ADDENDUM A:

NICHOLS RANCH ISR PROJECT SURETY ESTIMATE

Revised June 2010
November 2007

Uranerz
ENERGY CORPORATION

Surety Estimate
First Year of Operation
Nichols Ranch In-Situ Recovery Project
Uranerz Energy Corporation

Total Restoration and Reclamation Cost Estimates

No.	Cost Item	Cost
1	GROUNDWATER RESTORATION COST	$2,955,240
2a	PLANT EQUIPMENT REMOVAL AND DISPOSAL COST	$213,150
2b	BUILDING DEMOLITION AND DISPOSAL COST	$911,292
3	SOIL REMOVAL & DISPOSAL COST	$234,300
4	TOTAL WELL ABANDONMENT COST	$319,234
5	WELLFIELD EQUIPMENT REMOVAL & DISPOSAL COST	$335,643
6	TOPSOIL REPLACEMENT & REVEGETATION COST	$313,978
7	MISCELLANEOUS RECLAMATION COST	$3,335
	Subtotal Restoration and Reclamation Cost Estimate	$5,286,171
	Subtotal	$5,286,171
	Administration,Overhead and Contingency (25%)	$1,321,543
	Total	$6,607,714
	TOTAL CALCULATED IN 2010 DOLLARS	$6,607,714

US DEPT. of COMMERCE PRODUCER PRICE INDEX ADJUSMENT 2007 to 2010 **5.78%**
US DEPT. of COMMERCE PRODUCER PRICE INDEX ADJUSMENT 2009 to 2010 **5.31%**

Note: Unit costs presented in the various worksheets in this estimate originally incorporated 2007 values. Subsequently, where available, unit costs from the latest version (2009) of WDEQ Guideline 12, App K were included. All unit costs, whether 2007 or 2009, were adjusted by the Producer Price Index factor for the respective data. Note that PPI was used rather than Consumer Price Index as identified during WDEQ review, as changes in producer prices are more appropriate for industrial applications than a consumer price index.

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Nichols Ranch ISR Project
Uranerz Energy Corporation

Worksheet 1, No. I --
GROUNDWATER RESTORATION

Cost Item	Mining Unit Nichols #1	Notes
Technical Assumptions		
Wellfield Area (Ft^2)	1,551,650	
Wellfield Area (Acres)	35.62	66.21 Ac at Nichols, 45.56 at Hank per URZ permit
Affected Ore Zone Area (Ft^2)	1,551,650	
Avg Completed Thickness (Ft)	7.27	
Factor for Flare	1.45	
Affected Volume:	16,356,717	
Porosity	0.3	
Gallons per Cubic Foot	7.48	
Gallon per Pore Volume	36,704,474	
Number of Wells in Unit(s)		
Recovery Wells	233	
Injection Wells	259	
Monitor Wells	33	
Average Well Spacing (Ft)	100	
Average Well Depth (Ft)	550	
I Groundwater Sweep		
A. Plant & Office		
Operating Assumptions:		
Flowrate (gpm)	50	
PV's Required	1.00	
Total Gallons for Treatment	36,704,474	
Total Kgals for Treatment	36,704	
Cost Assumptions:		
Power		
Avg Connected Hp	15	
Kwh's/Hp	0.9325	
$/Kwh	0.05	$.02 plus demand charges per quote
Gallons per Minute	50	
Gallons per Hour	3000	
Cost per Hour	$0.74	
Cost per Kgal ($)	$0.247	
Chemicals		
Barium Chloride ($/Kgals)	$0.043	Costs from operating ISR facility experience (Cogema)
Antiscalent ($/Kgals)	$0.000	Costs from operating ISR facility experience (Cogema)
Elution ($/Kgals)	$0.105	Costs from operating ISR facility experience (Cogema)
Repair & Maintenance ($/Kgals)	$0.065	Costs from operating ISR facility experience (Cogema)
Analysis ($/Kgals)	$0.173	Costs from operating ISR facility experience (Cogema)
Total Cost per Kgal	$0.63	
Total Treatment Cost	$23,223	
Utilities		
Power ($/Month)	1,904	
Propane ($/Month)	846	
Time for Treatment		
Minutes for Treatment	734,089	
Hours for Treatment	12,235	
Days for Treatment	510	
Average Days per Month	30	
Months for Treatment	17.0	
Years for Treatment	1.42	
Utilities Cost ($)	$46,735	
TOTAL PLANT & OFFICE COST	**$69,958**	
B. WELLFIELD		
Cost Assumptions:		
Power		
Avg Flow/Pump (gpm)	1	
Avg Hp/Pump	1.5	
Avg # of Pumps Required	50	
Avg Connected Hp	75	
Kwh's/Hp	0.9325	
$/Kwh	0.05289	
Gallons per Minute	50	
Gallons per Hour	3000	
Costs per Hour ($)	$3.70	
Costs per Gallon ($)	$0.0012	
Costs per Kgal ($)	$1.23	
Repair & Maintenance ($/Kgals)	$0.017	
Total Cost per Kgal	$1.250	
TOTAL WELLFIELD COST	$45,878	
TOTAL GROUNDWATER SWEEP COST	**$115,836**	

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Worksheet 1, No. II
GROUNDWATER RESTORATION

Cost Item	Mining Unit Nichols #1	Notes
II REVERSE OSMOSIS		
A. PLANT & OFFICE		
Operating Assumptions:		
Flowrate (gpm)	50	
PV's Required	6.00	
Total Gallons for Treatment	220,226,842	
Total Kgals for Treatment	220,227	
Feed to RO (gpm)	50	
Permeate Flow (gpm)	40	
Brine Flow (gpm)	10	
Average RO Recovery	80%	
Cost Assumptions:		
Power		
Avg Connected Hp	20	
kWh/Hp	0.9325	
$/Kwh	0.05289	$.02 plus demand charges per quote
Gallons per Minute	50	
Gallons per Hour	3000	
Cost per Hour ($)	$0.99	
Cost per Gallon ($)	$0.0003	
Cost per Kgal ($)	$0.33	
Chemicals		
Sulfuric Acid ($/Kgals)	$0.080	Costs from operating ISR facility experience (Cogema)
Caustic Soda ($/Kgals)	$0.117	Costs from operating ISR facility experience (Cogema)
Hydrochloric Acid ($Kgals)	$0.010	Costs from operating ISR facility experience (Cogema)
Hydrochloric Sulfide ($Kgals)	$0.322	Costs from operating ISR facility experience (Cogema)
Repair & Maintenance ($Kgals)	$0.295	Costs from operating ISR facility experience (Cogema)
Sampling & Analysis ($/Kgals)	$0.173	Costs from operating ISR facility experience (Cogema)
Total Cost per Kgal ($)	$1.33	
Total Pumping Cost ($)	$292,088	
Utilities		
Power ($/Month)	1,904	
Propane ($/Month)	846	
Time for Treatment	0	
Minutes for Treatment	4,404,537	
Hours for Treatment	73,409	
Days for Treatment	3,059	
Average Days per Month	30	
Months for Treatment	101	
Utilities Cost ($)	$276,720	
TOTAL PLANT & OFFICE COST	**$568,808**	
B. WELLFIELD		
Cost Assumptions:		
Power		
Avg Flow/Pump (gpm)	1	
Avg Hp/Pump	1.5	
Avg # of Pumps Required	72.5	
Avg Connected Hp	108.75	
Kwh's/Hp	0.9325	
$/Kwh	0.053	
Gallons per Minute	72.5	
Gallons per Hour	4350	
Costs per Hour ($)	$5.36	
Costs per Gallon ($)	$0.0012	
Costs per Kgal ($)	$1.23	
Repair & Maintenance ($/Kgals)	$0.017	
Total Cost per Kgal	$1.250	
TOTAL WELLFIELD COST	**$275,267**	
TOTAL REVERSE OSMOSIS COST	**$844,075**	

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Worksheet 1, No III --
GROUNDWATER RESTORATION

Cost Item	Mining Unit Nichols #1	Notes
III Deep Disposal Well		
Operating Assumptions:		
Total Disposal Requirement		
RO Brine Total Gallons	44,045,368	
RO Brine Total Kgallons	44,045	
Brine Concentration Factor	1	
Total Concentrated Brine (Gals)	44,045,368	
Months of RO Operation	17.0	
Average Monthly Reqm't (Gallons)	2,592,000	
Average Brine Flow (gpm)	60.0	
Total DDW Disposal (Gallons)	44,045,368	
Total DDW Disposal (Kgallons)	44,045	
Cost Assumptions:		
Avg Connected Hp	20	
Kwh's/Hp	0.9325	
$/Kwh	0.053	$.02 plus demand charges per quote
Gallons per Minute	60.0	
Gallons per Hour	3600	
Cost per Hour ($)	$0.99	
Cost per Gallon ($)	$0.0003	
Cost per Kgal ($)	$0.27	
Chemicals		
RO Antiscalent ($/Kgals)	$0.203	Costs from operating ISR facility experience (Cogema)
WDW Antiscalent ($/Kgals)	$0.239	Costs from operating ISR facility experience (Cogema)
Sulfuric Acid ($/Kgals)	$0.296	Costs from operating ISR facility experience (Cogema)
Corrosion Inhibitor	$0.230	Costs from operating ISR facility experience (Cogema)
Algacide	$0.085	Costs from operating ISR facility experience (Cogema)
Other	$0.000	Costs from operating ISR facility experience (Cogema)
Repair & Maint. ($/Kgals)	$0.243	Costs from operating ISR facility experience (Cogema)
Total Cost per Kgal	$1.570	
TOTAL DEEP DISPOSAL WELL COST	**$69,143**	

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Worksheet 1, Nos. IV & V --
GROUNDWATER RESTORATION

Cost Item	Mining Unit Nichols #1	Labor Cost Factors			Notes
IV STABILIZATION MONITORING					
Operating Assumptions:					
Time of Stabilization (mos)	17.0				
Frequency of Analysis (mos)	3				
Total Sets of Analysis	6				
Cost Assumptions:					
Power ($/Month)	$0				No add'l power required to sample
Total Power Cost	$0				
Quantity of Monitoring Wells	12				
Cost per Event	$349				
Sampling & Analysis (each set)	$4,189				12 Monitoring Wells @ $330 per event
Total Sampling & Analysis Cost ($)	$25,133				
Utilities ($/Month)	$0				No add'l utilities required to sample
Total Utilities Cost ($)	$0				
TOTAL STABILIZATION COST	$25,133				
V LABOR					
Cost Assumptions:	No.	Cost/Hour	Hours/Year	Cost	
Crew:					
1. Supervisor	1	29	2080	$60,320	
2. Operators	4	22	2080	$183,040	
3. Maintenance	2	20	2080	$83,200	
4. Vehicles	2	10	2080	$41,600	
Cost per Year				$368,160	
Time Required - Years	5.02				
TOTAL RESTORATION LABOR COST	**$1,848,163**				

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Worksheet 1, Nos. VI, VII & Summary --
GROUNDWATER RESTORATION

Cost Item	Mining Unit Nichols #1	Notes
VI RESTORATION CAPITAL REQUIREMENTS		
I Deep Disposal Well(s)	1	
II Plug and Abandon DDW	$52,890	
III Reverse Osmosis Unit	$0	Already in Processing Plant
TOTAL RESTORATION CAPITAL REQUIREMENTS	**$52,890**	
VII RESTORATION OF EXCURSION WELLS		
I Shallow Sand Well(s)		
Total Wells in Excursion	0	Assume no excursions during Year 1
Cost of Clean-Up	$0	
Total Shallow Sand Cleanup	$0	
II Ore Zone Wells		
Total Wells in Excursion	0	
Cost of Clean-Up	$0	
Total Ore Zone Cleanup	$0	
III Deep Zone Wells		
Total Wells in Excursion	0	
Cost of Clean-Up	$0	
Total Deep Zone Cleanup	$0	
TOTAL WELLFIELD COST		
TOTAL EXCURSION CLEANUP COST	**$0**	
SUMMARY:		
I GROUNDWATER SWEEP	$115,836	
II REVERSE OSMOSIS	$844,075	
III WASTE DISPOSAL WELL	$69,143	
IV STABILIZATION	$25,133	
SUB TOTAL	$1,054,186	
V LABOR	$1,848,163	
VI CAPITAL	$52,890	
VII EXCURSION CLEANUP	$0	
TOTAL GROUNDWATER RESTORATION COST	**$2,955,240**	

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Worksheet 2 a
PLANT EQUIPMENT REMOVAL AND DISPOSAL

Cost Item	Nichols Mine Unit							Notes
	Office & Laboratory	Main Process Building	Maintenance Building	Resin + Sand Filter Media	External Tanks	Header Houses	Sub Total	
Volume (Yds^3)	40	200	45	110	109	240		add 4 add'l 17,000 gal tanks. 84 cy each crushed to 21 cy.
Quantity per Truck Load (Yds^3)	20	20	20	20	20	20		
Number of Truck Loads	2	10	2.25	5.5	5.45	12		
I Decontamination Cost								
Decontamination Cost ($/Load)	634.68	634.68	634.68	634.68	634.68	634.68		
Percent Requiring Decontamination	20%	100%	20%	0%	50%	100%		
Total Cost	$254	$6,347	$286	$0	$1,730	$7,616		
II Dismantle and Loading Cost								
Cost per Truck Load ($)	$846	$846	$846	$846	$846	$846		
Total Cost	$1,692	$8,462	$1,904	$4,654	$4,612	$10,155		
III Oversize Charges								
Percent Requiring Permits	40%	40%	40%	0%	50%	40%		
Cost per Truck Load ($)	$423	$423	$423	$423	$423	$423		
Total Cost	$338	$1,692	$381	$0	$1,153	$2,031		
IV Transportation & Disposal								
A. Landfill								
Percent to be Shipped	90%	80%	90%	0%	100%	80%		
Distance (Miles)	75	75	75	75	75	75		
Transport Cost ($/Ton-Mile)	$0.16	$0.16	$0.16	$0.16	$0.16	$0.16		
Transportation Cost	$463	$2,056	$521	$0	$1,401	$2,468		
Disposal Fee per Cubic Yard	$65	$65	$65	$65	$65	$65		
Disposal Cost ($)	$2,323	$10,324	$2,613	$0	$7,033	$12,389		
Total Cost	$2,786	$12,380	$3,134	$0	$8,434	$14,857		
B. Licensed Site								
Percent to be Shipped	10%	20%	10%	100%	0%	20%		
Distance (Miles)	160	160	160	160	160	160		
Transport Cost ($/Ton-Mile)	$0.16	$0.16	$0.16	$0.16	$0.16	$0.16		
Transport Cost	$691	$6,912	$778	$19,008	$0	$8,294		
Disposal Cost ($/Ton)	$370	$370	$370	$370	$370	$370		
Quantity per Truck Load (Yds^3)	20	20	20	20	20	20		
Quantity per Truck Load (Tons)	21.6	21.6	21.6	21.6	21.6	21.6		Based on avg 80lbs per cf
Disposal Cost	$1,599	$15,994	$1,799	$43,983	$0	$19,193		
Total Cost	$2,291	$22,906	$2,577	$62,991	$0	$27,487		
Total Cost	$5,076	$35,286	$5,711	$62,991	$8,434	$42,344		
TOTAL COST NICHOLS RANCH MINE	**$7,361**	**$51,788**	**$8,281**	**$67,646**	**$15,929**	**$62,146**	**$213,150**	

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Worksheet 2 b --
BUILDING DEMOLITION AND DISPOSAL

Cost Item	Nichols Mine Unit					Notes
	Office & Laboratory	Main Process Building	Maintenance Building	Header Houses	Sub Total	
STRUCTURE DEMOLITION & DISPOSAL						
Structural Character						
Demolition Volume (Ft^3)	90,000	1,188,000	144,000	3,000		
Unit Cost of Demolition ($/ Ft^3)	$0.257	$0.257	$0.257	$0.257		Demolition Unit Cost per WDEQ Guideline No.12, App. K ($/ft3)
Total Demolition Cost	$23,126	$305,264	$37,002	$771		
Weight of Disposal Material in Tons	41	535	65	1		
Factor for Gutting	0.1	0.3	0.2	0.25		
Cost for Gutting ($)	$2,313	$91,579	$7,400	$193		
Quantity per Truck Load (Ton)	21.6	21.6	21.6	21.6		
Number of Truckloads	1.9	24.8	3.0	0.1		
Distance to Landfill	75	75	75	75		
Unit Cost (Ton-Mile)	$0.16	$0.16	$0.16	$0.16		
Transportation Cost	$481.96	$6,361.87	$771.14	$16.07		
Disposal Cost ($/ton)	$102.89	$102.89	$102.89	$102.89		Demolition Unit Cost per WDEQ Guideline No.12, App. K, Adjusted Cost per Unit
Disposal Cost ($)	$4,166.96	$55,003.86	$6,667.13	$138.90		
TOTAL STRUCTURE DEMO & DISPOSAL	**$30,088**	**$458,209**	**$51,840**	**$1,119**	**$541,256**	
CONCRETE DECONTAMINATION, DEMO & DISPOSAL						
Area	9000	29700	8000	3000		12 header houses @250 sq ft each
Average Thickness (Ft)	0.5	0.5	0.5	0.5		
Volume (Ft^3)	4500	14850	4000	1500		
Weight of Disposal Concrete Assuming 145lbs/cubic foot	652,500	2,153,250	580,000	217,500		
Weight of Disposal in Tons	326	1077	290	109		
Percent Requiring Decontamination	0%	100%	0%	10%		
Volume Decontaminated (Ft^2)	0	14,850	0	150		
Decontamination ($/$Ft^2$)	$0.301	$0.301	$0.301	$0.301		Decontamination by Steam Cleaning (137.5 ft2/hr) ECHOS Unit Cost Book
Decontamination Cost	$0	$4,469	$0	$45		
Demolition ($/$Ft^2$)	$5.05	$5.05	$5.05	$5.05		Demolition Unit Cost per WDEQ Guideline No.12, App. K, Adjusted Cost per Unit
Demolition Cost	$45,494	$150,130	$40,439	$15,165		
Transportation & Disposal						
A. Onsite Disposal						
Percent to be Disposed Onsite	100%	75%	100%	100%		
Transportation Cost	$0	$0	$0	$0		
Disposal Cost per Cubic Yard ($)	$8.49	$8.49	$8.49	$8.49		Demolition Unit Cost per WDEQ Guideline No.12, App. K, Adjusted Cost per Unit
Disposal Cost ($)	$1,415	$4,668	$1,257	$472		
B. Licensed Site						
Percent to be Shipped	0%	25%	0%	0%		
Distance (Miles)	160	160	160	160		
Unit Cost (Ton-Mile)	$0.16	$0.16	$0.16	$0.16		
Transportation Cost ($)	$0	$6,833	$0	$0		
Disposal Cost ($/Ton)	$370	$370	$370	$370		
Disposal Cost ($)	$0	$99,650	$0	$0		
TOTAL TRANSPORT & DISPOSAL COST	**$46,909**	**$265,750**	**$41,697**	**$15,681**	**$370,037**	
TOTAL BUILDING DEMO & DISPOSAL COST	**$76,996**	**$723,959**	**$93,537**	**$16,800**	**$911,292**	

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Worksheet 3 b --
SOIL REMOVAL & DISPOSAL

	Nichols Mine Unit					
Cost Item	Office & Laboratory	Main Process Building	Maintenance Building	Header Houses	Sub Total	**Notes**
SOIL EXCAVATION, TRANSPORT & DISPOSAL						
Removal Under Building Footprints						
Excavation, Front End Loader	$52	$172	$46	$17		$89.04/hr per WDEQ Guideline12 and 150 cy/hr
Quantity to be Shipped (Ft^3)	2,250	7,425	2,000	750		Assume removal of 3" of Contaminated Soil under Primary Areas, Disposal at a Licensed facility (ft3)
Weight in Tons	112.5	371.25	100	37.5		
Distance (Miles)	160	160	160	160		
Transportation Unit Cost (Ton/Mile)	$0.16	$0.16	$0.16	$0.16		
Transportation Cost	$2,856	$9,425	$2,539	$952		
Disposal Fee ($/Ton)	$370	$370	$370	$370		
Disposal Cost ($)	$41,651	$137,448	$37,023	$13,884	$230,005	
Removal NPDES Pts.						
Quantity to be Shipped (Ft^3)	0	0	0	0		Zero discharge facility
Weight in Tons	0	0	0	0		
Distance (Miles)	160	160	160	160		
Transportation Cost Ton/Mile ($)	$0.16	$0.16	$0.16	$0.16		
Transportation Cost	$0	$0	$0	$0		
Disposal Fee ($/Ton)	$370	$370	$370	$370		
Disposal Cost ($)	$0	$0	$0	$0		
Total NPDES Removal Cost	$0	$0	$0	$0	$0	
TOTAL SOILS EXC., TRANSPORT & DISPOSAL	**$41,651**	**$137,448**	**$37,023**	**$13,884**	**$230,005**	
RADIATION SURVEY						
Area Required (Acres)	0.21	0.68	0.18	0.07		
Survey Cost ($/Acre)	$635	$635	$635	$635		
Number of Structures	1	1	1	12		
Cost per Structure ($)	$238	$238	$238	$238		
TOTAL RAD SURVEY COST	**$369**	**$671**	**$355**	**$2,900**	**$4,294**	
TOTAL SOIL REMOVAL & DISPOSAL COST	**$42,020**	**$138,119**	**$37,378**	**$16,783**	**$234,300**	

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Worksheet 4 --
Well Abandonment

Cost Item	Mining Unit Nichols #1	Notes
Number of Wells	515	Includes injection, recovery and monitor wells.
Average Depth (ft)	550	
Average Diameter (inch)	5	
Area of Annulus (ft^2)	0.1364	
Materials		
Bentonite Chips Required (Ft^3/Well)	40.9	300 feet of clay above water
Bags of Chips Required/Well	55	
Cost per Bag ($)	$6.82	
Cost/Well Bentonite Chips ($)	$375	
Gravel Fill Required (Ft^3/Well)	34.1	Avg depth less 300 feet filled w/ gravel
Cost of Gravel/Yd^3 ($)	$21	
Cost/Well Gravel Fill ($)	$27	
Cement Cone/Markers Req'd/Well	1	
Cost of Cement Cones Markers ($)	$6.35	
Total Materials Cost per Well	$408	
Labor		
Hours Required per Well	2	
Labor Cost per Hour	$74	
Total Labor Cost per Well ($)	148.092	
Equipment Rental		
Hours Required per Well	1	
Backhoe w/Operator Cost/Hr ($)	$63	
Total Equipment Cost per Well ($)	$63	
Total Cost per Well ($)	$620	
TOTAL WELL ABANDONMENT COST ($)	**$319,234**	

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Worksheet 5, No. I --
WELLFIELD EQUIPMENT REMOVAL & DISPOSAL

Cost Item	Mining Unit Nichols #1	Notes
I Wellfield Piping		
A. Removal		
Total Number of Wells	482	Includes total injection and recovery wells
Feeder lines from HH to Injection wells 1" HDPE (Ft)	71,560	From Preliminary Design
Pregnant solution feeder lines from production wells to HH 1" HDPE (Ft)	50,427	From Preliminary Design
Total Quantity of 1" HDPE Piping (Ft)	121,987	
Plastic Volume (Ft^3)	400.05	Thickness Based on WL Plastics Corp PSI 160 (R1=.05479', R2=.04425')
Chipped Volume Assuming 30% Void Space (Ft^3)	520.07	
Disposal Weight (tons)	20.80	Year 1 buildout only to include Nichols 1
Quantity per Truck Load (Tons)	21.6	Based on 20 cy per truckload and 80lbs per cf
Total Number of Truck Loads	1	
Total Length of Feeder line Trench (ft)	40,765	Includes Shared Trenches
Pipeline Removal Unit Cost ($/ft of trench)	$2.38	Quote - Jordan Construction
Total Cost for Trunkline Removal ($)	$97,022	
Total Cost - Removal	$97,022	
B. Survey & Decontamination		
Percent Requiring Decontamination	0	No survey or decon needed. Total volume to low level disposal
Loads for Decontamination	0	
Cost for Decontamination ($/Load)	$635	
Cost for Decontamination ($)	$0	
C. Transport & Disposal		
1.) Landfill		
a. Transportation		
Percent to be Shipped	0%	
Loads to be Shipped	0	
Distance (Miles)	75	
Transportation Cost (Ton/Mile) ($)	$0.16	
Transportation Cost ($)	$0	
b. Disposal		
Disposal Fee per Yd^3	$65	
Yds^3 per Load	20	
Disposal Cost ($)	$0	
Total Cost - Landfill	$0	
2.) Licensed Site		
a. Transportation		
Percent to be Shipped	100%	
Loads to be Shipped	1	
Tons to be Shipped	20.80	
Distance (Miles)	160	
Transportation Ton/Mile ($)	$0.16	
Transportation Cost ($)	$528	
b. Disposal		
Disposal Fee per ton	$370	
Disposal Cost ($)	$7,702	
Total Cost - Licensed Site	$8,230	
Total Cost - Transport & Disposal	$8,230	
Total Cost - WF Piping Removal & Disposal	**$105,251**	

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Worksheet 5, No. II
WELLFIELD EQUIPMENT REMOVAL & DISPOSAL

Cost Item	Mining Unit Nichols #1	Notes
II Production Well Pumps		
A. Pump and Tubing Removal		
Number of Production Wells	233	
Cost of Removal ($/well)	$42	
Cost of Removal ($)	$9,859	
Number of Pumps per Truck Load	180	
Number of Truck Loads (Pumps)	1.29	
Weight of Pumps	21.29	Assume 20 T per truck
B. Survey & Decontamination (Pumps)		
Percent Requiring Decontamination	50%	
Loads for Decontamination	0.65	
Cost for Decontamination ($/Load)	$635	
Cost for Decontamination ($)	$411	
C. Tubing Volume Reduction & Loading		
Length per Well (Ft)	300	
Total Quantity (Ft^3)	229.2	Thickness Based on WL Plastics Corp PSI 160 (R1=.05479', R2=.04425')
Chipped Volume Assuming 30% Void Space (Ft^3)	298.0	
Cost of Removal ($/Ft)	$0.03	
Cost of Removal ($)	$9.52	
Quantity per Truck Load (Ft^3)	540	
Number of Truck Loads	0.42	
D. Transport & Disposal		
1.) Landfill		
a. Transportation		
Percent to be Shipped (Pumps)	50%	
Loads to be Shipped	0.6	
Distance (Miles)	75	
Transportation Ton/Mile ($)	$0.16	
Transportation Cost ($)	$166	
b. Disposal		
Disposal Fee per Yd^3	$65	
Yds^3 per Load	20	
Disposal Cost ($)	$835	
Total Cost - Landfill	$1,002	
2.) Licensed Site		
a. Transportation		
Percent to be Shipped (Pumps)	50%	
Percent to be Shipped (Tubing)	100%	
Loads to be Shipped	1.07	
Distance (Miles)	160	
Transportation Ton/Mile ($)	$0.16	
Transportation Cost ($)	$588	
b. Disposal		
Disposal Cost per Yd^3	$18.51	
Disposal Volume per Load (cy)	20	
Disposal Cost	$397	
Total Cost - Licensed Site	$984	
Total Cost - Transport & Disposal	$1,986	
Total Cost - Pump Removal & Disposal	**$12,265**	

Surety Estimate
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Worksheet 5, No. III
WELLFIELD EQUIPMENT REMOVAL & DISPOSAL

Cost Item	Mining Unit Nichols #1	Notes
III Buried Trunkline		
A. Removal		
Trunk lines from Resin Plant to HH 8" HDPE Pipe (Ft)	38,473	
Pregnant solution trunk lines form HH to Resin Plant 8" HDPE Pipe (Ft)	38,473	
Total Quantity of 8" HDPE Piping (Ft)	76,946	
Plastic Volume (Ft^3)	51,906	Thickness Based on WL Plastics Corp PSI 160 (R1=.7188', R2=.5494')
Chipped Volume Assuming 30% Void Space (Ft^3)	67,478	
Disposal Tons	320	8.315lb/ft per WL Plastics
Quantity per Truck Load (Tons)	21.6	
Total Number of Truck Loads	15	
Total Length of Trunkline Trench (ft)	38,473	
Pipeline Removal Unit Cost ($/ft of trench)	$2.38	Quote Jordan Construction
Total Cost for Trunkline Removal ($)	$91,568	
B. Survey & Decontamination		
Percent Requiring Decontamination	0	No survey or decon needed. Total volume to low level disposal
Loads for Decontamination	0	
Cost for Decontamination ($/Load)	$635	
Cost for Survey & Decontamination ($)	$0	
C. Transportation & Disposal		
1.) Landfill		
a. Transportation		
Percent to be Shipped	0%	
Loads to be Shipped	0	
Distance (Miles)	75	
Transportation Cost (Ton/Mile) ($)	$0.16	
Transportation Cost ($)	$0	
b. Disposal		
Disposal Fee per Yd^3	$65	
Yds^3 per Load	20	
Disposal Cost ($)	$0	
Total Cost - Landfill	$0	
2.) Licensed Site		
a. Transportation		
Percent to be Shipped	100%	
Loads to be Shipped	15	
Tons to be Shipped	319.90	
Distance (Miles)	160	
Transportation Ton/Mile ($)	$0.159	
Transportation Cost ($)	$8,121	
b. Disposal		
Disposal Fee per ton	$370	
Disposal Cost ($)	$118,438	
Total Cost - Licensed Site	$126,559	
Total Cost Transportation & Disposal	**$126,559**	
Total Cost - Buried Trunkline Removal & Disposal	**$218,127**	
TOTAL WELLFIELD EQUIPMENT REMOVAL & DISPOSAL COST	**$335,643**	

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Worksheet 6, No. I
TOPSOIL REPLACEMENT & REVEGETATION

	Mining Unit	
Cost Item	Nichols #1	**Notes**
I Process Plant and Office Building		
A. Topsoil Handling & Grading		
Affected Area (Acres)	5.2	Plant site is 475' by 475'
Average Affected Thickness (Ins)	12	
Topsoil Volume (Yds^3)	8,356	
Unit Cost ($/cy)	$5	Price from Dragstrip Soil Cover Project MT
Sub Total - Topsoil	$44,197	
B. Radiation Survey & Soil Analysis		
Unit Cost ($/Ac)	$635	
Sub Total - Survey & Analysis	$3,287	
C. Revegation		
Fertilizer ($/Ac)	$245.41	Price from Dragstrip Soil Cover Project MT
Seeding Prep & Seeding ($/Ac)	$240.12	Price from Dragstrip Soil Cover Project MT
Mulching & Crimping ($/Ac)	$105.78	Price from Dragstrip Soil Cover Project MT
Sub Total Cost/Acre	$591.31	
Sub Total Revegation	$3,063	
TOTAL PLANT AND OFFICE BUILDING TOPSOIL REPLACEMENT & REVEG COST	**$50,548**	

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Worksheet 6, Nos. II & III
TOPSOIL REPLACEMENT & REVEGETATION

Cost Item	Mining Unit Nichols #1	Notes
II Wellfields		
A. Topsoil Handling & Grading		
Affected Area (Acres)	22	Equals trench length times 12 feet wide
Average Affected Thickness (Inch)	12	
Topsoil Volume (Yds^3)	35,217	
Unit Cost - Haul/Place/Grading ($/cy)	$5.29	Price from Dragstrip Soil Cover Project MT
Sub Total - Topsoil	$186,261	
B. Radiation Survey & Soil Analysis		
Unit Cost ($/Ac)	$635	
Sub Total - Survey & Analysis	$13,854	
C. Spill Cleanup		
Affected Area (Acres)	0	
Affected Area (Ft^2)	0	
Affected Area Thickness (Ft)	0.25	
Affected Volume (Ft^3)	0	
Quantity per Truckload (Ft^3)	540	
Quantity to be Shipped (Loads)	0	
Distance (Miles)	160	
Transportation Cost (Ton/Mile) ($)	$0.16	
Transportation Cost ($)	$0	
Handling Cost ($/Load)	$212	
Handling Cost ($)	$0	
Disposal Fee ($/Ton)	$370	
Disposal Cost ($)	$0	
Sub Total - Spill Cleanup	$0	
D. Revegation		
Fertilizer ($/Ac)	$245.41	Price from Dragstrip Soil Cover Project MT
Seeding Prep & Seeding ($/Ac)	$240.12	Price from Dragstrip Soil Cover Project MT
Mulching & Crimping ($/Ac)	$105.78	Price from Dragstrip Soil Cover Project MT
Sub Total Cost/Acre	$591.31	
Sub Total Revegation	$12,907	
Sub Total - Wellfields	$213,023	
TOTAL WELLFIELDS COST	**$213,023**	
III Roads		
A. Topsoil Handling & Grading		
Affected Area (Acres)	5.17	3750 feet by 60 feet wide
Average Affected Thickness (Ins)	12	
Topsoil Volume (Yds^3)	8,333	
Unit Cost - Haul/Place/Grading ($/cy)	$5.29	Price from Dragstrip Soil Cover Project MT
Sub Total - Topsoil	$44,075	
B. Radiation Survey & Soil Analysis		
Unit Cost ($/Ac)	$635	
Sub Total - Survey & Analysis	$3,278	
C. Revegation		
Fertilizer ($/Ac)	$245	Price from Dragstrip Soil Cover Project MT
Seeding Prep & Seeding ($/Ac)	$240	Price from Dragstrip Soil Cover Project MT
Mulching & Crimping ($/Ac)	$106	Price from Dragstrip Soil Cover Project MT
Sub Total Cost/Acre	$591	
Sub Total Revegation	$3,054	
Sub Total - Roads	$50,408	
TOTAL ROADS COST	**$50,407.59**	

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Worksheet 6, Nos IV & V
TOPSOIL REPLACEMENT & REVEGETATION

Cost Item	Mining Unit Nichols #1	Notes
IV Other		
A. Topsoil Handling & Grading		
Affected Area (Acres)	0	
Average Affected Thickness (Ins)	3	
Topsoil Volume (Yds^3)	0	
Unit Cost - Haul/Place/Grading ($/Ac)	$5.29	Price from Dragstrip Soil Cover Project MT
Sub Total - Topsoil	$0	
B. Radiation Survey & Soil Analysis		
Unit Cost ($/Ac)	$635	
Sub Total - Survey & Analysis	$0	
C. Revegation		
Fertilizer ($/Ac)	$245.41	Price from Dragstrip Soil Cover Project MT
Seeding Prep & Seeding ($/Ac)	$240.12	Price from Dragstrip Soil Cover Project MT
Mulching & Crimping ($/Ac)	$105.78	Price from Dragstrip Soil Cover Project MT
Sub Total Cost/Acre	$591.31	
Sub Total Revegation	$0	
Sub Total - Other	$0	
TOTAL OTHER COST	**$0**	
V Remedial Action		
A. Topsoil Handling & Grading		
Affected Area (Acres)	0	Assume no excursions/spills
Average Affected Thickness (Ins)	3	
Topsoil Volume (Yds^3)	0	
Unit Cost - Haul/Place/Grading ($/cy)	$5.29	Price from Dragstrip Soil Cover Project MT
Sub Total - Topsoil	$0	
B. Radiation Survey & Soil Analysis		
Unit Cost ($/Ac)	$635	
Sub Total - Survey & Analysis	$0	
C. Revegation		
Fertilizer ($/Ac)	$245.41	Price from Dragstrip Soil Cover Project MT
Seeding Prep & Seeding ($/Ac)	$240.12	Price from Dragstrip Soil Cover Project MT
Mulching & Crimping ($/Ac)	$105.78	Price from Dragstrip Soil Cover Project MT
Sub Total Cost/Acre	$591.31	
Sub Total Revegation	$0	
TOTAL REMEDIAL ACTION	**$0**	
TOTAL TOPSOIL REPLACEMENT & REVEGETATION COST (Total of 7I through 7V)	**$313,978**	

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Worksheet 7, Nos I - VII
MISCELLANEOUS RECLAMATION

	Cost Item	Mining Unit Nichols #1	Notes
I	**Fence Removal & Disposal**		
	Quantity (Ft)	8,558	
	Cost of Removal/Disposal ($/Ft)	$0.39	Demolition Unit Cost per WDEQ Guideline No.12, App. H
	Cost of Removal/Disposal ($)	$3,335	
II	**Powerline Removal & Disposal**		
	Quantity (Ft)	160,460	Power to Wells, header houses. Other power already in place by CBM companies
	Cost of Removal/Disposal ($/Ft)	$0	Lines buried in pipe trenches. Excavation costs covered on Sheets 6I and 6III. Assume salvage of wire at no cost.
	Cost of Removal/Disposal ($)	$0	
III	**Powerpole Removal & Disposal**		
	Quantity	0	Overhead powerpoles and lines will remain in place for future gas production
	Cost of Removal/Disposal ($/Each)	0	
	Cost of Removal/Disposal ($)	$0.00	
IV	**Transformer Removal & Disposal**		
	Quantity	0	
	Cost of Removal/Disposal ($/Each)	0	Tri-County Electric will remove at no cost, WDEQ Guideline No.12, App. H
	Cost of Removal/Disposal ($)	0	
V	**Culvert Removal & Disposal**		
	Quantity (Ft)	0	None
	Cost of Removal/Disposal ($/Ft)	$5.33	($101.21/20') WDEQ Guideline No.12, App. J
	Cost of Removal/Disposal ($)	$0.00	
VI	**Guardrail Removal**		
	Quantity (Ft)	0	None
	Cost of Removal/Disposal ($/Ft)	$6.88	
	Cost of Removal/Disposal ($)	$0	
VII	**Low Water Stream Crossing**		
	Quantity	0	None
	Cost of Removal/Disposal ($/Each)	$8,462	
	Cost of Removal/Disposal ($)	$0	
	TOTAL MISCELLANEOUS COST	**$3,335**	