



CAMECO RESOURCES
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July 31, 2009

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Mr. Lowell Spackman, District 1 Supervisor
Wyoming Department of Environmental Quality
Land Quality Division
Herschler Building, 3 Fl-West
122 West 25th Street
Cheyenne, WY 82002

RE: TFN 5 5/101, Bond Estimate Update, Permit to Mine No. 633, Response to Comments
(Re: WDEQ/LQD Letter Dated June 30, 2009)

Dear Mr. Spackman:

Power Resources, Inc. d/b/a Cameco Resources (CR) is herein submitting the responses to the WDEQ review of the surety estimate for Permit No. 633. Enclosed please find responses to your comments and two hard copies and an electronic copy of the updated surety. The response to comments includes updates to Permit 603 which is being submitted under separate cover under TFN 5 5/87.

If you have questions, please contact Ms. Dawn Kolkman at (307) 358-6541 x435.

A handwritten signature in black ink, appearing to read "K. Wenzel".

Krista K. Wenzel
Manager, Environment, Health and Safety

Attachment: Response to 603/633 Comments, Response to 633 Comments, Updated Surety (2 copies and electronic copy)

cc: T. Cannon J. McCarthy A. Faunce S. Collings
S. Bakken M. Whatley D. Mandeville, NRC (2 copies)
File SR 4.3.3.1 File HUP 4.3.3.1 w/o atch

Responses to Land Quality Division Comments
TFN 5 5/87 and TFN 5 5/101, Surety Estimate Update
Cameco Resources Permit 603, Highland Uranium Project
And Partial Response to Permit 633, Smith Ranch

Cameco Resources (CR) has reviewed comments received from the Land Quality Division (LQD) on its bond estimates for Permit 603 under TFN 5 5/87 and for Permit 633 under TFN 5 5/101. The TFN 5 5/101 letter requested that CR consider comments on Permit 603 that also apply to Permit 633. Thus, the comments below apply to both permits and are being submitted under both TFNs. Additional comments received under TFN 5 5/101 for Permit 633 are provided only under that TFN. The following lists comments received from the LQD followed by CR responses.

1. Page 1. The totals on this page will need to be adjusted subsequent to the changes resulting from the comments below. (PCR)

CR Response: Totals were adjusted subsequent to changes from comments below.

2. Page 1. The contingency noted on the total bond estimate is shown as 15%. LQD is currently requiring a 25% contingency on non-coal projects with bond estimates in excess of \$500,000.00, i.e., see Guideline 12, Rev. 9/20/08, page 11, No. 12 Miscellaneous Items. Cameco Resources used 25 % contingency for the last annual report bond estimate. Please revise the contingency to show 25%. (PCR)

CR Response: CR expanded costs and used highest, worst case costs on many more of the costs in comparison to previous surety estimates, as evidenced by the increase in the overall bond amount from the 2007 bond. Most costs in the spreadsheet include profit and overhead; CR added notes next to these costs to show this. For example, labor includes 30% overhead, profit and overhead were added to Guideline 12 equipment costs, transport and disposal costs include profit and overhead, lab costs include profit and overhead, utilities and capital and parts/maintenance item purchases include profit and overhead, etc. Guideline 12 shows examples of various contingencies which represents lower percentage contingencies for higher bonds due to economy of scale. Using a 15% contingency is justified based upon that scale.

3. Page 2, *MIT Costs*. Wellfields A and B should continue to have MITs completed until decommissioning. Please add the cost for MITs for these wellfields. (PCR)

CR Response: MITs were added for wellfields A and B.

4. Building utility costs for the restoration period were not found in the bond estimate. These costs should be calculated for the entire restoration period for all facilities required to conduct the restoration and final reclamation of the wellfields. (PCR)

CR Response: Building utility costs were added. A master cost was added for electrical for the highest month of the year per cubic foot and included for each building under the BLDGS tab. Propane and natural gas costs were also added based on 2008 actual costs.

5. Irrigation maintenance and monitoring costs for Irrigator No. 1 and Irrigator No. 2 were not found in the bond estimate. These costs should be calculated for the entire restoration period. (PCR)

CR Response: Irrigator maintenance and monitoring costs for Irrigator No. 1 and Irrigator No. 2 were added to the MISC REC worksheet. Maintenance costs for Irrigator No. 1 are zero because it is out of service and future use is not projected to be necessary.

6. Page 3, *Supervisory Labor Costs*. Costs are not found for the additional labor required for groundwater restoration as included in previous annual reports under *Labor Costs*. Please provide the additional labor costs. In addition, according to the *Moxley Report* of November 21, 2007, staffing requirements for the restoration period have been under bonded. CR will need to provide adequate bond to cover reasonable staffing requirements for the groundwater restoration and surface reclamation period. (PCR)

CR Response: Costs for an Environmental Manager and Restoration Manager were added. Unit Cost rates include labor.

7. Vehicle Operation Costs are not found in the bond estimate. Please add these costs to complete the restoration and reclamation of the wellfields for the number of years required. (PCR)

CR Response: Vehicle operation costs have been added to the WF REC sheets for both Highland Uranium Project and Smith Ranch.

8. Page 3, *TOTAL RESTORATION COST PER WELLFIELD*. The totals shown for the wellfields in this line item are the same cost as shown for the wellfield costs in the line *Subtotal Monitoring and Sampling Costs per Mine Unit*. Please revise the cost per wellfield or remove the line. (PCR)

CR Response: The totals for the wellfields are not the same cost as shown for the monitoring and sampling costs. It is only the same for those fields that are restored and only have monitoring costs. With the addition of the MIT costs for wellfields A and B, it no longer appears that the rows are the same.

9. Page 3, *Capital Costs (for all Reclamation)*. In addition to the items listed on the table *Capital Program Costs* (page 27 of the bond estimate) and as noted in the *Moxley Report* dated November 21, 2007, CR should provide cost estimates for infrastructure and equipment maintenance, replacement and repairs that will be needed during the restoration and reclamation period such as membranes, pumps, piping, flanges, etc. As stated by Mr. Moxley, "...general wellfield renovations should be anticipated and included in the bond calculation." (PCR)

CR Response: Miscellaneous reclamation costs have been updated to include actual costs for infrastructure and equipment maintenance, replacement and repairs. This is in addition to membrane replacement costs which are shown for reverse osmosis in the UC RO BIO worksheets.

10. Page 4, *Well Abandonment (Wellfields), # of Monitoring Wells*. Please add the total number of monitoring wells in the *Totals* column. (PCR)

CR Response: A total for the number of monitor wells was included in the *Totals* column. This is an extra column for accounting purposes that is not used in the final calculations.

11. Page 4, *III, Removal of Contaminated Soil Around Wells*. Please add the total cost to remove contaminated soils to the *Totals* column. (PCR)

CR Response: The total cost was included in the *Totals* column. This is an extra column for accounting purposes that is not used in final calculations.

12. Page 4, *Section V, Waste Disposal Well Abandonment*. The last line *Total Waste Disposal Well Abandonment Costs* does not include the cost for the new DDW (\$51,024.97). Please add the cost to the total. (PCR)

CR Response: The spreadsheet equation was updated to include the cost for the new DDW on the Highland Uranium Project spreadsheet.

13. The approved restoration schedule includes deep disposal well Vollman 33-27. Please add the cost for the piping need to bring the Vollman well on line with the existing infrastructure. (PCR)

CR Response: These costs are included in the capital costs on the Mastercosts worksheet for the Highland Uranium Project spreadsheet. A note has been added to reflect this.

14. The approved permit Plate No. OP-1 shows a waste disposal well Vollman No. 1 located in Section 22, T36N, R73W. Please explain the status of this well and if it needs to be removed. If so, provide the costs to remove it. (PCR)

CR Response: Vollman No. 1 was an oil well that was abandoned by the oil company to include pulling the surface casing. No removal costs are needed.

15. Page 5, *Wellfield Piping*. The approximate length of piping per header house and the total length of piping has been substantially reduced from 15000 ft in the 2006-2007 Annual Report to 2000 ft in the 2007-2008 Annual Report. Please explain this reduction in length of piping. (PCR)

CR Response: The length of piping per header house is accurately estimated as follows: Multiply an average of 46 wells per header house by an average of 300 ft. of piping per well. The Highland Uranium Project and Smith Ranch sureties have been updated.

16. Page 5, *Wellfield Buildings and Equipment Removal and Disposal. Wellfield Piping, Well Pumps and Tubing, Buried Trunkline, Well Houses, and Header House* costs for Mine Unit C should be included in the estimates through the restoration period. Although the column header states it is included with MU/C, they could not be located. (PCR)

CR Response: This comment references the columns for "Mine Unit C-19N" and "Mine Unit C Haul Drifts". The piping, tubing, header houses, etc., are included in the sum of the "Mine Unit C" totals. They are included as columns in the WF REC tab with zero totals to be consistent with the headings in the GW REST tab where the columns are addressed separately from a restoration standpoint. The comment was expanded to further clarify.

17. Page 7, *Total Header House Removal and Disposal Costs shown as \$1,736,418* should be \$448,792. Please revise the number. (PCR)

CR Response: The number has been revised. This was a subtotal that was not used in the final calculation.

18. Page 8. The removal/loading and transportation/disposal costs for the RO could not be found in the bond estimate. Please add the cost. (PCR)

CR Response: Costs for the RO units were added to the Equipment (EQUIP) worksheet.

19. Page 8. The removal/loading and transportation/disposal costs for Satellite No. 3 has been removed from the table as shown on the bond estimate of the 2006-2007 Annual Report. Please include this cost estimate. (PCR)

CR Response: A column was added for Satellite No. 3 on the Highland Uranium Project spreadsheet.

20. Page 10. Please add the demolition and disposal costs for the Selenium Plant. (PCR)

CR Response: A column for the Selenium Plant was added to the Highland Uranium Project spreadsheet.

21. Page 10, *Disposal Costs*. CR is proposing to dispose of 100% of the buildings and 75% of concrete on-site. A permit from DEQ/Solid and Hazardous Waste Division (SHWD) may be required to allow this disposal. Please contact DEQ/SHWD for information on this potential requirement. If a SHWD permit is required, CR will need to include the cost for disposing off-site until that permit is issued. (PCR)

CR Response: CR contacted Mr. Anderson from DEQ/SHWD. He confirmed that a permit would be needed and it should not be a problem for a permit to be issued. He also stated there are no costs associated with obtaining the permit.

22. Page 10, *HCL Acid Wash, including labor (\$/ft²)*. The cost has been reduced from \$0.59 in the 2006-2007 Annual Report to \$0.25 in this revised bond estimate. Please justify the significant cost reduction. (PCR)

CR Response: On the Smith Ranch and Highland Uranium Project Unit Cost Decontamination (UC-DECON) worksheets the cost for the manlift rental was underestimated and the error was corrected. An incorrect square footage had been used to calculate the unit costs; this has been corrected.

23. Page 10, *Demolition Costs, Concrete Floor*. The *Area of Concrete Floor* is given in ft², however, the cost for *Demolition* from Guideline 12, Appendix K is given in ft³. Please make the necessary adjustments for the units to match for an accurate estimate of the costs. (PCR)

CR Response: Guideline 12, Appendix K uses ft².

24. Page 9. The transportation and disposal costs for the RO units have not been included. Please add the cost. (PCR)

CR Response: See response to item 18.

25. Pages 10 and 11. The reviewer assumes the *Central Plant, Dryer Bldg, Yellowcake Warehouse, South Warehouse, Suspended Walkway, Maintenance Bldg, Main Office and Office Trailers* are associated with the Highland Plant and Offices (opposed to the Central Process Plant). For clarification, please indicate this is the case, on these pages. (PCR)

CR Response: A note was added to the title clarifying that this is the case on the Highland Uranium Project spreadsheet.

26. Page 10, *Building Demolition and Disposal*. The deep well injection cost for decontamination in the Central Plant has been reduced from \$553,507 to \$177. Please justify this cost decrease. (PCR)

CR Response: In the 2007 Surety estimate, the value for the Central Plant was incorrectly calculated and failed to account for a factor of 1000 gallons to match the Kgal units. In that surety the values for the other buildings were correctly calculated. No change is necessary for the current surety.

27. Pages 12 and 13, *Building Demolition and Disposal*. The columns *Process/Fire Water Bldg, Potable Water Bldg., Potable Water Tank Slab, Exxon R&D RO Bldg., and Exxon R&D Process Bldg* have been removed for the section. Please explain the removal of these columns. (PCR)

CR Response: These were inadvertently omitted and have been added.

28. Page 10, *Building Demolition and Disposal*. The length of concrete footing for the building sites have been reduced as compared to the same lengths listed in the 2006-2007 Annual Report. Please justify the decrease in length of the footings. (PCR)

CR Response: The calculation for the length of the concrete footing has been corrected to use the square root of the area of the floor multiplied times four as in the past surety.

29. Page 12, *Total Decontamination Costs*. Please provide a total value in the row for this item. (PCR)

CR Response: Page 12 is a continuation of buildings from page 10. Total costs for all categories are on pg. 10. An electronic copy of both sureties is provided with this package to again assist with your review.

30. Groundwater Restoration Elution Costs. Please explain the removal of these costs from the bond estimate. (PCR)

CR Response: Costs of elution are associated with producing uranium for sale. No production is expected by a third party during restoration if the bond is employed.

31. Page 12, II, *Total Demolition Costs*. Please provide a value in the row for this item. (PCR)

CR Response: Please see response to item 29.

32. Page 13, *Total Disposal Costs*. Please provide a value in the row for this item. (PCR)

CR Response: Please see response to item 29.

33. Page 13, *TOTAL BUILDING DEMOLITION AND DISPOSAL COSTS*. Please provide the totals for this line. (PCR)

CR Response: Please see response to item 29.

34. A section is not found addressing wellfield pattern area reclamation and satellite area reclamation. Please add the costs to disk and seed the acres in all wellfields and satellites. (PCR)

CR Response: Sections have been added for both the Highland Uranium Project and Smith Ranch. See worksheet WF-SAT-SURF.

35. Page 14, *Access Road Reclamation*. The section of road from the Highland Loop Road to Satellite 2 will need to be added to the bond estimate. (PCR)

CR Response: This comment refers to a rancher's road for which Cameco will not be

responsible at close of operations. However, there is a small section of road from Satellite 2 to this rancher's road that will need to be reduced in width for rancher use. These costs have been added.

36. Page 14, *Access Road Reclamation*. The section of paved road from State Hwy 93 to Highland Process Plant and Offices will need to be added to the bond estimate. It is believed that this section will require removal of asphalt that should be included in the cost. (PCR)

CR Response: This is a county road and should not be added.

37. Page 14. The reviewer estimates twice as much footage of road that will need to be reclaimed than shown in the bond estimate. CR should provide a map of all roads that need reclaimed to support their estimate. (PCR)

CR Response: Please see Plate OP1 as submitted with the July 24, 2009 annual report.

38. Page 16, The information found on the CD (electronic format) includes *Irrigation Area Reclamation, Drilling Fluid Storage Cell Reclamation of Exxon Reclaimed Lands, Potential Mitigation Plan for Irrigator No. 1A, Potential Mitigation Plan for Irrigator No. 2, Potential Plan for Shallow Well Casing Leak Investigation and Miscellaneous Fence Removal Costs*. These costs are not provided on the paper copy submitted with the proposed bond estimate and could not be printed for the file. Please provide the paper copy of these sections of the bond estimate. (PCR)

CR Response: These items can be found on pages 20 and 21. Please note that the Drilling Fluid Storage Cell reclamation is complete and has been removed from the estimate.

39. Additional costs which should be included in the bond estimate are removal of booster stations, culverts, surface water monitoring stations, air quality monitoring stations, oxygen pads, drilling mud storage, drill water facility and fiber optics lines. Please add the costs for these items. (PCR)

CR Response: Air quality monitoring stations and surface water monitoring stations have not disturbed any area and will not require reclamation. The costs for header houses include booster stations and a note was added to the spreadsheets. Access road reclamation includes culverts (See Miscellaneous Reclamation (MISC REC) worksheet); a note was added to the spreadsheets. There are only two oxygen pads that are not located at a Satellite area. Those located at the Satellite areas are already accounted for. The remaining two oxygen pads are located at MU-15 and the CPP. Costs for removal of these have been added to the Smith Ranch MISC REC worksheet. Staging areas for drill mud are captured in the WF-SAT-SURF worksheets. Costs for removal of buried trunklines on the WF REC worksheets capture costs of removing fiber optics lines. Costs to remove the drill water facility and make available to the rancher were added.

40. The updated bond estimate is provided for the existing disturbance. According to the Wyoming Environmental Quality Act § 35-11-411 (a)(iii) costs for proposed new disturbances for the next one (1) year period must also be included in the bond estimate. CR will need to ensure additional costs for the 2009-2010 report period are included in the upcoming annual report submittal. No response required. (PCR)

CR Response: New disturbances have been projected. CR appreciates the reminder.

41. The number of MIT's per wellfield does not reflect the number of wells that will need to be tested. The Master Costs table lists a total of 4061 injection and production wells. However, the number of wells listed in the GW Restoration table to have MIT's for the life of the mine is listed as 3012 wells. MIT's are required every five years for all injection and production wells, therefore some of the wells will require more than one MIT and all wells will require at least one MIT. Assuming 33% of the wells will require two MIT's a total of 5,401 MIT's will be necessary. The listed cost is \$293.33 per well for an increase of \$683,159.00. (SI)

CR Response: In accordance with WDEQ-LQD, Chapter 11, Mechanical Integrity Tests are performed every five years on injection wells. The number of wells to have MIT's was calculated using only injection wells during the restoration period. No changes are needed to this section.

42. CR does not list removal costs for disposal of contaminated clay from the radium settling ponds. Item IV under MISC REC total disturbance (in square feet) = 128,899. Assuming the clay is contaminated to a depth of 1 foot CR must dispose of 128,899 cubic feet at the licensed facility in Shirley Basin. Disposal at an NRC licensed site = \$12.52/cubic foot. Therefore, the increase for this item is \$1,613,815. (SI)

CR Response: The clay liner was removed in 2003. Samples taken after the liner was removed show that most of the contaminated material was removed. These samples indicate a maximum area of potential contamination for disposal of 23,800 square feet to a depth of six inches. This has been updated in the surety. In addition, CR corrected the areas of the ponds and the link for removal and loading costs.

43. No costs have been included for chemical reduction or bio-remediation in the bond estimate. The 2009 bond estimate uses \$1.69/Kgal for bioremediation for fields currently in restoration. No bioremediation cost is used for fields that are currently producing. Section 4.3 of the permit document discusses the use of bioreduction/chemical reductant addition as a restoration step. Section 4.3.3 discusses bio-remediation/chemical reductant as a step to be used if certain parameters remain elevated during restoration efforts. (SI)

CR Response: Bioremediation has been included for Mine Unit C where it is currently in use. Use of bioremediation for other mine units would reduce the bond since the addition of bioremediation is expected to reduce the amount of time and water needed to restore a wellfield. It is our intent to include bioremediation in the bond in the future when we can fully justify the reduction in the number of pore volumes.

44. The groundwater restoration portion of the bond estimate does not include the restoration costs for MU-C North or the Mine Unit C haulage drifts, however these costs are included in the Wellfield C surface reclamation costs. It is unclear if the groundwater restoration costs for these units are included in the Wellfield C costs. Please clarify that the groundwater restoration costs for MU-C North and the Mine Unit C haulage drifts is included in the Wellfield C total. (SI)

CR Response: See response to item 16. This has been clarified in the spreadsheets.

45. The deep disposal well MIT costs are listed for only one 5-year MIT. There are three deep disposal wells included in the bond estimate and assuming two MIT tests will be required it is recommended that the bond for this item be increased by \$17,723.00. (SI)

CR Response: Highland Uranium Project and Smith Ranch sureties have been amended to account for two MIT tests per deep disposal well.

46. The deep disposal well plugging and abandonment cost is listed as \$4.37/foot. The WQD recommends \$11.91/foot based on the Gene George recommendations for plugging and abandonment for the CR deep disposal wells. Therefore, the increase for this item is \$197,140.91. (SI)

CR Response: WA worksheets have been updated to use the recommended costs.

46. (CR Note: This should be item Number 47). The UC-WA table states that 0.059 sacks of cement are used per foot. The EPA (from the UIC inspectors training course) states that 0.12 sacks of cement per foot are needed. This change will increase the per foot cost from 0.96/foot to \$1.32/foot. Item 3 for the UC-WA table states that the labor cost requires two laborers for 0.5 hours to install chips, etc. Item 2 states that the rig time per location is 2.5 hours. The labor time should equal the rig time and be 2.5 hours. The labor cost is not included in the estimate. These changes result in a \$1.44/foot cost to plug and abandon wells. Also, the total footage in the WA table does not include wellfields, F, 27-H, I and J. The bond increase for this item is \$1,302,696.00. (SI)

CR Response: The quantity of cement has been updated. Labor time of 2.5 hours has been added to the estimate. The additional wellfields have been added.

CR also noted and made the following changes and is numbering them sequentially for ease in reference.

48. On the HUP Wellfield Reclamation (WF REC) worksheet in the Mine Unit C Haul Drift column, the value for the 1 inch carbon steel trunkline pipe length was removed since this does not occur on site.

49. On the SR and HUP Equipment (EQUIP) worksheets, labor for Removal and Loading Costs

for the Tankage was included twice in the equation for the totals. This error was corrected to only account for the cost once.

50. Sample analytical costs were corrected to reflect costs associated with a third party contract lab instead of "in-house" as previously provided.

51. Capital costs have been amended to include costs for the NRC license and inspections.

52. The costs for removing contaminated soil were removed from the UC-SAT SURF worksheets; these cost estimates had been added to the UC-WA and WA worksheets.

53. Transportation and disposal costs for pumps and tubing was corrected to represent costs per cubic foot rather than per cubic yard.

Responses to Land Quality Division Comments
TFN 5 5/101, Surety Estimate Update
Cameco Resources Permit 633, Smith Ranch

Cameco Resources (CR) has reviewed comments received from the Land Quality Division (LQD) on its bond estimates for Permits 603 and 633. The following lists each comment received from the LQD for Permit 633 followed by CR responses. This document is supplemented by the CR response to comments for Permit 603.

1. The number of MIT's per wellfield does not reflect the number of wells that will need to be tested. The Master Costs table lists a total of 3902 injection and production wells. However, the number of wells listed in the GW Restoration table to have MIT's for the life of the mine is listed as 2485 wells. MIT's are required every five years for all injection and production wells, therefore some of the wells will require more than one MIT and all wells will require at least one MIT. Assuming 33% of the wells will require two MIT's a total of 5,073 MIT's will be necessary. The listed cost is \$293.33 per well for an increase of \$759,118.00.

CR Response: In accordance with WDEQ-LQD, Chapter 11, Mechanical Integrity Tests are performed every five years on injection wells. The number of wells to have MIT's was calculated using only injection wells during the restoration period. No changes are needed to this section.

2. CR does not include costs for removal of contaminated sand material from beneath the clay liner from the settling basin/storage pond. Assuming the volume of the contaminated sand is equal to the volume of the clay liner the amount of material to be removed is 741 cubic feet. The listed cost per cubic foot is \$141 for a total cost of \$104,481.

CR Response: Costs for removal of contaminated sand material were included.

3. No costs have been included for chemical reduction or bio-remediation in the bond estimate. The 2009 bond estimate uses \$1.69/Kgal for bioremediation for fields currently in restoration. No bioremediation cost is used for fields that are currently producing.

CR Response: Use of bioremediation would reduce the bond since the addition of bioremediation is expected to reduce the amount of time and water needed to restore a wellfield. Bioremediation is currently being done and it is our intent to include bioremediation in the bond in the future when we can fully justify the reduction in the number of pore volumes.

4. The deep disposal well MIT costs are listed for only one 5-year MIT. There are four deep disposal wells included in the bond estimate and assuming two MIT tests will be required, it is recommended that the bond for this item be increased by \$23,630.

CR Response: The surety has been amended to account for two MIT tests per deep disposal well.

5. The deep disposal well plugging and abandonment costs are listed as \$4.37/foot. The WQD recommends \$11.91/foot based on the Gene George recommendations for plugging and abandonment of the CR deep disposal wells. Therefore, the bond increase for this item is \$218,660.

CR Response: The WA worksheet has been updated to use the recommended costs.

6. The UC-WA table states that 0.059 sacks of cement are used per foot for well abandonment. The EPA (from the UIC inspectors training course) states that 0.12 sacks of cement per foot are needed. This change will increase the per foot cost from 0.96/foot to \$1.32/foot. Item 3 for the UC-WA table states that the labor cost requires two laborers for 0.5 hours to install chips, etc. and item 2 states that the rig time per location is 2.5 hours. The labor time should equal the rig time and be 2.5 hours. The labor cost is not included in the estimate. These changes result in a \$1.44/foot cost to plug and abandon wells. The bond increase for this item is \$1,549,224.00.

CR Response: The quantity of cement has been updated. Labor time of 2.5 hours has been added to the estimate. The additional wellfields have been added.

SMITH RANCH
2009 Surety Estimate Revision

The 2009 Smith Ranch Surety Estimate was revised to follow the WDEQ-LQD standardized bond format and, where applicable, the cost estimates provided in WDEQ-LQD Guideline No. 12. At the request of the NRC, PRI has revised the Surety Estimate calculations to include a number of different line item changes. First, a recurring spreadsheet has been added to identify costs that are used throughout the Surety Estimate. In this spreadsheet a column was included to identify sources for individual line item costs. As one would expect a large number of the costs sources are based on operating experience and costs. For a large number of the cost items operating experience or costs is not only the best justifications of a given costs but often the only source of information to generate an input values for the surety estimate.

The first spreadsheet is a summary of costs from the next seven major spreadsheets. Additional topic specific spreadsheets were also added in the estimate to identify line item justification of the values used in the Surety Estimate. Costs input into those major spreadsheets are generally broken down into unit costs in the next spreadsheets, titled "UC-topic". The final sheet titled "Master Cost Basis" has the majority of the input costs that are used throughout the spreadsheets. Input costs are also shown in blue to show they were not taken from elsewhere.

**Cameco Resources
 Smith Ranch - Highland Uranium Project
 Surety Estimate**

Smith Ranch Reclamation Cost Estimate, 26 Feb 2009 (Revised 30 Jul 2009)

I.	Groundwater Restoration (GW REST Sheet)	\$21,632,987
II.	Well Abandonment and Wellfield Reclamation (WA, WF REC and WF-SAT-SURE Sheets)	\$10,271,034
III.	Equipment and Building Costs (EQUIP, BLDGS Sheets)	\$3,477,564
IV.	Miscellaneous Site Reclamation (MISC REC Sheet)	\$2,191,683
	Subtotal Reclamation Cost	\$37,573,267
	Contingency 15%	\$5,635,990
	TOTAL	\$43,209,257

**Cameco Resources
Smith Ranch - Highland Uranium Project
Surety Estimate**

Ground Water Restoration													
	Mine Unit-1	Mine Unit-2	Mine Unit-3	Mine Unit-4 44A/4E3	Mine Unit-15	Mine Unit-15A	Mine Unit K	Mine Unit 9	Mine Unit 10	Mine Unit 27	Mine Unit 21	Mine Unit 7	
													MWS only
I. Ground Water Sweep Costs													
Estimated PVS													
Total Kgal for GWS	62837	110783	64348	119216	137426	52669	84209	136376	0	0	0	0	74006
Bleed to Deep Disposal Well (%)	100	100	100	100	100	100	100	100	100	100	100	100	
Groundwater Sweep Unit Cost (\$/Kgal)	\$3.41	\$3.41	\$3.41	\$3.41	\$3.41	\$3.41	\$3.41	\$3.41	\$3.41	\$3.41	\$3.41	\$3.41	
Subtotal Ground Water Sweep Costs per Wellfield	\$213,981.22	\$377,260.36	\$219,807.75	\$405,970.76	\$467,981.97	\$179,353.74	\$286,760.10	\$464,306.36	\$0.00	\$0.00	\$0.00	\$0.00	\$2,615,524.26
Total Ground Water Sweep Costs	\$2,615,524.26												
II. Reverse Osmosis Costs													
Estimated PVS													
Total Kgal for RO	502696	886280	516384	933728	1099408	421352	673672	1091008	0	0	0	0	6144528
Bleed to Deep Disposal Well (%)	25	25	25	25	25	25	25	25	25	25	25	25	
Reverse Osmosis Unit Cost (\$/Kgal)	\$1.56	\$1.56	\$1.56	\$1.56	\$1.56	\$1.56	\$1.56	\$1.56	\$1.56	\$1.56	\$1.56	\$1.56	\$1.20
Subtotal Reverse Osmosis Costs per Wellfield	\$782,572.00	\$1,379,716.39	\$803,880.79	\$1,484,716.06	\$1,711,503.40	\$655,939.73	\$1,048,738.89	\$1,698,426.70	\$0.00	\$0.00	\$0.00	\$0.00	\$9,565,493.96
Total Reverse Osmosis Costs	\$9,565,493.96												
III. Bioremediation Costs (information only, data being compiled)													
Estimated PVS	0	0	0	0	0	0	0	0	0	0	0	0	
Total Kgal 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	\$0.00
Total Bioremediation Costs	\$0.00												
IV. MIT Costs													
MIT Costs per Well	\$293.33	\$293.33	\$293.33	\$293.33	\$293.33	\$293.33	\$293.33	\$293.33	\$293.33	\$293.33	\$293.33	\$293.33	
Restoration period, Excluding Dismantlement (months)	38.25	67.45	39.29	72.59	83.67	32.07	51.27	83.03	0.00	0.00	0.00	0.00	
Number of Wells MTD for 1.0c of Mine Unit	72	264	114	427	646	201	251	490	0	0	0	0	
Subtotal MIT Mine Unit	\$21,131.73	\$77,492.80	\$39,186.40	\$125,276.80	\$189,393.60	\$58,954.13	\$73,694.13	\$143,698.13	\$0.00	\$0.00	\$0.00	\$0.00	\$728,827.73
Subtotal MIT Costs for Disposal Wells	\$5,907.53												
Number of DDWs	4												
Number of MIs per DDW	2												
Total MIT Costs	\$776,087.97												
V. Monitoring and Sampling Costs													
Guideline K analysis - \$333.00 analysis													
1-parameter contract Laboratory analysis - \$30.00 analysis													
Total monitor wells	47	53	44	90	102	57	61	103	70	76	0	46	537
Groundwater sweep duration (months)	9.56	16.86	9.82	18.15	20.92	8.02	12.82	20.76	0.00	0.00	0.00	0.00	116.91
Reverse Osmosis duration (months)	28.69	50.59	29.47	54.44	62.75	24.05	38.45	62.27	0.00	0.00	0.00	0.00	350.71
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	0.00
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	47	53	44	90	102	57	61	103	70	76	0	46	
\$/sample	\$333.00	\$333.00	\$333.00	\$333.00	\$333.00	\$333.00	\$333.00	\$333.00	\$333.00	\$333.00	\$333.00	\$333.00	\$333.00
2. Groundwater Sweep Sampling (quarterly)													
# of Wells	47	53	44	90	102	57	61	103	70	76	0	46	
Total # samples	157	303	147	570	714	171	265	721	0	0	0	0	3046
\$/sample	\$30.00	\$70.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00
3. RO Sampling (quarterly)													
# of Wells	47	53	44	90	102	57	61	103	70	76	0	46	
Total # samples	155	301	146	360	423	156	273	709	0	0	0	0	8002
\$/sample	\$30.00	\$70.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00
4. Stabilization Sampling (Guideline K, quarterly)													
# of Wells	47	53	44	90	102	57	61	103	70	76	0	46	
Total # samples	185	355	180	360	423	156	273	709	0	0	0	0	2333
\$/sample	\$333.00	\$333.00	\$333.00	\$333.00	\$333.00	\$333.00	\$333.00	\$333.00	\$333.00	\$333.00	\$333.00	\$333.00	\$333.00
5. Stabilization Sampling (6-parameter bi-monthly)													
# of Wells	47	53	44	90	102	57	61	103	70	76	0	46	
Total # samples	185	355	180	360	423	156	273	709	0	0	0	0	2333
\$/sample	\$333.00	\$333.00	\$333.00	\$333.00	\$333.00	\$333.00	\$333.00	\$333.00	\$333.00	\$333.00	\$333.00	\$333.00	\$333.00

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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
# of Wells	17	11	24	30	61	34	34	56	70	76	0	46
Total # samples	282	318	264	540	612	342	366	618	420	456	0	276
\$/sample	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00
6. Monitor Well Sampling												
# of Wells	47	51	44	90	102	57	61	103	70	76	0	46
\$/sample	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00
Total # samples (2.2/mo for entire period)	5196	9264	4965	16749	21468	5526	8491	21534	1848	2046	0	1214
7. Other Laboratory Costs												
Radon, urinalysis, etc.	\$912.00/month											
Total for Other Laboratory Costs	\$34,884.00	\$61,514.40	\$35,832.48	\$66,202.08	\$76,307.04	\$29,247.84	\$46,758.24	\$75,723.36	\$0.00	\$0.00	\$0.00	\$0.00
Subtotal Monitoring and Sampling Costs per Mine Unit	\$261,540.00	\$454,298.40	\$264,504.48	\$736,492.08	\$959,918.04	\$299,688.84	\$420,531.24	\$953,322.36	\$207,900.00	\$225,708.00	\$0.00	\$136,608.00
Total Monitoring and Sampling Costs	\$4,914,511.44											
VI. Supervisory Labor Cost (for all Reclamation)												
Environmental Manager/RSO Support	\$7,527.40											
Restoration Manager Support	\$5,885.63/month											
HP Technician support	\$4,255.11/month											
Active restoration period (months)	38.25	67.45	39.29	72.39	81.67	32.67	51.27	83.03	0.00	0.00	0.00	0.00
Stabilization period (months)	12	12	12	12	12	12	12	12	12	12	12	12
Total Restoration Period	12.5 years											
Manager support during restoration	\$2,011,955.40											
HP Technician support during restoration	\$638,266.20											
Total Supervisory Labor Costs	\$2,650,221.60											
TOTAL RESTORATION COST PER WELLFIELD	\$1,779,224.95	\$2,288,767.95	\$1,327,379.42	\$2,746,455.70	\$3,328,797.01	\$1,193,938.44	\$1,829,724.36	\$3,259,853.55	\$207,900.00	\$225,708.00	\$0.00	\$136,608.00
VII. Capital Costs (for all Reclamation)	\$3,809,630.00											
TOTAL GROUND WATER RESTORATION COSTS	\$21,632,987.39											

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Well Abandonment													Totals
	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	
I Well Abandonment (Wellfields)													
# of Production Wells	101	140	148	216	268	204	195	218	0	60	0	0	1570
# of Injection Wells	113	255	204	353	463	376	294	354	0	190	0	0	2492
# of Monitoring Wells	47	53	44	90	102	57	61	103	70	76	0	0	749
Total number of Wells	261	428	396	659	833	637	550	695	70	256	0	0	4811
Average Diameter of Casing (inches)	5	5	5	5	5	5	5	5	5	5	5	5	5
Production, Injection and Monitoring Well Average Depth (ft)	500	850	750	850	450	500	950	950	950	950	600	600	725
Total Mine Unit Well Depth (ft)	130500	363800	297000	560150	374850	318500	522500	660200	66500	188800	0	0	3227500
Well Abandonment Unit Cost (\$/ft of well)	\$1.45	\$1.45	\$1.45	\$1.45	\$1.45	\$1.45	\$1.45	\$1.45	\$1.45	\$1.45	\$1.45	\$1.45	\$1.45
Subtotal Abandonment Cost per Wellfield	\$189,225.00	\$527,510.00	\$430,650.00	\$812,317.50	\$543,532.50	\$461,825.00	\$757,625.00	\$957,362.50	\$96,425.00	\$273,760.00	\$0.00	\$53,360.00	\$5,103,492.50
II Downhole Pump Disposal													
Number of Downhole Pumps	1570												
Pump Disposal Volume (ft ³)	0												
Total Pump Disposal Volume (ft ³)	29.1												29.1
Downhole Pump Disposal Rate (\$/ft ³)	\$338.00												338.00
Subtotal Downhole Pump Disposal	\$9,835.80												\$9,835.80
III Removal of Contaminated Soil Around Wells													
# of Production and Injection Wells	4082												
Cost per well (\$/well)	193.85												
Subtotal Removal of Soil Around Wells	\$787,418.70												\$787,418.70
IV Decontamination Hole Abandonment													
# of Projected Holes	0	0	0	0	0	0	62	30	270	0	0	0	0
Average Depth (ft)	500	850	750	850	450	500	950	950	950	950	600	600	725
Hole Abandonment Unit Cost (\$/ft of hole)	\$1.45	\$1.45	\$1.45	\$1.45	\$1.45	\$1.45	\$1.45	\$1.45	\$1.45	\$1.45	\$1.45	\$1.45	\$1.45
Site Reclamation (\$/site)	\$31.00	\$31.00	\$31.00	\$31.00	\$31.00	\$31.00	\$31.00	\$31.00	\$31.00	\$31.00	\$31.00	\$31.00	\$31.00
Subtotal Hole Abandonment per Wellfield	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$87,327.00	\$42,255.00	\$380,295.00	\$0.00	\$54,060.00	\$0.00	\$0.00
V Waste Disposal Well Abandonment													
A Well Sealing													
Sealing cost per foot (on UIC permit)	\$11.91	\$11.91	\$11.91	\$11.91	\$11.91	\$11.91	\$11.91	\$11.91	\$11.91	\$11.91	\$11.91	\$11.91	\$11.91
Subtotal Plugging Costs per Well (on UIC permit)	\$120,291	\$120,291	\$97,062	\$103,044	\$103,044	\$103,044	\$103,044	\$103,044	\$103,044	\$103,044	\$103,044	\$103,044	\$103,044
B Pump Dismantling and Decontamination													
Number of Persons	2	2	2	2	2	2	2	2	2	2	2	2	2
Number of Pumps	2	2	2	2	2	2	2	2	2	2	2	2	2
Pumps/Day	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Number of Days	4	4	4	4	4	4	4	4	4	4	4	4	4
\$/day/Person	\$210	\$210	\$210	\$210	\$210	\$210	\$210	\$210	\$210	\$210	\$210	\$210	\$210
Subtotal Dismantling and Decom Costs per Well	\$1,684	\$1,684	\$1,684	\$1,684	\$1,684	\$1,684	\$1,684	\$1,684	\$1,684	\$1,684	\$1,684	\$1,684	\$1,684
C Tubing String Disposal (NRC-1 licensed facility)													
Length of Tubing String (ft)	10,374	16,160	8,240	8,460	8,460	8,460	8,460	8,460	8,460	8,460	8,460	8,460	8,460
Diameter of Tubing String (inches)	2.875	2.875	2.875	2.875	2.875	2.875	2.875	2.875	2.875	2.875	2.875	2.875	2.875
Volume of Tubing String (ft ³)	455	455	369	378	378	378	378	378	378	378	378	378	378
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	\$12.52
Subtotal Tubing String Disposal Costs per Well	\$5,697	\$5,697	\$4,625	\$4,738	\$4,738	\$4,738	\$4,738	\$4,738	\$4,738	\$4,738	\$4,738	\$4,738	\$4,738
Subtotal Waste Disposal Well Abandonment Costs per Well	\$127,671.97	\$127,671.97	\$103,970.97	\$109,463.97	\$109,463.97	\$109,463.97	\$109,463.97	\$109,463.97	\$109,463.97	\$109,463.97	\$109,463.97	\$109,463.97	\$109,463.97
Total Waste Disposal Well Abandonment Costs	\$465,780.87												
Total Wellfield Abandonment Costs	\$6,930,466.32												

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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
Wellfield Piping												
Number of Header Houses per Wellfield		8	8	11	13	4	5	13	0	4		
Approximate Length of Piping per Header House (ft) (ave. 46 wells per with 3	13800	13800	13800	13800	13800	13800	13800	13800	13800	13800	13800	13800
Approximate Total Length of Piping (ft)	82800	69000	110400	151800	179400	8000	69000	179400	0	41400	0	891200
A Removal and Loading												
Wellfield Piping Removal Unit Cost (\$/ft of pipe)	\$0.85	\$0.85	\$0.85	\$0.85	\$0.85	\$0.85	\$0.85	\$0.85	\$0.85	\$0.85	\$0.85	\$0.85
Subtotal Wellfield Piping Removal and Loading Costs	\$70,380	\$58,650	\$93,840	\$129,030	\$152,490	\$6,800	\$58,650	\$152,490	\$0	\$35,190	\$0	\$0
B Transport and Disposal Costs (NRC-Licensed Facility)												
Average Diameter of Piping (inches)		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)	414	345	552	759	897	40	345	897	0	207	0	0
Volume for Disposal Assuming 10% Void Space (ft ³)	455	380	607	835	987	44	380	987	0	228	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	\$12.52	\$12.52	\$12.52
Subtotal Wellfield Piping Transport and Disposal Costs	\$5,696	\$4,757	\$7,599	\$10,453	\$12,356	\$551	\$4,757	\$12,356	\$0	\$2,854	\$0	\$0
Wellfield Piping Costs per Wellfield	\$76,076	\$63,407	\$101,439	\$139,483	\$164,846	\$7,351	\$63,407	\$164,846	\$0	\$38,044	\$0	\$0
Total Wellfield Piping Costs	\$818,899											
Well Pumps and Tubing												
Assumptions												
50% of production/injection wells contain pumps and/or tubing												
A. Pump and Tubing Transportation and Disposal												
Number of Production Wells	101	140	148	216	268	204	195	238	0	60	0	0
Number of Injection Wells	113	235	204	353	463	376	294	354	0	100	0	0
1 Pump Volume												
Number of Production Wells with Pumps	61	84	89	130	161	122	117	143	0	36	0	0
Average Pump Volume (ft ³)	1	1	1	1	1	1	1	1	1	1	1	1
Pump Volume per Wellfield (ft ³)	61	84	89	130	161	122	117	143	0	36	0	0
2 Tubing Volume												
Assumptions												
Average tubing length/wellfield based on average well depth minus 25 ft												
Number of Production Wells with Tubing	61	84	89	130	161	122	117	143	0	36	0	0
Number of Injection Wells with Tubing	68	141	122	212	278	226	176	212	0	60	0	0
Average Tubing Length per Well (ft)	475	825	725	825	425	475	925	925	925	775	575	775
Tubing Length per Wellfield (ft)	61275	185625	152975	282150	186575	165300	271025	328375	0	74400	0	0
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)	306	928	765	1411	933	827	1355	1642	0	372	0	0
Volume of Pump and Tubing (ft ³)	367	1012	854	1541	1094	949	1472	1785	0	408	0	0
Volume for Disposal Assuming 10% Void Space (ft ³)	404	1113	939	1695	1203	1044	1619	1964	0	449	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	\$12.52	\$12.52	\$12.52
Pump and Tubing Transport and Disposal Costs Per Wellfield	\$5,057	\$13,933	\$11,755	\$21,219	\$15,060	\$13,069	\$20,267	\$24,586	\$0	\$5,621	\$0	\$0
Total Pump and Tubing Disposal Costs	\$130,567											
Buried Trunkline (Includes \$ for fiber optic cable removal)												
Assumptions												
Length of Trunkline Trench (ft)	5075	7600	4700	12505	16000	0	0	7000	0	0	0	47030
A Removal and Loading												

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Wellfield Buildings and Equipment Removal and Disposal		Mine Unit-														
		Mine Unit-1	Mine Unit-2	Mine Unit-3	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		
Main Pipeline Removal Unit Cost (\$/ft of trench)		\$0.85	\$0.85	\$0.85	\$0.85	\$0.85	\$0.85	\$0.85	\$0.85	\$0.85	\$0.85	\$0.85	\$0.85	\$0.85	\$0.85	
Subtotal Trunkline Removal and Loading Costs		\$4,314	\$6,460	\$4,072	\$10,680	\$8,500	\$0	\$0	\$5,950	\$0	\$0	\$0	\$0	\$0	\$0	
B. Transport and Disposal Costs (NRC-Licensed Facility)																
1	1" Carbon Steel Trunkline					10000	0	0	0	0	0	0	0	0	0	10000
	Piping Length (ft)	0	0	0	0	218	0	0	0	0	0	0	0	0	0	
	Volume (ft ³)	0	0	0	0	218	0	0	0	0	0	0	0	0	0	
2	1" HDPE Trunkline					10000	0	0	0	0	0	0	0	0	0	10000
	Piping Length (ft)	0	0	0	0	50	0	0	0	0	0	0	0	0	0	
	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	0.005	0.005	
	Chipped Volume (ft ³)	0	0	0	0	50	0	0	0	0	0	0	0	0	0	
3	3" HDPE Trunkline					0	0	0	0	0	0	0	0	0	0	30630
	Piping Length (ft)	5075	7600	4790	12565	0	0	0	0	0	0	0	0	0	0	
	Chipped Volume Reduction (ft ³ /ft)	0.022	0.022	0.022	0.022	0.022	0.022	0.022	0.022	0.022	0.022	0.022	0.022	0.022	0.022	
	Chipped Volume (ft ³)	112	167	105	276	0	0	0	0	0	0	0	0	0	0	
4	6" HDPE Trunkline					0	0	0	0	0	0	0	0	0	0	59894
	Piping Length (ft)	2410	10000	4820	7320	20000	3200	2285	12730	0	0	0	0	0	0	
	Chipped Volume Reduction (ft ³ /ft)	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	
	Chipped Volume (ft ³)	188	780	376	571	1560	25	178	993	0	0	0	0	0	0	
5	8" HDPE Trunkline					0	0	0	0	0	0	0	0	0	0	17736
	Piping Length (ft)	4100	0	1100	4240	0	4260	11041	2420	0	0	0	0	0	0	
	Chipped Volume Reduction (ft ³ /ft)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	
	Chipped Volume (ft ³)	615	0	165	636	0	640	166	439	0	0	0	0	0	0	
6	10" HDPE Trunkline					0	0	0	0	0	0	0	0	0	0	16850
	Piping Length (ft)	0	5200	2000	4000	0	1400	0	1410	0	0	0	0	0	0	
	Chipped Volume Reduction (ft ³ /ft)	0.277	0.277	0.277	0.277	0.277	0.277	0.277	0.277	0.277	0.277	0.277	0.277	0.277	0.277	
	Chipped Volume (ft ³)	0	1440	1014	1296	0	388	0	529	0	0	0	0	0	0	
7	12" HDPE Trunkline					0	0	0	0	0	0	0	0	0	0	12088
	Piping Length (ft)	1400	0	0	5270	0	1000	0	4278	0	0	0	0	0	0	
	Chipped Volume Reduction (ft ³ /ft)	0.293	0.293	0.293	0.293	0.293	0.293	0.293	0.293	0.293	0.293	0.293	0.293	0.293	0.293	
	Chipped Volume (ft ³)	427.78	0	0	1544	0	316	0	1253	0	0	0	0	0	0	
8	14" HDPE Trunkline					0	0	0	0	0	0	0	0	0	0	5660
	Piping Length (ft)	240	0	0	0	0	3120	0	1800	0	0	0	0	0	0	
	Chipped Volume Reduction (ft ³ /ft)	0.359	0.359	0.359	0.359	0.359	0.359	0.359	0.359	0.359	0.359	0.359	0.359	0.359	0.359	
	Chipped Volume (ft ³)	206	0	0	0	0	1120	0	646	0	0	0	0	0	0	
9	16" HDPE Trunkline					0	0	0	0	0	0	0	0	0	0	8380
	Piping Length (ft)	1440	0	0	3020	0	0	2210	1110	0	0	0	0	0	0	
	Chipped Volume Reduction (ft ³ /ft)	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	
	Chipped Volume (ft ³)	576	0	0	1448	0	0	884	444	0	0	0	0	0	0	
10	18" HDPE Trunkline					0	0	0	0	0	0	0	0	0	0	5716
	Piping Length (ft)	0	0	0	0	0	0	2000	3000	0	0	0	0	0	0	
	Chipped Volume Reduction (ft ³ /ft)	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	
	Chipped Volume (ft ³)	0	0	0	0	0	0	1293	2251	0	0	0	0	0	0	
Total Trunkline Chipped Volume (ft ³)		2184.07	2387.6	1660.16	5771.86	1560	2489.18	2521.384	6555.632	0	0	0	0	0	0	
Volume for Disposal Assuming 10% Void Space (ft ³)		2402	2626	1826	6349	1716	2738	2774	7211	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	\$12.52	\$12.52	\$12.52	\$12.52	\$12.52	
Subtotal Trunkline Transport and Disposal Costs		\$30,069	\$32,874	\$22,859	\$79,480	\$21,482	\$34,276	\$34,726	\$90,271	\$0	\$0	\$0	\$0	\$0	\$0	

Cameco Resources
Smith Ranch - Highland Uranium Project
Surety Estimate

	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
Wellfield Buildings and Equipment Removal and Disposal												
Trunkline Decommissioning Costs per Wellfield	\$34,383	\$39,334	\$26,931	\$90,160	\$29,982	\$34,276	\$34,726	\$96,221	\$0	\$0	\$0	\$0
Total Trunkline Decommissioning Costs	\$386,013											
V. Well Houses												
Total Quantity	41	408	396	819	392	244	431	715	0	0	0	0
Average Well House 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)	585.9	758.88	736.56	1151.34	729.12	453.84	745.86	1329.9	0	0	0	0
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 House Demolition Costs	\$151	\$196	\$190	\$297	\$188	\$117	\$192	\$343	\$0	\$0	\$0	\$0
B. Survey and Decontamination												
Cost per Well House	4.57	4.57	4.57	4.57	4.57	4.57	4.57	4.57	4.57	4.57	4.57	4.57
Subtotal Survey and Decontamination Costs	\$1,440	\$1,865	\$1,811	\$2,830	\$1,792	\$1,116	\$1,833	\$3,269	\$0	\$0	\$0	\$0
C. Disposal at NRC Licensed Facility												
Total Volume (cy)	22	28	27	43	27	17	28	49	0	0	0	0
Volume for Disposal Assuming 10% Void Space (cy)	24	31	30	47	30	18	30	54	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	\$12.52	\$12.52	\$12.52
Subtotal NRC Licensed Facility Disposal Costs	\$300	\$388	\$376	\$588	\$376	\$225	\$376	\$676	\$0	\$0	\$0	\$0
Well House Removal and Disposal Costs per Wellfield	\$1,891	\$2,449	\$2,377	\$3,715	\$2,356	\$1,458	\$2,401	\$4,288	\$0	\$0	\$0	\$0
Total Well House Removal and Disposal Costs	\$20,935											
Header Houses (Includes Booster Stations)												
Total Quantity	6	5	8	11	13	4	5	13	0	3	0	0
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	6400	8800	10400	3200	4000	10400	0	2400	0	0
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	\$1,512	\$2,079	\$2,457	\$756	\$945	\$2,457	\$0	\$567	\$0	\$0
B. Survey and Decontamination												
Cost per Header House	\$368	\$368	\$368	\$368	\$368	\$368	\$368	\$368	\$368	\$368	\$368	\$368
Subtotal Survey and Decontamination Costs	\$2,210	\$1,842	\$2,947	\$4,052	\$4,789	\$1,473	\$1,842	\$4,789	\$0	\$1,105	\$0	\$0
C. Disposal												
Total Volume (cy)	178	148	237	326	385	119	148	385	0	89	0	0
Volume for Disposal Assuming 10% Void Space (cy)	196	163	261	359	424	130	163	424	0	98	0	0
Disposal Unit Cost per WDEQ Guideline No. 12, App. K (\$/cy)	\$7.56	\$7.56	\$7.56	\$7.56	\$7.56	\$7.56	\$7.56	\$7.56	\$7.56	\$7.56	\$7.56	\$7.56
Subtotal On-Site Disposal Costs	\$1,482	\$1,232	\$1,973	\$2,714	\$3,206	\$983	\$1,232	\$3,206	\$0	\$741	\$0	\$0
Headerhouse Soil Removal Volume ft ³ (assumes 10'Wx20'Lx2.5'D)	500	500	500	500	500	500	500	500	500	500	500	500
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 Off-Site Disposal Costs	\$15,667	\$13,056	\$20,889	\$28,722	\$33,944	\$10,444	\$13,056	\$33,944	\$0	\$7,833	\$0	\$0
Header House Removal and Disposal Costs per Wellfield	\$20,493	\$17,075	\$27,321	\$37,567	\$44,396	\$13,656	\$17,075	\$44,396	\$0	\$10,246	\$0	\$0
Total Header House Removal and Disposal Costs	\$232,226											
TOTAL REMOVAL AND DISPOSAL COSTS PER WELLFIELD	\$137,900	\$136,198	\$169,823	\$292,144	\$256,640	\$69,810	\$137,876	\$334,337	\$0	\$53,911	\$0	\$0
Vehicle Operation Costs												
Number of Pickup Trucks/Pulling Units (Gas)	10											
Unit Cost in \$/hr (WDEQ Guideline No. 12, Table D-1)	\$29.28											

Cameco Resources
Smith Ranch - Highland Uranium Project
Surety Estimate

	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
Wellfield Buildings and Equipment Removal and Disposal												
Average Operating Time (Hrs/Year)												
Total Number of Years (Average)												
Total Vehicle Operation Costs	\$1,464,000											
TOTAL WELLFIELD BUILDINGS AND EQUIPMENT REMOVAL	\$3,052,640											

Canoco Resources
 Smith Ranch - Highland Uranium Project
 Surety Estimate

	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
Wellfield and Satellite Surface Reclamation										
I. Wellfield Pattern Area, and Road Reclamation										
Area (acres)										
Discing/Seeding Unit Cost (\$/acre)	\$685	\$685	\$685	\$685	\$685	\$685	\$685	\$685	\$685	\$685
Subtotal Pattern Area and Road Reclamation Costs	\$17,866	\$35,772	\$25,849	\$11,650	\$20,831	\$19,599	\$39,746	\$11,650	\$15,076	\$39,746
Total Wellfield Area Reclamation Costs	\$237,807									
II. Laydown area reclamation										
Area of Disturbance (acres)										
Average Depth of Stripped Topsoil (ft)										
Surface Grade - Level Ground										
Average Length of Topsoil Haul (ft)										
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
Subtotal Ripping Costs	\$1,153	\$1,153	\$1,153	\$1,153	\$1,153	\$1,153	\$1,153	\$1,153	\$1,153	\$1,153
B. Topsoil Application with Scraper										
Volume of Topsoil Removed (cu yd)	1,081	1,081	1,081	1,081	1,081	1,081	1,081	1,081	1,081	1,081
Application Unit Cost per WDEQ Guideline No 12, App C (\$/cu yd)	\$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)	\$685	\$685	\$685	\$685	\$685	\$685	\$685	\$685	\$685	\$685
Subtotal Discing/Seeding Costs	\$685	\$685	\$685	\$685	\$685	\$685	\$685	\$685	\$685	\$685
Subtotal Surface Reclamation Costs per WF Laydown area	\$3,020	\$3,020	\$3,020	\$3,020	\$3,020	\$3,020	\$3,020	\$3,020	\$3,020	\$3,020
Total Wellfield Laydown Area Reclamation Costs	\$30,200									
SUBTOTAL SURFACE RECLAMATION COSTS PER WELLFIELD	\$20,906	\$38,792	\$28,069	\$14,670	\$23,853	\$22,619	\$42,766	\$14,670	\$18,096	\$42,766
III. Satellite Area Reclamation										
Assumptions:	SR-1	SR-2								
Area of Disturbance (acres)										
Average Depth of Stripped Topsoil (ft)										
Surface Grade - Level Ground										
Average Length of Topsoil Haul (ft)										
A. Ripping Overburden with Dozer										
Ripping Unit Cost per WDEQ Guideline No 12, App II (\$/acre)	\$1,152.92	\$1,152.92								
Subtotal Ripping Costs	\$2,363	\$3,459								
B. Topsoil Application with Scraper										
Volume of Topsoil Removed (cu yd)	3307	4840								
Application Unit Cost per WDEQ Guideline No 12, App C (\$/cu yd)	\$1.31	\$1.31								
Subtotal Topsoil Application Costs	\$4,338	\$6,320								
C. Discing and Seeding										
Discing/Seeding Unit Cost (\$/acre)	\$685	\$685								
Subtotal Discing/Seeding Costs	\$1,405	\$2,050								
Subtotal Surface Reclamation Costs per Satellite	\$8,786	\$11,835								
Total Satellite Building Area Reclamation Costs	\$19,921									
Total	\$287,928									

Cameco Resources
Smith Ranch - Highland Uranium Project
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/Day	25	25	25	25	25	25	25	25	25
Number of Days	33	54	12	16	10	7	66	16	16
\$/Day/Person	\$136	\$136	\$136	\$136	\$136	\$136	\$136	\$136	\$136
Subtotal Labor Costs	\$13,679	\$21,941	\$4,912	\$6,550	\$4,257	\$2,685	\$26,984	\$6,550	\$6,550
2. Equipment									
Number of Days	33	54	12	16	10	7	66	16	16
\$/Day	\$960	\$960	\$960	\$960	\$960	\$960	\$960	\$960	\$960
Subtotal Equipment Costs	\$32,079	\$51,456	\$11,520	\$15,360	\$9,984	\$6,298	\$63,283	\$15,360	\$15,360
Subtotal Tankage Removal and Loading Costs	\$45,758	\$73,397	\$16,432	\$21,910	\$14,241	\$8,983	\$90,267	\$21,910	\$21,910
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	\$136	\$136	\$136	\$136	\$136	\$136	\$136	\$136	\$136
Subtotal PVC/Steel Pipe Labor Costs	\$3,548	\$4,548	\$0	\$3,639	\$1,364	\$73	\$0	\$3,548	\$3,548
Subtotal PVC/Steel Pipe Removal and Loading Costs	\$3,548	\$4,548	\$0	\$3,639	\$1,364	\$73	\$0	\$3,548	\$3,548
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									
Number of Persons	1	1	1	1	1	1	0	1	1
Pumps/Day	2	2	2	2	2	2	2	2	2
Number of Days	10.5	21.5	0	7	6	1	0	7	7
\$/Day/Person	\$136	\$136	\$136	\$136	\$136	\$136	\$136	\$136	\$136
Subtotal Labor Costs	\$1,433	\$2,934	\$0	\$955	\$819	\$136	\$0	\$955	\$955
Subtotal Pump Removal and Loading Costs	\$1,433	\$2,934	\$0	\$955	\$819	\$136	\$0	\$955	\$955
D. Dryer									
Dryer Volume (ft ³)			200						
1. Labor									

Cameco Resources
Smith Ranch - Highland Uranium Project
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
Number of Persons	0	0	5	0	0	0	0	0	0
Ft/Day	0	0	175	0	0	0	0	0	0
Number of Days	0	0	2	0	0	0	0	0	0
\$/Day/Person	\$136	\$136	\$136	\$136	\$136	\$136	\$136	\$136	\$136
Total Labor Cost	\$0	\$0	\$1,364	\$0	\$0	\$0	\$0	\$0	\$0
Subtotal Dryer Dismantling and Loading Cost	\$0	\$0	\$1,364	\$0	\$0	\$0	\$0	\$0	\$0
E. RO Units									
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 (ft ³ /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	\$136.45	\$136.45	\$136.45	\$136.45	\$136.45	\$136.45	\$136.45	\$136.45	\$136.45
Subtotal RO Unit Removal and Loading Costs	\$0.00	\$0.00	\$0.00	\$272.90	\$272.90	\$0.00	\$0.00	\$0.00	\$0.00
Subtotal Equipment Removal and Loading Costs per Facility	\$50,739	\$80,879	\$17,796	\$26,777	\$16,697	\$9,192	\$90,267	\$26,413	\$26,413
Total Equipment Removal and Loading Costs	\$345,173								
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

Cameco Resources
Smith Ranch - Highland Uranium Project
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
Transportation and Disposal Unit Costs	\$12,521	\$12,521	\$12,521	\$12,521	\$12,521	\$12,521	\$12,521	\$12,521	\$12,521
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	\$68,365	\$103,072	\$69,333	\$91,570	\$59,726	\$35,123	\$346,313	\$89,641	\$89,641
TOTAL EQUIPMENT REMOVAL AND DISPOSAL COSTS	\$952,785								

Cameco Resources
Smith Ranch - Highland Uranium Project
Surety Estimate

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
I. Decontamination Costs									
A. Wall Decontamination									
Area to be Decontaminated (ft ²)	10,810	15,900	0	0	1,152	576	4,826	12,000	0
HCl Acid Wash, including labor (\$/ft ²)	\$0.71	\$0.71	\$0.71	\$0.71	\$0.71	\$0.71	\$0.71	\$0.71	\$0.71
Subtotal Wall Decontamination Costs	\$7,717	\$11,350	\$0	\$0	\$822	\$411	\$3,445	\$8,566	\$0
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
HCl Acid Wash, including labor (\$/ft ²)	\$0.56	\$0.56	\$0.56	\$0.56	\$0.56	\$0.56	\$0.56	\$0.56	\$0.56
Subtotal Concrete Floor Decontamination Costs	\$6,519	\$9,313	\$1,975	\$0	\$947	\$474	\$3,967	\$9,864	\$0
C. Deep Well Injection Costs									
Total Kgals for Injection (1 gal used per ft ²)	22.36	32.4	3.5	0	2.83	1.415	11.854	29.477	0
Deep Well Injection Unit Cost (\$/Kgals)	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19
Subtotal Deep Well Injection Costs	\$27	\$39	\$4	\$0	\$3	\$2	\$14	\$35	\$0
Subtotal Decontamination Costs per Building	\$14,263	\$20,702	\$1,979	\$0	\$1,772	\$887	\$7,426	\$18,465	\$0
Total Decontamination Costs	\$84,539								
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
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	\$89,314	\$148,856	\$31,576	\$30,931	\$4,325	\$2,163	\$45,288	\$81,088	\$2,145
B. Concrete Floor									
Area of Concrete Floor (ft ²)	11,550	16,500	3,500	8000	1678	839	7028	17477	832
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
Subtotal Concrete Floor Demolition Costs	\$58,674	\$83,820	\$17,780	\$40,640	\$8,524	\$4,262	\$35,702	\$88,784	\$4,227
C. Concrete Footing									
Length of Concrete Footing (ft)	430	514	237	260	164	116	335	529	115
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	\$7,780	\$9,298	\$4,283	\$6,515	\$2,965	\$2,097	\$6,068	\$9,570	\$2,081
Subtotal Demolition Costs per Building	\$155,768	\$241,974	\$53,639	\$78,086	\$15,814	\$8,522	\$87,058	\$179,442	\$8,453
Total Demolition Costs	\$1,401,082								
III. Disposal Costs									
A. Building									
Volume of Building (cy)	12833	21389	4537	4444	621	311	6507	11651	308
On-Site									
Percentage (%)	100	100	100	100	100	100	100	100	100
Volume for Disposal (cubic yards)	12833	21389	4537	4444	621	311	6507	11651	308
Disposal Unit Cost (\$/cy)	\$7.56	\$7.56	\$7.56	\$7.56	\$7.56	\$7.56	\$7.56	\$7.56	\$7.56
Subtotal On-Site Disposal Costs	\$97,032	\$161,721	\$34,304	\$33,604	\$4,699	\$2,349	\$49,202	\$88,095	\$2,330
B. Concrete Floor									
Area of Concrete Floor (ft ²)	11550	16500	3500	8000	1678	839	7028	17477	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)	8662.5	12375	2625	6000	1258.5	629.25	5271	13107.75	889.5
Volume of Concrete Floor (cy)	321	458	97	222	47	23	195	485	33
1. On-Site									
Percentage (%)	75	75	75	100	100	100	100	75	100
Volume for Disposal (cy)	241	344	73	222	47	23	195	364	33
Disposal Unit Cost per WDEQ Guideline No.12, App.K (\$/cy)	\$7.56	\$7.56	\$7.56	\$7.56	\$7.56	\$7.56	\$7.56	\$7.56	\$7.56
Subtotal On-Site Disposal Costs	\$1,819	\$2,599	\$551	\$1,680	\$352	\$176	\$1,476	\$2,753	\$249

Cameco Resources
Smith Ranch - Highland Uranium Project
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	CPP Ion Ex. Plant	Central Plant	Dryer Building	Office Building	Storage Building	Water Treat Plant	Shop Building	Pilot ISL Building	Fresh Water Pumphouse
Building Demolition and Disposal									
2. NRC-Licensed Facility									
Percentage (%)	25	25	25	0	0	0	0	25	0
Volume for Disposal (ft ³)	2166	3094	656	0	0	0	0	3277	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	\$11,509	\$16,156	\$3,427	\$0	\$0	\$0	\$0	\$17,113	\$0
Subtotal Concrete Floor Disposal Costs	\$13,128	\$18,755	\$3,978	\$1,680	\$352	\$176	\$1,476	\$19,866	\$249
C. Concrete Footing									
Length of Concrete Footing (ft)	430	514	237	360	164	116	335	529	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)	1720	2055	947	1440	655	463	1341	2115	496
Volume of Concrete Footing (cy)	64	76	35	53	24	17	50	78	18
Disposal Unit Cost per WDEQ Guideline No. 12, App K (\$/cy)	\$7.56	\$7.56	\$7.56	\$7.56	\$7.56	\$7.56	\$7.56	\$7.56	\$7.56
Subtotal Concrete Footing Disposal Costs	\$482	\$576	\$265	\$403	\$184	\$130	\$376	\$592	\$139
Subtotal Disposal Costs per Building	\$110,642	\$181,052	\$38,547	\$35,687	\$5,235	\$2,655	\$51,054	\$108,553	\$2,718
Total Disposal Costs	\$940,591								
IV. Health and Safety Costs									
Accounted for on GW REST									
SUBTOTAL BUILDING DEMOLITION AND DISPOSAL COSTS	\$280,673	\$443,728	\$94,165	\$113,773	\$22,821	\$12,064	\$145,538	\$306,460	\$11,171
TOTAL BUILDING DEMOLITION AND DISPOSAL COSTS	\$2,426,212								

Cameco Resources
Smith Ranch - Highland Uranium Project
Surety Estimate

Building Demolition and Disposal	DDW Buildings	Satellite SR-1	Yellowcake Warehouse	Satellite SR-2
I. Decontamination Costs				
A. Wall Decontamination				
Area to be Decontaminated (ft ²)	0	0	3100	0
HCl Acid Wash, including labor (\$/ft ²)	\$0.71	\$0.71	\$0.71	\$0.71
Subtotal Wall Decontamination Costs	\$0	\$0	\$2,213	\$0
B. Concrete Floor Decontamination				
Area to be Decontaminated (ft ²)	0	9000	2750	9000
HCl Acid Wash, including labor (\$/ft ²)	\$0.56	\$0.56	\$0.56	\$0.56
Subtotal Concrete Floor Decontamination Costs	\$0	\$5,080	\$1,552	\$5,080
C. Deep Well Injection Costs				
Total Kgals for Injection (1 gal used per ft ²)	0	9	5.85	9
Deep Well Injection Unit Cost (\$/Kgals)	\$1.19	\$1.19	\$1.19	\$1.19
Subtotal Deep Well Injection Costs	\$0	\$11	\$7	\$11
Subtotal Decontamination Costs per Building	\$0	\$5,091	\$3,772	\$5,091
Total Decontamination Costs				
II. Demolition Costs				
A. Building				
Volume of Building (ft ³)	660.3	402,000	55,000	402,000
Demolition Unit Cost per WDEQ Guideline No.12, App.K (\$/ft ³)	\$0.26	\$0.26	\$0.26	\$0.26
Subtotal Building Demolition Costs	\$170	\$103,620	\$14,177	\$103,620
B. Concrete Floor				
Area of Concrete Floor (ft ²)	0	13400	2750	13400
Demolition Unit Cost per WDEQ Guideline No.12, App.K (\$/ft ²)	\$5.08	\$5.08	\$5.08	\$5.08
Subtotal Concrete Floor Demolition Costs	\$0	\$68,072	\$13,970	\$68,072
C. Concrete Footing				
Length of Concrete Footing (ft)	0	463	210	463
Demolition Unit Cost per WDEQ Guideline No.12, App.K (\$/ft)	\$18.10	\$18.10	\$18.10	\$18.10
Subtotal Concrete Footing Demolition Costs	\$0	\$8,379	\$3,796	\$8,379
Subtotal Demolition Costs per Building	\$170	\$180,071	\$31,943	\$180,071
Total Demolition Costs				
III. Disposal Costs				
A. Building				
Volume of Building (cy)	24	14889	2037	14889
On-Site				
Percentage (%)	100	100	100	100
Volume for Disposal (cubic yards)	24	14889	2037	14889
Disposal Unit Cost (\$/cy)	\$7.56	\$7.56	\$7.56	\$7.56
Subtotal On-Site Disposal Costs	\$185	\$112,574	\$15,402	\$112,574
B. Concrete Floor				
Area of Concrete Floor (ft ²)	0	13400	2750	13400
Average Thickness of Concrete Floor (ft)	0.75	0.75	0.75	0.75
Volume of Concrete Floor (ft ³)	0	10050	2062.5	10050
Volume of Concrete Floor (cy)	0	372	76	372
On-Site				
Percentage (%)	0	75	75	75
Volume for Disposal (cy)	0	279	57	279
Disposal Unit Cost per WDEQ Guideline No.12, App.K (\$/cy)	\$7.56	\$7.56	\$7.56	\$7.56
Subtotal On-Site Disposal Costs	\$0	\$2,111	\$433	\$2,111

Cameco Resources
Smith Ranch - Highland Uranium Project
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Building Demolition and Disposal	DDW	Satellite	Yellowcake	Satellite
	Buildings	SR-1	Warehouse	SR-2
2 NRC-Licensed Facility				
Percentage (%)	0	25	25	25
Volume for Disposal (ft ³)	0	2513	516	2513
Transportation and Disposal Unit Cost (\$/ft ³)	\$5.22	\$5.22	\$5.22	\$5.22
Subtotal NRC-Licensed Facility Disposal Costs	\$0	\$13,121	\$2,693	\$13,121
Subtotal Concrete Floor Disposal Costs	\$0	\$15,232	\$3,126	\$15,232
C Concrete Footing				
Length of Concrete Footing (ft)	0	463	210	463
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)	0	1852	839	1852
Volume of Concrete Footing (cy)	0	69	31	69
Disposal Unit Cost per WDEQ Guideline No.12, App.K (\$/cy)	\$7.56	\$7.56	\$7.56	\$7.56
Subtotal Concrete Footing Disposal Costs	\$0	\$519	\$235	\$519
Subtotal Disposal Costs per Building	\$185	\$128,325	\$18,763	\$128,325
Total Disposal Costs				
IV. Health and Safety Costs				
Accounted for on GW REST				
SUBTOTAL BUILDING DEMOLITION AND DISPOSAL COSTS	\$355	\$313,487	\$54,478	\$313,487
TOTAL BUILDING DEMOLITION AND DISPOSAL COSTS				

Cameco Resources
Smith Ranch - Highland Uranium Project
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Miscellaneous Reclamation					
I. CPP/Office Area/Pilot Plant/Maint. Shop/Chem. Storage/Yard Reclamation					
Concrete Pad= 0.3 acres					
Total Area = 10.57 acres					
A. Concrete Pad					
Area of Concrete Pad (ft 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)					\$7.56
Subtotal Concrete Pad Demolition and Disposal Costs					\$68,216
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.II (\$/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)					\$771
Subtotal Discing/Seeding Costs					\$8,145
Total CPP/Office/Yard Area Reclamation					\$102,972
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

Cameco Resources
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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.11 (\$/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)	\$685	\$685	\$685	\$685	\$685
Subtotal Discing/Seeding Costs	\$3,255	\$7,470	\$3,426	\$4,984	\$4,012
Multiplier for Projected Additions	0	0	1	0	0
Subtotal Reclamation Costs per Access Road	\$17,486	\$39,172	\$36,438	\$26,136	\$21,038
Total Access Road Reclamation Costs	\$145,186				
III. Trunk Lines					
	Trunk Line #1	Trunk Line #2	Trunk Line #3 (MU-	Trunk Line #4 (O-	Trunk Line (SR-
	(CPP to MU-4)	(CPP to SR-1)	15 to SR-1)	Sand Pilot)	2 to CPP)
Length of Trench (ft)	7750	8500	21250	5500	25000
A. Removal and Loading					
Main Pipeline Removal Unit Cost (\$/ft of trench)	\$0.85	\$0.85	\$0.85	\$0.85	\$0.85
Subtotal Trunkline Removal and Loading Costs	\$6,588	\$7,225	\$18,063	\$4,675	\$2,125
B. Transport and Disposal Costs (NRC-Licensed Facility)					
1 2" HDPE Trunkline					
Piping Length (ft)	7750	42500	21250	22000	0
Chipped Volume Reduction (ft ³ /ft)	0.5	0.5	0.5	0.5	0.5
Chipped Volume (ft ³)	3875	21250	10625	11000	0
1 4" HDPE Trunkline					
Piping Length (ft)	0	0	0	0	15000
Chipped Volume Reduction (ft ³ /ft)	0.022	0.022	0.022	0.022	0.022

Cameco Resources
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Miscellaneous Reclamation						
	Chipped Volume (ft ³)	0	0	0	0	330
2.	6" HDPE Trunkline					
	Piping Length (ft)	7750	17000	42500	0	0
	Chipped Volume Reduction (ft ³ /ft)	0.078	0.078	0.078	0.078	0.078
	Chipped Volume (ft ³)	604.5	1326	3315	0	0
3.	8" HDPE Trunkline					
	Piping Length (ft)	0	0	0	0	0
	Chipped Volume Reduction (ft ³ /ft)	0.15	0.15	0.15	0.15	0.15
	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)	0.277	0.277	0.277	0.277	0.277
	Chipped Volume (ft ³)	0	0	0	0	0
4	12" HDPE Trunkline					
	Piping Length (ft)	0	9000	0	0	0
	Chipped Volume Reduction (ft ³ /ft)	0.293	0.293	0.293	0.293	0.293
	Chipped Volume (ft ³)	0	2637	0	0	0
5.	14" HDPE Trunkline					
	Piping Length (ft)	0	0	0	0	0
	Chipped Volume Reduction (ft ³ /ft)	0.359	0.359	0.359	0.359	0.359
	Chipped Volume (ft ³)	0	0	0	0	0
5.	16" HDPE Trunkline					
	Piping Length (ft)	15500	11000	21120	15500	15500
	Chipped Volume Reduction (ft ³ /ft)	0.4	0.4	0.4	0.4	0.4
	Chipped Volume (ft ³)	6200	4400	8448	6200	6200
6	18" HDPE Trunkline					
	Piping Length (ft)	0	31500	0	0	2320
	Chipped Volume Reduction (ft ³ /ft)	0.47	0.47	0.47	0.47	0.47
	Chipped Volume (ft ³)	0	14805	0	0	1090
	Total Pipeline Length (ft)	10680	44418	22388	17200	7620.4
	Volume for Disposal Assuming 10% Void Space (ft ³)	11747	48860	24627	18920	8382
	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	\$147,055	\$611,655	\$308,294	\$236,850	\$104,930
C.	Discing/Seeding					
	Width of Pipeline Trench (ft)	4	4	4	4	4
	Area of Pipeline Trench (acres)	0.7	0.8	2.0	0.5	0.2
	Discing/Seeding Unit Cost (\$/acre)	\$685	\$685	\$685	\$685	\$685
	Subtotal Discing/Seeding Costs	\$488	\$535	\$1,337	\$346	\$157
	Subtotal Reclamation Costs per Pipeline	\$154,131	\$619,415	\$327,694	\$241,871	\$107,212

Cameco Resources
Smith Ranch - Highland Uranium Project
Surety Estimate

Miscellaneous Reclamation		
Total Pipeline Reclamation Costs		\$1,462,639
IV. Settling Basin/Storage Ponds Reclamation	Storage Ponds	Settling Pond
A. Soil Sampling and Monitoring		
Number of Soil Samples	15	15
\$/Sample	\$333	\$333
Subtotal Soil Sampling and Monitoring Costs	\$4,995	\$4,995
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)	\$4.51	\$4.51
Subtotal Liner Removal and Loading Costs	\$6,676	\$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	\$14,865	\$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)	\$685	\$685
Subtotal Discing/Seeding Costs	\$343	\$1,713

Cameco Resources
Smith Ranch - Highland Uranium Project
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Miscellaneous Reclamation			
Subtotal Reclamation Costs		\$21,851	\$24,957
Total Settling Basin/Ponds Reclamation Costs		\$46,809	
V. Miscellaneous			
A. Potable Water Wells			
Total Depth (ft) (5- 5-inch Diameter Wells, @ 750 ft)		3,750	
Well Abandonment Unit Cost (\$/ft)		\$1.45	
Subtotal Potable Water Wells Abandonment Costs		\$5,437.50	
B. Fuel Area			
Concrete Floor			
Area of Concrete Floor (ft ²)		375	
Demolition Unit Cost per WDEQ Guideline No.12,App.K (\$/ft ²)		\$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. O₂ Pad MU-15			
Concrete Floor			
Area of Concrete Floor (ft ²)		400	
Demolition Unit Cost per WDEQ Guideline No.12,App.K (\$/ft ²)		\$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. O₂ Pad CPP			
Concrete Floor			
Area of Concrete Floor (ft ²)		400	
Demolition Unit Cost per WDEQ Guideline No.12,App.K (\$/ft ²)		\$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)		100,270	
Fence Removal Cost		\$0.55	
Subtotal Fence Removal		\$55,149	
Total Miscellaneous Structures Reclamation Costs		\$62,077.00	

Cameco Resources
 Smith Ranch - Highland Uranium Project
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Miscellaneous Reclamation	
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	\$2,191,683

**Cameco Resources
Smith Ranch - Highland Uranium Project
Surety Estimate**

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 =								\$210.50 man-day	
4. One 60 hp pump at the plant or satellite feeds two DDWs									
5. One 150 hp at each DDW									
6. Each DDW can take 75 gpm									
Wellfield Pumping Electrical Costs per 1000 Gallons									
1000 gal	X	3 hp	X	1 hr	X	0.746 kwh	X	\$ 0.0478	= \$ 0.056
		32 gpm		60 min		hp		kwh	
Wellfield Pumping Labor Costs per 1000 Gallons									
1000 gal	X	1 mon	X	30 days	X	\$210.50	X	2 operators	= \$ 1.922
		6,570,000 gal		1 month		man-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 Pumping Electrical Costs per 1000 Gallons									
1000 gal	X	60 hp	X	1 hr	X	0.746 kwh	X	\$ 0.0478	= \$ 0.238
		150 gpm		60 min		hp		kwh	
DDW Pumping Costs per 1000 gallons									
1000 gal	X	150 hp	X	1 hr	X	0.746 kwh	X	\$ 0.0478	= \$ 1.189
		75 gpm		60 min		hp		kwh	
TOTAL GWS COSTS PER 1000 GALLONS								= \$ 3.41	

Cameco Resources
Smith Ranch - Highland Uranium Project
Surety Estimate

Groundwater Reverse Osmosis (RO) and Bioremediation Unit Costs

Assumptions:

1. Cost of electricity =		\$0.0478 KW hr
2. Operator labor costs =		\$210.50 day
3. RO System Horsepower:		
downhole pump	3 hp	10 gpm
RO Unit Pump	60 hp	
Permeate/Injection pump	60 hp	
Waste pump	15 hp	
TOTAL:	138 hp	

4. Chemical costs:		
Cheese Whey =		\$1.08 gal
Methanol =		\$2.43 gal
Antiscalant =		\$16.19 gal

5. Mix Rates		
Cheese Whey	0.00005 gal/gal	
Methanol	0.00025 gal/gal	
Antiscalant	0.00000833 gal/gal	

6. Based on 36 pumps at 1,150 gpm		
7. RO Maintenance Costs		\$0.05 per Kgal

Wellfield Pumping Electrical Costs per 1000 Gallons

1000 gal	X	3 hp	X	1 hr	X	0.746 kwh	X	\$ 0.0478	=	\$ 0.056	per Kgal
		32 gpm		60 min		hp		kwh			

Reverse Osmosis/Bioremediation Electrical Costs per 1000 Gallons

1000 gal	X	138 hp	X	1 hr	X	0.746 kwh	X	\$ 0.0478	=	\$ 0.082	per Kgal
		1000 gpm		60 min		hp		kwh			

Reverse Osmosis/Bioremediation Labor Costs per 1000 Gallons

1000 gal	X	1 min	X	1 man-day	X	\$210.50	X	2 operators	=	\$ 0.877	per Kgal
		1,000 gal		480 min		man-day					

Treatment chemical costs per 1000 Gallons

Antiscalant:		
1000 gal	X	0.000008330 gal antiscalant
		1 gal
		X \$16.19 gal antiscalant
		= \$ 0.135

Methanol		
1000 gal	X	0.00025 gal methanol
		1 gal
		X \$2.43 gal methanol
		= \$ 0.608

Cheese Whey		
1000 gal	X	0.00005 gal cheese whey
		1 gal
		X \$1.08 gal cheese whey
		= \$ 0.054

Reverse Osmosis Production Rate

400 gal	X	60 min	X	24 hr	X	365 day	X	1 year	=	17,520,000	gallons
		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
		hr		day		year		12 month			month

TOTAL RO COSTS PER 1000 GALLONS	= \$ 1.20
TOTAL BIOREMEDIATION COSTS PER 1000 GALLONS	= \$ 1.68

Cameco Resources
 Smith Ranch - Highland Uranium Project
 Surety Estimate

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			
	8 hours	X	\$ 110 per hour	=\$ 880.00
	MIT Unit			
	8 hours	X	\$ 110 per hour	=\$ 880.00
TOTAL MIT COST PER DAY				=\$ 1760.00
	Wells Completed	6	per day	
MIT COSTS PER WELL				=\$ 293.33
MIT COSTS PER DEEP DISPOSAL WELL (2008 Cost)				=\$ 5907.53

**Cameco Resources
Smith Ranch - Highland Uranium Project
Surety Estimate**

WELL ABANDONMENT Unit Costs

Assumptions:

- 1 Use backhoe for 0.25 hr/well to dig, cut off, and cap well.
- 2 Drill rig used 2.5 hrs to plug well.
- 3 Labor for installing chips, etc. will require 2 workers at 2.5 hrs per well
- 4 Contouring and seeding included with miscellaneous reclamation

						Cost per ft (based on 700 ft wells)
Well Abandonment Costs						
Cat 416 Backhoe	0.25 hours	X \$ 80.00	per hour	=	20.00	\$0.0286
Drill rig	2.5 hours	X \$ 148.84	per hour	=	372.10	\$0.5316
Labor	2.5 hours	X \$ 17.06	per hour	=	42.64	\$0.1218
Well Cap	1 each	X \$ 1.27	each	=	1.27	\$0.0018
Materials per foot of well						
Cement	0.12 sacks/ft	X \$ 5.94	per sack	=		\$0.7128
Plug Gel	0.0067 sacks/ft	X \$ 7.30	per sack	=		\$0.0489

Total Estimated Cost per Foot:	\$1.45
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**Cameco Resources
Smith Ranch - Highland Uranium Project
Surety Estimate**

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 \$ 80.00	per hour	\$20.00
Radiation Technician	0.25 hours	X \$ 24.60	per hour	\$6.15
Laborer	2.5	X \$	17.06 per hour	\$42.64
Disposal and Transportation Costs				
Contaminated Soil per Well				0.370 cy per well
Disposal and Transportation				\$ 338.00 per cy
Total Estimated Cost per Well:				\$193.85

**Cameco Resources
Smith Ranch - Highland Uranium Project
Surety Estimate**

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 0.5 hrs per well					
					Cost per ft (based on 700 ft wells)
Hole Abandonment Costs					
Drill rig	2.5 hours	X \$	148.84 per hour	=\$ 372.10	\$0.5316
Well Cap	1 each	X \$	1.27 each	=\$ 1.27	\$0.0018
Labor	2.5 hours	X \$	17.06 per hour	= 42.64	\$0.1218
Materials per foot of					
Cement	0.12 lbs/ft	X \$	5.940 per sack	=	\$0.7128
Plug Gel	0.0067 sacks/ft	X \$	7.30 per sack	=	\$0.0489
Site Grading and Seeding:				\$31.00 per site	
Total Estimated Cost per Foot:					\$1.42

Cameco Resources
Smith Ranch - Highland Uranium Project
Surety Estimate

Wellfield Building/Clay Liner Removal			
Cost per Well Head Cover			
Radiation Tech =	19	per hour	
Operator =	20	per hour	
Total Wellhead Covers =	0.00		
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 =	\$ 45.72	per hour	
Cleaning Rate	10	wellheads per hour	
Survey / Decon.	\$ 4.57	per wellhead cover	
Cost per Header House			
Rad Technician =	19	per hour	
Operator =	20	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 =	\$ 368.36	per hour	
Cleaning Rate	1	header house per day	
Survey / Decon.	\$ 368.36	per header house	
Clay Liner/Subsoil Removal Cost			
Operator =	20	per hour	
Trackhoe =	\$ 80.00	per hour	
Loader =	\$ 80.00	per hour	
Loader Size =	20	cubic yards	
Disposal Rate =	40	yards/hour	
Total Removal	\$ 4.51	per cubic yard	

Cameco Resources
Smith Ranch - Highland Uranium Project
Surety Estimate

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	\$17.06	hr.						
Time	20	8hr. Days						
Manlift Rental	\$8,000.00	Month						
CPP Wall Area	26,710	square feet						
Labor and manlift	\$0.50	per square foot						
Acid	\$0.16	pound						
Consumables	\$0.05	per square foot						
Total	\$0.71	per square foot						
Acid Wash (Floors)								
Labor	2	Workers						
Rate	\$17.06	hr.						
Time	15	8hr. Days						
CPP Floor Area	11550	square feet						
Labor	\$0.35	per square foot						
Acid	\$0.16	pound						
Consumables	\$0.05	per square foot						
Total	\$0.56	per square foot						

Cameco Resources
Smith Ranch - Highland Uranium Project
Surety Estimate

WELLFIELD PIPING REMOVAL Unit Costs

Assumptions:

1. Trenching with backhoe at 1500 ft/day
2. Pipeline extraction and backfilling with backhoe at 1500 ft/day
4. Backhoe operation requires 1 worker
5. Pipeline extraction requires 2 workers
6. Operating schedule: 8 hrs/day, 5 days/week

Equipment

Backhoe

$$\frac{\$ 80}{\text{hour}} \times \frac{8 \text{ hours}}{\text{day}} \times \frac{1 \text{ day}}{1500 \text{ ft}} = \$ 0.43 \text{ per foot}$$

Labor

Backhoe Operation

$$\frac{\$ 26.31}{\text{man hr}} \times \frac{8 \text{ man hrs}}{1 \text{ day}} \times \frac{1 \text{ days}}{1500 \text{ ft}} = \$ 0.14 \text{ per foot}$$

Pipeline Extraction

$$\frac{\$ 26.31}{\text{man hr}} \times \frac{16 \text{ man hrs}}{1 \text{ day}} \times \frac{1 \text{ day}}{1500 \text{ ft}} = \$ 0.28 \text{ per foot}$$

MAIN PIPELINE REMOVAL COST = \$ 0.850 per foot

**Camco Resources
Smith Ranch - Highland Uranium Project
Surety Estimate**

Mine Unit Data												
	Mine Unit-1	Mine Unit-2	Mine Unit-3	Mine Unit-4/4A/4E/4F	Mine Unit-15	Mine Unit-15A	Mine Unit K	Mine Unit 9	Mine Unit 10	Mine Unit 27	Mine Unit 21	Mine Unit 7
Total number of production wells	101	140	148	216	268	204	195	238	0	60	0	0
Total number of injection wells	113	235	204	353	463	376	294	354	0	100	0	0
Total number of monitor wells	47	53	44	90	102	57	61	103	70	76	0	46
Flare Factor	1.56	1.05	1.05	1.14	1.48	1.68	1.21	1.52	0	1.82	0	1.58
Wellfield Area (ft ²)	1,108,034	2,271,426	1,790,519	2,725,270	2,554,278	970,206	1,813,644	1,931,533	0	1,764,110	0	1,079,984
Wellfield Area (acres)	25.44	52.14	41.10	62.56	58.64	22.27	41.64	44.34	0.00	40.50	0.00	24.79
Affected Ore Zone Area (ft ²)	1,108,034	2,271,426	1,790,519	2,725,270	2,554,278	970,206	1,813,644	1,931,533	0	1,764,110	0	1,079,984
Avg. Completed Thickness	18.0	23.0	17.0	19.0	18.0	16.0	19.0	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
Affected Volume (ft ³)	31,113,595	54,854,938	31,960,764	59,029,348	68,045,966	26,079,137	41,695,676	67,526,394	0	73,845,645	0	34,127,494
Gallons per Porc Volume	62,837	110,785	64,548	119,216	137,426	52,669	84,209	136,376	0	149,139	0	68,924
Number of Patterns in Unit(s)												
Current	101	140	148	216	268	101	180	180	0	0	0	0
Estimated next report	0	0	0	0	0	103	15	58	0	60	0	0
Total Estimated	101	140	148	216	268	204	195	238	0	60	0	0
Number of Wells in Unit(s)												
Production Wells												
Current	101	140	148	216	268	101	180	180	0	0	0	0
Estimated next report	0	0	0	0	0	103	15	58	0	60	0	0
Total Estimated	101	140	148	216	268	204	195	238	0	60	0	0
Injection Wells												
Current	113	235	204	353	463	186	271	265	0	0	0	0
Estimated next report	0	0	0	0	0	190	23	89	0	100	0	0
Total Estimated	113	235	204	353	463	376	294	354	0	100	0	0
Monitor Wells												
Current	47	53	44	90	102	57	61	90	70	76	0	46
Estimated next report	0	0	0	0	0	0	0	13	0	0	0	0
Total Estimated	47	53	44	90	102	57	61	103	70	76	0	46
Number of Wells per Wellfield	261	428	396	659	833	637	550	695	70	236	0	46
Total Number of Wells	4811											
Average Well Depth (ft)	500	850	750	850	450	500	950	950	950	800	600	600
Average Diameter of Casing (inches)	5	5	5	5	4.5	4.5	4.5	5	0	0	0	5
Deluge Holes Estimated Next Report Period	0	0	0	0	0	0	0	30	270	0	0	0
Length of Fencing (ft)	16,487	11,580	7,388	25,047	7,074	0	10,807	21,887	0	0	0	0
Number of Deep Disposal Wells												

Cameco Resources
Smith Ranch - Highland Uranium Project
Surety Estimate

Electrical Costs			
Power cost	2008 Actual		
	\$0.0478	KwHr	
Kilowatt to Horsepower	0.746	Kw/HP	
Horsepower per gallon per minute	0.167	HP/gpm	
Building Electricity Costs, Highest Winter Season	\$0.013	per cubic foot	
Labor Rates			
Latest Available: Wyoming US Bureau of Labor-Statistics May 2007		Inc 30% benefits (i.e. overhead)	
Environmental Manager/RSO	\$33.47	\$43.51	hour
Restoration Manager/Hydrologist	\$26.17	\$34.02	hour
Operator	\$20.24	\$26.31	hour
Laborer	\$13.12	\$17.06	hour
Engineer	\$29.12	\$37.86	hour
Radiation/Environmental Engineering Technician	\$18.92	\$24.60	hour
2,000 working hours in a month	173	hours per month	
Chemical Costs			
	2009 Actual (includes profit/overhead)		
Antiscalant for RO	\$10.19	gal	
Cheese Whiey	\$1.08	gal	
Methanol	\$2.43	gal	
Cement	\$5.94	sack	
Bentonite Tubes	\$2.90	tube	
Plug Gel	\$7.30	sack	
Well Cap	\$1.27	each	
Hydrochloric Acid	\$0.10	pound	
Analytical Costs			
	2009 Actual (includes profit/overhead)		
Guideline X (contract lab)	\$33.00	analysis	
U parameter (contract lab) Est Rate (CPI)	\$30.00	analysis	
Other (radon, bio, etc.) Est Rate (CPI)	\$912.00	month	

CPI Escalators (CPI-U, U.S./West)	
Not used, it went down	
Dec 2007 CPI, (urban, West)	209.545
Dec 2008 CPI (urban, West)	208.088
Escalation Factor	-0.700

Capital Program Costs	
Deep Disposal Well, SW Area	\$1,900,000
RO Unit, CPP	\$500,000
RO Unit, Reynolds Ranch	\$500,000
Decarbonator, CPP	\$50,000
Chipper	\$50,000
BFI Container x 2	\$7,800.00
*NRC License/Inspection Fees (1/2 of 158606/yr)	\$793,030
TOTAL Capital Costs	\$3,808,630

*Fees are split between Highland Uranium Project and Smith Ranch

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

**Cameco Resources
Smith Ranch - Highland Uranium Project
Surety Estimate**

Equipment Costs (includes profit and overhead)						
<u>Equipment</u>	<u>Base Rental Rate (\$/hr)</u>	<u>Labor Costs (\$/hr)</u>	<u>Repair Reserve Costs (\$/hr)</u>	<u>Fuel Costs (\$/hr)</u>	<u>Mod. & Demob. (\$/hr)</u>	<u>Total (\$/hr)</u>
Cat 924G Loader	\$80.00	N/A	inc	inc	inc.	\$80.00
Cat 416 Backhoe	\$80.00	N/A	inc	inc	inc.	\$80.00
Shredder	\$12.00	N/A	inc	inc	inc.	\$12.00
Cat D8N Bulldozer	\$110.00	N/A	inc	inc	inc.	\$110.00
Pulling Unit with Operator	\$110.00	inc	inc	inc	inc.	\$110.00
MIT Unit with Operator	\$110.00	inc	inc	inc	inc.	\$110.00
Drill Rig (workover, repair, P&A) with Operator	\$148.84	inc	inc	inc	inc.	\$148.84
Manlift Rental	\$50.00	inc	inc	inc	inc.	\$50.00
Crane Rental	\$110.00	inc	inc	inc	inc.	\$110.00
Basis						
Cat 924G, 416 rental rates from Russell Construction (Jan 09), drill rig based on current contracts				\$2.689	gallon	
Diesel estimated						
Pulling Unit cost based on Pronghorn Pump and Repair (Jan 09)						

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

Cameco Resources
Smith Ranch - Highland Uranium Project
Surety Estimate

Guideline No. 12 Unit Costs (includes profit)					
Paragraph 12. Miscellaneous (Administrative, Overhead and Contingency)					
Extrapolated percentage based on numbers provided				15	percent
App K. Cost Estimates for Demolition and Removal of Railroad Spurs and Facilities Buildings					
Task	Cost per unit	Regional Cost Adjustor	Overhead (10%)	Adjusted Cost per Unit	
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					
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	7.04 cy	0.974	\$0.70	\$7.561 cy	
App C. Calculations for Moving Materials with a Caterpillar 637G Push-Pull Scraper Fleet					
		Operating Cost per bank (in sim)			
One-Way Distance 500 feet, 0% grade		\$0.994	\$0.10	\$1.093 bey	
One-Way Distance 1,000 feet		\$1.187	\$0.12	\$1.306 bey	
One-Way Distance 2,000 feet		\$1.538	\$0.15	\$1.692 bey	
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 I. Cost Estimate for Ripping Overburden Using a Caterpillar D11R Dozer					
		Operating Costs			
0.27 acre/hour		\$282.97	\$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	2008 Actual
Seed cost	\$85.28 per acre
Hay Mulch Crimped and Tackifier Soil Amendment	\$448 per acre
Seed and Mulch	\$685 per acre
Depth of Topsoil	0.5 feet