CROW BUTTE RESOURCES, INC.

86 Crow Butte Road
P.O. Box 169
Crawford, Nebraska 69339-0169

(308) 665-2215
(308) 665-2341 – FAX

January 30, 2001

Mr. Philip Ting, Chief
Fuel Cycle Licensing Branch, FCSS
c/o Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Subject: Source Materials License SUA-1534
Docket No. 40-8943
Shallow Monitor Excursion Data Analysis

Dear Mr. Ting:

On January 19, 2001, NRC approved Amendment 8 to Source Materials License SUA-1534. This amendment revised the methods of calculating upper control limits (UCLs) for indicator parameters in monitor wells. In the transmittal letter, NRC directed that Crow Butte Resources, Inc. (CBR) perform a data analysis of three shallow monitor wells (SM6-13, SM6-18, and SM7-23).

Shallow Monitor Well SM6-13

On May 25, 2000 during routine biweekly water sampling of shallow monitor well SM6-13, the single parameter upper control limit (UCL) was exceeded for sulfate. As required by SUA-1534, a second sample was collected within 48 hours and analyzed for the five excursion indicator parameters. The results of the second sample also exceeded the single UCL for sulfate. Based upon these results, monitor well SM6-13 was placed on excursion status.

Weekly samples were obtained from June 1, 2000 to July 20, 2000. The last three of these weekly samples (taken on July 6, 13, and 20, 2000) were below the excursion criteria from the license. Based upon these results, CBR removed SM6-13 from excursion status by letter dated July 24, 2000.

Shallow Monitor Well SM6-18

On March 6, 2000 during routine biweekly water sampling of shallow monitor well SM6-18, the single parameter upper control limit (UCL) was exceeded for chloride. As required by SUA-1534, a second sample was collected within 48 hours and analyzed for the five excursion indicator parameters. The results of the second sample also exceeded the single UCL for chloride. Based upon

these results, monitor well SM6-18 was placed on excursion status. CBR submitted the second quarterly report on this excursion to NRC on November 2, 2000.

CBR increased the sampling frequency for SM6-18 from biweekly to weekly. Laboratory results for the analysis of weekly samples have been previously submitted to NRC through October 30, 2000. The data indicates that chloride concentrations have remained stable since March 6, ranging from 20 to 22 mg/l, which is just slightly above the single UCL of 19 mg/l. A graph showing chloride trends in SM6-18 through January 24, 2001 is attached. All other excursion monitoring parameters have remained stable at levels that are well below their respective UCLs.

The following table summarizes the three alternative methods for calculating the chloride UCL for SM6-18 based upon Amendment 8. These methods are available for use since the baseline average for the well was below 50 mg/l (i.e., 13 mg/l). Using the baseline average plus 15 mg/l method, SM6-18 would no longer be on excursion status. The new UCL for chloride would be 27 mg/l. The single UCL would be 32 mg/l (27 x 1.2). Therefore, the chloride concentration range of 20 to 22 mg/l would be well below this single UCL.

UCL Method	Formula Data	Chloride (mg/l)
Current Method	Max	13
	Max x 1.2 (Multiple UCL)	16
	Multiple UCL x 1.2 (Single UCL)	19
Average + 5 SD Method	Average	12.1
	SD	0.9
	Average + 5SD	16
Average + 15 mg/l	Average + 15 mg/l	27

Shallow Monitor Well SM7-23

On April 27, 2000 during routine biweekly water sampling of shallow monitor well SM7-23, the single parameter upper control limit (UCL) was exceeded for sulfate. As required by SUA-1534, a second sample was collected within 48 hours and analyzed for the five excursion indicator parameters. The results of the second sample (and a third sample taken on April 28) also exceeded the single UCL for

sulfate. Based upon these results, monitor well SM7-23 was placed on excursion status. CBR submitted the second quarterly report on this excursion to NRC on December 21, 2000.

CBR increased the sampling frequency for SM7-23 from biweekly to weekly. Laboratory results for the analysis of weekly samples have been previously submitted to NRC through December 19, 2000. The data indicates that sulfate concentrations have remained above the single UCL of 62 mg/l. A graph showing sulfate trends in SM7-23 through January 23, 2001 is attached. All other excursion monitoring parameters have remained stable at levels that are well below their respective UCLs.

The following table summarizes the three alternative methods for calculating the sulfate UCL for SM7-23 based upon Amendment 8. These methods are available for use since the baseline average for the well was below 50 mg/l (i.e., 39 mg/l). Using the method that results in the highest UCL (i.e., the baseline average plus 5 standard deviations method), SM7-23 would still be on excursion status. The new UCL for sulfate would be 64 mg/l. The single UCL would be 77 mg/l (64 x 1.2). Therefore, the most recent sulfate concentration of 79 mg/l would be above this single UCL.

UCL Method	Formula Data	Sulfate (mg/l)
Current Method	Max	43
	Max x 1.2 (Multiple UCL)	52
	Multiple UCL x 1.2 (Single UCL)	62
Average + 5 SD Method	Average	39
	SD	5.1
	Average + 5SD	64
Average + 15 mg/l	Average + 15 mg/l	54

As noted in our December 21, 2000 Quarterly Excursion Report for SM7-23, the sulfate concentrations appear stable at the current levels. Since it is apparent that mining activities have not affected the sulfate concentrations, CBR believes that it may be necessary to propose new multiple and single UCLs for sulfate in SM7-23 based upon the recent monitoring data. In the meantime, CBR plans to continue to sample SM7-23 on a weekly basis.

Conclusions

Based upon the data analysis, the approved methods for calculation of UCLs would result in removal of SM6-18 from excursion status. Shallow monitor SM7-23 would remain on excursion status and will most likely require an Amendment Request to change the UCL based upon the current sulfate concentrations.

The CBR Safety and Environmental Review Panel (SERP) must approve any changes to UCLs that have been previously set for active Mine Units, which includes SM6-18. Following SERP review and approval, modifications must be made to the CBR License Renewal Application and in the CBR laboratory database. When these actions are completed, CBR will remove SM6-18 from excursion status and will submit a final report to NRC. In the meantime, CBR will continue weekly monitoring of SM6-18.

If you have any questions or require any further information, please do not hesitate to call me at (308) 665-2215.

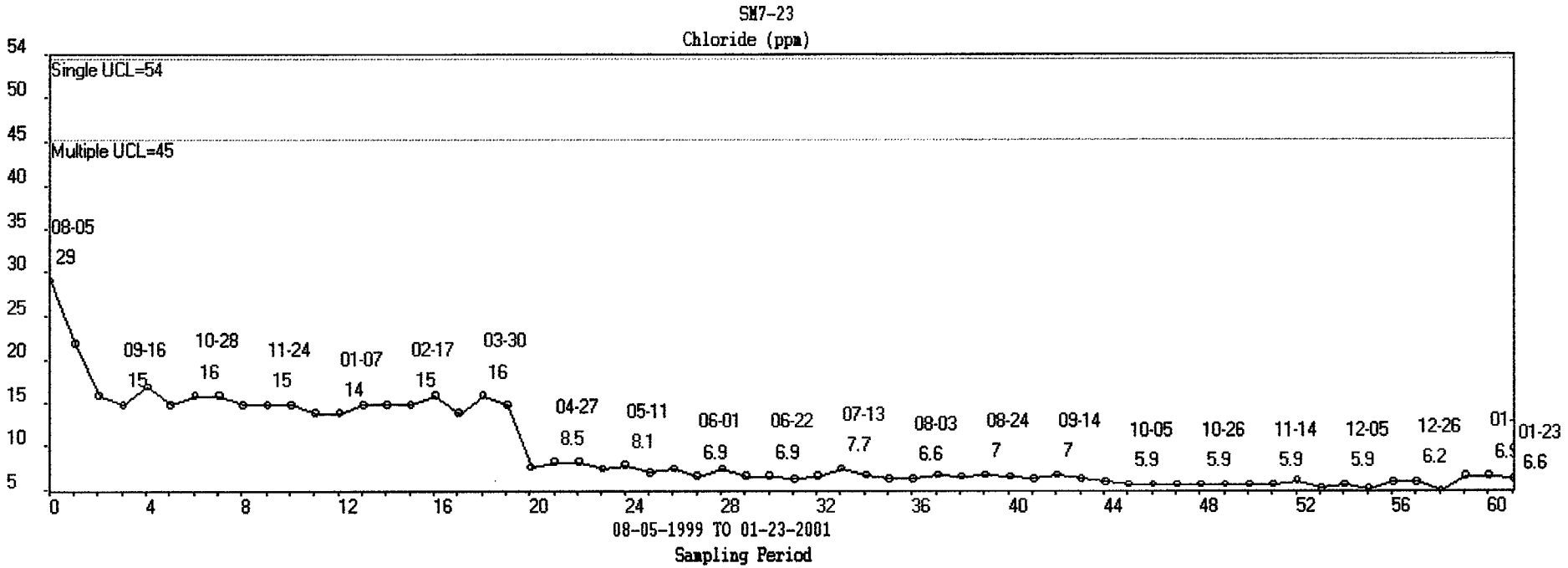
Sincerely,
CROW BUTTE RESOURCES, INC.

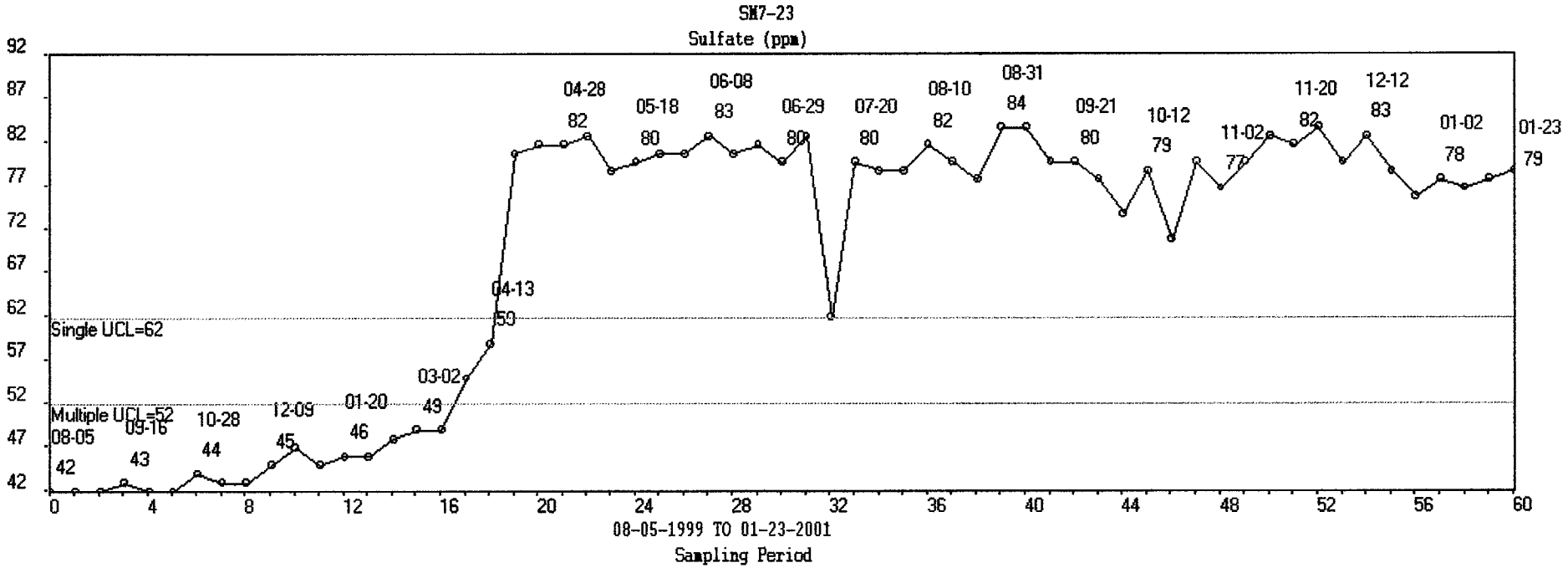
Michael Griffin
Manager of Environmental and Regulatory Affairs

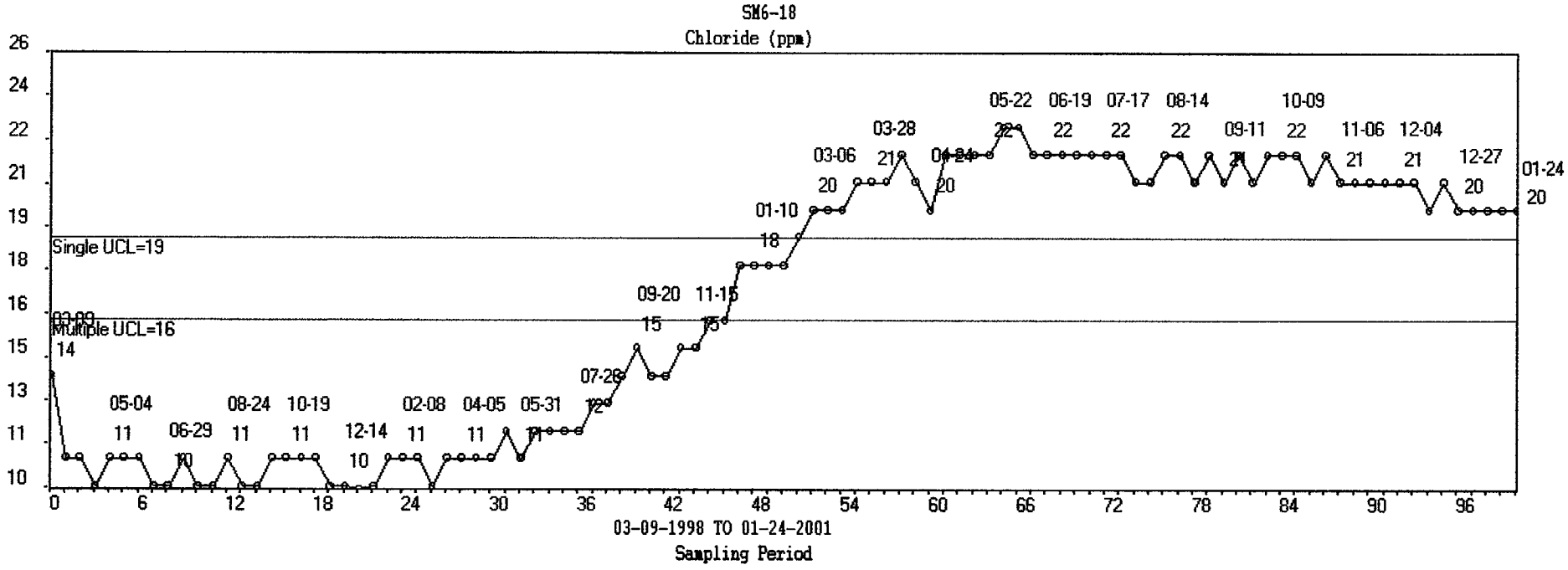
Enclosures: As Stated

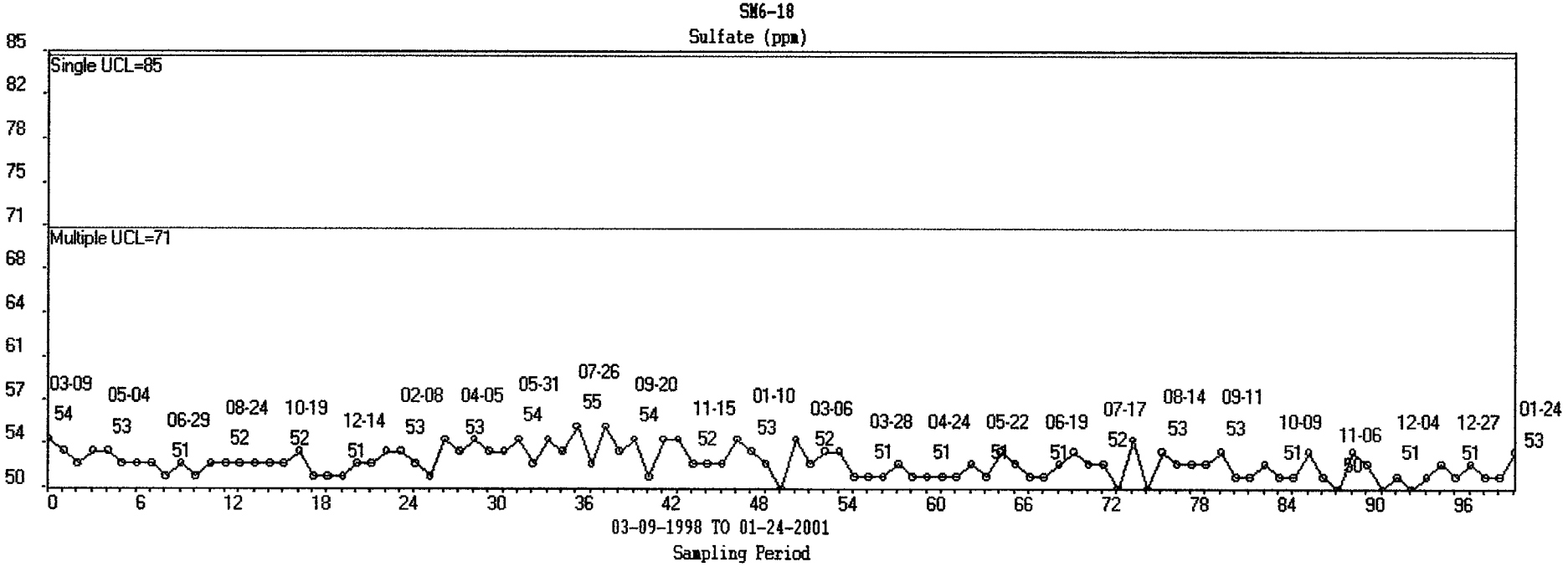
cc: Mr. Steve Collings - CBR, Denver

U.S. Nuclear Regulatory Commission
Mr. Mike Layton - ADDRESSEE ONLY
Fuel Cycle Licensing Branch
Mail Stop T-8A33
Washington, DC 20555


SM7-23
Chloride (ppm)
Single UCL=54
Multiple UCL=45
08-05
29
09-16
15
10-28
16
11-24
15
01-07
14
02-17
15
03-30
16
04-27
8.5
05-11
8.1
06-01
6.9
06-22
6.9
07-13
7.7
08-03
6.6
08-24
7
09-14
7
10-05
5.9
10-26
5.9
11-14
5.9
12-05
5.9
12-26
6.2
01-23
6.6
08-05-1999 TO 01-23-2001
Sampling Period


SM7-23
Sulfate (ppm)
Single UCL=62
Multiple UCL=52
08-05
42
09-16
43
10-28
44
12-09
45
01-20
46
03-02
49
04-13
59
04-28
82
05-18
80
06-08
83
06-29
80
07-20
80
08-10
82
08-31
84
09-21
80
10-12
79
11-02
77
11-20
82
12-12
83
01-02
78
01-23
79
08-05-1999 TO 01-23-2001
Sampling Period


SM6-18
Chloride (ppm)
Single UCL=19
Multiple UCL=16
03-09-1998 TO 01-24-2001
Sampling Period


SM6-18
Sulfate (ppm)
Single UCL=85
Multiple UCL=71
03-09-1998 TO 01-24-2001
Sampling Period