CONSTRUCTION				202,733.72 /ls	202,734
<p>1.00 ls 1,284.32 Labor hours 642.27 Equipment hours</p>					
DIVISION 03 CONCRETE					
02200.000	Earthwork	8,634.00	cy	31.954/cy	275,887
03002.100	Concrete_Foundations	354.00	cy	373.76 /cy	132,311
03002.300	Concrete_Walls Exterior	300.00	cy	705.86 /cy	211,758
03002.600	Concrete_Elevated Slab	177.00	cy	512.194/cy	90,658
03002.700	Concrete_Slab on Grade	119.00	cy	395.06 /cy	47,012
03002.835	Concrete Spillway	56.00	cy	1,054.304/cy	59,041
DIVISION 03 CONCRETE				85.17 /cy	816,667
<p>9,589.00 cy 7,977.87 Labor hours 2,781.79 Equipment hours</p>					
DIVISION 13 SPECIAL CONSTRUCTION					
13020.000	Building Modules	375.00	sf	210.00 /sf	78,750
DIVISION 13 SPECIAL CONSTRUCTION				210.00 /sf	78,750
<p>375.00 sf</p>					
DIVISION 16 ELECTRICAL					
16000.100	Electrical Subcontractor	1.00	ls	245,250.00 /ls	245,250
<i>Pump Station, PS Substation, Discharge Control Building/ Electrical_I&C.</i>					

AACE Classification Accuracy Range

Upper Range +40%

Lower Range -20%

Labor Rate Table - 3rd Qtr 2010 Union
 Equipment Rate Table -3rd Qtr 2010
 City Index - 989-WA-YAKIMA

Estimate Pay Item Report

Description	Quantity	Total	
		Unit Cost	Amount
DIVISION 16 ELECTRICAL		245,250.00 /ls	245,250
1.00 Is			
<hr/>			
04_KR DISCHARGE KACHESS RIVER		1,343,400.24 /LS	1,343,400
DISCHARGE STRUCTURE			
1.00 LS			
9,262.185 Labor hours			
3,424.06 Equipment hours			

Labor Rate Table - 3rd Qtr 2010 Union
Equipment Rate Table -3rd Qtr 2010
City Index - 989-WA-YAKIMA

Estimate Pay Item Report

Estimate Totals

Description	Amount	Totals	Rate
Labor	8,581,581		
Material	62,068,314		
Subcontract	31,252,505		
Equipment	6,059,818		
Other	56,000		
Subtotal		108,018,218	
Contractor's Fld Ovhd	4,320,729		4.000 %
Mobilization	2,160,364		2.000 %
Subtotal w/ mobilization		114,499,311	
Unlisted Items Minor	4,237,050		4.000 %
Design and Scope Changes Minor	4,237,050		4.000 %
Cost Est Refinements Minor	2,118,525		2.000 %
Contractor's Fee	7,505,516		6.000 %
Contractor's Bonds & Insurance	1,876,379		1.500 %
Procurement Strategy-Open Comp			
Contract Cost		134,473,831	
Contingencies	33,618,458		25.000 %
Field Cost		168,092,289	
Sales Tax Estimate (Mat & Eq)	5,527,320		8.200 %

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Labor Rate Table - 3rd Qtr 2010 Union
Equipment Rate Table -3rd Qtr 2010
City Index - 989-WA-YAKIMA

Estimate Pay Item Report

Estimate Totals

Escal to NTP (NOTINCL)
Forecasted Feature Bid

173,619,609

Upper Range +40%

AACE Classification Accuracy Range

Lower Range -20%