

**RAILROAD COMMISSION OF TEXAS  
HEARINGS DIVISION**

**SURFACE MINING DOCKET NO. C19-0001-SC-26-F  
APPLICATION BY TEXAS MUNICIPAL POWER AGENCY  
FOR RELEASE OF PHASE I, II, AND III RECLAMATION OBLIGATIONS FOR  
AN AGGREGATE 4,509.6 ACRES, PERMIT NO. 26D, GIBBONS CREEK LIGNITE  
MINE, GRIMES COUNTY, TEXAS**

**ORDER APPROVING RELEASE  
OF PHASE I, II and III RECLAMATION OBLIGATIONS FOR  
AN AGGREGATE 4,509.6 ACRES**

Statement of the Case

Texas Municipal Power Agency (TMPA), P. O. Box 7000, Bryan, Texas 77805, applied to the Railroad Commission of Texas (Commission), Surface Mining and Reclamation Division (SMRD and/or Staff), for Release of Reclamation Obligations on an aggregate 4,509.6 acres within Permit No. 26D, Gibbons Creek Lignite Mine, Grimes County, Texas. The application is made pursuant to the Texas Surface Coal Mining and Reclamation Act, Tex. Nat. Res. Code Ann. Ch. 134 (Vernon Supp. 2019) (Act) and §§12.312-313 of the "Coal Mining Regulations," Tex. R.R. Comm'n, 16 Tex. Admin. Code Ch. 12 (Thomson West 2019) (Regulations).

Permit No. 26D currently authorizes surface coal mining operations at TMPA's Gibbons Creek Lignite Mine within the approved permit area. Copies of the Application for release were filed in the required county and Commission offices. After public notice, no comments or requests for hearing were filed. The only parties to the proceeding are TMPA and Staff. There remain no outstanding issues between the parties. Based on the information provided by the Application, Staff's Technical Analysis and the Field Inspection Report of the area, Staff recommends the approval of release of reclamation obligations for on an aggregate 4,509.6 acres, with 217.0 acres for Phase I and II, 159.9 acres for Phase I, II, and III, 3.2 acres for Phase II and III, and 4,129.5 acres for Phase III only, within Permit No. 26D, Gibbons Creek Lignite Mine, in Grimes County, Texas. The parties have filed waivers of preparation and circulation of a proposal for decision. The Commission approves the release acreage as requested and finds that TMPA is eligible to the reduce the amount of bond for the permit in an amount that is attributable to the subject acreage in future bond adjustments.

### **FINDINGS OF FACT**

Based on the evidence in the record, the following Findings of Fact are made:

1. By letter dated June 11, 2018, Texas Municipal Power Agency (TMPA) filed an application (Application) with the Railroad Commission of Texas (Commission), Surface Mining and Reclamation Division (SMRD and/or Staff) for release of reclamation obligations on an aggregate 4,509.6 acres, with 217.0 acres for Phase I and II, 159.9 acres for Phase I, II, and III, 3.2 acres for Phase II and III, and 4,129.5 acres for Phase III only, within Permit No. 26D, Gibbons Creek Lignite Mine, in Grimes County, Texas. The chronological list of the Application substantive filings is contained in Finding of Fact No. 3, *infra*. The initial application as originally filed contained a request for release of an aggregate 4,523.7 acres. By letter dated June 18, 2018, Staff determined that the application was incomplete due to concerns regarding unapproved small depression areas located with the proposed release areas, surface-water and groundwater issues, and revegetation issues. By letter dated September 21, 2018 TMPA submitted Supplement No. 1 in which it reduced the requested acreage proposed for release of reclamation obligations from 4,523.7 to 4,517.7 acres, removing 6.0 acres that lacked the required revegetation productivity demonstration and therefore were not as yet eligible for Phase III release. By letter dated September 25, 2018, the Application was filed with the Hearings Division. By letter dated September 26, 2018, TMPA submitted an addendum to Supplement No. 1. By letter dated October 25, 2018, Staff suspended the Application due to a lack of surface-water data and assessment thereof. By letter dated February 26, 2019, TMPA submitted Supplement No. 2 to the Application to provide the surface-water data and assessment, and Staff resume review of the Application. By letter dated March 12, 2019, Staff declared the Application to be administratively complete. By letter dated May 6, 2019, TMPA subsequently submitted Supplement No. 3 containing additional ground-water hydrology information. By letter dated May 7, 2019, TMPA submitted Supplement No. 4 containing further surface-water hydrology information. By letter dated May 29, 2019, Staff filed its Technical Analysis (TA) and the December 19, 2018, Field Inspection Report (Inspection Report) recommending approval of the release application with no outstanding comments. By letter dated September 27, 2019, TMPA submitted Supplement No. 5 in which it further reduced the

proposed release area to 4,509.6 acres, removing 8.1 acres that were also not yet eligible for Phase III release because it lacked the required revegetation productivity demonstration. By letter dated September 30, 2019, Staff filed TA Addendum No. 1. By letter dated October 16, 2019, TMPA filed Supplement No. 6. An Informal Conference on the Application was held on November 5, 2019, and by letter dated November 12, 2019, TMPA subsequently filed Supplement No. 7 to address the remaining concerns that were discussed at the Informal Conference. By letter dated December 3, 2019, Staff filed TA Addendum No. 2 affirming resolution of the outstanding issues and recommending release of the proposed acreage.

2. The Application is made pursuant to the Texas Surface Coal Mining and Reclamation Act, Tex. Nat. Res. Code Ann Ch. 134 (Vernon Supp. 2019) (Act), and the "Coal Mining Regulations," Tex. Railroad Comm'n, 16 Tex. Admin. Code Ch. 12 (Thomson West 2019) (Regulations). The Application was properly certified in accordance with §12.312(a)(3). No fee is required for this Application.
3. The Permit No. 26D area is located approximately 8 miles northwest of Anderson, 16 miles east of College Station, and one mile north of Carlos, Texas. The permit area is located generally south of State Highway 30 (SH 30) and west of Farm-to-Market Road 244 (FM 244). A general location map of the permit area, with the 4,509.6 acres proposed for release delineated, is found in Appendix I within Attachment III of Staff's TA.
4. Permit No. 26D is currently bonded by a collateral bond, consisting of a letter of credit (LOC) in the amount of \$11,400,000 (Docket No. C19-0011-SC-26-E, Order dated April 9, 2019; amended in Docket No. C19-0021-SC-26-E, Order dated August 20, 2019).
5. Copies of the Application were filed for public review, in compliance with notice requirements, at the main office of the Railroad Commission of Texas at 1701 North Congress, William B. Travis Building, Austin, Texas, and in the office of the Grimes County Clerk in Anderson, Texas.

6. Notice of application was published once a week for four weeks in *The Navasota Examiner* circulated in Grimes County on December 12, 19, 26, 2018, and January 9, 2019. The newspaper is a paper of general circulation in the area of the proposed release request area, Grimes County. The notice of application contains all information required by the Act and Regulations for notice of an application requesting bond release. The newspaper of publication inadvertently omitted publication on January 2, 2019, and therefore published the required fourth week on the next available date. The published notice is adequate notification of the request for release. The notice includes the elements required by §134.129 of the Act and §12.312(a)(2) of the Regulations: the name of the permittee, the precise location of the land affected, the number of acres, permit number at the time of application and date approved, the amount of bond approved, the type and appropriate dates reclamation work was performed, and a description of the results achieved as they relate to the approved reclamation plan. The notice contains information on the applicant, location and boundaries of the permit area, the Application's availability for inspection, and the address to which comments should be sent. TMPA submitted proof of publication to the Commission by letter dated January 18, 2019.
7. TMPA sent notice of the Application to owners of interests within and adjacent to the areas requested for release. TMPA also sent notice to local governmental bodies, planning agencies, sewage and water treatment authorities and water companies in the locality as required by §12.312(a)(2) of the Regulations. The notice was provided via certified letter in multiple mailings dated December 7, 2018. TMPA mailed notice to the Natural Resources Conservation Service, Environmental Protection Agency (District Office in Dallas), Texas Commission on Environmental Quality, Texas State Soil and Water Conservation Board, Wickson Creek Special Utility District (SUD), Brazos River Authority, Texas General Land Office, U.S. Army Corps of Engineers, Navasota Soil and Water Conservation District, Enervest Operating LLC, State of Texas Senior Resident Engineer, and Grimes County, Grimes County Judge and Commissioners Court (Precincts 1, 2, 3, and 4), and to several landowners and lessees. The areas requested for release are not located within the territorial boundaries of any municipality that would be notified pursuant to §12.313(c) of the Regulations. Copies of the notification letters were filed with the Commission by letter dated January 18, 2019.

8. Staff provided notification of the Application by certified letter dated October 9, 2018, to the Grimes County Judge. Mailing of notification was provided at least 31 days prior to the date of consideration of the docket by the Commission in accordance with §134.133 of the Act. A copy of the letter was provided in Attachment II of Staff's TA.
9. One written objection was filed regarding the request for release pursuant to the notification letter sent by TMPA on December 7, 2018. Staff contact members of the Moody family and offered to conduct an inspection with them, which occurred on September 25, 2019. As documented in Staff's TA Addendum No. 1 on September 30, 2019, the Moody family had no adverse concerns with regard to the developed water resources (DWR) (Pond 10A, Pond Dike BD-10, and Pond B1P-5) proposed for release in the Application. No requests for hearing or informal conference were filed pursuant to §12.313(d).
10. Pursuant to §12.312(b) of the Regulations, Staff notified owners of interests in lands and lessees pertaining to the Application for release and notified the Tulsa Field Office of the Office of Surface Mining Reclamation and Enforcement (OSM) by letters dated October 2, 2018, of the date and time of Staff's field inspection scheduled for October 15, 2018. The notification stated that a release had been requested and, pursuant to §12.312(b)(1), advised them of the opportunity to participate in the on-site inspection. Staff provided copies of the October 2, 2018, letters in Appendix II within Attachment III (Inspection Report) of the TA.
11. The inspection for the release Application occurred on October 15, 2018, as stated in Staff's October 2, 2018, notification letters. Five representatives for TMPA and three SMRD Inspection and Enforcement staff were present for the pre-inspection meeting. Following a pre-inspection meeting, the SMRD inspectors, accompanied by three representatives for TMPA, conducted an inspection of the area requested for release. Staff notes that no landowners were present for the pre-inspection meeting or inspection. By letters dated August 29, 2019, Staff notified two previously unnotified area landowners, Ms. Christine E. Woodward Richards and Ms. Harriet R. Woodward Tidwell, both owners

of undivided interest in Tract Nos. 405 and 405A, of the proposed release application and provided to them opportunity to participate in an inspection of their lands. Staff indicates in TA Addendum No. 1 that, as of September 27, 2019, neither individual had requested to participate in an inspection. As described in Finding of Fact No. 9, *supra*, members of the Moody family were also notified and provided an opportunity to participate in an inspection of their lands.

12. In the Inspection Report, Staff notes that vegetation across the area appeared healthy and self-sustaining. Staff noted that all structures listed in the Application were observed and appeared stable and intact except for G1-2 Drop Structure, where erosion was observed at the upstream end. TMPA stated to the inspectors that this area would be repaired as soon as possible. By letter dated August 29, 2019, Staff provided a copy of a report of its January 7, 2019, inspection, indicating that the subject erosion damage had been repaired and is stable.
13. The aggregate 4,509.6 acres requested for release encompass portions of Mine Areas A1, B1, B2 and G1. The postmining land uses for these 4,509.6 acres are pastureland (3,714.7 acres, 82.4%), developed water resources (751.3 acres, 16.6%), industrial/commercial (I/C) (30.9 acres, 0.7%) and with 12.7 acres (0.3%) of undisturbed land.
14. Mining operations were conducted on 3,219.3 acres, 1,223.0 acres were disturbed by mining-related activities, including roads and diversions, and 67.3 acres were disturbed as ancillary between 1981 to 2001. Final grading of the 3,219.3 acres was accomplished between 1982 and 2002. Reclamation activities began in 1981, and have continued, as required, for necessary maintenance of the subject areas.
15. Based upon the Application, as supplemented, and Staff's review, Phase I release of reclamation obligations have been met for 376.9 acres in accordance with Phase I requirements for backfilling, regrading, and drainage control as required by §12.313(a)(1). The aggregate postmining land uses in the areas proposed for Phase I release consist of 279.8 acres of pastureland (74.2%), 82.7 acres of developed water resources (21.9%),

1.7 acres of industrial/commercial (I/C) (0.5%), and 12.7 acres are undisturbed (3.4%) [Application Table 3-3, Supplement No. 6].

- a. The area has been backfilled and regraded to its approximate original contour [§12.385(a)]; eliminated all highwalls [12.385(b)]; placed suitable topsoil substitute material over regraded spoil; constructed no cut-and-fill terraces; and, accomplished drainage control in accordance with the approved reclamation plan. Regrading of the area occurred between 1982 and 2002 in such a manner that erosion and water pollution has been minimized [§12.385(d)].
- b. Six diversions are contained within the 376.9-acre Phase I release area: B1 Drain 3, Rock Lake Creek, Dry Creek, Unnamed Creek, Diversion 2A, and Diversion 7H. The six diversions were approved as permanent postmine features by SMRD between 1992 and 2003. [§12.341].
- c. The area contains 14 permanent impoundments: Pond 10A, Pond B1P-1, Pond 12A, Pond 13A, Pond DP-1, Pond 5A, Pond B2P-6, Pond 6A, Pond 7A, Pond HR-2, Pond HR-5, Pond HR-6, Pond BD-10A, and Pond B2P-7. SMRD approved these 14 ponds as permanent postmine features between 1995 and 2012. The area of each pond has been revegetated and stabilized to reduce runoff and provide effective sediment control. [§12.347(b)].
- d. Runoff from the 376.9-acre area requested for Phase I release flows into final discharge Ponds 12A, 13A, 14, SP-7, and SP-8. These five sediment ponds were released from sediment control by the SMRD Director in a letter dated August 20, 1998. This runoff also flows through Ponds 1, 5A, 6A, 7A, 9A, 10A, Dike BD-10, SP-4 and SP-10/10A. These nine sediment ponds were released from sediment control by SMRD in a letter dated August 5, 1999. [§12.343].
- e. Seven permanent roads are located within the area requested for Phase I release: SP-7 Service Road, Pond 7A Access Road, Main Haul Road (East-West), South Access Road, Pond DP-1 Access Road, Pond 5A Access Road and Tract 141 Access Road.

Five of these roads, SP-7 Service Road, Pond 7A Access Road, Main Haul Road (East-West), Pond DP-1 Access Road, and Pond 5A Access Road, were approved for retention as permanent structures by the SMRD Director by letter dated August 1, 1995. The South Access Road was approved as permanent by SMRD letter dated June 17, 2010, and the Tract 141 Access Road was approved as permanent by letter dated August 18, 2005. [§12.400(f)].

- f. No disposal of non-coal waste has occurred within the area requested for Phase I release. [§12.375].
- 16. Portions of the 4,509.6 acres proposed for Phase II and III release, were previously approved for Phase I and Phase II release by the Commission in Docket No. C8-0007-SC-26-F (Order dated January 6, 1998), Docket No. C8-0029-SC-26-F (Order dated June 2, 1998), and Docket No. C9-0017-SC-26-F (Order dated December 7, 1999).
- 17. Based upon the Application and Staff's review, Phase II release of reclamation obligations have been met for an aggregate 380.1 acres in accordance with Phase II requirements for revegetation and for quality of discharges from the area as provided in §12.313(a)(2). The lands have been reclaimed and managed in accordance with the approved postmining land use [§12.147 and §12.399]. The aggregate postmining land uses in the areas proposed for Phase II release consist of 280.9 acres of pastureland (73.9%), 84.8 acres of DWR (22.3%), 1.7 acres of I/C (0.4%), and with 12.7 acres (3.4%) of undisturbed land. [Application Table 3-5, Supplement No. 7 (under Tab 6)].
  - a. The 280.9 acres of pastureland requested for Phase II release lies within 17 land management units (LMUs) contained in seven five-year extended responsibility periods (ERPs) established variously on November 6, 1990 (LMU B1-1), May 22, 1991 (LMU B2-1), November 30, 1994 (LMU B1-4), December 30, 1994 (LMUs B1-2 and B1-6), December 16, 1998 (LMUs B1-PER1, B1-PER7, B1-PER9, B2-6, B2-PER1, B2-PER2, B2-PER3, A1-4, and G1-3), March 30, 2009 (LMU B2-7), and November 22, 2013 (LMUs B2-8 and B2-9).



- b. TMPA submitted soil fertility data for pastureland in accordance with the approved soil testing plan by letters dated October 17, 1995, December 8, 1995, January 23, 1996, October 30, 1997, January 28, 1998, March 20, 2000, April 27, 2001, January 8, 2002, January 14, 2003, April 14, 2011, April 3, 2012, and July 16, 2013. TMPA reported soil fertility data for the 1994, 1997 through 2002, and 2009 through 2012 growing seasons. Staff determined that the data provided was in accordance with the approved soil-testing plan. Copies of Staff's approval letters dated February 15, 1996, February 26, 1998, March 9, 1998, February 18, 1999, June 14, 2000, July 12, 2001, February 11, 2002, February 18, 2003, April 19, 2012, August 21, 2012, and October 23, 2013, for the applicable growing seasons were provided in Section 5 of the Application (June 11, 2018 initial submittal).
- c. Permanent revegetation has been established on the area regraded in accordance with the approved reclamation plan for pastureland. The area has been planted with approved species; photographs contained in the Inspection Report show that vegetation is well established. The area has been revegetated with Hybrid Bermudagrass, Bahiagrass, and mixed bunch grasses with interseeded clover. The bunch grasses include Alamo switchgrass, Kleingrass, Old World Bluestem, Sideoats grama, and Indiangrass. All species were approved for the respective land uses at time of planting. Ground-cover evaluations for the 280.9 acres of pastureland within the proposed area for Phase II release were submitted and approved as follows:

<b>LMU</b>	<b>Submittal Letter Dates</b>	<b>Approval Letter Dates</b>
A1-4	January 14, 2002; January 17, 2003	March 8, 2002; February 27, 2003
B1-1	May 24, 1996; December 2, 1996	June 20, 1996; February 13, 1997
B1-2	February 8, 1999, February 29, 2000	March 2, 1999; July 5, 2000
B1-4	February 8, 1999, February 29, 2000	March 2, 1999; July 5, 2000
B1-6	February 8, 1999, February 29, 2000	March 2, 1999; July 5, 2000
B1-PER1	Requested by letter dated January 10, 2017, to add to adjacent ERA; approved May 26, 2017	March 2, 1999; July 5, 2000

LMU	Submittal Letter Dates	Approval Letter Dates
B1-PER7	Requested by letter dated January 10, 2017, to add to adjacent ERA; approved May 26, 2017	March 2, 1999; July 5, 2000
B1-PER9	January 14, 2002; January 17, 2003	March 8, 2002; February 27, 2003
B2-1	May 24, 1996; December 2, 1996	June 20, 1996; February 13, 1997
B2-6	January 14, 2002; January 17, 2003	March 8, 2002; February 27, 2003
B2-7	May 4, 2018	May 31, 2018
B2-8	May 14, 2018	May 31, 2018
B2-9	May 14, 2018	May 31, 2018
B2-PER1	January 14, 2002; January 17, 2003	March 8, 2002; February 27, 2003
B2-PER2	Requested by letter dated January 10, 2017, to add to adjacent ERA; approved May 26, 2017	March 2, 1999; July 5, 2000
B2-PER3	January 14, 2002; January 17, 2003	March 8, 2002; February 27, 2003
G1-3	January 14, 2002; January 17, 2003	March 8, 2002; February 27, 2003

Staff notes that the data indicate that the ground-cover areas are capable of stabilizing the soil surfaces from erosion. [§§12.390-12.395].

- d. Runoff from the aggregate 380.1-acre area requested for Phase II release flows into final discharge Ponds 12A, 13A, 14, SP-7, and SP-8. These five sedimentation ponds were released from sediment control by the SMRD Director in a letter dated August 20, 1998. This runoff also flows through Ponds 1, 5A, 6A, 7A, 9A, 10A, Dike BD-10, SP-4 and SP-10/10A. These nine sediment ponds were released from sediment control by SMRD in a letter dated August 5, 1999. [§12.340].
- e. Surface-water monitoring has been conducted in accordance with the requirements of the permit. As described in Staff's TA, Phase II sediment-control requirements are being met for the area as required by §12.313(a)(2) based upon monitoring data from 10 ponds: Ponds 1, 5A, 6A, 7A, 10A (combined with Pond Dike BD-10), B1P-6, DP-1, G1P-5, SP-4 and SP-7. Staff's analysis of the data indicates no adverse trends for total suspended solids (TSS) concentrations and indicates that TMPA has

- demonstrated that the areas proposed for Phase II release from reclamation liability obligations are not contributing suspended solids to stream flow or runoff outside of the permit area in excess of effluent limitations set out in the water quality permit or in excess of stream segment standards. [§12.313(a)(2), §12.344(c)].
- f. No silt dams are present within the area requested for Phase II release. [§12.344].
  - g. No rills or gullies were present within the area requested for Phase II release that would require repair. The areas have been stabilized to reduce the potential for contributing suspended solids to streamflow. [§12.389].
  - h. No prime farmland, for which additional requirements would be applicable, are located within the areas requested for Phase II release. [§§12.620-12.625].
18. Based upon the Application and on Staff's review, requirements for Phase III release of all reclamation obligations has been met for 4,292.6 acres in accordance with requirements for the completion of the ERP, soil resampling and vegetation standards as provided at §12.313(a)(3). SMRD has approved as permanent all structures within the requested area for Phase III release. Surface water and groundwater within and adjacent to all areas proposed for release have been protected in accordance with §12.313(a)(3), §12.348, and §12.349. The postmining land uses in the aggregate area proposed for Phase III release consists of 3,497.7 acres of pastureland (81.5%), 751.3 acres of DWR (17.5%), 30.9 acres of I/C (0.7%), and with 12.7 acres (0.3%) of undisturbed land. [Application Table 3-10, Supplement No. 6].
- a. At the Informal Conference held on November 5, 2019, TMPA submitted bond release orders to show that portions of the permit area that were inadvertently depicted on maps have been full released from reclamation liability. Bond release order approved for Phase III release by the Commission in Docket No. C13-0001-SC-26-F (Order dated August 25, 2015), and bond order approved for Phase I, II and III release in Docket No. C18-0005-SC-26-F (Order dated June 5, 2018) were admitted into the record to show that portions of: Main Haul Road North-South (3 segments in the Rail Spur Corridor); SR-8 Mine access Road (1 segment); Mine Road MN-2 (1 segment on

Tract 134); Pond 10A Access Road (1 segment); and a rainfall gauge located inside the Main Haul Road (North-South), were previously fully released from reclamation liability.

- b. The proposed Phase III release area contains 31 permanent impoundments, four erosion control structures, three spillway structures, four diversions, four reconstructed drainages and four new constructed drainages, seven drop structures, four erosion control structures, two county road sections, and eighteen mining-related roads, all approved by SMRD as permanent structures. Copies of Staff's approval letters for the structures have been provided in Section 5 of the initial, June 11, 2018, Application submittal and in the February 28, 2019, additional information provided as part of Supplement No. 1. Photographs were taken during Staff's field inspection on October 16, 2018, support Phase III release of the acreage requested, and are provided in Attachment III, Appendix IV of Staff's May 29, 2019, TA. Additional photographs were taken during Staff's special field inspection on November 20, 2019, support Phase III release of the acreage requested, and are provided as an attachment to Staff's December 3, 2019, TA Addendum No. 2. [§§12.154, 12.347, 12.400, 12.401].
- c. TMPA identified 135 depressions within the proposed release area. Copies of Staff's approval letters for these small depressions have also been provided in Section 5 of the Application (June 11, 2018 initial submittal) and in Attachment III, Appendix V of Staff's May 29, 2019, TA.
- d. The area that has been previously disturbed has met Phase III requirements for successful completion of the ERP of five years for areas that received at least 26 inches of rainfall annually [§12.395(c)]. The pastureland area requested for Phase III release are included in 29 LMUs located in eight extended responsibility areas (ERAs), as follows:

<b>ERA Initiation Date</b>	<b>LMUs</b>
November 6, 1990	B1-1
May 22, 1991	B2-1
November 2, 1994	B2-5 G1-1

<b>ERA Initiation Date</b>	<b>LMUs</b>
November 3, 1994	B2-2 G1-2
November 30, 1994	B1-4
December 1, 1994	B1-2 B1-3 B1-5 B1-6
December 23, 1994	B2-3
December 16, 1998	A1-4 B1-PER1 B1-PER2 B1-PER3 B1-PER4 B1-PER5 B1-PER6 B1-PER7 B1-PER8 B1-PER9 B2-6 B2-PER1 B2-PER2 B2-PER3 B2-PER4 B2-PER5 G1-3

- e. Per the resample requirements in the approved soil-testing plan, TMPA submitted data and analysis of a random 10% of soil grids from the eight ERAs. Staff stated in its letters approving the data submittal that the data indicated that there are no substantive differences in the analyzed parameters between the grids sampled during initial sampling and the random 10% resampling except values for pH and ABA slightly decreased in uppermost depth interval for the B Area LMUs for which data were submitted in August 2015. Staff ultimately concluded that the data do not reflect degradation of postmining soils and that these LMUs were acceptable. Copies of Staff's approval letters for the resampling on the subject pastureland acreage were provided in Staff's TA Appendix V and Section 5 of the Application, which includes the September 26, 2018, submittal of data inadvertently omitted from Supplement No. 1.

<b>ERA Initiation Date</b>	<b>LMUs</b>	<b>Submittal Letter Date</b>	<b>Approval Letter Date</b>
November 6, 1990	B1-1	May 5, 1997	March 9, 1998

ERA Initiation Date	LMUs	Submittal Letter Date	Approval Letter Date
May 22, 1991	B2-1	May 5, 1997	March 9, 1998
November 2, 1994	B2-5 G1-1	August 14, 2015 March 16, 2015	January 7, 2016 December 7, 2015
November 3, 1994	B2-2 G1-2	August 14, 2015 March 16, 2015	January 7, 2016 December 7, 2015
November 30, 1994	B1-4	November 16, 2007	March 25, 2008
December 1, 1994	B1-2 B1-3 B1-5 B1-6	August 14, 2015 August 14, 2015 August 14, 2015 August 14, 2015	January 7, 2016 January 7, 2016 January 7, 2016 January 7, 2016
December 23, 1994	B2-3	August 14, 2015	January 7, 2016
December 16, 1998	A1-4 B1-PER1 B1-PER2 B1-PER3 B1-PER4 B1-PER5 B1-PER6 B1-PER7 B1-PER8 B1-PER9 B2-6 B2-PER1 B2-PER2 B2-PER3 B2-PER4 B2-PER5 G1-3	November 16, 2007 March 16, 2015 August 14, 2015 August 14, 2015 August 14, 2015 August 14, 2015 August 14, 2015 August 14, 2015 November 16, 2007 November 16, 2007 August 14, 2015 August 14, 2015 August 14, 2015 August 14, 2015 August 14, 2015 August 14, 2015 March 16, 2015	March 25, 2008 December 7, 2015 January 7, 2016 January 7, 2016 January 7, 2016 January 7, 2016 January 7, 2016 January 7, 2016 March 25, 2008 March 25, 2008 January 7, 2016 January 7, 2016 January 7, 2016 January 7, 2016 January 7, 2016 January 7, 2016 December 7, 2015

- f. Successful revegetation of all acres requested for Phase III has been accomplished in accordance with §12.395 of the Regulations. Pastureland revegetation-success standards must be met in the final year of the ERP to qualify for Phase III release. Revegetation success has been adequately addressed in TMPA's Application, as supplemented, and in Staff's TA and TA addenda [Finding of Fact No. 18(b), *supra*].
- g. TMPA addressed surface-water protection by conducting surface mining activities in a manner to ensure that surface-water quantity and quality have been protected in accordance with §12.313(a)(2), §12.313(a)(3) and §12.349. Staff examined TMPA's analyses of surface-water quality from long-term surface-water monitoring stations on

streams that monitor upstream and downstream discharges from the areas proposed for Phase III release from reclamation obligations.

- i. The runoff from the areas proposed for Phase III release drain to Gibbons Creek, then to the Navasota River (TCEQ Stream Segment No. 1209) and its tributaries, thereafter to the Brazos River (TCEQ Stream Segment No. 1202) and ultimately to the Gulf of Mexico. Discharges from the area are regulated by the TCEQ through the Texas Pollutant Discharge Elimination System (TPDES). The TCEQ issued TPDES Permit No. WQ0002460000 to TMPA for wastewater discharges from the Gibbons Creek Lignite Mine.
- ii. In support of the requested release, TMPA submitted a surface-water hydrology report to address the requirements of §12.349 in the release application. TMPA's analyses of the surface-water data are based on information compiled from 38 permanent ponds (Ponds A1P-1, A1P-2, A1P-3, B1P-2, B1P-3, B1P-4, B1P-5, B1P-6, B1P-10, B2P-2, B2P-3, B2P-5, B2P-6, B2P-7, DP-1, G1P-1, G1P-2, G1P-3, G1P-4, G1P-5, HR-2, HR-5, HR-6, HR-7, 1, 5A, 6A, 7A, 9A, 10A, Dike BD-10, 12A, 13A, 14, SP-4, SP-7, SP-10, and Heifer Creek Pond) and four long-term surface-water monitoring (LSTM) stations: SWGC1 (Gibbons Creek - Undisturbed), SWNR1 (upstream of Navasota River - Undisturbed), SWGC2 (Gibbons Creek - Disturbed), and SWNR2/SWRN2 (downstream of Navasota River - Disturbed; hereafter referred to as Station SWNR2), which receive runoff from upstream and downstream of the areas proposed for Phase III release. Staff's surface-water evaluation focuses on the areas proposed for Phase III release from reclamation obligations (4,509.6 acres), as described at §12.313(a)(2), §12.313(a)(3) and §12.349.
- iii. TMPA's individual pond long-term monitoring data evaluation is based on information compiled from 38 ponds (listed in Finding of Fact No. 19(f)(ii), *supra*). These structures were approved as permanent as set forth in the following table:

<b>Pond</b>	<b>Commission Approval Letter Date(s)</b>
A1P-1	September 10, 1992 and May 5, 1999
A1P-2	September 10, 1992 and May 5, 1999
A1P-3	September 10, 1992 and May 5, 1999
B1P-2	November 6, 2012 and May 5, 1999
B1P-3	November 6, 2012 and May 5, 1999
B1P-4	October 20, 1988 and May 5, 1999
B1P-5	September 1, 1998 and May 5, 1999
B1P-6	September 1, 1998 and May 5, 1999
B1P-10	November 30, 1998
B2P-2	October 20, 1988 and May 5, 1999
B2P-3 (remaining portion)	September 1, 1998 and May 5, 1999
B2P-5	December 5, 1994
B2P-6	February 23, 1998
B2P-7	January 11, 2001
DP-1	May 14, 1999
G1P-1	July 31, 1992 and May 5, 1999
G1P-2	July 31, 1992 and May 5, 1999
G1P-3	July 20, 1992 and May 5, 1999
G1P-4	August 4, 1992 and May 5, 1999
G1P-5	August 4, 1992 and May 5, 1999
HR-2	April 29, 2003
HR-5	September 13, 1995
HR-6	September 13, 1995 and September 26, 1997
HR-7	September 13, 1995 and September 26, 1997
Heifer Creek Pond	April 28, 1995
1	May 14, 1999
5A	August 5, 1999
6A	August 5, 1999
7A	August 5, 1999
9A	August 5, 1999
10A	August 5, 1999 and November 6, 2012
Dike BD-10	August 5, 1999 and November 6, 2012
12A	August 20, 1998 and September 13, 1995
13A	August 20, 1998, September 13, 1995, and May 26, 2015
14	August 20, 1998 and August 24, 2009
SP-4	August 5, 1999
SP-7	August 20, 1998
SP-10	August 5, 1999



- (A) Due to the age of the sampling data from several of the 37 ponds that were evaluated, TMPA collected additional samples in December 2018 and January 2019 from these ponds to ensure that the water quality of the ponds remained in compliance with the limits established under TPDES Permit No. WQ0002460000. All data are provided in appendices to the Application. TMPA's analysis of the pond discharge data conclude that although several ponds have single-occurrence anomalies, all ponds have met the requirements of the TPDES permit requirements except Pond 14, where the daily average TSS concentration (40.38 mg/L) exceeds the maximum daily average established in TPDES Permit No. WQ0002460000 (35 mg/L), with three exceedances of the daily maximum (70 mg/L). TMPA concludes that the range of daily averages varied by season, with increased concentrations due to evaporation during warm, dry periods. TMPA indicates that regardless of these exceedances, there are no negative impacts that have occurred or expected to occur as a result of discharges from the ponds.
- (B) TMPA's analysis of the pond data shows that the ponds also comply with effluent limitations for pH, settleable solids/total settleable matter (SS/TSM), total iron (Fe), and total manganese (Mn) under TPDES Permit No. WQ0002460000. Most samples indicate a downward trend in concentrations of TSS, iron, and manganese beginning prior to completion of the period of record. There are no TPDES effluent limitations established for total dissolved solids (TDS) and sulfate ( $\text{SO}_4^{2-}$ ) concentrations and no stream segment criteria established for parameters SS/TSM, Fe, and Mn. TMPA asserts that it has demonstrated that disturbance to the hydrologic balance has been minimized in the permit and adjacent areas, and that material damage has been prevented outside the permit area. Staff's review of the technical report indicates that discharge data from representative ponds comply with effluent limitations for parameters pH, TSS, iron, and manganese under TPDES Permit No. WQ0002460000, and also that no degradation due to TDS,  $\text{SO}_4^{2-}$ , or SS/TSM concentrations is discernable.

Staff therefore concurs with TMPA's assertion that it has protected the hydrologic balance and prevented any material damage.

- iv. TMPA provided long-term surface-water monitoring (LTSM) data for LTSM Stations SWGC1 and SWGC2 (upstream and downstream stations, respectively, on Gibbons Creek, with period of record (POR) from 2nd Quarter 1979 through 1st Quarter 2018), and SWNR1 and SWNR2 (upstream and downstream stations, respectively, on the Navasota River, with POR from 4th Quarter 1988 through 1st Quarter 2018). (Note: Station SWNR2 has also been referred to as Station SWRN2; they are nevertheless the same station.) Staff's surface-water evaluation focuses on the surface-water monitoring data for these same LTSM stations, with data evaluated for all stations from 3rd Quarter 2012 to 1st Quarter 2019, whereas TMPA evaluated surface-water data from 3rd Quarter 2012 to 1st Quarter 2018. The approved LTSM plan requires that the LTSM stations be sampled for flow (Q), chloride ( $\text{Cl}^-$ ), pH, TDS, TSS, Fe, Mn, and  $\text{SO}_4^{2-}$ . Staff performed a comparative analysis for parameters TDS,  $\text{SO}_4$ , Cl, and pH because these parameters have Stream Segment criteria maximums or ranges. From the data evaluated in both Staff's TA and TMPA's application, the following are indicated:

- (A) Regarding monitoring stations on Gibbons Creek, a comparison of the surface-water-quality data collected from upstream (undisturbed) Station SWGC1 to data from downstream (disturbed) Station SWGC2 indicates congruence for the pH and average concentrations of Fe and Mn for the POR. For the parameters TDS, flow-weighted TDS, TSS,  $\text{SO}_4^{2-}$ , and  $\text{Cl}^-$  concentrations, the calculated averages are significantly higher for the downstream LTSM Station SWGC2 than for the upstream LTSM Station SWGC1.

- (i) TMPA and Staff both evaluated TDS concentrations for waters obtained from the Gibbons Creek stations:

- a) The baseline average TDS concentration for upstream Station SWGC1 is 489 mg/L. The post-baseline POR average TDS concentration for Station SWGC1 derived from data provided in the Application is 342 mg/L. The highest observed value for TDS concentration for this station for the post-baseline POR is 868 mg/L. The maximum and average TDS concentrations for the last 5½ years of the evaluated POR (September 2012 to March 2019) are 774 and 343 mg/L, respectively, indicating a decrease from the baseline period. (Staff TA, p. 19).
- b) The baseline average TDS concentration for downstream Station SWGC2 is 503 mg/L, very similar to the upstream station. The post-baseline POR average TDS concentration for Station SWGC2 is 514 mg/L. The highest TDS concentration observed for the post-baseline POR for this station is 2,190 mg/L, occurring on September 20, 2007. From data provided in the Application, the maximum and average TDS concentrations for the last 5½ years of the evaluated POR for Station SWGC2 are 1,690 and 514 mg/L, respectively, indicating little change from the baseline period, but somewhat higher than the post-baseline upstream station average.
- c) As represented from the data provided in the Application, flow volume in Gibbons Creek has exhibited a median baseline discharge of about 8.8 cubic feet per second (cfs) and a median discharge of 12.8 cfs over the last 5½ years of the POR. A significant increase in flow volume of approximately 45 percent in the downstream Station SWGC2 compared to the upstream Station SWGC1 has occurred even though the constructed permanent ponds have served to attenuate the discharge over time.
- d) Staff anticipates a reduction in TDS concentration as runoff travels further downstream. The flow-weighted average TDS concentration (460 mg/L) at downstream LTSM Station SWGC2 somewhat exceeds

the TDS concentration predicted in Staff's CHIA (178 mg/L) at Navasota River Basin Mass-Balance Point No. B (USGS Gauging Station No. 08110500), but is less than the maximum annual average concentration for Stream Segment No. 1209 (600 mg/L) and Stream Segment No. 1202 (750 mg/L). The volume of this flow in comparison to that of the Navasota River is small. This flow-weighted average TDS concentration is also expected to remain near the level observed in recent water samples and within or lower than the average flow-weighted TDS concentrations observed during the baseline surface-water period for the same station. Staff's TA supports a conclusion that water quality in comparison to the approved surface-water Probable Hydrologic Consequences (PHC) determination has been protected.

- (ii) Sulfate ( $\text{SO}_4^{-2}$ ) concentrations on Gibbons Creek were evaluated for data collected between September 2012 and February 2018. The flow-weighted average  $\text{SO}_4^{-2}$  concentration at downstream LTSM station SWGC2 (156 mg/L) has been higher than Stream Segment No. 1209, Navasota River criterion (100 mg/L) and lower than Stream Segment No. 1202, Brazos River below Navasota River criterion (200 mg/L). The highest observed sulfate concentration (682 mg/L) for downstream LTSM Station SWGC2 during this period occurred on August 8, 2017. Although higher than the Stream Segment No. 1209 (Navasota River) criterion, available early data for this station (2<sup>nd</sup> Quarter 1981 through 1<sup>st</sup> Quarter 1983) show that the flow-weighted average  $\text{SO}_4^{-2}$  concentration during that period, prior to mining of most of the proposed areas of release, was 141 mg/L, and had therefore already exceeded the Navasota River criterion prior to permitted mining activities. For the upstream Station SWGC1, the flow-weighted average  $\text{SO}_4^{-2}$  concentrations for early data and for the period September 2012 and February 2018 have remained much lower, below the Navasota River criterion, but mirror the relative changes seen for TDS concentrations (i.e., early data TDS and  $\text{SO}_4^{-2}$  averages 281 mg/L and 62 mg/L, respectively, and September 2012 to February 2018 TDS and  $\text{SO}_4^{-2}$

averages 230 mg/L and 52 mg/L, respectively). The same relationship holds true for downstream Station SWGC2. The data do not indicate degradation of Gibbons Creek or Navasota River surface waters.

- (iii) Chloride ( $\text{Cl}^-$ ) concentrations on Gibbons Creek were evaluated for data collected between September 2012 and February 2018. The flow-weighted average  $\text{Cl}^-$  concentration at downstream LTSM station SWGC2 (80 mg/L) is lower than Stream Segment No. 1209, Navasota River criterion (140 mg/L) and lower than Stream Segment No. 1202, Brazos River below Navasota River criterion (300 mg/L). The highest observed chloride concentration (289 mg/L) for downstream LTSM Station SWGC2 during this period occurred on August 8, 2017.
- (iv) TMPA and Staff evaluated the Gibbons Creek pH data collected between September 2012 and February 2018. The flow-weighted mean pH value at downstream LTSM station SWGC2 (7.7 s.u.) is within the criterion range for both Stream Segment Nos. 1209 and 1202 (6.5 - 9.0 s.u.). The lowest observed pH (6.8 s.u.) and highest observed pH (8.1 s.u.) at downstream LTSM Station SWGC2 during this period occurred on December 5, 2017, and July 19, 2014, respectively.
- (B) Regarding monitoring stations on the Navasota River, a comparison of the surface-water-quality data collected from undisturbed Station SWNR1 to data from disturbed Station SWNR2 indicates that the pH and the average concentrations of  $\text{SO}_4^{2-}$ ,  $\text{Cl}^-$ , Mn, and flow-weighted TDS for the POR are similar. The calculated averages for TDS, TSS, and Fe concentrations are significantly higher for the downstream Station SWNR2 than for the upstream Station SWNR1.
- (i) TMPA and Staff both evaluated TDS concentrations for waters obtained from the Navasota River stations:

- a) The baseline average TDS concentration for upstream Station SWNR1 is 203 mg/L. The post-baseline POR average TDS concentration for Station SWNR1 derived from data provided in the Application is 221 mg/L. The highest observed value for TDS concentration for this station for the post-baseline POR is 766 mg/L. The maximum and average TDS concentrations for the last 5½ years of the evaluated POR (September 2012 to March 2019) are 356 and 207 mg/L, respectively, showing essentially no change from the baseline period. (Staff TA, p. 19).
- b) The baseline average TDS concentration for downstream Station SWNR2 is 400 mg/L, approximately twice that of the upstream station. However, the post-baseline POR average TDS concentration for Station SWNR2 is 333 mg/L, a 17 percent reduction from the baseline average. The highest TDS concentration observed for the post-baseline POR for this station is 847 mg/L, occurring on October 27, 2010. From data provided in the Application, the maximum and average TDS concentrations for the last 5½ years of the evaluated POR for Station SWNR2 are 695 and 319 mg/L, respectively, indicating a decrease from the baseline period.
- c) As represented by TMPA in the Application, flow volume in the Navasota River estimated from USGS Station 08110100 data to yield a mean annual discharge of about 69 cfs. No additional data are available from which to establish a range for comparison.
- d) Staff anticipates a reduction in TDS concentration as runoff travels further downstream. The flow-weighted average TDS concentration (173 mg/L) at downstream LTSM Station SWNR2 is close to the TDS concentration predicted in the CHIA (178 mg/L) at Navasota River Basin Mass-Balance Point No. B (USGS Gauging Station No. 08110500), and is significantly less than the maximum annual average concentration for

Stream Segment No. 1209 (600 mg/L) and Stream Segment No. 1202 (750 mg/L). Further, this TDS concentration at LTSM station SWNR2 is expected to remain near the level observed in recent water samples for this station. Staff's TA supports a conclusion that measured water quality in comparison to the water-quality projection in the approved surface-water Probable Hydrologic Consequences (PHC) determination is consistent, and that the hydrologic balance has been protected.

- (ii) Sulfate concentrations on the Navasota River were evaluated for data collected between September 2012 and February 2018. The flow-weighted average  $\text{SO}_4^{2-}$  concentration at downstream LTSM station SWNR2 (14 mg/L) is lower than the criteria for both Stream Segment No. 1209, Navasota River (100 mg/L) and Stream Segment No. 1202, Brazos River below Navasota River (200 mg/L). The highest observed  $\text{SO}_4^{2-}$  concentration (80 mg/L) for downstream LTSM Station SWNR2 on the Navasota River during this period occurred on February 28, 2015.
- (iii) Chloride concentrations on the Navasota River were evaluated for data collected between September 2012 and February 2018. The flow-weighted average  $\text{Cl}^-$  concentration at downstream LTSM station SWNR2 (80 mg/L) is lower than Stream Segment No. 1209, Navasota River criterion (140 mg/L) and lower than Stream Segment No. 1202, Brazos River below Navasota River criterion (300 mg/L). The highest observed chloride concentration (289 mg/L) for downstream LTSM Station SWNR2 during this period occurred on August 8, 2017.
- (iv) TMPA and Staff evaluated the pH data collected between September 2012 and February 2018. The flow-weighted mean pH value at downstream LTSM station SWNR2 (7.8 s.u.) is within the criterion range for both Stream Segment Nos. 1209 and 1202 (6.5 - 9.0 s.u.). The lowest observed pH (7.2 s.u.) and highest observed pH (8.5 s.u.) at downstream

LTSM Station SWNR2 during this period occurred on December 6, 2016, and September 24, 2015, respectively.

- (C) TMPA provided a discussion of impacts to water quantity in Gibbons Creek and the Navasota River, stating that: "long-term reliable streamflow records were not available within the project area and vicinity; therefore, the stream-flow records available for the USGS Station 08110100, located on the Davidson Creek near Lyons, Texas were used to estimate average annual runoff from the project area. The drainage area monitored by this gauge is 195 square miles (124,800 acres). Mean monthly stream flow records in acre-feet from 1984 through 2014 were used to develop the long-term average flows shown in Table .146-3. The average monthly streamflows in acre-feet for this station were used to characterize the monthly runoff that may be expected to occur in the project area per acre of drainage area. The average annual runoff was calculated as 0.3991 acre-feet per acre or approximately 5 inches." [Application Section 4, *Hydrology Information*, unnumbered pages.] Staff concurs with this assessment, indicating that as stated in Staff's CHIA document, with respect to water quantity, the attenuation of storm runoff and increase in sustained flows in the Navasota River Basin will be insignificant when compared to the amount of storm runoff originating within the basin. [Staff TA, p. 25.]
- h. TMPA addressed the groundwater protection requirements of §12.348 (relating to Hydrologic Balance: Ground-Water Protection) through the submission of groundwater monitoring information for the spoil, overburden and underburden aquifers near or within the A1, B1/B2 and G1 Areas of Permit No. 26D, and a report containing its assessment of these data. The mine-area hydrostratigraphic components and LTGM wells, as summarized from information in the Application and Staff's TA, are listed in the following table:



Hydrogeologic Unit	Spoil/Sand Unit			LTGM Well(s)
	A1 Mine Block	B1/B2 Mine Block	G1 Mine Block	
Spoil	A1 Mine Spoil			MAMA1
Overburden	4525			MQ114; ME444
	4500 Lignite Zone			
Overburden	3525			MQ113; ME47A
	3500 Lignite Zone			
Underburden	3325			MQ115; ME44P
Spoil		B1 Mine Spoil		MAMB5
Spoil		B2 Mine Spoil		MAMA4
Overburden		3055		M0AB4-R
Overburden		2855		M0AB1
Overburden		2755		MOS13-R
	2500 Lignite Zone			
Underburden		2355		M0BB2
Underburden		Unknown		MBUTT
Spoil			G1 Mine Spoil	MAMG1
Overburden			2275	MB29P
	2200 Lignite Zone			
Underburden			1975	MB37B

- i. The first water-bearing sand underlying the lowest lignite zone mined in each mine block area is identified and monitored (underburden wells), as are one or more significant sand units overlying the mined seam in each mine block area (overburden wells).
- j. TMPA's initial submittal included groundwater monitoring data for the POR through 2<sup>nd</sup> Quarter 2017 for existing approved long-term groundwater monitoring (LTGM) wells. Well locations are depicted on Exhibit 4, *Water & Structure*, Sheets 1 through 5, in Supplement No. 7, and/or on Exhibit WS1, *Watershed*, in Supplement No. 5. Staff reviewed the quarterly LTGM results submitted to the Commission subsequent to the submittal of the release application and concluded that the data have shown no significant deviation in water levels or water quality from the data provided in the initial application. TMPA assessed chemical parameter changes over time for each LTGM

well but did not provide a comparison of the postmining conditions to the premining conditions established via the baseline data in the approved permit. Staff conducted this needed assessment in its review of the Application.

- k. Mining occurred in the A1 Mine Block from 1990 to 1992. This block has been monitored in two separate subareas, northeast and southwest, with each subarea containing two overburden wells completed in two separate sand units (4525 Sand and 3525 Sand) and one underburden well (3325 Sand), plus a single spoil monitoring well installed in the northeast subarea of the mine block. In the northeast subarea of the A1 Mine Block, monitoring data are collected for overburden LTGM wells ME444 and ME47A, underburden well ME44P, and spoil monitoring well MAMA1. In the southwest subarea are installed the MQ-series wells, consisting of overburden wells MQ113 and MQ114, and underburden monitoring well MQ115.
- i. Water levels for A1 Mine Block LTGM wells have all reached a steady state. Spoil LTGM well MAMA1 shows a steady rise peaking in early 2010 and a slow water-level decline and leveling as it seeks equilibrium. The overburden and underburden LTGM wells all show parallel water-level fluctuations representing minor adjustments of the static system.
- ii. Staff notes an anomalous discrepancy regarding overburden LTGM well ME444. The well was replaced in 1992, presumably completed in the same stratigraphic unit. However, significant changes in water quality occurred, clearly distinguishable as an abrupt change on Staff's graphical Piper diagram of the chemical constituents. This abrupt change in water chemistry is a diagnostic indicator that the original well and the replacement well were not completed in the same sand unit.
- iii. For underburden LTGM Well ME44P, the median TDS concentration for the period of record (POR) is 565 mg/L, ranging from 8 to 748 mg/L. For overburden LTGM Wells ME47A and MQ114, TDS concentrations have remained relatively static, ranging from 29 to 4,350 mg/L and 46 mg/L to 1,130 mg/L, respectively, with median TDS concentrations of 393 mg/L and 506 mg/L, respectively.

- iv. Staff has noted that the water chemistry of overburden LTGM Well MQ113 shows an abrupt change that has not been adequately explained by the permittee; however, Staff ultimately does not note any substantive concern in its TA regarding this change in chemistry. TMPA and Staff both indicate that, irrespective of the abrupt change, the present TDS concentrations remain well below the baseline levels.
- v. Spoil LTGM Well MAMA1 was installed to monitor the saturation of the postmine spoil. Spoil in the A1 Mine Block has exhibited stable water levels that are generally about five feet higher than the static water levels in the adjacent native sand.
- vi. Underburden LTGM Well MQ115 was not installed until 1992. The trend of the TDS concentrations shows a steady increase from initial concentration near 560 mg/L in 1993 to 800 mg/L in 1999, and the most recent measurement of 1,220 mg/L in 2016. Staff concludes that these levels are nonetheless comparable with typical baseline concentrations observed in the deeper overburden sands.
- vii. Staff also evaluated pH for sampled waters within the LTGM wells of the A1 Mine Block. The pH measurements for water in underburden LTGM well ME44P has decreased from values in excess of 8 s.u. in the baseline to about 7.5 s.u. in the postmining period. Overburden LTGM well MQ113 water has exhibited a static pH between 7 and 8 s.u. for the POR, while overburden LTGM wells MQ114 and ME444 both exhibit significant decreases in pH, from values of 6 to 7.5 s.u. in the baseline period to acidic levels between 4.5 and 6 s.u. Despite these discernable trends, there appears to be no correlation between TDS concentration and pH in the A1 Mine Block, and neither Staff nor TMPA note any concerns regarding pH in this mine area.
- l. Mining in the B1/B2 Mine Blocks occurred from 1982 to 1990. The two blocks together represent 2,156 acres. Groundwater analyses and measurements in the B1/B2 Mine Block have been obtained from two spoil LTGM wells (Well MAMA4 in the former B2 Mine Block, and Well MAMB5 in the B1 Mine Block), three overburden LTGM wells (Wells M0AB4-R, M0AB1, and MOS13), one underburden LTGM well (Well M0BB2), and a LTGM well completed in an unidentified underburden interval (Well MBUTT).

- (A) Available water-level data from the two spoil LTGM wells in the B1/B2 Mine Block indicate that these wells have attained a static water level. Only three wells, M0AB1, M0BB2 and MOS13 had any records in the baseline period, all showing slightly lower static water levels in the baseline period when compared to the present levels. Staff indicates that this may reflect climatic variation rather than a purely hydrologic change. Nevertheless, Staff notes no concerns regarding water level in the B1/B2 Mine Block in the postmine period.
- (B) Staff's evaluation of monitoring data for the B1/B2 Mine Block includes a Piper diagram of the water chemistry and shows that shallower groundwater in two defined overburden units show a single chemical profile. This profile is also indicative of unknown interval Well MBUTT and spoil LTGM Well MAMB5. Staff's analysis indicates that the overburden 2855 Sand and especially the underburden 2355 Sand have profiles which suggest that these strata may be contributing some water to the spoil monitored by spoil LTGM Well MAMB5.
- (C) Staff's analysis indicates that based on the chemical composition of the water, spoil LTGM Well MAMA4 is almost surely in contact with the 3055 Sand and/or the 2755 Sand. The closest well to spoil LTGM Well MAMA4 is the underburden LTGM Well M0BB2, and the underburden waters in the area of this well have likely provided contributions for recharge to the spoil.
- (D) Monitoring well M0BB2 was installed originally in 1980 as an underburden well. In that baseline monitoring data are available, Staff postulates that this well was mined through and replaced in 1985 or 1986; however, no clear record of this occurrence was identified. In any case, the postmining water-quality monitoring record agrees with the baseline data for this well in every parameter.
- (E) Staff indicates that overburden LTGM well MOS13 was replaced in 2003 by MOS13-R at a nearby location. TDS concentrations in the well increased dramatically from 2003 until it stabilized in 2015. Overburden LTGM well M0AB4 was also replaced with M0AB4-R in 2003. Documentation for well abandonment

of these wells can be found in Attachment 3 of Supplement No. 3, but otherwise not mentioned by TMPA in its groundwater evaluation. This new well is located upslope of the original well, and the time frame for establishing the replacement well is clear from discernable changes in water level, TDS, and especially pH. The pH documented for well M0AB4-R is, irrespective of a single outlier measurement of 6.6 s.u. in September 2018, very low, with the subsequent sample analysis again very acidic at a pH of 4.13 s.u. Staff has addressed this issue further as described below. [Finding of Fact No. 19(g)(iv), *infra*].

- I. Mining of the G1 Mine Block, as summarized in Staff's TA, occurred from 1988 to 1992 over an area of approximately 902.8 acres. Staff and TMPA evaluated baseline conditions from 1985 to the end of 1987. Whether due to the lack of data or by chance, Block G1 has the fewest issues with regard to the proposed release. As determined relative to water chemistry, baseline conditions are nearly the same as those in undisturbed areas. Static water levels have increased by about 10 ft in the underburden and decreased by approximately 5-10 ft in the overburden. The spoil-mass water levels have reached a static level, and pH ranges are reasonable. Spoil LTGM Well MAMG1 exhibits elevated TDS concentrations, but the water quality indicated from these monitoring data do not pose a problem for release because groundwater in the spoil is not considered to be a usable resource.
- m. In its concluding discussion of its conclusions regarding TMPA's assessment of these data to support groundwater protection, Staff provided a detailed summary of the LTGM well data with respect to its success in demonstrating that the predictions of the approved probable hydrologic consequences (PHC) determination have been met. Staff identified an issue related to the adequacy of the approved PHC determination, in that it does not contain any valid predictions, only post-baseline observed conditions. TMPA does not have in Permit No. 26D an approved predictive PHC determination, nor a comprehensive description of baseline conditions, because the baseline monitoring for Area B1/B2 is very limited. Nevertheless, Staff indicates that, in its judgement, the long postmine monitoring period has served as additional protection to the environment and, therefore, Staff has chosen as an exception, to

alternatively evaluate the LTGM data in light of baseline studies performed in the Peach Creek area adjacent to the permit area. The Peach Creek area is in some places less than a mile away from the reclaimed mine areas but itself was never mined. The baseline period for which groundwater data were collected in the Peach Creek area was in 1989 and 1990, with surface-water data available for the period from 1985 to 1994.

19. In Supplement No. 3, TMPA submitted a summary paper of the Peach Creek baseline study that it presented at the 30<sup>th</sup> Annual Surface Mine Reclamation Workshop held in College Station, Texas, on October 1-2, 2009. In the study, naturally occurring water with pH 3.5 s.u. was reported; a value that is close to what is seen in overburden LTGM Well M0AB4-R. Staff believes that it is possible that the relocated well is showing natural conditions. For both spoil LTGM wells in this mining block (MAMA4 and MAMB5), and also the two other spoil LTGM wells in the proposed release area (MAMA1 and MAMG1), the pH is significantly higher than the measurements from overburden LTGM Well M0AB4-R. This comparison suggests that the spoil mass is not the main source of the acidity seen in the native overburden in some portions of the mine blocks.
20. Based on its analysis of the water levels and water-quality parameters from the LTGM data provided, and from its comparison with the assessment in the Peach Creek study, Staff concurs with TMPA's assessment that the groundwater hydrologic balance has been protected as required at §§12.313(a)(3) and 12.348, that the data provided by TMPA for the 4,292.6 acres proposed for Phase III release meet the ground-water protection requirements of §12.348, that the re-established postmining groundwater system is adequate for the proposed postmining uses of the acreage requested for Phase III release, and that postmine water quality is deemed comparable to that which may have been present prior to mining the native sediments for which mining is now complete.
21. LTGM wells are located within the proposed release area. Three are spoil wells (MAMA4, MAMB5, and MAMG1), one is an underburden well completed through the spoil (MOBB2), and two are overburden wells (MB29P and M0AB4-R). All six wells are located on tracts owned by TMPA. TMPA requested by letter to Staff dated November 6, 2019 (letter copy provided in Supplement No. 7) to transfer these six wells to itself as landowner. Staff

confirmed in TA Addendum No. 2 that, by letter dated November 12, 2019, these six wells were appropriately transferred to TMPA as per its request by letter dated November 6, 2019. The six wells have been transferred to the landowner (TMPA) and remain available for quarterly sampling. Evaluation of the data obtained from these wells is described in Finding of Fact No. 19(g), *supra* [§12.333].

22. The areas requested for release of reclamation obligations are capable of sustaining the postmining land uses. Monthly inspections and Staff's Inspection Report of its inspection on October 16, 2018, demonstrate that the land has been reclaimed to and managed in accordance with the approved postmining land uses.
23. Pursuant to §12.313(a)(3), the Commission may release all of the bond attributable to the 217.0 acres for which Phase I and II release are requested, except for that amount necessary to maintain vegetation and conduct erosion repairs, and the entire remaining bond portion for the 4,292.6 acres proposed for Phase III release, upon a determination that reclamation has been successfully completed in accordance with the terms of the approved permit and the requirements of the Act and the Regulations. As a result of being granted Phase I and II release on 217.0 acres, Phase I, II and III release on 159.9 acres, Phase II and III release for 3.2 acres, and Phase III release on 4,129.5 acres, TMPA is eligible to reduce the bond amount for Permit No. 26D. In its TA, as reaffirmed in TA Addendum No. 2, Staff calculated an eligible bond reduction amount of \$7,514,910.44 according to the reclamation cost estimate (RCE) approved administratively by letter dated March 11, 2019, in Revision No. 43. The Commission adopted this same updated RCE when it accepted the current bonds for the permit by Order dated August 20, 2019 [Docket No. C19-0021-SC-26-E at Finding of Fact No. 3], accepting an amended Letter of Credit bond in an aggregate amount of \$11,400,000. Therefore, the revised bond amount calculated in the TA for the Application, as amended, is accurate. However, as stated by Staff in its TA, a specified reduction amount is only an estimate and is provided for illustration purposes only. The actual amount of any reduction would be calculated based on the costs for reclamation when a reduction of the bond is requested by TMPA; therefore, ensuring that the proposed bond amount remains sufficient to cover the cost of outstanding reclamation work. Given that TMPA does not request an adjustment to the approved bond in the Application, the accuracy of the amount of the reduction contained

in the TA is inconsequential, as any eligible reduction amount based on the current reclamation cost estimate would be superseded once the costs for reclamation are calculated at a future date when TMPA requests a reduction of the bond. Additionally, since the Commission is not required under the Act or the Regulations to determine an eligible bond reduction amount when approving an application for release, this Order prescribes that TMPA is eligible to reduce the amount of bond attributable to the aggregate 4,509.6 acres granted full or partial release, but does not specify the amount of the reduction.

24. All acres requested for release were marked in the field to distinguish them from active mining and reclamation areas.
25. TMPA and Staff, the only parties to the proceeding, filed waivers of the preparation and circulation of a proposal for decision. The proposed order was circulated to the parties with opportunity for comment.
26. Open meeting notice has been posted for Commission consideration of this application in accordance with Tex. Gov't Code Ann. CH. 551 (Vernon Supp. 2019).

### **CONCLUSIONS OF LAW**

Based on the above Findings of Fact, the following Conclusions of Law are made:

1. Proper notice of application and notice of consideration by the Commission has been provided for this request for release of reclamation obligations.
2. No public hearing was requested, and none is warranted.
3. TMPA has complied with all applicable provisions of the Act and the Regulations regarding notice for Commission jurisdiction to attach to allow consideration of the matter.
4. TMPA has complied with all applicable provisions of the Act and the Regulations for the acreage requested for release as set out in the Findings of Fact.



5. The Commission may approve a release an aggregate 4,509.6 acres, with 217.0 acres for Phase I and II, 159.9 acres for Phase I, II, and III, 3.2 acres for Phase II and III, and 4,129.5 acres for Phase III only, as set out in the above Findings of Fact and these Conclusions of Law.
6. Pursuant to the Commission's authority for inspection and evaluation of release applications, the Commission may order that TMPA continue marking the area approved for release so that Staff mapping, and tracking will be efficient.

**IT IS THEREFORE ORDERED BY THE RAILROAD COMMISSION OF TEXAS** that the Findings of Fact and Conclusions of Law in this Order are adopted;

**IT IS FURTHER ORDERED** that release of an aggregate 4,509.6 acres, with 217.0 acres for Phase I and II, 159.9 acres for Phase I, II, and III, 3.2 acres for Phase II and III, and 4,129.5 acres for Phase III only is hereby approved;

**IT IS FURTHER ORDERED** that all areas released from reclamation obligations shall remain clearly marked in the field with permanent boundary markers maintained to distinguish these areas at all corners and angle points from active mining and reclamation areas in accordance with this Order;

**IT IS FURTHER ORDERED** that the current bond remains in effect in accordance with its terms until a replacement bond is approved by the Commission;

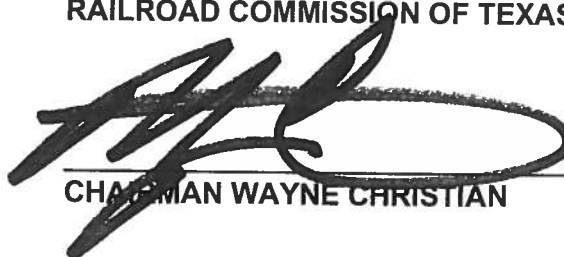
**IT IS FURTHER ORDERED** TMPA is eligible to reduce the amount of bond for the permit by the amount that is attributable to the 4,509.6 acres granted full or partial release in this Order;

**IT IS FURTHER ORDERED** that the Commission may vary the total amount of bond required from time to time as affected land acreage is increased or decreased or where the cost of reclamation changes; and

**IT IS FURTHER ORDERED** by the Commission that this order shall not be final and effective until 25 days after the Commission's Order is signed, unless the time for filing a motion for rehearing has been extended under Tex. Gov't Code §2001.142, by agreement under Tex. Gov't Code §2001.147, or by written Commission Order issued pursuant to Tex. Gov't Code §2001.146(e). If a timely motion for rehearing is filed by any party at interest, this order shall not become final and effective until such motion is overruled, or if such motion is granted, this order shall be subject to further action by the Commission. Pursuant to Tex. Gov't Code §2001.146(e), the time allotted for Commission action on a motion for rehearing in this case is 100 days from the date the Commission Order is signed.

**SIGNED** on January 14, 2020.

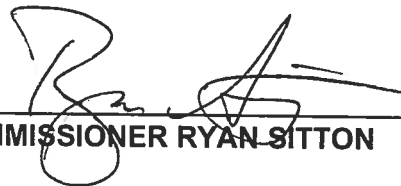
**RAILROAD COMMISSION OF TEXAS**



**CHAIRMAN WAYNE CHRISTIAN**



**COMMISSIONER CHRISTI CRADDICK**



**COMMISSIONER RYAN SITTON**

**ATTEST:**



**Secretary, Railroad Commission of Texas**