

## **APPENDIX D**

### **Field Cost Estimate**

## ESTIMATE WORKSHEET

## FEATURE:

Wymer Offstream Storage Facility  
Summary

Summary Sheet 1 of 1

## PROJECT:

Yakima River Basin Water Storage Study

WOID: YRSSW

ESTIMATE LEVEL: Appraisal

REGION PN

PRICE LEVEL: Apr-07

FILE: C:\Documents and Settings\jwzander\My Documents\2007 JWZ  
Estimates\Wymer Dam\Total Final Est\Final Est - Wymer PP and  
Reservoir.xls[River Intake(12)]

PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		<b>Wymer Offstream Storage Facility consists of:</b>					
		<b>Fish-screened Intake on Yakima River, 400 cfs Pumping Plant and Switchyard,</b>					
		<b>Concrete-Faced Rockfill Dam, Crest EL. 1750. Central Core Rockfill Dike, Crest EL. 1750.</b>					
		<b>Spillway and Outlet Works, Road (Access and I82) and Lmuma Creek Improvements</b>					
		Yakima River Intake					\$ 18,352,464.00
		Pumping Plant					\$ 54,246,343.00
		Switchyard and Transmission Line					\$ 6,070,102.00
		Discharge Line					\$ 24,306,490.00
		Dam and Dike					\$ 365,591,500.00
		Spillway and Outlet Works					\$ 59,776,337.00
		Diversion during Construction					\$ 4,414,450.00
		Road and Creek Improvements					\$ 5,902,027.00
		Subtotal					\$ 538,659,713.00
		Mobilization				+/- 5%	\$ 27,000,000.00
		Subtotal w/ mobilization					\$ 565,659,713.00
		Unlisted Items				+/- 10%	\$ 54,340,287.00
		Procurement Strategy = (USC 638, TERO tax, etc)				+/- 0%	\$ -
		<b>CONTRACT COST</b>					<b>\$ 620,000,000.00</b>
		Contingencies				+/- 25%	\$ 160,000,000.00
		<b>FIELD COST</b>					<b>\$ 780,000,000.00</b>
		Note : Non-contract costs are to be provided by others. This estimate does not include non-contract costs.					
		This estimate should not be used for funding purposes.					
		Escalation for cost increases that will occur during the construction period and cost increases that may occur prior to the contract award are not included.					
		This estimate assumes a procurement strategy consisting of full and open competition.					

## QUANTITIES

## PRICES

BY Design Team	CHECKED	BY Jerry Zander	CHECKED
DATE PREPARED May 2, 2007	PEER REVIEW	DATE PREPARED June 4, 2007	PEER REVIEW

47 6/4/2007

JB

Deed 6/4/2007

## ESTIMATE WORKSHEET

[illegible]

## ESTIMATE WORKSHEET

[illegible]

## ESTIMATE WORKSHEET

[illegible]

**FEATURE:**

Wymer Offstream Storage Facility  
Yakima River Intake  
Dewatering/Unwatering and Cofferdam

## Yakima River Basin Water Storage Study

<b>WOID:</b>	YRSSW	<b>ESTIMATE LEVEL:</b>	Appraisal
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<b>REGION</b>	<b>PN</b>	<b>PRICE LEVEL:</b>	Apr-07
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<b>FILE:</b>	J:\2007 JWZ Estimates\Wymer Dam\Total Final Est\Final Est - Wymer PP and Reservoir.xls Summary
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Geotechnical/Civil

PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		<b>Unwatering Intake and Pumping Plant</b>					
		Max River WS: El. 1284					
		Bottom of River: El. 1272					
		Assumed Construction WS: El. 1280 (Q= cfs)					
		Assumed top of Rock: ±El. 1260					
		Assumed Ground WS: El. 1280 (same as river)					
		Unwatering at base of soil excavation					
		- Furnish, install, and remove (filter toe drain):					
	13	Sand/gravel filter material		715	CY	\$ 71.00	\$ 50,765.00
	14	Slotted pipe 6-in dia. PVC or HDPE		2,150	LF	\$ 12.00	\$ 25,800.00
	15	Wrap slotted pipe in non-woven filter fabric		475	SY	\$ 6.00	\$ 2,850.00
	16	- Furnish and operate sump pumps					
		- Operate 11 sump pumps for 9 months		1	LS	\$ 750,000.00	\$ 750,000.00
		- Each pump should have a 30 ft lift and have a flow of about 4 gpm					
	17	Unwatering at base of rock excavation					
		- Furnish and operate sump pumps					
		- Operate 10 sump pumps for 9 months		1	LS	\$ 820,000.00	\$ 820,000.00
		- Each pump should have a 45 ft lift and have a flow of about 5 gpm					
		- Operate 3 sump pumps for 9 months					
		- Each pump should have a 55 ft lift and have a flow of about 5 gpm					
	18	Unwatering about fish return pipeline					
		- Furnish and operate sump pumps					
		- Operate 3 sump pumps for 2 months		1	LS	\$ 110,000.00	\$ 110,000.00
		- Each pump should have a 12 ft lift and have a flow of about 5 gpm					
		<b>Sheet Subtotal =</b>					<b>\$ 1,759,415.00</b>

**BY**  
Bob Davis

**CHECKED**  
Bill Engemoen

**BY**  
Jerry Zander

**CHECKED**

**DATE PREPARED**  
April 30, 2007

**PEER REVIEW**  
Al Kiene

**DATE PREPARED**  
May 31, 2007

PEER REVIEW

Paul

## ESTIMATE WORKSHEET

[illegible]

## ESTIMATE WORKSHEET

[illegible]



## ESTIMATE WORKSHEET

[illegible]

**FEATURE:**

Wymer Offstream Storage Facility  
Yakima River Intake

## Yakima River Basin Water Storage Study

<b>WOID:</b>	YRSSW	<b>ESTIMATE LEVEL:</b>	Appraisal
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<b>REGION</b>	PN	<b>PRICE LEVEL:</b>	Apr-07
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<b>FILE:</b>	J:\2007 JWZ Estimates\Wymer Dam\Total Final Est\Final Est - Wymer PP and Reservoir.xls\Summary
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Mechanical

PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		<b>Mechanical</b>					
	43	Ventilating System for Fish Pump	8410	1	L.S.	\$ 3,000.00	\$ 3,000.00
		Electrical Equipment Control Building:					
		Consists of:					
		1 - Centrifugal fan; 500 cfm					
		1 - Backdraft damper; 24-inch by 24-inch					
		1 - Intake counterbalance damper; 24-inch by 24-inch					
		2 - 24-inch by 24-inch stationary louver					
	44	One (3) ton capacity, electric, wire rope, monorail hoist with manual trolley for intake structure stop logs (hoist only; hoist beam provided by 8120)	8410	1	L.S.	\$ 6,000.00	\$ 6,000.00
	45	Stoplog guides and seats (steel)	8410	2,800	LBS	\$ 11.00	\$ 30,800.00
	46	Stoplog lifting beam (steel)	8410	1,000	LBS	\$ 4.50	\$ 4,500.00
	47	Stoplogs (steel)	8410	13,600	LBS	\$ 4.00	\$ 54,400.00
	48	Trashracks and seats (steel)	8410	20,400	LBS	\$ 8.00	\$ 163,200.00
	49	One trash rake, rails, supports (assume Atlas Polar DT8300 rake)	8410	11,000	LBS	\$ 10.00	\$ 110,000.00
	50	One conveyor (steel)	8410	5,000	LBS	\$ 10.50	\$ 52,500.00
	51	Fish screen guides, support structure, braces embedded seats, blank panel, and bypass walls Structural steel (Does not include walkway, see 8120)	8410	105,000	LBS	\$ 8.00	\$ 840,000.00
		<b>Sheet Subtotal =</b>					<b>\$ 1,264,400.00</b>

## QUANTITIES

## PRICES

**BY: J. Grass / P. Schlein**

R. Christensen

**CHECKED**

Rick Christensen

BY

Jerry Zander

**CHECKED**

PEER REVIEW

DATE PREPARED: 4/28/07

PEER REVIEW

**Dave Hulse**

DATE PREPARED

May 31, 2007

## ESTIMATE WORKSHEET

[illegible]

## ESTIMATE WORKSHEET

<b>FEATURE:</b>  Wymer Offstream Storage Facility Yakima River Intake   Mechanical	<b>PROJECT:</b>  Yakima River Basin Water Storage Study	
	<b>WOID:</b> YRSSW	<b>ESTIMATE LEVEL:</b> Appraisal
	<b>REGION:</b> PN	<b>PRICE LEVEL:</b> Apr-07
	<b>FILE:</b> J:\2007 JWZ Estimates\Wymer Dam\Total Final Est\Final Est - Wymer PP and Reservoir.xls\Est Notes - A	

[illegible]

QUANTITIES		PRICES	
BY R. Zelenka	CHECKED T. Hummel 4/24/07	BY Jerry Zander <i>JZ</i>	CHECKED <i>[Signature]</i>
DATE PREPARED April 23, 2007	PEER REVIEW T. Hummel 4/24/07	DATE PREPARED May 31, 2007	PEER REVIEW <i>[Signature]</i>

## ESTIMATE WORKSHEET

[illegible]

**PROJECT:**


## Yakima River Basin Water Storage Study

<b>WOID:</b>	YRSSW	<b>ESTIMATE LEVEL:</b>	Appraisal
<b>REGION</b>	PN	<b>PRICE LEVEL:</b>	Apr-07
<b>FILE:</b>	C:\Documents and Settings\jvwzander\My Documents\2007 JWZ Estimates\Wymer Dam\Total Final Est\Final Est - Wymer PP and Reservoir.xls Pumping Plant(12)		

[illegible]

## PRICES

CHECKED 

PEER REVIEW 

## ESTIMATE WORKSHEET

<b>FEATURE:</b>  Wymer Offstream Storage Facility Yakima River Pumping Plant  Civil/Structural	<b>PROJECT:</b> Yakima River Basin Water Storage Study  <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:30%;"><b>WOID:</b> YRSSW</td> <td><b>ESTIMATE LEVEL:</b> Appraisal</td> </tr> <tr> <td><b>REGION</b> PN</td> <td><b>PRICE LEVEL:</b> Apr-07</td> </tr> <tr> <td colspan="2"><b>FILE:</b> J:\2007 JWZ Estimates\Wymer Dam\Total Final Est\Final Est - Wymer PP and Reservoir.xls\Summary</td> </tr> </table>	<b>WOID:</b> YRSSW	<b>ESTIMATE LEVEL:</b> Appraisal	<b>REGION</b> PN	<b>PRICE LEVEL:</b> Apr-07	<b>FILE:</b> J:\2007 JWZ Estimates\Wymer Dam\Total Final Est\Final Est - Wymer PP and Reservoir.xls\Summary	
<b>WOID:</b> YRSSW	<b>ESTIMATE LEVEL:</b> Appraisal						
<b>REGION</b> PN	<b>PRICE LEVEL:</b> Apr-07						
<b>FILE:</b> J:\2007 JWZ Estimates\Wymer Dam\Total Final Est\Final Est - Wymer PP and Reservoir.xls\Summary							

PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		<b>CIVIL</b>	8120				
		HP Pumping Plant Yard= El. 1287					
		Site excavation for intake structure included in yard quantity.					
		<b>Service Yard and Access Road</b>					
	1	Stripping (remove and dispose 6" of topsoil)		34,500	SY	\$ 5.00	\$ 172,500.00
	2	Common excavation to Service Yard El. 1287		16,530	CY	\$ 7.00	\$ 115,710.00
	3	Place and compact embankment for service yard		18,500	CY	\$ 10.00	\$ 185,000.00
	4	Furnish and place 6-inch thick gravel surfacing		19,000	SY	\$ 8.00	\$ 152,000.00
	5	Furnish and place base course material - 6" thick		1,930	TONS	\$ 30.00	\$ 57,900.00
	6	Furnish and place bituminous Pavement - 3" thick		1,035	TONS	\$ 95.00	\$ 98,325.00
	7	Furnish and install 7-foot chain link fence for service yard		2,145	LF	\$ 25.00	\$ 53,625.00
	8	Furnish and install 7-foot x 24-foot access gate		1	EA	\$ 4,400.00	\$ 4,400.00
		<b>Dewatering During Construction:</b>					
		Included in quantities under River Intake.					
		<b>Structural Excavation and Backfill</b>					
		Assume top of rock= El. 1262.0					
		Assume stockpile rock for later use as riprap or rockfill.					
	9	Excavation of common materials for structures		79,900	CY	\$ 7.00	\$ 559,300.00
	10	Excavation of rock for structures (drill & shoot)		23,800	CY	\$ 30.00	\$ 714,000.00
	11	Furnish backfill for structures (assume local borrow, include in #12)		63,200	CY	\$ -	\$ -
	12	Place backfill around structures		63,200	CY	\$ 4.00	\$ 252,800.00
	13	Compact backfill around structures		63,200	CY	\$ 3.60	\$ 227,520.00
	14	Furnish & place embedment material for manifold pipe trench (CLSM)		485	CY	\$ 100.00	\$ 48,500.00
		<b>Sheet Subtotal =</b>					\$ 2,641,580.00

QUANTITIES		PRICES	
<b>BY</b> Brian Goplen	<b>CHECKED</b> John Pattie	<b>BY</b> <i>AJ</i> Jerry Zander	<b>CHECKED</b> <i>[Signature]</i>
<b>DATE PREPARED</b> April 26, 2007	<b>PEER REVIEW</b> Dick LaFond	<b>DATE PREPARED</b> May 31, 2007	<b>PEER REVIEW</b> <i>[Signature]</i>

## ESTIMATE WORKSHEET

FEATURE:			PROJECT:				
Wymer Offstream Storage Facility Yakima River Pumping Plant			Yakima River Basin Water Storage Study				
			WOID: YRSSW		ESTIMATE LEVEL: Appraisal		
			REGION PN		PRICE LEVEL: Apr-07		
			FILE: J:\2007 JWZ Estimates\Wymer Dam\Total Final Est\Final Est - Wymer PP and Reservoir.xls\Summary				
Civil/Structural							
PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		<b>STRUCTURAL</b>	8120				
		<b>Concrete for Structures</b>					
		Includes: Pumping Plant Structure = 13,000 CY					
		Air Chamber Foundation = 1800 CY					
		Flow Meter Vault = 240 CY					
		Miscellaneous Slabs = 10 CY					
	15	Furnish, form, and place reinforced concrete		15,050	CY	\$ 790.00	\$ 11,889,500.00
	16	Furnish and place concrete reinforcement.		1,956,500	LBS	\$ 1.40	\$ 2,739,100.00
		Assume 130 #/CY					
	17	Furnish and handle cement (.282T/CY)		4,244	TONS	\$ 130.00	\$ 551,720.00
	18	Furnish and install 6" PVC Waterstop		8,000	LF	\$ 9.00	\$ 72,000.00
		<b>Structural Steel</b>					
	19	Furnish and install structural steel (painted):					
		Superstructure roof trusses and crane girders		328,000	LBS	\$ 5.00	\$ 1,640,000.00
		<b>Miscellaneous Metalwork</b>					
	20	Furnish and install miscellaneous metalwork		73,000	LBS	\$ 10.00	\$ 730,000.00
	21	Pre-engineered metal stairs		26,000	LBS	\$ 9.00	\$ 234,000.00
	22	Roof Hatches: Bilco Type 8'x14' Type D Double leaf insul alum.		1	EA	\$ 17,000.00	\$ 17,000.00
	23	Floor Hatches: 3'x3' Type J alum floor hatch		3	EA	\$ 9,000.00	\$ 27,000.00
		Metal decking for roof system					
	24	1.5B20		15,820	SF	\$ 5.50	\$ 87,010.00
	25	1.5VL22		780	SF	\$ 10.00	\$ 7,800.00
	26	Air chamber cover:		1	LS	\$ 830,000.00	\$ 830,000.00
		Triang. Alum. Space Truss w/ non corrugated closure panels. 58 ft. dia. clear span, 7 ft. high					
		self supporting from periphery concrete walls					
		(similar to Durango Pumping Plant)					
		<b>Sheet Subtotal =</b>					\$ 18,825,130.00
<b>QUANTITIES</b>			<b>PRICES</b>				
BY Brian Goplen		CHECKED Dick LaFond	BY Jerry Zander		CHECKED		
DATE PREPARED April 26, 2007		PEER REVIEW Dick LaFond	DATE PREPARED May 31, 2007		PEER REVIEW		



**FEATURE:**

Wymer Offstream Storage Facility  
Yakima River Pumping Plant

## Yakima River Basin Water Storage Study

<b>WOID:</b>	YRSSW	<b>ESTIMATE LEVEL:</b>	Appraisal
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REGION	PN	PRICE LEVEL:	Apr-07
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**FILE:** J:\2007 JWZ Estimates\Wymer Dam\Total Final Est\Final Est - Wymer PP and Reservoir.xls\Summary

Mechanical

PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		<b>ARCHITECTURAL</b>	8120				
	27	<b>Standing Seam Roofing System</b>		15,820	SF	\$ 8.80	\$ 139,216.00
		Service Bay - 1" high rib @ 18" o.c., 24ga., G-90 hot-dipped galvanized steel, UL 90 rated Large roof - 3/12 hipped - 3,460 s.f. Small roof - 3/12 hipped - 560 s.f.					
		Unit Bay - 1" high rib @ 18" o.c., 24ga., G-90, hot-dipped galvanized steel, UL 90 rated Gabled with 3/12 pitch each side - 11,800 s.f.					
		<b>Roofing Felt</b>					
	28	2-layers 15# - 31,640 s.f.	8120	31,640	SF	\$ 0.60	\$ 18,984.00
		<b>Roof Insulation</b>					
	29	4" thick, rigid	8120	4,020	SF	\$ 4.20	\$ 16,884.00
	30	2" thick, rigid	8120	11,800	SF	\$ 2.20	\$ 25,960.00
		<b>Roll-up Doors (complete with hardware)</b>					
		Exterior					
	31	4'-0" x 7'-0", manual operated, insulated roll-up door		1	EA.	\$ 6,400.00	\$ 6,400.00
	32	14'-0" x 14'-0", manual operated, insulated roll-up door		1	EA.	\$ 9,000.00	\$ 9,000.00
		<b>Steel Doors &amp; Frames (complete with hardware)</b>					
		Interior					
	33	3'-0" x 7'-0" x 1 3/4", single, 90 min.		18	EA.	\$ 1,100.00	\$ 19,800.00
	34	3'-0" x 7'-0" x 1 3/4", double, 90 min.		5	EA.	\$ 1,700.00	\$ 8,500.00
		<b>Sheet Subtotal =</b>					<b>\$ 244,744.00</b>

## QUANTITIES

**BY**  
Brian Goplen

**CHECKED**  
Dick LaFond

**BY**  
Jerry Zander

**CHECKED**

**DATE PREPARED**  
April 26, 2007

**PEER REVIEW**  
Dick LaFond

**DATE PREPARED**  
May 31, 2007

PEER REVIEW

EW *Adl*

## ESTIMATE WORKSHEET

[illegible]

## ESTIMATE WORKSHEET

[illegible]

BY Rick Frisz	CHECKED Ken Smith	BY Jerry Zander <i>JZ</i>	CHECKED <i>JZ</i>
DATE PREPARED 4-30-07	PEER REVIEW <i>KRS</i>	DATE PREPARED May 31, 2007	PEER REVIEW <i>ad</i>

## ESTIMATE WORKSHEET

<b>FEATURE:</b>  Wymer Offstream Storage Facility Yakima River Pumping Plant  Mechanical	<b>PROJECT:</b>  Yakima River Basin Water Storage Study	
	<b>WOID:</b> YRSSW	<b>ESTIMATE LEVEL:</b> Appraisal
	<b>REGION:</b> PN	<b>PRICE LEVEL:</b> Apr-07
	<b>FILE:</b> J:\2007 JWZ Estimates\Wymer Dam\Total Final Est\Final Est - Wymer PP and Reservoir.xls Summary	

PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		Mechanical					
	60	Fire Suppression System: Consists of	8410	1	L.S.	\$ 210,000.00	\$ 210,000.00
		10 - Fire hose reels w/ 100 feet of hose					
		20 - Portable hand-held 20 lb. extinguishers					
		3 - Wheeled portable 125 lb. extinguishers					
		55 - Sprinkler system discharge heads					
		1 - 4-inch deluge valve, electric actuated					
		1 - Fire hydrant, dry type					
		1 - Fire department siamese connection					
		1 - Fire pump, horz. split-case, 500 gpm @ 300 ft of hd					
		10,000 lbs. of sch. 40 carbon steel pipe and fittings					
		1 - Clean agent gas fire suppression system for					
		4,500 ft^3 control room					
	61	Unit Cooling Water System: Consists of	8410	1	L.S.	\$ 310,000.00	\$ 310,000.00
		7 - Supply pumps, end-suction type, 150 gpm at 60 ft hd.					
		2 - 8-inch automatic, self cleaning strainers					
		4,000 lbs. of type K copper tubing & fittings					
		5,000 lbs. of ductile iron, mechanical joint pipe & fittings					
		4,000 lbs. of cast iron valving					
		2 - Mechanical seal end-suction pumping units; 25 gpm					
		at 100 ft hd.					
		2 - 4-inch self-cleaning filters, 25 micron					
	62	Compressed Air System: Consists of	8410	1	L.S.	\$ 40,000.00	\$ 40,000.00
		2 - 40 cfm @ 125 psi rotary screw air compressors					
		1 - 300 gal. carbon steel air receiver					
		1 - 80 cfm air dryer					
		3,000 lbs. of sch. 40 carbon steel pipe, valves & fittings					
	63	Service Water System: Consists of	8410	1	L.S.	\$ 47,000.00	\$ 47,000.00
		1 - Service water pump, 75 gpm @ 200 ft. of hd.					
		1 - Hydropneumatic steel tank, 300 gal.					
		1,500 lbs. of type K copper tubing, valves & fittings					
		10 - Service water rubber hose; 1-inch dia., 50 ft lengths					
		Sheet Subtotal =					\$ 607,000.00 ✓

QUANTITIES		PRICES	
BY: J. Grass	CHECKED Rick Christensen	BY Jerry Zander	CHECKED
DATE PREPARED: 4/27/07	PEER REVIEW Dave Hulse	DATE PREPARED May 31, 2007	PEER REVIEW

## ESTIMATE WORKSHEET

## FEATURE:

Wymer Offstream Storage Facility  
Yakima River Pumping Plant

Mechanical

## PROJECT:

Yakima River Basin Water Storage Study

WOID: YRSSW ESTIMATE LEVEL: Appraisal

REGION PN PRICE LEVEL: Apr-07

FILE: J:\2007 JWZ Estimates\Wymer Dam\Total Final Est\Final Est - Wymer PP and Reservoir.xls\Summary

PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		<b>Mechanical (cont)</b>					
	64	Gravity Drainage System: Consists of 50 - Floor drains, cast iron, 4-inch 25,000 lbs. of cast iron hub & spigot, service weight soil pipe	8410	1	L.S.	\$ 150,000.00	\$ 150,000.00
	65	Plant Unwatering System: Consists of 2 - Vertical turbine type sump pump, 1000 gpm @ 50 ft hd 1 - Drainage jet type drainage pump 1,500 lbs. of type K copper tube, valves & fittings 4,000 lbs. of ductile iron, mechanical joint pipe & fittings	8410	1	L.S.	\$ 210,000.00	\$ 210,000.00
	66	Domestic Water and Sanitary Waste and Vent System: Consists of: 4 - Water Closets 2 - Urinal 4 - Lavatories w/ faucets & accessories 1 - Duplex sewage ejector assembly 2 - Drench shower and eye wash 1 - Water heater, 20 gallons, electric 1 - Janitor's service sink, 36" x 36" molded stone 2,000 lbs. of cast iron hub & spigot service weight sewer and vent pipe 800 lbs. of type K copper tubing, valves & fittings	8410	1	L.S.	\$ 71,000.00	\$ 71,000.00
	67	20-ton Electric overhead traveling unit bay bridge crane, remote control, 56'-0" span; 30 ft. lift	8410	1	L.S.	\$ 330,000.00	\$ 330,000.00
	68	20-ton Electric overhead traveling service bay bridge crane, remote control, 55'-0" span; 25 ft. lift	8410	1	L.S.	\$ 280,000.00	\$ 280,000.00
	69	Electric passenger elevator: Overhead, Geared traction type, Capacity =3500 pounds, Travel = 43 feet, Landings = 4, Speed = 200 ft/min.	8410	1	L.S.	\$ 170,000.00	\$ 170,000.00
	70	Sump waste oil skimmer assembly, electric operated, w/ 55 gallon collection drum	8410	1	L.S.	\$ 17,000.00	\$ 17,000.00
		<b>Sheet Subtotal =</b>					<b>\$ 1,228,000.00</b>

## QUANTITIES

## PRICES

BY: J. Grass / A. Ritt	CHECKED Rick Christensen	BY Jerry Zander	CHECKED
DATE PREPARED: 4/27/07	PEER REVIEW Dave Hulse	DATE PREPARED May 31, 2007	PEER REVIEW



## ESTIMATE WORKSHEET

[illegible]



QUANTITIES		PRICES	
BY Mike Schuh	CHECKED <i>SM. Girgis</i>	BY <i>#3</i> Jerry Zander	CHECKED <i>J</i>
DATE PREPARED April 25, 2007	PEER REVIEW George Girgis <i>GP Girgis</i>	DATE PREPARED May 29, 2007	PEER REVIEW <i>GP</i>



## ESTIMATE WORKSHEET

## FEATURE:

Wymer Offstream Storage Facility  
Switchyard and Transmission Line

Civil/Structural

## PROJECT:

Yakima River Basin Water Storage Study

WOID: YRSSW ESTIMATE LEVEL: Appraisal

REGION PN PRICE LEVEL: Apr-07

## FILE:

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PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		<b>CIVIL/STRUCTURAL</b>	8120				
	1	<b>Excavation (Common)</b>		1,005	CY	\$ 21.00	\$ 21,105.00
	2	<b>Structural Concrete</b> (Switchyard foundations and pullboxes)		120	CY	\$ 1,400.00	\$ 168,000.00
	3	<b>Concrete Reinforcement</b>		15,310	LBS	\$ 1.70	\$ 26,027.00
	4	<b>Compacting Backfill about Structures</b>		790	CY	\$ 14.00	\$ 11,060.00
	5	<b>Switchyard Steel Structures</b>		35,800	LBS	\$ 5.50	\$ 196,900.00
	6	<b>Gravel Surfacing - 6-inch thick</b>		2,045	SY	\$ 13.00	\$ 26,585.00
	7	<b>Oil-Spill Containment System</b>		1	LS	\$ 38,000.00	\$ 38,000.00
		Geotextile fabric 4,255 SF (12 oz per sq yard, 110 mils non-woven)					
		Geomembrane liner: 2,130 SF (30 Mils XR-5 Seaman Corporation)					
		Geocel: 1,635 SF (8" deep "enviro grid" polymeric cellular confinement system)					
		Piping: 140 LF (6" Dia. Schedule 80 PVC pipe perforated)					
		Piping: 3 EA (6" Dia. Schedule 80 PVC "L")					
		Piping: 1 EA (12" Dia. 3'-2" long Schedule 80 PVC Cap)					
		Piping: 3 LF (12" Dia. Schedule 80 PVC perforated pipe)					
		Preservative-Treated Lumber: 75 LF (2"x4")					
		Expansion Anchors (Stainless steel 3/8" x 5" drilled in conc): 84 EA					
		Excavation: Included in excavation for structures					
		Uncompacted crushed aggregate: 135 CY (ASTM C33 Size No 4, 1 1/2" to 3/4")					
	8	<b>Gravelfill for Switchyard Foundations (Compacted)</b>		65	CY	\$ 55.00	\$ 3,575.00
	9	<b>5-Inch PVC Schedule 80 Conduit (CIP Power Duct Bank)</b>		115	LF	\$ 270.00	\$ 31,050.00
		Includes:					
		115 LF of 1.5' tall x 2.33' wide concrete CIP					
		15 CY of concrete					
		1970 lbs of reinforcement					
	10	<b>7-foot Chain link fence</b>		400	LF	\$ 37.00	\$ 14,800.00
		Sheet Subtotal =					\$ 537,102.00

## QUANTITIES

## PRICES

BY Brian Goplen	CHECKED Dick LaFond	BY Jerry Zander	CHECKED [Signature]
DATE PREPARED April 26, 2007	PEER REVIEW Dick LaFond	DATE PREPARED May 31, 2007	PEER REVIEW [Signature]

## ESTIMATE WORKSHEET

[illegible]

## ESTIMATE WORKSHEET

## FEATURE:

Wymer Offstream Storage Facility  
Discharge Line to Reservoir

Civil/Structural

## PROJECT:

Yakima River Basin Water Storage Study

WOID: YRSSW

ESTIMATE LEVEL: Appraisal

REGION PN

PRICE LEVEL: Apr-07



## FILE:

J:\2007 JWZ Estimates\Wymer Dam\Total Final Est\Final Est - Wymer PP  
and Reservoir.xls\Discharge (6)

PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		<b>Discharge Line</b>					
		Discharge line quantities are from PP yard to outlet.					
		Discharge line piping through dam covered by 8410					
		Discharge line outlet: El. 1610, right abutment					
		<b>Earthwork for Discharge Pipe</b>					
		<b>Price Alternative 2. Alternative 1 for reference only.</b>					
		<b>Alternative 1 - Payline Quantities - Vertical Trench Walls</b>					
		Clearing and Grubbing (150 ft wide along pipeline)	8140	78,000	SY		
		Common Excavation for pipe	8140	24,000	CY		
		Rock Excavation for pipe - (drill and shoot)	8140	30,000	CY		
		Backfill for pipe	8140	22,000	CY		
		Rockfill for pipe (used instead of backfill under dam)	8140	12,000	CY		
		Soil Cement Slurry (CLSM)	8140	3,700	CY		
		<b>Alternative 2 - Takeoff Quantities - 1-1/2:1 Trench Walls except use 1/2:1 trench walls under dam)</b>					
	1	Clearing and Grubbing (150 ft wide along pipeline)	8140	78,000	SY	\$ 1.00	\$ 78,000.00
	2	Common Excavation for pipe	8140	135,000	CY	\$ 6.00	\$ 810,000.00
	3	Rock Excavation for pipe - (drill and shoot)	8140	100,000	CY	\$ 23.00	\$ 2,300,000.00
	4	Backfill for pipe	8140	181,000	CY	\$ 4.50	\$ 814,500.00
	5	Rockfill for pipe (used instead of backfill under dam)	8140	37,000	CY	\$ 44.00	\$ 1,628,000.00
	6	Soil Cement Slurry (CLSM)	8140	14,000	CY	\$ 100.00	\$ 1,400,000.00
		<b>96-inch Diameter Steel Pipe</b>					
		<b>(Mortar lined w/ flexible lining)</b>					
	7	96 300, pipe thickness = 0.4375 (456 lb/ft steel weight)	8140	1,310	LF	\$ 1,140.00	\$ 1,493,400.00
	8	96 350, pipe thickness = 0.500 (521 lb/ft steel weight)	8140	400	LF	\$ 1,300.00	\$ 520,000.00
	9	96 425, pipe thickness = 0.625 (652 lb/ft steel weight)	8140	600	LF	\$ 1,630.00	\$ 978,000.00
	10	96 475, pipe thickness = 0.6875 (718 lb/ft steel weight)	8140	500	LF	\$ 1,800.00	\$ 900,000.00
	11	96 525, pipe thickness = 0.75 (784 lb/ft steel weight)	8140	300	LF	\$ 1,960.00	\$ 588,000.00
	12	96 575, pipe thickness = 0.8125 (850 lb/ft steel weight)	8140	300	LF	\$ 2,130.00	\$ 639,000.00
	13	96 650, pipe thickness = 0.9375 (982 lb/ft steel weight)	8140	400	LF	\$ 2,460.00	\$ 984,000.00
	14	96 700, pipe thickness = 1.0 (1048 lb/ft steel weight)	8140	400	LF	\$ 2,620.00	\$ 1,048,000.00
	15	<b>Cathodic protection for pipeline</b>	8140	1	LS	\$ 63,000.00	\$ 63,000.00
	16	<b>96"x96"x36" Tee for buried manhole</b>	8140	1	EA	\$ 59,000.00	\$ 59,000.00
		<b>Sheet Subtotal =</b>					<b>\$ 14,302,900.00</b>

## QUANTITIES

## PRICES

BY Anne Pavol	CHECKED Linda M. Bowles/Joe Gemperline	BY Jerry Zander	CHECKED 
DATE PREPARED May 1, 2007	PEER REVIEW David K. Edwards	DATE PREPARED May 31, 2007	PEER REVIEW 

## ESTIMATE WORKSHEET

## FEATURE:

Wymer Offstream Storage Facility  
Discharge Line to Reservoir

Civil/Structural

## PROJECT:

Yakima River Basin Water Storage Study

WOID: YRSSW

ESTIMATE LEVEL: Appraisal

REGION PN

PRICE LEVEL: Apr-07

## FILE:

J:\2007 JWZ Estimates\Wymer Dam\Total Final Est\Final Est - Wymer PP and Reservoir.xls\Discharge (6)

PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		<b>SH821 Detour for open cut discharge line</b>					
	17	Remove and Replace Concrete Asphalt on SH821	8140	135	ton	\$ 110.00	\$ 14,850.00
	18	Remove and Replace Aggregate base on SH821	8140	250	ton	\$ 50.00	\$ 12,500.00
	19	Compacted Embankment	8140	6,900	CY	\$ 18.00	\$ 124,200.00
	20	Concrete Asphalt for detour	8140	630	ton	\$ 100.00	\$ 63,000.00
	21	Aggregate base for detour	8140	1,150	ton	\$ 50.00	\$ 57,500.00
	22	Concrete Jersey Barriers	8140	200	LF	\$ 100.00	\$ 20,000.00
	23	Detour signage	8140	1	LS	\$ 70,000.00	\$ 70,000.00
	24	Detour removal	8140	1	LS	\$ 40,000.00	\$ 40,000.00
		<b>Discharge Line Outlet Structure</b>					
	25	Excavation of common materials for structures (2:1)	8140	960	CY	\$ 22.00	\$ 21,120.00
	26	Backfill (2:1)	8140	700	CY	\$ 28.00	\$ 19,600.00
	27	Compacted Backfill (2:1)	8140	700	CY	\$ 10.00	\$ 7,000.00
	28	Embankment	8140	790	CY	\$ 15.00	\$ 11,850.00
	29	Compacted Embankment	8140	790	CY	\$ 7.00	\$ 5,530.00
	30	Riprap (d50=24") (120 lb/cf)	8140	1,100	TONS	\$ 70.00	\$ 77,000.00
	31	Riprap Bedding (130 lb/cf)	8140	450	TONS	\$ 50.00	\$ 22,500.00
	32	Furnish, form, and place reinforced concrete	8140	240	CY	\$ 1,580.00	\$ 379,200.00
	33	Furnish and place concrete reinforcement.	8140	29,000	LBS	\$ 1.65	\$ 47,850.00
		Assume 120 #/CY					
	34	Furnish and handle cement (.282T/CY)	8140	60	TONS	\$ 180.00	\$ 10,800.00
		<b>Discharge Line Outlet Chute</b>					
	35	Excavation of common materials for structures (2:1)	8140	16,000	CY	\$ 15.00	\$ 240,000.00
	36	Backfill (2:1)	8140	3,600	CY	\$ 22.40	\$ 80,640.00
	37	Compacted Backfill (2:1)	8140	3,600	CY	\$ 8.00	\$ 28,800.00
	38	Embankment (chute crosses swale)	8140	44,000	CY	\$ 8.70	\$ 382,800.00
	39	Compacted Embankment (chute crosses swale)	8140	44,000	CY	\$ 3.50	\$ 154,000.00
	40	Riprap (d50=24") (120 lb/cf)	8140	8,300	TONS	\$ 63.00	\$ 522,900.00
	41	Riprap Bedding (130 lb/cf)	8140	3,700	TONS	\$ 45.00	\$ 166,500.00
	42	Furnish, form, and place reinforced concrete	8140	1,550	CY	\$ 1,270.00	\$ 1,968,500.00
	43	Furnish and place concrete reinforcement.	8140	185,000	LBS	\$ 1.50	\$ 277,500.00
		Assume 120 #/CY					
	44	Furnish and handle cement (.282T/CY)	8140	430	TONS	\$ 160.00	\$ 68,800.00
		<b>Sheet Subtotal =</b>					<b>\$ 4,894,940.00</b>

## QUANTITIES

## PRICES

BY Anne Pavol	CHECKED Joe Gemperline/ K. A. Sayer	BY Jerry Zander	CHECKED 
DATE PREPARED May 1, 2007	PEER REVIEW David K. Edwards	DATE PREPARED May 31, 2007	PEER REVIEW 

## ESTIMATE WORKSHEET

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## ESTIMATE WORKSHEET

[illegible]



## ESTIMATE WORKSHEET

[illegible]

## ESTIMATE WORKSHEET

## FEATURE:

Wymer Offstream Storage Facility  
Discharge Line to Reservoir

Electrical

## PROJECT:

Yakima River Basin Water Storage Study

WOID: YRSSW

ESTIMATE LEVEL: Appraisal

REGION PN

PRICE LEVEL: Apr-07

## FILE:

H:\D8170\EST\Spreadsheet\Mar\Wymer Offstream Storage\Wymer PP&  
Resrv - Part of Electrical Worksheets - dmar- 5-07.xls\Discharge (6)

PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		<b>ELECTRICAL</b>					
		<b>Access Shaft/Gate Chamber Structure</b>					
		<b>Bldg Electrical Service Equipment (F&amp;I)</b>	8430				
	57	Distribution panelboard, indoor type 480 volts, 3-phase with 225 ampere bus		1	EA	\$ 10,500.00	\$ 10,500.00
	58	Transformer load center 15 kVA, 1-phase, 480-240/120 volt		1	EA	\$ 8,300.00	\$ 8,300.00
		<b>Combination Motor Starters (F&amp;I)</b>	8430				
	59	NEMA size 2 reversing contactor, 480V, 3-phase 480-120 volt control transformer NEMA type 4 enclosure		1	EA	\$ 5,000.00	\$ 5,000.00
		<b>Lighting System (F&amp;I)</b>	8430				
	60	120 volt, fluorescent NEMA type 4 fixtures for tower/gate chamber		1	LS		\$ 5,000.00
		<b>Assumptions:</b>					
		Bringing power to dam is part of unlisted items					
		<b>Sheet Subtotal =</b>					\$ 28,800.00

## QUANTITIES

## PRICES

BY Mike Schuh	CHECKED <i>[Signature]</i>	BY Dan Mar <i>[Signature]</i>	CHECKED <i>[Signature]</i>
DATE PREPARED April 25, 2007	PEER REVIEW George Girgis <i>[Signature]</i>	DATE PREPARED 05-29-07	PEER REVIEW <i>[Signature]</i>

## ESTIMATE WORKSHEET

## FEATURE:

Wymer Offstream Storage Facility  
Dam and Dike  
Concrete-Faced Rockfill Dam

Dam Civil/Structural

## PROJECT:

Yakima River Basin Water Storage Study

WOID: YRSSW

ESTIMATE LEVEL: Appraisal

REGION PN

PRICE LEVEL: Apr-07



## FILE:

JA2007 JWZ Estimates\Wymer Dam\Total Final Est\Final Est - Wymer PP and Reservoir.xls\Discharge (6)

PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		<b>GENERAL SITEWORK</b>	8312				
		<i>Assume no clearing and grubbing required</i>					
		<i>Assume road improvements and haul roads are part of unlisted items</i>					
		<b>DIVERSION &amp; DEWATERING</b>	8312				
		<i>Given shallow alluvium &amp; narrow valley, dewatering assumed to be minor (part of unlisted items)</i>					
		<b>FOUNDATION EXCAVATION</b>					
		<i>Assume common material stockpiled for reuse in misc. fill, haul roads, and similar</i>					
		<i>Assume rock material stockpiled for use (zone 4)</i>					
		<i>Stockpiles will be located within 1/2 mile of dam</i>					
	1	Excavation, stripping, of dam foundation	8312	110,000	CY	\$ 2.50	\$ 275,000.00
		<i>Assume depth of stripping 12 inches or less</i>					
		<i>Assume stripping will be stockpiled for topsoil use</i>					
	2	Excavation, common, for dam foundation	8312	2,680,000	CY	\$ 5.00	\$ 13,400,000.00
		<i>Assume about 35% of volume requires ripping</i>					
		<i>Assume suitable materials will be stockpiled for use as miscellaneous fill</i>					
	3	Excavation, rock, for dam foundation	8312	22,000	CY	\$ 28.00	\$ 616,000.00
		<i>Assume drill and blast in areas along plinth</i>					
		<b>FOUNDATION TREATMENT</b>					
		<i>Includes misc. surface foundation treatment, consolidation grouting, and curtain grouting</i>					
	4	Slush grouting of foundation surface	8312	35,000	SF	\$ 6.00	\$ 210,000.00
		<i>Over assumed 40% of plinth area</i>					
	5	Dental concrete	8312	2,000	CY	\$ 200.00	\$ 400,000.00
	6	Furnish/place zone 2 sand filter on foundation	8312	40,000	CY	\$ 45.00	\$ 1,800,000.00
		<i>Over assumed 10% of area between u/s toe and axis</i>					
		<i>Assume a 3-ft thickness above &amp; below zone 3</i>					
	7	Furnish/place zone 3 gravel drain on foundation	8312	20,000	CY	\$ 40.00	\$ 800,000.00
		<i>Between the zone 2 filters in a 3-ft thickness</i>					
		Sheet Subtotal =					\$ 17,501,000.00

## QUANTITIES

## PRICES

BY Will Gonzales	CHECKED Bill Engemoen	BY Jerry Zander #3	CHECKED 
DATE PREPARED May 2, 2007	PEER REVIEW Chuck Redlinger	DATE PREPARED May 31, 2007	PEER REVIEW 

## ESTIMATE WORKSHEET

[illegible]

## ESTIMATE WORKSHEET

[illegible]

## ESTIMATE WORKSHEET

## FEATURE:

Wymer Offstream Storage Facility  
Dam and Dike  
Concrete-Faced Rockfill Dam

Dam Civil/Structural

## PROJECT:

Yakima River Basin Water Storage Study

WOID: YRSSW

ESTIMATE LEVEL: Appraisal

REGION PN

PRICE LEVEL: Apr-07

## FILE:

J:\2007 JWZ Estimates\Wymer Dam\Total Final Est\Final Est - Wymer PP and Reservoir.xls\Discharge (6)

PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		<b>CONCRETE FACE &amp; PLINTH CONSTRUCTION</b>					
		<b>Plinth</b>					
		<i>Typical thickness will be 1.5 feet</i>					
		<i>Width will range from 10 to 45 feet, avg=20 ft</i>					
		<i>Grouted anchors may be needed in poor rock areas</i>					
	23	Furnish and place reinforced concrete in plinth	8312	4,500	CY	\$ 550.00	\$ 2,475,000.00
	24	Furnish and place concrete reinforcement (100#/CY)	8312	450,000	LBS	\$ 1.50	\$ 675,000.00
	25	Furnish and handle cement for concrete (.282T/CY)	8312	1,300	TONS	\$ 145.00	\$ 188,500.00
	26	Furnish and install grouted anchors	8312	86,000	LF	\$ 26.00	\$ 2,236,000.00
		<i>Assume 1-inch diameter rebar grouted into rock</i>					
		<i>Assume 15-foot lengths</i>					
		<b>Concrete Deck</b>					
		<i>Thickness will average 2 feet</i>					
		<i>Adjacent panels will have waterstops and dowels</i>					
		<i>Concrete paved on 1.5:1 upstream face of dam</i>					
	27	Furnish and place reinforced concrete in deck	8312	125,000	CY	\$ 385.00	\$ 48,125,000.00
	28	Furnish and place concrete reinforcement (100#/CY)	8312	12,500,000	LBS	\$ 1.30	\$ 16,250,000.00
	29	Furnish and handle cement for concrete (.282T/CY)	8312	35,000	TONS	\$ 110.00	\$ 3,850,000.00
		<b>MISCELLANEOUS</b>					
		<b>Instrumentation</b>					
		<i>Assume part of unlisted items</i>					
		<b>Toe Drains</b>					
		<i>Assume part of unlisted items</i>					
		<b>Site cleanup and relandscaping</b>					
		<i>Assume part of unlisted items</i>					
		<b>Sheet Subtotal =</b>					\$ 73,799,500.00

## QUANTITIES

## PRICES

BY Will Gonzales	CHECKED Bill Engemoen	BY Jerry Zander	CHECKED [Signature]
DATE PREPARED May 2, 2007	PEER REVIEW Chuck Redlinger	DATE PREPARED May 31, 2007	PEER REVIEW [Signature]

## ESTIMATE WORKSHEET

## FEATURE:

Wymer Offstream Storage Facility  
Dam and Dike  
Central Core Rockfill Dike

Dike Civil/Structural

## PROJECT:

Yakima River Basin Water Storage Study

WOID: YRSSW

ESTIMATE LEVEL: Appraisal

REGION PN

PRICE LEVEL: Apr-07

## FILE:

J:\2007 JWZ Estimates\Wymer Dam\Total Final Est\Final Est - Wymer PP and Reservoir.xls\Discharge (6)

PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		<b>GENERAL SITEWORK</b>					
		<i>Assume no clearing and grubbing required</i>					
		<i>Assume road improvements and haul roads are part of unlisted items</i>					
		<b>DIVERSION &amp; DEWATERING</b>					
		<i>Assume groundwater is below excavation</i>					
		<i>Assume natural stream beds in area are dry</i>					
		<b>FOUNDATION EXCAVATION</b>					
		<i>Assume common material stockpiled for reuse</i>					
		<i>Assume rock material stockpiled for reuse</i>					
		<i>Stockpiles will be located within 1/2 mile of dam</i>					
	30	Excavation, stripping, of dam foundation <i>Assume depth of stripping 12 inches or less</i> <i>Assume stripping will be stockpiled for topsoil use</i>	8312	45,000	CY	\$ 4.00	\$ 180,000.00
	31	Excavation, common, for dam foundation <i>Assume about 35% of volume requires ripping</i> <i>Assume suitable materials will be stockpiled for use as miscellaneous fill</i>	8312	1,260,000	CY	\$ 5.00	\$ 6,300,000.00
	32	Excavation, rock, for dam foundation <i>Assume drill and blast in random locations</i>	8312	2,000	CY	\$ 48.00	\$ 96,000.00
		<b>FOUNDATION TREATMENT</b>					
		<i>Includes misc. foundation surface treatment, consolidation grouting, and curtain grouting</i>					
		<b>Miscellaneous Foundation Areas</b>					
		<i>Applied in areas of poor quality rock</i>					
	33	Slush grouting of foundation surface <i>Over assumed 30% of area beneath zone 1</i>	8312	36,000	SF	\$ 6.00	\$ 216,000.00
	34	Dental concrete	8312	2,000	CY	\$ 200.00	\$ 400,000.00
	35	Furnish/place zone 2 sand filter on foundation <i>Over 10% of area between zone 1 and d/s toe</i> <i>Assume a 3-ft thickness above and below zone 3</i>	8312	14,000	CY	\$ 45.00	\$ 630,000.00
	36	Furnish/place zone 3 gravel drain on foundation <i>Between the zone 2 filters in a 3-ft thickness</i>	8312	7,000	CY	\$ 40.00	\$ 280,000.00
		<b>Sheet Subtotal =</b>					\$ 8,102,000.00

## QUANTITIES

## PRICES

BY Will Gonzales	CHECKED Bill Engemoen	BY Jerry Zander	CHECKED
DATE PREPARED May 2, 2007	PEER REVIEW Chuck Redlinger	DATE PREPARED May 31, 2007	PEER REVIEW

**FEATURE:**

Wymer Offstream Storage Facility  
Dam and Dike  
Central Core Rockfill Dike

## Yakima River Basin Water Storage Study

<b>WOID:</b>	YRSSW	<b>ESTIMATE LEVEL:</b>	Appraisal
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<b>REGION</b>	PN	<b>PRICE LEVEL:</b>	Apr-07
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**FILE:** J:\2007 JWZ Estimates\Wymer Dam\Total Final Est\Final Est - Wymer PP and Reservoir.xls\Discharge (6)

Dike Civil/Structural

PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		<b>FOUNDATION TREATMENT (continued)</b>					
		<b>Consolidation Grouting of Foundation</b>					
		<i>Generally limited to area beneath zone 1</i>					
	37	Setups for drilling grout holes <i>Assume 2-inch dia. drilled on 10-foot centers</i>	8312	1,600	EA	\$ 150.00	\$ 240,000.00
	38	Drill grout holes <i>Assume 2-inch dia. w/length= 30 feet</i>	8312	48,000	LF	\$ 35.00	\$ 1,680,000.00
	39	Hookups to grout holes	8312	1,600	EA	\$ 60.00	\$ 96,000.00
	40	Pressure grout <i>Assume grouting process only minus cement</i> <i>Assume 2 CF per 1 LF of hole</i>	8312	100,000	CF	\$ 10.00	\$ 1,000,000.00
	41	Furnish and handle cement for pressure grouting <i>Assume 1 bag per CF</i>	8312	100,000	BAGS	\$ 10.00	\$ 1,000,000.00
		<b>Curtain Grouting of Foundation</b>					
		<i>Two-row curtain beneath zone 1</i>					
	42	Setups for drilling grout holes <i>Assume 2-rows of 2-inch dia.on 10-ft centers</i>	8312	500	EA	\$ 150.00	\$ 75,000.00
	43	Drill grout holes <i>Assume 2-inch dia. w/length from 60 to 120 feet,</i> <i>with an average of 90 feet</i>	8312	45,000	LF	\$ 40.00	\$ 1,800,000.00
	44	Hookups to grout holes	8312	500	EA	\$ 60.00	\$ 30,000.00
	45	Pressure grout <i>Assume grouting process only minus cement</i> <i>Assume 3 CF per 1 LF of hole</i>	8312	135,000	CF	\$ 10.00	\$ 1,350,000.00
	46	Furnish and handle cement for pressure grouting <i>Assume 1 bag per CF</i>	8312	135,000	BAGS	\$ 10.00	\$ 1,350,000.00
		<b>Sheet Subtotal =</b>					<b>\$ 8,621,000.00</b>

## QUANTITIES

**BY**  
Will Gonzales

**CHECKED**  
Bill Engemoen

**BY**  
Jerry Zander

**CHECKED**

**DATE PREPARED**  
May 2, 2007

**PEER REVIEW**  
Chuck Redlinger

**DATE PREPARED**  
May 31, 2007

PEER REVIEW



## ESTIMATE WORKSHEET

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## ESTIMATE WORKSHEET

[illegible]

## ESTIMATE WORKSHEET

## FEATURE:

Wymer Offstream Storage Facility  
Spillway and Outlet Works  
**Spillway**

Civil

## PROJECT:

Yakima River Basin Water Storage Study

WOID: YRSSW ESTIMATE LEVEL: Appraisal





REGION PN PRICE LEVEL: Apr-07

FILE: J:\2007 JWZ Estimates\Wymer Dam\Total Final Est\Final Est - Wymer PP and Reservoir.xls\Discharge (6)

PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		<b>Uncontrolled Spillway (no gates)</b>					
		Located on left abutment with crest at El. 1730					
		<b>Earthwork</b>	8130				
	1	Common excavation		560,000	CY	\$ 5.00	\$ 2,800,000.00
	2	Rock excavation (drill and blast)		145,000	CY	\$ 21.00	\$ 3,045,000.00
	3	Pervious backfill behind chute walls		4,000	CY	\$ 11.50	\$ 46,000.00
	4	Misc backfill behind chute walls		15,000	CY	\$ 7.80	\$ 117,000.00
	5	Riprap inlet structure		2,600	CY	\$ 50.00	\$ 130,000.00
	6	Bedding for riprap inlet structure		1,400	CY	\$ 40.00	\$ 56,000.00
	7	Riprap for stilling basin		1,700	CY	\$ 50.00	\$ 85,000.00
	8	Bedding for riprap stilling basin		1,000	CY	\$ 40.00	\$ 40,000.00
		<b>Concrete</b>	8130				
	9	Concrete in Inlet structure		1,100	CY	\$ 1,290.00	\$ 1,419,000.00
	10	Concrete in Crest structure		1,500	CY	\$ 1,230.00	\$ 1,845,000.00
	11	Concrete in Chute		14,500	CY	\$ 795.00	\$ 11,527,500.00
	12	Concrete in Stilling Basin structure		1,900	CY	\$ 1,180.00	\$ 2,242,000.00
	13	Furnish and place concrete reinforcement.		2,800,000	LBS	\$ 1.40	\$ 3,920,000.00
		Assume 150 #/CY					
	14	Furnish and handle cement (.282T/CY)		5,300	TONS	\$ 130.00	\$ 689,000.00
		<b>Drains - Furnish and install</b>	8130				
	15	6-inch dia PVC perf. And non perf. (90% perf.)		16,000	LF	\$ 7.00	\$ 112,000.00
	16	Furnish and install sand for drains		4,600	CY	\$ 31.00	\$ 142,600.00
	17	Furnish and install gravel for drains		4,000	CY	\$ 31.00	\$ 124,000.00
	18	Furnish and install 2-inch rigid insulation		130,000	SF	\$ 2.10	\$ 273,000.00
	19	Furnish and install 9-inch waterstops - spillway joints	8130	15,000	LF	\$ 9.00	\$ 135,000.00
	20	Drill and grout anchor bars	8130	370	EA	\$ 180.00	\$ 66,600.00
		(Total length of rock drilling= 1,850 feet)					
	21	Reinforcement for anchor bars	8130	9,400	LBS	\$ 1.70	\$ 15,980.00
	22	Furnish and install 48-inch chain link fencing	8130	6,300	LF	\$ 20.00	\$ 126,000.00
		for spillway					
		<b>Sheet Subtotal =</b>					\$ 28,956,680.00

## QUANTITIES

## PRICES

BY Tom Scobell	CHECKED 	BY Jerry Zander	CHECKED 
DATE PREPARED May 1, 2007	PEER REVIEW 	DATE PREPARED May 31, 2007	PEER REVIEW 

## ESTIMATE WORKSHEET

## FEATURE:

Wymer Offstream Storage Facility  
Spillway and Outlet Works  
**Spillway**

Civil/Structural

## PROJECT:

Yakima River Basin Water Storage Study

WOID: YRSSW

ESTIMATE LEVEL: Appraisal

REGION PN

PRICE LEVEL: Apr-07

## FILE:

C:\DOCUME~1\RIafond\LOCALS~1\Temp\SpillwayandOW.estimateworks  
heet.Stanton.v3.xls\Spillway and Outlet Works

PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		<b>Access Bridge across Spillway</b>	8140				
	23	Furnish and install AASHTO Type III precast, prestressed concrete beams, L = 65 feet		4	Each	\$ 10,200.00	\$ 40,800.00
	24	Furnish and place reinforced concrete for deck parapets and diaphragms, f'c = 4,000 psi		60	CY	\$ 1,850.00	\$ 111,000.00
	25	Furnish and handle cement material		17	Tons	\$ 195.00	\$ 3,315.00
	26	Furnish and install epoxy coated reinforcing steel Fy = 60,000 psi		16,000	LBS	\$ 1.70	\$ 27,200.00
	27	Furnish and install elastomeric bearing pads, (3" x 1'-6" x 1'-10"), total # = 8		22	SF	\$ 280.00	\$ 6,160.00
	28	Furnish and install compression joint seals DS Brown CV-3500 preformed neoprene compression joint seals, or equal		54	LF	\$ 8.00	\$ 432.00
		Deck drains (2 per side)					
	29	R-4005-A2 as manufactured by NEENAH Foundry or equal. Each one weighs~ 105 lbs		4	EA	\$ 525.00	\$ 2,100.00
	30	8-inch diameter black steel pipe, each L = 4'		16	LF	\$ 190.00	\$ 3,040.00
		Bridge will span spillway walls, which are 60-feet apart. The bridge superstructure will be supported on bearing seats, formed onto the spillway walls. Therefore, no foundation elements are included in this estimate worksheet.					
		The bridge is located near the left abutment. The dam crest will be gravel surfaced. Chain link fence is required along the length of the spillway, so it is not included here. No approach guardrail is included in this estimate (see roadwork estimate).					
		Water treatment for deck drainage is not included in this estimate.					
		<b>Sheet Subtotal =</b>					\$ 194,047.00

## QUANTITIES

## PRICES

BY Jesus G. Romero	CHECKED Nicholas W. Clough, PE	BY Jerry Zander	CHECKED
DATE PREPARED 5/1/07	PEER REVIEW David K. Edwards, PE	DATE PREPARED May 31, 2007	PEER REVIEW

## ESTIMATE WORKSHEET

## FEATURE:

Wymer Offstream Storage Facility  
Spillway and Outlet Works  
**Outlet Works**

Civil

## PROJECT:

Yakima River Basin Water Storage Study

WOID: YRSSW

ESTIMATE LEVEL: Appraisal

REGION PN

PRICE LEVEL: Apr-07

## FILE:

J:\2007 JWZ Estimates\Wymer Dam\Total Final Est\Final Est - Wymer PP and Reservoir.xls\Discharge (6)

PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		<b>Earthwork U/S - channel, intake, conduit, portal</b>	8130				
	31	Excavate common materials for structures		500	CY	\$ 35.00	\$ 17,500.00
	32	Excavate rock materials for structures (drill & shoot)		1,500	CY	\$ 44.00	\$ 66,000.00
	33	F & P bedding for riprap (processed on-site)		70	CY	\$ 40.00	\$ 2,800.00
	34	F & P rockfill from dam excavation (riprap)		140	CY	\$ 47.00	\$ 6,580.00
	35	Furnish and install chain link fabric around portal		1,750	SF	\$ 3.00	\$ 5,250.00
	36	F&I 18-inch x 1/2 in. dia resin anchors for fabric support		24	EA	\$ 50.00	\$ 1,200.00
		<b>Earthwork D/S - portal, conduit, house, stilling basin</b>	8130				
	37	Excavate common materials for structures		1,000	CY	\$ 35.00	\$ 35,000.00
	38	Excavate rock materials for structures (drill & shoot)		3,000	CY	\$ 42.00	\$ 126,000.00
	39	Excavate common materials for basin		12,000	CY	\$ 10.00	\$ 120,000.00
	40	Excavate rock materials for basin (drill & shoot)		4,000	CY	\$ 42.00	\$ 168,000.00
	41	F & P bedding for riprap (processed on-site)		4,500	CY	\$ 26.00	\$ 117,000.00
	42	F & P rockfill from dam excavation (riprap)		2,250	CY	\$ 45.00	\$ 101,250.00
	43	Furnish and install chain link fabric around portal		2,000	SF	\$ 3.00	\$ 6,000.00
	44	F&I 18-inch x 1/2 in. dia resin anchors for fabric support		30	EA	\$ 50.00	\$ 1,500.00
		<b>Construct ROW tunnel u/s of gate chamber</b>	8130				
	45	Drill and shoot 13.5-ft O.D.circular shaped u/s tunnel		850	LF	\$ 2,000.00	\$ 1,700,000.00
	46	Remove and stockpile rock (assume local stockpile)		4,500	CY	\$ 19.00	\$ 85,500.00
		Furnish, drill and install 750-10-ft long x 1-inch dia.					
	47	A307, 20K rockbolts		5,200	LF	\$ 72.00	\$ 374,400.00
	48	Furnish and install 6 steel sets (W8 x 40) (full circle)		11,400	LBS	\$ 6.00	\$ 68,400.00
		<b>Construct ROW tunnel d/s of gate chamber</b>	8130				
	49	Drill and shoot 19-ft OD circular shaped d/s tunnel		1,200	LF	\$ 2,800.00	\$ 3,360,000.00
	50	Remove and stockpile rock (assume local stockpile)		13,000	CY	\$ 19.00	\$ 247,000.00
		Furnish, drill and install 1250-10-ft long x 1-inch dia.					
	51	A307, 20K rockbolts		8,800	LF	\$ 72.00	\$ 633,600.00
	52	Furnish and install 6 steel sets (W10 x 40) in crown		20,000	LBS	\$ 6.00	\$ 120,000.00
		<b>Construct Gate chamber</b>					
	53	Drill and shoot 20-ft OD spherical shaped chamber		20	LF	\$ 3,000.00	\$ 60,000.00
	54	Remove and stockpile rock (assume local stockpile)		340	CY	\$ 23.00	\$ 7,820.00
		Furnish, drill and install 30-10-ft long x 1-inch dia.					
	55	A307, 20K rockbolts		300	LF	\$ 140.00	\$ 42,000.00
		<b>Sheet Subtotal =</b>					\$ 7,472,800.00

## QUANTITIES

## PRICES

BY

Doug Stanton

CHECKED

BY

Jerry Zander

CHECKED

DATE PREPARED

May 1, 2007

PEER REVIEW

DATE PREPARED

May 31, 2007

PEER REVIEW

## ESTIMATE WORKSHEET

[illegible]

## ESTIMATE WORKSHEET

[illegible]

## ESTIMATE WORKSHEET

## FEATURE:

Wymer Offstream Storage Facility  
Spillway and Outlet Works  
**Outlet Works**

Civil

## PROJECT:

Yakima River Basin Water Storage Study

WOID: YRSSW

ESTIMATE LEVEL: Appraisal

REGION PN

PRICE LEVEL: Apr-07

## FILE:

JA2007 JWZ Estimates\Wymer Dam\Total Final Est\Final Est - Wymer PP and Reservoir.xls\Discharge (6)

PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		<b>Construct ROW cast in place (CIP) concrete</b>	8130				
	80	Furnish, form, and place reinf. Conc - Intake structure		250	CY	\$ 1,500.00	\$ 375,000.00
	81	Furnish and place reinforcement (est 200#/CY)		50,000	LBS	\$ 1.60	\$ 80,000.00
	82	Furnish and handle cement (.282T/CY)		71	TONS	\$ 180.00	\$ 12,780.00
	83	FFP reinf. Conc - Steel lined U/S conduit (L=50' u/s of tunnel)		375	CY	\$ 1,500.00	\$ 562,500.00
	84	Furnish and place reinforcement (est 150#/CY)		56,250	LBS	\$ 1.60	\$ 90,000.00
	85	Furnish and handle cement (.282T/CY)		106	TONS	\$ 175.00	\$ 18,550.00
	86	FFP reinf. Conc - Steel lined U/S tunnel (L=850')		2,300	CY	\$ 1,150.00	\$ 2,645,000.00
	87	Furnish and place reinforcement (est 150#/CY)		350,000	LBS	\$ 1.50	\$ 525,000.00
	88	Furnish and handle cement (.282T/CY)		650	TONS	\$ 150.00	\$ 97,500.00
	89	FFP reinf. Concrete in gate chamber		180	CY	\$ 1,650.00	\$ 297,000.00
	90	Furnish and place reinforcement (160#/CY)		29,000	LBS	\$ 1.70	\$ 49,300.00
	91	Furnish and handle cement (.282T/CY)		51	TONS	\$ 180.00	\$ 9,180.00
	92	FFP reinf. Concrete - D/S tunnel (L=1200') includes walkway and saddles		5,200	CY	\$ 990.00	\$ 5,148,000.00
	93	Furnish and place reinforcement (est 150#/CY)		780,000	LBS	\$ 1.45	\$ 1,131,000.00
	94	Furnish and handle cement (.282T/CY)		1,500	TONS	\$ 145.00	\$ 217,500.00
	95	FFP reinf. concrete - D/S conduit (L=130 ft d/s of tunnel) includes walkway and saddles		290	CY	\$ 1,500.00	\$ 435,000.00
	96	Furnish and place reinforcement (est 150#/CY)		43,500	LBS	\$ 1.60	\$ 69,600.00
	97	Furnish and handle cement (.282T/CY)		82	TONS	\$ 175.00	\$ 14,350.00
	98	FFP reinf. concrete - D/S access house (30' x 30' x 12' tall) includes wingwalls		580	CY	\$ 1,400.00	\$ 812,000.00
	99	Furnish and place reinforcement (est 150#/CY)		87,000	LBS	\$ 1.60	\$ 139,200.00
	100	Furnish and handle cement (.282T/CY)		164	TONS	\$ 170.00	\$ 27,880.00
	101	Furnish and install 48-inch chain link fencing on wingwalls @ Control House	8130	80	LF	\$ 43.00	\$ 3,440.00
		<b>Sheet Subtotal =</b>					<b>\$ 12,759,780.00</b>

## QUANTITIES

## PRICES

BY  
Doug Stanton

CHECKED

BY

Jerry Zander

DATE PREPARED

May 1, 2007

PEER REVIEW

DATE PREPARED

May 31, 2007

PEER REVIEW



## ESTIMATE WORKSHEET

[illegible]

## ESTIMATE WORKSHEET

## FEATURE:

Wymer Offstream Storage Facility  
Spillway and Outlet Works  
Outlet Works

Mechanical

## PROJECT:

Yakima River Basin Water Storage Study

WOID: YRSSW

ESTIMATE LEVEL: Appraisal

REGION PN

PRICE LEVEL: Apr-07

## FILE:

J:\2007 JWZ Estimates\Wymer Dam\Total Final Est\Final Est - Wymer PP and Reservoir.xls\Discharge (6)

PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		<b>Steel Pipe</b>	8420				
	109	114-inch ID steel liner (7/8-inch wall, 1074 lb per lin. ft.)		900	LF	\$ 2,700.00	\$ 2,430,000.00
	110	102-inch ID steel pipe, Supported on concrete saddles (1/2-inch wall, 547 lb per lin. ft.)		1,330	LF	\$ 1,400.00	\$ 1,862,000.00
	111	72-inch ID steel pipe, encased in concrete (3/8-inch wall, 290 lb per lin. ft.)		60	LF	\$ 3,900.00	\$ 234,000.00
	112	30-inch ID steel pipe (1/4-inch wall, 80 lb per lin. ft.)		30	LF	\$ 200.00	\$ 6,000.00
	113	24-inch ID steel pipe for air vent (1/4-inch wall, 64 lb per lin. ft.)		20	LF	\$ 160.00	\$ 3,200.00
	114	14-inch ID steel pipe for filling line (1/4-inch wall, 38 lb per lin. ft.)		20	LF	\$ 95.00	\$ 1,900.00
		<b>Valves</b>					
	115	AWWA Class 250, manually operated butterfly valve (for air vent): 1 -24" Diameter valve, 1350 lbs. per valve.		1,350	LBS	\$ 8.00	\$ 10,800.00
	116	Combination air valve (for air vent to prevent vacuum) 1 -24" Diameter valve, 2600 lbs. per valve.		2,600	LBS	\$ 10.00	\$ 26,000.00
	117	AWWA Class 300, hydraulically operated ball valve: 1 -30" Diameter valve, 5900 lbs. per valve.		5,900	LBS	\$ 14.00	\$ 82,600.00
	118	AWWA Class 250, manually operated (filling line) butterfly valves: 2 -14" Diameter valves, 450 lbs. per valve.		900	LBS	\$ 10.00	\$ 9,000.00
		<b>Sheet Subtotal =</b>					\$ 4,665,500.00

## QUANTITIES

## PRICES

BY Rick Frisz	CHECKED Ken Smith	BY Jerry Zander	CHECKED
DATE PREPARED 4-30-07	PEER REVIEW KRS	DATE PREPARED May 31, 2007	PEER REVIEW

## ESTIMATE WORKSHEET

[illegible]

## ESTIMATE WORKSHEET

<b>FEATURE:</b>  Wymer Offstream Storage Facility Spillway and Outlet Works <b>Outlet Works</b>  Mechanical	<b>PROJECT:</b>  Yakima River Basin Water Storage Study	
	<b>WOID:</b> YRSSW	<b>ESTIMATE LEVEL:</b> Appraisal
	<b>REGION:</b> PN	<b>PRICE LEVEL:</b> Apr-07
	<b>FILE:</b> J:\2007 JWZ Estimates\Wymer Dam\Total Final Est\Final Est - Wymer PP and Reservoir.xls\Discharge (6)	

## ESTIMATE WORKSHEET

**FEATURE:**

## Wymer Offstream Storage Facility Diversion During Dam Construction

Geotechnical

**PROJECT:**

## Yakima River Basin Water Storage Study

<b>WOID:</b>	YRSSW	<b>ESTIMATE LEVEL:</b>	Appraisal
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REGION	PN	PRICE LEVEL:	Apr-07
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**FILE:** J:\2007 JWZ Estimates\Wymer Dam\Total Final Est\Final Est - Wymer PP and Reservoir.xls\Discharge (6)

## ESTIMATE WORKSHEET

[illegible]

## ESTIMATE WORKSHEET

FEATURE:			PROJECT:					
Wymer Offstream Storage Facility Diversion During Dam Construction			Yakima River Basin Water Storage Study					
			WOID:	YRSSW	ESTIMATE LEVEL:			Appraisal
			REGION	PN	PRICE LEVEL:			Apr-07
			FILE:					J:\2007 JWZ Estimates\Wymer Dam\Total Final Est\Final Est - Wymer PP and Reservoir.xls\Diversion (4)
Mechanical/Electrical								
PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT	
		Diverting Stream into Diversion pipe						
		Dewatering Pumps:	8420					
	11	Two - 10 cfs (4500 gpm) Flygt C 3300 Wastewater Submersible Pumps, low head (LT), Curve/ Impeller No. 809, S-installation, 20' TDH, 900 rpm, 50 hp (34 kW), ~12" disch., 3 ph/60 Hz/460 V (2300 lbs. ea.)		4,600	lbs	\$ 20.00	\$ 92,000.00	
		Submersible electrical cable	8430					
	12	3 - power conductor, 600 V, #4 AWG		500	LF	\$ 20.00	\$ 10,000.00	
	13	2 - thermal sensor cables, #10 AWG		500	LF	\$ 1.50	\$ 750.00	
	14	1 - ground cable, #6 AWG		500	LF	\$ 2.00	\$ 1,000.00	
	15	Combination pump motor starters, 600 volt, NEMA 4 enclosure, Size 3, non-reversing contactor	8430	2	each	\$ 5,500.00	\$ 11,000.00	
	16	Pump sump level controls 2 floats, control relay in a NEMA 4 enclosure	8430	1	each	\$ 1,600.00	\$ 1,600.00	
	17	Pumping Costs Estimate pumping 6 hours per day for 2 years		4,400	HRS	\$ 95.00	\$ 418,000.00	
		Sheet Subtotal =					\$ 534,350.00	
QUANTITIES			PRICES					
BY R. Zelenka		CHECKED T. Hummel 4/26/07	BY Dan Mar		CHECKED A.C. [Signature]			
DATE PREPARED April 25, 2007		PEER REVIEW T. Hummel 4/26/07	DATE PREPARED May 31, 2007		PEER REVIEW [Signature]			

## ESTIMATE WORKSHEET

[illegible]



## ESTIMATE WORKSHEET

## FEATURE:

Wymer Offstream Storage Facility  
Road and Creek Improvements  
Dam and Dike Access Roads

Civil/Structural

## PROJECT:

Yakima River Basin Water Storage Study

WOID: YRSSW

ESTIMATE LEVEL: Appraisal

REGION PN

PRICE LEVEL: Apr-07

## FILE:

J:\2007 JWZ Estimates\Wymer Dam\Total Final Est\Final Est - Wymer PP  
and Reservoir.xls\Discharge (6)

PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		<b>CIVIL - ROAD</b>					
		All roadway sections assume two 12' lanes w/o shoulders, 3:1 sloped ditches to 1' depth, and cut slopes of 2:1. A slope greater than 12% was utilized in several areas. Upon final design, alignment will be modified to better suit existing earthwork conditions and eliminate slopes greater than 12%.					
		<b>Road from SH821 to other side of Dam</b>					
		8200 LF of roadway					
	1	Excavation		25,000	CY	\$ 6.00	\$ 150,000.00 ✓
	2	Compacted Embankment		52,000	CY	\$ 6.80	\$ 353,600.00 ✓
	3	Gravel Surfacing (6" Depth)		7,000	TON	\$ 45.00	\$ 315,000.00 ✓
	4	24" CMP Culvert (assume five 35' lengths)		595	LF	\$ 60.00	\$ 35,700.00 ✓
	5	Metal Beam Guard Railing with Wooden Post to be installed across dam		6,400	LF	\$ 38.00	\$ 243,200.00 ✓
		<b>Road from access house to other side of dike</b>					
		2600 LF of roadway					
	6	Excavation		5,700	CY	\$ 11.00	\$ 62,700.00 ✓
	7	Compacted Embankment		13,000	CY	\$ 11.00	\$ 143,000.00 ✓
	8	Gravel Surfacing (6" Depth)		4,300	TON	\$ 45.00	\$ 193,500.00 ✓
	9	24" CMP Culvert (assume four 35' lengths)		175	LF	\$ 60.00	\$ 10,500.00 ✓
	10	Metal Beam Guard Railing with Wooden Post to be installed across dike		5,200	LF	\$ 38.00	\$ 197,600.00 ✓
		<b>Road from SH821 to outlet works</b>					
		3600 LF of roadway					
	11	Excavation		100	CY	\$ 50.00	\$ 5,000.00 ✓
	12	Compacted Embankment		330	CY	\$ 22.00	\$ 7,260.00 ✓
	13	Gravel Surfacing (6" Depth)		3,000	TON	\$ 50.00	\$ 150,000.00 ✓
	14	24" CMP Culvert (assume two 35' lengths)		245	LF	\$ 60.00	\$ 14,700.00 ✓
		<b>Sheet Subtotal =</b>					\$ 1,881,760.00 ✓

## QUANTITIES

## PRICES

BY

Nick Clough

CHECKED

Chris Duke, Anne Pavol

BY

Jerry Zander

CHECKED

M.C. 1/14

DATE PREPARED

May 2, 2007, Revised May 9, 2007

PEER REVIEW

Dave Edwards

DATE PREPARED

May 31, 2007

PEER REVIEW

R.C.D.

## ESTIMATE WORKSHEET

[illegible]

## ESTIMATE WORKSHEET

FEATURE:			PROJECT:					
Wymer Offstream Storage Facility Road and Creek Improvements I-82 Bridge Protection  Civil/Structural			Yakima River Basin Water Storage Study					
			WOID:	YRSSW	ESTIMATE LEVEL:			Appraisal
			REGION	PN	PRICE LEVEL:			Apr-07
			FILE: J:\2007 JWZ Estimates\Wymer Dam\Total Final Est\Final Est - Wymer PP and Reservoir.xls\Discharge (6)					
PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT	
		I-82 Bridges						
		Protect existing 2:1 slope bridge embankments						
		Apply waterproof membrane to existing bridge piers that will be submerged						
		Embankment Protection						
	24	Furnish and place riprap on embankments, (D50 = 24")	8140	34,000	TONS	\$ 30.00	\$ 1,020,000.00	
	25	Furnish and place riprap bedding	8140	16,000	TONS	\$ 20.00	\$ 320,000.00	
	26	Excavate existing protection (18" deep)	8140	10,500	CY	\$ 15.00	\$ 157,500.00	
		Bridge Pier Protection						
		Apply membrane to Bridge piers						
	27	Water jet face of piers	8140	490	SY	\$ 20.00	\$ 9,800.00	
	28	Remove spalling concrete (5% total area)	8140	25	SY	\$ 50.00	\$ 1,250.00	
	29	Furnish and install liquid applied CIM 1000 urethane (spray application)	8140	490	SY	\$ 11.00	\$ 5,390.00	
	30	Furnish and install liquid applied CIM 61 primer (spray application)	8140	490	SY	\$ 13.00	\$ 6,370.00	
		coating on piers manufactured by PermaBond, Inc. Telephone (801) 465-2890. Contact: Stan Terry 720-368-1357						
		Sheet Subtotal =					\$ 1,520,310.00	
QUANTITIES			PRICES					
BY Joe Gemperline		CHECKED Anne Pavol	BY Jerry Zander #3		CHECKED M.C. #4			
DATE PREPARED April 30, 2007		PEER REVIEW David K. Edwards	DATE PREPARED May 31, 2007		PEER REVIEW [Signature]			