



**CAMECO RESOURCES**  
*Smith Ranch-Highland  
Operation*  
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[www.cameco.com](http://www.cameco.com)

May 12, 2011

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

CERTIFIED MAIL #70100780000160023135 RETURN RECEIPT REQUESTED

**RE: Courtesy Copies of Restoration Schedule Submittal to WDEQ-LQD, Smith Ranch-Highland Uranium Project, License SUA-1548**

Dear Mr. Mandeville:

Power Resources, Inc. d/b/a/ Cameco Resources is herein providing copies of the restoration schedule and water balance recently submitted to the Wyoming Department of Environmental Quality / Land Quality Division (WDEQ-LQD) for approval into mining Permits 603 and 633. Once approval has been received from WDEQ-LQD, Cameco will send the documentation to the NRC as an alternate restoration schedule for approval into the license.

Please contact John McCarthy at (307) 358-6541 ext. 446 if you have questions.

Sincerely,

A handwritten signature in black ink, appearing to read 'Tom C. Cannon', written over a circular stamp or seal.

Tom C. Cannon  
General Manager of Operations

LTC/dk

Attachment: TFN 5 1/119, Non-significant Revision, Revised Restoration Plan, T2 Review  
TFN 5 3/121, Non-significant Revision, Revised Restoration Plan, T2 Review

cc: File SR 4.6.4.1  
CR-Cheyenne



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May 4, 2011

Mr. Lowell Spackman, District I Supervisor  
Wyoming Department of Environmental Quality  
Land Quality Division  
Herschler Building, 3 Fl-West  
122 West 25<sup>th</sup> Street  
Cheyenne, WY 82002

**CERTIFIED MAIL 7010 1060 0000 2139 2165 RETURN RECEIPT REQUESTED**

**RE: TFN 5 1/119, Non-Significant Revision, Revised Restoration Plan, T2 Review, Cameco Resources, Permit 603**

Dear Mr. Spackman,

On November 8, 2010 LQD provided T2 review comments regarding TFNs for revised restoration plans. Power Resources, Inc d/b/a Cameco Resources (Cameco), is herein providing responses to the T2 comments, along with associated permit revisions including a revised water balance, restoration schedule and text changes related to the responses. To preface the submittal with a brief summary of the history of the restoration schedule revisions. Cameco is including a discussion for clarification regarding the development of Cameco's restoration schedule and water balance.

Cameco, Land Quality Division (LQD) and the Nuclear Regulatory Commission (NRC) discussed groundwater restoration plans at the Smith-Highland ISL mines on July 23, 2009. During the meeting Cameco proposed using less groundwater sweep (GWS) than had traditionally been and indicated a new restoration schedule would be submitted to reflect proposed changes. Cameco therefore submitted a proposed restoration schedule change on August 13, 2009. LQD provided technical review comments on that submittal, to Cameco, dated December 21, 2009. Cameco responded on September 16, 2010 with a revised schedule for review and text changes to the operations and reclamation plans. Subsequently, LQD provided the second technical review (T2) on November 8, 2010.

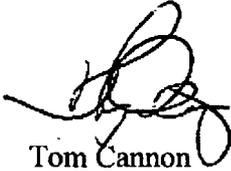
Cameco met with LQD April 13, 2011 and presented a revised restoration schedule, water balance, and a new disposal capacity chart that are being presented for insertion into the permit. This new revision to the restoration schedule and water balance supersede those submitted in September, 2010 and the disposal capacity chart is being added as an additional tool for LQD that provides a graphical representation of disposal capacity through time. As noted during the April 13 meeting, the revised schedule varies from the schedule submitted in September with cumulatively shortened timelines. This revised schedule more closely resembles the approved schedule. Previously, Cameco had not considered either the option of utilizing the deep disposal wells in a networked system or taking advantage of localized treatment at each satellite in order to provide capacity as is now shown in the newly revised water balance. Additionally, Cameco is adding capacity to the RO plant at the eastern end of the mine that services Mine Unit C, Mine Unit D, and Mine Unit E restoration areas that has assisted with the schedule of restoration completion in these three mine units. As discussed with LQD, this revised schedule will be included in the Combined Permit Amendment TFN 5 6/100.

Cameco also submitted text changes in September, 2010 in response to LQDs initial review comments (i.e. T1 comments). During the April 13, 2011 meeting with LQD, Cameco had discussed the opportunity to supply revised text narrative in the Combined Permit Amendment TFN 5 6/100 and LQD requested that Cameco continue to pursue text changes in the existing permits. CR has therefore included the text changes to address LQD comments from the T2 review. Please note that these text changes supersede those provided in the September, 2010 submittal and involve page number changes and re-formatting the text to be better incorporated into the approved permit. There are minor narrative changes to the text to address LQDs comments and provide clarification.

The LQD noted in a letter to Cameco dated February 1, 2011 that it is apparent that restoration is moving forward as described in the Permit Combination/Amendment (TFN 5 6/100); and Cameco has been working diligently on various restoration activities as reported during conversations, inspections, and at other scheduled meetings. Cameco acknowledges and appreciates LQD's recognition of restoration activities. Cameco also recognizes that LQD had anticipated having a meeting to discuss the restoration schedules at an earlier date; however, a great deal of time has been spent in coordinating with consultants, verifying and revising processes, accumulating data, and developing plans. These activities have been necessary not only for preparing the revised restoration schedule and water balance, but also to respond to the Mine Unit C bioremediation TFN with restoration plan, and to prepare individual, mine unit-specific restoration plans, that LQD requested. In the last month, Cameco has met with LQD weekly to discuss activities which have mostly pertained to restoration. Cameco is also agreeable to attend as many additional meetings to discuss restoration as are desired.

Please contact Dawn Kolkman at 307-358-6541, ext 435 or [Dawn\\_Kolkman@cameco.com](mailto:Dawn_Kolkman@cameco.com) if you have any questions.

Respectfully,



Tom Cannon  
General Manager

LTC/dk

Attachments: CR Response Document  
Permit Revision Package (Index of Change, Text Changes, Restoration  
Schedule, Water Balance and Disposal Capacity Chart)

cc: File HUP 4.3.3.1

File SR 4.3.3.1

ec: CR-Cheyenne

**TFN 5 1/119, REVISED RESTORATION SCHEDULE, T2 REVIEW  
CAMECO RESOURCES, HIGHLAND URANIUM PROJECT, PERMIT 603**

INTRODUCTION

On July 23, 2009 Cameco Resources (Cameco), Land Quality Division (LQD) and the Nuclear Regulatory Commission (NRC) discussed groundwater restoration plans at the Smith-Highland ISL mines. Cameco proposed using less groundwater sweep (GWS) than had traditionally been utilized as little benefit has been recognized with GWS. The focus would be a slower process, maintaining the cone of depression with a 20% bleed and using reverse osmosis (RO). It was suggested by Cameco that groundwater modeling would be used to develop plans for wellfield restoration. During the meeting Cameco indicated a new restoration schedule would be submitted to reflect these proposed changes.

Cameco submitted a revised restoration plan to LQD on August 13, 2009 which consisted of a single page change to the permit reclamation plan (Attachment 1, Highland Uranium Project — Estimated Time Table of Restoration Activities). Technical review comments were sent to Cameco on December 21, 2009 by LQD. Cameco submitted responses to LQD's comments on September 16, 2010 with a completely new schedule for review and included text changes to the operations and reclamation plans. LQD performed a T2 review that was sent to Cameco on November 8, 2011 with five comments remaining from the initial submittal and ten new comments pertaining to the September, 2010 submittal. Cameco has responded to LQD's comments in the following report.

COMMENTS

- 1 **Response Not Acceptable.** *The response discusses the short term disposal capacity issues that resulted in delays in restoration of the current wellfields that are in restoration, but does not explain the long delays for currently producing wellfields. The maintenance, infrastructure installation and replacement wells would have been incorporated into the present schedule and therefore not affect the timelines. Please provide justification for changing the start of restoration and for extending the length of time for restoration. (SI)*

**Cameco Response:** Cameco has revised the restoration schedule and water balance which shows that RO capacity will be sufficient for wellfield restoration. Cameco met with LQD to present and discuss the revised restoration schedule and water balance, at meeting dated April 13, 2011. LQD asked that Cameco explain how the new schedule presented can be shortened in comparison to the schedule submitted in September, 2010. Cameco re-evaluated their disposal capacity which was, in September, the limiting factor causing increased restoration time and will be networking the deep disposal wells such that restoration fluid can be sent to any deep disposal well during the restoration process. This plan was discussed with LQD during the March 23, 2011 inspection and LQD requested that Cameco ensure this is networking is provided for in this year's Annual Report.

- 3 **Response Not Acceptable.** *The pre-restoration phase needs to have a separate time bar. Please include a pre-restoration time bar on Attachment 1. (SI)*

**Cameco Response:** The text in the permit has been clarified to discuss restoration planning activities which occurs during the latter part of the mining phase. Cameco wants to expedite restoration by taking care of planning activities such as preparing the mine-unit specific restoration plan, proposing new restoration wells (if required) in coordination with production mining activities. Therefore, Cameco only presents mining, restoration, stabilization, and reclamation as distinct phases in the restoration schedule.

- 4 **Response Not Acceptable.** *The water balance in Attachment 3 only lists RO Reject and Post Production MU Control. Please include groundwater sweep in the water balance. (SI)*

**Cameco Response:** Cameco has, as stated above, revised the water balance which now includes projected use of groundwater sweep. Please see the attached water balance in this submittal for review.

- 5 **Response Not Acceptable.** *The pre-conditioning phase should be shown separately on the table. The text describing the actions taken during this phase does not completely discuss the pre-restoration phase activities. Additional wellfield preparation activities have included re-plumbing header houses, well cleanouts and pipeline installation. Please show the pre-conditioning phase time bar on Attachment 1 and add additional discussion of the wellfield preparation activities to the text. (SI)*

**Cameco Response:** Please refer to Cameco's response to LQD's Comment #3.

- 9 **Response Not Acceptable.** *The response states that the average monthly inflow to PSR#2 is 180 gallons a minute. The average irrigation rate shown on Attachment 3 for Smith Ranch and Amendment 3 for Highland includes 180 gallons per minute for each permit for a total average application rate of 360 gallons per minute. Please correct the attachments. (SI)*

**Cameco Response:** Please see the revised water balance attached.

#### NEW COMMENTS

- 10 *Page RP-7, second complete paragraph. The text uses the term "RTVs" Please define the acronym in the text. (PCR)*

**Cameco Response:** The reference RTV has been removed from the text..

- 11 *Page RP-7. The revised text describes the progressive change-over to restoration whereby portions of a wellfield may be brought into restoration at any one time. CR will need to clearly*

*describe the transition from production to restoration in the text, i.e., how long it will take to convert a wellfield to full restoration from production? Is this considered the pre-restoration period? How is the "end of injection" water quality average for the wellfield derived if the entire wellfield is not sampled at the same time? At what point does CR declare the wellfield is in restoration for the beginning of active restoration sampling (i.e., every two months for conductivity, chloride and uranium?). Please provide a detailed discussion of the transition from production to groundwater restoration in the text. (PCR)*

**Cameco Response:** Cameco has revised the text changes to include provisions for defining the change from production to restoration. Cameco has added text to the Reclamation Plan to indicate that the progressive change-over to restoration occurs over a period of several months. Cameco is unable to better predict exactly how long these activities, which occur toward the end of the mining phase will take. However, Cameco is also adding commitments to the Operations Plan of the Combined Permit (TFN 5 6/100) as follows: "Cameco will include information regarding approximately when mine-unit specific restoration plans will be submitted and when restoration well proposals will be submitted in accordance with Section 2.1.3 of the Reclamation Plan."

Per Cameco's discussion with LQD during the April 13, 2011 meeting, a wellfield in production will be monitored per production sampling criteria, and a wellfield in restoration will be monitored per restoration sampling criteria.

- 12 *Page RP-7 & 7A. The proposal describes the restoration well pattern in contrast to the production pattern as considerably different. CR must provide a typical restoration wellfield pattern which includes an average number of injection and recovery wells used and an average number of additional restoration wells necessary to complete restoration (per pattern area). LQD needs assurance that the surety covers an average number of new restoration wells to complete groundwater restoration of all mining units for the life of mine. (PCR)*

**Cameco Response:** The text change does indicate utilization of mine unit pattern wells during ground water restoration can be different than the production phase and that the number of wells in use may vary during restoration. Additionally, there is no specific restoration pattern as wells are specifically identified to balance flows and to maintain fluids inside of the pattern areas and therefore wellfield dependent. The text changes that Cameco is proposing contain provisions that the number of wells necessary for restoration will be identified in during restoration planning and any need for additional wells will be addressed and updated in the surety estimate provided in the Annual Report.

- 13 *Page RP-7, second paragraph. CR states that a ground water restoration plan for a mine unit will be developed prior to starting the restoration activities. CR should provide this plan to the LQD. Please add the commitment to develop a detailed restoration plan for the mine units for LQD review and approval. NOTE: LQD is currently reviewing the notifications for initiation of groundwater sampling for restoration for MUs D and E and will be sending a letter with recommendations for the information needed in the wellfield*

*restoration plans. (PCR)*

**Cameco Response:** As described in the new text regarding restoration planning, a restoration plan will be developed for a mine unit to allow for the most efficient restoration of the ground water in that wellfield. Cameco also included a text provision that the plan will be submitted to the LQD for inclusion in the restoration volume maintained by the LQD and separate from this permit.

- 14 *Attachment 1, Restoration Schedule shows a time bar for the addition of bioremediation/chemical reductant. Please include the water usage for this phase in the water balance. (PCR)*

**Cameco Response:** The use of bioremediation and or chemical reductant may be performed concurrently with GWS and or RO; therefore it is not shown as a specific time bar on the schedule. Furthermore, during the bioremediation/chemical reductant addition there is no waste water usage as the chemical reductant is circulated in a closed loop cycle, therefore it is not included in the water balance.

- 15 *Attachment 3, 2010 Projected Water Balance. The water balance and restoration schedule are based on updated estimated calculations submitted in September of 2010. The original schedule was proposed in August 2009. LQD continues to have comments which will likely require further changes to the schedule (i.e., groundwater sweep estimates and reductant estimates). LQD is unsure of the disposal well usage on the schedule due to delays in completion of disposal wells. Is MU-E currently in groundwater sweep and also proposing to mine in a new zone? Please revise the schedule to accurately reflect the 2010 water balance. (PCR)*

**Cameco Response:** Cameco has attached the revised restoration schedule and water balance to this submittal. Cameco met with LQD on April 13, 2011 to present and discuss each.

- 16 *Page OP-4. The text describes groundwater restoration as concurrent with mining but also deferred due to mining in adjacent mine units and also designed to achieve the fastest restoration possible given the ability of the aquifer to yield water. These limitations on restoration are not considered reasons to delay restoration. CR will need to demonstrate that there is a balance of the water usage for mining and restoration. The reviewer summarized the changes between the approved permit schedules and the proposed schedules (see the Attachment to comments). In summary, the restoration time has been extended in eight wellfields from 2 to 16 years and has been reduced in four wellfields from 2 to 5 years. CR will need to provide detailed justification for extending the period of restoration in the eight wellfields. It is recommended that CR meet with LQD to discuss the proposed delay in restoration. Further reviews could potentially delay the approval of the revised schedule. (PCR)*

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**Cameco Response:** Whether an existing mine unit or a portion of a mine unit is affected will be

addressed accordingly in the restoration plan. Additionally, the restoration time is no longer extended as discussed in Cameco's response to LQD's comment #1.

- 17 *Attachment 2, Mine Unit Extraction Rates and Poor Volumes will need to be revised to reflect the updated water balance and schedule. (PCR)*

**Cameco Response:** Cameco has revised Attachment 2, to reflect the updated water balance and schedule. The attachment is included in this submittal.

- 18 *CR will need to place a high priority on completing the restoration schedule changes as the approved schedule has errors which must be corrected as soon as possible (i.e., MU-K is included under the wrong permit). It is recommended that CR schedule a meeting to discuss the concerns with the restoration schedule in effort to accelerate the approval of the revision. (PCR)*

**Cameco Response:** Cameco acknowledges LQD's request for restoration schedule changes and has provided a revised schedule and water balance as per the meeting on April 13, 2011.

- 19 *Page OP-4. The text describes the projected schedule in Attachment 3. It should reference Attachment 1. Please correct the text. (PCR)*

**Cameco Response:** Cameco appreciates LQD noting of this misprint and text changes have been included.

- 20 *Please continue to carry Wellfields A, B and C on the restoration schedule and show the current phase of restoration. The restoration schedule should also show stability monitoring and wellfield reclamation for a clear understanding of the bond required through the life of mine. (PCR)*

**Cameco Response:** Wellfield C is shown on the revised restoration schedule with a timeline. Wellfields A and B have been illustrated in a text box as these wellfields will be reclaimed pending regulatory approval from the NRC.

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#### Attachments

Attachment 1	Ground Water Restoration Schedule
Attachment 2	Mine Unit Extraction Rates and Pore Volumes
Attachment 3	Waste Water Balance

**INDEX SHEET FOR MINE PERMIT AMENDMENTS OR REVISIONS**

Page 1 of 2

Date 5/4/11

TFN 5 1/119

PERMIT NO.: 603

MINE COMPANY NAME: Power Resources Inc. dba Cameco Resources

MINE NAME: Smith Ranch - Highland Operation

Statement: I, [Signature], an authorized representative of Power Resources, Inc. d/b/a Cameco Resources declare that only the items listed on this and all consecutively numbered Index Sheets are intended as revisions to the current permit document. In the event that other changes inadvertently occurred due to this revision, those unintentional alterations will not be considered approved. Please initial and date. 5.5.11 [Signature]

**NOTES:**

- 1) Include all revision or change elements and a brief description of or reason for each revision element.
- 2) List all revision or change elements in sequence by volume number; number index sheets sequentially as needed.

Volume Number	Page, Map or other Permit Entry to be REMOVED	Page, Map or other Permit Entry to be ADDED	Description of Change
8	Reclamation Plan: Table of Contents	Reclamation Plan: Table of Contents	CR has revised the Table of Contents to include added sections of text.
8	Reclamation Plan: page RP-6	Reclamation Plan: page RP-6, RP-6A and RP-6B	CR has revised page RP-6 and is now adding pages RP-6A and RP-6B for insertion to the permit. These pages represent text for newly added sections in the Reclamation Plan.
8	Reclamation Plan: Attachment 1 Groundwater Restoration Schedule	Reclamation Plan: Attachment 1- Groundwater Restoration Schedule	CR has revised the Restoration Schedule for approval and insertion as Attachment 1 into the Restoration Plan.
8	Reclamation Plan: Attachment 2: Mine Unit Extraction Rate and Pore Volumes	Reclamation Plan: Attachment 2: Mine Unit Extraction Rate and Pore Volumes	CR has revised the Extraction Rate and Pore Volumes for approval and insertion as Attachment 2 into the Restoration Plan
8	Reclamation Plan: Attachment 3: Waste Water Balance	Reclamation Plan: Attachment 3: Waste Water Balance. 2 Charts, RO Feed and DDW Capacity v. Projected Disposal	CR has revised the Waterbalance for approval and insertion as Attachment 3 into the Restoration Plan. RO Feed and DDW Capacity v. Projected Disposal are new and follow in behind the waterbalance.

application, "quality of use" is based on the pre-mining class of use suitability standards established by the Wyoming Department of Environmental Quality, Water Quality Rules and Regulations, Chapter 8, which are based on pre-mining background water quality.

A production area of 10 or more patterns feeding a common header house may undergo progressive change-over to restoration over a period of several months. Control of affected ground water in adjacent non-operating patterns, during the progressive change-over is normally achieved via the well field production bleed. Additional bleed may be taken if special conditions, such as greater ground water gradients, require such measures.

The evaluation of ground water restoration will be conducted on a parameter by parameter basis using the average quality over the production zone (i.e., the mine unit average). For any affected ground water outside the production zone, restoration will be evaluated separately for each well. The final acceptance level of water quality attained during ground water restoration will be based on the pre-mining class of use suitability standard, available technology and other social and economic factors as described in WDEQ/LQD Chapter 11, Section 5(a)(ii)(A).

#### 4.1.1 Restoration Planning Activities

Before the conclusion of the mining process, and prior to starting ground water restoration in a mine unit or portion thereof, a plan will be developed that will allow for the most efficient restoration of the ground water. This plan will be provided to the LQD for inclusion in the restoration volume maintained by the LQD and separate from this permit. The mine unit-specific plan will include an estimate of the number of wells required to achieve ground water restoration in a particular mine unit and whether additional wells may need to be installed. See 2.1.3.1 for more detail. The plan will also address the following elements:

- Wells that are or have been on excursion
  - Target restoration values
-

- Necessary changes to the surety that will be carried forward into the surety estimate provided in the Annual Report
- An explanation of the sequential or uniform method of restoration
- Serial sampling protocols and methods

After production and before restoration, a designated number of production wells will be sampled to characterize an "end of injection" water quality average. Iso-concentration maps and other data will be utilized to provide a gauge of the progress of restoration activities. The required pore volume displacement volumes may vary between pattern groups, depending upon their operating history, hydrogeology and flare volume. The surety will be amended as needed in the Annual Report to account for the correct pore volume displacement.

Aquifer hydrologic characteristics obtained from the pre-ISR mine unit hydrologic testing, including aquifer thickness, porosity and permeability, ground water gradient and average length of well screen, will be used to estimate the time required to remove the estimated pore volume displacements and any additional actions that may be necessary to control local abnormal ground water gradients.

The utilization of mine unit pattern wells during ground water restoration can be different than the production phase. Recovery and injection wells are selected for treatment of the entire volume of affected ground water and the varying concentration of solutes rather than the systematic extraction of uranium from each pattern. The number of wells in use at any particular time may be a small proportion of the total number of wells available, and they are chosen to balance flows and prevent affected ground water volumes from being moved away from existing pattern areas.

#### 4.1.2 Restoration Wells

It may be necessary in some instances to install additional wells in order to provide the proper flow balance and bleed. Situations where installation of restoration wells may be necessary may include:

1. Existing pattern wells fail the mechanical integrity test and have to be replaced;
2. Additional wells are needed within or outside the existing pattern area to efficiently address flare.

In those instances in which new wells are required, CR will prepare a proposal for the LQD. This proposal is prepared during the mining phase prior to entry into restoration. The proposal may include a schematic of the well. Proposals are approved by the LQD pursuant to Change No. 68 issued February 3, 2010. Proposals will be incorporated into the corresponding mine unit package included in Appendix D-6. Once the wells are installed, and prior to their use, a notice of construction will be submitted to LQD in accordance with Chapter 11, Section 11(b) (see Section 5.4.6 of the Operations Plan).

#### 4.2 Pre-Mining Background Water Quality

The pre-mining background water quality of a mining unit is based on the background water quality data collected from wells completed in the planned Production Zone (i.e., MP-Wells). Background water quality values are established on a mine unit average and parameter by parameter basis taking into account the variability between sample results.

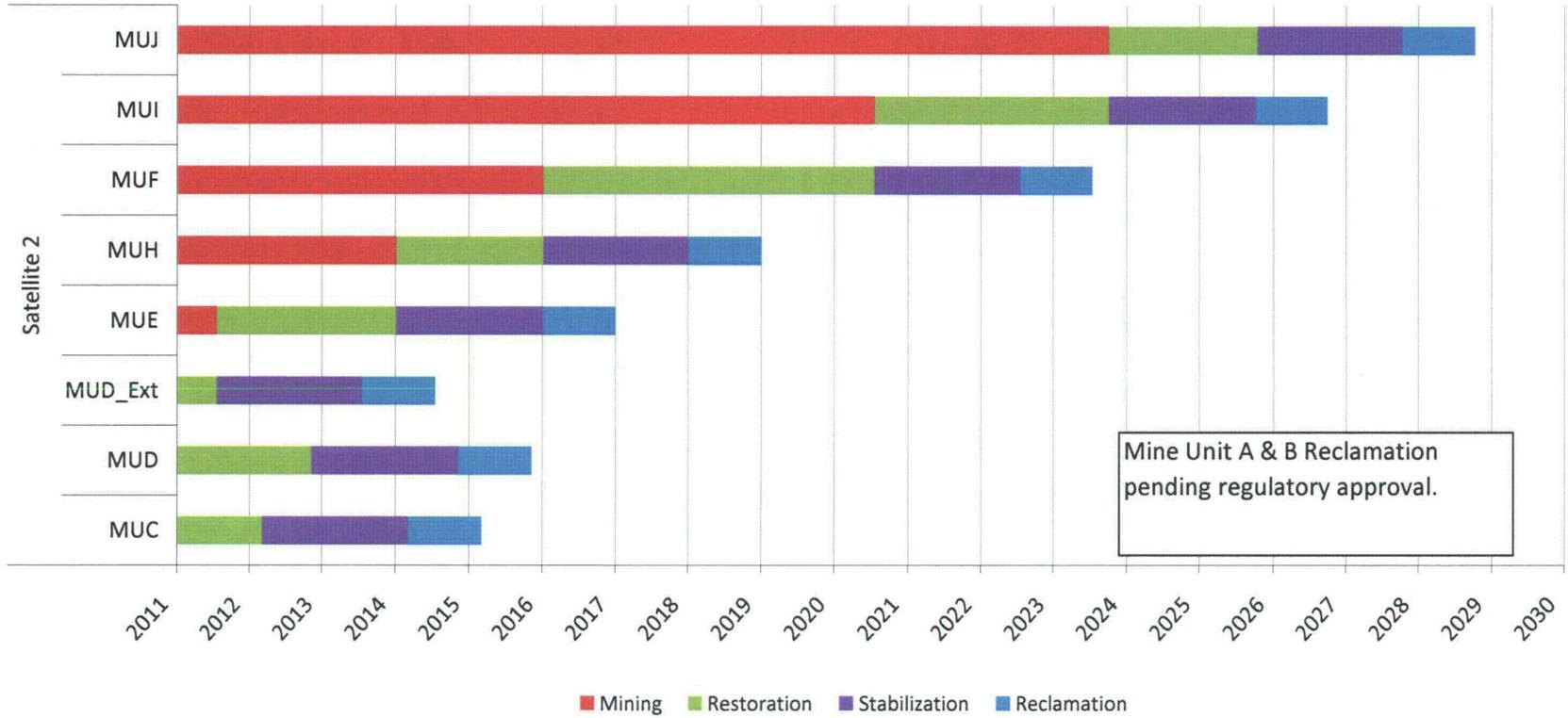
#### 4.3 Restoration Method

The ground water restoration program consists of two stages; restoration and stability monitoring. As described in Sections 4.3.1 through 4.3.3 below, the restoration stages consist of the following phases; ground water sweep, clean water injection (e.g., reverse osmosis treatment) and bioremediation and/or reductant addition. A supplemental selenium treatment facility may also be used in addition to the current processes. These phases are designed to optimize restoration equipment used in treating ground water and to minimize the volume of ground water consumed during the restoration process. The sequence of activities will be determined based on operating experience, waste water system capacity and the progress of restoration in individual mine units. The various phases of restoration will be selected based upon the most efficient means to restore a mine unit.

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# Attachment 1 - 2010 HUP Restoration Schedule

Considering 9.0 PV : 1.0 GWS / 8.0 RO



Mine Unit A & B Reclamation pending regulatory approval.

Highland Uranium Project  
 Mine Unit Extraction Rates<sup>1</sup> and Pore Volumes

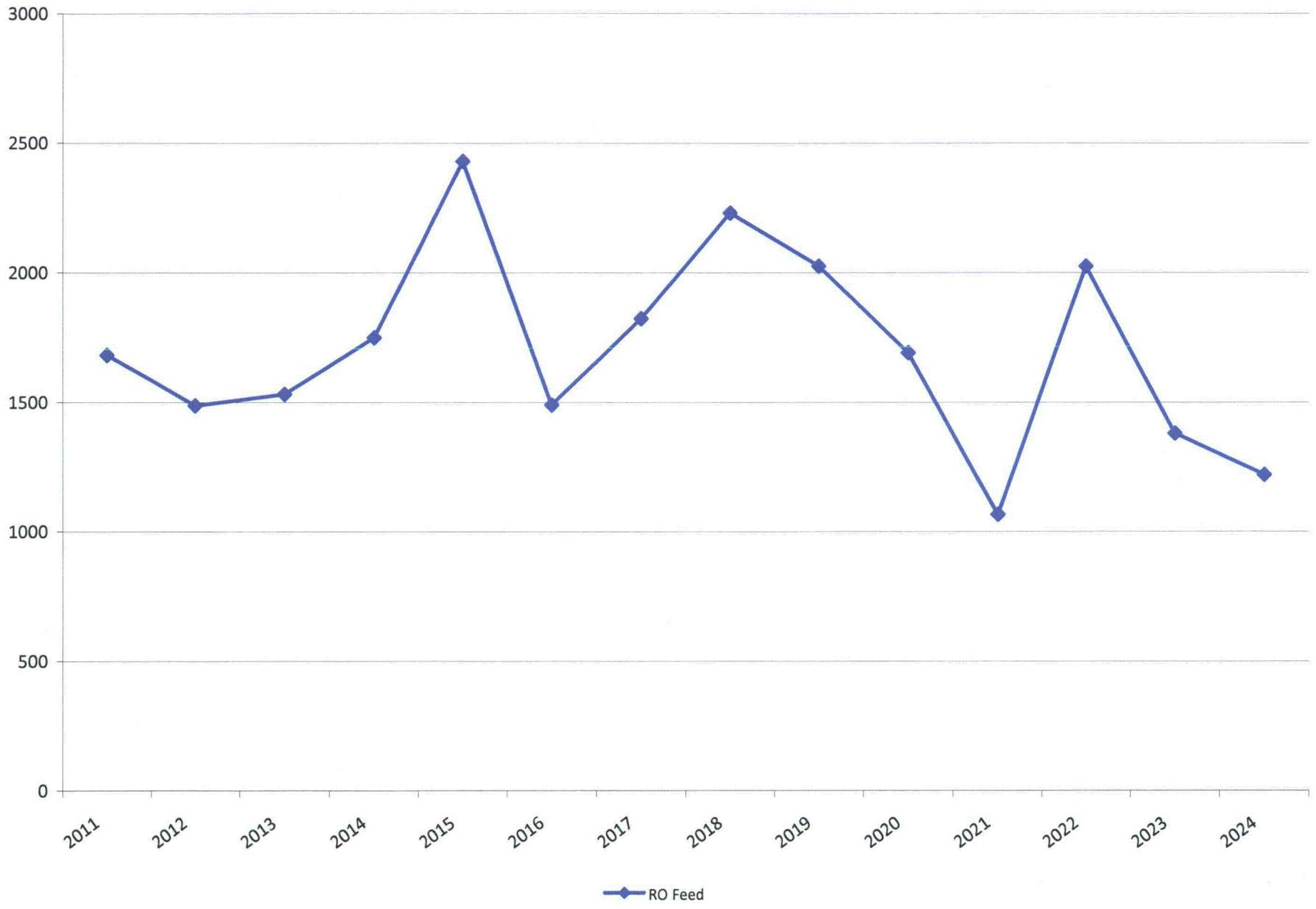
Mine Unit	GWS Extraction Rate (GPM)	Ground Water Sweep Pore Volume (gallons)	Clean Water Injection Pore Volume (gallons)
HUP MU-C	37.5 - 100		84,828,000
HUP MU-D	25 - 70	32,311,000	258,488,000
HUP MU-D Ext	25 - 70	19,235,000	153,880,000
HUP MU-E	25 - 70	91,086,000	728,688,000
HUP MU-F	50 - 140	232,906,000	1,863,248,000
HUP MU-H	25 - 70	90,870,000	726,960,000
HUP MU-I	25 - 70	84,786,000	726,960,000
HUP MU-J	50 - 70	66,817,020	534,536,160

<sup>1</sup> Mine unit extraction rates based on Conceptual Approach to Restoration of Wellfields at Smith Ranch/HUP by Robert Lewis dated July 30, 2008

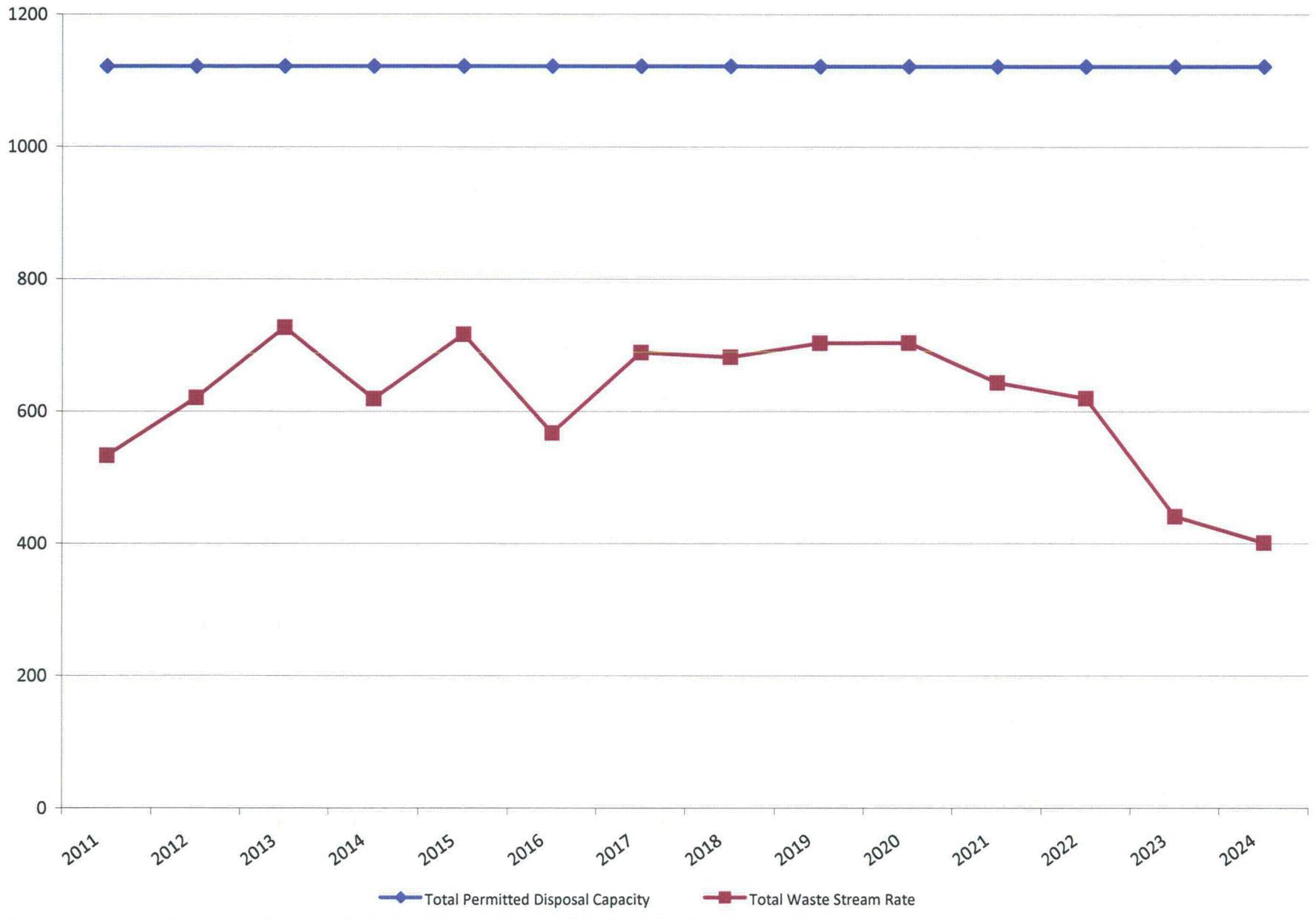
ATTACHMENT 3 - 2010 PROJECTED WATER BALANCE  
CONSIDERING 3.0 PV: 1 GWS + 8 RD

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	
RO Feed	1682	1486	1531	1749	2430	1490	1823	2230	2025	1691	1066	2025	1380	1219	926	0	0	0	0	0	0	0	0	0	0	0
GWS	13	150	244	78	0	86	125	11	84	187	263	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
RO Reject	420	372	383	437	608	372	466	558	506	423	287	508	345	305	231	0	0	0	0	0	0	0	0	0	0	0
<b>Total Waste Volume Generated</b>	<b>434</b>	<b>522</b>	<b>626</b>	<b>515</b>	<b>808</b>	<b>458</b>	<b>681</b>	<b>589</b>	<b>690</b>	<b>690</b>	<b>530</b>	<b>506</b>	<b>348</b>	<b>305</b>	<b>231</b>	<b>0</b>										
<b>Production Waste Stream</b>																										
SR-1	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	0	0	0	0	0	0	0	0	0	0
SR-2	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	0	0	0	0	0	0	0	0	0	0
CPP	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	0	0	0	0	0	0	0	0	0	0
Satellite 2	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	0	0	0	0	0	0	0	0	0	0
Satellite 3	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	0	0	0	0	0	0	0	0	0	0
<b>CPP Elution / Process Waste</b>	<b>18</b>	<b>17</b>	<b>19</b>	<b>23</b>	<b>28</b>	<b>28</b>	<b>27</b>	<b>32</b>																		
<b>Total Waste Stream Rate</b>	<b>532</b>	<b>620</b>	<b>727</b>	<b>619</b>	<b>716</b>	<b>587</b>	<b>689</b>	<b>682</b>	<b>703</b>	<b>703</b>	<b>643</b>	<b>620</b>	<b>441</b>	<b>401</b>	<b>327</b>	<b>95</b>	<b>32</b>									
DDW #1	150	150	150	150	150	160	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
DDW #2	150	150	150	150	150	160	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
Morton 1-20	147	147	147	147	147	147	147	147	147	147	147	147	147	147	147	147	147	147	147	147	147	147	147	147	147	147
Volman 33-27	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105
SRHUP #6	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105
SRHUP #7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SRHUP #8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SRHUP #9	158	158	158	158	158	158	158	158	158	158	158	158	158	158	158	158	158	158	158	158	158	158	158	158	158	158
SRHUP #10	126	126	126	126	126	126	126	126	126	126	126	126	126	126	126	126	126	126	126	126	126	126	126	126	126	126
Inrigator	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180
<b>Total Permitted Disposal Capacity</b>	<b>1121</b>																									
	589	501	395	503	405	555	433	440	418	418	478	502	881	721	784	1028	1089	1089	1089	1089	1089	1089	1089	1089	1089	1089

# RO Feed



### DDW Permitted Capacity vs Projected Disposal





**CAMECO RESOURCES**

*Smith Ranch-Highland  
Operation*

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*P.O. Box 1210  
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May 5, 2011

Mr. Lowell Spackman, District I Supervisor  
Wyoming Department of Environmental Quality  
Land Quality Division  
Herschler Building, 3 Fl-West  
122 West 25<sup>th</sup> Street  
Cheyenne, WY 82002

CERTIFIED MAIL 7010 1060 0000 2139 2189 RETURN RECEIPT REQUESTED

**RE: TFN 5 3/121, Non-Significant Revision, Revised Restoration Plan, T2 Review,  
Cameco Resources, Permit 633**

Dear Mr. Spackman,

Power Recourses, Inc. d/b/a Cameco Resources (Cameco) submitted a cover letter and response package for TFN 5 1/119 Revised Restoration Plan Permit 603 dated May 4, 2011. Cameco requests LQD refer to that cover letter for a discussion of the history of the restoration schedule revisions.

The attachment provides responses to LQDs T2 review on TFN 5 3/121 along with an index of change and associated permit revisions including a revised water balance, restoration schedule and text changes related to the responses.

Please contact Dawn Kolkman at 307-358-6541, ext 435 or [Dawn\\_Kolkman@cameco.com](mailto:Dawn_Kolkman@cameco.com) if you have any questions.

Respectfully,



Tom Cannon  
General Manager

LTC/dk

Attachments: CR Response Document  
Index of Change including Restoration Plan, Water Balance and Disposal  
Capacity Chart.

cc: File SR 4.3.3.1  
ec: Cameco-Cheyenne

## TFN 5 3/121, REVISED RESTORATION SCHEDULE, T2 REVIEW CAMECO RESOURCES, HIGHLAND URANIUM PROJECT, PERMIT 633

### INTRODUCTION

On July 23, 2009 Cameco Resources (Cameco), Land Quality Division (LQD) and the Nuclear Regulatory Commission (NRC) discussed groundwater restoration plans at the Smith-Highland ISL mines. Cameco proposed using less groundwater sweep (GWS) than had traditionally been utilized as little benefit has been recognized with GWS. The focus would be a slower process, maintaining the cone of depression with a 20% bleed and using reverse osmosis (RO). It was suggested by Cameco that groundwater modeling would be used to develop plans for wellfield restoration. During the meeting Cameco indicated a new restoration schedule would be submitted to reflect these proposed changes.

Cameco submitted a revised restoration plan to LQD on August 13, 2009 which consisted of a single page change to the permit reclamation plan (Attachment 1, Highland Uranium Project — Estimated Time Table of Restoration Activities). Technical review comments were sent to Cameco on December 21, 2009 by LQD. Cameco submitted responses to LQD's comments on September 16, 2010 with a completely new schedule for review and included text changes to the operations and reclamation plans. LQD performed a T2 review that was sent to Cameco on November 8, 2011 with five comments remaining from the initial submittal and ten new comments pertaining to the September, 2010 submittal. Cameco has responded to LQD's comments in the following report.

### COMMENTS

- 1 **Response Not Acceptable.** *The response discusses the short term disposal capacity issues that resulted in delays in restoration of the current wellfields that are in restoration, but does not explain the long delays for currently producing wellfields. The maintenance, infrastructure installation and replacement wells would have been incorporated into the present schedule and therefore not affect the timelines. Please provide justification for changing the start of restoration and for extending the length of time for restoration. (SI)*

**Cameco Response:** Cameco has revised the restoration schedule and water balance which shows that RO capacity will be sufficient for wellfield restoration. Cameco met with LQD to present and discuss the revised restoration schedule and water balance, at meeting dated April 13, 2011. LQD asked that Cameco explain how the new schedule presented can be shortened in comparison to the schedule submitted in September, 2010. Cameco re-evaluated their disposal capacity which was, in September, the limiting factor causing increased restoration time and will be networking the deep disposal wells such that restoration fluid can be sent to any deep disposal well during the restoration process. This plan was discussed with LQD during the March 23, 2011 inspection and LQD requested that Cameco ensure this is networking is provided for in this year's Annual Report.

- 3 **Response Not Acceptable.** *The pre-restoration phase needs to have a separate time bar. Please include a pre-restoration time bar on Attachment 1. (SI)*

**Cameco Response:** The text in the permit has been clarified to discuss restoration planning activities which occurs during the latter part of the mining phase. Cameco wants to expedite restoration by taking care of planning activities such as preparing the mine-unit specific restoration plan, proposing new restoration wells (if required) in coordination with production mining activities. Therefore, Cameco only presents mining, restoration, stabilization, and reclamation as distinct phases in the restoration schedule.

- 4 **Response Not Acceptable.** *The water balance in Attachment 3 only lists RO Reject and Post Production MU Control. Please include groundwater sweep in the water balance. (SI)*

**Cameco Response:** Cameco has, as stated above, revised the water balance which now includes projected use of groundwater sweep. Please see the attached water balance in this submittal for review.

- 5 **Response Not Acceptable.** *The pre-conditioning phase should be shown separately on the table. The text describing the actions taken during this phase does not completely discuss the pre-restoration phase activities. Additional wellfield preparation activities have included re-plumbing header houses, well cleanouts and pipeline installation. Please show the pre-conditioning phase time bar on Attachment 1 and add additional discussion of the wellfield preparation activities to the text. (SI)*

**Cameco Response:** Please refer to Cameco's response to LQD's Comment #3.

#### NEW COMMENTS

- 9 *Page 6-2A, second complete paragraph. The text uses the term "RTVs" Please define the acronym in the text. (PCR)*

**Cameco Response:** The reference RTV has been removed from the text.

- 10 *Page RP-7. The revised text describes the progressive change-over to restoration whereby portions of a wellfield may be brought into restoration at any one time. CR will need to clearly describe the transition from production to restoration in the text, i.e., how long it will take to convert a wellfield to full restoration from production? Is this considered the pre-restoration period? How is the "end of injection" water quality average for the wellfield derived if the entire wellfield is not sampled at the same time? At what point does CR declare the wellfield is in restoration for the beginning of active restoration sampling (i.e., every two months for conductivity, chloride and uranium?). Please provide a detailed discussion of the transition from production to groundwater restoration in the text. (PCR)*

**Cameco Response:** Cameco has revised the text changes to include provisions for defining the change from production to restoration. Cameco has added text to the Reclamation Plan to indicate that the progressive change-over to restoration occurs over a period of several months. Cameco is unable to better predict exactly how long these activities, which occur toward the end of the mining phase will take. However, Cameco is also adding commitments to the Operations Plan of the Combined Permit (TFN 5 6/100) as follows: "Cameco will include information regarding approximately when mine-unit specific restoration plans will be submitted and when restoration well proposals will be submitted in accordance with Section 2.1.3 of the Reclamation Plan."

Per Cameco's discussion with LQD during the April 13, 2011 meeting, a wellfield in production will be monitored per production sampling criteria, and a wellfield in restoration will be monitored per restoration sampling criteria.

- 11 *Page 6-2A & 6B. The proposal describes the restoration well pattern in contrast to the production pattern as considerably different. CR must provide a typical restoration wellfield pattern which includes an average number of injection and recovery wells used and an average number of additional restoration wells necessary to complete restoration (per pattern area). LQD needs assurance that the surety covers an average number of new restoration wells to complete groundwater restoration of all mining units for the life of mine. (PCR)*

**Cameco Response:** The text change does indicate utilization of mine unit pattern wells during ground water restoration can be different than the production phase and that the number of wells in use may vary during restoration. Additionally, there is no specific restoration pattern as wells are specifically identified to balance flows and to maintain fluids inside of the pattern areas and therefore wellfield dependent. The text changes that Cameco is proposing contain provisions that the number of wells necessary for restoration will be identified in during restoration planning and any need for additional wells will be addressed and updated in the surety estimate provided in the Annual Report.

- 12 *Page 6-2A, second paragraph. CR states that a ground water restoration plan for a mine unit will be developed prior to starting the restoration activities. CR should provide this plan to the LQD. Please add the commitment to develop a detailed restoration plan for the mine units for LQD review and approval. NOTE: LQD is currently reviewing the notifications for initiation of groundwater sampling for restoration for MUs D and E and will be sending a letter with recommendations for the information needed in the wellfield restoration plans. (PCR)*

**Cameco Response:** As described in the new text regarding restoration planning, a restoration plan will be developed for a mine unit to allow for the most efficient restoration of the ground water in that wellfield. Cameco also included a text provision that the plan will be submitted to the LQD for inclusion in the restoration volume maintained by the LQD and separate from this permit.

- 13 *Attachment 1, Restoration Schedule shows a time bar for the addition of bioremediation/chemical reductant. Please include the water usage for this phase in the water balance. (PCR)*

**Cameco Response:** The use of bioremediation and or chemical reductant may be performed concurrently with GWS and or RO; therefore it is not shown as a specific time bar on the schedule. Furthermore, during the bioremediation/chemical reductant addition there is no waste water usage as the chemical reductant is circulated in a closed loop cycle, therefore it is not included in the water balance.

- 14 *Attachment 3, 2010 Projected Water Balance. The water balance and restoration schedule are based on updated estimated calculations submitted in September of 2010. The original schedule was proposed in August 2009. LQD continues to have comments which will likely require further changes to the schedule (i.e., groundwater sweep estimates and reductant estimates). In addition, the disposal capacity is incorrect due to delays in completion of new disposal wells. Other changes such as Mine Unit E schedule for groundwater sweep is in question in lieu of the proposal to mine in a different zone. The schedule should be as current as possible for approval. Please revise the schedule to accurately reflect the 2010 water balance. (PCR)*

**Cameco Response:** Cameco has attached the revised restoration schedule and water balance to this submittal. Cameco met with LQD on April 13, 2011 to present and discuss each.

- 15 *Page 3-8. The revised text describes groundwater restoration could take up to sixteen years. This is a drastic change from the approved text. The reviewer summarized the changes between the approved permit schedules and the proposed schedules (see the Attachment to comments). In summary, the restoration time has been extended in eight wellfields from 2 to 16 years and has been reduced in four wellfields from 2 to 5 years. CR will need to provide detailed justification for extending the period of restoration in the eight wellfields. It is recommended that CR meet with LQD to discuss the proposed delay in restoration. Further reviews could potentially delay the approval of the revised schedule. (PCR)*

**Cameco Response:** Whether an existing mine unit or a portion of a mine unit is affected will be addressed accordingly in the restoration plan. Additionally, the restoration time is no longer extended as discussed in Cameco's response to LQD's comment #1.

- 16 *Attachment 2, Mine Unit Extraction Rates and Poor Volumes will need to be revised to reflect the updated water balance and schedule. (PCR)*

**Cameco Response:** Cameco has revised Attachment 2, to reflect the updated water balance and schedule. The attachment is included in this submittal.

- 17 *CR will need to place a high priority on completing the restoration schedule changes as the*

TFN 5 3/121, Restoration Plan Revision  
Permit 633, Cameco Resources  
Page 5

*approved schedule has errors which must be corrected as soon as possible (i.e., MU-9 is not shown on the Permit 633 restoration schedule and MU-K is included under the wrong permit). It is recommended that CR schedule a meeting to discuss the concerns with the restoration schedule in effort to accelerate the approval of the revision. (PCR)*

**Cameco Response:** Cameco acknowledges LQD's request for restoration schedule changes and has provided a revised schedule and water balance as per the meeting on April 13, 2011.

**INDEX SHEET FOR MINE PERMIT AMENDMENTS OR REVISIONS**

Page 1 of 1  
 Date 5/5/11  
 TFN 5 5/121  
 PERMIT NO.: 633

MINE COMPANY NAME: Power Resources Inc. dba Cameco Resources  
 MINE NAME: Smith Ranch - Highland Operation

Statement: I, Tom Quinn, an authorized representative of Power Resources, Inc. d/b/a Cameco Resources declare that only the items listed on this and all consecutively numbered Index Sheets are intended as revisions to the current permit document. In the event that other changes inadvertently occurred due to this revision, those unintentional alterations will not be considered approved. Please initial and date. 5.5.11

**NOTES:**

- 1) Include all revision or change elements and a brief description of or reason for each revision element.
- 2) List all revision or change elements in sequence by volume number; number index sheets sequentially as needed.

Volume Number	Page, Map or other Permit Entry to be REMOVED	Page, Map or other Permit Entry to be ADDED	Description of Change
1	Reclamation Plan: Table of Contents	Reclamation Plan: Table of Contents	Table of Contents has been revised to reflect the addition of sections 6.1.1.1 and 6.1.1.2 to the Reclamation Plan
1	Reclamation Plan: page 6-1	Reclamation Plan: pages 6-1, 6-1A thru 6-1C	Page 6-1 has been revised to include new text and pages 6-1A and 6-1C contain text for insertion into the permit.
1	Reclamation Plan: Attachment 1 SR Restoration Schedule (Projected)	Reclamation Plan: Attachment 1- 2010 SR Restoration Schedule	CR has revised the Restoration Schedule for approval and insertion as Attachment 1 into the Restoration Plan.
1	Reclamation Plan: Attachment 2: Mine Unit Extraction Rate and Pore Volumes	Reclamation Plan: Attachment 2: Mine Unit Extraction Rate and Pore Volumes	CR has revised the Extraction Rate and Pore Volumes for approval and insertion as Attachment 2 into the Restoration Plan
1	Reclamation Plan: Attachment 3: Projected SR Water Disposal Balance	Reclamation Plan: Attachment 3: Projected SR Water Disposal Balance, including 2 charts RO Feed and DDW Capacity vs. Projected Disposal	CR has revised the Waterbalance for approval and insertion as Attachment 3 into the Restoration Plan. including 2 charts RO Feed and DDW Capacity vs. Projected Disposal

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	Attachment 2 Mine Unit Extraction Rates and Pore Volumes	
	Attachment 3 Projected SR Water Disposal Balance	

## CHAPTER 6 RECLAMATION PLAN

The objective of the Reclamation Plan is to return the affected ground water and land surface to conditions such that they are suitable for uses for which they were suitable prior to mining. The methods to achieve this objective for both the affected ground water and land surface are described in the following sections.

### 6.1 Groundwater Restoration

#### 6.1.1 Restoration Standards

Ground water restoration is achieved by returning the affected ground water in the production zone, on a mine unit average, to a quality of use equal to or better than, and consistent with the uses for which the water was suitable prior to mining, by employing the best practicable technology (BPT) available (W.S. § 35-11-103(f)(i) and (iii)). For the purposes of this application, "quality of use" is based on the pre-mining class of use suitability standards established by the Wyoming Department of Environmental Quality, Water Quality Rules and Regulations, Chapter 8, which are based on pre-mining background water quality.

A production area of 10 or more patterns feeding a common header house may undergo progressive change-over to restoration over a period of several months. Control of affected ground water in adjacent non-operating patterns, during the progressive change-over is normally achieved via the well field production bleed. Additional bleed may be taken if special conditions, such as greater ground water gradients, require such measures.

The evaluation of ground water restoration will be conducted on a parameter by parameter basis using the average quality over the

production zone (i.e., the mine unit average). For any affected ground water outside the production zone, restoration will be evaluated separately for each well. The final acceptance level of water quality attained during ground water restoration will be based on the pre-mining class of use suitability standard, available technology and other social and economic factors as described in WDEQ/LQD Chapter 11, Section 5(a)(ii)(A).

#### 6.1.1.1 Restoration Planning Activities

Before the conclusion of the mining process, and prior to starting ground water restoration in a mine unit or portion thereof, a plan will be developed that will allow for the most efficient restoration of the ground water. This plan will be provided to the LQD for inclusion in the restoration volume maintained by the LQD and separate from this permit. The mine unit-specific plan will include an estimate of the number of wells required to achieve ground water restoration in a particular mine unit and whether additional wells may need to be installed. See 2.1.3.1 for more detail. The plan will also address the following elements:

- Wells that are or have been on excursion
- Target restoration values
- Necessary changes to the surety that will be carried forward into the surety estimate provided in the Annual Report
- An explanation of the sequential or uniform method of restoration
- Serial sampling protocols and methods

After production and before restoration, a designated number of production wells will be sampled to characterize an "end of injection" water quality average. Iso-concentration maps and other data will be utilized to provide a gauge of the progress of

restoration activities. The required pore volume displacement volumes may vary between pattern groups, depending upon their operating history, hydrogeology and flare volume. The surety will be amended as needed in the Annual Report to account for the correct pore volume displacement.

Aquifer hydrologic characteristics obtained from the pre-ISR mine unit hydrologic testing, including aquifer thickness, porosity and permeability, ground water gradient and average length of well screen, will be used to estimate the time required to remove the estimated pore volume displacements and any additional actions that may be necessary to control local abnormal ground water gradients.

The utilization of mine unit pattern wells during ground water restoration can be different than the production phase. Recovery and injection wells are selected for treatment of the entire volume of affected ground water and the varying concentration of solutes rather than the systematic extraction of uranium from each pattern. The number of wells in use at any particular time may be a small proportion of the total number of wells available, and they are chosen to balance flows and prevent affected ground water volumes from being moved away from existing pattern areas.

#### 6.1.1.2 Restoration Wells

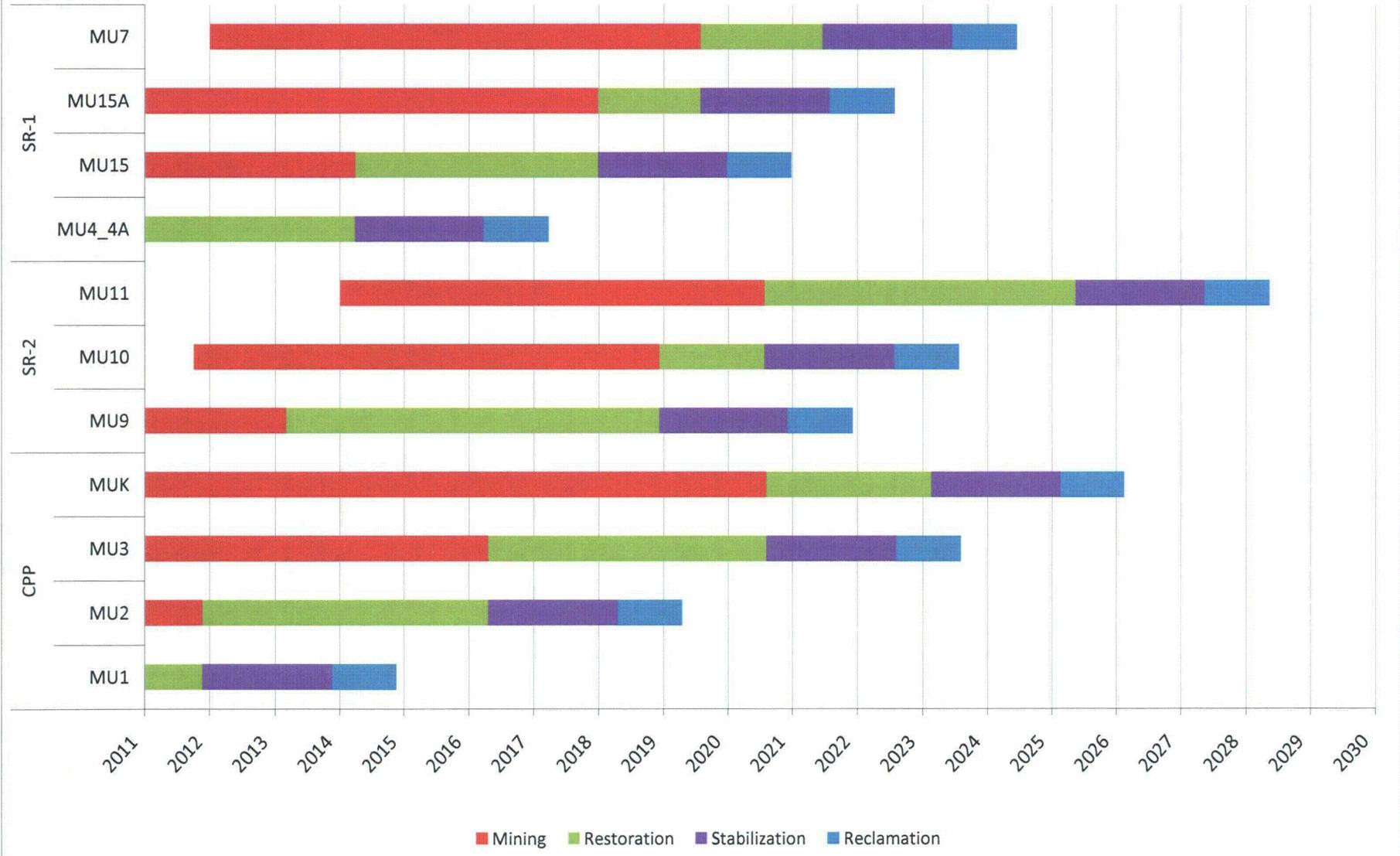
It may be necessary in some instances to install additional wells in order to provide the proper flow balance and bleed. Situations where installation of restoration wells may be necessary may include:

1. Existing pattern wells fail the mechanical integrity test and have to be replaced;
2. Additional wells are needed within or outside the existing pattern area to efficiently address flare.

In those instances in which new wells are required, CR will prepare a proposal for the LQD. This proposal is prepared during the mining phase prior to entry into restoration. The proposal may include a schematic of the well. Proposals are approved by the LQD pursuant to Change No. 68 issued February 3, 2010. Proposals will be incorporated into the corresponding mine unit package included in Appendix D-6. Once the wells are installed, and prior to their use, a notice of construction will be submitted to LQD in accordance with Chapter 11, Section 11(b) (see Section 5.4.6 of the Operations Plan).

# Attachment 1 - 2010 SR Restoration Schedule

Considering 9.0 PV : 1.0 GWS / 8.0 RO



Smith Ranch Project

Mine Unit Extraction Rates<sup>1</sup> and Pore Volumes

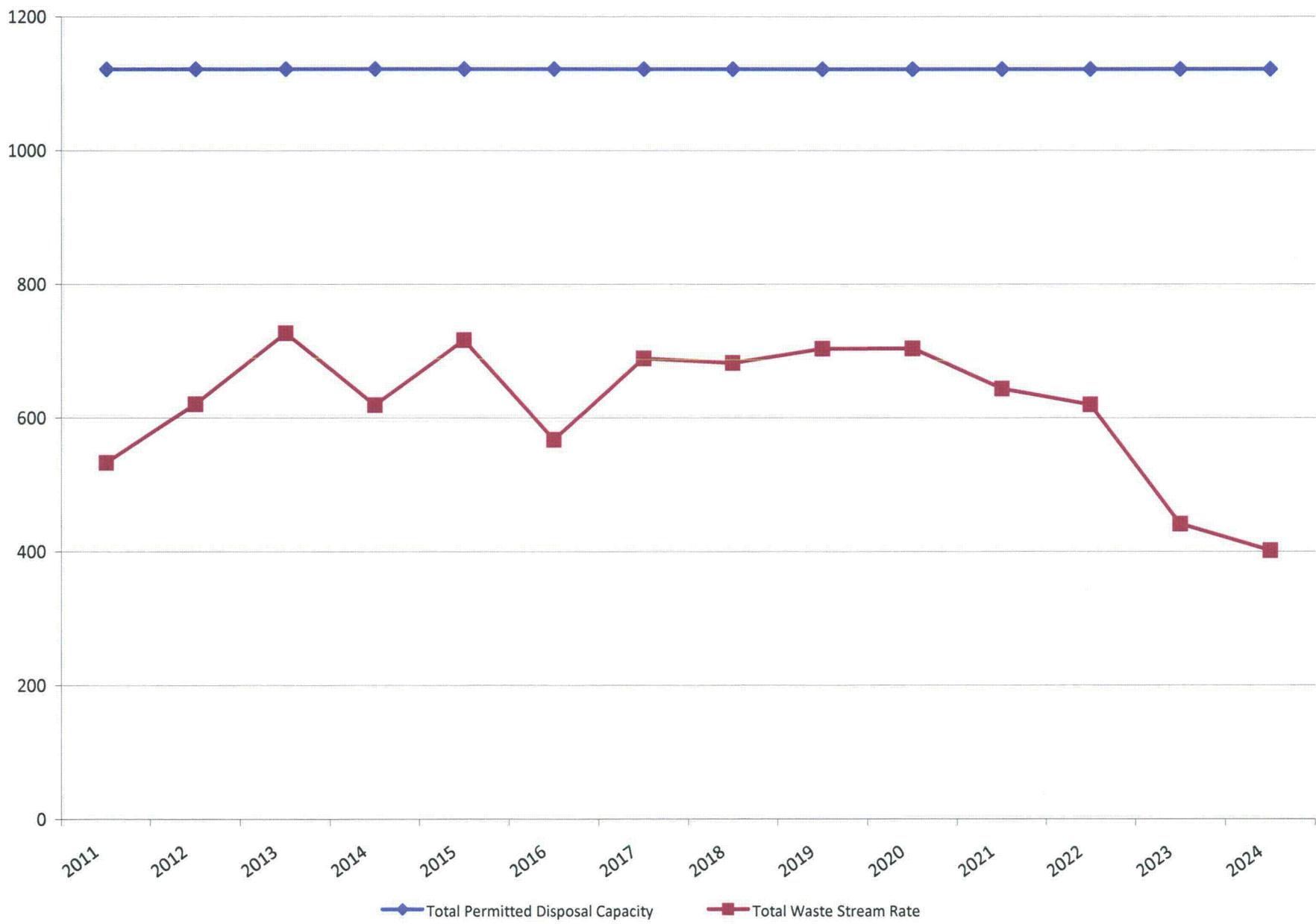
<b>Mine Unit</b>	<b>GWS Extraction Rate (GPM)</b>	<b>Ground Water Sweep Pore Volume (gallons)</b>	<b>Clean Water Injection Pore Volume (gallons)</b>
SR MU-1	100 – 150	62,837,000	502,696,000
SR MU-2	50 – 70	125,235,000	1,001,880,000
SR MU-3	50 – 70	113,908,000	911,264,000
SR MU-4/4A	50 – 70	119,216,000	953,728,000
SR MU-15	100 – 150	137,426,000	1,099,408,000
SR MU-15A	50 – 70	526,690,000	4,213,520,000
SR MU-K	50 – 70	84,209,000	673,672,000

<sup>1</sup> Mine Unit Extraction Rates based on Conceptual Approach to Restoration of Wellfields at Smith Ranch/HUP by Robert Lewis dated July 30, 2008

ATTACHMENT 3 - 2010 PROJECTED WATER BALANCE  
CONSIDERING 9.0 PV: 1 GWS + 8 RO

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	
RO Feed	1682	1485	1531	1749	2430	1490	1823	2230	2025	1691	1066	2025	1380	1219	928	0	0	0	0	0	0	0	0	0	0	0
GWS	13	150	244	78	0	88	125	11	94	167	253	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
RO Reject	420	372	383	437	808	372	456	558	506	423	287	506	345	305	231	0	0	0	0	0	0	0	0	0	0	0
<b>Total Waste Volume Generated</b>	<b>434</b>	<b>622</b>	<b>628</b>	<b>615</b>	<b>608</b>	<b>456</b>	<b>581</b>	<b>669</b>	<b>590</b>	<b>590</b>	<b>530</b>	<b>506</b>	<b>345</b>	<b>305</b>	<b>231</b>	<b>0</b>										
<b>Production Waste Stream</b>																										
SR-1	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	0	0	0	0	0	0	0	0	0	0
SR-2	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	0	0	0	0	0	0	0	0	0	0
CPP	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	0	0	0	0	0	0	0	0	0	0
Satellite 2	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	0	0	0	0	0	0	0	0	0	0
Satellite 3	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	0	0	0	0	0	0	0	0	0	0
CPP Effluent / Process Waste	18	17	19	23	28	28	27	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32
<b>Total Waste Stream Rate</b>	<b>532</b>	<b>620</b>	<b>727</b>	<b>619</b>	<b>716</b>	<b>567</b>	<b>689</b>	<b>682</b>	<b>703</b>	<b>703</b>	<b>643</b>	<b>620</b>	<b>441</b>	<b>401</b>	<b>327</b>	<b>85</b>	<b>32</b>									
DOW #1	160	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
DOW #2	160	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
Morton 1-20	147	147	147	147	147	147	147	147	147	147	147	147	147	147	147	147	147	147	147	147	147	147	147	147	147	147
Volman 33-27	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105
SRHUP #6	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105
SRHUP #7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SRHUP #8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SRHUP #9	158	158	158	158	158	158	158	158	158	158	158	158	158	158	158	158	158	158	158	158	158	158	158	158	158	158
SRHUP #10	128	126	126	126	126	126	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128
Irrigator	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180
<b>Total Permitted Disposal Capacity</b>	<b>1121</b>																									
	669	501	385	303	405	555	433	440	418	418	478	502	681	721	794	1028	1089	1089	1089	1089	1089	1089	1089	1089	1089	1089

### DDW Permitted Capacity vs Projected Disposal



# RO Feed

