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# J. E. STOVER & ASSOCIATES, INC.

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MINE ENGINEERING  
MINE RECLAMATION

CIVIL ENGINEERING  
CONST. MANAGEMENT

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August 25, 2020

Rob Zuber  
Division of Reclamation, Mining and Safety  
1313 Sherman Street, Room 215  
Denver, CO 80203

Re: 2018 Annual Hydrology Report  
Adequacy Review #1  
Bowie Resources, LLC, Bowie No. 2 Mine  
Permit No. C-1996-083

Dear Mr. Zuber:

On behalf of Bowie Resources, LLC, below are the responses to DRMS' adequacy review letter dated December 27, 2019;

1. **DRMS:** It is not clear to the Division why there are fewer than four quarters of data for some sites, (e.g. S1010 and SP1305), yet the sampling plan indicates that sampling will be done quarterly. Also, it is unclear why there is no lab data listed for SW-06 in 2018. Please explain

**BRL:** During the 2017-2018 the mountains in and around Bowie received a significant amount of snow. Therefore, sites S1010 and SP1305 were not accessible during the 1Q of 2018.

Laboratory data was obtained all four quarters for SW-06 but was inadvertently left off of the spreadsheet. Please see **revised Figure 18**.

2. **DRMS:** Regarding wells and springs, it is not clear why there are fewer than four quarters of data for some sites (e.g. S1010 and S1404), yet the sampling plan indicates that sampling be done quarterly. Please explain.

On Table 1, in the comments section it is stated "no winter monitoring/access" for Springs, Spring & Ponds and Surface water monitoring locations. So, if the site is inaccessible, no samples/monitoring are required.

Going forward on each Table it will be noted if a site was not accessible due to snow or other inclement weather conditions.

Sincerely,

*Tamme Bishop*

Tamme Bishop, P.E.  
Project Engineer

SW06  
East Roatcap Creek - Downstream  
Elevation - 6740

|           |            |            |            |            |
|-----------|------------|------------|------------|------------|
| Initiated | 1/1/1983   | 1/1/1983   | 1/1/1983   | 1/1/1983   |
| Activated | 12/21/1986 | 12/21/1986 | 12/21/1986 | 12/21/1986 |
| Date      | 11/27/2018 | 8/20/2018  | 6/25/2018  | 3/14/2018  |

| Summary Information      |          |          |      |       |           |        |        |        |       |        |        |
|--------------------------|----------|----------|------|-------|-----------|--------|--------|--------|-------|--------|--------|
| Field Parameters         | UNITS    | Baseline |      |       | Operation |        |        |        |       |        |        |
|                          |          | Min      | Ave  | Max   | Min       | Ave    | Max    |        |       |        |        |
| Flow                     | CFS      | 0.00     | 4.65 | 45.75 | 0.00      | 1.25   | 19.20  | 0.800  | 0.005 | 19.200 | 0.050  |
| Water Level in Flume     | Feet     |          |      |       | 0.00      | 0.21   | 1.22   |        |       |        |        |
| Temperature              | Celsius  | 0.5      | 10.0 | 21.1  | 0.03      | 9.64   | 25.50  | 0.2    | 12.5  | 10.1   | 1.6    |
| Conductivity             | umhos/cm | 60       | 277  | 691   | 80        | 596    | 1650   | 907    | 713   | 379    | 342    |
| pH                       | su       | 6.5      | 8.3  | 9.2   | 6.9       | 8.4    | 9.0    | 7.98   | 8.46  | 8.29   | 8.56   |
| Field Comments           |          |          |      |       |           |        |        |        |       |        |        |
| Lab Parameters           | UNITS    |          |      |       |           |        |        |        |       |        |        |
|                          |          |          |      |       |           |        |        |        |       |        |        |
| Bicarbonate              | mg/L     | 60       | 155  | 289   | 64        | 240    | 440    | 395    | 390   | 172    | 140    |
| Carbonate                | mg/L     | <MDL     | 1    | 7.1   | <MDL      | 7.26   | 52.00  | <MDL   | <MDL  | <MDL   | <MDL   |
| Chloride                 | mg/L     | 1        | 5    | 10    | <MDL      | 13.75  | 68.00  | 6.3    | 5.4   | 2.4    | 3.2    |
| Conductivity             | umhos/cm | 110      | 275  | 670   | 138.0     | 608.5  | 1430.0 | 756    | 615   | 338    | 291    |
| Hardness                 | mg/L     | 58       | 158  | 291   | 63.00     | 274.32 | 697.00 | 354    | 312   | 155    | 120    |
| Acidity                  | mg/L     |          |      |       | -370      | -119   | 62     | -316   | -340  | -150   | -123   |
| pH                       | su       | 6.8      | 7.9  | 8.4   | 6.50      | 8.08   | 8.60   | 8.26   | 8.22  | 8.34   | 8.17   |
| ResidueFilterable-TDS    | mg/L     | 40       | 180  | 380   | 50        | 418    | 1130   | 496    | 410   | 231    | 184    |
| ResidueNonFilterable-TSS | mg/L     | 18       | 104  | 524   | <MDL      | 22     | 138    | <MDL   | 50.5  | 10     | <MDL   |
| SAR                      |          | 0.11     | 0.46 | 0.72  | 0.28      | 0.97   | 5.93   | 0.805  | 0.866 | 0.537  | 0.528  |
| Sulfate                  | mg/L     | 10       | 32   | 80    | 4.20      | 88.69  | 410.00 | 111    | 52.8  | 15.3   | 15.8   |
| Calcium (Dissolved)      | mg/L     | 15       | 37   | 69    | 10.5      | 55.9   | 125.0  | 87.3   | 76.6  | 38.3   | 27.9   |
| Iron (Dissolved)         | mg/L     |          |      |       | <MDL      | 0.11   | 0.83   | 0.0179 | <MDL  | 0.0236 | 0.0222 |
| Iron (Total)             | mg/L     |          |      |       | 0.07      | 4.51   | 79.90  | 0.622  | 0.391 | 0.371  | 79.9   |
| Magnesium (Dissolved)    | mg/L     | 4        | 14   | 29    | 5.5       | 32.8   | 99.2   | 35     | 33.5  | 14.3   | 12.2   |
| Manganese (Total)        | mg/L     |          |      |       | <MDL      | 0.767  | 14.100 | 0.0885 | 0.105 | 0.0502 | 14.1   |
| Sodium (Dissolved)       | mg/L     | 2        | 14   | 28    | 5.10      | 40.16  | 196.00 | 35.2   | 36.1  | 14.8   | 15.4   |

SW06 is located on East Roatcap Creek in the NE1/4SW1/4 Sec 23, T13S, R92W of the 6th P.M. A 36" Parshall flume was also installed at this location

\* Sample taken on 3/28/16