



April 19, 2012

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

**CAMECO RESOURCES**  
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RE: License SUA-1548, Docket No. 40-8964  
2012-13 Revised Surety Estimate Update for North Butte Satellite Facility

Dear Mr. Mandeville:

Pursuant to License Condition 9.5, Power Resources, Inc. d/b/a Cameco Resources (Cameco) is herein providing (2) copies of the revised proposed surety for 2012-13 Year 1 Mining Operations Reclamation Surety Bond Estimate to the Wyoming Department of Equality/Land Quality Division (DEQ/LQD) in the amount of \$10,202,489 for the North Butte ISR Uranium Project. This estimate is revised based on recommendations from DEQ/LQD in a letter dated March 19, 2012.

If you have any questions, please contact me at 307.316.7588 or email [Josh\\_Leftwich@cameco.com](mailto:Josh_Leftwich@cameco.com).

Sincerely,  
CAMECO RESOURCES

A handwritten signature in blue ink, appearing to read "Josh Leftwich", written over a horizontal line.

Josh Leftwich  
Director of Safety, Health, Environment, & Quality

Attachment: WDEQ/LQD 2012-13 Revised Surety Estimate Update

cc: Document Control Desk, NRC  
File NB

FSME20

**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	\$114,514
PART II. BUILDING DEMOLITION AND DISPOSAL COST	\$580,814
PART III. WELLFIELD BUILDINGS & EQUIPMENT REMOVAL & DISPOSAL COST	\$933,066
PART IV. WELL & BOREHOLE ABANDONMENT COST	\$5,590,562
PART V. MISCELLANEOUS SURFACE RECLAMATION COST	\$846,252
SUBTOTAL RECLAMATION COST ESTIMATE	\$8,065,209
CONTRACTOR PROFIT, OVERHEAD, MOBILIZATION, DEMOBILIZATION COSTS (10%) *	\$806,521
SUBTOTAL	\$8,871,730
ADDITIONAL MISCELLANEOUS AND UNKNOWN COSTS (15%) **	\$1,330,759
<b>TOTAL CALCULATED SURETY (IN 2012 DOLLARS)</b>	<b>\$10,202,489</b>

\* 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**  
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<b>PART I: PROCESS EQUIPMENT REMOVAL &amp; DISPOSAL</b>	<b>Satellite Plant</b>
<b>A. Removal and Loading Costs</b>	
<i>1. Tankage</i>	
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
<b>Subtotal Labor Costs</b>	<b>\$19,849</b>
Number of Days	48
Cat 924G Loader	\$46.61
Crane Rental with Operator	\$142.80
Equipment Cost - \$/Day	\$1,515
<b>Subtotal Equipment Costs</b>	<b>\$72,731.90</b>
<b>Subtotal Tankage Removal and Loading Costs</b>	<b>\$92,581</b>
<i>2. PVC Pipe</i>	
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
<b>Subtotal Labor Costs</b>	<b>\$5,514</b>
b. Shredding Costs	
Pipe Shredding Unit Cost (\$/diameter-in-ft)	\$0.028
<b>Subtotal Shredding Costs</b>	<b>\$672</b>
<b>Subtotal PVC Pipe Removal and Loading Costs</b>	<b>\$6,186</b>
<i>3. Pumps</i>	
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
<b>Subtotal Pump Removal and Loading Costs</b>	<b>\$1,103</b>

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<b>PART I: PROCESS EQUIPMENT REMOVAL &amp; DISPOSAL</b>	<b>Satellite Plant</b>
<b>4. RO Units</b>	
Volume (ft3)	250
a. Labor	
Number of Persons	2
Ft3/Day	175
Number of Days	1
Labor Costs (per 8 hr day)	\$138
<b>Subtotal Labor Costs</b>	<b>\$275.68</b>
<b>Number of Days</b>	<b>1</b>
<b>Cat 416 Backhoe</b>	<b>\$46.61</b>
<b>Crane Rental with Operator</b>	<b>\$142.80</b>
<b>Equipment Cost - \$/Day</b>	<b>\$1,515.25</b>
<b>Subtotal Equipment Costs</b>	<b>\$1,515.25</b>
<b>Total Equipment Removal and Loading Costs</b>	<b>\$101,660</b>
<b>B. Transportation and Disposal Costs (NRC-Licensed Facility)</b>	
<b>1. Tankage</b>	
Volume of Tank Construction Material (ft3)	1190
Volume for Disposal Assuming 10% Void Space (ft3)	1309
Transportation and Disposal Unit Cost (\$/ft3)	\$7.34
<b>Subtotal Tankage Transportation and Disposal Costs</b>	<b>\$9,604</b>
<b>2. PVC Pipe</b>	
Volume of Shredded PVC Pipe (ft3)	96
Volume for Disposal Assuming 10% Void Space (ft3)	106
Transportation and Disposal Unit Cost (\$/ft3)	\$7.34
<b>Subtotal PVC Pipe Transportation and Disposal Costs</b>	<b>\$778</b>
<b>3. Pumps</b>	
Volume of Pumps (ft3)	78.88
Volume for Disposal Assuming 10% Void Space (ft3)	87
Transportation and Disposal Unit Cost (\$/ft3)	\$7.34
<b>Subtotal PVC Pipe Transportation and Disposal Costs</b>	<b>\$638</b>
<b>4. RO Units</b>	
Volume of RO Units (ft3)	250
Transportation and Disposal Unit Cost (\$/ft3)	\$7.34
<b>Subtotal Tankage Transportation and Disposal Costs</b>	<b>\$1,834</b>
<b>Total Equipment Transportation and Disposal Costs</b>	<b>\$12,854</b>
<b>TOTAL EQUIPMENT REMOVAL + DISPOSAL COSTS</b>	<b>\$114,514</b>

## APPENDIX B

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

North Butte ISR Project - WDEQ Permit No. 632 Update

<b>PART II: BUILDING DEMOLITION &amp; DISPOSAL</b>	<b>Satellite Bldg</b>	<b>DDW 1 Bldg</b>	<b>DDW 2 Bldg</b>
<b>A. Decontamination Costs</b>			
<i>1. Wall Decontamination</i>			
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
<i>2. Concrete Floor Decontamination</i>			
Area to be Decontaminated (ft2)	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
<b>Total Decontamination Costs</b>			<b>\$10,231</b>
<b>B. Demolition Costs</b>			
<i>1. Building</i>			
Assume:			
<b>Total Building Surface Area</b>	<b>49,080</b>	<b>4,800</b>	<b>4,800</b>
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
<i>2. Concrete Floor</i>			
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
<i>3. Concrete Footing</i>			
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
<b>Total Demolition Costs</b>			<b>\$177,134</b>
<b>C. Disposal Costs</b>			
<i>1. Building</i>			
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
<b>Dump Truck (Guideline 12 App. J \$/hr)</b>	<b>\$77.62</b>	<b>\$77.62</b>	<b>\$77.62</b>
Transportation(assume 2 trips per 12hr. Day)	\$47,434	\$6,900	\$6,900
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) <sup>1</sup>	293	43	43
Subtotal Disposal Costs	\$70,766	\$10,293	\$10,293
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
<b>Subtotal Building Disposal Costs</b>	<b>\$70,766</b>	<b>\$10,293</b>	<b>\$10,293</b>

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<b>2. Concrete Floor</b>			
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
<b>a. Municipal Landfill</b>			
Percentage (%)	75	75	75
Volume for Disposal (cy)	1097	21	21
Tons of Concrete	1,193	22	22
Cost to load Dump Trucks			
<b>Loader (Guideline 12 App. J), CAT 980G Front-end Loader</b>	<b>\$116.22</b>	<b>\$116.22</b>	<b>\$116.22</b>
Cost per cy, assume 1.5min dump time+58.5min standby for 12cy load	\$ 9.69	\$ 9.69	\$ 9.69
Load Cost	\$10,624	\$199	\$199
Cost to haul to landfill			
Total Trips @12(cy) each	91	2	2
<b>Dump Truck (Guideline 12 App. J)</b>	<b>\$77.62</b>	<b>\$77.62</b>	<b>\$77.62</b>
Transportation(assume 2 trips per 12hr. Day)	\$42,573	\$798	\$798
Disposal Unit Cost per WDEQ Guideline No.12, App.K (\$/ton)	\$79.54	\$79.54	\$79.54
<b>Subtotal Landfill Disposal Costs</b>	<b>\$148,127</b>	<b>\$2,777</b>	<b>\$2,777</b>
<b>b. 11e.(2) Byproduct Materials</b>			
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
<b>Subtotal Concrete Floor Disposal Costs</b>	<b>\$271,681</b>	<b>\$5,094</b>	<b>\$5,094</b>
<b>3. Concrete Footing</b>			
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			
<b>Loader (Guideline 12 App. J), CAT 980G Front-end Loader</b>	<b>\$116.22</b>	<b>\$116.22</b>	<b>\$116.22</b>
Cost per cy, assume 1.5min dump time+58.5min standby for 12cy load	\$ 9.69	\$ 9.69	\$ 9.69
Load Cost	\$1,913	\$175	\$175
Cost to haul to landfill			
Total Trips @12(cy) each	16	2	2
<b>Dump Truck (Guideline 12 App. J)</b>	<b>\$77.62</b>	<b>\$77.62</b>	<b>\$77.62</b>
Transportation(assume 2 trips per 12hr. Day)	\$7,666	\$703	\$703
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	\$359,541	\$16,954	\$16,954
<b>Total Disposal Costs</b>			<b>\$393,449</b>
<b>SUBTOTAL BUILDING DEMOLITION AND DISPOSAL COSTS</b>	<b>\$534,160</b>	<b>\$23,327</b>	<b>\$23,327</b>
<b>TOTAL BUILDING DEMOLITION AND DISPOSAL COSTS</b>			<b>\$580,814</b>

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

North Butte ISR Project - WDEQ Permit No. 632 Update

<b>PART III: WELLFIELD BLDGS., EQUIPMENT REMOVAL &amp; DISPOSAL</b>	<b>Mine Unit No.1</b>	<b>Mine Unit No.2</b>
<b>A. Mine Unit Piping</b>		
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
<b>1. Removal and Loading</b>		
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
<b>Subtotal Wellfield Piping Removal and Loading Costs</b>	<b>\$285,660</b>	<b>\$158,700</b>
<b>2. Shredding Costs</b>		
Assume:		
Length of Piping per Header House (ft)	13,800	13,800
Total Length of Piping (ft)	124200	69000
Average Diameter of Piping (inches)	2	2
HDPE Pipe Shredding Unit Cost (\$/diameter-in-ft)	\$0.057	\$0.057
<b>Subtotal Shredding Costs</b>	<b>\$14,159</b>	<b>\$7,866</b>
<b>3. Transport and Disposal Costs (NRC-Licensed Facility)</b>		
Chipped Volume Reduction (ft3/ft)	0.005	0.005
Chipped Volume per Wellfield (ft3)	621	345
Volume for Disposal Assuming 10% Void Space (ft3)	683	380
Transportation and Disposal Unit Cost (\$/ft3)	\$7.34	\$7.34
	\$5,011	\$2,788
<b>Total Wellfield Piping Removal and Disposal Costs</b>	<b>\$304,830</b>	<b>\$169,354</b>
<b>B. Well Pumps and Tubing</b>		
Assume:		
Average tubing length/wellfield based on average well depth minus 25 ft		
<b>1. Shredding Costs</b>		
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
<b>Subtotal Shredding Costs</b>	<b>\$24,268</b>	<b>\$24,268</b>
<b>2. Pump and Tubing Transportation and Disposal</b>		
a. Pump Volume		
Number of Production Wells with Pumps	140	140
Average Pump Volume (ft3)	1	1
Pump Volume per Wellfield (ft3)	140	140
b. Tubing Volume		
Tubing Length per Wellfield (ft)	286,000	286,000
Chipped Volume Reduction (ft3/ft)	0.007	0.007
Chipped Volume per Wellfield (ft3)	2,002	2,002
Volume of Pump and Tubing (ft3)	2,142	2,142
Volume for Disposal Assuming 10% Void Space (ft3)	2,356	2,356
Transportation and Disposal Unit Cost (\$/ft3)	\$7.34	\$7.34
<b>Subtotal Pump and Tubing Transport and Disposal Costs</b>	<b>\$17,286</b>	<b>\$17,286</b>
<b>Total Well Pumps and Tubing Removal and Disposal Costs</b>	<b>\$41,554</b>	<b>\$41,554</b>

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<b>PART III: WELLFIELD BLDGS., EQUIPMENT REMOVAL &amp; DISPOSAL</b>	<b>Mine Unit No.1</b>	<b>Mine Unit No.2</b>
<b>C. Buried Trunkline</b>		
Assume:		
Length of Trunkline Trench (ft)	7500	7500
<b>1. Removal and Loading</b>		
Main Pipeline Removal Unit Cost (\$/ft of trench)	\$2.30	\$2.30
Subtotal Trunkline Removal and Loading Costs	\$17,250	\$17,250
<b>2. Shredding Costs</b>		
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
<b>Subtotal Shredding Costs</b>	<b>\$28,996</b>	<b>\$28,996</b>



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<b>PART III: WELLFIELD BLDGS., EQUIPMENT REMOVAL &amp; DISPOSAL</b>		<b>Mine Unit No.1</b>	<b>Mine Unit No.2</b>
<b>3. Transport and Disposal Costs</b>			
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
	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
<b>Total Trunkline Chipped Volume (ft3)</b>			
Volume for Disposal Assuming 10% Void Space (ft3)		14005.76	14005.76
Transportation and Disposal Unit Cost (\$/ft3)		15406	15406
		\$7.34	\$7.34
<b>Subtotal Trunkline Transport and Disposal Costs</b>		<b>\$113,034</b>	<b>\$113,034</b>
<b>Total Trunkline Removal and Disposal Costs</b>		<b>\$159,280</b>	<b>\$159,280</b>

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<b>D. Well Covers</b>		
Total Quantity	440	440
Average Well Cover Volume (ft3)	1.86	1.86
<b>1. Removal</b>		
Total Volume (ft3)	818	818
Demolition Unit Cost per WDEQ Guideline No.12, App.K (\$/ft3)	\$0.262	\$0.262
<b>Subtotal Well Cover Demolition Costs</b>	<b>\$214</b>	<b>\$214</b>
<b>2. Survey and Decontamination</b>		
Assume:		
Cost per Well Cover	\$7	\$7
<b>Subtotal Survey and Decontamination Costs</b>	<b>\$2,886</b>	<b>\$2,886</b>
<b>3. Disposal</b>		
Total Volume (cy)	30	30
Cost to haul to landfill		
Total Trips @12(cy) each	3	3
Dump Truck (Guideline 12 App. J)	\$77.62	\$77.62
Transportation(assume 2 trips per 12hr. Day)	\$1,176	\$1,176
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) <sup>1</sup> :	2	2
<b>Subtotal Disposal Costs</b>	<b>\$1,929</b>	<b>\$1,929</b>
<b>Total Well Cover Removal and Disposal Costs</b>	<b>\$5,029</b>	<b>\$5,029</b>
<b>E. Header Houses</b>		
Total Quantity	9	5
Average Header House Volume (ft3)	800	800
<b>1. Removal</b>		
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
<b>2. Survey and Decontamination</b>		
Assume:		
Cost per Header House	\$568	\$568
<b>Subtotal Survey and Decontamination Costs</b>	<b>\$5,112</b>	<b>\$2,840</b>
<b>3. Disposal</b>		
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)	\$79.54	\$79.54
<b>Subtotal Off-Site Disposal Costs</b>	<b>\$23,305</b>	<b>\$12,965</b>
<b>Total Header House Removal + Disposal Costs</b>	<b>\$30,303</b>	<b>\$16,853</b>
<b>SUBTOTAL WELLFIELD BUILDINGS AND EQUIPMENT REMOVAL + DISPOSAL COSTS</b>	<b>\$540,996</b>	<b>\$392,070</b>
<b>TOTAL WELLFIELD BUILDINGS AND EQUIPMENT REMOVAL + DISPOSAL COSTS</b>		<b>\$933,066</b>

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<b>PART IV: WELL &amp; BOREHOLE ABANDONMENT</b>	<b>Mine Unit No.1</b>	<b>Mine Unit No.2</b>
<b>A. Well Abandonment (Wellfields)</b>		
# 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
	<b>\$1,563,562</b>	<b>\$1,563,562</b>
<b>Subtotal Abandonment Cost - Wellfields</b>		<b>\$3,127,124</b>
<b>B. Removal of Contaminated Soil Around Wells</b>		
# of Production and Injection Wells	440	440
Cost per well (\$/well)	\$162.15	\$162.15
	<b>\$71,346</b>	<b>\$71,346</b>
<b>Subtotal Removal of Soil Around Wells</b>		<b>\$142,692</b>
<b>C. Delineation Hole Abandonment</b>		
# 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
	<b>\$33,183</b>	<b>\$2,074,183</b>
<b>Subtotal Hole Abandonment per Wellfield</b>		<b>\$2,107,365</b>
<b>D. Waste Disposal Injection Well Abandonment</b>		
	<b>DDW 1</b>	<b>DDW 2</b>
<b>1. Well Sealing</b>		
Assume: TD = 8559' FedBY2 TD = 8570' FedBY1,		
Sealing cost per foot (in UIC permit)	\$11.91	\$11.91
<b>Subtotal Plugging Costs per Well (in UIC permit)</b>	<b>\$102,069</b>	<b>\$102,069</b>
<b>2. Pump Dismantling and Decontamination</b>		
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
<b>Subtotal Dismantling and Decon Costs per Well</b>	<b>\$1,788.80</b>	<b>\$1,788.80</b>
<b>3. Tubing String Disposal (NRC-Licensed Facility)</b>		
Length of Tubing String (ft)	8,570	8,570
Diameter of Tubing String (inches)	2.875	2.875
Volume of Tubing String (ft <sup>3</sup> )	386	386
Transportation and Disposal Unit Cost (\$/ft <sup>3</sup> )	\$7.34	\$7.34
<b>Subtotal Tubing String Disposal Costs per Well</b>	<b>\$2,833</b>	<b>\$2,833</b>
<b>Subtotal Waste Disposal Well Abandonment Costs per Well</b>	<b>\$106,691</b>	<b>\$106,691</b>
<b>Subtotal Waste Disposal Well Abandonment Costs</b>		<b>\$213,381</b>
<b>TOTAL WELL ABANDONMENT COSTS</b>		<b>\$5,590,562</b>

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<b>PART V: MISCELLANEOUS SURFACE RECLAMATION</b>	
<b>A. Wellfield Pattern Area Reclamation</b>	
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
<b>Total Wellfield Pattern Area Reclamation Costs</b>	<b>\$14,257</b>
<b>B. Wellfield Road Reclamation</b>	
Assume:	
Length of Wellfield Roads (1000 ft)	
Wellfield Road Reclamation Unit Cost (\$/1000 ft)	\$805
Subtotal Road Reclamation Costs per Wellfield	\$16,100
<b>Total Wellfield Road Reclamation Costs</b>	<b>\$16,100</b>
<b>C. Header House Surface Reclamation</b>	
Assume:	
Number of Header Houses	
Area of Disturbance per Header House (ft <sup>2</sup> )	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
<b>1. Ripping Overburden with Dozer</b>	
Ripping Unit Cost per WDEQ Guideline No.12, App.I (\$/acre)	\$867.49
Subtotal Ripping Costs	\$278
<b>2. Topsoil Application with Scraper</b>	
Assume:	
Volume of Topsoil Removed (cy)	
Application Unit Cost per WDEQ Guideline No.12, App.C (\$/cy)	\$1.27
<b>Subtotal Topsoil Application Costs</b>	<b>\$329</b>
<b>3. Disking and Seeding</b>	
Assume:	
Disking/Seeding Unit Cost (\$/acre)	
Subtotal Disking/Seeding Costs	\$194
Subtotal Header House Reclamation Costs per Wellfield	\$472
<b>Header House Reclamation Costs per Wellfield</b>	<b>\$472</b>
<b>TOTAL WELLFIELD SURFACE RECLAMATION COSTS</b>	<b>\$30,829</b>
<b>D. Satellite Plant Area Reclamation</b>	
<b>1. Topsoil Application</b>	
Assume:	
Average haul distance (ft)	
Surface grade: Level ground	2000
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)	\$1.65
<b>Total Topsoil Application Cost</b>	<b>\$27,968</b>
<b>2. Disking/Seeding</b>	
Assume:	
Surface Area (acres)	
Disking/Seeding Unit Cost (\$/acre)	\$606
Total Disking/Seeding Costs	\$3,030
<b>Satellite Plant/Office Area Reclamation</b>	<b>\$30,998</b>

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<b>PART V: MISCELLANEOUS SURFACE RECLAMATION</b>	
<b>E. Access Road Reclamation</b>	<b>Main Access Road</b>
Assume	
Surface grade: Level ground	
Length of road (miles)	6
Average road width (ft)	25
<b>1. Gravel Road Base Removal</b>	
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
<b>Subtotal Gravel Road Base Removal Costs</b>	<b>\$18,685</b>
<b>2. Ripping Overburden with Dozer</b>	
Overburden Surface Area (acres)	18
<b>Ripping Unit Cost per WDEQ Guideline No.12, App.I (\$/acre)</b>	<b>\$867.49</b>
<b>Subtotal Ripping Overburden Costs</b>	<b>\$15,615</b>
<b>3. Topsoil Application</b>	
Assume	
Average haul distance (ft)	1000
Topsoil Surface Area (ft <sup>2</sup> )	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
<b>Subtotal Topsoil Application Costs</b>	<b>\$18,685</b>
<b>4. Disking/Seeding</b>	
Surface Area (acres)	18
Disking/Seeding Unit Cost (\$/acre)	\$606
<b>Subtotal Disking/Seeding Costs</b>	<b>\$10,908</b>
<b>Total Access Road Reclamation Costs</b>	<b>\$63,893</b>
<b>F. Surge Pond Reclamation</b>	<b>Ponds 1 and 2</b>
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 <sup>3</sup> )	81675
Backhoe Operation Unit Cost	
<b>1. Liner &amp; Sludge Removal and Loading</b>	
a. Equipment	
Number of Backhoes	1
ft <sup>3</sup> /hr	300
Number of Hours	272
\$/hr/Backhoe	\$149.14
Equipment Costs	\$40,566
b. Labor	
Number of Persons	2
Number of Hours	272
\$/hr/Person(operator)	\$28
\$/hr/Person (laborer)	\$17
Labor Costs	\$12,289
<b>Subtotal Liner &amp; Sludge Removal and Loading Costs</b>	<b>\$52,855</b>

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<b>PART V: MISCELLANEOUS SURFACE RECLAMATION</b>	
<b>2. Transportation and Disposal (NRC-Licensed Facility)</b>	
Transportation and Disposal Unit Cost (\$/ft <sup>3</sup> )	\$7.51
Subtotal Transportation and Disposal Costs	<b>\$613,773</b>
<b>3. Leak Detection Piping Removal and Loading</b>	
Assume:	
Piping Removal Unit Cost same as for Well fields (\$/ft)	\$2.30
Length of Piping (ft)	400
<b>a. Piping Removal and Loading Costs</b>	
Total Length of Piping (ft)	400
Subtotal Piping Removal and Loading Costs	\$920
<b>b. Shredding Costs</b>	
Average Diameter of Piping (inches)	2
PVC Pipe Shredding Unit Cost (\$/diameter-in-ft)	\$0.028
Subtotal Pipe Shredding Costs	\$56
<b>c. Transport and Disposal Costs (NRC-Licensed Facility)</b>	
Chipped Volume Reduction (ft <sup>3</sup> /ft)	0.01
Chipped Volume (ft <sup>3</sup> )	4
Volume for Disposal Assuming 10% Void Space (ft <sup>3</sup> )	4
Transportation and Disposal Unit Cost (\$/ft <sup>3</sup> )	\$7.34
Subtotal Piping Transport and Disposal Costs	<b>\$29</b>
Subtotal Leak Detection Piping Removal and Disposal Costs	<b>\$1,005</b>
<b>4. Replacement of Excavated Soil</b>	
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
<b>5. Disking/Seeding</b>	
Surface Area (acres)	2.5
Disking/Seeding Unit Cost (\$/acre)	\$606
Subtotal Disking/Seeding Costs	\$1,515
<b>Total Evaporation Pond Reclamation Costs</b>	<b>\$720,532</b>
<b>TOTAL MISCELLANEOUS SURFACE RECLAMATION COSTS</b>	<b>\$846,252</b>