

**BASIN COOPERATIVE SERVICES**

A BASIN ELECTRIC SUBSIDIARY

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PUBLIC SERVICE COMMISSION



December 11, 2008

FROM DIRECTOR - RECLAMATION DIV.

Date: \_\_\_\_\_

Action: \_\_\_\_\_

Info. Only: \_\_\_\_\_

Info & File: \_\_\_\_\_

Mr. James R. Deutsch  
Reclamation Director  
Public Service Commission  
600 East Boulevard  
Bismarck, ND 58505-480

Re: Bond Release No. 6 – Permit BCGH-8204

Dear Mr. Deutsch:

This correspondence contains our response to deficiencies you sent on October 29, 2008. These deficiencies were concerned with minor vegetation errors and required gathering information regarding the 6 permanent ponds.

**Attachment VIB – Analyses of Reclamation Success**

- 1. Follow-up to Original Item No. 36: The 2005 reclaimed cover value in file T5A\_Standards.xls I listed as being 97.2% but Table 2 and file S19\_Tract5\_05c.xls shows that the value should be 97.5%. Please correct this value in T5A\_Standards.xls. The change was not made on the version of the file sent to the PSC. (GAW)

**Response:** This change was made on file T5A\_Standards.xls located on the revised CD. This did not change the result. The reclaimed area exceeded the standard. This comment required changes to the data CD. Please replace the original application CD with the revised CD that is included with this correspondence.

- 2. Follow-up to Original Item No. 30: Table 1, yield summary, shows the 2001 reclaimed yield for Tract 2A as 2,867 lbs/acre, but the value should be listed as 2,827 lbs/acre, according to S23\_SubArea2A\_01p.xls file. Please correct this typo. (GAW)

**Response:** Table 1 – Yield Summary – was changed. A revised page is included with this correspondence. Table 1 was also changed on the on the enclosed CD.

**Attachment XI – Pond Designs and Water quality Information**

- 3. Please provide calculations demonstrating that the developed water resources which are being retained as permanent structures can safely pass a 50-year 6 hour even as required by NDAC 69-05.2-16-09(9) or include a reference to where this data can be found in the permit. It appears that 50-year 6-hour calculations were not provided for many of the ponds even though they were approved as permanent ponds. (MDB)
- 4. Please provide data showing the size of developed water resources being retained are adequate for their intended purposes and that the water levels are reasonably stable per NDCC 38-14.1-24(7). (MDB)

**Response:** The following information pertains to both deficiencies 3 and 4.

Based on our recent review of related correspondence and revisions concerning permanent ponds, it would appear that adequate consideration/oversight has been given to leaving these structures as a permanent water source. It is because of this past regulatory review that we assumed that the PSC had considered their design and subsequent modifications to these designs to be appropriate.

Past regulatory reviews has resulted in a listing of permanent ponds in the permit. Permanent ponds are listed in Section 2.0 (page 2-16) in Volume II of the permit (updated by Revisions 11 and 33) and listed again and discussed in Section 3.5 (Volume VI). Design and associated hydrological information are located in Section 4.3 of the Water Management Plan. This information is found in Volumes XII and XIII. Data for Pond 144-84-18-8C is located in Volume XVI under Chapter 5.0 - Existing Facilities.

Not all ponds listed in this application were designed for a 50y-6hr event. One pond (pond 143-84-8-1C, Berg property in section 8 of Mine Area II) was listed as a sediment pond but was designed to replace a dugout that was disturbed by mining operations. In the pre-mine setting, this dugout had an 83 acre watershed. Pond 8-1C is located in approximately the same location and functioned as a sediment pond trapping sediment from a small stockpile area before it flowed downstream through an undisturbed woodland (note: this wooded draw was excluded from mining operations) to a sediment pond at a lower elevation. Due to these circumstances and because it is a replacement pond, the 50y - 6hr event design would not be appropriate.

It is also important to consider whether or not the 50y-6hr event design does apply following reclamation even though the original design may have been for example, a 25y – 6hr event. Prior to consideration as a permanent pond, some sediment ponds were designed for 25y-6hr storm event using soil and slope data typical of a barren mine disturbed surface. However, following soil respreading and vegetation establishment, Q values changed when hydrological criteria (CN values) changed. As an example, hydrological changes as a result of these reclamation operations for pond 144-85-13-8E are provided below.

The presence of a permanent water source is important. Rangeland utilization and range condition can be improved and impacts due to trailing can be minimized when more water sources are present. From a grazing utility standpoint, the more ponds the better whether or not they retain permanent water. Temporary surface water sources can often be the case in the spring or after a rainfall. All of the permanent ponds listed here provide an important water resource and complement the grazing post mining land use.

Specific information regarding each of the 6 permanent ponds in this bond release application is provided below (see Tables 1 and 2).

**TABLE 1:**  
**Listing of permanent ponds in Bond Release No. 6 to BCGH-8204**

<u>Tract</u>	<u>Mine Area</u>	<u>Pond ID</u>	<u>NPDES no.</u>	<u>Surface Owner</u>
2	I	144-85-23-5D	none	S. Brunmeier
3	I	G144-85-24-5A	none	L. Stephens
4	I	144-85-13-8E	046	BCS
7	I	144-84-18-8C	008	BCS
14	II	143-84-8-1G	none	Perschke Bros.
15	II	143-84-8-1C	none	Berg Family Part.

**TABLE 2**  
**Supplemental Permanent Pond Information**

Permanent pond data for Bond Release No. 6							
<u>Pond ID</u>	<u>Pool</u>	<u>Capacity</u>	<u>Watershed</u>	<u>Watershed Yield (ac ft)</u>		<u>Design</u>	<u>PSC</u> <sup>1</sup>
	<u>Area (ac)</u>	<u>(Acre ft.)</u>	<u>Size</u>	<u>80%</u>	<u>50%</u>		<u>Approved</u>
144-85-23-5D	2.1	10.7	154	5.3	10.1	25y-24hr	10/20/1989 Revision 16
G144-85-24-5A	7.0	32.3	778	35.0	66.8	100y-6hr	<sup>2</sup> 08/08/90 Revision 17
144-85-13-8E	2.3	15.2	83	2.9	5.5	25y-6hr 50y-6hr <sub>3</sub>	<sup>4</sup> Permanent Pond
144-84-18-8C	1.8	12.5	392	9.6	18.4	50y-6hr	02/20/1998 Revision 27
143-84-8-1G	1.5	6.4	187	6.6	12.4	50y-6hr	11/30/1988 Revision 15
143-84-8-1C	0.4	1.4	32	1.12	2.1	25y-24hr	<sup>5</sup> Replacement Pond

<b>TABLE 2 (continued)</b>
<sup>1</sup> Permit revisions containing permanent pond information and date of PSC approval.
<sup>2</sup> This pond was approved as a permanent pond in the permit. Updated information regarding pond design was provided in Revision 17.
<sup>3</sup> Note: Q values decreased from 81.9 for the designed discharge of 25y-6hr event to 30.0 cfs in the reclaimed setting for a 50y-6hr event.
<sup>4</sup> Listed and approved in the Permit as a permanent pond. Data provided in the permit show the revised design is adequate for a 50y-6hr storm event (see data below)
<sup>5</sup> This is a replacement pond for a dugout located in the same area prior to mining. While mining and reclamation occurred it also functioned as a sediment control structure.

**144-85-23-5D (Brunmeier Pond in Section 23 – of Mine Area I)**

Information concerning this permanent pond is located in Appendix 4.3-1 (Volume XII). Permanent pond design drawings are located on Plate 4.3.1-6a in Volume XIII. The State Water Commission Dam Design Classification is Class II and therefore this pond does not require a principal spillway. However, the emergency spillway requires design criteria of a 25y-24 hr event. It also requires that the dam would not be overtopped on a 50y-24hr event. Revisions to this pond included design changes to comply with the performance standards under NDAC 69-05.2-16-09.

These design changes were reviewed by the PSC via Revision 16. Please review related correspondence from Ed Englerth to BCS approving Pond 144-85-23-5D as a permanent pond – Revision 16 (correspondence date October 20, 1989).

This pond was installed to facilitate mining operations by collecting clean water from an undisturbed watershed and transfer this water around the mine disturbance area. This pond is spring fed and has never been dry. It is the primary water supply for Mr. Brunmeier's Livestock operation in the south ½ of section 23.

**G144-85-24-5A (Stephens Pond – Section 24 - Mine Area I – MSHA ID # 1211-ND-09-00042-06)**

This pond was initially listed as a permanent pond in Revision 11 and later in Revision 14. Design changes and related hydrological information were approved in Revision 17. This information is located in Appendix 4.3-1 (Volume XII). Its original design was suitable for a permanent pond in accordance with the performance standards under NDAC 69-05.2-16-09. Design drawings with approved revisions are on Plates 4.3.1-1, 4.3.1-2 and 4.3.1-3 located in Volume XII.

The surface owner (Wilbur and Lee Stephens) requested that this pond be left as a permanent pond. This pond is also spring fed and has never been dry based on quarterly GHM pond inspection reports.

**144-85-13-8E (BCS - Section 24, Mine Area I)**

Design and hydrological Information concerning this permanent pond is located in Appendix 4.3-1 (Volume XII). There it is identified as 144-85-13-E8. The design was changed by Revision 20. Design drawings are found on Plate 4.3.1-15 in Volume XII.

This is a dead water impoundment where the Initial disturbance caused by the old Teuber mine created a pond. This embankment was improved between the Teuber Mine and the upper end of a drainage to allow dragline access to a new mining area in Section 13 that was developed in the mid – 70s. It was included as a permanent pond in the permit and used as a sediment control feature (discharge point 046) during active mining operations during the post 79 law period. The spillway was designed to pass a 25 year – 6 hour event. However the watershed size indicated that this would rarely occur. Also please note that in a reclaimed setting with different surface soil conditions the Q value is 60 % less than the initial 25y-6hr storm event design (see the following table). Therefore the design was sufficient for a 50y-6hr storm event.

Pond inspection reports show this pond to provide a permanent source of water for livestock and it is believed to have a ground water supply.

The following storm data is from Appendix 4.3-1.

<b>Frequency (years)</b>	<b>Rainfall (inches)</b>	<b>Q (cfs)</b>	<b>Runoff (A-F)</b>
<b>10y – 24hr</b>	<b>3.15</b>	<b>54.5</b>	<b>10.8</b>
<b>25y-6hr</b>	<b>2.75</b>	<b>81.9</b>	<b>8.6</b>
<b>50y-6hr</b>	<b>3.25</b>	<b>30.0</b>	<b>4.5</b>

**CN=63 100 ac.**

**144-84-18-8C (BCS – Section 18)**

This pond is located along the haulroad to Mine Area I. Design and hydrological information is included in the permit under Chapter 5.0 – EXISTING FACILITIES. Design calculations can be found in Appendix 5.2-2 (Volume XVI).

Embankment modifications to include it as a permanent pond were described in Revision 27 and submitted to the PSC. This Revision was approved by the Commission on February, 20, 2998. This pond has a spring fed water source that provides a water source for 2 landowners. GHM quarterly pond inspection reports show this pond to have constant water supply over all grazing seasons.

**143-84-8-1G (Perschke Pond – NE4 of section 8 of MA-2)**

Design information concerning this pond is located in Appendix 4.3-2 of Volume XIII (see information/correspondence for Revision 15). This pond was constructed on reclaimed land (Perschke Bros) using the 50y-6hr design standard. This pond was approved as a permanent pond by approval of Revision 15 on November 30, 1988.

A dugout was installed in the south end in the fall of 2008 to concentrate inflows during drought periods. This pond has never been dry but will have water supply limitations during a prolonged drought combined with poor recharge due to a lack of spring runoff and reduced or zero flows from a spring located upstream.

**143-84-8-1C (Berg Pond – NW4 of section 8 of MA-2)**

Design and hydrological information concerning this pond is located in Appendix 4.3-2 of Volume XIII. The design drawing and associated information is located on Plate 4.3.2-13 (also in Volume XIII).

As stated in the Water Management Plan (Volume XII), this pond served two purposes. It collected runoff and sediment from a small stockpile area located in the watershed. As a consequence it trapped sediment before it had a chance to enter an undisturbed draw leading to sediment pond G143-84-8-3H. Its second purpose was to replace a pre-mine stockpond (dugout type) located in the upper portion of that undisturbed drainage. This dugout was removed by mine operations.

Similar to pre-mine conditions, this replacement pond has a small watershed and, at times, receives occasional inflows from an intermittent spring located upstream. It is located in a pasture that is grazed in the spring when the water is adequate for that time of year and therefore provides sufficient water supply for its intended post mine land use.

If you have any other questions, please call me at 701-745-7242 or I can be reached at my email address [dnilson@bepc.com](mailto:dnilson@bepc.com)

Sincerely,



David J. Nilson