

RAILROAD COMMISSION OF TEXAS

HEARINGS DIVISION

**SURFACE MINING DOCKET NO. C17-0016-SC-58-C
LUMINANT MINING COMPANY LLC
APPLICATION FOR PERMIT RENEWAL/REVISION
MARTIN LAKE LIBERTY MINE, PERMIT 58
RUSK COUNTY, TEXAS**

ORDER APPROVING APPLICATION FOR RENEWAL/REVISION

Statement of the Case

Luminant Mining Company LLC (Luminant), 6555 Sierra Drive, Irving, Texas 75039, has applied to the Railroad Commission of Texas (Commission) for renewal/revision of its surface coal mining and reclamation permit for its Martin Lake Liberty Mine, Permit No. 58, located in Rusk County, Texas. The application was filed pursuant to the Texas Surface Coal Mining and Reclamation Act, TEX. NAT. RES. CODE ANN. CH. 134 (Vernon 2011 & Supp. 2018) (Act), and the "Coal Mining Regulations," Tex. R. R. Comm'n, 16 TEX. ADMIN. CODE CH. 12 (West 2018) (Regulations).

The Martin Lake Liberty Mine is located in the northeastern portion of Rusk County. The Commission approved the initial application for the mine and issued Permit No. 58 by Order dated December 11, 2012. This application for renewal/revision was declared administratively complete by the Director, Surface Mining and Reclamation Division (SMRD or Staff) and transferred to the Hearings Division on June 12, 2017. Public notice and notice to landowners and state and federal agencies, with opportunity to comment, were provided. No public hearing on the application was requested.

Staff reviewed the application for compliance with the Act and Regulations, and prepared a Technical Analysis (TA) document dated September 6, 2018, followed by a Technical Analysis Addendum (TAA) dated December 11, 2018. Technical review of the application, supplements, Staff analyses, and other filings by the parties reflect no outstanding deficiencies. Staff recommends that the five permit provisions included in the December 11, 2012 Order approving Permit No. 58 be withdrawn because they have either been incorporated into the operations or reclamation plans or have been fulfilled and are no longer applicable. Staff recommends the adoption of five new permit provisions for this permit renewal. Based on the record in this docket, including the supplemented application and Staff's review, the Administrative Law Judge recommends that the application be approved in accordance with the Findings of Fact and Conclusion of Law, that current Permit Provisions 1-5 be deleted, that Staff's proposed new Permit Provisions, renumbered 1-5 (stated in Appendix I to this Order) be adopted, along with Staff's proposed soil monitoring plan (Appendix II), and the issuance of Permit No. 58A. Luminant and Staff are the only parties to the proceeding, and are in agreement with this Order, and have filed waivers of the circulation of a proposal for decision. No exceptions were filed.

FINDINGS OF FACT

1. On May 31, 2017, Luminant submitted its application made up of three volumes for renewal/revision of its surface coal mining and reclamation permit for the Martin Lake Liberty Mine, Rusk County, Texas. SMRD received the application on June 1, 2017. On June 12, 2017, the Director of SMRD declared the application administratively complete and filed it with the Hearings Division for docketing.
2. The application consists of the three main volumes and three supplements and is presented as a "Permit Renewal by Reference" application, in that it contains the updated and most current proposals for consideration and when combined with the original 15-volume permit application, is considered the "complete" permit application. By letter dated October 9, 2017, Staff filed one comment letter listing application deficiencies and providing non-substantive comments (hereinafter, CL1). By letter dated February 27, 2018, Luminant filed its first supplement (hereinafter, SD1) in response to CL1. Staff filed its Technical Analysis (TA) by letter dated September 6, 2018, which noted certain remaining deficiencies. By letter dated November 12, 2018, Luminant filed its second supplement (hereinafter, SD2) in response to the TA. In response to an email received by Luminant from Staff on November 28, 2018 in which Staff described remaining outstanding application deficiencies, Luminant filed its third supplement (hereinafter, SD3) by letter dated December 6, 2018. Staff filed one TA addendum (hereinafter, TAA) by letter dated December 11, 2018. Staff's TAA indicates that Luminant has satisfactorily addressed all of Staff's enumerated deficiencies with Commission approval of the Staff-recommended permit provisions (Appendix I to this Order). Luminant, by letter dated January 2, 2019, stated that while it believes Staff's proposed new permit provisions to lack strong technical or regulatory merit, it accepts their inclusion, without prejudice, in order to facilitate the timely approval of the application. Staff recommends that the five permit provisions included in the December 11, 2012 Order approving Permit No. 58 be withdrawn because they have either been incorporated into the operations or reclamation plans or have been fulfilled and are no longer applicable.
3. The permit area contains 3,866 acres. No additional acreage is proposed to be added. The area to be mined during the proposed renewal term (2018-2022) is approximately 817 acres in size and is located in Rusk County, Texas. The proposed permit renewal area is located about six miles southwest of the City of Tatum, Texas, and 13 miles east-northeast of the City of Henderson, Texas. It is located along the western side of the Martin Lake Reservoir approximately one mile north of the intersection of FM 1251 and FM 2658, approximately seven miles southwest of Tatum, Texas and approximately nine miles west of Beckville, Texas along various property boundaries. The permit area is located west of and adjacent to the existing Martin Lake Mine, Permit No. 4L. Surface mining activities are expected to continue through the year 2027, subject to Commission approval of subsequent permit renewals and revisions as appropriate.
4. The application was properly filed at least 180 days prior to the projected implementation of the renewal/revision [§12.108(a)(5)].
5. The application, as supplemented, was appropriately verified by an authorized representative of Luminant and was processed pursuant to the Act, the Regulations, the Administrative Procedure Act, TEX. GOV'T CODE ANN. CH. 2001 (APA), and "Practice and

Procedure,” Tex. R.R. Comm’n, 16 TEX. ADMIN. CODE §1.1 *et seq.* Notice of the application was published once each week for four consecutive weeks in the *Henderson Daily News*, a newspaper of general circulation in the locality of the surface mining and reclamation operations, on November 8, 15, 22, and 29, 2017. Luminant filed proof of publication of notice by letter dated January 11, 2018. The notice of application contains all information required by §134.058 of the Act and §12.207(a) of the Regulations. The information contained in the supplements was for the purpose of supplementation, clarification, revision, or correction of data and information addressed in sections of the administratively complete application, and to address comments and questions of parties. The application and all supplements were appropriately placed on file for public inspection. The information contained in the supplemental documents, for the purposes of approval of this application as set out in this Order, does not constitute a material change to an application for which additional notice must be provided under §12.226 of the Regulations.

6. Copies of the application, with supplements, were filed with and available for public inspection at the offices of the Rusk County Clerk and the Commission’s main office in Austin, Texas.
7. The Commission mailed a complete notice of application on November 21, 2017 to landowners within and adjacent to the proposed permit area. No landowners submitted comments/inquiries and/or protests regarding the application or requested a hearing, and no hearing was held.
8. On November 21, 2017, the Commission placed a complete notice of the application in the mail to the Texas and Federal agencies listed in §12.207 of the Regulations and to local government agencies. One state agency, Texas Parks and Wildlife Department (TPWD), filed comments with the Commission by letter dated August 29, 2017. Following receipt of SD1, TPWD indicated in a March 22, 2018 email to SMRD that SD1 adequately addressed TPWD’s comments contained in its August 28, 2017 letter. TPWD’s comments regarding the proposed renewal/revision are addressed in Finding of Fact No. 33.
9. Luminant submitted the required application fee of \$3,000.00 [§12.108(a)(3)]. Luminant has met the general requirements for format and contents of the application, as supplemented. Form SMRD-1C was filed, and it contains information required by §§12.116-12.154 [§12.107(a)]. In the application, as supplemented, the information is presented clearly and concisely and is supported by appropriate references [§12.107(b)]. Technical data has been submitted as required [§12.107(c) and (e)], and the data was prepared by or under the direction of professionals in the subjects analyzed [§12.107(d)]. Maps and plans were prepared as required [§12.107(f)]. A responsible official of the applicant verified the application, as supplemented, under oath that the information is true and correct to the best of the official’s information and belief [§12.107(g)].
10. Section .116 of the application, as supplemented, includes all information required to show organizational information, ownership interests, control, and compliance information, including other Luminant mining permits and identifications.
 - (a). Luminant owns certain tracts or is the lessee of certain land tracts located within the proposed permit area. Luminant’s former parent company, Texas Competitive Electric Holdings Company LLC, emerged from bankruptcy on October 3, 2016. Luminant provided its resident agent, CT Corporation, 350 N. St. Paul Street, Dallas, Texas 75201. Other identifying information was filed including the Mine

Safety and Health Administration identifying numbers and compliance information. Luminant, a Texas limited liability company, is now directly owned by Vistra Asset Company LLC. There have been numerous changes to Luminant's ownership and control information in connection with the bankruptcy emergence. Luminant has provided updated ownership and control information prior to the issuance of the 58A Permit. Information for notices of violation was updated (Appendix 116-D, SD1), as discussed below. In addition to Appendix 116-A and 116-B, Luminant has included Plate 116-1, the property ownership map, with tracts within and adjacent to the permit area identified by tract number. Tract ownership for tracts within the permit area are set out in Appendix B, and ownership of tracts adjacent to the permit area are set out in Appendix C. Appendix C also includes a description of the legal instrument by which Luminant claims right-of-entry, if any. Appendix E contains a table listing those tracts with lignite interests that have been severed from the surface estate. Appendix F includes lease holder information.

- (b). Luminant will continue to conduct mining operations on property it owns, on property owned by affiliates, and on property where a valid coal and lignite lease exists. Luminant does not propose any surface mining operations on any property for which it has not demonstrated a valid right-of-entry from the landowner. Information on the right-of-entry and property ownership is detailed in the application. Such information is described in Section .117 of the application as supplemented in SD1 and shown on the *Property Ownership Map*, Plate 116-1 located in Section .116 of the application, as supplemented. Luminant has described and identified documents to demonstrate a legal right to enter and begin surface mining and reclamation operations on all tracts proposed for disturbance during the proposed five-year renewal term.
- (c). Section .116 of the application as supplemented in SD1, includes identification of all tracts within and adjacent to the permit area and owners of all interests in those. Section .116, as supplemented in SD1, contains required compliance information, listing all violation notices received by the applicant in the three-year period preceding the date of the application. A table is provided in Appendix 116-E that lists tracts with severed lignite interests and associated information. Section .116 of the application includes all oil/gas leasehold and right-of-entry information for those property tracts proposed to be disturbed and/or mined during the permit term.
- (d). No tracts for which Luminant has right-of-entry are the subjects of pending litigation, and there are no interests in lands, options, or pending bids on interests held or made by Luminant on lands contiguous to the permit.
- (e). The information provided regarding violations and fee payment has been compared with the information contained in the Applicant Violator System (AVS) database and the AVS database has been updated as needed. The federal Office of Surface Mining Reclamation and Enforcement operates the AVS database to identify violators across the country. The AVS database has been queried to determine whether Luminant or any controller identified in the application or found in the database currently has any outstanding violations at coal mines owned or operated in the United States. The system also indicates whether Luminant or any controller is delinquent in the payment of abandoned mine land (AML) reclamation fees. A report of the findings resulting from a query of the AVS database is

provided in Appendix VI of Staff's TAA. No pending violations or non-payment of AML fees were found to exist.

11. The requirements of §12.118(a), (b), and (c) of the Regulations have been met.
 - (a). The permit area is not within an area designated as unsuitable for surface mining activities under §§12.75–.85 of the Regulations, and not within any area under study for designation in an administrative proceeding.
 - (b). Luminant does not claim an exemption under §12.118(b) provided for applicants having made substantial financial commitments prior to January 4, 1977.
 - (c). Luminant will not conduct surface mining activities within 300 feet of an occupied dwelling other than those owned by Luminant. Luminant does not propose to conduct mining in an area for which mining is prohibited or limited, except as otherwise approved by the Commission.
12. Section .119 of the application shows the number of acres anticipated to be affected during the permit term and over the life of the mine. This Section and updated Sections .125 and .139 include other details regarding the operation plan that are hereby approved.
 - (a). An updated list is included in Table 119-1 showing the yearly mined and affected acreages for the permit term (2018-2022) and for five years after the requested permit term (2023-2027). Luminant anticipates requesting subsequent permit renewals in five-year increments for the proposed permit area until surface mining activities have permanently ceased and the land has been reclaimed and released from bond. Due to the required five-year minimum between successful reclamation and release from bond, an additional five-year period will elapse subsequent to the reclamation of the final mining area.
 - (b). Table 125(a)-1 indicates that the following total acreage will be mined from the mine sub-areas N-Area and P-Area during the permit term (2018-2022), and from the auxiliary sub-area N-Area Aux. No. 2 in at least one future term:

Mining Area	Year	Mined Acres
N-Area	2018	136
N-Area	2019	91
N-Area	2020	93
N-Area Aux. No. 2	2023-2027*	63
P-Area	2018	131
P-Area	2019	125
P-Area	2020	88
P-Area	2021	124
P-Area	2022	29

*Denotes auxiliary subareas

Staff has summarized the acreages proposed for mining by mine year as follows (TA, p. 16):

Mining Year	Mined Acres	Affected Acres
2018	267	307
2019	216	248
2020	181	208
2021	124	143
2022	29	33
2023-2027*	63	72

*Denotes auxiliary subareas

Approximately 2.1 million tons of lignite will be mined annually during the five-year permit renewal/revision term (2018-2022). The total mine production from 2018-2022 is estimated to be 10,238,000 tons.

- (c). Luminant has described measures it will use to maximize recovery of all economically mineable seams in accordance with §§12.145(b)(6) and 12.356. Economically mineable seams are normally greater than one-half foot in thickness. The maximum normal pit widths are 150 feet; they may vary due to operational and safety considerations.
 - (d). Luminant does not propose blasting or auger mining in the operation plan.
 - (e). Luminant will obtain Commission approval prior to changes to the approved operation plan. Use of offset pits is a part of the operation plan to recover lignite when one end of a pit advances at a faster rate than the other end. Luminant's request for the use of angling of pits periodically to assist in the recovery of lignite at pit ends, in subcrop areas, voids, and where obstacles exist such as oil or gas wells is approved, provided that, in the case of changes that could occur due to offset pits or angling resulting in a change in postmine contours or pit alignment, Luminant will obtain Commission approval.
 - (f). As depicted on Plates 139-1-1 through 139-1-3 in the application, as supplemented, the mine blocks represent the overburden removal limit. The mining limits line on the mine plan and operations maps, as supplemented, represents the limit of mining-related disturbances. Land clearing by conventional land clearing methods will occur prior to mining. The proposed clearing distances are based on the longest annual advancement of mining in each mining area as measured from Plate 125-1. Luminant indicates that the distance cleared in advance of mining will typically be 2,700 feet in the N Area and 1,250 feet in the P Area. The maximum clearing distance during Year 5 of the permit term will be the width of the Year 5 mine block.
13. Requirements have been met for §12.125 for the size, sequence, and timing of mining areas. The area proposed for mining during the requested five-year permit renewal term

is a continuation of existing mining operations. The application reflects the mining area, year, and mined acres proposed for the permit term and for a five-year mine block thereafter [Table 125(a)-1]. The proposed Liberty Mine permit renewal area contains two mine areas (N and P Areas). Surface mining activities are expected to continue through the year 2027, subject to Commission approval of subsequent permit renewals and revisions as appropriate. A revised Life of Mine Plan is set out on Plate 125-1, which depicts existing permit boundaries and the mining limits lines.

14. Section .120 of SD2 contains an updated Certificate of Insurance indicating that the minimum requirements for public liability insurance have been met. The certificate dated July 30, 2018 states that the coverage is not less than \$500,000 (each occurrence) for bodily injury, and \$1,500,000 (general aggregate for designated location), and \$500,000 (each occurrence) for property damage, and \$1,000,000 (general aggregate limit for designated location). The insurance is provided by Associated Electric & Gas Insurance Services Limited, Policy No. XL5701602P, effective August 1, 2018 to August 1, 2019. The insurance includes damage to water wells. The policies include an endorsement that requires the insurance company to notify the Commission whenever substantive changes are made in a policy, including termination or failure to renew. Appropriate authorizations accompanied the certificate.
15. The application includes identification of other licenses and permits required in accordance with §12.121 to address all operations proposed for inclusion in the permit area, as supplemented in SD1 and SD2. These include permits or authorizations issued by the U.S. Army Corps of Engineers (USACE), the Texas Commission on Environmental Quality (TCEQ), the U.S. Mine Safety and Health Administration (MSHA), U.S. Environmental Protection Agency (EPA), the U.S. Fish & Wildlife Service (USFWS), and the TPWD. Dates of issuance of approved issued permits and registration activation dates are contained in the application. Copies of required permits were provided in the permit application, Appendices A-D, as supplemented in SD1 and SD2.
 - (a). Specific information was included for permits and registration numbers issued by the TCEQ [TPDES Permit No. WQ0002644000 authorizing treatment and discharge of wastes from Martin Lake/Oak Hill/Liberty Auxiliary Lignite Mining Areas, issued March 20, 2018; TPDES General Permit for Construction Stormwater Runoff No. TXR15XC68, effective June 4, 2013; and TCEQ Permit No. 105634 authorizing the construction and operation of lignite mining and handling plant located at Tatum, Rusk County, Texas, issued July 12, 2013 (Appendices A and B)].
 - (b). In addition, the information includes the USACE Fort Worth District permit for the Martin Lake Liberty Mine operations under the Clean Water Act, Permit No. SWF-2010-00276 (Appendix C).
 - (c). Luminant has provided the Mine Safety and Health Administration ID No. 41-04964.
 - (d). Also included is the Scientific Permit Number SPR-1215-262 issued to Peter F. Okonski by the Texas Parks and Wildlife, with names of persons authorized under the permit (Appendix D), and U.S. EPA hazardous waste identification number for the mine, TXD000821298.

- (e). Finally, the information includes the USFWS permits for the Martin Lake Liberty Mine operations permitting disturbance and removal of inactive bald eagle nests under Permit Nos. MB88924A-0, MB86886B-0, and MB86886B-1 (Appendix D).
16. Luminant has included information in compliance with §12.125(2) for a description and identification of cultural, historical, and archaeological resources listed on or eligible for listing on the National Register of Historic Places (NRHP) and known archaeological sites within the proposed permit area and adjacent areas. Luminant has provided information in accordance with §12.151 for measures to be used to prevent or minimize adverse impacts on such resources or on the interests of persons who have valid existing rights. Luminant included in Section .125 of its application, Cultural Resources Report, Rusk County, a summary of the cultural and historic resources within the permit area, with references to previous inventories and other information contained in the approved permit for the Martin Lake Liberty mining area, Permit No. 58. In 2012, an additional 45 acres were surveyed within the boundaries of the Martin Lake Liberty Mine since the issuance of approved Permit No. 58, and from December 2014 to January 2015, an additional tract that is 77 acres in size was surveyed. Two previously unrecorded sites were located. Table 11 (Pages 125(2)-331-332) lists the 59 sites previously evaluated prior to the approval of Permit No. 58 in addition to the two newly located sites by type and recommended NRHP eligibility status. Of these 61 sites, 40 sites (41RK12, 41RK34, 41RK609 through 41RK612, 41RK617 through 41RK620, 41RK624 through 41RK628, 41RK630, 41RK632, 41RK633, 41RK635 through 41RK644, 41RK647 through 41RK651, 41RK653, 41RK654, 41RK656, 41RK662, 41RK664, 41RK738, and 41RK739) have historic components, 17 sites (41RK13, 41RK14, 41RK16, 41RK26, 41RK27, 41RK29, 41RK32, 41RK187, 41RK614, 41RK615, 41RK616, 41RK621, 41RK623, 41RK629, 41RK646, 41RK652, and 41RK655) have prehistoric components, and 4 sites (41RK35, 41RK613, 41RK631, and 41RK663) have both historic and prehistoric components. In Table 11, Luminant indicates that consultant Blanton & Associates, Inc. has determined that all 40 sites with historic components are ineligible for NRHP inclusion, and no further work is recommended. Of the 17 prehistoric sites evaluated, 15 (41RK13, 41RK14, 41RK16, 41RK26, 41RK27, 41RK29, 41RK614, 41RK615, 41RK616, 41RK621, 41RK623, 41RK629, 41RK646, 41RK652, and 41RK655) are thought to lack sufficient data resources to warrant NRHP inclusion, and no further work is recommended. Blanton & Associates, Inc. also determined that the four sites with both historic and prehistoric components are ineligible for NRHP inclusion. The NRHP eligibility status of the remaining 2 prehistoric sites (41RK32 and 41RK187) remains undetermined. These two sites are outside the permit area; no mining activities are anticipated in their vicinity.
17. A description of hydrology and geology of the approved permit area has been included in the previous permit application. The application contains updates to Section .127 (SD1 and SD2). The Martin Lake Liberty Mine area is located within the Sabine River Basin and is drained by several unnamed tributaries of Martin Lake, which was formed by the impoundment of Martin Creek. Martin Creek flows into the Sabine River downstream of Martin Lake. Sediments of the Wilcox Group of Eocene age and Quaternary alluvium form most of the surface sediments in the proposed permit boundary. Minor occurrences of the Carrizo Sand Formation, which lies stratigraphically above the Wilcox Group, are also present along hilltops in the far north and southwest. Wilcox Group sediments in the proposed mine and adjacent area consist of interbedded very fine- to fine-grained quartz sands, silts, clays, and lignite with sporadic channel sands. Ground water is present to some degree in each of the shallow subsurface formations in the vicinity of the proposed mine and adjacent area. From core drilling, Luminant has identified and described the

overburden and underburden. The average core density at the proposed mine area is sufficient to meet the Commission's core density requirements. In the application, as supplemented, Luminant has included an updated Plate 127-1, *Geologic Cross Section Location Map*, figures 127-1 and 127-3 through 127-7 showing core density and geologic cross sections, and Appendix 127-D containing the geophysical logs for the five new geologic cross sections. The information provided is sufficient to represent the approved permit area (TA).

18. Groundwater information has been included in Section .128 of the application sufficient to characterize the permit area and surrounding area. Luminant provided an updated summary of water well inventory results for the area inside and within one mile of the permit area in Section .128, Table 128-6. Figure 128-3 (SD2) shows updated water well locations. Updated oil and gas wells within the permit boundary are shown on Figure 128-4 (SD2) and listed in Appendix 128-E. This information and references to the approved permit, detailed in Staff's TAA, pp. 16-17, adequately identify the location of the information required by §§12.126-12.129 of the Regulations, as updated.
 - (a). The approved permit includes baseline maps and studies. No new baseline groundwater data were collected. The primary aquifers in the region are the thick sand units within the deeper portions of the Wilcox Group. These units generally outcrop in belts that extend in a northeasterly direction across the general area and dip gently northwest towards the axis of the East Texas Embayment. The groundwater hydrology of the proposed permit area does not differ greatly from that of Luminant's currently approved adjacent Permit No. 4L, the Martin Lake Mine located to the east and north of the proposed mine area.
 - (b). The approved permit includes information for monitoring well drilling and installation techniques construction, logs, and summary forms.
 - (c). In the approved permit, groundwater investigations are summarized with wells depicted on Figure 128-1 and listed in Table 128-2. Aquifer tests have been summarized in Table 128-5 and Appendix 128-C of the approved permit. On Figures 128-5, 6 and 7 of the approved permit, Luminant adequately characterized the nature of the potentiometric surfaces for the identified hydrogeologic intervals. Baseline groundwater chemistry data are summarized in Section .128, Table 128-2 of the approved permit; laboratory reports are included in Appendix 128-B of the approved permit. Luminant also included information, data, and analyses of the Wilcox Group sediments in the proposed permit area and adjacent areas in the approved permit. Water well records for wells within an approximately one-mile radius surrounding the proposed permit boundary were updated (Table 128-6 of the application), and well locations are depicted on Figure 128-3 (SD2). Water well records are included in Appendix 128-D of the approved permit. Oil and gas wells within the proposed permit area were also inventoried; locations within a Study area are identified on Figure 128-4 (SD2) of the application, and the information is summarized in Appendix 128-E of the application. The information contained in the approved permit, as updated in this application, provides adequate information to meet the requirements of §§12.126 and 12.128 of the Regulations.
19. Surface water within and near the permit area is adequately described in Section .129 of the approved permit. Water quantity and water quality are addressed in the approved

permit to characterize the proposed permit area. No new baseline information was provided. The baseline information provided in Section .129 of the approved Permit No. 58 remains unchanged and is intended to support this renewal/revision application. Previous studies were conducted for the currently approved permit, and summaries were provided in the currently approved.

- (a). As stated in the approved permit, the permit area is located in the Sabine River Basin and is drained by several unnamed tributaries of Martin Lake. Downstream of Martin Lake, Martin Creek drains to the Sabine River east of the proposed permit area. Martin Lake, which occupies a surface area of approximately 5,000 acres, occupies part of the proposed permit area. Martin Lake is used for recreational purposes in addition to providing cooling water to the nearby Martin Lake Steam Electric Station. Martin Lake has a drainage area of approximately 130 square miles and a capacity of 77,500 ac-ft. There are over 50 naturally occurring or man-made impoundments contained within the proposed boundary. The man-made impoundments, which primarily serve as livestock or farm ponds, are dispersed throughout the proposed permit area. The impoundments were created by impounding runoff from intermittent streams in the headwaters of the drainage basins in the proposed permit area. Most of the impoundments are constructed with earthen embankments. Shallow natural impoundments were found in low-lying areas along streams and creeks and in isolated depressions throughout the proposed permit area. One potential spring was identified and sampled within the proposed permit area. The spring consisted of a water-filled, wood-framed hole at the head of a ditch. In the approved permit, surface water monitoring is described; stream monitoring stations are depicted on Figure 129-1 and summarized in Table 129-5, and baseline streamflow monitoring data is contained in Appendix 129-B.
 - (b). Descriptions of baseline surface water quantity are included in the approved permit, and monthly streamflow data for monitoring stations are contained in Appendix 129-B as summarized in Table 129-5 of the approved permit. Details regarding storm events and the resulting rainfall predicted for these events is described in the approved permit and was used by Luminant as representative for all watersheds within the approved permit area.
 - (c). Surface water quality sampling is described in the approved permit. The stations and periods used for sampling are described in the approved permit, and a summary of results is contained in Table .129-5 of the approved permit. Surface water bodies and springs were also previously sampled [Figures 129-1 and 129-2, Appendix 129-A, and Appendix 129-B of the approved permit (photographs and descriptions)]. Spring water quality data are included in Appendix 129-A of the approved permit.
 - (d). In Appendix 121-A (SD2), Luminant provided a copy of TDPES Wastewater Discharge Permit No. WQ0002644000, issued on January 10, 2013 and most recently renewed on April 3, 2018.
20. In the approved permit, Section .130, alternative water supplies are identified to replace water supplies that may be affected and may require replacement as set out in §12.130 of the Regulations. No new water rights were identified or included in this application, and the baseline information provided in the approved permit remains unchanged. As described in the approved permit, potential sources of alternative water supplies include

the water obtained from advance dewatering wellfields as well as ground water from deeper, water-bearing sands in the Carrizo-Wilcox Group sediments. Permitted water rights, including downstream water rights, are identified in the approved permit in Table 130-1, *Active Water Rights*, and on Figure 130-1, *Water Rights Locations*. The approved permit describes active water rights and private water wells that may potentially be affected by surface mining activities. In the approved permit, Luminant has acknowledged its responsibility to replace water sources used for domestic, agricultural, industrial, or other legitimate use if contamination, diminution, or interruption occurs as a proximate result of mining activities in accordance with the requirements of §12.130 of the Regulations.

21. All required climatological information is included in satisfaction of §12.131 of the Regulations in Section .131 of Luminant's approved Permit No. 58. The baseline information provided in Section .131 of the approved permit remains unchanged and is intended to support this Permit Renewal/Revision application. As described in the approved permit, regional precipitation data from the National Weather Service cooperative station at Carthage, Texas indicates that mean annual precipitation over the period of 1951-2004 was 49.97 inches (Table 131-1 of the approved permit). Historically, rainfall has been the greatest in December and the driest months are July and August. A secondary wet season appears to occur during the months of November, December, and January. Local precipitation data were collected from one rain gauge located near the southern portion of the proposed permit area (Figure 129-1 of the approved permit). The approved permit indicates that mean monthly low and high temperatures from the same period of record at the Carthage Station were 53.2 degrees Fahrenheit and 77.1 degrees Fahrenheit, respectively. The mean annual temperature is 65.2 degrees Fahrenheit. Gross annual lake evaporation in the vicinity of the proposed permit area is estimated to be 48.85 inches. The National Weather Service cooperative station in Lufkin, approximately 80 miles southeast of the proposed permit area, was the source of data for wind speed and direction included in the application for the years 1961-1980. The most frequent annual wind direction is from the south. Occurrences of maximum sustained winds are typical of strong cold fronts from the north during the winter season.
22. All required vegetative resource information for the proposed permit area is included in Section .132 of the application and is sufficient to describe premine vegetation important for fish and wildlife habitat, and sufficient to predict the potential for the re-establishment of vegetation during reclamation. Baseline vegetation information contained in the approved application includes a 2011 report prepared by Luminant's consultant PBS&J (Section .132 of the approved permit) and is supplemented with updated information prepared by Luminant's consultant Blanton & Associates, Inc. addressing plant species of concern in Section .132 of the application (SD1). The original permit application includes Plates 132-1 and 132-2, maps with depictions of topography, vegetation transects, and fish and wildlife sampling sites for the permit area. A representative list of vascular plant species for the renewal area and surrounding vicinity was presented in Appendix 132-A of the original permit application and remains representative of the renewal area.
23. Adequate fish and wildlife resource information is included in the application, with information from the applicant and Staff's TA regarding the current status of state and federal threatened and endangered species, and with information to provide an accounting of premine wetlands and waters of the U.S. pursuant to §404 of the Clean Water Act. The baseline fish and wildlife resources conditions presented in the original permit application are still representative of pre-mine conditions in the renewal area, and the application

incorporates the approved Section .133 for Permit No. 58 by reference and provides updated information addressing fish and wildlife species of concern. The application includes a report from Luminant's consultant, Blanton & Associates, Inc., dated May 2017. This report includes the appropriate scope and level of detail to enable the design of a protection and enhancement plan for fish and wildlife required by §12.144 of the Regulations, including site-specific resource information to address listed or proposed endangered or threatened species or their critical habitats or other habitats of unusually high value for fish and wildlife in accordance with the Endangered Species Act of 1973, as amended (16 U.S.C. §1531 et seq). There are no critical habitats within the proposed permit area. The information meets the requirements of §12.133 of the Regulations. Luminant's protection and enhancement plan for fish and wildlife is set out in Finding of Fact No. 32.

- (a). A report from Luminant's consultant dated May 2017 is included in Section .133. The report is intended to update the baseline information contained in the approved permit. The approved permit, as supplemented by the application, describes aquatic, wetland, and terrestrial resources within the permit area. It includes descriptions of sampling stations, methods and results of sampling, wildlife habitat, the potential habitat or lack of habitat for threatened and endangered species, and sensitive, important or unique areas within or near the proposed permit area. Figure 133-1 in the approved permit is a location map. The proposed permit area is located within the Sabine River Basin that has a drainage area of 7,396 square miles.
- (b). The report includes a table listing threatened fish and mussels of potential occurrence in Rusk County, Texas (Table 133-6, application SD1) and a table listing endangered, threatened, and candidate wildlife species of potential occurrence in Rusk County, Texas (Table 133-25, application SD1).
- (c). Threatened and endangered species with the potential to occur in or near the proposed permit area are included in the following table, along with their protected status either under the Endangered Species Act or other state or federal laws, record of occurrence and likelihood of occurring within the proposed permit area:

Species	Protected Status, State (S) or Federal (F)	Record of Occurrence
<i>Fish</i>		
Paddlefish	Threatened (S)	Not Likely
Creek Chubsucker	Threatened (S)	Found in Martin Lake during Martin Lake Mine studies (1985 and 2002); Not Likely
<i>Mollusks</i>		
Louisiana Pigtoe Mussel	Threatened (S)	Not Likely
Sandbank Pocketbook Mussel	Threatened (S)	Not Likely; no record
Southern Hickorynut	Threatened (S)	Possible (rare); no record
Texas Heelsplitter Mussel	Threatened (S)	Possible; no record
Texas Pigtoe Mussel	Threatened (S)	Not Likely; no record
Triangle Pigtoe Mussel	Threatened (S)	Not Likely; no record
<i>Amphibians and Reptiles</i>		
Texas Horned Lizard	Threatened (S)	Not Likely; no record
Northern Scarlet Snake	Threatened (S)	Possible; no record
Timber Rattlesnake	Threatened (S)	Possible; no record
Alligator Snapping Turtle	Threatened (S)	2014 and 2016 record
<i>Birds</i>		
Wood Stork	Threatened (S)	Possible Migrant (limited foraging and roosting potential); no record
Bald Eagle	Threatened (S)	2012 Record within the permit area, and 2013 Record outside the permit area
Peregrine Falcon	Threatened (S)	Possible Migrant; no record
Piping Plover	Threatened (S, F)	Possible Migrant; no record
Interior Least Tern	Endangered (S, F)	Possible Migrant or Breeder; no record
Bachman's Sparrow	Threatened (S)	Not Likely; no record
Rufa Red knot	Threatened (F)	Possible Migrant; no record
<i>Mammals</i>		
Rafinesque's Big-Eared Bat	Threatened (S)	Possible; no record
Red Wolf	Endangered (S, F)	Does not occur in renewal area.
Black Bear	Threatened (S)	Not Likely; no record
Louisiana Black Bear	Threatened (S)	Not Likely; no record

- (d). Section .133 of the application also includes information for the approximate acreage of premine USACE jurisdictional waters and wetlands for the proposed

permit area, made up of 501.9 acres. The total acreage is made up the following: emergent wetlands, 44.2 acres; forested wetlands, 68.7 acres; scrub-shrub wetlands, 47.4 acres; open water, 330 acres; and stream channels, 11.6 acres. These wetlands are delineated on Plate 133-1 in the approved permit.

- (e). In addition to the species listed above, TPWD has included four rare, but not listed threatened or endangered, plant species as potentially occurring in Rusk County: mohlenbrock's sedge, panicked indigobrush, soxman's milkvetch, and Texas trillium. None of these species was observed during baseline vegetation surveys completed in May and October 2010 or other surveys completed in the renewal area. Within the areas proposed to be disturbed in the 5-year mine permit term, occurrence of the mohlenbrock's sedge is unlikely, and habitat suitable for this species is not expected to occur in the areas to be disturbed. Occurrence of panicked indigobrush has not been recorded within or in the immediate Panicked indigobrush was not observed during vegetation baseline investigations within the renewal area, and habitat suitable for this species is not expected to occur within the areas proposed to be disturbed in the 5-year mine permit term. Occurrence of Soxman's milkvetch within the area to be disturbed during the 5-year mine permit term is unlikely based on the absence of previous detection, the restricted and historic documented occurrence of a single individual in the county, and the geographic separation from the nearest recorded population. Occurrence of Texas trillium within the area to be disturbed during the 5-year mine permit term is unlikely based on the absence of previous detection and absence of suitable habitat. The May 2017 report prepared by Luminant's consultant Blanton & Associates, Inc. (Section .132 of the application) includes Section 6.2, a discussion of threatened and endangered plant species.
24. The database, soil survey map, and soil interpretive information as presented in the approved Permit No. 58 native baseline remain valid as representative of premine conditions. On page 134-2a of the application, which was not included in the approved permit application, Luminant includes a present *Productivity of Existing Soils* in Rusk County from Texas Agricultural Statistics Service. Commodities include peanuts, hay, and haylage. Peanuts accounted for 218 harvested acres and a total of 525,735 pounds. Hay and haylage accounted for 31,242 acres and a total of 56,429 tons of production. Plate 134-1 of the application (SD1) includes soil maps depicting native soil mapping units within the proposed permit area, soil series, sample locations, and prime farmland soils. Information is included describing the native soil sampling sites (Appendix 134-A of the approved permit). Depth- and areally-weighted mean values for the parameters analyzed for pH, neutralization potential (NP), potential acidity (PA), exchangeable acidity (EA), acid/base account (ABA), pyritic sulfur, electrical conductivity (EC), sodium adsorption ratio (SAR), percent sand, silt, and clay, percent coarse fragments, cation exchange capacity (CEC), hot-water extractable boron (B), cadmium (Cd), and selenium (Se) were presented in the approved permit, along with detailed information for distributions, classifications, and aerial extent of soils, and native soil baseline acreage and proportionate extent. Updated Tables 134-1 and 134-2 are provided in the application (SD1). The approved permit, as supplemented by the application, contains the information required by §12.134 of the Regulations for soil resources information. Soil resources information and baseline conditions presented in the approved Permit No. 58 application, as supplemented by the updated present productivity information provided in Section .134 of the application for renewal/revision, are representative of pre-mine conditions in the renewal area and continue to meet the requirements of §12.134. Luminant's consultant

reviewed Natural Resources Conservation Service (NRCS) soils information to verify relevance of approved soil interpretations, and a review of county crop records published by the Texas Agricultural Statistics Service resulted in no new information for Rusk County since 2012, as presented in Section .134 of the application.

25. The approved Permit No. 58, as supplemented by the updated information regarding Land Use Management Plans provided in Section .135 of the application for renewal/revision, describes premine land use in accordance with the requirements of §12.135 of the Regulations for the proposed permit area. The approved permit describes each of the premine land uses and provides the following percentages for each premine land use: undeveloped land (46.2%), pastureland (20.9%), forestry (17.9%), developed water resources (8.7%), industrial/commercial (4.5%), and residential (1.8%). The approved permit contains a map delineating the land-use categories within the approved permit area as well as the location of pastureland condition evaluation sites. The renewal area is located outside the boundaries of local municipalities and is not subject to municipal regulation. Plate 135-1 in the approved Permit No. 58 application contains a map delineating the land-use categories within the permit area as well as the location of pastureland condition evaluation sites. The information in Section .135 was based on the previous permit for the permit area and published NRCS soil surveys. In the approved permit, Luminant included information for premine soil yields for crops and pasture (Tables 134-4 and 134-5) and forestry productivity (Table 134-6). Information for wildlife habitat (and limitations on wildlife use for each soil series), ponds, landfills, building site development, and recreational development is contained in Appendix 134-A of the approved permit. As indicated in the updated discussion of the Land-Use management Plans, mining activities in the renewal area are not expected to conflict with the Texas Conservation Action Plan (formerly known as the Texas Wildlife Action Plan) or the Texas Water Development Board's 2017 State Water Plan (p. 135-20, Land-Use Information Report, Blanton & Associates, Inc., Section .135, application).
26. All requirements are met in the approved permit and in the application for renewal/revision for the submittal of maps, cross-sections, and plans required by §§12.136 and 12.137 of the Regulations. All required operational maps and plans have been submitted in the application, as supplemented, or are otherwise contained in the original, approved application for Permit No. 58, in accordance with §12.142. Staff certified Luminant's compliance with regulatory requirements in the TAA.
27. As required by §12.138 of the Regulations, Luminant identified 7 prime farmland soil units within the proposed permit area, totaling 1,476.1 acres. Luminant replaced Appendix 138-A in the approved Permit No. 58 in Revision No. 41, approved by the Commission on June 9, 2017. Natural Resource Conservation Service prime farmland soils make up 38.2% of the renewal area and include select map units of Bernaldo very fine sandy loam, 1-3% slopes; Iulus, fine sandy loam, occasionally flooded; Laneville loam, occasionally flooded; Latex very fine sandy loam, 1-3% slopes; Meth fine sandy loam, 2-5% slopes; Sawlit loam, 0-2% slopes; and Sawlit-Sawtown complex, 0-2% slopes. In SD1, Luminant indicated that of the 132 tracts containing prime farmland soils within the mine permit area, 130 of these tracts have affidavits of use contained in Appendix 138-A of the approved permit. Two tracts are the right-of-way for state highways and thus do not require affidavits of use. Tract 1272 is the right-of-way for FM 2658, and Tract 1381 is the right-of-way for FM 1251. Luminant requests a negative prime farmland determination for all land in the proposed 3,865.9 acre mine area. This request is based on the 2010 prime farmland investigation, the prime farmland assessment map (138-1, SD1), and the historical use of

the land, as demonstrated in the affidavits of use. Luminant has satisfied the requirements of §12.138, and the Commission approves a negative prime farmland determination for all land in the proposed 3,865.9 acre mine area. Luminant has included a reclamation plan for prime farmland in Section .145 of the approved permit application, updated as necessary in the application.

28. Luminant has submitted all required materials to document its proposed operations plan for the proposed permit term, as revised in the application, as supplemented, in accordance with §12.139 of the Regulations, and as set out in the permit provisions contained in Appendix I. Luminant indicates that it will use standard surface mining methods and procedures to recover the lignite resources within the proposed Martin Lake Liberty Mine renewal area. Mining will be conducted in a manner that maximizes lignite recovery. Luminant indicates that changes to the operation plan may be required during the proposed permit renewal term. Commission approval is required prior to revised operations or reclamation.
- (a). The proposed Martin Lake Liberty Mine permit area contains two mine areas (N and P Areas) that will be mined during the initial permit renewal term (2018 to 2022) using a dragline in each area. Draglines are currently proposed as the primary equipment to be used for overburden removal during the permit renewal term. The Martin Lake Liberty Mine has four recoverable seams.
 - (b). Auxiliary areas are low stripping ratio deposits that will be used as additional fuel supply and will be mined according to the schedule provided in Table 125(a)-1. The mining of auxiliary areas could be accomplished with a dragline if available. Otherwise, auxiliary equipment (scrapers, dozers, hydraulic excavators, end dumps, etc.) will be used to remove overburden. The mining methods applicable to auxiliary areas mined with a dragline are the same as described for the other mining areas.
 - (c). The stripping operations will primarily use the simple side cast method shown in the application. Other digging methods that may be used are shown are presented. To supplement the dragline stripping operation, auxiliary equipment (scrapers, bulldozers, trucks, backhoes/shovels, front-end loaders, hydraulic excavators, etc.) may be used in portions of the permit-term mine blocks where the overburden depths are generally 50 feet or less. Due to the close proximity to and coincidence with the dragline operation, the approved reclamation time frame for the affected mine area will remain in effect for areas where auxiliary equipment supplements overburden removal. Luminant anticipates no significant impacts to postmine contours or slopes due to these operations.
 - (d). In order to fully recover the lignite resource, the actual location of the pit ends or final pits may vary slightly from those shown in the approved permit. The use of offset may occur when one end of a pit advances at a faster rate than the other end. In the event that offset pits or pit angling will alter the approved post-mine slopes, Luminant shall obtain Commission approval before pit alignment or offset implementation. Mining disturbance will not extend beyond the mining limits line (MLL) without receiving prior approval from the Commission. Activities within the MLL typically include or involve the following: open pit, spoil, walkways, benches, pre-benches, and rock crushing. Where box pits must be excavated, the box pit

spoil will be blended into the existing topography using standard reclamation practices.

- (e). Conventional land-clearing techniques and equipment will be used to clear vegetation, timber, and concrete in advance of mining. These techniques will include harvesting of timber, clearing with dozers, stacking and burning, and disposal in a mined pit. Trees disposed of in a pit will not adversely affect the top four feet of postmine soils. The preparation of the dragline walkway may require filling in low areas and removing unstable material and backfilling with stable material. Clearing and walkway preparation will be conducted as required to allow for the orderly progression of the mine. The distance cleared in advance of mining will typically be 2,700 feet in the N Area and 1,250 feet in the P Area based on the longest annual advancement of mining in each mine area. The maximum clearing distance during Year 5 of the permit term will be the width of the Year 5 mine block. Mine areas with a width (the distance parallel to the progression of mining) less than the distances listed above will have the lesser parallel distance as the maximum distance.
- (f). Selective overburden materials may be used as a topsoil substitute in the proposed permit area. Oxidized overburden will be loaded using auxiliary equipment and selectively handled following clearing and grubbing to replace native topsoil and subsoil and provide a minimum of 48 inches of suitable plant growth material. The oxidized interval extends from the natural ground surface to the shallowest of the base of the oxidized zone or five feet above the uppermost lignite seam, whichever is shallower, excluding rider seams.
- (g). Luminant proposes that backfilling and grading will occur over a distance of 1,200 feet, as measured from the toe of the active highwall, over 8 months. These requested time schedule and distance are based on detailed written analyses as required in §12.384(a)(3) of the Regulations. Backfilling and grading of auxiliary areas mined with auxiliary equipment will be completed within 180 days following coal removal at a distance not to exceed 1,000 feet, as measured from the toe of the active highwall. Suitable material placement will be complete within 8 months following backfilling and grading at a distance of no more than 1,950 feet, as measured from the toe of the active highwall, in the N and P Areas. Staff review indicates that these distances are necessary due to operational considerations. Suitable material placement will be completed in auxiliary areas within 180 days following backfilling and grading. Any uncontaminated concrete used will meet the criteria set forth by the TCEQ at 30 Texas Administrative Code §335.1, relating to the exception of certain material from the definition of solid waste. Protrusion of reinforcing steel from concrete will be minimized. Concrete fill will have at least four feet of cover consisting of suitable material.
- (h). Final pits are proposed to occur in 2021 and 2022. The final pit in the N Area will be reclaimed to include permanent impoundments. The final pit in the P Area will be reclaimed according to the proposed postmine contours without the formation of a final pit permanent impoundment. If a permanent cessation of operations occurs prior to the establishment of the scheduled final pits, the final pit locations will be based on the current progress of mining operations at the time of the permanent cessation.

- (i). Luminant has requested two stream buffer zone variances for waterway and creek segments depicted on Plate 139-4-1. The Commission may approve disturbances within 100 feet of perennial or intermittent streams: (1) if proposed activities will not cause or contribute to the violation of applicable State or federal water quality standards and will not adversely affect the water quantity and quality or other environmental resources of the stream [§12.355(a)(1)], and (2) in cases of temporary or permanent stream-channel diversions, they will comply with §12.341 of the Regulations related to the requirements for approval of diversions [§12.355(a)(2)]. Luminant's proposed stream buffer variances for waterway and creek segments will support disturbances projected to occur within the proposed permit term. Luminant has provided information to address the specific activities and/or the measures to be taken for each of the proposed stream buffer-zone variances. Staff has indicated that information is included in the application as supplemented that requirements are met under §12.355. Therefore, Staff recommends that these variance requests be approved. The stream buffer variances are approved.
- (j). Luminant indicates that the location of all pipelines will be visibly marked at 200-foot intervals in active mining areas, as measured from the centerline of the pipeline nearest to mining-related construction activities in accordance with §12.382(2) of the Regulations when pipelines are located within 500 feet of surface mining activities. All natural gas pipelines within 200 feet of mining-related disturbances will be marked with high-visibility markers every 25 feet for the entire length of the disturbance and will extend 200 feet in both directions beyond the location of the limits of the mining-related disturbance.
- (k). 7 sedimentation ponds, 2 temporary ponds, and 18 surface water control diversions are proposed in the Martin Lake Liberty Mine permit area. Luminant provided detailed design plans for the diversions proposed within the permit term in Section .148 of the application. Luminant also provided information regarding the frequency of pond maintenance inspections: pond inspections will be performed in accordance with §§12.344(b)(4) and 12.347(a)(12) for ponds that meet or exceed the size or other criteria of 30 CFR §§77.216(a), and in accordance with §§12.347(a)(11) and (12), for all ponds with embankments.
- (l). All dams, embankments, and other impoundments will be designed, constructed, and maintained to achieve at least the minimum design requirements applicable to structures constructed and maintained under the Watershed Protection and Flood Prevention Act. Ponds will be inspected. Dugout ponds may be utilized to reduce overland flow velocity, reduce runoff volume, or trap sediment. Dugout ponds constructed outside of the pit or dragline bench/walkway area will be no larger than 1,600 square feet and have a maximum depth of 10 feet, as shown on the typical drawing provided on page 139(T)-33.
- (m). Most of the primary sediment control structures are intended to be retained as permanent impoundments.
- (n). No coal cleaning facilities are proposed, and sedimentation ponds are described in the application as supplemented. Coal waste from the portable coal screening facilities will be placed in the active pit for proper disposal. Hazardous waste will

be removed, handled, stored, transported, and disposed of in accordance with federal and state requirements.

29. No existing structures as defined by §12.3(63) of the Regulations (structures or facilities for which construction began prior to approval of the State program) will be used to facilitate surface mining and reclamation operations (§12.140, Regulations). No blasting is proposed (§12.141, Regulations).
30. The application does not propose any new surface mining activities to occur within 500 feet of any known underground mines within the proposed permit term. The application indicates that Luminant is not aware of any known workings of active, inactive or abandoned underground mines, including mine openings to the surface within the proposed permit or areas adjacent to the permit.
31. The application meets the requirements of §§12.143 and 12.379 of the Regulations for fugitive dust control. An air pollution control plan is not required pursuant to §12.143(a). The permit area is not located west of the 100th meridian west longitude. The fugitive dust control practices used include use of water trucks to wet roads, application of asphalt emulsions, temporary closing of stretches of road when not in use, and periodically grading road surfaces. Luminant indicates that in high wind conditions (wind gusting over 31 mph or exceeding Level 6 —Strong Breeze category — of the Modified Beaufort Scale) it will cease potentially dusty operations not specifically related to mining or construction required for mining and will use all available water trucks to wet down areas required for mining or construction of structures required for mining or creating excessive dust. Fugitive dust control measures are adequate based on compliance with the Regulations and with TCEQ air quality requirements.
32. The application, as supplemented, includes a protection and enhancement plan to minimize disturbances and adverse effects on fish and wildlife and related environmental values during the proposed operations. The protection and enhancement plan meets the requirements of §§12.144 and 12.380 of the Regulations.
 - (a). Appendix 144-C contains a list of forbs, grasses, trees, shrubs, and other plants appropriate for use in fish and wildlife habitat and wetland mitigation, depending on availability and applicability, as well as common Bermuda grass and clovers for erosion control. The species list in the approved USACE permits are to be used to guide the revegetation of USACE mitigation areas.
 - (b). Loss of wetlands will be mitigated in accordance with the Corps of Engineers Permit for the proposed permit area. Mitigation ratios for the permit area are 2:1 for forested wetlands, 1.5:1 for non-forested (emergent) wetlands, and 1:1 for open water ponds and stream channels. Appendix 144-B of the approved permit application contains a copy of the mitigation plan approved by the USACE as part of Luminant's Section 404 permit, and this information remains unchanged. Luminant indicates that it may create wetland areas along various drainages and may enhance existing wetlands. Plate 133-1 of the approved permit delineates wetlands within the permit area.
 - (c). The application includes a handling and relocation plan for the alligator snapping turtle. Luminant has a scientific permit from the TPWD that will allow handling and relocation of this species. There is no record of the threatened Creek Chubsucker

fish species in the renewal area, although it has been documented in the Martin Lake Mine permit area, east of Martin Lake from the Liberty Mine renewal area. Measures will be taken to protect this species if it should be present, such as limiting stream crossings. Luminant has provided protective measures for the timber rattlesnake (which has not been observed within the permit renewal area), the threatened Bald Eagle (a winter resident and breeder in the permit area), and the endangered Interior Least Tern (a possible migrant and breeder). Luminant has included a plan to protect migratory birds within the permit area by minimizing disturbance areas and avoiding nesting sites. With respect to the Bald Eagle, Luminant will comply with all avoidance, minimization, or other mitigation measures outlined in the federal permit, including monitoring any nest for at least 10 days prior to conducting activities within 660 feet of the nest to ensure the nest is inactive. Luminant will report to the Commission any sightings of threatened or endangered species.

- (d). Luminant provided a copy of a July 8, 2015 letter from the USFWS to Luminant in Appendix 144- A. This letter states that "[t]he MBTA provides, in part, that unless and except as permitted by regulation, it shall be unlawful at any time, by any means or in any manner, to pursue, hunt, take, capture, kill, or attempt to take, capture, or kill any migratory birds." The letter recommended that Luminant incorporate USFWS's Nationwide Standard Conservation Measures into Luminant's generic wildlife plan as best management practices that are intended to avoid, minimize, or mitigate, to the extent practicable, potential impacts of permitted mining activities on migratory birds. On June 20, 2016, the USFWS sent a coordination letter to Luminant regarding protection to migratory birds. In the June 20, 2016 letter, the USFWS recommended that their Nationwide Standard Conservation Measures be incorporated into Luminant's fish and wildlife plan. Applicable and practicable elements of the Nationwide Standard Conservation Measures referenced in the USFWS's July 8, 2015 and June 20, 2016 letters are incorporated into Luminant's Fish and Wildlife Plan or other sections of this permit application as best management practices that are intended to avoid, minimize, or mitigate, to the extent practicable, potential impacts of permitted mining activities on migratory birds. Luminant will continue to coordinate with USFWS and the Commission to ensure that adequate protective measures are in place with respect to species protected under the MBTA. In addition, Luminant complies with the Endangered Species Act and the Bald and Golden Eagle Protection Act by conducting surveys for species that are protected under these acts (if potentially suitable habitat occurs and is expected to be disturbed in the permit area), notifying the Commission and USFWS of any sightings of these species, and developing and implementing protective measures for these species (as further discussed below).
- (e). In Section .144 of the application, Luminant included proposals to limit disturbances to wildlife by mining in narrow, incremental bands, avoiding rookeries and raptor nest sites during the breeding and nesting season, developing site-specific conservation measures where appropriate, and in observing the 100-foot buffer zone for intermittent and perennial streams (unless the Commission has approved disturbance in accordance with the Regulations). Pond areas and stream banks will be planted with appropriate vegetation. Plant species will be used to provide appropriate food and cover. Specific species are identified in the application, as supplemented (Appendix 144-C and Appendix 144-D). Staff

confirmed that the plan contains locally occurring native trees, shrubs, aquatics, grasses, and forbs for erosion control. Appendix 144-B of the approved permit application includes conceptual plans for wetland mitigation, in accordance with Luminant's USACE permits.

33. The application, as supplemented, contains a reclamation plan for the permit area that includes all required information in accordance with §12.145 of the Regulations, including a detailed reclamation timetable, a detailed estimate of the costs of reclamation, a plan showing the final surface configuration of the permit area, a selective handling plan for reclamation of the top four feet of the surface, and a plan for revegetation.

- (a). A detailed timetable for the completion of each major step remaining in the reclamation plan for the permit area is included in the application (SD2), in accordance with §12.145(b)(1).

Coal removal - The timeline for reclamation is initiated by final coal removal from the pit.

Backfilling and grading - Following coal removal, backfilling and grading will be completed within the timeframe and distance described in Section .139 (8 months and 1,200 feet).

Revegetation - Seeding and planting shall be conducted during the first normal period for favorable planting conditions after completion of backfilling and grading.

Mulching - Mulching occurs following the initial planting of temporary or permanent vegetation.

Temporary vegetation - Will be planted when seasonal conditions prevent the planting of permanent cover. Temporary cover is typically planted from September through December. Timing may vary, depending on weather conditions; however, temporary vegetation could be planted any time, depending on need.

Permanent vegetation - Warm season grasses are planted from March through June.

Trees and shrubs are planted from January through April into established ground cover. Timing may vary based on weather conditions.

Extended responsibility period (ERP) - Will be initiated when augmentation of the permanent vegetation has ceased and management units have been established.

Phase I bond release - Application for Phase I bond release will be submitted within one year of the initiation of the ERP, with the exception of approved temporary structures that are needed for drainage control and facilities that support mine operations.

Phase II bond release - A combined Phase II and III bond release application will be submitted within one year of the end of the ERP.

Phase III bond release - A combined Phase II and III bond release application will be submitted within one year of the end of the ERP.

- (b). Luminant's accepted bond currently in place for all its statewide mining operations is a blanket collateral bond in the amount of \$975,000,000 (Docket No. C16-0021-SC-00-E approved by Order dated September 27, 2016). Staff's analysis indicates that Luminant's current bond exceeds the sum of the estimated reclamation costs for its Texas mines, including the proposed reclamation costs attributable to the Martin Lake Liberty Mine (TAA, Appendix II), estimated by Staff, \$55,588,075.95. Luminant's summary of estimated costs is \$44,235,501.75 (SD3). Staff's estimate is more conservative and uses Year 2018, rather than Year 2016, equipment costs. Staff's estimate of Luminant's total reclamation costs for all mines is less than the approved bond. Staff's estimate is approved.

Mine Name	Permit Number	Reclamation Cost Estimate Date	Minimum Required Bond Amount/Reclamation Cost Estimate
Big Brown Mine	3F	December 6, 2017	\$16,363,718
Martin Lake Mine	4L	January 20, 2017	\$120,349,023
Monticello Thermo Mine	5G	February 1, 2017	\$17,791,518
Monticello Winfield Mine	34F	July 25, 2017	\$94,181,660
Oak Hill Mine	46C	July 5, 2017	\$149,439,526
Three Oaks Mine	48C	May 8, 2017	\$63,076,159
Bremond Mine	49B	November 16, 2015	\$4,048,777
Kosse Mine	50B	November 28, 2016	\$148,248,020
Leesburg Mine	51	May 3, 2016	\$4,886,759
Martin Lake AIV South Mine	53	June 6, 2014	\$40,448,786
Turlington Mine	54A	January 9, 2017	\$37,952,426
Monticello Thermo A-1 Area Mine	56	January 6, 2016	\$3,487,626
Liberty Mine	58	Pending	\$55,588,076
Total Aggregate Reclamation Cost			\$755,862,074
Approved Collateral Bond			\$975,000,000
Difference (above two lines)			\$219,137,926

Luminant's current bond of \$975,000,000 is an *Exit Collateral Bond* that became effective on October 3, 2016, when Luminant's ultimate parent company, Energy Future Holdings Corp., and its competitive businesses (the "Competitive Companies"), emerged from the Chapter 11 proceeding that was pending before the United States Bankruptcy Court for the District of Delaware. The current *Exit Collateral Bond* replaced an *Interim Collateral Bond* that was in effect until the October 3, 2016 emergence of Energy Future Holdings Corp. and its Competitive Companies from bankruptcy. The *Exit Collateral Bond* is a blanket collateral bond that covers all Luminant's statewide mining operations. As set out in the TA, this amount exceeds the sum of the estimated reclamation costs for Luminant's Texas mines, including the proposed bond amount attributable to the Martin Lake Liberty Mine.

Therefore, no changes to Luminant's existing blanket collateral bond (the *Exit Collateral Bond*) are necessary.

- (c). The application, as supplemented, complies with the requirements of §12.145(b)(3). The application (SD2) contains a Backfilling and Grading Plan. Projected postmine slopes are as follows as presented in Table 139(T)-1 (SD2) as set out below. Proposed postmine slopes will approximate premine slopes. Approximate premine contour will be met.

Slope Categories (%)	Premine Slope Area		Proposed Postmine Slope Area		Proposed Change	
	Area (Acres)	Percent of Total Area (%)	Area (Acres)	Percent of Total Area (%)	Area (Acres)	Percent of Total Area (%)
0-5	2,459	63.6	2,385	61.7	-74	-1.9
5-10	1,016	26.3	884	22.9	-132	-3.4
10-15	285	7.4	494	12.8	+209	+5.4
Over 15	106	2.7	103	2.7	-3	0
Total	3,866	100.0	3,866	100.0		

- (d). The application, as supplemented, includes information sufficient to meet the requirement of §12.145(b)(4) regarding soil handling requirements. In Appendix 145-A of the approved permit application, Luminant provided a study to determine the feasibility of using overburden as a topsoil substitute or within the top four feet of the postmine surface, and the baseline information provided in this study remains unchanged. This study supports the conclusion that selectively handled oxidized units are equal to or better than native soils for use as a topsoil substitute and for placement within the top four feet of graded spoil. Appendix 145-A of the approved permit application identifies the oxidized overburden units that are suitable for placement in the top four feet of reclamation, and Section .139, Overburden Characteristics, summarizes availability of the oxidized units for the current term permit to meet suitable material needs. Luminant proposes to use the oxidized overburden interval as a suitable topsoil substitute in Section .145(b)(4). The proposed replacement material contains no pyrite (oxidized material only); low pH and negative ABA values in the substitute material are due to exchangeable acidity. Luminant, therefore, commits in Supplemental Document No. 2 to incorporate lime in the top four feet of the postmine reclaimed surface, with the amount of lime determined based on soil tests. With this undertaking, the plan will result in a suitable postmine top four feet of reclaimed soils.
- (e). As set out in §12.145(b)(5), the application (SD2) includes a plan for revegetation as required by §§12.390–.393 and 12.395 of the Regulations. Luminant proposes a plan for revegetation in the application addressing the elements contained in §12.145(b)(5)(A)–(F). These include, as set out below: (1) a schedule for revegetation, species and amounts per acre of seeds and seedlings to be used, and methods to be used in planting and seeding, mulching techniques, irrigation and pest and disease control, (2) measures to be used to determine the success of revegetation, and (3) a soil-testing plan for evaluation of the results of topsoil handling and reclamation procedures related to revegetation.
- (1). The proposed postmine land uses for the permit area are as follows: (1) forestry; (2) fish and wildlife habitat; (3) pastureland; (4) industrial/commercial; (5) developed water resources; (6) undeveloped; and (7) residential. A timetable for establishment of vegetation is provided in Figure 145-1 of the application (SD2). Appendix 145-C of the original approved application indicates the species that will be planted. Luminant indicates on page 145-16 that forestry land use will be established through

planting of southern pine seedlings (loblolly, shortleaf, and longleaf pines). The minimum initial stocking rate will be 600 trees per acre. Herbaceous species (both temporary and permanent) listed in Appendix 145-C, will be planted in forestry and fish and wildlife habitat areas to sustain soil stability before planting woody species. The primary perennial pastureland species will be bermudagrass, supplemented with cool-season species such as crimson clover, arrowleaf clover, vetch, and ryegrass. Annual species, such as wheat, millet, rye, oats and sorghum, will be used as needed for temporary vegetative cover when immediate establishment of permanent vegetation is impractical. Plant species included on the State list of noxious weeds will not be planted, but may occur. Naturally occurring plants will provide diversity and will be considered appropriate for the approved postmine land use. No state or federally listed noxious species will be allowed to infest an area or adjacent land uses. Luminant indicates on pages 145-21 through 23 that at least 75% of the ground cover in areas reclaimed to the forestry, fish and wildlife habitat, and pastureland postmine land uses will be comprised of species from the approved planting list. The remaining 25% may be composed of plants identified in Table 145-G-1 in Appendix 145-G (SD2) that will not be planted but may occur on reclaimed land.

- (2). The TPWD provided comments by letter dated August 29, 2017. Following Luminant's filing of SD1 on March 5, 2018, TPWD submitted an email to Commission Staff on March 22, 2018, stating that "Supplement No. 1 adequately addresses the comments that TPWD provided in the August 29, 2017 letter." Luminant's reclamation plan adequately addresses TPWD's August 29, 2017 comments. The application, as supplemented will comply with the requirements for revegetation as required by the Regulations.
 - (a). TPWD commented that Section .132 of the application references the original application and updates species of concern information including the addition of Mohlenbrock's sedge, panicled indigobrush, and Soxman's milkvetch and suggested that Luminant should elaborate on the discussion of the permit area or the 5-year disturbance area for preferred habitat for the Soxman's milkvetch, as the discussion in the application is less thorough for this species and does not address whether the permit area exhibits preferred habitat for this species or if this species is likely to occur or not occur. In SD1, Luminant included additional information to address TPWD's request.
 - (b). TPWD commented that Section .133 updates information on sightings of threatened and endangered species since the original application. TPWD noted certain corrections that needed to be made in this Section and also recommended that Luminant update the inaccurate and outdated information regarding the Louisiana pigtoe to reflect recent occurrences in the middle Sabine River, that Luminant remove the discussion of occurrence in the Dallas-Fort Worth area in the upper Trinity River, and that Luminant should indicate that sightings within the permit area will be reported to the

Commission in compliance with §12.380 for the alligator snapping turtle and creek chubsucker. In SD1, Luminant adequately addressed TPWD's requests.

- (c). TPWD recommended that certain revisions be made for showy partridgepea, prairie rain-lily, Texas toadflax, narrowleaf silkgrass, annual bushfunflower, gaping grass, longleaf pine, and sassafras listed in the revegetation species for fish and wildlife areas contained in Appendix 144-C, and for native pigweed, yellow nutsedge, roundhead lespedeza, goldaster, and annual bushsunflower listed in the representative planting seeding rates for fish and wildlife areas contained in Appendix 144-D. In SD1, Luminant adequately addressed TPWD's requests by submitting revised pages 144-C-1 through 11 and revised pages 144-D-1 and 2.
 - (d). TPWD commented that Section .145 includes changes to Table 145-G-1 listing potential species occurring in revegetated fish and wildlife habitat. TPWD noted that most of the species on the original Table 145-G-1 were appropriately moved to Table 144-C because they represent native species that may occur naturally in the reclamation area and provide species diversity, and that some species from Table 145-G-1 were removed and do not appear on any revegetation or invader list for wildlife including some introduced species, thus making the renewal Table 145-G-1 much shorter than the original table. TWPD recommended that pigweed and yellow nutsedge be listed on Table 145-G-1, while recommending that yaupon and eastern redcedar not be actively planted and should be reflected on Table 144-C instead. In SD1, Luminant adequately addressed TPWD's requests by submitting revised pages 145-G-1 and 2 and by adding page 145-G-7.
 - (e). TPWD commented that it supports Luminant's plan to reclaim approximately 80% of the permit term mining disturbance area to land uses beneficial for fish and wildlife resources including fish and wildlife habitat (70%), developed water resources (5%), and undeveloped (5%).
- (3). Luminant provides a discussion of planting and seeding methods on page 145-18 (SD2). The first tillage to prepare seedbeds may use a chisel, ripper, Rome disk or moldboard plow. Subsequent tillage may be with lighter disks, harrows, sweeps or similar equipment. Generally, tree and shrub species will be planted using single-row commercial planters for bare root stock and plugs of pine or hardwood species. Trees planted in wetland habitat areas will likely be hand planted using Texas Forest Service (TFS) and NRCS guidelines. Planting operations for seeded herbaceous species will normally use drills or broadcast spreaders. Seed will be uniformly distributed at appropriate rates. Appropriate methods will be used on appropriate sites to plant into standing cover crops or other surface mulch. Establishment of grass species that do not produce viable seed will normally be accomplished with a sprig planter. Cool season annuals, most

often legumes, may be overseeded into established, permanent grasses using species and seeding rates specified in Appendix 145-C.

- (4). Luminant's mulching proposal is on page 145-19 (SD2). Luminant indicates that it will use residues from cool-season annual or perennial species, bermudagrass sprigs, straw or hay, and/or bermudagrass sod (for conditions warranting immediate stabilization efforts such as rills and gullies). Bermudagrass sprigs are planted at rates ranging from 40 to 60 bushels per acre in rows no more than 20 inches apart. Straw or hay application rates will vary according to the intended purpose, slope, and season. Mechanical hay mulch spreaders will be used for uniform distribution.
 - (5). Luminant indicates on page 145-20 that it will adhere to the Texas Pesticide and Herbicide Regulations (Texas Agricultural Code, Chapter 76) when chemically suppressing or killing pests that are in competition with the approved ground cover. Luminant adds that it does not anticipate the need to irrigate beyond that necessary to extend the season for initial seed or sprig establishment in unusually dry years.
 - (6). To determine success of revegetation, Luminant will follow standards set out in the Commission's guidance document, *Procedures and Standards for Determining Revegetation Success on Surface-Mined Lands in Texas*.
 - (7). The information presented in the application (SD2) constitutes a sufficient soil-testing plan that meets the requirements of §12.145(b)(5)(G). The revised soil-testing plan is available on pages 145-25 through 30, and Plate 145-1 (in Appendix 145-A of the approved original permit application), Martin Lake Liberty Mine Grid Map. Table 145-2, Areal-Weighted Frequency Distributions, Postmine Soil Performance Standards appears on revised page 145-30 (SD2). The soil-testing plan is included in Appendix II to this Order and is approved.
- (f). The application provides information adequate to satisfy the requirements of §12.145(b)(6). Surface mining will be conducted to maximize the use and conservation of the coal resource, using the best technology currently available to maintain environmental integrity and minimizing future re-disturbance. In Section .139 of the application, Luminant indicates that the operation plan was developed to maximize recovery of all economically mineable seams (typically, a minimum lignite seam thickness of 0.5 ft and less than 198 ft deep). No lignite seams considered to be economically mineable will be left.
- (g). The plan for disposal of debris, acid-forming and toxic-forming materials, and material contributing to a fire hazard as described in the application is satisfactory to demonstrate compliance with §12.145(b)(7). The top four feet of regraded areas and reconstructed drainages will consist of suitable overburden material free of acid forming materials (AFM) and toxic forming materials (TFM).
- (h). As required by §12.145(b)(8), Luminant will seal all bore holes, abandoned water wells, monitoring wells, dewatering wells, and oil and gas wells in accordance with the following, as applicable: Coal Exploration Regulations, §§12.331–.333, 16

TEX. ADMIN. CODE Part 4, §76.1004, *et seq.*, *id.* Part 1, §3.14 (Tex. Dep't of Licensing and Regulations) (as approved by the Commission). The plan, as supplemented, is sufficient and complies with §§12.331–.333 of the Regulations.

- (i). Luminant has included in the application, as supplemented, its plan to comply with the Clean Air Act and Clean Water Act and other applicable laws, regulations, and health and safety standards. Compliance is to be accomplished by haul-road watering, approved burning techniques, and dust emission controls subject to approval by the TCEQ. Luminant's compliance with the Clean Water Act and other applicable water-quality laws, regulations and health and safety standards will be insured by construction of sediment-control structures, systematic water-discharge monitoring and reporting, as well as the TPDES permit issued by the TCEQ that is referenced in Section .121 of this application.
34. No publicly owned parks exist within the permit boundary. There are no lands within the permit area located in the National System of Trails or Wild and Scenic Rivers System, the National Park System, the National Wildlife Refuge System, the National Wilderness Preservation System, or National Recreation Areas, as limited or prohibited by §12.71 of the Regulations.
35. The application, as supplemented, contains sufficient information to demonstrate compliance with the requirements of §§12.147 and 12.399 for alternative postmine land uses. The table below shows the percentages and numbers of acres disturbed prior to the requested permit term and the disturbances proposed during the requested permit term, and the composite of disturbed acreage. Luminant proposes that 15% of disturbed lands be reclaimed as pastureland, 72% as fish and wildlife habitat, with acreage ranging from <1% to 7% for the land uses forestry, developed water resources, industrial/commercial, residential, and undeveloped. A comparison of these postmine land uses with the premine land uses shows that essentially premine undeveloped land and forestry has been changed to fish and wildlife habitat, although slight changes occur in other categories.

Land Use Categories	Pre-Permit Term and Disturbance in Support of Mining (Acres and % Area)	Permit Term Mining Disturbance (Acres and % Area)	Composite (Acres and % Area)
Pastureland	394 (19%)	31 (4%)	425 (15%)
Fish and Wildlife Habitat	1,361 (66%)	687 (87%)	2,048 (72%)
Forestry	14 (<1%)	1 (<1%)	15 (<1%)
Developed Water Resources	79 (4%)	38 (5%)	117 (4%)
Industrial/Commercial	36 (2%)	9 (1%)	45 (2%)
Residential	3 (<1%)	0 (0%)	3 (<1%)
Undeveloped	180 (9%)	26 (3%)	206 (7%)
Cropland	0	0	0
Grazing land	0	0	0
TOTAL	2,068	792	2,859

Luminant proposed alternative land uses on only 18 leased tracts (SD2). Mining will occur on lands owned or controlled by Luminant and on some leased tracts or tracts with which Luminant has an agreement regarding the postmine land use. Any post-mine land use stipulations by the surface owner that are contained in the lease agreement will be provided to the Commission and strictly adhered to by Luminant. The application and the approved permit include adequate information showing the capability of the reclaimed land to support the proposed alternative uses and the reclamation activities required to achieve the uses. The proposed alternative uses are compatible with existing adjacent land uses. No approvals are required which have not been obtained. Based upon the reclamation plan contained within the application, the proposed alternative uses are feasible and can be achieved within a reasonable time after mining and can be maintained. A registered professional engineer certified the proposed land use plans as conforming to required standards. The application meets the requirements of §§12.147 and 12.399 of the Regulations. The proposed postmine land uses are approved.

36. The application contains a description with required maps and typical cross-sections of each road to be constructed, used, or maintained within the permit area, and a general description of the transportation facilities in the proposed mine plan area to meet requirements of §12.154. Table 154-1 (SD2) lists all existing and proposed transportation structures. Existing and proposed haul roads, service roads, and access roads are listed in Table 154-1 and are shown on Plate 154-1, *Transportation Plan*, and Plates 139-1-1 through 139-1-3, *Mine Plan and Operations*. No detailed design plans are included in the application, as supplemented.
37. The application, as supplemented, and with the adoption of the permit provisions contained in Appendix I to this Order, includes a plan for protection of the hydrologic balance that satisfactorily addresses the requirements of §12.146(a), general requirements including maps and descriptions to show how the surface water and groundwater systems will be protected in accordance with §12.146(b) (groundwater monitoring plan), and §12.146(c) (surface water monitoring plan). Luminant's consultant, Pastor, Behling & Wheeler, LLC (PBW), prepared the information contained in application Section .146, Appendix D. The application has also included information identifying the probable hydrologic consequences of the proposed operations to surface water and groundwater systems. Staff reviewed the PHC in its cumulative hydrologic impact assessment [subparagraph (j), *infra*].
 - (a). Luminant's plan to meet the groundwater protection and reclamation requirements of §12.146(a) and (b), and its groundwater determination of probable hydrologic consequences (PHC), are contained on pages 146(a)-1 and 2 in Section .146 of the initial application, and in Appendix 146-D of the original approved permit application, as updated as supplemented in Appendix 146-D of the renewal application (SD1 and SD2).
 - (b). Luminant will minimize disturbances to the hydrologic balance through implementation of an operation plan using accepted practices to control water pollution. The groundwater protection plan includes selective handling of waste materials in backfill areas to ensure placement of acid-forming and toxic-forming materials at least four feet below the final graded surface. A plan for selective handling and placement during the mining and reclamation process is described on pages 139-8 through 10 for acid-forming and toxic forming materials. The water

quality and quantity of the underburden Wilcox aquifer systems will be protected because it is separated from the lowest lignite seam proposed for mining by generally low permeability clayey units. Depressurization of underburden is not proposed.

- (c). The long-term groundwater monitoring (LTGM) plan consists of 18 wells: nine overburden monitoring wells, six spoil monitoring wells, and three underburden monitoring wells. The specific well designation for each proposed well is indicated in Table 146(d)-1, and locations of all wells are depicted on Figure 146(d)-2 in Supplemental Document No. 2. One of the six spoil monitoring wells has been installed, and the other five are proposed. All of the 12 overburden and underburden LTGM wells are baseline wells that have already been installed, and completion information is contained in Section .128 of the application. The proposed LTGM well MW-7-OB-09, which is located outside of the proposed permit area, will be protected from disturbance (SD1). Luminant will maintain access to the well and also maintain an active exploration notice for the tract on which the well is located. It will propose and receive approval of a suitable replacement well if access and protection cannot be maintained. Spoil monitoring wells will be installed within one year of completion of backfilling and grading unless the Commission approves a longer time period due to reclamation issues [page 146(d)-13]. The water-quality parameters proposed to be analyzed for the LTGM wells are listed on page 146(d)-13. All LTGM wells will be sampled quarterly and samples analyzed and reported for field pH, electrical conductance and temperature, sulfate, chloride, total dissolved solids, and dissolved iron and manganese. Spoil monitoring wells will also be sampled and reported annually for 12 trace elements. All wells are also proposed to be measured quarterly for water level. Any new or replacement well installed during the permit term will be sampled once for basic water-quality parameters: calcium, potassium, sodium, dissolved magnesium, bicarbonate, carbonate, and nitrate-nitrogen. The LTGM plans will be sufficient to identify any problems with groundwater.
- (d). Luminant has provided a proposed plan on page 146(d)-14 for annual reporting and evaluation of dewatering activities. Luminant proposes to report the following within 60 days following the end of each calendar year: (1) A potentiometric-surface elevation chart identifying each applicable LTGM well, the baseline or earliest recorded historic water level, the end-of-year water level and the change in water level (if any) for each well; (2) A summary of annual ground-water withdrawal amounts; (3) A map on which is identified the approximate location of the wellfields that were active during the reporting year and the change in water levels; and (4) An evaluation report comparing the observed effects from dewatering to the effects predicted in the probable hydrologic consequences (PHC) determination for that mine. If the evaluation indicates that the dewatering effects during the previous year have exceeded or are likely to exceed those presented in the approved permit application, then Luminant will provide the Commission with a response that addresses the observed or anticipated exceedance.
- (e). Luminant requests approval to conduct advance dewatering activities for the proposed five-year permit term, as shown on Figure 146(d)-1. Advance dewatering activities is expected to be conducted about 9 to 12 months prior to mining in an area. Areas of proposed dewatering fields and the simulated

maximum extent of dewatering drawdown effects (five feet of drawdown) are depicted on Figure 146(d)-1. Potentially affected private wells are also shown on this figure and are listed in Table 146(d)-2. A total of 57 wells are listed as potentially affected. The information provided in the supplemented application is adequate to satisfy the groundwater PHC determination requirements of §12.146(d). Luminant will replace all water supplies within the proposed permit or adjacent areas used for domestic, agricultural, industrial, or other legitimate use affected by contamination, diminution, or interruption proximately caused by surface mining operations as required by §12.130 of the Regulations.

- (f). Luminant's plan to meet the surface water protection and reclamation requirements of §12.146(a) and (c), and its surface water PHC determination, are contained on pages 146-1 through 6 and page 146(a)-2 in Section .146 of the initial application, in replacement portions of Appendices 146(d)-F and 146(d)-G and Tables 146(d)-1, 146(d)-2, 146(d)-2a, and 146(d)-4. Mining and reclamation operations will utilize acceptable practices to control water pollution and minimize changes to the hydrologic balance. All surface-water runoff from disturbed areas will pass through sedimentation ponds before discharging from the permit area. Discharge structures will be designed using standard engineering design procedures. In conjunction with sediment ponds, water treatment facilities will be utilized, if necessary, to assure that pond discharges meet TDPES effluent requirements. Luminant proposes to monitor the final discharge ponds in accordance with applicable State and federal water-quality permits, which do not allow the discharge of acid or toxic mine drainage. Luminant will design and construct ponds to optimize sediment removal and to minimize a likelihood of short-circuiting and to prevent erosion. Luminant indicates that the surface-water control plan is described on page 139-16 and on Plate 148-1 in the application. The smallest practicable area will be disturbed at any one time. Perennial streams will not be disturbed. Eighteen watersheds were described and modeled in the application. SEDCAD4 was used for hydrologic modeling of the watersheds for the study area. A comparison of the 24-hour, 10-year storm for the pre- and during-mine scenarios for the modeled watersheds shows an average increase in runoff volume of 0.09 acre-ft per acre (ac-ft/ac) from 0.01 to 0.14 ac-ft/ac and an average increase in peak flow rate of 0.37 cubic feet per second per acre (cfs/ac) from 0.06 cfs/ac to 0.58 cfs/ac. Post-mine average runoff volume increases averaged 0.04 ac-ft/ac and ranged from 0.01 ac-ft/ac to 0.07 ac-ft/ac. The average post-mine peak flow rate was 0.18 cfs and ranged from 0.03 cfs to 0.37 cfs. The anticipated increases in storm water runoff are directly related to increase in curve numbers because of the changes in land uses. Luminant's evaluation of evaporative losses due to mining is provided on page 146(d)-25 and 146(d)-26. Modeling results show the evaporative losses are imperceptible.
- (g). Luminant includes a long-term surface water monitoring plan (LTSM). The plan has been designed to meet two principle objectives: first, to demonstrate that direct impacts during mining are effectively controlled and mitigated by sediment control methods such as impoundments so that discharge is in compliance with permitted effluent limitations, and second, to demonstrate that mining operations have minimized disturbances to the surface water hydrologic balance in the permit and adjacent areas, prevented damaging effects outside the permit area, that the quality of surface water is suitable for the approved post-mining land use, and that the water rights of other users have been protected. The monitoring plan consists

of two correlative parts. The first part consists of monitoring point source discharges from final sedimentation impoundments or treatment impoundments. This component of the monitoring plan will measure the performance of during-mining impact mitigation and will be established in accordance with applicable conditions specified by the TCEQ wastewater discharge permits (TPDES permits). The second part of the plan calls for monitoring select disturbed area watersheds during mining and through reclamation. The data obtained from these monitored watersheds will be analyzed and compared to site-specific, baseline data and will provide the basis on which restoration of the surface water hydrologic balance will be demonstrated. The monitoring data from the watersheds will be used to support the demonstrations required for final bond release. Table 146(d)-9 includes an outline of the different types of ponds and the corresponding constituents that will be analyzed under this TPDES point-source monitoring program. On page 146(d)-30, Luminant indicates that ponds with discharges that exceed effluent limits for required constituents will be reported to the Commission via email or facsimile transmission within 24 hours of becoming aware of the exceedance. Luminant will compare LTSM data from disturbed-area watersheds to site-specific baseline data from seven final discharge ponds as shown on Figure 146(d)-3. Additional final discharge ponds may be added to the long-term surface-water monitoring plan in future renewals, as approved, for proposed future mine blocks. Water samples will be collected at the outlet structure of the pond, and flow data will also be collected. V-notch weirs will be installed and rating tables for the weirs are provided with the detailed design plans for each pond individually. Monitoring stations will be analyzed and reported quarterly for flow, TDS, TSS, TSM, pH, total Fe, total Mn, Se and acidity (Table 146(d)-8). The data will be submitted to the Commission in paper and electronic format within 30 days of the end of each calendar quarter. Luminant will protect surface water users as required by §§12.130 and 12.352 of the Regulations.

- (h). In the TAA, Staff notes that the current surface-water monitoring plan does not require monitoring of postmine ponds after they have been constructed and approved as permanent structures unless those ponds are final discharge ponds, which means that the current monitoring plan contains no component to track water quality of permanent impoundments in reclamation. Staff suggests that modifying the surface-water monitoring plan to include annual monitoring of pH of water retained in permanent ponds will provide data which can be used to demonstrate that a permanent impoundment will be suitable for its postmining land use, and that the data will also be useful for identifying, early on, where acid drainage might be impacting surface water so that the company can plan for and implement corrective measures in a timely fashion. For this reason, Staff sponsors proposed new Permit Provision No. 1, which requires Luminant to modify the parameters to be monitored for the surface-water monitoring plan to include total alkalinity, if the pH is less than 6.0 s.u. It also requires the plan to be modified to include annual monitoring of all approved postmining ponds for pH, and if pH is less than 6.0 s.u., total alkalinity. The modified plan would be submitted for review and approval by the Commission in accordance with § 12.226 of the Regulations, within 120 days of the issuance of the permit. As noted in Paragraph 2, *supra*, Luminant disagrees as to the necessity of this provision, but assents to its inclusion in this Order. The ALJ agrees with Staff's recommendation and proposes the adoption of the provision to ensure protection of the hydrologic balance and compliance with the Regulations.

- (i). Staff also suggests that the monitoring plan should include water-quality data from untreated runoff in order to predict whether surface water from reclaimed watersheds will be suitable for postmine land uses. Staff suggests that the current monitoring system would be sufficient for that purpose if discharge reports provided to the Commission were amended to include statements or checkboxes to inform Staff which discharges have been treated to adjust the pH and/or treated with coagulants. Thus, Staff sponsors proposed new Permit Provision No. 2 which would require Luminant to modify the monitoring plan to include a requirement that discharge monitoring reports and individual pond monitoring data provided to the Commission indicate which discharges include water which may have been treated to adjust the pH and/or treated with coagulants. The permit provision would also require Luminant to submit the modified plan for review and approval by the Commission in accordance with § 12.226 of the Regulations, within 120 days from the issuance of the permit. As noted in Paragraph 2, *supra*, Luminant disagrees as to the necessity of this provision, but assents to its inclusion in this Order. The ALJ agrees with Staff's recommendation and proposes the adoption of the provision to ensure protection of the hydrologic balance and compliance with the Regulations.
- (j). Luminant included a description in the application, as supplemented, of the probable hydrologic consequences (PHC) of the proposed operations to surface water and groundwater as required by §12.146(d) of the Regulations.
 - (1). Luminant presented information to show that during mining, water levels are expected to decline in the overburden saturated units adjacent to the mined area from seepage into the pit itself and pumping from dewatering wellfields. Luminant indicated that this decline is expected to be temporary and would occur primarily in areas where thick saturated sands are present. Saturated sands thicker than 20 feet can cause highway instability and excess water in the pit if not dewatered in advance of mining. Saturated overburden sands with thickness greater than 20 feet occur in portions of the proposed permit area, as shown on Figure 128-5 of Section .128 of the application. In these areas, dewater activities are anticipated. As shown on Figure 128-5, the thicker saturated sands are laterally discontinuous, and so drawdown from any future dewatering activities will be very limited in extent and limited by the geometry of these saturated sands. Drawdown will occur in the overburden only up to approximately 1,000 feet beyond the anticipated dewatering well field and mine blocks, as determined from modeling contained in the application, the USGS-developed program MODFLOW. The modeling includes anticipated dewatering approximately 9-12 months prior to mining. Expected well fields and the simulated maximum extent of dewatering drawdown effects (five feet of drawdown) are depicted on Figure 146(d)-1. Potentially affected private wells are also shown on the figure and are listed in Table 146(d)-2. Luminant indicated that a total of 57 wells will be potentially affected.
 - (2). Luminant predicts that recharge capacity of the reclaimed overburden (spoil areas) following mining probably will initially equal or exceed the premining recharge capacity due to an increase in vertical permeabilities of the surface materials but will decrease as vegetation is established and

the spoil material compacts, decreasing the vertical hydraulic conductivity. Following compaction, Luminant indicates that the lateral flow of ground water from adjacent undisturbed strata is expected to be very reduced due to the low permeability of the surrounding overburden sediments. Static water levels within the spoil from resaturation are anticipated to be reached in one to several tens of years. Some seeps or springs may develop postmine. Luminant indicates that, although it is not possible to pinpoint the location of any postmine seeps or springs after mining, the overall volume of groundwater discharging to surface water should approximate pre-mine discharge volumes after the water table recovers to pre-mine levels. Consequently, the overall impacts to the hydrologic balance are expected to be minimal.

- (3). Luminant also predicts that at first the total dissolved solids concentration in spoils area groundwater should increase for a period of time but is expected to eventually be restored to near premine levels through a long-term leaching process. The chemistry of the spoil-area groundwater is expected to evolve during the resaturation period, with total dissolved solids concentration increasing, then followed by a reduction in TDS concentration through leaching, and that measures taken to prevent disturbance of the low-permeability separating strata and appropriate plugging of wells that penetrate the underburden will serve to protect the underburden hydrologic units from this deteriorated spoil water. Luminant concludes that surface mining and reclamation activities proposed in this application should have no permanent long-term, adverse impacts on the overburden aquifer systems adjacent to the mined areas and on the underburden aquifer systems.
- (4). Underburden groundwater quality is not expected to be materially affected by the mining activities due to the existence of low permeability clays exist immediately below the mined seam in the proposed permit and adjacent area and will prevent movement of any higher-TDS waters from the spoil into the underburden aquifer units.
- (k). In TAA, Staff states that Luminant has provided LTGM data in Appendices 146(d)-F and G, but a quantitative analysis of these water-quality data was not provided in the PHC determination in comparison to baseline data to support the PHC-determination findings. For this reason, Staff sponsors proposed new Permit Provision No. 3, which would require Luminant to update the ground water PHC determination to provide a quantitative analysis of the LTGM data and a comparison to baseline data to support the PHC-determination findings. Additionally, Luminant would be required to provide a narrative explaining how the LTGM data impacts the quantity and quality of ground water in the permit and adjacent areas. The modified PHC determination would be submitted for review and approval by the Commission in accordance with § 12.226 of the Regulations, within 120 days from the issuance of the permit. As noted in Paragraph 2, *supra*, Luminant disagrees as to the necessity of this provision, but assents to its inclusion of this Order. The ALJ agrees with Staff's recommendation and proposes the adoption of the provision to ensure protection of the hydrologic balance and compliance with the Regulations.

- (l). In TAA, Staff states that Luminant's method of comparing premine to postmine flow does not consider the effects that the proposed AOC might have on runoff quantity. Staff also states that Luminant's water-quantity assessment does not account for changes to the topography, to the storage capacity of postmine ponds, or to the size and shape of watersheds which contribute runoff to those ponds. Staff suggests that the PHC must include a water-quantity mass-balance analysis to compare premine water quantity to post-mine water quantity for average rainfall and evaporative conditions. Staff sponsors proposed new Permit Provision No. 4, which would require Luminant to update the surface water PHC determination to include a water-quantity mass balance comparison for the permit area (premine to postmine) to assess how the proposed reclamation topography and reclamation ponds might affect downstream water quantity. The update surface water PHC determination would be submitted for review and approval by the Commission in accordance with § 12.226 of the Regulations, within 120 days from the issuance of the permit. As noted in Paragraph 2, *supra*, Luminant disagrees as to the necessity of this provision, but assents to its inclusion of this Order. The ALJ agrees with Staff's recommendation and proposes the adoption of the provision to ensure protection of the hydrologic balance and compliance with the Regulations.
- (m). In TAA, Staff suggests that Luminant's PHC determination does not address the possibility of acid-mine drainage and that the PHC analysis dismisses the potential for increases of dissolved solids by referencing Matthewson's study from 1982, which concludes that dissolved constituents in mine runoff are expected to decrease to background levels within one year. Staff states that Luminant does not provide any data from the Liberty Mine or from neighboring mines to support Matthewson's conclusions and suggest that the PHC determination should include an evaluation of data from the Liberty Mine and neighboring mines to verify that acidity and dissolved constituents in untreated surface water runoff are indeed decreasing over time. Staff therefore sponsors proposed new Permit Provision No. 5, which would require Luminant to update the surface water PHC determination to include findings on what impacts the proposed surface mining operation will have on acidity and total dissolved solids in surface water. The updated surface water PHC determination would be submitted for review and approval by the Commission in accordance with § 12.226 of the Regulations, within 120 days from the issuance of the permit. As noted in Paragraph 2, *supra*, Luminant disagrees as to the necessity of this provision, but assents to its inclusion this Order. The ALJ agrees with Staff's recommendation and proposes the adoption of the provision to ensure protection of the hydrologic balance and compliance with the Regulations.
- (n). A previous cumulative hydrologic impact assessment (CHIA) was prepared by Staff for the existing mines within the Sabine River Basin on November 16, 2012 for the Permit No. 59, Marshall Mine permit application, Docket No. C12-0010-SC-00-A. This assessment included an analysis of cumulative effects from all past, existing and proposed mining in the Sabine River Basin in Harrison, Panola, and Rusk Counties (Martin Lake AIV South Mine, former Darco Mine, Oak Hill Mine, South Hallsville Mine No. 1 Mine, Martin Lake Mine, Rusk Mine, Marshall Facility Area Mine, Liberty Mine, and Marshall Mine). The additional mining proposed in the application, as supplemented is not significant enough to change the predicted effects in that CHIA. No changes are proposed in the application that would affect the findings and conclusions set out in the CHIA. No additional CHIA is necessary. The analysis reflects that all cumulative effects to surface waters and groundwater

will be insignificant because of the large dilution effects from the surrounding aquifers and from substantial runoff within the large drainage areas (TAA, Appendix I).

38. The surface water control plan meets requirements. The plan is depicted on Plate 148-1 (SD2). All drainage from disturbed areas will be routed through sedimentation ponds prior to release from the permit area unless otherwise approved by the Commission. Text on pp. 139-14 through 139-17, as supplemented, describes the plan that includes the use of impoundments, sediment ponds, and diversions, and dewatering of overburden. Seven sedimentation ponds, two temporary ponds, and eighteen surface water control diversions are proposed in the permit area. General design plans for P-4 Sedimentation Pond, P-4 Diversion No. 1, and P-4 Diversion No. 2 were submitted in the application (Appendix 148-B). No detailed design plans for impoundments, sediment ponds, or diversions have been submitted. The existing and proposed permanent impoundments are listed in Table 139(T)-8. Outfall changes will be reported to the Commission to ensure that appropriate monitoring is conducted and reported. Luminant will collect data obtained from final discharge ponds in accordance with TCEQ discharge permits. Several of the final discharge ponds were not constructed immediately following approval of the initial mine permit because no mining activities occurred in the watersheds of those ponds for several years after the initial permit was approved. Therefore, baseline surface water monitoring stations LSW-1 through LSW-5 were reestablished on a temporary basis and sampled quarterly until the quarter in which final construction certification of the pond within the same watershed was obtained. The relationship between stream monitoring stations and final discharge ponds are shown on page 146(d)-31. Only one of the ponds (P-4) has not yet been constructed, so temporary surface water monitoring from the native stream channels is only occurring at LSW-1 and LSW-2. The long-term surface water data will be used to determine whether Luminant's surface impoundments and current reclamation practices are minimizing downstream impacts on surface water quality. Luminant personnel will maintain the temporary monitoring sites during regular visits and will update the rating curves following 10-year/24-hour flood events or if any changes in channel geometry are observed. Final discharge ponds monitored under the TPDES permit are shown in Figure 146(d)-3. Additional final discharge ponds may be added to the long-term surface water monitoring program in future renewals for proposed mining activities in future mine blocks (*i.e.*, "out years"). All active-mine drainage will be routed through sediment ponds unless otherwise approved by the Commission. The use of sedimentation ponds will mitigate impacts to sediment yield.
39. Temporary and permanent water control structures are proposed that will be sufficient for water control and discharge in accordance with TCEQ permit requirements. No detailed design plans have been included for approval. Diversions will assist in the control of surface water. General design plans for one sedimentation pond (P-4 Sedimentation Pond) and two associated diversions (P-4 Diversion Nos. 1 & 2) are included in the application. General design plan information for permanent impoundments proposed within the permit term is located in Table 139(T)-8 and on Plates 139-2-1. Typical designs of various permanent drop structures are shown on Figures 148-4 through 7. No other design plans have been submitted for approval. Luminant will obtain Commission approval of temporary and permanent structures prior to construction.

40. Luminant's proposals for closure, relocation and/or variances from the 100-foot buffer zone requirement for public roads are approved.

- (a). No road relocations or closures are proposed in the requested permit term.
- (b). The proposed surface mining will not approach nearer than 100 feet of the outside right-of-way line of any public road except as allowed by the Regulations or approved by the Commission. However, public road buffer zone variances are requested for the locations listed below for the proposed permit term. Activities will include, but not be limited to, mining, pre-stripping activities, pond construction, diversion construction, road construction, dewatering activities, regrading, reseeding, erosion repair, and other such activities associated with normal mining, construction and reclamation procedures. Luminant Mining Company LLC requests the following road buffer zone variances for the proposed permit term:
 - (1). Rusk County Road No. 2144 - The south side of the existing County Road No. 2144 0.02 miles east from the intersection with FM 2145 to a point approximately 0.70 miles west of the aforementioned intersection;
 - (2). FM 2658 – The east side of FM 2658 0.40 miles from its intersection with the existing FM 1251 to a point approximately 2.5 miles north of the aforementioned intersection. The east side of FM 2658 3.5 miles from its intersection with the existing FM 1251 to a point approximately 1.5 miles north. The west side of FM 2658 0.40 miles from its intersection with FM 1251 to a point approximately 4.5 miles north of the aforementioned intersection;
 - (3). FM 3231 – Both sides of FM 3231 from its intersection with the existing FM 1251 to a point approximately 0.04 miles north of the aforementioned intersection;
 - (4). Rusk County Road No. 399D – Both sides of the existing County Road No. 399D from its intersection with FM 2658 to a point approximately 0.27 miles west of the aforementioned intersection; and
 - (5). FM 1251 – Both sides of FM 1251 0.23 miles from its intersection with the existing FM 2658 to a point approximately 0.68 miles east of the aforementioned intersection.

The road buffer zone variances are listed on page 152-2 of the application, and their locations are set out on Plate 152-1 of the application. Appropriate notice has been provided in accordance with §12.207. The Commission is the public authority with jurisdiction over the areas within 100 feet of the outside right-of-way line of the public roads. The application indicates the methods that will be used to ensure that the activities proposed do not present danger to the public. The interests of the public will be protected. The road buffer zone variance requests meet the requirements of §§12.72(a)(2)(c), 12.72(a)(3), and 12.152. Requests for the public road buffer zone variances are approved.

41. Luminant indicates that existing routes will be used to transport lignite as depicted on Plate 154-1. Luminant proposes no new roads or conveyors. Luminant will reclaim roads when

no longer needed for surface mining and reclamation operations. A reclamation schedule for the temporary roads is included (Table 154-1). Reclamation of roads and other structures is also addressed in Section .145-H.

42. As of the date of this Order, there are no notices of violation, bond forfeitures, and /or civil penalties for Luminant or its owners/controllers. The Applicant-Violator System (AVS) report shows that Luminant has paid all reclamation fees and has no violations that have not been corrected or are in the process of being corrected in accordance with §12.215 of the Regulations.
43. Luminant has met the requirements of §§12.229-230 for those portions of the application related to the length of the permit term, requests for renewal of approved activities, meet environmental protection standards, continue meeting its responsibility to comply with the Act and Regulations, satisfactorily meet the terms of the approved permit, continue to meet bond requirements, and continue to meet insurance requirements.
44. The operations proposed by the proposed permit will not adversely affect any publicly-owned parks or places included in or eligible for listing in the NRHP, do not propose activities within a National Park, are not within 100 feet of a cemetery, are not within 100 feet of a public road except as otherwise approved in this Order, and are not within 300 feet of an occupied dwelling, public building, school, church, community, or institutional building, except as provided for by the Regulations.
45. Luminant does not control and has not controlled mining operations with a demonstrated pattern of willful violations or intent not to comply with the Act and Regulations.
46. Luminant Mining Company LLC and Luminant Generation Company LLC are current in the payment of franchise taxes through December 31, 2018, as required by Tax Code §§171.001 *et seq.* (Vernon 2015 & Supp. 2018) (Comptroller Certificates of Account Status).
47. All required information has been filed in accordance with §12.216 of the Regulations for the new activities proposed by the application, as supplemented, as well as updated information for existing operations. Such information, as supplemented, is accurate and complete and demonstrates that the proposed operations can be feasibly conducted in accordance with the supplemented application, this Order, the permit provisions contained in Appendix I to this Order, and the soil-testing plan contained in Appendix II to this Order.
48. Open meeting notice was posted for Commission consideration of this application.

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

CONCLUSIONS OF LAW

1. Proper public notice of application and notice of application to Texas and federal agencies were made as required by the Act, Regulations, the APA and the Commission's procedural rules. No public hearing was required. Open meeting notice has been made as required.
2. The application for renewal/revision of Permit No. 58 meets all requirements for approval as set out in the Act, the Regulations, the APA, and the Commission's procedural rules, as set forth in the Findings of Fact, and as required by the permit provisions.
3. The current blanket collateral bond in the amount of \$975,000,000 is in place as approved by the Commission and is not proposed for changes in this docket. The amount of the current blanket collateral bond exceeds the sum of the estimated reclamation costs for Luminant's Texas mines, including the proposed bond amount attributable to the Martin Lake Liberty Mine.

IT IS THEREFORE ORDERED BY THE RAILROAD COMMISSION OF TEXAS that the Findings of Fact, Conclusions of Law, permit provisions, and soil testing plan as set out in this Order are hereby adopted; and

IT IS FURTHER ORDERED that no additional bond is required;

IT IS FURTHER ORDERED that the application, as supplemented, and as limited by the permit provisions, is hereby approved and renumbered as Permit No. 58A, Martin Lake Liberty Mine; and

IT IS FURTHER ORDERED that the renewed and revised permit is hereby issued; 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 this 23rd day of January, 2019.

RAILROAD COMMISSION OF TEXAS



CHAIRMAN CHRISTI CRADDICK



COMMISSIONER RYAN SITTON

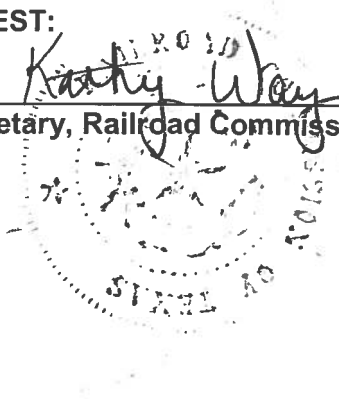


COMMISSIONER WAYNE CHRISTIAN

ATTEST:



Secretary, Railroad Commission of Texas



APPENDIX I**PERMIT PROVISIONS**

1. Luminant shall modify the parameters to be monitored for the surface-water monitoring plan to include total alkalinity, if the pH is less than 6.0 s.u. The plan must also be modified to include annual monitoring of all approved postmining ponds for the pH, and if the pH is less than 6.0 s.u., total alkalinity. The modified plan must be submitted for review and approval by the Commission in accordance with § 12.226 of the Regulations, within 120 days from the issuance of the permit.
2. Luminant shall modify the monitoring plan to include a requirement that discharge monitoring reports and individual pond monitoring data provided to the Commission indicate which discharges include water which may have been treated to adjust pH and/or treated with coagulants. The modified plan must be submitted for review and approval by the Commission in accordance with § 12.226 of the Regulations, within 120 days from the issuance of the permit.
3. Luminant shall update the ground-water PHC determination to provide a quantitative analysis of the LTGM data and a comparison to baseline data to support the PHC-determination findings. Additionally, Luminant should provide a narrative explaining how the LTGM data impacts the quantity and quality of ground-water in the permit and adjacent areas. The modified PHC determination must be submitted for review and approval by the Commission in accordance with § 12.226 of the Regulations, within 120 days from the issuance of the permit.
4. Luminant shall update the surface-water PHC determination to include a water-quantity mass balance comparison for the permit area (premine to postmine) to assess how the proposed reclamation topography and reclamation ponds might affect downstream water quantity. The updated surface-water PHC determination shall be submitted for review and approval by the Commission in accordance with § 12.226 of the Regulations, within 120 days from the issuance of the permit.
5. Luminant shall update the surface-water PHC determination to include findings on what impacts the proposed surface mining operation will have on acidity and total dissolved solids in surface-water. The updated surface-water PHC determination shall be submitted for review and approval by the Commission in accordance with § 12.226 of the Regulations, within 120 days from the issuance of the permit.

APPENDIX II - SOIL TESTING PLAN

Martin Lake Liberty Mine

After final grading, permanent markers will be placed on 1,000-ft centers in regraded areas to delineate a 23-acre grid system (see Plate 145-1, *Martin Lake Liberty Mine Grid Map*) for monitoring postmine soil quality and nutrient requirements. These markers will be maintained until land is released from all reclamation obligations. All disturbed areas will be subject to the postmine soil monitoring program as outlined below.

Initial Soil Sampling: Extent of Leveling

The grids will serve as the initial basis for postmine soil sampling. An initial composite soil sample will be obtained on each grid. The samples will be collected, analyzed and the results reported to the Commission within two years following rough backfilling and grading. Luminant will submit initial postmine soil monitoring results before the placement of land into the extended responsibility period (ERP) and before the approval of Phase I bond release.

Initial Soil Sampling for Placement into the Extended Responsibility Period (ERP)

If a grid is leveled to its full extent of 23 acres, it will be sampled and reported as a 23-acre grid. However, if a grid is not completely leveled (23 acres), the portion that has been leveled and will be proposed for placement into an Extended Responsibility Area (ERA) will be sampled and reported.

Portions of grids that are sampled and will be proposed for placement into an ERA will be physically marked in the field, with markers being placed so that they are visible from one to the next. The line dividing a grid into separate sampling portions will be clearly marked along an easily identifiable boundary such as an extended responsibility area, road or tree line. Markers are placed at each turn in an ERA line. So, if a person in the field needs to determine the extent of sampling which a portion of a soil grid has received, it would be a matter of locating the grid (from a map and/or the grid center post) and then observing which side of the ERA line they are on.

Grid identification for reporting purposes will be clear so that there is no question about which grids have been reported. Portions of grids which are sampled to facilitate placement into ERP will be labeled in such a way that it is clear there will be further sampling and reporting as the remainder of that grid is leveled and proposed for ERP. For example, a complete 23-acre grid will be labeled as "2345" whereas the first portion of an adjacent divided grid will be labeled as "2346-1" with subsequent samples being labeled as "2346-2", etc. until the entire 23 acres have been sampled and reported. There are no combinations of grids proposed for any advancing divided, interior grids. Any portion of a grid that will be proposed for placement into the ERA will have the appropriate number of samples collected from it based on its acreage.

Initial Soil Sampling: Procedures and Parameters

Composite soil samples will consist of sub-samples collected at a density of one per acre of disturbance. An aggregate disturbance/redisturbance of 0.5 acre within a grid initiates soil sampling requirements.

Composite samples will be made to represent the 0-1 ft and 1-4 ft depth increments. Adjacent soil sub-samples will be taken no less than 200 ft from each other. All samples will be collected using standard soil sampling techniques.

- If a grid is disturbed in its entirety, 23 sub-samples will be mixed to make one composite sample per depth increment.
- If the disturbance within a grid is not the complete 23 acres, then the disturbed acreage will be sampled at a frequency of one subsample per acre of disturbance. (Example: If only 12.6 acres are disturbed within the grid, 13 subsamples will be taken). If disturbance within a grid rounds to or is equal to 0.5 acre, at least one sample must be collected.
- If disturbance within a grid is less than 2 acres in size, the acreage may be combined with an adjacent grid; however, no more than two grids will be combined for sampling purposes.
- If disturbance within a grid is less than 0.5 acre in size, it will not be individually sampled for reporting purposes; however, the acreage will be combined with an adjacent grid.
- If disturbance within a grid is less than 0.05 acre in size, it will neither be individually sampled nor reported.

The composite samples representing the 0-1 ft increment will be analyzed for the following parameters:

1. pH
2. Potential acidity (PA)
3. Exchangeable acidity (EA)
4. Neutralization potential (NP)
5. Acid/base accounting (ABA) = $NP - (PA + EA)$
6. Texture - sand, silt and clay
7. Nitrate-nitrogen
8. Plant available phosphorus, potassium, calcium, and magnesium
9. Cation Exchange Capacity (CEC)
10. Sulfur forms

The composite samples representing the 1-4 ft increment will be analyzed for the following parameters:

1. pH
2. PA
3. EA

4. NP
5. ABA
6. Texture - sand, silt and clay
7. CEC
8. Sulfur forms

In addition to the above analyses, a random 10% of the initial soil samples at each depth interval (0-1 ft and 1-4 ft) will be analyzed for total Cd, Se, and hot-water extractable B.

Procedures for analyzing plant available nutrients will utilize the Texas Agricultural Extension Service publication *Soil Testing Procedures* (March, 1980). The remaining parameters will be analyzed according to the RCT *Overburden Parameters and Procedures Manual* dated May 16, 1989 (updated in 2003 for the adaptation of the EPA method for pyritic sulfur analysis).

The analytical results and a map showing each grid and/or partial grid reported will be submitted to the Commission in both hard copy and digital formats. The map will display the grids and/or partial grids sampled and reported plus the Texas State Plane coordinates of their location. Luminant will also provide an updated bank with each initial report submitted, showing acres for each grid. Maps provided will clearly delineate the configuration of each grid, represented by the data contained in the report, and digital acreage information will be provided.

Initial Soil Sampling: Calculation of the Disturbance Area Bank Account

Luminant proposes to use a banking method to establish postmine soil suitability by comparison of premine and postmine acreage exceeding baseline soil quality criteria. For parameters not listed in the soil baseline, the statewide criteria as shown in Advisory Notice ER-BA-127(b) will be used to determine postmine soil success. The statistical soil baseline (Section .134) will provide the frequency distributions of native soils for regulated parameters, as reflected in Table 145-2, *Areally-Weighted Frequency Distributions, Postmine Soil Performance Standards*. These frequency distributions are then multiplied by the acreage within the actual disturbance area to yield the actual acreage allowed for each parameter value at each depth increment. The disturbance area will increase as mining progresses to reflect additional areas of disturbance. Expansion of the disturbance boundary, reflecting newly mined and reclaimed areas, will be submitted to the Commission as part of each initial soil report. Postmine acres sampled to date will be compared to the native soil baseline, and no parameter will fall below the postmine soil performance standards. Ultimately, the disturbance boundary will reflect the full extent of disturbance and reclamation within the mining permit.

Banked acres will be provided with each submittal of initial postmine soil data. Luminant plans to have only one bank for the entire permit area. If new areas are added to the permit or permits are consolidated, these areas will be incorporated into the soil bank. Acreage released from reclamation liability will continue to be included in the bank. Therefore, one bank will continue through a mine from the beginning of mining to the final extent of mining disturbance, irrespective of permit term or other time constraints. This approach will

provide a truer means of evaluating postmine soil success throughout the entire life of a mine site than using intermediate bank areas. Luminant plans to provide one soil bank using two depth increments (0-1 ft and 1-4 ft).

The following steps are involved in calculating the postmine bank account:

1. The premine standard is calculated by multiplying category baseline percentages for each soil parameter by total acres within the bank area.
2. The postmine values are the sums of total banked acres by category for each soil parameter represented by the initial soil sampling data.
3. Finally, balances are calculated as the difference between premine and postmine values to which adjustments are made. Adjustments are made by utilizing offsetting negative postmine balances in a given parameter category by amounts up to the unused sum of less desirable categories from the premine statistics.

Soil-Fertility Sampling

The purpose of soil-fertility (maintenance) sampling is to ensure no augmentation beyond normal husbandry practices has occurred during the ERP. Maintenance soil sampling also provides documentation on soil conditions for management purposes. The results of these analyses will be used to determine the rate and amount of fertilizer application for the next growing season. Soil samples will be collected from each pastureland land management unit (LMU) at the end of the growing season (October 1st through December 31st). Samples will be taken prior to the first year of productivity assessment, during the first year of productivity assessment, and during the second year of productivity assessment for pastureland LMUs. In the event that years of productivity assessment are not concurrent, Luminant plans to collect maintenance samples in the year prior to the second year of productivity assessment. Luminant will not obtain maintenance samples from areas where trees are planted, as fertilizer is only applied to trees the year in which they are planted.

At the end of each growing season, composite soil samples will be taken from the 0-1 ft. depth and analyzed for the following parameters in accordance with the RCT overburden parameters and procedures list:

1. pH
2. nitrate-nitrogen
3. plant-available P, K, Ca and Mg

For sampling and reporting purposes, a pastureland LMU will not exceed 100 acres in size. Any management unit greater than 100 acres in size will be subdivided during sampling to reflect areas of approximately equal size less than 100 acres. The divisions will be made along existing soil grid lines using either northings or eastings, whichever is appropriate for the management unit configuration. Each management unit will be identified by number and shown on the map accompanying the report. Sub-

samples will be obtained to represent no more than 10 acres per sub-sample. These sub-samples will be composited to represent the management unit for analysis and reporting purposes.

A report showing the amount and type of fertilizer and lime applied (since the end of the previous growing season), analysis results, and a map showing the units sampled will be submitted to the RCT during the first quarter of the year following each reporting period.

Ten-Percent Random Sampling in Fourth Year of ERP

During the fourth year of ERP, a random 10 percent of the 23-acre and/or partial postmine soil monitoring grids will be re-sampled using two depth increments (0-1 and 1-4 ft) and analyzed for the same parameters as those in the initial soil sampling. Results and a map showing the grids randomly sampled will be provided to the Commission no later than the second month of the fifth year of the ERP. In the event that the chemical and physical properties of the postmine soils warrant further investigation, the Commission may require additional testing.

Alternate Soil-Testing Plan

In the event the postmine soil testing plan reveals AFM/TFM problems, an alternate soil-testing plan will be developed specific for the affected area. Luminant will submit a plan and schedule to the Commission for approval prior to the initiation of alternate soil testing. This plan will include detailed information regarding delineation of affected area, sampling depth, and increments. A maximum sample area of 5.7 acres at a density of one sample location per acre will be assigned and sampled on one-foot intervals to the depth of concern, unless otherwise approved by the Commission.

Luminant will notify the Commission of its sampling schedule to allow Staff to be present during sampling. Upon request, splits of each sample will be provided to the Commission at the time of sampling.

Samples will be analyzed for the same parameters as those in the initial soil sampling, unless the Commission approves the submittal of a more limited suite of parameters. The results of these analyses and a remediation plan will be submitted to the Commission.

Once Luminant conducts remediation, the affected area will be sampled using the initial soil-sampling protocol. This is essential to ensure remediated acreage is accurately reflected in the postmine soil bank and to replace any previously submitted data for the grid(s). Luminant will submit results to the Commission verifying the successful correction of the identified soil problem.

The proposed postmine soil performance standards for the proposed new Martin Lake Liberty Mine, as reflected in above-referenced Table 145-2, are attached.

LIBERTY MINE, RENEWAL/REVISION PERMIT APPLICATION

AREALLY-WEIGHTED FREQUENCY DISTRIBUTIONS

POSTMINE-SOIL PERFORMANCE STANDARDS FOR TOPSOIL SUBSTITUTE AREAS

	pH (s.u.)	
<u>SOIL DEPTH</u>	<u>4.0-4.4</u>	<u>4.5-4.9</u>
	-----% area-----	
0-12"	12	36
12"-48"	26	48

	ACID-BASE ACCOUNTING (ABA)								
	tons/1000 tons (t/kt)								
<u>SOIL DEPTH</u>	<u>-9</u>	<u>-8</u>	<u>-7</u>	<u>-6</u>	<u>-5</u>	<u>-4</u>	<u>-3</u>	<u>-2</u>	<u>-1</u>
	-----% area-----								
0-12"	--	--	--	--	5	5	2	11	17
12"-48"	--	--	3	--	4	13	9	15	32

	CLAY (%)		
<u>SOIL DEPTH</u>	<u>41-45</u>	<u>46-50</u>	<u>51-55</u>
	-----% area-----		
0-12"	5	3	3

SAND (%)	
<u>SOIL DEPTH</u>	
	<u>81-85</u>
	<u>86-90</u>
	<u>91-95</u>

	-----% area-----
0-12"	
	6
	--
	--

**100% OF THE POSTMINE 0-12" AND 12"-48" INCREMENTS
WILL MEET THE FOLLOWING STANDARDS**

Boron (B)	≤ 5 ppm
Cadmium (Cd)	≤ 0.7 ppm
Selenium (Se)	≤ 2 ppm

Note: a zero (0) in a parameter value column indicates a value between 0.0% and 0.5%, rounded to 0. A dashed line in a parameter value column represents a true zero (0) value for that interval.