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January 27, 2012

U.S. Nuclear Regulatory Commission
Attn: Douglas Mandeville
11545 Rockville Pike
Two White Flint North, Mailstop T8 F5
Rockville, MD 20852-2738

RE: Source Material License SUA-1548, Docket No. 40-8964
2012-2013 Surety Estimate Update for North Butte Satellite Facility

Dear Mr. Mandeville:

Pursuant to License Condition 9.5 of SUA-1548, Power Resources, Inc. d/b/a Cameco Resources (Cameco) is herein providing (2) copies of the proposed 2012-2013 Year 1 Mining Operations Reclamation Surety Bond Estimate submitted to the Wyoming Department of Environmental Quality/Land Quality Division in the amount of \$10,155,015. The new surety covers removal, disposal, and reclamation of process equipment, buildings, boreholes, and wells constructed during the first two year of mining operations. Unit costs from WDEQ Guideline 12, November 2011, were used to calculate totals. If you have comments or questions, please contact Jeanie Wolford in our Casper Office at telephone 307-333-7644.

Sincerely,
CAMECO RESOURCES

A handwritten signature in black ink, appearing to read "Josh Leftwich", written over the printed name.

Josh Leftwich
Director, SHEQ

Attachment: 2012-2013 Year 1 Mining Operations Reclamation Surety Bond Estimate, North Butte Satellite Facility

cc: Document Control Desk, NRC
File NB

ec: Cameco-Cheyenne

APPENDIX B

RECLAMATION SURETY BOND ESTIMATE YEAR 1 MINING OPERATIONS

APPENDIX B**2012-13 YEAR 1 MINING OPERATIONS RECLAMATION SURETY BOND ESTIMATE**

WDEQ Permit No. 632 Annual Report / NRC SUA-1548

North Butte ISR Project - WDEQ Permit No. 632 Update

TOTAL RECLAMATION COST ESTIMATE

PART I. PROCESS EQUIPMENT REMOVAL & DISPOSAL COST	\$111,165
PART II. BUILDING DEMOLITION AND DISPOSAL COST	\$577,322
PART III. WELLFIELD BUILDINGS & EQUIPMENT REMOVAL & DISPOSAL COST	\$902,757
PART IV. WELL & BOREHOLE ABANDONMENT COST	\$5,590,562
PART V. MISCELLANEOUS SURFACE RECLAMATION COST	\$845,874
SUBTOTAL RECLAMATION COST ESTIMATE	\$8,027,680
CONTRACTOR PROFIT, OVERHEAD, MOBILIZATION, DEMOBILIZATION COSTS (10%) *	\$802,768
SUBTOTAL	\$8,830,448
ADDITIONAL MISCELLANEOUS AND UNKNOWN COSTS (15%) **	\$1,324,567
TOTAL CALCULATED SURETY (IN 2012 DOLLARS)	\$10,155,015

* Based on WDEQ-LQD Guideline No. 12, Section II(B)(12)(b)

** Based on WDEQ-LQD Guideline No. 12, Sections II(B)(12)(except b) and (13)

APPENDIX B**2012-13 YEAR 1 MINING OPERATIONS RECLAMATION SURETY BOND ESTIMATE****WDEQ Permit No. 632 Annual Report / NRC SUA-1548**

North Butte ISR Project - WDEQ Permit No. 632 Update

PART I: PROCESS EQUIPMENT REMOVAL & DISPOSAL	Satellite Plant
A. Removal and Loading Costs	
1. Tankage	
Number of Tanks	25
Volume of Tank Construction Material (ft3)	1190
a. Labor	
Number of Persons	3
Ft3/Day	25
Number of Days	48
Labor Costs (per 8 hr day)	\$138
Subtotal Labor Costs	\$19,849
Number of Days	48
\$/Day	\$1,515
Subtotal Equipment Costs	\$72,732
Subtotal Tankage Removal and Loading Costs	\$92,581
2. PVC Pipe	
PVC Pipe Footage	6000
Average PVC Pipe Diameter (inches)	4
Shredded PVC Pipe Volume Reduction (ft3/ft)	0.016
Volume of Shredded PVC Pipe (ft3)	96
a. Labor	
Number of Persons	2
Ft/Day	300
Number of Days	20
Labor Costs (per 8 hr day)	\$138
Subtotal Labor Costs	\$5,514
b. Shredding Costs	
Pipe Shredding Unit Cost (\$/diameter-in-ft)	\$0.028
Subtotal Shredding Costs	\$672
Subtotal PVC Pipe Removal and Loading Costs	\$6,186
3. Pumps	
Number of Pumps	16
Average Volume (ft3/pump)	4.93
Volume of Pumps (ft3)	78.88
a. Labor	
Number of Persons	1
Pumps/Day	2
Number of Days	8
\$/Day/Person	\$138
Subtotal Pump Removal and Loading Costs	\$1,103

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PART I: PROCESS EQUIPMENT REMOVAL & DISPOSAL	Satellite Plant
4. RO Units	
Volume (ft3)	250
a. Labor	
Number of Persons	2
Ft3/Day	175
Number of Days	1
Labor Costs (per 8 hr day)	\$138
Subtotal Labor Costs	\$275.68
Total Equipment Removal and Loading Costs	\$100,145
B. Transportation and Disposal Costs (NRC-Licensed Facility)	
1. Tankage	
Volume of Tank Construction Material (ft3)	1190
Volume for Disposal Assuming 10% Void Space (ft3)	1309
Transportation and Disposal Unit Cost (\$/ft3)	\$7.34
Subtotal Tankage Transportation and Disposal Costs	\$9,604
2. PVC Pipe	
Volume of Shredded PVC Pipe (ft3)	96
Volume for Disposal Assuming 10% Void Space (ft3)	106
Transportation and Disposal Unit Cost (\$/ft3)	\$7.34
Subtotal PVC Pipe Transportation and Disposal Costs	\$778
3. Pumps	
Volume of Pumps (ft3)	78.88
Volume for Disposal Assuming 10% Void Space (ft3)	87
Transportation and Disposal Unit Cost (\$/ft3)	\$7.34
Subtotal PVC Pipe Transportation and Disposal Costs	\$638
Total Equipment Transportation and Disposal Costs	\$11,020
TOTAL EQUIPMENT REMOVAL + DISPOSAL COSTS	\$111,165

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North Butte ISR Project - WDEQ Permit No. 632 Update

PART II: BUILDING DEMOLITION & DISPOSAL	Satellite Bldg	DDW 1 Bldg	DDW 2 Bldg
A. Decontamination Costs			
1. Wall Decontamination			
Area to be Decontaminated (ft2)	0	704	704
HCl Acid Wash (\$/per sq ft.)	\$0.971	\$0.971	\$0.971
Subtotal Wall Decontamination Costs	\$0	\$683	\$683
2. Concrete Floor Decontamination	80		
Area to be Decontaminated (ft2)	19200	480	480
HCl Acid Wash (\$/Gallon)	\$0.440	\$0.440	\$0.440
Subtotal Concrete Floor Decontamination Costs	\$8,443	\$211	\$211
Subtotal Decontamination Costs per Building	\$8,443	\$894	\$894
Total Decontamination Costs			\$10,231
B. Demolition Costs			
1. Building			
Assume:			
Total Building Surface Area	49,080	4,800	4,800
Demolition Unit Cost per WDEQ Guideline No.12, App.K (\$/ft3)	\$0.262	\$0.262	\$0.262
Subtotal Building Demolition Costs	\$12,854	\$1,257	\$1,257
2. Concrete Floor			
Area of Concrete Floor (ft2)	25,600	480	480
Demolition Unit Cost per WDEQ Guideline No.12, App.K (\$/ft2)	\$5.27	\$5.27	\$5.27
Subtotal Concrete Floor Demolition Costs	\$134,838	\$2,528	\$2,528
3. Concrete Footing			
Length of Concrete Footing (ft)	960	88	88
Demolition Unit Cost per WDEQ Guideline No.12, App.K (\$/lin. ft)	\$19.25	\$19.25	\$19.25
Subtotal Concrete Footing Demolition Costs	\$18,484	\$1,694	\$1,694
Subtotal Demolition Costs per Building	\$166,176	\$5,479	\$5,479
Total Demolition Costs			\$177,134
C. Disposal Costs			
1. Building			
Volume of Building (cy) Building Construction and Demolition	1,222	178	178
a. Landfill			
Assume:			
Cost to haul to landfill			
Total Trips @12(cy) each	102	15	15
Dump Truck (Guideline 12 App. J \$/hr)	\$75.29	\$75.29	\$75.29
Transportation(assume 2 trips per 12hr. Day)	\$46,011	\$6,693	\$6,693
Disposal Unit Cost (\$/ton)(Guideline No. 12 App. K)	\$79.54	\$79.54	\$79.54
Percentage (%)	100	100	100
Converted C&D waste volume to tons (.24 tons/cy) ¹	293	43	43
Subtotal Disposal Costs	\$69,343	\$10,086	\$10,086
b. 11e.(2) Byproduct Materials			
Percentage (%)	0	0	0
Volume for Disposal (ft3)	0	0	0
Volume for Disposal Assuming 10% Void Space (ft3)	0	0	0
Transportation and Disposal Unit Cost (\$/ft3)	\$7.34	\$7.34	\$7.34
Subtotal 11e.(2) Byproduct Materials	\$0	\$0	\$0

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WDEQ Permit No. 632 Annual Report / NRC SUA-1548

North Butte ISR Project - WDEQ Permit No. 632 Update

PART II: BUILDING DEMOLITION & DISPOSAL	Satellite Bldg	DDW 1 Bldg	DDW 2 Bldg
Subtotal Building Disposal Costs	\$69,343	\$10,086	\$10,086
2. Concrete Floor			
Area of Concrete Floor (ft2)	25600	480	480
Average Thickness of Concrete Floor (ft)	0.833	0.833	0.833
Volume of Concrete Floor (ft3)(with .54 void factor)	39490.37037	740	740
Volume of Concrete Floor (cy)	1463	27	27
a. Municipal Landfill			
Percentage (%)	75	75	75
Volume for Disposal (cy)	1097	21	21
Tons of Concrete	1,193	22	22
Cost to load Dump Trucks			
Loader (Guideline 12 App. J), CAT 980G Front-end Loader	\$112.73	\$112.73	\$112.73
Cost per cy, assume 1.5min dump time+58.5min standby for 12cy load	\$ 9.39	\$ 9.39	\$ 9.39
Load Cost	\$10,305	\$193	\$193
Cost to haul to landfill			
Total Trips @12(cy) each	91	2	2
Dump Truck (Guideline 12 App. J)	\$75.29	\$75.29	\$75.29
Transportation(assume 2 trips per 12hr. Day)	\$41,296	\$774	\$774
Disposal Unit Cost per WDEQ Guideline No.12, App.K (\$/ton)	\$79.54	\$79.54	\$79.54
Subtotal Landfill Disposal Costs	\$146,531	\$2,747	\$2,747
b. 11e.(2) Byproduct Materials			
Assume:			
Additional \$2.00/ft3 for segregation of concrete			
Percentage (%)	25	25	25
Volume for Disposal (ft3)	9873	185	185
Segregation and Loading Unit Cost (\$/ft3)	\$5.00	\$5.00	\$5.00
Transportation and Disposal Unit Cost (\$/ft3)	\$7.51	\$7.51	\$7.51
Subtotal 11e.(2) Byproduct Materials	\$123,554	\$2,317	\$2,317
Subtotal Concrete Floor Disposal Costs	\$270,085	\$5,064	\$5,064
3. Concrete Footing			
Length of Concrete Footing (ft)	960	88	88
Average Depth of Concrete Footing (ft)	4	4	4
Average Width of Concrete Footing (ft)	0.75	0.75	0.75
Volume of Concrete Footing (ft3) (with 0.54 void factor)	5333	489	489
Volume of Concrete Footing (cy)	198	18	18
Tons of Concrete	215	20	20
Cost to load Dump Trucks			
Loader (Guideline 12 App. J), 5cy bucket	\$112.73	\$112.73	\$112.73
Cost per cy, assume 1.5min dump time+58.5min standby for 12cy load	\$ 9.39	\$ 9.39	\$ 9.39
Load Cost	\$1,856	\$170	\$170
Cost to haul to landfill			
Total Trips @12(cy) each	16	2	2
Dump Truck (Guideline 12 App. J)	\$75.29	\$75.29	\$75.29
Transportation(assume 2 trips per 12hr. Day)	\$7,436	\$682	\$682
Disposal Unit Cost per WDEQ Guideline No.12, App.K (\$/ton)	\$79.54	\$79.54	\$79.54
Subtotal Concrete Footing Disposal Costs	\$17,094	\$1,567	\$1,567
Subtotal Disposal Costs per Building	\$356,522	\$16,717	\$16,717
Total Disposal Costs			\$389,957
SUBTOTAL BUILDING DEMOLITION AND DISPOSAL COSTS	\$531,141	\$23,090	\$23,090

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North Butte ISR Project - WDEQ Permit No. 632 Update

PART II: BUILDING DEMOLITION & DISPOSAL	Satellite Bldg	DDW 1 Bldg	DDW 2 Bldg
TOTAL BUILDING DEMOLITION AND DISPOSAL COSTS			\$577,322

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North Butte ISR Project - WDEQ Permit No. 632 Update

PART III: WELLFIELD BLDGS., EQUIPMENT REMOVAL & DISPOSAL	Mine Unit No.1	Mine Unit No.2
A. Mine Unit Piping		
Assume:		
Number of Header Houses	9	5
Approximate Length of Piping per Header House (ft) (avg. 46 wells per with 300 ft pipeline/well)	13,800	13,800
Approximate Total Length of Piping (ft.)	124,200	69,000
1. Removal and Loading		
Trench Length - (usually run multiple pipes in trench assume 1/4 pipe length)	31,050	17,250
Wellfield Piping Removal Unit Cost (\$/ft of pipe)	\$2.30	\$2.30
Subtotal Wellfield Piping Removal and Loading Costs	\$285,660	\$158,700
2. Shredding Costs		
Assume:		
Length of Piping per Header House (ft)	13,800	13,800
Total Length of Piping (ft)	124,200	69,000
Average Diameter of Piping (inches)	2	2
HDPE Pipe Shredding Unit Cost (\$/diameter-in-ft)	\$0.057	\$0.057
Subtotal Shredding Costs	\$14,159	\$7,866
3. Transport and Disposal Costs (NRC-Licensed Facility)		
Chipped Volume Reduction (ft ³ /ft)	0.005	0.005
Chipped Volume per Wellfield (ft ³)	621	345
Volume for Disposal Assuming 10% Void Space (ft ³)	683	380
Transportation and Disposal Unit Cost (\$/ft ³)	\$7.34	\$7.34
	\$5,011	\$2,788
Total Wellfield Piping Removal and Disposal Costs	\$304,830	\$169,354
B. Well Pumps and Tubing		
Assume:		
Average tubing length/wellfield based on average well depth minus 25 ft		
1. Shredding Costs		
Number of Production Wells with Tubing	140	140
Number of Injection Wells with Tubing	300	300
Average Tubing Length per Well (ft)	650	650
Diameter of Production Well Fiberglass Tubing (inches)	2	2
Diameter of Injection Well HDPE Tubing (inches)	1.25	1.25
HDPE Pipe Shredding Unit Cost (\$/diameter-in-ft)	\$0.057	\$0.057
Subtotal Shredding Costs	\$24,268	\$24,268
2. Pump and Tubing Transportation and Disposal		
a. Pump Volume		
Number of Production Wells with Pumps	140	140
Average Pump Volume (ft ³)	1	1
Pump Volume per Wellfield (ft ³)	140	140
b. Tubing Volume		
Tubing Length per Wellfield (ft)	286,000	286,000
Chipped Volume Reduction (ft ³ /ft)	0.007	0.007
Chipped Volume per Wellfield (ft ³)	2,002	2,002
Volume of Pump and Tubing (ft ³)	2,142	2,142
Volume for Disposal Assuming 10% Void Space (ft ³)	2,356	2,356
Transportation and Disposal Unit Cost (\$/ft ³)	\$7.34	\$7.34

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North Butte ISR Project - WDEQ Permit No. 632 Update

PART III: WELLFIELD BLDGS., EQUIPMENT REMOVAL & DISPOSAL	Mine Unit No.1	Mine Unit No.2
Subtotal Pump and Tubing Transport and Disposal Costs	\$17,286	\$17,286
Total Well Pumps and Tubing Removal and Disposal Costs	\$41,554	\$41,554
C. Buried Trunkline		
Assume:		
Length of Trunkline Trench (ft)	7500	7500
1. Removal and Loading		
Main Pipeline Removal Unit Cost (\$/ft of trench)	\$2.30	\$2.30
Subtotal Trunkline Removal and Loading Costs	\$17,250	\$17,250
2. Shredding Costs		
Diameter of HDPE Piping (in)	2	2
Total Length of 2" HDPE Piping (ft)	7,500	7,500
Diameter of HDPE Piping (in)	3	3
Total Length of 3" HDPE Piping (ft)	7,500	7,500
Diameter of HDPE Piping (in)	4	4
Total Length of 4" HDPE Piping (ft)	0	0
Diameter of HDPE Piping (in)	6	6
Total Length of 6" HDPE Piping (ft)	4,000	4,000
Diameter of HDPE Piping (in)	8	8
Total Length of 8" HDPE Piping (ft)	18,400	18,400
Diameter of HDPE Piping (in)	10	10
Total Length of 10" HDPE Piping (ft)	0	0
Diameter of HDPE Piping (in)	12	12
Total Length of 12" HDPE Piping (ft)	0	0
Diameter of HDPE Piping (in)	14	14
Total Length of 14" HDPE Piping (ft)	0	0
Diameter of HDPE Piping (in)	16	16
Total Length of 16" HDPE Piping (ft)	0	0
Diameter of HDPE Piping (in)	18	18
Total Length of 18" HDPE Piping (ft)	0	0
Diameter of HDPE Piping (in)	20	20
Total Length of 20" HDPE Piping (ft)	15,000	15,000
Diameter of HDPE Piping (in)	24	24
Total Length of 24" HDPE Piping (ft)	0	0
HDPE Pipe Shredding Unit Cost (\$/diameter-in-ft)	\$0.057	\$0.057
Subtotal Shredding Costs	\$28,996	\$28,996
3. Transport and Disposal Costs		
a. 2" HDPE Trunkline		
Piping Length (ft)	7,500	7,500
Chipped Volume Reduction (ft3/ft)	0.01	0.01
Chipped Volume (ft3)	80.41	80.41
b. 3" HDPE Trunkline		
Piping Length (ft)	7500	7500
Chipped Volume Reduction (ft3/ft)	0.02	0.02
Chipped Volume (ft3)	174.64	174.64
c. 4" HDPE Trunkline		
Piping Length (ft)	0	0
Chipped Volume Reduction (ft3/ft)	0.04	0.04
Chipped Volume (ft3)	0.00	0.00
d. 6" HDPE Trunkline		
Piping Length (ft)	4000	4000

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PART III: WELLFIELD BLDGS., EQUIPMENT REMOVAL & DISPOSAL		Mine Unit No.1	Mine Unit No.2
	Chipped Volume Reduction (ft3/ft)	0.08	0.08
	Chipped Volume (ft3)	333.57	333.57
e	8" HDPE Trunkline		
	Piping Length (ft)	18400	18400
	Chipped Volume Reduction (ft3/ft)	0.14	0.14
	Chipped Volume (ft3)	2599.96	2599.96
f	10" HDPE Trunkline		
	Piping Length (ft)	0	0
	Chipped Volume Reduction (ft3/ft)	0.22	0.22
	Chipped Volume (ft3)	0.00	0.00
g	12" HDPE Trunkline		
	Piping Length (ft)	0	0
	Chipped Volume Reduction (ft3/ft)	0.31	0.31
	Chipped Volume (ft3)	0.00	0.00
h	14" HDPE Trunkline		
	Piping Length (ft)	0	0
	Chipped Volume Reduction (ft3/ft)	0.37	0.37
	Chipped Volume (ft3)	0.00	0.00
i	16" HDPE Trunkline		
	Piping Length (ft)	0	0
	Chipped Volume Reduction (ft3/ft)	0.49	0.49
	Chipped Volume (ft3)	0.00	0.00
j	18" HDPE Trunkline		
	Piping Length (ft)	0	0
	Chipped Volume Reduction (ft3/ft)	0.62	0.62
	Chipped Volume (ft3)	0.00	0.00
k	20" HDPE Trunkline		
	Piping Length (ft)	15,000	15,000
	Chipped Volume Reduction (ft3/ft)	0.72	0.72
	Chipped Volume (ft3)	10817.18	10817.18
l	24" HDPE Trunkline		
	Piping Length (ft)	0	0
	Chipped Volume Reduction (ft3/ft)	1.04	1.04
	Chipped Volume (ft3)	0.00	0.00
Total Trunkline Chipped Volume (ft3)			
Volume for Disposal Assuming 10% Void Space (ft3)		14005.76	14005.76
Transportation and Disposal Unit Cost (\$/ft3)		15406	15406
		\$7.34	\$7.34
Subtotal Trunkline Transport and Disposal Costs		\$113,034	\$113,034
Total Trunkline Removal and Disposal Costs		\$159,280	\$159,280
D. Well Covers			
Total Quantity		440	440
Average Well Cover Volume (ft3)		1.86	1.86
1. Removal			
Total Volume (ft3)		818	818
Demolition Unit Cost per WDEQ Guideline No.12, App.K (\$/ft3)		\$0.262	\$0.262
Subtotal Well Cover Demolition Costs		\$214	\$214
2. Survey and Decontamination			
Assume:			
Cost per Well Cover		\$7	\$7

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North Butte ISR Project - WDEQ Permit No. 632 Update

PART III: WELLFIELD BLDGS., EQUIPMENT REMOVAL & DISPOSAL	Mine Unit No.1	Mine Unit No.2
Subtotal Survey and Decontamination Costs	\$2,886	\$2,886
3. Disposal		
Total Volume (cy)	30	30
Cost to haul to landfill		
Total Trips @12(cy) each	3	3
Dump Truck (Guideline 12 App. J)	\$116.22	\$116.22
Transportation(assume 2 trips per 12hr. Day)	\$1,761	\$1,761
Disposal Unit Cost (\$/ton)(Guideline No. 12 App. K)	\$79.54	\$79.54
Percentage (%)	100	100
Converted C&D waste volume to tons (.24 tons/cy) ¹	2	2
Subtotal Disposal Costs	\$2,888	\$2,888
Total Well Cover Removal and Disposal Costs	\$5,988	\$5,988
E. Header Houses		
Total Quantity	9	5
Average Header House Volume (ft3)	800	800
1. Removal		
Total Volume (ft3)	7200	4000
Demolition Unit Cost per WDEQ Guideline No.12, App.K (\$/ft3)	\$0.262	\$0.262
Subtotal Building Demolition Costs	\$1,886	\$1,048
2. Survey and Decontamination		
Assume:		
Cost per Header House	\$568	\$568
Subtotal Survey and Decontamination Costs	\$5,112	\$2,840
3. Disposal		
Total Volume (cy)	267	148
Volume for Disposal Assuming 10% Void Space (cy)	293	163
Disposal Unit Cost per WDEQ Guideline No.12, App.K (\$/cy)	\$8.87	\$8.87
Subtotal Off-Site Disposal Costs	\$2,598	\$1,445
Total Header House Removal + Disposal Costs	\$9,596	\$5,333
SUBTOTAL WELLFIELD BUILDINGS AND EQUIPMENT REMOVAL + DISPOSAL COSTS	\$521,248	\$381,509
TOTAL WELLFIELD BUILDINGS AND EQUIPMENT REMOVAL + DISPOSAL COSTS		\$902,757

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PART IV: WELL & BOREHOLE ABANDONMENT	Mine Unit No.1	Mine Unit No.2
A. Well Abandonment (Wellfields)		
# of Production Wells	140	140
Cost to plug and abandon Production wells (\$/LF)	\$ 6.28	\$ 6.28
# of Injection Wells	300	300
Cost to plug and abandon Injection wells (\$/LF)	\$ 4.00	\$ 4.00
# of Monitoring Wells	80	80
Cost to plug and abandon Monitoring wells (\$/LF)	\$ 4.00	\$ 4.00
# of Restoration Wells	0	0
Cost to plug and abandon Restoration wells (\$/LF)	\$ 6.28	\$ 6.28
# water supply wells	1	1
Cost to plug and abandon Water Supply wells (\$/LF)	\$ 6.28	\$ 6.28
Total Number of Wells	521	521
Average Diameter of Casing (inches)	5	5
Average Depth (ft)	650	650
	\$1,563,562	\$1,563,562
Subtotal Abandonment Cost - Wellfields		\$3,127,124
B. Removal of Contaminated Soil Around Wells		
# of Production and Injection Wells	440	440
Cost per well (\$/well)	\$162.15	\$162.15
	\$71,346	\$71,346
Subtotal Removal of Soil Around Wells		\$142,692
C. Delineation Hole Abandonment		
# of Projected Holes	500	500
Average Depth (ft)		650
Hole Abandonment Unit Cost (\$/ft of hole)		\$6.28
Site Reclamation (\$/site)	\$66.37	\$66.37
	\$33,183	\$2,074,183
Subtotal Hole Abandonment per Wellfield		\$2,107,365
D. Waste Disposal Injection Well Abandonment	DDW 1	DDW 2
1. Well Sealing		
Assume: TD = 8559' FedBY2 TD = 8570' FedBY1,		
Sealing cost per foot (in UIC permit)	\$11.91	\$11.91
Subtotal Plugging Costs per Well (in UIC permit)	\$102,069	\$102,069
2. Pump Dismantling and Decontamination		
Number of Persons	2	2
Number of Pumps	2	2
Pumps/Day	0.5	0.5
Number of Days	4	4
\$/Day/Person	\$224	\$224
Subtotal Dismantling and Decon Costs per Well	\$1,788.80	\$1,788.80
3. Tubing String Disposal (NRC-Licensed Facility)		
Length of Tubing String (ft)	8,570	8,570
Diameter of Tubing String (inches)	2.875	2.875
Volume of Tubing String (ft ³)	386	386
Transportation and Disposal Unit Cost (\$/ft ³)	\$7.34	\$7.34
Subtotal Tubing String Disposal Costs per Well	\$2,833	\$2,833
Subtotal Waste Disposal Well Abandonment Costs per Well	\$106,691	\$106,691
Subtotal Waste Disposal Well Abandonment Costs		\$213,381

APPENDIX B**2012-13 YEAR 1 MINING OPERATIONS RECLAMATION SURETY BOND ESTIMATE**

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PART IV: WELL & BOREHOLE ABANDONMENT	Mine Unit No.1	Mine Unit No.2
TOTAL WELL ABANDONMENT COSTS		\$5,590,562

APPENDIX B

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PART V: MISCELLANEOUS SURFACE RECLAMATION	
A. Wellfield Pattern Area Reclamation	
Assume:	
Disking/Seeding Unit Cost Based on Actual Contractor Costs	
Pattern Area (acres)	23.53
Wellfield Pattern Area Disking/Seeding Unit Cost (\$/acre)	\$606
Subtotal Pattern Area Reclamation Costs per Wellfield	\$14,257
Total Wellfield Pattern Area Reclamation Costs	\$14,257
B. Wellfield Road Reclamation	
Length of Wellfield Roads (1000 ft)	20
Wellfield Road Reclamation Unit Cost (\$/1000 ft)	\$805
Subtotal Road Reclamation Costs per Wellfield	\$16,100
Total Wellfield Road Reclamation Costs	\$16,100
C. Header House Surface Reclamation	
Assume:	
Number of Header Houses	14
Area of Disturbance per Header House (ft ²)	1000
Total Area of Disturbance (acres)	0.32
Average Depth of Stripped Topsoil (ft)	1
Surface Grade: Level Ground	
Average Length of Topsoil Haul (ft)	1000
1. Ripping Overburden with Dozer	
Ripping Unit Cost per WDEQ Guideline No.12, App.I1 (\$/acre)	\$1,195.44
Subtotal Ripping Costs	\$383
2. Topsoil Application with Scraper	
Volume of Topsoil Removed (cy)	258
Application Unit Cost per WDEQ Guideline No.12, App.C (\$/cy)	\$1.27
Subtotal Topsoil Application Costs	\$329
3. Disking and Seeding	
Disking/Seeding Unit Cost (\$/acre)	\$606
Subtotal Disking/Seeding Costs	\$194
Subtotal Header House Reclamation Costs per Wellfield	\$577
Header House Reclamation Costs per Wellfield	\$577
TOTAL WELLFIELD SURFACE RECLAMATION COSTS	\$30,934
D. Satellite Plant Area Reclamation	
1. Topsoil Application	
Assume:	
Average haul distance (ft)	2000
Surface grade: Level ground	
Topsoil Surface Area (acres)	21
Average Depth of Topsoil (ft)	0.5
Volume of Topsoil (cy)	16940
Topsoil Unit Cost per WDEQ Guideline No.12, App.C (\$/cy)	\$1.27
Total Topsoil Application Cost	\$21,582
2. Disking/Seeding	
Surface Area (acres)	5
Disking/Seeding Unit Cost (\$/acre)	\$606

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PART V: MISCELLANEOUS SURFACE RECLAMATION	
Total Disking/Seeding Costs	\$3,030
Satellite Plant/Office Area Reclamation	\$24,612
E. Access Road Reclamation	Main Access Road
Assume	
Surface grade: Level ground	
Length of road (miles)	6
Average road width (ft)	25
1. Gravel Road Base Removal	
Assume	
Average haul distance (ft)	1000
Gravel Road Base Width (ft)	25
Average Road Base Depth (ft)	0.5
Volume of Road Base (cy)	14667
Removal Unit Cost per WDEQ Guideline No.12, App.C (\$/cy)	\$1.27
Subtotal Gravel Road Base Removal Costs	\$18,685
2. Ripping Overburden with Dozer	
Overburden Surface Area (acres)	18
Ripping Unit Cost per WDEQ Guideline No.12, App.I1 (\$/acre)	\$1,195.44
Subtotal Ripping Overburden Costs	\$21,518
3. Topsoil Application	
Assume	
Average haul distance (ft)	1000
Topsoil Surface Area (ft ²)	792000
Depth of Topsoil (ft)	0.5
Volume of Topsoil (cy)	14667
Topsoil Unit Cost per WDEQ Guideline No.12, App.C (\$/cy)	\$1.27
Subtotal Topsoil Application Costs	\$18,685
4. Disking/Seeding	
Surface Area (acres)	18
Disking/Seeding Unit Cost (\$/acre)	\$606
Subtotal Disking/Seeding Costs	\$10,908
Total Access Road Reclamation Costs	\$69,796
F. Surge Pond Reclamation	Ponds 1 and 2
Assume:	
Total Pond Surface Acres	2.5
Average Thickness of Liner and Sludge (in)	3
Average Thickness of Contaminated Soil (in)	6
Volume of Byproduct Material (ft ³)	81675
Backhoe Operation Unit Cost	
1. Liner & Sludge Removal and Loading	
a. Equipment	
Number of Backhoes	1
ft ³ /hr	300
Number of Hours	272
\$/hr/Backhoe	\$149.14
Equipment Costs	\$40,566
b. Labor	

APPENDIX B**2012-13 YEAR 1 MINING OPERATIONS RECLAMATION SURETY BOND ESTIMATE**

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PART V: MISCELLANEOUS SURFACE RECLAMATION	
Number of Persons	2
Number of Hours	272
\$/hr/Person(operator)	\$28
\$/hr/Person (laborer)	\$17
Labor Costs	\$12,289
Subtotal Liner & Sludge Removal and Loading Costs	\$52,855
2. Transportation and Disposal (NRC-Licensed Facility)	
Transportation and Disposal Unit Cost (\$/ft3)	\$7.51
Subtotal Transportation and Disposal Costs	\$613,773
3. Leak Detection Piping Removal and Loading	
Assume:	
Piping Removal Unit Cost same as for Well fields (\$/ft)	\$2.30
Length of Piping (ft)	400
a. Piping Removal and Loading Costs	
Total Length of Piping (ft)	400
Subtotal Piping Removal and Loading Costs	\$920
b. Shredding Costs	
Average Diameter of Piping (inches)	2
PVC Pipe Shredding Unit Cost (\$/diameter-in-ft)	\$0.028
Subtotal Pipe Shredding Costs	\$56
c. Transport and Disposal Costs (NRC-Licensed Facility)	
Chipped Volume Reduction (ft3/ft)	0.01
Chipped Volume (ft3)	4
Volume for Disposal Assuming 10% Void Space (ft3)	4
Transportation and Disposal Unit Cost (\$/ft3)	\$7.34
Subtotal Piping Transport and Disposal Costs	\$29
Subtotal Leak Detection Piping Removal and Disposal Costs	\$1,005
4. Replacement of Excavated Soil	
Assume:	
Includes replacement of topsoil and subsoil	
Surface Grade: Level ground	
Average Haul Distance (ft)	1000
Surface Area (acres)	2.5
Average Depth of Excavated Soil (ft)	10.0
Volume of Topsoil (cy)	40333
Soil Replacement Unit Cost per WDEQ Guideline No.12, App.C (\$/cy)	\$1.27
Subtotal Soil Replacement Costs	\$51,384
5. Disking/Seeding	
Surface Area (acres)	2.5
Disking/Seeding Unit Cost (\$/acre)	\$606
Subtotal Disking/Seeding Costs	\$1,515
Total Evaporation Pond Reclamation Costs	\$720,532
TOTAL MISCELLANEOUS SURFACE RECLAMATION COSTS	\$845,874