

July 13, 2012

Mr. Doug Mandeville U.S. Nuclear Regulatory Commission 11545 Rockville Pike Two White Flint North, Mailstop T8-F5 Rockville, MD 20852-2738 CAMECO RESOURCES

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

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## CERTIFIED MAIL # 7011 0470 0001 0202 2047 RETURN RECEIPT REQUESTED

Re: Submittal of Alternate Decommissioning Schedule Source Material License # SUA-1548 NRC Inspection Report 040-08964/09-002

Dear Mr. Mandeville:

Power Resources, Inc. d/b/a Cameco Resources (Cameco) is herein providing a current version of an alternate decommissioning schedule for the Smith Ranch-Highland Uranium Project as requested by the U.S. Nuclear Regulatory Commission (NRC) in a letter dated June 22, 2012 and received by Cameco on June 29, 2012. Attached are restoration schedules, water balances, and water balance assumptions submitted to the Wyoming Department of Environmental Quality (WDEQ) – Land Quality Division (LQD) under Permit 633 and 603 as submitted April 30, 2012 that are pending review and approval.

Please contact me at 307-358-6541, ext. 476 or email <u>Kenneth\_Garoutte@cameco.com</u> if you have any questions.

Respectfully,

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Ken Garoutte Safety, Health, Environment, Quality (SHEQ) Manager

KG/kg

Attachments: Restoration Schedules, Water Balances, and Assumptions

| cc: | File SR 4.6.4.1  |
|-----|--|
|     | Document Control Desk, NRC - CERTIFIED MAIL # 7011 0470 0001 0202 2030 |
| ec: | Cameco-Cheyenne  |

## Highland Water Balance Assumptions (Permit 603) Revision 6 2/3/2012

- 1. The Ground Water Sweep is calculated on the volume of water withdrawn from the formation.
- 2. The 8 pore volumes of RO treatment were calculated on the volume of permeate injected not the volume of water withdrawn from the formation.
- 3. Did not assume any production RO's are installed **to treat** the mine unit bleed. The final production center for Highland at Sat 3 is several miles from the CPP and there are not any connecting pipelines to the Highland Central Processing Plant.
- 4. The Highland Central Processing Plant will process elutions from third party toll milling, North Butte, and will dry slurry from Gas Hills.
- 5. A mine unit control bleed of 40 gpm has been included in the water balance for use anywhere on the Highland side of the property. The control bleed is a provision for excursion control.
- 6. The ground water sweep is used for RO make up water in the water balance. A provision has been included for an up to 5% bleed to be used during the RO phase for hydraulic control.
- 7. The recovery on the RO's will be 80%
- 8. Concentrate will be blended with GWS and sent to the land application disposal circuit.
- 9. The pore volume assumptions came from the 2010/2011 (Rev 3) approved surety estimate.
- 10. The DDW disposal volumes are the most recent volumes to date from the mine.
- 11. The assumed disposal capacity is maintained for the life of the project.
- 12. The assumed disposal includes land application for the life of the project.
- 13. The colored bars show the timeline of the restoration for each mine unit.
- 14. The red outline shows the period of GWS.
- 15. The water balance assumes that the current installed RO capacity remains constant for the restoration effort at Highland.
- 16. Beginning 2028 water from Smith Ranch will be disposed at HUP.
- 17. The assumed production bleed was 1 %.
- 18. Future internal production plans were used in the water balance to calculate production disposal required but are not shown on the water balance spreadsheet.

## ATTACHMENT 1

## PROPOSED RESTORATION SCHEDULE (12-9-11)

Smith Ranch/Highland Project

Permit 603

|             | Highland Project - | Permit 603           |                      |                       |             |                          |      |                      |                      |             |                      |                   |             |      |      |                         |      |
|-------------|--------------------|----------------------|----------------------|-----------------------|-------------|--------------------------|------|----------------------|----------------------|-------------|----------------------|-------------------|-------------|------|------|-------------------------|------|
|             | 2012               | 2013                 | 2014                 | 2015                  | 2016        | 2017                     | 2018 | 2019                 | 2020                 | 2021        | 2022                 | 2023              | 2024        | 2025 | 2026 | 2027                    | 2028 |
| MU-A        | Long ter           | rm groundwater m     | onitoring            |                       | Reclamation |                          |      |                      |                      |             |                      |                   |             |      |      |                         |      |
| MU-B        | ACL submittal      | Regulat              | tory review          |                       | Reclamation |                          |      |                      |                      |             |                      |                   |             |      |      |                         |      |
| MU-C        | RO and perm        | eate injection       | Stability Monitoring |                       | Reclamation |                          |      |                      |                      |             |                      |                   |             |      |      |                         |      |
| MU-D/D Ext. | RO                 | ) and permeate injec | ztion                | Stability Monitoring  |             | Reclamation              |      |                      |                      |             |                      |                   |             |      |      |                         |      |
| MU-E        | Groundwa           | ter sweep            | R                    | tO and permeate injec | tion        | Stability Monitoring     |      | Reclamation          |                      |             |                      |                   |             |      |      |                         |      |
| wir.        |                    | Mine Unit            | Escadorilar          |                       |             | Connector                |      |                      |                      |             |                      |                   |             |      |      |                         |      |
| 104         |                    |                      | T Productori         |                       |             | Ciodiana                 |      |                      |                      |             |                      | and permeate inje |             |      |      | examine a second of the |      |
| 10-н        | Mine Unit H        | production           | Groundw              | vater sweep           | R           | O and permeate injection | n    | Stability Monitoring |                      | Reclamation |                      |                   |             |      |      |                         |      |
|             |                    |                      |                      |                       |             |                          |      |                      | in the second        |             |                      |                   |             |      |      |                         |      |
| NU-1        |                    | Mine Unit            | t I production       |                       |             | Groundwater sweep        |      | R                    | and permeate injecti | on          | Stability Monitoring |                   | Reclamation |      |      |                         |      |
| FUN         |                    | Mine Unit            | l production         |                       |             | Groundwater sweep        |      | R                    | and permeate injecti | on          | Stability Monitoring |                   | Reclamation |      |      |                         |      |

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|   |                   |                  |                 |                             |       |  |       |       |       | Highland        | Water Balan<br>5-Feb-12<br>Rev. 6 | nce Perm | nit 603 |      |      |      |       |       |       |           |           | ر میلام ، میلام<br>ا |           |          |       |           |      |          |
|---|-------------------|------------------|-----------------|-----------------------------|-------|--|-------|-------|-------|-----------------|-----------------------------------|----------|---------|------|------|------|-------|-------|-------|-----------|-----------|----------------------|-----------|----------|-------|-----------|------|----------|
| Year  |                   |                  | -               | 1                           | 2     | 3  | 4     | 5     | 6     | 7               | 8                                 | 9        | 10      | n    | 12   | 13   | 14    | 15    | 16    | 17        | 18        | 19                   | 20        | 21       | 22    | 23        | 24   | 24       |
| Production Flows  |                   |                  |                 | 2012                        | 2013  | 2014   | 2015  | 2016  | 2017  | 2018            | 2019                              | 2020     | 2021    | 2022 | 2023 | 2024 | 2025  | 2026  | 2027  | 2028      | 2029      | 2030                 | 2031      | 2032     | 2033  | 2034      | 2035 | 2035     |
| Froduction Flows  |                   |                  |                 |                             |       |  |       |       |       |                 |                                   |          |         |      |      |      |       |       |       |           |           |                      |           |          |       |           |      |          |
| Total Braduction Flow (mm)  |                   |                  |                 | 4850                        | 4440  | 5150   | 4026  | 2020  | 1220  | 600             | 80                                |          |         |      |      | -    |       |       | _     |           |           | -                    |           |          |       |           |      |          |
| Total Production New (gpm)  |                   |                  |                 | 000                         | 4440  | 5150   | 4028  | 2920  | 1250  | 500             | ~                                 | 0        | U       | U    | 0    | U    |       | 0     | U     | 0         | 0         | 0                    | 0         | U        | U     |           | U    |          |
| Total Production Bleed (gpm)  |                   |                  |                 | 48.5                        | 44.4  | 51.5   | 40.3  | 29.2  | 12.3  | 5.8             | 0.8                               | 0        | 0       | 0    | 0    | 0    | 0     | 0     | 0     | 0         | 0         | 0                    | 0         | 0        | 0     | 0         | 0    | 0        |
| Control Bleed (gpm)   |                   |                  |                 | 40                          | 40    | 40   | 40    | 40    | 40    | 40              | 40                                | 40       | 40      | 40   | 40   | 40   | 40    | 40    | 40    | 40        | 0         |                      |           |          |       |           |      |          |
| Restoration Flows   | mound at 1 from B | -                | DO DUAL FILM    |                             |       |  |       |       |       |                 |                                   |          |         |      |      |      |       |       |       |           |           |                      |           |          |       |           |      |          |
| MUC (gal) (RO)  | 88652             | GWS PV to Finish | RO PV to Finish | 200                         | 400   | 1  |       |       |       |                 |                                   |          |         |      |      |      |       |       |       |           |           |                      |           |          |       |           |      |          |
| GWS (gal)   |                   |                  |                 |                             |       |  |       |       |       |                 |                                   |          |         |      |      |      |       |       |       |           |           |                      |           |          |       |           |      |          |
| MU D (gal) (RO)   | 28046             | 0                | 5               | 200                         | 200   |  |       |       |       |                 |                                   |          |         |      |      |      |       |       |       |           |           |                      |           |          |       |           |      |          |
| GWS (gal)   |                   |                  |                 |                             | -     |  |       |       |       |                 |                                   |          |         |      |      |      |       |       |       |           |           |                      |           |          |       |           |      |          |
| MU D Ext. (gal) (RO)  | 17296             | o                | s               | SV                          | 200   | 200  |       |       |       |                 |                                   |          |         |      |      |      |       |       |       |           |           |                      |           |          |       |           |      |          |
| GWS (gal)   |                   |                  |                 |                             | FO    | 50   |       |       |       |                 |                                   |          |         |      |      |      |       |       |       |           |           |                      |           |          |       |           |      |          |
| MUE (gal) (RO)  | 81658             | 1                | 8               | parties the state state and | 30    | 152  | 760   | 400   |       |                 |                                   |          |         |      |      |      |       |       |       |           |           |                      |           |          |       |           |      | <u> </u> |
| GWS (gal)   |                   |                  |                 | 150                         | 140   |  |       |       |       |                 |                                   |          |         |      |      |      |       |       |       |           |           |                      |           |          |       |           |      |          |
| Total Disposal (gal)<br>MU F(cal) (RO)                                      | 221800            | 1                | 8               | 70                          | 20    | 58   | 190   | 100   |       | N. HOMMAN STATE | IN COLUMN TWO IS NOT              | 320      | 320     | 720  | 720  | 720  | 530   | 820   |       |           |           |                      |           |          |       |           |      |          |
| GWS (gul)   |                   | -                |                 |                             |       |  |       | 100   | 100   | 100             | 160                               |          |         |      |      |      |       |       |       |           |           |                      |           |          |       |           |      |          |
| Total Disposal (gal)  | 94815             | 1                |                 |                             |       | Construction of the local division of the lo |       | 0     | 0     | 0               | 10                                | 80       | 80      | 160  | 190  | 180  | 150   | 80    |       |           |           |                      |           |          |       |           |      |          |
| GWS (gal)   | 34613             |                  | ٥               |                             |       | 100  | 100   | 300   |       |                 |                                   |          |         |      |      |      |       |       |       |           |           |                      |           |          |       |           |      |          |
| Total Disposal (gal)  | 117430            |                  |                 |                             |       | 0  | 0     | 90    | 210   | 150             |                                   |          |         |      |      |      |       |       |       |           |           |                      |           |          |       |           |      |          |
| GWS (gal)   | 115620            | 1                | ٥               |                             |       |  |       | 80    | 80    | 80              | 760                               | 600      | 600     |      |      |      |       |       |       |           |           |                      |           |          |       |           |      |          |
| Total Disposal (gal)  |                   |                  |                 |                             |       |  |       | 10    | 10    | 60              | 190                               | 150      | 150     |      |      |      |       |       |       |           |           |                      |           |          |       |           |      |          |
| MU J (gal)(RO)<br>GWS (gal)   | 86995             | 1                | 8               |                             |       |  |       |       |       | 20              | 30                                | 100      | 50      | 200  | 200  | 200  | 200   | 400   | 200   |           |           |                      |           |          |       |           |      |          |
| Total Disposal (gal)  |                   |                  | 2               |                             |       |  |       |       |       | 20              | 30                                | 0        | 0       | 50   | 50   | 50   | 50    | 100   | 50    |           |           |                      |           |          |       |           |      |          |
| MUK (gal)(RO)<br>GWS (gal)<br>Total Dispotal (gal)                          | 84209             | 1                | 8               |                             |       |  |       |       |       |                 | 11                                | - 40     | 40      | 4    | 44   | 40   | 200   | 20    | 0 720 | 320       |           |                      |           |          |       |           |      |          |
|   |                   |                  |                 |                             |       |  |       |       |       |                 |                                   |          |         |      |      |      |       |       |       |           |           |                      |           |          |       |           |      |          |
| Total Restoration Disposal (gpm)<br>Restoratio Water From Smith Ranch (gpm) |                   |                  |                 | 170                         | 170   | 88   | 190   | 200   | 220   | 230             | 230                               | 230      | 230     | 230  | 230  | 230  | 230   | 230   | 230   | 80<br>140 | 0 180 190 | 0<br>140             | 0 140 140 | 0<br>140 | 0 180 | 0 140 140 | 0    | 0        |
| Installed RO Capacity (gpm) (feed)  | Feed (gpm)        |                  |                 |                             |       |  |       |       |       |                 |                                   |          |         |      |      |      |       |       |       | 220       | 180       | 140                  | 140       | 140      | 190   | 140       | U    |          |
|   | 200               |                  |                 |                             |       |  |       |       |       |                 |                                   |          |         |      |      |      |       |       |       |           |           |                      |           |          |       |           |      |          |
|   | 100               |                  |                 |                             |       |  |       |       |       |                 |                                   |          |         |      |      |      |       |       |       |           |           |                      |           |          |       |           |      |          |
|   | 250               |                  |                 |                             |       |  |       |       |       |                 |                                   |          |         |      |      |      |       |       |       |           |           |                      |           |          |       |           |      |          |
|   | 250               | -                |                 |                             |       |  |       |       |       |                 |                                   |          |         |      |      |      |       |       |       |           |           |                      |           |          |       |           |      |          |
| Total RO Capacity (gpm)   | 1250              |                  |                 |                             |       |  |       |       |       |                 |                                   |          |         |      |      |      |       |       |       |           |           |                      |           |          |       |           |      |          |
| Deep Disposal Well Capacity (gpm)   | Permitted         | Current          | -               |                             |       |  |       | -     | -     |                 |                                   |          | 32      |      |      |      |       |       |       |           | <u> </u>  | -                    |           |          |       |           |      |          |
| DDW 9 (gpm)   | 147               | 28               |                 | 28                          | 28    | 28   | 28    | 28    | 28    | 28              | 28                                | 28       | 28      | 28   | 28   | 28   | 28    | 28    | 28    | 28        | 28        | 28                   | 28        | 28       | 28    | 28        | 28   | 28       |
| Volman 33-27 (gpm)  | 105               | 50               |                 | 50                          | 50    | 50   | 50    | 50    | 50    | 50              | 50                                | 50       | 50      | 50   | 50   | 50   | 50    | 50    | 50    | 50        | 50        | 50                   | 50        | 50       | 50    | 50        | 50   | 50       |
| Irrigator Circle 2 (gpm)  |                   | 180              |                 | 180                         | 180   | 180  | 180   | 180   | 20    | 20              | 20 180                            | 20 180   | 20      | 20   | 20   | 20   | 20    | 20    | 20    | 20        | 20        | 20                   | 20        | 20       | 20    | 20        | 20   | 20       |
| Total Ausilable   |                   | 302              |                 | 202                         | 500   |  | 344   |       | 304   | 304             | 206                               | 206      | 304     | 200  |      | 200  | 304   | 3~    | 200   | 200       |           |                      | -         | 201      | 201   | 200       | 201  |          |
|   |                   | 306              |                 | 306                         | 306   | 306  | 306   | 506   | 506   | 306             | 300                               | 300      | 306     | 306  | 306  | 306  | 306   | 306   | 306   | 306       | 306       | 306                  | 306       | 306      | 306   | 306       | 306  | 506      |
| HUP Resin Transfer  |                   |                  |                 | 0                           | 8.1   | 10.2   | 11    | 11    | 11    | 11              | 11                                | 11       | 11      | 11   | 11   | 11   | 10.2  | 10.2  | 10.2  | 10.2      | 10.2      | 10.2                 | 10.2      | 10.2     | 10.2  | 10.2      | 10.2 | 0        |
| Control Bleed (gpm)   |                   |                  |                 | 48.5                        | 44.4  | 40   | 40.3  | 40    | 40    | 40              | 40                                | 40       | 40      | 40   | 40   | 40   | 40    | 40    | 40    | 40        | 0         | 0                    | 0         | 0        | 0     | 0         | 0    | 0        |
| Total Restoration Disposal (gpm)  |                   |                  |                 | 170                         | 170   | 88   | 190   | 200   | 220   | 230             | 230                               | 230      | 230     | 230  | 230  | 230  | 230   | 230   | 230   | 220       | 180       | 140                  | 140       | 140      | 180   | 140       | 0    | 0        |
| Total Dispose Required (Epril)  |                   |                  |                 | 236.5                       | 202.5 | 189.7  | 281.3 | 280.2 | 283.3 | 280.8           | 281.8                             | 281      | 281     | 281  | 281  | 281  | 280.2 | 280.2 | 280.2 | 210.2     | 190.2     | 150.2                | 150.2     | 150.2    | 190.2 | 150.2     | 10.2 | 0        |
| Total Disposal Balance  |                   |                  |                 | 48                          | 44    | 116  | 25    | 26    | 23    | 19              | 24                                | 25       | 25      | 25   | 25   | 25   | 26    | 26    | 26    | 36        | 116       | 156                  | 156       | 156      | 116   | 156       | 296  | 306      |

Footnote: Mine Unit K (from permit 633) is included in this water balance table for permit 603, Reclamation Plan to show its dependency on the Highland Uranium Project disposal network during restoration.

- 1. The Ground Water Sweep is calculated on the volume of water withdrawn from the formation.
- 2. The 8 pore volumes of RO treatment were calculated on the volume of permeate injected not the volume of water withdrawn from the formation.
- 3. Production RO's are installed to treat all Mine Unit Bleed at the SRH. The water is to be used as process water in the plant. The goal is to eliminate the use of fresh water in the plant.
- 4. The water balance assumes that Reynolds Ranch Production is processed at the Smith Ranch CPP.
- 5. A mine unit control bleed of 20 gpm has been included in the water balance for use anywhere on the site. The control bleed is a provision for excursion control.
- 6. The ground water sweep is used for RO make up water in the water balance. A provision has been included for an up to 5% bleed to be used during the RO phase for hydraulic control.
- 7. The recovery on the RO's is assumed to be 80%.
- 8. The pore volume assumptions came from the 2010/2011 approved surety estimate (Rev 3).
- 9. The DDW disposal volumes are the most recent volumes to date from the mine.
- 10. The assumed disposal capacity is maintained for the life of the project.
- 11. The colored bars show the timeline of the restoration for each mine unit.
- 12. The red outline shows the period of GWS.
- 13. The water balance assumes that the 500 gpm (feed) RO will be installed at SR in 2028.
- 14. 250 gpm (feed) RO is added at SR2 in 2029 and an additional 500gpm (feed) is installed at SR2 in 2032 for the restoration of Mine Units 9, 10.
- 15. Mine Units 9 and 10 need to be restored together because they are in the same sand units.
- 16. The assumed production bleed is 1%
- 17. Future internal production plans were used in the water balance to calculate production disposal required but are not shown on the water balance spreadsheet.

|         |                          |                     |                       |                      |             |                           |               |            |           |              |                |                |                    |                |                     | Smith Ra         | nch/Highland | Project              | .,                  |             |                     |                   |              |               |                |      |
|---------|--------------------------|---------------------|-----------------------|----------------------|-------------|---------------------------|---------------|------------|-----------|--------------|----------------|----------------|--------------------|----------------|---------------------|------------------|--------------|----------------------|---------------------|-------------|---------------------|-------------------|--------------|---------------|----------------|------|
|         |                          |                     |                       |                      |             |                           |               |            |           |              |                |                |                    |                |                     |                  | Permit 633   |                      |                     |             |                     |                   |              |               |                |      |
|         | Smith Ranch - P          | ermit 633           |                       |                      |             |                           |               |            |           |              |                |                |                    |                |                     |                  |              |                      | 1                   |             |                     |                   |              |               |                |      |
|         | 2012                     | 2013                | 2014                  | 2015                 | 2016        | 2017                      | 2018          |            | 2019      | 202          | 0              | 2021           | 2022               |                | 2023                | 2024             | 2025         | 2026                 | 2027                | 2028        | 2029                | 2030              | 203          | 51            | 2032           | 2033 |
|         |                          |                     |                       |                      |             |                           |               |            |           |              |                |                |                    |                |                     |                  |              |                      |                     |             |                     |                   |              |               |                |      |
| MU-1    | RO and per               | neate injection     | Stability Monitoring  |                      | Reclamation |                           |               |            |           |              |                |                |                    |                |                     |                  |              |                      |                     |             |                     |                   |              |               |                |      |
|         |                          |                     |                       |                      |             |                           |               |            |           |              |                |                |                    |                |                     |                  |              |                      |                     |             |                     |                   |              |               |                |      |
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| - CA    |                          |                     | Gioundinator Shroop   |                      |             |                           |               | -          | 10.000    |              | 1.111.111      |                |                    | NO BIN I       |                     |                  |              | -                    |                     |             |                     | subsety more      |              |               | Reclamatio     |      |
|         |                          |                     |                       |                      |             |                           |               |            |           |              |                |                |                    |                |                     |                  |              |                      |                     |             |                     |                   |              |               |                |      |
| MU-3    | an Inisa a               |                     | Mine unit j           | production           |             |                           |               |            |           |              | Gn             | oundwater swe  | ep                 |                |                     |                  |              |                      |                     |             | RO and p            | ermeate injection |              |               |                |      |
|         |                          |                     |                       |                      |             |                           |               |            |           |              |                |                | 8 8 <del>8</del> 8 |                |                     | • • • • •        | A 14         |                      |                     |             |                     |                   |              |               |                | 1    |
|         |                          |                     |                       |                      |             | <u> 1967 - 1</u>          |               |            |           |              |                |                |                    | -              |                     |                  |              |                      |                     |             |                     |                   |              |               |                |      |
| MU-4/4A |                          | Groundwater swee    | ep                    |                      | ,           | RO and permeate injection | ction         |            |           | Stability No | citoring       |                | Reclamat           | ion            |                     |                  |              |                      |                     |             |                     |                   |              |               |                |      |
|         |                          |                     |                       |                      |             |                           |               |            |           |              |                |                |                    |                |                     |                  |              |                      |                     |             |                     |                   |              |               |                |      |
| MU-15   |                          | Mine unit productio | on                    |                      |             | Groundwater sweet         | ιp            | Sec.       |           |              |                |                | RO an              | s permeate in  | ijection            |                  |              | Stability Monitoring |                     | Reclamatio  |                     |                   |              |               |                |      |
|         | Contract Contract Contra |                     |                       |                      |             |                           |               |            |           |              |                |                |                    |                |                     |                  |              |                      |                     |             |                     |                   |              |               |                |      |
|         |                          |                     |                       |                      |             |                           |               |            |           |              |                |                |                    |                |                     |                  |              |                      |                     |             |                     |                   |              |               |                |      |
| MU-15A  |                          |                     |                       |                      |             | Mine Unit productio       | m             |            |           |              |                |                |                    |                |                     | iroundwater swee | P            |                      | RO and permeate inj | ection      | Stability Monitoria |                   | Reclam       | nation        |                |      |
|         |                          |                     |                       |                      |             |                           |               |            |           |              |                |                |                    |                |                     |                  |              |                      |                     |             |                     |                   |              |               |                |      |
|         |                          |                     |                       |                      |             |                           |               |            | Audio C   |              |                | SCARES N       | No. of Carlot      | and the second |                     |                  | TERMINAL ST  |                      | Constantion         |             |                     |                   |              | -             |                |      |
|         |                          |                     |                       | nt the statistics is |             |                           |               | a and play |           |              |                | Section of the | The second second  |                |                     |                  |              |                      | Groundwater Swe     | 1           |                     | NO and permeat    | e allectori  |               | - and a second |      |
|         |                          |                     |                       |                      |             |                           |               |            |           |              |                |                |                    |                |                     |                  |              |                      |                     |             |                     |                   |              |               |                |      |
| MU-9    |                          |                     |                       |                      |             | e de la com               | Mine Unit pro | oduction   |           |              |                |                |                    |                |                     |                  |              | Groun                | dwater sweep        |             |                     |                   | RO and perme | ate injection | 1              |      |
|         | -                        |                     |                       |                      |             |                           |               |            |           |              |                |                |                    |                |                     |                  |              |                      |                     |             |                     |                   |              |               |                |      |
|         |                          |                     |                       |                      |             |                           |               |            |           |              |                |                |                    |                |                     |                  |              | 4                    |                     |             |                     |                   |              |               |                |      |
| MU-10   |                          |                     |                       |                      |             |                           |               |            |           |              | line Unit prod | luction        |                    |                |                     |                  |              |                      |                     | 54.5        |                     |                   |              | Groundwate    | r sweep        |      |
|         |                          |                     |                       |                      |             |                           |               |            |           |              |                |                |                    |                |                     |                  |              |                      |                     |             |                     |                   |              |               |                |      |
| MU-K    |                          |                     |                       | Mine Unit            | production  | STAN AND AN               |               | -Keille    | Sert Line |              |                |                | Groundwater s      | weep           |                     | nnan s           |              | RO and p             | armeate injection   |             | Stability Heritaria |                   | Reciam       | ation         |                |      |
|         | and the second of        |                     |                       |                      |             |                           |               |            |           |              |                |                |                    |                |                     |                  |              |                      |                     |             | Sector Control      |                   |              |               |                |      |

ATTACHMENT 1

|                     |                      |                      |             | annan an a |  |
|---------------------|----------------------|----------------------|-------------|--|--|
|                     |                      |                      |             |  |  |
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| -                   |                      |                      |             |  |  |
|                     | Stability Monitoring |                      | Reclamation |  |  |
|                     |                      |                      |             |  |  |
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| dulity : Ionitoring |                      | Reclamation          |             |  |  |
|                     |                      |                      |             |  |  |
|                     |                      |                      |             |  |  |
|                     |                      |                      |             | Reclamation                              |  |
| R0 and perme        | ate injection        | Stability Monitoring |             |  |  |

|   |  |                  |                 |               |         |                    |  |                                     | 10 · · · · · · · · · · · · · · · · · · · |                       |         | Smi                       | th Ranch V | <b>Vater Bala</b> | nce Permi       | it 633 |  |        |       |       |       |      |            |                   |                    |       |      |      | ·    |      |      |
|---|--|------------------|-----------------|---------------|---------|--------------------|--|-------------------------------------|--|-----------------------|---------|---------------------------|------------|-------------------|-----------------|--------|--|--------|-------|-------|-------|------|------------|-------------------|--------------------|-------|------|------|------|------|------|
|   |  |                  |                 |               |         |                    |  |                                     |  |                       |         |                           |            | 3-Feb-12          |                 |        |  |        |       |       |       |      |            |                   |                    |       |      |      |      |      |      |
|   |  |                  |                 |               |         |                    |  |                                     |  |                       |         |                           |            | Nev. 6            |                 |        |  |        |       |       |       |      |            |                   |                    |       |      |      |      |      |      |
| Year                                    |  |                  |                 | 1             | 2       | 3                  | 4  | 5                                   | 6  | 7                     | 8       | 9                         | 10         | 11                | 12              | 13     | 14   | 15     | 16    | 17    | 18    | 19   | 20         | 21                | 22                 | 23    | 24   | 25   | 26   | 27   | 28   |
|   |  |                  |                 | 2012          | 2013    | 2014               | 2015   | 2016                                | 2017                                     | 2018                  | 2019    | 2020                      | 2021       | 2022              | 2023            | 2024   | 2025   | 2026   | 2027  | 2028  | 2029  | 2030 | 2031       | 2032              | 2033               | 2034  | 2035 | 2036 | 2037 | 2038 | 2039 |
|   | till and the second |                  |                 |               |         | -                  |  |                                     |  | -                     | -       |                           |            |                   |                 | -      |  |        |       |       |       |      |            |                   | -                  |       |      | -    |      |      |      |
| Sattellite CPP \ SR1 Water Balance      |  |                  |                 |               |         |                    |  |                                     |  |                       |         |                           |            |                   |                 |        |  |        |       |       |       |      |            |                   |                    |       |      | 1    |      |      | -    |
|   |  |                  |                 |               |         |                    |  |                                     |  |                       |         |                           |            |                   | -               |        | -  |        |       |       |       |      | The second |                   | _                  |       |      | _    |      |      |      |
| Total CPD /SR 1 Production Elow (nom)   |  |                  |                 | 6850          | 7130    | 8550               | 6770   | 5030                                | 6830                                     | 7120                  | 7760    | 6640                      | 8210       | 1720              | 2105            | 2420   | 2155   | 1160   |       | -     | -     | -    | -          |                   | -                  |       |      |      |      | -    |      |
| Total CPP /SR 1 Production Bleed (gpm)  |  |                  |                 | 68.5          | 71.2    | 85.5               | 67.7   | 59.2                                | 68.2                                     | 73.3                  | 72.6    | 66.4                      | 32.1       | 17.3              | 21.03           | 2430   | 21.5   | 11.6   | 0     | 0     | 0     | 0    | 0          | 0                 | 0                  | 0     | 0    | 0    | 0    | 0    | 0    |
| Total CPP/SR 1 Production RO Con. (gpm) |  |                  |                 | 13.7          | 14.24   | 17.1               | 13.54  | 11.84                               | 13.64                                    | 14.66                 | 14.52   | 13.28                     | 6.42       | 3.46              | 4.22            | 4.86   | 4.32   | 2.32   | 0     | 0     | 0     | 0    | 0          | 0                 | 0                  | 0     | 0    | o    | 0    | 0    | 0    |
| Sattellite SR2 Water Balance            |  |                  |                 |               |         |                    |  |                                     |  |                       | 1       |                           |            |                   |                 |        |  |        |       |       |       |      |            |                   |                    |       |      |      |      |      |      |
|   |  |                  |                 |               |         |                    |  |                                     |  |                       |         |                           |            |                   |                 |        |  |        |       |       |       |      |            |                   |                    |       |      |      |      |      | -    |
| Total SR 2 Production Flow (gpm)        |  |                  |                 | 4500          | 4500    | 4550               | 4550   | 4530                                | 4630                                     | 4530                  | 4430    | 3430                      | 1230       | 730               | 730             | 730    | 630  | 630    | 380   | 230   | 180   | 0    | 0          | 0                 | 0                  | 0     | 0    | 0    | 0    | 0    | 0    |
| Total Production Bleed (gpm)            |  |                  |                 | 45            | 45      | 45.5               | 45.5   | 45.3                                | 46.3                                     | 45.3                  | 44.3    | 34.3                      | 12.3       | 7.3               | 7.3             | 7.3    | 6.3  | 6.3    | 3.8   | 2.3   | 1.8   | 0    | 0          | 0                 | 0                  | 0     | 0    | 0    | 0    | 0    | 0    |
| Total Sk 2 Production Ro cont. (gpm)    |  |                  |                 | 5.0           | 3.0     |                    | 2.1  |                                     | 3.5                                      | 2.4                   | 0.5     | 0.3                       | - 23       | 1.3               | 1.5             | 1.5    | 1.5  | 1.5    | 0.8   | 0.3   | 0.4   | 0.0  | 0.0        | 0.0               | 0.0                | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Smith Ranch Production Flow       | _  |                  |                 | 11350.0       | 11620.0 | 13100.0            | 11320.0  | 10450.0                             | 11450.0                                  | 11860.0               | 11690.0 | 10070.0                   | 4440.0     | 2460.0            | 2835.0          | 3160.0 | 2785.0   | 1790.0 | 380.0 | 230.0 | 180.0 | 0.0  | 0.0        | 0.0               | 0.0                | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Production Bleed (gpm)            |  |                  |                 | 22.7          | 23.2    | 26.2               | 22.6   | 20.9                                | 22.9                                     | 23.7                  | 23.4    | 20.1                      | 8.9        | 4.9               | 5.7             | 6.3    | 5.6  | 3.6    | 0.8   | 0.5   | 0.4   | 0.0  | 0.0        | 0.0               | 0.0                | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
|   |  |                  |                 |               |         |                    |  |                                     |  |                       |         | Contraction of the second |            |                   |                 |        |  |        |       |       |       |      |            |                   |                    |       |      |      |      |      |      |
| Control Bleed (gpm)                     |  |                  |                 | 20            | 20      | 20                 | 20   | 20                                  | 20                                       | 20                    | 20      | 20                        | 20         | 20                | 20              | 20     | 20   | 20     | 20    | 20    | 20    | 20   | 20         | 20                | 20                 | 20    | 0    | 0    | 0    | 0    | 0    |
| Restoration Flows                       |  |                  |                 |               |         |                    |  |                                     |  |                       |         |                           |            |                   |                 |        |  |        |       |       |       |      |            |                   |                    |       |      |      |      |      |      |
|   |  |                  |                 |               |         |                    |  |                                     |  |                       |         |                           |            |                   |                 |        |  |        |       |       |       |      |            |                   |                    |       |      |      |      |      |      |
| MU 1 (                                  | PV With Flair (Kgal)   | GWS PV to Finish | RO PV to Finish |               |         | -                  |  |                                     |  |                       |         |                           |            |                   |                 |        |  |        |       |       |       |      |            |                   |                    |       |      |      |      |      |      |
| GWS (gal)                               | 62637  | 0                | 3.5             | 520           | y 34    | iu i               |  |                                     |  |                       |         |                           |            |                   |                 |        |  |        |       |       |       |      |            |                   |                    |       |      |      |      |      |      |
| Total Disposal (gal)                    |  |                  |                 | 84            | 0 8     | 0                  |  |                                     |  |                       |         |                           |            |                   |                 |        |  |        |       |       |       |      |            |                   |                    |       |      |      |      |      |      |
| MU 2 (gal)(RO)                          | 125235   | 1                | 8               |               | D       | 0                  | 0  | 0 (                                 | 15                                       | 0 150                 | 0 16    | 0 1                       | 0 16       | 50 10             | 60 16           | 50 16  | 0 15   | 0 160  | 16    | 0 1   | 60 16 | 2    |            |                   |                    |       |      |      |      |      |      |
| GWS (gal)                               |  |                  |                 | 34            | 0 3     | 18 4               | 5 8  | 0 64                                |  |                       |         |                           |            |                   |                 |        |  |        |       |       |       |      |            |                   |                    |       |      |      |      |      |      |
| Total Disposal (gal)                    |  |                  |                 | 30            | 0 3     | 18 4               | 5  | 0 10                                | 3  | 6 30                  | 6 4     | 0 4                       | 0 4        | 10                | 40 4            | 10 4   | 0 3  | 6 40   | 9 44  | 0     | 40 4  | 5    |            |                   |                    |       | F.,  |      |      |      |      |
| MU 3 (gal)(RO)                          | 151878   | 1                | 8               |               |         |                    |  |                                     |  |                       |         |                           |            |                   | -               |        | 15   | 0 150  | ) 15  | 0 5   | 60 56 | 50   | 50 56      | 50 51             | 50 72              | 0 560 | 2    |      |      |      |      |
| Total Disposal (gal)                    |  |                  |                 |               |         |                    |  |                                     |  | 1                     |         | 0                         | 0 1        |                   | 0               | 0      | 3  | 5 36   |       | 6 1   | 40 14 | ) 14 | 14         | 10 1              | 18/                | 0 140 |      |      |      |      |      |
| MU 4/4A (gal)(RO)                       | 119216   | 1                | 8               | CONTRACTOR OF |         | Contraction of the | 40   | 0 400                               | 40                                       | 0 400                 | 0 40    | 0                         |            |                   |                 |        | and and a second se |        |       |       |       |      |            | Constant Property | Constanting of the |       |      |      |      |      |      |
| GWS (gal)                               |  |                  |                 | 8             | ) 8     | 10 8               | 0  |                                     |  |                       |         |                           |            |                   |                 |        |  |        |       |       |       |      |            |                   |                    |       |      |      |      |      |      |
| Total Disposal (gal)                    |  | 6. T             |                 | 15            | 5 1     | 5 8                | 0 10   | 0 100                               | ) 10                                     | 0 100                 | 0 10    | 0                         |            |                   |                 |        |  |        |       |       |       |      |            |                   |                    |       |      |      |      |      |      |
| MU 15(gal) (RO)                         | 137426   | 1                | 8               |               |         |                    |  |                                     |  |                       |         | 44                        | 4          | 4                 | 40              | 40     | 40   | D      |       |       |       |      |            |                   |                    |       |      |      |      |      |      |
| Total Disposal (gal)                    | 1999   |                  |                 |               |         |                    | 3  | 5 2                                 | 5  | 0 0                   |         | 0 10                      | 0 10       | 10 10             | 00 10           | 0 10   | 0 10   | 0      |       |       |       |      |            |                   |                    |       |      |      |      |      |      |
| MU1SA (gal)(RO)                         | 52669  | 1                | 8               |               |         |                    | State of the local division of the local div | and the second second second second | and the second second second             | and the second second |         |                           |            |                   | Contraction (1) |        |  | 400    | 400   | 0 4   | 00    |      |            |                   |                    |       |      |      |      |      |      |

| nstalled RO Capacity (gpm) (feed) |   |                                       |           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |       |       |       |       |
|-----------------------------------|---|---------------------------------------|-----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------|-------|-------|-------|-------|
|                                   | Feed (gpm)<br>200<br>200  |                                       |           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |       |       |       |       |
|                                   | 250   |                                       |           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |       |       |       |       |
|                                   | 250   |                                       |           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |       |       |       |       |
|                                   | 250   |                                       |           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |       |       |       |       |
|                                   | 250   |                                       |           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |       |       |       |       |
|                                   | 250   |                                       |           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |       |       |       |       |
|                                   | 250   |                                       |           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |       |       |       |       |
|                                   | 250   |                                       |           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |       |       |       |       |
|                                   | 250   | ÷                                     |           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |       |       |       |       |
| otal Capacity                     | 2400  |                                       |           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |          |       |       |       |       |
| Deep Disposal Well Capacity (gpm) | Permitted   | Current                               | 1         | 1     | 1     | 1     |       |       |       |       |       |       |       | 1     |       |       |       | 1     |       |       |       | 1     | [     | 1     | 1     | <b>I</b> | 1     | 1 1   | 1     |       |
| DW #1                             | 150   | 50                                    | 50        | 50    | 50    | 50    | 50    | 50    | 50    | 50    | 50    | 50    | 50    | 50    | 50    | 50    | 50    | 50    | 50    | 50    | 50    | 50    | 50    | 50    | 50    | 50       | 50    | 50    | 50    | 50    |
| DW #2                             | 158   | 80                                    | 80        | 80    | 80    | 80    | 80    | 80    | 80    | 80    | 80    | 80    | 80    | 80    | 80    | 80    | 80    | 80    | 80    | 80    | 80    | 80    | 80    | 80    | 80    | 80       | 80    | 80    | 80    | 80    |
| DW #10                            | 126   | 20                                    | <br>20    | 20    | 20    | 20    | 20    | 20    | 20    | 20    | 20    | 20    | 20    | 20    | 20    | 20    | 20    | 20    | 20    | 20    | 20    | 20    | 20    | 20    | 20    | 20       | 20    | 20    | 20    | 20    |
| DW #6                             | 105   | 60                                    | 60        | 60    | 60    | 60    | 60    | 60    | 60    | 60    | 60    | 60    | 60    | 60    | 60    | 60    | 60    | 60    | 60    | 60    | 60    | 60    | 60    | 60    | 60    | 60       | 60    | 60    | 60    | 60    |
| otal Available                    |   | 210                                   | 210       | 210   | 210   | 210   | 210   | 210   | 210   | 210   | 210   | 210   | 210   | 210   | 210   | 210   | 210   | 210   | 210   | 210   | 210   | 210   | 210   | 210   | 210   | 210      | 210   | 210   | 210   | 210   |
| mith Ranch CPP Elutions           | en energia de la composición de la comp |                                       | 11.9      | 11.9  | 12.9  | 11.7  | 11.4  | 10.7  | 11.4  | 10.5  | 8.8   | 9.8   | 8.1   | 7.9   | 7.6   | 6.7   | 6.7   | 6.7   | 6.7   | 6.7   | 6.7   | 6.7   | 6.2   | 6.0   | 5.5   | 5.2      | 5.0   | 5.0   | 5.0   | 5.0   |
| otal Production Bleed (gpm)       |   | · · · · · · · · · · · · · · · · · · · | 22.7      | 23.2  | 26.2  | 22.6  | 20.9  | 22.9  | 23.7  | 23.4  | 20.1  | 8.9   | 4.9   | 5.7   | 6.3   | 5.6   | 3.6   | 0.8   | 0.5   | 0.4   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0      | 0.0   | 0.0   | 0.0   | 0.0   |
| Control Bleed                     |   |                                       | 30.0      | 20.0  | 20.0  | 20.0  | 20.0  | 20.0  | 20.0  | 20.0  | 20.0  | 20.0  | 20.0  | 20.0  | 20.0  | 20.0  | 20.0  | 20.0  | 20.0  | 20.0  | 20.0  | 20.0  | 20.0  | 20.0  | 20.0  | 0.0      | 0.0   | 0.0   | 0.0   | 0.0   |
| otal Restoration Disposal (gpm)   |   |                                       | 125.0     | 133.0 | 125.0 | 135.0 | 135.0 | 136.0 | 136.0 | 140.0 | 140.0 | 150.0 | 140.0 | 140.0 | 140.0 | 172.0 | 176.0 | 176.0 | 140.0 | 170.0 | 170.0 | 170.0 | 170.0 | 170.0 | 170.0 | 50.0     | 0.0   | 0.0   | 0.0   | 0.0   |
| otal Disposal Required (gpm)      |   |                                       | <br>189.6 | 188.1 | 184.1 | 189.3 | 187.3 | 189.6 | 191.1 | 193.9 | 188.9 | 188.7 | 173.0 | 173.6 | 173.9 | 204.3 | 206.3 | 203.5 | 167.2 | 197.1 | 196.7 | 196.7 | 196.2 | 196.0 | 195.5 | 55.2     | 5.0   | 5.0   | 5.0   | 5.0   |
| otal Disposal Balance             |   |                                       | 20.0      | 22.0  | 26.0  | 21.0  | 23.0  | 20.0  | 19.0  | 16.0  | 21.0  | 21.0  | 37.0  | 36.0  | 36.0  | 6.0   | 4.0   | 7.0   | 43.0  | 13.0  | 13.0  | 13.0  | 14.0  | 14.0  | 15.0  | 155.0    | 205.0 | 205.0 | 205.0 | 205.0 |

136 136 140

Total Disposal (gal) MU 7 (gal)(RO) GWS (gal) Total Disposal (gal) MU 9(gal)(RO) GWS (gal) Total Disposal (gal) MU 10 (gal)(RO) GWS (gal) Total Disposal (gal)

Total Restoration Disposal (gpm)

53608

136376

43282

1 8

1 8

125 133

125 135 135

1 8



400

40 40 0 0

20 100 100 0 0 0

400



| 0 | 0 |
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