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| FEATURE: Klamath River Dams Removal Partial Removal Option Iron Gate Dam & Powerplant Removal Most Probable Diversion and Care | PROJECT: Klamath River Northern California/Southern Oregon |
| | WOID: AF121 ESTIMATE LEVEL: Feasibility |
| | REGION: MP UNIT PRICE LEVEL: July-2010 |
| | FILE: C:\Estimating\Klamath\Klamath River Dams\Removal - Partial\Feasibility Estimates\Iron Gate\Klamath Dams Removal - Iron Gate - Partial Removal Option - MP Feas Est - 4-2011.xlsx\Summary |

| PLANT ACCOUNT | PAY ITEM | DESCRIPTION | CODE | QUANTITY | UNIT | UNIT PRICE | AMOUNT |
|---------------|----------|---|----------|----------|------|------------|---------------------|
| | | CIVIL | | | | | |
| | 1 | Furnish, Install, and Remove Barge-Mounted Crane in Reservoir for Dam Removal. | 86-68130 | 1 | ls | | \$200,000.00 |
| | | Barge is used for removal of existing closure gates and installation of new roller gate. | | | | | |
| | | Barge is located on reservoir for approximately 1 week. | | | | | |
| | 2 | Furnish, Install, and Remove Temporary Air Vent Hose from Barge to Diversion Tunnel Intake Structure. | 86-68130 | 150 | lf | | DELETED |
| | | Installation requires a dive depth of approximately 150 feet. | | | | | |
| | | Air vent consists of 12-inch diameter HDPE pipe. | | | | | |
| | 3 | Remove Reinforced Concrete Ring. | 86-68130 | 31 | cy | \$1,500.00 | \$46,500.00 |
| | | Located just downstream of closure gate and upstream of flap gate. | | | | | |
| | | Tunnel work | | | | | |
| | 4 | Remove Reinforced Concrete Stoplog Structure. | 86-68130 | 3 | cy | \$215.00 | \$645.00 |
| | | Located at downstream end of diversion tunnel. | | | | | |
| | 5 | Remove Water from behind Tailrace Cofferdam. | 86-68130 | 300,000 | gals | | DELETED |
| | | Unwatering of tailrace for removal of the powerhouse in the dry. | | | | | |
| | | Assume 3 inch portable trash pump operating for 1 day. | | | | | |
| | 6 | Provide Dewatering behind Tailrace Cofferdam for removal of Powerhouse in the dry. | 86-68130 | 1 | ls | | DELETED |
| | | Assume 3 inch portable trash pump operating for approximately 3 months. | | | | | |
| | | SUBTOTAL THIS SHEET | | | | | \$247,145.00 |

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| QUANTITIES | | PRICES | |
| BY Rick Benik | CHECKED Jonathan East | BY Craig A. Brush, P.E. | CHECKED |
| DATE PREPARED 02/19/11 | PEER REVIEW / DATE Tom Hepler P.E. 2/19/11 | DATE PREPARED 04/22/11 | PEER REVIEW / DATE DCD 4/22/11 |

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| FEATURE: REVISION #1 Klamath River Dams Removal Partial Removal Option Iron Gate Dam & Powerplant Removal Most Probable Diversion and Care | PROJECT: Klamath River Northern California/Southern Oregon <hr/> WOID: AF121 ESTIMATE LEVEL: Appraisal REGION: MP UNIT PRICE LEVEL: July-2010 FILE: C:\Estimating\Klamath\Klamath River Dams\Removal - Partial\Feasibility Estimates\Iron Gate\Klamath Dams Removal - Iron Gate - Partial Removal Option - MP Feas Est - 4-2011.xlsx\Diversion & Care |
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| | | CIVIL | | | | | |
| | 8 | Construct 240-ft-long, 2-span concrete Bridge. 31-ft deck width (two 12-ft lanes, two 2-ft shoulders, additional width for jersey barriers along each side). To be constructed near existing bridge, which is to be kept in service until new bridge is ready for service. Design loading is HS-20 truck. Cost is based on unit cost per ft2 of deck for similar concrete bridge at Upper San Joaquin priced out in 2009. | 86-68130 | 0 | ft2 | \$300.00 | |
| | 9 | Remove and dispose of existing bridge. Bridge is approximately 227 feet long. Consists of 9 spans @ about 25 feet (steel girders) with reinforced concrete decking (about 16 feet wide). Piers appear to be timber posts, supported on 4 or 5 pile bents. Rails along both sides are timber with concrete wheel guards. Assume wood is pressure-treated. Assume girders contain paint with heavy metals. | 86-68130 | 0 | ls | \$400,000.00 | |
| SUBTOTAL THIS SHEET | | | | | | | |

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| QUANTITIES | | PRICES | |
| BY Stephen Latham | CHECKED Rick Benik | BY Craig A. Grush, P.E. | CHECKED 06-06-11 |
| DATE PREPARED 11/08/10 | PEER REVIEW / DATE Tom Hepler, P.E. 11/08/10 | DATE PREPARED 06/03/11 | PEER REVIEW / DATE 6/6/11 |

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|---------------|----------|--|----------|----------|------|------------|-----------------------|
| | | MECHANICAL | 86-68420 | | | | |
| | | All items are necessary for the removal of Iron Gate Dam. | | | | | |
| | 11 | Remove 1 - 9' dia. hinged blind flange and associated metal work, including 5' of pipe spool. This will require installing and removing all fasteners on the blind flange. It assumed that these fasteners are on-site (Assume contains paint with heavy metals) Tunnel work | | 19,000 | lbs | \$2.00 | \$38,000.00 |
| | 12 | Remove 18" plug valve and 7' of 18" drainage pipe Weight of plug valve used: 2,000 lbs Tunnel work | | 2,900 | lbs | \$2.00 | \$5,800.00 |
| | 13 | Furnish, install and remove 1 - 16.5'x18' roller gate, stem, and operator Total roller gate weight approximately: 75,900 lbs. Installation and removal requires a dive depth of approximately 150 feet. | | 110,000 | lbs | \$15.00 | \$1,650,000.00 |
| | | DIVERSION AND CARE SUBTOTAL | | | | | \$3,340,945.00 |

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| QUANTITIES | | PRICES | |
| BY T. J. Turnage | CHECKED K. Converse | BY <i>[Signature]</i> Craig A. Grush, P.E. | CHECKED <i>[Signature]</i> 06-08-11 |
| DATE PREPARED 02/22/11 | PEER REVIEW / DATE Dan Drake 3/3/2011 | DATE PREPARED 06/08/11 | PEER REVIEW / DATE <i>[Signature]</i> 6/8/11 |

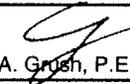
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| | | CIVIL | | | | | |
| | | Concrete and Structural Steel Items: | | | | | |
| | 14 | Remove Concrete in Observation Platform, Crest Wall and Wall Extension. | 86-68130 | 580 | yd3 | \$215.00 | \$124,700.00 |
| | | Observation Platform is reinforced concrete slab located on right abutment. | | | | | |
| | | Buried crest wall on left abutment consists of unreinforced controlled low strength material. | | | | | |
| | | Reinforced extension on right abutment includes reinforced concrete wall and stairs to trash gate. | | | | | |
| | | Items are associated with the Diversion Tunnel. | | | | | |
| | | All concrete is reinforced concrete. | | | | | |
| | 15 | Remove Concrete in Diversion Tunnel Intake Structure. | 86-68130 | 530 | yd3 | \$215.00 | \$113,950.00 |
| | | Remove concrete upstream of Sta. 3+00. | | | | | |
| | | Concrete removal requires a dive depth of 150 feet. | | | | | |
| | 16 | Remove Concrete in Diversion Tunnel Gate Tower. | 86-68130 | 410 | yd3 | \$215.00 | \$88,150.00 |
| | | Remove concrete down to elev. 2254. | | | | | |
| | 17 | Remove Steel Footbridge to Gate Tower. | 86-68130 | 13,000 | lbs | \$0.85 | \$11,050.00 |
| | | This bridge provides access from the dam crest to the gate tower for the diversion tunnel. | | | | | |
| | | Assume contains paint with heavy metal. | | | | | |
| | 18 | Remove Concrete in Diversion Tunnel Footbridge Abutment. Includes stairs over sheetpile wall. | 86-68130 | 20 | yd3 | \$215.00 | \$4,300.00 |
| | 19 | Place Concrete Plugs for Diversion Tunnel. | 86-68130 | 43 | yd3 | \$1,200.00 | \$51,600.00 |
| | | There will be 3 plugs total. Two placed vertically and one horiz. | | | | | |
| | | Plugs will be 2 feet thick, reinforced concrete, 3,000 psi min. | | | | | |
| | | Location of plugs and info about openings is as follows: | | | | | |
| | | Upstream portal; vertical plug, 15.5-ft-wide by 16.5-ft-high, horseshoe shape, at Sta. 3+01.0. | | | | | |
| | | Downstream portal; vertical plug, 15.5-ft-wide by 16.5-ft-high, horseshoe shape, at Sta. 12+68.5. | | | | | |
| | | Gate tower; horizontal plug at elev. 2254, 15.5-ft by 7.5-ft, reinf. concrete, rectangular shape. | | | | | |
| | | SUBTOTAL THIS SHEET | | | | | \$393,750.00 |

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| QUANTITIES | | PRICES | |
| BY Rose Reynolds, Stephen Latham | CHECKED Sheena Barnes, Jonathan East | BY Craig A. Grish, P.E. | CHECKED  |
| DATE PREPARED 02/19/11 | PEER REVIEW / DATE Rick Benik P.E. 2/22/11 | DATE PREPARED 04/22/11 | PEER REVIEW / DATE DCD 4/22/11 |

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| | | GEOTECHNICAL | | | | | |
| | 21 | Upstream Riprap Assume max size 250 lbs, ave. 100 lbs. to waste area by truck | 86-68313 | 80,000 | yd3 | \$13.00 | \$1,040,000.00 |
| | 22 | Downstream Riprap Assume max size 2500 lbs, ave. 500 lbs. to waste area by truck | 86-68313 | 30,000 | yd3 | \$13.00 | \$390,000.00 |
| | 23 | Miscellaneous Excavation Consists of finer earth fill materials 300,000 cy to spillway chute by truck remainder to waste area by truck | 86-68313 | 880,000 | yd3 | \$13.00 | \$11,440,000.00 |
| | 24 | Cutoff Wall Concrete Demolition The 2 concrete cutoff walls are embedded in the Zone III core but do not appear to be anchored into bedrock. | 86-68313 | 1,250 | yd3 | \$215.00 | \$268,750.00 |
| | 25 | Earth Fill Crest Raise Treat as miscellaneous excavation to waste area by truck | 86-68313 | 13,000 | yd3 | \$13.00 | \$169,000.00 |
| | 26 | Sheetpile Crest Raise Remove sheetpile wall crest raise Total height 13', embedded 9', type CS55. | 86-68313 | 800 | lin ft | \$250.00 | \$200,000.00 |
| | | Monitoring Well Removal | | | | | |
| | 27 | Remove 5 monitoring wells assume 150 length, 6" diameter remove as excavation progresses | 86-68313 | 5 | each | \$2,000.00 | \$10,000.00 |
| | | SUBTOTAL THIS SHEET | | | | | \$13,517,750.00 |

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| QUANTITIES | | PRICES | |
| BY Randy Kuzniakowski | CHECKED Tuti Tierney | BY  Craig A. Grush, P.E. | CHECKED  |
| DATE PREPARED 11/24/10 | PEER REVIEW / DATE Daniel W. Osmun 12/9/10 | DATE PREPARED 04/22/11 | PEER REVIEW / DATE  4/22/11 |

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| | | MECHANICAL | | | | | |
| | | Remove and dispose of the following equipment of the Spillway Structure: | | | | | |
| | 28 | Trash Sluice Gate- 10 ft. W x 9 ft. H Total gate weight approximately: 3500 lbs. Total gate hoist weight approximately: 1000 lbs Total weight approximately: | 86-68420 | 4,500 | lbs | \$0.85 | \$3,825.00 |
| | | (Assume contains paint with heavy metals & petroleum products) | | | | | |
| | | Remove and dispose of the following equipment of the Diversion Tunnel: | | | | | |
| | 29 | Intake structure Trash Racks- 4 rack each 10 ft. W x 33 ft. H Each rack weights approximately: 18,000 lbs Total weight approximately: | 86-68420 | 72,000 | lbs | \$0.70 | \$50,400.00 |
| | 30 | Sluice and Diversion Tunnel Gate Gate Hoist- 2-10-in. Dia. Hydraulic cylinders Gate hoist weight approx: 10,000 lbs ea. Framework- I-Beam framework securing hoists Total framework weight approx: 8,000 lbs Total weight approximately: | 86-68420 | 28,000 | lbs | \$0.85 | \$23,800.00 |
| | | (Assume contains paint with heavy metals & petroleum products) | | | | | |
| | 31 | Hoist Stem- 6-in. Dia. Sch. 160 x 150 ft. Stem weight is 50 lbs/ft. (Assume contains paint with heavy metals & petroleum products) | 86-68420 | 7,500 | lbs | \$0.85 | \$6,375.00 |
| | | | | | | | |
| | | SUBTOTAL THIS SHEET | | | | | \$84,400.00 |

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| QUANTITIES | | PRICES | |
| BY M. Gulsvig | CHECKED T. J. Tumage | BY <i>[Signature]</i> Craig A. Grush, P.E. | CHECKED <i>[Signature]</i> |
| DATE PREPARED 02/22/11 | PEER REVIEW / DATE Dan Drake 3/3/2011 | DATE PREPARED 04/22/11 | PEER REVIEW / DATE <i>[Signature]</i> 4/22/11 |

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| | | MECHANICAL | | | | | |
| | 32 | Air Vent Pipe- 8-in. Dia. Sch 40. x 160 ft. Near Sluice Gate Pipe weight is 29 lbs/ft. (Assume contains paint with heavy metals) Tunnel work | 86-68420 | 4,650 | lbs | \$2.00 | \$9,300.00 |
| | 33 | Transition Gate Structure Flap Gate - 96 in. Dia. With 4 ft. pipe Total weight approximately: (Assume contains paint with heavy metals) Tunnel work | 86-68420 | 8,000 | lbs | | DELETED |
| | 34 | Air Vent Pipe- 12-in. Dia Sch. 40 x 560 ft. From Gate to Outlet Works Pipe weight is 54 lbs/ft. (Assume contains paint with heavy metals) Tunnel work | 86-68420 | 30,250 | lbs | \$2.00 | \$60,500.00 |
| | 35 | Outlet Works Stop Logs Total logs weight approximately: 2,310 lbs Total guide weight approximately: 360 lbs Total weight approximately: (Assume contains paint with heavy metals) | 86-68420 | 2,670 | lbs | \$0.85 | \$2,269.50 |
| SUBTOTAL THIS SHEET | | | | | | | \$72,069.50 |

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| QUANTITIES | | PRICES | |
| BY M. Gulsvig | CHECKED T. J. Turnage | BY <i>[Signature]</i> Craig A. Grush, P.E. | CHECKED <i>[Signature]</i> |
| DATE PREPARED 02/22/11 | PEER REVIEW / DATE Dan Drake 3/3/2011 | DATE PREPARED 04/22/11 | PEER REVIEW / DATE <i>[Signature]</i> 4/22/11 |

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| | | ELECTRICAL | | | | | |
| | | Remove and dispose of the following equipment at the Diversion Tunnel Gate Intake Structure: | | | | | |
| | 36 | Hydraulic Pump motor (10 HP est) & control panel Total weight approximately: 250 lbs. | 86-68430 | 1 | EA | \$350.00 | \$350.00 |
| | 37 | Distribution equipment , Junction Boxes Total weight approximately: 200 lbs. | 86-68430 | 1 | EA | \$1,700.00 | \$1,700.00 |
| | 38 | Power Cable and 4"Conduit from Penstock Structure (3 conductor 6 AWG est.) Total weight approximately: 10,400 lbs. | 86-68430 | 800 | feet | \$35.00 | \$28,000.00 |
| | | DAM SUBTOTAL | | | | | \$14,159,019.50 |

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| QUANTITIES | | PRICES | |
| BY D. Berk CHECKED T. Griess | BY <i>[Signature]</i> Craig A. Grush, P.E. | CHECKED <i>[Signature]</i> | PEER REVIEW / DATE L. Rossi 12/9/10 |
| DATE PREPARED November 24, 2010 | PEER REVIEW / DATE L. Rossi 12/9/10 | DATE PREPARED 04/22/11 | PEER REVIEW / DATE <i>[Signature]</i> 4/22/11 |

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| FEATURE: Klamath River Dams Removal Partial Removal Option Iron Gate Dam & Powerplant Removal Most Probable Powerhouse, Switchyard, and Transmission Line | PROJECT: Klamath River Northern California/Southern Oregon |
| | WOID: AF121 ESTIMATE LEVEL: Feasibility REGION: MP UNIT PRICE LEVEL: July-2010 |
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| | | MECHANICAL | | | | | |
| | 40 | Turbine Unit 25,000 hp, 158 ft. of head, 180 RPM D3 is calculated at 8.85 ft. Turbine weight calculated approx: (Assume contains paint with heavy metals & petroleum products) | 86-68420 | 344,058 | lbs | | DELETED |
| | 41 | Draft Tube Bulkheads- 3-Bulkhead approx. 10 ft. W. x 10 ft. H Bulkhead weight approximately: 3000 lbs each 3-Framework weight approx: 2500 lbs each Total bulkhead weight approx: (Assume contains paint with heavy metals) | 86-68420 | 16,500 | lbs | | DELETED |
| | | Remove and dispose of the following equipment of the Powerhouse Structure: | | | | | |
| | 42 | Crane- No Crane at Site, but embedded rails still exist Above Ground Steel Rails-200 ft. length Crane is presently used at J. C. Boyle (Assume contains paint with heavy metals & petroleum products) | 86-68420 | 24,000 | lbs | | DELETED |
| | 43 | Governor- Accumulator tank for air over oil cylinders Governor control panel cabinet Pump for Oil Total weight approximately: (Assume contains paint with heavy metals & petroleum products) | 86-68420 | 20,310 | lbs | | DELETED |
| | | SUBTOTAL THIS SHEET | | | | | |

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| BY M. Gulsvig | CHECKED T. J. Turnage | BY <i>[Signature]</i> Craig A. Grash, P.E. | CHECKED <i>[Signature]</i> |
| DATE PREPARED 12/08/10 | PEER REVIEW / DATE Dan Drake 12/16/2010 | DATE PREPARED 04/22/11 | PEER REVIEW / DATE <i>[Signature]</i> 4/22/11 |

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| | | MECHANICAL | | | | | |
| | 44 | Bearing Oil System and Cooling Water System- Steel Piping of various sizes Valves of various sizes Total weight approximately: (Assume contains paint with heavy metals & petroleum products) | 86-68420 | 0,182 | lbs | | DELETED |
| | 45 | CO2 System- Various sizes of piping and valves Total weight approximately: (Assume contains paint with heavy metals & petroleum products) | 86-68420 | 2,568 | lbs | | DELETED |
| | 46 | Plant Water and Fire Protection System- Various sizes of piping and valves Total weight approximately: (Assume contains paint with heavy metals) | 86-68420 | 0,182 | lbs | | DELETED |
| | 47 | Sump Pumps- 2 Powerhouse water removal sump pumps Sump weight approximately: 1000 lbs each Total weight approximately: (Assume contains petroleum products) | 86-68420 | 2,000 | lbs | | DELETED |
| | 48 | Pumps- 4 Large pumps near outlet Pump weight approximately: 3000 lbs each 4 Pump Suction Inlet Bulkhead gates approx. 10 ft. H. x 10 ft. W. Bulkhead weight approximately: 2500 lbs each Total weight approximately: (Assume contains paint with heavy metals & petroleum products) | 86-68420 | 22,000 | lbs | | DELETED |
| | | SUBTOTAL THIS SHEET | | | | | |

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| BY M. Gulsvig | CHECKED T. J. Turnage | BY <i>[Signature]</i> Craig A. Brush, P.E. | CHECKED <i>[Signature]</i> |
| DATE PREPARED 12/08/10 | PEER REVIEW / DATE Dan Drake 12/16/2010 | DATE PREPARED 04/22/11 | PEER REVIEW / DATE <i>[Signature]</i> 4/22/11 |

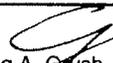
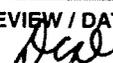
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| | | MECHANICAL | | | | | |
| | 49 | Exposed Piping around the plant- Various sizes of piping and valves Total weight approximately: (Assume contains paint with heavy metals & petroleum products) | 86-68420 | 10,294 | lbs | | DELETED |
| | 50 | Unwatering Piping- Various sizes of piping and valves Total weight approximately: (Assume contains paint with heavy metals) | 86-68420 | 10,294 | lbs | | DELETED |
| | 51 | Drainage Piping- Various sizes of piping and valves Total weight approximately: (Assume contains paint with heavy metals) | 86-68420 | 9,518 | lbs | | DELETED |
| | 52 | Transformer Oil and Fire Protection- Various sizes of piping and valves Total weight approximately: (Assume contains paint with heavy metals & petroleum products) | 86-68420 | 9,182 | lbs | | DELETED |
| | 53 | Compressed Air System- Various sizes of piping and valves Total weight approximately: (Assume contains paint with heavy metals & petroleum products) | 86-68420 | 1,460 | lbs | | DELETED |
| | 53A | Remove Petroleum Products from Mechanical Equipment. Includes quantities for the following equipment: From Item 42, unit bearing oil system, DTE heavy oil, 275 gal. From Item 41, unit governor oil sump and accumulator tank, hydraulic oil, 800 gal. The remaining items contain petroleum products in amounts too small to be considered for this level of estimate. | 86-68420 | 1,100 | gal | \$10.00 | \$11,000.00 |
| SUBTOTAL THIS SHEET | | | | | | | \$11,000.00 |

| | | | |
|---------------------------|--|--|--|
| QUANTITIES | | PRICES | |
| BY M. Gulsvig | CHECKED T. J. Turnage | BY <i>[Signature]</i> Craig A. Brush, P.E. | CHECKED <i>[Signature]</i> |
| DATE PREPARED 12/08/10 | PEER REVIEW / DATE Dan Drake 12/16/2010 | DATE PREPARED 04/22/11 | PEER REVIEW / DATE <i>[Signature]</i> 4/22/11 |

| | |
|---|---|
| FEATURE: Klamath River Dams Removal Partial Removal Option Iron Gate Dam & Powerplant Removal Most Probable Powerhouse, Switchyard, and Transmission Line | PROJECT: Klamath River Northern California/Southern Oregon <hr/> WOID: AF121 ESTIMATE LEVEL: Feasibility <hr/> REGION: MP UNIT PRICE LEVEL: July-2010 <hr/> FILE: C:\Estimating\Klamath\Klamath River Dams\Removal - Partial\Feasibility Estimates\Iron Gate\Klamath Dams Removal - Iron Gate - Partial Removal Option - MP Feas Est - 4-2011.xlsx\Summary |
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| PLANT ACCOUNT | PAY ITEM | DESCRIPTION | CODE | QUANTITY | UNIT | UNIT PRICE | AMOUNT |
|----------------------------|----------|---|----------|----------|------|------------|---------|
| | | ELECTRICAL | | | | | |
| | | Remove and dispose of the following equipment in the Powerplant: | | | | | |
| | 54 | AC Generator, Outdoor Horizontal 18.975 MVA (18 MW); 0.95PF, 6,600V, 180 RPM, 3 Ph, including rotating exciter Total weight approximately: 387,500 lbs. Stator: 124,600 lbs., Rotor: 180,300 lbs. Exciter Assembly: 17,000 lbs. Heaviest lift: 186,700 lbs. | 86-68430 | 1 | EA | | DELETED |
| | 55 | Excitation equipment for 18.975 MVA Generator (2 sections) Total weight approximately: 1,000 lbs. | 86-68430 | 1 | EA | | DELETED |
| | 56 | Surge protection equip. for 18.975 MVA Generator Total weight approximately: 800 lbs. | 86-68430 | 1 | EA | | DELETED |
| | 57 | Neutral grounding equip. for 18.975 MVA Generator includes transformer Total weight approximately: 500 lbs. | 86-68430 | 1 | EA | | DELETED |
| | 58 | Station Service Switchgear, 600 volt (5 sections) (400 lbs each section), 3 ft x 3ft x 90 inches high Total weight approximately: 2,000 lbs. | 86-68430 | 1 | EA | | DELETED |
| | 59 | Unit and plant control switchboard 5 cubicles (400 lbs each), 2ft x 2ft x 90 in. high Total weight approximately: 2,000 lbs. | 86-68430 | 1 | EA | | DELETED |
| SUBTOTAL THIS SHEET | | | | | | | |

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|------------------------------------|--|--|---|
| QUANTITIES | | PRICES | |
| BY D. Berk | CHECKED T. Griess | BY  Craig A. Grush, P.E. | CHECKED  |
| DATE PREPARED November 24, 2010 | PEER REVIEW / DATE L. Rossi 12/9/10 | DATE PREPARED 04/22/11 | PEER REVIEW / DATE  4/22/11 |

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|---|--|
| FEATURE: Klamath River Dams Removal Partial Removal Option Iron Gate Dam & Powerplant Removal Most Probable Powerhouse, Switchyard, and Transmission Line | PROJECT: Klamath River Northern California/Southern Oregon <hr/> WOID: AF121 ESTIMATE LEVEL: Feasibility <hr/> REGION: MP UNIT PRICE LEVEL: July-2010 <hr/> FILE: C:\Estimating\Klamath\Klamath River Dams\Removal - Partial\Feasibility Estimates\Iron Gate\Klamath Dams Removal - Iron Gate - Partial Removal Option - MP Feas Est - 4-2011.xlsx\SSummary |
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| PLANT ACCOUNT | PAY ITEM | DESCRIPTION | CODE | QUANTITY | UNIT | UNIT PRICE | AMOUNT |
|----------------------------|----------|---|----------|----------|------|-------------|--------------------|
| | | ELECTRICAL | | | | | |
| | | Remove and dispose of the following equipment in the Powerplant: | | | | | |
| | 60 | Battery system - assume 60 batteries, charger, racks and supports. Total weight approximately: 2,500 lbs. | 86-68430 | 1 | EA | \$10,000.00 | \$10,000.00 |
| | 61 | Raceways, Bus, Conduit and Cable (approx. 3000 lin. Ft. power & control cable, 1000 lin. Ft. conduit, 100 lin. Ft. cabletray, 40 lin. Ft. non-segregated phase bus) Total weight approximately: 9,000 lbs. | 86-68430 | 1 | EA | | DELETED |
| | 62 | 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 |
| | 63 | Transformer (3 phase, 275 kVA, 6600/480V est.) in power house Total weight approximately: 2,000 lbs. | 86-68430 | 1 | EA | | DELETED |
| | 64 | Governor Oil Pump Motors (10 hp and 20 hp est.) Total weight approximately: 450 lbs. | 86-68430 | 2 | EA | | DELETED |
| | 65 | Vertical Motors, outdoor, (480V, 100 HP est.) Outdoor for fish water pumps Total weight approximately: 2,000 lbs. | 86-68430 | 4 | EA | \$600.00 | \$2,400.00 |
| SUBTOTAL THIS SHEET | | | | | | | \$12,400.00 |

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| QUANTITIES | | PRICES | |
| BY D. Berk | CHECKED T. Griess | BY <i>[Signature]</i> Craig A. Grish, P.E. | CHECKED <i>[Signature]</i> |
| DATE PREPARED November 24, 2010 | PEER REVIEW / DATE L. Rossi 12/9/10 | DATE PREPARED 04/22/11 | PEER REVIEW / DATE <i>[Signature]</i> 4/22/11 |

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| FEATURE: Klamath River Dams Removal Partial Removal Option Iron Gate Dam & Powerplant Removal Most Probable Powerhouse, Switchyard, and Transmission Line | PROJECT: Klamath River Northern California/Southern Oregon <hr/> WOID: AF121 ESTIMATE LEVEL: Feasibility <hr/> REGION: MP UNIT PRICE LEVEL: July-2010 <hr/> FILE: C:\Estimating\Klamath\Klamath River Dams\Removal - Partial\Feasibility Estimates\Iron Gate\Klamath Dams Removal - Iron Gate - Partial Removal Option - MP Feas Est - 4-2011.xlsx\SSummary |
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| PLANT ACCOUNT | PAY ITEM | DESCRIPTION | CODE | QUANTITY | UNIT | UNIT PRICE | AMOUNT |
|--|----------|---|----------|----------|------|--------------|---------------------|
| | | ELECTRICAL | | | | | |
| | | Remove and dispose of the following equipment in the Powerplant: | | | | | |
| | 66 | Transformer (3 phase, 300 kVA, 6600/480V est.) Outdoor for fish water pumps Total weight approximately: 2,900 lbs. | 86-68430 | 1 | EA | \$10,000.00 | \$10,000.00 |
| | | Remove and dispose of the following equipment in switchyard/powerplant deck: | | | | | |
| | 67 | Step-up Transformer, outdoor, oil-filled, 3-phase, 18,947 kVA, 6,600/69,000 volt Total weight approximately: 58,000 lbs. | 86-68430 | 1 | EA | \$100,000.00 | \$100,000.00 |
| | 68 | Lattice steel structure, with 69-kV disconnect switches and insulators | 86-68430 | 1 | EA | \$5,000.00 | \$5,000.00 |
| | 69 | Generator Switchgear, outdoor, 7.2kV-includes unit breaker (5 Sections @ 2,400 lbs each section 3 ft x 7.5 ft x 95 inches high), 20 ft. non-seg. bus Total weight approximately: 12,000 lbs. | 86-68430 | 1 | EA | \$35,000.00 | \$35,000.00 |
| | 70 | Single Phase Pole Transformers. (25 kVA est.) Total weight approximately: 1050 lbs. | 86-68430 | 3 | EA | \$2,000.00 | \$6,000.00 |
| POWERHOUSE, SWITCHYARD, & TRANS LINE SUBTOTAL | | | | | | | \$179,400.00 |

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|------------------------------------|--|---|--|
| QUANTITIES | | PRICES | |
| BY D. Berk | CHECKED T. Griess | BY <i>[Signature]</i> Craig A. Grush, P.E. | CHECKED <i>[Signature]</i> |
| DATE PREPARED November 24, 2010 | PEER REVIEW / DATE L. Rossi 12/9/10 | DATE PREPARED 04/22/11 | PEER REVIEW / DATE <i>[Signature]</i> 4/22/11 |

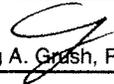
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|---|--|-------|--|--|--|-------------|--|
| FEATURE: | | | | PROJECT: | | | |
| Klamath River Dams Removal Partial Removal Option Iron Gate Dam & Powerplant Removal Most Probable Penstock | | | | Klamath River Northern California/Southern Oregon | | | |
| WOID: | | AF121 | | ESTIMATE LEVEL: | | Feasibility | |
| REGION: | | MP | | UNIT PRICE LEVEL: | | July-2010 | |
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| PLANT ACCOUNT | PAY ITEM | DESCRIPTION | CODE | QUANTITY | UNIT | UNIT PRICE | AMOUNT |
|----------------------------|----------|--|----------|----------|------|------------|---------------------|
| | | CIVIL | | | | | |
| | | Concrete and Structural Steel Items: | | | | | |
| | 71 | Remove Concrete in Penstock Intake Structure. | 86-68130 | 460 | yd3 | \$215.00 | \$98,900.00 |
| | 72 | Remove Concrete in Penstock Encasement. Encasement runs through embankment from intake structure to penstock anchor No. 1. | 86-68130 | 840 | yd3 | \$215.00 | \$180,600.00 |
| | 73 | Remove Concrete in 3 Penstock Anchors and 7 Penstock Supports | 86-68130 | 1,900 | yd3 | \$215.00 | \$408,500.00 |
| | 74 | Remove Steel Footbridge to Intake Structure. This bridge provides access from the left abutment to the penstock intake structure. Assume contains paint with heavy metals. | 86-68130 | 11,000 | lbs | \$0.85 | \$9,350.00 |
| | 75 | Remove Concrete in Intake Structure Footbridge Abutment. | 86-68130 | 5 | yd3 | \$215.00 | \$1,075.00 |
| SUBTOTAL THIS SHEET | | | | | | | \$698,425.00 |

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| QUANTITIES | | PRICES | |
| BY Rose Reynolds, Stephen Latham | CHECKED Jonathan East, Sheena Barnes | BY <i>[Signature]</i> Craig A. Gush, P.E. | CHECKED <i>[Signature]</i> |
| DATE PREPARED 11/24/10 | PEER REVIEW / DATE Rick Benik P.E. 12/9/10 | DATE PREPARED 04/22/11 | PEER REVIEW / DATE <i>[Signature]</i> 4/22/11 |

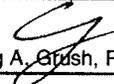
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|--|---|------------------------------------|--|
| FEATURE: Klamath River Dams Removal Partial Removal Option Iron Gate Dam & Powerplant Removal Most Probable Penstock | PROJECT: Klamath River Northern California/Southern Oregon | | |
| | WOID: AF121 | ESTIMATE LEVEL: Feasibility | |
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| PLANT ACCOUNT | PAY ITEM | DESCRIPTION | CODE | QUANTITY | UNIT | UNIT PRICE | AMOUNT |
|----------------------------|----------|--|----------|----------|------|------------|---------------------|
| | | MECHANICAL | | | | | |
| | | Remove and dispose of the following equipment of the Power Conduit (Penstock): | | | | | |
| | 76 | Intake Structure- | | | | | |
| | | Wheel Gate- 16.75 ft. H. x 22.33 ft. W. Gate weight approximately: 30,000 lbs | | | | | |
| | | Wheel Gate Hoist- 2-6-in. Dia. Hydraulic Cylinders Wheel gate hoist weight approx: 10,000 lbs | | | | | |
| | | Framework- I-Beam framework securing hoists Total framework weight approx: 10,000 lbs | | | | | |
| | | Trash rack- 17.5 ft. W. x 45.75 ft. H. Trashrack weight approximately: 44,400 lbs | | | | | |
| | | Stop logs- Total logs weight approximately: 29,250 lbs Total guide weight approximately: 3,600 lbs | | | | | |
| | | Slide Gate- 30-in. W. x 42-in. H. Slide Gate weight approximately: 3,240 lbs | | | | | |
| | | Sluice Gate- 12-in. W. x 12-in. H. Sluice Gate weight approximately: 1,140 lbs | | | | | |
| | | Total weight approximately: | 86-68420 | 131,630 | lbs | \$0.85 | \$111,885.50 |
| | | (Assume contains paint with heavy metals & petroleum products) | | | | | |
| | 77 | Gate Hoist Stem- 6-in. Sch 160 x 40 ft. Stem weight 45 lbs/ft. | 86-68420 | 1,800 | lbs | \$0.85 | \$1,530.00 |
| | | (Assume contains paint with heavy metals & petroleum products) | | | | | |
| SUBTOTAL THIS SHEET | | | | | | | \$113,415.50 |

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| QUANTITIES | | PRICES | |
| BY M. Gulsvig | CHECKED T. J. Turnage | BY  Craig A. Grash, P.E. | CHECKED  |
| DATE PREPARED 11/24/10 | PEER REVIEW / DATE Dan Drake 12/16/2010 | DATE PREPARED 04/22/11 | PEER REVIEW / DATE  4/22/11 |

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| FEATURE: Klamath River Dams Removal Partial Removal Option Iron Gate Dam & Powerplant Removal Most Probable Penstock | PROJECT: Klamath River Northern California/Southern Oregon | |
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| PLANT ACCOUNT | PAY ITEM | DESCRIPTION | CODE | QUANTITY | UNIT | UNIT PRICE | AMOUNT |
|----------------------------|----------|---|----------|----------|------|------------|---------------------|
| | | MECHANICAL | | | | | |
| | 78 | Water fill line- 12-in. Dia. STD x 27 ft Pipe weight 50 lbs/ft. (Assume contains paint with heavy metals) | 86-68420 | 1,350 | lbs | \$0.85 | \$1,147.50 |
| | 79 | Air Vent- 12-in. Dia. STD x 32 ft. Pipe weight 50 lbs/ft. (Assume contains paint with heavy metals) | 86-68420 | 1,600 | lbs | \$0.85 | \$1,360.00 |
| | | Power Conduit (Penstock) Continued: | | | | | |
| | 80 | Gage Wells- | | | | | |
| | | 10-in. Dia. STD x 32 ft. weights 41 lbs/ft. | 86-68420 | 1,312 | lbs | \$0.85 | \$1,115.20 |
| | | 12-in. Dia. STD x 26 ft. weights 50 lbs/ft. (Assume contains paint with heavy metals) | 86-68420 | 1,300 | lbs | \$0.85 | \$1,105.00 |
| | 81 | Penstock Vent- 46-in. Dia. 0.25-in. Thick x 60 ft. Pipe weight 124 lbs/ft. (Assume contains paint with heavy metals) | 86-68420 | 7,440 | lbs | \$0.85 | \$6,324.00 |
| | 82 | Penstock- 12-ft. Dia. 0.25-in. Thick x 698 ft. Pipe weight 386 lbs/ft. (Assume contains paint with heavy metals) | 86-68420 | 294,428 | lbs | \$0.85 | \$250,263.80 |
| | 83 | Bypass Outlet- 96-in. Dia. 0.25-in. Thick x 50 ft. Pipe weight 257 lbs/ft. (Assume contains paint with heavy metals) | 86-68420 | 12,850 | lbs | \$0.85 | \$10,922.50 |
| | 84 | Outlet Valve on bypass outlet- 66-in. Dia. Assumed to be a Fixed Cone Valve with controls Valve weight approximately: (Assume contains paint with heavy metals & petroleum products) | 86-68420 | 18,000 | lbs | \$0.85 | \$15,300.00 |
| SUBTOTAL THIS SHEET | | | | | | | \$287,538.00 |

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| QUANTITIES | | PRICES | |
| BY M. Gulsvig | CHECKED T. J. Turnage | BY  Craig A. Brush, P.E. | CHECKED  |
| DATE PREPARED 11/24/10 | PEER REVIEW / DATE Dan Drake 12/16/2010 | DATE PREPARED 04/22/11 | PEER REVIEW / DATE  4/22/11 |

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| FEATURE: Klamath River Dams Removal Partial Removal Option Iron Gate Dam & Powerplant Removal Most Probable Penstock | PROJECT: Klamath River Northern California/Southern Oregon |
| | WOID: AF121 ESTIMATE LEVEL: Feasibility REGION: MP UNIT PRICE LEVEL: July-2010 |
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| PLANT ACCOUNT | PAY ITEM | DESCRIPTION | CODE | QUANTITY | UNIT | UNIT PRICE | AMOUNT |
|---------------|----------|---|----------|----------|------|-------------|-----------------------|
| | | ELECTRICAL | | | | | |
| | | Remove and dispose of the following equipment at the Penstock Intake Structure: | | | | | |
| | 85 | Overhead Trolley Crane Motor (4hp est)& controls Total weight approximately: 500 lbs. | 86-68430 | 1 | EA | \$1,000.00 | \$1,000.00 |
| | 86 | Distribution equipment , Junction Boxes Total weight approximately: 200 lbs. | 86-68430 | 1 | EA | \$2,500.00 | \$2,500.00 |
| | 87 | Power Cable and Conduit 1800 ft. 4" Conduit with 3 conductor 6 AWG est. 1200 ft. 1.5" Conduit with 3 conductor 12 AWG est. Total weight approximately: 11,000 lbs. | 86-68430 | 1 | EA | \$70,000.00 | \$70,000.00 |
| | | PENSTOCK SUBTOTAL | | | | | \$1,172,878.50 |

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| QUANTITIES | | PRICES | |
| BY D. Berk | CHECKED T. Griess | BY <i>[Signature]</i> Craig A. Grush, P.E. | CHECKED <i>[Signature]</i> |
| DATE PREPARED November 24, 2010 | PEER REVIEW / DATE L. Rossi 12/9/10 | DATE PREPARED 04/22/11 | PEER REVIEW / DATE <i>[Signature]</i> 4/22/11 |

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|---|--|--|--|--------------------------|-------------|
| FEATURE: | | PROJECT: | | | |
| Klamath River Dams Removal Partial Removal Option Iron Gate Dam & Powerplant Removal Most Probable Reservoir Vegetative Restoration | | Klamath River Northern California/Southern Oregon | | | |
| | | WOID: | AF121 | ESTIMATE LEVEL: | Feasibility |
| | | REGION: | MP | UNIT PRICE LEVEL: | July-2010 |
| | | FILE: | C:\Estimating\Klamath\Klamath River Dams\Removal - Partial\Feasibility Estimates\Iron Gate\Klamath Dams Removal - Iron Gate - Partial Removal Option - MP Feas Est - 4-2011.xlsx\Summary | | |

| PLANT ACCOUNT | PAY ITEM | DESCRIPTION | CODE | QUANTITY | UNIT | UNIT PRICE | AMOUNT |
|----------------------------|----------|--|----------|----------|-------|------------|-----------------------|
| | | WATER AND ENVIRONMENTAL | | | | | |
| | 89 | SPRING GROUND SEEDING: 370 acres | 86-68220 | 370 | Acres | \$3,500.00 | \$1,295,000.00 |
| | | Idaho fescue (Festuca idahoensis) | 1578 | lbs | PLS | | |
| | | Blue wildrye (Elymus glaucus) | 1578 | lbs | PLS | | |
| | | Small fescue (Vulpia microstachys) | 1578 | lbs | PLS | | |
| | | Bluebunch wheatgrass (Pseudoroegneria spicata) | 2366 | lbs | PLS | | |
| | | Sandberg bluegrass (Poa secunda) | 197 | lbs | PLS | | |
| | | Spike bentgrass (Agrostis exarata) | 99 | lbs | PLS | | |
| | | Western needlegrass (Achnatherum occidentale) | 1578 | lbs | PLS | | |
| | | California brome (Bromus carinatus) | 3155 | lbs | PLS | | |
| | | Squirreltail (Elymus elymoides) | 1578 | lbs | PLS | | |
| | | Wood mulch | 788760 | lbs | | | |
| | | Tackifier | 47326 | lbs | | | |
| | 90 | SPRING BARGE SEEDING: 296 acres | 86-68220 | 296 | Acres | \$6,500.00 | \$1,924,000.00 |
| | | Idaho fescue (Festuca idahoensis) | 1262 | lbs | PLS | | |
| | | Blue wildrye (Elymus glaucus) | 1262 | lbs | PLS | | |
| | | Small fescue (Vulpia microstachys) | 1262 | lbs | PLS | | |
| | | Bluebunch wheatgrass (Pseudoroegneria spicata) | 1893 | lbs | PLS | | |
| | | Sandberg bluegrass (Poa secunda) | 158 | lbs | PLS | | |
| | | Spike bentgrass (Agrostis exarata) | 79 | lbs | PLS | | |
| | | Western needlegrass (Achnatherum occidentale) | 1262 | lbs | PLS | | |
| | | California brome (Bromus carinatus) | 2524 | lbs | PLS | | |
| | | Squirreltail (Elymus elymoides) | 1262 | lbs | PLS | | |
| | | Wood mulch | 631008 | lbs | | | |
| | | Tackifier | 37860 | lbs | | | |
| SUBTOTAL THIS SHEET | | | | | | | \$3,219,000.00 |

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| QUANTITIES | | PRICES | |
| BY O'Meara, Scott A | CHECKED Greimann, Blair P 2/28/11 | BY <i>[Signature]</i> Craig A. Grush, P.E. | CHECKED <i>[Signature]</i> |
| DATE PREPARED 02/03/11 | PEER REVIEW / DATE | DATE PREPARED 04/22/11 | PEER REVIEW / DATE <i>[Signature]</i> 4/22/11 |

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| FEATURE: Klamath River Dams Removal Partial Removal Option Iron Gate Dam & Powerplant Removal Most Probable Reservoir Vegetative Restoration | PROJECT: Klamath River Northern California/Southern Oregon |
| | WOID: AF121 ESTIMATE LEVEL: Feasibility |
| | REGION: MP UNIT PRICE LEVEL: July-2010 |
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|----------------------------|----------|--|----------|----------|-------|------------|-----------------------|
| | | WATER AND ENVIRONMENTAL | | | | | |
| | 91 | SPRING AERIAL SEEDING: 159 acres | 86-68220 | 159 | Acres | \$7,500.00 | \$1,192,500.00 |
| | | Idaho fescue (Festuca idahoensis) | 460 | lbs | PLS | | |
| | | Blue wildrye (Elymus glaucus) | 460 | lbs | PLS | | |
| | | Small fescue (Vulpia microstachys) | 460 | lbs | PLS | | |
| | | Bluebunch wheatgrass (Pseudoroegneria spicata) | 691 | lbs | PLS | | |
| | | Sandberg bluegrass (Poa secunda) | 58 | lbs | PLS | | |
| | | Spike bentgrass (Agrostis exarata) | 29 | lbs | PLS | | |
| | | Western needlegrass (Achnatherum occidentale) | 460 | lbs | PLS | | |
| | | California brome (Bromus carinatus) | 921 | lbs | PLS | | |
| | | Squirreltail (Elymus elymoides) | 460 | lbs | PLS | | |
| | | Wood mulch | 230233 | lbs | | | |
| | | Tackifier | 13814 | lbs | | | |
| | 92 | FALL GROUND SEEDING: 413 acres | 86-68220 | 413 | Acres | \$3,500.00 | \$1,445,500.00 |
| | | Idaho fescue (Festuca idahoensis) | 1650 | lbs | PLS | | |
| | | Blue wildrye (Elymus glaucus) | 1650 | lbs | PLS | | |
| | | Small fescue (Vulpia microstachys) | 1650 | lbs | PLS | | |
| | | Bluebunch wheatgrass (Pseudoroegneria spicata) | 2475 | lbs | PLS | | |
| | | Sandberg bluegrass (Poa secunda) | 206 | lbs | PLS | | |
| | | Spike bentgrass (Agrostis exarata) | 103 | lbs | PLS | | |
| | | Western needlegrass (Achnatherum occidentale) | 1650 | lbs | PLS | | |
| | | California brome (Bromus carinatus) | 3300 | lbs | PLS | | |
| | | Squirreltail (Elymus elymoides) | 1650 | lbs | PLS | | |
| | | Wood mulch | 126923 | lbs | | | |
| | | Tackifier | 7615 | lbs | | | |
| SUBTOTAL THIS SHEET | | | | | | | \$2,638,000.00 |

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| QUANTITIES | | PRICES | |
| BY O'Meara, Scott A | CHECKED Greimann, Blair P 2/28/11 | BY Craig A. Gush, P.E. | CHECKED |
| DATE PREPARED 02/03/11 | PEER REVIEW / DATE | DATE PREPARED 04/22/11 | PEER REVIEW / DATE 4/22/11 |

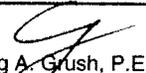
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| FEATURE: | | PROJECT: | |
| Klamath River Dams Removal Partial Removal Option Iron Gate Dam & Powerplant Removal Most Probable Reservoir Vegetative Restoration | | Klamath River Northern California/Southern Oregon | |
| | | WOID: AF121 | ESTIMATE LEVEL: Feasibility |
| | | REGION: MP | UNIT PRICE LEVEL: July-2010 |
| | | FILE: C:\Estimating\Klamath\Klamath River Dams\Removal - Partial\Feasibility Estimates\Iron Gate\Klamath Dams Removal - Iron Gate - Partial Removal Option - MP Feas Est - 4-2011.xlsx\Ssummary | |

| PLANT ACCOUNT | PAY ITEM | DESCRIPTION | CODE | QUANTITY | UNIT | UNIT PRICE | AMOUNT |
|---------------|----------|--|----------|----------|-------|------------|-----------------------|
| | | WATER AND ENVIRONMENTAL | | | | | |
| | 93 | RIPARIAN POLE PLANTING: 50 acres | 86-68220 | 50 | Acres | \$8,500.00 | \$425,000.00 |
| | | Narrowleaf willow (<i>Salix exigua</i>) | 24500 | cutting | | | |
| | | Arroyo willow (<i>Salix lasiolepis</i>) | 7000 | cutting | | | |
| | | Shining willow (<i>Salix lucida</i>) | 3500 | cutting | | | |
| | | Herbivore screen | 35000 | each | | | |
| | | Chemical herbivore deterrent | 700 | gal | | | |
| | 94 | WEED MANAGEMENT: 413 acres | 86-68220 | 413 | Acres | \$1,500.00 | \$619,500.00 |
| | | Herbicide, post-emergent | 825 | lbs AI | | | |
| | | MAINTENANCE TREATMENTS ON 10% OF THE RESTORATION AREAS PER YEAR OVER 4 YEARS, POST-RESTORATION | | | | | |
| | 95 | FALL GROUND SEEDING: 330 acres | 86-68220 | 330 | Acres | \$3,500.00 | \$1,155,000.00 |
| | | Idaho fescue (<i>Festuca idahoensis</i>) | 1320 | lbs PLS | | | |
| | | Blue wildrye (<i>Elymus glaucus</i>) | 1320 | lbs PLS | | | |
| | | Small fescue (<i>Vulpia microstachys</i>) | 1320 | lbs PLS | | | |
| | | Bluebunch wheatgrass (<i>Pseudoroegneria spicata</i>) | 1980 | lbs PLS | | | |
| | | Sandberg bluegrass (<i>Poa secunda</i>) | 165 | lbs PLS | | | |
| | | Spike bentgrass (<i>Agrostis exarata</i>) | 82.5 | lbs PLS | | | |
| | | Western needlegrass (<i>Achnatherum occidentale</i>) | 1320 | lbs PLS | | | |
| | | California brome (<i>Bromus carinatus</i>) | 2640 | lbs PLS | | | |
| | | Squirreltail (<i>Elymus elymoides</i>) | 1320 | lbs PLS | | | |
| | | Wood mulch | 660000 | lbs | | | |
| | | Tackifier | 39600 | lbs | | | |
| | 96 | WEED MANAGEMENT: 330 acres | 86-68220 | 330 | Acres | \$1,500.00 | \$495,000.00 |
| | | Herbicide, post-emergent | 31 | lbs AI | | | |
| | | RESERVOIR VEGETATIVE RESTORATION SUBTOTAL | | | | | |
| | | | | | | | \$9,331,500.00 |

| | | | |
|---------------------------|---|----------------------------|--|
| QUANTITIES | | PRICES | |
| BY O'Meara, Scott A | CHECKED Greimann, Blair P | BY Craig A. Crush, P.E. | CHECKED <i>[Signature]</i> |
| DATE PREPARED 04/12/11 | PEER REVIEW / DATE Greimann, Blair P 4/12/2011 | DATE PREPARED 04/22/11 | PEER REVIEW / DATE <i>[Signature]</i> 4/22/11 |

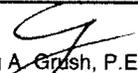
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| FEATURE: Klamath River Dams Removal Partial Removal Option Iron Gate Dam & Powerplant Removal Most Probable Road Improvements | PROJECT: Klamath River Northern California/Southern Oregon WOID: AF121 ESTIMATE LEVEL: Feasibility REGION: MP UNIT PRICE LEVEL: July-2010 FILE: C:\Estimating\Klamath\Klamath River Dams\Removal - Partial\Feasibility Estimates\Iron Gate\Klamath Dams Removal - Iron Gate - Partial Removal Option - MP Feas Est - 4-2011.xlsx\SSummary |
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| PLANT ACCOUNT | PAY ITEM | DESCRIPTION | CODE | QUANTITY | UNIT | UNIT PRICE | AMOUNT |
|---------------|----------|---|----------|----------|------|------------|-----------------------|
| | | GEOTECHNICAL | | | | | |
| | | These quantities represent the work required to prepare a disposal site and remove the earth fill embankment and concrete cutoff walls of Iron Gate Dam to original ground surface. | | | | | |
| | | General Sitework | | | | | |
| | 97 | Clear and Grub Disposal Area Estimated haul distance 1 1/4 mile. Disposed fill estimated to be 20' deep and traffic compacted (15% bulking factor). | 86-68313 | 29 | acre | \$6,000.00 | \$174,000.00 |
| | | Prepare Haul Road - 1.25 mi 2 way traffic - off road dumps or scrapers | | | | | |
| | 98 | Rock Excavation for Haul Road Widening hard basalt rock | 86-68313 | 13,500 | yd3 | \$40.00 | \$540,000.00 |
| | 99 | Clear and grub, 40' width for 1 mile | 86-68313 | 5 | acre | \$6,000.00 | \$30,000.00 |
| | 100 | 4' thick gravel surfacing | 86-68313 | 5,300 | ton | \$70.00 | \$371,000.00 |
| | | 300,000 cubic yards to be disposed of in spillway chute. Filling to start in stilling basin for access to chute. | | | | | |
| | | ROAD IMPROVEMENTS SUBTOTAL | | | | | \$1,115,000.00 |

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|----------------------------------|--|--|--|
| QUANTITIES | | PRICES | |
| BY Randy Kuzniakowski | CHECKED Tuti Tierney | BY  Craig A. Grush, P.E. | CHECKED  |
| DATE PREPARED 11/24/10 | PEER REVIEW / DATE Daniel W. Osmun 12/9/10 | DATE PREPARED 04/22/11 | PEER REVIEW / DATE  4/22/11 |

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|--|---|------------------------------------|--|
| FEATURE: Klamath River Dams Removal Partial Removal Option Iron Gate Dam & Powerplant Removal Most Probable Fish Spawning Facility | PROJECT: Klamath River Northern California/Southern Oregon | | |
| | WOID: AF121 | ESTIMATE LEVEL: Feasibility | |
| | REGION: MP | UNIT PRICE LEVEL: July-2010 | |
| | FILE: C:\Estimating\Klamath\Klamath River Dams\Removal - Partial\Feasibility Estimates\Iron Gate\Klamath Dams Removal - Iron Gate - Partial Removal Option - MP Feas Est - 4-2011.xlsx\Summary | | |

| PLANT ACCOUNT | PAY ITEM | DESCRIPTION | CODE | QUANTITY | UNIT | UNIT PRICE | AMOUNT |
|----------------------------|----------|--|----------|----------|------|------------|---------------------|
| | | CIVIL | | | | | |
| | | Concrete and Structural Steel Items: | | | | | |
| | 101 | Remove Building No. 2. <i>Located just north of the Powerhouse. Single story, hip roof, prefab metal structure on concrete slab. Office, lockers, and shop. 20 ft x 40 ft.</i> | 86-8130 | 800 | ft2 | \$60.00 | \$48,000.00 |
| | 102 | Remove Building No. 3. <i>Located between circular holding ponds. Single story, hip roof, prefab metal structure on concrete walls. Houses fish facility dope tank and holding tanks. 22.67 ft x 48 ft.</i> | 86-68130 | 1,088 | ft2 | \$60.00 | \$65,280.00 |
| | 103 | Remove Concrete in Fish Ladder. <i>Includes diffusion pools 1 thru 4, ladder pools 5 thru 20, and retaining wall (which serves as a support for part of the fish ladder, and which is the left wall of the tunnel outlet structure).</i> | 86-68130 | 950 | yd3 | \$215.00 | \$204,250.00 |
| | 104 | Remove Concrete in Holding Ponds #1 thru #6. <i>Includes 6 circular ponds.</i> | 86-68130 | 420 | yd3 | \$215.00 | \$90,300.00 |
| | 105 | Remove Concrete in Fish Facility Items. <i>Includes holding tank between pool 20 and Bldg. No. 3, tanks around & housed by Bldg. No. 3, ramp to Bldg. No. 3, flumes (to holding ponds), and gate basins #1 thru #6.</i> | 86-68130 | 380 | yd3 | \$215.00 | \$81,700.00 |
| | 106 | Remove Miscellaneous Metalwork in Fish Facilities. <i>Includes steel and aluminum mechanical sweep (in 12-ft-wide holding tank), fish basket (in dope tank), rotating sweeps & stationary sweeps (in circular ponds), frames, gratings, handrail, and ladders. Assume contains paint with heavy metals.</i> | 86-68130 | 12,000 | lbs | \$0.85 | \$10,200.00 |
| SUBTOTAL THIS SHEET | | | | | | | \$499,730.00 |

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| QUANTITIES | | PRICES | |
| BY Rose Reynolds, Stephen Latham | CHECKED Jonathan East, Sheena Barnes | BY  Craig A. Erush, P.E. | CHECKED  |
| DATE PREPARED 11/24/10 | PEER REVIEW / DATE Rick Benik P.E. 12/9/10 | DATE PREPARED 04/22/11 | PEER REVIEW / DATE  4/22/11 |

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| FEATURE: Klamath River Dams Removal Partial Removal Option Iron Gate Dam & Powerplant Removal Most Probable Fish Spawning Facility | PROJECT: Klamath River Northern California/Southern Oregon | |
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| PLANT ACCOUNT | PAY ITEM | DESCRIPTION | CODE | QUANTITY | UNIT | UNIT PRICE | AMOUNT |
|---------------|----------|--|----------|----------|------|------------|---------------------|
| | | CIVIL | | | | | |
| | | Concrete and Structural Steel Items: | | | | | |
| | 107 | Remove Concrete associated with 30"-dia. Water Supply Line. <i>Includes intake structure and 4 water supply line anchors (all on upstream side of dam).</i> | 86-68130 | 68 | yd3 | \$215.00 | \$14,620.00 |
| | 108 | Remove Concrete in Aerator Structure. <i>Located southeast of powerhouse, across the road, and up the slope. Supplies air for the 30"-dia. water supply line. Includes anchor blocks, thrust blocks, pipe supports, and aerator box.</i> | 86-68130 | 50 | yd3 | \$215.00 | \$10,750.00 |
| | 109 | Remove Wood in Aerator Structure. <i>Consists of lumber pressure-treated with chromated copper arsenate. Volume of lumber approximately 200 ft3. Assumed to weigh 30 lbs/ft3.</i> | 86-68130 | 6,000 | lbs | \$0.70 | \$4,200.00 |
| | 110 | Remove Structural Steel in Aerator Structure. <i>Includes three 6 in WF beams, each about 13 ft long, misc. angles & connection hardware, walkway supports, ladders, cages, and guardrails for landings & steps. Assume contains paint with heavy metals.</i> | 86-68130 | 2,500 | lbs | \$0.85 | \$2,125.00 |
| | 111 | Remove Asphalt Pavement. <i>Located around powerhouse and fish facility ponds and tanks.</i> | 86-68130 | 39,000 | ft2 | \$6.00 | \$234,000.00 |
| | 112 | Remove Restroom Building near Aerator Structure. <i>Metal building.</i> | 86-68130 | 340 | ft2 | \$60.00 | \$20,400.00 |
| | 113 | Remove Storage Shed near Aerator Structure. <i>Metal building.</i> | 86-68130 | 90 | ft2 | \$60.00 | \$5,400.00 |
| | | SUBTOTAL THIS SHEET | | | | | \$291,495.00 |

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| QUANTITIES | | PRICES | |
| BY Rose Reynolds, Stephen Latham | CHECKED Jonathan East, Sheena Barnes | BY Craig A. Brush, P.E. | CHECKED  |
| DATE PREPARED 11/24/10 | PEER REVIEW / DATE Rick Benik P.E. 12/9/10 | DATE PREPARED 04/22/11 | PEER REVIEW / DATE  4/22/11 |

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| PLANT ACCOUNT | PAY ITEM | DESCRIPTION | CODE | QUANTITY | UNIT | UNIT PRICE | AMOUNT |
|---------------|----------|---|----------|----------|--------|------------|---------------------|
| | | GEOTECHNICAL | | | | | |
| | | Fish Hatchery Berm Removal | | | | | |
| | 114 | Toe Drain Pipe <i>30" diameter RCP dispose of off site</i> | 86-68313 | 260 | lin ft | \$20.00 | \$5,200.00 |
| | 115 | Toe Drain Manhole <i>48" diameter precast concrete dispose of off site</i> | 86-68313 | 25 | lin ft | \$50.00 | \$1,250.00 |
| | 116 | Berm Removal <i>to be removed concurrent with dam constructed with random fill to wase area by truck</i> | 86-68313 | 53,000 | yd3 | \$13.00 | \$689,000.00 |
| | | SUBTOTAL THIS SHEET | | | | | \$695,450.00 |

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| QUANTITIES | | PRICES | |
| BY Randy Kuzniakowski | CHECKED Tuti Tierney | BY Craig A. Grush, P.E. | CHECKED |
| DATE PREPARED 11/24/10 | PEER REVIEW / DATE Daniel W. Osmun 12/9/10 | DATE PREPARED 04/22/11 | PEER REVIEW / DATE 4/22/11 |

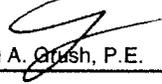
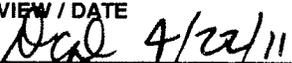
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|----------------------------|----------|--|----------|----------|------|------------|--------------------|
| | | MECHANICAL | | | | | |
| | | Remove and dispose of the following equipment of the Fish Structures: | | | | | |
| | 117 | Intake Structures Trashracks- 8.5ft. W. x 10.75 ft. H. | | | | | |
| | | Trashracks weight approximately: | 86-68420 | 5,000 | lbs | \$0.75 | \$3,750.00 |
| | 118 | Pipe Conduit- 30-in. Dia. X 0.25-in Thick x 960 ft. | 86-68420 | 76,640 | lbs | \$0.85 | \$65,144.00 |
| | | Pipe Weight 80 lbs/ft. (Assume contains paint with heavy metals) | | | | | |
| | 119 | Sluice Gate Valve- 30-in. H. x 30-in. W. | | | | | |
| | | Gate weight Approximately: 3,000 lbs (Assume contains paint with heavy metals & petroleum products) | 86-68420 | 3,000 | lbs | \$0.85 | \$2,550.00 |
| SUBTOTAL THIS SHEET | | | | | | | \$71,444.00 |

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|---------------------------|--|--|--|
| QUANTITIES | | PRICES | |
| BY M. Gulsvig | CHECKED T. J. Turnage | BY <i>[Signature]</i> Craig A. Grush, P.E. | CHECKED <i>[Signature]</i> |
| DATE PREPARED 11/24/10 | PEER REVIEW / DATE Dan Drake 12/16/2010 | DATE PREPARED 04/22/11 | PEER REVIEW / DATE <i>[Signature]</i> 4/22/11 |

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| | REGION: MP | UNIT PRICE LEVEL: July-2010 | |
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|----------------------------|----------|--|----------|----------|------|------------|--------------------|
| | | MECHANICAL | | | | | |
| | 120 | Sluice Gate Stem- 2-in. Dia. Sch. 160 x 45 ft. Pipe weight 8 lbs/ft. (Assume contains paint with heavy metals) | 86-68420 | 360 | lbs | \$0.85 | \$306.00 |
| | 121 | Butterfly Valve- 30-in. Dia. Valve weight approximately: 2435 lbs (Assume contains paint with heavy metals & petroleum products) | 86-68420 | 2,435 | lbs | \$0.85 | \$2,069.75 |
| | 122 | Piping- 30-in. Dia. x 0.25 Thickness x 90 ft. Pipe weight 80 lbs/ft. (Assume contains paint with heavy metals) | 86-68420 | 7,200 | lbs | \$0.85 | \$6,120.00 |
| | 123 | Piping- 24-in. Dia. x 0.25 Thickness x 248 ft. Pipe weight 64 lbs/ft. (Assume contains paint with heavy metals) | 86-68420 | 15,872 | lbs | \$0.85 | \$13,491.20 |
| | 123 | Piping- 20-in. Dia. x 0.25 Thickness x 85 ft. Pipe weight 53 lbs/ft. (Assume contains paint with heavy metals) | 86-68420 | 4,505 | lbs | \$0.85 | \$3,829.25 |
| | 124 | Piping- 18-in. Dia. x 0.25 Thickness x 432 ft. Pipe weight 48 lbs/ft. (Assume contains paint with heavy metals) | 86-68420 | 29,088 | lbs | \$0.85 | \$24,724.80 |
| | 125 | Piping- 16-in. Dia. x 0.25 Thickness x 166 ft. Pipe weight 42 lbs/ft. (Assume contains paint with heavy metals) | 86-68420 | 6,972 | lbs | \$0.85 | \$5,926.20 |
| SUBTOTAL THIS SHEET | | | | | | | \$56,467.20 |

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|----------------------------------|---|--|--|
| QUANTITIES | | PRICES | |
| BY M. Gulsvig | CHECKED T. J. Turnage | BY  Craig A. Crush, P.E. | CHECKED  |
| DATE PREPARED 11/24/10 | PEER REVIEW / DATE Dan Drake 12/16/2010 | DATE PREPARED 04/22/11 | PEER REVIEW / DATE  4/22/11 |

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| FEATURE: | | PROJECT: | |
| Klamath River Dams Removal Partial Removal Option Iron Gate Dam & Powerplant Removal Most Probable Fish Spawning Facility | | Klamath River Northern California/Southern Oregon | |
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|---------------|----------|--|----------|----------|------|------------|--------------------|
| | | MECHANICAL | | | | | |
| | 126 | Piping- 12-in. Dia. x 0.25 Thickness x 64 ft. Pipe weight 34 lbs/ft. (Assume contains paint with heavy metals) | 86-68420 | 2,176 | lbs | \$0.85 | \$1,849.60 |
| | 127 | Piping- 10-in. Dia. x 0.25 Thickness x 69 ft. Pipe weight 28 lbs/ft. (Assume contains paint with heavy metals) | 86-68420 | 1,932 | lbs | \$0.85 | \$1,642.20 |
| | 128 | Piping- 8-in. Dia. x 0.25 Thickness x 30 ft. Pipe weight 23 lbs/ft. (Assume contains paint with heavy metals) | 86-68420 | 3,588 | lbs | \$0.85 | \$3,049.80 |
| | 130 | Piping- 3-in. Dia. STD x 64 ft. Pipe weight 8 lbs/ft. (Assume contains paint with heavy metals) | 86-68420 | 1,088 | lbs | \$0.85 | \$924.80 |
| | 131 | Gate Valves- 24-in. Dia. Gate Valve- 1 total 24-in. Gate Valve weight approx: 3,800 lbs 18-in. Dia. Gate Valve- 7 total 18-in. Gate Valve weight approx: 1748 lbs ea 16-in. Dia. Gate Valve- 2 total 16-in. Gate Valve weight approx: 1465 lbs ea 12-in. Dia. Gate Valve- 1 total 12-in. Gate Valve weight approx: 722 lbs 8-in. Dia. Gate Valve- 6 total 8-in. Gate Valve weight approx: 339 lbs ea 3-in. Dia. Gate Valve- 1 total 3 -in. Gate Valve weight approx: 70 lbs Total weight approximately: (Assume contains paint with heavy metals & petroleum products) | 86-68420 | 21,792 | lbs | \$0.85 | \$18,523.20 |
| | | SUBTOTAL THIS SHEET | | | | | \$25,989.60 |

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|---------------------------|--|--|--|
| QUANTITIES | | PRICES | |
| BY M. Gulsvig | CHECKED T. J. Turnage | BY <i>[Signature]</i> Craig A. Brush, P.E. | CHECKED <i>[Signature]</i> |
| DATE PREPARED 11/24/10 | PEER REVIEW / DATE Dan Drake 12/16/2010 | DATE PREPARED 04/22/11 | PEER REVIEW / DATE <i>[Signature]</i> 4/22/11 |

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| PLANT ACCOUNT | PAY ITEM | DESCRIPTION | CODE | QUANTITY | UNIT | UNIT PRICE | AMOUNT |
|----------------------------|----------|--|----------|----------|------|------------|-------------------|
| | | MECHANICAL | | | | | |
| | 132 | Basin #1- | | | | | |
| | | Slide Gate- 2-18-in. manually operated | | | | | |
| | | Slide Gate weight approximately: 490 lbs ea | | | | | |
| | | (Assume contains paint with heavy metals & petroleum products) | | | | | |
| | | Stop logs- | | | | | |
| | | Total logs weight approximately: 1500 lbs | | | | | |
| | | Total guide weight approximately: 400 lbs | | | | | |
| | | (Assume contains paint with heavy metals) | | | | | |
| | | Total weight approximately: | 86-68420 | 2,880 | lbs | \$0.85 | \$2,448.00 |
| | 133 | Basin #2- | | | | | |
| | | Slide Gate- 4-18-in. manually operated | | | | | |
| | | Slide Gate weight approximately: 490 lbs ea | | | | | |
| | | (Assume contains paint with heavy metals & petroleum products) | | | | | |
| | | Stop logs- | | | | | |
| | | Total logs weight approximately: 1500 lbs | | | | | |
| | | Total guide weight approximately: 400 lbs | | | | | |
| | | (Assume contains paint with heavy metals) | | | | | |
| | | Total weight approximately: | 86-68420 | 3,860 | lbs | \$0.85 | \$3,281.00 |
| | 134 | Basin #3- | | | | | |
| | | Slide Gate- 2-18-in. manually operated | | | | | |
| | | Slide Gate weight approximately: 490 lbs ea | | | | | |
| | | (Assume contains paint with heavy metals & petroleum products) | | | | | |
| | | Stop logs- | | | | | |
| | | Total logs weight approximately: 1500 lbs | | | | | |
| | | Total guide weight approximately: 400 lbs | | | | | |
| | | (Assume contains paint with heavy metals) | | | | | |
| | | Total weight approximately: | 86-68420 | 2,880 | lbs | \$0.85 | \$2,448.00 |
| SUBTOTAL THIS SHEET | | | | | | | \$8,177.00 |

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| QUANTITIES | | PRICES | |
| BY M. Gulsvig | CHECKED T. J. Turnage | BY Craig A. Grash, P.E. | CHECKED  |
| DATE PREPARED 11/24/10 | PEER REVIEW / DATE Dan Drake 12/16/2010 | DATE PREPARED 04/22/11 | PEER REVIEW / DATE DDD 4/22/11 |

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| PLANT ACCOUNT | PAY ITEM | DESCRIPTION | CODE | QUANTITY | UNIT | UNIT PRICE | AMOUNT |
|---------------|----------|--|----------|----------|------|------------|-------------------|
| | | MECHANICAL | | | | | |
| | 135 | Basin #4- | | | | | |
| | | Slide Gates- | | | | | |
| | | 24-in. Slide Gate manually operated | | | | | |
| | | 24-in. Slide Gate weight approx: 700 lbs | | | | | |
| | | 2-18-in. Slide Gate manually operated | | | | | |
| | | 18-in. Slide Gate weight approx: 490 lbs ea | | | | | |
| | | (Assume contains paint with heavy metals & petroleum products) | | | | | |
| | | Stop logs- | | | | | |
| | | Total logs weight approximately: 1500 lbs | | | | | |
| | | Total guide weight approximately: 400 lbs | | | | | |
| | | (Assume contains paint with heavy metals) | | | | | |
| | | Total weight approximately: | 86-68420 | 3,580 | lbs | \$0.85 | \$3,043.00 |
| | 136 | Basin #5- | | | | | |
| | | Slide Gate- 18-in. manually operated | | | | | |
| | | Slide Gate weight approximately: 490 lbs | | | | | |
| | | (Assume contains paint with heavy metals & petroleum products) | | | | | |
| | | Stop logs- | | | | | |
| | | Total logs weight approximately: 750 lbs | | | | | |
| | | Total guide weight approximately: 200 lbs | | | | | |
| | | (Assume contains paint with heavy metals) | | | | | |
| | | Total weight approximately: | 86-68420 | 1,440 | lbs | \$0.85 | \$1,224.00 |
| | 137 | Basin #6- | | | | | |
| | | Slide Gate- 18-in. manually operated | | | | | |
| | | Slide Gate weight approximately: 490 lbs | | | | | |
| | | (Assume contains paint with heavy metals & petroleum products) | | | | | |
| | | Stop logs- | | | | | |
| | | Total logs weight approximately: 750 lbs | | | | | |
| | | Total guide weight approximately: 200 lbs | | | | | |
| | | (Assume contains paint with heavy metals) | | | | | |
| | | Total weight approximately: | 86-68420 | 1,440 | lbs | \$0.85 | \$1,224.00 |
| | | SUBTOTAL THIS SHEET | | | | | \$5,491.00 |

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|---------------------------|--|--|--|
| QUANTITIES | | PRICES | |
| BY M. Gulsvig | CHECKED T. J. Turnage | BY <i>[Signature]</i> Craig A. Brush, P.E. | CHECKED <i>[Signature]</i> |
| DATE PREPARED 11/24/10 | PEER REVIEW / DATE Dan Drake 12/16/2010 | DATE PREPARED 04/22/11 | PEER REVIEW / DATE <i>[Signature]</i> 4/22/11 |

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| FEATURE: Klamath River Dams Removal Partial Removal Option Iron Gate Dam & Powerplant Removal Most Probable | PROJECT: Klamath River Northern California/Southern Oregon |
| | WOID: AF121 ESTIMATE LEVEL: Feasibility |
| | REGION: MP UNIT PRICE LEVEL: July-2010 |
| | FILE: C:\Estimating\Klamath\Klamath River Dams\Removal - Partial\Feasibility Estimates\Iron Gate\Klamath Dams Removal - Iron Gate - Partial Removal Option - MP Feas Est - 4-2011.xlsx\SSummary |

| PLANT ACCOUNT | PAY ITEM | DESCRIPTION | CODE | QUANTITY | UNIT | UNIT PRICE | AMOUNT |
|---------------|----------|--|------|----------|------|--------------------------|---------------------|
| | | Wanaka Springs | | | | | |
| | 140 | Concrete total | BLM | 28 | CY | \$300.00 | \$8,400.00 |
| | | 1 Dock Pier 25'x5'x5' (23 CY) | | | | | |
| | | 1 Concrete table base (2 CY) | | | | | |
| | | 3 Concrete fire rings/garbage bases (1 CY) | | | | | |
| | | 3 Concrete sign bases (2 CY) | | | | | |
| | 141 | Double pipe railings | BLM | 60 | LF | \$40.00 | \$2,400.00 |
| | 142 | Wood picnic tables to be removed and hauled away | BLM | 5 | EA | \$100.00 | \$500.00 |
| | 143 | 25'X5' Wooden floating dock | BLM | 125 | SF | \$20.00 | \$2,500.00 |
| | 144 | Rip and reseed site and access road | BLM | 2.5 | ACRE | \$25,000.00 | \$62,500.00 |
| | 145 | Signs to be removed and hauled away | BLM | 3 | EA | \$300.00 | \$900.00 |
| | 146 | 15'x5' Gangplank with railings | BLM | 75 | SF | \$20.00 | \$1,500.00 |
| | | Juniper Point | | | | | |
| | 147 | Concrete total | BLM | 19 | CY | \$300.00 | \$5,700.00 |
| | | 1 Dock abutment 25'x4'x3' (11 CY) | | | | | |
| | | 15 Concrete fire rings (5 CY) | | | | | |
| | | 1 Picnic table base (2 CY) | | | | | |
| | | 4 Sign bases (1 CY) | | | | | |
| | 148 | 2, 4'x4' Concrete toilet vaults | BLM | 32 | SF | \$100.00 | \$3,200.00 |
| | 149 | Wood picnic tables to be removed and hauled away | BLM | 8 | EA | \$100.00 | \$800.00 |
| | 150 | Signs to be removed and hauled away | BLM | 4 | EA | \$300.00 | \$1,200.00 |
| | 151 | Dock pipe railing | BLM | 50 | LF | \$40.00 | \$2,000.00 |
| | 152 | 50'x5' Composite dock with poly floats | BLM | 250 | SF | \$20.00 | \$5,000.00 |
| | 153 | 20'x5' Composite gangplank with railings | BLM | 100 | SF | \$20.00 | \$2,000.00 |
| | 154 | Bury 3' dia boulders on site | BLM | 50 | EA | Included in regrade item | |
| | 155 | Regrade to natural contour, rip and reseed | BLM | 2 | ACRE | \$25,000.00 | \$50,000.00 |
| | | SUBTOTAL THIS SHEET | | | | | \$148,600.00 |

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|----------------------------------|--|-----------------------------------|--------------------------------------|
| QUANTITIES | | PRICES | |
| BY Renee Snyder (BLM) | CHECKED Sheena Barnes | BY Craig A. Grush, P.E. | CHECKED |
| DATE PREPARED 11/24/10 | PEER REVIEW / DATE Rick Benik P.E. 12/9/10 | DATE PREPARED 04/22/11 | PEER REVIEW / DATE 4/22/11 |

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|--|--|---|-----------------------------|--|--|
| FEATURE: | | PROJECT: | | | |
| Klamath River Dams Removal Partial Removal Option Iron Gate Reservoir Most Probable | | Klamath River Northern California/Southern Oregon | | | |
| | | WOID: AF121 | ESTIMATE LEVEL: Feasibility | | |
| | | REGION: MP | UNIT PRICE LEVEL: July-2010 | | |
| | | FILE: C:\Estimating\Klamath\Klamath River Dams\Removal - Partial\Feasibility Estimates\Iron Gate\Klamath Dams Removal - Iron Gate - Partial Removal Option - MP Feas Est - 4-2011.xls\Summary | | | |

| PLANT ACCOUNT | PAY ITEM | DESCRIPTION | CODE | QUANTITY | UNIT | UNIT PRICE | AMOUNT |
|---------------|----------|---|------|----------|-------|--------------------------|---------------------|
| | | Camp Creek | | | | | |
| | 156 | Concrete total | BLM | 110 | CY | \$300.00 | \$33,000.00 |
| | | 80'x25'x1' Boat ramp (75 CY) | | | | | |
| | | Main dock platform piers 25'x4'x3' (11 CY) | | | | | |
| | | 15 Fire ring bases (6 CY) | | | | | |
| | | Step/dock abutment 8'x6'x5' (9 CY) | | | | | |
| | | 6 Sign bases (2 CY) | | | | | |
| | | 1 Block foundation sign base (3 CY) | | | | | |
| | | 2 Picnic table bases (4 CY) | | | | | |
| | 157 | 180'Lx16'Wx8'D Earth jetty to remove and/or regrade | BLM | 855 | CY | \$25.00 | \$21,375.00 |
| | 158 | Well house 10'x16' concrete block building | BLM | 160 | SF | \$100.00 | \$16,000.00 |
| | 159 | 2, 20'x5' Composite decking gangplanks w/ aluminum frame railings | BLM | 200 | SF | \$20.00 | \$4,000.00 |
| | 160 | 2, 20'x5' Floating composite w/ aluminum frame docks | BLM | 200 | SF | \$20.00 | \$4,000.00 |
| | 161 | Concrete block double toilet bldg 10'x16' | BLM | 160 | SF | \$100.00 | \$16,000.00 |
| | 162 | Dump stations and approx. 2000 gal buried concrete tank | BLM | 1 | EA | \$5,000.00 | \$5,000.00 |
| | 163 | Power poles and lines | BLM | 3 | POLES | \$1,500.00 | \$4,500.00 |
| | 164 | Remove waterlines and 3 faucets and regrade | BLM | 600 | LF | \$5.00 | \$3,000.00 |
| | 165 | Recycle/bury approx. 3' dia. boulders | BLM | 75 | EA | Included in regrade item | |
| | 166 | Steel pipe/plank picnic tables to be removed and hauled away | BLM | 5 | EA | \$100.00 | \$500.00 |
| | 167 | Relocate concrete tables | BLM | 12 | EA | \$100.00 | \$1,200.00 |
| | 168 | Regrade, rip and reseed | BLM | 4 | ACRE | \$25,000.00 | \$100,000.00 |
| | 169 | Signs to be removed and hauled away | BLM | 7 | EA | \$300.00 | \$2,100.00 |
| | | Dutch Creek | | | | | |
| | 170 | 50'x4'x3' Dock concrete abutment | BLM | 22 | CY | \$300.00 | \$6,600.00 |
| | 171 | Double pipe railing | BLM | 100 | LF | \$40.00 | \$4,000.00 |
| | | SUBTOTAL THIS SHEET | | | | | \$221,275.00 |

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|---------------------------|---|----------------------------|--|
| QUANTITIES | | PRICES | |
| BY Renee Snyder (BLM) | CHECKED Sheena Barnes | BY Craig A. Grush, P.E. | CHECKED <i>[Signature]</i> |
| DATE PREPARED 11/24/10 | PEER REVIEW / DATE Rick Benik P.E. 12/9/10 | DATE PREPARED 04/22/11 | PEER REVIEW / DATE <i>[Signature]</i> 4/22/11 |

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|---|---|
| FEATURE: Klamath River Dams Removal Partial Removal Option Iron Gate Reservoir Most Probable | PROJECT: Klamath River Northern California/Southern Oregon |
| | WOID: AF121 ESTIMATE LEVEL: Feasibility |
| | REGION: MP UNIT PRICE LEVEL: July-2010 |
| | FILE: C:\Estimating\Klamath\Klamath River Dams\Removal - Partial\Feasibility Estimates\Iron Gate\Klamath Dams Removal - Iron Gate - Partial Removal Option - MP Feas Est - 4-2011.xls\Summary |

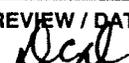
| PLANT ACCOUNT | PAY ITEM | DESCRIPTION | CODE | QUANTITY | UNIT | UNIT PRICE | AMOUNT |
|---------------|----------|--|------|----------|------|--------------------------|---------------------|
| | | Mirror Cove | | | | | |
| | 172 | Concrete total | | 89 | CY | \$300.00 | \$26,700.00 |
| | | 80'x25'x0.5' Boat ramp (37 CY) | | | | | |
| | | 2 Concrete boat dock abutments: 6'x8'x1.5' and 6'x30'x5' (36 CY) | | | | | |
| | | 12 Fire ring foundations (4 CY) | | | | | |
| | | 2 Sets of concrete stairs (9 CY) | | | | | |
| | | 7 Sign foundations (3 CY) | | | | | |
| | 173 | 10'x16' Toilet vault | | 160 | SF | \$100.00 | \$16,000.00 |
| | 174 | 2, 30'x5' Composite gangplanks w/aluminum frame and railings | | 300 | SF | \$20.00 | \$6,000.00 |
| | 175 | Double pipe railings on dock | | 80 | LF | \$40.00 | \$3,200.00 |
| | 176 | Bury 3' dia. boulders on site | | 120 | EA | Included in regrade item | |
| | 177 | Regrade site, rip and reseed | | 3 | ACRE | \$25,000.00 | \$75,000.00 |
| | 178 | Signs to be removed and hauled away | | 7 | EA | \$300.00 | \$2,100.00 |
| | | Overlook Point | | | | | |
| | 179 | 1 Concrete picnic table base | | 1 | CY | \$300.00 | \$300.00 |
| | 180 | Steel frame table to be removed and hauled away | | 1 | EA | \$100.00 | \$100.00 |
| | 181 | Regrade steep access road and site to natural contours, rip and reseed | | 0.5 | ACRE | \$25,000.00 | \$12,500.00 |
| | | Long Gulch | | | | | |
| | 182 | 80'x25'x4" Concrete boat ramp to be removed | | 25 | CY | \$300.00 | \$7,500.00 |
| | 183 | Remove picnic tables (steel frame with planks) & haul away | | 2 | EA | \$100.00 | \$200.00 |
| | 184 | Regrade ramp area to natural contours, rip, reseed | | 0.05 | ACRE | \$25,000.00 | \$1,250.00 |
| | | RECREATIONAL FACILITIES REMOVAL SUBTOTAL | | | | | \$520,725.00 |

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|---------------------------|---|--|--|
| QUANTITIES | | PRICES | |
| BY Renee Snyder (BLM) | CHECKED Sheena Barnes | BY <i>[Signature]</i> Craig A. Grush, P.E. | CHECKED <i>[Signature]</i> |
| DATE PREPARED 11/24/10 | PEER REVIEW / DATE Rick Benik P.E. 12/9/10 | DATE PREPARED 04/22/11 | PEER REVIEW / DATE <i>[Signature]</i> 4/22/11 |

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|---|---|------------------------------------|--|
| FEATURE: Klamath River Dams Removal Partial Removal Option Iron Gate Dam & Powerplant Removal Most Probable SUMMARY | PROJECT: Klamath River Northern California/Southern Oregon | | |
| | WOID: AF121 | ESTIMATE LEVEL: Feasibility | |
| | REGION: MP | UNIT PRICE LEVEL: July-2010 | |
| | FILE: C:\Estimating\Klamath\Klamath River Dams\Removal - Partial\Feasibility Estimates\Iron Gate\Klamath Dams Removal - Iron Gate - Partial Removal Option - MP Feas Est - 4-2011.xlsx\SUMMARY | | |

| PLANT ACCOUNT | PAY ITEM | DESCRIPTION | CODE | QUANTITY | UNIT | UNIT PRICE | AMOUNT |
|---------------|----------|---|------|----------|------|------------|------------------------|
| | | Sediment Removal (assumes by natural erosion) | | 839,100 | CY | \$0.00 | \$0.00 |
| | | Diversion and Care | | | | | \$3,340,945.00 |
| | | Dam Removal | | | | | \$14,159,019.50 |
| | | Powerhouse/Switchyard/Transmission Line Removal | | | | | \$179,400.00 |
| | | Penstock Removal | | | | | \$1,172,878.50 |
| | | Reservoir Vegetative Restoration | | | | | \$9,331,500.00 |
| | | Road Improvements | | | | | \$1,115,000.00 |
| | | Fish Spawning Facility Removal | | | | | \$1,662,033.80 |
| | | Recreational Facilities to be Removed | | | | | \$520,725.00 |
| | | Subtotal | | | | | \$31,481,501.80 |
| | | Mobilization | 5% | +/- | | | \$1,550,000.00 |
| | | Subtotal 1 with Mobilization | | | | | \$33,031,501.80 |
| | | Escalation to Notice to Proceed (NTP), from July 2010 to July 2020 (assumes 3%/yr compounding over 10 years) | | | | | \$11,360,075.00 |
| | | Subtotal 2 = Subtotal 1 with Mobilization + Escalation to NTP | | | | | \$44,391,576.80 |
| | | Design Contingencies | 10% | +/- | | | \$4,608,423.20 |
| | | Allowance for Procurement Strategies (APS) | 0% | +/- | | | |
| | | Type of solicitation assumed is: Competitive RFP | | | | | |
| | | CONTRACT COST | | | | | \$49,000,000.00 |
| | | Construction Contingencies | 20% | +/- | | | \$10,000,000.00 |
| | | FIELD COST | | | | | \$59,000,000.00 |
| | | Non-Contract Costs: (Environmental & Cultural Resources Mitigation ~ 45%, Design Data Collection ~ 1%, Engineering Design ~ 4%, Permitting ~ 3%, Procurement ~ 1%, Construction Management ~ 10%, and Closeout ~ 1%) | 65% | +/- | | | \$38,000,000.00 |
| | | CONSTRUCTION COST | | | | | \$97,000,000.00 |

Ref.: For appropriate use and terminology, see Reclamation Manual, Directives and Standards FAC; 09-01, 09-02 and 09-03.

| QUANTITIES | | PRICES | |
|---------------------------------------|---|-----------------------------------|--|
| BY Refer to Previous Sheets | CHECKED Refer to Previous Sheets | BY Craig A. Brush, P.E. | CHECKED  |
| DATE PREPARED | PEER REVIEW / DATE Refer to Previous Sheets | DATE PREPARED 04/22/11 | PEER REVIEW / DATE  4/03/11 |