

**APPENDIX H**  
**ENGINEERING COST ESTIMATES**

**BEAR TRAP CREEK OPTIONS  
COST ESTIMATES**

**BEAR TRAP CREEK - OPTION 1**

| ITEM/DESCRIPTION           | QUANTITIY | UNIT | UNIT COST | TOTAL COST |
|----------------------------|-----------|------|-----------|------------|
| 1 No Action                |           |      | \$ 0.00   | \$ 0.00    |
| <b>TOTAL CAPITAL COSTS</b> |           |      |           | \$ -       |

|   |                |
|---|----------------|
| <b>TOTAL CONSTRUCTION AND CAPITAL COSTS</b> | <b>\$ 0.00</b> |
|---|----------------|

| <b>POST CLOSURE MAINTENANCE COSTS</b>  |                      |
|--|----------------------|
| <i>Years 1 Through 30</i>  |                      |
| Water quality monitoring, vegetation monitoring<br>storm water monitoring, weed control, groundwater sampling. | \$ 30,000.00         |
| <b>Annual Subtotal Years 1 through 30</b>  | <b>\$ 30,000.00</b>  |
| <b>PRESENT WORTH COST FOR O&amp;M</b>  | <b>\$ 372,272.00</b> |

|                                 |                      |
|---------------------------------|----------------------|
| <b>TOTAL PRESENT WORTH COST</b> | <b>\$ 372,272.00</b> |
|---------------------------------|----------------------|

**BEAR TRAP CREEK - OPTION 2**

| ITEM/DESCRIPTION  | QUANTITY | UNIT | UNIT COST    | TOTAL COST           |
|---|----------|------|--------------|----------------------|
| 1 Mobilization/Demobilization   | 5        | %    | \$ 3,000.00  | \$ 15,000.00         |
| 2 Surface Water and Sediment Control  | 1.5      | %    | \$ 3,000.00  | \$ 4,500.00          |
| 3 Construct Haul Road   | 1        | LS   | \$ 10,000.00 | \$ 10,000.00         |
| 4 Excavate & Haul Tailings (assume 3 mi round trip)   | 5,000    | CY   | \$ 16.75     | \$ 83,750.00         |
| 5 Flosse and Louise Tailings Excavation & Haul  | 1,200    | CY   | \$ 16.75     | \$ 20,100.00         |
| 6 Amendment   | 51       | Ton  | \$ 80.00     | \$ 4,080.00          |
| 7 Cover Soil  | 2500     | CY   | \$ 13.00     | \$ 32,500.00         |
| 8 Revegetation  | 1        | AC   | \$ 1,500.00  | \$ 1,500.00          |
| <i>Repository-(Paymaster)*</i>  |          |      |              |                      |
| 9 Clear and Grub  | 0.25     | AC   | \$ 3,000.00  | \$ 750.00            |
| 10 Compact Repository   | 7,200    | CY   | \$ 1.16      | \$ 8,352.00          |
| 11 Cap Liner  | 2,310    | SY   | \$ 15.00     | \$ 34,650.00         |
| 12 Cover Soil   | 770      | CY   | \$ 13.00     | \$ 10,010.00         |
| <b>SUBTOTAL CONSTRUCTION COSTS</b>  |          |      |              | <b>\$ 225,192.00</b> |
| Contingency   |          |      | 25%          | \$ 56,300.00         |
| <b>TOTAL ESTIMATED CONSTRUCTION COSTS</b>   |          |      |              | <b>\$ 281,492.00</b> |
| Project Management/Administrative Costs   |          |      | 8%           | \$ 23,000.00         |
| Engineering and Final Design  |          |      | 15%          | \$ 43,000.00         |
| Construction Management   |          |      | 10%          | \$ 29,000.00         |
| <b>TOTAL CAPITAL COSTS</b>  |          |      |              | <b>\$ 95,000.00</b>  |
| <b>TOTAL CONSTRUCTION AND CAPITAL COSTS</b>   |          |      |              | <b>\$ 376,492.00</b> |
| <b>POST CLOSURE MAINTENANCE COSTS</b>   |          |      |              |                      |
| <i>Years 1 Through 30</i><br>Water quality monitoring, vegetation monitoring<br>storm water monitoring, weed control, groundwater sampling. |          |      |              | \$ 30,000.00         |
| <b>Annual Subtotal Years 1 through 30</b>   |          |      |              | <b>\$ 30,000.00</b>  |
| <b>PRESENT WORTH COST FOR O&amp;M</b>   |          |      |              | <b>\$ 372,272.00</b> |
| <b>TOTAL PRESENT WORTH COST</b>   |          |      |              | <b>\$ 748,764.00</b> |

\*Use of a soil cover only system would reduce approximately \$34,600 to the construction costs

Note: Material may be placed in West Impoundment Repository if Tailings Impoundment Option 3 is selected; cost approx. the same

**BEAR TRAP CREEK - OPTION 4**

| ITEM/DESCRIPTION  |   | QUANTITY | UNIT | UNIT COST    | TOTAL COST            |
|---|---|----------|------|--------------|-----------------------|
| 1   | Mobilization/Demobilization                       | 5        | %    | \$ 10,000.00 | \$ 50,000.00          |
| 2   | Surface Water and Sediment Control                | 1.5      | %    | \$ 10,000.00 | \$ 15,000.00          |
| 3   | Construct Haul Road                               | 1        | LS   | \$ 10,000.00 | \$ 10,000.00          |
| 4   | Excavate & Haul Tailings (assume 3 mi round trip) | 31,000   | CY   | \$ 16.75     | \$ 519,250.00         |
| 5   | Flosse and Louise Tailings Excavation             | 1,200    | CY   | \$ 16.75     | \$ 20,100.00          |
| 6   | Clean fill/soil                                   | 7,500    | CY   | \$ 13.00     | \$ 97,500.00          |
| 7   | Amendment   | 1,050    | Ton  | \$ 80.00     | \$ 84,000.00          |
| 8   | Revegetation                                      | 11       | AC   | \$ 1,500.00  | \$ 16,500.00          |
| <i>Repository-(Paymaster)*</i>  |   |          |      |              |                       |
| 9   | Clear and Grub                                    | 1.50     | AC   | \$ 3,000.00  | \$ 4,500.00           |
| 10  | Compact Repository                                | 32,200   | CY   | \$ 1.16      | \$ 37,352.00          |
| 11  | Cap Liner   | 6,000    | SY   | \$ 15.00     | \$ 90,000.00          |
| 12  | Cover Soil  | 2000     | CY   | \$ 13.00     | \$ 26,000.00          |
| <b>SUBTOTAL CONSTRUCTION COSTS</b>  |   |          |      |              | <b>\$ 970,202.00</b>  |
| Contingency   |   |          |      | 25%          | \$ 242,600.00         |
| <b>TOTAL ESTIMATED CONSTRUCTION COSTS</b>   |   |          |      |              | <b>\$1,212,802.00</b> |
| Project Management/Administrative Costs   |   |          |      | 6%           | \$ 73,000.00          |
| Engineering and Final Design  |   |          |      | 12%          | \$ 146,000.00         |
| Construction Management   |   |          |      | 8%           | \$ 98,000.00          |
| <b>TOTAL CAPITAL COSTS</b>  |   |          |      |              | <b>\$ 317,000.00</b>  |
| <b>TOTAL CONSTRUCTION AND CAPITAL COSTS</b>   |   |          |      |              | <b>\$1,529,802.00</b> |
| <b>POST CLOSURE MAINTENANCE COSTS</b>   |   |          |      |              |                       |
| <i>Years 1 Through 5</i><br>Water quality monitoring, vegetation monitoring<br>storm water monitoring, weed control, groundwater sampling.  |   |          |      |              | \$ 30,000.00          |
| <b>Annual Subtotal Years 1 through 5</b>  |   |          |      |              | <b>\$ 30,000.00</b>   |
| <i>Years 6 Through 30</i><br>Water quality monitoring, vegetation monitoring<br>storm water monitoring, weed control, groundwater sampling. |   |          |      |              | \$ 10,000.00          |
| <b>Annual Subtotal Years 6 through 30</b>   |   |          |      |              | <b>\$ 10,000.00</b>   |
| <b>PRESENT WORTH COST FOR O&amp;M</b>   |   |          |      |              | <b>\$ 206,095.00</b>  |
| <b>TOTAL PRESENT WORTH COST</b>   |   |          |      |              | <b>\$1,735,897.00</b> |

\*Use of a soil cover only system would reduce approximately \$90,000 to the construction costs

Note: Material may be placed in West Impoundment Repository if Tailings Impoundment Option 3 is selected; cost approx. the same

**BEAR TRAP CREEK - OPTION 5**

| ITEM/DESCRIPTION  |   | QUANTITY | UNIT | UNIT COST    | TOTAL COST            |
|---|---|----------|------|--------------|-----------------------|
| 1   | Mobilization/Demobilization                       | 5        | %    | \$ 17,000.00 | \$ 85,000.00          |
| 2   | Surface Water and Sediment Control                | 1.5      | %    | \$ 17,000.00 | \$ 25,500.00          |
| 3   | Construct Haul Road                               | 1        | LS   | \$ 10,000.00 | \$ 10,000.00          |
| 4   | Excavate & Haul Tailings (assume 3 mi round trip) | 61,500   | CY   | \$ 16.75     | \$1,030,125.00        |
| 5   | Flosse and Louise Tailings Excavation             | 1,200    | CY   | \$ 16.75     | \$ 20,100.00          |
| 6   | Clean fill/soil                                   | 15,000   | CY   | \$ 13.00     | \$ 195,000.00         |
| 7   | Channel Restoration                               | 3,120    | LF   | \$ 30.00     | \$ 93,600.00          |
| 8   | Revegetation                                      | 11       | AC   | \$ 1,500.00  | \$ 16,500.00          |
| <i>Repository-(Paymaster)*</i>  |   |          |      |              |                       |
| 9   | Clear and Grub                                    | 2.00     | AC   | \$ 3,000.00  | \$ 6,000.00           |
| 10  | Compact Repository                                | 62,700   | CY   | \$ 1.16      | \$ 72,732.00          |
| 11  | Cap Liner   | 8,500    | SY   | \$ 15.00     | \$ 127,500.00         |
| 12  | Cover Soil  | 2835     | CY   | \$ 13.00     | \$ 36,855.00          |
| <b>SUBTOTAL CONSTRUCTION COSTS</b>  |   |          |      |              | <b>\$1,718,912.00</b> |
| Contingency   |   |          |      | 25%          | \$ 429,800.00         |
| <b>TOTAL ESTIMATED CONSTRUCTION COSTS</b>   |   |          |      |              | <b>\$2,148,712.00</b> |
| Project Management/Administrative Costs   |   |          |      | 6%           | \$ 129,000.00         |
| Engineering and Final Design  |   |          |      | 12%          | \$ 258,000.00         |
| Construction Management   |   |          |      | 8%           | \$ 172,000.00         |
| <b>TOTAL CAPITAL COSTS</b>  |   |          |      |              | <b>\$ 559,000.00</b>  |
| <b>TOTAL CONSTRUCTION AND CAPITAL COSTS</b>   |   |          |      |              | <b>\$2,707,712.00</b> |
| <b>POST CLOSURE MAINTENANCE COSTS</b>   |   |          |      |              |                       |
| <i>Years 1 Through 5</i><br>Water quality monitoring, vegetation monitoring<br>storm water monitoring, weed control, groundwater sampling.  |   |          |      |              | \$ 30,000.00          |
| <b>Annual Subtotal Years 1 through 5</b>  |   |          |      |              | <b>\$ 30,000.00</b>   |
| <i>Years 6 Through 30</i><br>Water quality monitoring, vegetation monitoring<br>storm water monitoring, weed control, groundwater sampling. |   |          |      |              | \$ 5,000.00           |
| <b>Annual Subtotal Years 6 through 30</b>   |   |          |      |              | <b>\$ 5,000.00</b>    |
| <b>PRESENT WORTH COST FOR O&amp;M</b>   |   |          |      |              | <b>\$ 164,551.00</b>  |
| <b>TOTAL PRESENT WORTH COST</b>   |   |          |      |              | <b>\$2,872,263.00</b> |

\*Use of a soil cover only system would reduce approximately \$127,500 to the construction costs

Note: Material may be placed in West Impoundment Repository if Tailings Impoundment Option 3 is selected; cost approx. the same

**SERIES PRESENT WORTH FACTOR**

$$SPWF = \frac{((1+i)^n - 1)}{i(1+i)^n}$$

where:

$i$  = discount rate =

0.07 **OSWER Directive No. 9355.3-20**

$n$  = period, yrs

$$P + A(SPWF)$$

where:

$P$  = present worth

$A$  = annual O&M cost

| SPWF   | MULTIPLIER |
|--------|------------|
| (1-5)  | 4.10       |
| (1-30) | 12.41      |
| (6-30) | 8.31       |

**Option 1 and 2**

O&M for Years 1-30 = \$ 30,000.00

Present Worth Cost of O&M = \$ 372,271.24 **(30,000x12.41)**

**Option 4**

O&M for Years 1-5 = \$ 30,000.00

O&M for Years 6-30 = \$ 10,000.00

Present Worth Cost of O&M = \$ 206,094.36 **(30,000x4.1)+(10,000x8.31)**

**Option 5**

O&M for Years 1-5 = \$ 30,000.00

O&M for Years 6-30 = \$ 5,000.00

Present Worth Cost of O&M = \$ 164,550.14 **(30,000x4.10)+(5,000x8.31)**

**LOWER MIKE HORSE CREEK OPTIONS  
COST ESTIMATES**

**LOWER MIKE HORSE CREEK - OPTION 1**

| ITEM/DESCRIPTION           | QUANTITIY | UNIT | UNIT COST | TOTAL COST |
|----------------------------|-----------|------|-----------|------------|
| 1 No Action                |           |      | \$ 0.00   | \$ 0.00    |
| <b>TOTAL CAPITAL COSTS</b> |           |      |           | \$ -       |

|   |         |
|---|---------|
| <b>TOTAL CONSTRUCTION AND CAPITAL COSTS</b> | \$ 0.00 |
|---|---------|

| <b>POST CLOSURE MAINTENANCE COSTS</b>   |               |
|---|---------------|
| <i>Years 1 Through 30</i><br>Surface water and groundwater quality monitoring,<br>erosion control, and weed control | \$ 30,000.00  |
| <b>Annual Subtotal Years 1 through 30</b>   | \$ 30,000.00  |
| <b>PRESENT WORTH COST FOR O&amp;M</b>   | \$ 372,272.00 |

|                                 |               |
|---------------------------------|---------------|
| <b>TOTAL PRESENT WORTH COST</b> | \$ 372,272.00 |
|---------------------------------|---------------|

**LOWER MIKE HORSE CREEK - OPTION 2**

| ITEM/DESCRIPTION  |  | QUANTITY | UNIT | UNIT COST   | TOTAL COST           |
|---|--|----------|------|-------------|----------------------|
| 1   | Mobilization/Demobilization                            | 1        | LS   | \$ 9,000.00 | \$ 9,000.00          |
| 2   | Surface Water and Sediment Control                     | 1        | LS   | \$ 3,000.00 | \$ 3,000.00          |
| 3   | Excavation & Haul Tailings (assume 0.25 mi round trip) | 8,000    | CY   | \$ 15.25    | \$ 122,000.00        |
| 4   | Channel Restoration                                    | 1300     | LF   | \$ 30.00    | \$ 39,000.00         |
| 5   | Revegetation   | 4.5      | AC   | \$ 1,500.00 | \$ 6,750.00          |
| <i>Repository-(Above high water mark)*</i>  |  |          |      |             |                      |
| 6   | Clear and Grub   | 1        | AC   | \$ 3,000.00 | \$ 3,000.00          |
| 7   | Compact Repository                                     | 8,000    | CY   | \$ 1.16     | \$ 9,280.00          |
| 8   | Cap Liner  | 3,000    | SY   | \$ 15.00    | \$ 45,000.00         |
| 9   | Cover Soil   | 1000     | CY   | \$ 13.00    | \$ 13,000.00         |
| <b>SUBTOTAL CONSTRUCTION COSTS</b>  |  |          |      |             | <b>\$ 250,030.00</b> |
| Contingency   |  |          |      | 25%         | \$ 62,600.00         |
| <b>TOTAL ESTIMATED CONSTRUCTION COSTS</b>   |  |          |      |             | <b>\$ 312,630.00</b> |
| Project Management/Administrative Costs   |  |          |      | 6%          | \$ 19,000.00         |
| Engineering and Final Design  |  |          |      | 12%         | \$ 38,000.00         |
| Construction Management   |  |          |      | 8%          | \$ 26,000.00         |
| <b>TOTAL CAPITAL COSTS</b>  |  |          |      |             | <b>\$ 83,000.00</b>  |
| <b>TOTAL CONSTRUCTION AND CAPITAL COSTS</b>   |  |          |      |             | <b>\$ 395,630.00</b> |
| <b>POST CLOSURE MAINTENANCE COSTS</b>   |  |          |      |             |                      |
| <b>Years 1 Through 5</b><br>Water quality monitoring, vegetation monitoring<br>storm water monitoring, weed control, groundwater sampling.  |  |          |      |             | \$ 30,000.00         |
| <b>Annual Subtotal Years 1 through 5</b>  |  |          |      |             | <b>\$ 30,000.00</b>  |
| <b>Years 6 Through 30</b><br>Water quality monitoring, vegetation monitoring<br>storm water monitoring, weed control, groundwater sampling. |  |          |      |             | \$ 10,000.00         |
| <b>Annual Subtotal Years 6 through 30</b>   |  |          |      |             | <b>\$ 10,000.00</b>  |
| <b>PRESENT WORTH COST FOR O&amp;M</b>   |  |          |      |             | <b>\$ 206,095.00</b> |
| <b>TOTAL PRESENT WORTH COST</b>   |  |          |      |             | <b>\$ 601,725.00</b> |

\*Use of a soil cover only system would reduce approximately \$45,000 to the construction costs.

**LOWER MIKE HORSE CREEK - OPTION 3**

| ITEM/DESCRIPTION  |   | QUANTITIY | UNIT | UNIT COST    | TOTAL COST           |
|---|---|-----------|------|--------------|----------------------|
| 1   | Mobilization/Demobilization                         | 1         | LS   | \$ 18,000.00 | \$ 18,000.00         |
| 2   | Surface Water and Sediment Control                  | 1         | LS   | \$ 6,000.00  | \$ 6,000.00          |
| 3   | Excavate & Haul Tailings (assume 5 mi round trip)** | 15,000    | CY   | \$ 17.80     | \$ 267,000.00        |
| 4   | Clean fill/ Soil                                    | 3,500     | CY   | \$ 13.00     | \$ 45,500.00         |
| 5   | Channel Restoration                                 | 1300      | LF   | \$ 30.00     | \$ 39,000.00         |
| 6   | Revegetation  | 4.5       | AC   | \$ 1,500.00  | \$ 6,750.00          |
| <i>Repository-(Paymaster)*</i>  |   |           |      |              |                      |
| 7   | Clear and Grub                                      | 1         | AC   | \$ 3,000.00  | \$ 3,000.00          |
| 8   | Compact Repository                                  | 15,000    | CY   | \$ 1.16      | \$ 17,400.00         |
| 9   | Cap Liner   | 5,000     | SY   | \$ 15.00     | \$ 75,000.00         |
| 10  | Cover Soil  | 1670      | CY   | \$ 13.00     | \$ 21,710.00         |
| <b>SUBTOTAL CONSTRUCTION COSTS</b>  |   |           |      |              | <b>\$ 499,360.00</b> |
| Contingency   |   |           |      | 25%          | \$ 124,900.00        |
| <b>TOTAL ESTIMATED CONSTRUCTION COSTS</b>   |   |           |      |              | <b>\$ 624,260.00</b> |
| Project Management/Administrative Costs   |   |           |      | 6%           | \$ 38,000.00         |
| Engineering and Final Design  |   |           |      | 12%          | \$ 75,000.00         |
| Construction Management   |   |           |      | 8%           | \$ 50,000.00         |
| <b>TOTAL CAPITAL COSTS</b>  |   |           |      |              | <b>\$ 163,000.00</b> |
| <b>TOTAL CONSTRUCTION AND CAPITAL COSTS</b>   |   |           |      |              | <b>\$ 787,260.00</b> |
| <b>POST CLOSURE MAINTENANCE COSTS</b>   |   |           |      |              |                      |
| <i>Years 1 Through 5</i><br>Water quality monitoring, vegetation monitoring<br>storm water monitoring, weed control, groundwater sampling.  |   |           |      |              | \$ 30,000.00         |
| <b>Annual Subtotal Years 1 through 5</b>  |   |           |      |              | <b>\$ 30,000.00</b>  |
| <i>Years 6 Through 30</i><br>Water quality monitoring, vegetation monitoring<br>storm water monitoring, weed control, groundwater sampling. |   |           |      |              | \$ 5,000.00          |
| <b>Annual Subtotal Years 6 through 30</b>   |   |           |      |              | <b>\$ 5,000.00</b>   |
| <b>PRESENT WORTH COST FOR O&amp;M</b>   |   |           |      |              | <b>\$ 164,551.00</b> |
| <b>TOTAL PRESENT WORTH COST</b>   |   |           |      |              | <b>\$ 951,811.00</b> |

\*Use of a soil cover only system would reduce approximately \$75,000 to the construction costs.

\*\*Note: Material may be placed in West Impoundment Repository if Tailings Impoundment Option 3 is selected for cost savings of about \$40,000.

**SERIES PRESENT WORTH FACTOR**

$$SPWF = \frac{((1+i)^n - 1)}{i(1+i)^n}$$

where:

$i$  = discount rate =

0.07 **OSWER Directive No. 9355.3-20**

$n$  = period, yrs

$$P + A(SPWF)$$

where:

$P$  = present worth

$A$  = annual O&M cost

| SPWF   | MULTIPLIER |
|--------|------------|
| (1-5)  | 4.10       |
| (1-30) | 12.41      |
| (6-30) | 8.31       |

**Option 1**

O&M for Years 1-30 = \$ 30,000.00

Present Worth Cost of O&M = \$ 372,271.24 **(30,000x12.41)**

**Option 2**

O&M for Years 1-5 = \$ 30,000.00

O&M for Years 6-30 = \$ 10,000.00

Present Worth Cost of O&M = \$ 206,094.36 **(30,000x4.1)+(10,000x8.31)**

**Option 3**

O&M for Years 1-5 = \$ 30,000.00

O&M for Years 6-30 = \$ 5,000.00

Present Worth Cost of O&M = \$ 164,550.14 **(30,000x4.10)+(5,000x8.31)**

**MIKE HORSE TAILINGS IMPOUNDMENT OPTIONS  
COST ESTIMATES**

**MIKE HORSE TAILINGS IMPOUNDMENT  
OPTION 1**

| ITEM/DESCRIPTION           | QUANTITY | UNIT | UNIT COST | TOTAL COST |
|----------------------------|----------|------|-----------|------------|
| 1 No Action                |          |      | \$ 0.00   | \$ 0.00    |
| <b>TOTAL CAPITAL COSTS</b> |          |      |           | \$ -       |

|   |         |
|---|---------|
| <b>TOTAL CONSTRUCTION AND CAPITAL COSTS</b> | \$ 0.00 |
|---|---------|

| <b>POST CLOSURE MAINTENANCE COSTS</b>  |               |
|--|---------------|
| <i>Years 1 Through 30</i><br>Dam safety inspections and maintenance, water level monitoring, seepage monitoring, vegetation monitoring, storm water monitoring, weed control, seepage and groundwater sampling | \$ 30,000.00  |
| <b>Annual Subtotal Years 1 through 30</b>  | \$ 30,000.00  |
| <b>PRESENT WORTH COST FOR O&amp;M</b>  | \$ 372,272.00 |

|                                 |               |
|---------------------------------|---------------|
| <b>TOTAL PRESENT WORTH COST</b> | \$ 372,272.00 |
|---------------------------------|---------------|

**MIKE HORSE TAILINGS IMPOUNDMENT  
OPTION 2A - SOIL CAP OPTION**

|  | ITEM/DESCRIPTION                           | QUANTITY | UNIT | UNIT COST    | TOTAL COST            |
|--|--|----------|------|--------------|-----------------------|
| 1  | Mobilization/Demobilization                | 5        | %    | \$ 7,000.00  | \$ 35,000.00          |
| 2  | Surface Water and Sediment Control         | 1.5      | %    | \$ 7,000.00  | \$ 10,500.00          |
| 3  | Pond Dewatering                            | 30.25    | Days | \$ 875.00    | \$ 26,468.75          |
| 5  | Channel Bedding Stone                      | 2,800    | CY   | \$ 11.00     | \$ 30,800.00          |
| 6  | Channel Riprap                             | 2800     | CY   | \$ 24.00     | \$ 67,200.00          |
| 7  | Geotextile                                 | 1900     | SY   | \$ 3.50      | \$ 6,650.00           |
| 8  | Liner along upstream face of Dam           | 7200     | SY   | \$ 15.00     | \$ 108,000.00         |
| 9  | Revegetation                               | 4.5      | AC   | \$ 1,500.00  | \$ 6,750.00           |
| 10   | Toe Drains                                 | 1        | LS   | \$ 25,000.00 | \$ 25,000.00          |
| 11   | Excavate & Haul Tailings (5 mi round trip) | 13,000   | CY   | \$ 17.80     | \$ 231,400.00         |
| 12   | Cover Soil on Dam Face                     | 5,000    | CY   | \$ 13.00     | \$ 65,000.00          |
|  | <i>Repository-(Paymaster)</i>              |          |      |              |                       |
| 13   | Clear and Grub                             | 1        | AC   | \$ 3,000.00  | \$ 3,000.00           |
| 14   | Compact Repository                         | 13,000   | CY   | \$ 1.16      | \$ 15,080.00          |
| 15   | Cover Soil                                 | 1,083    | CY   | \$ 13.00     | \$ 14,079.00          |
|  | <i>Cap In-Place Tailings</i>               |          |      |              |                       |
| 16   | Cover Soil                                 | 850      | CY   | \$ 13.00     | \$ 11,050.00          |
| <b>SUBTOTAL CONSTRUCTION COSTS</b>   |  |          |      |              | <b>\$ 655,977.75</b>  |
| Contingency  |  |          |      | 25%          | \$ 164,000.00         |
| <b>TOTAL ESTIMATED CONSTRUCTION COSTS</b>  |  |          |      |              | <b>\$ 819,977.75</b>  |
| Project Management/Administrative Costs  |  |          |      | 6%           | \$ 50,000.00          |
| Engineering and Final Design   |  |          |      | 12%          | \$ 99,000.00          |
| Construction Management  |  |          |      | 8%           | \$ 66,000.00          |
| <b>TOTAL CAPITAL COSTS</b>   |  |          |      |              | <b>\$ 215,000.00</b>  |
| <b>TOTAL CONSTRUCTION AND CAPITAL COSTS</b>  |  |          |      |              | <b>\$1,034,977.75</b> |
| <b>POST CLOSURE MAINTENANCE COSTS</b>  |  |          |      |              |                       |
| <i>Years 1 Through 30</i><br>Dam safety inspections and maintenance, water level monitoring, seepage monitoring, vegetation monitoring, storm water monitoring, weed control, seepage and groundwater sampling |  |          |      |              | \$ 20,000.00          |
| <b>Annual Subtotal Years 1 through 30</b>  |  |          |      |              | <b>\$ 20,000.00</b>   |
| <b>PRESENT WORTH COST FOR O&amp;M</b>  |  |          |      |              | <b>\$ 248,181.00</b>  |
| <b>TOTAL PRESENT WORTH COST</b>  |  |          |      |              | <b>\$1,283,159.00</b> |

**MIKE HORSE TAILINGS IMPOUNDMENT  
OPTION 2B - COMPOSITE CAP**

|  | ITEM/DESCRIPTION                           | QUANTITY | UNIT | UNIT COST    | TOTAL COST            |
|--|--|----------|------|--------------|-----------------------|
| 1  | Mobilization/Demobilization                | 5        | %    | \$ 7,000.00  | \$ 35,000.00          |
| 2  | Surface Water and Sediment Control         | 1.5      | %    | \$ 7,000.00  | \$ 10,500.00          |
| 3  | Pond Dewatering                            | 30.25    | Days | \$ 875.00    | \$ 26,468.75          |
| 5  | Channel Bedding Stone                      | 2,800    | CY   | \$ 11.00     | \$ 30,800.00          |
| 6  | Channel Riprap                             | 2800     | CY   | \$ 24.00     | \$ 67,200.00          |
| 7  | Geotextile                                 | 1900     | SY   | \$ 3.50      | \$ 6,650.00           |
| 8  | Liner along upstream face of Dam           | 7200     | SY   | \$ 15.00     | \$ 108,000.00         |
| 9  | Revegetation                               | 4.5      | AC   | \$ 1,500.00  | \$ 6,750.00           |
| 10   | Toe Drains                                 | 1        | LS   | \$ 25,000.00 | \$ 25,000.00          |
| 11   | Excavate & Haul Tailings (5 mi round trip) | 13,000   | CY   | \$ 17.80     | \$ 231,400.00         |
| 12   | Cover Soil on Dam Face                     | 5,000    | CY   | \$ 13.00     | \$ 65,000.00          |
|  | <i>Repository-(Paymaster)</i>              |          |      |              |                       |
| 13   | Clear and Grub                             | 1        | AC   | \$ 3,000.00  | \$ 3,000.00           |
| 14   | Compact Repository                         | 13,000   | CY   | \$ 1.16      | \$ 15,080.00          |
| 15   | Cap Liner                                  | 3250     | SY   | \$ 15.00     | \$ 48,750.00          |
| 16   | Cover Soil                                 | 1,083    | CY   | \$ 13.00     | \$ 14,083.33          |
|  | <i>Cap In-Place Tailings</i>               |          |      |              |                       |
| 17   | Cap  | 2,500    | SY   | \$ 15.00     | \$ 37,500.00          |
| 18   | Cover Soil                                 | 850      | CY   | \$ 13.00     | \$ 11,050.00          |
| <b>SUBTOTAL CONSTRUCTION COSTS</b>   |  |          |      |              | <b>\$ 742,232.08</b>  |
| Contingency  |  |          |      | 25%          | \$ 185,600.00         |
| <b>TOTAL ESTIMATED CONSTRUCTION COSTS</b>  |  |          |      |              | <b>\$ 927,832.08</b>  |
| Project Management/Administrative Costs  |  |          |      | 6%           | \$ 56,000.00          |
| Engineering and Final Design   |  |          |      | 12%          | \$ 112,000.00         |
| Construction Management  |  |          |      | 8%           | \$ 75,000.00          |
| <b>TOTAL CAPITAL COSTS</b>   |  |          |      |              | <b>\$ 243,000.00</b>  |
| <b>TOTAL CONSTRUCTION AND CAPITAL COSTS</b>  |  |          |      |              | <b>\$1,170,832.08</b> |
| <b>POST CLOSURE MAINTENANCE COSTS</b>  |  |          |      |              |                       |
| <i>Years 1 Through 30</i>  |  |          |      |              |                       |
| Water level monitoring, seepage monitoring, vegetation monitoring<br>storm water monitoring, weed control, seepage and groundwater sampling. |  |          |      |              | \$ 20,000.00          |
| <b>Annual Subtotal Years 1 through 30</b>  |  |          |      |              | <b>\$ 20,000.00</b>   |
| <b>PRESENT WORTH COST FOR O&amp;M</b>  |  |          |      |              | <b>\$ 248,181.00</b>  |
| <b>TOTAL PRESENT WORTH COST</b>  |  |          |      |              | <b>\$1,419,013.00</b> |

**MIKE HORSE TAILINGS IMPOUNDMENT  
OPTION 3A - SOIL CAP OPTION**

| ITEM/DESCRIPTION  | QUANTITIY | UNIT | UNIT COST    | TOTAL COST            |
|---|-----------|------|--------------|-----------------------|
| 1 Mobilization/Demobilization   | 5         | %    | \$ 16,000.00 | \$ 80,000.00          |
| 2 Surface Water and Sediment Control  | 1.5       | %    | \$ 16,000.00 | \$ 24,000.00          |
| 3 Pond Dewatering   | 55.4      | Days | \$ 875.00    | \$ 48,512.02          |
| 4 Haul Road Improvement   | 1         | LS   | \$ 15,000.00 | \$ 15,000.00          |
| 5 Channel Bedding Stone   | 5,400     | CY   | \$ 11.00     | \$ 59,400.00          |
| 6 Channel Riprap  | 5400      | CY   | \$ 24.00     | \$ 129,600.00         |
| 7 Geotextile  | 7600      | SY   | \$ 3.50      | \$ 26,600.00          |
| 8 Revegetation  | 4.5       | AC   | \$ 1,500.00  | \$ 6,750.00           |
| 9 Excavate & Haul Tailings (0.5 mi round trip)  | 66,000    | CY   | \$ 15.40     | \$1,016,400.00        |
| <i>Repository - (West Side Repository)</i>  |           |      |              |                       |
| 10 Clear and Grub   | 4         | AC   | \$ 3,000.00  | \$ 12,000.00          |
| 11 Compact Repository   | 66,000    | CY   | \$ 1.16      | \$ 76,560.00          |
| 12 Cover Soil   | 5,000     | CY   | \$ 13.00     | \$ 65,000.00          |
| <i>Cap In-Place Tailings</i>  |           |      |              |                       |
| 13 Cover Soil   | 6400      | CY   | \$ 13.00     | \$ 83,200.00          |
| <b>SUBTOTAL CONSTRUCTION COSTS</b>  |           |      |              | <b>\$1,643,022.02</b> |
| Contingency   |           |      | 25%          | \$ 410,800.00         |
| <b>TOTAL ESTIMATED CONSTRUCTION COSTS</b>   |           |      |              | <b>\$2,053,822.02</b> |
| Project Management/Administrative Costs   |           |      | 6%           | \$ 124,000.00         |
| Engineering and Final Design  |           |      | 12%          | \$ 247,000.00         |
| Construction Management   |           |      | 8%           | \$ 165,000.00         |
| <b>TOTAL CAPITAL COSTS</b>  |           |      |              | <b>\$ 536,000.00</b>  |
| <b>TOTAL CONSTRUCTION AND CAPITAL COSTS</b>   |           |      |              | <b>\$2,589,822.02</b> |
| <b>POST CLOSURE MAINTENANCE COSTS</b>   |           |      |              |                       |
| <i>Years 1 Through 5</i><br>Water level monitoring, vegetation monitoring<br>storm water monitoring, weed control, groundwater sampling.  |           |      |              | \$ 30,000.00          |
| <b>Annual Subtotal Years 1 through 5</b>  |           |      |              | <b>\$ 30,000.00</b>   |
| <i>Years 6 Through 30</i><br>Water level monitoring, vegetation monitoring<br>storm water monitoring, weed control, groundwater sampling. |           |      |              | \$ 10,000.00          |
| <b>Annual Subtotal Years 6 through 30</b>   |           |      |              | <b>\$ 10,000.00</b>   |
| <b>PRESENT WORTH COST FOR O&amp;M</b>   |           |      |              | <b>\$ 206,095.00</b>  |
| <b>TOTAL PRESENT WORTH COST</b>   |           |      |              | <b>\$2,795,917.00</b> |

\*Assume 12" of cover soil on dam face and along western face where tailings are exposed, and 6" of cover soil on eastern side.

**MIKE HORSE TAILINGS IMPOUNDMENT  
OPTION 3B - COMPOSITE CAP OPTION**

| ITEM/DESCRIPTION                               | QUANTITY | UNIT | UNIT COST    | TOTAL COST            |
|--|----------|------|--------------|-----------------------|
| 1 Mobilization/Demobilization                  | 5        | %    | \$ 18,000.00 | \$ 90,000.00          |
| 2 Surface Water and Sediment Control           | 1.5      | %    | \$ 18,000.00 | \$ 27,000.00          |
| 3 Pond Dewatering                              | 55.4     | Days | \$ 875.00    | \$ 48,512.02          |
| 4 Haul Road Improvement                        | 1        | LS   | \$ 15,000.00 | \$ 15,000.00          |
| 5 Channel Bedding Stone                        | 5,400    | CY   | \$ 11.00     | \$ 59,400.00          |
| 6 Channel Riprap                               | 5400     | CY   | \$ 24.00     | \$ 129,600.00         |
| 7 Geotextile                                   | 7600     | SY   | \$ 3.50      | \$ 26,600.00          |
| 8 Revegetation                                 | 4.5      | AC   | \$ 1,500.00  | \$ 6,750.00           |
| 9 Excavate & Haul Tailings (0.5 mi round trip) | 66,000   | CY   | \$ 15.40     | \$1,016,400.00        |
| <i>Repository - (West Side Repository)</i>     |          |      |              |                       |
| 10 Clear and Grub                              | 4        | AC   | \$ 3,000.00  | \$ 12,000.00          |
| 11 Compact Repository                          | 66,000   | CY   | \$ 1.16      | \$ 76,560.00          |
| 12 Cap Liner                                   | 16500    | SY   | \$ 15.00     | \$ 247,500.00         |
| 13 Cover Soil                                  | 5,500    | CY   | \$ 13.00     | \$ 71,500.00          |
| <i>Cap In-Place Tailings</i>                   |          |      |              |                       |
| 14 Cap   | 16,000   | SY   | \$ 15.00     | \$ 240,000.00         |
| 15 Cover Soil                                  | 5,333    | CY   | \$ 13.00     | \$ 69,333.33          |
| <b>SUBTOTAL CONSTRUCTION COSTS</b>             |          |      |              | <b>\$2,136,155.36</b> |
| Contingency                                    |          |      | 25%          | \$ 534,100.00         |
| <b>TOTAL ESTIMATED CONSTRUCTION COSTS</b>      |          |      |              | <b>\$2,670,255.36</b> |
| Project Management/Administrative Costs        |          |      | 6%           | \$ 161,000.00         |
| Engineering and Final Design                   |          |      | 12%          | \$ 321,000.00         |
| Construction Management                        |          |      | 8%           | \$ 214,000.00         |
| <b>TOTAL CAPITAL COSTS</b>                     |          |      |              | <b>\$ 696,000.00</b>  |

|   |                       |
|---|-----------------------|
| <b>TOTAL CONSTRUCTION AND CAPITAL COSTS</b> | <b>\$3,366,255.36</b> |
|---|-----------------------|

| <b>POST CLOSURE MAINTENANCE COSTS</b>   |                      |
|---|----------------------|
| <b>Years 1 Through 5</b><br>Water level monitoring, vegetation monitoring<br>storm water monitoring, weed control, groundwater sampling.  | \$ 30,000.00         |
| <b>Annual Subtotal Years 1 through 5</b>  | <b>\$ 30,000.00</b>  |
| <b>Years 6 Through 30</b><br>Water level monitoring, vegetation monitoring<br>storm water monitoring, weed control, groundwater sampling. | \$ 10,000.00         |
| <b>Annual Subtotal Years 6 through 30</b>   | <b>\$ 10,000.00</b>  |
| <b>PRESENT WORTH COST FOR O&amp;M</b>   | <b>\$ 206,095.00</b> |

|                                 |                       |
|---------------------------------|-----------------------|
| <b>TOTAL PRESENT WORTH COST</b> | <b>\$3,572,350.00</b> |
|---------------------------------|-----------------------|

\*Assume 12" of cover soil on dam face, 6" of cover soil along eastern side and a liner and geonet with 12" of cover soil along western face where tailings are exposed.

**MIKE HORSE TAILINGS IMPOUNDMENT  
OPTION 4A - SOIL CAP OPTION**

| ITEM/DESCRIPTION  | QUANTITY | UNIT | UNIT COST    | TOTAL COST             |
|---|----------|------|--------------|------------------------|
| 1 Mobilization/Demobilization   | 5        | %    | \$ 50,000.00 | \$ 250,000.00          |
| 2 Surface Water and Sediment Control  | 1.5      | %    | \$ 50,000.00 | \$ 75,000.00           |
| 3 Pond Dewatering   | 55.4     | Days | \$ 875.00    | \$ 48,512.02           |
| 4 Haul Road Improvement   | 1        | LS   | \$ 15,000.00 | \$ 15,000.00           |
| 5 Channel Bedding Stone   | 5,500    | CY   | \$ 11.00     | \$ 60,500.00           |
| 6 Channel Riprap  | 5,500    | CY   | \$ 24.00     | \$ 132,000.00          |
| 7 Geotextile  | 7,800    | SY   | \$ 3.50      | \$ 27,300.00           |
| 8 Revegetation  | 4.5      | AC   | \$ 1,500.00  | \$ 6,750.00            |
| 9 Excavate & Haul Tailings (0.5 mi round trip)  | 35,000   | CY   | \$ 15.40     | \$ 539,000.00          |
| 10 Excavate & Haul Tailings (5 mi round trip)   | 196,000  | CY   | \$ 17.80     | \$ 3,488,800.00        |
| 11 Cover Soil on Dam Face   | 3,000    | CY   | \$ 13.00     | \$ 39,000.00           |
| <i>Repository - (West Side Repository and Paymaster (or other on-site repository))</i>  |          |      |              |                        |
| 12 Clear and Grub   | 10       | AC   | \$ 3,000.00  | \$ 30,000.00           |
| 13 Compact Repository   | 231,000  | CY   | \$ 1.16      | \$ 267,960.00          |
| 15 Cover Soil   | 16,000   | CY   | \$ 13.00     | \$ 208,000.00          |
| <i>Cap In-Place Tailings</i>  |          |      |              |                        |
| 16 Cover Soil   | 8600     | CY   | \$ 13.00     | \$ 111,800.00          |
| <b>SUBTOTAL CONSTRUCTION COSTS</b>  |          |      |              | <b>\$ 5,299,622.02</b> |
| Contingency   |          |      | 25%          | \$ 1,325,000.00        |
| <b>TOTAL ESTIMATED CONSTRUCTION COSTS</b>   |          |      |              | <b>\$ 6,624,622.02</b> |
| Project Management/Administrative Costs   |          |      | 5%           | \$ 332,000.00          |
| Engineering and Final Design  |          |      | 8%           | \$ 530,000.00          |
| Construction Management   |          |      | 6%           | \$ 398,000.00          |
| <b>TOTAL CAPITAL COSTS</b>  |          |      |              | <b>\$ 1,260,000.00</b> |
| <b>TOTAL CONSTRUCTION AND CAPITAL COSTS</b>   |          |      |              | <b>\$ 7,884,622.02</b> |
| <b>POST CLOSURE MAINTENANCE COSTS</b>   |          |      |              |                        |
| <b>Years 1 Through 5</b><br>Water level monitoring, vegetation monitoring<br>storm water monitoring, weed control, groundwater sampling.  |          |      |              | \$ 30,000.00           |
| <b>Annual Subtotal Years 1 through 5</b>  |          |      |              | <b>\$ 30,000.00</b>    |
| <b>Years 6 Through 30</b><br>Water level monitoring, vegetation monitoring<br>storm water monitoring, weed control, groundwater sampling. |          |      |              | \$ 10,000.00           |
| <b>Annual Subtotal Years 6 through 30</b>   |          |      |              | <b>\$ 10,000.00</b>    |
| <b>PRESENT WORTH COST FOR O&amp;M</b>   |          |      |              | <b>\$ 206,095.00</b>   |
| <b>TOTAL PRESENT WORTH COST</b>   |          |      |              | <b>\$ 8,090,717.00</b> |

\*Assume 12" of cover soil on dam face and along western face where tailings are exposed, and 6" of cover soil on eastern side.

**MIKE HORSE TAILINGS IMPOUNDMENT  
OPTION 4B - COMPOSITE CAP OPTION**

| ITEM/DESCRIPTION   | QUANTITY | UNIT | UNIT COST    | TOTAL COST             |
|--|----------|------|--------------|------------------------|
| 1 Mobilization/Demobilization  | 5        | %    | \$ 60,000.00 | \$ 300,000.00          |
| 2 Surface Water and Sediment Control   | 1.5      | %    | \$ 60,000.00 | \$ 90,000.00           |
| 3 Pond Dewatering  | 55.4     | Days | \$ 875.00    | \$ 48,512.02           |
| 4 Haul Road Improvement  | 1        | LS   | \$ 15,000.00 | \$ 15,000.00           |
| 5 Channel Bedding Stone  | 5,500    | CY   | \$ 11.00     | \$ 60,500.00           |
| 6 Channel Riprap   | 5,500    | CY   | \$ 24.00     | \$ 132,000.00          |
| 7 Geotextile   | 7,800    | SY   | \$ 3.50      | \$ 27,300.00           |
| 8 Revegetation   | 4.5      | AC   | \$ 1,500.00  | \$ 6,750.00            |
| 9 Excavate & Haul Tailings (0.5 mi round trip)   | 35,000   | CY   | \$ 15.40     | \$ 539,000.00          |
| 10 Excavate & Haul Tailings (5 mi round trip)  | 196,000  | CY   | \$ 17.80     | \$ 3,488,800.00        |
| 11 Cover Soil on Dam Face  | 3,000    | CY   | \$ 13.00     | \$ 39,000.00           |
| <i>Repository - (West Side Repository and Paymaster)</i>   |          |      |              |                        |
| 12 Clear and Grub  | 10       | AC   | \$ 3,000.00  | \$ 30,000.00           |
| 13 Compact Repository  | 231,000  | CY   | \$ 1.16      | \$ 267,960.00          |
| 14 Cap Liner   | 48,000   | SY   | \$ 15.00     | \$ 720,000.00          |
| 15 Cover Soil  | 16,000   | CY   | \$ 13.00     | \$ 208,000.00          |
| <i>Cap In-Place Tailings</i>   |          |      |              |                        |
| 16 Cover Soil  | 8600     | CY   | \$ 13.00     | \$ 111,800.00          |
| 17 Cap Liner   | 16700    | SY   | \$ 15.00     | \$ 250,500.00          |
| <b>SUBTOTAL CONSTRUCTION COSTS</b>   |          |      |              | <b>\$ 6,335,122.02</b> |
| Contingency  |          |      | 25%          | \$ 1,583,800.00        |
| <b>TOTAL ESTIMATED CONSTRUCTION COSTS</b>  |          |      |              | <b>\$ 7,918,922.02</b> |
| Project Management/Administrative Costs  |          |      | 5%           | \$ 396,000.00          |
| Engineering and Final Design   |          |      | 8%           | \$ 634,000.00          |
| Construction Management  |          |      | 6%           | \$ 476,000.00          |
| <b>TOTAL CAPITAL COSTS</b>   |          |      |              | <b>\$ 1,506,000.00</b> |
| <b>TOTAL CONSTRUCTION AND CAPITAL COSTS</b>  |          |      |              | <b>\$ 9,424,922.02</b> |
| <b>POST CLOSURE MAINTENANCE COSTS</b>  |          |      |              |                        |
| <b>Years 1 Through 5</b>   |          |      |              | \$ 30,000.00           |
| Water level monitoring, vegetation monitoring<br>storm water monitoring, weed control, groundwater sampling. |          |      |              |                        |
| <b>Annual Subtotal Years 1 through 5</b>   |          |      |              | <b>\$ 30,000.00</b>    |
| <b>Years 6 Through 30</b>  |          |      |              | \$ 10,000.00           |
| Water level monitoring, vegetation monitoring<br>storm water monitoring, weed control, groundwater sampling. |          |      |              |                        |
| <b>Annual Subtotal Years 6 through 30</b>  |          |      |              | <b>\$ 10,000.00</b>    |
| <b>PRESENT WORTH COST FOR O&amp;M</b>  |          |      |              | <b>\$ 206,095.00</b>   |
| <b>TOTAL PRESENT WORTH COST</b>  |          |      |              | <b>\$ 9,631,017.00</b> |

\*Assume 12" of cover soil on dam face, 6" of cover soil along eastern side and a liner and geonet with 12" of cover soil along western face where tailings are exposed.

**MIKE HORSE TAILINGS IMPOUNDMENT  
OPTION 5A - SOIL CAP OPTION**

| ITEM/DESCRIPTION   |   | QUANTITIY | UNIT | UNIT COST     | TOTAL COST              |
|--|---|-----------|------|---------------|-------------------------|
| 1  | Mobilization/Demobilization                 | 5         | %    | \$ 131,000.00 | \$ 655,000.00           |
| 2  | Surface Water and Sediment Control          | 1.5       | %    | \$ 131,000.00 | \$ 196,500.00           |
| 3  | Pond Dewatering                             | 55.4      | Days | \$ 875.00     | \$ 48,512.02            |
| 4  | Haul Road Improvement                       | 1         | LS   | \$ 15,000.00  | \$ 15,000.00            |
| 6  | Channel Restoration                         | 2,000     | LF   | \$ 30.00      | \$ 60,000.00            |
| 9  | Revegetation                                | 14        | AC   | \$ 1,500.00   | \$ 21,000.00            |
| 10   | Excavate & Haul Tailings (20 mi round trip) | 370,000   | CY   | \$ 32.00      | \$ 11,840,000.00        |
| 11   | Cover Soil                                  | 22,000    | CY   | \$ 13.00      | \$ 286,000.00           |
| <i>Repository-(Site to be Determined)</i>  |   |           |      |               |                         |
| 12   | Land Acquisition                            | 20        | AC   | \$ 800.00     | \$ 16,000.00            |
| 13   | Clear and Grub                              | 15        | AC   | \$ 3,000.00   | \$ 45,000.00            |
| 14   | Compact Repository                          | 370,000   | CY   | \$ 1.16       | \$ 429,200.00           |
| 16   | Cover Soil                                  | 24,000    | CY   | \$ 13.00      | \$ 312,000.00           |
| <b>SUBTOTAL CONSTRUCTION COSTS</b>   |   |           |      |               | <b>\$ 13,924,212.02</b> |
| Contingency  |   |           |      | 25%           | \$ 3,481,100.00         |
| <b>TOTAL ESTIMATED CONSTRUCTION COSTS</b>  |   |           |      |               | <b>\$ 17,405,312.02</b> |
| Project Management/Administrative Costs  |   |           |      | 5%            | \$ 871,000.00           |
| Engineering and Final Design   |   |           |      | 8%            | \$ 1,393,000.00         |
| Construction Management  |   |           |      | 6%            | \$ 1,045,000.00         |
| <b>TOTAL CAPITAL COSTS</b>   |   |           |      |               | <b>\$ 3,309,000.00</b>  |
| <b>TOTAL CONSTRUCTION AND CAPITAL COSTS</b>  |   |           |      |               | <b>\$ 20,714,312.02</b> |
| <b>POST CLOSURE MAINTENANCE COSTS</b>  |   |           |      |               |                         |
| <b>Years 1 Through 5</b>   |   |           |      |               |                         |
| Water level monitoring, vegetation monitoring<br>storm water monitoring, weed control, groundwater sampling. |   |           |      |               | \$ 30,000.00            |
| <b>Annual Subtotal Years 1 through 5</b>   |   |           |      |               | <b>\$ 30,000.00</b>     |
| <b>Years 6 Through 30</b>  |   |           |      |               |                         |
| Water level monitoring, vegetation monitoring<br>storm water monitoring, weed control, groundwater sampling. |   |           |      |               | \$ 5,000.00             |
| <b>Annual Subtotal Years 6 through 30</b>  |   |           |      |               | <b>\$ 5,000.00</b>      |
| <b>PRESENT WORTH COST FOR O&amp;M</b>  |   |           |      |               | <b>\$ 127,654.00</b>    |
| <b>TOTAL PRESENT WORTH COST</b>  |   |           |      |               | <b>\$ 20,841,966.00</b> |

**MIKE HORSE TAILINGS IMPOUNDMENT  
OPTION 5B - COMPOSITE CAP OPTION**

| ITEM/DESCRIPTION  | QUANTITY | UNIT | UNIT COST     | TOTAL COST              |
|---|----------|------|---------------|-------------------------|
| 1 Mobilization/Demobilization   | 5        | %    | \$ 142,000.00 | \$ 710,000.00           |
| 2 Surface Water and Sediment Control  | 1.5      | %    | \$ 142,000.00 | \$ 213,000.00           |
| 3 Pond Dewatering   | 55.4     | Days | \$ 875.00     | \$ 48,512.02            |
| 4 Haul Road Improvement   | 1        | LS   | \$ 15,000.00  | \$ 15,000.00            |
| 6 Channel Restoration   | 2,000    | LF   | \$ 30.00      | \$ 60,000.00            |
| 9 Revegetation  | 14       | AC   | \$ 1,500.00   | \$ 21,000.00            |
| 10 Excavate & Haul Tailings (20 mi round trip)  | 371,000  | CY   | \$ 32.00      | \$ 11,872,000.00        |
| 11 Cover Soil   | 22,000   | CY   | \$ 13.00      | \$ 286,000.00           |
| <i>Repository-(Site to be Determined)</i>   |          |      |               |                         |
| 12 Land Acquisition   | 20       | AC   | \$ 800.00     | \$ 16,000.00            |
| 13 Clear and Grub   | 15       | AC   | \$ 3,000.00   | \$ 45,000.00            |
| 14 Compact Repository   | 371,000  | CY   | \$ 1.16       | \$ 430,360.00           |
| 15 Cap Liner  | 72,000   | SY   | \$ 15.00      | \$ 1,080,000.00         |
| 16 Cover Soil   | 24,000   | CY   | \$ 13.00      | \$ 312,000.00           |
| <b>SUBTOTAL CONSTRUCTION COSTS</b>  |          |      |               | <b>\$ 15,108,872.02</b> |
| Contingency   |          |      | 25%           | \$ 3,777,300.00         |
| <b>TOTAL ESTIMATED CONSTRUCTION COSTS</b>   |          |      |               | <b>\$ 18,886,172.02</b> |
| Project Management/Administrative Costs   |          |      | 5%            | \$ 945,000.00           |
| Engineering and Final Design  |          |      | 8%            | \$ 1,511,000.00         |
| Construction Management   |          |      | 6%            | \$ 1,134,000.00         |
| <b>TOTAL CAPITAL COSTS</b>  |          |      |               | <b>\$ 3,590,000.00</b>  |
| <b>TOTAL CONSTRUCTION AND CAPITAL COSTS</b>   |          |      |               | <b>\$ 22,476,172.02</b> |
| <b>POST CLOSURE MAINTENANCE COSTS</b>   |          |      |               |                         |
| <i>Years 1 Through 5</i><br>Water level monitoring, vegetation monitoring<br>storm water monitoring, weed control, groundwater sampling.  |          |      |               | \$ 30,000.00            |
| <b>Annual Subtotal Years 1 through 5</b>  |          |      |               | <b>\$ 30,000.00</b>     |
| <i>Years 6 Through 30</i><br>Water level monitoring, vegetation monitoring<br>storm water monitoring, weed control, groundwater sampling. |          |      |               | \$ 5,000.00             |
| <b>Annual Subtotal Years 6 through 30</b>   |          |      |               | <b>\$ 5,000.00</b>      |
| <b>PRESENT WORTH COST FOR O&amp;M</b>   |          |      |               | <b>\$ 127,654.00</b>    |
| <b>TOTAL PRESENT WORTH COST</b>   |          |      |               | <b>\$ 22,603,826.00</b> |

**SERIES PRESENT WORTH FACTOR**

$$SPWF = \frac{((1+i)^n - 1)}{i(1+i)^n}$$

where:

*i* = discount rate =  
*n* = period, yrs

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$$P + A(SPWF)$$

where:

P = present worth  
A = annual O&M cost

| SPWF   | MULTIPLIER |
|--------|------------|
| (1-3)  | 2.62       |
| (1-5)  | 4.10       |
| (1-30) | 12.41      |
| (4-30) | 9.78       |
| (6-30) | 8.31       |

**Option 1**

O&M for Years 1-30 = \$ 30,000.00

Present Worth Cost of O&M = \$ 372,271.24 **(30,000x12.41)**

**Option 2A and 2B**

O&M for Years 1-30 = \$ 20,000.00

Present Worth Cost of O&M = \$ 248,180.82 **(20,000x12.41)**

**Option 3A , 3B, 4A and 4B**

O&M for Years 1-5 = \$ 30,000.00

O&M for Years 6-30 = \$ 10,000.00

Present Worth Cost of O&M = \$ 206,094.36 **(30,000x4.1)+(10,000x8.31)**

**Option 5A and 5B**

O&M for Years 1-3 = \$ 30,000.00

O&M for Years 4-30 = \$ 5,000.00

Present Worth Cost of O&M = \$ 127,653.11 **(30,000x2.62)+(5,000x9.78)**

**UPPER BLACKFOOT RIVER OPTIONS  
COST ESTIMATES**

**UPPER BLACKFOOT RIVER - OPTION 1**

| ITEM/DESCRIPTION           | QUANTITIY | UNIT | UNIT COST | TOTAL COST |
|----------------------------|-----------|------|-----------|------------|
| 1 No Action                |           |      | \$ 0.00   | \$ 0.00    |
| <b>TOTAL CAPITAL COSTS</b> |           |      |           | \$ -       |

|   |         |
|---|---------|
| <b>TOTAL CONSTRUCTION AND CAPITAL COSTS</b> | \$ 0.00 |
|---|---------|

| <b>POST CLOSURE MAINTENANCE COSTS</b>   |               |
|---|---------------|
| <i>Years 1 Through 30</i><br>Water quality monitoring, vegetation monitoring<br>storm water monitoring, weed control, groundwater sampling. | \$ 30,000.00  |
| <b>Annual Subtotal Years 1 through 30</b>   | \$ 30,000.00  |
| <b>PRESENT WORTH COST FOR O&amp;M</b>   | \$ 372,272.00 |

|                                 |               |
|---------------------------------|---------------|
| <b>TOTAL PRESENT WORTH COST</b> | \$ 372,272.00 |
|---------------------------------|---------------|

**UPPER BLACKFOOT RIVER - OPTION 2**

| ITEM/DESCRIPTION  |   | QUANTITIY | UNIT | UNIT COST    | TOTAL COST            |
|---|---|-----------|------|--------------|-----------------------|
| 1   | Mobilization/Demobilization                       | 1         | LS   | \$ 31,000.00 | \$ 31,000.00          |
| 2   | Surface Water and Sediment Control                | 1         | LS   | \$ 10,000.00 | \$ 10,000.00          |
| 3   | Construct Haul Road                               | 1         | LS   | \$ 10,000.00 | \$ 10,000.00          |
| 4   | Excavate & Haul Tailings (assume 3 mi round trip) | 35,000    | CY   | \$ 16.75     | \$ 586,250.00         |
| 5   | Revegetation                                      | 10        | AC   | \$ 1,500.00  | \$ 15,000.00          |
| <i>Repository-(Paymaster)*</i>  |   |           |      |              |                       |
| 6   | Clear and Grub                                    | 2.00      | AC   | \$ 3,000.00  | \$ 6,000.00           |
| 7   | Compact Repository                                | 35,000    | CY   | \$ 1.16      | \$ 40,600.00          |
| 8   | Cap Liner   | 6,000     | SY   | \$ 15.00     | \$ 90,000.00          |
| 9   | Cover Soil  | 2000      | CY   | \$ 13.00     | \$ 26,000.00          |
| <b>SUBTOTAL CONSTRUCTION COSTS</b>  |   |           |      |              | <b>\$ 814,850.00</b>  |
| Contingency   |   |           |      | 25%          | \$ 203,800.00         |
| <b>TOTAL ESTIMATED CONSTRUCTION COSTS</b>   |   |           |      |              | <b>\$1,018,650.00</b> |
| Project Management/Administrative Costs   |   |           |      | 6%           | \$ 62,000.00          |
| Engineering and Final Design  |   |           |      | 12%          | \$ 123,000.00         |
| Construction Management   |   |           |      | 8%           | \$ 82,000.00          |
| <b>TOTAL CAPITAL COSTS</b>  |   |           |      |              | <b>\$ 267,000.00</b>  |
| <b>TOTAL CONSTRUCTION AND CAPITAL COSTS</b>   |   |           |      |              | <b>\$1,285,650.00</b> |
| <b>POST CLOSURE MAINTENANCE COSTS</b>   |   |           |      |              |                       |
| <b>Years 1 Through 5</b><br>Water level monitoring, vegetation monitoring<br>storm water monitoring, weed control, groundwater sampling.  |   |           |      |              | \$ 30,000.00          |
| <b>Annual Subtotal Years 1 through 5</b>  |   |           |      |              | <b>\$ 30,000.00</b>   |
| <b>Years 6 Through 30</b><br>Water level monitoring, vegetation monitoring<br>storm water monitoring, weed control, groundwater sampling. |   |           |      |              | \$ 10,000.00          |
| <b>Annual Subtotal Years 6 through 30</b>   |   |           |      |              | <b>\$ 10,000.00</b>   |
| <b>PRESENT WORTH COST FOR O&amp;M</b>   |   |           |      |              | <b>\$ 206,095.00</b>  |
| <b>TOTAL PRESENT WORTH COST</b>   |   |           |      |              | <b>\$1,491,745.00</b> |

\*Use of a soil cover only system would reduce approximately \$90,000 to the construction costs.

**UPPER BLACKFOOT RIVER - OPTION 4**

| ITEM/DESCRIPTION  | QUANTITY | UNIT | UNIT COST    | TOTAL COST             |
|---|----------|------|--------------|------------------------|
| 1 Mobilization/Demobilization   | 1        | LS   | \$ 56,000.00 | \$ 56,000.00           |
| 2 Surface Water and Sediment Control  | 1        | LS   | \$ 17,000.00 | \$ 17,000.00           |
| 3 Construct Haul Road   | 1        | LS   | \$ 10,000.00 | \$ 10,000.00           |
| 4 Excavate & Haul Tailings (assume 3 mi round trip)   | 45,000   | CY   | \$ 16.75     | \$ 753,750.00          |
| 5 Clean Fill  | 10,000   | CY   | \$ 11.00     | \$ 110,000.00          |
| 6 Restore Stream Channel  | 7,500    | LF   | \$ 30.00     | \$ 225,000.00          |
| 7 Revegetation  | 12       | AC   | \$ 1,500.00  | \$ 18,000.00           |
| 8 Relocate Mike Horse Road  | 2650     | LF   | \$ 45.00     | \$ 119,250.00          |
| <i>Repository-(Paymaster)*</i>  |          |      |              |                        |
| 9 Clear and Grub  | 2.00     | AC   | \$ 3,000.00  | \$ 6,000.00            |
| 10 Compact Repository   | 45,000   | CY   | \$ 1.16      | \$ 52,200.00           |
| 11 Cap Liner  | 7,000    | SY   | \$ 15.00     | \$ 105,000.00          |
| 12 Cover Soil   | 2335     | CY   | \$ 13.00     | \$ 30,355.00           |
| <b>SUBTOTAL CONSTRUCTION COSTS</b>  |          |      |              | <b>\$ 1,502,555.00</b> |
| Contingency   |          |      | 25%          | \$ 375,700.00          |
| <b>TOTAL ESTIMATED CONSTRUCTION COSTS</b>   |          |      |              | <b>\$ 1,878,255.00</b> |
| Project Management/Administrative Costs   |          |      | 6%           | \$ 113,000.00          |
| Engineering and Final Design  |          |      | 12%          | \$ 226,000.00          |
| Construction Management   |          |      | 8%           | \$ 151,000.00          |
| <b>TOTAL CAPITAL COSTS</b>  |          |      |              | <b>\$ 490,000.00</b>   |
| <b>TOTAL CONSTRUCTION AND CAPITAL COSTS</b>   |          |      |              | <b>\$ 2,368,255.00</b> |
| <b>POST CLOSURE MAINTENANCE COSTS</b>   |          |      |              |                        |
| <b>Years 1 Through 5</b><br>Water level monitoring, vegetation monitoring<br>storm water monitoring, weed control, groundwater sampling.  |          |      |              | \$ 30,000.00           |
| <b>Annual Subtotal Years 1 through 5</b>  |          |      |              | <b>\$ 30,000.00</b>    |
| <b>Years 6 Through 30</b><br>Water level monitoring, vegetation monitoring<br>storm water monitoring, weed control, groundwater sampling. |          |      |              | \$ 5,000.00            |
| <b>Annual Subtotal Years 6 through 30</b>   |          |      |              | <b>\$ 5,000.00</b>     |
| <b>PRESENT WORTH COST FOR O&amp;M</b>   |          |      |              | <b>\$ 164,551.00</b>   |
| <b>TOTAL PRESENT WORTH COST</b>   |          |      |              | <b>\$ 2,532,806.00</b> |

\*Use of a soil cover only system would reduce approximately \$105,000 to the construction costs.

**SERIES PRESENT WORTH FACTOR**

$$SPWF = \frac{((1+i)^n - 1)}{i(1+i)^n}$$

where:

$i$  = discount rate =

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$n$  = period, yrs

$$P + A(SPWF)$$

where:

$P$  = present worth

$A$  = annual O&M cost

| SPWF   | MULTIPLIER |
|--------|------------|
| (1-5)  | 4.10       |
| (1-30) | 12.41      |
| (6-30) | 8.31       |

**Option 1**

O&M for Years 1-30 = \$ 30,000.00

Present Worth Cost of O&M = \$ 372,271.24 **(30,000x12.41)**

**Option 2**

O&M for Years 1-5 = \$ 30,000.00

O&M for Years 6-30 = \$ 10,000.00

Present Worth Cost of O&M = \$ 206,094.36 **(30,000x4.1)+(10,000x8.31)**

**Option 4**

O&M for Years 1-5 = \$ 30,000.00

O&M for Years 6-30 = \$ 5,000.00

Present Worth Cost of O&M = \$ 164,550.14 **(30,000x4.10)+(5,000x8.31)**