

<b>FEATURE:</b>  Klamath River Dams Removal Partial Removal Option JC Boyle Dam & Powerplant Removal Most Probable Low Diversion and Care	<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 - Partial\Feasibility Estimates\JC Boyle\Klamath Dams Removal - JC Boyle - Partial Removal Option - MPL Feas Est - 4-2011.xlsx\SSummary
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PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		<b>CIVIL</b>					
	1	Removal of Diversion Conduit Bulkheads. Includes removing two 9.5'x10' concrete bulkheads, one at a time by blasting.	86-68130	14	CY	\$725.00	\$10,150.00
	2	Remove Water from behind Tailrace Cofferdam. Unwatering of tailrace for removal of the powerhouse in the dry. Assume 3 inch portable trash pump operating for 2 days.	86-68130	500,000	gale		DELETED
	3	Provide Dewatering behind Tailrace Cofferdam for removal of Powerhouse in the dry. Assume 3 inch portable trash pump operating for approximately 3 months.	86-68130	1	ls		DELETED
<b>SUBTOTAL THIS SHEET</b>							<b>\$10,150.00</b>

<b>QUANTITIES</b>		<b>PRICES</b>	
<b>BY</b> Rick Benik	<b>CHECKED</b> Jonathan East	<b>BY</b> <i>[Signature]</i> Craig A. Grish, P.E.	<b>CHECKED</b> <i>[Signature]</i> 05-19-11
<b>DATE PREPARED</b> 12/20/10	<b>PEER REVIEW / DATE</b> Tom Hepler P.E. 12/20/10	<b>DATE PREPARED</b> 05/19/11	<b>PEER REVIEW / DATE</b> <i>[Signature]</i> 6/3/11



<b>FEATURE:</b>  Klamath River Dams Removal Partial 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 - Partial\Feasibility Estimates\JC Boyle\Klamath Dams Removal - JC Boyle - Partial Removal Option - MPL Feas Est - 4-2011.xlsx\Summary
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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. Assume contains paint with heavy metals.	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. Waste in scour hole	86-68130	600	yd3		DELETED
	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>\$546,800.00</b>

<b>QUANTITIES</b>		<b>PRICES</b>	
BY Stephen Latham	CHECKED Jonathan East	BY  Craig A. Grush, P.E.	CHECKED 05-19-11
DATE PREPARED 11/17/10	PEER REVIEW / DATE Rick Benik P.E. 12/11/10	DATE PREPARED 05/19/11	PEER REVIEW / DATE 6/3/11

<b>FEATURE:</b>  Klamath River Dams Removal Partial 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 - Partial\Feasibility Estimates\JC Boyle\Klamath Dams Removal - JC Boyle - Partial Removal Option - MPL Feas Est - 4-2011.xls\Summary
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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		DELETED
	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		DELETED
	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>\$29,030.00</b>

<b>QUANTITIES</b>		<b>PRICES</b>	
<b>BY</b> Stephen Latham	<b>CHECKED</b> Jonathan East	<b>BY</b> <i>[Signature]</i> Craig A. Grush, P.E.	<b>CHECKED</b> <i>[Signature]</i> 05-19-11
<b>DATE PREPARED</b> 11/17/10	<b>PEER REVIEW / DATE</b> Rick Benik P.E. 12/11/10	<b>DATE PREPARED</b> 05/19/11	<b>PEER REVIEW / DATE</b> <i>[Signature]</i> 6/3/11

<b>FEATURE:</b>  Klamath River Dams Removal Partial 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 - Partial\Feasibility Estimates\JC Boyle\Klamath Dams Removal - JC Boyle - Partial Removal Option - MPL Feas Est - 4-2011.xlsx\Summary
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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 11/12/10	PEER REVIEW / DATE Daniel W. Osmun 12/20/10	DATE PREPARED 05/19/11	PEER REVIEW / DATE <i>[Signature]</i> 6/3/11

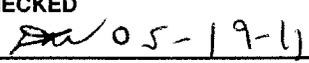
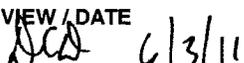
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PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		<b>MECHANICAL</b>					
		Remove and dispose of the following equipment at Dam:					
	23	Hand Rails and Light Poles	86-68420	5,000	lbs	\$0.45	\$2,250.00
	24	Spillway Radial Gates 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
	26A	Remove Petroleum Products from Red Barn Area Includes quantities for the following: Steel shed oil storage drums. Misc. oil products, approx. 2 drums @ 55 gal. Convault fuel tanks. Diesel fuel tank @ 500 gal., Gasoline tank @ 1,000 gal. Tanks to remain on-site.	86-68420	1,600	gal	\$8.00	\$12,800.00
<b>SUBTOTAL THIS SHEET</b>							<b>\$114,140.00</b>

<b>QUANTITIES</b>		<b>PRICES</b>	
<b>BY</b> T. J. Turnage	<b>CHECKED</b> K. Converse	<b>BY</b> <i>[Signature]</i> Craig A. Grush, P.E.	<b>CHECKED</b> <i>[Signature]</i> 05-19-11
<b>DATE PREPARED</b> December 9, 2010	<b>PEER REVIEW / DATE</b> Dan Drake 12/16/2010	<b>DATE PREPARED</b> 05/19/11	<b>PEER REVIEW / DATE</b> <i>[Signature]</i> 6/3/11

<b>FEATURE:</b>  Klamath River Dams Removal Partial 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 - Partial\Feasibility Estimates\JC Boyle\Klamath Dams Removal - JC Boyle - Partial Removal Option - MPL Feas Est - 4-2011.xlsx\SSummary
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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>\$1,800,195.00</b>

<b>QUANTITIES</b>		<b>PRICES</b>	
<b>BY</b> D. Berk	<b>CHECKED</b> T. Griess	<b>BY</b>  Craig A. Grush, P.E.	<b>CHECKED</b>  05-19-11
<b>DATE PREPARED</b> November 12, 2010	<b>PEER REVIEW / DATE</b> L. Rossi 12/15/10	<b>DATE PREPARED</b> 05/19/11	<b>PEER REVIEW / DATE</b>  6/3/11

<b>FEATURE:</b>  Klamath River Dams Removal Partial 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 <hr/> <b>REGION:</b> MP <b>UNIT PRICE LEVEL:</b> July-2010 <hr/> <b>FILE:</b> C:\Estimating\Klamath\Klamath River Dams\Removal - Partial\Feasibility Estimates\JC Boyle\Klamath Dams Removal - JC Boyle - Partial Removal Option - MPL Feas Est - 4-2011.xlsx\Ssummary
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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		DELETED
	30	Remove Structural Steel Items associated with Powerhouse. Includes only WF beam shapes, crane rails, and penstock sections inside powerhouse. Assume contains paint with heavy metals.	86-68130	94,000	lbs		DELETED
	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>\$197,600.00</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> <i>[Signature]</i> 05-19-11
<b>DATE PREPARED</b> 11/17/10	<b>PEER REVIEW / DATE</b> Rick Benik P.E. 12/11/10	<b>DATE PREPARED</b> 05/19/11	<b>PEER REVIEW / DATE</b> <i>[Signature]</i> 6/3/11

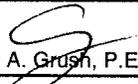
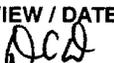
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PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		<b>MECHANICAL</b>					
		Remove and dispose of the following equipment at the Power House:					
	32	2 - Governor oil systems governor, sump tanks, accumulator tank, piping	86-68420	52,500	lbs		DELETED
	33	Cooling water and bearing oil systems	86-68420	6,500	lbs		DELETED
	34	2 - Francis Turbines (includes runner, scroll case, draft tube and shaft)	86-68420	560,000	lbs		DELETED
	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		DELETED
	37	2 - CO2 systems	86-68420	6,600	lbs		DELETED
	38	Plant Water and Fire Protection	86-68420	3,100	lbs		DELETED
	39	Transformer Oil Fire protection	86-68420	6,500	lbs		DELETED
		<b>SUBTOTAL THIS SHEET</b>					<b>\$108,000.00</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 December 9, 2010	PEER REVIEW / DATE Dan Drake 12/16/2010	DATE PREPARED 05/19/11	PEER REVIEW / DATE <i>[Signature]</i> 6/3/11

<b>FEATURE:</b>  Klamath River Dams Removal Partial 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 <hr/> <b>REGION:</b> MP <b>UNIT PRICE LEVEL:</b> July-2010 <hr/> <b>FILE:</b> C:\Estimating\Klamath\Klamath River Dams\Removal - Partial\Feasibility Estimates\JC Boyle\Klamath Dams Removal - JC Boyle - Partial Removal Option - MPL Feas Est - 4-2011.xlsx\Summary
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PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		<b>MECHANICAL</b>					
	40	Unwatering Piping	86-68420	33,000	lbs		DELETED
	41	Drainage Piping	86-68420	10,000	lbs		DELETED
	42	2 Oil Sump pumps	86-68420	2,000	lbs		DELETED
	43	Remove and Dispose of Draft Tube Bulk Head Gates and Hoists at the Powerhouse	86-68420	66,000	lbs		DELETED
		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			
	43A	Remove Petroleum Products from Mechanical Equipment.	86-68420	2,700	gal	\$8.00	\$21,600.00
		Includes quantities for the following equipment: From Item 34, Units 1 & 2, bearing oil systems. DTE heavy oil, 400 gal. per unit, 800 gal. total. From Item 32, Units 1 & 2, governor oil sumps and accumulator tanks. Hydraulic oil, 925 gal. per unit, 1,850 gal. total. The remaining items contain petroleum products in amounts too small to be considered for this level of estimate.					
<b>SUBTOTAL THIS SHEET</b>							<b>\$21,600.00</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 December 9, 2010	PEER REVIEW / DATE Dan Drake 12/16/2010	DATE PREPARED 05/19/11	PEER REVIEW / DATE  6/3/11

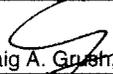
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PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		<b>ELECTRICAL</b>					
		<b>Remove and dispose of the following equipment in the Powerplant:</b>					
	44	Outdoor Vertical AC Generator, Unit 1: 53 MVA (50 MW); Unit 2: 50 MVA (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	<del>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.-</del>	86-68430	2	EA		DELETED
	46	<del>Surge protection equip. for 53/50 MVA Generator Total weight approximately: 1,500 lbs.-</del>	86-68430	2	EA		DELETED
	47	<del>Neutral grounding equip. for 53/50 MVA Generator includes transformer Total weight approximately: 500 lbs.-</del>	86-68430	2	EA		DELETED
	48	<del>Generator Switchgear, 15kV -- (6 sections) (750 lbs each), 3 ft x 6ft x 90 inches high Total weight approximately: 4,500 lbs.-</del>	86-68430	4	EA		DELETED
	49	<del>Station Service Switchgear, 600 volt (5 sections) (400 lbs each), 3 ft x 3ft x 90 inches high Total weight approximately: 2,000 lbs.-</del>	86-68430	4	EA		DELETED
<b>SUBTOTAL THIS SHEET</b>							<b>\$300,000.00</b>

<b>QUANTITIES</b>		<b>PRICES</b>	
BY D. Berk	CHECKED T. Griess	BY 	CHECKED  05-19-11
DATE PREPARED November 17, 2010	PEER REVIEW / DATE L. Rossi 12/15/10	DATE PREPARED 05/19/11	PEER REVIEW / DATE  6/3/11

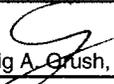
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		<b>ELECTRICAL</b>					
		<b>Remove and dispose of the following equipment in the Powerplant:</b>					
	50	Unit and plant control switchboard 5 cubicles (200 lbs each), 2ft x 2ft x 90 in. high Total weight approximately: 1,000 lbs.	86-68430	1	EA		DELETED
	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		DELETED
	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		DELETED
		<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>\$13,500.00</b>

<b>QUANTITIES</b>		<b>PRICES</b>	
BY D. Berk	CHECKED T. Griess	BY 	CHECKED  05-19-11
DATE PREPARED November 17, 2010	PEER REVIEW / DATE L. Rossi 12/15/10	DATE PREPARED 05/19/11	PEER REVIEW / DATE  6/3/11

<b>FEATURE:</b>  Klamath River Dams Removal Partial 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 <hr/> <b>REGION:</b> MP <b>UNIT PRICE LEVEL:</b> July-2010 <hr/> <b>FILE:</b> C:\Estimating\Klamath\Klamath River Dams\Removal - Partial\Feasibility Estimates\JC Boyle\Klamath Dams Removal - JC Boyle - Partial Removal Option - MPL Feas Est - 4-2011.xls\Summary
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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>\$722,400.00</b>

<b>QUANTITIES</b>		<b>PRICES</b>	
BY D. Berk	CHECKED T. Griess	BY  Craig A. Grush, P.E.	CHECKED  05-19-11
DATE PREPARED November 17, 2010	PEER REVIEW / DATE L. Rossi 12/15/10	DATE PREPARED 05/19/11	PEER REVIEW / DATE  6/3/11

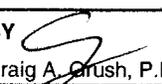
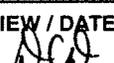
<b>FEATURE:</b>  Klamath River Dams Removal Partial Removal Option JC Boyle Dam & Powerplant Removal Most Probable Low Penstock	<b>PROJECT:</b>  Klamath River Northern California/Southern Oregon <hr/> <b>WOID:</b> AF652 <b>ESTIMATE LEVEL:</b> Feasibility <hr/> <b>REGION:</b> MP <b>UNIT PRICE LEVEL:</b> July-2010 <hr/> <b>FILE:</b> C:\Estimating\Klamath\Klamath River Dams\Removal - Partial\Feasibility Estimates\JC Boyle\Klamath Dams Removal - JC Boyle - Partial Removal Option - MPL Feas Est - 4-2011.xlsx\Summary
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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		DELETED
	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		DELETED
	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. Assume contains paint with heavy metals.	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		DELETED
	65	Remove Open Concrete Flume Walls. 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	12,200	yd3	\$220.00	\$2,684,000.00
<b>SUBTOTAL THIS SHEET</b>							<b>\$2,693,900.00</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 11/17/10	PEER REVIEW / DATE Rick Benik P.E. 12/11/10	DATE PREPARED 05/19/11	PEER REVIEW / DATE <i>[Signature]</i> 6/3/11

<b>FEATURE:</b>  Klamath River Dams Removal Partial 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 - Partial\Feasibility Estimates\JC Boyle\Klamath Dams Removal - JC Boyle - Partial Removal Option - 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.	86-68130	11,500	lbs	\$0.45	\$5,175.00
		Includes three 16 WF beams, each about 61.3 feet long, that support the trashracks.					
		Assume contains paint with heavy metals.					
	67	Remove Forebay Concrete Walls 3000 psi, reinforced concrete.	86-68130	1,500	yd3	\$220.00	\$330,000.00
		Includes forebay, forebay spillway, forebay sluiceway, and forebay drainage items (man-hole, 12-inch concrete drain pipe).					
		Waste in scour hole					
	68	Place Concrete Plugs at Tunnel Portals 3000 psi, reinforced concrete min., two plugs @ 2-ft thick.	86-68130	30	yd3	\$900.00	\$27,000.00
		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.					
	69	Remove Concrete Items associated with Penstocks D/S from Tunnel.	86-68130	1,800	yd3	\$220.00	\$396,000.00
		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					
	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>\$810,235.00</b>

QUANTITIES		PRICES	
<b>BY</b> Stephen Latham	<b>CHECKED</b> Jonathan East	<b>BY</b>  Craig A. Grush, P.E.	<b>CHECKED</b>  05-19-11
<b>DATE PREPARED</b> 11/17/10	<b>PEER REVIEW / DATE</b> Rick Benik P.E. 12/11/10	<b>DATE PREPARED</b> 05/19/11	<b>PEER REVIEW / DATE</b>  6/3/11

<b>FEATURE:</b>  Klamath River Dams Removal Partial 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 - Partial\Feasibility Estimates\JC Boyle\Klamath Dams Removal - JC Boyle - Partial Removal Option - 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. Assume contains paint with heavy metals.	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. Grish, P.E.	CHECKED <i>[Signature]</i> 05-19-11
DATE PREPARED 11/17/10	PEER REVIEW / DATE Rick Benik P.E. 12/11/10	DATE PREPARED 05/19/11	PEER REVIEW / DATE <i>[Signature]</i> 6/3/11

<b>FEATURE:</b>  Klamath River Dams Removal Partial Removal Option JC Boyle Dam & Powerplant Removal Most Probable Low Penstock	<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 - Partial\Feasibility Estimates\JC Boyle\Klamath Dams Removal - JC Boyle - Partial Removal Option - MPL Feas Est - 4-2011.xlsx\Summary
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PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		<b>MECHANICAL</b>					
		Remove and dispose of the following equipment at the Fish By-Pass Intake:					
	75	Fixed Wheel Gate Gate, frame and hoist (steel)	86-68420	55,000	lbs		DELETED
	76	Trash rack and trash rake (steel)	86-68420	75,000	lbs		DELETED
	77	Stop Logs and slots (steel) stop log slots embedded in concrete	86-68420	136,000	lbs		DELETED
	78	Traveling Water Screen 4 traveling water screens 4 spraywater pumps	86-68420 120,000 4,000	lbs lbs	lbs		DELETED
	79	Fish By Pass and Supports (steel), 4-Pronged Inlet to Forebay, Spillway, Door Escape Flume	86-68420	610,000	lbs		DELETED
<b>SUBTOTAL THIS SHEET</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 December 9, 2010	PEER REVIEW / DATE Dan Drake 12/16/2010	DATE PREPARED 05/19/11	PEER REVIEW / DATE <i>[Signature]</i> 6/3/11

<b>FEATURE:</b>  Klamath River Dams Removal Partial Removal Option JC Boyle Dam & Powerplant Removal Most Probable Low Penstock	<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 - Partial\Feasibility Estimates\JC Boyle\Klamath Dams Removal - JC Boyle - Partial Removal Option - MPL Feas Est - 4-2011.xlsx\Summary
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PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		<b>MECHANICAL</b>					
		<b>Remove and dispose of the following equipment at the Forebay, Spillway, Deer Escape Flume:</b>					
	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
		<b>Remove and dispose of the following equipment at the Penstock Intake:</b>					
	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 (Assume contains paint with heavy metals & petroleum products)	86-68420	148,000	lbe		DELETED
<b>SUBTOTAL THIS SHEET</b>							<b>\$789,075.00</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 December 9, 2010	PEER REVIEW / DATE Dan Drake 12/16/2010	DATE PREPARED 05/19/11	PEER REVIEW / DATE <i>[Signature]</i> 6/3/11

<b>FEATURE:</b>  Klamath River Dams Removal Partial Removal Option JC Boyle Dam & Powerplant Removal Most Probable Low Penstock	<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 - Partial\Feasibility Estimates\JC Boyle\Klamath Dams Removal - JC Boyle - Partial Removal Option - MPL Feas Est - 4-2011.xlsx\Summary
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PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		<b>MECHANICAL</b>					
		Remove and dispose of the following equipment at the Head Gate Structure:					
	86	Gate, Stem and Frame	86-68420	28,000	lbs	\$0.45	\$12,600.00
	87	Steel Transition Manifolds on Upstream and Downstream	86-68420	250,000	lbs	\$0.45	\$112,500.00
	87A	Remove Petroleum Products from Mechanical Equipment.	86-68420	380	gal	\$8.00	\$3,040.00
		Includes quantities for the following equipment: From Item 85, Units 1 & 2, butterfly valves and HPUs. Hydraulic oil, 191 gal. per valve, 382 gal. total.					
		The remaining items contain petroleum products in amounts too small to be considered for this level of estimate.					
		<b>PENSTOCK SUBTOTAL</b>					<b>\$4,427,281.00</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 December 9, 2010	PEER REVIEW / DATE Dan Drake 12/16/2010	DATE PREPARED 05/19/11	PEER REVIEW / DATE <i>[Signature]</i> 6/3/11



<b>FEATURE:</b>  Klamath River Dams Removal Partial 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 - Partial\Feasibility Estimates\JC Boyle\Klamath Dams Removal - JC Boyle - Partial Removal Option - MPL Feas Est - 4-2011.xlsx\Road Improvements
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PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		<b>WATER AND ENVIRONMENTAL</b>					
	89	<b>SPRING GROUND SEEDING:</b>	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			
	90	<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 Craig A. Grush, P.E.	CHECKED <i>SGW</i> 05-25-11
DATE PREPARED 02/03/11	PEER REVIEW / DATE	DATE PREPARED 05/25/11	PEER REVIEW / DATE <i>DCD</i> 6/3/11



<b>FEATURE:</b>  Klamath River Dams Removal Partial Removal Option JC Boyle Dam & Powerplant Removal Most Probable Low Reservoir Vegetative Restoration	<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 - Partial\Feasibility Estimates\JC Boyle\Klamath Dams Removal - JC Boyle - Partial Removal Option - MPL Feas Est - 4-2011.xls\Road Improvements		

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			
MAINTENANCE TREATMENTS ON 10% OF THE RESTORATION AREAS PER YEAR OVER 4 YEARS, POST-RESTORATION							
	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>

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

<b>FEATURE:</b>  Klamath River Dams Removal Partial 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 - Partial\Feasibility Estimates\JC Boyle\Klamath Dams Removal - JC Boyle - Partial Removal Option - MPL Feas Est - 4-2011.xlsx\Road Improvements
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PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		<b>GEOTECHNICAL</b>					
		These quantities represent the work required to prepare disposal sites and remove the earth fill embankment and concrete cutoff wall of J. C. Boyle Dam to original ground surface.					
		<b>General Sitework</b>					
	97	Clear and Grub Disposal Area (Embankment) Estimated haul distance 1/2 mile. Disposed fill estimated to be 10' deep and traffic compacted (15% bulking factor). Prepare Haul Road (For Embankment) - 0.5 mi 2 way traffic - off road dumps or scrapers	86-68313	10	acre	\$4,000.00	\$40,000.00
	98	Clear and grub, 40' width	86-68313	2.4	acre	\$4,000.00	\$9,600.00
	99	4" thick gravel surfacing	86-68313	0	ton	\$20.00	
	100	Clear and Grub Disposal Area (For Concrete) Estimated haul distance 3/10 mile. Disposed fill estimated to be 10' deep and traffic compacted (50% bulking factor). Prepare Haul Road (For Concrete) - 0.3 mi 1 way traffic - off road dumps	86-68313	4	acre	\$4,000.00	\$16,000.00
	101	Clear and grub, 20' width	86-68313	1	acres	\$4,000.00	\$4,000.00
	102	4" thick gravel surfacing	86-68313	650	ton		DELETED
	103	Soil Cover over Concrete Rubble Assume 2' thick cover from embankment - 2.75 mile haul.	86-68313	13,000	yd3	\$25.00	\$325,000.00
		<b>SUBTOTAL THIS SHEET</b>					<b>\$394,600.00</b>

<b>QUANTITIES</b>		<b>PRICES</b>	
BY Randy Kuzniakowski	CHECKED Tuti Tierney	BY Craig A. Grush, P.E.	CHECKED <i>AW</i> 05-25-11
DATE PREPARED 12/10/10	PEER REVIEW / DATE Daniel W. Osmun 12/20/10	DATE PREPARED 05/25/11	PEER REVIEW / DATE <i>DCD</i> 6/3/11

<b>FEATURE:</b>  Klamath River Dams Removal Partial 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 <hr/> <b>REGION:</b> MP <b>UNIT PRICE LEVEL:</b> July-2010 <hr/> <b>FILE:</b> C:\Estimating\Klamath\Klamath River Dams\Removal - Partial\Feasibility Estimates\JC Boyle\Klamath Dams Removal - JC Boyle - Partial Removal Option - MPL Feas Est - 4-2011.xls\Road Improvements
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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	86-68313	9,700	yd3		Included in concrete removal items
		Haul distance 2.75 miles (across dam). A 30 percent bulking factor was applied.					
	105	Rubble from Flume/Forebay	86-68313	37,000	yd3		Included in concrete removal items
		Haul distance 1.0 mile (midpoint of flume). A 30 percent bulking factor was applied.					
	106	Rubble from Power House	86-68313	4,300	yd3		Included in concrete removal items
		Haul distance 1.75 miles. A 30 percent bulking factor was applied.					
	107	Embankment Fill in Wasteway (Forebay) Scour Hole	86-68313	0	yd3	\$25.00	
		To restore scour hole to original contours.					
		<b>ROAD IMPROVEMENTS SUBTOTAL</b>					<b>\$394,600.00</b>

<b>QUANTITIES</b>		<b>PRICES</b>	
BY Randy Kuzniakowski	CHECKED Tuti Tierney	BY 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 DCO 6/3/11



<b>FEATURE:</b>  Klamath River Dams Removal Partial Removal Option JC Bolye Dam & Powerplant Removal Most Probable Low SUMMARY	<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 - Partial\Feasibility Estimates\JC Boyle\Klamath Dams Removal - JC Boyle - Partial Removal Option - 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					\$10,150.00
		Dam Removal					\$1,800,195.00
		Powerhouse/Switchyard/Transmission Line Removal					\$722,400.00
		Penstock Removal					\$4,427,281.00
		Reservoir Vegetative Restoration					\$1,771,000.00
		Road Improvements					\$394,600.00
		Recreational Facilities to be Removed					\$79,745.00
		<b>Subtotal</b>					<b>\$9,205,371.00</b>
		Mobilization	5%	+/-			\$460,000.00
		<b>Subtotal 1 with Mobilization</b>					<b>\$9,665,371.00</b>
		Escalation to Notice to Proceed (NTP), from July 2010 to July 2020 (assumes 1.5%/yr compounding over 10 years)					\$1,551,687.00
		<b>Subtotal 2 = Subtotal 1 with Mobilization + Escalation to NTP</b>					<b>\$11,217,058.00</b>
		Design Contingencies	8%	+/-			\$782,942.00
		Allowance for Procurement Strategies (APS)	0%	+/-			
		Type of solicitation assumed is: Competitive RFP					
		<b>CONTRACT COST</b>					<b>\$12,000,000.00</b>
		Construction Contingencies	18%	+/-			\$2,500,000.00
		<b>FIELD COST</b>					<b>\$14,500,000.00</b>
		Non-Contract Costs: (Environmental & Cultural Resources Mitigation ~ 45%, Design Data Collection ~ 1%, Engineering Design ~ 3%, Permitting ~ 2%, Procurement ~ 1%, Construction Management ~ 9%, and Closeout ~ 1%)	62%	+/-			\$8,500,000.00
		<b>CONSTRUCTION COST</b>					<b>\$23,000,000.00</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. Crush, P.E.	<b>CHECKED</b> [Signature] 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> [Signature] 6/3/11