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DEPARTMENT OF NATURAL RESOURCES

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FINDINGS DOCUMENT
Utah Coal Regulatory Program

PID:	C0150018
TaskID:	4381
Mine Name:	DEER CREEK MINE
Title:	REDUCE HYDROLOGIC MONITORING SITES

Operation Plan

Hydro GroundWater

Analysis:

Spring 84-56 - The justification for eliminating spring 84-56 from the groundwater monitoring program is that there has been no change in pre-mining and post-mining water quality or quantity. No pre-mining water quality data is presented so this is unsupported. Further, the request does not sufficiently explain the measurement of no flow from 2002 until 2006 and again from 2007 until 2011. Prior to mining flows were present from 1.6 gpm to 6.2 gpm. Since 2011 flows up to 0.84 gpm have appeared. The Division finds it necessary to continue monitoring of this location to evaluate the return of this flow.

Spring 82-51 - The justification for eliminating this spring from the groundwater monitoring program is that there has been no change in historic water quality or quantity. The follow goes down from the measurements taken in the early 1980's. This decrease is typical for the East Mountain springs. During the subsidence time window from 1987 to 1990 the spring is dry but then recovers in 1993 and begins to flow. Following 1993 the flow tracks the Palmer Drought Index. The provided explanation is justified for removal of this spring from the monitoring plan.

Spring 79-10 - The justification for eliminating this spring from the groundwater monitoring program is that there has been no change in pre-mining and post-mining water quality or quantity. This explanation is justified for removal of this spring from the monitoring plan.

Springs 79-15 and 79-34 The justification for eliminating these springs from the groundwater monitoring program is a pre-mining dataset is not available for these springs but the Permittee has analyzed the data and shows no abnormality in the post mining dataset to believe any impacts from mining occurred. This explanation is justified for removal from these springs from the monitoring plan.

Spring 79-29 - The justification for eliminating this spring from the groundwater monitoring program is that there has been no change in pre-mining and post-mining water quality or quantity. This explanation is justified for removal of this spring from the monitoring plan. However, this argument was made in the first submittal and left out of the July 2013 submittal.

Spring 79-35 - The justification for eliminating this spring from the groundwater monitoring program is that there has been no change in pre-mining and post-mining water quality or quantity. This explanation is justified for removal of this spring from the monitoring plan.

Spring 82-52 - The justification for eliminating this spring from the groundwater monitoring program is that there has been no change in pre-mining and post-mining water quality or quantity. Several possible inaccurate statements are included in the justification form. Such as:

""Pre- and Post-water quality data is included for spring 82-52. Data show insignificant variances between pre- and post-quality results.""

Based on DOGM review mining began in 1975 but monitoring was not begun until 1982 and this indicates that no premining data is available. The permittee must either better demonstrate premining data or adjusted these statements and reevaluate spring 82-52. The justification for removal will be reexamined after this further explanation or reevaluation.

Spring 89-61 and Elk Spring - The justification for eliminating these springs from the groundwater monitoring program is that there has been no change in pre-mining and post-mining water quality or quantity. In addition, no mining was conducted below the panels and no subsidence has occurred. Further the springs were developed in 2009 for culinary use by the North Emery Water users. This explanation is justified for removal of these springs from the monitoring plan.

Burnt Tree Spring - The justification for eliminating this spring from the groundwater monitoring program is that there has been no change in pre-mining and post-mining water quality or quantity. The follow goes down from the measurements taken in the early 1980's. This decrease is typical for the East Mountain springs. After this decrease the flow tracks well with the Palmer Drought Index. The provided explanation is justified for removal of this spring from the monitoring plan.

Spring Ted's Tub - The justification for eliminating this spring from the groundwater monitoring program is that there has been no change in pre-mining and post-mining water quality or quantity. At Ted's Tub the highest recorded flow was in the early 1980's. Following the early 80's the flow fluctuated up and down but around 2003 the flow appear to have begun to correlate to the PDI. This explanation is justified for removal of this spring from the monitoring plan.

Spring 79-38 - The justification for eliminating this spring from the groundwater monitoring program is that there has been no change in pre-mining and post-mining water quality or quantity. At 79-38 the highest recorded flow was in the early 1980's. Following the early 80's the flow fluctuated up and down but around 2003 the flow appear to have begun to correlate to the PDI. This explanation is justified for removal of this spring from the monitoring plan.

Spring 89-60 - The justification for eliminating this spring from the groundwater monitoring program is that there has been no change in pre-mining and post-mining water quality or quantity. Several possible inaccurate statements are included in the justification form. Such as:

""Pre- and Post-water quality data is included for springs 79-38, 89-60, and Ted's Tub.""
and

""Sites 79-38, 89-60, and Ted's Tub have been monitored by Energy West Mining Company since 1979.""

Based on DOGM review mining began in 1988 but monitoring was not begun until 1989 and this indicates that no premining data is available. The permittee must either better demonstrate premining data or adjusted these statements and reevaluate spring 89-60. The justification for removal will be reexamined after this further explanation or reevaluation.

Springs 79-2, and 80-41 - The justification for eliminating these springs from the groundwater monitoring program is that there has been no change in pre-mining and post-mining water quality or quantity. This explanation is justified for removal of these springs from the monitoring plan.

Spring 79-40 - The justification for eliminating spring 79-40 from the groundwater monitoring program is there has been no change in pre-mining and post-mining water quality or quantity. The pre-mining water quantity data shows flow between 2 gpm to 15 gpm from 1983 to 1988. Since subsidence was completed in 1998 flows have ranged from 0 gpm to 2 gpm. Due to the periods of no from 2002 to 2004 and 2007 to 2010 the Division finds it necessary to continue monitoring of this location to better evaluate these dry periods flow.

The justification for eliminating this spring from the groundwater monitoring program is that there has been no change in pre-mining and post-mining water quality or quantity. Several possible inaccurate statements are included in the justification form. Such as:

""Pre- and Post-water quality data is included for spring 80-47. Data show insignificant variances between pre- and post-quality results.""

Based on DOGM review mining began in 1977 but monitoring was not begun until 1981 and this indicates that no premining data is available. The permittee must either better demonstrate premining data or adjusted these statements and reevaluate spring 80-47. The justification for removal will be reexamined after this further explanation or reevaluation.

Springs 17-21-1, 17-22-1, and 79-32 are outside the PacifiCorp's permit areas. The justification for eliminating these springs from the groundwater monitoring program is that they are outside of the area of influence any mining plan. This explanation is justified for removal from these springs monitoring plan.

Spring 17-35-1 - The justification for eliminating spring 17-35-1 from the groundwater monitoring program is that there has been no change in pre-mining and post-mining water quality or quantity. Prior to mining flows varied from less than 0.5 gpm to more than 3 gpm from 1988 to 1999. However, following subsidence completion in 2002 every measurement has

registered as no flow or at best ground saturation. In addition, the Permittee indicates that a grazing permittee unsuccessfully attempted to redevelop the spring in August 2000. The Division rejects the request to cease monitoring at spring 17-35-1. In addition, if no flow has been present since 2002 and a grazing permittee has attempted and failed at redevelopment then the Division requires the permittee update their MRP to address if any new probably hydrologic consequences at this location.

Spring 17-35-2 - The justification for eliminating this spring from the groundwater monitoring program is that there has been no change in pre-mining and post-mining water quality or quantity. The permittee states mining was first began in 1990. The Division water quality database reports has data beginning in 1987 and has never recorded a flow. This explanation is justified for removal of this spring from the monitoring plan.

Spring T-19 " Is located outside of the Trail mountain permit boundary and has been monitored since 1988. In the first 10 years of data the high measurement was 450 gpm and in the most recent 10 years the high measurement was 580 gpm. The justification for eliminating this spring from the groundwater monitoring program is that there has been no change in pre-mining and post-mining water quality or quantity. This explanation is justified for removal from of this spring from the monitoring plan.

Springs 79-26 and 79-32 are outside the PacifiCorp's permit areas. The justification for eliminating these springs from the groundwater monitoring program is that they are outside of the area of influence any mining plan. This explanation is justified for removal from these springs monitoring plan.

Spring 18-2-1 - The justification for eliminating this spring from the groundwater monitoring program is there has been no change in pre-mining and post-mining water quality or quantity. The pre-mining water quantity data shows flow between 0 gpm to 18.9 gpm from 1987 to 1998. Since subsidence was completed in 2002 flows have ranged from 0 gpm to 3.6 gpm. Due to the numerous periods of since 2002, the Division finds it necessary to continue monitoring of this location to better evaluate these dry periods flow.

Deficiencies Details:

The application does not meet the water monitoring requirements of the State of Utah R645-Coal Mining Rules. The following deficiencies must be addressed prior to the Division approval of the application:

R645-301-731.214: Spring 79-29 - The justification for eliminating this spring from the groundwater monitoring program is that there has been no change in pre-mining and post-mining water quality or quantity. This explanation is justified for removal of this spring from the monitoring plan. However, this argument was made in the first submittal and left out of the July 2013 submittal.

R645-301-731.214: Spring 82-52 - The justification for eliminating this spring from the groundwater monitoring program is that there has been no change in pre-mining and post-mining water quality or quantity. Several possible inaccurate statements are included in the justification form. Such as:

""Pre- and Post-water quality data is included for spring 82-52. Data show insignificant variances between pre- and post-quality results.""

Based on DOGM review mining began in 1975 but monitoring was not begun until 1982 and this indicates that no premining data is available. The permittee must either better demonstrate premining data or adjusted these statements and reevaluate spring 82-52. The justification for removal will be reexamined after this further explanation or reevaluation.

R645-301-731.214: Spring 89-60 - The justification for eliminating this spring from the groundwater monitoring program is that there has been no change in pre-mining and post-mining water quality or quantity. Several possible inaccurate statements are included in the justification form. Such as:

""Pre- and Post-water quality data is included for springs 79-38, 89-60, and Ted's Tub.""
and

""Sites 79-38, 89-60, and Ted's Tub have been monitored by Energy West Mining Company since 1979.""

Based on DOGM review mining began in 1988 but monitoring was not begun until 1989 and this indicates that no premining data is available. The permittee must either better demonstrate premining data or adjusted these statements and reevaluate spring 89-60. The justification for removal will be reexamined after this further explanation or reevaluation.

R645-301-731.214: Spring 80-47 - The justification for eliminating this spring from the groundwater monitoring program is that there has been no change in pre-mining and post-mining water quality or quantity. Several possible inaccurate statements are included in the justification form. Such as:

""Pre- and Post-water quality data is included for spring 80-47. Data show insignificant variances between pre- and post-quality results.""

Based on DOGM review mining began in 1977 but monitoring was not begun until 1981 and this indicates that no premining

data is available. The permittee must either better demonstrate premining data or adjusted these statements and reevaluate spring 80-47. The justification for removal will be reexamined after this further explanation or reevaluation.

Spring 79-40 - The justification for eliminating spring 79-40 from the groundwater monitoring program is there has been no change in pre-mining and post-mining water quality or quantity. The pre-mining water quantity data shows flow between 2 gpm to 15 gpm from 1983 to 1988. Since subsidence was completed in 1998 flows have ranged from 0 gpm to 2 gpm. Due to the periods of no flow from 2002 to 2004 and 2007 to 2010 the Division finds it necessary to continue monitoring of this location to better evaluate these dry periods flow.

R645-301-731.214: Spring 18-2-1 - The justification for eliminating this spring from the groundwater monitoring program is there has been no change in pre-mining and post-mining water quality or quantity. The pre-mining water quantity data shows flow between 0 gpm to 18.9 gpm from 1987 to 1998. Since subsidence was completed in 2002 flows have ranged from 0 gpm to 3.6 gpm. Due to the numerous periods of no flow since 2002, the Division finds it necessary to continue monitoring of this location to better evaluate these dry periods flow.

R645-301-731.214: Spring 84-56 - The justification for eliminating spring 84-56 from the groundwater monitoring program is that there has been no change in pre-mining and post-mining water quality or quantity. No pre-mining water quality data is presented so this is unsupported. Further, the request does not sufficiently explain the measurement of no flow from 2002 until 2006 and again from 2007 until 2011. Prior to mining flows were present from 1.6 gpm to 6.2 gpm. Since 2011 flows up to 0.84 gpm have appeared. The Division finds it necessary to continue monitoring of this location to evaluate the return of this flow.

R645-301-731.214 and 728.334: Spring 17-35-1 - The justification for eliminating spring 17-35-1 from the groundwater monitoring program is that there has been no change in pre-mining and post-mining water quality or quantity. Prior to mining flows varied from less than 0.5 gpm to more than 3 gpm from 1988 to 1999. However, following subsidence completion in 2002 every measurement has registered as no flow or at best ground saturation. In addition, the Permittee indicates that a grazing permittee unsuccessfully attempted to redevelop the spring in August 2000. The Division rejects the request to cease monitoring at spring 17-35-1. In addition, if no flow has been present since 2002 and a grazing permittee has attempted and failed at redevelopment then the Division requires the permittee update their MRP to address any probably hydrologic consequences at this location.

R645-301-731.214: Because the Division database does not contain all of the flow data presented in the permittee's justifications the permittee shall electronically submit a copy of all flow data provided in justification graph in Microsoft Excel or comma separated format.

R645-301-731.214: Appendix A shall be updated as necessary in accordance with these findings. In addition, the permittee shall keep all locations within currently held leases and notate these as inactive and that monitoring will be resumed if mine workings are ever redeveloped.

khoffman