CROW BUTTE RESOURCES, INC.

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August 7, 2003

Mr. Dwight Chamberlain, Director
Division of Nuclear Material Safety
Region IV
United States Nuclear Regulatory Commission
611 Ryan Plaza Drive, Suite 400
Arlington, Texas 76011

Subject: Semiannual Radiological Effluent and Environmental Monitoring Report
Source Materials License No. SUA-1534, Docket No. 40-8943

Dear Mr. Chamberlain:

Enclosed please find one copy of the Semiannual Radiological Effluent and Environmental Monitoring Report for the Crow Butte Uranium Project. The report is provided in accordance with License Condition 12.1 of Source Materials License SUA-1534 and 10 CFR Part 40. This report covers the first and second quarters of 2003.

If you have any questions concerning the report, please feel free to call me at (308) 665-2215.

Sincerely,
CROW BUTTE RESOURCES, INC.

Michael L. Griffin
Manager of Health, Safety, and Environmental Affairs

c: Ms. Susan Frant
Branch Chief, Fuel Cycle Licensing Branch
Division of Fuel Cycle Safety and Safeguards
c/o Document Control Desk
U.S. Nuclear Regulatory Commission
Washington D.C. 20555

Mr. David Miesbach
Underground Injection Control Program Coordinator
Nebraska Department of Environmental Quality
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Lincoln, Nebraska 68509-8922

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CROW BUTTE RESOURCES, INC.

CROW BUTTE URANIUM PROJECT

RADIOLOGICAL EFFLUENT AND ENVIRONMENTAL MONITORING REPORT

for

FIRST AND SECOND QUARTERS, 2003

USNRC Source Materials License SUA 1534

Table of Contents

1 WATER QUALITY MONITORING DATA

1.1 Excursion Monitoring

Biweekly excursion monitoring in the shallow aquifer and perimeter monitor wells was continued in Mine Units 1 through 8 during the first and second quarters of 2003. Complete excursion monitoring results are available on site for inspection.

CM5-11 was removed from excursion status during the period. IJ-13 and SM7-23 remain on excursion status. Excursion reports have been submitted as required in License Condition 12.2.

1.2 Water Supply Wells and Surface Water

Summary sheets of quarterly radiological analytical data for the reporting period from all surface waters and water supply wells within one kilometer of the active wellfield boundary are included in Appendix A. The reported radiological data are within the expected ranges for each well or stream. Samples were obtained from all sample locations with the exceptions noted in Appendix A.

2 OPERATIONAL

2.1 Production Data Summary

Mining operations continued through the first and second quarters of 2003. The average operating production flow rate was 4378 gpm for the first quarter and 4322 gpm for the second quarter. The average production flow for the first half of 2003 was 4350 gpm. Injection and production totals from the totalizers and the calculated bleed totals for the reporting period are included in Appendix B.

The main injection trunkline is equipped with a continuous pressure sensor. The average and maximum injection pressures for each wellhouse are included in Appendix C in the Wellfield Injection Pressure table.

2.2 Wastewater Summary

The total volume of wastewater discharged to the ponds was 2,396,745 gallons during the first quarter and 1,199,780 gallons during the second quarter. Currently, all five evaporation ponds contain wastewater.

Wastewater that is not disposed of in the evaporation ponds is injected into the Deep Disposal Well (DDW). Currently, the well is operated on a continuous basis and 17,593,505 gallons of wastewater was injected into the well during the first half of 2003. A summary of the total volume of wastewater injected and the average radionuclide content is contained in Appendix D.

2.3 Effluent Release

10 CFR §40.65 requires licensees to report quantities of radionuclides in liquid and gaseous effluent releases to the environment. In the Application for Renewal of Source Materials License SUA-1534, submitted December 1995, Table 7.3(A) presented calculations of the annual radon emissions for the Crow Butte Plant. These calculations assumed a 7.04×10^{-4} Curies/m^3 radon release from leaching operations and the radon release calculations for the first half of 2003 use this release rate estimate.

During the first quarter production occurred at an average flow rate of 4378 gpm (16,571 lpm). Production was maintained continuously for 90 days during the first quarter. This represents a first quarter operating factor of 100%. The production flow for the first quarter results in a calculated radon release of 1,089 Curies. During the second quarter production occurred at an average flow rate of 4322 gpm (16,359 lpm). Production was maintained continuously for 91 days for the second quarter with 3 hours of downtime. This represents a second quarter operating factor of 99.9%. The production flow for the second quarter results in a calculated radon release of 1,086 Curies. Calculations for radon release from production operations are shown in Appendix E.

Additional wells were brought on line during the first half of 2003. Calculations for the start-up of 6.71 acres of a new wellfield are shown in Appendix E. The calculated radon released from start-up of 6.71 acres is 8 Curies.

The total radon emission due to leaching operations from the Crow Butte plant for the first half of 2003 was 2,183 Curies. This calculated release rate is comparable with the releases estimated in CBR's License Renewal Application.

Radon gas is also released from restoration activities. For restoration water that is treated by ion exchange only, the radon concentration is 0.697 µCi/l. Of the total restoration production flow it is assumed that 25% of the radon is released through wellfield loss and 10% of the remaining radon is released during pressurized ion exchange treatment. For water that is treated by reverse osmosis, it is assumed that 100% of the remaining radon is released. For water treated by reverse osmosis the radon concentration is 0.470 µCi/l after adjusting for wellfield loss and ion exchange loss.

During the first half of 2003, a total of 102,725,150 gallons (388,814,693 l) of restoration water was produced from Mine Units 2 and 3. Based upon an estimated radon concentration of 0.697 µCi/l, the total amount of radon in the restoration solution was calculated to be 271 Curies as

shown in Appendix E. The estimated release of radon through wellfield loss at 25% of this total was 68 Curies. The plant loss for ion exchange treatment of the restoration water is estimated at 10% of the remaining radon, or 20 Curies.

Of the total amount of restoration water produced in the first half of 2003, 26,051,204 gallons (98,603,807 l) of the water was treated by reverse osmosis. The release of radon from reverse osmosis treatment is estimated to be 100% of the remaining radon, after correction for wellfield and ion exchange losses. These corrections result in an estimated radon concentration of 0.470 µCi/l. The total estimated radon release from reverse osmosis treatment was 46 Curies. An additional 1.46 acres of wellfields were placed in restoration during the first half of 2003. The calculated radon released from start-up of 1.46 acres is 2 Curie. Calculations for the start-up of 1.46 acres of a wellfield placed in restoration are shown in Appendix E.

Based upon the calculations shown in Appendix E, the total estimated semiannual radon emission for the first half of 2003 from restoration activities was 136 Curies. This resulted in a total estimated radon release from the Crow Butte project during the first half of 2003 of 2,319 Curies.

2.4 Restoration

Restoration activities continued in Mine Unit #2 and Mine Unit #3 during the first half of 2003. Restoration of Mine Unit 1 was approved by NRC during the period.

Restoration injection and production totals are included in Appendix B. Restoration injection pressures are included in Appendix C.

3 ENVIRONMENTAL MONITORING

3.1 Air Monitor Stations

Seven air monitoring stations are used to monitor the Crow Butte Plant. Ambient radon-222 concentrations and radionuclide concentrations in air for each monitoring site are listed in Appendix F. All of the data for both quarters are within the expected ranges.

3.2 TLD Monitors

Environmental TLD monitors are located at each air monitoring station. The results of the area TLD monitors fall within the expected ranges and are listed in Appendix G.

3.3 Stream Sediments

Sediment samples are collected from two locations on Squaw Creek and two locations on English Creek on an annual basis in October. The results of sediment sampling will be reported in the Semiannual Radiological Effluent and Environmental Monitoring Report for the second half of 2003.

Appendix A

Private Well and Surface Water Radiological Monitoring Results

First and Second Quarter, 2003

CROW BUTTE RESOURCES, INC.

PRIVATE WELL AND SURFACE WATER RADIOLOGICAL MONITORING RESULTS

FIRST QUARTER, 2003

SAMPLE ID	DATE SAMPLED	URANIUM mg/l	URANIUM µCi/ml	RADIUM-226 pCi/l	RADIUM-226 precision ±
Well #8	1/17/03	0.0135	9.14E-09	0.4	0.2
Well #11	1/10/03	0.0092	6.22E-09	ND	-
Well #12	1/17/03	0.0033	2.25E-09	ND	-
Well #16	1/17/03	0.0059	4.02E-09	0.5	0.2
Well #19	1/17/03	0.0052	3.51E-09	ND	-
Well #24	1/10/03	0.0045	3.07E-09	ND	-
Well #25	1/10/03	0.0054	3.66E-09	ND	-
Well #26	1/10/03	0.0066	4.44E-09	ND	-
Well #27	1/10/03	0.0069	4.66E-09	ND	-
Well #28	1/17/03	0.0064	4.36E-09	ND	-
Well #41	1/10/03	0.0072	4.87E-09	ND	-
Well #63	1/10/03	0.0132	8.96E-09	0.4	0.2
Well #125	1/10/03	0.0073	4.95E-09	ND	-
Well #129	1/17/03	0.0074	5.02E-09	ND	-
Well #130	1/17/03	0.0073	4.91E-09	ND	-
Well #131	1/10/03	0.0045	3.06E-09	ND	-
Well #133	1/10/03	0.0090	6.11E-09	0.3	0.2
Well #134	1/17/03	0.0103	6.98E-09	ND	-
Well #135	1/17/03	0.0211	1.43E-08	ND	-
Drinking Water Well	1/10/03	0.0071	4.82E-09	ND	-
Stream S-1	1/17/03	0.0047	3.21E-09	ND	-
Stream S-2	Sample Location Frozen-No Sample Taken				
Stream S-5	Sample Location Frozen-No Sample Taken				
Stream E-1	1/17/03	0.0112	7.61E-09	ND	-
Stream E-5	Sample Location Frozen-No Sample Taken				
Impoundment I-3	Sample Location Frozen-No Sample Taken				
Impoundment I-4	Sample Location Frozen-No Sample Taken				
Reporting Limit		**0.0003**	**2.00E-10**	**0.2**	-

ND-Not detected at the reporting limit

CROW BUTTE RESOURCES, INC.

PRIVATE WELL AND SURFACE WATER RADIOLOGICAL MONITORING RESULTS

SECOND QUARTER, 2003

SAMPLE ID	DATE SAMPLED	URANIUM mg/l	URANIUM µCi/ml	RADIUM-226 pCi/l	RADIUM-226 precision ±
Well #8	5/9/03	0.0140	9.50E-09	0.6	0.4
Well #11	5/9/03	0.0091	6.20E-09	ND	-
Well #12	5/9/03	0.0035	2.40E-09	ND	-
Well #16	5/9/03	0.0074	5.00E-09	ND	-
Well #19	5/9/03	0.0059	4.00E-09	ND	-
Well #24	5/9/03	0.0048	3.30E-09	ND	-
Well #25	5/9/03	0.0057	3.90E-09	ND	-
Well #26	5/8/03	0.0068	4.60E-09	ND	-
Well #27	5/9/03	0.0075	5.10E-09	ND	-
Well #28	5/9/03	0.0067	4.50E-09	ND	-
Well #41	5/9/03	0.0088	6.00E-09	ND	-
Well #63	5/9/03	0.0150	1.00E-08	ND	-
Well #125	5/8/03	0.0072	4.90E-09	ND	-
Well #129	5/9/03	0.0079	5.40E-09	ND	-
Well #130	5/9/03	0.0075	5.10E-09	ND	-
Well #131	5/9/03	0.0049	3.30E-09	ND	-
Well #133	5/8/03	0.0093	6.30E-09	ND	-
Well #134	5/9/03	0.0100	6.80E-09	ND	-
Well #135	5/9/03	0.0220	1.50E-08	0.4	0.3
Drinking Water Well	5/9/03	0.0077	5.20E-09	ND	-
Stream S-1	5/9/03	0.0046	3.10E-09	0.4	0.3
Stream S-2	5/9/03	0.0040	2.70E-09	ND	-
Stream S-5	5/9/03	0.0045	3.00E-09	ND	-
Stream E-1	5/9/03	0.1100	7.50E-08	0.6	0.4
Stream E-5	5/9/03	0.0077	5.20E-09	ND	-
Impoundment I-3	5/9/03	0.0411	2.80E-08	ND	-
Impoundment I-4	5/9/03	0.0334	2.30E-08	ND	-
Reporting Limit		**0.0003**	**2.00E-10**	**0.2**	-

ND-Not detected at the reporting limit

Appendix B

Plant Production and Waste Totals

First and Second Quarter, 2003

WASTE VOLUME
First Quarter 2003

TOTALIZER	PLANT TO PONDS	PLANT TO DDW	RESTORATION TO DDW	CLEAN WATER INTO PLANT	TRUCKS TO POND
January	1227900	806883	2081043	660085	
February	647610	554408	1989605	389577	
March	348470	772335	2220400	390337	
TOTAL GAL. EOQ	2223980	2133626	6291048	1439999	172,765

TOTAL 1st QTR VOLUME DISCHARGED TO WASTE PONDS =	2396745 GALLONS
TOTAL 1st QTR VOLUME DISCHARGED TO DEEP WELL=	8424674 GALLONS
TOTAL 1st QTR VOLUME DISCHARGED TO WASTE PONDS + DPWELL =	10821419 GALLONS
TOTAL 1st QTR VOLUME WF BLEED FROM WELLFIELDS=	9381420 GALLONS

WELLFIELD BLEED
First Quarter 2003

MONTH	January	February	March
BLEED	1.2%	0.8%	0.8%

PLANT FLOW
First Quarter 2003

AVERAGE OPERATING FLOW RATE=	4378 GPM EOQ
TOTAL GALLONS PRODUCED=	567424968 GALLONS EOQ
TOTAL GALLONS INJECTED=	552314709 GALLONS EOQ

	TOTAL GALS. PRODUCED	TOTAL GALS. INJECTED	HOURS IN MONTH	HOURS IN PRODUCTION	AVERAGE PROD. GPM	AVERAGE COM INJ GPM	AVERAGE REST INJ GPM	HRS. DOWN TIME
Prev. YTD	0	0	0	0				0
January	194369635	188915789.1	744	744	4354	4232	344	0
February	177657925	173107701	672	672	4406	4293	357	0
March	195397407	190291219	744	744	4377	4263	336	0
EOQ TOTAL	567424968	552314709	2160	2160	4378	4262	345	0
YTD TOTAL	567424968	552314709	2160	2160	4378	4262	345	0

	TOTAL MUII GALS PRODUCED	TOTAL MUIII GALS PRODUCED	TOTAL BRINE GALS PRODUCED	TOTAL PERM GALS PRODUCED	PLANT BLEED	MUIII BLEED TO DDW
Prev. YTD	0	0	0	0	0	0
January	3764657	14074115	1683804	3405910	2254589	397239
February	3667555	12871794	1635836	2892099	1503965	353769
March	3998583	13496078	1161174	3214067	1483190	1059226
EOQ TOTAL	11430795	40441987	4480814	9512076	5241744	1810234
YTD TOTAL	11430795	40441987	4480814	9512076	5241744	1810234

WASTE VOLUME
Second Quarter 2003

TOTALIZER	PLANT TO PONDS	PLANT TO DDW	RESTORATION TO DDW	CLEAN WATER INTO PLANT	TRUCKS TO POND
April	351560	978251	2208413	431462	
May	305810	993458	2184324	499298	
June	400910	1256686	1547699	449259	
TOTAL GAL. EOQ	1058280	3228395	5940436	1380019	141,500

TOTAL 2nd QTR VOLUME DISCHARGED TO WASTE PONDS =	1199780	GALLONS
TOTAL 2nd QTR VOLUME DISCHARGED TO DEEP WELL=	9168831	GALLONS
TOTAL 2nd QTR VOLUME DISCHARGED TO WASTE PONDS + DPWELL =	10368611	GALLONS
TOTAL 2nd QTR VOLUME WF BLEED FROM WELLFIELDS=	8988592	GALLONS

WELLFIELD BLEED
Second Quarter 2003

MONTH	April	May	June
BLEED	0.9%	0.8%	0.9%

PLANT FLOW
Second Quarter 2003

AVERAGE OPERATING FLOW RATE=	4322	GPM EOQ
TOTAL GALLONS PRODUCED=	566378578	GALLONS EOQ
TOTAL GALLONS INJECTED=	539163951	GALLONS EOQ

	TOTAL GALS. PRODUCED	TOTAL GALS. INJECTED	HOURS IN MONTH	HOURS IN PRODUCTION	AVERAGE PROD. GPM	AVERAGE COM INJ GPM	AVERAGE REST INJ GPM	HRS. DOWN TIME
Prev. YTD	567424968	552314709	2160	2160	4378	4262	345	0
April	186214178.2	178345879.7	720	720	4311	4128	388	0
May	192906952.2	180148786	744	741	4321	4036	328	3
June	187257447	180669285	720	720	4335	4182	306	0
EOQ TOTAL	566378578	539163951	2184	2181	4322	4114	341	3
YTD TOTAL	1133803546	1091478660	4344	4341	4350	4188	343	3

	TOTAL MUII GALS PRODUCED	TOTAL MUIII GALS PRODUCED	TOTAL BRINE GALS PRODUCED	TOTAL PERM GALS PRODUCED	PLANT BLEED	MUIII BLEED TO DDW
Prev. YTD	11430795	40441987	4480814	9512076	5241744	1810234
April	3691891	15491720	1811174	2902709	1640629	397239
May	3637084	13005847	1830555	2986294	1580410	353769
June	2206064	12819762	685245	1842337	1641440	862454
EOQ TOTAL	9535039	41317329	4326974	7731340	4862479	1613462
YTD TOTAL	20965834	81759316	8807788	17243416	10104223	3423696

AVERAGE CHEMICAL ANALYSIS, MONTHLY First Quarter 2003					
WELLFIELD PRODUCTION	Ca ppm	Na ppm	Cl ppm	SO4 ppm	CO3 ppm (Ct)*
January	77.9	1282.7	597.9	939.8	1525.6
February	76.8	1284.7	602.1	925.3	1546.6
March	77.5	1266.3	586.3	918.0	1528.1
WELLFIELD INJECTION	Ca ppm	Na ppm	Cl ppm	SO4 ppm	CO3 ppm (Ct)*
January	77.3	1375.7	624.7	934.0	1735.3
February	76.3	1364.3	624.4	915.9	1744.8
March	77.7	1337.5	606.9	908.2	1669.5

MINIMUM & MAXIMUM ASSAYS INJECTED First Quarter 2003					
WELLFIELD INJECTION	pH s.u.	Na ppm	Cl ppm	SO4 ppm	CO3 ppm (Ct)*
MINIMUM	7.51	1236	572	870	1470
MAXIMUM	8.01	1605	655	964	1890

*ALK = Ct/1.2

WASTE VOLUME First Quarter 2003				
TOTALIZER	PLANT TO POND	PLANT TO DDW	REST. TO DDW	CLEAN WATER
Prev. EOQ	0	0	0	0
January	1227900	806883	2081043	660085
February	1875510	1361291	4070648	1049662
March	2223980	2133626	6291048	1439999
GALLONS	2223980	2133626	6291048	1439999

AVERAGE CHEMICAL ANALYSIS, MONTHLY Second Quarter 2003					
WELLFIELD PRODUCTION	**Ca ppm**	**Na ppm**	**Cl ppm**	**SO4 ppm**	**CO3 ppm (Ct)***
April	78.1	1290.8	599.2	924.8	1559.0
May	78.6	1306.0	603.4	891.2	1561.5
June	77.4	1299.0	603.6	922.6	1582.8
WELLFIELD INJECTION	**Ca ppm**	**Na ppm**	**Cl ppm**	**SO4 ppm**	**CO3 ppm (Ct)***
April	78.1	1363.6	620.2	919.8	1725.0
May	78.4	1388.4	627.6	887.9	1762.3
June	77.1	1393.8	623.7	917.6	1763.0

MINIMUM & MAXIMUM ASSAYS INJECTED Second Quarter 2003					
WELLFIELD INJECTION	**pH s.u.**	**Na ppm**	**Cl ppm**	**SO4 ppm**	**CO3 ppm (Ct)***
MINIMUM	7.45	1290	594	0	1515
MAXIMUM	7.94	1635	657	957	1950

***ALK = Ct/1.2**

WASTE VOLUME Second Quarter 2003				
TOTALIZER	PLANT TO POND	PLANT TO DDW	REST. TO DDW	CLEAN WATER
Prev. EOQ	2223980	2133626	6291048	1439999
April	2575540	3111877	8499461	1871461
May	2881350	4105335	10683785	2370759
June	3282260	5362021	12231484	2820018
GALLONS	1058280	3228395	5940436	1380019

Appendix C

Wellfield Injection Pressures

First and Second Quarter, 2003

WELLFIELD INJECTION PRESSURE
First Quarter 2003

	WF HOUSE #1		WF HOUSE #2		WF HOUSE #3		WF HOUSE #4		WF HOUSE #5	
	AVERAGE	MAXIMUM	AVERAGE	MAXIMUM	AVERAGE	MAXIMUM	AVERAGE	MAXIMUM	AVERAGE	MAXIMUM
January	0	0	0	0	49	70	58	72	43	71
February	0	0	0	0	35	52	41	60	26	54
March	0	0	0	0	31	38	39	55	25	50
AVERAGE	0	0	0	0	39	70	46	72	32	71
	WF HOUSE #6		WF HOUSE #7		WF HOUSE #8		WF HOUSE #9		WF HOUSE #10	
	AVERAGE	MAXIMUM	AVERAGE	MAXIMUM	AVERAGE	MAXIMUM	AVERAGE	MAXIMUM	AVERAGE	MAXIMUM
January	24	72	0	0	14	15	0	0	74	76
February	24	25	0	0	17	20	0	0	72	75
March	25	26	0	0	18	20	0	0	75	78
AVERAGE	25	72	0	0	16	20	0	0	73	78
	WF HOUSE #11		WF HOUSE #12		WF HOUSE #13		WF HOUSE #14		WF HOUSE #15	
	AVERAGE	MAXIMUM	AVERAGE	MAXIMUM	AVERAGE	MAXIMUM	AVERAGE	MAXIMUM	AVERAGE	MAXIMUM
January	74	76	0	0	0	0	93	95	0	0
February	72	76	0	0	0	0	91	92	0	0
March	75	79	0	0	0	0	92	94	3	92
AVERAGE	74	79	0	0	0	0	92	95	1	92
	WF HOUSE #16		WF HOUSE #17		WF HOUSE #18		WF HOUSE #19		WF HOUSE #20	
	AVERAGE	MAXIMUM	AVERAGE	MAXIMUM	AVERAGE	MAXIMUM	AVERAGE	MAXIMUM	AVERAGE	MAXIMUM
January	1	12	79	80	0	0	0	0	85	87
February	0	5	77	86	0	0	0	0	81	85
March	1	5	77	78	2	75	0	0	82	92
AVERAGE	1	12	77	86	1	75	0	0	83	92
	WF HOUSE #21		WF HOUSE #22		WF HOUSE #23		WF HOUSE #24		WF HOUSE #25	
	AVERAGE	MAXIMUM	AVERAGE	MAXIMUM	AVERAGE	MAXIMUM	AVERAGE	MAXIMUM	AVERAGE	MAXIMUM
January	95	95	96	98	0	0	96	98	95	96
February	95	95	95	97	0	0	96	98	95	96
March	94	96	95	96	0	0	96	98	95	96
AVERAGE	95	96	95	98	0	0	96	98	95	96
	WF HOUSE #26		WF HOUSE #27		WF HOUSE #28		WF HOUSE #30		WF HOUSE #31	
	AVERAGE	MAXIMUM	AVERAGE	MAXIMUM	AVERAGE	MAXIMUM	AVERAGE	MAXIMUM	AVERAGE	MAXIMUM
January	95	98	94	97	71	86	69	79	91	96
February	95	96	95	96	69	72	67	75	91	94
March	95	96	96	99	73	75	70	72	94	98
AVERAGE	95	98	95	99	71	86	69	79	92	99
	WF HOUSE #32		WF HOUSE #33		WF HOUSE #34		WF HOUSE #35		WF HOUSE #36	
	AVERAGE	MAXIMUM	AVERAGE	MAXIMUM	AVERAGE	MAXIMUM	AVERAGE	MAXIMUM	AVERAGE	MAXIMUM
January	96	99	97	99	86	93	93	95	0	0
February	97	99	95	99	83	90	92	98	32	96
March	98	99	97	99	86	95	94	96	95	98
AVERAGE	97	99	96	99	85	95	93	98	64	98

WELLFIELD INJECTION PRESSURE
Second Quarter 2003

	WF HOUSE #1		WF HOUSE #2		WF HOUSE #3		WF HOUSE #4		WF HOUSE #5	
	AVERAGE	MAXIMUM	AVERAGE	MAXIMUM	AVERAGE	MAXIMUM	AVERAGE	MAXIMUM	AVERAGE	MAXIMUM
April	0	0	0	0	41	55	49	72	33	50
May	0	0	0	0	40	59	45	63	34	58
June	0	0	0	0	21	46	24	54	16	55
AVERAGE	0	0	0	0	34	59	39	72	28	58
	WF HOUSE #6		WF HOUSE #7		WF HOUSE #8		WF HOUSE #9		WF HOUSE #10	
	AVERAGE	MAXIMUM	AVERAGE	MAXIMUM	AVERAGE	MAXIMUM	AVERAGE	MAXIMUM	AVERAGE	MAXIMUM
April	26	30	1	10	19	25	0	0	76	79
May	26	33	2	12	18	25	0	0	75	78
June	28	32	5	48	21	42	0	0	73	80
AVERAGE	27	33	2	48	19	42	0	0	75	80
	WF HOUSE #11		WF HOUSE #12		WF HOUSE #13		WF HOUSE #14		WF HOUSE #15	
	AVERAGE	MAXIMUM	AVERAGE	MAXIMUM	AVERAGE	MAXIMUM	AVERAGE	MAXIMUM	AVERAGE	MAXIMUM
April	77	80	0	0	0	0	92	95	0	0
May	77	82	0	0	0	0	92	94	0	0
June	75	80	0	0	0	0	90	99	0	0
AVERAGE	76	82	0	0	0	0	91	99	0	0
	WF HOUSE #16		WF HOUSE #17		WF HOUSE #18		WF HOUSE #19		WF HOUSE #20	
	AVERAGE	MAXIMUM	AVERAGE	MAXIMUM	AVERAGE	MAXIMUM	AVERAGE	MAXIMUM	AVERAGE	MAXIMUM
April	1	5	77	80	0	0	0	0	84	86
May	4	95	77	80	0	0	0	0	84	85
June	0	0	75	79	0	0	0	0	81	85
AVERAGE	2	95	76	80	0	0	0	0	83	86
	WF HOUSE #21		WF HOUSE #22		WF HOUSE #23		WF HOUSE #24		WF HOUSE #25	
	AVERAGE	MAXIMUM	AVERAGE	MAXIMUM	AVERAGE	MAXIMUM	AVERAGE	MAXIMUM	AVERAGE	MAXIMUM
April	94	95	95	96	0	0	96	96	95	96
May	96	98	96	97	3	81	95	96	96	98
June	94	99	93	97	0	0	92	96	93	99
AVERAGE	94	99	94	97	1	81	94	96	94	99
	WF HOUSE #26		WF HOUSE #27		WF HOUSE #28		WF HOUSE #30		WF HOUSE #31	
	AVERAGE	MAXIMUM	AVERAGE	MAXIMUM	AVERAGE	MAXIMUM	AVERAGE	MAXIMUM	AVERAGE	MAXIMUM
April	95	96	96	99	74	75	71	73	95	98
May	96	98	97	99	73	92	71	78	95	99
June	93	99	93	99	72	75	70	76	95	99
AVERAGE	95	99	95	99	73	92	71	78	95	99
	WF HOUSE #32		WF HOUSE #33		WF HOUSE #34		WF HOUSE #35		WF HOUSE #36	
	AVERAGE	MAXIMUM	AVERAGE	MAXIMUM	AVERAGE	MAXIMUM	AVERAGE	MAXIMUM	AVERAGE	MAXIMUM
April	81	99	97	99	87	99	96	99	95	95
May	49	52	97	99	88	92	98	99	96	99
June	49	52	94	99	82	95	94	99	88	99
AVERAGE	59	99	96	99	86	99	96	99	93	99

Appendix D

Deep Disposal Well Injection Radiological Data

First and Second Quarter, 2003

Crow Butte Uranium Mine

Deep Disposal Well Injection Radiological Data

Month	Total Gallons Injected	Average Natural Uranium (mg/l)	Total Natural Uranium Injected (mg)	Total Natural Uranium Injected (nCi)	Average Radium-226 (pCi/l)	Total Radium-226 Injected (nCi)
January-03	2,887,926	7	7.65E+07	5.18E+04	845	9.24E+03
February-03	2,544,013	5	4.81E+07	3.26E+04	875	8.43E+03
March-03	2,992,735	5.4	6.12E+07	4.14E+04	884	1.00E+04
April-03	3,186,664	7.9	9.53E+07	6.45E+04	1,370	1.65E+04
May-03	3,177,782	7.6	9.14E+07	6.19E+04	1,180	1.42E+04
June-03	2,804,385	10	1.06E+08	7.19E+04	928	9.85E+03
Totals	17,593,505		4.79E+08	3.24E+05		6.82E+04

Appendix E

Radon Release Calculations

First and Second Quarter, 2003

Radon Effluent Release Calculation (Production and Startup)

First Quarter 2003 Radon Release from Leaching Operations:

Curies/M3	*Production Flow (liters)*	*Radon-222 Decay Constant*	*Operating Days*	*Operating Factor*	*M3/liter conversion*	*Hours/Day Conversion*	*Minutes/Hour Conversion*	*Total Radon Release from Leaching*
7.04E-04	16,571	0.72	90	100.0%	0.001	24	60	1,089

Second Quarter 2003 Radon Release from Leaching Operations:

Curies/M3	*Production Flow (liters)*	*Radon-222 Decay Constant*	*Operating Days*	*Operating Factor*	*M3/liter conversion*	*Hours/Day Conversion*	*Minutes/Hour Conversion*	*Total Radon Release from Leaching*
7.04E-04	16,359	0.72	91	99.9%	0.001	24	60	1,086

First Half 2003 Radon Release From Startup:

Curies/M3	*Total Acres of New Wellfield*	*Meter3/Acre Conversion*	*Orebody Thickness (meters)*	*Porosity*	*Total Radon Release from Startup*
7.04E-04	6.71	4,074	1.52	0.29	8

Total Estimated Radon Release from Production: **2,183**

Radon Effluent Release Calculation (Restoration)

First Half 2003 Radon Release From Restoration:

Total Restoration Flow (liters)	*Microcuries/liter*	*Curies/Microcurie*	*Production Potential*
388,814,693	0.697	1.00E-06	271

Wellfield Loss (25% of Production Potential):	68
Ion Exchange Loss (10% of Production Potential minus Wellfield Loss):	20
Reverse Osmosis Loss (100% of remaining activity at 0.470 microcuries/liter)	46

Total Reverse Osmosis Flow (liters)	*Microcuries/liter*	*Curies/Microcurie*
98,603,807	0.470	1.00E-06

First Half 2003 Radon Release From Startup of New Restoration:

Curies/M3	*Total Acres of New Wellfield*	*Meter3/Acre Conversion*	*Orebody Thickness (meters)*	*Porosity*	*Total Radon Release from Startup*
7.04E-04	1.46	4074	1.52	0.29	2

Total Estimated Radon Release from Restoration: **136**

Total Estimated Radon Release, First Half 2003: **2,319**

Appendix F

Environmental Air Monitoring Results

First and Second Quarter, 2003

Crow Butte Resources, Inc.
Crow Butte Uranium Project

Track Etch Cup Ambient Radon Concentrations

Air Monitoring Station No.

Period:January 2, 2003 to July 1, 2003

	Gross Count	Average Radon Concentration (x 10^{-9} uCi/ml)	Accuracy (x 10^{-9} uCi/ml)	Percent Effluent Concnetration
AM-1	32	0.4	0.07	4.0%
AM-2	59	0.9	0.12	9.0%
AM-3	32	0.4	0.07	4.0%
AM-4	50	0.7	0.10	7.0%
AM-5	61	0.9	0.12	9.0%
AM-6	59	0.9	0.12	9.0%
AM-8	68	1	0.12	10.0%
AB-3 (AM-3 Duplicate)	52	0.7	0.10	7.0%
AB-6 (AM-6 Duplicate)	37	0.5	0.08	5.0%

LLD (x 10^{-9} uCi/ml)	0.2
Effluent Concentration Limit, 10 CFR 20 App B Column 2:	10

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HIGH VOLUME AIR SAMPLING REPORT

CLIENT: CROW BUTTE RESOURCES

REPORT DATE: July 31, 2003

SAMPLE ID: A.M. #1

Quarter/Date Sampled Air Volume	Radionuclide	Concentration µCi/mL	Error Estimate µCi/mL	L.L.D. µCi/mL	Effluent Conc.* µCi/mL	% Effluent Concentration
C03040259-001A	^{nat}U	< 1.00E-16	N/A	1.00E-16	9.00E-14	< 1.11E-01
01/02/2003-03/31/2003	^{226}Ra	< 1.00E-16	N/A	1.00E-16	9.00E-13	< 1.11E-02
Air Volume in mLs	^{210}Pb	1.55E-14	9.85E-16	2.00E-15	6.00E-13	2.58E+00
5.40E+09						
C03070186-001A	^{nat}U	< 1.00E-16	N/A	1.00E-16	9.00E-14	< 1.11E-01
04/01/2003-07/01/2003	^{226}Ra	< 1.00E-16	N/A	1.00E-16	9.00E-13	< 1.11E-02
Air Volume in mLs	^{210}Pb	6.51E-15	7.90E-16	2.00E-15	6.00E-13	1.09E+00
5.53E+09						

Final prep volume is 0.95 liter
LLD's are from Reg. Guide 4.14
*Effluent Concentration from the NEW 10 CFR Part 20 - Appendix B - Table 2
Year for Natural Uranium
Week for Radium-226
Day for Lead-210

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HIGH VOLUME AIR SAMPLING REPORT

CLIENT: CROW BUTTE RESOURCES

REPORT DATE: July 31, 2003

SAMPLE ID: A.M. #2

Quarter/Date Sampled Air Volume	Radionuclide	Concentration µCi/mL	Error Estimate µCi/mL	L.L.D. µCi/mL	Effluent Conc.* µCi/mL	% Effluent Concentration
C03040259-002A	^{nat}U	3.15E-16	N/A	1.00E-16	9.00E-14	3.50E-01
01/02/2003-03/31/2003	^{226}Ra	< 1.00E-16	N/A	1.00E-16	9.00E-13	< 1.11E-02
Air Volume in mLs	^{210}Pb	4.99E-15	8.41E-16	2.00E-15	6.00E-13	8.32E-01
5.31E+09						
C03070186-002A	^{nat}U	1.30E-16	N/A	1.00E-16	9.00E-14	1.44E-01
04/01/2003-07/01/2003	^{226}Ra	< 1.00E-16	N/A	1.00E-16	9.00E-13	< 1.11E-02
Air Volume in mLs	^{210}Pb	6.66E-15	8.08E-16	2.00E-15	6.00E-13	1.11E+00
5.41E+09						

Final prep volume is 0.95 liter
LLD's are from Reg. Guide 4.14
*Effluent Concentration from the NEW 10 CFR Part 20 - Appendix B - Table 2
Year for Natural Uranium
Week for Radium-226
Day for Lead-210

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HIGH VOLUME AIR SAMPLING REPORT

CLIENT: CROW BUTTE RESOURCES

REPORT DATE: July 31, 2003

SAMPLE ID: A.M. #3

Quarter/Date Sampled Air Volume	Radionuclide	Concentration µCi/mL	Error Estimate µCi/mL	L.L.D. µCi/mL	Effluent Conc.* µCi/mL	% Effluent Concentration
C03040259-003A	^{nat}U	< 1.00E-16	N/A	1.00E-16	9.00E-14	< 1.11E-01
01/02/2003-03/31/2003	^{226}Ra	< 1.00E-16	N/A	1.00E-16	9.00E-13	< 1.11E-02
Air Volume in mLs	^{210}Pb	9.46E-15	9.54E-16	2.00E-15	6.00E-13	1.58E+00
5.08E+09						
C03070186-003A	^{nat}U	< 1.00E-16	N/A	1.00E-16	9.00E-14	< 1.11E-01
04/01/2003-07/01/2003	^{226}Ra	< 1.00E-16	N/A	1.00E-16	9.00E-13	< 1.11E-02
Air Volume in mLs	^{210}Pb	7.18E-15	8.08E-16	2.00E-15	6.00E-13	1.20E+00
5.41E+09						

Final prep volume is 0.95 liter
LLD's are from Reg. Guide 4.14
*Effluent Concentration from the NEW 10 CFR Part 20 - Appendix B - Table 2
Year for Natural Uranium
Week for Radium-226
Day for Lead-210

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HIGH VOLUME AIR SAMPLING REPORT

CLIENT: CROW BUTTE RESOURCES

REPORT DATE: July 31, 2003

SAMPLE ID: A.M. #4

Quarter/Date Sampled Air Volume	Radionuclide	Concentration µCi/mL	Error Estimate µCi/mL	L.L.D. µCi/mL	Effluent Conc.* µCi/mL	% Effluent Concentration
C03040259-004A	^{nat}U	< 1.00E-16	N/A	1.00E-16	9.00E-14	< 1.11E-01
01/02/2003-03/31/2003	^{226}Ra	< 1.00E-16	N/A	1.00E-16	9.00E-13	< 1.11E-02
Air Volume in mLs	^{210}Pb	1.17E-14	9.14E-16	2.00E-15	6.00E-13	1.96E+00
5.61E+09						
C03070186-004A	^{nat}U	1.30E-16	N/A	1.00E-16	9.00E-14	1.45E-01
04/01/2003-07/01/2003	^{226}Ra	< 1.00E-16	N/A	1.00E-16	9.00E-13	< 1.11E-02
Air Volume in mLs	^{210}Pb	7.20E-15	8.09E-16	2.00E-15	6.00E-13	1.20E+00
5.40E+09						

Final prep volume is 0.95 liter
LLD's are from Reg. Guide 4.14
*Effluent Concentration from the NEW 10 CFR Part 20 - Appendix B - Table 2
Year for Natural Uranium
Week for Radium-226
Day for Lead-210

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HIGH VOLUME AIR SAMPLING REPORT

CLIENT: CROW BUTTE RESOURCES

REPORT DATE: July 31, 2003

SAMPLE ID: A.M. #5

Quarter/Date Sampled Air Volume	Radionuclide	Concentration µCi/mL	Error Estimate µCi/mL	L.L.D. µCi/mL	Effluent Conc.* µCi/mL	% Effluent Concentration
C03040259-005A	^{nat}U	3.90E-15	N/A	1.00E-16	9.00E-14	4.33E+00
01/02/2003-03/31/2003	^{226}Ra	2.48E-16	9.92E-17	1.00E-16	9.00E-13	2.76E-02
Air Volume in mLs	^{210}Pb	2.23E-14	1.39E-15	2.00E-15	6.00E-13	3.71E+00
3.83E+09						
C03040259-005A - recheck	^{nat}U	3.60E-15	N/A	1.00E-16	9.00E-14	4.00E+00
01/02/2003-03/31/2003	^{226}Ra	2.48E-16	9.92E-17	1.00E-16	9.00E-13	2.76E-02
Air Volume in mLs	^{210}Pb	2.23E-14	1.39E-15	2.00E-15	6.00E-13	3.71E+00
3.83E+09						
C03070186-005A	^{nat}U	6.84E-16	N/A	1.00E-16	9.00E-14	7.59E-01
04/01/2003-07/01/2003	^{226}Ra	< 1.00E-16	N/A	1.00E-16	9.00E-13	< 1.11E-02
Air Volume in mLs	^{210}Pb	8.21E-15	7.94E-16	2.00E-15	6.00E-13	1.37E+00
5.74E+09						

Final prep volume is 0.95 liter
LLD's are from Reg. Guide 4.14
*Effluent Concentration from the NEW 10 CFR Part 20 - Appendix B - Table 2
Year for Natural Uranium
Week for Radium-226
Day for Lead-210

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HIGH VOLUME AIR SAMPLING REPORT

CLIENT: CROW BUTTE RESOURCES

REPORT DATE: July 31, 2003

SAMPLE ID: A.M. #6

Quarter/Date Sampled Air Volume	Radionuclide	Concentration µCi/mL	Error Estimate µCi/mL	L.L.D. µCi/mL	Effluent Conc.* µCi/mL	% Effluent Concentration
C03040259-006A	^{nat}U	< 1.00E-16	N/A	1.00E-16	9.00E-14	< 1.11E-01
01/02/2003-03/31/2003	^{226}Ra	< 1.00E-16	N/A	1.00E-16	9.00E-13	< 1.11E-02
Air Volume in mLs	^{210}Pb	9.57E-15	8.97E-16	2.00E-15	6.00E-13	1.60E+00
5.40E+09						
C03070186-006A	^{nat}U	< 1.00E-16	N/A	1.00E-16	9.00E-14	< 1.11E-01
04/01/2003-07/01/2003	^{226}Ra	< 1.00E-16	N/A	1.00E-16	9.00E-13	< 1.11E-02
Air Volume in mLs	^{210}Pb	7.04E-15	7.92E-16	2.00E-15	6.00E-13	1.17E+00
5.52E+09						

Final prep volume is 0.95 liter
LLD's are from Reg. Guide 4.14
*Effluent Concentration from the NEW 10 CFR Part 20 - Appendix B - Table 2
Year for Natural Uranium
Week for Radium-226
Day for Lead-210

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HIGH VOLUME AIR SAMPLING REPORT

CLIENT: CROW BUTTE RESOURCES

REPORT DATE: July 31, 2003

SAMPLE ID: A.M. #8

Quarter/Date Sampled Air Volume	Radionuclide	Concentration µCi/mL	Error Estimate µCi/mL	L.L.D. µCi/mL	Effluent Conc.* µCi/mL	% Effluent Concentration
C03040259-007A	^{nat}U	3.45E-16	N/A	1.00E-16	9.00E-14	3.83E-01
01/02/2003-03/31/2003	^{226}Ra	< 1.00E-16	N/A	1.00E-16	9.00E-13	< 1.11E-02
Air Volume in mLs	^{210}Pb	1.25E-14	9.50E-16	2.00E-15	6.00E-13	2.09E+00
5.40E+09						
C03070186-007A	^{nat}U	4.54E-16	N/A	1.00E-16	9.00E-14	5.05E-01
04/01/2003-07/01/2003	^{226}Ra	< 1.00E-16	N/A	1.00E-16	9.00E-13	< 1.11E-02
Air Volume in mLs	^{210}Pb	6.02E-15	7.74E-16	2.00E-15	6.00E-13	1.00E+00
5.52E+09						

Final prep volume is 0.95 liter
LLD's are from Reg. Guide 4.14
*Effluent Concentration from the NEW 10 CFR Part 20 - Appendix B - Table 2
Year for Natural Uranium
Week for Radium-226
Day for Lead-210

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Appendix G

Environmental TLD Monitoring Results

First and Second Quarter, 2003

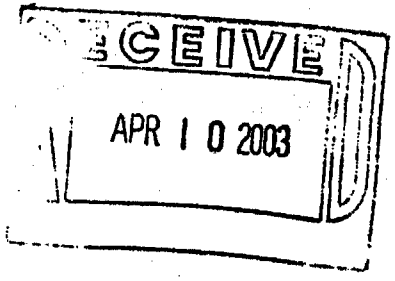
Crow Butte Resources
PO Box 169
Crawford, NE 69339

Attn: Rhonda Grantham

SPHERICAL X9 ENVIRONMENTAL REPORT
Prepared by Landauer, Inc.

Account Number:	**306192**
Process Number:	X9SP GD139
Received Date:	4-Apr-03
Report Date:	7-Apr-03
Released by:	CAS

Participant No.	Name/Description	Reading 1 (mrem)	Reading 2 (mrem)	Reading 3 (mrem)	Reading 4 (mrem)	Reading 5 (mrem)	Mean Ambient Dose Equivalent (mrem)	Net Values after control subtraction Mean Ambient Dose Equivalent (mrem)	Standard Deviation (mrem)	95% Confidence Interval (mrem)
Quarterly Monitoring Period starting:				January 1, 2003						
Control		39	45	42	50	48	45		4.4	5.5
1001	AM-1	50	56	49	49	57	52	7	4.0	4.9
1002	AM-2	49	47	46	50	51	49	4	2.1	2.6
1003	AM-6	66	62	61	59	65	63	18	2.9	3.6
1008	AM-8	53	54	53	50	50	52	7	1.9	2.3
1009	AM-3	48	50	52	48	49	49	4	1.7	2.1
1010	AM-4	Received damaged								
1011	AM-5	53	50	51	50	44	50	5	3.4	4.2



95% Confidence Interval is based on the standard error of the mean

Crow Butte Resources
PO Box 169
Crawford, NE 69339
Attn: Rhonda Grantham

SPHERICAL X9 ENVIRONMENTAL REPORT
Prepared by Landauer, Inc.

Account Number:	**306192**
Process Number:	X9SP GD515
Received Date:	11-Jul-03
Report Date:	22-Jul-03
Released by:	LCC

Participant No.	Name/Description	Reading 1 (mrem)	Reading 2 (mrem)	Reading 3 (mrem)	Reading 4 (mrem)	Reading 5 (mrem)	Mean Ambient Dose Equivalent (mrem)	Net Values after control subtraction: Mean Ambient Dose Equivalent (mrem)	Standard Deviation (mrem)	95% Confidence Interval (mrem)
Quarterly Monitoring Period starting:				April 1, 2003						
Control		38	37	37	38	37	37		0.5	0.7
1001	AM-1	41	43	42	42	42	42	5	0.7	0.9
1002	AM-2	43	42	43	44	43	43	6	0.7	0.9
1003	AM-6	44	47	43	45	42	44	7	1.9	2.4
1008	AM-8	49	45	48	46	46	47	10	1.6	2.0
1009	AM-3	46	46	45	43	45	45	8	1.2	1.5
1010	AM-4	42	44	44	46	43	44	7	1.5	1.8
1011	AM-5	47	53	47	44	44	47	10	3.7	4.6

95% Confidence Interval is based on the standard error of the mean