Cameco

CAMECO RESOURCES
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June 30, 2010

Mr. Doug Mandeville
U.S. Nuclear Regulatory Commission
11545 Rockville Pike
#2 White Flint, T7E18
Rockville MD 20852-2738

RE: Source Material License SUA-1548, Docket No. 40-8964, SRH Annual Surety Update

Dear Mr. Mandeville:

Power Resources, Inc. dba Cameco Resources (CR) is herein providing the annual update for the surety estimate for the Smith Ranch - Highland Uranium Project.

CR will be submitting the Wyoming Department of Environmental Quality's (WDEQ) Annual Report to the WDEQ on July 30, 2010, which will include updated surety estimates. CR will provide copies of this submittal to NRC in accordance with our license.

If you have any questions, please contact Angelo Kallas at 307.358.6541, Extension 474.

Sincerely,

Thomas P. Young
Vice President, Operations

TY/mw

Attachments: Highland Uranium Project Reclamation Cost Estimate and Smith Ranch Reclamation Cost Estimate

cc: J. Brister T. Cannon File SRH 4.6.4.1

Cameco Resources
Smith Ranch Uranium Project
2010-11 Surety Estimate

Smith Ranch Reclamation Cost Estimate, June 2010

I.	Groundwater Restoration (GW REST Sheet)			$26,505,903
II.	Well Abandonment and Wellfield Reclamation (WA, WF REC and WF-SAT-SURF Sheets)			$14,648,245
III.	Equipment and Building Costs (EQUIP, BLDGS Sheets)			$ 9,068,041
IV.	Miscellaneous Site Reclamation (MISC REC Sheet)			$1,299,355
	Subtotal Reclamation Cost			$51,521,544
		Contingency	25%	$12,880,386
			TOTAL	$64,401,930

Cameco Resources
Smith Ranch Uranium Project
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Ground Water Restoration

	Mine Unit-1	Mine Unit-2	Mine Unit-3	Mine Unit-4/4A/4Ext	Mine Unit-15	Mine Unit-15A	Mine Unit K	Mine Unit 9	Mine Unit 10	Mine Unit 27	Mine Unit 21	Mine Unit 7
I. Ground Water Sweep Costs												
Estimated PV's	0	1	1	1	1	1	1	1	1	1	0	1
Total Kgals for GWS	0	110785	64548	119216	137426	52669	84209	136376	43282	59655	0	15317
Bleed to Deep Disposal Well (%)	100	100	100	100	100	100	100	100	100	100	100	100
Groundwater Sweep Unit Cost ($/Kgal)	$1.63	$1.63	$1.63	$1.63	$1.63	$1.63	$1.63	$1.63	$1.63	$1.63	$1.63	$1.63
Subtotal Ground Water Sweep Costs per Wellfield	**$0.00**	**$180,872.10**	**$105,383.69**	**$194,636.90**	**$224,367.28**	**$85,989.55**	**$137,483.04**	**$222,653.01**	**$70,663.96**	**$97,395.18**	**$0.00**	**$25,007.16**
Total Ground Water Sweep Costs	**$1,344,451.87**											
II. Reverse Osmosis Costs												
Estimated PV's	2	8	8	8	8	8	8	8	8	8	0	8
Total Kgals for RO	125674	886280	516384	953728	1099408	421352	673672	1091008	346256	477240	0	122536
Bleed to Deep Disposal Well (%)	25	25	25	20	20	20	20	20	20	20	20	20
Reverse Osmosis Unit Cost ($/Kgal)	$1.35	$1.35	$1.35	$1.35	$1.35	$1.35	$1.35	$1.35	$1.35	$1.35	$1.35	$1.35
Subtotal Reverse Osmosis Costs per Wellfield	**$169,537.24**	**$1,195,612.95**	**$696,614.39**	**$1,286,601.92**	**$1,483,127.73**	**$568,413.94**	**$908,799.67**	**$1,471,795.93**	**$467,107.64**	**$643,808.19**	**$0.00**	**$165,304.00**
Total Reverse Osmosis Costs	**$9,056,723.60**											
III. Bioremediation Costs (information only, data being compiled)												
Estimated PV's	0	0	0	0	0	0	0	0	0	0	0	0
Total Kgals for Bioremediation	0	0	0	0	0	0	0	0	0	0	0	0
Bleed to Deep Disposal Well (%)	25	25	25	25	25	25	25	25	25	25	25	25
Chemical Reductant Unit Cost ($/Kgal)	$1.69	$1.69	$1.69	$1.69	$1.69	$1.69	$1.69	$1.69	$1.69	$1.69	$1.69	$1.69
Subtotal Bioremediation Costs per Wellfield	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**
Total Bioremediation Costs	**$0.00**											
IV. MIT Costs												
MIT Costs per Well	$227.50	$227.50	$227.50	$227.50	$227.50	$227.50	$227.50	$227.50	$227.50	$227.50	$227.50	$227.50
Restoration period, Excluding Bioremediation (months)	24.00	72.00	72.00	48.00	102.00	108.00	120.00	132.00	34.40	42.87	0.00	19.93
Number of Wells MIT'd for Life of Mine Unit	85	524	602	455	1,242	1,337	2,118	1,302	708	992	0	399
Subtotal MIT Mine Unit	**$19,337.50**	**$119,210.00**	**$136,955.00**	**$103,512.50**	**$282,555.00**	**$304,167.50**	**$481,845.00**	**$296,205.00**	**$161,070.00**	**$225,680.00**	**$0.00**	**$90,772.50**
5-year MIT Costs for Disposal Wells $5,907.53												
Number of DDWs 5												
Number of MITs per DDW 2												
Subtotal MIT DDWs	**$59,075.30**											
Total MIT Costs	**$2,280,385.30**											
V. Monitoring and Sampling Costs												
Guideline 8 analysis = $337.00 analysis												
6 parameter contract laboratory analysis = $100.00 analysis												
Total monitor wells	47	53	59	90	102	57	121	103	111	76	0	59
Groundwater sweep duration (months)	0.00	30.00	48.00	6.00	54.00	72.00	84.00	96.00	6.59	9.08	0.00	2.33
Reverse Osmosis duration (months)	12.00	30.00	12.00	30.00	36.00	24.00	24.00	24.00	15.81	21.79	0.00	5.60
Bioremediation (months) information only, data being compiled	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stabilization duration (months)	12	12	12	12	12	12	12	12	12	12	0	12
A. Monitor Well Sampling												
1. Well Sampling prior to restoration start												
# of Wells	47	53	59	90	102	57	121	103	111	76	0	59
$/sample	$337.00	$337.00	$337.00	$337.00	$337.00	$337.00	$337.00	$337.00	$337.00	$337.00	$337.00	$337.00
2. Groundwater Sweep Sampling (quarterly)												
# of Wells	47	53	59	90	102	57	121	103	111	76	0	59
Total # samples	0	530	944	180	1836	1368	3388	3296	259	254	0	59
$/sample	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00
3. RO Sampling (quarterly)												
# of Wells	47	53	59	90	102	57	121	103	111	76	0	59
Total # samples	188	530	236	900	1224	456	968	824	592	558	0	118
$/sample	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00

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				Ground Water Restoration											
				Mine Unit-1	Mine Unit-2	Mine Unit-3	Mine Unit-4/4A/4Ext	Mine Unit-15	Mine Unit-15A	Mine Unit K	Mine Unit 9	Mine Unit 10	Mine Unit 27	Mine Unit 21	Mine Unit 7
4. Stabilization Sampling (Guideline 8, quarterly)															
# of Wells				17	31	24	30	61	34	34	56	111	76	0	59
Total # samples				85	155	120	150	305	170	170	280	555	380	0	295
$/sample				$337.00	$337.00	$337.00	$337.00	$337.00	$337.00	$337.00	$337.00	$337.00	$337.00	$337.00	$337.00
5. Stabilization Sampling (6 parameter bi-monthly)															
# of Wells				17	31	24	30	61	34	34	56	111	76	0	59
Total # samples				282	318	354	540	612	342	726	618	666	456	0	354
$/sample				$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00
6. Monitor Well Sampling															
# of Wells				47	53	59	90	102	57	121	103	111	76	0	59
$/sample				$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00
Total # samples (2 month intervals)				564	1908	2124	2160	5202	3078	7260	6798	1909	1629	0	588
7. Other Laboratory Costs															
Radon, urinalysis, etc. =		$1,000.00	month												
Total for Other Laboratory Costs:				$24,000.00	$72,000.00	$72,000.00	$48,000.00	$102,000.00	$108,000.00	$120,000.00	$132,000.00	$34,400.00	$42,870.00	$0.00	$19,930.00
Subtotal Monitoring and Sampling Costs per Mine Unit				**$171,884.00**	**$470,696.00**	**$498,123.00**	**$506,880.00**	**$1,126,559.00**	**$708,899.00**	**$1,452,267.00**	**$1,414,671.00**	**$601,442.00**	**$486,242.00**	**$0.00**	**$251,128.00**
Total Monitoring and Sampling Costs				**$7,688,791.00**											
VI. Supervisory Labor Cost (for all Reclamation)															
Environmental Manager/RSO Support		$11,160.33													
Restoration Manager Support		$7,912.71	month												
HP Technician support		$4,647.89	month												
Active restoration period (months)				24.00	72.00	72.00	48.00	102.00	108.00	120.00	132.00	34.40	42.87	0.00	19.93
Stabilization period (months)				12	12	12	12	12	12	12	12	12	12	0	12
Total Restoration Period		10	years												
Manager support during restoration		$2,288,765.09													
HP Technician support during restoration		$557,746.46													
Labor Support 5 each		$2,289,040.00													
Total Supervisory Labor Costs				**$5,135,551.55**											
TOTAL RESTORATION COST PER WELLFIELD				**$360,758.74**	**$1,966,391.05**	**$1,437,076.08**	**$2,091,631.32**	**$3,116,609.01**	**$1,667,469.99**	**$2,980,394.71**	**$3,405,324.94**	**$1,300,283.60**	**$1,453,125.37**	**$0.00**	**$532,211.66**
VII. Capital Costs (for all Reclamation)				**$1,000,000.00**											
TOTAL GROUND WATER RESTORATION COSTS				**$26,505,903.32**											

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Well Abandonment

		Mine Unit-1	Mine Unit-2	Mine Unit-3	Mine Unit- 4	Mine Unit-15	Mine Unit-15A	Mine Unit K	Mine Unit 9	Mine Unit 10	Mine Unit 27	Mine Unit 21	Mine Unit 7	Delineation Holes General	Totals
I.	Well Abandonment (Wellfields)														
	# of Production Wells	101	174	176	216	268	204	335	238	180	340	0	120		2252
	# of Injection Wells	113	235	258	353	463	376	534	354	270	432	0	180		3568
	# of Monitoring Wells	47	53	59	90	102	57	121	103	111	76	0	59		878
	Total Number of Wells	261	462	493	659	833	637	990	695	561	748	0	359		6698
	Average Diameter of Casing (inches)	5	5	5	5	5	5	5	5	5	5	5	5		
	Production, Injection and Perimeter Well Average Depth (ft)	500	850	750	850	450	500	950	950	900	800	600	950		725
	Total Mine Unit Well Depth (ft)	130500	392700	369750	560150	374850	318500	940500	660250	504900	598400	0	341050		3747200
	Well Abandonment Unit Cost ($/ft. of well)	$1.06	$1.06	$1.06	$1.06	$1.06	$1.06	$1.06	$1.06	$1.06	$1.06	$1.06	$1.06		
	Subtotal Abandonment Cost per Wellfield	$138,330.00	$416,262.00	$391,935.00	$593,759.00	$397,341.00	$337,610.00	$996,930.00	$699,865.00	$535,194.00	$634,304.00	$0.00	$361,513.00		$5,503,043.00
II.	Removal of Contaminated Soil Around Wells														
	# of Production and Injection Wells 5820														
	Cost per well ($/well) 73.29														
	Subtotal Removal of Soil Around Wells	$426,547.80													$426,547.80
III.	Delineation Hole Abandonment														
	# of Projected Holes	0	0	0	0	0	0	62	30	50	0	500	0	1500	
	Average Depth (ft)	500	850	750	850	450	500	950	950	900	800	600	950	750	$754.17
	Hole Abandonment Unit Cost ($/ft of hole)	$1.05	$1.05	$1.05	$1.05	$1.05	$1.05	$1.05	$1.05	$1.05	$1.05	$1.05	$1.05	$1.05	
	Site Reclamation ($/site)	$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	
	Subtotal Hole Abandonment per Wellfield	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$61,845.00	$29,925.00	$47,250.00	$0.00	$315,000.00	$0.00	$1,181,250.00	
IV.	Waste Disposal Well Abandonment	DDW #1	DDW #2	DDW SRHUP 6 (SW)	DDW Reynolds	DDW SRHUP 10									
A.	Well Sealing														
	Sealing cost per foot (in UIC permit)	$11.91	$11.91	$11.91	$11.91	$11.91									
	Subtotal Plugging Costs per Well (in UIC permit)	$120,291	$120,291	$97,662	$100,044	$100,044									
B.	Pump Dismantling and Decontamination														
	Number of Persons	2	2	2	2	2									
	Number of Pumps	2	2	2	2	2									
	Pumps/Day	0.5	0.5	0.5	0.5	0.5									
	Number of Days	4	4	4	4	4									
	$/Day/Person	$258	$258	$258	$258	$258									
	Subtotal Dismantling and Decon Costs per Well	$2,060	$2,060	$2,060	$2,060	$2,060									
C.	Tubing String Disposal (NRC-Licensed Facility)														
	Length of Tubing String (ft)	10,100	10,100	8,200	8,400	8,400									
	Diameter of Tubing String (inches)	2.875	2.875	2.875	2.875	2.875									
	Volume of Tubing String (ft^3)	455	455	369	378	378									
	Transportation and Disposal Unit Cost ($/$ft^3$)	$12.52	$12.52	$12.52	$12.52	$12.52									
	Subtotal Tubing String Disposal Costs per Well	$5,697	$5,697	$4,625	$4,738	$4,738									
	Subtotal Waste Disposal Well Abandonment Costs per Well	$128,048.25	$128,048.25	$104,347.25	$106,842.25	$106,842.25									
	Total Waste Disposal Well Abandonment Costs	$574,128.25													
Total Wellfield Abandonment Costs		**$8,138,990.10**													

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Wellfield Buildings and Equipment Removal and Disposal	Mine Unit-1	Mine Unit-2	Mine Unit-3	Mine Unit-4/4A/4Ext	Mine Unit-15	Mine Unit-15A	Mine Unit-K	Mine Unit-9	Mine Unit-10	Mine Unit-27	Mine Unit-21	Mine Unit-7	
I. Wellfield Piping													
Number of Header Houses per Wellfield	6	5	10	11	13	9	16	13	3	4	0	2	
Approximate Length of Piping per Header House (ft) (ave. 46 wells per with 300 ft pip	13800	13800	13800	13800	13800	13800	13800	13800	13800	13800	13800	13800	
Approximate Total Length of Piping (ft)	82800	69000	138000	151800	179400	124200	220800	179400	41400	55200	0	27600	1269600
A. Removal and Loading													
Trench Length - usually run multiple pipes in trench assume 1/4 pipe length	20700	17250	34500	37950	44850	31050	55200	44850	10350	13800	0	6900	
Wellfield Piping Removal Unit Cost ($/ft of pipe)	$1.83	$1.83	$1.83	$1.83	$1.83	$1.83	$1.83	$1.83	$1.83	$1.83	$1.83	$1.83	
Subtotal Wellfield Piping Removal and Loading Costs	$151,524	$126,270	$252,540	$277,794	$328,302	$227,286	$404,064	$328,302	$75,762	$101,016	$0	$50,508	
B. Transport and Disposal Costs (NRC-Licensed Facility)													
Average Diameter of Piping (inches)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	
Chipped Volume Reduction (ft^3/ft)	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	
Chipped Volume per Wellfield (ft^3)	568	473	946	1041	1230	851	1514	1230	284	378	0	189	
Volume for Disposal Assuming 10% Void Space (ft^3)	624	520	1041	1145	1353	937	1665	1353	312	416	0	208	
Transportation and Disposal Unit Cost ($/$ft^3$)	$12.52	$12.52	$12.52	$12.52	$12.52	$12.52	$12.52	$12.52	$12.52	$12.52	$12.52	$12.52	
Subtotal Wellfield Piping Transport and Disposal Costs	$7,812	$6,510	$13,032	$14,334	$16,938	$11,730	$20,843	$16,938	$3,906	$5,208	$0	$2,604	
Wellfield Piping Costs per Wellfield	$159,336	$132,780	$265,572	$292,128	$345,240	$239,016	$424,907	$345,240	$79,668	$106,224	$0	$53,112	
Total Wellfield Piping Costs	**$2,443,223**												
II. Well Pumps and Tubing													
Assumptions:													
60% of production/injection wells contain pumps and/or tubing													
A. Pump and Tubing Transportation and Disposal													
Number of Production Wells	101	174	176	216	268	204	335	238	180	240	0	120	
Number of Injection Wells	113	235	258	353	463	376	534	354	270	432	0	180	
1. Pump Volume													
Number of Production Wells with Pumps	61	104	106	130	161	122	201	143	108	144	0	72	
Average Pump Volume (ft^3)	1	1	1	1	1	1	1	1	1	1	1	1	
Pump Volume per Wellfield (ft^3)	61	104	106	130	161	122	201	143	108	144	0	72	
2. Tubing Volume													
Assumptions:													
Average tubing length/wellfield based on average well depth minus 25 ft													
Number of Production Wells with Tubing	61	104	106	130	161	122	201	143	108	144	0	72	
Number of Injection Wells with Tubing	68	141	155	212	278	226	320	212	162	259	0	108	
Average Tubing Length per Well (ft)	475	825	725	825	425	475	925	925	875	775	575	925	
Tubing Length per Wellfield (ft)	61275	202125	189225	282150	186575	165300	481925	328375	236250	312325	0	166500	
Diameter of Production Well Fiberglass Tubing (inches)	2	2	2	2	2	2	2	2	2	2	2	2	
Diameter of Injection Well HDPE Tubing (inches)	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	
Chipped Volume Reduction (ft^3/ft)	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	
Chipped Volume per Wellfield (ft^3)	420	1386	1297	1934	1279	1133	3304	2251	1619	2141	0	1141	
Volume of Pump and Tubing (ft^3)	481	1490	1403	2064	1440	1255	3505	2394	1727	2285	0	1213	
Volume for Disposal Assuming 10% Void Space (ft^3)	529	1639	1543	2270	1584	1381	3856	2633	1900	2514	0	1334	
Transportation and Disposal Unit Cost ($/$ft^3$)	$12.52	$12.52	$12.52	$12.52	$12.52	$12.52	$12.52	$12.52	$12.52	$12.52	$12.52	$12.52	
Pump and Tubing Transport and Disposal Costs Per Wellfield	$6,622	$20,518	$19,316	$28,417	$19,829	$17,288	$48,271	$32,961	$23,785	$31,472	$0	$16,700	
Total Pump and Tubing Disposal Costs	**$265,179**												
III. Buried Trunkline (Includes $ for fiber optic cable removal)													
Assumptions:													
Length of Trunkline Trench (ft)	5075	7600	4790	12565	19085	7500	17198	11565	2500	8800	0	5400	102078
A. Removal and Loading													
Main Pipeline Removal Unit Cost ($/ft of trench)	$1.83	$1.83	$1.83	$1.83	$1.83	$1.83	$1.83	$1.83	$1.83	$1.83	$1.83	$1.83	
Subtotal Trunkline Removal and Loading Costs	$9,287	$13,908	$8,766	$22,994	$34,926	$13,725	$31,472	$21,164	$4,575	$16,104	$0	$9,882	
B. Transport and Disposal Costs (NRC-Licensed Facility)													

Wellfield Buildings and Equipment Removal and Disposal	Mine Unit-1	Mine Unit-2	Mine Unit-3	Mine Unit-4/4A/4Ext	Mine Unit-15	Mine Unit-15A	Mine Unit-K	Mine Unit-9	Mine Unit-10	Mine Unit-27	Mine Unit-21	Mine Unit-7	
1. 2" HDPE Trunkline													
Piping Length (ft)	0	0	0	0	0	0	0	0	0	0	0	0	0
Chipped Volume per foot of pipe (ft^3/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	
Chipped Volume (ft^3)				0	0	0	0	0	0	0	0	0	
2. 3" HDPE Trunkline													
Piping Length (ft)	5075	7600	4790	12565	0	0	0	0	0	0	0	0	30030
Chipped Volume per foot of pipe (ft^3/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	
Chipped Volume (ft^3)	118	177	112	293	0	0	0	0	0	0	0	0	
3. 4" HDPE Trunkline													
Piping Length (ft)					0	0	0	0	0	8800	0	0	0
Chipped Volume per foot of pipe (ft^3/ft)	0.0385	0.0385	0.0385	0.0385	0.0385	0.0385	0.0385	0.0385	0.0385	0.0385	0.0385	0.0385	
Chipped Volume (ft^3)	0	0	0	0	0	0	0	0	0	338	0	0	
4. 6" HDPE Trunkline													
Piping Length (ft)	2410	10000	4820	7320	28170	2320	5754	4800	2000	0	0	0	67594
Chipped Volume per foot of pipe (ft^3/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	
Chipped Volume (ft^3)	201	834	402	610	2349	193	480	400	167	0	0	0	
5. 8" HDPE Trunkline													
Piping Length (ft)	4100	0	1100	4240	4000	6266	2052	15980	3000	1600	0	4000	46338
Chipped Volume per foot of pipe (ft^3/ft)	0.1413	0.1413	0.1413	0.1413	0.1413	0.1413	0.1413	0.1413	0.1413	0.1413	0.1413	0.1413	
Chipped Volume (ft^3)	579	0	155	599	565	885	290	2258	424	226	0	565	
6. 10" HDPE Trunkline													
Piping Length (ft)	0	5200	3660	4680	6000	1400	1028	2800	0	1200	0	2000	27968
Chipped Volume per foot of pipe (ft^3/ft)	0.2196	0.2196	0.2196	0.2196	0.2196	0.2196	0.2196	0.2196	0.2196	0.2196	0.2196	0.2196	
Chipped Volume (ft^3)	0	1142	804	1028	1317	307	226	615	0	263	0	439	
7. 12" HDPE Trunkline													
Piping Length (ft)	1460	0	0	5270	0	1080	2866	4110	0	3656	0	0	18442
Chipped Volume per foot of pipe (ft^3/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	
Chipped Volume (ft^3)	451	0	0	1627	0	333	885	1269	0	1129	0	0	
8. 14" HDPE Trunkline													
Piping Length (ft)	740	0	0	0	0	6200	0	1830	0	0	0	4000	12770
Chipped Volume per foot of pipe (ft^3/ft)	0.3723	0.3723	0.3723	0.3723	0.3723	0.3723	0.3723	0.3723	0.3723	0.3723	0.3723	0.3723	
Chipped Volume (ft^3)	276	0	0	0	0	2308	0	681	0	0	0	1489	
9. 16" HDPE Trunkline													
Piping Length (ft)	1440	0	0	3620	0	0	2010	1420	0	0	0	0	8490
Chipped Volume per foot of pipe (ft^3/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	
Chipped Volume (ft^3)	700	0	0	1761	0	0	978	691	0	0	0	0	
10. 18" HDPE Trunkline													
Piping Length (ft)	0	0	0	0	24170	0	20686	7640	0	12286	0	0	64782
Chipped Volume per foot of pipe (ft^3/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	
Chipped Volume (ft^3)	0	0	0	0	14877	0	12732	4702	0	7562	0	0	
Total Chipped Volume (ft^3)	2207	1976	1361	5625	19108	4028	15590	10617	591	9519	0	2494	
Volume for Disposal Assuming 10% Void Space (ft^3)	2428	2173	1497	6188	21019	4431	17149	11678	650	10471	0	2743	
Transportation and Disposal Unit Cost ($/ft3)	$12.52	$12.52	$12.52	$12.52	$12.52	$12.52	$12.52	$12.52	$12.52	$12.52	$12.52	$12.52	
Subtotal Trunkline Transport and Disposal Costs	$30,395	$27,203	$18,740	$77,465	$263,127	$55,470	$214,680	$146,191	$8,137	$131,081	$0	$34,338	
Trunkline Decommissioning Costs per Wellfield	$39,682	$41,111	$27,506	$100,459	$298,053	$69,195	$246,152	$167,355	$12,712	$147,185	$0	$44,220	
Total Trunkline Decommissioning Costs	**$1,193,630**												
IV. Well Heads													
Total Quantity	261	462	493	659	833	637	990	695	561	748	0	359	
Average Well Head Volume (ft^3)	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	
A. Removal													
Total Volume (ft^3)	485.46	859.32	916.98	1225.74	1549.38	1184.82	1841.4	1292.7	1043.46	1391.28	0	667.74	

Wellfield Buildings and Equipment Removal and Disposal	Mine Unit-1	Mine Unit-2	Mine Unit-3	Mine Unit-4/4A/4Ext	Mine Unit-15	Mine Unit-15A	Mine Unit-K	Mine Unit-9	Mine Unit-10	Mine Unit-27	Mine Unit-21	Mine Unit-7
Demolition Unit Cost per WDEQ Guideline No.12,App.K ($/ft^3)	$0.258	$0.258	$0.258	$0.258	$0.258	$0.258	$0.258	$0.258	$0.258	$0.258	$0.258	$0.258
Subtotal Well Head Demolition Costs	$125	$221	$236	$316	$399	$305	$475	$333	$269	$359	$0	$172
B. Survey and Decontamination												
Cost per Well Head	6.56	6.56	6.56	6.56	6.56	6.56	6.56	6.56	6.56	6.56	6.56	6.56
Subtotal Survey and Decontamination Costs	$1,713	$3,032	$3,235	$4,324	$5,466	$4,180	$6,496	$4,560	$3,681	$4,908	$0	$2,356
C. Disposal at NRC licensed Facility												
Total Volume (ft^3)	485	859	917	1226	1549	1185	1841	1293	1043	1391	0	668
Volume for Disposal Assuming 10% Void Space (ft^3)	534	945	1009	1348	1704	1303	2026	1422	1148	1530	0	735
Transportation and Disposal Unit Cost ($/ft^3)	$12.52	$12.52	$12.52	$12.52	$12.52	$12.52	$12.52	$12.52	$12.52	$12.52	$12.52	$12.52
Subtotal NRC Licensed Facility Disposal Costs	$6,685	$11,830	$12,631	$16,875	$21,332	$16,312	$25,363	$17,801	$14,371	$19,153	$0	$9,201
Well Head Removal and Disposal Costs per Wellfield	$8,523	$15,083	$16,102	$21,515	$27,197	$20,797	$32,334	$22,694	$18,321	$24,420	$0	$11,729
Total Well Head Removal and Disposal Costs	**$218,715**											
V. **Header Houses** (Includes Booster Stations)												
Booster Houses				1	6		3	1				
Total Quantity	6	5	10	12	19	9	19	14	3	4	0	2
Average Header House Volume (ft^3)	800	800	800	800	800	800	800	800	800	800	800	800
A. Removal												
Total Volume (ft^3)	4800	4000	8000	9600	15200	7200	15200	11200	2400	3200	0	1600
Demolition Unit Cost per WDEQ Guideline No.12,App.K ($/ft^3)	$0.236	$0.236	$0.236	$0.236	$0.236	$0.236	$0.236	$0.236	$0.236	$0.236	$0.236	$0.236
Subtotal Building Demolition Costs	$1,134	$945	$1,890	$2,268	$3,591	$1,701	$3,591	$2,646	$567	$756	$0	$378
B. Survey and Decontamination												
Cost per Header House	$568	$568	$568	$568	$568	$568	$568	$568	$568	$568	$568	$568
Subtotal Survey and Decontamination Costs	$3,405	$2,838	$5,675	$6,810	$10,783	$5,108	$10,783	$7,945	$1,703	$2,270	$0	$1,135
C. Disposal												
Total Volume (cy)	178	148	296	356	563	267	563	415	89	119	0	59
Volume for Disposal Assuming 10% Void Space (cy)	196	163	326	391	619	293	619	456	98	130	0	65
Disposal Unit Cost per WDEQ Guideline No.12,App.K ($/cy)	$9.03	$9.03	$9.03	$9.03	$9.03	$9.03	$9.03	$9.03	$9.03	$9.03	$9.03	$9.03
Subtotal On-Site Disposal Costs	$1,770	$1,472	$2,945	$3,532	$5,591	$2,646	$5,591	$4,119	$885	$1,174	$0	$587
Headerhouse Soil Removal Volume ft3 (assumes 10'Wx20'Lx2.5'D)	500	500	500	500	500	500	500	500	500	500	500	500
Disposal Unit Cost ($/ft3)	$5.22	$5.22	$5.22	$5.22	$5.22	$5.22	$5.22	$5.22	$5.22	$5.22	$5.22	$5.22
Subtotal Off-Site Disposal Costs	$15,667	$13,056	$26,111	$31,333	$49,611	$23,500	$49,611	$36,556	$7,833	$10,444	$0	$5,222
Header House Removal and Disposal Costs per Wellfield	$21,976	$18,311	$36,621	$43,943	$69,576	$32,955	$69,576	$51,266	$10,988	$14,644	$0	$7,322
Total Header House Removal and Disposal Costs	**$377,178**											
TOTAL REMOVAL AND DISPOSAL COSTS PER WELLFIELD	$236,139	$227,803	$365,117	$486,462	$759,895	$379,251	$821,240	$619,516	$145,474	$323,945	$0	$133,083
VI. **Vehicle Operation Costs**												
Number of Pickup Trucks/Pulling Units (Gas)	10											
Unit Cost in $/hr (UC-Equipment Costs)	$18.08											
Average Operating Time (Hrs/Year)	1,000											
Total Number of Years (Average)	9											
Total Vehicle Operation Costs	$1,627,200											
TOTAL WELLFIELD BUILDINGS AND EQUIPMENT REMOVAL	**$6,125,125**											

Cameco Resources
Smith Ranch Uranium Project
2010-11 Surety Estimate

Wellfield and Satellite Surface Reclamation	Mine Unit-1	Mine Unit-2	Mine Unit-3	Mine Unit-3 2nd Comp.	Mine Unit-4	Mine Unit-4A	Mine Unit-15	Mine Unit-15A	Mine Unit-K	Mine Unit-9	Mine Unit-10
I. Wellfield Pattern Area, and Road Reclamation											
Area (acres)	29.3	90.0	47.3	17.0	71.9	35.0	67.4	35.6	47.9	66.5	21.1
Disking/Seeding Unit Cost ($/acre)	$606	$606	$606	$606	$606	$606	$606	$606	$606	$606	$606
Subtotal Pattern Area and Road Reclamation Costs	$17,740	$36,359	$28,660	$10,308	$43,625	$21,223	$40,891	$15,529	$29,037	$40,330	$12,797
Total Wellfield Area Reclamation Costs	**$316,246**										
II. Laydown area reclamation											
Area of Disturbance (acres)	1	1	1	1	1	1	1	1	2	1	1
Average Depth of Stripped Topsoil (ft)	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
Surface Grade: Level Ground											
Average Length of Topsoil Haul (ft)	500	500	500	500	500	500	500	500	500	500	500
A. Ripping Overburden with Dozer											
Ripping Unit Cost per WDEQ Guideline No.12, App.II ($/acre)	$1,153	$1,153	$1,153	$1,153	$1,153	$1,153	$1,153	$1,153	$1,153	$1,153	$1,153
Subtotal Ripping Costs	$1,153	$1,153	$1,153	$1,153	$1,153	$1,153	$1,153	$1,153	$1,729	$1,153	$1,153
B. Topsoil Application with Scraper											
Volume of Topsoil Removed (cy)	1,081	1,081	1,081	1,081	1,081	1,081	1,081	1,081	1,621	1,081	1,081
Application Unit Cost per WDEQ Guideline No.12, App.C ($/cy)	$1.09	$1.09	$1.09	$1.09	$1.09	$1.09	$1.09	$1.09	$1.09	$1.09	$1.09
Subtotal Topsoil Application Costs	$1,182	$1,182	$1,182	$1,182	$1,182	$1,182	$1,182	$1,182	$1,773	$1,182	$1,182
C. Discing and Seeding											
Discing/Seeding Unit Cost ($/acre)	$606	$606	$606	$606	$606	$606	$606	$606	$606	$606	$606
Subtotal Discing/Seeding Costs	$606	$606	$606	$606	$606	$606	$606	$606	$910	$606	$606
Subtotal Surface Reclamation Costs per WF laydown area	$2,941	$2,941	$2,941	$2,941	$2,941	$2,941	$2,941	$2,941	$4,412	$2,941	$2,941
Total Wellfield Laydown Area Reclamation Costs	**$36,763**										
SUBTOTAL SURFACE RECLAMATION COSTS PER WELLFIELD	**$20,681**	**$39,300**	**$31,601**	**$13,249**	**$46,566**	**$24.164**	**$43.832**	**$18,470**	**$33,449**	**$43,271**	**$15,738**
III. Satellite Area Reclamation	SR-1	SR-2	Reynolds Ranch								
Assumptions:											
Area of Disturbance (acres)	2.05	3	3								
Average Depth of Stripped Topsoil (ft)	1	1	1								
Surface Grade: Level Ground											
Average Length of Topsoil Haul (ft)	1000	500									
A. Ripping Overburden with Dozer											
Ripping Unit Cost per WDEQ Guideline No.12, App.II ($/acre)	$1,152.92	$1,152.92	$1,152.92								
Subtotal Ripping Costs	$2,363	$3,459	$3,459								
B. Topsoil Application with Scraper											
Volume of Topsoil Removed (cy)	3307	4840	4840								
Application Unit Cost per WDEQ Guideline No.12, App.C ($/cy)	$1.31	$1.31	$1.31								
Subtotal Topsoil Application Costs	$4,318	$6,320	$6,320								
C. Discing and Seeding											
Discing/Seeding Unit Cost ($/acre)	$606	$606	$606								
Subtotal Discing/Seeding Costs	$1,243	$1,819	$1,819								
Subtotal Surface Reclamation Costs per Satellite	$7,924	$11,598	$11,598								
Total Satellite Building Area Reclamation Costs	**$31,120**										
Total	**$384,129**										

Cameco Resources
Smith Ranch Uranium Project
2010-11 Surety Estimate

Equipment Removal and Loading	CPP Ion Ex. Plant	Central Plant	Dryer Building	Satellite SR-1	Pilot ISL	Water Pumphouse	Bone Yard	Satellite SR-2	Sat. Reynolds
I. Removal and Loading Costs									
A. Tankage									
Number of Tanks	13	51	0	10	15	3	30	10	10
Volume of Tank Construction Material (ft^3)	835	1340	300	397	260	164	1648	397	397
1. Labor									
Number of Persons	3	3	3	3	3	3	3	3	3
Ft^3/Day	25	25	25	25	25	25	25	25	25
Number of Days	33	54	12	16	10	7	66	16	16
$/Day/Person	$176	$176	$176	$176	$176	$176	$176	$176	$176
Subtotal Labor Costs	$17,652	$28,314	$6,339	$8,452	$5,494	$3,465	$34,822	$8,452	$8,452
2. Equipment									
Number of Days	33	54	12	16	10	7	66	16	16
$/Day	$1,384	$1,384	$1,384	$1,384	$1,384	$1,384	$1,384	$1,384	$1,384
Subtotal Equipment Costs	$46,246	$74,179	$16,607	$22,143	$14,393	$9,079	$91,230	$22,143	$22,143
Subtotal Tankage Removal and Loading Costs	$63,898	$102,493	$22,946	$30,595	$19,887	$12,544	$126,052	$30,595	$30,595
B. PVC/Steel Pipe									
PVC Pipe Footage	2800	5000	0	4000	1500	0	0	4000	4000
Average PVC Pipe Diameter (inches)	3	3	3	3	3	3	0	3	3
Shredded PVC Pipe Volume Reduction (ft^3/ft)	0.016	0.016	0.016	0.016	0.016	0.016	0	0.016	0.016
Volume of Shredded PVC Pipe (ft^3)	45	80	0	64	24	0	0	64	64
Steel Pipe Footage	1100	0	0	0	0	80	0	0	0
Average Steel Pipe Diameter (inches)	6	0	0	0	0	8	0	0	0
Volume (ft^3)	216	0	0	0	0	30	0	0	0
Labor									
Number of Persons	2	2	2	2	2	2	2	2	2
Ft/Day	300	300	300	300	300	300	300	300	300
Number of Days	13	17	0	13	5	0	0	13	13
$/Day/Person	$176	$176	$176	$176	$176	$176	$176	$176	$176
Subtotal PVC/Steel Pipe Labor Costs	$4,578	$5,869	$0	$4,695	$1,761	$94	$0	$4,578	$4,578
Subtotal PVC/Steel Pipe Removal and Loading Costs	$4,578	$5,869	$0	$4,695	$1,761	$94	$0	$4,578	$4,578
C. Pumps									
Number of Pumps	21	43	0	13	12	2	0	13	13
Average Volume (ft^3/pump)	4.93	4.93	0	4.93	4.93	4.93	4.93	4.93	4.93
Volume of Pumps (ft^3)	103.53	211.99	0	64.09	59.16	9.86	0	64.09	64.09
1. Labor & Equipment									
Number of Persons	2	2	2	2	2	2	0	1	1
Pumps/Day	2	2	2	2	2	2	2	2	2
Number of Days	10.5	21.5	0	6.5	6	1	0	7	7
$/Day/Person	$181	$258	$258	$258	$258	$258	$258	$258	$258
$/ Day Equipment	$0	$314	$314	$314	$314	$314	$314	$314	$314
Subtot Subtotal Labor & Equipment Costs	$3,809	$17,835	$0	$5,392	$4,977	$830	$0	$4,004	$4,004
D. Dryer									
Dryer Volume (ft^3)			200						
1. Labor									
Number of Persons	0	0	5	0	0	0	0	0	0
Ft^3/Day	0	0	175	0	0	0	0	0	0
Number of Days	0	0	2	0	0	0	0	0	0
$/Day/Person	$176	$176	$176	$176	$176	$176	$176	$176	$176
Total Labor Cost	$0	$0	$1,761	$0	$0	$0	$0	$0	$0
Subtotal Dryer Dismantling and Loading Cost	$0	$0	$1,761	$0	$0	$0	$0	$0	$0
E. RO Units									

Equipment Removal and Loading	CPP Ion Ex. Plant	Central Plant	Dryer Building	Satellite SR-1	Pilot ISL	Water Pumphouse	Bone Yard	Satellite SR-2	Sat. Reynolds
Number of RO Units									
Current	0	0	0	0	0	0	0	0	0
Planned	0	0	0	1	1	0	0	0	0
Average Volume (ft3/RO Unit)	250	250	250	250	250	250	250	250	250
Labor									
Number of Persons	2	2	2	2	2	2	2	2	2
Number of Days	0	0	0	1	1	0	0	0	0
$/Day/Person	$176.08	$176.08	$176.08	$176.08	$176.08	$176.08	$176.08	$176.08	$176.08
Subtotal RO Unit Removal and Loading Costs	$0.00	$0.00	$0.00	$352.16	$352.16	$0.00	$0.00	$0.00	$0.00
Subtotal Equipment Removal and Loading Costs per Facility	$72,285	$126,197	$24,707	$41,034	$26,977	$13,468	$126,052	$39,177	$39,177
Total Equipment Removal and Loading Costs	**$509,074**								
II. Transportation and Disposal Costs (NRC-Licensed Facility)									
A. Tankage									
Volume of Tank Construction Material (ft^3)	835	1340	300	397	260	164	1648	397	397
Volume for Disposal Assuming 10% Void Space (ft^3)	919	1474	330	436	286	180	1813	436	436
Transportation and Disposal Unit Cost ($/$ft^3$)	$12.52	$12.33	$141.00	$141.00	$141.00	$141.00	$141.00	$141.00	$141.00
Subtotal Tankage Transportation and Disposal Costs	$11,505	$18,174	$46,530	$61,476	$40,326	$25,380	$255,633	$61,476	$61,476
B. PVC / Steel Pipe									
Volume of Shredded PVC Pipe (ft^3)	44.8	80	0	64	24	0	0	64	64
Volume for Disposal Assuming 10% Void Space (ft^3)	49	88	0	70	26	0	0	70	70
Volume of Steel Pipe (ft^3)	296	0	0	0	0	30	30	0	0
Volume for Disposal Assuming 10% Void Space (ft^3)	326	0	0	0	0	33	33	0	0
Transportation and Disposal Unit Cost ($/$ft^3$)	$12.52	$12.52	$12.52	$12.52	$12.52	$12.52	$12.52	$12.52	$12.52
Subtotal PVC Pipe Transportation and Disposal Costs	$4,694	$1,102	$0	$876	$325	$413	$413	$876	$876
C. Pumps									
Volume of Pumps (ft^3)	103.53	211.99	0	64	59	9.86	0	64	64
Volume for Disposal Assuming 10% Void Space (ft^3)	114	233	0	70	65	11	0	70	70
Transportation and Disposal Unit Cost ($/$ft^3$)	$12.52	$12.52	$12.52	$12.52	$12.52	$12.52	$12.52	$12.52	$12.52
Subtotal Pump Transportation and Disposal Costs	$1,427	$2,917	$0	$876	$814	$138	$0	$876	$876
D. Dryer									
Dryer Volume (ft^3)	0	0	400	0	0	0	0	0	0
Volume for Disposal Assuming Dryer Remains Intact (ft^3)	0	0	400	0	0	0	0	0	0
Transportation and Disposal Unit Cost ($/$ft^3$)	$12.52	$12.52	$12.52	$12.52	$12.52	$12.52	$12.52	$12.52	$12.52
Total Dryer Transportation and Disposal Costs	$0	$0	$5,007	$0	$0	$0	$0	$0	$0
E. RO Units									
Volume of RO Units (ft^3)	0	0	0	250	250	0	0	0	0
Volume for Disposal Assuming 50% Volume Reduction (ft^3)	0	0	0	125	125	0	0	0	0
Transportation and Disposal Unit Costs	$12.52	$12.52	$12.52	$12.52	$12.52	$12.52	$12.52	$12.52	$12.52
Subtotal RO Unit Transportation and Disposal Costs	$0	$0	$0	$1,565	$1,565	$0	$0	$0	$0
Subtotal Equipment Transportation and Disposal Costs per Facility	$17,626	$22,193	$51,537	$64,793	$43,030	$25,931	$256,046	$63,228	$63,228
Total Equipment Transportation and Disposal Costs	**$607,612**								
III. Health and Safety Costs									
Radiation Safety Equipment — Accounted for on GW REST									
Total Health and Safety Costs									
SUBTOTAL EQUIPMENT REMOVAL AND DISPOSAL COSTS PER FACILITY	$89,911	$148,390	$76,244	$105,827	$70,007	$39,399	$382,098	$102,405	$102,405
TOTAL EQUIPMENT REMOVAL AND DISPOSAL COSTS	**$1,116,686**								

Building Demolition and Disposal	CPP Ion Ex. Plant	Central Plant	Dryer Building	Office Building	Storage Building	Water Treat Plant	Shop Building	Pilot ISL Building	Fresh Water Pumphouse	DDW 1 Buildings 15x30	DDW 10 Buildings 20x24	DDW Reynolds Buildings 20x24
I. Decontamination Costs												
A. Wall Decontamination												
Area to be Decontaminated (ft^2)	10,810	15,900	9,600	0	1,152	576	4,826	12,000	0	720	704	704
HCl Acid Wash, including labor ($/$ft^2$)	$0.77	$0.77	$0.77	$0.77	$0.77	$0.77	$0.77	$0.77	$0.77	$0.77	$0.77	$0.77
Subtotal Wall Decontamination Costs	$8,349	$12,280	$7,414	$0	$890	$445	$3,727	$9,268	$0	$556	$544	$544
B. Concrete Floor Decontamination												
Area to be Decontaminated (ft^2)	11,550	16,500	3,500	0	1,678	839	7,028	17,477	0	390	392	392
HCl Acid Wash, including labor ($/$ft^2$)	$0.51	$0.51	$0.51	$0.51	$0.51	$0.51	$0.51	$0.51	$0.51	$0.51	$0.51	$0.51
Subtotal Concrete Floor Decontamination Costs	$5,849	$8,356	$1,773	$0	$850	$425	$3,559	$8,851	$0	$198	$199	$199
C. Deep Well Injection Costs												
Total Kgals for Injection (1 gal used per ft2)	22.36	32.4	13.1	0	2.83	1.415	11.854	29.477	0	1.11	1.096	1.096
Deep Well Injection Unit Cost ($/Kgals)	$0.86	$0.86	$0.86	$0.86	$0.86	$0.86	$0.86	$0.86	$0.86	$0.86	$0.86	$0.86
Subtotal Deep Well Injection Costs	$19	$28	$11	$0	$2	$1	$10	$25	$0	$1	$1	$1
Subtotal Decontamination Costs per Building	$14,217	$20,664	$9,198	$0	$1,742	$871	$7,296	$18,144	$0	$755	$744	$744
Total Decontamination Costs	**$91,865**											
II. Demolition Costs												
A. Building												
Volume of Building (ft^3)	346,500	577,500	122,500	120,000	16,780	8,390	175,700	314,586	8,320	3120	4800	4800
Demolition Unit Cost per WDEQ Guideline No.12,App.K ($/$ft^3$)	$0.26	$0.26	$0.26	$0.26	$0.26	$0.26	$0.26	$0.26	$0.26	$0.26	$0.26	$0.26
Subtotal Building Demolition Costs	$89,314	$148,856	$31,576	$30,931	$4,325	$2,163	$45,288	$81,088	$2,145	$804	$1,237	$1,237
B. Concrete Floor												
Area of Concrete Floor (ft^2)	11,550	16,500	3,500	8000	1678	839	7028	17477	832	390	392	392
Demolition Unit Cost per WDEQ Guideline No.12,App.K ($/$ft^2$)	$5.08	$5.08	$5.08	$5.08	$5.08	$5.08	$5.08	$5.08	$5.08	$5.08	$5.08	$5.08
Subtotal Concrete Floor Demolition Costs	$58,674	$83,820	$17,780	$40,640	$8,524	$4,262	$35,702	$88,784	$4,227	$1,981	$1,991	$1,991
C. Concrete Footing												
Length of Concrete Footing (ft)	430	514	237	360	164	116	335	529	115	90	88	88
Demolition Unit Cost per WDEQ Guideline No.12,App.K ($/ft)	$18.10	$18.10	$18.10	$18.10	$18.10	$18.10	$18.10	$18.10	$18.10	$18.10	$18.10	$18.10
Subtotal Concrete Footing Demolition Costs	$7,780	$9,298	$4,283	$6,515	$2,965	$2,097	$6,068	$9,570	$2,081	$1,629	$1,593	$1,593
Subtotal Demolition Costs per Building	$155,768	$241,974	$53,639	$78,086	$15,814	$8,522	$87,058	$179,442	$8,453	$4,414	$4,821	$4,821
Total Demolition Costs	**$1,595,979**											
III. Disposal Costs												
A. Building												
Volume of Building (cy)	12833	21389	4537	4444	621	311	6507	11651	308	116	178	178
On-Site												
Percentage (%)	100	100	100	100	100	100	100	100	100	100	100	100
Volume for Disposal (cubic yards)	12833	21389	4537	4444	621	311	6507	11651	308	116	178	178
Disposal Unit Cost ($/cy)	$9.03	$9.03	$9.03	$9.03	$9.03	$9.03	$9.03	$9.03	$9.03	$9.03	$9.03	$9.03
Subtotal On-Site Disposal Costs	$115,915	$193,192	$40,980	$40,144	$5,613	$2,807	$58,777	$105,239	$2,783	$1,044	$1,606	$1,606
B. Concrete Floor												
Area of Concrete Floor (ft^2)	11550	16500	3500	8000	1678	839	7028	17477	1186	390	392	392
Average Thickness of Concrete Floor (ft)	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Volume of Concrete Floor (ft^3)	8662.5	12375	2625	6000	1258.5	629.25	5271	13107.75	889.5	292.5	294	294
Volume of Concrete Floor (cy)	321	458	97	222	47	23	195	485	33	11	11	11
1. On-Site												
Percentage (%)	75	75	75	100	100	100	100	75	100	75	75	75
Volume for Disposal (cy)	241	344	73	222	47	23	195	364	33	8	8	8
Disposal Unit Cost per WDEQ Guideline No.12,App.K ($/cy)	$9.03	$9.03	$9.03	$9.03	$9.03	$9.03	$9.03	$9.03	$9.03	$9.03	$9.03	$9.03
Subtotal On-Site Disposal Costs	$2,173	$3,105	$659	$2,007	$421	$211	$1,763	$3,289	$298	$73	$74	$74
2. NRC-Licensed Facility												
Percentage (%)	25	25	25	0	0	0	0	25	0	25	25	25
Volume for Disposal (ft^3)	2166	3094	656	0	0	0	0	3277	0	73	74	74
Transportation and Disposal Unit Cost ($/$ft^3$)	$5.22	$5.22	$5.22	$5.22	$5.22	$5.22	$5.22	$5.22	$5.22	$5.22	$5.22	$5.22
Subtotal NRC-Licensed Facility Disposal Costs	$11,309	$16,156	$3,427	$0	$0	$0	$0	$17,113	$0	$382	$384	$384
Subtotal Concrete Floor Disposal Costs	$13,482	$19,261	$4,086	$2,007	$421	$211	$1,763	$20,402	$298	$455	$458	$458
C. Concrete Footing												
Length of Concrete Footing (ft)	430	514	237	360	164	116	335	529	124	90	88	88
Average Depth of Concrete Footing (ft)	4	4	4	4	4	4	4	4	4	4	4	4
Average Width of Concrete Footing (ft)	1	1	1	1	1	1	1	1	1	1	1	1
Volume of Concrete Footing (ft^3)	1720	2055	947	1440	655	463	1341	2115	496	360	352	352
Volume of Concrete Footing (cy)	64	76	35	53	24	17	50	78	18	13	13	13
Disposal Unit Cost per WDEQ Guideline No.12,App.K ($/cy)	$9.03	$9.03	$9.03	$9.03	$9.03	$9.03	$9.03	$9.03	$9.03	$9.03	$9.03	$9.03
Subtotal Concrete Footing Disposal Costs	$575	$688	$317	$482	$219	$155	$449	$708	$166	$120	$118	$118
Subtotal Disposal Costs per Building	$129,972	$213,141	$45,383	$42,633	$6,253	$3,173	$60,989	$126,349	$3,247	$1,619	$2,182	$2,182

	CPP Ion Ex. Plant	Central Plant	Dryer Building	Office Building	Storage Building	Water Treat Plant	Shop Building	Pilot ISL Building	Fresh Water Pumphouse	DDW 1 Buildings	DDW 10 Buildings	DDW Reynolds Buildings
Building Demolition and Disposal										15x30	20x24	20x24
Total Disposal Costs	**$1,211,873**											
IV. Health and Safety Costs Accounted for on GW REST												
SUBTOTAL BUILDING DEMOLITION AND DISPOSAL COSTS	$299,957	$475,779	$108,220	$120,719	$23,809	$12,566	$155,343	$323,935	$11,700	$6,788	$7,747	$7,747
TOTAL BUILDING DEMOLITION AND DISPOSAL COSTS	**$2,899,717**											
Building Utility Costs												
Number of years of operation required for restoration/reclamation	10	10	0	10	0	0	10	0	10	10	10	10
SUBTOTAL BUILDING ELECTRICAL COSTS (UC-Electrical Power)		$232,718.55		$79,870.07			$43,032.68		$58,094.35	$265,255.33	$268,389.50	$268,389.50
TOTAL BUILDING ELECTRICITY COSTS	**$2,512,339.15**											
SUBTOTAL PROPANE AND NATURAL GAS COSTS		$ 823,251		$ 19,913			$ 8,769					
TOTAL PROPANE AND NATURAL GAS COSTS	**$ 2,539,299**											
TOTAL UTILITY COSTS	**$5,051,638**											

	DDW WellHead Buildings	Satellite SR-1	Yellowcake Warehouse	Satellite SR-2	Satellite Reynolds	Construction Shop	CPP Lab Addition
Building Demolition and Disposal	5 ea 8x8	160X120-(40x40)		160X120	160X120	50X80	25X40
I. Decontamination Costs							
A. Wall Decontamination							
Area to be Decontaminated (ft^2)	0	0	3100	0	0	0	1300
HCl Acid Wash, including labor ($/$ft^2$)	$0.77	$0.77	$0.77	$0.77	$0.77	$0.77	$0.77
Subtotal Wall Decontamination Costs	$0	$0	$2,394	$0	$0	$0	$1,004
B. Concrete Floor Decontamination							
Area to be Decontaminated (ft^2)	0	9000	2750	9000	9000	0	1000
HCl Acid Wash, including labor ($/$ft^2$)	$0.51	$0.51	$0.51	$0.51	$0.51	$0.51	$0.51
Subtotal Concrete Floor Decontamination Costs	$0	$4,558	$1,393	$4,558	$4,558	$0	$506
C. Deep Well Injection Costs							
Total Kgals for Injection (1 gal used per ft2)	0	9	5.85	9	9	0	2.3
Deep Well Injection Unit Cost ($/Kgals)	$0.86	$0.86	$0.86	$0.86	$0.86	$0.86	$0.86
Subtotal Deep Well Injection Costs	$0	$8	$5	$8	$8	$0	$2
Subtotal Decontamination Costs per Building	$0	$4,566	$3,792	$4,566	$4,566	$0	$1,512
Total Decontamination Costs							
II. Demolition Costs							
A. Building							
Volume of Building (ft^3)	3200	441,600	55,000	447,360	447,360	80,000	25,000
Demolition Unit Cost per WDEQ Guideline No.12,App.K ($/$ft^3$)	$0.26	$0.26	$0.26	$0.26	$0.26	$0.26	$0.26
Subtotal Building Demolition Costs	$825	$113,827	$14,177	$115,312	$115,312	$20,621	$6,444
B. Concrete Floor							
Area of Concrete Floor (ft^2)	0	18400	2750	18640	18640	4000	1000
Demolition Unit Cost per WDEQ Guideline No.12,App.K ($/$ft^2$)	$5.08	$5.08	$5.08	$5.08	$5.08	$5.08	$5.08
Subtotal Concrete Floor Demolition Costs	$0	$93,472	$13,970	$94,692	$94,692	$20,320	$5,080
C. Concrete Footing							
Length of Concrete Footing (ft)	160	640	210	560	560	260	65
Demolition Unit Cost per WDEQ Guideline No.12,App.K ($/ft)	$18.10	$18.10	$18.10	$18.10	$18.10	$18.10	$18.10
Subtotal Concrete Footing Demolition Costs	$2,896	$11,582	$3,796	$10,134	$10,134	$4,705	$1,176
Subtotal Demolition Costs per Building	$3,721	$218,881	$31,943	$220,138	$220,138	$45,646	$12,700
Total Demolition Costs							
III. Disposal Costs							
A. Building							
Volume of Building (cy)	119	16356	2037	16569	16569	2963	926
On-Site							
Percentage (%)	100	100	100	100	100	100	100
Volume for Disposal (cubic yards)	119	16356	2037	16569	16569	2963	926
Disposal Unit Cost ($/cy)	$9.03	$9.03	$9.03	$9.03	$9.03	$9.03	$9.03
Subtotal On-Site Disposal Costs	$1,070	$147,729	$18,399	$149,656	$149,656	$26,762	$8,363
B. Concrete Floor							
Area of Concrete Floor (ft^2)	0	18400	2750	18640	18640	4000	1000
Average Thickness of Concrete Floor (ft)	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Volume of Concrete Floor (ft^3)	0	13800	2062.5	13980	13980	3000	750
Volume of Concrete Floor (cy)	0	511	76	518	518	111	28
1. On-Site							
Percentage (%)	100	75	75	75	75	100	90
Volume for Disposal (cy)	0	383	57	388	388	111	25
Disposal Unit Cost per WDEQ Guideline No.12,App.K ($/cy)	$9.03	$9.03	$9.03	$9.03	$9.03	$9.03	$9.03
Subtotal On-Site Disposal Costs	$0	$3,462	$517	$3,508	$3,508	$1,004	$226
2. NRC-Licensed Facility							
Percentage (%)	0	25	25	25	25	0	10
Volume for Disposal (ft^3)	0	3450	516	3495	3495	0	75
Transportation and Disposal Unit Cost ($/$ft^3$)	$5.22	$5.22	$5.22	$5.22	$5.22	$5.22	$5.22
Subtotal NRC-Licensed Facility Disposal Costs	$0	$18,017	$2,693	$18,252	$18,252	$0	$392
Subtotal Concrete Floor Disposal Costs	$0	$21,479	$3,210	$21,760	$21,760	$1,004	$618
C. Concrete Footing							
Length of Concrete Footing (ft)	160	640	210	560	560	260	65
Average Depth of Concrete Footing (ft)	4	4	4	4	4	4	4
Average Width of Concrete Footing (ft)	1	1	1	1	1	1	1
Volume of Concrete Footing (ft^3)	640	2560	839	2240	2240	1040	260
Volume of Concrete Footing (cy)	24	95	31	83	83	39	10
Disposal Unit Cost per WDEQ Guideline No.12,App.K ($/cy)	$9.03	$9.03	$9.03	$9.03	$9.03	$9.03	$9.03
Subtotal Concrete Footing Disposal Costs	$214	$856	$281	$749	$749	$348	$87
Subtotal Disposal Costs per Building	$1,284	$170,064	$21,890	$172,165	$172,165	$28,114	$9,068

	DDW WellHead Buildings	Satellite SR-1	Yellowcake Warehouse	Satellite SR-2	Satellite Reynolds	Construction Shop	CPP Lab Addition
Building Demolition and Disposal	5 ea 8x8	160X120-(40x40)		160X120	160X120	50X80	25X40
Total Disposal Costs							
IV. **Health and Safety Costs** Accounted for on GW REST							
SUBTOTAL BUILDING DEMOLITION AND DISPOSAL COSTS	$5,005	$393,511	$57,625	$396,869	$396,869	$73,760	$23,280
TOTAL BUILDING DEMOLITION AND DISPOSAL COSTS							
Building Utility Costs							
Number of years of operation required for restoration/reclamation	10	9	0	9	9	0	10
SUBTOTAL BUILDING ELECTRICAL COSTS (UC-Electrical Power)		$502,479.88		$502,479.88	$291,629.40		In CPP cost
TOTAL BUILDING ELECTRICITY COSTS							
SUBTOTAL PROPANE AND NATURAL GAS COSTS		$ 442,319		$ 1,245,047			In CPP cost
TOTAL PROPANE AND NATURAL GAS COSTS							
TOTAL UTILITY COSTS							

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^2)			13068				
		Demolition Unit Cost per WDEQ Guideline No.12,App.K ($/$ft^2$)			$5.08				
		Average Thickness of Concrete Floor (ft)			0.50				
		Volume of Concrete Floor (ft^3)			6,534				
		Volume of Concrete Floor (cy)			242				
		On-Site Disposal Unit Cost per WDEQ Guideline No.12,App.K ($/cy)			$9.03				
		Subtotal Concrete Pad Demolition and Disposal Costs			**$68,572**				
	B.	Gravel Road Base Removal							
		Average haul distance (ft)			1000				
		Gravel Road Base Area (acres)			8.0				
		Average Road Base Depth (ft)			0.5				
		Volume of Road Base (cy)			6453				
		Removal Unit Cost per WDEQ Guideline No.12, App.C ($/cy)			$1.31				
		Subtotal Gravel Road Base Removal Costs			**$8,426**				
	C.	Ripping Overburden with Dozer							
		Overburden Surface Area (acres)			10.6				
		Ripping Unit Cost per WDEQ Guideline No.12, App.I1 ($/acre)			$1,152.92				
		Subtotal Ripping Overburden Costs			**$12,186**				
	D.	Topsoil Application							
		Area of surface disturbance (ft^2)			460426				
		Average thickness of topsoil (ft)			0.5				
		Average haul distance (ft)			2000				
		Surface grade (%)			0%				
		Volume of Topsoil (cy)			8,526				
		Movement of Topsoil Unit Cost per WDEQ Guideline No.12, App.C ($/cy)			$1.69				
		Subtotal Topsoil Application Costs			**$14,425**				
	E.	Discing/Seeding							
		Surface Area (acres)			10.57				
		Discing/Seeding Unit Cost ($/acre)			$672				
		Subtotal Discing/Seeding Costs			**$7,107**				
	Total CPP/Office/Yard Area Reclamation				**$102,290**				
II.	**Access Road Reclamation (includes culverts)**				**CPP Access Rd.**	**CPP to SAT 3**	**Access to WF**	**MU-15 Access**	**SR2 Access**
	A.	Assumptions							
		Surface grade			1%	5%	5%	0%	5%
		Length of Road (ft)			5173	15827	15557	10560	8500
		Width of Road (ft)			40	30	14	30	30
		Area of road (acres)			4.8	10.9	5.0	7.3	5.9

Miscellaneous Reclamation									
B.	Gravel Road Base Removal								
		Average haul distance (ft)	1000	1000	1000	1000	1000
		Gravel Road Base Width (ft)	30	20	10	20	20
		Gravel Road Base Area (acres)	3.56	7.27	3.57	4.85	3.90
		Average Road Base Depth (ft)	0.5	0.5	0.5	0.5	0.5
		Volume of Road Base (cy)	2874	5862	2881	3911	3148
		Removal Unit Cost per WDEQ Guideline No.12, App.C ($/cy)	$1.31	$1.31	$1.31	$1.31	$1.31
	Subtotal Gravel Road Base Removal Costs		$3,752	$7,654	$3,762	$5,107	$4,111
C.	Ripping Overburden with Dozer						
		Overburden Surface Area (acres)	4.8	10.9	5.0	7.3	5.9
		Ripping Unit Cost per WDEQ Guideline No.12, App.I1 ($/acre)	$1,152.92	$1,152.92	$1,152.92	$1,152.92	$1,152.92
	Subtotal Ripping Overburden Costs		$5,476	$12,567	$5,765	$8,385	$6,749
D.	Topsoil Application						
		Average haul distance (ft)	1500	1500	1500	1500	1500
		Topsoil Surface Area (ft^2)	206910	474804	217800	316800	255000
		Depth of Topsoil (ft)	0.5	0.5	0.5	0.5	0.5
		Volume of Topsoil (cy)	3832	8793	4033	5867	4722
		Movement of Topsoil Unit Cost per WDEQ Guideline No.12, App.C ($/cy)	$1.31	$1.31	$1.31	$1.31	$1.31
	Subtotal Topsoil Application Costs		$5,003	$11,481	$5,266	$7,660	$6,166
E.	Discing/Seeding						
		Surface Area (acres)	4.8	10.9	5.0	7.3	5.9
		Discing/Seeding Unit Cost ($/acre)	$606	$606	$606	$606	$606
	Subtotal Discing/Seeding Costs		$2,880	$6,609	$3,032	$4,410	$3,550
	Multiplier for Projected Additions		0	0	1	0	0
	Subtotal Reclamation Costs per Access Road		$17,111	$38,311	$35,650	$25,562	$20,576
	Total Access Road Reclamation Costs		**$141,992**				
III.	**Trunk Lines**		**Trunk Line #1 (CPP to MU-4)**	**Trunk Line #2 (CPP to SR-1)**	**Trunk Line #3 (MU-15 to SR-1)**	**Trunk Line #4 (O-Sand Pilot)**	**Trunk Line (SR-2 to CPP)**
					Included in MU 15 WF REC		
		Length of Trench (ft)	7750	8500	0	5500	2500
A.	Removal and Loading						
		Main Pipeline Removal Unit Cost ($/ft of trench)	$1.83	$1.83	$1.83	$1.83	$1.83
	Subtotal Trunkline Removal and Loading Costs		$14,183	$15,555	$0	$10,065	$4,575
B.	Transport and Disposal Costs (NRC-Licensed Facility)						
	1	2" HDPE Trunkline					
		Piping Length (ft)	7750	8500		22000	0
		Chipped Volume Reduction (ft^3/ft)	0.0107	0.0107	0.0107	0.0107	0.0107
		Chipped Volume (ft^3)	83	91	0	236	0
	1.	4" HDPE Trunkline					
		Piping Length (ft)	0	0	0	0	15000

Miscellaneous Reclamation										
				Chipped Volume Reduction (ft^3/ft)		0.0385	0.0385	0.0385	0.0385	0.0385
				Chipped Volume (ft^3)		0	0	0	0	577
		2.	6" HDPE Trunkline							
				Piping Length (ft)		7750	17000		0	0
				Chipped Volume Reduction (ft^3/ft)		0.0834	0.0834	0.0834	0.0834	0.0834
				Chipped Volume (ft^3)		646	1,418	0	0	0
		3.	8" HDPE Trunkline							
				Piping Length (ft)		0	0	0	0	0
				Chipped Volume Reduction (ft^3/ft)		0.1413	0.1413	0.1413	0.1413	0.1413
				Chipped Volume (ft^3)		0	0	0	0	0
		3.	10" HDPE Trunkline							
				Piping Length (ft)		0	0	0	0	0
				Chipped Volume Reduction (ft^3/ft)		0.2196	0.2196	0.2770	0.2770	0.2770
				Chipped Volume (ft^3)		0	0	0	0	0
		4.	12" HDPE Trunkline							
				Piping Length (ft)		0	6000	0	0	0
				Chipped Volume Reduction (ft^3/ft)		0.3088	0.3088	0.3088	0.3088	0.3088
				Chipped Volume (ft^3)		0	1,853	0	0	0
		5.	14" HDPE Trunkline							
				Piping Length (ft)		0	0	0	0	0
				Chipped Volume Reduction (ft^3/ft)		0.3723	0.3723	0.3723	0.3723	0.3723
				Chipped Volume (ft^3)		0	0	0	0	0
		5.	16" HDPE Trunkline							
				Piping Length (ft)		15500	11000		15500	15500
				Chipped Volume Reduction (ft^3/ft)		0.4864	0.4864	0.4864	0.4864	0.4864
				Chipped Volume (ft^3)		7,539	5,350	0	7,539	7,539
		6	18" HDPE Trunkline							
				Piping Length (ft)		0		0	0	2320
				Chipped Volume Reduction (ft^3/ft)		0.6155	0.6155	0.6155	0.6155	0.6155
				Chipped Volume (ft^3)		0	0	0	0	1,428
			Total Volume Chipped (ft^3)			8,268	8,712	0	7,775	9,544
			Volume for Disposal Assuming 10% Void Space (ft^3)			9,095	9,583	0	8,552	10,498
			Transportation and Disposal Unit Cost (NRC-Licensed Facility) ($/ft^3$)			$12.52	$12.52	$12.52	$12.52	$12.52
		Subtotal Transport and Disposal Costs				$113,856	$119,965	$0	$107,058	$131,419
	C.	Discing/Seeding								
			Width of Pipeline Trench (ft)			4	4	4	4	4
			Area of Pipeline Trench (acres)			0.7	0.8	0.0	0.5	0.2
			Discing/Seeding Unit Cost ($/acre)			$606	$606	$606	$606	$606
		Subtotal Discing/Seeding Costs				$432	$473	$0	$306	$139

Miscellaneous Reclamation										
	Subtotal Reclamation Costs per Pipeline					$128,471	$135,993	$0	$117,429	$136,133
	Total Pipeline Reclamation Costs					**$542,317**				
IV.	**Settling Basin/Storage Ponds Reclamation**					**Storage Ponds**	**Settling Pond**			
	A.	Soil Sampling and Monitoring								
			Number of Soil Samples			15	15			
			$/Sample			$337	$337			
		Subtotal Soil Sampling and Monitoring Costs				$5,055	$5,055			
	B.	Liner/Subsoil Removal and Disposal								
			Thickness of clay liner (ft)			1	0.5			
			Thickness of contaminated subsoil (ft)			1	0.5			
			Width of Pond (ft)			200	252			
			Length of Pond (ft)			100	432			
			Depth of Pond (ft)			10	20			
			Surface area of pond (ft^2)			20000	108864			
		1.	Removal and Loading							
				Volume of Clay Liner (cy)		1481	0			
				Clay Liner Removal and Loading Unit Cost ($/cy)		$3.89	$3.89			
			Subtotal Liner Removal and Loading Costs			$5,770	$0			
		2.	Transportation and Disposal							
				Volume of Clay Liner (ft^3)		1481	0			
				Volume of Geotextile Liner (ft^3)		52	0			
				Volume of Geotextile Liner @ 40% void (ft^3)		87	0			
				Transportation and Disposal Unit Cost ($/$ft^3$)		$5.22	$5.22			
			Subtotal Liner Transportation and Disposal Costs			$8,189	$0			
		Subtotal Liner Removal and Disposal Costs				$13,959	$0			
	C.	Grade and Contour								
				Volume of Embankment Material (CY)		7,407	80,640			
				Average Grade (%)		0	0			
				Distance (ft)		50	100			
				Material Moving Unit Cost per WDEQ Guideline No.12, App.E ($/cy)		$0.092	$0.161			
		Subtotal Grade and Contour Costs				$681	$12,983			
	D.	Topsoil Application								
				Area of surface disturbance (ft^2)		20000	108899			
				Average thickness of topsoil (ft)		1	1			
				Average haul distance (ft)		1000	1000			
				Surface grade (%)		0%	3%			
			Volume of Topsoil (cy)			741	4,033			
			Topsoil Unit Cost per WDEQ Guideline No.12, App.C ($/cy)			$1.31	$1.31			
		Subtotal Topsoil Application Costs				$967	$5,266			
	E.	Discing/Seeding								
				Area of surface disturbance (acres)		0.5	2.5			
			Discing/Seeding Unit Cost ($/acre)			$606	$606			

Miscellaneous Reclamation											
		Subtotal Discing/Seeding Costs					$303	$1,516			
	Subtotal Reclamation Costs						$20,965	$24,820			
	Total Settling Basin/Ponds Reclamation Costs						**$45,786**				
V.	**Miscellaneous**										
	A.	Potable Water Wells									
			Total Depth (ft) (5- 5-inch Diameter Wells, @ 750 ft)				3,750				
			Well Abandonment Unit Cost ($/ft)				$1.06				
		Subtotal Potable Water Wells Abandonment Costs					$3,975.00				
	B.	Fuel Area									
			Concrete Floor								
				Area of Concrete Floor (ft3)			375				
				Demolition Unit Cost per WDEQ Guideline No.12,App.K ($/ft3)			$0.24				
			Subtotal Concrete Floor Demolition Costs				$89				
			Concrete Footing								
				Length of Concrete Footing (ft)			77				
				Demolition Unit Cost per WDEQ Guide. No.12,App.K ($/lin. ft)			$18.10				
			Subtotal Concrete Footing Demolition Costs				$1,402				
		Subtotal Fuel Area Costs					$1,491				
	C	O_2 Pad MU-15									
			Concrete Floor								
				Area of Concrete Floor (ft2)			400				
				Demolition Unit Cost per WDEQ Guideline No.12,App.K ($/ft2)			$5.08				
			Subtotal Concrete Floor Demolition Costs				$2,032				
			Concrete Footing								
				Length of Concrete Footing (ft)			80				
				Demolition Unit Cost per WDEQ Guide. No.12,App.K ($/lin. ft)			$18.10				
			Subtotal Concrete Footing Demolition Costs				$1,448				
		Subtotal O_2 Pad MU-15 Costs					$3,480				
	D	O_2 Pad CPP									
			Concrete Floor								
				Area of Concrete Floor (ft2)			400				
				Demolition Unit Cost per WDEQ Guideline No.12,App.K ($/ft2)			$18.10				
			Subtotal Concrete Floor Demolition Costs				$7,239				
			Concrete Footing								
				Length of Concrete Footing (ft)			80				
				Demolition Unit Cost per WDEQ Guide. No.12,App.K ($/lin. ft)			$18.10				
			Subtotal Concrete Footing Demolition Costs				$1,448				
		Subtotal O_2 Pad CPP Costs					$8,687				
	E	Fence Removal									
			Total Length of Fence (ft)				162,735				
			Fence Removal Cost				$0.55				
		Subtotal Fence Removal					$89,504				

Miscellaneous Reclamation		
	Total Miscellaneous Structures Reclamation Costs	**$94,970.25**
VI.	**Infrastructure, Equipment Maintenance, Replacement and Repairs** @$62,000/yr	**$372,000.00**
	Note: 6 years is used to account for reduced maintenance as wellfields are decommissioned	
TOTAL MISCELLANEOUS RECLAMATION COSTS		**$1,299,355**

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Groundwater Sweep (GWS) and Deep Disposal Well (DDW) Unit Costs

Assumptions:

1. Wellfield pumps are 5 hp pumping at 32 gpm
2. Cost of electricity = $0.0478 kwh
3. Operator labor costs = $257.53 man-day
4. One 60 hp pump at the plant or satellite feeds two DDWs
5. One 75 hp at each DDW (operating HP)
6. Each DDW can take 105 gpm

Wellfield Pumping Electrical Costs per 1000 Gallons

1000	gal/min		5	hp/pump	1440	Kgal/day	= $	0.12
25	gal/pump		0.746	Kwh/hp	$0.0478	/kwh		
40	pumps		24	hr/day				

Wellfield Pumping Labor Costs per 1000 Gallons

2	Oper.		$515	Labor cost/day		= $	0.36
$258	Cost/oper/day		1,440	kgal/day			

Groundwater Sweep Production Rate

150	gal	X	60	min	X	24	hr	X	365	day	X		1	year	=	*6,570,000*	*gallons*
	min			hr			day			year			12	month			*month*

Plant or Satellite to DDW or Irrigator No. 2 Pumping Electrical Costs per 1000 Gallons

150	gal		171	Kgal/day	$0.0478	$/Kwh	= $	0.300
60	HP		0.746	Kwh/HP	24	Hr/day		

DDW Pumping Costs per 1000 gallons

75	gal		75	Kgal?day	$0.0478	$/Kwh	= $	0.856
75	HP		0.746	Kwh/HP	24	Hr/day		

TOTAL GWS COSTS PER 1000 GALLONS	**= $**	**1.63**
TOTAL DDW INJECTION COSTS PER 1000 GALLONS	**= $**	**1.16**

Groundwater Reverse Osmosis (RO) and Bioremediation Unit Costs

Assumptions:

1.	Cost of electricity =														$0.0478	KW hr
2.	Operator labor costs =														$257.53	day
3.	RO System Horsepower:															
			RO Unit Pump				60	hp								
			Permeate/Injection pump				60	hp								
			Waste pump				15	hp								
			TOTAL:				135	hp								
4.	Chemical costs:															
			Sodium Sulfide												$0.38	gal
			Methanol =												$2.43	gal
			Antiscalant =												$16.19	gal
5.	Mix Rates															
			Sodium Sulfide				0.0002	gal/gal								
			Methanol				0.00025	gal/gal								
			Antiscalant				0.00000833	gal/gal								
6.	Based on 20 pumps to produce 500 gpm - each pump does 25 gpm														720	Kgal/day
7.	RO Maintenance Costs														$0.07	per Kgal

Wellfield Pumping Electrical Costs per 1000 Gallons

20	pumps			0.746	Kwh/HP		$0.0478	electric rate						= $	$0.12	per Kgal
5	HP			24	Hrs/Day											

Reverse Osmosis/Bioremediation Electrical Costs per 1000 Gallons

135	HP			0.746	Kwh/HP		$0.0478	electric rate						= $	0.160	per Kgal
				24	Hrs/Day											

Reverse Osmosis/Bioremediation Labor Costs per 1000 Gallons

2	Oper.			$515.06	Labor cost/day									= $	0.715	per Kgal
$258	Cost/oper/day			720	kgal/day											

Treatment chemical costs per 1000 Gallons

	Antiscalant:															
	1000	gal	X	0.000008330	gal antiscalant	X	$16.19							= $	0.135	per Kgal
				1	gal		gal antiscalant									
	Methanol															
	1000	gal	X	0.00025	gal methanol	X	$2.43							= $	0.608	per Kgal
				1	gal		gal methanol									
	Sodium Sulfide															
	1000	gal	X	0.00020	pounds	X	$0.38							= $	0.076	per Kgal
				1	gal		pound sodium sulfide									

Reverse Osmosis Production Rate

	500	gal	X	60	min	X	24	hr	X	365	day	X	1	year	=	*21,900,000*	*gallons*
		min			hr			day			year		12	month			*month*

Bioremediation Production Rate (information only, not used)

	1050	gal	X	60	min	X	24	hr	X	365	day	X	1	year	=	*45,990,000*	*gallons*
		min			hr			day			year		12	month			*month*

TOTAL RO COSTS PER 1000 GALLONS	**= $**	**1.06**
TOTAL BIOREMEDIATION COSTS PER 1000 GALLONS	**= $**	**1.68**
TOTAL RO COSTS PER 1000 GALLONS WITH BRINE DISPOSAL COST	**= $**	**1.35**

FIVE YEAR MECHANICAL INTEGRITY TESTS (MIT)													
Assumptions:													
1	Pulling Unit for 8 hr/day												
2	MIT Unit for 8 hr/day												
3	Labor for operation of pulling unit requires 2 workers												
4	Labor for operation of MIT Unit requires 1 worker												
MIT Costs per Well													
Equipment and Labor:													
	Pulling Unit includes one operator												
		8	hours	X	$	82.06	per hour					=$	656.46
	Laborer												
		8	hours	X	$	22.01	per hour					=$	176.08
	MIT Unit includes one operator												
		8	hours	X	$	66.54	per hour					=$	532.32
							TOTAL MIT COST PER DAY					=$	1365.00
	Wells Completed					6	per day						
MIT COSTS PER WELL												=$	227.50
MIT COSTS PER DEEP DISPOSAL WELL (2008 Cost)												=$	5907.53

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WELL ABANDONMENT Unit Costs

Assumptions:												
1	**Typical 8 hour working day**											
2	Backhoe for 8.0 hr/day to dig and reclaim pits											
3	Use hose reel for 8 hr/day to pull equipment from well and trimme cement into well bore.											
4	Use cementer for 8.0 hr/day to pump cement/plug gel downhole											
5	Use 2 tow vehicles for 8.0 hr/day to tow hose reel and cementer											
6	Labor for hose reel and cementer will require 2 workers at 8.0 hr/day											
7	Gooseneck trailer for 8.0 hr/day.											
8	Forklift for 8.0 hr/day.											
9	Cost of bulk cement is $5.94/94# and plug gel cost is $7.30/50# sack.											
10	Plug Six (6) Wells per day 700		700	ft	X	6	=				4,200	
Cased Well Abandonment Costs											4,200	**Cost per ft based on doing 6 wells per day**
	Cat 416 Backhoe	8	hours	X	$	25.42	per hour			=	$ 203.35	$0.0484
	Operator	8	hours	X	$	32.19	per hour			=	$ 257.53	$0.0613
	Pickup Trucks	16	hours	X	$	18.08	per hour			=	$ 289.21	$0.0689
	Hose Reel	8	hours	X	$	62.50	per hour			=	$ 500.00	$0.1190
	Cementer	8	hours	X	$	32.90	per hour			=	$ 263.18	$0.0627
	Forklift	8	hours	X	$	50.07	per hour			=	$ 400.57	$0.0954
	Trailer - gooseneck	8	hours	X	$	13.87	per hour			=	$ 110.92	$0.0264
	Labor	16	hours	X	$	22.01	per hour			=	$ 352.16	$0.0838
	Well Cap	6	each	X	$	7.50	each			=	$ 45.00	$0.0107
Materials per foot of well												
	Cement	0.073	sacks/ft	X	$	5.94	per sack			=	$ 1,821.20	$0.4336
	Plug Gel	0.007	sacks/ft	X	$	7.30	per sack			=	$ 205.42	$0.0489
Total Estimated Cost per Day											$ 4,448.54	
Total Estimated Cost per Foot:												**$1.06**

REMOVAL OF CONTAMINATED SOIL AROUND WELLS Unit Cost

Assumptions:

1. Use backhoe for 0.25 hr/well to dig
2. Radiation Technician measures extent of contamination for 0.25 hr/well

Assessment/Removal Costs							**Cost per well**
Cat 416 Backhoe							
	0.25	hours	X	$	25.42	per hour	$6.35
Radiation Technician							
	0.25	hours	X	$	26.87	per hour	$6.72
Laborer							
	0.25		X	$	32.19	per hour	$8.05
Disposal and Transportation Costs							
Contaminated Soil per Well					0.370	cy per well	
Disposal and Transportation				$	141.00	per cy	$52.17
Total Estimated Cost per Well:							**$73.29**

Cameco Resources
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DELINEATION HOLE ABANDONMENT Unit Costs												
Assumptions:												
1	Drill rig used 2.5 hrs to plug well.											
2	Labor for installing chips, etc. will require 2 workers at 2.5 hrs per well											
Hole Abandonment Costs											750	**$/ft (based on 750 ft holes)**
	Site Locating	1	per site	X	$	10.00	per site			=	10.00	$ 0.013
	Drill rig	2.5	hours	X	$	200.00	per hour			=	500.00	$ 0.667
	Hole Plug	1	each	X	$	7.50	each			=	7.50	$ 0.010
	Labor	5	hours	X	$	22.01	per hour			=	110.05	$ 0.147
Materials per foot of												
	Plug Gel	12	sacks	X	$	7.30	per sack			=	87.60	$ 0.117
Site Grading & Seeding												
	Cat 416 Backhoe	1	hours	X	$	25.42	per hour			=	25.42	$ 0.034
	Operator	1	hours	X	S	32.19	per hour			=	32.19	$ 0.043
	Seeding	0.0184	acre	X	$	606.37	per acre			=	11.14	$ 0.015
Total Estimated Cost per Well											**773.90**	
Total Estimated Cost per Foot:												**$1.05**

Wellfield Building/Clay Liner Removal					
Cost per Well Head Cover					
	Radiation Tech =	27	per hour		
	Operator =	32	per hour		
	HCl 35% Cost =	$ 0.160	per pound		
	Acid Usage Rate =	4.1	pounds per wellhead cover		
	Acid Unit Cost =	$ 0.66	per wellhead cover		
	Total Labor Rate =	$ 65.62	per hour		
	Cleaning Rate	10	wellheads per hour		
	Survey / Decon.	**$ 6.56**	**per wellhead cover**		
Cost per Header House					
	Rad Technician =	27	per hour		
	Operator =	32	per hour		
	Number of Operators =	2			
	HCl 35% Cost =	$ 0.160	per pound		
	Acid Usage Rate =	20	pounds per header house		
	Acid Unit Cost =	$ 3.20	per header house		
	Total Labor Rate =	$ 567.53	per hour		
	Cleaning Rate	1	header house per day		
	Survey / Decon.	**$ 567.53**	**per header house**		
Clay Liner/Subsoil Removal Cost					
	Operator =	32	per hour		
	Trackhoe =	$ 79.68	per hour		
	Loader =	$ 43.93	per hour		
	Loader Size =	1.5	cubic yards		
	Disposal Rate =	40	yards/hour		
	Total Removal	**$ 3.89**	**per cubic yard**		

	ACID WASH		
	Assumptions:		
	10% wash solution is used		
	0.25 gallon of acid wash is used per sq ft. to clean walls.		
	1 gallon of acid wash is used per sq ft. to clean floors.		
	Using the CPP square footages the assumption is as follows		
	Acid Wash (Walls)		
	Labor	2	Men
	Rate	$22.01	hr.
	Time	20	8hr. Days
	Manlift	$7,976.33	Month
	CPP Wall Area	26,710	square feet
	Labor and manlift	$0.56	per square foot
	Acid	$0.16	pound
	Consumables	$0.05	per square foot
	Total	$0.77	per square foot
	Acid Wash (Floors)		
	Labor	2	Workers
	Rate	$22.01	hr.
	Time	15	8hr. Days
	CPP Floor Area	17820	square feet
	Labor	$0.30	per square foot
	Acid	$0.16	pound
	Consumables	$0.05	per square foot
	Total	$0.51	per square foot

Electrical Power Consumption and Costs - During Restoration

Description	Operating Horsepower	Voltage	Lighting FT^2	Lighting Watts (1.25 watts/FT^2)	Electric Heat Kw	Electric Air Condioning Kw	Kw/HP	Kwhr/HP hr	Operating Hours/yr	Kwhr/yr	Power Cost $/Kwhr	Electrical Cost/year
CPP 500 Gallon RO and Support Equip												
RO Feed Pump (cost of power in RO operating cost)	-	480					0.746	0.746	8,760	-	0.04780	$ -
Decar/Re-injection Pump (cost of power in RO operating)	-	480					0.746	0.746	8,760	-	0.04780	$ -
Decarb-Fan	5.0	480					0.746	0.746	8,760	32,675	0.04780	$ 1,561.86
Misc. Equip. (metering pumps, fans, sump pumps)	10.0	480					0.746	0.746	8,760	65,350	0.04780	$ 3,123.71
Air Compressors	7.5	480					0.746	0.746	8,760	49,012	0.04780	$ 2,342.78
Lighting (1.25 watts/sqft)			28,050	1.25					8,760	307,148	0.04780	$ 14,681.65
Laboratory Power	5.0						0.746	0.746	8,760	32,675	0.04780	$ 1,561.86
CPP Electrical Power Cost per Year Total												**$ 23,271.86**
SR1 500 Gallon RO and Support Equip.												
PC Booster Pump	40.0	480					0.746	0.746	8,760	261,398	0.04780	$ 12,494.84
RO Feed Pump (cost of power in RO operating cost)		480					0.746	0.746	8,760	-	0.04780	$ -
Decar/Re-injection Pump (cost of power in RO operating)		480					0.746	0.746	8,760	-	0.04780	$ -
Decarb-Compressor	5.0	480					0.746	0.746	8,760	32,675	0.04780	$ 1,561.86
Decarb Booster Pump	10.0	480					0.746	0.746	8,760	65,350	0.04780	$ 3,123.71
DDW 2 injection Pump	75.0	480					0.746	0.746	8,760	490,122	0.04780	$ 23,427.83
Misc. Equip. (metering pumps, fans, sump pumps)	10.0	480					0.746	0.746	8,760	65,350	0.04780	$ 3,123.71
Air Compressors	7.5	480					0.746	0.746	8,760	49,012	0.04780	$ 2,342.78
Lighting (1.25 watts/sqft)			18,640	1.25					8,760	204,108	0.04780	$ 9,756.36
SR1 500 Gallon RO and Support Equip. Total												**$ 55,831.10**
SR2 500 Gallon RO and Support Equip.												
PC Booster Pump	40.0	480					0.746	0.746	8,760	261,398	0.04780	$ 12,494.84
RO Feed Pump (cost of power in RO operating cost)	-	480					0.746	0.746	8,760	-	0.04780	$ -
Decar/Re-injection Pump (cost of power in RO operating)	-	480					0.746	0.746	8,760	-	0.04780	$ -
Decarb-Compressor	5.0	480					0.746	0.746	8,760	32,675	0.04780	$ 1,561.86
Decarb Booster Pump	10.0	480					0.746	0.746	8,760	65,350	0.04780	$ 3,123.71
DDW SHRUP 6 injection Pump	75.0	480					0.746	0.746	8,760	490,122	0.04780	$ 23,427.83
Misc. Equip. (metering pumps, fans, sump pumps)	10.0	480					0.746	0.746	8,760	65,350	0.04780	$ 3,123.71
Air Compressors	7.5	480					0.746	0.746	8,760	49,012	0.04780	$ 2,342.78
Lighting (1.25 watts/sqft)			18,640	1.25					8,760	204,108	0.04780	$ 9,756.36
SR1 500 Gallon RO and Support Equip. Total												**$55,831.10**
Reynolds Ranch 1 500 Gallon RO and Support Equip.												
PC Booster Pump	40.0	480					0.746	0.746	8,760	261,398	0.04780	$ 12,494.84
RO Feed Pump (cost of power in RO operating cost)	-	480					0.746	0.746	8,760	-	0.04780	$ -
Decar/Re-injection Pump (cost of power in RO operating)	-	480					0.746	0.746	8,760	-	0.04780	$ -
Decarb-Compressor	5.0	480					0.746	0.746	8,760	32,675	0.04780	$ 1,561.86
Decarb Booster Pump	10.0	480					0.746	0.746	8,760	65,350	0.04780	$ 3,123.71
Misc. Equip. (metering pumps, fans, sump pumps)	10.0	480					0.746	0.746	8,760	65,350	0.04780	$ 3,123.71
Air Compressors	7.5	480					0.746	0.746	8,760	49,012	0.04780	$ 2,342.78
Lighting (1.25 watts/sqft)			18,640	1.25					8,760	204,108	0.04780	$ 9,756.36
SR1 500 Gallon RO and Support Equip. Total												**$32,403.27**
DDW 1												
DDW PD Injection Pump	75.0	480					0.746	0.746	8,760	490,122	0.04780	$ 23,427.83
Misc. Equip. (metering pumps, fans, sump pumps)	1.0	480					0.746	0.746	8,760	6,535	0.04780	$ 312.37
Heater - electric Kw (includes wellhead)	-	480			12.5				4,320	54,000	0.04780	$ 2,581.20
Lighting (1.25 watts/sqft)			390	1.25					8,760	4,271	0.04780	$ 204.13
DDW 1 Injection Pump Support Equip. Total												**$26,525.53**
DDW SHRUP #10												
DDW PD Injection Pump	75.0	480					0.746	0.746	8,760	490,122	0.04780	$ 23,427.83
Misc. Equip. (metering pumps, fans, sump pumps)	1.0	480					0.746	0.746	8,760	6,535	0.04780	$ 312.37
Air Compressors	1.0	480					0.746	0.746	8,760	6,535	0.04780	$ 312.37
Heater - electric Kw (includes wellhead)	-	480			12.5				4,320	54,000	0.04780	$ 2,581.20
Lighting (1.25 watts/sqft)			392	1.25					8,760	4,292	0.04780	$ 205.18
DDW SRHUP 10 Injection Pump Support Equip. Total												**$26,838.95**
DDW Reynolds Ranch												
DDW PD Injection Pump	75.0	480					0.746	0.746	8,760	490,122	0.04780	$ 23,427.83
Misc. Equip. (metering pumps, fans, sump pumps)	1.0	480					0.746	0.746	8,760	6,535	0.04780	$ 312.37
Air Compressors	1.0	480					0.746	0.746	8,760	6,535	0.04780	$ 312.37
Heater - electric Kw (includes wellhead)	-	480			12.5				4,320	54,000	0.04780	$ 2,581.20
Lighting (1.25 watts/sqft)			392	1.25					8,760	4,292	0.04780	$ 205.18
Reynolds Ranch Injection Pump Support Equip. Total												**$26,838.95**
Maintenance Shop Building												
Misc. Equip. (fans, sump pumps)	2.0	480					0.746	0.746	8,760	13,070	0.04780	$ 624.74
Lighting (1.25 watts/sqft)			7,028	1.25					8,760	76,957	0.04780	$ 3,678.53
Maintenance Shop Building Total												**$ 4,303.27**
Fresh Water Pumphouse												
Water Pumps, fans, and metering pumps	10.0	480					0.746	0.746	8,760	65,350	0.04780	$ 3,123.71
Lighting (1.25 watts/sqft)			1,186	1.25					8,760	12,987	0.04780	$ 620.76
Heater - electric Kw	-	480			10.0				4,320	43,200	0.04780	$ 2,064.96
Fresh Water Pumphouse Total												**$ 5,809.44**
Office Building												
Water Pumps, fans	7.5	480					0.746	0.746	8,760	49,012	0.04780	$ 2,342.78
Lighting (1.00 watts/sqft)			8,000	1.00					8,760	70,080	0.04780	$ 3,349.82
Air conditioning - electric Kw	-	480				30.0			1,600	48,000	0.04780	$ 2,294.40
Office Building Total												**$ 7,987.01**

Heating Costs By Building

	Flooring Sq. Feet	Wall Sq. Feet	Number Of Fans	Fan CFM	AIR Exchange BTU/hr (ΔT=40)	Building BTU/hr (ΔT=40, R=20)	Combined BTU/hr	Heating Months	Determine Which Fuel is Used $$ per Million BTUs (Fuel Specific)	Nat. Gas $$ / yr	Propane $$ / yr
CPP	31,500	26,710	5	70,000	2,882,674	116,420	2,999,094	5	$6.00	$82,325	
Maintenance Shop (est. 200 cfm)	7,028	4826	1	200	8,236	23,708	31,944	5	$6.00	$877	
SR-1	17,600	12800	3	42,000	1,729,604	60,800	1,790,404	5	$6.00	$49,147	
SR-2	19,200	11200	3	42,000	1,729,604	60,800	1,790,404	5	$17.00		$138,339
Office Building	8,000	7,680	5	1,000	41,181	31,360	72,541	5	$6.00	$1,991	
Reynolds Ranch Satellite	19,200	11200	3	42,000	1,729,604	60,800	1,790,404	5	$17.00		$138,339
					0	0	0	5			
										$132,349	$276,677

Smith Ranch Total (all restoration Bldings) $409,026

WELLFIELD PIPING REMOVAL Unit Costs

Assumptions:

1. Trenching with Trackhoe at 1000 ft per day
2. Pipeline extraction and backfilling with Trackhoe & loader at 200 1000 feet per day
4. Trackhoe operation requires 1 worker
5. Pipeline extraction requires 2 workers
6. Operating schedule: 8 hrs/day, 5 days/week

Equipment

Trackhoe										
	$ 79.68	X	8 hours		1 day		=$ 0.64	per foot		
	hour		day		1000 ft					
Loader										
	$ 43.93	X	8 hours	X	1 day		=$ 0.35	per foot		
	hour		day		1000 ft					
Pickup										
	$ 18.08	X	8 hours	X	1 day		=$ 0.14	per foot		
	hour		day		1000 ft					

Labor

Trackhoe Operation										
	$ 32.19	X	8 man hrs	X	1 days		=$ 0.26	per foot		
	man hr		1 day		1000 ft					
Loader Operation										
	$ 32.19	X	8 man hrs	X	1 day		=$ 0.26	per foot		
	man hr		1 day		1000 ft					
Pipeline Extraction Laborer										
	$ 22.01	X	8 man hrs	X	1 day		=$ 0.18	per foot		
	man hr		1 day		1000 ft					

MAIN PIPELINE REMOVAL COST =$ **1.830** per foot

Chipped Pipe Volume Calculations

Pipe Diam Inches	SDR	OD	ID	Wall Thickness	Area of Plastic in Crossection (ft^2)	Volume of Plastic per Linear Foot (ft^3)
1.5	11	1.900	1.534	0.183	0.0069	0.0069
2	11	2.375	1.917	0.229	0.0107	0.0107
3	11	3.500	2.825	0.3375	0.0233	0.0233
4	11	4.500	3.633	0.4335	0.0385	0.0385
6	11	6.625	5.348	0.6385	0.0834	0.0834
8	11	8.625	6.963	0.831	0.1413	0.1413
10	11	10.750	8.678	1.036	0.2196	0.2196
12	11	12.750	10.293	1.2285	0.3088	0.3088
14	11	14.000	11.302	1.349	0.3723	0.3723
16	11	16.000	12.916	1.542	0.4864	0.4864
18	11	18.000	14.531	1.7345	0.6155	0.6155

Equipment Costs - based on Cost Reference Guide - Equipment Watch 2010

Gasoline cost/gallon= 2. $ 2.63

Diesel Cost/ gallon = $ 2.68

GEC = ground engaging components 18%

Equipment Description	Hourly Ownership & Overhaul Cost: Ownership: Depr. $	CFC $	O'Head $	Overhaul: Labor $	Parts $	Field Repair & Operating Expenses (no operator labor): Labor $	Parts $	Fuel consum. Gal/hr	Fuel $	Lube $	Tires $	GEC $	Total Operating cost/hr	Total Hourly Cost	Owner's Profit & OH / hr	Cost/hr
Cat 14H Grader - 14' Blade	$ 16.53	$ 7.29	$ 9.16	$ 3.95	$ 8.32	$ 3.29	$ 8.07	7.04	$ 18.87	$ 4.22	$ 5.14	$ 0.64	$ 40.23	$ 85.48	$ 15.39	$ 100.86
Bobcat S250 Skid Steer Loader	$ 1.95	$ 0.64	$ 0.78	$ 1.75	$ 1.31	$ 1.42	$ 0.93	2.78	$ 7.44	$ 0.84	$ 0.85	$ 0.08	$ 11.56	$ 17.99	$ 3.24	$ 21.23
Backhoe 416E Extendable Boom	$ 3.85	$ 1.51	$ 1.30	$ 1.21	$ 0.92	$ 1.23	$ 1.14	2.88	$ 7.71	$ 1.57	$ 0.95	$ 0.15	$ 12.75	$ 21.54	$ 3.88	$ 25.42
Cat 924H 4-WD Wheel Loader	$ 8.05	$ 2.76	$ 2.63	$ 2.30	$ 1.85	$ 2.85	$ 1.80	4.12	$ 11.05	$ 1.87	$ 1.83	$ 0.24	$ 19.64	$ 37.23	$ 6.70	$ 43.93
Cat 615C Elevating Scarper	$ 17.88	$ 7.79	$ 7.88	$ 7.89	$ 14.79	$ 12.27	$ 13.31	10.07	$ 26.98	$ 5.18	$ 3.33	$ 1.14	$ 62.21	$ 118.44	$ 21.32	$ 139.76
Cat D8R Dozer - Semi U Blade	$ 21.97	$ 7.90	$ 7.53	$ 7.89	$ 14.36	$ 8.77	$ 13.86	11.36	$ 30.44	$ 5.41	$ -	$ 2.01	$ 60.49	$ 120.14	$ 21.63	$ 141.77
Cat 320C L Trackhoe	$ 16.31	$ 5.02	$ 3.64	$ 5.70	$ 5.60	$ 5.70	$ 5.60	5.80	$ 15.53	$ 3.52	$ -	$ 0.90	$ 31.25	$ 67.52	$ 12.15	$ 79.68
Concrete Jaws Labounty - CP-60	$ 1.57	$ 0.47	$ 0.47	$ 0.81	$ 0.39	$ 7.30	$ 1.95	-	$ -	$ 0.21	$ -	$ -	$ 9.46	$ 13.17	$ 2.37	$ 15.54
Grove RT700E 50 ton RT Crane	$ 20.62	$ 6.85	$ 8.83	$ 6.07	$ 9.81	$ 5.85	$ 13.79	11.54	$ 30.93	$ 6.22	$ 5.70	$ -	$ 62.49	$ 114.67	$ 20.64	$ 135.31
Vermeer 1230 Chipper	$ 2.19	$ 0.40	$ 0.60	$ 1.21	$ 1.38	$ 0.99	$ 1.02	2.92	$ 7.82	$ 0.83	$ 0.26	$ 0.69	$ 11.61	$ 17.39	$ 3.13	$ 20.52
JLG 600S Manlift - 60 ft (Gas)	$ 11.12	$ 2.18	$ 1.51	$ 5.10	$ 4.52	$ 5.26	$ 1.87	3.11	$ 8.18	$ 1.71	$ 0.80	$ -	$ 17.82	$ 42.25	$ 7.60	$ 49.85
Pressure Washer 5 gpm 2200 psi	$ 0.21	$ 0.04	$ 0.03	$ 0.34	$ 0.09	$ 0.52	$ 0.04	0.50	$ 1.32	$ 0.17	$ -	$ -	$ 2.05	$ 2.76	$ 0.50	$ 3.25
Pick-up Truck 3/4 ton 4X4	$ 2.66	$ 0.44	$ 0.37	$ 0.59	$ 0.54	$ 0.75	$ 0.52	3.14	$ 8.26	$ 0.79	$ 0.40	$ -	$ 10.72	$ 15.32	$ 2.76	$ 18.08
Pulling Unit - Truck 1.75 Ton 4X4	$ 4.06	$ 0.71	$ 0.72	$ 0.66	$ 0.88	$ 0.83	$ 0.85	6.88	$ 18.09	$ 1.66	$ 0.65	$ -	$ 22.08	$ 29.11		
Hoisting Unit - Hydraulic 18000#	$ 4.91	$ 0.90	$ 0.78	$ 1.46	$ 1.32	$ 1.80	$ 1.52	-	$ -	$ 0.46	$ -	$ -	$ 3.78	$ 13.15		
Pulling Unit Total	$ 8.97	$ 1.61	$ 1.50	$ 2.12	$ 2.20	$ 2.63	$ 2.37	6.88	$ 18.09	$ 2.12	$ 0.65	$ -	$ 25.86	$ 42.26	$ 7.61	$ 49.87
MIT Truck - 1.75 Ton 4X4 Gas	$ 4.06	$ 0.71	$ 0.72	$ 0.66	$ 0.88	$ 0.83	$ 0.85	6.88	$ 18.09	$ 1.66	$ 0.65	$ -	$ 22.08	$ 29.11	$ 5.24	$ 34.35
Mobile Mixer Trailer Mounted - Cementer - Grout mixer pumper	$ 5.86	$ 1.12	$ 1.07	$ 4.16	$ 1.68	$ 5.48	$ 1.85	2.02	$ 5.41	$ 0.85	$ 0.40	$ -	$ 13.99	$ 27.88	$ 5.02	$ 32.90
GooseNeck Trailer 3 Axle - fixed	$ 2.85	$ 0.76	$ 0.45	$ 1.42	$ 0.88	$ 1.64	$ 1.22	-	$ -	$ 0.29	$ 2.24	$ -	$ 5.39	$ 11.75	$ 2.12	$ 13.87
GEHL DL-8 Rough Terrain Lift Truck	$ 8.35	$ 1.88	$ 1.92	$ 5.06	$ 4.93	$ 5.28	$ 3.31	3.23	$ 8.66	$ 1.61	$ 1.43	$ -	$ 20.29	$ 42.43	$ 7.64	$ 50.07

Mine Unit Data

		Mine Unit-1	Mine Unit-2	Mine Unit-3	Mine Unit-4/4A/4Ext	Mine Unit-15	Mine Unit-15A	Mine Unit K	Mine Unit 9	Mine Unit 10	Mine Unit 11	Mine Unit 27	Mine Unit 21	Mine Unit 7
Total number of production wells		101	174	176	216	268	204	335	238	180	0	240	0	120
Total number of injection wells		113	235	258	353	463	376	534	354	270	0	432	0	180
Total number of monitor wells		47	53	59	90	102	57	121	103	111	0	76	0	59
Flare Factor		1.56	1.05	1.05	1.14	1.48	1.68	1.21	1.52	1.52	0	1.82	0	1.55
Wellfield Area (ft2)		1,108,034	2,271,426	1,790,519	2,725,270	2,554,278	970,206	1,813,644	1,931,533	613,014	0	705,644	0	240,000
Wellfield Area (acres)		25.44	52.14	41.10	62.56	58.64	22.27	41.64	44.34	14.07	0.00	16.20	0.00	5.51
Affected Ore Zone Area (ft2)		1,108,034	2,271,426	1,790,519	2,725,270	2,554,278	970,206	1,813,644	1,931,533	613,014	0	705,644	0	240,000
Avg. Completed Thickness		18.0	23.0	17.0	19.0	18.0	16.0	19.0	23.0	23.0	0.0	23.0	0.0	20.0
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
Affected Volume (ft3)		31,113,595	54,854,938	31,960,764	59,029,348	68,045,966	26,079,137	41,695,676	67,526,394	21,430,969	0	29,538,258	0	7,584,000
Kgallons per Pore Volume		62,837	110,785	64,548	119,216	137,426	52,669	84,209	136,376	43,282	0	59,655	0	15,317
Number of Patterns in Unit(s)														
	Current	101	140	148	216	268	101	195	238	0	0	60	0	0
	Estimated next report	0	20	28	0	0	103	140	0	180	0	180	0	120
	Total Estimated	101	160	176	216	268	204	335	238	180	0	240	0	120
Number of Wells in Unit(s)														
Production Wells														
	Current	101	140	148	216	268	101	195	238	0	0	60	0	0
	Estimated next report	0	34	28	0	0	103	140		180	0	180	0	120
	Total Estimated	101	174	176	216	268	204	335	238	180	0	240	0	120
Injection Wells														
	Current	113	235	204	353	463	186	294	354	0	0	100	0	0
	Estimated next report	0	0	54	0	0	190	240		270	0	332	0	180
	Total Estimated	113	235	258	353	463	376	534	354	270	0	432	0	180
Monitor Wells														
	Current	47	53	44	90	102	57	61	103	70	0	76	0	47
	Estimated next report	0	0	15	0	0	0	60		41	0	0	0	12
	Total Estimated	47	53	59	90	102	57	121	103	111	0	76	0	59
Number of Wells per Wellfield		261	462	493	659	833	637	990	695	561	0	748	0	359
Total Number of Wells	6,698													
Average Well Depth (ft)		500	850	750	850	450	500	950	950	900	500	800	600	950
Average Diameter of Casing (inches)		5	5	5	5	4.5	4.5	4.5	5	5	0	0	0	5
Delineation Holes Estimated Next Report Period		0	0	0	0	0	0	62	50	50	500	0	500	0
Length of Fencing (ft)		16,487	11580	7388	25047	7074	0	23271	21987	21595	0	19732	0	8674
Number of Deep Disposal Wells	5													

Electrical Costs

	2009 Actual	
Power cost	$0.0478	kwHr
Kilowatt to Horsepower	0.746	Kw/HP
Horsepower per gallon per minute	0.167	HP/gpm

Labor Rates

Latest Available, Wyoming, Mountain States Employers Council, July, 2009		Inc 42% benefits (i.e., overhead)	
Environmental Manager/RSO	$45.43	$64.51	hour
Restoration Manager/Hydrologist	$32.21	$45.74	hour
Operator	$22.67	$32.19	hour
Laborer	$15.50	$22.01	hour
Engineer	$32.21	$45.74	hour
Radiation/Environmental Engineering Technician	$18.92	$26.87	hour
2,080 working hours in a month	173	hours per month	

Chemical Costs

	2010 Actual (includes profit/overhead)	
Antiscalant for RO	$16.19	gal
Sodium Sulfide	$9.38	pound
Methanol	$2.43	gal
Cement	$5.94	sack
Bentonite Tubes	$2.90	tube
Plug Gel	$7.30	50# sack
Well Cap - Guideline 12	$7.50	each
Hydrochloric Acid	$0.16	pound

Analytical Costs

	2010 Actual (includes profit/overhead)	
Guideline 8 (contract lab)	$337.00	analysis
6 parameter (contract lab) Est Rate (CPI)	$100.00	analysis
Other (radon, bio, etc.) Est Rate (CPI)	$1,000.00	month

Capital Program Costs
Restoration

RO Unit, Reynolds Ranch	$500,000
RO Unit, SR2	$500,000
TOTAL Capital Costs	$1,000,000

Note: profit as used in this spreadsheet, indicates profit to the third party.

Equipment Costs (includes profit and overhead)

Equipment	*Base Rental Rate ($/hr)*	*Labor Costs ($/hr)*	*Total ($/hr)*
Cat 924G Loader	$ 43.93	N/A	$43.93
Cat 416 Backhoe	$ 25.42	N/A	$25.42
Shredder	$ 36.52	N/A	$20.52
Cat D8N Bulldozer	$ 141.77	N/A	$141.77
Pulling Unit with Operator	$ 49.87	$32.19	$82.06
MIT Unit with Operator	$ 34.35	$32.19	$66.54
GEHL DL-8 Rough Terrain Lift Truck	$ 50.07	N/A	$50.07
Drill Rig (workover, repair, P&A) with all labor, water	$ 200.00	inc	$200.00
Goose Neck Trailer	$ 13.87	N/A	$13.87
Manlift	$ 49.85	N/A	$49.85
Cementer	$ 32.90	N/A	$32.90

Crane with operator	$ 135.31	$32.19	$167.50
Cat 320C L Trackhoe	$ 79.68	N/A	$79.68
Concrete Jaws Labounty - CP-60	$ 15.54	N/A	$15.54
Pick-up Truck 3/4 ton 4X4	$ 18.08	N/A	$18.08
Hose Reel	$ 62.50	N/A	$62.50
Bobcat S250 Skid Steer Loader	$ 21.23	N/A	$21.23
Cat 14H Grader - 14' Blade	$ 100.86	N/A	$100.86
Cat 615C Elevating Scarper	$ 139.76	N/A	$139.76

Basis:
Drill rig based on current 2010 contracts
Equipment rates based on Cost Reference Guide - Equipment Watch 2010 updated addition - see UC - Equip Cost Tab

Waste Disposal Costs (profit/overhead included)

Waste Form	*Fee*		*Load Correction Factor (Tons/Yd3)*	*Fee per Cubic Yard*	*Transport Cost*		*Total Transportation and Disposal*	
Soil, Concrete Bulk Byproduct Material	$185.19	per Ton	0.54	$100.00	$41.00	per Yd3	$141.00	per Yd3
							$5.22	per ft3
Unpackaged Bulk Byproduct Material (e.g., pipe)	$707.15	per Ton	0.42	$297.00	$41.00	per Yd3	$338.00	per Yd3
							$12.52	per ft3
Solid Waste (landfill)	$0.00827	per Lb			Incl.	per Lb	$0.00827	per Lb
Solid Waste (landfill)	$133.75	per Load			Incl.	per Load	$133.75	per Load
Void Factor (for disposal)	1.25							

Load Correction Factors - difference between solid material and when it is broken because of air space between the pieces of material, the coarser the material the lower the load factor (or the finer the material the higher the factor). The table below shows some examples of load factors for several common materials, including concrete. These factors are from the Caterpillar Performance Handbook and the Engineering Pocket Reference Guide.

Material	Pounds/CY Solid (bank)	Pounds/CY Broken (Loose)	% Dif	Load Factor
Granite	4536	2781	39%	0.61
Limestone	4401	2619	40%	0.60
Sandstone	3915	2538	35%	0.65
Concrete	3996	2176	46%	0.54
Sand & gravel	2700	2400	11%	0.89

Guideline No. 12 Unit Costs (includes profit)

Paragraph 12, Miscellaneous (Administrative, Overhead and Contingency)
Extrapolated percentage based on numbers provided 15 percent

Task	Cost per unit	Regional Cost Adjustn	Overhead (10%)	Adjusted Cost per Unit
App K, Cost Estimates for Demolition and Removal of Railroad Spurs and Facilities Buildings				
Mixture of Types	$0.24 ft3	0.974	$0.02	$0.258 ft3
Explosive Demolition, Concrete or Steel	0.22 ft3	0.974	$0.02	$0.236 ft3
Disposal (Average)	8.41 cy	0.974	$0.84	$9.032 cy
Cay Landfill Dump Charges	$95.00 ton	0.974	$9.50	$102.030 ton
Concrete Footings and Foundations		0.974		
6" Thick with Rebar	4.73 ft2	0.974	$0.47	$5.080 ft2
Footings - 2' Thick, 3' Wide	16.85 lin. ft.	0.974	$1.69	$18.097 lin. ft.
Concrete Disposal On-Site	8.41 cy	0.974	$0.84	$9.032 cy
App C, Calculations for Moving Materials with a Caterpillar 637G Push-Pull Scraper Fleet		Operating Cost per bank (in situ)		
One-Way Distance 500 feet, 0% grade		$0.994	$0.10	$1.093 bcy
One-Way Distance 1,000 feet		$1.187	$0.12	$1.306 bcy
One-Way Distance 2,000 feet		$1.538	$0.15	$1.692 bcy
App E, Calculations for Moving Material with a Caterpillar D9R Dozer		Operating Cost per linear cubic yard		
Distance 50 feet		$0.118	$0.01	$0.130 lcy
App H, Cost Estimates for Handling Wire Fencing and Electrical Power Lines				
Fencing Removal		$0.50	$0.05	$0.55 linear foot
App H, Cost Estimate for Ripping Overburden Using a Caterpillar D10R Dozer		Operating Costs		
	0.27 acre/hour	$282.99	$28.30	$311.29 per hour
				$1,152.92 per acre

Seeding Unit Costs (includes profit/overhead)

Discing / Seeding/Topsoil Costs	2010 Actual
Seed cost	$65.99 per acre
Hay Mulch Crimped and Soil Amendment	$540 per acre
Seed and Mulch	$606 per acre
Depth of Topsoil	0.5 feet

Highland Uranium Project Reclamation Cost Estimate, June 2010

I.	Groundwater Restoration (GW REST Sheet)			$28,220,367
II.	Well Abandonment and Wellfield Reclamation (WA, WF REC, WF-SAT-SURF Sheets)			$11,745,435
III.	Equipment and Building Costs (EQUIP, BLDGS Sheets)			$4,264,997
IV.	Miscellaneous Site Reclamation (MISC REC Sheet)			$1,590,850
	Subtotal Reclamation Cost			$45,821,649
		Contingency	25%	$11,455,412
			TOTAL	$57,277,061

Cameco Resources
Highland Uranium Project
2010-11 Surety Estimate

Ground Water Restoration

			Mine Unit-A	Mine Unit-B	Mine Unit-C	Mine Unit-C22	Mine Unit-C Haul Drifts	Mine Unit-D	Mine Unit-D Ext	Mine Unit-E	Mine Unit-F	Mine Unit-H	Mine Unit-I	Mine Unit-J
I.	Ground Water Sweep Costs													
	Estimated PV's		0	0	0	0	0	1	1	1	1	1	1	1
	Total Kgals for GWS		0	0	0	0	0	28046	17296	81658	221800	94815	115820	86995
	Bleed to Deep Disposal Well (%)		100	100	100	100	100	100	100	100	100	100	100	100
	Groundwater Sweep Unit Cost ($/Kgal)		$1.63	$1.63	$1.63	$1.63	$1.63	$1.63	$1.63	$1.63	$1.63	$1.63	$1.63	$1.63
	Subtotal Ground Water Sweep Costs per Wellfield		**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$45,789.04**	**$28,238.15**	**$133,318.18**	**$362,119.71**	**$154,798.83**	**$189,092.45**	**$142,031.58**
Total Ground Water Sweep Costs			**$1,055,387.94**											
II.	Reverse Osmosis Costs													
	Estimated PV's		0	0	2	2	2	8	8	8	8	8	8	8
	Total Kgals for RO		0	0	137922	39382	0	224368	138368	653264	1774400	758520	926560	695960
	Bleed to Deep Disposal Well (%)		25	25	25	25	25	25	25	25	25	25	25	25
	Reverse Osmosis Unit Cost ($/Kgal)		$2.22	$2.22	$2.22	$2.22	$2.22	$2.22	$2.22	$2.22	$2.22	$2.22	$2.22	$2.22
	Subtotal Reverse Osmosis Costs per Wellfield		**$0.00**	**$0.00**	**$305,648.37**	**$87,274.29**	**$0.00**	**$497,220.99**	**$306,636.75**	**$1,447,695.63**	**$3,932,240.44**	**$1,680,953.01**	**$2,053,345.75**	**$1,542,314.05**
Total Reverse Osmosis Costs			**$11,853,329.28**											
III.	Bioremediation/Chemical Reductant Costs (Scheduled to occur with the last 1 to 2 PV of RO)													
	Estimated PV's		0	0	1	1	1	2	2	2	2	2	2	2
	Total Kgals for Treatment		0	0	68961	19691	0	56092	34592	163316	443600	189630	231640	173990
	Bleed to Deep Disposal Well (%)		25	25	25	25	25	25	25	25	25	25	25	25
	Chemical Reductant Unit Cost ($/Kgal)		$1.69	$1.69	$1.68	$1.68	$1.68	$1.68	$1.68	$1.68	$1.68	$1.68	$1.68	$1.68
	Subtotal Bioremediation/Reductant Costs per Wellfield		**$0.00**	**$0.00**	**$115,764.26**	**$33,055.12**	**$0.00**	**$94,161.18**	**$58,069.30**	**$274,157.22**	**$744,667.64**	**$318,330.31**	**$388,852.15**	**$292,075.57**
Total Bioremediation Costs			**$2,319,132.75**											
IV.	Selenium Plant Operation													
	Years		9											
	$/year		$114,000.00											
	Subtotal Selenium Plant Operation Costs		**$1,026,000.00**											
V.	MIT Costs													
	MIT Costs per Well		$227.50	$227.50	$227.50	$227.50	$227.50	$227.50	$227.50	$227.50	$227.50	$227.50	$227.50	$227.50
	Restoration period, Excluding Biorem Except In MU-C (months)		60.00	60.00	6.30	1.80	0.00	14.52	8.95	42.26	114.78	49.07	59.94	45.02
	Number of Wells MIT'd for Life of Mine Unit		0	365	120	0	0	71	14	298	2,548	475	361	269
	Subtotal MIT Mine Unit		**$0.00**	**$83,037.50**	**$27,313.65**	**$0.00**	**$0.00**	**$16,050.13**	**$3,291.93**	**$67,772.25**	**$579,697.30**	**$108,126.20**	**$82,045.60**	**$61,111.05**
	5-year MIT Costs for Disposal Wells	$5,907.53												
	Number of DDWs	3												
	Number of MITs per DDW	2												
	Subtotal MIT DDW Costs		**$35,445.18**											
Total MIT Costs			**$1,063,890.78**											
VI.	Monitoring and Sampling Costs													
	Guideline 8 analysis =	$337.00 analysis												
	6 parameter contract laboratory analysis =	$100.00 analysis												
	Total monitor wells		1	97	97	0	0	38	20	86	149	81	39	57
	Groundwater sweep duration (months)		0.00	0.00	0.00	0.00	0.00	4.27	2.63	12.43	33.76	14.43	17.63	13.24
	Reverse Osmosis duration (months)		0.00	0.00	6.30	1.80	0.00	10.25	6.32	29.83	81.02	34.64	42.31	31.78
	Bioremediation (months) information only, data being compiled		0.00	0.00	3.15	0.90	0.00	2.56	1.58	7.46	20.26	8.66	10.58	7.94
	Stabilization duration (months)		12	12	12	12	12	12	12	12	12	12	12	12
A.	Monitor Well Sampling													
1.	Well Sampling prior to restoration start													
	# of Wells		1	97	97	0	0	38	20	86	149	81	39	57
	$/sample		$337.00	$337.00	$337.00	$337.00	$337.00	$337.00	$337.00	$337.00	$337.00	$337.00	$337.00	$337.00
2.	Groundwater Sweep Sampling (quarterly)													
	# of Wells		1	97	97	0	0	38	20	86	149	81	39	57
	Total # samples		0	0	0	0	0	64	20	373	1689	405	234	266
	$/sample		$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00

Cameco Resources
Highland Uranium Project
2010-11 Surety Estimate

Ground Water Restoration

			Mine Unit-A	Mine Unit-B	Mine Unit-C	Mine Unit-C22	Mine Unit-C Haul Drifts	Mine Unit-D	Mine Unit-D Ext	Mine Unit-E	Mine Unit-F	Mine Unit-H	Mine Unit-I	Mine Unit-J
3.	RO Sampling (quarterly)													
	# of Wells		1	97	97	0	0	38	20	86	149	81	39	57
	Total # samples		0	0	194	0	0	127	40	860	4023	945	546	608
	$/sample		$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00
4.	Stabilization Sampling (Guideline 8, quarterly)													
	# of Wells		6	56	44	6	2	19	16	28	89	69	33	33
	Total # samples		30	280	220	30	10	95	80	140	445	345	165	165
	$/sample		$337.00	$337.00	$337.00	$337.00	$337.00	$337.00	$337.00	$337.00	$337.00	$337.00	$337.00	$337.00
5.	Stabilization Sampling (6 parameter bi-monthly)													
	# of Wells		6	56	44	6	2	19	16	28	89	69	33	33
	Total # samples		6	582	582	0	0	228	120	516	894	486	234	342
	$/sample		$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00
6.	Monitor Well Sampling													
	# of Wells		1	97	97	0	0	38	20	86	149	81	39	57
	$/sample		$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00
	Total # samples (2.2/mo for entire period)		6	582	1040	0	0	553	225	2654	10954	2824	1609	1851
7.	Other Laboratory Costs													
	Radon, etc. =	$1,000.00 month												
	Total for Other Laboratory Costs:		$60,000.00	$60,000.00	$6,300.00	$1,800.00	$0.00	$14,520.00	$8,950.00	$42,260.00	$114,780.00	$49,070.00	$59,940.00	$45,020.00
	Subtotal Monitoring and Sampling Costs per Mine Unit		**$71,647.00**	**$303,449.00**	**$294,729.00**	**$11,910.00**	**$3,370.00**	**$156,541.00**	**$83,150.00**	**$558,722.00**	**$2,070,958.00**	**$658,632.00**	**$390,988.00**	**$426,534.00**
Total Monitoring and Sampling Costs			**$5,030,630.00**											
VII.	**Supervisory Labor Cost (for all Reclamation)**													
	Environmental Manager/RSO Support	$11,160.33 month												
	Restoration Manager Support	$7,912.71 month												
	HP Technician support	$4,647.89 month												
	Active restoration period (months)		60.00	60.00	6.30	1.80	0.00	14.52	8.95	42.26	114.78	49.07	59.94	45.02
	Stabilization period (months)		12	12	12	12	12	12	12	12	12	12	12	12
	Total Restoration Period	9 years												
	Manager support during restoration	$2,059,888.58												
	HP Technician support during restoration	$501,971.82												
	Labor Support 5 each	$2,060,136.00												
Total Supervisory Labor Costs			**$4,621,996.40**											
TOTAL RESTORATION COST PER WELLFIELD			**$71,647.00**	**$386,486.50**	**$743,455.28**	**$132,239.41**	**$3,370.00**	**$809,762.34**	**$479,386.13**	**$2,481,665.28**	**$7,689,683.09**	**$2,920,840.35**	**$3,104,323.95**	**$2,464,066.25**
VIII.	**Capital Costs (for all Reclamation)**		**$1,250,000.00**											
TOTAL GROUND WATER RESTORATION COSTS			**$28,220,367.15**											

Cameco Resources
Highland Uranium Project
2010-11 Surety Estimate

Well Abandonment

			Mine Unit-A	Mine Unit-B	Mine Unit-C	Mine Unit-C 22	Mine Unit-C Haul Dr	Mine Unit-D	Mine Unit-D Ext	Mine Unit-E	Mine Unit-F	Mine Unit-H	Mine Unit-I	Mine Unit-J	Delination Holes General	Totals
I.	Well Abandonment (Wellfields)															
	# of Production Wells		0	141	198	0	0	49	30	129	459	204	125	118		1453
	# of Injection Wells		0	224	393	0	0	102	67	240	873	316	236	240		2691
	# of Monitoring Wells		1	97	97	0	0	38	20	86	149	81	39	57		665
	Total Number of Wells		1	462	688	0	0	189	117	455	1481	601	400	415		4809
	Average Diameter of Casing (inches)		5	5	5	5	5	5	5	5	5	5	5	5		
	Production, Injection and Perimeter Well Average Depth (ft)		500	450	550	550	550	600	600	550	650	500	650	540		544
	Total Mine Unit Well Depth (ft)		500	207900	378400	0	0	113400	70200	250250	962650	300500	260000	224100		1020650
	Well Abandonment Unit Cost ($/ft. of well)		$1.06	$1.06	$1.06	$1.06	$1.06	$1.06	$1.06	$1.06	$1.06	$1.06	$1.06	$1.06		
	Subtotal Abandonment Cost per Wellfield		$530	$220,374	$401,104	$0	$0	$120,204	$74,412	$265,265	$1,020,409	$318,530	$275,600	$237,546		$2,933,974
III.	Removal of Contaminated Soil Around Wells															
	# of Production and Injection Wells	4144														
	Cost per well ($/well)	73.39														
	Subtotal Removal of Soil Around Wells		$303,713.76													$303,713.76
IV.	Delineation Hole Abandonment															
	# of Projected Holes		0	0	0	0	0	0	0	0	0	0	0	0	1000	
	Average Depth (ft)		500	450	550	550	550	600	600	550	650	500	650	540	600	
	Hole Abandonment Unit Cost ($/ft of hole)		$1.27	$1.27	$1.27	$1.27	$1.27	$1.27	$1.27	$1.27	$1.27	$1.27	$1.27	$1.27	$1.27	
	Site Reclamation ($/site) Included in Unit Cost above		$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	
	Subtotal Hole Abandonment per Wellfield		$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$762,000	$762,000
V.	Waste Disposal Well Abandonment		Morton No. 1-20	Vollman No. 33-27	SRHUP # 9											
	A. Well Sealing															
	Sealing cost per foot (in Reynolds UIC permit)		$11.91	$11.91	$11.91											
	Subtotal Plugging Costs per Well		$107,190	$119,100	$119,100											
	B. Pump Dismantling and Decontamination															
	Number of Persons		2	2	2											
	Number of Pumps		2	2	2											
	Pumps/Day		0.5	0.5	0.5											
	Number of Days		4	4	4											
	$/Day/Person		$258	$258	$258											
	Subtotal Dismantling and Decon Costs per Well		$2,060	$2,060	$2,060											
	C. Tubing String Disposal (NRC-Licensed Facility)															
	Length of Tubing String (ft)		9,000	10,000	10,000											
	Diameter of Tubing String (inches)		2.875	2.875	2.875											
	Volume of Tubing String (ft^3)		406	451	451											
	Transportation and Disposal Unit Cost ($/$ft^3$)		$12.52	$12.52	$12.52											
	Subtotal Tubing String Disposal Costs per Well		$5,077	$5,641	$5,641											
	Subtotal Waste Disposal Well Abandonment Costs per Well		$114,327.25	$126,801.25	$126,801.25											
	Total Waste Disposal Well Abandonment Costs		$367,929.75													
Total Wellfield Abandonment Costs			$4,367,618.78													

Wellfield Buildings and Equipment Removal and Disposal	Mine Unit-A	Mine Unit-B	Mine Unit-C	Mine Unit-C 19N	Mine Unit-C Haul Drifts	Mine Unit-D	Mine Unit-D Ext	Mine Unit-E	Mine Unit-F	Mine Unit-H	Mine Unit-I	Mine Unit-J	
I. Wellfield Piping				Not Used, Included w/MU-C									
Number of Header Houses per Wellfield	5	18	20	0	0	4	3	15	43	10	6	9	
Approximate Length of Piping per Header House (ft) (ave. 46 wells per with 300 ft	13800	13800	13800	13800	13800	13800	13800	13800	13800	13800	13800	13800	
Approximate Total Length of Piping (ft)	69000	248400	276000	0	0	8000	41400	207000	593400	138000	82800	124200	1788200
A. Removal and Loading													
Wellfield Piping Removal Unit Cost ($/ft of pipe)	$1.83	$1.83	$1.83	$1.83	$1.83	$1.83	$1.83	$1.83	$1.83	$1.83	$1.83	$1.83	
Subtotal Wellfield Piping Removal and Loading Costs	$126,270	$454,572	$505,080	$0	$0	$14,640	$75,762	$378,810	$1,085,922	$252,540	$151,524	$227,286	-
B. Transport and Disposal Costs (NRC-Licensed Facility)													
Average Diameter of Piping (inches)	2	2	2	2	2	2	2	2	2	2	2	2	
Chipped Volume Reduction (ft^3/ft)	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	
Chipped Volume per Wellfield (ft^3)	345	1242	1380	0	0	40	207	1035	2967	690	414	621	
Volume for Disposal Assuming 10% Void Space (ft^3)	380	1366	1518	0	0	44	228	1139	3264	759	455	683	
Transportation and Disposal Unit Cost ($/$ft^3$)	$12.52	$12.52	$12.52	$12.52	$12.52	$12.52	$12.52	$12.52	$12.52	$12.52	$12.52	$12.52	
Subtotal Wellfield Piping Transport and Disposal Costs	$4,757	$17,100	$19,003	$0	$0	$551	$2,854	$14,259	$40,860	$9,502	$5,696	$8,550	
Wellfield Piping Costs per Wellfield	$131,027	$471,672	$524,083	$0	$0	$15,191	$78,616	$393,069	$1,126,782	$262,042	$157,220	$235,836	
Total Wellfield Piping Costs	**$3,395,538**												
II. Well Pumps and DownholeTubing													
Assumptions:													
60% of production/injection wells contain pumps and/or tubing													
A. Pump and Tubing Transportation and Disposal													
Number of Production Wells	0	141	198	0	0	49	30	129	459	204	125	118	
Number of Injection Wells	0	224	393	0	0	102	67	240	873	316	236	240	
Number of Monitor Wells	1	97	97			38	20	86	149	81	39	57	
1. Pump Volume													
Number of Production Wells with Pumps	1	97	224	0	0	55	50	215	149	144	159	179	
Average Pump Volume (ft^3) 66"X 3.8" Diam = 5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	
Pump Volume per Wellfield (ft^3)	5.2	504.2	1164	0	0	286	260	1118	775	749	826	930	
2. Tubing Volume													
Assumptions:													
Average tubing length/wellfield based on average well depth minus 25 ft													
Number of Production & Monitor Wells with Tubing	1	97	224	0	0	55	50	215	149	144	159	179	
Number of Injection Wells with Tubing	0	134	236	0	0	61	40	144	524	190	142	144	
Average Tubing Length per Well (ft)	475	425	525	525	525	575	575	525	625	475	625	515	
Tubing Length per Wellfield (ft)	475	98,175	241,500	0	0	66,700	51,750	188,475	420,625	158,650	188,125	166,345	
Diameter of Production Well Fiberglass Tubing (inches)	2	2	2	2	2	2	2	2	2	2	2	2	
Diameter of Injection Well HDPE Tubing (inches)	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	
Chipped Volume Reduction (ft^3/ft)	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	
Chipped Volume per Wellfield (ft^3)	2	491	1208	0	0	334	259	942	2103	793	941	832	
Volume of Pump and Tubing (ft^3)	7	995	2372	0	0	620	519	2060	2878	1542	1767	1762	
Volume for Disposal Assuming 10% Void Space (ft^3)	8	1095	2610	0	0	682	571	2266	3165	1696	1944	1939	
Transportation and Disposal Unit Cost ($/$ft^3$)	$12.52	$12.52	$12.52	$12.52	$12.52	$12.52	$12.52	$12.52	$12.52	$12.52	$12.52	$12.52	
Pump and Tubing Transport and Disposal Costs Per Wellfield	$100	$13,708	$32,673	$0	$0	$8,538	$7,148	$28,367	$39,621	$21,231	$24,336	$24,273	
Total Pump and DownholeTubing Costs	**$199,995**												
III. Buried Trunkline (Includes $ for fiber optic cable removal)													
Assumptions:		inc w/MU-A		inc w/MU-C	inc w/MU-C			inc w/MU-D					
Length of Trunkline Trench (ft)	6500	0	5900	0	0	12000	5500	0	11700	13200	10750	2500	68050
A. Removal and Loading													
Main Pipeline Removal Unit Cost ($/ft of trench)	$1.83	$1.83	$1.83	$1.83	$1.83	$1.83	$1.83	$1.83	$1.83	$1.83	$1.83	$1.83	
Subtotal Trunkline Removal and Loading Costs	$11,895	$0	$10,797	$0	$0	$21,960	$10,065	$0	$21,411	$24,156	$19,673	$4,575	
B. Transport and Disposal Costs (NRC-Licensed Facility)													
1. 1" Carbon Steel Trunkline													
Piping Length (ft)	0	0	0	0	0	0	0	0	0	0	0	0	0
Volume (ft^3)	0	0	0	0	0	0	0	0	0	0	0	0	
2. 1.5" HDPE Trunkline													
Piping Length (ft)	0	0	0	0	0	0	0	0	0	0	0	0	0
Chipped Volume per Lft (ft^3/ft)	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	
Chipped Volume (ft^3)	0	0	0	0	0	0	0	0	0	0	0	0	

Wellfield Buildings and Equipment Removal and Disposal	Mine Unit-A	Mine Unit-B	Mine Unit-C	Mine Unit-C 19N	Mine Unit-C Haul Drifts	Mine Unit-D	Mine Unit-D Ext	Mine Unit-E	Mine Unit-F	Mine Unit-H	Mine Unit-I	Mine Unit-J	
3. 3" HDPE Trunkline													
Piping Length (ft)	6500	0	5900	0	0	12000	5500	0	11700	13200	10750	0	29900
Chipped Volume per Lft (ft^3/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	
Chipped Volume (ft^3)	151	0	137	0	0	279	128	0	272	307	250	0	
4. 6" HDPE Trunkline													
Piping Length (ft)	0	0	0	0	0	0	11000	0	0	0	3000	0	14000
Chipped Volume per Lft (ft^3/ft)	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	
Chipped Volume (ft^3)	0	0	0	0	0	0	917	0	0	0	250	0	
5. 8" HDPE Trunkline													
Piping Length (ft)	0	0	0	0	0	0	0	0	0	0	0	0	0
Chipped Volume per Lft (ft^3/ft)	0.141	0.141	0.141	0.141	0.141	0.141	0.141	0.141	0.141	0.141	0.141	0.141	
Chipped Volume (ft^3)	0	0	0	0	0	0	0	0	0	0	0	0	
6. 10" HDPE Trunkline													
Piping Length (ft)	13000	0	0	0	0	0	0	0	0	0	750	2000	13750
Chipped Volume per Lft (ft^3/ft)	0.220	0.220	0.220	0.220	0.220	0.220	0.220	0.220	0.220	0.220	0.220	0.220	
Chipped Volume (ft^3)	2854	0	0	0	0	0	0	0	0	0	165	439	
7. 12" HDPE Trunkline													
Piping Length (ft)	0	0	11800	0	0	24000	0	0	0	0	0	2000	35800
Chipped Volume per Lft (ft^3/ft)	0.309	0.309	0.309	0.309	0.309	0.309	0.309	0.309	0.309	0.309	0.309	0.309	
Chipped Volume (ft^3)	0	0	3644	0	0	7411	0	0	0	0	0	618	
8. 14" HDPE Trunkline													
Piping Length (ft)	0	0	0	0	0	0	0	0	23400	26400	8500	0	23400
Chipped Volume per Lft (ft^3/ft)	0.372	0.372	0.372	0.372	0.372	0.372	0.372	0.372	0.372	0.372	0.372	0.372	
Chipped Volume (ft^3)	0	0	0	0	0	0	0	0	8712	9829	3165	0	
9. 16" HDPE Trunkline													
Piping Length (ft)	0	0	0	0	0	0	0	0	23400	26400	8500	0	23400
Chipped Volume per Lft (ft^3/ft)	0.486	0.486	0.486	0.486	0.486	0.486	0.486	0.486	0.486	0.486	0.486	0.486	
Chipped Volume (ft^3)	0	0	0	0	0	0	0	0	11381.40381	12840.55814	4134.270613	0	
10. 18" HDPE Trunkline													
Piping Length (ft)	0	0	0	0	0	0	0	0	0	0	0	0	0
Chipped Volume per Lft (ft^3/ft)	0.616	0.616	0.616	0.616	0.616	0.616	0.616	0.616	0.616	0.616	0.616	0.616	
Chipped Volume (ft^3)	0	0	0	0	0	0	0	0	0	0	0	0	
Total Trunkline Chipped Volume (ft^3)	3006	0	3781	0	0	7691	1045	0	20366	22977	7964	1057	
Volume for Disposal Assuming 10% Void Space (ft^3)	3306	0	4159	0	0	8460	1150	0	22403	25275	8761	1162	
Transportation and Disposal Unit Cost ($/$ft^3$)	$12.52	$12.52	$12.52	$12.52	$12.52	$12.52	$12.52	$12.52	$12.52	$12.52	$12.52	$12.52	
Subtotal Trunkline Transport and Disposal Costs	$41,386	$0	$52,065	$0	$0	$105,907	$14,396	$0	$280,452	$316,406	$109,675	$14,547	
Trunkline Decommissioning Costs per Wellfield	$53,281	$0	$62,862	$0	$0	$127,867	$24,461	$0	$301,863	$340,562	$129,348	$19,122	
Total Trunkline Decommissioning Costs	**$1,059,366**												
IV. Well Head Covers				Inc w/MU-C	Inc w/MU-C								
Total Quantity	90	490	552	0	0	117	97	331	1347	470	361	285	3024
Average Well Head Cover Volume (ft^3)	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	
A. Removal													
Total Volume (ft^3)	167.4	911.4	1026.72	0	0	217.62	180.42	615.66	2505.42	874.2	671.46	530.1	
Demolition Unit Cost per WDEQ Guideline No.12,App.K ($/$ft^3$)	$0.258	$0.258	$0.258	$0.258	$0.258	$0.258	$0.258	$0.258	$0.258	$0.258	$0.258	$0.258	
Subtotal Well Head Cover Demolition Costs	$43	$235	$265	$0	$0	$56	$47	$159	$646	$225	$173	$137	
B. Survey and Decontamination													
Cost per Well House	6.56	6.56	6.56	6.56	6.56	6.56	6.56	6.56	6.56	6.56	6.56	6.56	
Subtotal Survey and Decontamination Costs	$591	$3,215	$3,622	$0	$0	$768	$636	$2,172	$8,839	$3,084	$2,369	$1,870	
C. Disposal at NRC licensed Facility													
Total Volume (cy)	6	34	38	0	0	8	7	23	93	32	25	20	
Volume for Disposal Assuming 10% Void Space (cy)	7	37	42	0	0	9	7	25	102	36	27	22	
Transportation and Disposal Unit Cost ($/$ft^3$)	$338.00	$338.00	$338.00	$338.00	$338.00	$338.00	$338.00	$338.00	$338.00	$338.00	$338.00	$338.00	
Subtotal NRC Licensed Facility Disposal Costs	$2,366	$12,506	$14,196	$0	$0	$3,042	$2,366	$8,450	$34,476	$12,168	$9,126	$7,436	
Well Head Covers Removal and Disposal Costs per Wellfield	$3,000	$15,956	$18,083	$0	$0	$3,866	$3,049	$10,781	$43,961	$15,477	$11,668	$9,443	
Total Well Head Cover Removal and Disposal Costs	**$135,284**												

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Wellfield Buildings and Equipment Removal and Disposal	Mine Unit-A	Mine Unit-B	Mine Unit-C	Mine Unit-C 19N	Mine Unit-C Haul Drifts	Mine Unit-D	Mine Unit-D Ext	Mine Unit-E	Mine Unit-F	Mine Unit-H	Mine Unit-I	Mine Unit-J
V. Header Houses (Includes Booster Stations)												
Total Quantity	5	18	20	0	0	4	3	15	43	10	6	9
Average Header House Volume (ft^3)	800	800	800	800	800	800	800	800	800	800	800	800
A. Removal												
Total Volume (ft^3)	4000	14400	16000	0	0	3200	2400	12000	34400	8000	4800	7200
Demolition Unit Cost per WDEQ Guideline No.12,App.K ($/$ft^3$)	$0.236	$0.236	$0.236	$0.236	$0.236	$0.236	$0.236	$0.236	$0.236	$0.236	$0.236	$0.236
Subtotal Building Demolition Costs	$945	$3,402	$3,780	$0	$0	$756	$567	$2,835	$8,128	$1,890	$1,134	$1,701
B. Survey and Decontamination												
Cost per Header House	$568	$568	$568	$568	$568	$568	$568	$568	$568	$568	$568	$568
Subtotal Survey and Decontamination Costs	$2,838	$10,216	$11,351	$0	$0	$2,270	$1,703	$8,513	$24,404	$5,675	$3,405	$5,108
C. Disposal												
Total Volume (cy)	148	533	593	0	0	119	89	444	1274	296	178	267
Volume for Disposal Assuming 10% Void Space (cy)	163	587	652	0	0	130	98	489	1401	326	196	293
Disposal Unit Cost per WDEQ Guideline No.12,App.K ($/cy)	$9.03	$9.03	$9.03	$9.03	$9.03	$9.03	$9.03	$9.03	$9.03	$9.03	$9.03	$9.03
Subtotal On-Site Disposal Costs	$1,472	$5,302	$5,889	$0	$0	$1,174	$885	$4,417	$12,654	$2,945	$1,770	$2,646
Headerhouse Soil Removal Volume ft3 (assumes 10'Wx20'Lx2.5'D)	500	500	500	500	500	500	500	500	500	500	500	500
Disposal Unit Cost ($/ft3)	$5.22	$5.22	$5.22	$5.22	$5.22	$5.22	$5.22	$5.22	$5.22	$5.22	$5.22	$5.22
Subtotal Off-Site Disposal Costs	$13,056	$47,000	$52,222	$0	$0	$10,444	$7,833	$39,167	$112,278	$26,111	$15,667	$23,500
Header House Removal and Disposal Costs per Wellfield	$18,311	$65,920	$73,242	$0	$0	$14,644	$10,988	$54,932	$157,464	$36,621	$21,976	$32,955
Total Header House Removal and Disposal Costs	**$487,053**											
TOTAL REMOVAL AND DISPOSAL COSTS PER WELLFIELD	$205,719	$567,256	$710,943	$0	$0	$170,106	$124,262	$487,149	$1,669,691	$675,933	$344,548	$321,629
VI Vehicle Operation Costs												
Number of Pickup Trucks/Pulling Units (Gas)	10											
Unit Cost in $/hr (UC-Equipment Costs)	$18.08											
Average Operating Time (Hrs/Year)	1000											
Total Number of Years (Average)	9											
Total Vehicle Operation Costs	**$1,626,793**											
TOTAL WELLFIELD BUILDINGS AND EQUIPMENT REMOVAL	**$6,904,029**											

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Wellfield and Satellite Surface Reclamation	Mine Unit-A/B	Mine Unit-C	Mine Unit-D	Mine Unit-E	Mine Unit-F	Mine Unit-H	Mine Unit-D Ext.	Mine Unit-I	Mine Unit-J	Mine Unit-JA
I. Wellfield Pattern Area Reclamation										
Pattern Area (acres)	42.75	67.5	12.375	49.5	171	56.25	9	45	60.75	0
Disking/Seeding Unit Cost ($/acre)	$606	$606	$606	$606	$606	$606	$606	$606	$606	$606
Subtotal Pattern Area Reclamation Costs per Wellfield	$25,922	$40,930	$7,504	$30,015	$103,689	$34,108	$5,457	$27,287	$36,837	$0
Total Wellfield Pattern Area Reclamation Costs	**$311,749**									
II. Wellfield Road Reclamation										
Road Construction										
Length of Wellfield Roads (1000 ft)	12.8	11.3	2.4	13.3	18	15.7	5	5	5	1
Wellfield Road Reclamation Unit Cost ($/1000 ft)	$1,173	$1,173	$1,173	$1,173	$1,173	$1,173	$1,173	$1,173	$1,173	$1,173
Wellfield Road Reclamation Costs	$15,014	$13,255	$2,815	$15,601	$21,114	$18,416	$5,865	$5,865	$5,865	$1,173
Total Wellfield Road Reclamation Costs	**$104,983**									
III. Laydown area reclamation										
Area of Disturbance (acres)	1	1	1	1	1	1	1	1	1	1
Average Depth of Stripped Topsoil (ft)	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
Surface Grade: Level Ground										
Average Length of Topsoil Haul (ft)	500	500	500	500	500	500	500	500	500	500
A. Ripping Overburden with Dozer										
Ripping Unit Cost per WDEQ Guideline No.12, App.I1 ($/acre)	$1,152.92	$1,152.92	$1,152.92	$1,152.92	$1,152.92	$1,152.92	$1,152.92	$1,152.92	$1,152.92	$1,152.92
Subtotal Ripping Costs	$1,153.00	$1,153.00	$1,153.00	$1,153.00	$1,153.00	$1,153.00	$1,153.00	$1,153.00	$1,153.00	$1,153.00
B. Topsoil Application with Scraper										
Volume of Topsoil Removed (cy)	1081	1081	1081	1081	1081	1081	1081	1081	1081	1081
Application Unit Cost per WDEQ Guideline No.12, App.C ($/cy)	$1.09	$1.09	$1.09	$1.09	$1.09	$1.09	$1.09	$1.09	$1.09	$1.09
Subtotal Topsoil Application Costs	$1,182	$1,182	$1,182	$1,182	$1,182	$1,182	$1,182	$1,182	$1,182	$1,182
C. Discing and Seeding										
Discing/Seeding Unit Cost ($/acre)	$606	$606	$606	$606	$606	$606	$606	$606	$606	$606
Subtotal Discing/Seeding Costs	$606	$606	$606	$606	$606	$606	$606	$606	$606	$606
Subtotal Surface Reclamation Costs per WF laydown area	$2,941	$2,941	$2,941	$2,941	$2,941	$2,941	$2,941	$2,941	$2,941	$2,941
Total Wellfield Laydown Area Reclamation Costs	**$29,410**									
SUBTOTAL SURFACE RECLAMATION COSTS PER WELLFIELD	**$43,877**	**$57,126**	**$13,260**	**$48,557**	**$127,744**	**$55,465**	**$14,263**	**$36,093**	**$45,643**	**$4,114**
TOTAL WELLFIELD SURFACE RECLAMATION COSTS	**$446,142**									
IV. Satellite Area Reclamation	**Satellite No.1**	**Satellite No.2**	**Satellite No.3**	**Se Plant**						
Assumptions:										
Area of Disturbance (acres)	1	3	2.5	2						
Average Depth of Stripped Topsoil (ft)	1	0.67	0.67	0.67						
Surface Grade: Level Ground										
Average Length of Topsoil Haul (ft)	1000	500	500	500						
A. Ripping Overburden with Dozer										
Ripping Unit Cost per WDEQ Guideline No.12, App.I1 ($/acre)	$1,152.92	$1,152.92	$1,152.92	$1,152.92						
Subtotal Ripping Costs	$1,153.00	$3,459.00	$2,882	$2,306						
B. Topsoil Application with Scraper										
Volume of Topsoil Removed (cy)	1613	3243	2702	2162						
Application Unit Cost per WDEQ Guideline No.12, App.C ($/cy)	$1.31	$1.31	$1.31	$1.31						
Subtotal Topsoil Application Costs	$2,107	$4,234	$3,528	$2,823						
C. Discing and Seeding										
Discing/Seeding Unit Cost ($/acre)	$606	$606	$606	$606						
Subtotal Discing/Seeding Costs	$606	$1,819	$1,516	$1,213						
Subtotal Surface Reclamation Costs per Satellite	$3,866	$9,512	$7,926	$6,342						
Total Satellite Building Area Reclamation Costs	**$27,646**									
TOTAL WELLFIELD AND SATELLITE SURFACE RECLAMATION COSTS	**$473,788.00**									

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Equipment Removal and Loading	Central Plant	Satellite No. 1	Satellite No. 2	Satellite No. 3	Se Plant
I. Removal and Loading Costs					
A. Tankage					
Number of Tanks	26	8	14	18	7
Volume of Tank Construction Material (ft^3)	1028	162	290	397	290
Labor					
Number of Persons	4	4	4	4	4
Ft^3/Day	25	25	25	25	25
Number of Days	41	6	12	16	12
$/Day/Person	$258	$258	$258	$258	$258
Subtotal Labor Costs	$42,359	$6,675	$11,949	$16,358	$11,949
Equipment					
Number of Days	41	6	12	16	12
$/Day	$1,933	$1,933	$1,933	$1,933	$1,933
Subtotal Equipment Costs	$79,478	$12,525	$22,421	$30,693	$22,421
Subtotal Tankage Removal and Loading Costs	$121,837	$19,200	$34,370	$47,051	$34,370
B. PVC/Steel Pipe					
PVC Pipe Footage	10000	1000	4000	4000	4000
Average PVC Pipe Diameter (inches)	3	3	3	3	3
Shredded PVC Pipe Volume Reduction (ft^3/ft)	0.016	0.016	0.016	0.016	0.016
Volume of Shredded PVC Pipe (ft^3)	160	16	64	64	64
Steel Pipe Footage	2000	0	0	0	0
Average Steel Pipe Diameter (inches)	2	0	0	0	0
Volume (ft^3)	0	0	0	0	0
Labor & Equipment					
Number of Persons	4	4	4	4	4
Ft/Day	300	300	300	300	300
Number of Days	40.00	3	13.33	13.33	13.33
$/Day/Person	$258	$258	$258	$258	$258
$/ Day Equipment	$1,108	$1,108	$1,108	$1,108	$1,108
Subtotal PVC/Steel Pipe Labor & Equipment Costs	$85,531	$7,128	$28,510	$28,510	$28,510
Subtotal PVC/Steel Pipe Removal and Loading Costs	$85,531	$7,128	$28,510	$28,510	$28,510
C. Pumps					
Number of Pumps	50	10	14	13	14
Average Volume (ft^3/pump)	4.93	4.93	4.93	4.93	4.93

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Equipment Removal and Loading	Central Plant	Satellite No. 1	Satellite No. 2	Satellite No. 3	Se Plant
Volume of Pumps (ft^3)	246.5	49.3	69.02	64.09	69.02
Labor & Equipment					
Number of Persons	2	2	2	2	2
Pumps/Day	2	2	2	2	2
Number of Days	25	5	7	6.5	7
$/Day/Person	$258	$258	$258	$258	$258
$/ Day Equipment	$314	$314	$314	$314	$314
Subtotal Labor & Equipment Costs	$20,738	$4,148	$5,807	$5,392	$5,807
Subtotal Pump Removal and Loading Costs	$20,738	$4,148	$5,807	$5,392	$5,807
D. Dryer					
Dryer Volume (ft^3)	885				
Labor & Equipment					
Number of Persons	4	0	0	0	0
Ft^3/Day	125	0	0	0	0
Number of Days	7.08	0	0	0	0
$/Day/Person	$258	$258	$258	$258	$258
$/Day Equipment (includes crane with operator)	$2,284				
Total Labor Cost	$23,464	$0	$0	$0	$0
Total Dryer Dismantling and Loading Cost	$23,464	$0	$0	$0	$0
E. RO Units					
Number of RO Units					
Current	0	0	2	0	0
Planned	0	0	0	0	2
Average Volume (ft3/RO Unit)	250	250	250	250	250
Labor & Equipment					
Number of Persons	2	2	2	2	2
Number of Days		0	2	0	2
$/Day/Person	$257.53	$257.53	$257.53	$257.53	$257.53
$/ Day Equpment	$545.17	$545.17	$545.17	$545.17	$545.17
Subtotal RO Unit Removal and Loading Costs	$0	$0	$2,120	$0	$2,120
Subtotal Equipment Removal and Loading Costs per Facility	$251,570	$30,476	$70,807	$80,953	$70,807
Total Equipment Removal and Loading Costs	**$504,613**				
II. Transportation and Disposal Costs (NRC-Licensed Facility)					
A. Tankage					

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Equipment Removal and Loading	Central Plant	Satellite No. 1	Satellite No. 2	Satellite No. 3	Se Plant
Volume of Tank Construction Material (ft^3)	1028	162	290	397	290
Volume for Disposal Assuming 10% Void Space (ft^3)	1131	178	319	437	319
Transportation and Disposal Unit Cost ($/$ft^3$)	$12.52	$12.52	$12.52	$12.52	$12.52
Subtotal Tankage Transportation and Disposal Costs	$14,158	$2,228	$3,993	$5,471	$3,993
B. PVC / Steel Pipe					
Volume of Shredded PVC Pipe (ft^3)	160	16	64	64	64
Volume for Disposal Assuming 10% Void Space (ft^3)	176	18	70	70	70
Volume of Steel Pipe (ft^3)	0	0	0	0	0
Volume for Disposal Assuming 10% Void Space (ft^3)	0	0	0	0	0
Transportation and Disposal Unit Cost ($/$ft^3$)	$12.52	$12.52	$12.52	$12.52	$12.52
Subtotal PVC Pipe Transportation and Disposal Costs	$2,203	$225	$876	$876	$876
C. Pumps					
Volume of Pumps (ft^3)	246.5	49.3	69.02	64.09	69.02
Volume for Disposal Assuming 10% Void Space (ft^3)	271	54	76	70	76
Transportation and Disposal Unit Cost ($/$ft^3$)	$12.52	$12.52	$12.52	$12.52	$12.52
Subtotal Pump Transportation and Disposal Costs	$3,393	$676	$951	$876	$951
D. Dryer					
Dryer Volume (ft^3)	885	0	0	0	0
Volume for Disposal Assuming Dryer Remains Intact (ft^3)	885	0	0	0	0
Transportation and Disposal Unit Cost ($/$ft^3$)	$12.52	$12.52	$12.52	$12.52	$12.52
Total Dryer Transportation and Disposal Costs	$11,079	$0	$0	$0	$0
E. RO Units					
Volume of RO Units (ft^3)	0	0	500	0	500
Volume for Disposal Assuming 50% Volume Reduction (ft^3)	0	0	250	0	250
Transportation and Disposal Unit Costs	$12.52	$12.52	$12.52	$12.52	$12.52
Subtotal RO Unit Transportation and Disposal Costs	$0	$0	$3,130	$0	$3,130
Subtotal Equipment Transportation and Disposal Costs per Facility	$30,833	$3,129	$8,950	$7,223	$8,950
Total Equipment Transportation and Disposal Costs	**$59,084**				
III. Health and Safety Costs					
Radiation Safety Equipment — Accounted for on GW REST					
Total Health and Safety Costs					
SUBTOTAL EQUIPMENT REMOVAL AND DISPOSAL COSTS PER FACILITY	$282,403	$33,605	$79,757	$88,176	$79,757
TOTAL EQUIPMENT REMOVAL AND DISPOSAL COSTS	**$563,697**				

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Building Demolition and Disposal (Highland Uranium Project Buildings)	Central Plant	Dryer Building	Satellite No. 1	Satellite No. 2	Satellite No. 3	Sat. No. 3 Fab Shop	Yellowcake Warehouse	South Warehouse	Suspended Walkway
I. Decontamination Costs									
A. Wall Decontamination									
Area to be Decontaminated (ft^2)	131,000	20,000	0	0	0	0	0	0	0
HCl Acid Wash, including labor ($/$ft^2$)	$0.48	$0.48	$0.48	$0.48	$0.48	$0.48	$0.48	$0.48	$0.48
Subtotal Wall Decontamination Costs	$62,298	$9,511	$0	$0	$0	$0	$0	$0	$0
B. Concrete Floor Decontamination									
Area to be Decontaminated (ft^2)	17,820	0	6,000	9,600	9,600	0	0	0	0
HCl Acid Wash, including labor ($/$ft^2$)	$0.51	$0.51	$0.51	$0.51	$0.51	$0.51	$0.51	$0.51	$0.51
Subtotal Concrete Floor Decontamination Costs	$9,025	$0	$3,039	$4,862	$4,862	$0	$0	$0	$0
C. Deep Well Injection Costs									
Total Kgals for Injection (1 gal used per ft2)	148.82	20	6	9.6	9.6	0	0	0	0
Deep Well Injection Unit Cost ($/Kgals)	$0.86	$0.86	$0.86	$0.86	$0.86	$0.86	$0.86	$0.86	$0.86
Subtotal Deep Well Injection Costs	$127	$17	$5	$8	$8	$0	$0	$0	$0
Subtotal Decontamination Costs per Building	$71,450	$9,528	$3,044	$4,870	$4,870	$0	$0	$0	$0
Total Decontamination Costs	**$103,733**								
II. Demolition Costs									
A. Building									
Volume of Building (ft^3)	794,000	30,720	192,000	320,000	320,000	37,560	91,000	333,000	5,600
Demolition Unit Cost per WDEQ Guideline No.12,App.K ($/$ft^3$)	$0.26	$0.26	$0.26	$0.26	$0.26	$0.26	$0.26	$0.26	$0.26
Subtotal Building Demolition Costs	$204,661	$7,918	$49,490	$82,483	$82,483	$9,681	$23,456	$85,834	$1,443
B. Concrete Floor									
Area of Concrete Floor (ft^2)	23,760	500	8,000	12800	12800	0	6500	18000	0
Demolition Unit Cost per WDEQ Guideline No.12,App.K ($/ft2)	$5.08	$5.08	$5.08	$5.08	$5.08	$5.08	$5.08	$5.08	$5.08
Subtotal Concrete Floor Demolition Costs	$120,701	$2,540	$40,640	$65,024	$65,024	$0	$33,020	$91,440	$0
C. Concrete Footing									
Length of Concrete Footing (ft)	617	89	358	453	453	0	322	537	0
Demolition Unit Cost per WDEQ Guideline No.12,App.K ($/ft)	$18.10	$18.10	$18.10	$18.10	$18.10	$18.10	$18.10	$18.10	$18.10
Subtotal Concrete Footing Demolition Costs	$11,158	$1,619	$6,475	$8,190	$8,190	$0	$5,836	$9,712	$0
Subtotal Demolition Costs per Building	$336,520	$12,077	$96,605	$155,697	$155,697	$9,681	$62,312	$186,986	$1,443
Total Demolition Costs	**$1,429,520**								
III. Disposal Costs									
A. Building									
Volume of Building (cy)	29407	1138	7111	11852	11852	1391	3370	12333	207
Off-Site County Landfill									
Percentage (%)	100	100	100	100	100	100	100	100	100
Volume for Disposal (cubic yards)	29407	1138	7111	11852	11852	1391	3370	12333	207
Disposal Unit Cost ($/cy)	$9.03	$9.03	$9.03	$9.03	$9.03	$9.03	$9.03	$9.03	$9.03
Subtotal On-Site Disposal Costs	$265,618	$10,277	$64,230	$107,050	$107,050	$12,565	$30,442	$111,399	$1,873
B. Concrete Floor									
Area of Concrete Floor (ft^2)	23760	500	8000	12800	12800	0	6500	18000	1186
Average Thickness of Concrete Floor (ft)	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Volume of Concrete Floor (ft^3)	17820	375	6000	9600	9600	0	4875	13500	889.5
Volume of Concrete Floor (cy)	660	14	222	356	356	0	181	500	33
1. Off-Site County Landfill									
Percentage (%)	75	75	75	100	100	100	100	100	100
Volume for Disposal (cy)	495	10	167	356	356	0	181	500	33
Disposal Unit Cost per WDEQ Guideline No.12,App.K ($/cy)	$9.03	$9.03	$9.03	$9.03	$9.03	$9.03	$9.03	$9.03	$9.03

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Building Demolition and Disposal (Highland Uranium Project Buildings)	Central Plant	Dryer Building	Satellite No. 1	Satellite No. 2	Satellite No. 3	Sat. No. 3 Fab Shop	Yellowcake Warehouse	South Warehouse	Suspended Walkway
Subtotal On-Site Disposal Costs	$4,471	$94	$1,505	$3,211	$3,211	$0	$1,631	$4,516	$298
2. NRC-Licensed Facility									
Percentage (%)	25	25	25	0	0	0	0	0	0
Volume for Disposal (ft^3)	4455	94	1500	0	0	0	0	0	0
Transportation and Disposal Unit Cost ($/$ft^3$)	$5.22	$5.22	$5.22	$5.22	$5.22	$5.22	$5.22	$5.22	$5.22
Subtotal NRC-Licensed Facility Disposal Costs	$23,265	$490	$7,833	$0	$0	$0	$0	$0	$0
Subtotal Concrete Floor Disposal Costs	$27,736	$584	$9,338	$3,211	$3,211	$0	$1,631	$4,516	$298
C. Concrete Footing									
Length of Concrete Footing (ft)	617	89	358	453	453	0	322	537	124
Average Depth of Concrete Footing (ft)	4	4	4	4	4	4	4	4	4
Average Width of Concrete Footing (ft)	1	1	1	1	1	1	1	1	1
Volume of Concrete Footing (ft^3)	2466	358	1431	1810	1810	0	1290	2147	496
Volume of Concrete Footing (cy)	91	13	53	67	67	0	48	80	18
Disposal Unit Cost per WDEQ Guideline No.12,App.K ($/cy)	$9.03	$9.03	$9.03	$9.03	$9.03	$9.03	$9.03	$9.03	$9.03
Subtotal Concrete Footing Disposal Costs	$825	$120	$479	$606	$606	$0	$432	$718	$166
Subtotal Disposal Costs per Building	$294,179	$10,981	$74,047	$110,867	$110,867	$12,565	$32,505	$116,633	$2,337
Total Disposal Costs	**$986,492**								
IV. Health and Safety Costs Accounted for on GW REST									
SUBTOTAL BUILDING DEMOLITION AND DISPOSAL COSTS	$702,149	$32,586	$173,696	$271,434	$271,434	$22,246	$94,817	$303,619	$3,780
TOTAL BUILDING DEMOLITION AND DISPOSAL COSTS	**$2,519,745**								
Building Utility Costs									
Number of years of operation required for restoration/reclamation	0	0	0	9	0	0	0	0	0
SUBTOTAL BUILDING ELECTRICAL COSTS (UC-Electrical Power)	$0.00	$0.00	$0.00	$195,390.00	$0.00	$0.00	$0.00	$0.00	$0.00
TOTAL BUILDING ELECTRICITY COSTS	**$1,050,630**								
SUBTOTAL PROPANE AND NATURAL GAS COSTS (UC-Heating Cost)				$27,304.36					
TOTAL PROPANE AND NATURAL GAS COSTS	$130,924								
TOTAL UTILITY COSTS	**$1,181,554.45**								

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Building Demolition and Disposal (Highland Uranium Project Buildings)	Changehouse and Lab	Maintenance Bldg	Main Office	Office Trailers	Process/ Fire Water	Potable Water Bldg	Potable Water Tank Slab	Central Plant Tank Slabs	Selenium Plant	Exxon R&D RO Bldg.
I. Decontamination Costs										
A. Wall Decontamination										
Area to be Decontaminated (ft^2)	0	0	0	0	0	0	0	0	4,000	0
HCl Acid Wash, including labor ($/$ft^2$)	$0.48	$0.48	$0.48	$0.48	$0.48	$0.48	$0.48	$0.48	$0.48	$0.48
Subtotal Wall Decontamination Costs	$0	$0	$0	$0	$0	$0	$0	$0	$1,902	$0
B. Concrete Floor Decontamination										
Area to be Decontaminated (ft^2)	0	0	0	0	0	0	0	0	9,600	1260
HCl Acid Wash, including labor ($/$ft^2$)	$0.51	$0.51	$0.51	$0.51	$0.51	$0.51	$0.51	$0.51	$0.51	$0.51
Subtotal Concrete Floor Decontamination Costs	$0	$0	$0	$0	$0	$0	$0	$0	$4,862	$638
C. Deep Well Injection Costs										
Total Kgals for Injection (1 gal used per ft2)	0	0	0	0	0	0	0	0	13.6	1.26
Deep Well Injection Unit Cost ($/Kgals)	$0.86	$0.86	$0.86	$0.86	$0.86	$0.86	$0.86	$0.86	$0.86	$0.86
Subtotal Deep Well Injection Costs	$0	$0	$0	$0	$0	$0	$0	$0	$12	$1
Subtotal Decontamination Costs per Building	$0	$0	$0	$0	$0	$0	$0	$0	$6,776	$639
Total Decontamination Costs										
II. Demolition Costs										
A. Building										
Volume of Building (ft^3)	73000	27,000	72,000	20,000	16,500	6,300	0	0	320,000	15120
Demolition Unit Cost per WDEQ Guideline No.12,App.K ($/$ft^3$)	$0.26	$0.26	$0.26	$0.26	$0.26	$0.26	$0.26	$0.26	$0.26	$0.26
Subtotal Building Demolition Costs	$18,816	$6,960	$18,559	$5,155	$4,253	$1,624	$0	$0	$82,483	$3,897
B. Concrete Floor										
Area of Concrete Floor (ft^2)	5400	2100	6000	0	800	180	1256	7854	12800	1260
Demolition Unit Cost per WDEQ Guideline No.12,App.K ($/ft2)	$5.08	$5.08	$5.08	$5.08	$5.08	$5.08	$5.08	$5.08	$5.08	$5.08
Subtotal Concrete Floor Demolition Costs	$27,432	$10,668	$30,480	$0	$4,064	$914	$6,381	$39,898	$65,024	$6,401
C. Concrete Footing										
Length of Concrete Footing (ft)	294	183	310	0	113	54	0	0	453	142
Demolition Unit Cost per WDEQ Guideline No.12,App.K ($/ft)	$18.10	$18.10	$18.10	$18.10	$18.10	$18.10	$18.10	$18.10	$18.10	$18.10
Subtotal Concrete Footing Demolition Costs	$5,319	$3,317	$5,607	$0	$2,047	$971	$0	$0	$8,190	$2,570
Subtotal Demolition Costs per Building	$51,567	$20,945	$54,646	$5,155	$10,364	$3,509	$6,381	$39,898	$155,697	$12,868
Total Demolition Costs										
III. Disposal Costs										
A. Building										
Volume of Building (cy)	2704	1000	2667	741	611	233	0	0	11852	560
Off-Site County Landfill										
Percentage (%)	100	100	100	100	100	100	100	100	100	100
Volume for Disposal (cubic yards)	2704	1000	2667	741	611	233	0	0	11852	560
Disposal Unit Cost ($/cy)	$9.03	$9.03	$9.03	$9.03	$9.03	$9.03	$9.03	$9.03	$9.03	$9.03
Subtotal On-Site Disposal Costs	$24,421	$9,032	$24,086	$6,691	$5,520	$2,108	$0	$0	$107,050	$5,058
B. Concrete Floor										
Area of Concrete Floor (ft^2)	0	2100	6000	0	800	180	1256	7854	12800	1260
Average Thickness of Concrete Floor (ft)	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Volume of Concrete Floor (ft^3)	0	1575	4500	0	600	135	942	5890.5	9600	945
Volume of Concrete Floor (cy)	0	58	167	0	22	5	35	218	356	35
1. Off-Site County Landfill										
Percentage (%)	100	100	100	100	100	100	100	100	100	100
Volume for Disposal (cy)	0	58	167	0	633	5	35	218	356	35
Disposal Unit Cost per WDEQ Guideline No.12,App.K ($/cy)	$9.03	$9.03	$9.03	$9.03	$9.03	$9.03	$9.03	$9.03	$9.03	$9.03

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Building Demolition and Disposal (Highland Uranium Project Buildings)	Changehouse and Lab	Maintenance Bldg	Main Office	Office Trailers	Process/ Fire Water	Potable Water Bldg	Potable Water Tank Slab	Central Plant Tank Slabs	Selenium Plant	Exxon R&D RO Bldg.
Subtotal On-Site Disposal Costs	$0	$527	$1,505	$0	$5,720	$45	$315	$1,971	$3,211	$316
2. NRC-Licensed Facility										
Percentage (%)	0	0	0	0	0	0	0	0	0	0
Volume for Disposal (ft^3)	0	0	0	0	0	0	0	0	0	0
Transportation and Disposal Unit Cost ($/$ft^3$)	$5.22	$5.22	$5.22	$5.22	$5.22	$5.22	$5.22	$5.22	$5.22	$5.22
Subtotal NRC-Licensed Facility Disposal Costs	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Subtotal Concrete Floor Disposal Costs	$0	$527	$1,505	$0	$5,720	$45	$315	$1,971	$3,211	$316
C. Concrete Footing										
Length of Concrete Footing (ft)	0	183	310	0	113	54	0	0	453	142
Average Depth of Concrete Footing (ft)	4	4	4	4	4	4	4	4	4	4
Average Width of Concrete Footing (ft)	1	1	1	1	1	1	1	1	1	1
Volume of Concrete Footing (ft^3)	0	733	1239	0	453	215	0	0	1810	568
Volume of Concrete Footing (cy)	0	27	46	0	17	8	0	0	67	21
Disposal Unit Cost per WDEQ Guideline No.12,App.K ($/cy)	$9.03	$9.03	$9.03	$9.03	$9.03	$9.03	$9.03	$9.03	$9.03	$9.03
Subtotal Concrete Footing Disposal Costs	$0	$245	$415	$0	$151	$72	$0	$0	$606	$190
Subtotal Disposal Costs per Building	$24,421	$9,804	$26,006	$6,691	$11,391	$2,225	$315	$1,971	$110,867	$5,564
Total Disposal Costs										
IV. Health and Safety Costs Accounted for on GW REST										
SUBTOTAL BUILDING DEMOLITION AND DISPOSAL COSTS	$75,988	$30,749	$80,652	$11,846	$21,755	$5,734	$6,696	$41,869	$273,340	$19,071
TOTAL BUILDING DEMOLITION AND DISPOSAL COSTS										
Building Utility Costs										
Number of years of operation required for restoration/reclamation	0	0	0	0	0	0	0	0	9	0
SUBTOTAL BUILDING ELECTRICAL COSTS (UC-Electrical Power)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$291,629.40	$0.00
TOTAL BUILDING ELECTRICITY COSTS										
SUBTOTAL PROPANE AND NATURAL GAS COSTS (UC-Heating Cost)									$103,620	
TOTAL PROPANE AND NATURAL GAS COSTS										
TOTAL UTILITY COSTS										

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Building Demolition and Disposal (Highland Uranium Project Buildings)	Exxon R&D Process Bldg.	SRHUP 9 DDW	VOLLMAN 33-27 DDW	MORTON 1-20 DDW
I. Decontamination Costs				
A. Wall Decontamination				
Area to be Decontaminated (ft^2)	0	0	0	0
HCl Acid Wash, including labor ($/$ft^2$)	$0.48	$0.48	$0.48	$0.48
Subtotal Wall Decontamination Costs	$0	$0	$0	$0
B. Concrete Floor Decontamination				
Area to be Decontaminated (ft^2)	1260	1260	1260	1260
HCl Acid Wash, including labor ($/$ft^2$)	$0.51	$0.51	$0.51	$0.51
Subtotal Concrete Floor Decontamination Costs	$638	$638	$638	$638
C. Deep Well Injection Costs				
Total Kgals for Injection (1 gal used per ft2)	1.26	1.26	1.26	1.26
Deep Well Injection Unit Cost ($/Kgals)	$0.86	$0.86	$0.86	$0.86
Subtotal Deep Well Injection Costs	$1	$1	$1	$1
Subtotal Decontamination Costs per Building	$639	$639	$639	$639
Total Decontamination Costs				
II. Demolition Costs				
A. Building				
Volume of Building (ft^3)	15120	15120	15120	15120
Demolition Unit Cost per WDEQ Guideline No.12,App.K ($/$ft^3$)	$0.26	$0.26	$0.26	$0.26
Subtotal Building Demolition Costs	$3,897	$3,897	$3,897	$3,897
B. Concrete Floor				
Area of Concrete Floor (ft^2)	1260	1260	1260	1260
Demolition Unit Cost per WDEQ Guideline No.12,App.K ($/ft2)	$5.08	$5.08	$5.08	$5.08
Subtotal Concrete Floor Demolition Costs	$6,401	$6,401	$6,401	$6,401
C. Concrete Footing				
Length of Concrete Footing (ft)	142	142	142	142
Demolition Unit Cost per WDEQ Guideline No.12,App.K ($/ft)	$18.10	$18.10	$18.10	$18.10
Subtotal Concrete Footing Demolition Costs	$2,570	$2,570	$2,570	$2,570
Subtotal Demolition Costs per Building	$12,868	$12,868	$12,868	$12,868
Total Demolition Costs				
III. Disposal Costs				
A. Building				
Volume of Building (cy)	560	560	560	560
Off-Site County Landfill				
Percentage (%)	100	100	100	100
Volume for Disposal (cubic yards)	560	560	560	560
Disposal Unit Cost ($/cy)	$9.03	$9.03	$9.03	$9.03
Subtotal On-Site Disposal Costs	$5,058	$5,058	$5,058	$5,058
B. Concrete Floor				
Area of Concrete Floor (ft^2)	1260	1260	1260	1260
Average Thickness of Concrete Floor (ft)	0.75	0.75	0.75	0.75
Volume of Concrete Floor (ft^3)	945	945	945	945
Volume of Concrete Floor (cy)	35	35	35	35
1. Off-Site County Landfill				
Percentage (%)	100	100	100	100
Volume for Disposal (cy)	35	35	35	35
Disposal Unit Cost per WDEQ Guideline No.12,App.K ($/cy)	$9.03	$9.03	$9.03	$9.03

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	Exxon R&D	SRHUP 9	VOLLMAN	MORTON 1
Building Demolition and Disposal (Highland Uranium Project Buildings)	**Process Bldg.**	**DDW**	**33-27 DDW**	**20 DDW**
Subtotal On-Site Disposal Costs	$316	$316	$316	$316
2. NRC-Licensed Facility				
Percentage (%)	0	0	0	0
Volume for Disposal (ft^3)	0	0	0	0
Transportation and Disposal Unit Cost ($/$ft^3$)	$5.22	$5.22	$5.22	$5.22
Subtotal NRC-Licensed Facility Disposal Costs	$0	$0	$0	$0
Subtotal Concrete Floor Disposal Costs	$316	$316	$316	$316
C. Concrete Footing				
Length of Concrete Footing (ft)	142	142	142	142
Average Depth of Concrete Footing (ft)	4	4	4	4
Average Width of Concrete Footing (ft)	1	1	1	1
Volume of Concrete Footing (ft^3)	568	568	568	568
Volume of Concrete Footing (cy)	21	21	21	21
Disposal Unit Cost per WDEQ Guideline No.12,App.K ($/cy)	$9.03	$9.03	$9.03	$9.03
Subtotal Concrete Footing Disposal Costs	$190	$190	$190	$190
Subtotal Disposal Costs per Building	$5,564	$5,564	$5,564	$5,564
Total Disposal Costs				
IV. Health and Safety Costs Accounted for on GW REST				
SUBTOTAL BUILDING DEMOLITION AND DISPOSAL COSTS	$19,071	$19,071	$19,071	$19,071
TOTAL BUILDING DEMOLITION AND DISPOSAL COSTS				
Building Utility Costs				
Number of years of operation required for restoration/reclamation	0	7	7	7
SUBTOTAL BUILDING ELECTRICAL COSTS (UC-Electrical Power)	$0.00	$187,872.65	$187,865.33	$187,872.65
TOTAL BUILDING ELECTRICITY COSTS				
SUBTOTAL PROPANE AND NATURAL GAS COSTS (UC-Heating Cost)				
TOTAL PROPANE AND NATURAL GAS COSTS				
TOTAL UTILITY COSTS				

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Miscellaneous Reclamation									
I.	**CP/Office Area Reclamation**								
		Concrete Pad= 0.3 acres							
		Total Area = 10 acres							
	A.	Asphalt							
		Area of Asphalt (acres)			3.4				
		Demolition Unit Cost per WDEQ Guideline No.12,App.I ($/acre)			$821.28				
		Average Thickness (ft)			0.50				
		Hauling Unit Cost per WDEQ Guideline No. 12, App C (500 ft, 0% grade)			$1.093				
		Volume of Asphalt (cy)			2,743				
		Disposal Average Cost per WDEQ Guideline No.12,App.K ($/cy)			$9.03				
		Subtotal Concrete Pad Demolition and Disposal Costs			**$27,568**				
	B.	Ripping Overburden with Dozer							
		Overburden Surface Area (acres)			10.6				
		Ripping Unit Cost per WDEQ Guideline No.12, App.I1 ($/acre)			$1,152.92				
		Subtotal Ripping Overburden Costs			**$12,186**				
	C.	Topsoil Application							
		Area of surface disturbance (ft^2)			130680				
		Average thickness of topsoil (ft)			0.5				
		Average haul distance (ft)			2000				
		Surface grade (%)			0%				
		Volume of Topsoil (cy)			2,420				
		Movement of Topsoil Unit Cost per WDEQ Guideline No.12, App.C ($/cy)			$1.69				
		Subtotal Topsoil Application Costs			**$4,094**				
	D.	Discing/Seeding							
		Surface Area (acres)			13				
		Discing/Seeding Unit Cost ($/acre)			$606				
		Subtotal Discing/Seeding Costs			**$7,883**				
	Total CPP/Office/Yard Area Reclamation				**$51,731**				
II.	**Access Road Reclamation (includes culverts)**				**CPF/Office Area**	**Sat No. 1**	**Sat No. 3**	**Connecting Road**	**Sat No. 2 to Rancher Rd**
	A.	Assumptions							
		Surface grade			5%	0%	0%	0%	0%
		Length of Road (ft)			13200	15840	5280	10560	2640
		Width of Road (ft)			25	30	30	30	10
		Area of road (acres)			7.6	10.9	3.6	7.3	0.6
	B.	Ripping and Hauling Asphalt							
		Assumptions							
		Average Haul Distance (feet)			5500	0	0	0	0.0
		Average Thickness of Asphalt (ft)			0.5	0	0	0	0.0
		Ripping Unit Cost Per WDEQ Guideline No. 12, App I ($/acre)			$821.28	$821.28	$821.28	$821.28	$821.28
		Volume of Asphalt (cy)			6111	0	0	0	0
		Hauling Unit Cost per WDEQ Guideline No. 12, App C ($/cy)			$3.49	$3.49	$3.49		$3.49
	C.	Gravel Road Base Removal							
		Average haul distance (ft)			0	1000	1000	1000	0
		Gravel Road Base Width (ft)			0	14	14	14	
		Gravel Road Base Area (acres)			0.00	5.09	1.70	3.39	
		Average Road Base Depth (ft)			0	0.5	0.5	0.5	

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Miscellaneous Reclamation							
		Volume of Road Base (cy)	0	4107	1369	2738	
		Removal Unit Cost per WDEQ Guideline No.12, App.C ($/cy)	$0.00	$1.31	$1.31	$1.31	
		Subtotal Gravel Road Base Removal Costs	$0	$5,362	$1,787	$3,575	$0
	D.	Ripping Overburden with Dozer					
		Overburden Surface Area (acres)	0.0	10.9	3.6	7.3	0.6
		Ripping Unit Cost per WDEQ Guideline No.12, App.I1 ($/acre)	$1,152.92	$1,152.92	$1,152.92	$1,152.92	$1,152.92
		Subtotal Ripping Overburden Costs	$0	$12,577	$4,192	$8,385	$699
	E.	Topsoil Application					
		Average haul distance (ft)	1500	5000	1500	1500	1500
		Topsoil Surface Area (ft^2)	330000	475200	158400	316800	26400
		Depth of Topsoil (ft)	0.5	0.5	0.5	0.5	0.5
		Volume of Topsoil (cy)	6111	8800	2933	5867	489
		Movement of Topsoil Unit Cost per WDEQ Guideline No.12, App.C ($/cy)	$1.31	$1.31	$1.31	$1.31	$1.31
		Subtotal Topsoil Application Costs	$7,979	$11,490	$3,830	$7,660	$638
	F	Discing/Seeding					
		Surface Area (acres)	7.6	10.9	3.6	7.3	0.6
		Discing/Seeding Unit Cost ($/acre)	$606	$606	$606	$606	$606
		Subtotal Discing/Seeding Costs	$4,594	$6,615	$2,205	$4,410	$367
		Multiplier for Projected Additions	0	0	0	0	0
		Subtotal Reclamation Costs per Access Road	$12,573	$36,044	$12,014	$24,030	$1,704
		Total Access Road Reclamation Costs	**$86,365**				
III.	**Trunk Lines**		**SAT2 to SAT1 WW Pipeline**	**SAT3 to SAT2 PSR**	**H-WF Rest. Bypass**	**Vollman WW Pipeline**	**SRHUP 9 WW Pipeline**
		Length of Trench (ft)	24000	22000	2200	4800	4000
	A.	Removal and Loading					
		Main Pipeline Removal Unit Cost ($/ft of trench)	$1.83	$1.83	$1.83	$1.83	$1.83
		Subtotal Trunkline Removal and Loading Costs	$43,920	$40,260	$4,026	$8,784	$7,320
	B.	Transport and Disposal Costs (NRC-Licensed Facility)					
		1. 3" HDPE Trunkline					
		Piping Length (ft)	24000	0	2200		4000
		Chipped Volume Reduction (ft^3/ft)	0.023	0.023	0.023	0.023	0.023
		Chipped Volume (ft^3)	559	0	51	0	93
		2. 4" HDPE Trunkline					
		Piping Length (ft)	0	22000	0	4000	0
		Chipped Volume Reduction (ft^3/ft)	0.038	0.038	0.038	0.038	0.038
		Chipped Volume (ft^3)	0	846	0	154	0
		2. 6" HDPE Trunkline					
		Piping Length (ft)	0	0	0	0	0
		Chipped Volume Reduction (ft^3/ft)	0.083	0.083	0.083	0.083	0.083
		Chipped Volume (ft^3)	0	0	0	0	0
		3. 8" HDPE Trunkline					
		Piping Length (ft)	0	0	0	0	0
		Chipped Volume Reduction (ft^3/ft)	0.141	0.141	0.141	0.141	0.141
		Chipped Volume (ft^3)	0	0	0	0	0
		3. 10" HDPE Trunkline					

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Miscellaneous Reclamation										
				Piping Length (ft)			0	0	0	0	0
				Chipped Volume Reduction (ft^3/ft)			0.220	0.220	0.220	0.220	0.220
				Chipped Volume (ft^3)			0	0	0	0	0
		4.	12" HDPE Trunkline								
				Piping Length (ft)			0	0	0	0	0
				Chipped Volume Reduction (ft^3/ft)			0.309	0.309	0.309	0.309	0.309
				Chipped Volume (ft^3)			0	0	0	0	0
		5.	14" HDPE Trunkline								
				Piping Length (ft)			0	0	0	0	0
				Chipped Volume Reduction (ft^3/ft)			0.372	0.372	0.372	0.372	0.372
				Chipped Volume (ft^3)			0	0	0	0	0
		5.	16" HDPE Trunkline								
				Piping Length (ft)			0	0	0	0	0
				Chipped Volume Reduction (ft^3/ft)			0.486	0.486	0.486	0.486	0.486
				Chipped Volume (ft^3)			0	0	0	0	0
		6	18" HDPE Trunkline								
				Piping Length (ft)			0	0	0	0	0
				Chipped Volume Reduction (ft^3/ft)			0.616	0.616	0.616	0.616	0.616
				Chipped Volume (ft^3)			0	0	0	0	0
		Total Pipeline Disposal Volume					559	846	51	154	93
				Volume for Disposal Assuming 10% Void Space (ft^3)			615	931	56	169	102
				Transportation and Disposal Unit Cost (NRC-Licensed Facility) ($/$ft^3$)			$12.52	$12.52	$12.52	$12.52	$12.52
		Subtotal Transport and Disposal Costs					$7,699	$11,655	$701	$2,116	$1,277
	C.	Discing/Seeding									
				Width of Pipeline Trench (ft)			10	10	8	8	8
				Area of Pipeline Trench (acres)			5.5	5.1	0.4	0.9	0.7
				Discing/Seeding Unit Cost ($/acre)			$606	$606	$606	$606	$606
		Subtotal Discing/Seeding Costs					$3,341	$3,062	$245	$535	$445
	Subtotal Reclamation Costs per Pipeline						$54,960	$54,977	$4,972	$11,435	$9,042
	Total Pipeline Reclamation Costs						**$135,386**				
IV.	**Settling Basin/Storage Ponds Reclamation**						**E. Radium Pond**	**W. Radium Pond**			
	A.	Soil Sampling and Monitoring									
				Number of Soil Samples			10	10			
				$/Sample			$337	$337			
		Subtotal Soil Sampling and Monitoring Costs					$3,370	$3,370			
	B.	Subsoil Removal and Disposal (Liner removed in 2003)									
				Thickness of subsoil (ft)			1	1			
				Thickness of contaminated subsoil (ft)			0.5	0.5			
				Width of Pond (ft)			85	85			
				Length of Pond (ft)			140	140			
				Surface area of pond (ft^2)			11900	11900			
		1.	Removal and Loading								
				Volume of Subsoil (cy)			220	220			
				Subsoil Removal and Loading Unit Cost ($/cy)			$3.89	$3.89			
				Subtotal Subsoil Removal and Loading Costs			$858	$858			

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Miscellaneous Reclamation											
		2.	Transportation and Disposal								
				Volume of Subsoil for Disposal(ft^3)			220	220			
				Transportation and Disposal Unit Cost ($/$ft^3$)			$5.22	$5.22			
			Subtotal Subsoil Transportation and Disposal Costs				$1,151	$1,151			
		Subtotal Subsoil Removal and Disposal Costs					$2,009	$2,009			
	C.	Grade and Contour									
			Volume of Embankment Materials (cy)				6400	6400			
			Average Grade (%)				0	0			
			Distance (ft)				50	50			
			Material Moving Cost per WDEQ Guideline No. 12, App E ($/cy)				0.1298	0.1298			
		Subtotal Grade and Contour Costs					830.72	830.72			
	D.	Topsoil Application									
				Area of surface disturbance (ft^2)			99000	99000			
				Average thickness of topsoil (ft)			0.5	0.5			
				Average haul distance (ft)			1000	1000			
				Surface grade (%)			0	3			
			Volume of Topsoil (cy)				1,833	1,833			
			Movement of Topsoil Unit Cost per WDEQ Guideline No.12, App.C ($/cy)				$1.31	$1.31			
		Subtotal Topsoil Application Costs					$2,394	$2,394			
	D.	Discing/Seeding									
				Area of surface disturbance (acres)			2.3	2.3			
			Discing/Seeding Unit Cost ($/acre)				$606	$606			
		Subtotal Discing/Seeding Costs					$1,376	$1,376			
	Subtotal Reclamation Costs						$9,980	$9,980			
	Total Settling Basin/Ponds Reclamation Costs						**$19,959**				
V.	**Purge Storage Reservoir Reclamation**						**PSR-1**	**PSR-2**			
	A.	Soil Sampling and Monitoring									
			Number of Soil Samples				10	10			
			$/Sample				$337	$337			
		Subtotal Soil Sampling and Monitoring Costs					$3,370	$3,370			
	B.	Leachate Collection System Removal Costs					$5.000	$0			
	C.	Topsoil/Subsoil Application									
			Assumptions:								
				Average haul distance (ft)			1000	150			
				Surface grade (%)			0	0			
			Volume of Topsoil/Subsoil (cy)				83000	74000			
			Movement of TopsoilUnit Cost per WDEQ Guideline No.12, App.C ($/cy)				$1.31	$1.31			
		Subtotal Topsoil/Subsoil Application Costs per Reservoir					$108,373	$96,622			
	D.	Discing/Seeding									
			Surface Area (acres)				6	32			
			Discing/Seeding Unit Cost ($/acre)				$606	$606			
		Subtotal Discing/Seeding Costs					$3,638	$19,404			
	Subtotal Reclamation Costs per Reservoir						$120,381	$119,396			
	Total Purge Storage Reservoir Reclamation Costs						**$239,777**				
VI.A	**Irrigation Maintenance and Monitoring Costs**						**Irrigator No.1**	**Irrigator No.2**			
	A.	Irrigation Maintenance and Repair									
			Irrigation Operation Months/Year				0	6			
			Cost per Month				$667	$1,940			

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Miscellaneous Reclamation				
	Total Number of Years	0	7	
	Subtotal Maintenance and Repair Costs	$0	$81,476	
B.	Irrigation Monitoring and Sampling			
	# of Irrigation Fluid Samples/Year	0	6	
	Cost/sample (Energy Labs - Casper Wyoming)	$337	$337	
	# of Vegetation Samples/Year	5	5	
	Cost/sample (Energy Labs - Casper Wyoming)	$337	$337	
	# of Soil Samples/Year	30	34	
	Cost/sample (Energy Labs - Casper Wyoming)	$337	$337	
	# of Soil Water Samples/Year	0	2	
	Cost/sample (Energy Labs - Casper Wyoming)	$337	$337	
	Total Number of Years	5	5	
	Subtotal Sampling Costs	$58,975	$79,195	
	Subtotal Maintenance and Monitoring Costs per Irrigator	$58,975	$160,671	
	Total Irrigation Maintenance and Monitoring Costs	**$219,646**		
VI.B	**Irrigation Area Reclamation**	**Irrigator No. 1A**	**Irrigator No. 2**	
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)	$606	$606	
	Subtotal Discing/Seeding Costs	$33,350	$64,275	
	Subtotal Reclamation Costs per Irrigation Area	$46,350	$87,475	
	Total Irrigation Area Reclamation Costs	**$133,825**		
VII.	**Revegetation of Exxon Reclaimed Lands**			
	Assumptions:			
	10% Reseeding potential areas of erosion ($/acre)	$606		
	Surface Area (acres)	217		
	Total Exxon Reclaimed Lands Revegetation Costs	**$13,158**		
VIII.	**Potential Mitigation Plan For Irrigator No.1A (Requested by WDEQ-LQD)**			
	Assumptions:			
	Harvesting grass for 2 years will further reduce Se levels in vegetation.			
	Harvest grass for 2 years @ $2000/year.	$4,000		
	Analyze Se in grass for 2 years @$165/sample X 4 samples X 2 yrs.	$1,320		
	Analyze Se in soil for 2 years @$174/sample X 28 samples X 2 yrs.	$9,744		
	Add 1 ft. of Se free water to 58 acre irrigation area @ cost of $6000.	$6,000		
	If desired, plow, disk and reseed area with alfalfa @ cost of $4400.	$33,330		
	Total Potential Mitigation Plan Costs- Call $30,000	$54,394		
IX.	**Potential Mitigation Plan For Irrigator No.2 (Requested by WDEQ-LQD)**			

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Miscellaneous Reclamation			
	Assumptions:		
	Harvesting grass for 2 years will further reduce Se levels in vegetation.		
	Harvest grass for 2 years @ $4000/year.	$8,000	
	Analyze Se in grass for 2 years @$165/sample X 4 samples X 2 yrs.	$1,320	
	Analyze Se in soil for 2 years @$174/sample X 32 samples X 2 yrs.	$11,136	
	Add 1 ft. of Se free water to 116 acre irrigation area @ cost of $12000.	$12,000	
	If desired, plow, disk and reseed area with alfalfa @ cost of $8800.	$64,236	
	Total Potential Mitigation Plan Costs- Call $42,000	**$96,692**	
X.	**Potential Mitigation Plan for Shallow Well Casing Leak Investigation**		
	Assumptions:		
	Investigation and potential mitigation plan as of Feb 2009.		
	Assume cost of $50,000.		
	Total Preliminary Cost	$50,000	
XI.	**Miscellaneous**		
A.	Fence Removal		
	Total Length of Fence (ft)	100,377	
	Fence Removal Cost	$0.55	
	Subtotal Fence Removal	$55,207.35	
B.	Drill Water Tank Removal (offer to rancher; dispose of timbers)		
	Material (cy)	1.48	
	4 hours Cat 924G Loader	$175.72	
	4 hours truck	$72.30	
	4 hours labor (operator)	$128.77	
	Disposal costs	$13.37	
	Subtotal Drill Water Tank Removal	$390.16	
C.	PSR2 Monitor Wells		
	Quantity	3	
	Depth	100.00	
	Total Depth	300.00	
	Cased Hole Abandonment cost	$1.06	
	Subtotal PSR2 Monitor Wells Abandonment	$318.00	
	Total Miscellaneous Structures Reclamation Costs	**$55,915.51**	
XII.	**Infrastructure, Equipment Maintenance, Replacement and Repairs** @$62,000/yr for 7 years	**$434,000.00**	
	Note: 7 years is used to account for active restoration period		
TOTAL MISCELLANEOUS RECLAMATION COSTS		**$1,590,850**	
NOTE: Vehicle operation costs are captured in WF REC			

WELLFIELD ROAD RECLAMATION

Assumptions

1. Gravel road base removed at cost of **$0.994**/cy/1000 ft (WDEQ Guideline No. 12, App. C, Level Ground, 500 ft haul)
2. Gravel road base: average depth = 0.25 ft, average width = 10 ft
3. Roads scarified prior to topsoil application at cost of **$59.41**/acre (WDEQ Guideline No. 12, Appendix P)
4. Grading of scarified roads prior to topsoil application at cost of **$64.77**/acre (WDEQ Guideline No. 12, Appendix G)
5. Topsoil applied at cost of **$0.994**/cy/1000 ft (WDEQ Guideline No. 12, App. C, Level Ground, 500 ft haul)
6. Stripped topsoil: average depth = 0.67 ft, average width = 25 ft
7. Discing/seeding cost of **$685**/acre is based on actual contractor costs

Gravel Road Base Removal Costs per 1000 ft of Road

$$\frac{1000\ \text{ft}}{} \times \frac{0.25\ \text{ft}}{} \times \frac{10\ \text{ft}}{} \times \frac{1\ \text{cy}}{27\ \text{ft}^3} \times \frac{\$0.99}{\text{cy}} = \$\ 92$$

Scarification Costs per 1000 ft of Road

$$\frac{1000\ \text{ft}}{} \times \frac{25\ \text{ft}}{} \times \frac{1\ \text{acre}}{4.356\text{E+04}\ \text{ft}^2} \times \frac{\$59.41}{\text{acre}} = \$\ 34$$

Grading Costs per 1000 ft of Road

$$\frac{1000\ \text{ft}}{} \times \frac{25\ \text{ft}}{} \times \frac{1\ \text{acre}}{4.356\text{E+04}\ \text{ft}^2} \times \frac{\$64.77}{\text{acre}} = \$\ 37$$

Topsoil Application Costs per 1000 ft of Road

$$\frac{1000\ \text{ft}}{} \times \frac{0.67\ \text{ft}}{} \times \frac{25\ \text{ft}}{} \times \frac{1\ \text{cy}}{27\ \text{ft}^3} \times \frac{\$0.99}{\text{cy}} = \$\ 617$$

Discing/Seeding Costs per 1000 ft of Road

$$\frac{1000\ \text{ft}}{} \times \frac{25\ \text{ft}}{} \times \frac{1\ \text{acre}}{4.356\text{E+04}\ \text{ft}^2} \times \frac{\$685}{\text{acre}} = \$\ 393$$

TOTAL WELLFIELD ROAD RECLAMATION COSTS PER 1000 FT OF ROAD **= $ 1,173**

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Groundwater Sweep (GWS) and Deep Disposal Well (DDW) Unit Costs

Assumptions:																	
1.	Wellfield pumps are 5 hp pumping at 25 gpm																
2.	Cost of electricity =															$0.0478	kwh
3.	Operator labor costs =															$257.53	man-day
4.	One 60 hp pump at the plant or satellite feeds two DDWs																
5.	One 75 hp at each DDW (pumps run on VFDs which reduces operating HP to match pumping rate)																
6.	Each DDW can take 75 gpm																
7.	Se Plant Media Cost 3 changes with disposal cost															$114,000	per year
Wellfield Pumping Electrical Costs per 1000 Gallons																	
	1000	gal/min		5	hp/pump	1440	Kgal/day							= $	0.12		
	25	gal/pump		0.746	Kwh/hp	$0.0478	/kwh										
	40	pumps		24	hr/day												
Wellfield Pumping Labor Costs per 1000 Gallons																	
	2	Oper.		$515	Labor cost/day									= $	0.36		
	$258	Cost/oper/day		1,440	kgal/day												
Groundwater Sweep Production Rate																	
	150	gal	X	60	min	X	24	hr	X	365	day	X	1	year	=	*6,570,000*	*gallons*
		min			hr			day			year		12	month			*month*
Plant or Satellite to DDW or Irrigator No. 2 Pumping Electrical Costs per 1000 Gallons																	
	150	gal		171	Kgal/day		$0.0478	$/Kwh						= $	0.300		
	60	HP		0.746	Kwh/HP		24	Hr/day									
DDW Pumping Costs per 1000 gallons																	
	75	gal		75	Kgal?day		$0.0478	$/Kwh						= $	0.856		
	75	HP		0.746	Kwh/HP		24	Hr/day									
TOTAL GWS COSTS PER 1000 GALLONS														= $	**1.63**		

Groundwater Reverse Osmosis (RO) and Bioremediation Unit Costs

Assumptions:																	
1.	Cost of electricity =															$0.0478	KW hr
2.	Operator labor costs =															$257.53	day
3.	RO System Horsepower:																
				RO Unit Pump				60	hp								
				Permeate/Injection pump				60	hp								
				Waste pump				15	hp								
				TOTAL:				135	hp								
4.	Chemical costs:																
				Sodium Sulfide												$0.38	pound
				Methanol =												$2.43	gal
				Antiscalant =												$16.19	gal
5.	Mix Rates																
				Sodium Sulfide				0.0002	pound/gal								
				Methanol				0.00025	gal/gal								
				Antiscalant				0.00000833	gal/gal								
6.	Based on 20 pumps to produce 500 gpm - each pump does 25 gpm															720	Kgal/day
7.	RO Maintenance Costs															$0.07	per Kgal
Wellfield Pumping Electrical Costs per 1000 Gallons																	
20	pumps			0.746	Kwh/HP		$0.0478	electric rate							= $	$0.12	per Kgal
5	HP			24	Hrs/Day												
Reverse Osmosis/Bioremediation Electrical Costs per 1000 Gallons																	
135	HP			0.746	Kwh/HP		$0.0478	electric rate							= $	0.160	per Kgal
				24	Hrs/Day												
Reverse Osmosis/Bioremediation Labor Costs per 1000 Gallons																	
2	Oper.			$515.06	Labor cost/day										= $	0.715	per Kgal
$258	Cost/oper/day			720	kgal/day												
Treatment chemical costs per 1000 Gallons																	
	Antiscalant:																
	1000	gal	X	0.000008330	gal antiscalant	X	$16.19								= $	0.135	per Kgal
				1	gal		gal antiscalant										
	Methanol																
	1000	gal	X	0.00025	gal methanol	X	$2.43								= $	0.608	per Kgal
				1	gal		gal methanol										
	Sodium Sulfide																
	1000	gal	X	0.00020	pounds	X	$0.38								= $	0.076	per Kgal
				1	gal		pound sodium sulfide										
Reverse Osmosis Production Rate																	
	500	gal	X	60	min	X	24	hr	X	365	day	X	1	year	=	*21,900,000*	*gallons*
		min			hr			day			year		12	month			*month*
Bioremediation Production Rate (information only, not used)																	
	1050	gal	X	60	min	X	24	hr	X	365	day	X	1	year	=	*45,990,000*	*gallons*
		min			hr			day			year		12	month			*month*
TOTAL RO COSTS PER 1000 GALLONS													= $	**1.06**			
TOTAL BIOREMEDIATION/CHEMICAL REDUCTANT COSTS PER 1000 GALLON													= $	**1.68**			
TOTAL RO COSTS PER 1000 GALLONS WITH BRINE DISPOSAL COST													= $	**2.22**			

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FIVE YEAR MECHANICAL INTEGRITY TESTS (MIT)													
Assumptions:													
1	Pulling Unit for 8 hr/day												
2	MIT Unit for 8 hr/day												
3	Labor for operation of pulling unit requires 2 workers												
4	Labor for operation of MIT Unit requires 1 worker												
MIT Costs per Well													
Equipment and Labor:													
	Pulling Unit with Operator												
		8	hours	X	$	82.06	per hour					=$	656.46
	Laborer												
		8	hours	X	$	22.01	per hour					=$	176.08
	MIT Unit with Operator												
		8	hours	X	$	66.54	per hour					=$	532.32
											TOTAL MIT COST PER DAY	=$	1365.00
	Wells Completed					6	per day						
MIT COSTS PER WELL												=$	227.50
MIT COSTS PER DEEP DISPOSAL WELL (2010 Cost)												=$	5907.53

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WELL ABANDONMENT Unit Costs												
Assumptions:												
1	Typical 8 hour working day											
2	Backhoe for 8.0 hr/day to dig and reclaim pits											
3	Use hose reel for 8 hr/day to pull equipment from well and trimme cement into well bore.											
4	Use cementer for 8.0 hr/day to pump cement/plug gel downhole											
5	Use 2 tow vehicles for 8.0 hr/day to tow hose reel and cementer											
6	Labor for hose reel and cementer will require 2 workers at 8.0 hr/day											
7	Gooseneck trailer for 8.0 hr/day.											
8	Forklift for 8.0 hr/day.											
9	Cost of bulk cement is $5.94/94# and plug gel cost is $7.30/50# sack.											
10	Plug Six (6) Wells per day 700	700	ft	X	6	=				4,200		
Cased Well Abandonment Costs										4,200	**$/ft based on 6 wells/day**	
	Cat 416 Backhoe	8	hours	X	$ 25.42	per hour			=	$ 203.35	$0.0484	
	Operator	8	hours	X	$ 32.19	per hour			=	$ 257.53	$0.0613	
	Pickup Trucks	16	hours	X	$ 18.08	per hour			=	$ 289.21	$0.0689	
	Hose Reel	8	hours	X	$ 62.50	per hour			=	$ 500.00	$0.1190	
	Cementer	8	hours	X	$ 32.90	per hour			=	$ 263.18	$0.0627	
	Forklift	8	hours	X	$ 50.07	per hour			=	$ 400.57	$0.0954	
	Trailer - gooseneck	8	hours	X	$ 13.87	per hour			=	$ 110.92	$0.0264	
	Labor	16	hours	X	$ 22.01	per hour			=	$ 352.16	$0.0838	
	Well Cap	6	each	X	$ 7.50	each			=	$ 45.00	$0.0107	
Materials per foot of well												
	Cement	0.073	sacks/	X	$ 5.94	per sack			=	$ 1,821.20	$0.4336	
	Plug Gel	0.007	sacks/	X	$ 7.30	per sack			=	$ 205.42	$0.0489	
Total Estimated Cost per Day										$ 4,448.54		
Total Estimated Cost per Foot:											**$1.06**	

REMOVAL OF CONTAMINATED SOIL AROUND WELLS Unit Cost

Assumptions:

1 Use backhoe for 0.25 hr/well to dig

2 Radiation Technician measures extent of contamination for 0.25 hr/well

Assessment/Removal Costs								**Cost per well**
	Cat 416 Backhoe							
		0.25	hours	X	$ 25.42	per hour		$6.35
	Radiation Technician							
		0.25	hours	X	$ 26.87	per hour		$6.72
	Operator							
		0.25		X	$ 32.19	per hour		$8.05
Disposal and Transportation Costs								
	Contaminated Soil per Well				0.370	cy per well		
	Disposal and Transportation				$ 141.00	per cy		$52.17
Total Estimated Cost per Well:								**$73.29**

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DELINEATION HOLE ABANDONMENT Unit Costs													
Assumptions:													
1	Drill rig used 2.5 hrs to plug well.												
2	Labor - will require 2 workers at 2.5 hrs per well												
Hole Abandonment Costs											600	**Cost per ft (based on 700 ft holes)**	
	Site Locating	1	per sit	X	$	10.00	per site			=	10.00	$ 0.017	
	Drill rig	2.5	hours	X	$	200.00	per hour			=	500.00	$ 0.833	
	Hole Plug	1	each	X	$	7.50	each			=	7.50	$ 0.013	
	Labor	5	hours	X	$	22.01	per hour			=	110.05	$ 0.183	
Materials per foot of													
	Plug Gel	9	sacks	X	$	7.30	per sack			=	65.70	$ 0.110	
Site Grading & Seeding													
	Cat 416 Backhoe	1	hours	X	$	25.42	per hour			=	25.42	$ 0.042	
	Operator	1	hours	X	S	32.19	per hour			=	32.19	$ 0.054	
	Seeding	0.0184	acre	X	$	606.37	per acre			=	11.14	$ 0.019	
Total Estimated Cost per Well											**752.00**		
Total Estimated Cost per Foot:												**$1.27**	

Wellfield Building/Clay Liner Removal					
Cost per Well Head Cover					
	Radiation Tech =	27	per hour		
	Operator =	32	per hour		
	Total Wellhead Covers =	3,024.00			
	HCl 35% Cost =	$ 0.160	per pound		
	Acid Usage Rate =	4.1	pounds per wellhead cover		
	Acid Unit Cost =	$ 0.66	per wellhead cover		
	Total Labor Rate =	$ 65.62	per hour		
	Cleaning Rate	10	wellheads per hour		
	Survey / Decon.	**$ 6.56**	**per wellhead cover**		
Cost per Header House					
	Rad Technician =	27	per hour		
	Operator =	32	per hour		
	Number of Operators =	2			
	HCl 35% Cost =	$ 0.160	per pound		
	Acid Usage Rate =	20	pounds per header house		
	Acid Unit Cost =	$ 3.20	per header house		
	Total Labor Rate =	$ 567.53	per hour		
	Cleaning Rate	1	header house per day		
	Survey / Decon.	**$ 567.53**	**per header house**		
Clay Liner/Subsoil Removal Cost					
	Operator =	32	per hour		
	Trackhoe =	$ 79.68	per hour		
	Loader =	$ 43.93	per hour		
	Loader Size =	1.5	cubic yards		
	Disposal Rate =	40	yards/hour		
	Total Removal	**$ 3.89**	**per cubic yard**		

	ACID WASH		
	Assumptions:		
	10% wash solution is used		
	0.25 gallon of acid wash is used per sq ft. to clean walls.		
	1 gallon of acid wash is used per sq ft. to clean floors.		
	Using the CPP square footages the assumption is as follows		
	Acid Wash (Walls)		
	Labor	2	Men
	Rate	$22.01	hr.
	Time	20	8hr. Days
	Manlift Rental	$49.85	Month
	CPP Wall Area	26710	square feet
	Labor and manlift	$0.27	per square foot
	Acid	$0.16	pound
	Consumables	$0.05	per square foot
	Total	$0.48	per square foot
	Acid Wash (Floors)		
	Labor	2	Workers
	Rate	$22.01	hr.
	Time	15	8hr. Days
	CPP Floor Area	17820	square feet
	Labor	$0.30	per square foot
	Acid	$0.16	pound
	Consumables	$0.05	per square foot
	Total	$0.51	per square foot

Electrical Power Consumption and Costs - During Restoration

Description	Operating Horsepower	Voltage	Lighting FT^2	Lighting Watts (1.25 watts/FT^2)	Electric Heat Kw	Electric Air Condioning Kw	Kw/HP	Kwhr/HP hr	Operating Hours/yr	Kwhr/yr	Power Cost $/Kwhr	Electrical Cost/year
Sat 2 500 Gallon RO and Support Equip												
RO Feed Pump (cost of power in RO operating cost)	-	480					0.746	0.746	8,760	-	0.04780	$ -
Decar/Re-injection Pump (cost of power in RO operating)	-	480					0.746	0.746	8,760	-	0.04780	$ -
Decarb-Fan	5.0	480					0.746	0.746	8,760	32,675	0.04780	$ 1,561.86
Misc. Equip. (metering pumps, fans, sump pumps)	10.0	480					0.746	0.746	8,760	65,350	0.04780	$ 3,123.71
Air Compressors	7.5	480					0.746	0.746	8,760	49,012	0.04780	$ 2,342.78
Lighting (1.25 watts/sqft)			28,050	1.25					8,760	307,148	0.04780	$ 14,681.65
Sat 2 Electrical Power Cost per Year Total												**$ 21,710.00**
Se Plant 500 Gallon RO and Support Equip.												
PC Booster Pump	40.0	480					0.746	0.746	8,760	261,398	0.04780	$ 12,494.84
RO Feed Pump (cost of power in RO operating cost)		480					0.746	0.746	8,760	-	0.04780	$ -
Decar/Re-injection Pump ((cost of power in RO operating cost)		480					0.746	0.746	8,760	-	0.04780	$ -
Decarb-Compressor	5.0	480					0.746	0.746	8,760	32,675	0.04780	$ 1,561.86
Decarb Booster Pump	10.0	480					0.746	0.746	8,760	65,350	0.04780	$ 3,123.71
Misc. Equip. (metering pumps, fans, sump pumps)	10.0	480					0.746	0.746	8,760	65,350	0.04780	$ 3,123.71
Air Compressors	7.5	480					0.746	0.746	8,760	49,012	0.04780	$ 2,342.78
Lighting (1.25 watts/sqft)			18,640	1.25					8,760	204,108	0.04780	$ 9,756.36
Se Plant 500 Gallon RO and Support Equip. Total												**$ 32,403.27**
DDW Vollman 33-27												
DDW PD Injection Pump	75.0	480					0.746	0.746	8,760	490,122	0.04780	$ 23,427.83
Misc. Equip. (metering pumps, fans, sump pumps)	1.0	480					0.746	0.746	8,760	6,535	0.04780	$ 312.37
Air Compressors	1.0	480					0.746	0.746	8,760	6,535	0.04780	$ 312.37
Heater - electric Kw (includes wellhead)	-	480			12.5				4,320	54,000	0.04780	$ 2,581.20
Lighting (1.25 watts/sqft)			390	1.25					8,760	4,271	0.04780	$ 204.13
DDW Vollman 33-27 Injection Pump Support Equip. Total												**$26,837.90**
DDW SHRUP #9												
DDW PD Injection Pump	75.0	480					0.746	0.746	8,760	490,122	0.04780	$ 23,427.83
Misc. Equip. (metering pumps, fans, sump pumps)	1.0	480					0.746	0.746	8,760	6,535	0.04780	$ 312.37
Air Compressors	1.0	480					0.746	0.746	8,760	6,535	0.04780	$ 312.37
Heater - electric Kw (includes wellhead)	-	480			12.5				4,320	54,000	0.04780	$ 2,581.20
Lighting (1.25 watts/sqft)			392	1.25					8,760	4,292	0.04780	$ 205.18
DDW SRHUP 9 Injection Pump Support Equip. Total												**$26,838.95**
DDW Morton 1-20												
DDW PD Injection Pump	75.0	480					0.746	0.746	8,760	490,122	0.04780	$ 23,427.83
Misc. Equip. (metering pumps, fans, sump pumps)	1.0	480					0.746	0.746	8,760	6,535	0.04780	$ 312.37
Air Compressors	1.0	480					0.746	0.746	8,760	6,535	0.04780	$ 312.37
Heater - electric Kw (includes wellhead)	-	480			12.5				4,320	54,000	0.04780	$ 2,581.20
Lighting (1.25 watts/sqft)			392	1.25					8,760	4,292	0.04780	$ 205.18
Morton 1-20 Injection Pump Support Equip. Total												**$26,838.95**
PSR2 & Irrigator												
Feed Water Pump	40.0	480					0.746	0.746	3,600	107,424	0.04780	$ 5,134.87
Irrigator	50.0	480					0.746	0.746	3,600	134,280	0.04780	$ 6,418.58
Sampler	-	480			0.5				3,600	1,800	0.04780	$ 86.04
PSR2 & Irrigator Total												**$ 11,639.49**

Heating Cost by Building

	Flooring Sq. Feet	Wall Sq. Feet	Number Of Fans	Fan CFM	AIR Exchange BTU/hr (ΔT=40)	Building BTU/hr (ΔT=40, R=20)	Combined BTU/hr	Heating Months	Determine Which Fuel is Used: $$ per Million BTUs (Fuel Specific)	Nat. Gas $$ / yr	Propane $$ / yr
Sat-2 (6x6" Tank Fans)	12,375	12,000	6	1,500	61,772	48,750	110,522	5	$6.00	$3,034	
Se Removal Bldg. (2009/2010)	12,000	12400	1	9,000	370,630	48,800	419,430	5	$6.00	$11,513	

Estimated Ventilation CFM and impact on heating $$/yr does not account for time with building doors left open.

WELLFIELD PIPING REMOVAL Unit Costs

Assumptions:

1. Trenching with Trackhoe at 1000 ft per day
2. Pipeline extraction and backfilling with Trackhoe & loader at 20 1000 feet per day
4. Trackhoe operation requires 1 worker
5. Pipeline extraction requires 2 workers
6. Operating schedule: 8 hrs/day, 5 days/week

Equipment

Trackhoe										
	$ 79.68 / hour	X	8 hours / day		1 day / 1000 ft		=$ 0.64	per foot		
Loader										
	$ 43.93 / hour	X	8 hours / day	X	1 day / 1000 ft		=$ 0.35	per foot		
Pickup										
	$ 18.08 / hour	X	8 hours / day	X	1 day / 1000 ft		=$ 0.14	per foot		

Labor

Trackhoe Operation										
	$ 32.19 / man hr	X	8 man hrs / 1 day	X	1 days / 1000 ft		=$ 0.26	per foot		
Loader Operation										
	$ 32.19 / man hr	X	8 man hrs / 1 day	X	1 day / 1000 ft		=$ 0.26	per foot		
Pipeline Extraction Laborer										
	$ 22.01 / man hr	X	8 man hrs / 1 day	X	1 day / 1000 ft		=$ 0.18	per foot		

MAIN PIPELINE REMOVAL COST =$ **1.830** per foot

Chipped Pipe Volume Calculations

Pipe Diam Inches	SDR	OD	ID	Wall Thickness	Area of Plastic in Crossection (ft^2)	Volume of Plastic per Linear Foot (ft^3)
1.5	11	1.900	1.534	0.183	0.0069	0.0069
2	11	2.375	1.917	0.229	0.0107	0.0107
3	11	3.500	2.825	0.3375	0.0233	0.0233
4	11	4.500	3.633	0.4335	0.0385	0.0385
6	11	6.625	5.348	0.6385	0.0834	0.0834
8	11	8.625	6.963	0.831	0.1413	0.1413
10	11	10.750	8.678	1.036	0.2196	0.2196
12	11	12.750	10.293	1.2285	0.3088	0.3088
14	11	14.000	11.302	1.349	0.3723	0.3723
16	11	16.000	12.916	1.542	0.4864	0.4864
18	11	18.000	14.531	1.7345	0.6155	0.6155

Equipment Costs - based on Cost Reference Guide - Equipment Watch 2010

Gasoline cost/gallon= $ 2.63
Diesel Cost/ gallon = $ 2.68

GEC = ground engaging components 18%

Equipment Description	Hourly Ownership & Overhaul Cost					Field Repair & Operating Expenses (no operator labor)							Total Operating cost/hr	Total Hourly Cost	Owner's Profit & OH / hr	Cost/hr
	Ownership			Overhaul												
	Depr. $	CFC $	O'Head $	Labor $	Parts $	Labor $	Parts $	Fuel consum. Gal/hr	Fuel $	Lube $	Tires $	GEC $				
Cat 14H Grader - 14' Blade	$ 16.53	$ 7.29	$ 9.16	$ 3.95	$ 8.32	$ 3.29	$ 8.07	7.04	$ 18.87	$ 4.22	$ 5.14	$ 0.64	$ 40.23	$ 85.48	$ 15.39	**$ 100.86**
Bobcat S250 Skid Steer Loader	$ 1.95	$ 0.64	$ 0.78	$ 1.75	$ 1.31	$ 1.42	$ 0.93	2.78	$ 7.44	$ 0.84	$ 0.85	$ 0.08	$ 11.56	$ 17.99	$ 3.24	**$ 21.23**
Backhoe 416E Extendable Boom	$ 3.85	$ 1.51	$ 1.30	$ 1.21	$ 0.92	$ 1.23	$ 1.14	2.88	$ 7.71	$ 1.57	$ 0.95	$ 0.15	$ 12.75	$ 21.54	$ 3.88	**$ 25.42**
Cat 924H 4-WD Wheel Loader	$ 8.05	$ 2.76	$ 2.63	$ 2.30	$ 1.85	$ 2.85	$ 1.80	4.12	$ 11.05	$ 1.87	$ 1.83	$ 0.24	$ 19.64	$ 37.23	$ 6.70	**$ 43.93**
Cat 615C Elevating Scarper	$ 17.88	$ 7.79	$ 7.88	$ 7.89	$ 14.79	$ 12.27	$ 13.31	10.07	$ 26.98	$ 5.18	$ 3.33	$ 1.14	$ 62.21	$ 118.44	$ 21.32	**$ 139.76**
Cat D8R Dozer - Semi U Blade	$ 21.97	$ 7.90	$ 7.53	$ 7.89	$ 14.36	$ 8.77	$ 13.86	11.36	$ 30.44	$ 5.41	$ -	$ 2.01	$ 60.49	$ 120.14	$ 21.63	**$ 141.77**
Cat 320C L Trackhoe	$ 16.31	$ 5.02	$ 3.64	$ 5.70	$ 5.60	$ 5.70	$ 5.60	5.80	$ 15.53	$ 3.52	$ -	$ 0.90	$ 31.25	$ 67.52	$ 12.15	**$ 79.68**
Concrete Jaws Labounty - CP-60	$ 1.57	$ 0.47	$ 0.47	$ 0.81	$ 0.39	$ 7.30	$ 1.95	-	$ -	$ 0.21	$ -	$ -	$ 9.46	$ 13.17	$ 2.37	**$ 15.54**
Grove RT700E 50 ton RT Crane	$ 20.62	$ 6.85	$ 8.83	$ 6.07	$ 9.81	$ 5.85	$ 13.79	11.54	$ 30.93	$ 6.22	$ 5.70	$ -	$ 62.49	$ 114.67	$ 20.64	**$ 135.31**
Vermeer 1230 Chipper	$ 2.19	$ 0.40	$ 0.60	$ 1.21	$ 1.38	$ 0.99	$ 1.02	2.92	$ 7.82	$ 0.83	$ 0.26	$ 0.69	$ 11.61	$ 17.39	$ 3.13	**$ 20.52**
JLG 600S Manlift - 60 ft (Gas)	$ 11.12	$ 2.18	$ 1.51	$ 5.10	$ 4.52	$ 5.26	$ 1.87	3.11	$ 8.18	$ 1.71	$ 0.80	$ -	$ 17.82	$ 42.25	$ 7.60	**$ 49.85**
Pressure Washer 5 gpm 2200 psi	$ 0.21	$ 0.04	$ 0.03	$ 0.34	$ 0.09	$ 0.52	$ 0.04	0.50	$ 1.32	$ 0.17	$ -	$ -	$ 2.05	$ 2.76	$ 0.50	**$ 3.25**
Pick-up Truck 3/4 ton 4X4	$ 2.66	$ 0.44	$ 0.37	$ 0.59	$ 0.54	$ 0.75	$ 0.52	3.14	$ 8.26	$ 0.79	$ 0.40	$ -	$ 10.72	$ 15.32	$ 2.76	**$ 18.08**
Pulling Unit - Truck 1.75 Ton 4X4	$ 4.06	$ 0.71	$ 0.72	$ 0.66	$ 0.88	$ 0.83	$ 0.85	6.88	$ 18.09	$ 1.66	$ 0.65	$ -	$ 22.08	$ 29.11		
Hoisting Unit - Hydraulic 18000#	$ 4.91	$ 0.90	$ 0.78	$ 1.46	$ 1.32	$ 1.80	$ 1.52	-	$ -	$ 0.46	$ -	$ -	$ 3.78	$ 13.15		
Pulling Unit Total	$ 8.97	$ 1.61	$ 1.50	$ 2.12	$ 2.20	$ 2.63	$ 2.37	6.88	$ 18.09	$ 2.12	$ 0.65	$ -	$ 25.86	$ 42.26	$ 7.61	**$ 49.87**
MIT Truck - 1.75 Ton 4X4 Gas	$ 4.06	$ 0.71	$ 0.72	$ 0.66	$ 0.88	$ 0.83	$ 0.85	6.88	$ 18.09	$ 1.66	$ 0.65	$ -	$ 22.08	$ 29.11	$ 5.24	**$ 34.35**
Mobile Mixer Trailer Mounted - Cementer - Grout mixer pumper	$ 5.86	$ 1.12	$ 1.07	$ 4.16	$ 1.68	$ 5.48	$ 1.85	2.02	$ 5.41	$ 0.85	$ 0.40	$ -	$ 13.99	$ 27.88	$ 5.02	**$ 32.90**
GooseNeck Trailer 3 Axle - fixed	$ 2.85	$ 0.76	$ 0.45	$ 1.42	$ 0.88	$ 1.64	$ 1.22	-	$ -	$ 0.29	$ 2.24	$ -	$ 5.39	$ 11.75	$ 2.12	**$ 13.87**
GEHL DL-8 Rough Terrain Lift Truck	$ 8.35	$ 1.88	$ 1.92	$ 5.06	$ 4.93	$ 5.28	$ 3.31	3.23	$ 8.66	$ 1.61	$ 1.43	$ -	$ 20.29	$ 42.43	$ 7.64	**$ 50.07**

Mine Unit Data

		Mine Unit-A	Mine Unit-B	Mine Unit-C	Mine Unit- C22	Mine Unit-C Haul Drifts	Mine Unit-D	Mine Unit- D Ext	Mine Unit E	Mine Unit F	Mine Unit H	Mine Unit I	Mine Unit J
				wells added for restoration no increase in affected volume									
Total number of production wells		0	141	198	0	0	49	30	129	459	204	125	118
Total number of injection wells		0	224	393	0	0	102	67	240	873	316	236	240
Total number of monitor wells		1	97	97	0	0	38	20	86	149	81	39	57
Total Pumps Installed (based on Inventory + pojected adds)		1	97	224			55	50	215	149	144	159	179
Flare Factor		2.94	2.94	2	2	0	2.5	2.5	2.6	2	2.4	2.5	2.5
Wellfield Area (ft2)		151,900	690,900	1,067,056	325,000	0	326,750	201,509	971,941	3,431,990	1,222,583	1,146,959	1,148,680
Wellfield Area (acres)		3.49	15.86	24.50	7.46	0.00	7.50	4.63	22.31	78.79	28.07	26.33	26.37
Affected Ore Zone Area (ft2)		151,900	690,900	1,067,056	325,000	0	326,750	201,509	971,941	3,431,990	1,222,583	1,146,959	1,148,680
Avg. Completed Thickness		15.0	15.0	16.0	15.0	0.0	17.0	17.0	16.0	16.0	16.0	20.0	15.0
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
Affected Volume (ft3)		6,698,790	30,468,690	34,145,792	9,750,000	0	13,886,875	8,564,133	40,432,746	109,823,680	46,947,187	57,347,950	43,075,500
Kgallons per Pore Volume		13,529	61,535	68,961	19,691	0	28,046	17,296	81,658	221,800	94,815	115,820	86,995
Number of Patterns in Unit(s)													
	Current	0	141	190	0	0	43	30	119	459	154	125	118
	Estimated next report	0	0	8	0	0	6	0	10	0	50	0	0
	Total Estimated	0	141	198	0	0	49	30	129	459	204	125	118
Number of Wells in Unit(s)													
Production Wells					Wells included in MU-C								
	Current	0	141	190	0	0	43	30	119	459	154	125	118
	Estimated next report	0	0	8	0	0	6	0	10	0	50	0	0
	Total Estimated	0	141	198	0	0	49	30	129	459	204	125	118
Injection Wells													
	Current	0	224	343	0	0	74	67	212	873	316	236	240
	Estimated next report	0	0	50	0	0	28	0	28	0	0	0	0
	Total Estimated	0	224	393	0	0	102	67	240	873	316	236	240
Monitor and Restoration Wells													
	Current	1	97	97	0	0	38	20	86	149	81	39	57
	Estimated next report	0	0	0	0	0	0	0	0	0	0	0	0
	Total Estimated	1	97	97	0	0	38	20	86	149	81	39	57
Number of Wells per Wellfield		1	462	688	0	0	189	117	455	1481	601	400	415
Total Number of Wells		4809											
Average Well Depth (ft)		500	450	550	550	550	600	600	550	650	500	650	540
Average Diameter of Casing (inches)		5	5	5	5	5	5	5	5	5	5	5	5
Delineation Holes Estimated Next Report Period		0	0	0	0	0	0	0	0	0	0	0	0
Length of Fencing (ft)		0	0	18694	0	0	14060	0	18426	29540	9680	0	9977
Number of Deep Disposal Wells	3												

Electrical Costs

	2008 Actual	
Power cost	$0.0478	kwHr
Kilowatt to Horsepower	0.746	Kw/HP
Horsepower per gallon per minute	0.167	HP/gpm

Labor Rates

Latest Available, Wyoming, Mountain States Employers Council, July, 2009

		Inc 42% benefits (i.e., overhead)	
Environmental Manager/RSO	$45.43	$64.51	hour
Restoration Manager/Hydrologist	$32.21	$45.74	hour
Operator	$22.67	$32.19	hour
Laborer	$15.50	$22.01	hour
Engineer	$32.21	$45.74	hour
Radiation/Environmental Engineering Technician	$18.92	$26.87	hour
2,080 working hours in a year	173	hours per month	

Chemical Costs

	2010 Actual (includes profit/overhead)	
Antiscalant for RO	$16.19	gal
Sodium Sulfide	$0.38	pound
Methanol	$2.43	gal
Cement	$5.94	sack
Bentonite Tubes	$2.90	tube
Plug Gel	$7.20	sack
Well Cap - per guideline 12	$7.50	each
Hydrochloric Acid	$0.16	pound

Analytical Costs

	2010 Actual (includes profit/overhead)	
Guideline 8 (contract lab adjusted for current contract cost)	$337.00	analysis
6 parameter (contract lab) Est Rate (CPI)	$100.00	analysis
Other (radon, bio, etc.) Est Rate (CPI)	$1,600.00	month

Capital Program Costs
Restoration

				$0
RO Unit	ea	2	$500,000.00	$1,000,000
Disposal Well Transmission Lines				$250,000
TOTAL Capital Costs				$1,250,000

Note: profit as used in this spreadsheet, indicates profit to the third party.

Equipment Costs (includes profit and overhead)

Equipment	*Base Rental*	*Labor Costs*	*Total ($/hr)*
Cat 924G Loader - 2.25 cu yd bucket	$43.93	N/A	$43.93
Cat 416 Backhoe	$25.42	N/A	$25.42
Shredder	$20.52	N/A	$20.52
Cat D8N Bulldozer	$141.77	N/A	$141.77
Pulling Unit with Operator	$49.87	$32.19	$82.06
MIT Unit with Operator	$34.35	$32.19	$66.54
GEHL DL-8 Rough Terrain Lift Truck	$50.07	N/A	$50.07
Drill Rig (workover, repair, P&A) with all labor, water	$200.00	inc	$200.00
Goose Neck Trailer	$13.87	N/A	$13.87
Manlift	$49.85	N/A	$49.85
Cementer	$32.90	N/A	$32.90
Crane with operator	$135.31	$32.19	$167.50
Cat 320C L Trackhoe - 1.5 cu yd bucket	$79.68	N/A	$79.68
Concrete Jaws Labounty - CP-60	$15.54	N/A	$15.54
Pick-up Truck 3/4 ton 4X4	$18.08	N/A	$18.08
Hose Reel	$62.50	N/A	$62.50
Bobcat S250 Skid Steer Loader	$21.23	N/A	$21.23
Cat 14H Grader - 14' Blade	$100.86	N/A	$100.86
Cat 615C Elevating Scarper	$139.76	N/A	$139.76

Basis:
Drill rig based on current 2010 contracts
Equipment rates based on Cost Reference Guide - Equipment Watch 2010 updated addition - see UC - Equip Cost Tab

Waste Disposal Costs (includes profit/overhead)

Waste Form	*Fee*		*Load Correction Factor (Tons/Yd3)*	*Fee per Cubic Yard*	*Transport Cost*		*Total Transportation and Disposal Cost*	
Soil, Concrete, Bulk Byproduct Material	$185.19	per Ton	0.54	$100.00	$41.00	per Yd3	$141.00	per Yd3
							$5.22	per ft3
Unpackaged Bulk Byproduct Material (e.g., pipe)	$707.15	per Ton	0.42	$297.00	$41.00	per Yd3	$338.00	per Yd3
							$12.52	per ft3
Solid Waste (landfill)	$0.00827	per Lb			Incl.	per Lb	$0.00827	per Lb
Solid Waste (landfill)	$133.75	per Load			Incl.	per Load	$133.75	per Load
Void Factor (for disposal)	1.25							

Load Correction Factors - difference between solid material and when it is broken because of air space between the pieces of material, the coarser the material the lower the load factor (or the finer the material the higher the factor). The table below shows some examples of load factors for several common materials, including concrete. These factors are from the Caterpillar Performance Handbook and the Engineering Pocket Reference Guide.

Material	Pounds/CY Solid (bank)	Pounds/CY Broken (Loose)	% Dif	Load Factor
Granite	4536	2781	39%	0.61
Limestone	4401	2619	40%	0.60
Sandstone	3915	2538	35%	0.65
Concrete	3996	2176	46%	0.54
Sand & gravel	2700	2400	11%	0.89

Guideline No. 12 Unit Costs (includes profit)

Paragraph 12, Miscellaneous (Administrative, Overhead and Contingency)
Extrapolated percentage based on numbers provided 15 percent

Task	Cost per unit	Regional Cost Adjustmen	Overhead (10%)	Adjusted Cost per Unit	
App K, Cost Estimates for Demolition and Removal of Railroad Spurs and Facilities Buildings					
Mixture of Types	$0.24 ft3	0.974	$0.02	$0.258	ft3
Explosive Demolition, Concrete or Steel	0.22 ft3	0.974	$0.02	$0.236	ft3
Disposal (Average)	8.41 cy	0.974	$0.84	$9.032	cy
City Landfill Dump Charges	$95.00 ton	0.974	$9.50	$102.030	ton
Concrete Footings and Foundations					ft2
6" Thick with Rebar	4.73 ft2	0.974	$0.47	$5.080	ft2
Footings - 2' Thick, 3' Wide	16.85 lin. ft.	0.974	$1.69	$18.097	lin. ft.
Concrete Disposal Off-Site	8.41 cy	0.974	$0.84	$9.032	cy
App C, Calculations for Moving Materials with a Caterpillar 637G Push-Pull Scraper Fleet		Operating Cost per bank (in situ) cubic yards			
One-Way Distance 500 feet, 0% grade		$0.994	$0.10	$1.093	bcy
One-Way Distance 1,000 feet, 0% grade		$1.187	$0.12	$1.306	bcy
One-Way Distance 2,000 feet, 0% grade		$1.538	$0.15	$1.692	bcy
One-Way Distance 6,500 feet, 5% grade		$3.170	$0.32	$3.487	bcy
App E, Calculations for Moving Material with a Caterpillar D9R Dozer		Operating Cost per linear cubic yard			
Distance 50 feet		$0.1180	$0.01	$0.130	lcy
App H, Cost Estimates for Handling Wire Fencing and Electrical Power Lines					
Fencing Removal		$0.5000	$0.05	$0.55	linear foot
App I, Cost Estimate for Ripping Asphalt Using a Caterpillar D9R Dozer		Operating Cost			
		$746.62	$74.66	$821.28	per acre
App H, Cost Estimate for Ripping Overburden Using a Caterpillar D10R Dozer		Operating Costs			
	0.27 acre/hour	$282.99	$28.30	$311.29	per hour
				$1,152.92	per acre
App L, Abandonment and Sealing of Cased Drill Holes and Monitor Wells					
Site Grading		$30.00	$3.00	$33.00	per site
Seeding		$1.00	$0.10	$1.10	per site

Seeding Unit Costs (includes profit/overhead)

Discing / Seeding/Topsoil Costs	2010 Actual	
Seed cost	$65.99	per acre
Hay Mulch Crimped and Soil Amendment	$540	per acre
Seed and Mulch	$606	per acre
Depth of Topsoil	0.5	feet