



**CAMECO RESOURCES**  
Smith Ranch-Highland  
Operation  
Mail:  
P.O. Box 1210  
Glenrock, WY  
82637 USA

Tel: (307) 358-6541  
Fax: (307) 358-4533  
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December 6, 2010

Mr. Lowell Spackman, District 1 Supervisor  
Land Quality Division  
Wyoming Department of Environmental Quality  
Herschler Building  
122 West 25<sup>th</sup> Street  
Cheyenne, WY 82002

CERTIFIED MAIL #70092820000140460641 RETURN RECEIPT REQUESTED

RE: Soil Sample Results from Wellfield Release, Cameco Resources, Smith Ranch Highland  
Uranium Project, Permit 633

Dear Mr. Spackman:

On September 22, 2010 Power Resources, Inc. d/b/a Cameco Resources (CR) provided written notification, pursuant to Permit 633, regarding a wellfield release in Mine Unit 15, near headerhouse 12. In accordance with Permit 633, soil samples were collected from the release site and submitted to an off-site laboratory for analysis. CR has included a copy of the Laboratory Analytical Report for inclusion into the originally submitted spill report.

A total of three soil samples were collected (from 0-6 inches) within the release area, and one background sample was obtained. A map of the collection sample sites is attached. The analytes tested for include arsenic, selenium, uranium, and radium-226. The results are summarized in the table below.

#### Summary of Analytical Report

	Background Sample	Sample 1	Sample 2	Sample 3
Selenium (mg/kg)	0.07	0.425	0.24	0.12
Arsenic (mg/kg)	6.0	4.9	5.8	4.7
Uranium (mg/kg)	2.5	2.8	3.1	5.9
Radium (pCi/g)	2.1	3.3	2.4	2.5

CR assessed the laboratory results and compared them to background results and/or regulatory standards. The arsenic background sample was 6.0 mg/kg and the 3 samples collected ranged from 4.7-5.8 mg/kg indicating indistinguishable results from background. The selenium background result was 0.07 mg/kg and the 3 samples ranged from 0.12 – 0.425 mg/kg which appear to be slightly above background but within normal concentration levels. The uranium background was 2.5 mg/kg and the 3 samples ranged from 2.8 – 5.9 mg/kg. Though the third sample appears to be slightly above background it remains well below the trigger level value established for an industrial/commercial facility which is 1,230 mg/kg. Trigger levels for commercial/industrial soil contamination are provided in the Memorandum of Understanding Between the EPA and the NRC, *Consultation and Finality on Decommissioning and Decontamination of Contaminated Sites*. The radium 226 background result was 2.1 mg/kg and the 3 samples ranged from 2.4-3.3 mg/kg indicating indistinguishable results from background.

Concentrations for each of these analytes were not exceeded and further assessment is not necessary.

Please contact me at (307) 358-6541 ext. 474 if you have questions.

Sincerely,



Angelo Kallas  
Safety, Health, Environment, and Quality (SHEQ) Manager

AK/dk

Attachment: Energy Laboratory Analytical Report  
Map

cc: J. Brister T. Cannon  
Mr. Doug Mandeville – NRC Project Manager (2-copies)  
Mr. Joe Hunter – Water Quality Division  
File SR 4.3.3.1 File SR 4.6.4.4 File SR 4.6.4.1



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## ANALYTICAL SUMMARY REPORT

November 02, 2010

RECEIVED

Power Resources dba Cameco Corporation  
762 Ross Rd (Douglas, WY 82633)  
Glenrock, WY 82637

*Arlene*

NOV 04 2010

Workorder No.: C10091205

Project Name: SR-HUP

SMITH RANCH - HIGHLAND

*H.H. 15-12*

Energy Laboratories, Inc. received the following 4 samples for Power Resources dba Cameco Corporation on 9/29/2010 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C10091205-001	1	09/28/10 00:00	09/29/10	Soil	ABDPTA extractable metals Metals by ICP/CPMS, Total Digestion For RadioChemistry ABDTPA Soil Extraction Digestion, Total Metals for Core Samples Radium 226
C10091205-002	2	09/28/10 00:00	09/29/10	Soil	Same As Above
C10091205-003	3	09/28/10 00:00	09/29/10	Soil	Same As Above
C10091205-004	Bkgd	09/28/10 00:00	09/29/10	Soil	Same As Above

This report was prepared by Energy Laboratories, Inc., 2393 Salt Creek Hwy., Casper, WY 82601. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:

*Stephanie D. Waldrop*  
**Stephanie D. Waldrop**  
**Reporting Supervisor**



### LABORATORY ANALYTICAL REPORT

**Client:** Power Resources dba Cameco Corporation  
**Project:** SR-HUP  
**Lab ID:** C10091205-004  
**Client Sample ID:** Bkgd

**Report Date:** 11/02/10  
**Collection Date:** 09/28/10  
**Date Received:** 09/29/10  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>METALS - ABDTPA EXTRACTABLE</b>							
Selenium	0.07	mg/kg-dry	D	0.01		SW6020	10/07/10 22:27 / sml
<b>METALS - TOTAL</b>							
Arsenic	6.0	mg/kg-dry		0.5		SW6020	10/19/10 12:17 / sml
Uranium	2.5	mg/kg-dry		0.5		SW6020	10/19/10 12:17 / sml
<b>RADIONUCLIDES - TOTAL</b>							
Radium 226	2.1	pCi/g-dry				E903.0	10/27/10 21:51 / jb
Radium 226 precision (±)	0.2	pCi/g-dry				E903.0	10/27/10 21:51 / jb
Radium 226 MDC	0.1	pCi/g-dry				E903.0	10/27/10 21:51 / jb

**Report Definitions:**  
RL - Analyte reporting limit.  
QCL - Quality control limit.  
MDC - Minimum detectable concentration

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.  
D - RL increased due to sample matrix.



### LABORATORY ANALYTICAL REPORT

**Client:** Power Resources dba Cameco Corporation  
**Project:** SR-HUP  
**Lab ID:** C10091205-001  
**Client Sample ID:** 1

**Report Date:** 11/02/10  
**Collection Date:** 09/28/10  
**Date Received:** 09/29/10  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>METALS - ABDTPA EXTRACTABLE</b>							
Selenium	0.425	mg/kg-dry	D	0.009		SW6020	10/07/10 22:05 / sml
<b>METALS - TOTAL</b>							
Arsenic	4.9	mg/kg-dry		0.5		SW6020	10/15/10 02:05 / sml
Uranium	2.8	mg/kg-dry		0.5		SW6020	10/19/10 14:53 / sml
<b>RADIONUCLIDES - TOTAL</b>							
Radium 226	3.3	pCi/g-dry				E903.0	10/27/10 16:35 / jb
Radium 226 precision (±)	0.3	pCi/g-dry				E903.0	10/27/10 16:35 / jb
Radium 226 MDC	0.1	pCi/g-dry				E903.0	10/27/10 16:35 / jb

**Report Definitions:**  
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QCL - Quality control limit.  
MDC - Minimum detectable concentration

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.  
D - RL increased due to sample matrix.



### LABORATORY ANALYTICAL REPORT

**Client:** Power Resources dba Cameco Corporation  
**Project:** SR-HUP  
**Lab ID:** C10091205-002  
**Client Sample ID:** 2

**Report Date:** 11/02/10  
**Collection Date:** 09/28/10  
**Date Received:** 09/29/10  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>METALS - ABDTPA EXTRACTABLE</b>							
Selenium	0.24	mg/kg-dry	D	0.01		SW6020	10/07/10 22:16 / sml
<b>METALS - TOTAL</b>							
Arsenic	5.8	mg/kg-dry		0.5		SW6020	10/19/10 15:00 / sml
Uranium	3.1	mg/kg-dry		0.5		SW6020	10/19/10 15:00 / sml
<b>RADIONUCLIDES - TOTAL</b>							
Radium 226	2.4	pCi/g-dry				E903.0	10/27/10 16:35 / jb
Radium 226 precision (±)	0.3	pCi/g-dry				E903.0	10/27/10 16:35 / jb
Radium 226 MDC	0.1	pCi/g-dry				E903.0	10/27/10 16:35 / jb

**Report Definitions:**  
 RL - Analyte reporting limit.  
 QCL - Quality control limit.  
 MDC - Minimum detectable concentration

MCL - Maximum contaminant level.  
 ND - Not detected at the reporting limit.  
 D - RL increased due to sample matrix.



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### LABORATORY ANALYTICAL REPORT

**Client:** Power Resources dba Cameco Corporation  
**Project:** SR-HUP  
**Lab ID:** C10091205-003  
**Client Sample ID:** 3

**Report Date:** 11/02/10  
**Collection Date:** 09/28/10  
**Date Received:** 09/29/10  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>METALS - ABDTPA EXTRACTABLE</b>							
Selenium	0.12	mg/kg-dry	D	0.01		SW6020	10/07/10 22:22 / sml
<b>METALS - TOTAL</b>							
Arsenic	4.7	mg/kg-dry		0.5		SW6020	10/19/10 15:06 / sml
Uranium	5.9	mg/kg-dry		0.5		SW6020	10/19/10 15:06 / sml
<b>RADIONUCLIDES - TOTAL</b>							
Radium 226	2.5	pCi/g-dry				E903.0	10/27/10 16:35 / jb
Radium 226 precision (±)	0.3	pCi/g-dry				E903.0	10/27/10 16:35 / jb
Radium 226 MDC	0.1	pCi/g-dry				E903.0	10/27/10 16:35 / jb

**Report Definitions:**  
RL - Analyte reporting limit.  
QCL - Quality control limit.  
MDC - Minimum detectable concentration

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.  
D - RL increased due to sample matrix.

