Cameco

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US Nuclear Regulatory Commission
Attn: Mr. Douglas Mandeville
11545 Rockville Pike
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Mr. Drew Persinko, Deputy Director
Attn: Control Documents
Office of Federal and State Materials and Environmental Management Programs
Mailstop T8 F5
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

License SUA-1548, Docket No. 40-8964
2015-16 Surety Estimate Update for North Butte ISR Project, Financial Assurance Estimates (TAC J00677)

Dear Sirs:

Pursuant to License Condition 9.5, Power Resources, Inc. d/b/a Cameco Resources (Cameco) is herein providing (2) copies of the proposed 2015-16 reclamation surety estimate update for the North Butte ISR Project. The estimate resulted in a proposed surety amount of $27,413,400.

If you have any questions or concerns regarding this estimate please feel free to contact Larry McGonagle at 307-333-7655.

Sincerely,
Cameco Resources

Larry McGonagle
Division SHEQ Manger

Enclosures:
Appendix A: 2015-16 NB Reclamation Surety Bond Estimate

LM:jmw

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North Butte Project
2015-16 Surety Estimate

Total Restoration and Reclamation Cost Estimate			
I.	Groundwater Restoration (GWR-WF and GWR-SITE Sheets)		$17,119,964
II.	Well & Drill Hole Abandonment (WA Sheet)		$3,975,975
III.	Wellfield Buildings & Equipment Removal & Disposal (WF BLDGS Sheet)		$1,011,435
IV.	Wellfield & Satellite Surface Reclamation (WF REC Sheet)		$226,322
V.	Equipment Removal and Disposal (EQUIP Sheet)		$221,812
VI.	Building Demolition and Disposal (BLDGS Sheet)		$753,723
VII.	Miscellaneous Reclamation (MISC REC Sheet)		$528,544
	Subtotal Restoration and Reclamation Cost Estimate		$23,837,775
	Contractor Profit & Overhead (10%)[1]	See Master Costs	
	Contingency (15%)[2]	15%	$3,575,666
	TOTAL[3]		$27,413,400

[1], Per WDEQ/LQD Guideline No. 12, Section 12(b)

[2], Per WDEQ/LQD Guideline No. 12, Section 12(a) and (c-h), Section 13 and NRC License Condition 9.5 (SUA-1548)

[3], Costs reflect both WDEQ & NRC requirements. No salvage value assumed.

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Ground Water Restoration -Wellfield		Mine Unit 1	Mine Unit 2	Mine Unit 3
I.	**Ground Water Sweep Costs**			
	Estimated PV's	1	1	1
	Total kgals for GWS	83,140	104,750	148,441
	Bleed to Deep Disposal Well (%)	100%	100%	100%
	Groundwater Sweep Unit Cost ($/kgal)	$2.22	$2.22	$2.22
	Subtotal Ground Water Sweep Costs per Wellfield	$184,674	$232,675	$329,723
	Total Ground Water Sweep Costs	**$747,072**		
II.	**Reverse Osmosis Costs**			
	Estimated PV's	2	2	4.5
	Total Kgals for RO	166,280	209,500	667,985
	Wellfield Pumping Cost	$0.22	$0.22	$0.22
	Reverse Osmosis Unit Cost ($/kgal)	$0.61	$0.61	$0.61
	Bleed to Deep Disposal Well (%)	20%	20%	20%
	Brine Volume for Disposal	33,256	41,900	133,597
	DDW Disposal Cost($/kgal)	$1.21	$1.21	$1.21
	Permeate Volume for Re-Use	133,024	167,600	534,388
	Satellite Pumping Cost ($/kgal)	$0.79	$0.79	$0.79
	Subtotal Reverse Osmosis Costs per Wellfield	$283,889	$357,678	$1,140,447
	Total Reverse Osmosis Costs	**$1,782,014**		
III.	**Reverse Osmosis with Chemical Reductant Costs**			
	Estimated PV's	6	6	3.5
	Total kgals for RO	498,840	628,500	519,544
	Wellfield Pumping Cost	$0.22	$0.22	$0.22
	Reverse Osmosis with Chemical Reductant Unit Cost ($/kgal)	$0.61	$0.61	$0.61
	Bleed to Deep Disposal Well (%)	20%	20%	20%
	Brine Volume for Disposal (kgal)	99,768	125,700	103,909
	DDW Disposal Cost($/kgal)	$1.21	$1.21	$1.21
	Permeate Volume for Re-Use	399,072	502,800	415,635
	Satellite Pumping Cost ($/kgal)	$0.79	$0.79	$0.79
	Subtotal RO with Chemical Reductant Costs per Wellfield	$851,667	$1,073,035	$887,014
	Total Reverse Osmosis with Chemical Reductant Costs	**$2,811,716**		
IV.	**Mechanical Integrity Testing (MIT) Costs**			
	Pre-Restoration, Restoration and Stability Period (yrs)	4.30	6.30	6.30
	Number of Injection Wells	303	299	320
	Number of MITs per Well	0.9	1.3	1.3
	MIT Costs per Injection Well	$140.09	$140.09	$140.09
	Number of Production Well	193	185	180
	MIT Costs per Production Well	$216	$216	$216
	Subtotal MIT Costs per Wellfield	$72,338	$103,101	$105,448
	Total Wellfield MIT Costs	**$280,887**		
V.	**Monitoring and Sampling Costs**			
	A. Pre-Restoration Monitoring			
	1. Excursion Monitoring (M, MO and MU wells, twice per month)			
	# of Wells	42	31	50
	Total # samples	0	1488	2400

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Ground Water Restoration -Wellfield	**Mine Unit 1**	**Mine Unit 2**	**Mine Unit 3**
UCL Parameters ($/sample)	$30.00	$30.00	$30.00
Subtotal Pre-Restoration Monitoring Costs per Mine Unit	$0.00	$44,640.00	$72,000.00
Total Pre-Restoration Monitoring Costs	$116,640.00		
B. Restoration Monitoring			
1. Sampling Prior to Start-up (MP Wells)			
# of Wells	16	18	20
Modified Guideline 8 ($/sample)	$335.00	$335.00	$335.00
2. Restoration Progress Monitoring (MP Wells, every 2 months)			
# of Wells	16	18	20
Total # samples	316.8	356.4	396
Restoration Progress Parameters ($/sample)	$50.00	$50.00	$50.00
3. Excursion Monitoring (M, MO and MU wells, every 2 months)			
# of Wells	38	31	50
Total # samples	752.4	613.8	990
UCL Parameters ($/sample)	$30.00	$30.00	$30.00
Subtotal Restoration Monitoring Costs per Mine Unit	$43,772.00	$42,264.00	$56,200.00
Total Restoration Monitoring Costs	$142,236		
C. Stability Monitoring			
1. Beginning of stability (MP wells)			
# of Wells	16	18	20
Modified Guideline 8 ($/sample)	$335.00	$335.00	$335.00
2. Quarterly sampling (MP wells)			
# of Wells	16	18	20
Total # samples	64	72	80
Modified Guideline 8 ($/sample)	$335.00	$335.00	$335.00
3. Monitor Well Sampling (M wells, every 2 months)			
# of Wells	28	24	40
Total # samples	168	144	240
UCL Parameters ($/sample)	$30.00	$30.00	$30.00
Subtotal Stability Monitoring Costs per Mine Unit	$31,840.00	$34,470.00	$40,700.00
Total Stability Monitoring Costs	$107,010.00		
D. Other Laboratory Costs			
Radon, Bioassay, etc.	$35,191	$51,559	$51,559
Subtotal Monitoring and Sampling Costs per Mine Unit	$110,803	$172,933	$220,459
Total Monitoring and Sampling Costs	**$504,195**		
VII. Header House Heating Costs			
Number of Header Houses per Unit(s)	10	9	10
Pre-Restoration and Restoration Period (yrs)	3.30	5.30	5
Electrical Heating Costs ($/yr)	$3,839	$3,839	$3,839
Subtotal Header House Heating Cost per Wellfield	$126,700	$183,139	$203,488
Total Header House Heating Costs	**$513,327**		
TOTAL RESTORATION COST PER WELLFIELD	$1,630,071	$2,122,561	$2,886,579
TOTAL WELLFIELD RESTORATION COST	**$6,639,211**		

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Ground Water Restoration - Site Wide					
I.	**Building Utility Costs**	**Satellite No. 1**	**DDW No. 1**	**DDW No. 2**	
	Assumptions:				
	Electricity Unit Cost ($/yr)	$31,247	$5,034	$5,034	
	Propane ($/yr)	$36,154	$0	$0	
	Natural Gas ($/yr)	$0	$0	$0	
	Number of Years	5	5		
	Subtotal Utility Cost per Building	$357,226	$26,682	$0	
	Total Building Utility Costs	**$383,907**			
II.	**Infrastructure, Equipment Maintenance,**				
	Replacement and Repair Costs (Est. based on SR actual)				
	Annual Maintenance Cost ($/yr)	$15,000			
	Restoration Period (yrs)	5			
	Total Cost	**$79,500**			
III.	**Deep Disposal Well MIT Costs**				
	Five-year MIT Costs for Disposal Wells	$33,843			
	Number of DDWs	2			
	Number of MITs per DDW	2			
	Total DDW MIT Cost	**$135,372**			
IV.	**Capital Costs**				
	Reverse Osmosis Unit (2-500 gpm @ $600K each)	$1,200,000			
	Deep Disposal Well (1 @ $3.72M each)	$3,720,000			
	Total Capital Costs	**$4,920,000**			
V.	**Vehicle Operation Costs**				
	Number of Pickup Trucks (Gas)	3			
	Truck Cost ($/hr)	$22.14			
	Average Operating Time (hrs/yr)	1000			
	Restoration and Stability Period (yrs)	6			
	Total Vehicle Operation Cost	**$418,503**			
VI.	**Labor Costs**				
	Assumptions:				
	Number of Restoration Managers	1			
	$/hr	$56.84			
	Number of Environmental Techs/HPTs	1			
	$/hr	$35.53			
	Number of Operators/Laborers	6			
	$/hr	$36.95			
	Number of Maintenance Technicians	1			
	$/hr	$32.68			
	Hrs/yr	2080			
	Restoration and Stability Period (yrs)	6			
	Total Labor Cost	**$4,543,471**			
TOTAL SITE-WIDE RESTORATION COSTS		**$10,480,753**			

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Well and Drill Hole Abandonment	Mine Unit 1	Mine Unit 2	Mine Unit 3	Water Wells	Misc Wells
I. Well Abandonment (Wellfields)					
A. Sealing Costs					
Total # of Wells per Wellfield	539	516	552	3	57
Well Average Depth (ft)	680	750	750	750	650
Well Abandonment (Sealing) Costs ($/ft)	$2.75	$2.75	$2.75	$2.75	$2.75
Subtotal Sealing Costs per Wellfield	$1,007,930	$1,064,250	$1,138,500	$6,188	$101,888
B Casing Removal and Disposal Costs					
Total # of Wells per Wellfield	539	516	552	3	57
Total # of Wells for Casing Removal and Disposal	539	516	552	3	57
Remove and Dispose Casing ($/well)	$33	$33	$33	$33	$33
Subtotal Casing Removal and Disposal Costs per Wellfield	$17,787	$17,028	$18,216	$99	$1,881
Subtotal Well Abandonment Costs per Wellfield	$1,025,717	$1,081,278	$1,156,716	$6,287	$103,769
Total Well Abandonment Costs	**$3,373,767**				
II. Removal of Contaminated Soil Around Wells					
# of Production and Injection Wells	496	484	500		
Removal of Contaminated Soil Around Wells ($/well)	$83.58	$83.58	$83.58		
Subtotal Contaminated Soil Removal/Disposal Costs per Wellfield	$41,455	$40,453	$41,790		
Total Contaminated Soil Removal/Disposal Costs	**$123,698**				
III. Drill Hole Abandonment					
A. Drill Hole Plug and Abandonment					
# of Projected Drill Holes					
2015-16	25				
Total # of Drill Holes	25				
Average Depth of Fallback (feet)	200				
Total Footage Requiring Abandonment (ft)	5,000				
Hole Abandonment ($/ft)	$3.30				
Subtotal Plug and Abandonment Costs	$16,500				
B. Incidental Costs					
Mobilization	$1,000				
Total # of Drill Holes	25				
Site Location ($/hole)	$11				
Capping ($/hole)	$11				
Small Site Grading and Seeding ($/site)	$55				
Subtotal Incidental Costs	$2,925				
C. Subsurface Retained Abandonment Cost					
Reclamation Cost per hole (Equipment, materials, labor)	$77				
40% of Reclamation Costs (GL 12 Appendix L, footnote 6)	$31				
Plugged and Abandoned Boreholes - Surface Cost 40% (2012)	537				
Plugged and Abandoned Boreholes - Surface Cost 40% (2013)	63				
Plugged and Abandoned Boreholes - Surface Cost 40% (2014)	214				
Subtotal Subsurface Retained Abandonment Cost	$25,071.20				
Total Delineation Hole Abandonment	**$44,496**				
IV. Waste Disposal Well Abandonment	**BY-1 DDW**	**DDW No. 2**			
A. Plug and Abandonment per WDEQ-WQD UIC Permit #11-468	$217,007	$217,007			
Total Waste Disposal Well Abandonment Costs	**$434,014**				
TOTAL WELL AND DRILL HOLE ABANDONMENT COSTS	**$3,975,975**				

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Highland Uranium Project
2015-16 Surety Estimate

Wellfield Buildings and Equipment Removal and Disposal	Mine Unit 1	Mine Unit 2	Mine Unit 3
I. Wellfield Piping			
Number of Header Houses per Wellfield	10	9	10
Approximate Length of Piping per Header House (ft)	13,800	13,800	13,800
*average 46 wells per with 300 ft pipeline/well)			
Approximate Total Length of Piping (ft)	138,000	124,200	138,000
A. Removal and Loading			
Wellfield Piping Removal Unit Cost ($ ft of pipe)	$1.57	$1.57	$1.57
Subtotal Wellfield Piping Removal and Loading Costs	$216,610	$194,949	$216,610
B. Transport and Disposal Costs (NRC-Licensed Facility)			
Average Diameter of Piping (inches)	2	2	2
Chipped Volume Reduction (ft3/ft)	0.011	0.011	0.011
Chipped Volume per Wellfield (ft^3)	1480	1332	1480
Volume for Disposal Assuming 10% Void Space (ft^3)	1628	1465	1628
Transportation and Disposal Unit Cost ($/ft3)	$5.77	$5.77	$5.77
Subtotal Wellfield Piping Transport and Disposal Costs	$9,393	$8,453	$9,393
Subtotal Wellfield Piping Costs per Wellfield	$226,003	$203,402	$226,003
Total Wellfield Piping Costs	**$655,408**		
II. Well Pumps and DownholeTubing			
Assumptions: Pump and tubing removal costs included under ground water restoration labor			
60% of production/injection wells contain pumps and/or tubing			
A. Pump and Tubing Transportation and Disposal			
Number of Production Wells	193	185	180
Number of Injection Wells	303	299	320
Number of Monitor Wells	42	31	50
1. Pump Volume			
Number of Production Wells with Pumps	193	185	180
Pump Volume (ft^3)	0.43	0.43	0.43
Pump Volume per Wellfield (ft^3)	83.6	80.1	78.0
2. Tubing Volume			
Average Tubing Length per Well (ft)	655	725	725
*Average tubing length/wellfield based on average well depth minus 25 ft			
Number of Production Wells with Tubing	116	111	108
Number of Injection Wells with Tubing	182	179	192
Tubing Length per Wellfield (ft)	222,700	232,725	253,750
Diameter of Production Well Fiberglass Tubing (inches)	2	2	2
Diameter of Injection Well HDPE Tubing (inches)	1.25	1.25	1.25
Chipped Volume Reduction (ft^3/ft)	0.011	0.011	0.011
Chipped Volume per Wellfield (ft^3)	2388	2495	2721
Volume of Pump and Tubing (ft^3)	2472	2575	2799
Volume for Disposal Assuming Void Space (ft^3)	2719	2833	3079
Transportation and Disposal Unit Cost ($/ft3)	$5.77	$5.77	$5.77
Subtotal Pump and Tubing Transport and Disposal Costs Per Wellfield	$15,688	$16,346	$17,765
Total Pump and Tubing Transport and Disposal Costs	**$49,799**		
III. Wellhead Cover Removal			
Number of Production and Injection Wells	496	484	500
Well Head Removal, Decontamination, and Disposal Cost	$11.93	$11.93	$11.93
Subtotal Wellhead Removal Costs	$5,918	$5,775	$5,966
Total Wellhead Cover Removal Costs	**$17,659**		
IV. Header Houses			
Total Quantity	10	9	10
Average Header House Volume (ft^3)	1600	1600	1600
A. Removal			
Total Volume (ft^3)	16000	14400	16000
Demolition Cost	$0.316	$0.316	$0.316
Subtotal Building Demolition Costs	$5,051	$4,546	$5,051
B. Survey and Decontamination			
Cost per Header House	$631	$631	$631
Subtotal Survey and Decontamination Costs	$6,311	$5,680	$6,311
C. Disposal			
Total Volume for Disposal - Incl. 33% Factor (cy)	196	176	196
Volume for Disposal Assuming Void Space (cy)	215	194	215
Disposal Cost, Landfill (cy)	$42.17	$42.17	$42.17
Subtotal County Landfill Disposal Costs	$9,066	$8,180	$9,066
Headerhouse Soil Removal Volume (assumes 10'Wx20'Lx2.5'D)	500	501	502
11e.(2) Disposal Cost (ft^3)	$5.80	$5.80	$5.80
Subtotal 11(e)2 Disposal Cost	$29,024	$26,174	$29,140

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Wellfield Buildings and Equipment Removal and Disposal					**Mine Unit 1**	**Mine Unit 2**	**Mine Unit 3**	
Subtotal Header House Removal and Disposal Costs per Wellfield					$49,452	$44,580	$49,568	
Total Header House Removal and Disposal Costs					**$143,600**			
TOTAL REMOVAL AND DISPOSAL COSTS PER WELLFIELD					**$866,466**			
V.	**Buried Trunkline**				**Main Trunkline Trench**			
	Assumptions:							
	Length of Trunkline Trench (ft)				7500			
	Length of Waste Water Pipleine Trench (ft)				4600			
	A. Removal and Loading							
	Main Pipeline Removal Unit Cost ($/ft of trench)				$3.14			
	Subtotal Trunkline Removal and Loading Costs				$37,985			
	B. Transport and Disposal Costs (NRC-Licensed Facility)							
	1. 4" HDPE Trunkline (Wasteline)							
	Piping Length (ft)				4600			
	Chipped Volume per Lft (ft3/ft)				0.038			
	Chipped Volume (ft^3)				177			
	2. 10" HDPE Trunkline (Restoration) (x2)							
	Piping Length (ft)				15000			
	Chipped Volume per Lft (ft3 ft)				0.220			
	Chipped Volume (ft^3)				3293.339433			
	3. 18" HDPE Trunkline (Prod/Inject) (x2)							
	Piping Length (ft)				15000			
	Chipped Volume per Lft (ft3/ft)				0.486			
	Chipped Volume (ft^3)				7296			
	Total Trunkline Chipped Volume (ft^3)				10766			
	Volume for Disposal Assuming 10% Void Space (ft^3)				11843			
	Transportation and Disposal Unit Cost ($/ft3)				$5.77			
	Subtotal Trunkline Transport and Disposal Costs (NRC License Facility)				$68,331			
	C. Transport and Disposal Cost (Landfill)							
	1. 2" Steel Line (o2)							
	Piping Length (ft)				7500			
	2. 3" HDPE Trunkline (cO2)							
	Piping Length (ft)				7500			
	3. 1" Fiber Optics Line							
	Length (ft)				7500			
	Volume for Disposal Assuming 10% Void Space (cy)				917			
	Disposal Cost, Landfill (cy)				$42.17			
	Subtotal Transport and Disposal Costs				$38,652.78			
Subtotal Trunkline Decommissioning Costs per Wellfield					$144,969			
Total Trunkline Decommissioning Costs					**$144,969**			
TOTAL WELLFIELD BUILDINGS AND EQUIPMENT REMOVAL					**$1,011,435**			

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Wellfield and Satellite Surface Reclamation			Mine Unit 1	Mine Unit 2	Mine Unit 3
I.	**Wellfield Pattern Area Reclamation**				
	Pattern Area (acres)		66.3	63.5	90.0
	*Assumes wellfield pattern area X 2				
	Discing/Seeding Unit Cost ($/acre)		$548	$548	$548
	Subtotal Pattern Area Reclamation Costs per Wellfield		$36,321	$34,777	$49,290
Total Wellfield Pattern Area Reclamation Costs			**$120,388**		
II.	**Wellfield Road Reclamation**				
	Road Construction				
	Length of Wellfield Roads (1000 ft)		9	20	20
	Wellfield Road Reclamation Unit Cost ($/1000 ft)		$1,437	$1,437	$1,437
	Subtotal Wellfield Road Reclamation Costs		$12,929	$28,732	$28,732
Total Wellfield Road Reclamation Costs			**$70,393**		
III.	**Laydown area reclamation**		**Laydown Area**	**Staging Area**	
	Area of Disturbance (acres)		0.5	3.86	
	Average Depth of Stripped Topsoil (ft)		0.5	0.67	
	Surface Grade: Level Ground				
	Average Length of Topsoil Haul (ft)		2000	500	
	A. Ripping Overburden with Dozer				
	Ripping Cost (per acre)		$1,381	$1,381	
	Subtotal Ripping Costs		$691	$5,332	
	B. Topsoil Application with Scraper				
	Volume of Topsoil Removed (cy)		403	4172	
	Moving Materials (0% Grade)		$1.21	$1.21	
	Subtotal Topsoil Application Costs		$487	$5,039	
	C. Discing and Seeding				
	Discing/Seeding Unit Cost ($/acre)		$548	$548	
	Subtotal Discing/Seeding Costs		$274	$2,114	
	Subtotal Surface Reclamation Costs per WF laydown area		$1,452	$12,485	
	Total Wellfield Laydown Area Reclamation Costs		**$13,937**		
IV.	**Fence Removal**				
	Length of Fencing (ft)		9,800	5,400	6,300
	Fence Removal Costs		$0.42	$0.42	$0.42
	Subtotal Fence Removal Costs per Wellfield		$4,096	$2,257	$2,633
Total Fence Removal Costs			**$8,987**		
TOTAL WELLFIELD SURFACE RECLAMATION COSTS			**$213,705**		
V.	**Satellite Area Reclamation**		**Satellite No.1**		
	Assumptions:				
	Area of Disturbance (acres)		3.85		
	Average Depth of Stripped Topsoil (ft)		0.5		
	Surface Grade: Level Ground				
	Average Length of Topsoil Haul (ft)		2000		
	A. Ripping Overburden with Dozer				
	Ripping Cost (per acre)		$1,381.27		
	Subtotal Ripping Costs		$5,318.00		
	B. Topsoil Application with Scraper				
	Volume of Topsoil Removed (cy)		3106		
	Moving Materials (0% Grade)		$1.44		
	Subtotal Topsoil Application Costs		$4,479		
	C. Discing and Seeding				
	Discing/Seeding Unit Cost ($ acre)		$548		
	Subtotal Discing/Seeding Costs		$2,109		
	Subtotal Surface Reclamation Costs per Satellite		$11,906		
VI.	**Fence Removal**				
	Length of Fencing (ft)		1,700		
	Fence Removal Costs		$0.42		
	Subtotal Fence Removal Costs per Wellfield		$711		
Total Fence Removal Costs			$711		
	Total Satellite Building Area Reclamation Costs		**$12,617**		
TOTAL WELLFIELD & SATELLITE SURFACE RECLAMATION COSTS			**$226,322**		

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Equipment Removal and Loading					Satellite No. 1
I.	**Removal and Loading Costs**				
	A.	Tankage			
			Number of Tanks		25
			Volume of Tank Construction Material (ft^3)		1190
			Tank Removal Cost		$124.16
		Subtotal Tankage Removal and Loading Costs			$147,747
	B.	PVC/Steel Pipe			
			PVC Pipe Footage		6000
			Average PVC Pipe Diameter (inches)		4
			Shredded PVC Pipe Volume Reduction (ft3/ft)		0.038
			Volume of Shredded PVC Pipe (ft^3)		231
			Pipe Removal Cost		$8.06
		Subtotal PVC/Steel Pipe Labor & Equipment Costs			$48,351
	C.	Pumps			
			Number of Pumps		16
			Average Volume (ft^3/pump)		4.93
			Volume of Pumps (ft^3)		78.88
			Pump Removal Cost		$96.82
		Subtotal Pump Removal and Loading Costs			$7,637
	D.	RO Units			
			Number of RO Units (500 gpm)		
				Current	0
				Planned	2
			RO Average Volume (ft3/Unit)		250
		RO Removal Cost			$4.72
		Subtotal RO Unit Removal and Loading Costs			$2,360
	Subtotal Equipment Removal and Loading Costs per Facility				$206,095
Total Equipment Removal and Loading Costs					
II.	**Transportation and Disposal Costs (NRC-Licensed Facility)**				
	A.	Tankage			
			Volume of Tank Construction Material (ft^3)		1190
			Volume for Disposal Assuming Void Space (ft^3)		1309
			Transportation and Disposal Unit Cost ($/ft3)		$7.32
		Subtotal Tankage Transportation and Disposal Costs			$9,586
	B.	PVC / Steel Pipe			
			Volume of Shredded PVC Pipe (ft^3)		231
			Volume for Disposal Assuming Void Space (ft^3)		254
			Volume of Steel Pipe (ft^3)		0
			Volume for Disposal Assuming Void Space (ft^3)		0
			Transportation and Disposal Unit Cost ($/ft3)		$5.77
		Subtotal PVC Pipe Transportation and Disposal Costs			$1,466
	C.	Pumps			
			Volume of Pumps (ft^3)		78.88
			Volume for Disposal Assuming Void Space (ft^3)		87
			Transportation and Disposal Unit Cost ($/ft3)		$7.32

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Equipment Removal and Loading					**Satellite No. 1**
		Subtotal Pump Transportation and Disposal Costs			$637
	D.	Dryer			
		Dryer Volume (ft^3)			0
		Volume for Disposal Assuming Dryer Remains Intact (ft^3)			0
		Transportation and Disposal Unit Cost ($/ft3)			$7.32
		Subotal Dryer Transportation and Disposal Costs			$0
	E.	RO/Degasser Units			
		Volume of RO/Degasser Units (ft^3)			500
		Volume for Disposal Assuming Volume Reduction (ft^3)			550
		Transportation and Disposal Unit Costs			$7.32
		Subtotal RO Unit Transportation and Disposal Costs			$4,028
	Subtotal Equipment Transportation and Disposal Costs per Facility				$15,717
	Total Equipment Transportation and Disposal Costs				
III.	**Health and Safety Costs**				
		Radiation Safety Equipment		Accounted for on GW REST	
	Total Health and Safety Costs				
SUBTOTAL EQUIPMENT REMOVAL AND DISPOSAL COSTS PER FACILITY					$221,812
TOTAL EQUIPMENT REMOVAL AND DISPOSAL COSTS					**$221,812**

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Building & Other Miscellaneous Demolition and Disposal	Satellite No. 1	DDW No. 1	DDW No. 2	DDW No. 3	Office No. 1	Office No. 2	Bunkhouse No. 1	Water Tank & Pad (2)	O2 Tank Pad
I. Decontamination Costs									
A. Wall Decontamination									
Area to be Decontaminated (ft^2)	0	880	880	0	0	0	0	0	0
HCl Acid Wash, including labor ($ ft2)	$0.95	$0.95	$0.95	$0.95	$0.95	$0.95	$0.95	$0.95	$0.95
Subtotal Wall Decontamination Costs	$0	$833	$833	$0	$0	$0	$0	$0	$0
B. Concrete Floor Decontamination									
Area to be Decontaminated (ft^2)	17,164	480	480	0	0	0	0	0	0
HCl Acid Wash, including labor ($ ft2)	$0.60	$0.60	$0.60	$0.60	$0.60	$0.60	$0.60	$0.60	$0.60
Subtotal Concrete Floor Decontamination Costs	$10,335	$289	$289	$0	$0	$0	$0	$0	$0
C. Deep Well Injection Costs									
Total kgals for Injection (1 gal used per ft2)	17.16	1.36	1.36	0	0	0	0	0	0
Deep Well Injection Unit Cost ($/kgals)	$1.21	$1.21	$1.21	$1.21	$1.21	$1.21	$1.21	$1.21	$1.21
Subtotal Deep Well Injection Costs	$21	$2	$2	$0	$0	$0	$0	$0	$0
Subtotal Decontamination Costs per Building	$10,356	$1,124	$1,124	$0	$0	$0	$0	$0	$0
Total Decontamination Costs	$12,604								
II. Demolition Costs									
A. Building (Tanks)									
Volume of Building (ft^3)	538,158	4,800	4,800	0	16,128	16,128	2,496	100,000	0
Demolition Cost	$0.316	$0.316	$0.316	$0.316	$0.316	$0.316	$0.316	$0.316	$0.316
Subtotal Building Demolition Costs	$169,896	$1,515	$1,515	$0	$5,092	$5,092	$788	$31,570	$0
B. Concrete Floor									
Area of Concrete Floor (ft^2)	17,164	480	480	0	0	0	0	556	663
Demolition Cost	$6.11	$6.11	$6.11	$6.11	$6.11	$6.11	$6.11	$6.11	$6.11
Subtotal Concrete Floor Demolition Costs	$104,788	$2,930	$2,930	$0	$0	$0	$0	$3,394	$4,048
C. Concrete Footing									
Length of Concrete Footing (ft)	524	88	88	0	0	0	0	0	0
Demolition Cost	$22.51	$22.51	$22.51	$22.51	$22.51	$22.51	$22.51	$22.51	$22.51
Subtotal Concrete Footing Demolition Costs	$11,794	$1,972	$1,972	$0	$0	$0	$0	$0	$0
Subtotal Demolition Costs per Building	$286,478	$6,417	$6,417	$0	$5,092	$5,092	$788	$34,964	$4,048
Total Demolition Costs	$364,504								
III. Disposal Costs									
A. Building									
Volume of Building (cy)	19,932	178	178	0	597	597	92	3,704	0
Off-Site County Landfill									
Percentage (%)	100	100	100	100	100	100	100	100	100
Total Volume for Disposal - Incl. 33% Factor (cy)	6577	59	59	0	197	197	31	1222	0
Disposal Cost, Landfill (cy)	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17
Subtotal County Facility Off-Site Disposal Costs	$277,351	$2,474	$2,474	$0	$8,312	$8,312	$1,286	$51,537	$0
B. Concrete Floor									
Area of Concrete Floor (ft^2)	17,164	480	480	0	0	0	0	556	663
Average Thickness of Concrete Floor (ft)	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Volume of Concrete Floor (ft^3)	12873	360	360	0	0	0	0	417	497
Volume of Concrete Floor (cy)	477	13	13	0	0	0	0	15	18
1. On-Site Concrete Disposal									
Percentage (%)	75	75	100	100	100	100	100	100	100
Volume for Disposal (cy)	358	10	13	0	0	0	0	15	18
Concrete Disposal On Site (cy)	$9.50	$9.50	$9.50	$9.50	$9.50	$9.50	$9.50	$9.50	$9.50
Subtotal County Facility Off-Site Disposal Costs	$3,399	$95	$127	$0	$0	$0	$0	$147	$175
2. NRC-Licensed Facility									
Percentage (%)	25	25	0	0	0	0	0	0	0
Volume for Disposal (ft^3)	3218	90	0	0	0	0	0	0	0
Transportation and Disposal Unit Cost ($/$ft^3$)	$5.80	$5.80	$5.80	$5.80	$5.80	$5.80	$5.80	$5.80	$5.80
Subtotal NRC-Licensed Facility Disposal Costs	$18,682	$522	$0	$0	$0	$0	$0	$0	$0
Subtotal Concrete Floor Disposal Costs	$22,081	$617	$127	$0	$0	$0	$0	$147	$175
C. Concrete Footing									
Length of Concrete Footing (ft)	524	88	88	0	0	0	0	0	0
Average Depth of Concrete Footing (ft)	4	4	4	4	4	4	4	4	4
Average Width of Concrete Footing (ft)	1	1	1	1	1	1	1	1	1
Volume of Concrete Footing (ft^3)	2096	351	351	0	0	0	0	0	0
Volume of Concrete Footing (cy)	78	13	13	0	0	0	0	0	0
Concrete Disposal On Site (cy)	$9.50	$9.50	$9.50	$9.50	$9.50	$9.50	$9.50	$9.50	$9.50
Subtotal Concrete Footing Disposal Costs	$738	$123	$123	$0	$0	$0	$0	$0	$0
Subtotal Disposal Costs per Building	$300,170	$3,214	$2,724	$0	$8,312	$8,312	$1,286	$51,684	$175
Total Disposal Costs	$376,615								
IV. Health and Safety Costs Accounted for on GW REST									
TOTAL BUILDING & OTHER MISCELLANEOUS DEMOLITION AND DISPOSAL COSTS	$753,723								

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Building & Other Miscellaneous Demolition and Disposal	CO2 Pad Satellite	Silo Pad	Acid Tank Pad
I. Decontamination Costs			
A. Wall Decontamination			
Area to be Decontaminated (ft^2)	0	0	0
HCl Acid Wash, including labor ($ ft2)	$0.95	$0.95	$0.95
Subtotal Wall Decontamination Costs	$0	$0	$0
B. Concrete Floor Decontamination			
Area to be Decontaminated (ft^2)	0	0	0
HCl Acid Wash, including labor ($ ft2)	$0.60	$0.60	$0.60
Subtotal Concrete Floor Decontamination Costs	$0	$0	$0
C. Deep Well Injection Costs			
Total kgals for Injection (1 gal used per ft2)	0	0	0
Deep Well Injection Unit Cost ($ kgals)	$1.21	$1.21	$1.21
Subtotal Deep Well Injection Costs	$0	$0	$0
Subtotal Decontamination Costs per Building	$0	$0	$0
Total Decontamination Costs			
II. Demolition Costs			
A. Building (Tanks)			
Volume of Building (ft^3)	0	0	0
Demolition Cost	$0.316	$0.316	$0.316
Subtotal Building Demolition Costs	$0	$0	$0
B. Concrete Floor			
Area of Concrete Floor (ft^2)	732	452	625
Demolition Cost	$6.11	$6.11	$6.11
Subtotal Concrete Floor Demolition Costs	$4,469	$2,759	$3,816
C. Concrete Footing			
Length of Concrete Footing (ft)	0	85	100
Demolition Cost	$22.51	$22.51	$22.51
Subtotal Concrete Footing Demolition Costs	$0	$1,913	$2,251
Subtotal Demolition Costs per Building	$4,469	$4,672	$6,067
Total Demolition Costs			
III. Disposal Costs			
A. Building			
Volume of Building (cy)	0	0	0
Off-Site County Landfill			
Percentage (%)	100	100	100
Total Volume for Disposal - Incl. 33% Factor (cy)	0	0	0
Disposal Cost, Landfill (cy)	$42.17	$42.17	$42.17
Subtotal County Facility Off-Site Disposal Costs	$0	$0	$0
B. Concrete Floor			
Area of Concrete Floor (ft^2)	732	452	625
Average Thickness of Concrete Floor (ft)	0.75	0.75	0.75
Volume of Concrete Floor (ft^3)	549	339	469
Volume of Concrete Floor (cy)	20	13	17
1. On-Site Concrete Disposal			
Percentage (%)	100	100	100
Volume for Disposal (cy)	20	13	17
Concrete Disposal On Site (cy)	$9.50	$9.50	$9.50
Subtotal County Facility Off-Site Disposal Costs	$193	$119	$165
2. NRC-Licensed Facility			
Percentage (%)	0	0	0
Volume for Disposal (ft^3)	0	0	0
Transportation and Disposal Unit Cost ($/$ft^3$)	$5.80	$5.80	$5.80
Subtotal NRC-Licensed Facility Disposal Costs	$0	$0	$0
Subtotal Concrete Floor Disposal Costs	$193	$119	$165
C. Concrete Footing			
Length of Concrete Footing (ft)	0	85	100
Average Depth of Concrete Footing (ft)	4	4	4
Average Width of Concrete Footing (ft)	1	1	1
Volume of Concrete Footing (ft^3)	0	340	400
Volume of Concrete Footing (cy)	0	13	15
Concrete Disposal On Site (cy)	$9.50	$9.50	$9.50
Subtotal Concrete Footing Disposal Costs	$0	$120	$141
Subtotal Disposal Costs per Building	$193	$239	$306
Total Disposal Costs			
IV. Health and Safety Costs Accounted for on GW REST			
TOTAL BUILDING & OTHER MISCELLANEOUS DEMOLITION AND DISPOSAL COSTS			

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Miscellaneous Reclamation									
I.	**Access Road Reclamation (includes culverts)**								**N. Uranium Road**
	A.	Assumptions							
		Surface grade							0%
		Length of Road (ft)							10938
		Width of Road (ft)							24
		Area of road (acres)							6.03
	B.	Gravel Road Base Removal							
			Average haul distance (ft)						1000
			Gravel Road Base Width (ft)						24
			Gravel Road Base Area (acres)						6.03
			Average Road Base Depth (ft)						0.5
			Volume of Road Base (cy)						4861
			Moving Materials (0% Grade)						$1.44
		Subtotal Gravel Road Base Removal Costs							$7,011
	C.	Ripping Overburden with Dozer							
			Overburden Surface Area (acres)						7.0
			Ripping Cost (per acre)						$1,381.27
		Subtotal Ripping Overburden Costs							$9,669
	D.	Topsoil Application							
			Average haul distance (ft)						1000
			Topsoil Surface Area (ft^2)						262512
			Depth of Topsoil (ft)						0.5
			Volume of Topsoil (cy)						4861
			Moving Materials (0% Grade)						$1.44
		Subtotal Topsoil Application Costs							$7,011
	E.	Discing/Seeding							
			Surface Area (acres)						6.0
			Discing/Seeding Unit Cost ($/acre)						$548
		Subtotal Discing/Seeding Costs							$3,300
	Subtotal Reclamation Costs per Access Road								$26,991
Total Access Road Reclamation Costs									**$26,991**
II.	**Settling Basin/Storage Ponds Reclamation**								**Storage Ponds**
	A.	Soil Sampling and Monitoring							
			Number of Soil Samples						30
			$/Sample						$255
		Subtotal Soil Sampling and Monitoring Costs							$7,650
	B.	Liner/Subsoil/Leak Detection Removal and Disposal							
			Thickness of clay liner (ft)						0.25
			Thickness of sludge (ft)						0.5
			Width of Pond (ft)						280
			Length of Pond (ft)						340
			Surface area of pond (ft^2)						95200
		1.	Removal and Loading						
				Volume of Clay Liner and Sludge (cy)					2644

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Miscellaneous Reclamation								
				Volume of Geotextile Liner (cy)				10
				Liner and Sludge Removal and Loading Unit Cost ($/cy)				$5.12
				Length of Piping (ft)				400
				Wellfield Piping Removal Unit Cost ($/ft of pipe)				$1.86
			Subtotal Removal and Loading Costs					$14,326
		2.	Transportation and Disposal					
				Volume of Clay Liner and Sludge (cy)				2655
				Transportation and Disposal Unit Cost ($/cy)				$156.73
				Volume of Geotextile Liner @ 40% void (cy)				17
				Transportation and Disposal Unit Cost ($/cy)				$197.73
				Average Diameter of Piping (inches)				2
				Chipped Volume Reduction (ft3/ft)				0.011
				Chipped Volume (ft^3)				4.3
				Volume for Disposal Assuming 10% Void Space (ft^3)				5.0
				Transportation and Disposal Unit Cost ($/$ft^3$)				$5.77
			Subtotal Liner Transportation and Disposal Costs					$419,590
		Subtotal Liner Removal and Disposal Costs						$433,916
	C.	Topsoil Application						
				Area of surface disturbance (ft^2)				95200
				Average thickness of topsoil (ft)				10
				Average haul distance (ft)				1000
				Surface grade (%)				0%
			Volume of Topsoil (cy)					35,259
			Topsoil Unit Cost per WDEQ Guideline No.12, App.C ($/cy)					$1.444
		Subtotal Topsoil Application Costs						$50,925
	D.	Revegetation						
				Area of surface disturbance (acres)				3.2
			Revegetation Unit Cost ($/acre)					$548
		Subtotal Revegetation Costs						$1,742
	E.	Fence Removal						
		Length of Fencing (ft)						1,500
		Fence Removal Costs						$0.42
		Subotal Fence Removal Costs						$627
	Total Settling Basin/Ponds Reclamation Costs							**$494,860**
III.	**Removal of Monitoring Stations**							
	A.	Air Quality Monitoring Stations						6
			Removal Unit Cost					$1,116
			Subtotal Air Quality Monitoring Stations					$6,693.19
	Total Removal of Monitoring Stations							**$6,693**
TOTAL MISCELLANEOUS RECLAMATION COSTS								**$528,544**

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	Mine Unit 1	Mine Unit 2	Mine Unit 3	Mine Unit 4	Mine Unit 5
Pore Volume Calculations					
Flare Factor	1.5	1.5	1.5	0.0	0.0
Wellfield Area (ft2)	1,444,445	1,383,106	1,960,000	0	0
Wellfield Area (acres)	33.16	31.75	45.00	0.00	0.00
Affected Ore Zone Area (ft2)	1,444,445	1,383,106	1,960,000	0	0
Avg. Completed Thickness	19	25	25	0	0
Porosity	0.27	0.27	0.27	0.27	0.27
Affected Volume (ft3)	41,166,694	51,866,475	73,500,000	0	0
Kgallons per Pore Volume	83,140	104,750	148,441	0	0
Patterns	152	185	200		
Restoration Schedule (Based on Annual Water Balance/Schedule Update)					
Pre-Restoration Period (yrs)	0.00	2.00	2.00	0.00	0.00
Restoration Period (yrs)	3.30	3.30	3.30	0.00	0.00
Stability Period (yrs)	1.00	1.00	1.00	0.00	0.00
Total # of Years	4	6	6	0	0
End of Restoration (yrs)	5				
End of Stability (yrs)	6				
Number of Header Houses per Wellfield					
Current	10	9	0	0	0
Planned	0	0	10	0	0
Total Estimated	10	9	10	0	0
Average Header House Volume (ft3)	1600	1600	1600	0	0
Number of Wells (In Service) per Wellfield					
Production Wells (P)					
Current	193	106	0	0	0
Planned	0	79	180	0	0
Total Estimated	193	185	180	0	0
MP-Wells (included under P-Wells)	16	18	20		
Injection Wells (I)					
Current	303	131	0	0	0
Planned	0	168	320	0	0
Total Estimated	303	299	320	0	0
Restoration Wells (R)					
Current	0	0	0	0	0
Planned	0	0	0	0	0
Total Estimated	0	0	0	0	0
Monitor Wells (M, MO, MU, MT)					
Current	42	31	0	0	0
Planned	0	0	50	0	0
Total Estimated	42	31	50	0	0
M-Wells	28	24	40		
MO-Wells	10	7	10		
MU-Wells	0	0	0		
MT-Wells	4	0	0		
Other Wells (Pumping Wells, etc.)					
Current	1	1	0	0	0
Planned	0	0	2	0	0
Total Estimated	1	1	2	0	0
Number of Wells per Wellfield	539	516	552	0	0
Total Number of In Service Wells	1607				
Well Completion Details					
Average Well Depth (ft)	680	750	750		
Average Diameter of Casing (inches)	5	5	5	5	5
Wellfield Fencing					
Length of Fencing (ft)	9,800	5400	6300	0	0

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Labor Costs	Rate ($)2013	2014 Year	Units	Type	Source	Date	Document	eDoc	RP	
Environmental Manager/RSO	$46.00	$65.37	hour	survey	2013 MSEC Mining Industry Compensation & Benefits plus 1.02% CPI (2014)	2014			CPI Escalators (CPI-U, U.S. City Average)	
Restoration Manager	$40.00	$56.84	hour	survey	2013 MSEC Mining Industry Compensation & Benefits plus 1.02% CPI (2014)	2014			1988 CPI (average)	118.3
Environmental Tech/HPT	$25.00	$35.53	hour	survey	2013 MSEC Mining Industry Compensation & Benefits plus 1.02% CPI (2014)	2014			June 2014 CPI (deep well estimate)	238.3
Operator/Laborer	$26.00	$36.95	hour	survey	2013 MSEC Mining Industry Compensation & Benefits plus 1.02% CPI (2014)	2014			2013 CPI (November 2013)	233.069
Maintenance Tech	$23.00	$32.68	hour	survey	2013 MSEC Mining Industry Compensation & Benefits plus 1.02% CPI (2014)	2014			Current CPI (November 2014)	236.51
Net Benefits Multiplier	40		%		InfoMine USA cost data for Surface Metal and Industrial Mineral Mines - Western US (Table 3) and Wyoming Coal labor data				2014 Escalation Factor	1.015
*Includes additional 40% net benefits based on InfoMine USA cost data for Surface Metal and Industrial Mineral Mines - Western U.S. (Table 5)										
**Mountain States Employers Council, 2013 Survey, Mining Industry Compensation & Benefits										

Utility Costs	Rate ($)	Profit & Overhead	Units	Source
Electrical Costs	$0.0711	included	kWhr	Actual Costs-2014
Kilowatt to Horsepower	0.746	included	Kw/HP	N/A
Natural Gas - SaneRise	$0.00	included	Percent	N/A
Propane - SaneRise	$36,154	included	year	Actual Costs-2014
Propane - DDW	$0.00	included	year	Actual Costs-2012

Chemical & Material Costs	Rate ($)	Profit & Overhead	Units	Source			
Antiscalant for RO (Hypersperse)	$2.5000	included	pound	Actual Costs NB	2014		
Antiscalant for RO (ScaleTrol)	$4.5177	included	pound	Actual Costs NB	2014		
Sodium Tripolyphosphate	$0.0000	included	pound		2014		
EDTA Tetrasodium Dihydrate	$0.0000	included	pound		2014		
Sodium Sulfide	$0.0000	included	pound		2014		
Hydrochloric Acid	$0.2200	included	pound	Actual Costs NB	2014		
Barium Chloride	$0.0000	included	pound		2014		

Analytical Costs	Rate ($)	Profit & Overhead	Units	Source*			
Guideline 4 (former Guideline 8) Parameters	$335.00	included	analysis	Quoted cost (IML)	2015		
Excursion Parameters (UCL)	$30.00	included	analysis	Fee Schedule-2013			
Restoration Progress Parameters (UCL + U + Se)	$50.00	included	analysis	Fee Schedule-2013			
Soil Sampling/Monitoring	$315.00	included	analysis	Actual Costs-2013			
Other (Radon, Bioassay, etc.)	$620.00	$682.00	month	Quoted cost (IML)	2015		
*All quotes, fee schedules and actual costs based on Energy Laboratories, Inc., Casper, WY unless otherwise indicated							

Equipment Costs	Rate ($)	Profit & Overhead*	Units	Source			
Bandit 1290XP Trailer Mounted Brush Chipper	$34.33	$37.76	hour	Equipment Watch**	2014		
Bobcat S250 Skid Steer Loader	$22.72	$24.99	hour	Equipment Watch	2014		
Cat 320C L Trackhoe - 1.25 cu yd bucket	$69.44	$76.38	hour	Equipment Watch	2014		
Cat 416E Backhoe	$27.17	$29.89	hour	Equipment Watch	2014		
Cat 924H Loader - 2.4 cu yd bucket	$42.89	$47.18	hour	Equipment Watch	2014		
Concrete Jaws Labounty - CP-60	$18.51	$20.36	hour	Equipment Watch	2013		
GEHL DL-8 Rough Terrain Lift Truck	$46.78	$51.46	hour	Equipment Watch	2014		
Manlift (JLG 600S)	$39.13	$43.04	hour	Equipment Watch	2014		
MIT Unit	$30.09	$33.10	hour	Equipment Watch	2013		
Pick-up Truck 3/4 ton 4X4	$20.13	$22.14	hour	Equipment Watch	2014		
Pulling Unit***	$35.32	$38.85	hour	Equipment Watch	2013		
*Includes additional 10% Profit & Overhead per WDEQ/LQD Guidline No. 12, Section 12(b)							
**Equipment Watch Rental Rate Blue Book: Volume 1							
***1 3/4 Ton 4x4 Truck with Hoist							

Quoted Costs	Rate ($)	Profit & Overhead	Units	Source			
Deep Disposal Well - Plug & Abandonment Costs	$13.62	included	foot	UIC Permit-2012		delete	
DDW MIT	$33,843	included	well	Quote-2014		delete	
Well Replacements (Restoration)	$14,763	included	well	Actual Costs-2013		delete	
Bellhole Refurbishment	$5,530	included	bellhole	Contract-2012			
Header House Refurbishment (Typical Wellfield)	$32,000	included	header house	Actual Costs-2013			

WDEQ/LQD Guideline No. 12 Costs	Appendix	Rate ($)	Profit & Overhead*	Units	Source			
Moving Materials: One-Way Distance 500 feet, 0% grade	Appendix C	$1.098	$1.208	bcy	Guideline 12	10/2014		
Moving Materials: One-Way Distance 1,000 feet, 0% grade	Appendix C	$1.311	$1.442	bcy	Guideline 12	10/2014		
Moving Materials: One-Way Distance 2,000 feet, 0% grade	Appendix C	$1.503	$1.653	bcy	Guideline 12	10/2014		
Moving Materials: One-Way Distance 150 feet, 0% grade	Appendix E	$0.347	$0.382	lcy	Guideline 12	10/2014		
Grading Operating Costs	Appendix G	$77.57	$85.33	acre	Guideline 12	10/2014		
Fencing Removal	Appendix H	$0.38	$0.42	foot	Guideline 12	10/2014		
Ripping Operating Costs (Asphalt)	Appendix I	$871.04	$958.14	acre	Guideline 12	10/2014		
Ripping Operating Costs (Overburden)	Appendix II	$1,255.70	$1,381.27	acre	Guideline 12	10/2014		
Building Demolition - Mixture of Types	Appendix K	$0.287	$0.316	ft3	Guideline 12	10/2014		
Building Demo Disposal (Average)	Appendix K	$9.76	$10.74	cy	Guideline 12	10/2014		
Concrete (Floor) Demolition - 6" Thick with Rebar	Appendix K	$5.55	$6.11	ft2	Guideline 12	10/2014		
Concrete (Footing) Demolition - 2' Thick, 3' Wide	Appendix K	$20.46	$22.51	linear foot	Guideline 12	10/2014		
Concrete Disposal On-Site	Appendix K	$8.64	$9.50	cy	Guideline 12	10/2014		
Drill Hole Abandonment: Wet Exploration Holes >25 holes	Appendix L	$3.00	$3.30	foot	Guideline 12	10/2014		
Well Abandonment: Monitor, Production, and Injection Wells	Appendix L	$2.50	$2.75	foot	Guideline 12	10/2014		
Scattered Wells <25	Appendix L	$4.00	$4.40	foot	Guideline 12	10/2014		
Mobilization	Appendix L	$1,000.00	$1,100.00	location	Guideline 12	10/2014		
Incidental Costs: Small Site Grading and Seeding (<1000 sq. feet)	Appendix L	$50	$55	site	Guideline 12	10/2014		
Incidental Costs: Capping	Appendix L	$10	$11	each	Guideline 12	10/2014		
Incidental Costs: Site Location	Appendix L	$10	$11	site	Guideline 12	10/2014		
Incidental Costs: Remove Pump, Wiring, and Drop Pipe	Appendix L	$0.40	$0.44	foot	Guideline 12	10/2014		
Incidental Costs: Remove and Dispose Casing (top few feet)	Appendix L	$30.00	$33.00	well	Guideline 12	10/2014		
Incidental Costs: Monitoring Well Concrete Pedestal Disposal	Appendix L	$100.00	$110.00	each	Guideline 12	10/2014		
Scarification Costs	Appendix P	$71.51	$78.66	acre	Guideline 12	10/2014		
Revegetation Costs-Seed	Appendix Q	$106.00	$116.60	acre	Guideline 12	10/2014		
Revegetation Costs-Mulch	Appendix Q	$91.88	$101.07	acre	Guideline 12	10/2014		
Revegetation Costs-Fertilizer	Appendix Q	$300.00	$330.00	acre	Guideline 12	10/2014		
Revegetation Costs-Total	Appendix Q	$497.88	$547.67	acre	Guideline 12	10/2014		
Revegetation Costs-Total	Guideline 12A	$300.00	$330.00	acre	Guideline 12	10/2014		
Dozer - D6	Appendix D-1	$92.95	$102.25	hour	Guideline 12	10/2014		
Culvert Removal	Appendix J	$139.12	$153.03	per 20' section	Guideline 12	10/2014		
Demolition and Removal of Surface Water Monitoring Station	Appendix N	$2,672.16	$2,939.38	each	Guideline 12	10/2014		
Demolition and Removal of Meterological/Air Monitoring Station	Appendix O	$1,014.12	$1,115.53	each	Guideline 12	10/2014		
*Includes additional 10% Profit & Overhead per WDEQ/LQD Guidline No. 12, Section 12(b)								

Construction & Demolition Debris Transportation & Disposal Costs										
Building Volume for Disposal	0.33									
Void Factor (for disposal)	1.1									
	Disposal ($/ton)	C&D (cy/ton)	Trasport ($/load)	C&D (cy/load)	Total ($/cy)	Total ($/ft3)				
C&D Debris (county landfill)	$62.00	2	$335.00	70	$42.17	$1.56				
*Transportation and disposal costs based on actual costs (2013). Transportation and disposal costs include profit and overhead of service provider. Conversion factors of 2 cy/ton and 0.33 to account for air space in buildings based on FEMA - Debris Estimating Field Guide, FEMA 330, September 2010.										

11e.(2) Byproduct Material Transportation & Disposal										

Load Correction Factor: Soil, sand, etc.	1.1									
Load Correction Factor: Process materials, etc.	0.42									
White Mesa	**Disposal ($/ton)**	**Disposal ($/cy)**	**Volume (cy)**	**Transport ($/cy)**	**Total ($/cy)**	**Total ($/ft3)**				
Type I: Soil, sand, gravel, rock, concrete rubble,etc.	$138.97	$152.87	13.0	$247.95	$400.82	$14.85				
Type II: Process material, pumps, motors, etc.	$160.08	$67.23	24.7	$130.50	$197.73	$7.32				
Type II: Chipped piping	$160.08	$67.23	36.4	$88.55	$155.78	$5.77				
Pathfinder										
Type I: Soil, sand, rock, gravel, demolition masonry, concrete rubble	N/A	$130.00	13.0	$26.73	$156.73	$5.80				
Type II: Other process waste, process equipment, etc.	N/A	$378.00	24.7	$14.07	$392.07	$14.52				
Type II: Chipped piping	N/A	$378.00	36.4	$9.55	$387.55	$14.35				

*Transportation and disposal costs based on contract amounts as adjusted annually. Transportation and disposal costs include profit and overhead of service provider and include all unloading and decontamination fees, waste tax.

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Total Restoration and Reclamation Cost Estimate			
I.	Groundwater Restoration (GWR-WF and GWR-SITE Sheets)		$17,119,964
II.	Well & Drill Hole Abandonment (WA Sheet)		$3,975,975
III.	Wellfield Buildings & Equipment Removal & Disposal (WF BLDGS Sheet)		$1,011,435
IV.	Wellfield & Satellite Surface Reclamation (WF REC Sheet)		$226,322
V.	Equipment Removal and Disposal (EQUIP Sheet)		$221,812
VI.	Building Demolition and Disposal (BLDGS Sheet)		$753,723
VII.	Miscellaneous Reclamation (MISC REC Sheet)		$528,544
	Subtotal Restoration and Reclamation Cost Estimate		$23,837,775
	Contractor Profit & Overhead (10%)[1]	See Master Costs	
	Contingency (15%)[2]	15%	$3,575,666
	TOTAL[3]		$27,413,400

[1], Per WDEQ/LQD Guideline No. 12, Section 12(b)

[2], Per WDEQ/LQD Guideline No. 12, Section 12(a) and (c-h), Section 13 and NRC License Condition 9.5 (SUA-1548)

[3], Costs reflect both WDEQ & NRC requirements. No salvage value assumed.

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Ground Water Restoration -Wellfield			Mine Unit 1	Mine Unit 2	Mine Unit 3
I.	**Ground Water Sweep Costs**				
	Estimated PV's		1	1	1
	Total kgals for GWS		83,140	104,750	148,441
	Bleed to Deep Disposal Well (%)		100%	100%	100%
	Groundwater Sweep Unit Cost ($/kgal)		$2.22	$2.22	$2.22
	Subtotal Ground Water Sweep Costs per Wellfield		$184,674	$232,675	$329,723
	Total Ground Water Sweep Costs		**$747,072**		
II.	**Reverse Osmosis Costs**				
	Estimated PV's		2	2	4.5
	Total Kgals for RO		166,280	209,500	667,985
	Wellfield Pumping Cost		$0.22	$0.22	$0.22
	Reverse Osmosis Unit Cost ($/kgal)		$0.61	$0.61	$0.61
	Bleed to Deep Disposal Well (%)		20%	20%	20%
	Brine Volume for Disposal		33,256	41,900	133,597
	DDW Disposal Cost($/kgal)		$1.21	$1.21	$1.21
	Permeate Volume for Re-Use		133,024	167,600	534,388
	Satellite Pumping Cost ($/kgal)		$0.79	$0.79	$0.79
	Subtotal Reverse Osmosis Costs per Wellfield		$283,889	$357,678	$1,140,447
	Total Reverse Osmosis Costs		**$1,782,014**		
III.	**Reverse Osmosis with Chemical Reductant Costs**				
	Estimated PV's		6	6	3.5
	Total kgals for RO		498,840	628,500	519,544
	Wellfield Pumping Cost		$0.22	$0.22	$0.22
	Reverse Osmosis with Chemical Reductant Unit Cost ($/kgal)		$0.61	$0.61	$0.61
	Bleed to Deep Disposal Well (%)		20%	20%	20%
	Brine Volume for Disposal (kgal)		99,768	125,700	103,909
	DDW Disposal Cost($/kgal)		$1.21	$1.21	$1.21
	Permeate Volume for Re-Use		399,072	502,800	415,635
	Satellite Pumping Cost ($/kgal)		$0.79	$0.79	$0.79
	Subtotal RO with Chemical Reductant Costs per Wellfield		$851,667	$1,073,035	$887,014
	Total Reverse Osmosis with Chemical Reductant Costs		**$2,811,716**		
IV.	**Mechanical Integrity Testing (MIT) Costs**				
	Pre-Restoration, Restoration and Stability Period (yrs)		4.30	6.30	6.30
	Number of Injection Wells		303	299	320
	Number of MITs per Well		0.9	1.3	1.3
	MIT Costs per Injection Well		$140.09	$140.09	$140.09
	Number of Production Well		193	185	180
	MIT Costs per Production Well		$216	$216	$216
	Subtotal MIT Costs per Wellfield		$72,338	$103,101	$105,448
	Total Wellfield MIT Costs		**$280,887**		
V.	**Monitoring and Sampling Costs**				
	A. Pre-Restoration Monitoring				
	1. Excursion Monitoring (M, MO and MU wells, twice per month)				
	# of Wells		42	31	50
	Total # samples		0	1488	2400

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Ground Water Restoration -Wellfield	**Mine Unit 1**	**Mine Unit 2**	**Mine Unit 3**
UCL Parameters ($/sample)	$30.00	$30.00	$30.00
Subtotal Pre-Restoration Monitoring Costs per Mine Unit	$0.00	$44,640.00	$72,000.00
Total Pre-Restoration Monitoring Costs	$116,640.00		
B. Restoration Monitoring			
1. Sampling Prior to Start-up (MP Wells)			
# of Wells	16	18	20
Modified Guideline 8 ($/sample)	$335.00	$335.00	$335.00
2. Restoration Progress Monitoring (MP Wells, every 2 months)			
# of Wells	16	18	20
Total # samples	316.8	356.4	396
Restoration Progress Parameters ($/sample)	$50.00	$50.00	$50.00
3. Excursion Monitoring (M, MO and MU wells, every 2 months)			
# of Wells	38	31	50
Total # samples	752.4	613.8	990
UCL Parameters ($/sample)	$30.00	$30.00	$30.00
Subtotal Restoration Monitoring Costs per Mine Unit	$43,772.00	$42,264.00	$56,200.00
Total Restoration Monitoring Costs	$142,236		
C. Stability Monitoring			
1. Beginning of stability (MP wells)			
# of Wells	16	18	20
Modified Guideline 8 ($/sample)	$335.00	$335.00	$335.00
2. Quarterly sampling (MP wells)			
# of Wells	16	18	20
Total # samples	64	72	80
Modified Guideline 8 ($/sample)	$335.00	$335.00	$335.00
3. Monitor Well Sampling (M wells, every 2 months)			
# of Wells	28	24	40
Total # samples	168	144	240
UCL Parameters ($/sample)	$30.00	$30.00	$30.00
Subtotal Stability Monitoring Costs per Mine Unit	$31,840.00	$34,470.00	$40,700.00
Total Stability Monitoring Costs	$107,010.00		
D. Other Laboratory Costs			
Radon, Bioassay, etc.	$35,191	$51,559	$51,559
Subtotal Monitoring and Sampling Costs per Mine Unit	$110,803	$172,933	$220,459
Total Monitoring and Sampling Costs	**$504,195**		
VII. Header House Heating Costs			
Number of Header Houses per Unit(s)	10	9	10
Pre-Restoration and Restoration Period (yrs)	3.30	5.30	5
Electrical Heating Costs ($/yr)	$3,839	$3,839	$3,839
Subtotal Header House Heating Cost per Wellfield	$126,700	$183,139	$203,488
Total Header House Heating Costs	**$513,327**		
TOTAL RESTORATION COST PER WELLFIELD	$1,630,071	$2,122,561	$2,886,579
TOTAL WELLFIELD RESTORATION COST	**$6,639,211**		

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Ground Water Restoration - Site Wide					
I.	**Building Utility Costs**	**Satellite No. 1**	**DDW No. 1**	**DDW No. 2**	
	Assumptions:				
	Electricity Unit Cost ($/yr)	$31,247	$5,034	$5,034	
	Propane ($/yr)	$36,154	$0	$0	
	Natural Gas ($/yr)	$0	$0	$0	
	Number of Years	5	5		
	Subtotal Utility Cost per Building	$357,226	$26,682	$0	
	Total Building Utility Costs	**$383,907**			
II.	**Infrastructure, Equipment Maintenance,**				
	Replacement and Repair Costs (Est. based on SR actual)				
	Annual Maintenance Cost ($/yr)	$15,000			
	Restoration Period (yrs)	5			
	Total Cost	**$79,500**			
III.	**Deep Disposal Well MIT Costs**				
	Five-year MIT Costs for Disposal Wells	$33,843			
	Number of DDWs	2			
	Number of MITs per DDW	2			
	Total DDW MIT Cost	**$135,372**			
IV.	**Capital Costs**				
	Reverse Osmosis Unit (2-500 gpm @ $600K each)	$1,200,000			
	Deep Disposal Well (1 @ $3.72M each)	$3,720,000			
	Total Capital Costs	**$4,920,000**			
V.	**Vehicle Operation Costs**				
	Number of Pickup Trucks (Gas)	3			
	Truck Cost ($/hr)	$22.14			
	Average Operating Time (hrs/yr)	1000			
	Restoration and Stability Period (yrs)	6			
	Total Vehicle Operation Cost	**$418,503**			
VI.	**Labor Costs**				
	Assumptions:				
	Number of Restoration Managers	1			
	$/hr	$56.84			
	Number of Environmental Techs/HPTs	1			
	$/hr	$35.53			
	Number of Operators/Laborers	6			
	$/hr	$36.95			
	Number of Maintenance Technicians	1			
	$/hr	$32.68			
	Hrs/yr	2080			
	Restoration and Stability Period (yrs)	6			
	Total Labor Cost	**$4,543,471**			
TOTAL SITE-WIDE RESTORATION COSTS		**$10,480,753**			

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Well and Drill Hole Abandonment	Mine Unit 1	Mine Unit 2	Mine Unit 3	Water Wells	Misc Wells
I. Well Abandonment (Wellfields)					
A. Sealing Costs					
Total # of Wells per Wellfield	539	516	552	3	57
Well Average Depth (ft)	680	750	750	750	650
Well Abandonment (Sealing) Costs ($/ft)	$2.75	$2.75	$2.75	$2.75	$2.75
Subtotal Sealing Costs per Wellfield	$1,007,930	$1,064,250	$1,138,500	$6,188	$101,888
B Casing Removal and Disposal Costs					
Total # of Wells per Wellfield	539	516	552	3	57
Total # of Wells for Casing Removal and Disposal	539	516	552	3	57
Remove and Dispose Casing ($/well)	$33	$33	$33	$33	$33
Subtotal Casing Removal and Disposal Costs per Wellfield	$17,787	$17,028	$18,216	$99	$1,881
Subtotal Well Abandonment Costs per Wellfield	$1,025,717	$1,081,278	$1,156,716	$6,287	$103,769
Total Well Abandonment Costs	**$3,373,767**				
II. Removal of Contaminated Soil Around Wells					
# of Production and Injection Wells	496	484	500		
Removal of Contaminated Soil Around Wells ($/well)	$83.58	$83.58	$83.58		
Subtotal Contaminated Soil Removal/Disposal Costs per Wellfield	$41,455	$40,453	$41,790		
Total Contaminated Soil Removal/Disposal Costs	**$123,698**				
III. Drill Hole Abandonment					
A. Drill Hole Plug and Abandonment					
# of Projected Drill Holes					
2015-16	25				
Total # of Drill Holes	25				
Average Depth of Fallback (feet)	200				
Total Footage Requiring Abandonment (ft)	5,000				
Hole Abandonment ($/ft)	$3.30				
Subtotal Plug and Abandonment Costs	$16,500				
B. Incidental Costs					
Mobilization	$1,000				
Total # of Drill Holes	25				
Site Location ($/hole)	$11				
Capping ($/hole)	$11				
Small Site Grading and Seeding ($/site)	$55				
Subtotal Incidental Costs	$2,925				
C. Subsurface Retained Abandonment Cost					
Reclamation Cost per hole (Equipment, materials, labor)	$77				
40% of Reclamation Costs (GL 12 Appendix L, footnote 6)	$31				
Plugged and Abandoned Boreholes - Surface Cost 40% (2012)	537				
Plugged and Abandoned Boreholes - Surface Cost 40% (2013)	63				
Plugged and Abandoned Boreholes - Surface Cost 40% (2014)	214				
Subtotal Subsurface Retained Abandonment Cost	$25,071.20				
Total Delineation Hole Abandonment	**$44,496**				
IV. Waste Disposal Well Abandonment	**BY-1 DDW**	**DDW No. 2**			
A. Plug and Abandonment per WDEQ-WQD UIC Permit #11-468	$217,007	$217,007			
Total Waste Disposal Well Abandonment Costs	**$434,014**				
TOTAL WELL AND DRILL HOLE ABANDONMENT COSTS	**$3,975,975**				

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Wellfield Buildings and Equipment Removal and Disposal	Mine Unit 1	Mine Unit 2	Mine Unit 3
I. Wellfield Piping			
Number of Header Houses per Wellfield	10	9	10
Approximate Length of Piping per Header House (ft)	13,800	13,800	13,800
*average 46 wells per with 300 ft pipeline/well)			
Approximate Total Length of Piping (ft)	138,000	124,200	138,000
A. Removal and Loading			
Wellfield Piping Removal Unit Cost ($/ft of pipe)	$1.57	$1.57	$1.57
Subtotal Wellfield Piping Removal and Loading Costs	$216,610	$194,949	$216,610
B. Transport and Disposal Costs (NRC-Licensed Facility)			
Average Diameter of Piping (inches)	2	2	2
Chipped Volume Reduction (ft3/ft)	0.011	0.011	0.011
Chipped Volume per Wellfield (ft^3)	1480	1332	1480
Volume for Disposal Assuming 10% Void Space (ft^3)	1628	1465	1628
Transportation and Disposal Unit Cost ($/ft3)	$5.77	$5.77	$5.77
Subtotal Wellfield Piping Transport and Disposal Costs	$9,393	$8,453	$9,393
Subtotal Wellfield Piping Costs per Wellfield	$226,003	$203,402	$226,003
Total Wellfield Piping Costs	**$655,408**		
II. Well Pumps and DownholeTubing			
Assumptions: Pump and tubing removal costs included under ground water restoration labor			
60% of production/injection wells contain pumps and/or tubing			
A. Pump and Tubing Transportation and Disposal			
Number of Production Wells	193	185	180
Number of Injection Wells	303	299	320
Number of Monitor Wells	42	31	50
1. Pump Volume			
Number of Production Wells with Pumps	193	185	180
Pump Volume (ft^3)	0.43	0.43	0.43
Pump Volume per Wellfield (ft^3)	83.6	80.1	78.0
2. Tubing Volume			
Average Tubing Length per Well (ft)	655	725	725
*Average tubing length/wellfield based on average well depth minus 25 ft			
Number of Production Wells with Tubing	116	111	108
Number of Injection Wells with Tubing	182	179	192
Tubing Length per Wellfield (ft)	222,700	232,725	253,750
Diameter of Production Well Fiberglass Tubing (inches)	2	2	2
Diameter of Injection Well HDPE Tubing (inches)	1.25	1.25	1.25
Chipped Volume Reduction (ft^3/ft)	0.011	0.011	0.011
Chipped Volume per Wellfield (ft^3)	2388	2495	2721
Volume of Pump and Tubing (ft^3)	2472	2575	2799
Volume for Disposal Assuming Void Space (ft^3)	2719	2833	3079
Transportation and Disposal Unit Cost ($/ft3)	$5.77	$5.77	$5.77
Subtotal Pump and Tubing Transport and Disposal Costs Per Wellfield	$15,688	$16,346	$17,765
Total Pump and Tubing Transport and Disposal Costs	**$49,799**		
III. Wellhead Cover Removal			
Number of Production and Injection Wells	496	484	500
Well Head Removal, Decontamination, and Disposal Cost	$11.93	$11.93	$11.93
Subtotal Wellhead Removal Costs	$5,918	$5,775	$5,966
Total Wellhead Cover Removal Costs	**$17,659**		
IV. Header Houses			
Total Quantity	10	9	10
Average Header House Volume (ft^3)	1600	1600	1600
A. Removal			
Total Volume (ft^3)	16000	14400	16000
Demolition Cost	$0.316	$0.316	$0.316
Subtotal Building Demolition Costs	$5,051	$4,546	$5,051
B. Survey and Decontamination			
Cost per Header House	$631	$631	$631
Subtotal Survey and Decontamination Costs	$6,311	$5,680	$6,311
C. Disposal			
Total Volume for Disposal - Incl. 33% Factor (cy)	196	176	196
Volume for Disposal Assuming Void Space (cy)	215	194	215
Disposal Cost, Landfill (cy)	$42.17	$42.17	$42.17
Subtotal County Landfill Disposal Costs	$9,066	$8,180	$9,066
Headerhouse Soil Removal Volume (assumes 10'Wx20'Lx2.5'D)	500	501	502
11e.(2) Disposal Cost (ft^3)	$5.80	$5.80	$5.80
Subtotal 11(e)2 Disposal Cost	$29,024	$26,174	$29,140

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Wellfield Buildings and Equipment Removal and Disposal						**Mine Unit 1**	**Mine Unit 2**	**Mine Unit 3**
	Subtotal Header House Removal and Disposal Costs per Wellfield					$49,452	$44,580	$49,568
Total Header House Removal and Disposal Costs						**$143,600**		
TOTAL REMOVAL AND DISPOSAL COSTS PER WELLFIELD						**$866,466**		
V.	**Buried Trunkline**					**Main Trunkline Trench**		
	Assumptions:							
	Length of Trunkline Trench (ft)					7500		
	Length of Waste Water Pipleine Trench (ft)					4600		
	A. Removal and Loading							
		Main Pipeline Removal Unit Cost ($ ft of trench)				$3.14		
	Subtotal Trunkline Removal and Loading Costs					$37,985		
	B. Transport and Disposal Costs (NRC-Licensed Facility)							
		1. 4" HDPE Trunkline (Wasteline)						
			Piping Length (ft)			4600		
			Chipped Volume per Lft (ft3/ft)			0.038		
			Chipped Volume (ft^3)			177		
		2. 10" HDPE Trunkline (Restoration) (x2)						
			Piping Length (ft)			15000		
			Chipped Volume per Lft (ft3/ft)			0.220		
			Chipped Volume (ft^3)			3293.339433		
		3. 18" HDPE Trunkline (Prod/Inject) (x2)						
			Piping Length (ft)			15000		
			Chipped Volume per Lft (ft3/ft)			0.486		
			Chipped Volume (ft^3)			7296		
		Total Trunkline Chipped Volume (ft^3)				10766		
		Volume for Disposal Assuming 10% Void Space (ft^3)				11843		
		Transportation and Disposal Unit Cost ($ ft3)				$5.77		
	Subtotal Trunkline Transport and Disposal Costs (NRC License Facility)					$68,331		
	C. Transport and Disposal Cost (Landfill)							
		1. 2" Steel Line (o2)						
			Piping Length (ft)			7500		
		2. 3" HDPE Trunkline (cO2)						
			Piping Length (ft)			7500		
		3. 1" Fiber Optics Line						
			Length (ft)			7500		
		Volume for Disposal Assuming 10% Void Space (cy)				917		
		Disposal Cost, Landfill (cy)				$42.17		
		Subtotal Transport and Disposal Costs				$38,652.78		
	Subtotal Trunkline Decommissioning Costs per Wellfield					$144,969		
Total Trunkline Decommissioning Costs						**$144,969**		
TOTAL WELLFIELD BUILDINGS AND EQUIPMENT REMOVAL						**$1,011,435**		

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Wellfield and Satellite Surface Reclamation				Mine Unit 1	Mine Unit 2	Mine Unit 3
I.	**Wellfield Pattern Area Reclamation**					
	Pattern Area (acres)			66.3	63.5	90.0
	*Assumes wellfield pattern area X 2					
	Discing/Seeding Unit Cost ($/acre)			$548	$548	$548
	Subtotal Pattern Area Reclamation Costs per Wellfield			$36,321	$34,777	$49,290
Total Wellfield Pattern Area Reclamation Costs				**$120,388**		
II.	**Wellfield Road Reclamation**					
	Road Construction					
		Length of Wellfield Roads (1000 ft)		9	20	20
		Wellfield Road Reclamation Unit Cost ($/1000 ft)		$1,437	$1,437	$1,437
	Subtotal Wellfield Road Reclamation Costs			$12,929	$28,732	$28,732
Total Wellfield Road Reclamation Costs				**$70,393**		
III.	**Laydown area reclamation**			**Laydown Area**	**Staging Area**	
		Area of Disturbance (acres)		0.5	3.86	
		Average Depth of Stripped Topsoil (ft)		0.5	0.67	
		Surface Grade: Level Ground				
		Average Length of Topsoil Haul (ft)		2000	500	
	A.	Ripping Overburden with Dozer				
			Ripping Cost (per acre)	$1,381	$1,381	
		Subtotal Ripping Costs		$691	$5,332	
	B.	Topsoil Application with Scraper				
			Volume of Topsoil Removed (cy)	403	4172	
			Moving Materials (0% Grade)	$1.21	$1.21	
		Subtotal Topsoil Application Costs		$487	$5,039	
	C.	Discing and Seeding				
			Discing/Seeding Unit Cost ($/acre)	$548	$548	
		Subtotal Discing/Seeding Costs		$274	$2,114	
	Subtotal Surface Reclamation Costs per WF laydown area			$1,452	$12,485	
	Total Wellfield Laydown Area Reclamation Costs			**$13,937**		
IV.	**Fence Removal**					
	Length of Fencing (ft)			9,800	5,400	6,300
	Fence Removal Costs			$0.42	$0.42	$0.42
	Subtotal Fence Removal Costs per Wellfield			$4,096	$2,257	$2,633
Total Fence Removal Costs				**$8,987**		
TOTAL WELLFIELD SURFACE RECLAMATION COSTS				**$213,705**		
V.	**Satellite Area Reclamation**			**Satellite No.1**		
	Assumptions:					
		Area of Disturbance (acres)		3.85		
		Average Depth of Stripped Topsoil (ft)		0.5		
		Surface Grade: Level Ground				
		Average Length of Topsoil Haul (ft)		2000		
	A.	Ripping Overburden with Dozer				
			Ripping Cost (per acre)	$1,381.27		
		Subtotal Ripping Costs		$5,318.00		
	B.	Topsoil Application with Scraper				
			Volume of Topsoil Removed (cy)	3106		
			Moving Materials (0% Grade)	$1.44		
		Subtotal Topsoil Application Costs		$4,479		
	C.	Discing and Seeding				
			Discing/Seeding Unit Cost ($ acre)	$548		
		Subtotal Discing/Seeding Costs		$2,109		
	Subtotal Surface Reclamation Costs per Satellite			$11,906		
VI.	**Fence Removal**					
	Length of Fencing (ft)			1,700		
	Fence Removal Costs			$0.42		
	Subtotal Fence Removal Costs per Wellfield			$711		
Total Fence Removal Costs				$711		
	Total Satellite Building Area Reclamation Costs			**$12,617**		
TOTAL WELLFIELD & SATELLITE SURFACE RECLAMATION COSTS				**$226,322**		

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Equipment Removal and Loading				Satellite No. 1
I.	**Removal and Loading Costs**			
	A.	Tankage		
		Number of Tanks		25
		Volume of Tank Construction Material (ft^3)		1190
		Tank Removal Cost		$124.16
		Subtotal Tankage Removal and Loading Costs		$147,747
	B.	PVC/Steel Pipe		
		PVC Pipe Footage		6000
		Average PVC Pipe Diameter (inches)		4
		Shredded PVC Pipe Volume Reduction (ft3/ft)		0.038
		Volume of Shredded PVC Pipe (ft^3)		231
		Pipe Removal Cost		$8.06
		Subtotal PVC/Steel Pipe Labor & Equipment Costs		$48,351
	C.	Pumps		
		Number of Pumps		16
		Average Volume (ft^3/pump)		4.93
		Volume of Pumps (ft^3)		78.88
		Pump Removal Cost		$96.82
		Subtotal Pump Removal and Loading Costs		$7,637
	D.	RO Units		
		Number of RO Units (500 gpm)		
			Current	0
			Planned	2
		RO Average Volume (ft3/Unit)		250
		RO Removal Cost		$4.72
		Subtotal RO Unit Removal and Loading Costs		$2,360
	Subtotal Equipment Removal and Loading Costs per Facility			$206,095
Total Equipment Removal and Loading Costs				
II.	**Transportation and Disposal Costs (NRC-Licensed Facility)**			
	A.	Tankage		
		Volume of Tank Construction Material (ft^3)		1190
		Volume for Disposal Assuming Void Space (ft^3)		1309
		Transportation and Disposal Unit Cost ($/ft3)		$7.32
		Subtotal Tankage Transportation and Disposal Costs		$9,586
	B.	PVC / Steel Pipe		
		Volume of Shredded PVC Pipe (ft^3)		231
		Volume for Disposal Assuming Void Space (ft^3)		254
		Volume of Steel Pipe (ft^3)		0
		Volume for Disposal Assuming Void Space (ft^3)		0
		Transportation and Disposal Unit Cost ($/ft3)		$5.77
		Subtotal PVC Pipe Transportation and Disposal Costs		$1,466
	C.	Pumps		
		Volume of Pumps (ft^3)		78.88
		Volume for Disposal Assuming Void Space (ft^3)		87
		Transportation and Disposal Unit Cost ($/ft3)		$7.32

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Equipment Removal and Loading							**Satellite No. 1**
		Subtotal Pump Transportation and Disposal Costs					$637
	D.	Dryer					
			Dryer Volume (ft^3)				0
			Volume for Disposal Assuming Dryer Remains Intact (ft^3)				0
			Transportation and Disposal Unit Cost ($/ft3)				$7.32
		Subotal Dryer Transportation and Disposal Costs					$0
	E.	RO/Degasser Units					
			Volume of RO/Degasser Units (ft^3)				500
			Volume for Disposal Assuming Volume Reduction (ft^3)				550
			Transportation and Disposal Unit Costs				$7.32
		Subtotal RO Unit Transportation and Disposal Costs					$4,028
	Subtotal Equipment Transportation and Disposal Costs per Facility						$15,717
	Total Equipment Transportation and Disposal Costs						
III.	**Health and Safety Costs**						
		Radiation Safety Equipment			Accounted for on GW REST		
	Total Health and Safety Costs						
SUBTOTAL EQUIPMENT REMOVAL AND DISPOSAL COSTS PER FACILITY							$221,812
TOTAL EQUIPMENT REMOVAL AND DISPOSAL COSTS							**$221,812**

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Building & Other Miscellaneous Demolition and Disposal	Satellite No. 1	DDW No. 1	DDW No. 2	DDW No. 3	Office No. 1	Office No. 2	Bunkhouse No. 1	Water Tank & Pad (2)	O2 Tank Pad
I. Decontamination Costs									
A. Wall Decontamination									
Area to be Decontaminated (ft^2)	0	880	880	0	0	0	0	0	0
HCl Acid Wash, including labor ($ ft2)	$0.95	$0.95	$0.95	$0.95	$0.95	$0.95	$0.95	$0.95	$0.95
Subtotal Wall Decontamination Costs	$0	$833	$833	$0	$0	$0	$0	$0	$0
B. Concrete Floor Decontamination									
Area to be Decontaminated (ft^2)	17.164	480	480	0	0	0	0	0	0
HCl Acid Wash, including labor ($ ft2)	$0.60	$0.60	$0.60	$0.60	$0.60	$0.60	$0.60	$0.60	$0.60
Subtotal Concrete Floor Decontamination Costs	$10,335	$289	$289	$0	$0	$0	$0	$0	$0
C. Deep Well Injection Costs									
Total kgals for Injection (1 gal used per ft2)	17.16	1.36	1.36	0	0	0	0	0	0
Deep Well Injection Unit Cost ($ kgals)	$1.21	$1.21	$1.21	$1.21	$1.21	$1.21	$1.21	$1.21	$1.21
Subtotal Deep Well Injection Costs	$21	$2	$2	$0	$0	$0	$0	$0	$0
Subtotal Decontamination Costs per Building	$10,356	$1,124	$1,124	$0	$0	$0	$0	$0	$0
Total Decontamination Costs	$12,604								
II. Demolition Costs									
A. Building (Tanks)									
Volume of Building (ft^3)	538,158	4,800	4,800	0	16,128	16,128	2,496	100,000	0
Demolition Cost	$0.316	$0.316	$0.316	$0.316	$0.316	$0.316	$0.316	$0.316	$0.316
Subtotal Building Demolition Costs	$169,896	$1,515	$1,515	$0	$5,092	$5,092	$788	$31,570	$0
B. Concrete Floor									
Area of Concrete Floor (ft^2)	17.164	480	480	0	0	0	0	556	663
Demolition Cost	$6.11	$6.11	$6.11	$6.11	$6.11	$6.11	$6.11	$6.11	$6.11
Subtotal Concrete Floor Demolition Costs	$104,788	$2,930	$2,930	$0	$0	$0	$0	$3,394	$4,048
C. Concrete Footing									
Length of Concrete Footing (ft)	524	88	88	0	0	0	0	0	0
Demolition Cost	$22.51	$22.51	$22.51	$22.51	$22.51	$22.51	$22.51	$22.51	$22.51
Subtotal Concrete Footing Demolition Costs	$11,794	$1,972	$1,972	$0	$0	$0	$0	$0	$0
Subtotal Demolition Costs per Building	$286,478	$6,417	$6,417	$0	$5,092	$5,092	$788	$34,964	$4,048
Total Demolition Costs	$364,504								
III. Disposal Costs									
A. Building									
Volume of Building (cy)	19,932	178	178	0	597	597	92	3,704	0
Off-Site County Landfill									
Percentage (%)	100	100	100	100	100	100	100	100	100
Total Volume for Disposal - Incl. 33% Factor (cy)	6577	59	59	0	197	197	31	1222	0
Disposal Cost, Landfill (cy)	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17
Subtotal County Facility Off-Site Disposal Costs	$277,351	$2,474	$2,474	$0	$8,312	$8,312	$1,286	$51,537	$0
B. Concrete Floor									
Area of Concrete Floor (ft^2)	17.164	480	480	0	0	0	0	556	663
Average Thickness of Concrete Floor (ft)	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Volume of Concrete Floor (ft^3)	12873	360	360	0	0	0	0	417	497
Volume of Concrete Floor (cy)	477	13	13	0	0	0	0	15	18
1. On-Site Concrete Disposal									
Percentage (%)	75	75	100	100	100	100	100	100	100
Volume for Disposal (cy)	358	10	13	0	0	0	0	15	18
Concrete Disposal On Site (cy)	$9.50	$9.50	$9.50	$9.50	$9.50	$9.50	$9.50	$9.50	$9.50
Subtotal County Facility Off-Site Disposal Costs	$3,399	$95	$127	$0	$0	$0	$0	$147	$175
2. NRC-Licensed Facility									
Percentage (%)	25	25	0	0	0	0	0	0	0
Volume for Disposal (ft^3)	3218	90	0	0	0	0	0	0	0
Transportation and Disposal Unit Cost ($/$ft^3$)	$5.80	$5.80	$5.80	$5.80	$5.80	$5.80	$5.80	$5.80	$5.80
Subtotal NRC-Licensed Facility Disposal Costs	$18,682	$522	$0	$0	$0	$0	$0	$0	$0
Subtotal Concrete Floor Disposal Costs	$22,081	$617	$127	$0	$0	$0	$0	$147	$175
C. Concrete Footing									
Length of Concrete Footing (ft)	524	88	88	0	0	0	0	0	0
Average Depth of Concrete Footing (ft)	4	4	4	4	4	4	4	4	4
Average Width of Concrete Footing (ft)	1	1	1	1	1	1	1	1	1
Volume of Concrete Footing (ft^3)	2096	351	351	0	0	0	0	0	0
Volume of Concrete Footing (cy)	78	13	13	0	0	0	0	0	0
Concrete Disposal On Site (cy)	$9.50	$9.50	$9.50	$9.50	$9.50	$9.50	$9.50	$9.50	$9.50
Subtotal Concrete Footing Disposal Costs	$738	$123	$123	$0	$0	$0	$0	$0	$0
Subtotal Disposal Costs per Building	$300,170	$3,214	$2,724	$0	$8,312	$8,312	$1,286	$51,684	$175
Total Disposal Costs	$376,615								
IV. Health and Safety Costs Accounted for on GW REST									
TOTAL BUILDING & OTHER MISCELLANEOUS DEMOLITION AND DISPOSAL COSTS	**$753,723**								

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Building & Other Miscellaneous Demolition and Disposal	CO2 Pad Satellite	Silo Pad	Acid Tank Pad
I. Decontamination Costs			
A. Wall Decontamination			
Area to be Decontaminated (ft^2)	0	0	0
HCl Acid Wash, including labor ($ ft2)	$0.95	$0.95	$0.95
Subtotal Wall Decontamination Costs	$0	$0	$0
B. Concrete Floor Decontamination			
Area to be Decontaminated (ft^2)	0	0	0
HCl Acid Wash, including labor ($ ft2)	$0.60	$0.60	$0.60
Subtotal Concrete Floor Decontamination Costs	$0	$0	$0
C. Deep Well Injection Costs			
Total kgals for Injection (1 gal used per ft2)	0	0	0
Deep Well Injection Unit Cost ($ kgals)	$1.21	$1.21	$1.21
Subtotal Deep Well Injection Costs	$0	$0	$0
Subtotal Decontamination Costs per Building	$0	$0	$0
Total Decontamination Costs			
II. Demolition Costs			
A. Building (Tanks)			
Volume of Building (ft^3)	0	0	0
Demolition Cost	$0.316	$0.316	$0.316
Subtotal Building Demolition Costs	$0	$0	$0
B. Concrete Floor			
Area of Concrete Floor (ft^2)	732	452	625
Demolition Cost	$6.11	$6.11	$6.11
Subtotal Concrete Floor Demolition Costs	$4,469	$2,759	$3,816
C. Concrete Footing			
Length of Concrete Footing (ft)	0	85	100
Demolition Cost	$22.51	$22.51	$22.51
Subtotal Concrete Footing Demolition Costs	$0	$1,913	$2,251
Subtotal Demolition Costs per Building	$4,469	$4,672	$6,067
Total Demolition Costs			
III. Disposal Costs			
A. Building			
Volume of Building (cy)	0	0	0
Off-Site County Landfill			
Percentage (%)	100	100	100
Total Volume for Disposal - Incl. 33% Factor (cy)	0	0	0
Disposal Cost, Landfill (cy)	$42.17	$42.17	$42.17
Subtotal County Facility Off-Site Disposal Costs	$0	$0	$0
B. Concrete Floor			
Area of Concrete Floor (ft^2)	732	452	625
Average Thickness of Concrete Floor (ft)	0.75	0.75	0.75
Volume of Concrete Floor (ft^3)	549	339	469
Volume of Concrete Floor (cy)	20	13	17
1. On-Site Concrete Disposal			
Percentage (%)	100	100	100
Volume for Disposal (cy)	20	13	17
Concrete Disposal On Site (cy)	$9.50	$9.50	$9.50
Subtotal County Facility Off-Site Disposal Costs	$193	$119	$165
2. NRC-Licensed Facility			
Percentage (%)	0	0	0
Volume for Disposal (ft^3)	0	0	0
Transportation and Disposal Unit Cost ($/$ft^3$)	$5.80	$5.80	$5.80
Subtotal NRC-Licensed Facility Disposal Costs	$0	$0	$0
Subtotal Concrete Floor Disposal Costs	$193	$119	$165
C. Concrete Footing			
Length of Concrete Footing (ft)	0	85	100
Average Depth of Concrete Footing (ft)	4	4	4
Average Width of Concrete Footing (ft)	1	1	1
Volume of Concrete Footing (ft^3)	0	340	400
Volume of Concrete Footing (cy)	0	13	15
Concrete Disposal On Site (cy)	$9.50	$9.50	$9.50
Subtotal Concrete Footing Disposal Costs	$0	$120	$141
Subtotal Disposal Costs per Building	$193	$239	$306
Total Disposal Costs			
IV. Health and Safety Costs Accounted for on GW REST			
TOTAL BUILDING & OTHER MISCELLANEOUS DEMOLITION AND DISPOSAL COSTS			

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Miscellaneous Reclamation								
I.	**Access Road Reclamation (includes culverts)**							**N. Uranium Road**
	A.	Assumptions						
		Surface grade						0%
		Length of Road (ft)						10938
		Width of Road (ft)						24
		Area of road (acres)						6.03
	B.	Gravel Road Base Removal						
			Average haul distance (ft)					1000
			Gravel Road Base Width (ft)					24
			Gravel Road Base Area (acres)					6.03
			Average Road Base Depth (ft)					0.5
			Volume of Road Base (cy)					4861
			Moving Materials (0% Grade)					$1.44
		Subtotal Gravel Road Base Removal Costs						$7,011
	C.	Ripping Overburden with Dozer						
			Overburden Surface Area (acres)					7.0
			Ripping Cost (per acre)					$1,381.27
		Subtotal Ripping Overburden Costs						$9,669
	D.	Topsoil Application						
			Average haul distance (ft)					1000
			Topsoil Surface Area (ft^2)					262512
			Depth of Topsoil (ft)					0.5
			Volume of Topsoil (cy)					4861
			Moving Materials (0% Grade)					$1.44
		Subtotal Topsoil Application Costs						$7,011
	E.	Discing/Seeding						
			Surface Area (acres)					6.0
			Discing/Seeding Unit Cost ($/acre)					$548
		Subtotal Discing/Seeding Costs						$3,300
	Subtotal Reclamation Costs per Access Road							$26,991
Total Access Road Reclamation Costs								**$26,991**
II.	**Settling Basin/Storage Ponds Reclamation**							**Storage Ponds**
	A.	Soil Sampling and Monitoring						
			Number of Soil Samples					30
			$/Sample					$255
		Subtotal Soil Sampling and Monitoring Costs						$7,650
	B.	Liner/Subsoil/Leak Detection Removal and Disposal						
			Thickness of clay liner (ft)					0.25
			Thickness of sludge (ft)					0.5
			Width of Pond (ft)					280
			Length of Pond (ft)					340
			Surface area of pond (ft^2)					95200
		1.	Removal and Loading					
				Volume of Clay Liner and Sludge (cy)				2644

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Miscellaneous Reclamation									
				Volume of Geotextile Liner (cy)					10
				Liner and Sludge Removal and Loading Unit Cost ($/cy)					$5.12
				Length of Piping (ft)					400
				Wellfield Piping Removal Unit Cost ($/ft of pipe)					$1.86
			Subtotal Removal and Loading Costs						$14,326
		2.	Transportation and Disposal						
				Volume of Clay Liner and Sludge (cy)					2655
				Transportation and Disposal Unit Cost ($/cy)					$156.73
				Volume of Geotextile Liner @ 40% void (cy)					17
				Transportation and Disposal Unit Cost ($/cy)					$197.73
				Average Diameter of Piping (inches)					2
				Chipped Volume Reduction (ft3/ft)					0.011
				Chipped Volume (ft^3)					4.3
				Volume for Disposal Assuming 10% Void Space (ft^3)					5.0
				Transportation and Disposal Unit Cost ($/$ft^3$)					$5.77
			Subtotal Liner Transportation and Disposal Costs						$419,590
		Subtotal Liner Removal and Disposal Costs							$433,916
	C.	Topsoil Application							
				Area of surface disturbance (ft^2)					95200
				Average thickness of topsoil (ft)					10
				Average haul distance (ft)					1000
				Surface grade (%)					0%
			Volume of Topsoil (cy)						35,259
			Topsoil Unit Cost per WDEQ Guideline No.12, App.C ($/cy)						$1.444
		Subtotal Topsoil Application Costs							$50,925
	D.	Revegetation							
				Area of surface disturbance (acres)					3.2
			Revegetation Unit Cost ($/acre)						$548
		Subtotal Revegetation Costs							$1,742
	E.	Fence Removal							
		Length of Fencing (ft)							1,500
		Fence Removal Costs							$0.42
		Subotal Fence Removal Costs							$627
	Total Settling Basin/Ponds Reclamation Costs								**$494,860**
III.	**Removal of Monitoring Stations**								
	A.	Air Quality Monitoring Stations							6
			Removal Unit Cost						$1,116
			Subtotal Air Quality Monitoring Stations						$6,693.19
	Total Removal of Monitoring Stations								**$6,693**
TOTAL MISCELLANEOUS RECLAMATION COSTS									**$528,544**

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	Mine Unit 1	Mine Unit 2	Mine Unit 3	Mine Unit 4	Mine Unit 5
Pore Volume Calculations					
Flare Factor	1.5	1.5	1.5	0.0	0.0
Wellfield Area (ft2)	1,444,445	1,383,106	1,960,000	0	0
Wellfield Area (acres)	33.16	31.75	45.00	0.00	0.00
Affected Ore Zone Area (ft2)	1,444,445	1,383,106	1,960,000	0	0
Avg. Completed Thickness	19	25	25	0	0
Porosity	0.27	0.27	0.27	0.27	0.27
Affected Volume (ft3)	41,166,694	51,866,475	73,500,000	0	0
Kgallons per Pore Volume	83,140	104,750	148,441	0	0
Patterns	152	185	200		
Restoration Schedule (Based on Annual Water Balance/Schedule Update)					
Pre-Restoration Period (yrs)	0.00	2.00	2.00	0.00	0.00
Restoration Period (yrs)	3.30	3.30	3.30	0.00	0.00
Stability Period (yrs)	1.00	1.00	1.00	0.00	0.00
Total # of Years	4	6	6	0	0
End of Restoration (yrs)	5				
End of Stability (yrs)	6				
Number of Header Houses per Wellfield					
Current	10	9	0	0	0
Planned	0	0	10	0	0
Total Estimated	10	9	10	0	0
Average Header House Volume (ft3)	1600	1600	1600	0	0
Number of Wells (In Service) per Wellfield					
Production Wells (P)					
Current	193	106	0	0	0
Planned	0	79	180	0	0
Total Estimated	193	185	180	0	0
MP-Wells (included under P-Wells)	16	18	20		
Injection Wells (I)					
Current	303	131	0	0	0
Planned	0	168	320	0	0
Total Estimated	303	299	320	0	0
Restoration Wells (R)					
Current	0	0	0	0	0
Planned	0	0	0	0	0
Total Estimated	0	0	0	0	0
Monitor Wells (M, MO, MU, MT)					
Current	42	31	0	0	0
Planned	0	0	50	0	0
Total Estimated	42	31	50	0	0
M-Wells	28	24	40		
MO-Wells	10	7	10		
MU-Wells	0	0	0		
MT-Wells	4	0	0		
Other Wells (Pumping Wells, etc.)					
Current	1	1	0	0	0
Planned	0	0	2	0	0
Total Estimated	1	1	2	0	0
Number of Wells per Wellfield	539	516	552	0	0
Total Number of In Service Wells	1607				
Well Completion Details					
Average Well Depth (ft)	680	750	750		
Average Diameter of Casing (inches)	5	5	5	5	5
Wellfield Fencing					
Length of Fencing (ft)	9,800	5400	6300	0	0

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Labor Costs	Rate ($)2013	2014 Year	Units	Type	Source	Date	Document	eDoc	RP	
Environmental Manager/RSO	$46.00	$65.37	hour	survey	2013 MSEC Mining Industry Compensation & Benefits plus 1.02% CPI (2014)	2014			CPI Escalators (CPI-U, U.S. Citv Average)	
Restoration Manager	$40.00	$56.84	hour	survey	2013 MSEC Mining Industry Compensation & Benefits plus 1.02% CPI (2014)	2014			1988 CPI (average)	118.3
Environmental Tech/HPT	$25.00	$35.53	hour	survey	2013 MSEC Mining Industry Compensation & Benefits plus 1.02% CPI (2014)	2014			June 2014 CPI (deep well estimate)	238.3
Operator/Laborer	$26.00	$36.95	hour	survey	2013 MSEC Mining Industry Compensation & Benefits plus 1.02% CPI (2014)	2014			2013 CPI (November 2013)	233.069
Maintenance Tech	$23.00	$32.68	hour	survey	2013 MSEC Mining Industry Compensation & Benefits plus 1.02% CPI (2014)	2014			Current CPI (November 2014)	236.51
Net Benefits Multiplier	40		%		InfoMine USA cost data for Surface Metal and Industrial Mineral Mines - Western US (Table 5) and Wyoming Coal labor data				2014 Escalation Factor	1.015
*Includes additional 40% net benefits based on InfoMine USA cost data for Surface Metal and Industrial Mineral Mines - Western U.S. (Table 5)										
**Mountain States Employers Council, 2013 Survey, Mining Industry Compensation & Benefits										

Utility Costs		Rate ($)	Profit & Overhead	Units	Source					
Electrical Costs		$0.0711	included	kWhr	Actual Costs-2014					
Kilowatt to Horsepower		0.746	included	Kw/HP	N/A					
Natural Gas - Satellite		$0.00	included	Percent	N/A					
Propane - Satellite		$36.154	included	year	Actual Costs-2014					
Propane - DDW		$0.00	included	year	Actual Costs-2012					

Chemical & Material Costs		Rate ($)	Profit & Overhead	Units	Source					
Antiscalant for RO (Hypersperse)		$2.5000	included	pound	Actual Costs NB	2014				
Antiscalant for RO (ScaleTrol)		$4.5177	included	pound	Actual Costs NB	2014				
Sodium Tripolyphosphate		$0.0900	included	pound		2014				
EDTA Tetrasodium Dihydrate		$0.0000	included	pound		2014				
Sodium Sulfide		$0.0000	included	pound		2014				
Hydrochloric Acid		$0.2200	included	pound	Actual Costs NB	2014				
Barium Chloride		$0.0000	included	pound		2014				

Analytical Costs		Rate ($)	Profit & Overhead	Units	Source*					
Guideline 4 (former Guideline 8) Parameters		$375.00	included	analysis	Quoted cost (IML)	2015				
Excursion Parameters (UCL)		$30.00	included	analysis	Fee Schedule-2013					
Restoration Progress Parameters (UCL + U + Se)		$50.00	included	analysis	Fee Schedule-2013					
Soil Sampling/Monitoring		$315.00	included	analysis	Actual Costs-2013					
Other (Radon, Bioassay, etc.)		$620.00	$682.00	month	Quoted cost (IML)	2015				
*All quotes, fee schedules and actual costs based on Energy Laboratories, Inc., Casper, WY unless otherwise indicated										

Equipment Costs		Rate ($)	Profit & Overhead*	Units	Source					
Bandit 1290XP Trailer Mounted Brush Chipper		$34.33	$37.76	hour	Equipment Watch**	2014				
Bobcat S250 Skid Steer Loader		$22.72	$24.99	hour	Equipment Watch	2014				
Cat 320C L Trackhoe - 1.25 cu yd bucket		$69.44	$76.38	hour	Equipment Watch	2014				
Cat 416E Backhoe		$27.17	$29.89	hour	Equipment Watch	2014				
Cat 924H Loader - 2.4 cu yd bucket		$42.89	$47.18	hour	Equipment Watch	2014				
Concrete Jaws Labounty - CP-60		$18.51	$20.36	hour	Equipment Watch	2013				
GEHL DL-8 Rough Terrain Lift Truck		$46.78	$51.46	hour	Equipment Watch	2014				
Manlift (JLG 600S)		$39.13	$43.04	hour	Equipment Watch	2014				
MIT Unit		$30.09	$33.10	hour	Equipment Watch	2013				
Pick-up Truck 3/4 ton 4X4		$20.13	$22.14	hour	Equipment Watch	2014				
Pulling Unit***		$35.32	$38.85	hour	Equipment Watch	2013				
*Includes additional 10% Profit & Overhead per WDEQ/LQD Guidline No. 12, Section 12(b)										
**Equipment Watch Rental Rate Blue Book: Volume 1										
***1 3/4 Ton 4x4 Truck with Hoist										

Quoted Costs		Rate ($)	Profit & Overhead	Units	Source					
Deep Disposal Well - Plug & Abandonment Costs		$13.62	included	foot	UIC Permit-2012		delete			
DDW MIT		$33.843	included	well	Quote-2014		delete			
Well Replacements (Restoration)		$14,763	included	well	Actual Costs-2013		delete			
Bellhole Refurbishment		$5.530	included	bellhole	Contract-2012					
Header House Refurbishment (Typical Wellfield)		$32,000	included	header house	Actual Costs-2013					

WDEQ/LQD Guideline No. 12 Costs	Appendix	Rate ($)	Profit & Overhead*	Units	Source					
Moving Materials: One-Way Distance 500 feet, 0% grade	Appendix C	$1.098	$1.208	bcy	Guideline 12	10/2014				
Moving Materials: One-Way Distance 1,000 feet, 0% grade	Appendix C	$1.311	$1,442	bcy	Guideline 12	10/2014				
Moving Materials: One-Way Distance 2,000 feet, 0% grade	Appendix C	$1,503	$1,653	bcy	Guideline 12	10/2014				
Moving Materials: One-Way Distance 150 feet, 0% grade	Appendix E	$0.347	$0.382	lcy	Guideline 12	10/2014				
Grading Operating Costs	Appendix G	$77.57	$85.33	acre	Guideline 12	10/2014				
Fencing Removal	Appendix H	$0.38	$0.42	foot	Guideline 12	10/2014				
Ripping Operating Costs (Asphalt)	Appendix I	$871.04	$958.14	acre	Guideline 12	10/2014				
Ripping Operating Costs (Overburden)	Appendix II	$1,255.70	$1,381.27	acre	Guideline 12	10/2014				
Building Demolition - Mixture of Types	Appendix K	$0.287	$0.316	ft3	Guideline 12	10/2014				
Building Demo Disposal (Average)	Appendix K	$9.76	$10.74	cy	Guideline 12	10/2014				
Concrete (Floor) Demolition - 6" Thick with Rebar	Appendix K	$5.55	$6.11	ft2	Guideline 12	10/2014				
Concrete (Footing) Demolition - 2' Thick, 3' Wide	Appendix K	$20.46	$22.51	linear foot	Guideline 12	10/2014				
Concrete Disposal On-Site	Appendix K	$8.64	$9.50	cy	Guideline 12	10/2014				
Drill Hole Abandonment: Wet Exploration Holes >25 holes	Appendix L	$3.00	$3.30	foot	Guideline 12	10/2014				
Well Abandonment: Monitor, Production, and Injection Wells	Appendix L	$2.50	$2.75	foot	Guideline 12	10/2014				
Scattered Wells <25	Appendix L	$4.00	$4.40	foot	Guideline 12	10/2014				
Mobilization	Appendix L	$1,000.00	$1,100.00	location	Guideline 12	10/2014				
Incidental Costs: Small Site Grading and Seeding (<1000 sq. feet)	Appendix L	$50	$55	site	Guideline 12	10/2014				
Incidental Costs: Capping	Appendix L	$10	$11	each	Guideline 12	10/2014				
Incidental Costs: Site Location	Appendix L	$10	$11	site	Guideline 12	10/2014				
Incidental Costs: Remove Pump, Wiring, and Drop Pipe	Appendix L	$0.40	$0.44	foot	Guideline 12	10/2014				
Incidental Costs: Remove and Dispose Casing (top few feet)	Appendix L	$30.00	$33.00	well	Guideline 12	10/2014				
Incidental Costs: Monitoring Well Concrete Pedestal Disposal	Appendix L	$100.00	$110.00	each	Guideline 12	10/2014				
Scarification Costs	Appendix P	$71.51	$78.66	acre	Guideline 12	10/2014				
Revegetation Costs-Seed	Appendix Q	$106.00	$116.60	acre	Guideline 12	10/2014				
Revegetation Costs-Mulch	Appendix Q	$91.88	$101.07	acre	Guideline 12	10/2014				
Revegetation Costs-Fertilizer	Appendix Q	$300.00	$330.00	acre	Guideline 12	10/2014				
Revegetation Costs-Total	Appendix Q	$497.88	$547.67	acre	Guideline 12	10/2014				
Revegetation Costs-Total	Guideline 12A	$300.00	$330.00	acre	Guideline 12	10/2014				
Dozer - D6	Appendix D-1	$92.95	$102.25	hour	Guideline 12	10/2014				
Culvert Removal	Appendix J	$139.12	$153.03	per 20' section	Guideline 12	10/2014				
Demolition and Removal of Surface Water Monitoring Station	Appendix N	$2,672.16	$2,939.38	each	Guideline 12	10/2014				
Demolition and Removal of Meteorological/Air Monitoring Station	Appendix O	$1,014.12	$1,115.53	each	Guideline 12	10/2014				
*Includes additional 10% Profit & Overhead per WDEQ/LQD Guidline No. 12, Section 12(b)										

Construction & Demolition Debris Transportation & Disposal Costs										
Building Volume for Disposal	0.33									
Void Factor (for disposal)	1.1									
	Disposal ($/ton)	C&D (cy/ton)	Transport ($/load)	C&D (cy/load)	Total ($/cy)	Total ($/ft3)				
C&D Debris (county landfill)	$62.00	2	$335.00	30	$42.17	$1.56				
*Transportation and disposal costs based on actual costs (2013). Transportation and disposal costs include profit and overhead of service provider. Conversion factors of 2 cy/ton and 0.33 to account for air space in buildings based on FEMA - Debris Estimating Field Guide, FEMA 320, September 2010.										

11e.(2) Byproduct Material Transportation & Disposal										

Load Correction Factor: Soil, sand, etc.	1.1					
Load Correction Factor: Process materials, etc.	0.42					
White Mesa	Disposal ($/ton)	Disposal ($/cy)	Volume (cy)	Transport ($/cy)	Total ($/cy)	Total ($/ft3)
Type I: Soil, sand, gravel, rock, concrete rubble,etc.	$138.97	$152.87	13.0	$247.95	$400.82	$14.85
Type II: Process material, pumps, motors, etc.	$160.08	$67.23	24.7	$130.50	$197.73	$7.32
Type II: Chipped piping	$160.08	$67.23	36.4	$88.55	$155.78	$5.77
Pathfinder						
*Type I: Soil, sand, rock, gravel, demolition masonry, concrete rubble	N/A	$130.00	13.0	$26.73	$156.73	$5.80
Type II: Other process waste, process equipment, etc.	N/A	$378.00	24.7	$14.07	$392.07	$14.52
Type II: Chipped piping	N/A	$378.00	36.4	$9.55	$387.55	$14.35

*Transportation and disposal costs based on contract amounts as adjusted annually. Transportation and disposal costs include profit and overhead of service provider and include all mitigation and decontamination fees, waste tax.