

**RAILROAD COMMISSION OF TEXAS  
HEARINGS DIVISION**

**SMRD DOCKET NO. C19-0010-SC-49-C  
LUMINANT MINING COMPANY LLC  
APPLICATION FOR RENEWAL/REVISION/EXPANSION  
PERMIT NO. 49B, BREMOND MINE  
ROBERTSON COUNTY, TEXAS**

**ORDER OF APPROVAL OF APPLICATION FOR RENEWAL/REVISION/EXPANSION  
AND ISSUANCE OF PERMIT NO. 49C**

Statement of the Case

Luminant Mining Company LLC (Luminant or Applicant), 6555 Sierra Drive, Irving, Texas 75039 has applied to the Railroad Commission of Texas (Commission) for renewal/revision/expansion of its surface coal mining and reclamation permit for its Bremond Mine, Permit No. 49B, located in Robertson County, Texas. The application was filed pursuant to the Texas Surface Coal Mining and Reclamation Act, Tex. Nat. Res. Code Ann. Ch. 134 (Vernon Supp. 2019) (Act), and the "Coal Mining Regulations," Tex. RR. Comm'n 16 Tex. Admin. Code Ch. 12 (Thompson West 2019) (Regulations). The application proposes to expand the existing 3,371-acre permit area by approximately 8,887 acres and seeks approval of renewed and revised operations during a requested five-year renewal term. The parties to this proceeding are the Commission's Surface Mining and Reclamation Division (SMRD or Staff) and Luminant.

The Bremond Mine lies approximately five miles east of the town of Bremond, Texas, in Robertson County. Permit No. 49 was initially approved and issued for the Twin Oak Mine on March 23, 2004. It was renewed and renamed for the first time on April 20, 2010 (Permit No. 49A), and subsequently renewed and renamed again on October 25, 2016 (Permit No. 49B). This application for renewal/revision/expansion of the Bremond Mine was declared administratively complete by the Director, Surface Mining and Reclamation Division (SMRD) and transferred to the Hearings Division on January 23, 2019, following Luminant's first supplement to the application, filed by letter dated January 21, 2019. Public notice, notice to landowners, and notice to state and federal agencies, with opportunity to comment, were provided in accordance with all applicable regulatory and statutory provisions. Following notice of the application, Mr. Ron Garney (Protestant) requested a hearing in this docket. Subsequently, Protestant withdrew from the proceeding, and the hearing to be held in this docket was cancelled given no other requests for hearing were received.

Staff reviewed the application for compliance with the Act and Regulations, and prepared a Technical Analysis (TA) document dated April 3, 2019, the first addendum thereto dated August 16, 2019 (TA Addendum No. 1), and the second addendum thereto, dated October 3, 2019 (TA Addendum No. 2). Luminant has accepted Staff's TA with addenda. Based on the application, as supplemented, the evidence presented, Staff's TA and addenda, and considering the comments filed, all factual issues have been addressed as required by the Act and Regulations, with the proposed permit provision as set forth in the Findings of Fact and Appendix I and the Soil Testing Plan included as Appendix II to this Order.

Luminant's currently accepted reclamation performance bond is a blanket collateral bond for all of its statewide mining operations in the amount of \$975,000,000, approved by Commission Order dated September 27, 2016. Staff recommends that the minimum amount for the Bremond Mine be increased to \$28,799,866, which is greater than Luminant's estimated reclamation costs of \$22,464,657. Because Luminant's current bond exceeds the sum of the estimated reclamation costs for its Texas mines and Staff's proposed increase to the bond amount attributable to the Bremond Mine, no changes to Luminant's existing blanket collateral bond are necessary as a result of this permit renewal.

After review of the supplemented application, Staff's TA and addenda, and comments received, the Administrative Law Judge recommends that the Commission approve the application, as supplemented, in accordance with the Findings of Fact and Conclusions of Law, with the permit provision contained in Appendix I and the Soil Testing Plan contained in Appendix II to this Order, and the permit, renumbered as Permit No. 49C, be issued to Luminant.

### **FINDINGS OF FACT**

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

1. On December 21, 2018, Luminant Mining Company LLC (Luminant) submitted its application pursuant to the Texas Surface Coal Mining and Reclamation Act, Tex. Nat. Res. Code Ann. Ch. 134 (Vernon Supp. 2019) (Act), and the "Coal Mining Regulations," Tex. R.R. Comm'n, 16 Tex. Admin. Code (TAC) Ch. 12 (West 2019) (Regulations), including nineteen volumes for renewal/revision/expansion of its surface coal mining and reclamation Permit No. 49B for the Bremond Mine. The existing 3,371-acre permit area is located in Robertson County, Texas. The existing permit area is bound: on the west generally by Walnut Creek, in the south generally by highway FM 46, in the east by various property tracts, and in the north generally by a segment of the Luminant railroad. The Bremond Mine, Permit No. 49B expansion area, approximately 8,887 acres, lies approximately five miles east of the town of Bremond, near the community of Petteway, and is contained within the "Bald Prairie," Petteway," and "Owensville" U.S. Geological Survey 7.5-minute, quadrangle maps.
  - (a) Luminant submitted the required application fee of \$3,000.00 [§ 12.108(a)(3), Regulations]. The Interim Director of SMRD (Interim Director) declared the application administratively incomplete on January 7, 2019, on the basis that the application lacked an overburden and topsoil handling plan and an accurate soil handling plan for the Bremond Mine. Luminant filed a response to the Interim Director's finding that the application was "administratively incomplete" on January 9, 2019 and supplemented the application through its Supplemental Document No. 1 (SD1) by letter dated January 21, 2019. Staff advised the Interim Director on the administrative completeness of the application in an Assessment of Incompleteness attached to the Interim Director's January 17, 2019 letter. The Interim Director declared the application as supplemented (SD1) administratively complete and filed it with the Hearings Division for docketing by letter dated January 23, 2019. The application consists of nineteen volumes and four additional volumes filed as supplements. Luminant filed four supplemental documents (hereinafter, SD1, SD2, SD3, and SD4). Staff filed a Technical Analysis document on April 3, 2019, evaluating the application as supplemented in SD1 (TA), its first addendum to its Technical Analysis on August 16, 2019, evaluating the application as supplemented (SD2, SD3) (TA Addendum No. 1),

and its second addendum to its Technical Analysis on October 3, 2019, evaluating the application as supplemented through SD4 (TA Addendum No. 2). These documents were filed as follows: SD1, by letter dated January 21, 2019; SD2, by letter dated February 5, 2019; TA, by letter dated April 3, 2019; SD3, by letter dated August 1, 2019; TA Addendum No. 1, by letter dated August 16, 2019, reviewing SD1, SD2, and SD3 and recommending the application be approved subject to a resolution of the remaining application deficiencies; SD4, by letter dated September 25, 2019, resolving all application deficiencies; and TA Addendum No. 2, by letter dated October 3, 2019, recommending final approval of the application, as supplemented, with one permit provision and the Soil Testing Plan contained in Appendices I and II to this Order, respectively.

- (b) Staff and Luminant are the only Parties to the proceeding. Copies of the application have been on file with and available for public inspection at the office of the Robertson County Clerk in Franklin, Texas and at the Commission's main office in Austin, Texas. The information contained in SD1 was submitted for the purpose of revising and correcting the application transmitted by letter dated December 21, 2018, to achieve administrative completeness. SD2 was submitted in response to the ALJ's comments on the draft public notice and road closures. The information contained in SD3 and SD4 was submitted 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, including Staff's identified application deficiencies. The application and all supplements were appropriately placed on file for public inspection with at the Commission's Austin offices and at the office of the Robertson County Clerk. Required public notice was given after the filing of the application [§ 12.123, Regulations]. The information contained in the supplemental documents, for the purposes of approval of this application as set out in this Order, do not constitute material changes to the application, for which additional notice must be provided under § 12.212(d) of the Regulations. Staff's TA Addendum No. 2 indicates that Luminant has satisfactorily addressed all of Staff's enumerated deficiencies and recommends the permit renewal/revision/expansion application be approved, with Commission approval of the Staff-recommended permit provision.
  - (c) Permit No. 49B, issued October 25, 2016, has a five-year term. In accordance with § 12.106(b) of the Regulations, the application was filed on December 21, 2018, at least 180 days prior to the expiration of the permit. Additionally, given that Luminant proposes an expansion of the existing permit boundary, which requires the part of the application addressing new land areas to meet all standards applicable for the issuance of a new permit, the application was properly filed at least eight months prior to the projected commencement of operations as set out in § 12.106(b)(1) of the Regulations.
2. The existing permit area contains 3,371 acres; in the application, Luminant proposes to add an additional 8,887 acres, for a combined total of 12,258 acres. Luminant requests approval to mine approximately 1,842 acres during the proposed five-year permit renewal term. Luminant may conduct exploration activities within the permitted mining area on an as-needed basis to facilitate the gathering of geotechnical data. Surface water and groundwater monitoring are ongoing.

3. The application, as supplemented, was appropriately verified by an authorized representative of Luminant [§ 12.107(g), Regulations] 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 TAC § 1.1 *et seq.* The application has met the requirements set out in § 12.107 (Regulations) for format and content, with adoption of the Findings of Fact, the permit provision contained in Appendix I, and the Soil Testing Plan contained in Appendix II. Form SMRD-1C was filed, and it contains the information required by §§ 12.116–12.154 [§ 12.107(a), Regulations]. In the application, as supplemented, the information is current, presented clearly and concisely, and is supported by appropriate references [§ 12.107(b), Regulations]. Technical data has been submitted as required [§ 12.107(c) and (e), Regulations], and the data was prepared by or under the direction of professionals in the subjects analyzed [§ 12.107(d), Regulations].
4. Proper notice of application was published once each week for four consecutive weeks in a newspaper of general circulation in the locality of the surface mining and reclamation operations on February 14, 21, 28, and March 7, 2019, in the *Robertson County News* and the *Franklin Advocate*, Robertson County, Texas. Luminant filed proof of publication of notice by letter dated March 14, 2019. The notice of application contains all information required by the Act and the Regulations. Luminant identified the location of the public offices where the application, as supplemented, was filed in accordance with § 12.207 of the Regulations and submitted an original affidavit and news clippings showing publication in accordance with § 12.123 of the Regulations. The notices contained all required information concerning the Applicant, the location and boundaries of the permit area, the availability of the application for inspection, and the address to which comments, objections, or requests for a public hearing or informal conference on the application were to be sent. The supplements to the application, filed after notice was published, do not result in any material effects on landowners or the environment that are greater than those initially proposed and do not create a need for additional notice.
5. On February 15, 2019, the Commission placed complete notice of application as first-class mail or interagency mail, as appropriate, to the Texas and Federal agencies listed in § 12.207 of the Regulations and to local government agencies, including the required divisions of the following: Texas Commission on Environmental Quality (TCEQ); Texas Historical Commission (THC); University of Texas, Bureau of Economic Geology; Texas State Soil and Water Conservation Board; Texas Parks and Wildlife Department (TPWD); General Land Office; Natural Resources Conservation Service (NRCS); USDI Fish and Wildlife Service (USFWS); U.S. Environmental Protection Agency (EPA); USDI Office of Surface Mining Reclamation and Enforcement; U.S. Department of the Army Corps of Engineers (USACE); Texas Department of Transportation (TDOT); Brazos River Authority; water and sewage companies as required by § 12.207(c)(4) of the Regulations; various utility companies; and the Robertson County Clerk and County Judge. Two state agencies filed comments with the Commission regarding the application. TPWD, filed comments with the Commission by letters dated April 8, 2019 and October 11, 2019. TPWD's comments regarding the proposed renewal/revision/expansion application are addressed in Finding of Fact No. 29, *infra*. THC, by letter dated September 10, 2019, offered several comments regarding section .125, cultural resource information, of the application. THC's comments are addressed in Finding of Fact No. 13, *infra*.
6. The Commission placed a complete notice of application in the mail on February 15, 2019, to landowners within and adjacent to the proposed permit area. By letter dated February

19, 2019, landowner Ron Garney (Protestant) requested an extension of time to file comments on the application. By letter dated March 20, 2019, the ALJ granted Protestant's request, extending the deadline for comments to April 22, 2019. By email dated April 22, 2019, Protestant requested a hearing in this docket. The ALJ, by letter dated April 24, 2019, acknowledged the Protestant's request for hearing and named the Protestant a provisional party to the proceeding, subject to a final ruling on any objections that may be received challenging the Protestant's right to participate in the hearing. Subsequently, by letter dated May 16, 2019, Protestant requested to withdraw as a "protestant" from the proceeding. Accordingly, the ALJ, by letter dated May 17, 2019, granted Protestant's request and cancelled the hearing to be held in this docket. No additional landowner comments, protests, or other timely requests for hearing were received.

7. The application, as supplemented (SD3), includes all information required to show organizational information, ownership interests, and compliance information as required by § 12.116 of the Regulations. Luminant has presented information that complies with the requirements of § 12.117 of the Regulations for documentation of claimed right-of-entry.
  - (a) Luminant is a Texas limited liability company. Luminant provided its resident agent, Capitol Corporate Services, Inc., 206 E. 9th Street, Suite 1300, Austin, Texas 78701 (SD3). The following represents the current ownership and control of Luminant. Vistra Energy Corp. is the parent corporation of Vistra Intermediate Company LLC. Vistra Intermediate Company LLC is the parent company of Vistra Operations Company LLC. Vistra Operations Company LLC is the parent company of Vistra Asset Company LLC. Vistra Asset Company LLC is the parent company of Luminant Mining Company LLC and Luminant Generation Company LLC. Luminant Generation Company LLC owns or controls the coal and lignite to be mined by Luminant Mining Company LLC and has the right to receive such coal and lignite after mining. All officers and directors of these entities have been identified in the application, as supplemented (SD3).
  - (b) Tracts where Luminant does not have legal right of entry are hatched on Plates 116-1 through 116-3. Luminant proposes 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 Generation Company LLC, Big Brown Power Company LLC, and Big Brown Lignite Company LLC own certain tracts or are the lessee(s) of certain land tracts located within the proposed permit area (.117, application). Luminant does not propose any surface mining operations on any property for which it does not have a valid right-of-entry. Right-of-entry and property ownership is detailed in permit application Section 116, as supplemented (SD3), and Section 117. Additionally, Appendix 116-B (SD3) includes tract ownership information for tracts within the permit area and Appendix 116-C includes ownership information for tracts adjacent to the permit area as well as a description of the legal instrument by which Luminant claims right-of-entry, if any. Appendix 116-E (SD3) contains a table listing those tracts with lignite interests that have been severed from the surface estate. Appendix 116-F includes oil/gas lease holder information. Tables 116-F-2 provides that Luminant has executed accommodation agreements with oil and gas entities with leases on lands, with the exception of Energy Transfer Fuel, LP and Fortson Oil Company. The executed accommodation agreements have been filed in the Robertson County Courthouse.

Plates 116-1, 116-2, and 116-3, each the Property Ownership Map, located in section .116 of the application, illustrate property ownership for tracts within and adjacent to the permit area, identified by tract number. Luminant provided information regarding notices of violation in Appendix 116-D.

- (c) 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 Office of Surface Mining Reclamation and Enforcement (OSM) 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 TA Addendum No. 2. No outstanding violations, bond forfeitures, and/or civil penalties for Luminant or its owners/controllers were found, and no pending violations or nonpayment of AML fees were found to exist (TA Addendum No. 2).
- 8. Luminant provides sufficient information in the application, as supplemented (SD3) to meet the requirements of § 12.118 of the Regulations. The proposed permit area is not within an area designated as unsuitable for surface mining activities under §§ 12.78–12.85 of the Regulations (SD3) and is not within any area under study for designation in an administrative proceeding (§ 12.118, Regulations). The Applicant does not propose to conduct surface mining activities within 300 feet of any occupied dwelling not owned by Luminant; a buffer zone of at least 300 feet will be maintained around occupied dwellings not 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. Luminant does not claim the exemption under § 12.118(b) of the Regulations provided for applicants having made substantial financial commitments prior to January 4, 1977.
- 9. Luminant provides sufficient information in the application, as supplemented, to meet the requirements of § 12.119 of the Regulations for the proposed permit term and § 12.125 of the Regulations for life-of-mine information. The application, as supplemented, includes required information regarding the proposed permit boundary and term.
  - (a) The application contains information for the mining activities associated with the permit term (2020-2024) for the life-of-mine area. The application includes information that complies with the requirements of § 12.119(a) of the Regulations for: (i) the anticipated starting and termination dates of each phase of mining and (ii) the anticipated number of acres of land to be affected for each phase of mining over the total life of the permit. Luminant proposed to recover approximately 2,910,200 tons of lignite per year during the proposed five-year renewal term, with approximately 14,551,000 tons projected for recovery during the proposed renewal term. The mining progression is shown on the Life of Mine Map, Plates 125-1 through 125-3 and the Mine Plan and Operations maps, Plates 139-1-1 through 139-1-12. Mine Years and proposed Mined and Affected Acres are shown in the following table (Table 119-1):

Year	Mined Acres	Affected Acres
2020	232	267
2021	131	151
2022	181	208
2023	175	201
2024	141	162
2020-2024	982	1129
2025-2041*	4203	4833

Note: Mined acres include auxiliary areas.

\* Denotes out years; "Out Years" (2025-2041) describe the next permit term(s) subject to Commission approval.

- (b) The application includes information for the size, sequence, and timing of sub-areas of the permit and the life-of-mine anticipated permit, as required by § 12.125(1) of the Regulations (Life of Mine map, Plates 125-1 through 125-3). Luminant proposes mining approximately 1,842 acres during the proposed permit term (2020-2024) and an additional 4,203 acres in the future terms (2025-2041). Luminant proposes to mine areas QI Aux. Area No. 1, QII, and QII Aux. Area No. 1 during the proposed permit term and areas QII, QIII, and QIV in the future terms. Luminant proposes mining and other mining related-disturbances on the following approximate acreages as set out in Table 125-1, as follows:

MINING AREA	YEAR	MINE BLOCK ACRES
QI AUX. AREA NO. 1	2020-2024	943
QII	2020	232
QII	2021	131
QII	2022	181
QII	2023	175
QII	2024	141
QII AUX. AREA NO. 1	2020-2024	39
QII	2025-2041*	1578
QIII	2025-2041*	661
QIV	2025-2041*	1964

\*Denotes out years.

10. Luminant provides information that complies with § 12.120 of the Regulations for personal injury and property damage insurance. Luminant provided a certificate of liability insurance coverage, submitted to the Commission by letter dated July 30, 2018, effective from August 1, 2018, to August 1, 2019 (Appendix 120-A). Luminant provided replacement certificates of insurance to SMRD Staff by letter dated July 31, 2019; the replacement certificate of insurance for the Bremond Mine is effective for the time period from August 1, 2019, to August 1, 2020. By letter dated October 28, 2019, Staff filed its review of the replacement certificates, indicating the certificate identifies the Bremond Mine and the minimum requirements of § 12.311 of the Regulations have been met.
11. Section .121 of the application, as supplemented (SD3), includes identification of required permits or authorizations issued by the EPA, USACE, TCEQ, the U.S. Mine Safety and Health Administration, the TPWD, and the USFWS. Permit issuance and approval dates

are contained in the application, as supplemented (SD3). The information provided in this section of the application meets the requirements of § 12.121 of the Regulations.

12. Luminant provides sufficient information to satisfy the requirements of §§ 12.122, 12.123, and 12.124 of the Regulations. Luminant identifies the location of the public office(s) for public availability of the application and provided newspaper identification and publication information (See Finding of Fact No. 4, *supra*). Luminant also provided a description of existing environmental resources that could be impacted by the operations [Findings of Fact No. 9, *supra*, and Findings of Fact Nos. 13 – 25, *infra*]. Luminant updated Section .123 of the application in SD2 and SD3.
13. Luminant provides sufficient information regarding the 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, in compliance with § 12.125(2) (Regulations). Luminant includes the Bremond Mine Permit 49B Renewal/Revision/Expansion Cultural Resources Report prepared by Blanton & Associates, Inc. (Blanton) on behalf of Luminant in section .125 of the application, as supplemented (SD3), in addition to correspondence with the THC (Appendix 125-A). Approved Permit No. 49B identified 15 cultural resource sites within the permit area, four of which required protection. In the application for renewal/revision/expansion a total of 28 cultural resource sites were recorded and evaluated within the renewal/revision/expansion Bremond Mine permit boundaries, of which 22 sites have been recommended as not meeting the NRHP listing criteria. Six of the 28 sites identified in the proposed permit renewal/revision/expansion area have been recommended for either avoidance/relocation (41RT173), NRHP testing (41RT107, 41RT111, 41RT125, 41RT393), or data recovery investigations (41RT113). Luminant includes its Protection, Testing, Treatment, and Mitigation Plan, in section .151 of the application, including reference to the Memorandum of Agreement between the Commission and the THC, treatment avoidance, testing, or mitigation by category (NRHP-listed, sites eligible for such listing, sites requiring additional evaluation, and sites that are ineligible), and a treatment plan for newly discovered sites. The information provided in section .151 satisfies the requirements at §12.151 of the Regulations. By letter dated September 10, 2019, THC commented on the application, concurring with Luminant's summary of the history of cultural resource investigations, but providing content updates to Table 1 [*Cultural Resource Sites Evaluated within the Renewal/Revision/Expansion Bremond Mine Permit Boundaries*; Application, p. 125(b)-9] to more closely reflect THC eligibility determinations (TA Addendum No. 2, Appendix III). The THC revised its recommendations for site 4RT235 to be classified as "undetermined until further testing is conducted." Staff recommends Luminant update Table 1 [Application, p. 125(b)-9] in its next revision application. Several sites have not yet been tested or testing is not complete, and the sites must be avoided until protected, mitigated, or determined ineligible for listing. Therefore, Staff recommends proposed Permit Provision No. 1, stating, "All cultural resource sites within the permit boundary, identified during or subsequent to baseline surveys, for which eligibility for nomination to the National Register of Historic Places has not been determined, shall not be disturbed by mining and/or mining-related activities. Copies of all correspondence items, including all attachments, between Luminant and the THC shall concurrently be provided to the SMRD." The Commission approves Permit Provision No. 1.
14. The requirements of § 12.126 of the Regulations have been met. Hydrological characteristics of groundwater and surface water have been adequately described. The



principal groundwater resources in the area are the Simsboro Sand and water-bearing units in the Calvert Bluff and Hooper Formations of the Wilcox Group. The Carrizo Formation, although part of the Claiborne Group, is hydrostratigraphically part of the Wilcox Group; the aquifer is termed the Carrizo-Wilcox Aquifer. Figure 126-4 depicts the locations of the outcropping and downdip portions of these aquifers. The water-bearing properties of the geologic units are included in Table 126-1. Geologic characteristics of the permit renewal/revision/expansion area have been adequately described. The Eocene Wilcox Group is the principal geologic unit featured in the permit renewal/revision/expansion area. The Wilcox Group is made up of interbedded fine to very fine-grained sand, silts, and clays as well as lignite beds. The Wilcox is comprised, from oldest to youngest, of the Hooper Formation, 500 to 1,000 feet in thickness, comprised of dark gray to brown mudstone with minor light gray to pale brown sands, followed by the Simsboro Formation, which is less than 100 feet to 800 feet in thickness, comprised of white-gray, kaolinite, fine to medium-grained sand and overlain by the Calvert Bluff Formation, which is 500 to 2,000 feet in thickness, comprised of reddish-brown mudstone and sand with lignite beds (Figure 126-3).

15. Section .127 of the application, as supplemented, adequately addresses the requirements at § 12.127 of the Regulations. Geologic information for the permit area, including geologic descriptions and a statistical summary of selected physical and chemical characteristics, were prepared for stratigraphic units mapped in the proposed permit renewal/revision/expansion in the application. A licensed professional geoscientist certified Section .127.
  - (a) Continuous cores were collected at 41 locations in 1985, 1986, 1998, 2003, 2013, and 2016-2017 within the permit renewal/revision/expansion area. Plate 127-1 (*Geologic Cross Section Location Map*, SD3) shows cross-section locations in the approved permit area, with core and gridhole locations. A total of ten stratigraphic units and two lignite void/channel sands were defined in the study area (Figure 127-1). Luminant provides Appendix 127-A containing chemical analyses for all continuous cores collected for the proposed renewal/revision/expansion area. Appendix 127-B includes continuous core descriptions and geophysical logs for all the cores collected. Statistical analyses for different stratigraphic units are contained in Appendix 127-C.
  - (b) The overburden stratigraphy is typical of the Calvert Bluff Formation of the Wilcox Group, which generally consists of interbedded sand, silt, and clay with several lignite seams; the overburden thickness within the renewal/revision/expansion area ranges from 0 feet updip to more than 200 feet downdip. Luminant's consultant, Golder Associates, Inc. (Golder), considers the overburden to be all sediments above the L4 or L5 lignite seams (Plate 127-8). The underburden includes all sediments below the L5 seam, or the L4 seam where L5 is absent, and consists primarily of sediments of sand, silt, and clay, including units UBU (interbedded sand, silt, and clay unit); USD (comprised of approximately 77% sand); and UCL (comprised of approximately 50% clay). The distribution of these units throughout the renewal/revision/expansion area is presented on fourteen stratigraphic cross sections shown on Plates 127-2 (SD3) through 127-6. Net sand thickness is provided in Plate 127-8. Luminant identified overburden and underburden units with a summary of average, maximum, minimum, and standard deviation values for pH, acid-base accounting, sand content, and clay content (Appendix 127-C, Summary of Unit Statistics).

- (c) Eight lignite seams, described on pages 127-11 and 127-12 of the application, are present in the study area, with L1 being the youngest. The L3, L4, and L5 lignite seams will be mined based on the current mine plan. The L3 is the youngest mineable seam; it is distributed through most of the renewal/revision/expansion area and is generally three to five feet thick. The L4 seam is the thickest and most expansive seam at eight to ten feet thick. The L5 seam generally occurs ten to 15 feet below the L4 and is typically two to four feet thick. Plate 127-8 depicts the elevations of the tops of the L3, L4, and L5 lignite seams, along with lignite void areas, core and borehole locations, continuous core locations, and dragline mobile area.
16. Regional groundwater hydrology has been adequately characterized in the application, as supplemented (SD3, SD4), to determine adequate monitoring of groundwater in accordance with § 12.128 of the Regulations. Much of the groundwater baseline data has previously been submitted and approved by the Commission in previous applications for permit issuance or permit renewals for the Bremond Mine. To comply with § 12.128 for the expansion area in this application, Luminant updated the water well inventories [Appendix 128-D, Plate 128-2 (SD3), Table 128-5] and oil and gas well inventories [Appendix 128-E, Plate 128-3] in 2018; collected two rounds of water-quality samples from existing monitoring wells in 2012-2013; and collected water-level measurements from a subset of the existing monitoring wells between 2012-2019 (SD4). Between 2017 and 2019, four rounds of water levels were collected from all accessible monitoring wells located north of Highway 46 (SD4). The information for groundwater includes characterizations of principal aquifers from aquifer tests, hydraulic conductivities, hydrologic data from a well inventory, data from monitoring and test wells, and baseline monitoring wells. Groundwater data for water levels are included, and long-term groundwater monitoring and well locations are in accordance with the requirements of § 12.146(b) of the Regulations [Finding of Fact No. 32(b), *infra*]. The application also includes an overburden potentiometric surface map [Plate 128-5 (SD3)] and an underburden potentiometric surface map (Plate 128-6). The updated information included in this application adequately characterizes the groundwater and surface water hydrology.
- (a) Data from 32 monitoring wells north of Highway 46 (not including nine monitoring wells, located South of Highway 46, that were not included in Luminant's renewal/revision/expansion application) were used to characterize the baseline groundwater quantity and quality (Table 128-1, SD4). Water-level data for wells located north of Highway 46 are summarized in Table 128-3 (SD3, SD4); water chemistry data are summarized in Table 128-4; and available laboratory reports are provided in Appendix 128-B. A summary of Hydrologic Test Results is included as Table 128-6. Of the 32 monitoring wells, 13 wells were used for monitoring the overburden; however, Luminant was unable to locate one of these wells (AA-18) and two wells contained a pump. Ten wells were used to monitor the underburden; seven wells were used to monitor void areas, and two wells were used to monitor the Simsboro Formation underburden (Table 128-1, SD4). Luminant has committed to install additional wells as listed on Table 146(d)-4 (SD3) and depicted on Plate 146(d)-2 (SD4). Additional wells P1-UB and P1-S will be installed prior to mining and wells P1-OB, P2-OB, P2-UB, P2-S, P3-OB, P3-UB, P4-OB and P4-UB will be installed at least three years prior to mining or in 2025, whichever is first [Table 146(d)-4, SD3]. Luminant agreed to attempt to locate missing well AA-18 using a professional surveyor or a sub-meter portable GPS unit, and, if Luminant is unable to locate the well, coordinate with the Texas Department of Licensing

and Regulation to document the well as missing according to their regulations. Staff has determined, after consultations with the Inspection and Enforcement Section within SMRD, that Luminant's failure to locate the well does not constitute a violation of the explorations plan requirements in Registration No. 31, if acted upon in a timely manner (TA Addendum No. 2). Plates 128-2 (SD3) and 128-3 depict well locations for water wells and oil and gas wells, respectively. Table 128-5 provides a summary of the water well inventory and Appendix 128-D includes the Water Well Inventory Report.

- (b) Data from groundwater sampling are provided in Table 128-7 (SD4) for each monitored area. Groundwater in the Bremond Mine area occurs in the overburden through interconnected, permeable sand units within the Calvert Bluff Formation above the lignite seams; in the Calvert Bluff Formation below the lignite seams; and below that, in the Simsboro Formation. The most transmissive Calvert Bluff aquifers in the permit renewal/revision/expansion area are thick sand channels within the overburden and the lateral equivalent strata in the lignite voids. Groundwater conditions in the overburden are generally unconfined; however, confined conditions do exist. Groundwater quality in the overburden is variable; TDS ranges from 100 to 3,046 mg/L, averaging about 700 mg/L; values of pH range from slightly acidic (5.8 s.u.) to slightly alkaline (7.5 s.u.), averaged at 6.5 s.u. The Calvert Bluff underburden aquifer conditions are confined or semi-confined, if they are near the coal outcrops or a void area. TDS levels in the Calvert Bluff underburden range from ten to 2,310 mg/L, averaging about 574 mg/L; values of pH range from slightly acidic (5.6 s.u.) to slightly alkaline (8.1 s.u.), averaging at 7.1 s.u. TDS levels in void area wells range from ten or less mg/L to 720 mg/L, with an average of 330 mg/L; values of pH are close to neutral (6.7 to 7.7 s.u.), averaging 7.0 s.u. Simsboro Formation underburden TDS levels range from 200-225 mg/L; pH levels are close to neutral. The top of the Simsboro Aquifer has sufficient separation from the lowest mineable lignite seam (the L5 seam or the L4 seam where the L5 seam is missing) to preclude the need for advance depressurization in this area. The overburden and underburden water-bearing strata are generally not hydraulically connected outside of the void areas.
- (c) Based on March 2018 monitoring results, water levels in the underburden wells show a significant decrease compared to initial measurement (SD4). In 2019, the water levels generally dropped another one to five feet compared to March 2018 levels, with an average drop of about two to three feet (most likely due to seasonal variations as the summer of 2019 was extremely dry) (SD4). The Simsboro Formation underburden aquifer is widely used, and surface water levels have decreased significantly in the period of record, largely attributed to the utilization of the resource for industrial and potential domestic uses. Data from quarterly groundwater sampling will be reported to the Commission. Spoil wells will also be sampled annually for major constituents and 12 trace elements [Finding of Fact 32(f), *infra*].
- (d) Luminant will continue to submit within 60 days following the end of each calendar year a water table elevation chart identifying each applicable long-term monitoring 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.

17. Luminant provides sufficient information in this application, as supplemented (SD3), in addition to information submitted in previous applications for this mine, to adequately characterize surface water hydrology in accordance with § 12.129 of the Regulations. Much of the surface water baseline data has previously been submitted and approved by the Commission in the initial permit application or previous permit renewals for the Bremond Mine. To comply with § 12.129 for the expansion area in this application, Luminant: (i) collected 12 months of baseline data in 2012 and 2013 from five stream monitoring stations (stations TOS-1, TOS-2, TOS-3, TOS-4, TOS-5); (ii) collected 12 months of baseline data in 2017 from one new stream monitoring station on Willson Creek (SW-1); (iii) collected quarterly baseline data from four existing stream monitoring stations (TOS-2, TOS-3, TOS-4, and TOS-5); (iv) updated ownership for existing impoundments within the proposed permit area; and (v) collected one-time surface water samples in 2018 from nine existing impoundments within the proposed renewal/revision/expansion permit area.
- (a) Luminant includes descriptions of minimum, maximum, and average discharge conditions, which identify critical low flow and peak discharge rates of streams sufficient to identify seasonal variations and water usage.
- (b) Luminant includes sampling results for several key parameters of water-quality data to identify the characteristics of surface water in, discharging into, or which will receive flow from surface or ground water from affected areas within the proposed permit area, sufficient to identify seasonal variations (showing total dissolved solids (TDS), total suspended solids (TSS), acidity, alkalinity, hydrogen-ion concentrations (pH), dissolved iron (DFe), and dissolved manganese (DMn)) (Table 129-5). Luminant provided baseline stream-water quality sampling data in Tables 129-6 and 129-7. Laboratory analytical reports for the stream monitoring samples are provided in Appendix 129-E.
- (c) Luminant describes the topography on the proposed permit area as upland hills having moderate relief. The permit area is located between the Brazos and Navasota Rivers in the Walnut Creek drainage basin (a tributary to the Brazos River). The streams in the permit renewal/revision/expansion area generally flow from east to west and drain to Walnut Creek, which flows north to south near the western boundary of the proposed permit area (Plate 129-1) into the Little Brazos River, and then eventually into the Brazos River. Named creeks within the proposed permit area include: Gnats Creek, Mill Creek, Beck Creek, and Willson Creek; the watersheds for the named creeks and four additional unnamed tributaries within the proposed expanded permit area (UT-W1, UT-W2, UT-W3, and UT-W4) are shown on Plate 129-1. The streams within the permit boundary are classified as intermittent. Walnut Creek is classified as a perennial stream; however, it was observed dry or ponded at baseline stream monitor stations TOS-2 and TOS-5 during several baseline stream monitoring events (Appendix 129-B). The watersheds for the creeks in permit renewal area range from 110 acres for UT-W3 to 7,250 acres for the combined watersheds of Gnats Creek and Mill Creek. The entire drainage area for Walnut Creek is 87,803 acres. Watersheds for streams within the permit area are shown on Plate 129-1, and watershed characteristics of the major tributaries in the proposed permit area are summarized in Table 129-1.

- (d) Luminant provides a detailed watershed morphometry study for Beck Creek, Gnats Creek, Mill Creek, and Willson Creek (Table 129-1) and identifies additional watersheds for the unnamed tributaries within the proposed permit boundary. Calculations for bifurcation ratios and stream length ratios are provided in Tables 129-2 and 129-3, respectively.
- (e) From aerial survey, Luminant identified approximately 180 naturally occurring or man-made impoundments within the proposed permit area; small natural depressions may not have been detected. The majority of the man-made impoundments are located either in the watershed headwaters, gullies at lower elevations, or in excavations at the base of hillsides. Natural impoundments are found in low areas along streams and creeks and in isolated depressions. The mapped study area impoundments and their respective owners are shown on Plate 129-2. No major impoundments or reservoirs are located within the permit area. The William Harris Reservoir occurs about 150 miles downstream of the proposed permit area. No significant springs occur within the proposed permit area or have been identified in Robertson County; smaller springs may occur.
- (f) Luminant indicates that eleven TPDES permits exist near the study area (TCEQ 2018). The TPDES permit monitoring locations are listed in Table 129-12, and the discharge locations are shown on Figure 129-1.
- (g) Luminant provides descriptions of long-term stream monitoring stations (Appendix 129-B) and photographs of surfacewater monitoring locations (Appendix 129-D).
- (h) Luminant indicates the following data was collected to support the currently proposed permit expansion: (i) 12 months of baseline data were collected in 2012 and 2013 from five stream monitoring stations that were previously monitored by CDM in 1985 (stations TOS-1, TOS-2, TOS-3, TOS-4, and TOS-5); (ii) 12 months of baseline data were collected in 2017 from one new stream monitoring station on Willson Creek (SW-1); and (iii) quarterly baseline data was collected from four of the existing stream monitoring stations (TOS-2, TOS-3, TOS-4, and TOS-5) in the current study area. Baseline surfacewater quality sampling data are summarized in Tables 129-6 and 129-7. Sampling results for mine surface water impoundments are included in Tables 129-8 (general chemistry parameters) and 129-9 (trace metals parameters). Laboratory analytical reports for the stream monitoring samples and surface water impoundments are provided in Appendix 129-E.
- (i) Luminant describes the watershed characteristics for creeks and rivers with pertinent stream profiles, streamflow data, and water quality data. USGS records were also reviewed for streamflow gauging stations in the vicinity of the permit renewal/revision/expansion area. Luminant provided long-term stream monitoring data from the Upper Keechi Creek (USGS 08065200), Tehuacana Creek (USGS 08064700), and Big Creek (USGS 08110430) gauging stations as having comparable watershed size, relief, vegetation, and meteorology as the Walnut Creek watershed. Table 129-11 presents a summary of the historical streamflow data from gauges on these streams (USGS, 2018), and Plate 129-3 shows the locations of the gauges.

- (j) An adequate surface water control plan was included in the approved permit for disturbances proposed in this application and for future mining (application p. 139-17 through -18). Surface water drainage will be routed into surface water control structures such as diversions and sedimentation ponds. All surface water runoff from disturbed areas will be routed through a sedimentation pond prior to discharge to a receiving stream. Measures will be used to ensure that acid-forming and toxic-forming materials do not come into contact with fresh water. Diversions will be designed to, at a minimum, safely pass the runoff resulting from a two-year, six-hour precipitation event (temporary ephemeral); a ten-year, six-hour precipitation event (permanent ephemeral); or a 100-year, six-hour precipitation event (stream channel diversion), as required by the Regulations. Final discharge ponds will be subject to TCEQ discharge permit effluent limitations; all applicable monitoring and water quality standards shall be met. The results of discharge sampling will be reported at the intervals specified in the TPDES wastewater discharge permit. Dewatering wells are proposed for all mining areas; dewatering discharges are typically negligible, thus, do not significantly impact design criteria for hydraulic structures.
18. The requirements of § 12.130 of the Regulations have been met in the application, as supplemented (SD3). The approved permit includes alternative sources of water that include several public water supply systems (Table 130-2) and the Carrizo-Wilcox aquifer. Luminant has identified 12 water rights within the vicinity of the proposed permit area, shown on Figure 130-1 and described in Table 130-1. Four of these rights are located downstream of the Study Area (Nos. 4363, 4364, 4365, 5770). Luminant acknowledges its responsibility to provide alternative water supplies to any impacted water user (both groundwater and surface water supplies) required by § 12.130. Potential impacts to groundwater users have been addressed in compliance with § 12.146 of the Regulations (SD3).
19. The approved permit includes climatological information for the permit area meeting the requirements of § 12.131 of the Regulations. The report included in the renewal/revision/expansion application has been signed and sealed by a professional geologist. The study area lies in the Subtropical Humid climatic region (Figure 131-1). Luminant presented regional temperature and precipitation data from the National Oceanic and Atmospheric Administration (NOAA) based on 2005 data from the Marlin, Texas station, located approximately 24 miles northwest of the proposed permit renewal area. Mean monthly precipitation data and monthly low (high) temperatures are presented in Table 131-1. Additionally, rain gauge information from a gauge installed near Walnut Creek near the northwestern boundary of the proposed permit area and precipitation data have been collected since 2006. Summarized monthly precipitation data for the gauge are presented in Table 131-2; precipitation data from 2008 were not included in the mean annual precipitation calculation due to a malfunction in the rain gauge. The mean annual rainfall is shown to be 36.6 inches. For the years 1944-2004, the mean annual low temperature was 55.3° F (with the lowest mean monthly low temperature of 36.6° F in January), and the mean annual high temperature was 78.4° F (with the highest mean monthly high temperature of 95.9° in August), as measured by NOAA. Evaporation data was obtained from the Texas Water Development Board files for gross monthly evaporation, with a mean annual gross evaporation of 58.9 inches (Quadrangle 611) for the period of record 1954-2017. Prevailing wind information collected from 1968-1980 at the Waco, Texas National Weather Service station about 45 miles west-northwest of the permit area, reflects winds from the south as most frequent.

20. In section .132 of the application, Luminant provides a vegetation baseline report prepared by its consultant, Blanton, as a stand-alone document, to satisfy the requirements of § 12.132 of the Regulations for the proposed renewal/revision/expansion permit area. The information contained in the application, including Blanton's survey report, adequately characterize the vegetation in the subject area and is sufficient to allow an evaluation of the importance of vegetation to fish and wildlife and to predict the potential for reestablishing vegetation as required by § 12.132.

- (a) The permit area is located in the Post Oak Savannah vegetational area of Texas (Figure 132-2). The application includes Plate 132-2, Sheets 1 and 2, which are maps with depictions of topography, vegetation transects, and fish and wildlife sampling sites for the proposed permit area. The named streams in the renewal/revision/expansion area include the following: Barton Branch, Beck, Duck, Gnats, Mill, and Walnut Creek. The below table includes the vegetative communities Luminant identified in the permit renewal/revision/expansion area (Table 132-1):

<b>Vegetation/Habitat Type</b>	<b>Renewal/Revision/Expansion Area (Acres)</b>	<b>Percent of Total Renewal/Revision/Expansion Area (%)</b>
Grasslands	7,149	58.3
Upland Hardwood Forest	3,046	24.8
Bottomland/Riparian Forest	1,093	8.9
Regenerative Areas	403	3.3
Mesquite Brushland	223	1.8
Disturbed Land	184	1.5
Aquatic Habitat	84	0.7
Savannah	44	0.4
Hydric Habitat	30	0.2
Cropland	13	0.1
<b>Totals</b>	<b>12,269</b>	<b>100.00</b>

Luminant includes Plate 132-1, Sheets 1 and 2, depicting vegetation and habitat types by color, aerial photograph. Summaries of each vegetative community are included in the application for renewal/revision/expansion. Areas of ecologically sensitive and important habitat within the proposed permit area include portions of the bottomland hardwood forests, hydric habitats, and aquatic habitats.

- (b) The application identifies important plant species that may occur within the proposed renewal/revision/expansion area including: commercially important plant species such as various forage grasses, orchard crops, and commercially harvested timber; threatened and endangered plant species including Navasota ladies'-tresses (NLT) and Large-fruited sand-verbena (LFSV); species of greatest conservation need (SGCN) including, Centerville Brazos-mint, Large beakrush, Mohlenbrock's sedge, Panicked indigobush, Parks' jointweed, Sandhill woolly-white, Texas cornsalad, Texas sandmint, and Texas sunnybell; and the dominant plant species contained in the permit area vegetation communities, summarized in Staff's TA on pages 37-38. Appendix 132-A includes a representative listing of vascular plant species observed during field surveys, and Appendix 132-B includes

the results of quantitative vegetation sampling in the renewal/revision/expansion area.

- (c) NLT, a federally and state-listed endangered plant species, was surveyed for in the renewal/revision/expansion area in 2016, 2017, and 2018. LFSV, a federally and State-listed endangered plant species, was surveyed for in the renewal/revision/expansion area expected to be disturbed during the permit term. Neither plant species was observed within the permit boundary. The known range of the LFSV plant covers a three-county area of east Texas, including Freestone, Leon, and Robertson counties; the nearest recorded occurrence to the proposed permit is 12 miles southeast of the renewal/revision/expansion area, where the LFSV occurs in the Sparta Sands formation. The historic range of the NLT includes Robertson County, and a known population of NLT occurs in Limestone County, approximately six miles northeast of the proposed renewal/revision/expansion area's northernmost tip. No individuals of NLT or LFSV have been encountered during vegetation baseline investigations or specific surveys for the species conducted in the renewal area. Additional surveys may be conducted in the future if potentially suitable habitat found for these species is identified in areas to be disturbed during future permit terms, as discussed in section .144 of the application (SD4).
21. The fish and wildlife resources information presented in the application, which includes relevant information previously submitted to the Commission, is sufficient to meet the requirements of § 12.133 of the Regulations, including information sufficient to design the protection and enhancement plan required by § 12.144 of the Regulations. In section .133 of the application, Luminant provides a fish and wildlife information baseline report prepared by Blanton as a stand-alone document, to satisfy the requirements for fish and wildlife information as outlined in § 12.133 (Regulations) for the proposed 12,258-acre renewal/revision/expansion permit area (including the information included in Permit No. 49B and for the proposed permit expansion area). From 2016 to 2017, Blanton conducted baseline investigations, species surveys, and water/wetlands investigations in the expansion area. The fish and wildlife information in this application is sufficient to characterize the wildlife communities and habitats for the proposed permit area and adjacent areas. The investigation and wildlife studies contain site-specific information concerning Federal and State-listed threatened and endangered species and descriptions/depictions of habitats. Appendix 133-A includes agency correspondence. Luminant's protection and enhancement plan for fish and wildlife is set out in Finding of Fact No. 30, *infra*.
- (a) The renewal/expansion area is located in east-central Texas, within the Brazos River Basin. Aquatic habitats in the renewal/revision/expansion area consist of two major types: (i) small, artificial impoundments (both on- and off-channel) and (ii) streams, including Walnut Creek, Duck Creek, and associated tributaries and headwater streams. All stream reaches in the renewal/revision/expansion area (with the exception of Duck Creek, which is located within the Bremond Transportation Corridor) were classified as ephemeral or intermittent. Input into these streams is predominantly driven by surface water runoff. The tributaries primarily exhibit ephemeral flow patterns.
  - (b) Six aquatic stations on Walnut and South Walnut creeks were originally sampled as part of the studies conducted in the Twin-Oak-Bremond study area. In 1998,



six additional stations were identified in the renewal area. In 2013, five additional station locations were studied on area streams. In 2016 and 2017, an additional ten aquatic sampling stations were established within the expansion area that is the subject of this renewal/revision/expansion application. The locations of all sampling stations within or in the vicinity of the renewal/revision/expansion area are presented in Plates 132-1 and 132-2. The application includes descriptions of each station. Water quality and sampling results are included in Tables 133-1 and 133-2.

- (c) Appendices 113-B through 133-E contain species sampling results for fish, amphibians, birds, and mammals. Lists of federally listed and state-listed threatened and endangered species with the potential to occur in Robertson County are included in the application in Tables 133-3 and 133-4. Staff prepared a summary of threatened or endangered species that have been reported or may occur within the proposed permit area. All threatened or endangered species are either: (i) unlikely to occur within the proposed permit area; (ii) may possibly occur within the proposed permit area; or (iii) are possible migrants to the area. The following table summarizes information from Luminant's and Staff's analyses:

Species	Protected Status	Likelihood of Occurrence
<b><i>Amphibians and Reptiles</i></b>		
Alligator Snapping Turtle	State Threatened	Possible
Houston Toad	Federal Endangered; State Endangered	Possible
Texas Horned Lizard	State Threatened	Not Likely, rare in east Texas
Timber Rattlesnake	State Threatened	Possible
<b><i>Birds</i></b>		
Peregrine Falcon	State Threatened	Possible Migrant
Bald Eagle	State Threatened	Possible
Interior Least Tern (ILT)	Federal Endangered; State Endangered	Possible
Red Knot	Federal Threatened	Possible Migrant
Whooping Crane	Federal Endangered; State Endangered	Possible Migrant
Wood Stork	State Threatened	Possible Migrant, sighted within .5 miles of the Bremond transportation corridor
<b><i>Fish</i></b>		
Blue Sucker	State Threatened	Not Likely
Sharptnose Shiner	Federal Endangered	Possible
Smalleye Shiner	Federal Endangered	Possible
<b><i>Mollusks</i></b>		

Species	Protected Status	Likelihood of Occurrence
Smooth Pimpleback	Federal Candidate for Listing; State Threatened	Possible
Texas Fawnsfoot	Federal Candidate for Listing; State Threatened	Possible
<b>Plants</b>		
Navasota Ladies'-Tresses Orchid (NLT)	Federal Endangered; State Endangered	Possible
Large-Fruited Sand- Verbena (LFSV)	Federal Endangered; State Endangered	Possible
<b>Mammals</b>		
Louisiana Black Bear	State Threatened	Possible
Red Wolf	Federal Endangered; State Endangered	Not Likely, extirpated in Texas

- (d) Generally all bird species listed in Table 133-D-1, located in Appendix 133-D, are protected by the Migratory Bird Treaty Act (MBTA) or state game laws; the only bird species likely to occur in the renewal/revision/expansion permit area that are not protected by an state or federal laws include the Rock Pigeon (*Columba livia*), European Starling (*Sturnus vulgaris*), and House Sparrow (*Passer domesticus*). Luminant also noted that the Bald and Golden Eagle Protection Act provides additional protections to all golden and bald eagles.
- (e) Luminant provided information concerning wetlands contained within the permit renewal/revision/expansion area. The permit renewal/revision/expansion area contains approximately 122.96 acres of premine USACE jurisdictional water and wetlands, as depicted on Plate 133-1, Sheets 1 and 2. Table 133-5 lists categories of jurisdictional waters and wetlands as well as corresponding acreages within the permit renewal/revision/expansion area as follows:

Jurisdictional Category	Renewal/Revision/ Expansion (acres)
Forested Wetlands	2.72
Scrub-Shrub Wetland	2.24
Emergent (Marsh) Wetlands	23.58
Open Water	50.08 <sup>a</sup>
Stream Channels	44.34 <sup>b</sup>
<b>Total</b>	<b>122.96</b>

<sup>a</sup> Open water area includes 7.95 acres of open water features mapped in "No Access" areas.

<sup>b</sup> Stream area does not include approximately 45,200 linear feet of streams mapped in "No Access" areas a OHWM data were not available for those streams.

Specific information regarding waters of the United States within the renewal/revision/expansion area are addressed in the Clean Water Act, Section 404 permit application submitted to USACE.

22. Luminant provided sufficient soil resource information in the application in compliance with § 12.134 (Regulations). Luminant's consultant, HF & Associates, Inc., prepared section .134 of the application (Soil Resources Information), which includes previously approved soil resources information from approved Permit No. 49 and new soil resources information for the proposed expansion area. New soil samples were collected in the proposed expansion area; chemical analyses for these samples are provided in Appendix 134-A. Plate 134-1, Sheets 1 and 2 (SD3), depict the soil map units contained in the proposed renewal/revision/expansion area, including 22 map units (Table 134-1), 18 soil series (Table 134-2), soil sample locations, the soil baseline boundary, and prime-farmland soils. Detailed soil information is included in Tables 134-1 (Acreage and Proportionate Extent of Soils), 134-2 (Taxonomic Classification of Soil Series), and 134-3 (Prime Farmland Soils Acreage and Proportionate Extent) and Appendices 134-A (Laboratory Source Data – By Genetic Horizon) (SD3), 134-B (Source Data – by 0-12" and 12"-48" Intervals), 134-C (Source Data – By Topsoil and Subsoil Intervals), 134-D (Official Soil Series Descriptions), and 134-E (Natural Resources Conservation Service – Soil Interpretation Tables). Prime farmland soil units comprise approximately 9.7% of the proposed permit area. The application includes county production for various crops planted in Robertson County in 2012, 2014, and 2017 (Table 134-5), obtained from the National Agricultural Statistics Service. Approximately 70.9% of the proposed permit area soils are classified as suited to cultivation, and approximately 29.1% of the proposed permit area soils are not suited to cultivation but are better suited for pastureland, grazingland, woodland, and wildlife habitat. Class four soils, which have severe limitations that reduce the choice of plants and require very careful management, constitute the largest soil group within the proposed permit area (38%). A revised native soil baseline is included in the application. Table 134-8 includes minimum and maximum values for pH, acid/base accounting (ABA), neutralization potential, exchangeable acidity, potential acidity, pyritic sulfur, sand, silt, clay, cation-exchange capacity, electrical conductivity (EC), sodium adsorption ratio (SAR), soluble boron, total cadmium, and total selenium (Se) based on laboratory source data and depth-weighted data. Luminant has met the requirements of § 12.134(b) (Regulations) requiring analyses, trials, and tests required under § 12.335 (Regulations) where the applicant proposes to use overburden materials as a supplement or substitute for topsoil. Areal-weighted frequency distributions for the proposed permit area are included (Tables 134-9 through 134-12) for the 0-12 inch interval, the 12-48 inch interval, and for topsoil and subsoil intervals for the following geochemical parameters: pH, ABA, clay, and sand. Staff proposes that existing Permit Provision No. 1, which was originally imposed to reflect the correct values for frequency distributions for topsoil and subsoil are the postmine-soil performance standards for pH, acid-base account, clay and sand, respectively, not be retained. Existing Permit Provision No. 1 is no longer necessary and is not retained.
23. Luminant has met the requirements of § 12.135 of the Regulations for the proposed permit area. Luminant provides a Land Use Information Report prepared by Blanton as a stand-alone document to satisfy the requirements for land use information as outlined in § 12.135 (Regulations) for the proposed 12,258-acre renewal/revision/expansion permit area, (including previously approved information in Permit No. 49B and information for the proposed permit expansion area). The renewal/revision/expansion area includes six of the ten land use categories defined by the Commission; land use categories are illustrated

on Plate 135-1, Sheets 1 and 2. Aerial photography and field surveys were used to determine land uses for the proposed permit area, along with relevant literature. Table 135-1 sets out acreage for the six land-use categories within the proposed renewal/revision/expansion permit area including: (i) pastureland, 7,627.9 acres (62.2%); (ii) undeveloped land, 4,221.9 acres (34.4%); (iii) industrial/commercial, 301.4 acres (2.5%); (iv) developed water resources, 79.3 acres (0.6%); (v) residential, 24.9 acres (0.2%); and (vi) cropland, 13.2 acres (0.1%). Historical land use in Robertson County is primarily rural, with over 85% of the county's land being used for farms (including cropland as well as livestock and poultry) according to the USDA Census of Agriculture (USDA 2012a). Premine land capability and productivity information is provided, as required. Tables presenting soil limitations for Robertson County are included in Appendix 135-A. Average yields per acre expected of principal crops and pasture under a high level of management in Robertson County are shown in Table 135-A-1 and are consistent with soil information presented in section .134 of the application. The predicted yields for the most common forage species are as follows: range production ranges from 2,355 to 5,850 pounds per acre per year, improved and common Bermudagrass ranges from 2.5-8.0 Animal Unit Months (AUM), bahiagrass ranges from 4.5-7.0 AUM, and kleingrass ranges from 2.5-4.5 AUM. Table 135-A-2 provides information concerning the selection of soils that are suitable for establishing, maintaining, or improving elements of wildlife habitat. There are no indications or records of previously mining activities in the renewal/revision/expansion area; however, small areas have been excavated for sand and gravel. Land use classification and land management and guidance plans encompassing the renewal/revision/expansion area are promulgated by Robertson County, the Brazos Valley Council of Governments, TPWD, and the Texas Water Development Board. The subject area is not subject to municipal regulation. The application includes a discussion of alternative uses, including building site development and recreational development.

24. All requirements have been met in the application, as supplemented, for the submission of properly certified maps, cross-sections, and plans required by §§ 12.136 and 12.137 of the Regulations. Section .136 (application pages 136-1 through 136-3) includes a table entitled "*Rule 12.136 Maps: General Requirements*" specifying locations of maps within the application containing certain required information as follows:

SECTION	SUBJECT	LOCATION
12.136(1)	All boundaries of lands and names of present owners of record of those lands, both surface and subsurface, included in or contiguous to the permit area.	Plates 116-1, 116-2, and 116-3  Appendix 116-B (SD3)  Appendix 116-C
12.136(2)	The boundaries of land within the proposed permit area upon which the applicant has the legal right to enter and begin surface mining activities.	Plates 116-1, 116-2, and 116-3

SECTION	SUBJECT	LOCATION
12.136(3)	The boundaries of all areas proposed to be affected over the estimated total life of the proposed surface mining activities, with a description of size, sequence, and timing of the mining of sub-areas for which it is anticipated that additional permits will be sought.	Plates 125-1, 125-2, and 125-3
12.136(4)	The location of all buildings on and within 1,000 feet of the proposed permit area, with identification of the current use of the buildings.	Plates 116-1, 116-2, and 116-3
12.136(5)	The location of surface and subsurface man-made features within, passing through, or passing over the proposed permit area, including, but not limited to major electric transmission lines, pipelines, and agricultural drainage tile fields.	Plates 128-2 (SD3) and 128-3  Plates 136-1, 136-2, and 136-3
12.136(6)	The location and boundaries of any proposed reference areas for determining the success of revegetation.	None
12.136(7)	The locations of water supply intakes for current users of surface water flowing into, out of, and within a hydrologic area defined by the Commission, and those surface waters which will receive discharges from affected areas in the proposed permit area.	Plate 129-1  Figure 130-1
12.136(8)	Each public road located in or within 100 feet of the proposed permit area.	Plates 139-1-1 through 139-1-12
12.136(9)	The boundaries of any public park and locations of any cultural or historical resources listed or eligible for listing in the National Register of Historic Places, and known archeological sites within the permit or adjacent areas.	On file with SMRD, not for public disclosure
12.136(10)	Each public or private cemetery or Indian burial ground located in or within 100 feet of the proposed permit area.	Plates 125-1, 125-2, and 125-3  Plates 139-1-1 through 139-1-12
12.136(11)	Any land within the proposed permit area and adjacent area which is within the boundaries of any units of the National System of Trails or Wild and Scenic River System, including study rivers designated under Section 5(a) of the Wild and Scenic Rivers Act.	None
12.136(12)	Other relevant information required by the Commission.	None

Luminant provided information required by § 12.137 (Regulations) (SD3) for cross-sections, maps, and plans:

SECTION	SUBJECT	LOCATION
12.137(a)(1)	Elevations and locations of test borings and core samples.	Plate 127-1 (SD3)
12.137(a)(2)	Elevations and locations of monitoring stations used to gather data for water quality and quantity, fish and wildlife, and air quality, if required, in preparation of this application.	Plate 128-1 Plate 129-1 Plate 132- 2
12.137(a)(3)	Nature, depth, and thickness of the coal seams to be mined, any coal or rider seams above the seam to be mined, each stratum of the overburden, and the stratum immediately below the lowest coal seam to be mined.	Plates 127-1 (SD3) through 127-9
12.137(a)(4)	All crop lines and the strike and dip of the coal to be mined within the proposed permit area.	Plates 127-2 (SD3) through 127-7
12.137(a)(5)	Location and extent of known workings of active, inactive, or abandoned underground mines, including mine openings to the surface within the proposed permit and adjacent areas.	None
12.137(a)(6)	Location and extent of subsurface water, if encountered, within the proposed permit and adjacent areas.	Plates 128-4 through 128-6 (Plate 128-5, SD3)
12.137(a)(7)	Location of surface water bodies such as streams, lakes, ponds, springs, constructed or natural drains, and irrigation ditches within and the proposed permit and adjacent areas.	Plates 129-1 and 129-2
12.137(a)(8)	Location and extent of existing or previous surface-mined areas within the proposed permit area.	None
12.137(a)(9)	Location and dimensions of existing areas of spoil, waste, and noncoal waste disposal, dams, embankments, other impoundments, and water-treatment and air pollution control facilities within the proposed permit area.	None
12.137(a)(10)	Location, and depth if available, of gas and oil wells within the proposed permit area and water wells in the permit area and adjacent area.	Plates 128-2 (SD3) and 128-3
12.137(a)(11)	Sufficient slope measurements to adequately represent the existing land surface configuration of the proposed permit area.	Plates 137-1-1 through 137-1-3  Plates 137-2-1 through 137-2-3
12.137(b)	Location of certifications.	Section 137. Maps and plans not contained in Section 137 are certified individually.

25. Luminant provided all required prime farmland soil information in compliance with § 12.138 (Regulations). The Commission granted Luminant a negative determination of prime farmland for all land tracts within the existing 3,371-acre Bremond Mine, Permit 49B. If land with prime farmland soils is considered prime farmland because of a cropping history and is proposed for disturbance by mining-related activities, then special requirements for reconstruction of soils apply. Luminant requests a negative determination for all prime farmland soils within the proposed 8,887-acre expansion area of the Bremond Mine. Luminant's request is supported by 2018 prime farmland investigations, the Prime Farmland Assessment Map (Plate 138-1, Sheets 1 and 2), and the historical use of the land, as demonstrated in affidavits of use (Appendix 138-A, as supplemented in SD3). Plates 138-1, Sheets 1 and 2, identify the prime farmland soil series, the tracts on which the soils occur, and markings showing no right-of-entry tracts or limited right-of-entry tracts. No negative determination of prime farmland may be made for tracts for which Luminant claims no right-of-entry. A negative determination may be made for tracts for which Luminant has documented right-of-entry and has proved a lack of cropping history. Tracts may be approved for a negative determination based on the presence of a mature canopy indicating that they could not have been cropped. Luminant provided affidavits of use (Appendix 138-A, as supplemented in SD3), from several people, indicating that none of the tracts with prime farmland soils have been used as cropland for any five of the last ten years prior to acquisition or lease by Luminant. These affidavits are evidence that the persons signing the affidavits were acquainted with agricultural activities on various tracts. Luminant does not show it has right-of-entry for Tract No. 517A, which contains prime farmland soils; thus, Staff did not recommend approval of the request for negative determination on prime farmland on Tract No. 517A. No evidence controverting the affidavits, as supplemented (SD3), concerning all tracts other than Tract No. 517A was presented. The Commission approves a negative prime farmland determination for all tracts within the proposed expansion area with prime farmland soils for which adequate affidavits have been provided and for which Luminant has documented a claimed right-of-entry, included in Appendix 138-A (SD3). The Commission does not approve tracts for which Luminant claims no right-of-entry (and for which there are, therefore, no acquisition, lease, or option dates), including Tract No. 517A. A negative prime farmland determination is made for all tracts, excluding Tract No. 517A, acquired by Luminant within the proposed permit area.
26. Luminant presents a proposed operations plan that meets the requirements of § 12.139 of the Regulations in the application, as supplemented (SD3 and SD4).
- (a) The Bremond Mine has five recoverable lignite seams. Luminant proposes mining in the QI and QII areas during the proposed permit term (2020-2024). Auxiliary areas will also be mined. The Life of Mine Map, Plates 125-1 through 125-3, and the Mine Plan and Operations Map, Plates 139-1-1 through 139-1-12, show the areas to be mined in the proposed permit term. Lignite seams proposed for mining (L3, L4, and L5) during the proposed permit term (2020-2024) range from approximately two to ten feet in thickness. Luminant includes mining methods that will maximize recovery of all economically mineable seams, normally greater than 0.5 feet thick. Mining and reclamation disturbances will be kept within the mining limits line (MLL) depicted on the Life of Mine Map and the Mining Operations Maps. Luminant proposes mining by dragline or with mobile auxiliary equipment and/or a dragline. The overburden depth to bottom seam of lignite averages 80 feet; mining in shallower areas will progress more quickly, and maximum clearing distances will vary from a minimum of 1,720 feet in the QII Area to a maximum of 1,800 feet in

the QI Area (Years 1-4). Based on the information contained in Tables 139(T)-3 and 139(T)-4 and Figures 139(F)-36 through -39, Luminant requests additional time and distance for backfilling and grading standards for the dragline mining areas within the proposed permit term. The clearing distances are approved as set out in the application, page 139-6, based on field conditions, equipment, and/or operational needs. With reference to clearing distances, Luminant has established the need for the distances based upon specific conditions in each named mine area. Luminant may utilize offset pits or angled pits in order to enhance recovery of lignite. If an angled or offset pit is used that will alter approved postmine slopes, Luminant will seek approval from the Commission before pit alignment or offset implementation.

- (b) Other operations are detailed in the application, as supplemented (SD3), including a description of the locations and types of sedimentation ponds and other structures in the surface water control plan, description of proposed dewatering activities in all mining areas during the permit term as depicted on Plate 146(d)-1 (SD3), locations of lignite stockpiles and mine facilities (Plates 139-1-1 through 139-1-12), description of overburden and topsoil handling [Appendix 145-A (SD3, SD4)], waste handling, mine facilities (Plates 139-1-1 through 139-1-12), and the measures Luminant will use to control dust (no other air-pollution controls are proposed). Luminant includes temporary storage locations for storage of suitable selective placement material to be used in reclaiming the top four feet of the surface (Plates 139-1-1 through 139-1-12). Temporary overburden and topsoil storage areas are depicted (Plates 139-1-1 through 139-1-12). No overburden or topsoil storage areas are proposed as a result of stripping operations. There are no proposed permanent overburden storage areas. No disposal areas or structures for spoil or coal processing waste are proposed, with the exception of the disposal of coal waste from portable screening facilities. Any excess construction material will be regraded as a part of postmine topography or used in construction. Stockpiles left in place for more than 30 days will be marked and protected from disturbance and erosion. Seeding and planting of stockpiled materials will be conducted no later than the first normal period of favorable conditions. If conditions are not favorable, alternative methods such as seeding of temporary vegetation, mulching, disking, or sediment control measures could be used to protect suitable material stockpiles until conditions are favorable. Material from temporary overburden storage areas will be used in the final reclamation of the Bremond Mine. All fill areas will be reclaimed and excess material from this storage area will be blended in accordance with the proposed postmine contours. Any waste and spoil generated during construction proposed for the renewal term will be appropriately handled and stored or transported and disposed of in accordance with regulatory requirements, including those of the Resource Conservation Act, EPA, TCEQ, and TDOT.
- (c) Following overburden removal, lignite will be loaded into haul trucks through the use of a combination of equipment including front-end loaders, hydraulic backhoes, and other mobile equipment. The lignite will be transported from the active mining area to the Bremond Loading Station or approved stockpile areas. The primary route of travel will be on haul roads; the lignite is loaded on railcars and transported by rail to the Oak Grove Steam Electric Station. The use of public roadways will be a secondary means of lignite transportation.



- (d) Luminant includes information in the application, as supplemented, in compliance with the requirements of §§ 12.382 and 12.402 of the Regulations for activities related to oil and gas wells and pipelines. Pipelines must be visibly marked within 100 feet of mining related construction activities every 25 feet, or if within 50 feet of mining related construction activities then every ten feet for a total distance of 100 feet. Luminant will mark pipelines within 50 feet of the nearest point to mining-related construction activities as measured from the centerline of the pipeline nearest to mining-related construction activities every ten feet in both directions (application p. 139-13). Luminant will utilize procedures for activities inside petroleum pipeline buffer zones to ensure pipelines are de-activated prior to Luminant making a cut inside the buffer zone, as described in the application.
- (e) The application also includes a narrative description of the design, construction, use, modification, maintenance, and reclamation of structures to be used in the proposed permit term. Luminant's surface water control plan includes existing and proposed impoundments [Table 139(T)-8], primary sediment control structures and impoundment schedule [Table 139(T)-6 and Plates 139-1-1 through 139-1-12], a Diversion Schedule [Table 139(T)-7], and a Permanent Impoundment Schedule [Table 139(T)-8]. The impoundment schedule, Table 139(T)-6, provides the approximate in-service dates for existing and proposed sedimentation ponds within the proposed permit area. Dewatering wells depicted on Plate 146(d)(1) are proposed for all mining areas. Luminant provides information regarding flow routes and monitoring/compliance with water-quality standards. Diversions included in the Bremond Mine surface water control plan are shown in Appendices 148-B through 148-F.
- (f) Luminant requests stream buffer zone variances for waterway and creek segments including Q-4, Gnats Creek, an unnamed tributary of Walnut Creek, and Duck Creek, depicted in Plates 139-4-1 through 139-4-3 and listed on Table 139(T)-2, which will support disturbances projected to occur within the proposed permit term. In compliance with the requirements of §12.355, Luminant has presented the following information that: (1) surface mining 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; (2) no temporary or permanent stream-channel diversion prior to Commission approval; and, (3) the area not to be disturbed shall be designated as a buffer zone and will be marked as specified in §12.330.
- (g) Final pits are proposed for the proposed permit term in 2024. The final pit in these areas will be reclaimed to include a series of permanent impoundments.
- (h) Luminant includes a discussion of exploration activities in the application, including subcrop definition drilling, lignite and overburden coring, lignite test pit excavation, other deposit development drilling, and aquifer identification. Prior to conducting exploration activities, Luminant will notify the Commission. A map depicting the location of boreholes subsequently cased as wells will be provided annually. Luminant provides additional information regarding exploration disturbance: no unique, critical or high-value habitat will be disturbed. All road and transportation facilities will meet regulatory requirements; disturbed areas will be restored to approximate original contour (AOC); and topsoil will be salvaged and redistributed on disturbed areas that will be revegetated with native species.

- (i) Perennial streams will not be disturbed during pond construction without prior approval from the appropriate agencies. Surface water runoff into disturbed areas will be minimized. Appropriate diversions will be used to prevent erosion and to protect streamflow and runoff outside the permit area. In addition, Luminant will ensure that all acid-forming and/or toxic-forming materials are appropriately handled and disposed of as required.
  - (j) Discussion of final surface configuration of the permit area is contained in Finding of Fact No. 31(c), *infra*.
27. No existing structures will be utilized during the requested permit term (§§ 12.140 and 12.217 Regulations). No blasting is proposed (§ 12.141, Regulations). In accordance with §12.142 of the Regulations, the application contains the information required for operations maps and plans by referencing other sections of the application (pp. 142-1 and 142-2) and including in section .142 of the application a bond map summary (Table 142-1), a Bond Map (Plates 142-1 through 142-3), and a Bond Change Map (Plates 142(a)-1 through 142(a)-3). No disposal of excess spoil is proposed (§ 12.153, Regulations).
28. The application contains a fugitive dust control plan in compliance with § 12.143 of the Regulations. Luminant will control dust through use of: (i) water trucks used to wet the roads and traveled surfaces throughout the mine; (ii) asphalt emulsion on roads; (iii) temporary closing of roads when not in use; (iv) the use of motor graders to periodically grade roads; and (v) mulching and vegetating construction activities throughout construction. No mandatory air pollution control plan is required because the proposed permit area is not located west of the 100<sup>th</sup> meridian west longitude (§ 12.143(a), Regulations). Staff agrees that the dust control measures proposed are sufficient and that no discretionary air pollution control plan is necessary (§ 12.143(b)(1), Regulations).
29. The TPWD provided information regarding protected vegetative and wildlife species and made various comments and recommendations in response to the application. All comments and recommendations have been addressed in the application, as supplemented, in compliance with the requirements of the Regulations. Regulation § 12.132 requires a description of premine vegetation that is sufficient to predict the potential for reestablishing postmine vegetation. Regulation § 12.133 requires site-specific state and federal endangered or threatened species and habitat information for habitats of unusually high value such as important streams, wetlands, and riparian areas. Regulations §§ 12.144 and 12.380 require a description of how the operator will minimize adverse impacts on fish and wildlife to the extent possible, using the best technology currently available, and will enhance fish and wildlife resources where practicable. The Regulations include no statement requiring an investigation or description of all species and habitats within and near the proposed permit area. Additional requirements apply to alternative postmine land uses under the criteria of §§ 12.147 and 12.399 (Regulations). Where agricultural, fish and wildlife habitat, and undeveloped land uses are the planned postmine land uses or where a permittee plans to plant vegetation for any land use, appropriate vegetation is required. TPWD commented on the application by letter dated April 8, 2019, expressing concerns related to various permits, various aspects of the vegetation baseline report and fish and wildlife information and plan, the reclamation plan and postmine land use, and road systems and support facilities. TPWD also commented that the application, as supplemented, adequately addressed state-listed threatened and endangered species for the renewal term with the exception of the timber rattlesnake survey, as discussed below. Luminant has addressed TPWD's comments in accordance

with Commission requirements by providing responses thereto and modifications to portions of the application. Staff's responses to TPWD's recommendations are provided in Appendix III (revised) to Staff's TA Addendum No. 2 and are based on a review of the application through SD4. Staff sent an electronic copy of the renewal/revision/expansion application as supplemented (SD3) to TPWD and USFWS by letter dated August 9, 2019. No further comments from USFWS were received, while minor comments from TPWD were received on October 11, 2019.

- (a) TPWD recommended that Luminant should coordinate with TPWD, as appropriate, for project work which may require various permits such as the *Marl, Sand, Gravel, Shell or Mudshell Permit* and the *Permit to Introduce Fish, Shellfish, or Aquatic Plants into Public Waters*. In response, Luminant committed to coordinating with TPWD if activities require the referenced permits on application p. 144-5 (SD3). Staff noted Luminant's commitment in Appendix III of its TA Addendum No. 1.
- (b) TPWD commented that it is aware of coordination between Luminant, the Commission, and the USFWS regarding federally-listed species and defers comments regarding adequacy of the surveys and protection plans to the USFWS who is the lead authority regarding the NLT, Houston toad (HT), LFSV, and ILT. TPWD commented that the application, as supplemented, adequately addresses state-listed threatened and endangered species for the renewal term, with the exception of timber rattlesnake surveys addressed below.
- (c) TPWD recommended that additional surveys for the timber rattlesnake be conducted and recommended the following modifications to survey timing and methods: focused pedestrian surveys occurring between mid-July through mid-September; survey transects should be established in a greater number of locations; associating a timber rattlesnake survey transect with each Bottomland/Riparian Forest and Upland Hardwood Forest Vegetation/Wildlife Sampling Site, as depicted on Plate 132-1, or alternately (if surveying the entire Permit and Expansion area in the manner suggested is not practicable) survey transects could be established at the suggested sites within only areas of mining activity for the coming permit term; road cruising efforts are recommended and should be continued and conducted within the same time frame mentioned above (ideally mid-August through early fall); any hotspots of observations should be identified as sites for adaptive management; and the Applicant should use large funnel traps near potential timber rattlesnake hibernacula to detect snakes as they make egress and ingress movements in the spring and fall. Luminant responded that despite extensive field investigations, timber rattlesnakes have never been observed in the Bremond Mine permit area (SD3). Luminant conducted field investigations pursuant the information included in various scientific authorities and correspondence with industry experts (SD3). Furthermore, section .144 of the application (SD3, SD4) includes a protection plan for the timber rattlesnake, ensuring proper measures will be taken if the species is observed in the permit area. Luminant agreed to meet to discuss potential rattlesnake surveys as recommended by TPWD within 45 days of permit issuance; should discussions result in the conclusion that the surveys are necessary, Luminant shall provide a timber rattlesnake survey plan to the Commission for review and approval within 90 days and prior to commencing the survey; otherwise, no survey action will be taken (SD4). Staff recognized Luminant's commitment to meet with Staff and

TPWD to discuss timber rattlesnake surveys (TA Addendum No. 2). TPWD indicated to Staff that in September 2019 that the timber rattlesnake may be delisted following a formal listing process; thus, following the final outcome of the listing process, Staff and TPWD will contact Luminant if additional meetings concerning timber rattlesnake surveys are required (TA Addendum No. 2). If timber rattlesnakes continue to be protected, Staff, Luminant, and TPWD will meet to discuss survey methodologies; Staff reserves the right to adopt a conservative survey approach and require Luminant to conduct additional surveys (TA Addendum No. 2).

- (d) TPWD recommends survey efforts for SGCN species continue. If suitable habitat occurs in the permit area, TPWD recommends surveying for the species in areas of potential disturbance so that appropriate actions can be taken to protect or salvage sensitive resources. Luminant responds that baseline investigations (including protected species surveys) for the area to be disturbed have been completed and reviewed by the Commission; if SGCN species are observed, Luminant will notify TPWD. Staff responded that SGCN species are surveyed for in baseline studies and the Commission will continue to require these species to be surveyed in future permit renewal terms. TPWD further commented that it encourages continued reporting for listed and SGCN species occurrence data to better inform conservation planning. TPWD further commented that in anticipation of soon-to-be-released update to the Rare, Threatened, and Endangered Species of Texas (RTEST), TPWD is making recommendations regarding tracked SGCN species that currently do not appear on RTEST. Further, although not currently listed as SGCN, certain species are of heightened concern to TPWD and are planned for elevation to SGCN, such that TPWD would appreciate data reporting for these species, if observed. Additionally, TPWD encouraged Luminant to continue reporting encounters of protected and rare species to the Texas Natural Diversity Database (TXNDD) according to the data submittal instructions found at the TPWD TXNDD: Submit Data webpage and requested the TPWD be sent any similar notifications sent to the Commission. Luminant noted these comments; Staff noted the comments and concurred that listed and SGCN species occurrence data should be reported to TPWD.
- (e) TPWD recommended that, in the event species are encountered in an impact area, the Applicant should implement a handling and relocation plan in accordance with applicable state regulations and scientific collection permit. Staff responded that section .144 of the application addresses handling and relocation plans and indicates the application meets the requirements of §12.144 of the Regulations.
- (f) TPWD recommended Luminant consider implementation of the Enhancement Measures discussed in § 12.144(3)(B) (Regulations), including the development of a variety of habitat types. Staff responded that Luminant addresses enhancement measures and features that will be implemented on pages 144-19 through 144-22 of the application and indicates the application meets the requirements of §12.144.
- (g) TPWD recommended that Luminant consider revegetating impacted areas with plant species that provide habitat for monarch butterflies and other pollinators to contribute to pollinator conservation efforts. TPWD commented that many species listed in Table 144-C are beneficial to monarch butterflies and other pollinators and

could be preferentially selected during reclamation to establish pollinator habitats. Additional species appropriate for the project area can be found by accessing the Lady Bird Johnson Wildflower Center, working with TPWD biologists to develop an appropriate list of species, or utilizing resources found at Xerces Society's Guidelines webpage. In Appendix III to Staff's TA Addendum No. 2, Staff commented that Table 144-C contains plant species that provide habitat for monarch butterflies and other pollinators and concurred that Luminant should prioritize planting species that provide habitat for pollinators as much as feasible. Table 144-C currently includes species that may serve as nectar plants for monarch butterflies, other butterflies, and other pollinators; thus, no changes were necessary in response to this recommendation. Luminant indicated that plant species that may serve as hosts or nectar plants for butterflies and other pollinators will be planted in postmine land use features as funding and seed availability allow.

- (h) TPWD recommended against planting the non-native and invasive milkweed species black swallow-wort (*Cynanchum louiseae*) and pale swallow-wort (*C. rossicum*) because monarch butterfly larvae are unable to feed and complete their lifecycle on these plants. TPWD further recommended against planting the tropical milkweed (*Asclepias curassavica*), which is a popular year-round milkweed that fosters greater transmission of a protozoan which increases the likelihood that monarchs become infected with a debilitating parasite. Staff noted that the Black swallow-wort (*Cynanchum louiseae*) and pale swallow-wort (*C. rossicum*) are not included in the planting list in Appendix 144-C. Luminant noted that the species of concern are not included on Luminant's revegetation list.
- (i) TPWD commented that it reviews USACE Section 404 permit applications and provides comments directly to the USACE; therefore, its comment letter did not address compensation for impacts to waters of the United States or the adequacy of the proposed mitigation plan. Staff acknowledges this comment in Appendix III to Staff's TA Addendum No. 2. Sufficient information is available in the application to show the adequacy of the reclamation plan for these areas.
- (j) TPWD commented that Luminant should plant native grasses in pastureland, grazingland, or fish and wildlife reclamation areas; TPWD encouraged incorporating native prairie grasses listed in section Appendices 145-C and D to reclaim a portion of the permit area as native grassland habitat. Luminant noted this comment, and Staff concurs that native prairie grasses should be planted to the greatest extent feasible. Luminant is encouraged to plant native prairie grasses in accordance with this sub-finding when feasible.
- (k) TPWD commented that undeveloped land accounts for 34.4% of the permit area, yet nearly the entire area (98%) considered for reclamation under the application is proposed pastureland; TPWD recommends the Applicant consider including more fish and wildlife habitat in the reclamation plans. Staff agreed, stating that ideally postmine land use will return to premine condition; postmine land uses that are an alternative to premine land uses must meet § 12.399(c) of the Regulations; and all affected areas must be restored to a higher or better use pursuant to § 12.399(a). Luminant responded that the proposed land uses were determined to be consistent with the economy of the Bremond Mine area, since the highest and best use of land in this area is considered to be pasture/livestock. Up to ten percent of the pastureland use may consist of features, and Luminant plans to

develop wildlife habitat in those areas. Additionally, restoration of streams and other wetlands, as well as retention ponds and impoundments, will also occur within the pastureland and developed water resources in accordance with the mitigation plan associated with the USACE permit.

- (l) TPWD commented that to enhance the likelihood of wildlife utilizing culverts as crossing structures, TPWD encourages the applicant to consider implementation of the following design features when installing and maintaining culverts: install the shortest length culvert possible; install a single large culvert instead of multiple smaller culverts when possible; provide a natural substrate bottom; install culverts so that the lower edge is flush with the ground; where there is persistent water coverage, provide an elevated concrete ledge through the length of the culvert to allow terrestrial species access through the culvert; avoid rip rap when possible and where rip rap is required, it should be buried, back-filled with topsoil and planted with native vegetation; and maintain culverts to prevent significant obstructions. With regard to culverts, TPWD also commented that it understands certain engineering constraints apply to the design and maintenance of culverts and that the recommendations stated in this sub-finding should be considered and implemented as such constraints allow. In accordance with TPWD's comments, Staff noted Application Deficiency No. 154-4 in TA Addendum No. 1. In SD4, Luminant revised text on page 154-3 to include a statement that addresses wildlife movement during culvert installation, when feasible. Luminant's revised text indicates that it will consider incorporating wildlife-friendly features into culvert designs providing that they do not interfere with the design and that wildlife-friendly features for culverts have been vetted and identified in accordance with a TPWD/TDOT memorandum. In TA Addendum No. 2, Staff considers the revised information as adequate to address the requirements of §12.154 of the Regulations.
  - (m) TPWD commented that in SD3, Luminant described the TPWD Scientific Permit (permit number SPR-1215-262) as a permit that "generally allows for monitoring, salvage and relocation of listed species if they are encountered" and recommended the language should be modified to clarify that the TPWD Scientific Permit does not allow for the monitoring, salvage or relocation (or any form of "take") of species listed under the Endangered Species Act, as for such species, a permit from the USFWS would be required. The Regulations at §12.121 requires an application to list all other licenses and permits needed by the applicant to conduct the proposed activities and identify each license and permit by the following: (1) type of permit or license; (2) name and address of the issuing authority; (3) identification numbers of applications for those permits or licenses or, if issued, the identification numbers of the permits or licenses; and, (4) the date of approval or disapproval by each issuing authority if a decision has been made. While an accurate description of a permit listed pursuant to §12.121 may be useful to the Commission, it is not required under the Regulations and an inaccurate description does not preclude approval of the application. Luminant is encouraged to revise this text in accordance with TPWD's comment related to the Scientific Permit in the next revision application filed with the Commission.
30. The application, as supplemented (SD3, SD4) contains adequate measures to protect fish and wildlife and to mitigate impacts for the permit term in accordance with § 12.144 of the Regulations. In section .144 of the application (SD3, SD4), Luminant provides a fish and

wildlife plan prepared by Blanton as a stand-alone document to satisfy the requirements as outlined in § 12.144 for the proposed 12,258-acre renewal/revision/expansion permit area (including approved Permit No. 49B information and new information for the proposed permit expansion area). Much of the information presented in Luminant's Fish and Wildlife Plan has been approved in previous permitting actions; new or revised information has been incorporated to reflect current interpretations of application regulations, currently accepted language for other approved mine permits, information regarding protected species and wetlands, replacement of the mitigation plan in Appendix 144-B to reflect the USACE Clean Water Act Section 404 Individual Permit application for the renewal/revision/expansion currently under review by USACE (application no. SWF-2016-00335), and updated planting lists in Appendix 144-C and 144-D.

- (a) The plan includes a description of adequate minimization and protective measures for threatened and endangered species, migratory birds, and other species in accordance with TPWD and USFWS requirements and consultation. Luminant coordinated with USFWS in 2003 to ensure compliance with the Migratory Bird Treaty Act (MBTA); a copy of this coordination letter, along with associated documentation related to the Fish and Wildlife Plan and migratory birds, is included in Appendix 144-A. Luminant contacted USFWS again in 2015 by telephone and by letter dated February 4, 2015, (Appendix 144-A) to solicit input and to follow up on the 2003 consultation regarding MBTA compliance. USFWS, by letter dated July 8, 2015, indicated that it believed Luminant's mining and reclamation activities fall within the scope of prohibited conduct under the MBTA (Appendix 144-A (SD2)). In a September 4, 2015, ruling regarding the MBTA, the United States Court of Appeals for the Fifth Circuit held in *U.S. v. CITGO Petroleum Corp.*, 801 F.3d 477 (5th Cir. 2015) that "the MBTA's ban on 'takings' only prohibits intentional acts (not omissions) that directly (not indirectly or accidentally) kill migratory birds." Luminant sent a response letter to USFWS dated March 22, 2016, (Appendix 144-A) that referenced the Fifth Circuit's binding opinion and stated that as long as Luminant is not deliberately and intentionally pursuing, hunting, taking, capturing, killing, or attempting to take, capture, or kill a migratory bird as part of its Texas operations, Luminant is not exposed to potential liability under the MBTA. In a response letter dated June 20, 2016, (Appendix 144-A), USFWS continued to recommend incorporation of the Nationwide Standard Conservation Measures (NSCM) in Luminant's wildlife plan to provide "maximum protection from potential liability under the MBTA." On April 11, 2018, the USFWS issued a guidance memorandum to provide clarification regarding modifications to USFWS policies and practices, specifically including a memorandum issued on December 22, 2017 by the U.S. Department of the Interior's Office of the Solicitor (the M-Opinion). The April 11, 2018, guidance memorandum interprets the M-Opinion to conclude that the "take of birds resulting from an activity is not prohibited by the MBTA when the underlying purpose of that activity is not to take birds," "the MBTA's prohibitions on take apply when the purpose of an action is to take migratory birds, their eggs, or their nests," and "the take of birds, eggs, or nests, occurring as the result of an activity, the purpose of which is not to take birds, eggs, or nests, is not prohibited by the MBTA." (Appendix 144-A, SD2). Luminant's operation does not involve intentional killing or taking of migratory birds, their eggs, or their nests. Luminant has incorporated best management practices (BMPs) that are intended to avoid, minimize, or mitigate, to the extent practicable, potential impacts of permitted mining activities on migratory birds and are based on applicable and practicable elements of the NSCM recommended by USFWS (see attachment to USFWS's

letter dated July 8, 2015 in Appendix 144-A) and by Staff. Luminant implements BMPs that are intended to maximize habitat availability over time, minimize adverse habitat effects from fragmentation (e.g., patch size, edge effects, patch size to edge ratio), and avoid sensitive resources including mining in narrow bands to keep disturbance areas as small as possible at any one time followed immediately by reclamation activities, avoiding rookeries and raptor nest sites during breeding and nesting season, and developing site-specific conservation measures where appropriate.

- (b) In addition to MBTA compliance, 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, and developing and implementing protective measures for these species.
  - (i) The ILT is known to occupy disturbed areas associated with mining for nesting; however, such areas are not present in the renewal/revision/expansion area, and no terns have been documented within the proposed permit area. The ILT has nested in the nearby Kosse Mine; no adverse impacts to the species is expected from mine activity since Luminant has implemented appropriate protection measures for the species where needed. If ILTs are observed in the renewal/expansion area as a result of the creation of potentially suitable habitat in areas disturbed by mining, Luminant will coordinate with the Commission and develop protection measures for the species.
  - (ii) NLT and LFSV have not been observed in the presence/absence surveys conducted in the renewal/revision/expansion area expected to be disturbed during the initial phase of mining operations. The LFSV was surveyed for in 2017. Surveys were conducted in 2016, 2017, and 2018 for the NLT in the existing permit area and proposed expansion area. Luminant agrees to complete another blooming season survey along the Bremond Transportation Corridor to attain three years of presence/absence surveys for the NLT in all areas of potentially suitable habitat within the portion of the renewal/revision/expansion area expected to be disturbed (SD3). There is limited quantity and quality of potentially suitable habitat for the species in the renewal/revision/expansion area; thus, it is unlikely the species will occur in the renewal/revision/expansion area. However, if potentially suitable habitat is identified in the renewal/revision/expansion area, Luminant will conduct additional surveys. If the species is identified in the permit area, Luminant will comply with Commission regulations regarding reporting the species and implementing avoidance and/or protection measures.
  - (iii) The Houston toad (*Bufo houstonensis*) has not been documented during surveys for the species within the portion of the renewal/revision/expansion area to be disturbed during the initial phase of mine operation. Houston toad surveys employing four audio recorders were conducted during three consecutive breeding seasons (2016, 2017, and 2018), and additional surveys were conducted in 2017 and 2018 breeding seasons for the area



expected to be disturbed during the initial phase of mining operation (SD3). Luminant also committed to conducting an additional survey in the expansion area to be disturbed in the initial phase of mining during the 2019 breeding season, completing three consecutive years of presence/absence surveys for the Houston toad in areas of potentially suitable habitat expected to be disturbed during the initial phase of the mine operation. Luminant will coordinate with the Commission to ensure that required presence/absence surveys are completed in potentially suitable habitat prior to mining disturbance (SD3).

- (iv) No timber rattlesnakes were observed in the renewal/expansion area during any of the original or recent field surveys, including baseline investigations, species surveys, and water and wetlands investigations. Impacts to the species are not expected to occur. In the event the species is encountered, Luminant will implement a handling and relocation plan in accordance with the provisions of a TWPD Scientific Research Permit. Luminant has agreed to enter into further discussions, within 45 days of permit issuance, with the Commission and TPWD regarding additional timber rattlesnake surveys and provide a rattlesnake survey plan for Commission approval, if necessary (SD4). Additional procedures regarding future discussions between Staff, Luminant, and TPWD and additional timber rattlesnake survey procedures are included in Finding of Fact No. 29(c), *supra*.
- (v) The Bald Eagle has not been observed during recent baseline investigations or species surveys in the renewal/revision/expansion area; however, one sighting was documented during field surveys conducted the summer of 1991. Wintering or migrating bald eagles are known to occur in the area, but nesting would be unlikely in the renewal/revision/expansion area. If any species or nests are identified in the area, Luminant will notify the Commission and field observations would be conducted.
- (c) Measures are included related to the removal of surface features, construction of roads and other facilities, sediment pond construction and operation, reclamation pond construction and operation, equipment operation and maintenance, invasive species control, water quality control, proper design of diversions and stream channel restoration, and timely revegetation of stream disturbances. Appendix 144-C provides a list of revegetation species that will be used during reclamation for various habitats. Appendix 144-D provides the planting/seeding rates for selected revegetation species in Appendix 144-C.
- (d) In the event of wetland disturbance, reclamation and mitigation of the area will be completed in accordance with USACE Permit requirements mitigation ratios of 2:1 for forested wetlands, 1.5:1 for non-forested wetlands, and 1:1 for ponds and streams. In 2005, Luminant obtained Section 404 permit authorization (SWF-2001-00455) to authorize impacts to water of the U.S. within the existing Bremond Mine permit area; however, no mining impacts occurred in the permit area before this authorization was closed on September 28, 2015. Luminant submitted a Section 404 Individual Permit application to the USACE for impacts to waters of the U.S., including wetlands, within the Bremond Mine renewal/revision/expansion area (USACE Project No. SWF-2016-00335) on May 31, 2018. USACE is

currently reviewing the application. Luminant has committed that when it receives its USACE Individual Permit authorization, it will provide the Commission with a copy of the permit and comply with its conditions, including its authorization and mitigation plan. Accordingly, Existing Permit Provision No. 3, which states that no mining-related construction or exploration activities are approved until Luminant receives a permit from the USACE to demonstrate compliance with the Clean Water Act, is removed. Luminant has included information regarding the presence of wetlands within the permit area [Finding of Fact No. 21(e), *supra*] and will comply with mitigation in accordance with acreage and linear feet as the units of measure to quantify impacts and mitigation.

31. The application, as supplemented (SD1, SD3, and SD4), contains a plan for reclamation of the lands within the proposed permit area that meets the requirements of § 134.092 of the Act and the § 12.145 of the Regulations.

- (a) The approved permit includes a reclamation timetable (Figure 145-1) contained on page 145-9 of the application, including the following:

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 of the application, as supplemented (backfilling and grading plan).

Placement of suitable material – Following backfilling and grading, placement of suitable material will be completed within the time and/or distance requirements as established in Section .139 of the permit application, as supplemented.

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

Temporary vegetation – May be planted when seasonal conditions prevent planting permanent cover. Temporary cover is typically planted from September through November.

Permanent vegetation – Warm-season grasses are typically planted during March through June. Trees and shrubs are typically planted from January through April.

Mulching – Suitable mulch and other soil stabilizing practices will be used on all areas to control erosion, promote germination of seed, or increase the moisture retention capacity of the soil.

Extended responsibility period – 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.

Phase II and Phase III bond release – Luminant indicated a combined Phase II and Phase III bond release application will be submitted to the Commission within one year following completion of the extended responsibility period. The timetable also includes that SMRD approval of quantitative data, demonstrating revegetation success, will be obtained prior to submitting applications for Phase II and/or Phase III bond release. Phase II and/or Phase III bond release applications will be submitted between April 1st and September 30th.

- (b) A detailed estimate of the cost of reclamation required to be covered by the performance bond is contained in the application, in accordance with §12.145(b)(2).
  - (i) Luminant provided its reclamation cost estimate in Section .145, Appendix H. Luminant's estimate of \$22,464,657 includes costs for mined areas, disturbed areas, and ancillary areas. Staff's reclamation cost estimate of \$28,799,866 also includes costs for mined areas, disturbed areas, and ancillary areas (TA Addendum No. 2; Appendix II).
  - (ii) The Commission adopts Staff's estimate of \$28,799,866 as the amount required to reclaim the permit area should reclamation be performed by a third-party at the direction of the Commission because it will result in a more conservative cost that is more appropriate for third-party reclamation.
  - (iii) Luminant's accepted bond for all of its statewide mining operations is a blanket collateral bond in the amount of \$975,000,000 [Docket No. C16-0021-SC-00-E]. Staff's analysis indicates that Luminant's current bond exceeds the sum of the estimated reclamation costs for its Texas mines, including the proposed increase bond amount attributable to the Bremond Mine. Therefore, no changes to Luminant's existing blanket collateral bond are necessary as a result of this permit renewal and the Commission may issue the renewed and revised permit upon approval of the subject application.
- (c) The application, as supplemented, in accordance with § 12.145(b)(3) (Regulations), includes a plan that shows the final surface configuration of the permit area. The application, as supplemented, includes descriptions of backfilling and regrading and indicates that backfilling and grading variances are needed for operational reasons for the QII Area (Figure 139(F)-37, Table 139(T)-4). Average annual pit progression during the proposed permit term for the QII Area will be six pit widths at 150 feet each, with annual backfilling and grading time equal to 1,800 feet divided by 900 feet times 12 months per year, equaling 24 months (rounded). This variance request is approved in accordance with §12.384(a)(3). The Auxiliary Areas may be mined as part of the dragline operation; the backfilling and grading time and distance variance values associated therewith will be the same as for the QII Area. The application, as supplemented, includes the postmine contour maps, Plates 139-2-1 (SD3) and 139-2-3 and the postmine slope maps, Plates 139-3-1 and 139-3-3. These maps and the Slope Comparison Table, 139(T)-1, indicate that premine and proposed postmine slopes are similar. A slight increase of approximately 1.9% occurs in the 0-5% slope, a slight decrease of approximately 1% occurs in the 5-10% slope, a slight increase of 1% or less occurs in the 10-15% slope, and a slight decrease approximately 1.6% occurs in the 15% and

greater slope. The postmine topography will approximate premine topography. Luminant indicates that the formation of rills and gullies in all reclamation areas will be monitored; rills and gullies will be repaired based on seasonable considerations. Erosion repairs will be conducted when there is reasonable opportunity for success considering soil moisture conditions. Existing Permit Provision No. 2 states, in full, as follows: "The premine and postmine slopes depicted in Table 139(T)-1 found in Supplement Document No. 2 of the renew/revision application of Permit No. 49A, are not approved. The approved premine and postmine slopes are found on Table 139(a)-1 [Revision No. 1 of Permit 49A]." In the application, Luminant provided all required information regarding premine and postmine slopes for the requested five-year permit term; therefore, Existing Permit Provision No. 2 is not retained.

- (d) Luminant has included information (SD3 and SD4) to meet the requirement of § 12.145(b)(4) of the Regulations for a plan for the removal, storage, and redistribution of topsoil, subsoil, and other material to meet the requirements of §§ 12.334-12.338 of the Regulations, as required by § 12.145(b)(4). In all mining areas, the selective handling method described in Section .139, as supported by Appendix 145-A, will be used to place suitable mixed overburden materials for reclamation to postmine soils that meet or exceed premine soil quality and meet suitability criteria for the top four feet. Luminant has provided a soil-handling plan that is acceptable as a method to prevent the presence of acid-forming and/or toxic-forming materials (AFM/TFM) in the top four feet of reclaimed soils. Dragline operators will be provided with appropriate training to avoid placement of AFM/TFM in the top four feet of reclamation. Luminant's report (Appendix 145-A (SD3, SD4)) focuses primarily on the first five-year permit term; data collected from cores in future permit terms were included in the report but will be evaluated in more detail in future permit renewals.
- (i) Luminant indicates [p. 145-A-12 (SD3)] that the information presented in Appendix 145-A (SD3, SD4) demonstrates that the suitable replacement material is a viable option for use within the top four feet of leveled minespoil. Statistical analyses of the key parameters of concern, pH, ABA, sand, and clay, indicate that the suitable selective overburden replacement material meets Commission suitability criteria for these parameters [Tables 145-A-5 through 145-A-12, (SD3, SD4)]; other potential constituents of concern, such as electrical conductivity, sodium adsorption ratio, and trace elements are within acceptable limits for use as a plant growth medium with minor exceptions. The pH, ABA, sand, and clay content of the identified suitable replacement material is as good as or better than the same parameters for native soils. Average values and frequency distributions for these parameters indicate that use of the suitable replacement material to create the upper four feet of postmine soils will be an improvement over native soils, primarily due to the replacement of the native droughty topsoil layers and claypan subsoil layers with a more homogenous, moderately-textured soil. Luminant indicates that many of the native soils in the Bremond renewal/revision/expansion area provide a limited plant growth medium. Comparison to overburden characteristics supports the conclusion that selective handling of overburden will provide materials more suitable for postmine topsoil than are available in native soils.

- (ii) A plan for the use of suitable replacement material to reclaim the top four feet of postmine soils is included in the application. Luminant compared data for identified suitable replacement material to Commission guidelines and to the native soil information contained in Section .134 of the application. Luminant indicates in Appendix 145-A (SD3, SD4) that, with three exceptions, the suitable replacement material extends from natural ground surface to: (1) the shallowest mineable lignite seam (the L3 seam or L4 seam when the L3 seam is missing or the L7 seam at core CC-3021 where the L3 and L4 seams are missing), excluding shallower lignite seams, a five-foot buffer zone above the L3 (or L4) (or L7 at core CC-3021) lignite seams, and an eight-foot buffer above the L3 seam at core CC-20; (2) the top of the L1 seam at core CC-4017; (3) the bottom of the oxidized interval at core CC-6-13. Exceptions to this placement apply in the area of influence around cores CC-20 and CC-6-13, where the lower boundary of the suitable interval will be limited to 8 feet and 13 feet above the shallowest of either the L3 or L4 seam, respectively. Another exception will be the area of influence around core CC-4017 where material below the L1 seam is considered unsuitable (application p. 139-7, SD4).
- (e) Luminant provides a plan for revegetation, as required in § 12.145(b)(5)(A)-(F) of the Regulations. The reclamation plan was determined to meet the general requirements of § 12.145 and the revegetation requirements of §§ 12.390-12.393 and 12.395. The plan contains a description of its revegetation schedule, planting methods, mulching techniques, irrigation practices, pest and disease control measures, and the standards to be used for determination of revegetation success.
  - (i) The schedule for revegetation includes Luminant's plan to seed and plant during the first normal period after the completion of backfilling and grading, typically March–June for permanent warm-season grasses, September–November for temporary cover, and January–April for trees. The timetable for reclamation is set out in Finding of Fact No. 31(a), *supra*. Plant species for revegetation will be selected from lists in Appendix 144-C, Revegetation Species for Fish and Wildlife; Appendix 144-D, Representative Planting Dates and Seeding Rates for Fish and Wildlife; and Appendix 145-C, Planting Guide (SD3). Appendix 145-B (SD3) includes potential species occurring in revegetated fish and wildlife habitat and (up to 25% of the ground cover). Appendix 145-D sets out forage production standards for various grasses. The application also includes information concerning land management and fertilization, planting methods, mulching, and other erosion control techniques.
  - (ii) Luminant proposes to use the Commission's guidelines entitled *Procedures and Standards for Determining Revegetation Success on Surface-Mined Lands in Texas*, revised December 2014, to determine revegetation success on all land uses. The Natural Resources Conservation Service's estimates of production for premine soils under various levels of management will be used as the standard for productivity for pastureland. USDA Forage Production Standards are used as a technical guide to quantitatively determine revegetation success. For fish and wildlife habitat, ground cover will meet a minimum of 90% of the 78% technical standard [§ 12.395(a)(2), Regulations], and trees and shrubs will

meet a minimum 90% [§ 12.395(a)(2), Regulations] of the 30 trees per acre stocking standard as based on local conditions after consultation with the TPWD [letter to Director, SMRD, dated January 8, 1998, § 12.395(b)(3)(A) (Regulations)]. For pastureland, ground cover will meet at least 90% of the 95% technical standard [§ 12.395(a)(2), Regulations], and productivity will be at least 90% of the technical standard developed by the USDA – Natural Resources Conservation Service (Appendix 145-D). Revegetation success in industrial/commercial areas will be based on ground cover, which shall not be less than required to control erosion. At least 75% of ground cover will be comprised of species from the approved planting list. Luminant revised Appendix 145-C (SD3) to state that the partridge pea will not be planted at a higher rate than ten percent of the total plant mix, in accordance with Staff's recommendation.

- (f) Luminant includes a soil-testing plan in the application, as supplemented (SD3) for evaluation of the results of soil handling and reclamation procedures related to revegetation. Postmine performance standards are addressed in Table 145-1, which contains the areally-weighted frequency distribution values against which postmine samples will be measured to determine compliance. Appropriate select material placement and soil testing, in accordance with the Soil Testing Plan and Postmine Performance Standards (Soil Testing Plan) is contained in Staff's Appendix VII to the TA Addendum No. 2, and is included as Appendix II to this Order. The Commission approves the Soil Testing Plan as set out in Appendix II to this Order.
- (g) Surface mining will be conducted using the best technology currently available to maximize the use and conservation of the coal resource according to §§ 12.145(b)(6) and 12.356 of the Regulations.
- (h) Luminant will ensure that any AFM/TFM which could be present in the postmine reclaimed soils are identified, that the postmine reclaimed soils are adequate as a growth medium, with topsoil equal to or better than the premine soil for sustaining revegetation, and that the one to four foot depth has comparable root development characteristics. Luminant will compare postmine reclaimed soils to the premine soil baseline (Section .134 of the application) by the use of a banking method. For parameters not listed in the premine soil baseline, Luminant will use the Commission's Technical Guideline SA-2 as the standard to determine postmine soil success. The application, as supplemented (SD3), includes a contingency plan that will be used if any AFM/TFM problems are identified so that such areas may be treated or replaced, as appropriate. The application, as supplemented, includes a plan to ensure that all debris is covered or adequately disposed of. All acid-forming and toxic-forming materials and other materials required to be covered will be covered with a minimum of four feet of non-toxic and non-acid-forming materials in accordance with § 12.145(b)(7) (Regulations).
- (i) As required by § 12.145(b)(8) (Regulations), 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, the Texas Department of Licensing and Regulations, and 16 TAC Part 4, § 76.104. The plan, as supplemented (SD3), is sufficient and complies with §§ 12.331-12.333 of the Regulations.

- (j) Luminant will comply with the requirements of the Clean Air Act and Section 404 of the Clean Water Act. Luminant will monitor and report water discharges as set out in the application, as supplemented, and will meet the terms, conditions, and effluent limitations set out in the TCEQ and TPDES (Texas Pollutant Discharge Elimination System) permits. When Luminant receives USACE NWP-21 authorizations under § 404 of the Clean Water Act, it will provide the Commission with a copy of the permit and comply with its conditions. Existing Permit Provision No. 3, which stated that no mining-related construction or exploration activities within jurisdictional waters of the U.S. are approved until Luminant receives a permit from the USACE to demonstrate compliance with the Clean Water Act, is no longer necessary. Luminant provides sufficient documentation of required permits. Existing Permit Provision No. 3 is removed.
32. The application as supplemented (SD3, SD4) includes a description, as required by § 12.146 of the Regulations, of measures to be taken to protect the hydrologic balance of the surface water and groundwater systems within the permit area and adjacent areas; to prevent damage outside the permit area; to meet water quality laws; and to protect groundwater and surface water users as set out below and in these Findings of Fact. Luminant includes a determination of probable hydrologic consequences (PHC) in Section .146 of the application, Appendix D, as supplemented in SD3, including a long-term groundwater monitoring plan (LTGM plan) and a long-term surface water plan (LTSM) plan, as required by §§ 12.146 (b) and (c) of the Regulations.
- (a) Luminant meets § 12.146(a) of the Regulations by proving a hydrologic reclamation plan to address the impacts of the mining operation on the surfacewater hydrologic system. It indicates that best practical technologies will be used and that the disturbed are will be kept to a minimum. Luminant indicates that acid-forming material (AFM) and toxic-forming materials (TFM) will be covered by a minimum of four feet of suitable plant growth. Luminant obligates itself to replace the water supply of landowners whose water supply has been affected by mining (application sec. .130). Luminant will monitor final discharges to ponds in accordance with applicable state and federal water quality permits; this permit does not allow the discharge of acid or toxic mine discharge. The best technology will be used to reduce suspended solids into stream flows including sedimentation ponds, check dams, mulching, and contemporaneous reclamation to minimize disturbed areas. Luminant's surface water control plan includes measures to protect the quality and quantity of surface water systems, prevent additional contributions of suspended solids, provide water-treatment facilities, and control drainage.
  - (b) Luminant provides adequate information to meet § 12.146(b) (Regulations) regarding the groundwater monitoring plan and § 12.146(d) (Regulations), the groundwater PHC determination. Impacts to groundwater levels may occur in the vicinity of mining from groundwater inflow to the pit; these impacts are likely to be limited to the areas closest to the pit. Luminant will control this water as a part of its water control plan. Advance overburden dewatering will also cause water level declines. Advance dewatering activities are anticipated for several areas within the life-of-mine area; however, no dewatering is proposed for the initial five-year permit term. Groundwater declines will be greater in areas of greater saturated sand thickness that are laterally extensive. Luminant's consultant, Golder, used groundwater modeling program MODFLOW to simulate dewatering for the

proposed life-of-mine. The areas in which advance dewatering was simulated are shown on Plate 146(d)-1 (SD3). The results of the transient dewatering simulations are summarized in Table 146(d)-1; advance dewatering activities will likely commence nine to twelve months before mining.

- (c) Limited advance depressurization of the Calvert Bluff Underburden will likely be needed in the QI Aux. Area No. 1 and northern portion of the QII area, where a thick Calvert Bluff underburden sand exists just below the base of the lowest mineable lignite seam, during the initial permit term but is not anticipated for other areas within the life-of-mine footprint (SD4). In the permit renewal/revision/expansion area, the top of the deeper Simsboro Aquifer appears to have sufficient separation from the lowest mineable lignite seam throughout the permit area to preclude the need for advance depressurization (SD4). The potential drawdown impacts in the Calvert Bluff underburden were quantified based on the results of a numerical groundwater flow model developed by Hall Southwest Corp. (HSW) in 1991. The model was used to simulate a depressurization well-field situated on the southeastern side of the QI Aux. Area mine blocks and the northern portion of the QII Area. The results of the simulation show that steady-state conditions will be achieved after three months of depressurization with an average well-field pumping rate of 392 gpm. The model results indicate dewatering should commence at least three months prior to mining in this area and continue for as long as the pits are opened in areas of excess head. Various portions of Golder's report, contained in Appendix 146-D, were updated in SD3 and SD4.
- (d) The five-foot drawdown contour (predicted from modeling) as a result of overburden dewatering could extend to a maximum of 5,000 feet beyond the dewatering fields. Because the sand bodies targeted for dewatering have limited or no hydraulic connection with Walnut Creek, advance dewatering activities should have no perceptible impact of the volume of flow in Walnut Creek. The underburden flow model for the permit area shows that drawdowns of five feet or more in the underburden water-bearing sands are unlikely to occur more than 3,500 feet from the edge of the depressurization well field [Plate 146(d)-1 (SD3)]. Other non-mining related stresses on the underburden sands, such as pumping from rig-supply wells in the area, will also cause localized drawdown in the underburden aquifers. Approximately 61 wells fall within either the five-foot depressurization or dewatering drawdown contours (Plate 146(d)-1 (SD3) and Table 146(d)-2 (SD3)). A number of potentially impacted water wells have been abandoned (Table 146(d)-2) and a number will be removed by the mining process (Plate 146(d)-1). Dewatering, pit inflow, and depressurization during the life-of-mine could impact these wells; wells located near the mine and screened in the same interval being dewatered or depressurized are more likely to be impacted. Wells screened at depths greater than 200-300 feet below ground surface are not likely to be impacted. It is unlikely that the Simsboro Aquifer will experience any drawdown due to dewatering or depressurization of the shallower Calvert Bluff overburden or underburden sands.
- (e) To assist in evaluating impacts to groundwater, Luminant includes a plan for the monitoring and reporting of dewatering and depressurization activities [pp. 146(d)-15, SD3]. Luminant will submit to the Commission a report summarizing annual dewatering activities within 60 days following the end of each calendar year. The



report will include: (i) a potentiometric surface elevation chart that lists the long-term groundwater monitoring (LTGM) wells; (ii) the baseline water levels from the wells; (iii) the fourth quarter (or most recent) water level from the LTGM wells and the change in water levels; (iv) a summary of groundwater withdrawal amounts; (v) a map showing the approximate location of the active well field during the previous year and the change in water levels; and (vi) an evaluation, with summary, that compares the observed effects from dewatering to the effects predicted in the Probable Hydrologic Consequences (PHC) determination, including any effects from incidental underburden depressurization as a result of mining. Luminant will provide the Commission with a response addressing any observed or anticipated exceedance of the estimates contained in the approved permit application.

- (f) Luminant proposes a LTGM plan that will provide sufficient information to ensure the protection of the groundwater hydrologic balance. Proposed long-term groundwater monitoring wells are included in Table 146(d)-4 (SD3). The number of monitoring wells will likely be expanded during future permit renewals. Quarterly samples will be taken for the following parameters: total dissolved solids (TDS), total and dissolved iron (Fe), total and dissolved manganese (Mn), sulfate (SO<sub>4</sub>), chloride (Cl), field EC (electrical conductivity), field pH (s.u.), and field temperature. For spoil monitoring wells, annual samples will be taken and reported to the Commission for 12 trace elements [application p. 146(d)-14, SD3]. If a new or replacement well is installed, Luminant will conduct a one-time sampling for all of the quarterly and annual parameters, as well as for calcium, magnesium, carbonate, nitrate-nitrogen, potassium, bicarbonate, and sodium.
- (g) The application includes appropriate surface water information, including surface water hydrology (Finding of Fact No. 17, *supra*), modeling of potential impacts on surface water quantity and quality, and a long-term surface water monitoring (LTSM) plan to satisfy §§ 12.146(c) (Regulations) (LTSM) and 12.146(d) (PHC determination for surface water).
  - (i) Luminant's surface water modeling effort conservatively addresses mining for the life-of-mine. Watersheds were mapped and soils and land use data, topography, cover, and other characteristics, such as rainfall rates, were assigned to the watersheds and incorporated into a hydrologic model. The estimate of postmine evaporative losses was conservatively based on the 400 acres, which is slightly greater than Luminant's estimate of the life-of-mine surface area for post-mine impoundments. The average annual net evaporative loss represents less than 0.3% of the median annual flow at the USGS gauging station 08108780, located on the Little Brazos River near Hearne, Texas. The model incorporated a postmine land use of pastureland as a conservative factor in predicting runoff rates and sediment yields for premining, during mining, and postmining scenarios for the ten-year/24-hour, 25-year/24-hour, and 100-year/24-hour design storm events. Table 146(d)-7 sets out predicted runoff volumes and peak flows for affected watersheds. Sediment yields were predicted using the ten-year/24-hour design storm event [Table 146(d)-8]; they are predicted to increase during mining; after mining and revegetation, they are predicted to decrease to below premine conditions.

- (ii) Measures will be taken, during and after the proposed surface mining activities, to minimize additional contributions of sediment to surface waters, such that discharges into receiving streams will meet applicable federal and state water quality laws and regulations in accordance with water quality permit requirements. Sediment ponds and impoundments will detain water and thereby decrease the contribution of TSS in discharges, in accordance with the TCEQ TPDES permit requirements.
- (iii) Results of sampling of each final discharge pond will be reported to the Commission. Luminant previously used the "paired watershed" monitoring approach; data collected from the paired watershed is summarized in Appendix 146(d)-F. In the renewal/revision/expansion application, Luminant proposes to abandon the "paired watershed" approach and instead, monitor an upstream and downstream station on Walnut Creek; watersheds will be monitored at stream sampling stations, located appropriately. Proposed surface water monitoring stations are shown on Plate 146(d)-2 (SD4). Stream stages will be monitored using staff gauges with channel rating curves, and rainfall will be recorded using a continuous recording rain gauge. Luminant adequately describes TCEQ sampling requirements, procedures, and proposed monitoring and reporting to the Commission.
- (iv) Tables 146(d)-9 through 146(d)-11 provide for the monitoring of parameters that relate to the suitability of the surface water and to the objectives for protection of the hydrologic balance, including the parameters that will be monitored and sampling frequencies for final discharge of ponds and stream monitoring stations. Table 146(d)-9 summarizes the Data Collection / Water Quality Analysis Procedures encompassing the LTSM Program, specifying: (i) monthly reporting per the TPDES permit (the Discharge Monitoring Report); (ii) quarterly reporting of individual pond data to be sampled weekly when discharge occurs; (iii) quarterly reporting for long-term monitoring stations (paired, undisturbed, and disturbed) for flow data (instantaneous), water quality data (TDS, TSS, TSM, pH, and total and dissolved iron and manganese), and daily rainfall; and (iv) annual updates of outfall location maps, submitted to the Commission at least annually.
- (v) Luminant includes Table 146(d)-10, TPDES Point Source Monitoring, that specifies effluent parameters and parameter limits for active-mining, final discharge ponds and postmining final ponds. Active-mining, final discharge ponds that receive drainage from disturbed areas and discharge during times other than precipitation events will be sampled for the following parameters (effluent limits follow each parameter): TSS, 70 mg/L; Fe, 7.0 mg/L; Mn, 2.0 mg/L; and pH, greater than six and less than nine standard units; in addition, aluminum and flow will be reported, and if Se is required by the TPDES permit, the Se limits will be based on Total Maximum Daily Load (TMDL) limits set by TCEQ.
- (vi) For active-mining, final discharge ponds that discharge only during precipitation events within any 24-hour period less than or equal to the ten-year, 24-hour precipitation event, and for postmining final discharge ponds

(ponds that receive water from a reclamation area that has been returned to approved contour and on which revegetation has commenced), the following parameters will be sampled for the following effluent limitations: settleable solids, 0.5 ml/L and pH, greater than six and less than nine standard units; in addition, flow will be reported. For all three types of ponds, individual final discharge ponds (ponds that contribute flow to a TPDES outfall) will be sampled at a minimum of once per quarter. Grab samples will not be collected from ponds that do not discharge. Ponds with discharges that exceed effluent parameter limited will be reported to the Commission within 24 hours of Luminant becoming aware of the violation.

- (vii) Water-quality data from the TPDES point-source monitoring station will continue to be monitored until release from Phase II reclamation liability obligations. Hydrologic balance monitoring data will be used to support Phase III release from reclamation liability obligations. Table 146(d)-11 summarizes point source sampling for reporting to the Commission that will continue quarterly until a pond and its watershed are released from Phase II reclamation. Luminant indicates that long-term surface water quality monitoring data will be compared to baseline data per Advisory Notice AD-BO-312.
- (viii) Measures to be taken relevant to diversions and ponds will minimize contributions of additional sediments to surface waters. Discharges into receiving streams will meet applicable federal and state water quality laws and regulations in accordance with water quality permit requirements. Disturbances to the surface water hydrologic balance within the permit and adjacent areas will be minimal. Luminant has undertaken to mitigate impacts caused by proposed activities. Schedules are included for primary sediment control structures, impoundments, and diversions.
- (h) Staff prepared a Cumulative Hydrologic Impact Assessment (CHIA) dated October 3, 2019 (TA Addendum No. 2; Appendix I). The Calvert Mine (Permit 27H) and the Bremond Mine (49B) are located in the Walnut Creek watershed, a tributary to the Little Brazos River for which the CHIA was prepared. Staff prepared two previous CHIA documents for the Bremond Mine and Calvert Mine - on April 19, 1993, for Permit No. 27B (Docket No. C2-0111-SC-27-C) and on October 14, 2008, for Permit No. 27F (Docket No. C7-0025-SC-27-C, TA Addendum No. 1) due to the increase in surface water acreage from 118.8 acres to 264 acres. The 1993 CHIA and 2008 CHIA were limited to the life-of-mine operations proposed at the time. In 2016, the Calvert Mine permit area was reduced by 648 acres. For the renewal/revision/expansion of Bremond Mine Permit No. 49B, Staff updated the October 14, 2008, CHIA. The CHIA is a comprehensive update for the Walnut Creek watershed. The approval of the Bremond permit renewal/revision/expansion application is dependent on the CHIA illustrating that mining operations at the Bremond Mine have been designed to prevent material damage to the hydrologic balance outside the permit area. The TCEQ-classified stream-segment designation applicable is Segment No. 1242. For this CHIA update, the drainage boundaries were refined using publicly available hydrologic unit code (HUC) shapefiles, available via the USGS' National Map Project. The permit areas for existing mines located in the Walnut Creek watershed are shown on Figures 1 and 2 of the CHIA; the cumulative impact area (CIA) delineated as a

result of those mining activities is shown on Figure 1 of the CHIA and encompasses the Calvert and Bremond Mines. As set out in this Order, Luminant requests approval to mine approximately 1,842 acres during the proposed five-year permit renewal term. Based upon the information provided by the Applicant, Staff analysis of information contained in the application, as supplemented, and the Staff-prepared CHIA, the proposed surface mining and reclamation operations have been designed to minimize effects on surface waters and groundwater. The CHIA is sufficient as an assessment of the probable cumulative hydrologic impacts of the permit area. Staff determined that cumulative postmine effects on surface water and groundwater quality and quantity from mining would be minimal.

- (i) Walnut Creek is an intermittent stream with a watershed of approximately 137 square miles and is a subwatershed of the 595-square-mile Little Brazos River Basin. The Little Brazos River flows into the Brazos River approximately 25 miles downstream of the Calvert Mine permit area.
- (ii) Staff described the potential effects of the mining activities of the Calvert and Bremond Mines on the surface water and groundwater in the CIA, an area over which the proposed operation(s) "may cause measurable changes in specified hydrological parameters at a particular location within the geographical area of a specified watershed system" (CHIA, p. I-1, Staff's TA Addendum No. 2) by (a) delineating two mass-balance calculation points in the CIA; (b) evaluating baseline water quantity and quality; (c) for surface water, evaluating chemical, physical, and geomorphic changes in receiving-stream flow; and (d) for ground water, evaluating potential aquifer-head drawdowns and declines as well as the physical and chemical changes in the reclaimed spoil areas, including chemical changes in the spoil groundwater.
- (iii) For surface water, total dissolved solids (TDS) were used as the indicator parameter in the mass-balance analysis to project changes to the chemical quality of the water. Although Mass-Balance Location No. 1, located on Walnut Creek immediately upstream of its confluence with the Little Brazos River, showed the largest potential increase in TDS concentrations at 31.4% (from 240 mg/L to 315 mg/L). This value is significantly below the TDS threshold value of 750 mg/L for TCEQ Stream Segment No. 1202. Further downstream at Mass-Balance Location No. 2 on the Little Brazos River at identified irrigation Water Rights 4363A and 4364A, the cumulative effects are also predicted to remain significantly less than 750 mg/L. The TDS concentration increases from 240 mg/L to 272 mg/L at the downstream node of the CIA are small but not insignificant. The cumulative impacts are also softened by the dilution caused by substantial runoff within the Brazos River Basin drainage area. TDS concentrations in the postmining period are also predicted to be in an acceptable range.
- (iv) The physical changes expected within the mines' reclaimed areas will cause small changes in the quantity of surface water available for downstream users. Changes to be expected include attenuation of storm events due to surface water impoundments and longer sustained flows in receiving streams. The effect of attenuation of storm-water runoff and increase in sustained flows is insignificant when compared to the amount

of storm-water runoff originating within the CIA and upstream Brazos River Basin. The amount of water stored in impoundments and lost to evapotranspiration is negligible when compared to the aggregate amount of water originating from the entire Walnut Creek watershed within the CIA. In addition, it is not expected that postmine soils loss will be greater than premine due to the construction of surface water control and treatment structures.

- (v) For ground water, Staff found that the projected aquifer-head drawdowns and declines due to mining activities were found to be insignificant within the CIA, resulting primarily from the limited extent of sand bodies and the usually unconfined conditions within isolated watershed areas in the overburden Wilcox sediments.
  - (vi) Mining will cause physical changes in the spoil areas which will alter the spoil resaturation rates and change the geometry of the groundwater flownet. However, the cumulative effects of mining on these aquifer characteristics are insignificant and are primarily the result of the isolation of effects within generally unconfined aquifer conditions within local watershed areas.
  - (vii) Mass balance analyses were also employed to project water-quality impacts of spoil-area groundwater on surrounding aquifers. These analyses showed measurable cumulative effects throughout the CIA for the subject mines, but the effects were significantly less than threshold values established and were deemed acceptable. The same is true for the effects of spoil-area groundwater on streamflow water quality in critical reaches outside the mine areas.
  - (viii) No material damage is predicted and those effects that are predicted are deemed insignificant because of the dilution effects of surrounding aquifers and from substantial runoff within the large drainage areas.
33. The application, as supplemented (SD3), contains sufficient information to meet the requirements of § 12.147 of the Regulations. Luminant includes a proposed postmine land use plan for the renewal/revision/expansion permit area. The postmine land use plan for the proposed disturbed acreage for the requested permit term (4,342 acres) has been certified by a Texas registered professional engineer and will result in proposed alternative land uses in the following percentages: pastureland, 98%; industrial commercial, less than 1%; and developed water resources, 2% [*Postmine Land Use Map*, Plate 147-1, Sheets 1-2 and Table 147-1 (SD3)]. No proposed disturbances will occur where Luminant does not own the land or possess a valid lease granting right of entry to mine. The postmine land use plan is feasible, reflects an achievable higher land use, and is compatible with adjacent land uses in the general area included in section .135 of the application, as supplemented. The proposed uses take into consideration the landowner's preference. Other than the Commission's approval, no state or local land use plans, programs, agency approval, or authorizations required for the proposed postmine land uses. The proposed plan will present no actual or probable hazard to public health or safety, water-flow diminution, pollution, or cause unreasonable delays. The information provided meets the requirements of § 12.147 and § 12.399 of the Regulations.

34. Luminant meets the requirements of §§ 12.148 (ponds, impoundments) and 12.150 (diversions) of the Regulations. Certifications for all structures requiring certification are included in the design package.
- (a) Table 139(T)-6 and Table 139(T)-8 contain the Primary Sediment Control Structures and Impoundment Schedule and Permanent Impoundment Schedule, respectively. Locations of hydraulic structures are depicted on Plates 148-1 through 148-3, Surface Water Control. Detailed design plans for pending sedimentation ponds were submitted in the application, including: Q-1 Permanent Sedimentation Pond (Appendix 148-B); Q-2 Sedimentation Pond (Appendix 148-C); Q-3 Permanent Sedimentation Pond (Appendix 148-D); Q-4 Sedimentation Pond (Appendix 148-E); and Q-5 Permanent Sedimentation Pond (Appendix 148-F). The detailed design plans submitted for the Q-1 and Q-5 Permanent Sedimentation Ponds are subject to the requirements of § 12.148(a)(2) of the Regulations in accordance with criteria set by the Mine Safety and Health Administration at 30 CFR § 77.216(a)(1). Luminant has met the requirements of §12.148(a)(2), having made all appropriate demonstrations required for approval of the Q-1 and Q-5 Permanent Sedimentation Ponds in section. 148 of the application. Table 139(T)-7 contains a Diversion schedule. Detailed design plans submitted in the application for mine water diversions include: Q-1 Diversion Nos. 1-6 (Appendices 148-B and 154-B); Q-2 Diversion Nos. 1 and 2 (Appendices 154-C and 148-C, respectively); Q-3 Diversion No. 1 (Appendix 148-D); Q-4 Diversion Nos. 1-4 (Appendices 154-C and 148-E); Q-5 Diversion Nos. 1 and 2 (Appendix 148-F). No permanent or temporary impoundment detailed design plans, with the exception of five pending sedimentation ponds, are proposed in this application. The detailed design plans for sedimentation ponds and mine water diversions submitted in section .148 of the application meet all applicable requirements at §§ 12.148, 12.150, 12.341, 12.344 and 12.347 of the Regulations and are approved. Detailed design plans for sedimentation ponds and mine water diversions not submitted in the application will be submitted to the Commission for approval prior to construction. General design plan information for permanent impoundments proposed within the permit term is located in Table 139T-8 and Plates 139-2-1 (SD3) through 3. Existing Permit Provision No. 4, requiring detailed design plans be submitted to the Commission for diversions and requiring use of stockpiles as part of construction or reclamation, is no longer required. Staff recommends Existing Permit Provision No. 4 be removed. Existing Permit Provision No. 4 is removed.
- (b) Detailed design plans for access roads associated with ponds proposed for construction during the requested term were submitted in the application including: Q-1 Access Road Nos. 1-3 (Appendix 148-B); Q-2 Access Road Nos. 1-4 (Appendix 148-C); Q-3 Access Road Nos. 1 and 2 (Appendix 148-D); Q-4 Access Road Nos. 1 and 2 (Appendix 148-E); and Q-5 Access Road Nos. 1 and 2 (Appendix 148-F). The detailed design plans submitted for these access roads meet all applicable requirements and are approved.
- (c) Luminant proposes to construct permanent drop structures in areas where excessive velocities from runoff have caused or will potentially cause erosion. Typical designs of drop structures are shown on Figures 148(F)-4 through 148(F)-7. No drop structure detailed design plans were submitted in the application.

Detailed design plans will be provided to the Commission for approval prior to construction.

- (d) No coal processing waste banks, dams, or embankments are proposed. Preliminary hydrologic information is contained in section. 139 of the application and Appendix 148-A. No underground mining areas are located in the proposed permit area.
  - (e) Luminant proposes to construct miscellaneous flow diversions within areas bounded by surface water control as described in Advisory Notice EN-PS-341. Flow diversion design, location, construction, maintenance, and removal will be sufficient to meet the performance standards of § 12.341(c) (Regulations). Flow diversions are designed so that the combination of channel, bank, and floodplain configuration is adequate to safely pass the peak runoff of a two-year/six-hour precipitation event. No perennial or intermittent stream-channel diversions will be constructed during the proposed permit term; no detailed design plans regarding the same were submitted in the application. Luminant will provide a map with an approximate locations for diversions within five days of initiating construction; perennial and intermittent stream channel diversions will not be diverted without prior approval from the Commission. Temporary miscellaneous flow diversions will not be constructed in areas without adequate bonding or be used as a boundary of surface water control.
35. Luminant indicates in Section. 149 that it does not propose mining activities to occur within 500 feet of any known underground mines within the proposed permit term. The application contains adequate information to demonstrate compliance with § 12.149 of the Regulations.
36. Luminant provides sufficient information in the application, as supplemented (SD2, SD3), to meet the requirements of § 12.152 (Regulations). Proposed mining will not approach nearer than 100 feet of the right-of-way line of any public road, except as allowed by the Regulations and approved by the Commission. Luminant requests the following buffer zone variances [depicted on Plates 152-1 through 152-3 (SD2)] for activities including, but not limited to, mining, pre-stripping, pond construction, diversion construction, road construction, dewatering activities, regrading, reseeding, erosion repair, and other such activities:
- (a) Public Road Buffer Zone Variances:
    - (i) RCR 477 (Headsville Road) – Along both sides, starting .44 miles northeast of the intersection of RCR 459 and RCR 477, to a point 0.56 miles northeast of the aforementioned intersection.
    - (ii) RCR 477 (Headsville Road) – Along both sides, starting 0.24 miles southwest of the intersection of RCR 459 and RCR 477, to a point 0.38 miles southwest of the aforementioned intersection.
    - (iii) Whiterock Road (White Road) – Along both sides, starting 0.18 miles northwest of the intersection of RCR 459 and Whiterock Road, to a point 0.42 miles northwest of the aforementioned intersection.

- (iv) RCR 455 – Along both sides, starting at a point 0.74 miles from the intersection of RCR 459 and RCR 456 for a distance of 0.09 miles northeast. This buffer also includes a segment that extends north for approximately 0.05 miles at the 0.03 mile interval.
  - (v) RCR 448 (Wasik Road) – Along the west side, starting from the intersection of RCR 448 and FM 2293 to a point 1.13 miles north of the aforementioned intersection. Additionally, the road buffer zone continues along both sides to a point 1.29 miles from the aforementioned intersection for a distance of 0.16 miles.
  - (vi) RCR 450 (Sammys Road) – Along the west side, starting from the intersection of FM 2293 and RCR 450, continuing 0.20 miles southeast of the aforementioned intersection.
  - (vii) FM 2293 – Along the north side, starting from the intersection of RCR 448 and FM 2293 to a point 0.74 miles west of the aforementioned intersection. Along both sides, to a point 2.58 miles from the aforementioned intersection. Additionally, along the south side, to a point 2.86 miles from the aforementioned intersection.
  - (viii) Nuelda Road – Along both sides, starting 0.13 miles southeast of the intersection of FM 2293 and Nuelda Road, to a point 0.46 miles along Nuelda Road of the aforementioned intersection.
- (b) The public road buffer zone variances addressed in Finding of Fact No. 36(a), *supra*, meet all requirements set forth in §12.152 of the Regulations. Notice of Application (Finding of Fact No. 4, *supra*) contained all required information related to the requested variances and afforded the public with all necessary procedural opportunities under §12.72. The Commission finds that the interests of the public and affected landowners will be protected as required under §12.72(a)(3) and approves the public road buffer zone variances requested in section .152 of the application.
- (c) Luminant also requested closure of Robertson County Roads 477, 448, 456, 459, 455, 455A, 455 Relocation, 455A Relocation, and 457A Relocation (SD2, SD3), as depicted on Plates 139-1-2, 139-1-3, and 139-1-5. Approvals for the closures were previously granted by the Robertson County Commissioners' Court as the designated authority pursuant to SMRD Advisory Notice AD-AD-072 and are contained in Appendix 152-A of the application. Closure of the roads is a short-term activity related to construction of the Bremond Transportation Road and temporary dragline walkway. Luminant requests the county roads be approved as temporary ancillary roads during their closures.
- (d) Roads will be maintained to: control or prevent erosion, siltation, and related pollution; control and prevent damage to fish and wildlife, water quality, streams, and drainageways; control or prevent damage to public or private property; and use non-acid-forming and non-toxic-forming surface materials.
37. The application meets the requirements of § 12.154 of the Regulations regarding road systems and support facilities. A road schedule is included in Table 154-1 of the



application and reflects proposed reclamation dates. The system of roads is depicted on Plates 139-1-1 through 139-1-12 and Plates 154-1 through 154-3 of the application. Detailed design plans, appropriately certified, for roads submitted in the application include: Bremond Transportation Road (Appendix 154-B); Bremond Transportation Road No. 2 (Appendix 154-B); Q Area Haul Road (Appendix 154-C); Loading Station Bypass (Appendix 154-C); and FM 2293 Access Road (Appendix 154-C). Typical road sections are included in the application [Figures 154(F)-1 through 154(F)-4]. The detailed design plans for roads contained in section .154 of the application meet all applicable requirements under §§ 12.154 and 12.400-401 of the Regulations and are approved. No conveyors or rail systems are proposed during the proposed permit term. Roads that are no longer needed to support mining will be reclaimed. Certifications for primary roads not proposed in this permit application will be provided in detail to the Commission six months prior to the desired construction date. Culverts will be installed in drainageways along the roadway, as needed. Where feasible, Luminant will consider the incorporation of wildlife movement recommendations to the extent they do not negatively impact required design criteria and performance standards of culverts, as provided by TPWD (SD4). Luminant indicates that concrete headwalls and rock riprap or embankments covered with vegetation will be used to protect inlets of ditch relief culverts, as possible. The alteration of a natural drainageway during construction of a road is not proposed by Luminant.

38. The required application fee of \$3,000 was submitted [§ 12.108(a), Regulations]. The application, contained in nineteen volumes, was filed on December 21, 2018, at least 180 days prior to the expiration date of the permit [§ 12.106(b)(2), Regulations]. 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), Regulations]. In the application, as supplemented, the information is current, presented clearly and concisely, and is supported by appropriate references [§ 12.107(b), Regulations]. Maps and plans contained in the application meet the requirements under §12.207(f) of the regulations. Technical data has been submitted as required [§ 12.107(c) and (e), Regulations], and the data were prepared by or under the direction of professionals in the subjects analyzed [§ 12.107(d), Regulations]. 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), Regulations].
39. The permit application, as supplemented, and as modified by the permit provision contained in Appendix I and the Soil Testing Plan contained in Appendix II, meets the requirements § 12.216 of the Regulations as set out below and as included in the Findings of Fact.
- (a) The permit application, as amended and supplemented, is accurate and complete. All requirements of the Act and Regulations have been met as set out in these Findings of Fact with the inclusion of the permit provision set out in Appendix I and the Soil Testing Plan set out in Appendix II to this Order.
  - (b) Luminant has demonstrated that surface coal mining and reclamation operations, as required by the Act and the Regulations, can be feasibly accomplished under the mining and reclamation plan contained in the permit renewal/revision/expansion application, as supplemented, with adoption of the proposed permit provision contained in Appendix I to this Order.

- (c) Staff has made an assessment of the Cumulative Hydrologic Impact Assessment for surfacewater and groundwater systems from current, proposed, and otherwise anticipated mining operations within a defined Cumulative Impact Area (TA Addendum No. 2, Appendix I), as required; Luminant's operations are designed to prevent damage to the hydrologic balance outside the proposed mine plan area.
- (d) The proposed permit area is not within an area designated as unsuitable for surface mining (§§ 12.74 – 12.85, Regulations) nor involved in a proceeding seeking to designate the area as unsuitable for surface mining (§§ 12.78 – 12.85, Regulations). The proposed operations, as approved in this Order, will not take place on any prohibited federal lands within the boundaries of national forests or on prohibited lands contained within national parks, refuges, trails, wilderness preserves, or wild and scenic rivers. Proposed operations will not adversely affect any properties listed on or eligible for listing on the National Register of Historic Places, except as otherwise allowed by § 12.71(a)(3) (Regulations) and will not be conducted within prohibited 100-foot buffer zones of the outside right-of-way of public roads, except as otherwise approved by the Commission and provided for in the Regulations. Proposed operations will not be conducted within 300 feet of any occupied dwelling not owned by Luminant except as provided for in §§ 12.71(a)(5) and 12.72(b) (Regulations), public building, school, church, community or institutional building, or public park. Proposed operations will not commence within 100 feet, measured horizontally, of a cemetery. No underground mines are known to exist within or adjacent to the permit area; no mining related activities are proposed within 500 feet of an underground mine (§12.149, Regulations).
- (e) Luminant has submitted all required information for documentation of right of entry required under §12.117 of the Regulations.
- (f) The information provided in the application, as supplemented, is adequate to address the requirements of § 12.116 (Regulations). All required fees have been paid. Luminant is current in payment of required franchise taxes. The report from the AVS database (operated by the OSM) is contained in Appendix VI of Staff's TA Addendum No. 2; the information in the AVS database indicates that there are no pending violations that remain uncorrected, or the violations are in the process of being corrected or are subject to a valid, good faith appeal of the alleged violation. Luminant has demonstrated compliance with § 12.215(e) (Regulations) and has satisfied the requirements for submissions and demonstrations under § 12.216(7) (Regulations).
- (g) The Applicant/Violator System report has been reviewed. The report included no indication required reclamation fees have not been paid.
- (h) The proposed operations to be performed at the Bremond Mine will not be inconsistent with other surface mining and reclamation operations in adjacent areas to the existing and proposed expanded permit area.
- (i) Luminant currently has a collateral bond for its statewide mining operations in place. No changes to Luminant's existing blanket collateral bond are necessary as a result of this permit renewal [Finding of Fact No. 31(b), *supra*]. The approved bond is sufficient and will remain in place. No additional bond is required.

- (j) Luminant has, with respect to prime farmland, addressed in this application the requirements of § 12.201 of the Regulations. The permit renewal/revision/expansion area is located east of the 100<sup>th</sup> Meridian West Longitude and, by definition, contains no alluvial valley floors; therefore, the requirements of § 12.202 of the Regulations are not applicable.
  - (k) The postmining land uses of the permit renewal/revision/expansion area meet the requirements of the Regulations; the proposed postmining land uses are approved in accordance with this Order and the requirements of § 12.339 (Regulations).
  - (l) All specific performance-standard approvals required under Subchapter K of the Regulations have been made by the Commission.
  - (m) The Bremond Mine activities will not affect the continued existence of endangered or threatened species or result in destruction or adverse modification of critical habitats, as determined under the Endangered Species Act of 1973 (16 U.S.C § 1531 *et seq.*).
  - (n) The requirements in §12.390 for a long-term, intensive agricultural postmine land use are not applicable because no postmine cropland land use is planned or required.
40. Official notice has been taken of the current franchise tax account status pages available on the Texas Comptroller of Public Accounts' website that evidence an active right to transact business in Texas. Luminant and Vistra Asset Company LLC, Luminant Mining Company LLC's corporate parent, have paid all franchise taxes due. The parties were afforded the opportunity to contest official notice of the documents prior to their admittance into the record.
41. The required public posting of the consideration of this application by the Commission has occurred.
42. This application was processed in accordance with the procedures contained in the Regulations, Act, Commission Practice and Procedure and in accordance with the Administrative Procedure Act.

### CONCLUSIONS OF LAW

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

1. The Commission has jurisdiction under §§ 134.051 and 134.075 of the Act and § 12.216 of the Regulations to approve this application for permit renewal/revision/expansion as contained in this Order, and as set out in Appendices I and II to this Order.
2. Proper notice of the application was provided in accordance with the requirements of the Act, §§ 134.058 and 134.059; the Regulations, § 12.207; the Commission's *Practice and Procedure*, 16 TAC § 1.1 *et seq.*; and the Administrative Procedure Act (APA), Tex. Gov't Code Ch. 2001 (Vernon Supp. 2019). No public hearing was required. Open meeting notice has been made as required.

3. The application for renewal/revision/expansion of Permit No. 49B, with references to the approved permit and with the permit provision (Appendix I) and soil testing plan (Appendix II) meets all requirements for approval as set out in the Act, the Regulations, the APA, and the Commission's *Practice and Procedure*, as set forth in the Findings of Fact.
4. A reclamation cost estimate for the Bremond Mine in the amount of \$28,799,866 is sufficient to ensure completion of the reclamation plan if the work has to be performed by a third-party at the direction of the Commission in the event of forfeiture.
5. The current blanket collateral bond in the amount of \$975,000,000 is in place as approved by the Commission; no changes are needed in this docket.
6. Based upon the updated compliance history filed by Luminant in accordance with §§ 12.116(a)(2) and 12.215(g) of the Regulations and AVS Report, a renewed, revised and expanded permit may be issued for the Bremond Mine.

**IT IS THEREFORE ORDERED** that the Findings of Fact and Conclusions of Law, permit provision, and Soil Testing Plan contained in this Order are hereby adopted;

**IT IS FURTHER ORDERED** that Luminant Mining Company LLC's application, as supplemented, for renewal, revision and expansion of Surface Mining and Reclamation Permit No. 49B is approved as set out in this Order;

**IT IS FURTHER ORDERED** that the permit is hereby renumbered as Surface Mining and Reclamation Permit No. 49C;

**IT IS FURTHER ORDERED** that Permit No. 49C is hereby issued to Luminant Mining Company LLC; and

**IT IS FURTHER ORDERED** that Luminant Mining Company LLC's current blanket collateral bond in the amount of \$975,000,000 remains in place. The amount of the bond is greater than reclamation costs of Luminant Mining Company LLC's permits; 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 of an application is filed by any party at interest, this order shall not become final and effective until such motion is overruled, or if such motion is granted, this order shall be subject to further action by the Commission. Pursuant to Tex. Gov't Code §2001.146(e), the time allotted for Commission action on a motion for rehearing in this case is 100 days from the date the Commission Order is signed.

**SIGNED** on November 19, 2019.

**RAILROAD COMMISSION OF TEXAS**



**CHAIRMAN WAYNE CHRISTIAN**

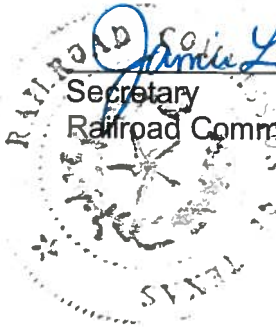


**COMMISSIONER CHRISTI CRADDICK**



**COMMISSIONER RYAN SIFTON**

**ATTEST:**

  
Secretary  
Railroad Commission of Texas

## **APPENDIX I**

### **PERMIT PROVISION**

1. All cultural resource sites within the permit boundary, identified during or subsequent to baseline surveys, for which eligibility for nomination to the National Register of Historic Places has not been determined, shall not be disturbed by mining and/or mining-related activities. Copies of all correspondence items, including all attachments, between Luminant and the Texas Historical Commission shall concurrently be provided to the SMRD.

## **APPENDIX II**

### **SOIL-TESTING PLAN AND POSTMINE PERFORMANCE STANDARDS (Appendix VII to Staff's TA Addendum No. 2)**

#### ***Postmine Soil Testing Plan***

After final grading, permanent markers will be placed on 1,000-foot centers in regraded areas to delineate a 5.7-acre grid system (see Plate 145-1 for mine soil monitoring grid map) for monitoring postmine soil quality and nutrient requirements. These markers will be maintained until land is released from all reclamation obligations.

#### **Initial Soil Sampling**

Initial soil sampling will consist of composite samples from each 5.7-acre grid as may be delineated by the advance of spoil leveling. Samples will be prepared and either shipped to the lab in a timely manner or promptly stored in a manner appropriate to minimize biological and geochemical changes during the period between collection and analysis. The samples will be collected, analyzed, and the results reported to the Commission within two years following rough backfilling and grading of each complete grid, prior to the placement of land into the ERP, and prior to approval of Phase I, II, or III bond release. This period allows sufficient time for additional reclamation efforts if the soil suitability criteria are not immediately met.

Adjacent samples will be collected no less than 200 feet apart. Six soil samples per grid will be mixed to make one composite sample per depth increment. If a grid is less than two acres in size, it will be combined with an adjacent grid. If a partial grid is  $\geq 0.5$  acre in size, additional sampling will be conducted on 200-foot centers. No more than two grids will be combined for initial sampling purposes. Composite samples will be made to represent the following depth increments: 0-1 foot and 1-4 feet in topsoil substitute scenarios. The samples will be collected using standard soil sampling techniques.

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

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

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

1. pH
2. Potential acidity
3. Exchangeable acidity
4. Neutralization potential

5. Acid/base accounting = Neutralization potential - (Potential acidity + Exchangeable acidity)
6. Texture: sand, silt, and clay (USDA-NRCS)
7. Cation Exchange Capacity
8. Sulfur forms

In addition to the above analyses, a random 10 percent of the samples (0-1' and 1'-4') will also be analyzed for cadmium, selenium, hot-water boron, electrical conductivity, and sodium adsorption ratio. Procedures for the above analyses will be as contained in RRC, Overburden Parameters and Procedures (May 16, 1989) with Soil Testing Procedures (March 1980, Texas Agricultural Extension Service) used for plant available nutrients.

The analytical results, an updated postmine soil bank, and a map showing all grids reported will be submitted to the Commission in both hard copy and digital formats. The map will display the grids sampled and reported plus the Texas State Plane coordinates.

Luminant will 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.

#### Sampling to the Extent of Leveling

Grid centers will be surveyed and marked every 1,000 feet to delineate 23-acre grids. The 5.7-acre (1/4 of a 23-acre grid) grids will serve as the basis for all initial sampling. If a grid is sampled to its full extent of 5.7 acres, it will be reported as a complete grid (e.g., grid 1234A). However, if a grid is not completely leveled (5.7 acres), and the leveled portion needs to be placed into the ERP, the portion that has been leveled and will be proposed for placement into the ERA will be sampled and reported. The portion of a grid that has been sampled will be marked using the ERA line. The ERAs are marked in the field, with markers being placed so they are visible from one to the next. Markers are placed at each turn in an ERA line. So if anyone in the field needs to determine the extent of soil sampling for a portion of a grid, it would be as simple as locating the grid (from a map and/or the grid center post) and then observing which side of the ERA they are on.

Table 145-1  
Postmine Soil Performance Standards

pH				
s.u.				
SOIL DEPTH	3.5 – 3.9	4.0 – 4.4	4.5 – 4.9	
% of area				
0-12"	0.0	10.0	25.0	
12-48"	1.0	7.0	21.0	
ACID-BASE ACCOUNTING PLAN (ABA)				
Tons/1000 Tons (t/kt)				
SOIL DEPTH	-5	-4	-3	-2 -1



% of area					
0-12"	0.0	1.0	5.0	13.0	12.0
12-48"	1.0	1.0	14.0	14.0	15.0
% CLAY					
SOIL DEPTH	41-45	46-50	51-55	56-60	
% of area					
0-12"	4.0	4.0	0.0	0.0	
% SAND					
SOIL DEPTH	81-85	86-90	91-95		
% of area					
0-12"	2	5	3		
<b><u>100% OF THE POSTMINE 0-12" – 48" INCREMENTS WILL MEET THE FOLLOWING STANDARDS:</u></b>					
Electrical Conductivity (EC)		4 mmhos/cm			
Sodium Absorption (SAR)		13			
Boron (B)		5 ppm			
Cadmium (Cd)		0.7 ppm			
Selenium (Se)		2 ppm			

Grid identification for reporting purposes will continue to be clear so that there is no question about whether grids have been reported. Portions of grids that 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 5.7-acre grid will be labeled as 2345A whereas the first portion of an adjacent grid would be labeled as 2346A-1 with subsequent samples being labeled as 2346A-2, etc. until the entire disturbance within that grid has been sampled and reported.

Initial samples will be collected at the approved density (one per acre). There will be no combinations of grids proposed for any advancing 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.

The native soil baseline will serve as the basis for determining postmine soil quality pertaining to the presence of acid- or toxic-forming materials compared to the premine soil as discussed in Section 12.386 of the regulations. 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 statistical baseline, the statewide criteria as shown in Technical Release SA-2 will be used to determine postmine soil success.

The proposed substitute material in the 1-4 feet increment is of the same origin as the proposed topsoil substitute material. Therefore, it is projected to have comparable qualities for root development as the topsoil substitute material. Final demonstration of quality will be based on postmine productivity.

#### Maintenance Soil Sampling

Composite soil samples will be taken at the end of the growing season from the 0-1 foot depth and analyzed for pH, nitrate-nitrogen, and plant-available phosphorus, potassium, calcium, and magnesium in accordance with the RRC overburden parameters and procedures list. The samples will be collected from each management unit. For sampling and reporting purposes, a management unit 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 generally 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. Subsamples will be obtained to represent approximately ten acres per subsample. These subsamples will be composited to represent the management unit for analysis and reporting purposes. The soil samples will be obtained in the year immediately prior to the first year of productivity assessment, during the first year of productivity assessment, and during the second year of productivity assessment. 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. Analysis results and a map showing the units sampled will be submitted to the RRC during the first quarter of the year following each reporting period. In the event that maintenance liming has been conducted, the liming rates will be provided in the maintenance soil report.

The purpose of this sampling program is to provide documentation on soil conditions for management purposes. Luminant will not obtain maintenance samples from areas where trees are planted because fertilizer is not applied regularly to trees.

#### Ten Percent Random Sampling in Fourth Year of ERP

During the fourth year of ERP, a random 10 percent of the 5.7-acre grids (or approved larger size grids) will be sampled and analyzed in the same manner as the initial sampling requirements. The analytical results and a map showing the grids sampled will be provided to the Commission no later than February of the fifth year of the ERP. In the event that chemical and physical properties of the postmine soils warrant further investigation, the Commission may require additional testing.

#### Alternate Soil Testing Plan

An alternative soil monitoring program would be initiated based on AFM/TFM problems identified either during planned postmine soil monitoring or following postmine soil monitoring. Soil samples will be collected from the 0 to 1-ft, 1 to 2-ft, 2 to 3-ft, and 3 to 4-ft increments at a density of one sample per acre for each affected grid and will be analyzed for those parameters identified by the SMRD and/or Luminant in the postmine monitoring program as a potential problem. This intensified sampling scheme will assist in identifying the extent of the soil problem.

Luminant will notify the Commission of its sampling schedule to allow members of the Commission staff to be present during this sampling. Upon request, splits of each sample taken during the sampling effort will be procured upon sample processing (after drying and grinding) and provided

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

Once Luminant conducts remediation, Luminant will again collect soil samples from the 0 to 1-ft, 1 to 2-ft, 2 to 3-ft, and 3 to 4-ft intervals at a density of one sample per acre for each remediated grid and the samples will be analyzed for the identified problem parameter. The affected area will also be sampled using the initial soil sampling protocol 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 and a map showing the impacted areas to the Commission to verify the successful correction of any soil problems previously identified in the postmine-soil monitoring program.

#### Calculation of Disturbance Area Bank Account

The native soil baseline (Section 134) will provide the frequency distributions of native soils for regulated parameters. (See Table 145-1 for 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 depicted on the disturbance map will vary as mining progresses to reflect additional areas of disturbance. These changes to the disturbance boundary will be submitted to the RRC as part of each initial soil report or with each application for Extended Responsibility. 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 report 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, these additional areas will be incorporated into the existing soil bank. Acreage released from bond 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 regardless 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 bank using two depth increments (0-1' and 1-4').

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.