

<b>FEATURE:</b> REVISION #1 Klamath River Dams Removal Full Removal Option JC Boyle Dam & Powerplant Removal Most Probable Low Diversion and Care	<b>PROJECT:</b> Klamath River Northern California/Southern Oregon
	WOID: AF652      ESTIMATE LEVEL: Feasibility REGION: MP      UNIT PRICE LEVEL: July-2010
	FILE: C:\Estimating\Klamath\Klamath River Dams\Removal\Feasibility Estimates\MPL, MP, MPH - Revision #1 - 2011-03\JC Boyle\Klamath Dams Removal - JC Boyle - Full Removal Option - REV#1 - MPL Feas Est - 4-2011.xlsx\Summary

PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		<b>CIVIL</b>					
	1	Removal of Diversion Conduit Bulkheads.	86-68130	14	CY	\$725.00	\$10,150.00
		Includes removing two 9.5'x10' concrete bulkheads, one at a time by blasting.					
	2	Remove Water from behind Tailrace Cofferdam.	86-68130	500,000	gals	\$0.01	\$5,000.00
		Unwatering of tailrace for removal of the powerhouse in the dry. Assume 3 inch portable trash pump operating for 2 days.					
	3	Provide Dewatering behind Tailrace Cofferdam	86-68130	1	ls		\$28,000.00
		for removal of Powerhouse in the dry. Assume 3 inch portable trash pump operating for approximately 3 months.					
		<b>SUBTOTAL THIS SHEET</b>					<b>\$43,150.00</b>

<b>QUANTITIES</b>		<b>PRICES</b>	
BY Rick Benik	CHECKED Jonathan East	BY <i>[Signature]</i> Craig A. Grush, P.E.	CHECKED <i>[Signature]</i> 05-19-11
DATE PREPARED 11/01/10	PEER REVIEW / DATE Tom Hepler P.E. 11/1/10	DATE PREPARED 05/19/11	PEER REVIEW / DATE <i>[Signature]</i> 6/3/11



<b>FEATURE:</b> REVISION #1 Klamath River Dams Removal Full Removal Option JC Boyle Dam & Powerplant Removal Most Probable Low Dam	<b>PROJECT:</b> Klamath River Northern California/Southern Oregon <hr/> <b>WOID:</b> AF652 <b>ESTIMATE LEVEL:</b> Feasibility <b>REGION:</b> MP <b>UNIT PRICE LEVEL:</b> July-2010 <b>FILE:</b> C:\Estimating\Klamath\Klamath River Dams\Removal\Feasibility Estimates\MPL, MP, MPH - Revision #1 - 2011-03\JC Boyle\Klamath Dams Removal - JC Boyle - Full Removal Option - REV#1 - MPL Feas Est - 4-2011.xlsx\Summary
--	--

PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		<b>CIVIL</b>					
		<b>Concrete and Structural Steel Items:</b>					
	5	Remove Spillway Concrete 3000 psi, reinforced and mass concrete. Includes removal of two diversion culverts beneath spillway block 1. Spillway concrete was estimated between dam Sta. 2+19.5 and Sta. 3+36.5.	86-68130	2,500	yd3	\$130.00	\$325,000.00
	6	Remove Monorail Structural Steel Components This structure used for installing steel stoplogs in spillway radial gate openings.	86-68130	15,000	lbs	\$0.45	\$6,750.00
	7	Remove Fish Ladder Concrete 3000 psi, reinforced concrete. Includes fish ladder intake at upstream end, diffusion box at downstream end, and north abutment wall (which supports dam embankment). This quantity is for concrete to the right of dam Sta. 3+36.5.	86-68130	1,600	yd3	\$130.00	\$208,000.00
	8	Remove Gravity Dam Section Concrete 3000 psi, mass concrete.	86-68130	600	yd3	\$130.00	\$78,000.00
	9	Remove Timber Equipment Ramp on left side of dam. Timber is creosote pressure treated Douglas Fir assumed to weigh 36 lbs/ft3. Volume of timber to be removed is approximately 290 ft3.	86-68130	10,500	lbs	\$0.50	\$5,250.00
	10	Remove Pressure-Treated Lumber from Footbridge around intake structure. 2 in by 8 in Lumber assumed to weigh 30 lb/ft3. Volume of lumber to be removed is approximately 120 ft3.	86-68130	3,600	lbs	\$0.50	\$1,800.00
<b>SUBTOTAL THIS SHEET</b>							<b>\$624,800.00</b>

<b>QUANTITIES</b>		<b>PRICES</b>	
BY Stephen Latham	CHECKED Jonathan East	BY Craig A. Grush, P.E.	CHECKED <i>[Signature]</i> 05-19-11
DATE PREPARED 11/01/10	PEER REVIEW / DATE Rick Benik P.E. 11/1/10	DATE PREPARED 05/19/11	PEER REVIEW / DATE <i>[Signature]</i> 6/3/11

<b>FEATURE:</b>		<b>PROJECT:</b>	
REVISION #1 Klamath River Dams Removal Full Removal Option JC Boyle Dam & Powerplant Removal Most Probable Low Dam		Klamath River Northern California/Southern Oregon	
		WOID: AF652	ESTIMATE LEVEL: Feasibility
		REGION: MP	UNIT PRICE LEVEL: July-2010
		FILE: C:\Estimating\Klamath\Klamath River Dams\Removal\Feasibility Estimates\MPL, MP, MPH - Revision #1 - 2011-03\JC Boyle\Klamath Dams Removal - JC Boyle - Full Removal Option - REV#1 - MPL Feas Est - 4-2011.xlsx]Summary	

PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		<b>CIVIL</b>					
		<b>Concrete and Structural Steel Items:</b>					
	11	Storage Shed located on access road about 440' from left abutment of dam. 48' x 36' wood frame construction.	86-68130	1,728	ft2	\$38.00	\$65,664.00
	12	Warehouse located on access road about 370' from left abutment of dam (Red Barn). 60' x 32' wood frame construction.	86-68130	1,920	ft2	\$38.00	\$72,960.00
	13	Fire System Control Bldg. on left abutment. 15.25'x25.25' concrete block on concrete slab.	86-68130	385	ft2	\$38.00	\$14,630.00
	14	Dam Communication Bldg. on left abutment. 13.5'x24.5' metal building on concrete slab.	86-68130	331	ft2	\$38.00	\$12,578.00
	15	Concrete Slab on left abutment for former Control House. 13'x13' house has been removed.	86-68130	6	cy	\$130.00	\$780.00
	16	4'x5' Metal Hatch on top of Concrete Pull Box on left abutment. Metal hatch weighs approximately 400 lbs.	86-68130	1	cy	\$130.00	\$130.00
	17	Reservoir Level Gauge House on Dam Crest 4'x6' Metal building.	86-68130	24	ft2	\$38.00	\$912.00
<b>SUBTOTAL THIS SHEET</b>							<b>\$167,654.00</b>

<b>QUANTITIES</b>		<b>PRICES</b>	
BY Stephen Latham	CHECKED Jonathan East	BY <i>[Signature]</i> Craig A. Grush, P.E.	CHECKED <i>[Signature]</i> 05-19-11
DATE PREPARED 11/01/10	PEER REVIEW / DATE Rick Benik P.E. 11/1/10	DATE PREPARED 05/19/11	PEER REVIEW / DATE <i>[Signature]</i> 6/3/11

<b>FEATURE:</b> REVISION #1 Klamath River Dams Removal Full Removal Option JC Boyle Dam & Powerplant Removal Most Probable Low Dam	<b>PROJECT:</b> Klamath River Northern California/Southern Oregon
	WOID: AF652      ESTIMATE LEVEL: Feasibility REGION: MP      UNIT PRICE LEVEL: July-2010
	FILE: C:\Estimating\Klamath\Klamath River Dams\Removal\Feasibility Estimates\MPL, MP, MPH - Revision #1 - 2011-03\JC Boyle\Klamath Dams Removal - JC Boyle - Full Removal Option - REV#1 - MPL Feas Est - 4-2011.xlsx\Summary

PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		<b>GEOTECHNICAL</b>					
	18	Upstream Riprap <i>average size 50 lbs (from photograph)</i>	86-68313	2,220	yd3	\$8.00	\$17,760.00
	19	Downstream Riprap <i>average size 50 lbs (from photograph)</i>	86-68313	1,850	yd3	\$8.00	\$14,800.00
	20	Miscellaneous Excavation <i>Consists of finer earth fill materials such as Zone 1, Zone 2, Filters and a Waste Rock Zone</i>	86-68313	132,500	yd3	\$8.00	\$1,060,000.00
	21	Cutoff Wall Concrete Demolition <i>The concrete cutoff wall is embedded in the Zone 1 core and is anchored into bedrock.</i>	86-68313	70	yd3	\$130.00	\$9,100.00
	22	Cutoff Wall Anchors <i>Cut #8 anchors at top of bedrock</i>  <i>Assume concrete rubble disposed of on site but anchors hauled off site.</i>	86-68313	285	ea	\$9.00	\$2,565.00
		<b>SUBTOTAL THIS SHEET</b>					<b>\$1,104,225.00</b>

<b>QUANTITIES</b>		<b>PRICES</b>	
BY Randy Kuzniakowski	CHECKED Tuti Tierney	BY <i>[Signature]</i> Craig A. Grush, P.E.	CHECKED <i>[Signature]</i> 05-19-11
DATE PREPARED 11/01/10	PEER REVIEW / DATE Daniel W. Osmun 11/1/10	DATE PREPARED 05/19/11	PEER REVIEW / DATE <i>[Signature]</i> 6/3/11

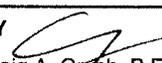
<b>FEATURE:</b> REVISION #1 Klamath River Dams Removal Full Removal Option JC Boyle Dam & Powerplant Removal Most Probable Low Dam	<b>PROJECT:</b> Klamath River Northern California/Southern Oregon
	WOID: AF652      ESTIMATE LEVEL: Feasibility
	REGION: MP      UNIT PRICE LEVEL: July-2010
	FILE: C:\Estimating\Klamath\Klamath River Dams\Removal\Feasibility Estimates\MPL, MP, MPH - Revision #1 - 2011-03\JC Boyle\Klamath Dams Removal - JC Boyle - Full Removal Option - REV#1 - MPL Feas Est - 4-2011.xlsx\Summary

PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		<b>MECHANICAL</b>					
		Remove and dispose of the following equipment at Dam:					
	23	Hand Rails and Light Poles	86-68420	5,000	lbs	\$0.45	\$2,250.00
	24	Spillway Radial Gates and Hoists 3 radial gates, 3 hoists	86-68420	124,000	lbs	\$0.45	\$55,800.00
	25	Stop Logs and Slots (steel) stop logs slots embedded in concrete	86-68420	92,000	lbs	\$0.45	\$41,400.00
		Remove and dispose of the following equipment at the Fish Ladder Structure:					
	26	24" Slide Gate at Entrance to Fish Ladder Structure	86-68420	4,200	lbs	\$0.45	\$1,890.00
		<b>SUBTOTAL THIS SHEET</b>					<b>\$101,340.00</b>

<b>QUANTITIES</b>		<b>PRICES</b>	
BY T. J. Turnage	CHECKED K. Converse	BY <i>[Signature]</i> Craig A. Grush, P.E.	CHECKED <i>[Signature]</i> 05-19-11
DATE PREPARED October 28, 2010	PEER REVIEW / DATE Dan Drake 10/29/2010	DATE PREPARED 05/19/11	PEER REVIEW / DATE <i>[Signature]</i> 6/3/11

<b>FEATURE:</b> REVISION #1 Klamath River Dams Removal Full Removal Option JC Boyle Dam & Powerplant Removal Most Probable Low Dam	<b>PROJECT:</b> Klamath River Northern California/Southern Oregon <hr/> <b>WOID:</b> AF652 <b>ESTIMATE LEVEL:</b> Feasibility <hr/> <b>REGION:</b> MP <b>UNIT PRICE LEVEL:</b> July-2010 <hr/> <b>FILE:</b> C:\Estimating\Klamath\Klamath River Dams\Removal\Feasibility Estimates\MPL, MP, MPH - Revision #1 - 2011-03\JC Boyle\Klamath Dams Removal - JC Boyle - Full Removal Option - REV#1 - MPL Feas Est - 4-2011.xlsx\Summary
--	--

PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		<b>ELECTRICAL</b>					
		<b>Remove and dispose of the following equipment at Spillway:</b>					
	27	Spillway gate motor & control panel Total weight approximately: 500 lbs.	86-68430	1	EA	\$500.00	\$500.00
	28	Distribution equipment , panelboards Total weight approximately: 500 lbs.	86-68430	1	EA	\$5,500.00	\$5,500.00
		<b>DAM SUBTOTAL</b>					<b>\$2,004,019.00</b>

<b>QUANTITIES</b>		<b>PRICES</b>	
BY D. Berk	CHECKED T. Griess	BY  Craig A. Grish, P.E.	CHECKED  05-19-11
DATE PREPARED November 1, 2010	PEER REVIEW / DATE L. Rossi 11/1/10	DATE PREPARED 05/19/11	PEER REVIEW / DATE  6/3/11

<b>FEATURE:</b> REVISION #1 Klamath River Dams Removal Full Removal Option JC Boyle Dam & Powerplant Removal Most Probable Low Powerhouse, Switchyard, and Transmission Line	<b>PROJECT:</b> Klamath River Northern California/Southern Oregon <hr/> <b>WOID:</b> AF652 <b>ESTIMATE LEVEL:</b> Feasibility <b>REGION:</b> MP <b>UNIT PRICE LEVEL:</b> July-2010 <b>FILE:</b> C:\Estimating\Klamath\Klamath River Dams\Removal\Feasibility Estimates\MPL, MP, MPH - Revision #1 - 2011-03\JC Boyle\Klamath Dams Removal - JC Boyle - Full Removal Option - REV#1 - MPL Feas Est - 4-2011.xlsx\Summary
--	--

PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		<b>CIVIL</b>					
		<b>Concrete and Structural Steel Items:</b>					
	29	Remove Powerhouse Concrete down to Elevation 3324.0 (springline of the turbines). Waste in scour hole	86-68130	1,500	yd3	\$300.00	\$450,000.00
	30	Remove Structural Steel Items associated with Powerhouse. Includes only WF beam shapes, crane rails, and penstock sections inside powerhouse.	86-68130	94,000	lbs	\$0.45	\$42,300.00
	31	Warehouse near Powerhouse. Large metal building on concrete slab.	86-68130	5,200	ft2	\$38.00	\$197,600.00
		<b>SUBTOTAL THIS SHEET</b>					<b>\$689,900.00</b>

<b>QUANTITIES</b>		<b>PRICES</b>	
<b>BY</b> Stephen Latham	<b>CHECKED</b> Jonathan East	<b>BY</b> Craig A. Grish, P.E.	<b>CHECKED</b> [Signature] 05-19-11
<b>DATE PREPARED</b> 11/01/10	<b>PEER REVIEW / DATE</b> Rick Benik P.E. 11/1/10	<b>DATE PREPARED</b> 05/19/11	<b>PEER REVIEW / DATE</b> [Signature] 6/3/11

<b>FEATURE:</b> REVISION #1 Klamath River Dams Removal Full Removal Option JC Boyle Dam & Powerplant Removal Most Probable Low Powerhouse, Switchyard, and Transmission Line	<b>PROJECT:</b> Klamath River Northern California/Southern Oregon								
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:25%;">WOID:</td> <td style="width:25%;">AF652</td> <td style="width:25%;">ESTIMATE LEVEL:</td> <td style="width:25%;">Feasibility</td> </tr> <tr> <td>REGION:</td> <td>MP</td> <td>UNIT PRICE LEVEL:</td> <td>July-2010</td> </tr> </table>		WOID:	AF652	ESTIMATE LEVEL:	Feasibility	REGION:	MP	UNIT PRICE LEVEL:	July-2010
WOID:	AF652	ESTIMATE LEVEL:	Feasibility						
REGION:	MP	UNIT PRICE LEVEL:	July-2010						
<b>FILE:</b> C:\Estimating\Klamath\Klamath River Dams\Removal\Feasibility Estimates\MPL, MP, MPH - Revision #1 - 2011-03\JC Boyle\Klamath Dams Removal - JC Boyle - Full Removal Option - REV#1 - MPL Feas Est - 4-2011.xlsx\Summary									

PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		<b>MECHANICAL</b>					
		Remove and dispose of the following equipment at the Power House:					
	32	2 - Governor oil systems governor, sump tanks, accumulator tank, piping	86-68420	52,500	lbs	\$0.45	\$23,625.00
	33	Cooling water and bearing oil systems	86-68420	6,500	lbs	\$0.45	\$2,925.00
	34	2 - Francis Turbines (Includes runner, scroll case, draft tube and shaft)	86-68420	560,000	lbs	\$0.45	\$252,000.00
	35	150 Ton crane (Includes crane and embedded steel rail)	86-68420	240,000	lbs	\$0.45	\$108,000.00
	36	Compressed Air systems	86-68420	1,100	lbs	\$0.45	\$495.00
	37	2 - CO2 systems	86-68420	6,600	lbs	\$0.45	\$2,970.00
	38	Plant Water and Fire Protection	86-68420	3,100	lbs	\$0.45	\$1,395.00
	39	Transformer Oil Fire protection	86-68420	6,500	lbs	\$0.45	\$2,925.00
		<b>SUBTOTAL THIS SHEET</b>					<b>\$394,335.00</b>

<b>QUANTITIES</b>		<b>PRICES</b>	
BY T. J. Turnage	CHECKED K. Converse	BY <i>[Signature]</i> Craig A. Grush, P.E.	CHECKED <i>[Signature]</i> 05-19-11
DATE PREPARED October 28, 2010	PEER REVIEW / DATE Dan Drake 10/29/2010	DATE PREPARED 05/19/11	PEER REVIEW / DATE <i>[Signature]</i> 6/3/11

<b>FEATURE:</b> REVISION #1 Klamath River Dams Removal Full Removal Option JC Boyle Dam & Powerplant Removal Most Probable Low Powerhouse, Switchyard, and Transmission Line	<b>PROJECT:</b> Klamath River Northern California/Southern Oregon
	WOID: AF652      ESTIMATE LEVEL: Feasibility REGION: MP      UNIT PRICE LEVEL: July-2010
	FILE: C:\Estimating\Klamath\Klamath River Dams\Removal\Feasibility Estimates\MPL, MP, MPH - Revision #1 - 2011-03\JC Boyle\Klamath Dams Removal - JC Boyle - Full Removal Option - REV#1 - MPL Feas Est - 4-2011.xlsx\Summary

PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		<b>MECHANICAL</b>					
	40	Unwatering Piping	86-68420	33,000	lbs	\$0.45	\$14,850.00
	41	Drainage Piping	86-68420	10,000	lbs	\$0.45	\$4,500.00
	42	2-Oil Sump pumps	86-68420	2,000	lbs	\$0.45	\$900.00
	43	Remove and Dispose of Draft Tube Bulk Head Gates and Hoists at the Powerhouse	86-68420	65,000	lbs	\$0.45	\$29,250.00
		4-Draft Tube Bulk Head Gates (12,000 lbs ea.)	48,000	lbs			
		4-Guides(2,400 lbs for the pair)	9,600	lbs			
		2-Hoist (3,700 lbs ea.)	7,400	lbs			
		<b>SUBTOTAL THIS SHEET</b>					<b>\$49,500.00</b>

<b>QUANTITIES</b>		<b>PRICES</b>	
BY T. J. Turnage	CHECKED K. Converse	BY <i>[Signature]</i> Craig A. Grush, P.E.	CHECKED <i>[Signature]</i> 05-19-11
DATE PREPARED October 28, 2010	PEER REVIEW / DATE Dan Drake 10/29/2010	DATE PREPARED 05/19/11	PEER REVIEW / DATE <i>[Signature]</i> 6/3/11

<b>FEATURE:</b> REVISION #1 Klamath River Dams Removal Full Removal Option JC Boyle Dam & Powerplant Removal Most Probable Low Powerhouse, Switchyard, and Transmission Line	<b>PROJECT:</b> Klamath River Northern California/Southern Oregon
	WOID: AF652      ESTIMATE LEVEL: Feasibility REGION: MP      UNIT PRICE LEVEL: July-2010
	FILE: C:\Estimating\Klamath\Klamath River Dams\Removal\Feasibility Estimates\MPL, MP, MPH - Revision #1 - 2011-03\JC Boyle\Klamath Dams Removal - JC Boyle - Full Removal Option - REV#1 - MPL Feas Est - 4-2011.xlsx\Summary

PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		<b>ELECTRICAL</b>					
		<b>Remove and dispose of the following equipment in the Powerplant:</b>					
	44	Outdoor Vertical AC Generator, Unit 1: 53 MVA (50 MW); Unit 2: 50 MVA (48 MW); 0.95PF, 11,500 V, 277 RPM, 3 Ph, including rotating exciter Total weight each approximately: 657,000 lbs. Stator: 175,000 lbs., Rotor: 290,000 lbs. Heaviest lift: 300,000 lbs.	86-68430	2	EA	\$150,000.00	\$300,000.00
	45	Excitation equipment for 53/50 MVA Generator (5 cabinets)(400 lbs each), 3 ft x 3ft x 90 inches high Total weight approximately: 2,000 lbs.	86-68430	2	EA	\$12,000.00	\$24,000.00
	46	Surge protection equip. for 53/50 MVA Generator Total weight approximately: 1,500 lbs.	86-68430	2	EA	\$6,000.00	\$12,000.00
	47	Neutral grounding equip. for 53/50 MVA Generator includes transformer Total weight approximately: 500 lbs.	86-68430	2	EA	\$2,000.00	\$4,000.00
	48	Generator Switchgear, 15kV - (6 sections) (750 lbs each), 3 ft x 6ft x 90 inches high Total weight approximately: 4,500 lbs.	86-68430	1	EA	\$19,000.00	\$19,000.00
	49	Station Service Switchgear, 600 volt -(5 sections) (400 lbs each), 3 ft x 3ft x 90 inches high Total weight approximately: 2,000 lbs.	86-68430	1	EA	\$8,000.00	\$8,000.00
		<b>SUBTOTAL THIS SHEET</b>					<b>\$367,000.00</b>

<b>QUANTITIES</b>		<b>PRICES</b>	
BY D. Berk	CHECKED T. Griess	BY <i>[Signature]</i> Craig A. Grush, P.E.	CHECKED <i>[Signature]</i> 05-19-11
DATE PREPARED November 1, 2010	PEER REVIEW / DATE L. Rossi 11/1/10	DATE PREPARED 05/19/11	PEER REVIEW / DATE <i>[Signature]</i> 6/3/11

<b>FEATURE:</b> REVISION #1 Klamath River Dams Removal Full Removal Option JC Boyle Dam & Powerplant Removal Most Probable Low Powerhouse, Switchyard, and Transmission Line	<b>PROJECT:</b> Klamath River Northern California/Southern Oregon <hr/> <b>WOID:</b> AF652 <b>ESTIMATE LEVEL:</b> Feasibility <b>REGION:</b> MP <b>UNIT PRICE LEVEL:</b> July-2010 <b>FILE:</b> C:\Estimating\Klamath\Klamath River Dams\Removal\Feasibility Estimates\MPL, MP, MPH - Revision #1 - 2011-03\JC Boyle\Klamath Dams Removal - JC Boyle - Full Removal Option - REV#1 - MPL Feas Est - 4-2011.xlsx\Summary
--	--

PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		<b>ELECTRICAL</b>					
		<b>Remove and dispose of the following equipment in the Powerplant:</b>					
	50	Unit and plant control switchboard 5 cubicles (200 lbs each), 2ft x 2ft x 90 in. high Total weight approximately: 1,000 lbs.	86-68430	1	EA	\$4,000.00	\$4,000.00
	51	Battery system - assume 40 batteries, charger, racks and supports. Total weight approximately: 2,500 lbs.	86-68430	1	EA	\$7,000.00	\$7,000.00
	52	Raceways, Conduit and Cable (approx. 3000 lin. Ft. power & control cable, 1000 lin. Ft. conduit, 200 lin. Ft. cabletray) Total weight approximately: 8,000 lbs.	86-68430	1	EA	\$10,000.00	\$10,000.00
	53	Misc. power & control boards 10 boards (50 lbs each) 3ft x 2 ft x 9 in Total weight approximately: 500 lbs.	86-68430	1	EA	\$5,000.00	\$5,000.00
		<b>Remove and dispose of the following Gantry Crane equipment at the Powerplant:</b>					
	54	5 Gantry Crane motors - hoist (50Hp*), aux hoist (30Hp*), aux hoist trolley (5Hp*), gantry (2-15Hp*) (Hp* Approx.) Total weight approximately: 750 lbs.	86-68430	1	EA	\$1,500.00	\$1,500.00
	55	Gantry Crane control equipment (3 cubicles) Total weight approximately: 900 lbs.	86-68430	1	EA	\$5,000.00	\$5,000.00
		<b>SUBTOTAL THIS SHEET</b>					<b>\$32,500.00</b>

<b>QUANTITIES</b>		<b>PRICES</b>	
BY D. Berk	CHECKED T. Griess	BY <i>CG</i> Craig A. Grush, P.E.	CHECKED <i>DM</i> 05-19-11
DATE PREPARED November 1, 2010	PEER REVIEW / DATE L. Rossi 11/1/10	DATE PREPARED 05/19/11	PEER REVIEW / DATE <i>DCD</i> 6/3/11

<b>FEATURE:</b> REVISION #1 Klamath River Dams Removal Full Removal Option JC Boyle Dam & Powerplant Removal Most Probable Low Powerhouse, Switchyard, and Transmission Line	<b>PROJECT:</b> Klamath River Northern California/Southern Oregon <hr/> <b>WOID:</b> AF652 <b>ESTIMATE LEVEL:</b> Feasibility <b>REGION:</b> MP <b>UNIT PRICE LEVEL:</b> July-2010 <b>FILE:</b> C:\Estimating\Klamath\Klamath River Dams\Removal\Feasibility Estimates\MPL, MP, MPH - Revision #1 - 2011-03\JC Boyle\Klamath Dams Removal - JC Boyle - Full Removal Option - REV#1 - MPL Feas Est - 4-2011.xlsx\Summary
--	--

PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		<b>ELECTRICAL</b>					
		<b>Remove and dispose of the following Gantry Crane equipment at the Powerplant:</b>					
	56	Conduit and Cable (approx. 3000 lin. Ft. power & control cable, 100 lin. Ft. power cable from reel, 1000 lin. Ft conduit) Total weight approximately: 8,000 lbs.	86-68430	1	EA	\$9,000.00	\$9,000.00
	57	Exterior Lighting 6 poles with lights (250 lbs. each) Total weight approximately: 1,500 lbs.	86-68430	1	EA	\$1,500.00	\$1,500.00
		<b>Remove and dispose of the following Transmission Lines:</b>					
	58	Transmission Line No. 59 From Boyle Substation to Line Tie 266.8 ACSR, 69-kV	86-68430	1.66	mile	\$20,000.00	\$33,200.00
	59	Transmission Line No. 98 From Boyle Substation to Line Tie on Line 18 #2 AAC, 69-kV	86-68430	0.24	mile	\$20,000.00	\$4,800.00
	60	Transmission Line No. 58 From Boyle Substation to Line Tie 266.8 ACSR, 69-kV  Major substation equipment (transformers, circuit breakers, etc.) to be salvaged by PacifiCorp	86-68430	1.66	mile	\$20,000.00	\$33,200.00
<b>POWERHOUSE, SWITCHYARD, &amp; TRANS LINE SUBTOTAL</b>							<b>\$1,614,935.00</b>

<b>QUANTITIES</b>		<b>PRICES</b>	
BY D. Berk	CHECKED T. Griess	BY <i>CG</i> Craig A. Grush, P.E.	CHECKED <i>DAW</i> 05-19-11
DATE PREPARED November 1, 2010	PEER REVIEW / DATE L. Rossi 11/1/10	DATE PREPARED 05/19/11	PEER REVIEW / DATE <i>DAW</i> 6/3/11

<b>FEATURE:</b> REVISION #1 Klamath River Dams Removal Full Removal Option JC Boyle Dam & Powerplant Removal Most Probable Low Penstock	<b>PROJECT:</b> Klamath River Northern California/Southern Oregon
	WOID: AF652      ESTIMATE LEVEL: Feasibility
	REGION: MP      UNIT PRICE LEVEL: July-2010
	FILE: C:\Estimating\Klamath\Klamath River Dams\Removal\Feasibility Estimates\MPL, MP, MPH - Revision #1 - 2011-03\JC Boyle\Klamath Dams Removal - JC Boyle - Full Removal Option - REV#1 - MPL Feas Est - 4-2011.xlsx\Summary

PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		<b>CIVIL</b>					
		<b>Concrete and Structural Steel Items:</b>					
	61	Remove Intake Structure Concrete 3000 psi, reinforced concrete.	86-68130	1,600	yd3	\$130.00	\$208,000.00
	62	Remove Fish Screen Building Building is located on top of intake structure. Wood frame construction, with metal rib roof and metal siding. Some wood is pressure-treated, which may be considered a hazardous material.	86-68130	1,300	ft2	\$38.00	\$49,400.00
	63	Remove 24-inch-dia. Steel Fish Discharge Pipe Pipe is located alongside the 14-ft-dia. steel pipe. Length is estimated to be approx. 340 feet long from Sta. 0+15.25 to the outlet at the Klamath River.	86-68130	22,000	lbs	\$0.45	\$9,900.00
	64	Remove Concrete Items associated with the 14-ft-diameter Steel Pipe. Includes anchors for horiz. pipe bends, piers, 14-ft dia. concrete conduit section, outlet transition with newer (2002) headgate vault section, siphon spillway structure, and 22-ft-long spillway flume.	86-68130	1,100	yd3	\$130.00	\$143,000.00
	65	Remove Open Concrete Flume. 3000 psi, reinforced concrete. Total flume length = 10,761 feet. Includes both 2-wall and 1-wall flume reaches. Includes 2,300 CY of unreinforced porous concrete (gunite or shotcrete) on 1-wall flume reaches. Waste in scour hole	86-68130	26,000	yd3	\$220.00	\$5,720,000.00
		<b>SUBTOTAL THIS SHEET</b>					<b>\$6,130,300.00</b>

<b>QUANTITIES</b>		<b>PRICES</b>	
BY Stephen Latham	CHECKED Jonathan East	BY <i>[Signature]</i> Craig A. Grush, P.E.	CHECKED <i>[Signature]</i> 05-19-11
DATE PREPARED 11/01/10	PEER REVIEW / DATE Rick Benik P.E. 11/1/10	DATE PREPARED 05/19/11	PEER REVIEW / DATE <i>[Signature]</i> 6/3/11

<b>FEATURE:</b> REVISION #1 Klamath River Dams Removal Full Removal Option JC Boyle Dam & Powerplant Removal Most Probable Low Penstock	<b>PROJECT:</b> Klamath River Northern California/Southern Oregon	
	<b>WOID:</b> AF652	<b>ESTIMATE LEVEL:</b> Feasibility
	<b>REGION:</b> MP	<b>UNIT PRICE LEVEL:</b> July-2010
	<b>FILE:</b> C:\Estimating\Klamath\Klamath River Dams\Removal\Feasibility Estimates\MPL, MP, MPH - Revision #1 - 2011-03\JC Boyle\Klamath Dams Removal - JC Boyle - Full Removal Option - REV#1 - MPL Feas Est - 4-2011.xlsx\Summary	

PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		<b>CIVIL</b>					
		<b>Concrete and Structural Steel Items:</b>					
	66	Remove Structural Steel Items associated with the Forebay Trashrack Piers. Includes three 16 WF beams, each about 61.3 feet long, that support the trashracks.	86-68130	11,500	lbs	\$0.45	\$5,175.00
	67	Remove Forebay Concrete 3000 psi, reinforced concrete. Includes forebay, forebay spillway, forebay sluiceway, and forebay drainage items (man-hole, 12-inch concrete drain pipe). Waste in scour hole	86-68130	2,500	yd3	\$220.00	\$550,000.00
	68	Place Concrete Plugs at Tunnel Portals 3000 psi, reinforced concrete min., two plugs @ 2-ft thick. Upper portal is a concrete-lined horseshoe shape, 16.5 ft high by 15.5 ft wide. Lower portal is a grouted, steel-lined conduit 16 feet in diameter.	86-68130	30	yd3	\$900.00	\$27,000.00
	69	Remove Concrete Items associated with Penstocks D/S from Tunnel. Includes surge tank support and anchor block #1, anchor block #2, two anchor blocks at P.I. #3, and all ring girder supports. Waste in scour hole	86-68130	1,800	yd3	\$220.00	\$396,000.00
	70	Headgate Control Bldg. at Flume Entrance. Concrete block on concrete slab.	86-68130	330	ft2	\$38.00	\$12,540.00
	71	Forebay Spillway Gate House Metal building on wood frame covering forebay spillway radial gates.	86-68130	570	ft2	\$38.00	\$21,660.00
	72	Forebay Control Building. Wood building on metal frame.	86-68130	470	ft2	\$38.00	\$17,860.00
<b>SUBTOTAL THIS SHEET</b>							<b>\$1,030,235.00</b>

<b>QUANTITIES</b>		<b>PRICES</b>	
<b>BY</b> Stephen Latham	<b>CHECKED</b> Jonathan East	<b>BY</b> Craig A. Grush, P.E.	<b>CHECKED</b> [Signature] 05-19-11
<b>DATE PREPARED</b> 11/01/10	<b>PEER REVIEW / DATE</b> Rick Benik P.E. 11/1/10	<b>DATE PREPARED</b> 05/19/11	<b>PEER REVIEW / DATE</b> [Signature] 6/3/11

<b>FEATURE:</b> REVISION #1 Klamath River Dams Removal Full Removal Option JC Boyle Dam & Powerplant Removal Most Probable Low Penstock	<b>PROJECT:</b> Klamath River Northern California/Southern Oregon
	WOID: AF652      ESTIMATE LEVEL: Feasibility
	REGION: MP      UNIT PRICE LEVEL: July-2010
	FILE: C:\Estimating\Klamath\Klamath River Dams\Removal\Feasibility Estimates\MPL, MP, MPH - Revision #1 - 2011-03\JC Boyle\Klamath Dams Removal - JC Boyle - Full Removal Option - REV#1 - MPL Feas Est - 4-2011.xlsx)Summary

PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		<b>CIVIL</b>					
		<b>Concrete and Structural Steel Items:</b>					
	73	Communication Tower next to Forebay Control Building. Tower made of steel angles on top of concrete footings.	86-68130	7,100	lbs	\$0.45	\$3,195.00
	74	Insulated Generator Building next to Forebay Control Building. Metal building on top of concrete footings.	86-68130	72	ft2	\$38.00	\$2,736.00
<b>SUBTOTAL THIS SHEET</b>							<b>\$5,931.00</b>

<b>QUANTITIES</b>		<b>PRICES</b>	
BY Stephen Latham	CHECKED Jonathan East	BY <i>[Signature]</i> Craig A. Grush, P.E.	CHECKED <i>[Signature]</i> 05-19-11
DATE PREPARED 11/01/10	PEER REVIEW / DATE Rick Benik P.E. 11/1/10	DATE PREPARED 05/19/11	PEER REVIEW / DATE <i>[Signature]</i> 6/3/11

<b>FEATURE:</b> REVISION #1 Klamath River Dams Removal Full Removal Option JC Boyle Dam & Powerplant Removal Most Probable Low Penstock	<b>PROJECT:</b> Klamath River Northern California/Southern Oregon
	WOID: AF652      ESTIMATE LEVEL: Feasibility REGION: MP      UNIT PRICE LEVEL: July-2010
	FILE: C:\Estimating\Klamath\Klamath River Dams\Removal\Feasibility Estimates\MPL, MP, MPH - Revision #1 - 2011-03\JC Boyle\Klamath Dams Removal - JC Boyle - Full Removal Option - REV#1 - MPL Feas Est - 4-2011.xlsx\Summary

PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		<b>MECHANICAL</b>					
		<b>Remove and dispose of the following equipment at the Fish By-Pass Intake:</b>					
	75	Fixed Wheel Gate Gate, frame and hoist (steel)	86-68420	55,000	lbs	\$0.45	\$24,750.00
	76	Trash rack and trash rake (steel)	86-68420	75,000	lbs	\$0.45	\$33,750.00
	77	Stop Logs and slots (steel) stop log slots embedded in concrete	86-68420	136,000	lbs	\$0.45	\$61,200.00
	78	Traveling Water Screen 4 traveling water screens 4 spraywater pumps	86-68420	124,000	lbs	\$0.45	\$55,800.00
	79	Fish By-Pass and Supports (steel), 4-Pronged Inlet to Forebay, Spillway, Deer Escape Flume	86-68420	610,000	lbs	\$0.45	\$274,500.00
		<b>SUBTOTAL THIS SHEET</b>					<b>\$450,000.00</b>

<b>QUANTITIES</b>		<b>PRICES</b>	
BY T. J. Turnage	CHECKED K. Converse	BY Craig A. Grish, P.E.	CHECKED <i>PCW</i> 05-19-11
DATE PREPARED October 28, 2010	PEER REVIEW / DATE Dan Drake 10/29/2010	DATE PREPARED 05/19/11	PEER REVIEW / DATE <i>DCD</i> 6/3/11

<b>FEATURE:</b> REVISION #1 Klamath River Dams Removal Full Removal Option JC Boyle Dam & Powerplant Removal Most Probable Low Penstock	<b>PROJECT:</b> Klamath River Northern California/Southern Oregon
	WOID: AF652      ESTIMATE LEVEL: Feasibility REGION: MP      UNIT PRICE LEVEL: July-2010
	FILE: C:\Estimating\Klamath\Klamath River Dams\Removal\Feasibility Estimates\MPL, MP, MPH - Revision #1 - 2011-03\JC Boyle\Klamath Dams Removal - JC Boyle - Full Removal Option - REV#1 - MPL Feas Est - 4-2011.xlsx\Summary

PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		<b>MECHANICAL</b>					
		Remove and dispose of the following equipment at the Forebay, Spillway, Deer Escape Flume:					
	80	Radial Gates and Hoists 2 radial gates, 2 hoists	86-68420	16,500	lbs	\$0.45	\$7,425.00
	81	Trash rack and trash rake (steel)	86-68420	43,500	lbs	\$0.45	\$19,575.00
	82	Stop Logs and slots (steel) stop log slots embedded in concrete	86-68420	14,500	lbs	\$0.45	\$6,525.00
		Remove and dispose of the following equipment at the Penstock Intake:					
	83	Penstocks and bifurcation (steel) Some portions embedded in natural rock, includes pipe, expansion joints, and support rings	86-68420	1,600,000	lbs	\$0.45	\$720,000.00
	84	Surge Tank (steel)	86-68420	79,000	lbs	\$0.45	\$35,550.00
	85	2 - 108" Butterfly valves	86-68420	148,000	lbs	\$0.45	\$66,600.00
		<b>SUBTOTAL THIS SHEET</b>					<b>\$855,675.00</b>

<b>QUANTITIES</b>		<b>PRICES</b>	
BY T. J. Turnage	CHECKED K. Converse	BY Craig A. Grush, P.E.	CHECKED 05-19-11
DATE PREPARED October 28, 2010	PEER REVIEW / DATE Dan Drake 10/29/2010	DATE PREPARED 05/19/11	PEER REVIEW / DATE 6/3/11





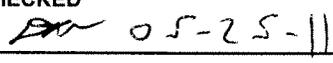
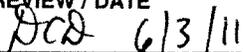
<b>FEATURE:</b> REVISION #1 Klamath River Dams Removal Full Removal Option JC Boyle Dam & Powerplant Removal Most Probable Low Reservoir Vegetative Restoration	<b>PROJECT:</b> Klamath River Northern California/Southern Oregon <hr/> <b>WOID:</b> AF652 <b>ESTIMATE LEVEL:</b> Feasibility <hr/> <b>REGION:</b> MP <b>UNIT PRICE LEVEL:</b> July-2010 <hr/> <b>FILE:</b> C:\Estimating\Klamath\Klamath River Dams\Removal\Feasibility Estimates\MPL, MP, MPH - Revision #1 - 2011-03\JC Boyle\Klamath Dams Removal - JC Boyle - Full Removal Option - REV#1 - MPL Feas Est - 4-2011.xlsx\Res Reveg
---	--

PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		<b>WATER AND ENVIRONMENTAL</b>					
	89	SPRING GROUND SEEDING:	86-68220	247	Acres	\$3,000.00	\$741,000.00
		Idaho fescue (Festuca idahoensis)	988	lbs	PLS		
		Blue wildrye (Elymus glaucus)	988	lbs	PLS		
		Small fescue (Vulpia microstachys)	988	lbs	PLS		
		Bluebunch wheatgrass (Pseudoroegneria spicata)	1482	lbs	PLS		
		Sandberg bluegrass (Poa secunda)	124	lbs	PLS		
		Spike bentgrass (Agrostis exarata)	62	lbs	PLS		
		Wood mulch	494000	lbs			
		Tackifier	29640	lbs			
	99	<del>SPRING BARGE SEEDING:</del>	<del>86-68220</del>		<del>Acres</del>		<del>DELETED</del>
<b>SUBTOTAL THIS SHEET</b>							<b>\$741,000.00</b>

<b>QUANTITIES</b>		<b>PRICES</b>	
BY O'Meara, Scott A	CHECKED Greimann, Blair P 2/28/2011	BY <i>J</i> Craig A. Grush, P.E.	CHECKED <i>SW</i> 05-25-11
DATE PREPARED 02/03/11	PEER REVIEW / DATE	DATE PREPARED 05/25/11	PEER REVIEW / DATE <i>Neo</i> 6/3/11

<b>FEATURE:</b> REVISION #1 Klamath River Dams Removal Full Removal Option JC Boyle Dam & Powerplant Removal Most Probable Low Reservoir Vegetative Restoration	<b>PROJECT:</b> Klamath River Northern California/Southern Oregon <hr/> <b>WOID:</b> AF652 <b>ESTIMATE LEVEL:</b> Feasibility <hr/> <b>REGION:</b> MP <b>UNIT PRICE LEVEL:</b> July-2010 <hr/> <b>FILE:</b> C:\Estimating\Klamath\Klamath River Dams\Removal\Feasibility Estimates\MPL, MP, MPH - Revision #1 - 2011-03\JC Boyle\Klamath Dams Removal - JC Boyle - Full Removal Option - REV#1 - MPL Feas Est - 4-2011.xlsx\Res Reveg
---	--

PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		<b>WATER AND ENVIRONMENTAL</b>					
	91	SPRING AERIAL SEEDING:	86-68220	0	Acres	\$6,500.00	
	92	FALL GROUND SEEDING:	86-68220	62	Acres	\$3,000.00	\$186,000.00
		Idaho fescue (Festuca idahoensis)	247	lbs	PLS		
		Blue wildrye (Elymus glaucus)	247	lbs	PLS		
		Small fescue (Vulpia microstachys)	247	lbs	PLS		
		Bluebunch wheatgrass (Pseudoroegneria spicata)	371	lbs	PLS		
		Sandberg bluegrass (Poa secunda)	31	lbs	PLS		
		Spike bentgrass (Agrostis exarata)	15	lbs	PLS		
		Wood mulch	19000	lbs			
		Tackifier	1140	lbs			
<b>SUBTOTAL THIS SHEET</b>							<b>\$186,000.00</b>

<b>QUANTITIES</b>		<b>PRICES</b>	
BY O'Meara, Scott A	CHECKED Greimann, Blair P 2/28/2011	BY  Craig A. Grush, P.E.	CHECKED  05-25-11
DATE PREPARED 02/03/11	PEER REVIEW / DATE	DATE PREPARED 05/25/11	PEER REVIEW / DATE  6/3/11

<b>FEATURE:</b>				<b>PROJECT:</b>			
REVISION #1 Klamath River Dams Removal Full Removal Option JC Boyle Dam & Powerplant Removal Most Probable Low Reservoir Vegetative Restoration				Klamath River Northern California/Southern Oregon			
<b>WOID:</b>		AF652		<b>ESTIMATE LEVEL:</b>		Feasibility	
<b>REGION:</b>		MP		<b>UNIT PRICE LEVEL:</b>		July-2010	
<b>FILE:</b>				C:\Estimating\Klamath\Klamath River Dams\Removal\Feasibility Estimates\MPL, MP, MPH - Revision #1 - 2011-03\JC Boyle\Klamath Dams Removal - JC Boyle - Full Removal Option - REV#1 - MPL Feas Est - 4-2011.xlsx\Res Reveg			

PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		<b>WATER AND ENVIRONMENTAL</b>					
	93	<b>RIPARIAN POLE PLANTING:</b>	86-68220	54	Acres	\$4,000.00	\$216,000.00
		Narrowleaf willow ( <i>Salix exigua</i> )	15120	cutting			
		Arroyo willow ( <i>Salix lasiolepis</i> )	2160	cutting			
		Shining willow ( <i>Salix lucida</i> )	2160	cutting			
		Western serviceberry ( <i>Amelanchier alnifolia</i> )	1080	cutting			
		Chokecherry ( <i>Prunus virginiana</i> )	1080	transplant			
		Herbivore screen	21600	each			
		Chemical herbivore deterrent	432	gal			
		Polymer	68	lbs			
	94	<b>WEED MANAGEMENT:</b>	86-68220	62	Acres	\$1,000.00	\$62,000.00
		Herbicide, post-emergent	124	lbs AI			
		<b>MAINTENANCE TREATMENTS ON 10% OF THE RESTORATION AREAS PER YEAR OVER 4 YEARS, POST-RESTORATION</b>					
	95	<b>FALL GROUND SEEDING:</b>	86-68220	99	Acres	\$3,000.00	\$297,000.00
		Idaho fescue ( <i>Festuca idahoensis</i> )	395	lbs PLS			
		Blue wildrye ( <i>Elymus glaucus</i> )	395	lbs PLS			
		Small fescue ( <i>Vulpia microstachys</i> )	395	lbs PLS			
		Bluebunch wheatgrass ( <i>Pseudoroegneria spicata</i> )	593	lbs PLS			
		Sandberg bluegrass ( <i>Poa secunda</i> )	49	lbs PLS			
		Spike bentgrass ( <i>Agrostis exarata</i> )	25	lbs PLS			
		Wood mulch	197600	lbs			
		Tackifier	11856	lbs			
	96	<b>WEED MANAGEMENT:</b>	86-68220	99	Acres	\$1,000.00	\$99,000.00
		Herbicide, post-emergent	9	lbs AI			
		<b>RESERVOIR VEGETATIVE RESTORATION SUBTOTAL</b>					<b>\$1,771,000.00</b>

QUANTITIES		PRICES	
<b>BY</b> O'Meara, Scott A	<b>CHECKED</b> Greimann, Blair P	<b>BY</b> Craig A. Grush, P.E.	<b>CHECKED</b> 05-25-11
<b>DATE PREPARED</b> 04/12/11	<b>PEER REVIEW / DATE</b> Greimann, Blair P 4/12/2011	<b>DATE PREPARED</b> 05/25/11	<b>PEER REVIEW / DATE</b> 6/3/11



<b>FEATURE:</b> REVISION #1 Klamath River Dams Removal Full Removal Option JC Boyle Dam & Powerplant Removal Most Probable Low Road Improvements	<b>PROJECT:</b> Klamath River Northern California/Southern Oregon <hr/> <b>WOID:</b> AF652 <b>ESTIMATE LEVEL:</b> Feasibility <b>REGION:</b> MP <b>UNIT PRICE LEVEL:</b> July-2010 <b>FILE:</b> C:\Estimating\Klamath\Klamath River Dams\Removal\Feasibility Estimates\MPL, MP, MPH - Revision #1 - 2011-03\JC Boyle\Klamath Dams Removal - JC Boyle - Full Removal Option - REV#1 - MPL Feas Est - 4-2011.xlsx\Road Improvements
--	--

PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		<b>GEOTECHNICAL</b>					
		<b>Disposal of Concrete Rubble in Wasteway (Forebay) Scour Hole</b>					
	104	Rubble from Dam Haul distance 2.75 miles (across dam). A 30 percent bulking factor was applied.	86-68313	9,700	yd3		Included in concrete removal items
	105	Rubble from Flume/Forebay Haul distance 1.0 mile (midpoint of flume). A 30 percent bulking factor was applied.	86-68313	37,000	yd3		Included in concrete removal items
	106	Rubble from Power House Haul distance 1.75 miles. A 30 percent bulking factor was applied.	86-68313	4,300	yd3		Included in concrete removal items
	107	Embankment Fill in Wasteway (Forebay) Scour Hole To restore scour hole to original contours.	86-68313	0	yd3	\$25.00	
		<b>ROAD IMPROVEMENTS SUBTOTAL</b>					<b>\$394,600.00</b>

<b>QUANTITIES</b>		<b>PRICES</b>	
BY Randy Kuzniakowski	CHECKED Tuti Tierney	BY <i>[Signature]</i> Craig A. Grush, P.E.	CHECKED <i>[Signature]</i> 05-25-11
DATE PREPARED 11/01/10	PEER REVIEW / DATE Daniel W. Osmun 11/1/10	DATE PREPARED 05/25/11	PEER REVIEW / DATE <i>[Signature]</i> 6/3/11



**FEATURE:**  
**REVISION #1**  
**Klamath River Dams Removal**  
**Full Removal Option**  
**JC Bolye Dam & Powerplant Removal**  
**Most Probable Low**  
**SUMMARY**

**PROJECT:**  
**Klamath River**  
**Northern California/Southern Oregon**

**WOID:** AF652      **ESTIMATE LEVEL:** Feasibility  
**REGION:** MP      **UNIT PRICE LEVEL:** July-2010

**FILE:** C:\Estimating\Klamath\Klamath River Dams\Removal\Feasibility Estimates\MPL, MP, MPH - Revision #1 - 2011-03\JC Boyle\Klamath Dams Removal - JC Boyle - Full Removal Option - REV#1 - MPL Feas Est - 4-2011.xlsx\Summary

PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		Sediment Removal (assumes by natural erosion)		555,400	CY	\$0.00	\$0.00
		Diversion and Care					\$143,150.00
		Dam Removal					\$2,004,019.00
		Powerhouse/Switchyard/Transmission Line Removal					\$1,614,935.00
		Penstock Removal					\$8,597,241.00
		Reservoir Vegetative Restoration					\$1,771,000.00
		Road Improvements					\$394,600.00
		Recreational Facilities to be Removed					\$79,745.00
		<b>Subtotal</b>					<b>\$14,604,690.00</b>
		Mobilization	5%	+/-			\$730,000.00
		<b>Subtotal 1 with Mobilization</b>					<b>\$15,334,690.00</b>
		Escalation to Notice to Proceed (NTP), from July 2010 to July 2020 (assumes 1.5%/yr compounding over 10 years)					\$2,461,844.00
		<b>Subtotal 2 = Subtotal 1 with Mobilization + Escalation to NTP</b>					<b>\$17,796,534.00</b>
		Design Contingencies	8%	+/-			\$1,203,466.00
		Allowance for Procurement Strategies (APS)	0%	+/-			
		Type of solicitation assumed is: Competitive RFP					
		<b>CONTRACT COST</b>					<b>\$19,000,000.00</b>
		Construction Contingencies	18%	+/-			\$4,000,000.00
		<b>FIELD COST</b>					<b>\$23,000,000.00</b>
		Non-Contract Costs: (Environmental & Cultural Resources Mitigation ~ 35%, Design Data Collection ~ 1%, Engineering Design ~ 3%, Permitting ~ 2%, Procurement ~ 1%, Construction Management ~ 9%, and Closeout ~ 1%)	52%	+/-			\$12,000,000.00
		<b>CONSTRUCTION COST</b>					<b>\$35,000,000.00</b>
		Ref.: For appropriate use and terminology, see Reclamation Manual, Directives and Standards FAC; 09-01, 09-02 and 09-03.					

QUANTITIES		PRICES	
<b>BY</b> Refer to Previous Sheets	<b>CHECKED</b> Refer to Previous Sheets	<b>BY</b> Craig A. Grish, P.E.	<b>CHECKED</b> DW 05-19-11
<b>DATE PREPARED</b>	<b>PEER REVIEW / DATE</b> Refer to Previous Sheets	<b>DATE PREPARED</b> 05/19/11	<b>PEER REVIEW / DATE</b> DCD 6/3/11