

**Cameco Resources  
Smith Ranch Highland Uranium Project  
2016-2017 Surety Estimate Update**

**Itemized changes in 2016-2017 surety bond calculation**

	2015-2016 Approved Total = \$212,675,100	<i>(Submitted November 2015)</i>
		\$212,675,100
Removed MU-J extension from all pages	(\$1,446,400)	\$211,228,700
Updated WF Data page, well counts, Header houses, fencing, etc., removed planned wells/Header Houses	(\$1,500,600)	\$209,728,100
Updated Master Costs page, CPI 2015 Escalator Update	(\$24,500)	\$209,703,600
Updated Master Costs page-Electricity, costs up 3.35%	\$1,338,700	\$211,042,300
Updated Master Costs page, Nat. Gas, propane, chemical, analytical, equip, quotes, & GL-12 cost updates: Significant change = Concrete Floor demolition	(\$1,597,900)	\$209,444,400
Updated GWR Site page, updates to capitol costs and harvesting costs	(\$2,328,100)	\$207,116,300
Updated WA page: no delineation planned for next period and updated plugged well counts	(\$4,009,400)	\$203,106,900
Updated WF Bldgs, EQUIP/BLDGS and WF Rec Pages: minor changes	(\$46,100)	\$203,060,800
Updated Misc Page: PSR-2/CLI costs, updated costs for pipeline SR-1 to Se Plant, removed planned pipeline/road to SRHUP #8.	\$57,500	\$203,118,300
Updated GWR-WF page with pore volumes and MU-10 MP wells	(\$144,500)	\$202,973,800
Updated years of operation & restoration from proposed water balance; Decrease of 4 years with the removal of planned wellfields/development.	(\$15,250,100)	\$187,723,700
WA page: WQD revised surety for UIC Class I DDWs, 3% decrease \$\$/Foot	(\$28,500)	\$187,695,200

**Net Update for 2016-2017 Surety Estimate**

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**\$187,695,200**

**Cameco Resources**  
 **Smith Ranch Highland Uranium Project**  
 **2015-2016 Surety Estimate Update**

<b>Total Restoration and Reclamation Cost Estimate</b>			
<b>I.</b>	<b>Groundwater Restoration (GWR-WF and GWR-SITE Sheets)</b>		<b>\$115,610,402</b>
<b>II.</b>	<b>Well &amp; Drill Hole Abandonment (WA Sheet)</b>		<b>\$23,448,562</b>
<b>III.</b>	<b>Wellfield Buildings &amp; Equipment Removal &amp; Disposal (WF BLDGS Sheet)</b>		<b>\$8,540,144</b>
<b>IV.</b>	<b>Wellfield and Satellite Surface Reclamation (WF REC Sheet)</b>		<b>\$1,110,695</b>
<b>V.</b>	<b>Equipment Removal &amp; Disposal (EQUIP Sheet)</b>		<b>\$1,559,941</b>
<b>VI.</b>	<b>Building Removal &amp; Disposal (BLDGS Sheet)</b>		<b>\$5,319,951</b>
<b>VII.</b>	<b>Miscellaneous Reclamation (MISC REC Sheet)</b>		<b>\$7,623,536</b>
	<b>Subtotal Restoration and Reclamation Cost Estimate</b>		<b>\$163,213,232</b>
	<b>Contractor Profit &amp; Overhead (10%)<sup>1</sup></b>	<b>See Master Costs</b>	
		<b>Contingency (15%)<sup>2</sup></b>	<b>\$24,481,985</b>
		<b>15%</b>	
		<b>TOTAL<sup>3</sup></b>	<b>\$187,695,200</b>
<sup>1</sup> , Per WDEQ/LQD Guideline No. 12, Section 12(b)			
<sup>2</sup> , Per WDEQ/LQD Guideline No. 12, Section 12(a) and (c-h), Section 13 and NRC License Condition 9.5 (SUA-1548)			
<sup>3</sup> , 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 3/3Ext	Mine Unit 4/4A	Mine Unit 15	Mine Unit 15A	Mine Unit K	K-North	Mine Unit 9	Mine Unit 10	Mine Unit 10-Ext	Mine Unit 27	Mine Unit 21	Mine Unit 7	A-Wellfield	B-Wellfield	C-Wellfield	C-22 Pattern	C abandoned UG workings	D-Wellfield	D-Extension	E-Wellfield	F-Wellfield	H-Wellfield	I-Wellfield	J-Wellfield
<b>I. Ground Water Sweep Costs</b>																										
Estimated PV's	0	1	1	0.6	1	1	1	1	1	1	1	0	0	1	0	0	0	0	0	0	0	0.5	1	1	1	1
Total kgals for GWS	0	110,785	152,825	71,530	137,426	52,669	84,209	78,562	136,376	190,435	44,986	0	0	104,736	0	0	0	0	0	0	45,540	232,890	90,864	84,780	66,812	
Bleed to Deep Disposal Well (%)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Groundwater Sweep Unit Cost (\$/kgal)	\$2.15	\$2.15	\$2.15	\$2.15	\$2.15	\$2.15	\$2.15	\$2.15	\$2.15	\$2.15	\$2.15	\$2.15	\$2.15	\$2.15	\$1.38	\$1.38	\$1.38	\$1.38	\$1.38	\$1.38	\$1.38	\$1.38	\$1.38	\$1.38	\$1.38	\$1.38
Subtotal Ground Water Sweep Costs per Wellfield	\$0.00	\$237,688.00	\$327,884.00	\$92,079.00	\$294,846.00	\$113,001.00	\$180,669.00	\$168,554.00	\$292,593.00	\$408,576.00	\$96,517.00	\$0.00	\$0.00	\$224,710.00	\$0	\$0	\$0	\$0	\$0	\$0	\$31,522	\$322,407	\$125,790	\$117,367	\$92,493	
<b>Total Ground Water Sweep Costs</b>	<b>\$3,126,696</b>																									
<b>II. Reverse Osmosis Costs</b>																										
Estimated PV's	0	4.5	4.5	2.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	0	0	4.5	0	0	1	0	0	1	1	3	4.5	3.5	4.5	4.5
Total Kgals for RO	0	498,533	687,713	298,040	618,417	237,011	378,941	353,529	613,692	856,958	202,437	0	0	471,312	0	0	0	0	0	0	273,240	1,048,005	408,888	381,510	300,654	
Wellfield Pumping Cost	\$0.21	\$0.21	\$0.21	\$0.21	\$0.21	\$0.21	\$0.21	\$0.21	\$0.21	\$0.21	\$0.21	\$0.21	\$0.21	\$0.21	\$0.20	\$0.20	\$0.20	\$0.20	\$0.20	\$0.20	\$0.20	\$0.20	\$0.20	\$0.20	\$0.20	\$0.20
Reverse Osmosis Unit Cost (\$/kgal)	\$0.64	\$0.64	\$0.64	\$0.64	\$0.64	\$0.64	\$0.64	\$0.64	\$0.64	\$0.64	\$0.64	\$0.64	\$0.64	\$0.64	\$0.62	\$0.62	\$0.62	\$0.62	\$0.62	\$0.62	\$0.62	\$0.62	\$0.62	\$0.62	\$0.62	\$0.62
Bleed to Deep Disposal Well (%)	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
Brine Volume for Disposal	0	99,707	137,543	59,608	123,683	47,402	75,788	70,706	122,738	171,392	40,487	0	0	94,262	0	0	0	0	0	0	54,648	209,601	81,778	76,302	60,131	
DDW Disposal Cost(\$/kgal)	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19
Permeate Volume for Re-Use	0	398,826	550,170	238,432	494,734	189,608	303,152	282,823	490,954	685,566	161,950	0	0	377,050	0	0	0	0	0	0	218,592	838,404	327,110	305,208	240,523	
Satellite Pumping Cost	\$0.75	\$0.75	\$0.75	\$0.75	\$0.75	\$0.75	\$0.75	\$0.75	\$0.75	\$0.75	\$0.75	\$0.75	\$0.75	\$0.75	\$0.75	\$0.75	\$0.75	\$0.75	\$0.75	\$0.75	\$0.75	\$0.75	\$0.75	\$0.75	\$0.75	\$0.75
Subtotal Reverse Osmosis & Disposal Costs per Wellfield	\$0.00	\$838,860.19	\$1,157,185.61	\$501,499.68	\$1,040,584.92	\$398,807.85	\$637,627.64	\$594,868.75	\$1,032,634.36	\$1,441,967.23	\$340,632.44	\$0.00	\$0.00	\$793,057.37	\$0	\$0	\$0	\$0	\$0	\$0	\$451,706	\$1,732,507	\$675,952	\$630,692	\$497,025	
<b>Total Reverse Osmosis Costs</b>	<b>\$12,765,608</b>																									
<b>III. Reverse Osmosis with Chemical Reductant Costs</b>																										
Estimated PV's	0.0	3.5	3.5	2.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	0.0	0.0	3.5	0	0	1	1	0	1	1	3	3.5	3.5	3.5	3.5
Total kgals for RO	0	387,748	534,888	298,040	480,991	184,342	294,732	274,967	477,316	666,523	157,451	0	0	366,576	0	0	127,233	19,691	0	32,309	19,233	273,240	815,115	318,024	296,730	233,842
Wellfield Pumping Cost	\$0.21	\$0.21	\$0.21	\$0.21	\$0.21	\$0.21	\$0.21	\$0.21	\$0.21	\$0.21	\$0.21	\$0.21	\$0.21	\$0.21	\$0.20	\$0.20	\$0.20	\$0.20	\$0.20	\$0.20	\$0.20	\$0.20	\$0.20	\$0.20	\$0.20	\$0.20
Reverse Osmosis with Chemical Reductant Unit Cost (\$/kgal)	\$0.72	\$0.72	\$0.72	\$0.72	\$0.72	\$0.72	\$0.72	\$0.72	\$0.72	\$0.72	\$0.72	\$0.72	\$0.72	\$0.72	\$0.72	\$0.72	\$0.72	\$0.72	\$0.72	\$0.72	\$0.72	\$0.72	\$0.72	\$0.72	\$0.72	\$0.72
Bleed to Deep Disposal Well (%)	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
Brine Volume for Disposal (kgal)	0	77,550	106,978	59,608	96,198	36,868	58,946	54,993	95,463	133,305	31,490	0	0	73,315	0	0	25,447	3,938	0	6,462	3,847	54,648	163,023	63,605	59,346	46,768
DDW Disposal Cost(\$/kgal)	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19
Permeate Volume for Re-Use	0	310,198	442,910	238,432	484,793	174,473	283,785	274,974	481,853	685,566	161,950	0	0	377,050	0	0	101,786	15,753	0	25,847	15,386	218,592	652,092	254,419	237,384	187,074
Satellite Pumping Cost (\$/kgal)	\$0.75	\$0.75	\$0.75	\$0.75	\$0.75	\$0.75	\$0.75	\$0.75	\$0.75	\$0.75	\$0.75	\$0.75	\$0.75	\$0.75	\$0.75	\$0.75	\$0.75	\$0.75	\$0.75	\$0.75	\$0.75	\$0.75	\$0.75	\$0.75	\$0.75	\$0.75
Subtotal RO with Chemical Reductant per Wellfield	\$0.00	\$685,405.35	\$945,498.69	\$526,833.08	\$850,228.06	\$325,852.91	\$520,984.78	\$486,047.89	\$843,731.91	\$1,178,184.48	\$278,319.67	\$0.00	\$0.00	\$647,981.36	\$0	\$0	\$224,905	\$34,807	\$0	\$57,111	\$33,997	\$482,995	\$1,440,845	\$562,158	\$524,517	\$413,353
<b>Total Reverse Osmosis Costs</b>	<b>\$11,063,756</b>																									
<b>IV. Mechanical Integrity Testing (MIT) Costs</b>																										
Pre-Restoration, Restoration and Stability Period (yrs)	0	7	14	5	10	12	17	16	20	21	21	0	0	20	0	0	3	1	1	4	3	9	17	9	9	13
Number of Injection Wells	162	281	280	384	831	0	279	174	397	338	153	0	0	247	1	194	258	0	0	143	0	229	704	285	234	233
Number of MITs required per Well	0.0	1.4	2.8	1.0	2.0	2.4	3.4	3.2	4.0	4.2	4.2	0.0	0.0	4.0	0.0	4.0	0.4	0.4	0.4	0.4	0.4	1.0	4.2	1.6	1.4	3.4
MIT Cost per Injection Well	\$133.25	\$133.25	\$133.25	\$133.25	\$133.25	\$133.25	\$133.25	\$133.25	\$133.25	\$133.25	\$133.25	\$133.25	\$133.25	\$133.25	\$133.25	\$133.25	\$133.25	\$133.25	\$133.25	\$133.25	\$133.25	\$133.25	\$133.25	\$133.25	\$133.25	\$133.25
Subtotal MIT Mine Unit	\$0.00	\$52,419.92	\$104,466.75	\$51,167.39	\$221,458.84	\$0.00	\$126,399.43	\$74,192.71	\$211,598.46	\$189,159.43	\$85,625.42	\$0.00	\$0.00	\$131,649.42	\$0	\$0	\$13,751	\$0	\$0	\$7,622	\$0	\$30,514	\$393,989	\$60,761	\$43,652	\$105,559
<b>Total MIT Costs</b>	<b>\$1,903,986</b>																									
<b>V. Wellfield Refurbishment Costs</b>																										
<b>Well Replacement (#)</b>	0	5	50	5	50	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	5	140	5	5	18
Replacement (\$/well)	\$15,613	\$15,613	\$15,613	\$15,613	\$15,613	\$15,613	\$15,613	\$15,613	\$15,613	\$15,613	\$15,613	\$15,613	\$15,613	\$15,613	\$15,613	\$15,613	\$15,613	\$15,613	\$15,613	\$15,613	\$15,613	\$15,613	\$15,613	\$15,613	\$15,613	\$15,613
Bellhole Refurbishment (#)	0	7	11	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0
Refurbishment (\$/bellhole)	\$5,505	\$5,505	\$5,505	\$5,505	\$5,505	\$5,505	\$5,505	\$5,505	\$5,505	\$5,505	\$5,505	\$5,505	\$5,505	\$5,505	\$5,505	\$5,505	\$5,505	\$5,505	\$5,505	\$5,505	\$5,505	\$5,505	\$5,505	\$5,505	\$5,505	\$5,505
Header House Refurbishment (#)	0	5	5	5	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26	0	0	0
Refurbishment (\$/header house)	\$10,008	\$10,008	\$10,008	\$10,008	\$10,008	\$10,008	\$10,008	\$10,008	\$10,008	\$10,008	\$10,008	\$10,008	\$10,008	\$10,008	\$10,008	\$10,008	\$10,008	\$10,008	\$10,008	\$10,008	\$10,008	\$10,008	\$10,008	\$10,008	\$10,008	\$10,008
Subtotal Refurbishment Cost per Wellfield	\$0	\$166,639	\$891,243	\$205,172	\$900,751	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$78,065	\$0	\$0	\$0	\$0	\$78,065	\$2,446,038	\$78,065	\$111,093	\$281,034
<b>Total Wellfield Refurbishment Cost</b>	<b>\$5,236,165</b>																									
<b>VI. Monitoring and Sampling Costs</b>																										
<b>A. Pre-Restoration Monitoring</b>																										
Excursion Monitoring (M, MO and MU wells, twice per month)																										
# of Wells	47	50	40	90	83	42	51	53	69	49	66	85	0	62	7	64	85	0	0	50	0	59	119	82	34	59
Total # samples	0	0	4800	0	5976	9792	10176	16560	12936	26928	0	0	20832	0	0	0	0	0	0	0	0	11424	0	0	0	5664
UCL Parameters (\$/sample)	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00
Subtotal Pre-Restoration Monitoring Costs per Mine Unit	\$0.00	\$0.00	\$144,000.00	\$0.00	\$179,280.00	\$211,680.00	\$293,760.00	\$305,280.00	\$496,800.00	\$388,080.00	\$807,840.00	\$0.00	\$0.00	\$624,960.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$342,720.00	\$0.00	\$0.00	\$169,920.00
<b>Total</b>																										

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Ground Water Restoration -Wellfield	Mine Unit 1	Mine Unit 2	Mine Unit 3/3Ext	Mine Unit 4/4A	Mine Unit 15	Mine Unit 15A	Mine Unit K	K-North	Mine Unit 9	Mine Unit 10	Mine Unit 10-Ext	Mine Unit 27	Mine Unit 21	Mine Unit 7	A-Wellfield	B-Wellfield	C-Wellfield	C-22 Pattern	C abandoned UG workings	D-Wellfield	D-Extension	E-Wellfield	F-Wellfield	H-Wellfield	I-Wellfield	J-Wellfield
Total Header House Heating Costs	\$2,627,276																									
TOTAL RESTORATION COST PER WELLFIELD	\$14,136	\$2,124,700	\$3,886,153	\$1,541,323	\$3,850,447	\$1,177,552	\$2,056,301	\$1,863,743	\$3,337,221	\$3,990,512	\$1,734,632	\$0	\$0	\$2,695,016	\$0	\$0	\$488,539	\$34,807	\$20,460	\$136,161	\$56,547	\$1,430,573	\$7,822,330	\$1,772,359	\$1,560,394	\$1,823,591
<b>TOTAL WELLFIELD RESTORATION COSTS</b>	<b>\$43,813,495</b>																									

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<b>Ground Water Restoration - Site Wide</b>											
<b>I.</b>	<b>Building Utility Costs</b>	<b>CPP</b>	<b>Main Office</b>	<b>Maint Shop</b>	<b>Pumphouse</b>	<b>Sat SR-1</b>	<b>Sat SR-2</b>	<b>Sat Reynolds</b>	<b>Satellite No.2</b>	<b>Selenium Plant</b>	<b>Satellite No.3</b>
	Electricity Unit Cost (\$/yr)	\$31,791	\$26,748	\$6,015	\$10,545	\$43,165	\$43,165	\$43,165	\$29,797	\$42,749	\$29,797
	Propane (\$/yr)	\$2,364	\$0	\$0	\$0	\$0	\$54,948	\$54,948	\$0	\$0	\$48,723
	Natural Gas (\$/yr)	\$66,706	\$0	\$0	\$0	\$11,990	\$0	\$0	\$11,587	\$11,587	\$0
	<b>Number of Years</b>	21	21	21	21	19	21	0	8	21	16
	Subtotal Utility Cost per Building	\$2,118,072	\$561,705	\$126,319	\$221,437	\$1,047,938	\$2,060,373	\$0	\$331,073	\$1,141,062	\$1,256,312
	*Yrs for Satellite SR-1 assumes end of restoration for MU-7										
	<b>Total Building Utility Costs</b>	<b>\$8,864,289</b>									
<b>II.</b>	<b>Deep Disposal Well Utility Costs</b>	<b>SR-1</b>	<b>SR-2</b>	<b>REY-1</b>	<b>SRHUP #6</b>	<b>SRHUP #7</b>	<b>SRHUP #10</b>	<b>Morton 1-20</b>	<b>Vollman 33-27</b>	<b>SRHUP #9</b>	
	Electricity Unit Cost (\$/yr)	\$4,799	\$4,799	\$4,799	\$4,799	\$4,799	\$4,799	\$4,799	\$4,799	\$4,799	\$4,799
	Propane (\$/yr)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	Natural Gas (\$/yr)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	Number of Years	21	21	21	21	21	21	21	21	21	21
	Subtotal Utility Cost per Building	\$100,781	\$100,781	\$100,781	\$100,781	\$100,781	\$100,781	\$100,781	\$100,781	\$100,781	\$100,781
	<b>Total Deep Disposal Well Utility Costs</b>	<b>\$907,033</b>									
<b>III.</b>	<b>Booster Pump Operation Costs</b>	<b>SRH</b>									
	Restoration Period (yrs)	20									
	<a href="#">Booster Pump Operating Cost (\$/yr)</a>	\$216,612.14									
	<b>Total Booster Pump Operating Cost</b>	<b>\$4,332,243</b>									
<b>IV.</b>	<b>Infrastructure, Equipment Maintenance, Replacement and Repair Costs</b>	<b>SRH</b>									
	<b>Annual Maintenance Cost</b>	\$188,277									
	Restoration Period (yrs)	20									
	<b>Total Cost</b>	<b>\$3,765,540</b>									
<b>V.</b>	<b>Deep Disposal Well MIT Costs</b>	<b>SRH</b>									
	<a href="#">Five-year MIT Costs for Disposal Wells</a>	\$17,065.32									
	Number of DDWs	9									
	Number of MITs per DDW	4									
	<b>Total DDW MIT Cost</b>	<b>\$614,352</b>									
<b>VI.</b>	<b>Capital Costs</b>	<b>SRH</b>									
	*Estimates based on planned expenditures (2016)										
	DDW 7- Rey Ranch DDW connecting pipeline	\$470,000									
	<b>Total Capital Costs</b>	<b>\$470,000</b>									
<b>VII.</b>	<b>Vehicle Operation Costs</b>	<b>SRH</b>									
	Number of Pickup Trucks (Gas)	20									
	<a href="#">Truck Cost (\$/hr)</a>	\$20.69									
	Average Operating Time (hrs/yr)	1000									
	Restoration and Stability Period (yrs)	21									
	<b>Total Vehicle Operation Cost</b>	<b>\$8,690,220</b>									

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2015-2016 Surety Estimate Update**

VIII. Labor Costs		SRH								
<b>Assumptions:</b>										
	Number of Environmental Managers/RSOs	1								
	\$/hr	\$65.75								
	Number of Restoration Managers	1								
	\$/hr	\$57.18								
	Number of Environmental Techs/HPTs	4								
	\$/hr	\$35.74								
	Number of Operators/Laborers	14								
	\$/hr	\$37.16								
	Number of Maintenance Technicians	4								
	\$/hr	\$32.88								
	Hrs/yr	2080								
	Restoration and Stability Period (yrs)	21								
<b>Total Labor Cost</b>		<b>\$40,084,035</b>								
<b>IX. Irrigation Maintenance and Monitoring</b>		<b>Irrigator No. 1A</b>	<b>Irrigator No. 2</b>							
<b>A. Harvesting Costs</b>										
	Irrigation Area (acres)	55	106							
	Harvesting Costs (\$/acre)	\$76	\$76							
	Restoration Period (yrs)	21								
	Subtotal Harvesting Costs per Irrigator	\$88,219	\$170,022							
<b>B. Irrigation Monitoring</b>										
	# of Irrigation Fluid Samples/Year	6	6							
	\$/sample	\$105	\$105							
	# of Vegetation Samples/Year	5	5							
	\$/sample	\$270	\$270							
	# of Soil Samples/Year	30	34							
	\$/sample	\$335	\$335							
	# of Soil Water Samples/Year	12	2							
	\$/sample	\$150	\$150							
	Restoration Period (yrs)	21								
	Subtotal Monitoring Costs per Irrigator	\$290,430	\$287,070							
	Subtotal Monitoring and Harvesting Costs per Irrigator	\$378,649	\$457,092							
<b>Total Maintenance and Monitoring Costs</b>		<b>\$835,741</b>								
<b>X. Selenium Plant Operation Costs</b>		<b>SRH</b>								
	Restoration Period (yrs)	21								
	<u>Selenium Plant Operating Cost (\$/yr)</u>	\$153,974								
<b>Total Selenium Plant Operating Cost</b>		<b>\$3,233,454</b>								
<b>TOTAL SITE-WIDE RESTORATION COSTS</b>		<b>\$71,796,907</b>								

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Well and Drill Hole Abandonment	Mine Unit 1	Mine Unit 2	Mine Unit 3 / 3 Ext	Mine Unit 4/4A	Mine Unit 15	Mine Unit 15A	Mine Unit K	K-North	Mine Unit 9	Mine Unit 10	Mine Unit 10-Ext	Mine Unit 27	Mine Unit 21	Mine Unit 7	Mine Unit 8	A-Wellfield	B-Wellfield	C-Wellfield	C-22 Pattern	C abandoned UG workings	D-Wellfield	D-Extension	E-Wellfield	F-Wellfield	H-Wellfield	I-Wellfield	J-Wellfield	Other	
<b>I. Well Abandonment (Wellfields)</b>																													
A. Sealing Costs						Inc in MU-15														Inc in MU-C	Inc in MU-C	Inc in MU-D							
Total # of Wells per Wellfield	292	473	580	669	1374	42	498	327	731	584	333	88	0	445	128	8	392	560	0	0	286	0	431	1399	521	393	422		
Production, Injection and Perimeter Well Average Depth (ft)	500	850	750	850	450	500	950	864	950	900	930	800	600	825	668	500	450	550	550	550	600	550	650	500	650	540	900		
Well Abandonment (Sealing) Costs (\$/ft)	\$2.75	\$2.75	\$2.75	\$2.75	\$2.75	\$2.75	\$2.75	\$2.75	\$2.75	\$2.75	\$2.75	\$2.75	\$2.75	\$2.75	\$2.75	\$2.75	\$2.75	\$2.75	\$2.75	\$2.75	\$2.75	\$2.75	\$2.75	\$2.75	\$2.75	\$2.75	\$2.75		
Subtotal Sealing Costs per Wellfield	\$401,500	\$1,105,638	\$1,196,250	\$1,563,788	\$1,700,325	\$57,750	\$1,301,025	\$776,952	\$1,909,738	\$1,445,400	\$851,648	\$193,600	\$0	\$1,009,594	\$235,136	\$11,000	\$485,100	\$847,000	\$0	\$0	\$471,900	\$0	\$651,888	\$2,500,713	\$716,375	\$702,488	\$626,670		
B. Casing Removal and Disposal Costs																													
Total # of Wells per Wellfield (In Service)	292	473	580	669	1374	42	498	327	731	584	333	88	0	445	128	8	392	560	0	0	286	0	431	1399	521	393	422		
# of Previously Abandoned Wells Pending Release	124	100	70	89	134	0	132	12	92	7	0	19	0	0	0	54	118	189	0	0	89	0	273	340	52	40	22		
Total # of Wells for Casing Removal and Disposal	416	573	650	758	1508	42	630	339	823	591	333	107	0	445	128	62	510	749	0	0	375	0	704	1739	573	433	444		
Remove and Dispose Casing (\$/well)	\$33	\$33	\$33	\$33	\$33	\$33	\$33	\$33	\$33	\$33	\$33	\$33	\$33	\$33	\$33	\$33	\$33	\$33	\$33	\$33	\$33	\$33	\$33	\$33	\$33	\$33	\$33		
Subtotal Casing Removal and Disposal Costs per Wellfield	\$13,728	\$18,909	\$21,450	\$25,014	\$49,764	\$1,386	\$20,790	\$11,187	\$27,159	\$19,503	\$10,989	\$3,531	\$0	\$14,685	\$4,224	\$2,046	\$16,830	\$24,717	\$0	\$0	\$12,375	\$0	\$23,232	\$57,387	\$18,909	\$14,289	\$14,652		
Subtotal Well Abandonment Costs per Wellfield	\$415,228	\$1,124,547	\$1,217,700	\$1,588,802	\$1,750,089	\$59,136	\$1,321,815	\$788,139	\$1,936,897	\$1,464,903	\$862,637	\$197,131	\$0	\$1,024,279	\$239,360	\$13,046	\$501,930	\$871,717	\$0	\$0	\$484,275	\$0	\$675,120	\$2,558,100	\$735,284	\$716,777	\$641,322		
<b>Total Well Abandonment Costs</b>	<b>\$21,248,424</b>																												
<b>II. Removal of Contaminated Soil Around Wells</b>																													
# of Production and Injection Wells	245	420	537	577	1288	0	447	273	655	534	266	0	0	381	0	1	327	455	0	0	231	0	372	1225	437	359	360		
Removal of Contaminated Soil Around Wells (\$/well)	\$83.69	\$83.69	\$83.69	\$83.69	\$83.69	\$83.69	\$83.69	\$83.69	\$83.69	\$83.69	\$83.69	\$83.69	\$83.69	\$83.69	\$83.69	\$83.69	\$83.69	\$83.69	\$83.69	\$83.69	\$83.69	\$83.69	\$83.69	\$83.69	\$83.69	\$83.69	\$83.69		
Subtotal Contaminated Soil Removal/Disposal Costs per Wellfield	\$20,505	\$35,151	\$44,943	\$48,290	\$107,796	\$0	\$37,410	\$22,848	\$54,818	\$44,692	\$22,262	\$0	\$0	\$31,887	\$0	\$84	\$27,367	\$38,080	\$0	\$0	\$19,333	\$0	\$31,133	\$102,523	\$36,573	\$30,045	\$30,129		
<b>Total Contaminated Soil Removal/Disposal Costs</b>	<b>\$785,868</b>																												
<b>III. Delineation Hole Abandonment</b>																													
A. Subsurface Retained Abandonment Cost																													
# of Drill Holes Pending Bond Release																													
2012-13	689																												
2013-14	1022																												
2014-2015	776																												
2015-2016	375																												
Total # of Drill Holes	2862																												
Mobilization Fee	\$1,100.00																												
Reclamation Cost per hole (grading/seeding, cap, site location)	\$77.00																												
40% of Reclamation Costs (GL 12 Appendix L, footnote 6)	\$30.80																												
Subtotal Subsurface Retained Abandonment Cost	\$89,249.60																												
B. Drill Hole Plug and Abandonment																													
# of Projected Drill Holes	0																												
Hole Abandonment (\$/ft)	\$3.30																												
Projected Drill Hole Abandonment, ave depth 860ft	\$0																												
C. Incidental Costs																													
Total # of Drill Holes	0																												
Mobilization Fee	\$1,100.00																												
Site Location (\$/hole)	\$11																												
Capping (\$/hole)	\$11																												
Small Site Grading and Seeding (\$/site)	\$55																												
Subtotal Incidental Costs	\$1,100																												
<b>Total Delineation Hole Abandonment</b>	<b>\$90,350</b>																												
<b>IV. Waste Disposal Well Abandonment</b>																													
A. Well Sealing																													
Total Depth of Well	10,097	9,996	9,600	9,900	9,550	9,950	9,206	14,412	9,500																				
Sealing Cost Per Foot	\$13.62	\$13.62	\$13.62	\$13.62	\$13.62	\$13.62	\$13.62	\$13.62	\$13.62	\$13.62	\$13.62	\$13.62	\$13.62	\$13.62	\$13.62	\$13.62	\$13.62	\$13.62	\$13.62	\$13.62	\$13.62	\$13.62	\$13.62	\$13.62	\$13.62	\$13.62	\$13.62		
*Sealing costs per foot includes surface reclamation costs																													
Subtotal Plugging Costs per Well	\$137,521	\$136,146	\$130,752	\$134,838	\$130,071	\$135,519	\$125,386	\$196,291	\$129,390																				
B. Pump Dismantling and Decontamination																													
Number of Pumps	2	2	2	2	2	2	2	2	2																				
Pump Dismantling and Disposal Cost	\$2,810	\$2,810	\$2,810	\$2,810	\$2,810	\$2,810	\$2,810	\$2,810	\$2,810																				
Subtotal Dismantling and Decon Costs per Well	\$5,619.34	\$5,619.34	\$5,619.34	\$5,619.34	\$5,619.34	\$5,619.34	\$5,619.34	\$5,619.34	\$5,619.34																				
C. Tubing String Disposal (NRC-Licensed Facility)																													
Length of Tubing String (ft)	8,271	8,257	8,910	9,100	8,800	8,217	8,498	8,869	8,820																				
Diameter of Tubing String (inches)	2.875	2.875	2.875	2.875	2.875	2.875	2.875	2.875	2.875																				
Volume of Tubing String (ft <sup>3</sup> )	193	192	207	212	205	191	383	400	397																				
Transportation and Disposal Unit Cost (\$/ft <sup>3</sup> )	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32																				
Subtotal Tubing String Disposal Costs per Well	\$1,410	\$1,408	\$1,519	\$1,552	\$1,501	\$1,401	\$2,804	\$2,927	\$2,911																				
Subtotal Cost per Well	\$144,550	\$143,173	\$137,890	\$142,009	\$137,191	\$142,539	\$133,809	\$204,838	\$137,920																				
<b>Total Waste Disposal Well Abandonment Costs</b>	<b>\$1,323,921</b>																												
<b>TOTAL WELL AND DRILL HOLE ABANDONMENT COSTS</b>	<b>\$23,448,562</b>																												

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Wellfield Buildings and Equipment Removal and Disposal			Mine Unit 1	Mine Unit 2	Mine Unit 3/3 Ext	Mine Unit 4/4A	Mine Unit 15	Mine Unit 15A	Mine Unit K	K-North	Mine Unit 9	Mine Unit 10	Mine Unit 10- Ext	Mine Unit 27	Mine Unit 21	Mine Unit 7	A-Wellfield	B-Wellfield	C-Wellfield	C-22 Pattern	C abandoned UG workings	D-Wellfield	D-Extension	E-Wellfield	F-Wellfield	H-Wellfield	I-Wellfield	J-Wellfield	
I.	Wellfield Piping																												
	Number of Header Houses per Wellfield		6	5	10	11	18	5	9	7	13	9	3	0	0	7	5	18	20										
	Length of Piping per Header House (ft)		13800	13800	13800	13800	13800	13800	13800	13800	13800	13800	13800	13800	13800	13800	13800	13800	13800	13800	13800	13800	13800	13800	13800	13800	13800	13800	
	*Based on 46 wells per header house with 300 ft pipeline per well																												
	Approximate Total Length of Piping (ft)		82800	69000	138000	151800	248400	69000	124200	96600	179400	124200	41400	0	0	96600	69000	248400	276000	0	0	55200	41400	207000	593400	138000	82800	124200	
A.	Removal and Loading																												
	Wellfield Piping Removal Unit Cost (\$/ft of pipe)		\$1.54	\$1.54	\$1.54	\$1.54	\$1.54	\$1.54	\$1.54	\$1.54	\$1.54	\$1.54	\$1.54	\$1.54	\$1.54	\$1.54	\$1.54	\$1.54	\$1.54	\$1.54	\$1.54	\$1.54	\$1.54	\$1.54	\$1.54	\$1.54	\$1.54	\$1.54	
	Subtotal Wellfield Piping Removal and Loading Costs		\$127,784	\$106,486	\$212,973	\$234,270	\$383,351	\$106,486	\$191,675	\$149,081	\$276,864	\$191,675	\$63,892	\$0	\$0	\$149,081	\$106,486	\$383,351	\$425,945	\$0	\$0	\$85,189	\$63,892	\$319,459	\$915,782	\$212,973	\$127,784	\$191,675	
B.	Transport and Disposal Costs (NRC-Licensed Facility)																												
	Average Diameter of Piping (inches)		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
	Chipped Volume Reduction (ft <sup>3</sup> /ft)		0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	
	Chipped Volume per Wellfield (ft <sup>3</sup> )		888	740	1480	1628	2663	740	1332	1036	1923	1332	444	0	0	1036	740	2663	2959	0	0	592	444	2219	6362	1480	888	1332	
	Volume for Disposal Assuming 10% Void Space (ft <sup>3</sup> )		977	814	1628	1790	2930	814	1465	1139	2116	1465	488	0	0	1139	814	2930	3255	0	0	651	488	2441	6998	1628	977	1465	
	Transportation and Disposal Unit Cost (\$/ft <sup>3</sup> )		\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	
	Subtotal Wellfield Piping Transport and Disposal Costs		\$5,637	\$4,697	\$9,393	\$10,328	\$16,905	\$4,697	\$8,453	\$6,572	\$12,209	\$8,453	\$2,816	\$0	\$0	\$6,572	\$4,697	\$16,905	\$18,781	\$0	\$0	\$3,756	\$2,816	\$14,084	\$40,377	\$9,393	\$5,637	\$8,453	
	Subtotal Wellfield Piping Costs per Wellfield		\$133,421	\$111,183	\$222,366	\$244,598	\$400,256	\$111,183	\$200,128	\$155,653	\$289,073	\$200,128	\$66,708	\$0	\$0	\$155,653	\$111,183	\$400,256	\$444,726	\$0	\$0	\$88,945	\$66,708	\$333,543	\$956,159	\$222,366	\$133,421	\$200,128	
	Total Wellfield Piping Costs		\$5,247,785																										
II.	Well Pumps and Tubing																												
	*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		83	137	232	191	432	0	168	99	258	196	113	0	0	134	0	133	199	0	0	91	0	143	487	128	127	121	
	Number of Injection Wells		162	284	305	387	856	0	279	174	397	338	153	0	0	247	1	194	257	0	0	140	0	230	738	310	233	239	
	Number of Monitor Wells		47	50	40	90	83	42	51	53	69	49	66	85	0	62	7	64	85	0	0	50	0	59	119	82	34	59	
	1. Pump Volume																												
	Number of Production Wells with Pumps		50	82	139	114	259	0	101	59	155	118	68	0	0	80	0	133	199	0	0	91	0	143	487	128	127	121	
	Pump Volume (ft <sup>3</sup> )		0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	
	Pump Volume per Wellfield (ft <sup>3</sup> )		21.6	35.5	60.3	49.5	112.3	0.0	43.7	25.7	67.1	50.9	29.4	0.0	0.0	34.8	0.0	57.6	86.0	0.0	0.0	39.4	0.0	61.7	211.0	55.2	54.8	52.4	
	2. Tubing Volume																												
	Average Tubing Length per Well (ft)		475	825	725	825	425	475	925	839	925	875	905	775	575	800	475	425	525	525	525	525	575	575	525	625	475	625	515
	*Based on average well depth minus 25 ft																												
	Tubing Length per Wellfield (ft)		138,700	387,750	418,325	550,275	582,675	19,950	460,650	273,514	669,700	510,125	300,460	65,875	0	354,400	3,800	166,175	283,500	0	0	161,575	0	226,275	840,000	246,525	245,625	215,785	
	Diameter of Production Well Fiberglass Tubing (inches)		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
	Diameter of Injection Well HDPE Tubing (inches)		1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	
	Chipped Volume Reduction (ft <sup>3</sup> /ft)		0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	
	Chipped Volume per Wellfield (ft <sup>3</sup> )		1487	4157	4485	5900	6247	214	4939	2932	7180	5469	3221	706	0	3800	41	1782	3040	0	0	1732	0	2426	9006	2643	2633	2314	
	Volume of Pump and Tubing (ft <sup>3</sup> )		1509	4192	4545	5950	6359	214	4983	2958	7247	5520	706	0	3835	41	1840	3126	0	0	1771	0	2488	9217	2698	2688	2366		
	Volume for Disposal Assuming Void Space (ft <sup>3</sup> )		1659	4612	5000	6544	6995	235	5481	3254	7972	6072	3575	777	0	4218	45	2024	3439	0	0	1949	0	2736	10139	2968	2957	2603	
	Transportation and Disposal Unit Cost (\$/ft <sup>3</sup> )		\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	
	Subtotal Pump and Tubing Transport and Disposal Costs Per Wellfield		\$9,572	\$26,610	\$28,849	\$37,757	\$40,359	\$1,356	\$31,624	\$18,775	\$45,997	\$35,034	\$20,627	\$4,483	\$0	\$24,337	\$260	\$11,678	\$19,842	\$0	\$0	\$11,245	\$0	\$15,786	\$58,500	\$17,125	\$17,061	\$15,019	
	Total Pump and Tubing Disposal Costs		\$491,896																										
III.	Buried Trunkline (Includes \$ for fiber optic cable removal)																												
	Assumptions:																												
	Length of Trunkline Trench (ft)		5075	7600	4790	12565	19085	7500	12000	17198	11565	9050	2095	0	0	5400	6500	0	5900	0	0	12000	5500	0	11700	13200	10750	2500	
A.	Removal and Loading																												
	Main Pipeline Removal Unit Cost (\$/ft of trench)		\$3.09	\$3.09	\$3.09	\$3.09	\$3.09	\$3.09	\$3.09	\$3.09	\$3.09	\$3.09	\$3.09	\$3.09	\$3.09	\$3.09	\$3.09	\$3.09	\$3.09	\$3.09	\$3.09	\$3.09	\$3.09	\$3.09	\$3.09	\$3.09	\$3.09	\$3.09	
	Subtotal Trunkline Removal and Loading Costs		\$15,664	\$23,458	\$14,785	\$38,783	\$58,907	\$23,149	\$37,039	\$53,083	\$35,696	\$27,933	\$6,466	\$0	\$0	\$16,667	\$20,063	\$0	\$18,211	\$0	\$0	\$37,039	\$16,976	\$0	\$36,113	\$40,743	\$33,181	\$7,716	
B.	Transport and Disposal Costs (NRC-Licensed Facility)																												
	1. 3" HDPE Trunkline																												
	Piping Length (ft)		5075	7600	4790	12565	0	0	0	0	0	0	0	0	0	0	6500	0	5900	0	0	12000	5500	0	11700	13200	10750	0	
	Chipped Volume per foot of pipe (ft <sup>3</sup> /ft)		0.0233	0.0233	0.0233	0.0233	0.0233	0.0233	0.0233	0.0233	0.0233	0.0233	0.0233	0.0233	0.0233	0.0233	0.0233	0.0233	0.0233	0.0233	0.0233	0.0233	0.0233	0.0233	0.0233	0.0233	0.0233	0.0233	
	Chipped Volume (ft <sup>3</sup> )		118	177	112	293	0	0	0	0	0	0	0	0	0	151	0	137	0	0	279	128	0	279	307	250	0	0	
	2. 6" HDPE Trunkline																												
	Piping Length (ft)		2410	10000	4820	7320	28170	2320	2288	3466	4800	6850	3500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3000	0
	Chipped Volume per foot of pipe (ft <sup>3</sup> /ft)		0.0834	0.0834	0.0834	0.0834	0.0834	0.0834	0.0834	0.0834	0.0834	0.0834	0.0834	0.0834	0.0834	0.0834	0.0834	0.0834	0.0834	0.0834	0.0834	0.0834	0.0834	0.0834	0.0834	0.0834	0.0834	0.0834	0.0834
	Chipped Volume (ft <sup>3</sup> )		201	834	402	610	2349	193	191	289	40																		



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Smith Ranch Highland Uranium Project  
2015-2016 Surety Estimate Update

Wellfield Buildings and Equipment Removal and Disposal		Mine Unit 1	Mine Unit 2	Mine Unit 3/3 Ext	Mine Unit 4/4A	Mine Unit 15	Mine Unit 15A	Mine Unit K	K-North	Mine Unit 9	Mine Unit 10	Mine Unit 10-Ext	Mine Unit 27	Mine Unit 21	Mine Unit 7	A-Wellfield	B-Wellfield	C-Wellfield	C-22 Pattern	C abandoned UG workings	D-Wellfield	D-Extension	E-Wellfield	F-Wellfield	H-Wellfield	I-Wellfield	J-Wellfield
Total Chipped Volume (ft <sup>3</sup> )		2325	2153	1472	5918	19108	4028	2608	14057	10617	5748	2773	0	0	2494	3006	0	3781	0	0	7691	1045	0	20366	22977	7964	1057
Volume for Disposal Assuming Void Space (ft <sup>3</sup> )		2558	2368	1620	6509	21019	4431	2869	15463	11678	6323	3050	0	0	2743	3306	0	4159	0	0	8460	1150	0	22403	25275	8761	1162
Transportation and Disposal Unit Cost (\$/ft <sup>3</sup> )		\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77
Subtotal Trunkline Transport and Disposal Costs		\$14,759	\$13,663	\$9,347	\$37,555	\$121,275	\$25,566	\$16,553	\$89,218	\$67,379	\$36,482	\$17,598	\$0	\$0	\$15,826	\$19,075	\$0	\$23,996	\$0	\$0	\$48,812	\$6,635	\$0	\$129,260	\$145,831	\$50,549	\$6,704
Trunkline Decommissioning Costs per Wellfield		\$30,423	\$37,121	\$24,132	\$76,338	\$180,182	\$48,715	\$53,592	\$142,301	\$103,075	\$64,415	\$24,064	\$0	\$0	\$32,493	\$39,138	\$0	\$42,207	\$0	\$0	\$85,851	\$23,611	\$0	\$165,373	\$186,574	\$83,730	\$14,420
<b>Total Trunkline Decommissioning Costs</b>		<b>\$1,457,755</b>																									
IV. Wellhead Cover Removal		Mine Unit 1	Mine Unit 2	Mine Unit 3/3 Ext	Mine Unit 4/4A	Mine Unit 15	Mine Unit 15A	Mine Unit K	K-North	Mine Unit 9	Mine Unit 10	Mine Unit 10-Ext	Mine Unit 27	Mine Unit 21	Mine Unit 7	A-Wellfield	B-Wellfield	C-Wellfield	C-22 Pattern	C Haul Drifts	D-Wellfield	D-Extension	E-Wellfield	F-Wellfield	H-Wellfield	I-Wellfield	J-Wellfield
Number of Wells		245	420	537	577	1288	0	447	273	655	534	266	0	0	381	1	327	455	0	0	231	0	372	1225	437	359	360
Well Head Removal, Decontamination, and Disposal Cost		\$11.70	\$11.70	\$11.70	\$11.70	\$11.70	\$11.70	\$11.70	\$11.70	\$11.70	\$11.70	\$11.70	\$11.70	\$11.70	\$11.70	\$11.70	\$11.70	\$11.70	\$11.70	\$11.70	\$11.70	\$11.70	\$11.70	\$11.70	\$11.70	\$11.70	\$11.70
Subtotal Wellhead Removal Costs		\$2,866	\$4,913	\$6,281	\$6,749	\$15,065	\$0	\$5,228	\$3,193	\$7,661	\$6,246	\$3,111	\$0	\$0	\$4,456	\$12	\$3,825	\$5,322	\$0	\$0	\$2,702	\$0	\$4,351	\$14,328	\$5,111	\$4,199	\$4,211
<b>Total Well Head Removal and Disposal Costs</b>		<b>\$109,830</b>																									
V. Header Houses (Includes Booster Stations)		Mine Unit 1	Mine Unit 2	Mine Unit 3/3 Ext	Mine Unit 4/4A	Mine Unit 15	Mine Unit 15A	Mine Unit K	K-North	Mine Unit 9	Mine Unit 10	Mine Unit 10-Ext	Mine Unit 27	Mine Unit 21	Mine Unit 7	A-Wellfield	B-Wellfield	C-Wellfield	C-22 Pattern	C Haul Drifts	D-Wellfield	D-Extension	E-Wellfield	F-Wellfield	H-Wellfield	I-Wellfield	J-Wellfield
Booster Houses		0	0	1	1	6	0	3	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Total Quantity		6	5	11	12	24	5	12	7	14	9	4	0	0	7	5	18	21	0	0	4	3	15	43	11	6	9
Average Header House Volume (ft <sup>3</sup> )		1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
A. Removal																											
Total Volume (ft <sup>3</sup> )		9600	8000	17600	19200	38400	8000	19200	11200	22400	14400	6400	0	0	11200	8000	28800	33600	0	0	6400	4800	24000	68800	17600	9600	14400
Demolition Cost		\$0.293	\$0.293	\$0.293	\$0.293	\$0.293	\$0.293	\$0.293	\$0.293	\$0.293	\$0.293	\$0.293	\$0.293	\$0.293	\$0.293	\$0.293	\$0.293	\$0.293	\$0.293	\$0.293	\$0.293	\$0.293	\$0.293	\$0.293	\$0.293	\$0.293	\$0.293
Subtotal Building Demolition Costs		\$2,809	\$2,341	\$5,150	\$5,618	\$11,236	\$2,341	\$5,618	\$3,277	\$6,554	\$4,213	\$1,873	\$0	\$0	\$3,277	\$2,341	\$8,427	\$9,831	\$0	\$0	\$1,873	\$1,404	\$7,022	\$20,131	\$5,150	\$2,809	\$4,213
B. Survey and Decontamination																											
Cost per Header House		\$634	\$634	\$634	\$634	\$634	\$634	\$634	\$634	\$634	\$634	\$634	\$634	\$634	\$634	\$634	\$634	\$634	\$634	\$634	\$634	\$634	\$634	\$634	\$634	\$634	\$634
Subtotal Survey and Decontamination Costs		\$3,802	\$3,168	\$6,970	\$7,603	\$15,207	\$3,168	\$7,603	\$4,435	\$8,871	\$5,703	\$2,534	\$0	\$0	\$4,435	\$3,168	\$11,405	\$13,306	\$0	\$0	\$2,534	\$1,901	\$9,504	\$27,246	\$6,970	\$3,802	\$5,703
C. Disposal																											
Total Volume for Disposal - Incl. 33% Factor (cy)		117	98	215	235	469	98	235	137	274	176	78	0	0	137	98	352	411	0	0	78	59	293	841	215	117	176
Volume for Disposal Assuming Void Space (cy)		129	108	237	258	516	108	258	151	301	194	86	0	0	151	108	387	452	0	0	86	65	323	925	237	129	194
Disposal Cost, Landfill (cy)		\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17
Subtotal Off-Site County Landfill Disposal Costs		\$5,440	\$4,554	\$9,994	\$10,879	\$21,758	\$4,554	\$10,879	\$6,367	\$12,692	\$8,180	\$3,626	\$0	\$0	\$6,367	\$4,554	\$16,319	\$19,059	\$0	\$0	\$3,626	\$2,741	\$13,620	\$39,004	\$9,994	\$5,440	\$8,180
Headerhouse Soil Removal Volume (assumes 10'Wx20'Lx2.5'D)		500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500
11e(2) Disposal Cost (ft <sup>3</sup> )		\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80
Subtotal 11e(2) Disposal Costs		\$17,414	\$14,512	\$31,926	\$34,829	\$69,658	\$14,512	\$34,829	\$20,317	\$40,634	\$26,122	\$11,610	\$0	\$0	\$20,317	\$14,512	\$52,243	\$60,951	\$0	\$0	\$11,610	\$8,707	\$43,536	\$124,804	\$31,926	\$17,414	\$26,122
Subtotal Header House Removal and Disposal Costs per Wellfield		\$29,465	\$24,575	\$54,040	\$58,929	\$117,859	\$24,575	\$58,929	\$34,396	\$68,751	\$44,218	\$19,643	\$0	\$0	\$34,396	\$24,575	\$88,394	\$103,147	\$0	\$0	\$19,643	\$14,753	\$73,682	\$211,185	\$54,040	\$29,465	\$44,218
<b>Total Header House Removal and Disposal Costs</b>		<b>\$1,232,878</b>																									
TOTAL REMOVAL AND DISPOSAL COSTS PER WELLFIELD		\$205,747	\$204,402	\$335,668	\$424,371	\$753,721	\$185,829	\$349,501	\$354,318	\$514,557	\$350,041	\$134,153	\$4,483	\$0	\$251,335	\$175,168	\$504,153	\$615,244	\$0	\$0	\$208,386	\$105,072	\$427,362	\$1,405,545	\$485,216	\$267,876	\$277,996
<b>TOTAL WELLFIELD BUILDINGS AND EQUIPMENT REMOVAL</b>		<b>\$8,540,144</b>																									

**Cameco Resources  
 Smith Ranch Highland Uranium Project  
 2015-2016 Surety Estimate Update**

Wellfield and Satellite Surface Reclamation		Mine Unit 1	Mine Unit 2	Mine Unit 3/ 3 Ext	Mine Unit 4/4A	Mine Unit 15	Mine Unit 15A	Mine Unit K	K-North	Mine Unit 9	Mine Unit 10	Mine Unit 10- Ext	Mine Unit 27	Mine Unit 21	Mine Unit 7	Mine Unit-A/B	Mine Unit-C	Mine Unit-D	Mine Unit-E	Mine Unit-F	Mine Unit-H	D-Extension	Mine Unit-I	Mine Unit-J
<b>I. Wellfield Pattern Area, and Road Reclamation</b>																								
	Area (acres)	50.9	104.3	99.8	125.1	117.3	44.5	83.3	65.4	88.7	99.5	23.5	0.0	0.0	68.4	37.9	63.9	14.9	44.6	157.6	56.1	9.3	52.7	52.7
	*Assume wellfield pattern area X 2																							
	Discing/Seeding Unit Cost (\$/acre)	\$330	\$330	\$330	\$330	\$330	\$330	\$330	\$330	\$330	\$330	\$330	\$330	\$330	\$330	\$330	\$330	\$330	\$330	\$330	\$330	\$330	\$330	\$330
	Subtotal Pattern Area and Road Reclamation Costs	\$16,790	\$34,412	\$32,947	\$41,290	\$38,702	\$14,698	\$27,482	\$21,589	\$29,264	\$32,842	\$7,762	\$0	\$0	\$22,579	\$12,500	\$21,094	\$4,924	\$14,725	\$52,001	\$18,526	\$3,056	\$17,378	\$17,404
	<b>Total Wellfield Area Reclamation Costs</b>	<b>\$481,965</b>																						
<b>II. Wellfield Road Reclamation</b>																								
	Road Construction																							
	Length of Wellfield Roads (1000 ft)	6.2	10.1	11.2	92.4	19.8	13.6	9.6	2.8	12.7	16.2	2.9	0	0	16.2	12.8	11.3	2.4	13.3	18	15.7	5	5	5
	Wellfield Road Reclamation Unit Cost (\$/1000 ft)	\$1,184	\$1,184	\$1,184	\$1,184	\$1,184	\$1,184	\$1,184	\$1,184	\$1,184	\$1,184	\$1,184	\$1,184	\$1,184	\$1,184	\$1,184	\$1,184	\$1,184	\$1,184	\$1,184	\$1,184	\$1,184	\$1,184	\$1,184
	Subtotal Wellfield Road Reclamation Costs	\$7,343	\$11,961	\$13,264	\$109,430	\$23,449	\$16,107	\$11,369	\$3,316	\$15,041	\$19,186	\$3,434	\$0	\$0	\$19,186	\$15,159	\$13,383	\$2,842	\$15,751	\$21,317	\$18,594	\$5,922	\$5,922	\$5,922
	<b>Total Wellfield Road Reclamation Costs</b>	<b>\$357,898</b>																						
<b>III. Laydown area reclamation</b>																								
	Area of Disturbance (acres)	1	1	2	2	1	1	2	2	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1
	Average Depth of Stripped Topsoil (ft)	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
	Surface Grade: Level Ground																							
	Average Length of Topsoil Haul (ft)	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500
	A. Ripping Overburden with Dozer																							
	Ripping Cost (per acre)	\$1,230	\$1,230	\$1,230	\$1,230	\$1,230	\$1,230	\$1,230	\$1,230	\$1,230	\$1,230	\$1,230	\$1,230	\$1,230	\$1,230	\$1,230	\$1,230	\$1,230	\$1,230	\$1,230	\$1,230	\$1,230	\$1,230	\$1,230
	Subtotal Ripping Costs	\$1,230	\$1,230	\$2,459	\$2,459	\$1,230	\$1,230	\$1,845	\$1,845	\$1,230	\$1,230	\$1,230	\$0	\$0	\$1,230	\$1,230	\$1,230	\$1,230	\$1,230	\$1,230	\$1,230	\$1,230	\$1,230	\$1,230
	B. Topsoil Application with Scraper																							
	Volume of Topsoil Removed (cy)	1,081	1,081	2,162	2,162	1,081	1,081	1,621	1,621	1,081	1,081	1,081	0	0	1,081	1,081	1,081	1,081	1,081	1,081	1,081	1,081	1,081	1,081
	Moving Materials (0% Grade)	\$1,07	\$1,07	\$1,07	\$1,07	\$1,07	\$1,07	\$1,07	\$1,07	\$1,07	\$1,07	\$1,07	\$1,07	\$1,07	\$1,07	\$1,07	\$1,07	\$1,07	\$1,07	\$1,07	\$1,07	\$1,07	\$1,07	\$1,07
	Subtotal Topsoil Application Costs	\$1,155	\$1,155	\$2,309	\$2,309	\$1,155	\$1,155	\$1,732	\$1,732	\$1,155	\$1,155	\$1,155	\$0	\$0	\$1,155	\$1,155	\$1,155	\$1,155	\$1,155	\$1,155	\$1,155	\$1,155	\$1,155	\$1,155
	C. Discing and Seeding																							
	Discing/Seeding Unit Cost (\$/acre)	\$330	\$330	\$330	\$330	\$330	\$330	\$330	\$330	\$330	\$330	\$330	\$330	\$330	\$330	\$330	\$330	\$330	\$330	\$330	\$330	\$330	\$330	\$330
	Subtotal Discing/Seeding Costs	\$330	\$330	\$660	\$660	\$330	\$330	\$495	\$495	\$330	\$330	\$330	\$0	\$0	\$330	\$330	\$330	\$330	\$330	\$330	\$330	\$330	\$330	\$330
	Subtotal Surface Reclamation Costs per WF laydown area	\$2,715	\$2,715	\$5,428	\$5,428	\$2,715	\$2,715	\$4,072	\$4,072	\$2,715	\$2,715	\$2,715	\$0	\$0	\$2,715	\$2,715	\$2,715	\$2,715	\$2,715	\$2,715	\$2,715	\$2,715	\$2,715	\$2,715
	Total Wellfield Laydown Area Reclamation Costs	\$65,155														\$24,435								
	<b>SUBTOTAL SURFACE RECLAMATION COSTS PER WELLFIELD</b>	<b>\$26,848</b>	<b>\$49,088</b>	<b>\$51,639</b>	<b>\$156,148</b>	<b>\$64,866</b>	<b>\$33,520</b>	<b>\$42,923</b>	<b>\$28,977</b>	<b>\$47,020</b>	<b>\$54,743</b>	<b>\$13,911</b>	<b>\$0</b>	<b>\$0</b>	<b>\$44,480</b>	<b>\$30,374</b>	<b>\$37,192</b>	<b>\$10,481</b>	<b>\$33,191</b>	<b>\$76,033</b>	<b>\$39,835</b>	<b>\$11,693</b>	<b>\$26,015</b>	<b>\$26,041</b>
	<b>TOTAL WELLFIELD SURFACE RECLAMATION COSTS</b>	<b>\$905,018</b>																						
<b>IV. Fence Removal</b>																								
	Length of Fencing (ft)	16,487	11,580	7,388	26,009	7,074	0	23,271	23,271	21,887	21,595	9,661	19,732	0	8,674	13,720	18,694	14,060	18,426	29,540	9,680	0	9,977	10,000
	Fence Removal Costs	\$0.42	\$0.42	\$0.42	\$0.42	\$0.42	\$0.42	\$0.42	\$0.42	\$0.42	\$0.42	\$0.42	\$0.42	\$0.42	\$0.42	\$0.42	\$0.42	\$0.42	\$0.42	\$0.42	\$0.42	\$0.42	\$0.42	\$0.42
	Subtotal Fence Removal Costs per Wellfield	\$6,892	\$4,840	\$3,088	\$10,872	\$2,957	\$0	\$9,727	\$9,727	\$9,149	\$9,027	\$4,038	\$8,248	\$0	\$3,626	\$5,735	\$7,814	\$5,877	\$7,702	\$12,348	\$4,046	\$0	\$4,170	\$4,180
	<b>Total Fence Removal Costs</b>	<b>\$134,063</b>																						
<b>V. Satellite Area Reclamation</b>		<b>SR-1</b>	<b>SR-2</b>	<b>REY</b>	Satellite No.1	Satellite No.2	Satellite No.3	Se Plant																
	Assumptions:																							
	Area of Disturbance (acres)	2.70	5.00	5.00	1.00	3.00	2.50	2.00																
	Average Depth of Stripped Topsoil (ft)	1	1	1	1	0.67	0.67	0.67																
	Surface Grade: Level Ground																							
	Average Length of Topsoil Haul (ft)	1000	500	500	1000	500	500	500																
	A. Ripping Overburden with Dozer																							
	Ripping Cost (per acre)	\$1,229.72	\$1,229.72	\$1,229.72	\$1,229.72	\$1,229.72	\$1,229.72	\$1,229.72																
	Subtotal Ripping Costs	\$3,320	\$6,149	\$6,149	\$1,230	\$3,689	\$3,074	\$2,459																
	B. Topsoil Application with Scraper																							
	Volume of Topsoil Removed (cy)	4356	8067	8067	1613	3243	2702	2162																
	Moving Materials (0% Grade)	\$1.28	\$1.28	\$1.28	\$1.28	\$1.28	\$1.28	\$1.28																
	Subtotal Topsoil Application Costs	\$5,558	\$10,293	\$10,293	\$2,059	\$4,138	\$3,448	\$2,759																
	C. Discing and Seeding																							
	Discing/Seeding Unit Cost (\$/acre)	\$330	\$330	\$330	\$330	\$330	\$330	\$330																
	Subtotal Discing/Seeding Costs	\$891	\$1,650	\$1,650	\$330	\$990	\$825	\$660																
	Subtotal Surface Reclamation Costs per Location	\$9,769	\$18,092	\$18,092	\$3,619	\$8,817	\$7,347	\$5,878																
	<b>Total Satellite Building Area Reclamation Costs</b>	<b>\$71,614</b>																						
	<b>TOTAL WELLFIELD AND SATELLITE SURFACE RECLAMATION COSTS</b>	<b>\$1,110,695</b>																						

Cameco Resources  
**Smith Ranch Highland Uranium Project**  
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Equipment Removal and Loading		CPP IX Plant	Central Plant	Dryer Building	Satellite SR-1	Pilot ISL	Pumphouse	Bone Yard	Satellite SR-2	Satellite Reynolds	CPP Lab Addition	CPP Control Room / Change Rooms	CPP Lab	CPP Maintenance Shop Addition	Sodium Hydroxide Addition	HUP Plant	Satellite No. 1	Satellite No. 2	Satellite No. 3	Selenium Plant	
		I. Removal and Loading Costs																			
A. Tankage																					
Number of Tanks		23	36	2	23	15	3	3	10	0	0	0	0	0	1	39	8	14	18	9	
Volume of Tank Construction Material (ft³)		900	1340	300	920	260	164	164	397	0	0	0	0	0	32.5	1629	162	290	397	290	
Tank Removal Cost		\$124.03	\$124.03	\$124.03	\$124.03	\$124.03	\$124.03	\$124.03	\$124.03	\$124.03	\$124.03	\$124.03	\$124.03	\$124.03	\$124.03	\$124.03	\$124.03	\$124.03	\$124.03	\$124.03	
Subtotal Tankage Removal and Loading Costs		\$111,629	\$166,203	\$37,210	\$114,109	\$32,248	\$20,341	\$20,341	\$49,179	\$0	\$0	\$0	\$0	\$0	\$4,031	\$202,048	\$20,093	\$35,969	\$49,241	\$35,969	
B. PVC/Steel Pipe																					
PVC Pipe Footage		4800	6000	350	7000	1500	0	0	4000	0	100	50	100	0	0	12996	1000	4000	4000	4000	
Average PVC Pipe Diameter (inches)		3	3	2	3	3	3	3	3	3	2	2	2	2	0	3	3	3	3	3	
Shredded PVC Pipe Volume Reduction (ft³/ft)		0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	
Volume of Shredded PVC Pipe (ft³)		112	140	8	163	35	0	0	93	0	2	1	2	0	0	303	23	93	93	93	
Steel Pipe Footage		1100	1,000	300	250	0	80	0	0	0	25	50	25	15	25	645	0	0	0	0	
Average Steel Pipe Diameter (inches)		6	0	0	6	0	8	0	0	0	0.5	0.5	0.5	0.5	0.5	2	0	0	0	0	
Volume (ft³)		216	0	0	49	0	30	0	0	0	1	1	1	1	1	15	0	0	0	0	
Pipe Removal Cost		\$8.05	\$8.05	\$8.05	\$8.05	\$8.05	\$8.05	\$8.05	\$8.05	\$8.05	\$8.05	\$8.05	\$8.05	\$8.05	\$8.05	\$8.05	\$8.05	\$8.05	\$8.05	\$8.05	
Subtotal PVC/Steel Pipe Removal and Loading Costs		\$47,471	\$56,322	\$5,230	\$58,333	\$12,069	\$644	\$0	\$32,184	\$0	\$1,006	\$805	\$1,006	\$121	\$201	\$109,755	\$8,046	\$32,184	\$32,184	\$32,184	
C. Pumps																					
Number of Pumps		23	67	6	23	12	2	0	13	0	0	0	0	0	2	52	10	14	13	14	
Average Volume (ft³/pump)		4.93	4.93	0	4.93	4.93	4.93	4.93	4.93	4.93	4.93	4.93	4.93	4.93	4.93	4.93	4.93	4.93	4.93	4.93	
Volume of Pumps (ft³)		113	330	0	113	59	10	0	64	0	0	0	0	0	10	256.36	49.3	69.02	64.09	69.02	
Pump Removal Cost		\$96	\$96	\$96	\$96	\$96	\$96	\$96	\$96	\$96	\$96	\$96	\$96	\$96	\$96	\$96	\$96	\$96	\$96	\$96	
Subtotal Pump Removal and Loading Costs		\$10,851.06	\$31,688.92	\$0.00	\$10,851.06	\$5,665.60	\$960.27	\$0.00	\$6,145.73	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$960.27	\$24,617.49	\$4,734.13	\$6,627.79	\$6,154.37	\$6,627.79	
D. Dryer																					
Dryer Volume (ft³)		0	0	1,000	0	0	0	0	0	0	0	0	0	0	0	885	0	0	0	0	
Dryer Removal Costs		\$14.13	\$14.13	\$14.13	\$14.13	\$14.13	\$14.13	\$14.13	\$14.13	\$14.13	\$14.13	\$14.13	\$14.13	\$14.13	\$14.13	\$14.13	\$14.13	\$14.13	\$14.13	\$14.13	
Subtotal Dryer Dismantling and Loading Cost		\$0	\$0	\$14,134	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$12,509	\$0	\$0	\$0	\$0	
E. RO Units																					
Number of RO Units (500 gpm)																					
Current		1	0	0	1	0	0	0	0.25	0	0	0	0	0	0	0	0	2.5	0	0	
Planned		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Number of Degasser Units																					
Current		0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Planned		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
RO/Degasser Average Volume (ft³/Unit)		250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	
RO and Degasser Removal Cost		\$4.69	\$4.69	\$4.69	\$4.69	\$4.69	\$4.69	\$4.69	\$4.69	\$4.69	\$4.69	\$4.69	\$4.69	\$4.69	\$4.69	\$4.69	\$4.69	\$4.69	\$4.69	\$4.69	
Subtotal RO Unit Removal and Loading Costs		\$1,172.17	\$0.00	\$0.00	\$2,344.35	\$0.00	\$0.00	\$0.00	\$293.04	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$2,930.44	\$0.00	\$1,172.17	
Subtotal Equipment Removal and Loading Costs per Facility		\$171,123	\$254,213	\$56,574	\$185,638	\$49,983	\$21,945	\$20,341	\$87,801	\$0	\$1,006	\$805	\$1,006	\$121	\$5,192	\$348,929	\$32,873	\$77,711	\$87,579	\$75,953	
Total Equipment Removal and Loading Costs		\$1,478,792																			
II. Transportation and Disposal Costs (NRC-Licensed Facility)																					
A. Tankage																					
Volume of Tank Construction Material (ft³)		900	1340	300	920	260	164	164	397	0	0	0	0	0	33	0	162	290	397	290	
Volume for Disposal Assuming Void Space (ft³)		900	1474	330	1012	286	180	180	436	0	0	0	0	0	36	0	178	319	437	319	
Transportation and Disposal Unit Cost (\$/ft³)		\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	
Subtotal Tankage Transportation and Disposal Costs		\$7,250	\$10,795	\$2,417	\$7,411	\$2,095	\$1,318	\$1,318	\$3,193	\$0	\$0	\$0	\$0	\$0	\$264	\$0	\$1,304	\$2,336	\$3,200	\$2,336	
B. PVC / Steel Pipe																					
Volume of Shredded PVC Pipe (ft³)		111.8	139.7	8.2	163.0	34.9	0.0	0.0	93.1	0.0	2.3	1.2	2.3	0.0	0.0	0	23	93	93	93	
Volume for Disposal Assuming Void Space (ft³)		123	154	9	179	38	0	0	102	0	3	1	3	0	0	0	25	102	102	102	
Volume of Steel Pipe (ft³)		216	0	0	49.075	0	30	0	0	0	1	1	1	1	1	0	0	0	0	0	
Volume for Disposal Assuming Void Space (ft³)		238	0	0	54	0	33	0	0	0	1	1	1	1	1	0	0	0	0	0	
Transportation and Disposal Unit Cost (\$/ft³)		\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	
Subtotal PVC Pipe Transportation and Disposal Costs		\$2,083	\$889	\$52	\$1,344	\$219	\$190	\$0	\$589	\$0	\$23	\$12	\$23	\$6	\$6	\$0	\$144	\$589	\$589	\$589	
C. Pumps																					
Volume of Pumps (ft³)		113	330	0	113	59	10	0	64	0	0	0	0	0	10	0	49	69	64	69	
Volume for Disposal Assuming Void Space (ft³)		124	363	0	124	65	11	0	70	0	0	0	0	0	11	0	54	76	70	76	
Transportation and Disposal Unit Cost (\$/ft³)		\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	
Subtotal Pump Transportation and Disposal Costs		\$908	\$2,658	\$0	\$908	\$476	\$81	\$0	\$513	\$0	\$0	\$0	\$0	\$0	\$81	\$0	\$395	\$557	\$513	\$557	
D. Dryer																					
Dryer Volume (ft³)		0	0	1000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Volume for Disposal Assuming Dryer Remains Intact (ft³)		0	0	1000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Transportation and Disposal Unit Cost (\$/ft³)		\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	
Total Dryer Transportation and Disposal Costs		\$0	\$0	\$7,323	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
E. RO/Degasser Units																					
Volume of RO Units (ft³)		250	0	0	500	0	0	0	62.5	0	0	0	0	0	0	0	0	62.5	0	250	
Volume for Disposal Assuming Volume Reduction (ft³)		275	0	0	550	0	0	0	68.75	0	0	0	0	0	0	0	0	68.75	0	275	
Transportation and Disposal Unit Costs		\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	
Subtotal RO Unit Transportation and Disposal Costs		\$2,014	\$0	\$0	\$4,028	\$0	\$0	\$0	\$503	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$5,035	\$0	\$2,014	
Subtotal Equipment Transportation and Disposal Costs per Facility		\$12,255	\$14,342	\$9,792	\$13,691	\$2,790	\$1,589	\$1,318	\$4,798	\$0	\$23	\$12	\$23	\$6	\$351	\$0	\$1,843	\$8,517	\$4,302	\$5,496	
Total Equipment Transportation and Disposal Costs		\$81,148																			
III. Health and Safety Costs																					
Radiation Safety costs																					
Total Health and Safety Costs																					
Subtotal Equipment Removal and Disposal Costs per Facility		\$183,378	\$268,555	\$66,366	\$199,329	\$52,773	\$23,534	\$21,659	\$92,600	\$0	\$1,029	\$817	\$1,029	\$127	\$5,543	\$348,929	\$34,716	\$86,228	\$91,881	\$81,449	
TOTAL EQUIPMENT REMOVAL AND DISPOSAL COSTS		\$1,559,941																			

**Cameco Resources**  
**Smith Ranch Highland Uranium Project**  
**2015-2016 Surety Estimate Update**

				CPP IX Plant	Central Plant	Dryer Building	Office Building	Storage Building	Water Treat Plant	Shop Building	Pilot ISL Building	Fresh Water Pumphouse	CPP O2 Pad	CPP Fuel Area	Mine Unit 15 O2 Pad	DDW 1 Buildings	DDW SRHUP #10 Buildings	DDW REY-1 Buildings	DDW WellHead Buildings	Satellite SR-1	Yellowcake Warehouse	Satellite SR-2	Satellite Reynolds	Construction Shop	CPP Lab Addition	DDW SRHUP #7 Buildings	CPP Control Room / Change Rooms	CPP Lab	CPP Maintenance Shop Addition	Sodium Hydroxide Addition	HUP Plant	Dryer Building	
<b>Building Demolition and Disposal</b>		165 x 70	165 x 100	100 x 35																													
<b>I. Decontamination Costs</b>																																	
<b>A. Wall Decontamination</b>																																	
Area to be Decontaminated (ft²)																																	
HCl Acid Wash, including labor (\$/ft²)																																	
Subtotal Wall Decontamination Costs																																	
<b>B. Concrete Floor Decontamination</b>																																	
Area to be Decontaminated (ft²)																																	
HCl Acid Wash, including labor (\$/ft²)																																	
Subtotal Concrete Floor Decontamination Costs																																	
<b>C. Deep Well Injection Costs</b>																																	
Total kgals for Injection (1 gal used per ft²)																																	
Deep Well Injection Unit Cost (\$/kgals)																																	
Subtotal Deep Well Injection Costs																																	
Subtotal Decontamination Costs per Building																																	
<b>Total Decontamination Costs</b>																																	
<b>II. Demolition Costs</b>																																	
<b>A. Building</b>																																	
Height of Building (ft)																																	
Volume of Building (ft³)																																	
Demolition Cost																																	
Subtotal Building Demolition Costs																																	
<b>B. Concrete Floor</b>																																	
Area of Concrete Floor (ft²)																																	
Concrete Floor Demolition Cost																																	
Subtotal Concrete Floor Demolition Costs																																	
<b>C. Concrete Footing</b>																																	
Length of Concrete Footing (ft)																																	
Demolition Cost																																	
Subtotal Concrete Footing Demolition Costs																																	
Subtotal Demolition Costs per Building																																	
<b>Total Demolition Costs</b>																																	
<b>III. Disposal Costs</b>																																	
<b>A. Building</b>																																	
Volume of Building (cy)																																	
Off-site County Facility																																	
Percentage (%)																																	
Total Volume for Disposal - Incl. 33% Factor (cy)																																	
Volume for Disposal (cubic yards)																																	
Disposal Unit Cost (\$/cy)																																	
Subtotal county facility off-Site Disposal Costs																																	
<b>B. Concrete Floor</b>																																	
Area of Concrete Floor (ft²)																																	
Average Thickness of Concrete Floor (ft)																																	
Volume of Concrete Floor (ft³)																																	
Volume of Concrete Floor (cy)																																	
<b>1. Off-site County disposal</b>																																	
Percentage (%)																																	
Volume for Disposal (cy)																																	
Disposal Unit Cost (\$/cy)																																	
Subtotal county facility off-Site Disposal Costs																																	
<b>2. NRC-licensed Facility</b>																																	
Percentage (%)																																	
Volume for Disposal (ft³)																																	
Transportation and Disposal Unit Cost (\$/ft³)																																	
Subtotal NRC-Licensed Facility Disposal Costs																																	
Subtotal Concrete Floor Disposal Costs																																	
<b>C. Concrete Footing</b>																																	
Length of Concrete Footing (ft)																																	
Average Depth of Concrete Footing (ft)																																	
Average Width of Concrete Footing (ft)																																	
Volume of Concrete Footing (ft³)																																	
Volume of Concrete Footing (cy)																																	
Disposal Unit Cost (\$/cy)																																	
Subtotal Concrete Footing Disposal Costs																																	
Subtotal Disposal Costs per Building																																	
<b>Total Disposal Costs</b>																																	
<b>IV. Health and Safety Costs</b>																																	
SUBTOTAL BUILDING DEMOLITION AND DISPOSAL COSTS		\$322,246	\$527,544	\$119,091	\$121,416	\$22,685	\$12,140	\$171,952	\$316,663	\$11,103	\$2,682	\$2,572	\$2,682	\$6,551	\$7,640	\$6,532	\$7,542	\$428,735	\$83,130	\$428,735	\$0	\$78,608	\$8,960	\$7,640	\$12,127	\$9,174	\$11,642	\$16,474	\$821,816	\$45,383			
<b>TOTAL BUILDING DEMOLITION AND DISPOSAL COSTS</b>																																	

Cameco Resources  
Smith Ranch Highland Uranium Project  
2015-2016 Surety Estimate Update

	Satellite No. 1	Satellite No. 2	Satellite No. 3	Sat. No. 3 Fab Shop	Yellowcake Warehouse	South Warehouse	Suspended Walkway	Changehouse and Lab	Maintenance Building	min Office	Process/Fire Water	Potable Water Building	Potable Water Tank Slab	Central Plant Tank Slabs	Selenium Plant	Exxon R&D RO Building	Exxon R&D Process Building	SRHUP #9 DDW	Vollman 33-27 DDW	Morton 1-20 DDW
<b>Building Demolition and Disposal</b>																				
<b>I. Decontamination Costs</b>																				
A. Wall Decontamination																				
Area to be Decontaminated (ft <sup>2</sup> )	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4,000	0	0	0	0	0
HCl Acid Wash, including labor (\$/ft <sup>2</sup> )	\$0.88	\$0.88	\$0.88	\$0.88	\$0.88	\$0.88	\$0.88	\$0.88	\$0.88	\$0.88	\$0.88	\$0.88	\$0.88	\$0.88	\$0.88	\$0.88	\$0.88	\$0.88	\$0.88	\$0.88
Subtotal Wall Decontamination Costs	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,515	\$0	\$0	\$0	\$0	\$0
B. Concrete Floor Decontamination																				
Area to be Decontaminated (ft <sup>2</sup> )	6000	9600	9600	0	0	0	0	0	0	0	0	0	0	0	9600	1260	1260	1260	1260	1260
HCl Acid Wash, including labor (\$/ft <sup>2</sup> )	\$0.53	\$0.53	\$0.53	\$0.53	\$0.53	\$0.53	\$0.53	\$0.53	\$0.53	\$0.53	\$0.53	\$0.53	\$0.53	\$0.53	\$0.53	\$0.53	\$0.53	\$0.53	\$0.53	\$0.53
Subtotal Concrete Floor Decontamination Costs	\$3,205	\$5,128	\$5,128	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$5,128	\$673	\$673	\$673	\$673	0.535979164
C. Deep Well Injection Costs																				
Total kgals for Injection (1 gal used per ft <sup>2</sup> )	6	9.6	9.6	0	0	0	0	0	0	0	0	0	0	0	13.6	1.26	1.26	1.26	1.26	1.26
Deep Well Injection Unit Cost (\$/kgals)	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	1.127414695
Subtotal Deep Well Injection Costs	\$7	\$11	\$11	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$16	\$1	\$1	\$1	\$1	\$1
Subtotal Decontamination Costs per Building	\$3,212	\$5,139	\$5,139	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$8,659	\$674	\$674	\$674	\$674	676
<b>Total Decontamination Costs</b>																				
<b>II. Demolition Costs</b>																				
A. Building																				
Height of Building (ft)	24	25	25	25	14	19	0	14	13	12	21	35	0	0	25	12	12	12	12	12
Volume of Building (ft <sup>3</sup> )	192,000	320,000	320,000	37,560	91,000	333,000	5,600	73,000	27,000	72,000	16,500	6,300	0	0	320,000	15,120	15,120	15,120	15,120	15,120
Demolition Cost	\$0.29	\$0.29	\$0.29	\$0.29	\$0.29	\$0.29	\$0.29	\$0.29	\$0.29	\$0.29	\$0.29	\$0.29	\$0.29	\$0.29	\$0.29	\$0.29	\$0.29	\$0.29	\$0.29	\$0.29
Subtotal Building Demolition Costs	\$56,179	\$93,632	\$93,632	\$10,990	\$26,627	\$97,436	\$1,639	\$21,360	\$7,900	\$21,067	\$4,828	\$1,843	\$0	\$0	\$93,632	\$4,424	\$4,424	\$4,424	\$4,424	\$4,424
B. Concrete Floor																				
Area of Concrete Floor (ft <sup>2</sup> )	8,000	12,800	12,800	0	6,500	18,000	0	5,400	2,100	6,000	800	180	1,256	7,854	12,800	12,801	12,802	1,260	1,260	1,260
Demolition Cost	\$0.84	\$0.84	\$0.84	\$0.84	\$0.84	\$0.84	\$0.84	\$0.84	\$0.84	\$0.84	\$0.84	\$0.84	\$0.84	\$0.84	\$0.84	\$0.84	\$0.84	\$0.84	\$0.84	\$0.84
Subtotal Concrete Floor Demolition Costs	\$6,688	\$10,701	\$10,701	\$0	\$5,434	\$15,048	\$0	\$4,514	\$1,756	\$5,016	\$669	\$150	\$1,050	\$6,566	\$10,701	\$10,702	\$1,053	\$1,053	\$1,053	\$0.84
C. Concrete Footing																				
Length of Concrete Footing (ft)	358	453	453	0	322	537	0	294	183	310	113	54	0	0	453	453	453	142	142	142
Demolition Cost	\$17.24	\$17.24	\$17.24	\$17.24	\$17.24	\$17.24	\$17.24	\$17.24	\$17.24	\$17.24	\$17.24	\$17.24	\$17.24	\$17.24	\$17.24	\$17.24	\$17.24	\$17.24	\$17.24	\$17.24
Subtotal Concrete Footing Demolition Costs	\$6,167	\$7,801	\$7,801	\$0	\$5,559	\$9,250	\$0	\$5,067	\$3,160	\$5,341	\$1,950	\$925	\$0	\$0	\$7,801	\$7,801	\$7,801	\$2,447	\$2,447	\$2,447
Subtotal Demolition Costs per Building	\$69,034	\$112,134	\$112,134	\$10,990	\$37,620	\$121,734	\$1,639	\$30,941	\$0	\$7,447	\$2,918	\$1,050	\$6,566	\$112,134	\$0	\$0	\$7,924	\$7,924	\$7,924	\$7,924
<b>Total Demolition Costs</b>																				
<b>III. Disposal Costs</b>																				
A. Building																				
Volume of Building (cy)	7,111	11,852	11,852	1,391	3,370	12,333	207	2,704	1,000	2,667	611	233	0	0	11,852	560	560	560	560	560
Off-site County Facility																				
Percentage (%)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Total Volume for Disposal - Incl. 33% Factor (cy)																				
Volume for Disposal (cubic yards)	2347	3911	3911	459	1112	4070	68	892	330	880	202	77	0	0	3911	185	185	185	185	185
Disposal Unit Cost (\$/cy)	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$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	\$98,951	\$164,919	\$164,919	\$19,357	\$46,899	\$171,618	\$2,886	\$37,622	\$13,915	\$37,107	\$8,504	\$3,247	\$0	\$0	\$164,919	\$7,792	\$7,792	\$7,792	\$7,792	\$7,792
B. Concrete Floor																				
Area of Concrete Floor (ft <sup>2</sup> )	8,000	12,800	12,800	0	6,500	18,000	0	5,400	2,100	6,000	800	180	1,256	7,854	12,800	12,801	12,802	1,260	1,260	1,260
Average Thickness of Concrete Floor (ft)	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Volume of Concrete Floor (ft <sup>3</sup> )	6000	9600	9600	0	4875	13500	0	4050	1575	4500	600	135	942	5890.5	9600	9600.75	9601.5	945	945	945
Volume of Concrete Floor (cy)	222	356	356	0	181	500	0	150	58	167	22	5	35	218	356	356	356	35	35	35
1. Off-site County disposal																				
Percentage (%)	75%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Volume for Disposal (cy)	167	356	356	0	181	500	0	150	58	167	22	5	35	218	356	356	356	35	35	35
Disposal Unit Cost (\$/cy)	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$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	\$7,028	\$14,993	\$14,993	\$0	\$7,613	\$21,083	\$0	\$6,325	\$2,460	\$7,028	\$937	\$211	\$1,471	\$9,199	\$14,993	\$14,994	\$14,995	\$1,476	\$1,476	\$1,476
2. NRC-licensed Facility																				
Percentage (%)	25%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Volume for Disposal (ft <sup>3</sup> )	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Transportation and Disposal Unit Cost (\$/ft <sup>3</sup> )	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80
Subtotal NRC-Licensed Facility Disposal Costs	\$87	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Subtotal Concrete Floor Disposal Costs	\$7,115	\$14,993	\$14,993	\$0	\$7,613	\$21,083	\$0	\$6,325	\$2,460	\$7,028	\$937	\$211	\$1,471	\$9,199	\$14,993	\$14,994	\$14,995	\$1,476	\$1,476	\$1,476
C. Concrete Footing																				
Length of Concrete Footing (ft)	358	453	453	0	322	537	0	294	183	310	113	54	0	0	453	453	453	142	142	142
Average Depth of Concrete Footing (ft)	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Average Width of Concrete Footing (ft)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Volume of Concrete Footing (ft <sup>3</sup> )	1431	1810	1810	0	1290	2147	0	1176	733	1239	453	215	0	0	1810	1810	1810	568	568	568
Volume of Concrete Footing (cy)	53	67	67	0	48	80	0	44	27	46	17	8	0	0	67	67	67	21	21	21
Disposal Unit Cost (\$/cy)	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17
Subtotal Concrete Footing Disposal Costs	\$2,235	\$2,827	\$2,827	\$0	\$2,015	\$3,352	\$0	\$1,836	\$1,145	\$1,936	\$707	\$335	\$0	\$0	\$2,827	\$2,827	\$2,827	\$887	\$887	\$887
Subtotal Disposal Costs per Building	\$108,301	\$182,739	\$182,739	\$19,357	\$56,527	\$196,053	\$2,886	\$45,783	\$0	\$0	\$10,148	\$3,793	\$1,471	\$9,199	\$182,739	\$0	\$0	\$10,155	\$10,155	\$10,155
<b>Total Disposal Costs</b>																				
<b>IV. Health and Safety Costs</b>																				
SUBTOTAL BUILDING DEMOLITION AND DISPOSAL COSTS	\$180,547	\$300,012	\$300,012	\$30,347	\$94,147	\$317,787	\$4,525	\$76,724	\$0	\$0	\$17,595	\$6,711	\$2,521	\$15,765	\$303,532	\$0	\$0	\$18,753	\$18,753	\$18,755
<b>TOTAL BUILDING DEMOLITION AND DISPOSAL COSTS</b>																				

Cameco Resources  
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Miscellaneous Reclamation															
I. CPP/Office Area/Pilot Plant/Maint. Shop/Chem. Storage/Yard Reclamation															
Concrete Pad= 0.3 acres															
Total Area = 10.57 acres															
A. Concrete Pad															
Area of Concrete Pad (ft <sup>2</sup> ) 13068															
Demolition Cost \$0.84															
Average Thickness of Concrete Floor (ft) 0.50															
Volume of Concrete Floor (ft <sup>3</sup> ) 6,534															
Volume of Concrete Floor (cy) 242															
Concrete Disposal On Site (\$/cy) \$9.49															
Subtotal Concrete Pad Demolition and Disposal Costs \$13,222															
B. Gravel Road Base Removal															
Average haul distance (ft) 1000															
Gravel Road Base Area (acres) 8.0															
Average Road Base Depth (ft) 0.5															
Volume of Road Base (cy) 6453															
Moving Materials \$1.28															
Subtotal Gravel Road Base Removal Costs \$8,234															
C. Ripping Overburden with Dozer															
Overburden Surface Area (acres) 10.6															
Ripping Cost (per acre) \$1,229.72															
Subtotal Ripping Overburden Costs \$12,998															
D. Topsoil Application															
Area of surface disturbance (ft <sup>2</sup> ) 460426															
Average thickness of topsoil (ft) 0.5															
Average haul distance (ft) 2000															
Surface grade (%)															
Volume of Topsoil (cy) 8,526															
Moving Materials \$1.28															
Subtotal Topsoil Application Costs \$10,880															
E. Discing/Seeding															
Surface Area (acres) 10.57															
Discing/Seeding Unit Cost (\$/acre) \$330															
Subtotal Discing/Seeding Costs \$3,488															
Total CPP/Office/Yard Area Reclamation \$48,822															
II. CPP/Office Area Reclamation (Highland)															
Concrete Pad= 0.3 acres															
Total Area = 10 acres															
A. Asphalt															
Area of Asphalt (acres) 3.4															
Ripping Cost (per acre) \$853.88															
Average Thickness (ft) 0.50															
Moving Materials (0% Grade) \$1,068															
Volume of Asphalt (cy) 2,743															
Disposal Cost \$42.17															
Subtotal Asphalt Ripping and Disposal Costs \$130,132															
B. Ripping Overburden with Dozer															
Overburden Surface Area (acres) 10.6															
Ripping Cost (per acre) \$1,229.72															
Subtotal Ripping Overburden Costs \$12,998															
C. Topsoil Application															
Area of surface disturbance (ft <sup>2</sup> ) 130680															
Average thickness of topsoil (ft) 0.5															
Average haul distance (ft) 2000															
Surface grade (%) 0%															
Volume of Topsoil (cy) 2,420															
Moving Materials (0% Grade) \$1.65															
Subtotal Topsoil Application Costs \$4,001															
D. Discing/Seeding															
Surface Area (acres) 13															
Discing/Seeding Unit Cost (\$/acre) \$330															
Subtotal Discing/Seeding Costs \$4,290															
Total Access Road Reclamation Costs \$151,421															
III. Access Road Reclamation (includes culverts)															
SR CPP Access Rd. CPP to SAT 3 Access to WF MU-15 Access SR2 Access Reynolds Access Access SRHUP 7 Access SRHUP 10 from MU-4 Highland CPP/Office Area Sat No. 1 Sat No. 3 Connecting Road Sat No. 2 to Rancher Rd															
A. Assumptions															
Surface grade 1% 5% 5% 0% 5% 0% 0% 0% 0% 5% 0% 0% 0% 0%															
Length of Road (ft) 5,173 15,827 15,557 10,560 8,500 2,500 1,500 2,500 13,200 15,840 5,280 10,560 2,640															
Width of Road (ft) 40 30 14 30 30 3 20 20 25 30 30 10															
Area of road (acres) 4.8 10.9 5.0 7.3 5.9 1.7 0.7 1.1 7.6 10.9 3.6 7.3 0.6															
B. Ripping and Hauling Asphalt															
Assumptions															
Average Haul Distance (feet) 500 500 500 500 500 500 500 500 5500 0 0 0 0															
Average Thickness of Asphalt (ft) 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5															
Ripping Cost (per acre) \$853.88 \$853.88 \$853.88 \$853.88 \$853.88 \$853.88 \$853.88 \$853.88 \$853.88 \$853.88 \$853.88 \$853.88 \$853.88															
Volume of Asphalt (cy) 3832 8793 4033 5867 4722 1389 556 926 6111 8800 2933 5867 489															
Moving Materials \$1.65 \$1.65 \$1.65 \$1.65 \$1.65 \$1.65 \$1.65 \$1.65 \$1.65 \$1.65 \$1.65 \$1.65 \$1.65															
Subtotal Ripping and Hauling Asphalt \$10,391 \$23,844 \$10,938 \$15,909 \$12,806 \$3,766 \$1,507 \$2,511 \$16,572 \$23,864 \$7,955 \$15,909 \$1,326															
B. Gravel Road Base Removal															
Average haul distance (ft) 1000 1000 1000 1000 1000 1000 1000 1000 0 1000 1000 1000 0															
Gravel Road Base Width (ft) 30 20 10 20 20 1.15 0.69 2.0 0.00 14 14 14 0															
Gravel Road Base Area (acres) 3.56 7.27 3.57 4.85 3.90 1.15 0.69 1.15 5.09 1.70 3.39 0.00															
Average Road Base Depth (ft) 0.75 0.5 0.5 0.5 0.5 0 0 0 0 0 0 0 0															
Volume of Road Base (cy) 4311 5862 2881 3911 3148 0 0 0 0 0 0 0 0															
Moving Materials \$1.28 \$1.28 \$1.28 \$1.28 \$1.28 \$1.28 \$1.28 \$1.28 \$1.28 \$1.28 \$1.28 \$1.28 \$1.28															
Subtotal Gravel Road Base Removal Costs \$5,501 \$7,480 \$3,676 \$4,991 \$4,017 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0															
C. Ripping Overburden with Dozer															
Overburden Surface Area (acres) 4.8 10.9 5.0 7.3 5.9 1.7 0.7 1.1 0.0 10.9 3.6 7.3 0.6															
Ripping Cost (per Acre) \$1,229.72 \$1,229.72 \$1,229.72 \$1,229.72 \$1,229.72 \$1,229.72 \$1,229.72 \$1,229.72 \$1,229.72 \$1,229.72 \$1,229.72 \$1,229.72 \$1,229.72															
Subtotal Ripping Overburden Costs \$5,841 \$13,404 \$6,149 \$8,943 \$7,199 \$2,117 \$847 \$1,412 \$0 \$13,415 \$4,472 \$8,943 \$745															
D. Topsoil Application															
Average haul distance (ft) 1500 1500 1500 1500 1500 1500 1500 1500 1500 1500 1500 1500 1500															
Topsoil Surface Area (ft <sup>2</sup> ) 206920 474810 217798 316800 250000 75000 30000 50000 330000 475200 158400 316800 26400															
Depth of Topsoil (ft) 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5															
Volume of Topsoil (cy) 3832 8793 4033 5867 4722 1389 556 926 6111 8800 2933 5867 489															
Moving Materials \$1.28 \$1.28 \$1.28 \$1.28 \$1.28 \$1.28 \$1.28 \$1.28 \$1.28 \$1.28 \$1.28 \$1.28 \$1.28															
Subtotal Topsoil Application Costs \$4,889 \$11,220 \$5,146 \$7,486 \$6,026 \$1,772 \$709 \$1,181 \$7,798 \$11,229 \$3,743 \$7,486 \$624															
E. Discing/Seeding															
Surface Area (acres) 4.8 10.9 5.0 7.3 5.9 1.7 0.7 1.1 7.6 10.9 3.6 7.3 0.6															
Discing/Seeding Unit Cost (\$/acre) \$330 \$330 \$330 \$330 \$330 \$330 \$330 \$330 \$330 \$330 \$330 \$330 \$330															
Subtotal Discing/Seeding Costs \$1,584 \$3,597 \$1,650 \$2,400 \$1,932 \$568 \$227 \$379 \$2,500 \$3,600 \$1,200 \$2,400 \$200															
Multiplier for Projected Additions 0 0 1 0 0 0 0 0 0 0 0 0 0															
Subtotal Reclamation Costs per Access Road \$28,190 \$59,545 \$55,117 \$39,729 \$31,980 \$8,223 \$3,290 \$5,483 \$26,870 \$52,108 \$17,370 \$34,738 \$2,895															
Total Access Road Reclamation Costs \$365,539															
IV. Trunk Lines															
Trunk Line #1 (CPP) Trunk Line #2 (CPP) Trunk Line #3 (MU- Included in MU 15) Trunk Line #4 (O- Trunk Line (SR- WF 4 to CPP - Waste Transfer SR2 Waste Transfer SR1 SR-1 to Sat 2 SAT2 to SAT1 / Mortu SAT3 to SAT2 PSR H-WF Rest. Bypass Vollman WW Pipeline SRHUP 9 WW Pipeline SAT3 to SAT2 Pipeline to Irrigator 1 SAT2 to PSR2															
A. Removal and Loading															
Length of Trench (ft) 7750 8500 0 5500 2500 10000 12000 7000 39268 24000 22000 2200 13000 4000 10950 24000 5600															

**Cameco Resources  
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Miscellaneous Reclamation																		
Main Pipeline Removal Unit Cost (\$/ft of trench)	\$3.09	\$3.09	\$3.09	\$3.09	\$3.09	\$3.09	\$3.09	\$3.09	\$3.09	\$3.09	\$3.09	\$3.09	\$3.09	\$3.09	\$3.09	\$3.09	\$3.09	\$3.09
Subtotal Trunkline Removal and Loading Costs	\$23,921	\$26,236	\$0	\$16,976	\$7,716	\$30,866	\$37,039	\$21,606	\$121,203	\$74,077	\$67,904	\$6,790	\$40,125	\$12,346	\$33,798	\$74,077	\$17,285	
<b>B. Transport and Disposal Costs (NRC-Licensed Facility)</b>																		
1. 2" HDPE Trunkline																		
Piping Length (ft)	7750	8500	0	22000	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chipped Volume Reduction (ft <sup>3</sup> /ft)	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107
Chipped Volume (ft <sup>3</sup> )	83	91	0	236	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. 3" HDPE Trunkline																		
Piping Length (ft)	0	1	2	3	4	5	6	8	9	24000	0	2200	0	4000	0	0	0	0
Chipped Volume Reduction (ft <sup>3</sup> /ft)	0.0233	0.0233	0.0233	0.0233	0.0233	0.0233	0.0233	0.0233	0.0233	0.0233	0.0233	0.0233	0.0233	0.0233	0.0233	0.0233	0.0233	0.0233
Chipped Volume (ft <sup>3</sup> )	0	0	0	0	0	0	0	0	0	559	0	51	0	93	0	0	0	0
3. 4" HDPE Trunkline																		
Piping Length (ft)	0	0	0	0	15000	10000	12000	7000	0	0	22000	0	13000	0	0	6000	0	0
Chipped Volume Reduction (ft <sup>3</sup> /ft)	0.0385	0.0385	0.0385	0.0385	0.0385	0.0385	0.0385	0.0385	0.0385	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Chipped Volume (ft <sup>3</sup> )	0	0	0	0	577	385	462	269	0	0.00	846.10	0.00	499.97	0.00	230.75	0.00	0.00	0.00
4. 6" HDPE Trunkline																		
Piping Length (ft)	7750	17000	0	0	0	0	0	39268	0	0	0	0	10950	0	3500	0	0	0
Chipped Volume Reduction (ft <sup>3</sup> /ft)	0.0834	0.0834	0.0834	0.0834	0.0834	0.0834	0.0834	0.0834	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Chipped Volume (ft <sup>3</sup> )	646	1,418	0	0	0	0	0	3,275	0.00	0.00	0.00	0.00	0.00	913.14	0.00	291.87	0.00	0.00
5. 8" HDPE Trunkline																		
Piping Length (ft)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24000	0	0	0
Chipped Volume Recution (ft <sup>3</sup> /ft)	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
Chipped Volume (ft <sup>3</sup> )	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3391.25	0.00	0.00	0.00
6. 12" HDPE Trunkline																		
Piping Length (ft)	0	6000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chipped Volume Reduction (ft <sup>3</sup> /ft)	0.3088	0.3088	0.3088	0.3088	0.3088	0.3088	0.3088	0.3088	0.3088	0.3088	0.3088	0.3088	0.3088	0.3088	0.3088	0.3088	0.3088	0.3088
Chipped Volume (ft <sup>3</sup> )	0	1,853	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7. 16" HDPE Trunkline																		
Piping Length (ft)	15500	11000	0	15500	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chipped Volume Reduction (ft <sup>3</sup> /ft)	0.4864	0.4864	0.4864	0.4864	0.4864	0.4864	0.4864	0.4864	0.4864	0.4864	0.4864	0.4864	0.4864	0.4864	0.4864	0.4864	0.4864	0.4864
Chipped Volume (ft <sup>3</sup> )	7,539	5,350	0	7,539	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8. 18" HDPE Trunkline																		
Piping Length (ft)	0	0	0	2320	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chipped Volume Reduction (ft <sup>3</sup> /ft)	0.6155	0.6155	0.6155	0.6155	0.6155	0.6155	0.6155	0.6155	0.6155	0.6155	0.6155	0.6155	0.6155	0.6155	0.6155	0.6155	0.6155	0.6155
Chipped Volume (ft <sup>3</sup> )	0	0	0	1,428	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume Chipped (ft <sup>3</sup> )	8,268	8,712	0	7,775	385	462	269	3,275	559	846	51	500	93	913	3,622	292	0	0
Volume for Disposal Assuming Void Space (ft <sup>3</sup> )	9,995	9,983	0	8,552	10,498	423	508	296	3,602	615	931	56	550	102	1,004	3,984	321	0
Transportation and Disposal Unit Cost (\$/ft <sup>3</sup> )	\$5.77	\$5.77	\$0	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77
Subtotal Transport and Disposal Costs	\$52,476	\$55,292	\$0	\$49,343	\$60,571	\$2,441	\$2,931	\$1,708	\$20,783	\$3,548	\$5,372	\$323	\$3,173	\$589	\$5,793	\$22,987	\$1,852	
<b>C. Discing/Seeding</b>																		
Width of Pipeline Trench (ft)	4	4	4	4	4	5	5	5	5	10	10	8	8	8	8	8	8	8
Area of Pipeline Trench (acres)	0.7	0.8	0.0	0.5	0.2	1.1	1.4	0.8	4.5	5.5	5.1	0.4	2.4	0.7	2.0	4.4	1.0	
Discing/Seeding Unit Cost (\$/acre)	\$330	\$330	\$330	\$330	\$330	\$330	\$330	\$330	\$330	\$330	\$330	\$330	\$330	\$330	\$330	\$330	\$330	\$330
Subtotal Discing/Seeding Costs	\$2,335	\$2,338	\$0	\$1,617	\$376	\$379	\$455	\$265	\$1,487	\$1,818	\$1,667	\$133	\$788	\$242	\$664	\$1,455	\$339	
Subtotal Reclamation Costs per Pipeline	\$76,632	\$81,786	\$0	\$66,486	\$68,363	\$33,686	\$40,425	\$23,579	\$143,473	\$79,443	\$74,943	\$7,246	\$44,086	\$13,177	\$40,255	\$98,519	\$19,476	
<b>Total Pipeline Reclamation Costs</b>	<b>\$911,575</b>																	
<b>V. Settling Basin/Storage Ponds Reclamation</b>																		
<b>A. Soil Sampling and Monitoring</b>																		
Number of Soil Samples	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
\$/Sample	\$335	\$335	\$335	\$335	\$335	\$335	\$335	\$335	\$335	\$335	\$335	\$335	\$335	\$335	\$335	\$335	\$335	\$335
Subtotal Soil Sampling and Monitoring Costs	\$5,025	\$5,025	\$5,025	\$5,025	\$5,025	\$5,025	\$5,025	\$5,025	\$5,025	\$5,025	\$5,025	\$5,025	\$5,025	\$5,025	\$5,025	\$5,025	\$5,025	\$5,025
<b>B. Liner/Subsoil Removal and Disposal</b>																		
Thickness of clay liner (ft)	1	0.5	0	0.5	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Thickness of contaminated subsoil (ft)	1	0.5	0	0.5	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Width of Pond (ft)	200	252	182.5	127	182.5	127	182.5	127	182.5	127	182.5	127	182.5	127	182.5	127	182.5	127
Length of Pond (ft)	100	432	182.5	127	182.5	127	182.5	127	182.5	127	182.5	127	182.5	127	182.5	127	182.5	127
Depth of Pond (ft)	10	20	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Surface area of pond (ft <sup>2</sup> )	20000	108864	33306.25	16129	33306.25	16129	33306.25	16129	33306.25	16129	33306.25	16129	33306.25	16129	33306.25	16129	33306.25	16129
<b>1. Removal and Loading</b>																		
Volume of Clay Liner (cy)	1481	4032	0	896	4032	896	4032	896	4032	896	4032	896	4032	896	4032	896	4032	896
Clay Liner Removal and Loading Unit Cost (\$/cy)	\$4.02	\$4.02	\$4.02	\$4.02	\$4.02	\$4.02	\$4.02	\$4.02	\$4.02	\$4.02	\$4.02	\$4.02	\$4.02	\$4.02	\$4.02	\$4.02	\$4.02	\$4.02
Subtotal Liner Removal and Loading Costs	\$5,957	\$16,212	\$0	\$3,603	\$16,212	\$3,603	\$16,212	\$3,603	\$16,212	\$3,603	\$16,212	\$3,603	\$16,212	\$3,603	\$16,212	\$3,603	\$16,212	\$3,603
<b>2. Transportation and Disposal</b>																		
Volume of Clay Liner (ft <sup>3</sup> )	1481	4032	0	896	4032	896	4032	896	4032	896	4032	896	4032	896	4032	896	4032	896
Volume of Geotextile Liner (ft <sup>3</sup> )	52	0	0	27	0	0	27	0	0	0	45	0	45	0	0	0	45	0
Volume of Geotextile Liner @ 40% void (ft <sup>3</sup> )	87	0	0	45	0	0	45	0	0	0	75	0	75	0	0	0	75	0
Transportation and Disposal Unit Cost (\$/ft <sup>3</sup> )	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80
Subtotal Liner, Transportation and Disposal Costs	\$9,103	\$23,405	\$0	\$5,201	\$23,405	\$5,201	\$23,405	\$5,201	\$23,405	\$5,201	\$23,405	\$5,201	\$23,405	\$5,201	\$23,405	\$5,201	\$23,405	\$5,201
Subtotal Liner Removal and Disposal Costs	\$15,060	\$39,617	\$0	\$8,804	\$39,617	\$8,804	\$39,617	\$8,804	\$39,617	\$8,804	\$39,617	\$8,804	\$39,617	\$8,804	\$39,617	\$8,804	\$39,617	\$8,804
<b>C. Grade and Contour</b>																		
Volume of Embankment Material (CY)	7,407	80,640	12,336	5,974	80,640	12,336	5,974	80,640	12,336	5,974	80,640	12,336	5,974	80,640	12,336	5,974	80,640	12,336
Average Grade (%)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Distance (ft)	50	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Material Moving Unit Cost per WDEQ Guideline No.12, App.E (\$/cy)	\$0.155	\$0.155	\$0.155	\$0.155	\$0.155	\$0.155	\$0.155	\$0.155	\$0.155	\$0.155	\$0.155	\$0.155	\$0.155	\$0.155	\$0.155	\$0.155	\$0.155	\$0.155
Subtotal Grade and Contour Costs	\$1,149	\$																



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<b>Miscellaneous Reclamation</b>			
Subtotal Soil Sampling and Monitoring Costs	\$3,350	\$3,350	
B. Leachate Collection System Removal Costs	\$5,000	\$0	
C. Topsoil/Subsoil Application			
Assumptions:			
Average haul distance (ft)	1000	150	
Surface grade (%)	0	0	
Volume of Topsoil/Subsoil (cy)	8300	7400	
Topsoil/Subsoil Unit Cost per WDEQ Guideline No.12, App.C (\$/cy)	\$1,276	\$0,000	
Topsoil/Subsoil Unit Cost per WDEQ Guideline No.12, App.E (\$/cy)	\$0,00	\$0,34	
Subtotal Topsoil/Subsoil Application Costs per Reservoir	\$105,908	\$25,234	
D. Discing/Seeding			
Surface Area (acres)	6	32	
Discing/Seeding Unit Cost (\$/acre)	\$330	\$330	
Subtotal Discing/Seeding Costs	\$1,980	\$10,560	
E. Well Abandonment			
Number of Wells	5	27	18 existing plus 9 planned
Average Depth (ft)	60	100	
Abandonment Cost	\$2,75	\$2,75	
Small Site Grading and Seeding (~1000 sq. feet)	\$55	\$55	
Remove and Dispose Casing (top few feet)	\$33	\$33	
Monitoring Well Concrete Pedestal Disposal	\$110	\$110	
Subtotal Well Abandonment Cost	\$1,815	\$12,771	
Subtotal Reclamation Costs per Reservoir	\$118,053	\$51,915	
<b>Total Purge Storage Reservoir Reclamation Costs</b>	<b>\$169,968</b>		
<b>VI. Irrigation Area Reclamation</b>		<b>Irrigator No. 1A</b>	<b>Irrigator No. 2</b>
A. Irrigation Equipment Removal Costs	\$2,000	\$2,000	
B. Plowing			
Assumptions:			
Plowing Unit Cost (\$/acre)	\$100	\$100	
Irrigation Area (acres)	55	106	
Number of Cultivations	2	2	
Subtotal Plowing Costs	\$11,000	\$21,200	
C. Discing/Seeding			
Discing/Seeding Unit Cost (\$/acre)	\$330	\$330	
Subtotal Discing/Seeding Costs	\$18,150	\$34,980	
Subtotal Reclamation Costs per Irrigation Area	\$31,150	\$58,180	
<b>Total Irrigation Area Reclamation Costs</b>	<b>\$89,330</b>		
<b>VII. Potential Subsoil Mitigation for Purge Storage Reservoirs</b>		<b>PSR-1</b>	<b>PSR-2</b>
A. Subsoil Removal and Loading			
Surface Area (acres)	6	32	
Depth (inches)	6	6	
Volume for Removal (cy)	4,840	25,813	
Liner and Subsoil Removal Cost	\$4,02	\$4,02	
Subtotal Removal and Loading	\$19,461	\$103,723	
B. Subsoil Transportation and Disposal to 11e(2) Facility			
Disposal Cost	\$156,73	\$156,73	
Subtotal Disposal Cost	\$758,573	\$4,045,724	
Subtotal Reclamation Costs per Reservoir	\$778,034	\$4,149,447	
<b>Total Purge Storage Reservoir Mitigation Costs</b>	<b>\$4,927,481</b>		
<b>VIII. Revegetation of Excon Reclaimed Lands</b>			
Surface Area (acres)	217		
Assumptions:			
10% Reseeding potential areas of erosion (\$/acre) 0.10 x 330	\$33		
<b>Total Excon Reclaimed Lands Revegetation Costs</b>	<b>\$716</b>		
<b>IX. Potential Ground Water Mitigation for Casing Leak Investigation and PSR-2</b>			
A. <b>PSR-2 Investigation Costs (analytical and possible new well installation)</b>	\$200,000	*PSR-2 recovery at 3 wells, plus 9 shallow well installations @ \$3500/well.	
B. Ground Water Pump and Treat Costs			
Area (ft2)	1,000,000	*PSR-2 recovery at 3 wells.	
Sand Thickness (ft)	20		
Porosity (%)	20%		
Affected ground water (kgal)	29,920		
Wellfield Pumping Cost	\$0,21		
Reverse Osmosis Unit Cost (\$/kgal)	\$0,64		
Bleed to Deep Disposal Well (%)	25%		
Brine Volume for Disposal	7,480		
DDW Disposal Cost (\$/kgal)	\$1,19		
Permeate Volume for Re-Use	22,440		
Satellite Pumping Cost (\$/kgal)	\$0,75		
Subtotal Ground Water Pump and Treat Costs	\$50,998		
C. Well Abandonment (CLI Shallow Wells)			
# of Monitoring Wells (Current)	142		
Average Well Depth (ft)	156		
# of Monitoring Wells (Planned)	0		
Average Well Depth (ft)	250		
Total Well Depth (ft)	22,152		
Well Abandonment (\$/ft)	\$2,75		
Small Site Grading and Seeding (\$/site)	\$55,00		
Remove and Dispose Casing (\$/well)	\$33,00		
Concrete Pedestal Disposal (\$/each)	\$110,00		
Subtotal Well Abandonment Costs	\$89,034		
<b>Total CLI and PSR-2 Ground Water Mitigation Costs</b>	<b>\$340,032</b>		
<b>X. Subsurface Release of Solutions Decommissioning Costs</b>			
Number of trunkline failures	18		
Average cubic yards of contaminated soil estimated per event	8		
Removal cost of soil	\$160		
Subtotal of subsurface decommissioning costs	\$23,013.16		
<b>XI. Surface releases of Solutions Decommissioning Costs</b>			
Total surface acreage impacted	26		
Estimated % of soil contaminated	20%		
Cubic yards of soil for removal assuming 3" depth	2063		
Removal cost of soil per cy	\$160		
Subtotal of surface decommissioning costs	\$329,767.89		
<b>TOTAL MISCELLANEOUS RECLAMATION COSTS Highland</b>	<b>\$7,623,536</b>		



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	Mine Unit-1	Mine Unit-2	Mine Unit-3/ 3 Ext	Mine Unit- 4/4A	Mine Unit-15	Mine Unit-15A	Mine Unit K	Mine Unit K-North	Mine Unit 9	Mine Unit 10	10-Extension	Mine Unit 27	Mine Unit 21	Mine Unit 7	Mine Unit 8	A-Wellfield	B-Wellfield	C-Wellfield	C-22 Pattern	C abandoned UG workings	D-Wellfield	D-Extension	E-Wellfield	F-Wellfield	H-Wellfield	I-Wellfield	J-Wellfield	
<b>Pore Volume Calculations</b>																												
Flare Factor	1.56	1.05	1.16	1.14	1.48	1.68	1.21	1.30	1.52	1.45	1.45	1.82	0	1.74	0	4.13	4.13	2.46	2	0	2.88	2.78	2.9	2.1	2.3	1.83	1.92	
Wellfield Area (ft2)	1,108,034	2,271,426	2,174,453	2,725,270	2,554,278	970,206	1,813,644	1,424,902	1,931,533	2,167,666	512,063	641,495	0	1,490,217	0	148600	676550	1067056	325000	0	326750	201509	971941	3431990	1222583	1146959	1148680	
Wellfield Area (acres)	25.44	52.14	49.92	62.56	58.64	22.27	41.64	32.71	44.34	49.76	11.76	0.00	0.00	34.21	0.00	3.41	15.53	24.5	7.46	0	7.5	4.63	22.31	78.79	28.07	26.33	26.37	
Affected Ore Zone Area (ft2)	1,108,034	2,271,426	2,174,453	2,725,270	2,554,278	970,206	1,813,644	1,424,902	1,931,533	2,167,666	512,063	641,495	0	1,490,217	0	148600	676550	1067056	325000	0	326750	201509	971941	3431990	1222583	1146959	1148680	
Avg. Completed Thickness	18.0	23.0	30.0	19.0	18.0	16.0	19.0	21.0	23.0	30.0	30.0	23.0	0.0	20.0	20.0	15	15	16	15	0	17	17	16	16	16	20	15	
Porosity	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	
Affected Volume (ft3)	31,113,595	54,854,938	75,670,964	59,029,348	68,045,966	26,079,137	41,695,676	38,899,825	67,526,394	94,293,471	22,274,741	26,852,981	0	51,859,552	0	9205770	41912273	41999324	9750000	0	15997680	9523315	45098062	1.15E+08	44991054	41978699	33081984	
Kgallons per Pore Volume	62,837	110,785	152,825	119,216	137,426	52,669	84,209	78,562	136,376	190,435	44,986	54,232	0	104,736	0	18592	84646	84822	19691	0	32309	19233	91080	232890	90864	84780	66812	
<b>Restoration Schedule (Based on Annual Water Balance/Schedule Update)</b>																												
Pre-Restoration Period (yrs)	0	0	5	0	3	7	8	8	10	11	17	0	0	14	0	0	0	0	0	0	0	0	0	4	0	0	4	
Restoration Period (yrs)	0	6	8	4	6	4	8	7	9	9	3	0	0	5	0	0	0	2	0	0	3	2	8	12	8	8	8	
Stability Period (yrs)	0	1	1	1	1	1	1	1	1	1	1	0	0	1	0	0	0	1	1	1	1	1	1	1	1	1	1	
Total # of Years	0	7	14	5	10	12	17	16	20	21	21	0	0	20	0	0	0	3	1	1	4	3	9	17	9	9	13	
End of Restoration (yrs)	20																											
End of Stability (yrs)	21																											
<b>Number of Header Houses per Wellfield</b>																												
Current	6	5	10	11	18	5	9	7	13	9	3	0	0	0	0	5	18	20	0	0	4	3	15	43	10	6	9	
Planned	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total Estimated	6	5	10	11	18	5	9	7	13	9	3	0	0	7	0	5	18	20	0	0	4	3	15	43	10	6	9	
Average Header House Volume (ft3)	1600																											
<b>Number of Wells (In Service) per Wellfield</b>																												
<b>Production Wells (P)</b>																												
Current	83	134	207	188	407	0	168	99	258	196	113	0	0	134	15	0	133	196	0	0	91	0	140	417	125	124	112	
Planned	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total Estimated	83	134	207	188	407	0	168	99	258	196	113	0	0	134	15	0	133	196	0	0	91	0	140	417	125	124	112	
<b>Injection Wells (I)</b>																												
Current	162	281	280	384	831	0	279	174	397	338	153	0	0	247	29	1	194	254	0	0	140	0	227	668	307	230	230	
Planned	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total Estimated	162	281	280	384	831	0	279	174	397	338	153	0	0	247	29	1	194	254	0	0	140	0	227	668	307	230	230	
<b>Restoration Wells (R)</b>																												
Current	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18	0	0	0	0	0	14	0	0	0	
Planned	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total Estimated	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18	0	0	0	0	0	14	0	0	0	
<b>Monitor Wells (M, MO, MU, etc.)</b>																												
Current	47	50	40	90	83	42	51	53	69	49	66	85	0	62	82	7	64	85	0	0	50	0	59	119	82	34	59	
Planned	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total Estimated	47	50	40	90	83	42	51	53	69	49	66	85	0	62	82	7	64	85	0	0	50	0	59	119	82	34	59	
<b>Other Wells (Pumping Wells, etc.)</b>																												
Current	0	3	3	2	3	0	0	1	7	1	1	3	0	2	2	0	1	2	0	0	5	0	0	41	2	0	3	
Planned	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total Estimated	0	3	3	2	3	0	0	1	7	1	1	3	0	2	2	0	1	2	0	0	5	0	0	41	2	0	3	
<b>Wellfield Refurbishment (I or P)</b>																												
Planned	0	5	50	5	50	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	5	140	5	5	18	
<b>Number of In Service Wells per Wellfield</b>	292	473	580	669	1374	42	498	327	731	584	333	88	0	445	128	8	392	560	0	0	286	0	431	1399	521	393	422	
<b>Total Number of Wells</b>	10,976																											
<b>Well Completion Details</b>																												
Average Well Depth (ft)	500	850	750	850	450	500	950	864	950	900	930	800	600	825	668	500	450	550	550	550	600	600	550	650	500	650	540	
Average Diameter of Casing (inches)	5	5	5	5	4.5	4.5	4.5	4.5	5	5	5	0	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	
<b>Wellfield Fencing</b>																												
Length of Fencing (ft)	16,487	11580	7388	26009	7074	0	23271	23271	21887	21595	9661	19732	0	8674	0	0	13720	18694	0	0	14060	0	18426	29540	9680	9977	10000	

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<b>Labor Costs</b>	<b>2013 Rate</b>	<b>Esc Rate (\$)</b>	<b>Net Benefits*</b>	<b>Units</b>	<b>Source</b>				<b>CPI Escalators (CPI-U, U.S. City Average)</b>
Environmental Manager/RSO	\$46.00	\$46.04	\$65.75	hour	2013 MSEC rates plus CPI 2015 Escalation Factor				1988 CPI 118.3
Restoration Manager	\$40.00	\$40.84	\$57.18	hour	2013 MSEC rates plus CPI 2015 Escalation Factor				June 2014 238.3
Environmental Tech/HPT	\$25.50	\$25.53	\$35.74	hour	2013 MSEC rates plus CPI 2015 Escalation Factor				Denver CPI (Half 2015) 238.1
Operator/Laborer	\$26.00	\$26.55	\$37.16	hour	2013 MSEC rates plus CPI 2015 Escalation Factor				June 2014 CPI (used in last 238.3
Maintenance Tech	\$23.00	\$23.48	\$32.88	hour	2013 MSEC rates plus CPI 2015 Escalation Factor				2015 Escalation Factor 1.000840
*Includes additional 40% net benefits based on InfoMine USA cost data for Surface Metal and Industrial Mineral Mines - Western U.S. (Table 5)									
<b>Utility Costs</b>		<b>Rate (\$)</b>	<b>Profit &amp; Overhead</b>	<b>Units</b>	<b>Source</b>				
Electrical Costs		\$0.0678	included	kWhr	Actual Costs-2015				
Kilowatt to Horsepower		0.746	included	Kw/HP	N/A				
Efficiency - Downhole Pumps		80%	included	Percent	N/A				
Efficiency - Surface Pumps		90%	included	Percent	N/A				
Natural Gas - CPP/Main Office Area		\$66,705.65	included	year	Actual Costs-2015				
Natural Gas - Satellite SR-1		\$11,990.00	included	year	Actual Costs-2015				
Propane - CPP/Main Office Area		\$2,364.32	included	year	Actual Costs-2015				
Propane - Satellite SR-2		\$54,948.41	included	year	Actual Costs-2015				
Natural Gas - Satellite No. 2/Selenium Treatment Plant		\$23,174.81	included	year	Actual Costs-2015				
Propane - Satellite No. 2/Selenium Treatment Plant		\$0.00	included	year	Actual Costs-2015				
Propane - Satellite No. 3		\$48,722.70	included	year	Actual Costs-2015				
<b>Chemical &amp; Materials Costs</b>		<b>Rate (\$)</b>	<b>Profit &amp; Overhead</b>	<b>Units</b>	<b>Source</b>				
Antiscalant for RO (Hypersperse)		\$3.8400	included	pound	Actual Costs-2015				
Antiscalant for RO (ScaleTrol)		\$4.8400	included	pound	Actual Costs-2015				
Sodium Tripolyphosphate		\$1.0710	included	pound	Quote-2014 plus 2015 Escalator Factor				
EDTA Tetrasodium Dihydrate		\$1.7614	included	pound	Quote-2014 plus 2015 Escalator Factor				
Sodium Sulfide		\$0.5000	included	pound	Actual Costs-2015				
Hydrochloric Acid		\$0.1627	included	pound	Actual Costs-2015				
Barium Chloride		\$0.8600	included	pound	Actual Costs-2015				
Iron Aggregate		\$0.4635	included	pound	Actual Costs-2015				
Silica Sand		\$0.1392	included	pound	Actual Costs-2015				
Pea Gravel		\$0.0135	included	pound	Actual Costs-2015				
<b>Analytical Costs</b>		<b>Rate (\$)</b>	<b>Profit &amp; Overhead</b>	<b>Units</b>	<b>Source*</b>				
Guideline 8		\$372.00	included	analysis	Actual Costs-2015				50
Excursion Parameters (UCL)		\$30.00	included	analysis	Fee Schedule-2015				1.25
Restoration Progress Parameters (UCL + U + Se)		\$50.00	included	analysis	Fee Schedule-2015				
Irrigator Fluid		\$105.00	included	analysis	Actual Costs-2015				
Irrigator Vegetation		\$270.00	included	analysis	Actual Costs-2015				
Irrigator Soil		\$335.00	included	analysis	Actual Costs-2015				
Irrigator Soil Water		\$150.00	included	analysis	Fee Schedule-2015				
Other Lab Costs (Radon, Bioassay, DDW, PWS, etc.)		\$1,500.00	\$1,650.00	analysis	Cost Estimate per month		* over life of mine plan		
*All quotes, fee schedules and actual costs based on Energy Laboratories, Inc., Casper, WY									
<b>Equipment Costs</b>		<b>Rate (\$)</b>	<b>Profit &amp; Overhead*</b>	<b>Units</b>	<b>Source</b>	<b>date</b>			
Bandit 1290XP Trailer Mounted Brush Chipper		\$34.36	\$37.80	hour	Equipment Watch**	2014 plus 2015 Escalator Factor			
Bobcat S250 Skid Steer Loader		\$22.74	\$25.01	hour	Equipment Watch	2014 plus 2015 Escalator Factor			
Cat 320C L Trackhoe - 1.25 cu yd bucket		\$69.50	\$76.45	hour	Equipment Watch	2014 plus 2015 Escalator Factor			
Cat 416E Backhoe		\$27.19	\$29.91	hour	Equipment Watch	2014 plus 2015 Escalator Factor			
Cat 924H Loader - 2.4 cu yd bucket		\$42.93	\$47.22	hour	Equipment Watch	2014 plus 2015 Escalator Factor			
Concrete Jaws Labounty - CP-60		\$18.90	\$20.79	hour	Equipment Watch	2013 plus 2015 Escalator = X 1.0197			
GEHL DL-8 Rough Terrain Lift Truck		\$46.82	\$51.50	hour	Equipment Watch	2014 plus 2015 Escalator Factor			
Manlift		\$39.16	\$43.08	hour	Equipment Watch	2014 plus 2015 Escalator Factor			
MIT Unit		\$30.68	\$33.75	hour	Equipment Watch	2013 plus 2015 Escalator = X 1.0197			
Pick-up Truck 3/4 ton 4X4		\$18.81	\$20.69	hour	Equipment Watch	2014 plus 2015 Escalator Factor			
Pulling Unit***		\$36.05	\$39.66	hour	Equipment Watch	2013 plus 2015 Escalator = X 1.0197			
*Includes additional 10% Profit & Overhead per WDEQ/LQD Guideline No. 12, Section 12(b)									
**Equipment Watch Rental Rate Blue Book: Volume 1									
***1 3/4 Ton 4x4 Truck with Hoist									

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Quoted Costs		Rate (\$)	Profit & Overhead	Units	Source						
Deep Disposal Well - Plug & Abandonment Costs		\$13.62	included	foot	2015 estimate plus 2015 Escalator Factor						
Deep Disposal Well - MIT Costs		\$17,065	included	well	Ave Actual Costs-2015 plus 2015 Escalator Factor						
Well Replacements (Restoration)		\$15,613	included	well	Actual Costs-2014 plus 2015 Escalator Factor						
Bellhole Refurbishment		\$5,505	included	bellhole	Estimate cost 2014 plus 2015 Escalator Factor						
Header House Refurbishment		\$10,008	included	header house	Estimate cost 2014 plus 2015 Escalator Factor						
<b>WDEQ/LQD Guideline No. 12 Costs</b>	<b>Appendix</b>	<b>Rate (\$)</b>	<b>Profit &amp; Overhead*</b>	<b>Units</b>	<b>Source</b>						
Moving Materials: One-Way Distance 500 feet, 0% grade	Appendix C	\$0.971	\$1.068	bcy	Guideline-2/2016						
Moving Materials: One-Way Distance 1,000 feet, 0% grade	Appendix C	\$1.160	\$1.276	bcy	Guideline-2/2016						
Moving Materials: One-Way Distance 2,000 feet, 0% grade	Appendix C	\$1.503	\$1.653	bcy	Guideline-2/2016						
Moving Materials: One-Way Distance 50 feet, 0% grade	Appendix E	\$0.141	\$0.155	lcy	Guideline-2/2016						
Moving Materials: One-Way Distance 100 feet, 0% grade	Appendix E	\$0.238	\$0.262	lcy	Guideline-2/2016						
Moving Materials: One-Way Distance 150 feet, 0% grade	Appendix E	\$0.310	\$0.341	lcy	Guideline-2/2016						
Grading Operating Costs	Appendix G	\$70.37	\$77.41	acre	Guideline-2/2016						
Fencing Removal	Appendix H	\$0.38	\$0.42	foot	Guideline-2/2016						
Ripping Operating Costs (Asphalt)	Appendix I	\$776.25	\$853.88	acre	Guideline-2/2016						
Ripping Operating Costs (Overburden)	Appendix II	\$1,117.93	\$1,229.72	acre	Guideline-2/2016						
Building Demolition - Mixture of Types	Appendix K	\$0.266	\$0.29	ft3	Guideline-2/2016						
Building Demo Disposal (Average)	Appendix K	\$9.71	\$10.68	cy	Guideline-2/2016						
Concrete (Floor) Demolition - 6" Thick with Rebar	Appendix K	\$0.76	\$0.84	ft2	Guideline-2/2016						
Concrete (Footing) Demolition - 2' Thick, 3' Wide	Appendix K	\$15.67	\$17.24	linear foot	Guideline-2/2016						
Concrete Disposal On-Site	Appendix K	\$8.63	\$9.49	cy	Guideline-2/2016						
Drill Hole Abandonment: Wet Exploration Holes >25 holes	Appendix L	\$3.00	\$3.30	foot	Guideline-2/2016						
Well Abandonment: Monitor, Production, and Injection Wells	Appendix L	\$2.50	\$2.75	foot	Guideline-2/2016						
Incidental Costs: Small Site Grading and Seeding (<1000 sq. feet)	Appendix L	\$50	\$55	site	Guideline-2/2016						
Incidental Costs: Capping	Appendix L	\$10	\$11	each	Guideline-2/2016						
Incidental Costs: Site Location	Appendix L	\$10	\$11	hole	Guideline-2/2016						
Incidental Costs: Remove Pump, Wiring, and Drop Pipe	Appendix L	\$0.40	\$0.44	foot	Guideline-2/2016						
Incidental Costs: Remove and Dispose Casing (top few feet)	Appendix L	\$30	\$33	well	Guideline-2/2016						
Incidental Costs: Monitoring Well Concrete Pedestal Disposal	Appendix L	\$100	\$110	each	Guideline-2/2016						
Mobilization Fee	Appendix L	\$1,000	\$1,100	Project	Guideline-2/2016						
Scarification Costs	Appendix P	\$64.54	\$70.99	acre	Guideline-2/2016						
Revegetation Costs-Total	Guideline 12A,II-I	\$300.00	\$330.00	acre	Guideline-2/2016						
*Includes additional 10% Profit & Overhead per WDEQ/LQD Guideline No. 12, Section 12(b)											
<b>Construction &amp; Demolition Debris Transportation &amp; Disposal Costs</b>											
Building Volume for Disposal	0.33										
Void Factor (for disposal)	1.1										
	<b>Disposal (\$/ton)</b>	<b>C&amp;D (cy/ton)</b>	<b>Transport (\$/load)</b>	<b>C&amp;D (cy/load)</b>	<b>Total (\$/cy)</b>	<b>Total (\$/ft3)</b>					
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.											
<b>11e.(2) Byproduct Material Transportation &amp; Disposal</b>											
Load Correction Factor: Soil, sand, etc.	1.1										
Load Correction Factor: Process materials, etc.	0.42										
<b>White Mesa</b>	<b>Disposal (\$/ton)</b>	<b>Disposal (\$/cy)</b>	<b>Volume (cy)</b>	<b>Transport (\$/cy)</b>	<b>Total (\$/cy)</b>	<b>Total (\$/ft3)</b>					
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					
<b>Pathfinder</b>											
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, fuel surcharges, etc. Transportation costs assume 1) one truck transports one 13-cy bin of Type I waste, 2) one truck transports one 24.7-cy bin of Type II process waste (including pumps, motors, etc.) and 3) one truck transports one 36.4-cy bin of Type II chipped piping waste.											

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GROUNDWATER RESTORATION UNIT COSTS			
<b>Wellfield Pumping</b>			
Equipment			
Wellfield Pump Sizes	5	hp	
Wellfield Pump Flow Rate	25	gpm	
kW to HP Conversion Factor	0.746		
Cost of Electricity	\$0.0678	kWhr	
Efficiency	80%		
<b>Wellfield Pumping Cost</b>	<b>\$0.21</b>	<b>per kgal</b>	
<b>Satellite Pumping</b>			
Equipment			
Satellite Pump Sizes	60	hp	
Satellite Pump Flow Rate	75	gpm	
kW to HP Conversion Factor	0.746		
Cost of Electricity	\$0.0678	kWhr	
Efficiency	90%		
<b>Satellite Pumping Cost</b>	<b>\$0.75</b>	<b>per kgal</b>	
<b>Deep Disposal Well Injection</b>			
Equipment			
Deep Disposal Well Pump Size	75	hp	
Deep Disposal Well Flow Rate	75	gpm	
kW to HP Conversion Factor	0.746		
Cost of Electricity	\$0.0678	kWhr	
Efficiency	90%		
Reagent			
Antiscalant Cost (Scaletrol)	\$4.8400	per lb	
Density of Water	8.34	lbs/gal	
Specific Gravity (Scaletrol)	1.284		
Antiscalant Cost (Scaletrol)	\$51.83	per gal	
Antiscalant Dose (ScaleTrol)	0.000048	gal/gal	
<b>Deep Disposal Well Cost</b>	<b>\$1.19</b>	<b>per kgal</b>	
<b>Total Groundwater Sweep Costs</b>	<b>\$2.15</b>	<b>per kgal</b>	
<b>PSR2 &amp; Irrigator</b>			
Equipment			
Feed Water Pump	40	hp	
Irrigator Pump	50	hp	
Sampler	0.5	kW	
Irrigator Flow Rate	200	gpm	
kW to HP Conversion Factor	0.746		
Cost of Electricity	0.0678	kWhr	
Efficiency	90%		
<b>PSR 2 &amp; Irrigator Cost</b>	<b>\$0.42</b>	<b>per kgal</b>	
<b>Total Groundwater Sweep Costs (highland)</b>	<b>\$1.38</b>	<b>per kgal</b>	
<b>Reverse Osmosis</b>			
Equipment			
System Capacity	250	gpm	
Unit Pump	60	hp	
Injection Pump	60	hp	
Waste Pump	15	hp	
kW to HP Conversion Factor	0.746		
Cost of Electricity	\$0.0678	kWhr	
Efficiency	90%		
Reagents			
Tripolyphosphate Usage Rate	0.0000130	lb/gal	
Tripolyphosphate Cost	\$1.0710	per lb	
EDTA Usage Rate	0.0000315	lb/gal	
EDTA Cost	\$1.7614	per lb	
Antiscalant Cost (Hypersperse)	\$3.8400	per lb	
Density of Water	8.34	lbs/gal	
Specific Gravity (Hypersperse)	1.124		
Antiscalant Cost (Hypersperse)	\$35.9968	per gal	

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Antiscalant Dose (Hypersperse)	0.000036	gal/gal					
Sodium Sulfide Usage Rate	0.00017	lb/gal					
Sodium Sulfide Cost	\$0.5000	per lb					
<b>RO Cost (without Reductant)</b>	<b>\$0.64</b>	<b>per kgal</b>					
<b>RO Cost (with Reductant)</b>	<b>\$0.72</b>	<b>per kgal</b>					
<b>MIT Costs for Production Wells</b>							
Equipment							
Pulling Unit Hours	4	hrs/day					
Pulling Unit Cost	\$39.66	\$/hour					
MIT Unit Hours	8	hrs/day					
MIT Unit Cost	\$33.75	\$/hour					
Labor							
Required Hours	8	hrs/day					
Required Laborers	1.5	per day					
Labor Cost	\$32.88	\$/hour					
Productivity	4	wells/day					
<b>MIT Cost for Production Wells</b>	<b>\$205.78</b>	<b>per well</b>					
<b>MIT Costs for Injection Wells</b>							
Equipment							
Pulling Unit Hours	0	hrs/day					
Pulling Unit Cost	\$39.66	\$/hour					
MIT Unit Hours	8	hrs/day					
MIT Unit Cost	\$33.75	\$/hour					
Labor							
Required Hours	8	hrs/day					
Required Laborers	1	per day					
Labor Cost	\$32.88	\$/hour					
Productivity	4	wells/day					
<b>MIT Cost for Injection Wells</b>	<b>\$133.25</b>	<b>per well</b>					
<b>Selenium Plant Operating Costs</b>							
Plant Operation							
Selenium Plant Media Change	4	times/year					
Number of Columns in Plant	2	columns					
Reagents							
Barium Chloride	90,000	lb/year					
BaCl Cost	\$0.8600	\$/lb					
Materials							
Iron	12,000	lb/column					
Iron Cost	\$0.4635	\$/lb					
Sand	18,000	lb/column					
Sand Cost	\$0.14	\$/lb					
Gravel	20,000	lb/column					
Gravel Cost	\$0.0135	\$/lb					
Disposal							
ByProduct for Disposal	63	yd <sup>3</sup> /year					
Disposal Cost (incl. Transport)	\$157	per yd <sup>3</sup>					
<b>Selenium Plant Operating Cost</b>	<b>\$153,974.79</b>	<b>per year</b>					
<b>Booster Pump Operating Cost Smith Ranch Highland</b>							
Equipment							
Wellfield Pump Sizes	40	hp					
Number of Pumps Running (avg.)	11	per year					
Hours Running	24	per day					
kW to HP Conversion Factor	0.746						
Cost of Electricity	\$0.0678	kWhr					
Efficiency	90%						
<b>Booster Pump Operating Costs</b>	<b>\$216,612.14</b>	<b>per year</b>					

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WELL ABANDONMENT UNIT COSTS					
<b>Removal of Contaminated Soil Around Wells</b>			<b>Removal of Contaminated Soil</b>		
Equipment			Equipment		
Cat 416 Backhoe Time	0.25	hours	Cat 416 Backhoe Time	0.03	hours
Cat 416 Backhoe Cost	\$29.91	per hour	Cat 416 Backhoe Cost	\$29.89	per hour
Labor			Labor		
Radiation Technician	0.25	hours	Radiation Technician	0.03	hours
Radiation Technician Cost	\$35.74	per hour	Radiation Technician Cost	\$35.74	per hour
Operator	0.25	hours	Operator	0.03	hours
Operator Cost	\$37.16	per hour	Operator Cost	\$37.16	per hour
Disposal			Disposal		
ByProduct Disposal	0.37	cubic yard	ByProduct Disposal	1	cubic yard
Disposal Cost (incl. Transport)	\$156.73	per cubic yard	Disposal Cost (incl. Transport)	\$156.73	per cubic yard
<b>Removal of Contaminated Soil Cost</b>	<b>\$83.69</b>	<b>per well</b>	<b>Removal of Contaminated Soil Cost</b>	<b>\$159.81</b>	<b>per cubic yard</b>
<b>DDW Pump Dismantling and Disposal</b>					
Labor					
Number of Laborers	2	per day			
Number of Pumps Dismanteled	0.5	per day			
Hours Per Day	8	hours			
Laborers Cost	\$32.88				
Disposal					
Volume of DDW Pump	240	ft <sup>3</sup>			
ByProduct Disposal	\$7.32	per ft <sup>3</sup>			
<b>DDW Pump Dismanteling and Disposal</b>	<b>\$2,809.67</b>	<b>per pump</b>			
<b>WELLFIELD RECLAMATION COSTS</b>					
<b>Wellfield Piping Removal</b>					
Equipment					
Trackhoe	1	per day			
Trackhoe Cost	\$76.45	per hour			
Loader	1	per day			
Loader Cost	\$47.22	per hour			
Pickup Truck	1	per day			
Pickup Cost	\$20.69	per hour			
Chipper Cost	\$37.80	per hour			
Labor					
Backhoe Operator	\$37.16	per hour			
Loader Operator	\$37.16	per hour			
Laborer	\$32.88	per hour			
Hours Per Day	8	per day			
Productivity	1500	ft/day			
<b>Piping Removal Cost</b>	<b>\$1.54</b>	<b>per foot of pipe</b>			
<b>Piping Reduction</b>					
2" Pipe	0.0107				
3" Pipe	0.0233				
4" Pipe	0.0385				
6" Pipe	0.0834				
8" Pipe	0.1413				
10" Pipe	0.2196				
12" Pipe	0.3088				
14" Pipe	0.3723				
16" Pipe	0.4864				
18" Pipe	0.6155				
Production Pump Volume					
Length	66.0000	inches			
Diameter	3.8000	inches			

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Cubic Inch to Cubic Foot Conversion	0.0006							
<b>Production Pump Volume</b>	<b>0.43</b>	<b>cubic feet</b>						
<b>Trunk Line Removal</b>								
Equipment								
Trackhoe	1	per day						
Trackhoe Cost	\$76.45	per hour						
Loader	1	per day						
Loader Cost	\$47.22	per hour						
Pickup Truck	1	per day						
Pickup Cost	\$20.69	per hour						
Chipper Cost	\$37.80	per hour						
Labor								
Trackhoe Operator	\$37.16	per hour						
Loader Operator	\$37.16	per hour						
Laborer	\$32.88	per hour						
Hours Per Day	8	per day						
Productivity	750	ft/day						
<b>Buried Piping Removal Cost</b>	<b>\$3.09</b>	<b>per foot of pipe</b>						
<b>Production Pump Volume</b>								
Length	66	inches						
Diameter	3.8	inches						
Cubic Inch to Cubic Foot Conversion	0.0006							
<b>Production Pump Volume</b>	<b>0.43</b>	<b>cubic feet</b>						
<b>Removal of Well Head Covers</b>								
Volume of Well Head Cover (ft <sup>3</sup> )	1.86	cubic feet						
<u>Demolition Cost</u>	\$0.293	per cubic ft						
Decontamination								
Acid Usage	4.1	pounds per wellhead cover						
Acid Cost	\$0.16	per wellhead cover						
Labor								
Radiation Tech	\$35.74	per hour						
Operator	\$37.16	per hour						
Productivity	10	wellheads per hour						
Disposal								
Void space	10%							
<u>Transportation and Disposal Cost</u>	\$1.56	per cubic ft						
<b>Removal of Well Head Cover Cost</b>	<b>\$11.70</b>	<b>per well</b>						
<b>Header House Decontamination</b>								
Decontamination								
Acid Usage	20	pounds per header house						
Acid Cost	\$0.16	per pound						
Labor								
Radiation Tech	\$35.74	per hour						
Number of Operators	2	per day						
Operator	\$37.16	per hour						
Hours Per Day	8	per day						
Productivity	1	header house per day						
<b>Header House Decontamination Cost</b>	<b>\$634</b>	<b>per header house</b>						
<b>Header House Heating</b>								
Heater Power Usage	7.5	kW/day						
Days Used	180	days per year						
Electricity Cost	\$0.0678	kWhr						
<b>Header House Heating Cost</b>	<b>\$1,098</b>	<b>per year</b>						
<b>WELLFIELD AND SATELLITE AND SURFACE RECLAMATION</b>								
<b>Wellfield Road Reclamation</b>								
Gravel Road Base								
Average Depth	0.25	feet						
Average Width	10	feet						

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Material Moved (0% Grade)	\$1.28	bcy						
Cubic Yard to Cubic Feet Conversion	0.04							
<b>Scarification of Road</b>								
Scarification Costs	\$71	per acre						
Average Width	25	feet						
Acre to Sq. Foot Conversion	2.29568E-05							
Grading Cost	\$77	per acre						
Topsoil Depth	0.67	feet						
Discing/Seeding Costs	\$330							
Linear Feet for Unit Cost	1000	feet						
<b>Wellfield Road Reclamation Cost</b>	<b>\$1,184.31</b>	<b>per 1000 feet</b>						
<b>EQUIPMENT COSTS</b>								
<b>Tank Removal</b>								
Equipment								
Loader	\$47.22	per hour						
Trackhoe	\$76.45	per hour						
Manlift	\$43.08	per hour						
Pickup	\$20.69	per hour						
Lift Truck	\$51.50	per hour						
Labor								
Number of Operators	4							
Operator Cost	\$37.16	per hour						
Hours Per Day	8	per day						
Productivity	25	ft <sup>3</sup> /day						
<b>Tank Removal Cost</b>	<b>\$124</b>	<b>per ft<sup>3</sup></b>						
<b>Pipe Removal</b>								
Equipment								
Manlift	\$43.08	per hour						
Pickup	\$20.69	per hour						
Lift Truck	\$51.50	per hour						
Chipper	\$37.80	per hour						
Labor								
Number of Operators	4							
Operator Cost	\$37.16	per hour						
Hours Per Day	8	per day						
Productivity	300	ft/day						
<b>Pipe Removal Cost (Inside Buildings)</b>	<b>\$8.05</b>	<b>per ft</b>						
<b>Pump Removal</b>								
Equipment								
Truck	\$20.69	per hour						
Skid Steer	\$25.01	per hour						
Labor								
Number of Operators	2							
Operator Cost	\$37.16	per hour						
Hours Per Day	8	per day						
Productivity	10	ft <sup>3</sup> /day						
<b>Pump Removal</b>	<b>\$96.03</b>	<b>per ft<sup>3</sup></b>						
<b>Dryer Removal</b>								
Equipment								
Truck	\$20.69	per hour						
Lift Truck	\$51.50	per hour						
Labor								
Number of Operators	4							
Operator Cost	\$37.16	per hour						
Hours Per Day	8	per day						
Productivity	125	ft <sup>3</sup> /day						
<b>Dryer Removal Cost</b>	<b>\$14.13</b>	<b>per ft<sup>3</sup></b>						
<b>RO and Degasser Removal</b>								
Equipment								
Truck	\$20.69	per hour						
Lift Truck	\$51.50	per hour						



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Labor									
Number of Operators	2								
Operator Cost	\$37.16	per hour							
Hours Per Day	8	per day							
Productivity	250	ft <sup>3</sup> /day							
<b>RO and Degasser Removal Cost</b>	<b>\$4.69</b>	<b>per ft<sup>3</sup></b>							
<b>BUILDING COSTS</b>									
<b>Acid Wash Walls</b>									
Acid									
Acid Usage	0.05	per square foot							
Acid Cost	\$0.16	per pound							
Equipment									
Manlift	\$43.08	per hour							
Labor									
Laborer	2	people							
Laborer Cost	\$32.88	per hour							
Productivity	125	square feet per hour							
<b>Acid Wash Walls Cost</b>	<b>\$0.88</b>	<b>per square foot</b>							
<b>Acid Wash Floors</b>									
Acid									
Acid Usage	0.05	per square foot							
Acid Cost	\$0.16	per pound							
Labor									
Laborer	2	people							
Laborer Cost	\$32.88	per hour							
Productivity	125	square feet per hour							
<b>Acid Wash Floors Cost</b>	<b>\$0.53</b>	<b>per square foot</b>							
<b>Electrical Power</b>									
*Pumping Costs for Operating DDWs, RO, and Wellfield are included in GW Rest Costs									
<b>CPP</b>									
Miscellaneous Pumps, Fans, Sumps, etc.	27.5	HP							
Lighting	35.0625	kW (per square ft)							
kW to HP Conversion Factor	0.746								
Electricity Cost	\$0.0678	per kWhr							
Efficiency Factor	90%								
Operating Hours Per Year	8760	hours							
<b>CPP Power Cost</b>	<b>\$31,791</b>	<b>per year</b>							
<b>SR 1 &amp; SR 2 Power Costs</b>									
Miscellaneous Pumps, Fans, Sumps, etc.	72.5	HP							
Lighting	24	kW							
kW to HP Conversion Factor	0.746	kW (per square ft)							
Electricity Cost	\$0.0678	per kWhr							
Efficiency Factor	90%								
Operating Hours Per Year	8760	hours							
<b>SR 1 &amp; SR 2 Power Costs</b>	<b>\$43,165</b>	<b>per year</b>							
<b>Reynolds Ranch Power Costs</b>									
Miscellaneous Pumps, Fans, Sumps, etc.	72.5	HP							
Lighting	24	kW							
kW to HP Conversion Factor	0.746	kW (per square ft)							
Electricity Cost	\$0.0678	per kWhr							
Efficiency Factor	90%								
Operating Hours Per Year	8760	hours							
<b>Reynolds Ranch Power Costs</b>	<b>\$43,165</b>	<b>per year</b>							
*Pumping Costs for Operating DDWs, RO, and Wellfield are included in GW Rest Costs									
<b>Satellite 2</b>									
Miscellaneous Pumps, Fans, Sumps, etc.	22.5	HP							
Lighting	35.0625	kW (per square ft)							
kW to HP Conversion Factor	0.746								
Electricity Cost	\$0.0678	per kWhr							
Efficiency Factor	90%								
Operating Hours Per Year	8760	hours							

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<b>Satellite 2 Power Cost</b>	<b>\$29,797</b>	<b>per year</b>							
<b>Satellite 3</b>									
Miscellaneous Pumps, Fans, Sumps, etc.	22.5	HP							
Lighting	35.0625	kW (per square ft)							
kW to HP Conversion Factor	0.746								
Electricity Cost	\$0.0678	per kWhr							
Efficiency Factor	90%								
Operating Hours Per Year	8760	hours							
<b>Satellite 3 Power Cost</b>	<b>\$29,797</b>	<b>per year</b>							
<b>Se Plant</b>									
Miscellaneous Pumps, Fans, Sumps, etc.	72.5	HP							
Lighting	23.3	kW							
kW to HP Conversion Factor	0.746	kW (per square ft)							
Electricity Cost	\$0.0678	per kWhr							
Efficiency Factor	90%								
Operating Hours Per Year	8760	hours							
<b>Selenium Power Cost</b>	<b>\$42,749</b>	<b>per year</b>							
<b>DDW - Typical</b>									
Miscellaneous Pumps, Fans, Sumps, etc.	2.00000	HP							
Lighting	0.48750	kW							
Heating	12.50000	kW							
kW to HP Conversion Factor	0.74600	kW (per square ft)							
Electricity Cost	0.06780	per kWhr							
Efficiency Factor	0.90000								
Operating Hours Per Year	8760.00000	hours							
<b>DDW Electrical Cost</b>	<b>4799.11642</b>	<b>per year</b>							
<b>Maintenance Shop Power Costs</b>									
Miscellaneous Pumps, Fans, Sumps, etc.	2	HP							
Lighting	8.785	kW							
kW to HP Conversion Factor	0.746	kW (per square ft)							
Electricity Cost	\$0.0678	per kWhr							
Efficiency Factor	90%								
Operating Hours Per Year	8760	hours							
<b>Maintenance Shop Power Costs</b>	<b>\$6,015</b>	<b>per year</b>							
<b>Fresh Water Pumphouse Power Costs</b>									
Miscellaneous Pumps, Fans, Sumps, etc.	10	HP							
Lighting	1.04	kW							
Heating	10	kW							
kW to HP Conversion Factor	0.746	kW (per square ft)							
Electricity Cost	\$0.0678	per kWhr							
Efficiency Factor	90%								
Operating Hours Per Year	8760	hours							
<b>Fresh Water Pumphouse Power Costs</b>	<b>\$10,545</b>	<b>per year</b>							
<b>Office Building Power Costs</b>									
Miscellaneous Pumps, Fans, Sumps, etc.	7.5	HP							
Lighting	10	kW							
Air Conditioning	30	kW							
kW to HP Conversion Factor	0.746	kW (per square ft)							
Electricity Cost	\$0.0678	per kWhr							
Efficiency Factor	90%								
Operating Hours Per Year	8760	hours							
<b>Office Building Power Costs</b>	<b>\$26,748</b>	<b>per year</b>							
<b>MISCELLANEOUS RECLAMATION AND RESTORATION COSTS</b>									
<b>Liner and Subsoil Removal Costs</b>									
Equipment									
Trackhoe Cost	\$ 76.45	per hour							
Loader Cost	\$ 47.22	per hour							
Labor									
Operator	37.16	per hour							
Productivity	40	cubic yards/hour							
<b>Total Removal</b>	<b>\$ 4.02</b>	<b>per cubic yard</b>							