RAILROAD COMMISSION OF TEXAS
HEARINGS DIVISION

SMRD DOCKET NO. C18-0015-SC-50-C
LUMINANT MINING COMPANY LLC
APPLICATION FOR RENEWAL/REVISION/EXPANSION
PERMIT NO. 50B, KOSSE MINE
LIMESTONE AND ROBERTSON COUNTIES, TEXAS

PROPOSAL FOR DECISION

HEARD BY: Kyle Lebby – Administrative Law Judge

PROCEDURAL HISTORY:

Application Filed:	August 6, 2018
Notice of Application:	September 20, 27 and October 4, 11, 2018
Request for Hearing Filed:	November 26, 2018
Notice of Hearing:	May 14, 2019
Publication of Notice of Hearing:	May 16, 23 and 30, 2019
Hearing Date:	June 14 and 17, 2019
Transcript Received:	June 21, 2019
Proposal for Decision Issued:	August 14, 2019

APPEARANCES:

FOR APPLICANT:	**APPLICANT:**
Tab Urbantke and Lauren Freeland *Hunton Andrews Kurth LLP*	Luminant Mining Company LLC
FOR PROTESTANT:	**REPRESENTING:**
Ray Field	Himself and Susan Calhoun-Field
FOR STAFF:	**STAFF:**
Kathy Keils and Jessica Mendoza *Staff Attorneys, OGC*	Surface Mining and Reclamation Division

Statement of the Case

Luminant Mining Company LLC (Luminant or Applicant), 6555 Sierra Drive, Irving, Texas 75039, applied to the Railroad Commission of Texas (Commission), Surface Mining and Reclamation Division, for a renewal/revision/expansion of its Permit No. 50B, Kosse Mine in Limestone and Robertson Counties. The application was filed pursuant to the Texas Surface Coal Mining and Reclamation Act, Tex. Nat. Res. Code Ch. 134 (Vernon Supp. 2019) (Act) and the Commission's "Coal Mining Regulations," Tex. R.R. Comm'n 16 Tex. Admin. Code Ch. 16 (Thomson West 2019) (Regulations). The existing 15,206-acre permit area is located along State Highway (SH) 7 approximately 6 miles east of the town of Kosse, Texas and approximately 12 miles west of Marquez, Texas. The application proposes to expand the existing permit area by approximately 1,357 acres and seeks approval of renewed and revised operations during a requested 5-year renewal term. The parties to the proceeding are Luminant, Staff of the Commission's Surface Mining and Reclamation Division (SMRD or Staff), and Mr. Ray Field and Susan Calhoun-Field (collectively, Protestant).

Copies of the application were filed in required county and Commission offices and distributed to required local, state, and federal agencies for review and comment. Public and other notices required by law were issued in accordance wilh all applicable regulatory and statutory provisions. Following notice of application, Protestant requested a hearing in this docket. A public hearing commenced at the Robertson County Courthouse in Franklin, Texas on June 14, 2019 at which Protestant provided testimony in support of its standing as an interested party. At the close of the June 14 setting, the hearing was continued to June 17, 2019 at the Commission's Offices in Austin, Texas. The June 17 setting was held, as scheduled, during which the merits of the application were addressed. Luminant and Staff were the only parties to attend the hearing on the merits held on June 17, 2019; during which the parties in attendance stipulated to the admittance of the application, as supplemented, and Staff's Technical Analysis with addendum into the evidentiary record of the proceeding.

Luminant has accepted the Staff's Technical Analysis with addendum. Based upon the application, as supplemented, the evidence presented, and the Staff's Technical Analysis and addendum, and considering comments filed, all factual issues have been addressed as required by the Act and Regulations, with the proposed permit provisions as set out in the Findings of Fact and Appendix I, and the Soil Testing Plan included as Appendix II.

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 the Commission's Order dated September 27, 2016. Staff recommends that the minimum amount of bond for the Kosse Mine be increased to $200,777,829, which is greater than Luminant's estimated reclamation costs of $177,347,971.44. Because Luminant's current bond exceeds the sum of the estimated reclamation costs for its Texas mines, including Staff's proposed increase to the bond amount attributable to the Kosse Mine, no changes to Luminant's existing blanket collateral bond are necessary as a result of this permit renewal.

After review of the application and supplements, exhibits, Staff's Technical Analysis and Addendum, and comments received, the Administrative Law Judge (ALJ) recommends that the Commission approve the application, as supplemented, with the permit provisions contained in Appendix I and the Soil Testing Plan contained in Appendix II, and the permit, renumbered as Permit No. 50C, be issued to Luminant.

DISCUSSION AND ANALYSIS

There are three parties to the proceeding – Luminant, SMRD and Protestant. Protestant is not represented by legal counsel in this matter. In November 2018, Protestant timely requested a hearing and was named a party subject to an adverse ruling on any objection received challenging its right to participate in the matter. As agreed to by Luminant and Protestant on the record during an informal conference held on January 10, 2019, the scheduling of the hearing was postponed to allow Luminant to submit Supplement No. 2 to the application and allow Protestant sufficient time to review the contents of the supplemental filing. After receiving correspondence from the parties regarding the location and scope of the hearing and their availability to attend the initial setting, the Public Hearing was convened in Franklin, Texas on June 14, 2019.[1]

The scope of the setting in Franklin was limited to public comment on the application and consideration of evidence with regard to standing. Protestant was afforded the opportunity to request the scope of the initial setting be expanded but did not do so.[2] Public comment was received from two persons during the hearing on June 14 – Mr. Ray Field (Protestant) and landowner Mr. Louie Regan [*See* "Public Comment" and Findings of Fact No. 17, *infra*]. Based on correspondence regarding the parties' availability to attend a subsequent setting in the Commission's Austin Offices to address the merits of the application,[3] the hearing was continued by announcement prior to the close of the setting on June 14, 2019 pursuant to §12.213 of the Regulations.[4] [5] The hearing was continued to 9:00 a.m. on June 17, 2019 in Room 1-100 of the Commission Austin Offices to consider evidence regarding the regulatory sufficiency of the application.[6]

As announced and conveyed in prior correspondence to the parties,[7] the hearing reconvened on June 17, 2019. Luminant and Staff appeared at and participated in the setting. Protestant was not present at the scheduled 9:00 a.m. start time or 9:15 a.m. when the hearing was called.[8] As suggested by the ALJ and agreed to by the other parties, the hearing was delayed to allow Protestant additional time to arrive.[9] Following two separate recesses[10] and having received no indication that the Protestant did not intend to appear,[11] the setting commenced at 10:00 a.m.[12] Following appearances from Luminant and Staff, the Notice of Application[13] and Notice of Hearing[14] were entered into evidence to demonstrate notice was performed as required by the Act and Regulations.[15] Additional exhibits admitted into the evidentiary record consist of

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[1] Notice of Public Hearing was issued to the Parties on May 14, 2019 (Finding of Fact No. 15, *infra*).
[2] ALJ letter to Parties dated April 10, 2019.
[3] *See*, ALJ letters to Parties dated May 1, 9 and 17, 2019.
[4] Transcript of Public Hearing on June 14, 2019, p. 51, lns. 18-25.
[5] 16 TAC §12.213 *stating* "The hearings examiner conducting the hearing may continue the hearing without the necessity of publishing, serving, mailing or otherwise issuing a new notice, by simply making an announcement at the hearing prior to recessing or reconvention, of the date, time and place for the hearing to reconvene…".
[6] Transcript of Public Hearing on June 14, 2019, p. 51, lns. 18-25.
[7] ALJ letters to Parties dated May 9 and 17, 2019 stating the hearing on the merits of the application would commence at 9:00 a.m. in the Commission's Austin Offices on Monday, June 17, 2019 and will continue, as necessary, on June 18 and 19, 2019.
[8] Transcript of Public Hearing on June 17, 2019, p. 8, ln, 2 – p. 9, ln, 2.
[9] *Id.* at p. 9, lns. 1 – 25.
[10] *Id.* at p. 9, ln. 1 – p. 10, ln. 6.
[11] *Id.* at p. 10, ln. 2 – p. 11, ln. 1.
[12] *Id.*
[13] ALJ Exhibit No. 1 (Jurisdictional) (publisher's affidavits and tear sheets from the papers that published the notice).
[14] ALJ Exhibit No. 2 (Jurisdictional) (publisher's affidavit and tear sheets from the paper that published the notice).
[15] Transcript of Public Hearing on June 17, 2019, p. 11, ln. 17 – p. 13, ln. 2.

Luminant's application, as supplemented,[16] and Staff's Technical Analysis (TA) and TA Addendum No. 1 (TA Addendum).[17] The setting concluded on June 17, 2019 without any testimony taken. The evidentiary record was closed by letter dated August 14, 2019 following admittance of two documents officially noticed by the ALJ.[18]

Public Comment

Public comment was received from two persons during the setting on June 14, 2019 – Mr. Ray Field (Protestant)[19] and landowner Mr. Louie Regan (Findings of Fact No. 17, *infra*). Mr. Regan indicated he owns property adjacent to land Luminant conducts operations on and expressed concerns that operations may be devaluing his property. Mr. Regan also commented on noise and shaking ground he attributed to a dragline located off his property. The Regulations do not contemplate impacts to property values that may be caused by operations conducted in accordance with a permit. Furthermore, noise and shaking ground in this context are outside the scope of the applicable regulatory framework.

Mr. Field, as a party and in accordance with the scope of the setting, as noticed, gave comment under oath and included statements regarding his interests and how he felt they would be adversely impacted by the operations proposed in the application.[20] Following Mr. Field's testimony, the other parties, Luminant and Staff, declined to cross examine Mr. Field regarding Protestant's party status and indicated they had no objection to them being a party to the proceeding.[21] The substance of Mr. Field's comments is addressed under "*Protestant's Interests and Assertions*" and Findings of Fact No. 17, *infra*.

Protestant's Interests and Assertions

The Protestant owns land directly adjacent to proposed permit boundary[22] where he operates a ranch.[23] In a multitude of filings received prior to the Public Hearing and in testimony given at the Public Hearing on June 14, 2019, Protestant voiced numerous concerns and asserted a wide-range of allegations including, but not limited to, the following: adverse effects to his livestock and property value resulting from the proposed expansion and redirection of Willow Creek;[24] insufficient lighting on mining equipment to alert low flying aircraft;[25] noise and vibrations caused by the operations;[26] supplementation of the application;[27] insufficient studies of the operations' impacts to the environment, public and employees;[28] illegal destruction of grave

[16] Applicant Exhibit No. 1.
[17] Staff Exhibit No. 1.
[18] ALJ Exhibit Nos. 3 and 4 (*see* Finding of Fact No. 57, *infra*).
[19] Ms. Susan Calhoun-Field did not attend any portion of the hearing.
[20] *See* 16, Tex. Admin. Code §12.211(a).
[21] Transcript of Public Hearing on June 14, 2019, p. 38, lns., 8-17.
[22] Applicant Exhibit No. 1 [Section 116 (Plate 116-1; Appendix C, p. 116.C-5)].
[23] *See* Transcript of Public Hearing on June 14, 2019, p. 17, lns. 9-21.
[24] *See, e.g.*, Transcript of Public Hearing on June 14, 2019, p. 18, ln. 12 – p. 20, ln. 21.
[25] *Id.* at p.27, ln. 22 – p. 28, ln. 24.
[26] *Id.* at p. 23, ln. 18 – p. 24, ln. 16.
[27] *See* Protestant's filing dated February 25, 2019 referencing "Luminant Mining, Kosse Mining LLC, Vistra Holding LLC, SMRD NO. C18-0015-SC-50-C PERMIT 50B".
[28] *See* Protestant's Objections to Permit filed December 3, 2018.

sites;[29] maps in the application that do not accurately depict two water wells located on his property;[30] and, violations of multiple state and federal agency regulations.[31]

For those claims within the jurisdiction of the Commission,[32] Staff's documented review of the application shows all requirements for approval have been met with the adoption of two permit provisions as set out in the Findings of Fact.[33] Luminant has accepted Staff's review. Protestant offered no evidence to support the multitude of unsubstantiated claims they made prior to the Public Hearing or to contradict the expert opinions of the other parties.

Given the number of pleadings and pre-hearing motions filed by Protestant,[34] a discussion is warranted to address the various claims and statements made by Protestant regarding their inability to attend the setting on the merits.[35] [36] Prior to the Public Hearing on June 14, 2019, Protestant approached the bench and handed the ALJ a handwritten note that stated he, Mr. Field, was scheduled for a medical procedure on Monday, June 17, 2019 (the date of the setting on the merits of the application) and that he had mailed a letter "certified" to be filed in the docket stating as such 10 days prior to the setting.[37] Mr. Field then stated he was reminding the Court given it had previously been notified of the procedure.[38] The record reflects Mr. Field's note, read into the record in Franklin, Texas, was the first time Protestant notified the ALJ of any conflict that would preclude its participation at the setting(s) scheduled for June 17 through 19, 2019.

There was extensive correspondence with the parties prior to setting the portion of the hearing held in Commission's Offices in Austin. On May 1, 2019, the ALJ sent proposed dates to the parties for the setting(s) on the merits to be held in July 2019 (July 11-12 or 15-16) and requested the parties provide their availability on those dates.[39] In response, Luminant's counsel indicated it was unavailable July 11 and 12,[40] and Protestant stated they had a medical procedure scheduled for July 16 and would be restricted 4 to 5 weeks after.[41] After receiving these representations from Luminant and Protestant, the ALJ issued correspondence dated May 9, 2019 informing the parties that the portion of the hearing on the merits would commence on June 17, 2019 and would continue, as necessary, on June 18 and 19;[42] however, the parties were afforded the opportunity to inform the ALJ if an existing significant commitment conflicted with the

[29] *Id.*; Protestant's filing received April 26, 2019 that included "Protestants Motion for Relief to Set-aside Petitioners Permit Application 50B".
[30] *See* Protestant's Objections to Permit filed December 3, 2018.
[31] *See* Protestant's filing received April 26, 2019 that included "Protestants Motion for Relief to Set-aside Petitioners Permit Application 50B".
[32] *E.g.,* surface water protection (§12.146); existing groundwater well identification [§12.128(a)(3)]; and, protection of historic places [§§12.125(2) and 12.151].
[33] Staff Ex. No. 1; *e.g..,* Findings of Fact Nos. 25 (protection of historic places), 30(a) (private water well identification) and 49-51 (surface water protection and stream buffer variances), *infra*.
[34] After being named a party on November 28, 2019, Protestant filed approximately 14 pre-hearing motions (some filings were construed as motions given they requested relief) and approximately 15 additional submittals addressing various matters.
[35] Protestant's Motion to Deny Permit and Amended Motion to Deny Permit filed July 8 and July 16, 2019, respectively
[36] It should be noted that despite actively filing correspondence in the docket, Protestant did not designate any fact or expert witnesses or pre-file any exhibits it intended to present during the setting on the mertis prior to applicable. deadlines set-forth in by the ALJ in the Docket Control Order (ALJ Order No. 6).
[37] *See* Transcript of Public Hearing on June 14, 2019, p. 49, ln. 15 – p. 50, ln. 1.
[38] Transcript of Public Hearing on June 14, 2019, p. 50, lns. 13-15.
[39] ALJ letter to Parties dated May 1, 2019 transmitting Docket Control Order (ALJ Order No. 6).
[40] Applicant's letter dated May 7, 2019 indicating it had previously scheduled out-of-state travel July 11-12.
[41] Protestant's filing dated May 7, 2019 titled "Protestants Response to Hearing Date".
[42] ALJ letter to Parties dated May 9, 2019.

stated dates prior to a deadline set forth in the letter.[43] The Protestant did not identify any conflict that would preclude its participation on June 17 – 19, 2019 prior to the applicable deadline.[44] Furthermore, Protestant acknowledged the scheduled dates while requesting to be provided with assistance at all settings of the Public Hearing due to a hearing impairment.[45]

Given the representations of the parties, or lack thereof, the ALJ informed the parties that the settings on the merits would commence on June 17, 2019.[46] After being notified of the scheduled date, Protestant submitted numerous filings that do not contain any indication that Mr. Field had a medical procedure that conflicted with the June 17 setting. From May 23 to May 29, Protestant submitted six pre-hearing motions.[47] On June 12, 2019, two days prior to the Public Hearing, Protestant submitted an additional four filings.[48] In no document submitted prior to the setting in Franklin does Protestant inform the ALJ of a medical procedure or any other commitment that conflicted with the June 17 setting. In filings made after the Public Hearing, Protestant continues to assert that the ALJ had knowledge of Mr. Field's scheduling issue prior to the initial setting;[49] however, the record does not support this contention.

In addition to misrepresenting the record regarding Mr. Field's availability for the June 17 setting, it should be noted that throughout this proceeding Protestant has displayed conduct in blatant violation of the Commission's Practice and Procedure rule that addresses conduct and decorum in proceedings.[50] In multiple filings, Protestant made disparaging, personal attacks and unsubstantiated accusations against Luminant's and SMRD's counsel, representatives of the other parties, support staff within the Commission's Hearings Division and the ALJ.[51] Protestant's statements were such that they was notified that previous statements violated the "Conduct and Decorum" rule and issued a warning that further statements in violation of the rule would subject them to sanctions permissible under Commission rules; including possible expulsion from the hearing.[52] Protestant has ignored that warning in filings made after the Public Hearing by continuing to vehemently attack persons associated with the docket.[53]

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[43] *Id.* stating "If any party has a significant existing commitment that conflicts with the dates stated in this letter, it is to inform me of such and provide documentation establishing its inability to accommodate the stated dates on or before Monday, May 13, 2019" (emphasis in original).

[44] After the applicable deadline (*see* Footnote 43, *supra*), Protestant did request the settings be moved to the week of June 24 – 28 but did not identify any reason for the request or provide any supporting documentation (Protestant's filing titled "Protestants Response to Administrative Law Judge Notice issued 9 May, 2019 for 17 June" received May 16, 2019).

[45] *See* Protestant's filing titled "Protestants Response to Administrative Law Judge Notice issued 15 May, 2019" received May 16, 2019.

[46] ALJ letter to Parties dated May 17, 2019.

[47] *See* ALJ letters to Parties dated May 28 and 30, 2019 setting applicable deadlines to respond to Motions filed by Protestant and informing Protestant of the appeals process.

[48] The four June 12 filings were untimely and/or inherently deficient pursuant to 16 Tex. Admin. Code §1.105 that addresses motions for continuance and/or Paragraph No. 6 in the Docket Control Order issued on May 1, 2019 (ALJ Order No. 6) and were therefore not considered.

[49] Protestant's Motion to Deny Permit filed July 8, 2019.

[50] 16, Tex. Admin. Code, §1.5 *stating* "Parties, authorized representatives, witnesses, and other participants in Commission proceedings shall conduct themselves with proper dignity, courtesy, civility, and respect for the Commission, the director, the examiner, and all other participants. Disorderly conduct will not be tolerated. A violator of this rule may be excluded from the proceeding by the examiner for such period as is just and may be subject to such other just, reasonable, and lawful disciplinary action as the Commission may prescribe."

[51] *See*, *e.g.*, Protestant letter dated February 25, 2019 *referencing* "Jan. 10th Administrative meeting"; Protestant document titled "Protestants Response to Petitioners Legal Council [sic] Refusing to Provide Document for Production, Documents Requested for Discovery & Protestants Motions for Relief" filed on April 16, 2019 (construed as Motion to Dismiss); and, Protestant "Motion for 'request for PRODUCTION:" filed May 29, 2019 (emphasis in original).

[52] ALJ letter to Protestant dated May 1, 2019.

[53] Protestant's Motion to Deny Permit and Amended Motion to Deny Permit filed July 8 and July 16, 2019, respectively.

Burden of Proof

The Act and Regulations provide for a presumptive right to renewal of permits,[54] but nonetheless provide affected persons with the right to a hearing to dispute permit renewals.[55] Under this statutory and regulatory framework, the burden of proof is explicitly assigned to the party challenging the adoption of the terms of a proposed permit that are unchanged from the existing permit.[56] Conversely, the Act and Regulations mandate that an applicant that seeks revisions to an existing permit or an extension of the permit area beyond the existing boundary in a renewal application must demonstrate that any changes proposed to the existing permit satisfies all applicable regulations and the part of the application that addresses new land areas meets all standards applicable to a new permit.[57]

In the subject docket, Luminant's application requests renewal, revision and expansion of Permit No. 50B. According to controlling law, the burden of proof is bifurcated between Protestant and Luminant. Protestant bears the burden with respect to those terms of the existing permit that the application does not propose to change. With respect to all other matters within the application, consisting of proposed revisions to the existing terms of the permit and the requested extension area, Luminant bears the burden.[58]

Discussion of Evidence

The record of evidence in the case, in total, consists of the Application, as supplemented, Staff's TA and TA Addendum, jurisdictional exhibits, comprised of the Notice of Application and Notice of Hearing, two documents officially noticed and Mr. Field's testimony in support of his standing taken at the setting in Franklin, Texas on June 14, 2019. Protestant offered no evidence to support their burden and overcome the presumptive right to renewal afforded Luminant in the Act or contradict the other parties' position that the application, as supplemented, meets all requirements for approval with the Permit Provisions contained in Appendix I. Accordingly, the totally of the evidence supports approval of the application.

[54] *See* Tex. Nat. Res. Code Ch. 134, §134.074 and 16 Tex. Admin. Code §12.227.
[55] *See* Tex. Nat. Res. Code Ch. 134, §134.075, incorporating by reference the requirements of §134.063 in the case of renewal applications, and *see* 16 Tex. Admin. Code §12.227, §12.228.
[56] *See* Tex. Nat. Res. Code Ch. 134, §134.075(b) and 16 Tex. Admin. Code §12.230(b).
[57] *See* Tex. Nat. Res. Code Ch. 134, §§134.079-134.081 and 134.076(b) and *see* 16 Tex. Admin. Code §§12.226 and 12.227(b) incorporating by reference the requirements of §12.228(b)(2) in the case of renewal applications proposing operations beyond the boundaries of the permit area approved under the existing permit.
[58] The burden of proof was assigned to the parties in accordance with this sub-heading by ALJ Order No. 6 (Docket Control Order).

FINDINGS OF FACT

1. By letter dated and received by the Commission on August 6, 2018, Luminant Mining Company LLC (Luminant or Applicant), 6555 Sierra Drive, Irving, Texas, 75039, submitted its application for a surface mining and reclamation permit for renewal/revision/expansion of its Kosse Mine, Permit No. 50B. The application was filed pursuant to the Texas Surface Coal Mining and Reclamation Act, Tex. Nat. Res. Code Ch. 134 (Vernon Supp. 2019) (Act) and the Commission's "Coal Mining Regulations," Tex. R.R. Comm'n 16 Tex. Admin. Code Ch. 16 (Thomson West 2019) (Regulations). The existing 15,206-acre permit area is located in Limestone and Robertson Counties along State Highway (SH) 7 approximately 6 miles east of the town of Kosse, Texas and approximately 12 miles west of Marquez, Texas. Luminant's permitted Bremond Mine (formerly, Twin Oak Mine), near Bremond, Texas, Permit No. 49A, is approximately 4.9 miles south of the Kosse permit area. The permit area is bound: on the west by various property tracts and Limestone County Road (LCR) 712 and FM 2749; on the north by various property tracts, Cox Creek and LCR 716; on the east by various property tracts and where segments of FM 1246 and FM 937 intersect near Oletha, Texas; and on the south by various property tracts and Robertson County Road (RCR) 477. Luminant operates the lignite mine. The mine supplies fuel to the Oak Grove Steam Electric Station. Permit No. 50B was issued on May 3, 2016, and contains approximately 15,206 acres. The proposed Permit No. 50B renewal/revision/expansion boundary consists of approximately 16,563 acres. Luminant requests approval of the mining of approximately 2,298 acres during the proposed five-year permit term (2019 – 2023) and proposes to mine in four of the mine areas over the term of the proposed renewal.

2. The Interim Director, SMRD, determined the 17-volume application to be administratively complete on August 9, 2018, with the submission of Luminant's Supplemental Document No. 1, filed August 8, 2018 (hereinafter, SDI) providing portions of the application inadvertently omitted from its August 6, 2018 filing. Staff filed its Technical Analysis (TA) by letter dated September 21, 2018. Luminant filed its second supplement (hereinafter, SD2), by letter dated February 21, 2019, in response. Staff filed one TA addendum (hereinafter, TA Addendum) by letter dated April 3, 2019, as revised by letter dated April 5, 2019, concluding that Luminant's application, as supplemented, satisfactorily addresses all regulatory issues necessary for permit approval.

   (a). All information contained in the supplements was for the purpose of supplementation, clarification, limitation, or correction of data and information addressed in sections of the administratively complete application. The application and all supplements were appropriately placed on file for public inspection. The information contained in the supplemental documents does not constitute a material change to an application for which additional notice must be provided pursuant to §12.212(d) of the Regulations. The required public notice was published after the filing of the application. The notice indicated that the application might be further supplemented. The supplementary documents were filed to provide portions of the application inadvertently omitted from Luminant's August 6, 2018 filing and to address Staff exceptions to compliance and other comments. The supplements do not result in any material effects on landowners or the environment that are greater than those initially proposed or that create a need for additional notice.

3. Staff notes no remaining substantive deficiencies; however, Staff recommends two permit provisions—the retention of existing Permit Provision No. 1 and the retention of and revision to existing Permit Provision No. 2. Staff also recommends the removal of two existing permit provisions, Existing Permit Provision Nos. 3 and 4. All accepted permit provisions are set out in Appendix I to this Order.

4. The application has met the requirements set out in § 12.107 for format and content, with adoption of the Findings of Fact, the permit provisions contained in Appendix I, and the Soil Testing Plan contained in Appendix II. Form SMRD-1C was filed, and it contains information required by §§12.116-12.154 [§12.107(a)]. In the application, as supplemented, the information is current, presented clearly and concisely, and is supported by appropriate references [§12.107(b)]. Technical data has been submitted as required [§12.107(c) and (e)], and the data were prepared by or under the direction of professionals in the subjects analyzed [§12.107(d)]. 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)].

5. Permit No. 50B, issued May 3, 2016, has a 5-year term. In accordance with §12.106(b) of the Regulations, the application was filed on August 6, 2018, at least 180 prior to the expiration of the permit. Additionally, given the Luminant proposes an expansion of the existing permit boundary which requires the part of the application that addresses new land areas meets all standards applicable to 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). The required filing fee of $3,000 has been paid [§12.108(b)(3)].

6. 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 as follows: on September 20 and 27 and October 4 and 11, 2018, in *The Groesbeck Journal,* on September 20 and 27 and October 4 and 11, 2018, in *The Robertson County News*, and September 20 and 27 and October 4 and 11, 2018, in *The Franklin Advocate.* Luminant identified the location of the public offices where the application, as supplemented, was filed in accordance with §12.122 of the Regulations and submitted an original affidavit and news clippings showing publication in accordance with §12.123 of the Regulations. The notice of application as published contains all information required by the Act and 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 or that create a need for additional notice. Evidence of proper notice was accepted into the record of the proceeding.[59]

7. A copy of the application, as supplemented, was filed for public review in the offices of the Limestone and Robertson County Clerks; copies were also filed with the Railroad Commission of Texas in Austin, Texas.

8. In accordance with its policy, the Commission placed notices of application in first-class mail on October 4, 2018, to owners of interests in lands within the permit boundary and

[59] ALJ Exhibit No. 1 (Jurisdictional).

tracts adjacent to the permit boundary. Returned notices of this mailing for which updated or corrected addresses were available were re-mailed. Luminant was advised of notices that were returned with insufficient addresses, and Luminant updated addresses as available in SD2, Appendices 116-B and 116-C.

9. On October 5, 2018, the Commission placed notices of application and cover letters as first-class mail or interagency mail, as appropriate, to 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); USDI Office of Surface Mining Reclamation and Enforcement; U.S. Department of the Army Corps of Engineers (USACE); Texas Department of Transportation; Brazos River Authority; water and sewage companies as required by section 12.207(c)(4) of the Regulations; various utility companies; and the Limestone and Robertson County Clerks and County Judges.

10. One state agency, TPWD, filed comments with the Commission by letter dated October 3, 2018; and one federal agency, USFWS, filed comments by email dated December 3, 2018. TPWD's and USFWS's comments regarding the proposed renewal/revision/expansion application are addressed in Finding of Fact No. 42, *infra*.

11. Ray Field and Susan Calhoun-Field (collectively, Protestant), residents of Franklin, Texas, filed written objections to the application by two letters dated November 11, 2018 (one of which was filed November 12, 2018, and the other filed December 3, 2018). The objections to the application voiced in Protestant's letters include the following: insufficient studies of the impacts of the operations to the environment and employees; illegal destruction of grave sites; and, two water wells located on his property were not depicted on required maps. Protestant filed a request for hearing by letter dated November 22, 2018 that was filed with the Commission on November 26, 2018. Aside from those filed by the agencies addressed in Finding of Fact No. 10, *supra*, no other written comments were received. No other requests for hearing were received other than that filed by the Protestant.

12. By letter dated November 28, 2019, the Administrative Law Judge (ALJ) acknowledged the Protestant's request for hearing and named Protestant a 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.

13. On January 10, 2019, an informal conference was held at the Railroad Commission's Austin offices, per Luminant's request, to allow Luminant, Staff, and the Protestant an opportunity to conduct informal discussion off the record pursuant to §12.211(c) of the Regulations. A complete audio recording of the portions of the informal conference that were held on the record was made and is maintained by the Commission.

14. On May 1, 2019, following correspondence from the parties regarding availability, the ALJ issued a scheduling order (Docket Control Order) pursuant to §1.55 of the Commission's Practice and Procedure. In the same May 1, 2019 letter, the ALJ indicated that the Public Hearing would commence on June 14, 2019, at the Robertson County Courthouse in Franklin, Texas and the scope of the initial setting would be limited to public comment on the application and consideration of evidence with regard to standing. By letters dated May 9 and 17, 2019, after receiving correspondence from the parties regarding their

availability, the ALJ informed the parties that a subsequent setting to address the merits of the application would take place on June 19, 2019, to continue, as necessary, on June 18 and 19, 2019 at the Commission's Austin Offices.

15. On May 14, 2019, proper Notice of Public Hearing, as required by §12.212(c) of the Regulations, was mailed by the Commission by first-class mail to Luminant and all persons who had expressed by written notification to the Commission an interest in the pending permit application (including Protestant). The Notice of Public Hearing was also mailed to the Limestone and Robertson County Judges and County Clerks. The notice contained all information required by §12.212(b) of the Regulations. Proper Notice of Public Hearing, as required by §12.212(a) of the Regulations, was published by the Commission in *The Franklin News Weekly Paper*, a local newspaper of general circulation in the locality of the proposed surface coal mining and reclamation operation, once each week for three consecutive weeks prior to the scheduled hearing date on May 16, 23 and 30, 2019. Evidence of proper Notice of Public Hearing was accepted into the record of the proceeding.[60]

16. The Notice of Public Hearing limited the scope of the initial setting of the Public Hearing on June 14, 2019 to receiving public comment on the application and receiving evidence regarding standing from those who had requested to be named a party. No one aside from Protestant requested party status throughout the entirety of the proceeding. Additionally, the Notice of Public Hearing indicated the hearing may be continued at various times and places by announcement at the hearing.

17. As noticed, the public hearing on the application commenced on June 14, 2019 at the Robertson County Courthouse in Franklin, Texas. The hearing was held pursuant to the Texas Surface Coal Mining and Reclamation Act, Tex. Nat. Res. Code Ann. Ch. 134, the Administrative Procedure Act, Tex. Gov't Code Ch. 2001, and the Commission's "Practice and Procedure" rules and "Coal Mining Regulations," 16 Tex. Admin. Code Ch. 1 and 12, respectively. As stated in the Notice of Public Hearing, the scope of the setting was limited to receiving public comment on the application and receiving evidence regarding standing from those who had requested to be named a party. Aside from representatives of Luminant and Staff, approximately three people attended the public hearing in Franklin, Texas. Two people made public comments on the application at the public hearing— Mr. Ray Field (Protestant), and landowner Mr. Louie Reagan. Mr. Reagan of Franklin, Texas commented that Luminant owns property on two sides of his parcel of property which may be devaluing his property. He also referenced noise and ground shaking in the vicinity of his property and suggested that Luminant should be required to buy his property or take other steps to address these issues. The Regulations do not contemplate impacts to property values that may be caused by operations conducted in accordance with a permit. Further, the Commission has no jurisdiction over noise and shaking ground that may be attributable to surface mining operations. Protestant Ray Field commented that he is a neighboring landowner next to the Kosse Mine, and that if Luminant's permit area is expanded, Luminant will be "cutting off a surface water drainage that comes into [his] property." He also made comments about adverse effects to his property value and livestock, the redirection of Willow Creek, insufficient lighting on mining equipment to alert low flying aircraft and noise and vibrations caused by the operations. Staff's TA and TA Addendum assert that all concerns voiced by Mr. Field during the Public Hearing and in Protestant's written objection, Finding of Fact No. 11, *supra*, that are within the jurisdiction

[60] ALJ Exhibit No. 2 (Jurisdictional).

of the Commission have been sufficiently addressed within the context of the Regulations (*See, e.g.,* Findings of Fact Nos. 25, 30(a), 32, and 49 – 51, *infra*). As a party to the proceeding, Mr. Field gave comment under oath and included statements regarding his interests and how he felt they would be adversely impacted by the operations proposed in the application.[61] Following Mr. Field's testimony, the other parties, Luminant and Staff, declined to cross examine Mr. Field regarding the Protestant's party status and indicated they had no objection to him being a party to the proceeding.[62]

18. Pursuant to §12.213 of the Regulations, prior to the close of the setting on June 14, 2019, the ALJ announced that the Public Hearing was continued to 9:00 a.m. on June 17, 2019 in Room 1-100 of the Commission Austin Offices.[63] As stated in prior correspondence to the parties, it was announced that merits of the subject application would be addressed when the hearing reconvened.

19. As noticed, the hearing reconvened in the Commission's Austin office on June 17, 2019, during which the regulatory sufficiency of the application was addressed (Hearing on the Merits). Luminant and Staff attended and participated in the Hearing on the Merits. The Protestant did not attend or participate in the Hearing on the Merits. During the Hearing on the Merits, the ALJ accepted the application and all supplements (including SD1 and SD2),[64] as well as Staff's TA and TA Addendum,[65] into the record of the proceeding. Additionally, the Notice of Application[66] and Notice of Hearing[67] were entered into evidence during this setting. Protestant did not participate in the Hearing on the Merits. There is no evidence contrary to the positions of Luminant and Staff.

20. Pursuant to § 12.214 of the Regulations, a verbatim transcript was made of each part of the Public Hearing held June 14 and 17, 2019. The transcript was created by certified court reporters. The Commission maintains a complete record of all proceedings related to the docket.

21. The ALJ took official notice of two documents[68] and closed the evidentiary record by letter dated August 14, 2019.

22. Section .116 of the application, as supplemented (SD2), includes all information required to show organizational information, ownership and control, current officers and directors, updated compliance information, and other mining permits and identifications in accordant with §12.116 of the Regulations. In addition, Section .117 of the application contains right-of-entry documentation as required by §12.117.

    (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. 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

[61] *See* 16, Tex. Admin. Code §12.211(a).
[62] Transcript of Public Hearing on June 14, 2019, p. 38, lns., 8-17.
[63] Transcript of Public Hearing on June 14, 2019, p. 51, lns. 18-25.
[64] Applicant Exhibit No. 1.
[65] Staff Exhibit No. 1.
[66] ALJ Exhibit No. 1 (Jurisdictional).
[67] ALJ Exhibit No. 2 (Jurisdictional).
[68] ALJ Exhibit Nos. 3 and 4 (*see* Finding of Fact No. 57, *infra*).

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.

(b). 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. Luminant does not propose any surface mining operations on any property for which it does not have a valid right-of-entry. Information on the right-of-entry and property ownership is detailed in Sections .116 (SD2) and .117 of the permit application, and Appendices 116-B (SD2) and 116-C (SD2). The applicable tracts are shown on the *Property Ownership Map,* Plates 116-1 and 116-2 located in Section 116 of the application.

(c). Section .116 of the application, as supplemented, includes identification of all tracts within and adjacent to the permit area and owners of all interests in those tracts (Appendices B and C, Section .116, as supplemented (SD2), and Plates 116-1 and 116-2, Property Ownership Map. Section .116, Appendix D, contains required compliance information. Section .116, Appendix E, as supplemented (SD2) contains required information regarding lignite interests that have been severed from the surface estate. Section .116, Appendix F, Tables 116-F-1 and 116-F-2 of the application includes all oil/gas leasehold and right-of-entry information for those property tracts proposed to be disturbed and/or mined during the permit term. Luminant indicates that accommodation agreements have been executed with oil and gas entities with leases on lands, with the exception of Energy Transfer Fuel, LP and J. Sugar Co., Inc. The agreements have been filed in the Limestone and Robertson County Courthouses.

(d). 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 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 outstanding violations, bond forfeitures, and/or civil penalties for Luminant or its owners/controllers were found. No pending violations or non-payment of AML fees were found to exist.

23. The requirements of §12.118(a), (b), and (c) of the Regulations have been met in the application, as supplemented in SD2.

(a). The permit area is not within an area designated as unsuitable for surface mining activities under §§12.78 - 12.85 of the Regulations, and not within any area under study for designation in an administrative proceeding.

(b). Luminant does not claim an exemption under § 12.118(b) provided for applicants having made substantial financial commitments prior to January 4, 1977.

(c). Luminant will not conduct surface mining activities within 300 feet of an occupied dwelling other than those owned by Luminant.

24. Luminant has included information in the application in compliance with §12.119 for the life of mine and §12.125(1) for the size, sequence, and timing of sub-areas of the mine.

(a). Areas proposed for mining during the proposed permit term (2019 – 2023) and for the life-of-mine area have been included in the application. The application includes information which complies with the requirements of §12.119(a) of the Regulations for the anticipated starting and termination dates of each phase of mining and the anticipated number of acres of land to be affected for each phase of mining and over the total life of the permit. Luminant proposes to recover approximately 9.36 million tons of lignite per year during the proposed five-year renewal term, with approximately 46.78 million tons projected for recovery during the proposed renewal term. The Mine Years and proposed Mined and Affected Acres are shown in the following table. "Out Years" 2024-2028 describe the next permit term subject to Commission approval (Table 119-1).

Year	Mined Acres	Affected Acres
2019	541	622
2020	595	684
2021	411	473
2022	441	507
2023	310	357
2019-2023	150	173
2024-2028*	1,153	1,326

Note: Mined acres include auxiliary areas.
*Denotes out years.

(b). The application includes information for the size, sequence, and timing of sub-areas of the permit and the life-of-mine anticipated permit terms required by §12.125(1) of the Regulations (application and a Life-of-Mine Map, Plates 125-1 and 125-2). Luminant proposes mining approximately 2,448 acres during the permit term (2019–2023) and an additional 1,153 acres in future terms (2024–2028) and proposes to mine in areas DI, DIII, DV, and EI and multiple auxiliary areas during the requested permit term. Luminant proposes mining and other mining-related disturbances on the following approximate acreages as set out in Table 125-1, Section .125, as follows:

MINING AREA	YEAR	MINE BLOCK ACRES
DI	2019	181
DI	2020	88

DI Aux. Area	2019-2023	108
Heads Creek Aux.	2019-2023	42
DIII	2020	125
DIII	2021	93
DIII	2022	98
DIII	2024-2028*	377
DV	2019	159
DV	2020	162
DV	2021	167
DV	2022	164
DV	2023	133
DV	2024-2028*	526
EI	2019	201
EI	2020	220
EI	2021	151
EI	2022	179
EI	2023	177
EI	2024-2028*	250

*Denotes out years.

25. Luminant has included information in compliance with §12.125(2) for a description and identification of cultural, historical, and archaeological resources listed on or eligible for listing on the National Register of Historic Places and known archaeological sites within the proposed permit area and adjacent areas. Luminant has provided information in accordance with §12.151 for measures to be used to prevent or minimize adverse impacts on such resources or on the interests of persons who have valid existing rights. Sites identified included those eligible for listing in the National Register of Historic Places, protected cemeteries and burial grounds, sites requiring additional testing, sites determined ineligible for listing in the National Register of Historic Places (NRHP), and site mitigation status as required. Of the 291 sites identified, 19 were identified since submission of Luminant's previous permit renewal application. All 19 sites were determined to be located within the permit renewal/revision/expansion area. A schedule was included for mitigating impacts to sites of unknown significance that cannot be avoided by mining and/or construction of various structures. In Section .151 of the permit, Luminant included its Protection, Testing, Treatment, and Mitigation Plan, including compliance with the Memorandum of Agreement between the Commission and the Texas Historical Commission, 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. Existing Permit Provision No. 1 was previously approved to protect these sites until eligibility is determined and appropriate action taken for each site that is unknown at this time or for which eligibility has not yet been determined. The 35 sites that must be protected are shown on Figure 125(2)-1 and are listed in Table 125(2)-II. 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 again 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 Texas Historical Commission shall concurrently

be provided to the SMRD." The Commission approves the retention of existing Permit Provision No. 1.

26. Luminant has provided information that complies with §12.120 for personal injury and property damage insurance. Luminant has provided adequate proof of insurance coverage in the form of a certificate of liability insurance coverage, dated July 30, 2018 and effective from August 1, 2018 through August 1, 2019, in compliance with §12.311 of the Regulations. The Certificate of Insurance included in Section 120, Appendix A of the application states that the coverage is not less than $500,000 (each occurrence) and $1,500,000 (general aggregate) for bodily injury, and $500,000 (each occurrence) and $1,000,000 (general aggregate) for property damage. The insurance is provided by Associated Electric & Gas Insurance Services Limited, Policy No. XL5701602P. The insurance includes damage to water wells and from use of explosives. The policies include an endorsement that requires the insurance company to notify the Commission whenever substantive changes are made in a policy, including termination or failure to renew. Appropriate authorizations accompanied the certificate.

27. The application, as supplemented in SD2, includes identification of other licenses and permits required in accordance with §12.121 to address all areas proposed for inclusion in the proposed permit area. This listing includes: the Texas Commission on Environmental Quality (TCEQ) Texas Pollutant Discharge Elimination System (TPDES) Wastewater Discharge Permit No. WQ0002699000, issued September 28, 2017; TCEQ Water Use Permit No. 5931 for Mining Area D; TPDES Stormwater Multi-sector General Permit No. TXR05BW81, issued September 28, 2017; TPDES Stormwater Construction General Permit No. TXR15XC76, issued April 5, 2018; TCEQ Solid Waste Registration No. 88189; TCEQ Air Quality Permit No. 78321, renewed October 28, 2016; TCEQ Air Quality Permit No. 86820, issued December 18, 2008; TCEQ Air Quality Permit No. 106611, issued November 8, 2012; U.S. Environmental Protection Agency (EPA) Hazardous Waste Identification No. TXR000081251; USACE Nationwide 21 Permit No. 200500663 for wetlands, issued May 25, 2007; USACE Nationwide 21 Permit No. 200500663 for wetlands, re-authorized February 26, 2013; individual USACE permits for wetlands for Permit No. 50B, E Area (Permit No. SWF-2007-00055, issued June 8, 2012), and D Area (Permit No. SWF-2012-00349, issued March 31, 2016); Application for Project No. SWF-2019-00033 submitted January 10, 2019, to USACE to obtain authorization for impacts to Waters of the U.S. in the Kosse D-Area Expansion Area (SD2); Mine Safety and Health Administration Identification No. 41-04586; TPWD Scientific Permit No. SPR-1215-262, effective December 11, 2015; and USFWS Fish and Wildlife Permit No. TE840214-1 (Interior Least Tern Recovery), issued December 4, 2015. Luminant updated Section .121 of the application in SD2. Copies of issued permits must be provided to the Commission upon receipt.

28. All requirements have been met for §§12.122, 12.123, and 12.124 for identifying the location of the public office(s) for public availability of the application (*See* Finding of Fact Nos. 6 and 7, *supra*), newspaper identification and publication (Finding of Fact No. 6, *supra*), description of existing environmental resources that could be impacted by the operations [Findings of Fact Nos. 24(b) and 25, *supra*, and Findings of Fact Nos. 29 – 39, *infra*], respectively. Luminant updated Section .123 of the application in SD2.

29. The application, as supplemented in SD2, provides an adequate description of the hydrology and geology of the proposed permit area and adjacent areas as required by §§12.126 - 12.127 of the Regulations.

(a). Hydrological characteristics of groundwater and surface water have been adequately described. Groundwater for the study area occurs in the Simsboro, Calvert Bluff, and Hooper Formations of the Wilcox Group, as well as the Carrizo Sand Formation in the Claiborne Group; Figure 126-4, Section .126 of the application depicts the locations of the outcropping and downdip portions of these aquifers. Water-bearing properties of geologic units are included in Table 126-1. Overburden sand thickness information is included on Plates 127-9 and 127-10. Stratigraphic units SDI, SD2, OBU, CL, OC, UC, ISD1, ISD2, IBU, ICL, USD1, USD2, UBU, UCL, SIM1, and SIM2 were identified and are described in Sections 3.2.3 through 3.2.5 of Section 127 of the report contained in the application. The top of the Simsboro Formation (Sands SIM1 and SIM2) is located from less than 10 feet to more than 100 feet beneath the lowest lignite seam, L4 in the D Area and L8 in the E Area. Appendix 127-C (SD2) contains a summary of pH, acid/base accounting, percent sand, percent clay, boron and selenium for the non-lignite stratigraphic units.

(b). The geologic baseline data has previously been submitted and approved by the Commission in previous applications for permits or permit renewals for this mine. This renewal/revision/expansion application included data for five new continuous cores collected in February and March 2018 and updated plates to show the core locations and proposed mine plan. Otherwise, this renewal/revision/expansion application presented the same data contained in the last permit renewal/revision application for the Kosse Mine that the Commission previously approved. The updated information included in this application, as supplemented in SD2, along with the approved permit, adequately meets the requirements of §12.127. The geological information provided includes a description of the thickness and extent of the lignite seams and physical and chemical characteristics of the overburden, interburden, and underburden, locations of geologic data points and cross sections from continuous cores drilled between 1987 and 2018 within the proposed permit area. Some 1987 data were replaced in 2006 due to quality concerns. Fifty-four cores were used to characterize the permit area. A licensed professional geoscientist certified Section .127.

(1). Revised Plate 127-1 (Geologic Cross Section Location Map, SD2) shows cross-section locations in the approved permit area, with core and gridhole locations. Plates 127-2 through 127-7 and Plate 127-11, as revised in SD2, show geologic cross-sections within various portions of the permit area. Plate 127-8 depicts the elevations (in ft amsl) of the tops of the L3 and L8 lignite seams, along with lignite void areas, core and gridhole locations, and auxiliary areas. Plates 127-1, 127-4, 127-5, and 127-11 were revised in SD2 to include additional geologic cross section information as requested by Staff in the TA concerning Deficiency No. 127-1. Overburden thickness and overburden sand thickness are provided on Plates 127-9 and 127-10. In the application, Luminant identified overburden, interburden and underburden units with a summary of average, maximum, minimum and standard deviation values for pH, acid-base accounting, sand content, clay content, boron, and selenium; the units include sand units, interbedded sand, silt and clay units, lignite, and clay units (Appendix 127-C, *Stratigraphic Unit Descriptions and Statistics*, as supplemented in SD2). Luminant also analyzed the core chemical characteristics of the overburden intervals for suitability as a topsoil and subsoil substitute.

Suitable overburden intervals for each core are identified, as reviewed by Staff and in accordance with Staff's TA, as further discussed in Section .145(b)(4).

(2). The information from the cores, cross sections, and other data have been analyzed and provide sufficient information to identify all strata above and immediately below the lowest coal seam to be mined and to determine the quality of the overburden and interburden.

30. Luminant adequately describes the groundwater hydrology of the permit area and adjacent areas in Section .128 of the application, as supplemented. The groundwater baseline data has previously been submitted and approved by the Commission in previous applications for permits or permit renewals for this mine. This renewal/revision/expansion application updated inventories for water, oil and gas wells to identify current conditions and updated plates to show the proposed mine plan. Otherwise, this renewal/revision/expansion application presented the same data contained in the last permit renewal/revision application for the Kosse Mine that the Commission previously approved. Luminant clarified, in SD2, that the proposed expansion area is adequately characterized by baseline data which has already been collected; therefore, no additional field investigations were conducted to support this renewal/revision/expansion application. The updated information included in this application, along with the approved permit, adequately characterizes the groundwater hydrology as required by §12.128 of the Regulations.

(a). The approved permit contains 62 monitoring wells (including one replacement well) installed to characterize the baseline groundwater quantity and quality. Aquifer test results for 20 of these wells were provided in Appendix 128-C and summarized in Table 128-5. Of the 62 monitoring wells, 58 wells were used for monitoring of baseline water quality and water level monitoring of the Calvert Bluff overburden, the interburden zones, the Calvert Bluff underburden, and the Simsboro Formation underburden, while 4 wells were used for aquifer testing only (Table 128-1). The information provided in the approved permit included a generalized overburden potentiometric surface map (Plate 128-5, SD2), underburden potentiometric surface maps (Plates 128-6 and 128-7), and groundwater sampling results for chemicals and trace metals (Tables 128-2 and 128-3). Plates 128-2 (SD2), and 128-3 depict well locations for water wells and oil and gas wells, respectively.

(b). The principal sources of shallow groundwater in the permit area are sand units in the Calvert Bluff Formation and the Simsboro Formation. Results of groundwater sampling are summarized in Tables 128-2 (chemicals) and 128-3 (trace metals), and Appendix 128-B contains the lab sheets for the laboratory analysis results. Although values vary, overburden groundwater values determined from the 2004-2006 data analyses were: (1) Calvert Bluff Overburden: pH, 6.3 to 7.5 standard units, averaging about 7; total dissolved solids (TDS) concentrations, 151 to 2,720 mg/L, averaging about 620 mg/L; dissolved iron concentrations, nondetectable to 2.8 mg/L, averaging about 0.3 mg/L; dissolved manganese concentrations, nondetectable to 1.9 mg/L, averaging about 0.3 mg/L.; (2) Calvert Bluff Underburden: pH, 6.4 to 7.6 standard units, averaging about 7; TDS concentrations, 172 to 1,570 mg/L, averaging 450 mg/L; dissolved iron concentrations, nondetectable to 1.6 mg/L; and dissolved manganese concentrations, nondetectable to 1.1 mg/L; and (3) Simsboro Underburden: pH,

6.2 to 7.5 s.u., averaging about 7; TDS concentrations, 117 to 1,150 mg/L, averaging 330 mg/L; dissolved iron concentrations, nondetectable to 7.8 mg/L; and dissolved manganese concentrations, nondetectable to 2.1 mg/L. The information contained in the approved permit as updated includes the hydraulic conductivities, hydrologic data from a well inventory, data from monitoring and test wells, borehole geophysical logs, continuous overburden cores, overburden cores, and aquifer tests. Table 128-6 (SD2) of the application for renewal/revision/expansion lists the water wells within the permit area and within approximately one mile of this boundary. The water well locations are shown on Plate 128-2 (SD2). Oil and gas wells and well locations within and adjacent to the proposed permit area are identified on Plate 128-3 and in Appendix 128-D of the application.

(c). The data provided indicates that the underburden sands and the overburden sands do not appear to be hydraulically connected. Overburden groundwater discharges into Steele Creek and Willow Creek and their tributaries. Sampling results from the first water-bearing stratum beneath the lowest lignite seam to be mined were included in the baseline information in the application as updated. No springs have been identified within the proposed permit area that will be affected by proposed mining operations.

(d). Monitoring of underburden groundwater indicates that water levels dropped an average of 16 feet between 1987 and 2007, and Luminant posits that the drop is due to increased Simsboro Formation supply well usage; Staff concurs with this conclusion and notes that the Simsboro Formation has been utilized locally, resulting in a regional decline in the Simsboro aquifer head.

31. The surface water hydrology for the permit area is adequately described in the approved permit, Section .129. The surface baseline data has previously been submitted and approved by the Commission in previous applications for permits or permit renewals for this mine. This renewal/revision/expansion application presented updated plates to show the proposed mine plan. Otherwise, this renewal/revision/expansion application presented the same data contained in the last permit renewal/revision application for the Kosse Mine that the Commission previously approved. The description includes general information and baseline hydrologic conditions for primary creeks, tributaries, and impoundments. The surface water monitoring stations are adequately located to describe conditions for the proposed permit area. The application, as supplemented, meets the requirements of §12.129 of the Regulations.

(a). Plate 129-1, Surface Water Data Location Map, depicts watershed boundaries, surface water monitoring stations, and one-time surface waters within the proposed permit area. Several tributaries of Steele Creek (a tributary to the Navasota River in the Navasota River Watershed of the Brazos River Basin), including Willow Creek, Heads Creek, Cox Creek, and Owens Creek, drain the proposed permit area. Detailed surface water quantity and quality information for the proposed permit area is provided in the narrative section of the application, Section .129, in Tables 129-1 through 12, Figures 129-1 through 4, Plates 129-1 and 2, and Appendices 129-A through F. Approximately 200 premine impoundments (livestock or farm ponds) have been identified with locations and owners shown on Plate 129-2; no major surface water impoundments are contained in the Study Area.

(b). Based upon a study performed for the applicant by Pastor, Behling & Wheeler, LLC (PBW), there are over 200 naturally occurring or man-made impoundments within and near the proposed renewal/revision/expansion area. Twenty-four (24) of these water bodies, determined to be representative of the proposed renewal/expansion study area, were sampled within and near the proposed renewal/revision/expansion area for water quality (13 water bodies on July 12, 2005, and 11 water bodies on February 20-21, 2007). Water quality data are included in the application, Tables 129-9 and 129-10. Photographs of the ponds are included in Appendix 129-B. No major surface-water impoundments are located within the proposed permit area.

(c). Surface water quantity and quality data were presented in the initial permit application from four baseline monitoring stations (Plate 129-1) from 12 months of sampling in 1987-1988 and 12 months of sampling in 2004-2005. Volume of flows at these four stations and methods used to measure flow are described. Stream flows were estimated using long-term historical records from the USGS for nearby stream stations at Upper Keechi Creek and Tehuacana Creek (Figure 129-1), that are similar in size, relief, climate, and vegetation as the primary watershed receiving drainage from the proposed permit area, Steele Creek. Streamflow conditions were estimated using Upper Keechi Creek, because its watershed size and geometry are most similar to the proposed permit area watersheds. Water quality data for monthly sampling events are included in Tables 129-7 (general chemistry) and 129-8 (metals), with laboratory analyses contained in Appendix 129-C. In addition, sampling results from a one-time sampling of 13 ponds within and near the proposed permit are included in Tables 129-9 (general chemistry) and 129-10 (metals). In 2005, Luminant's consultant collected baseline data for the then-proposed renewal/expansion area that was much smaller than the larger study area examined for the initially-approved permit, and that updated data was included in Luminant's previous application.

(1). An additional 12 months of data were collected from baseline monitoring stations and stations for the previously-approved expansion area. Monitoring stations are shown on Plate 129-1.[69] Photographs and descriptions are included in the application, Appendix 129-B. Monitoring stations approved for the existing permit term, as revised in consultant PBW's study, are proposed for use during the requested permit term (SW-1, Crest/Staff Gauge on Steele Creek upstream of renewal/revision/expansion area; SW-2A, Crest/Staff Gauge on Steele Creek downstream of renewal/revision/expansion area; SW-3, Staff Gauge on Willow Creek, formerly crest gauge for 1987 study; and SW-5, Staff Gauge on Heads Creek formerly, continuous recorder for 1987 study) as well as three proposed additional stream monitoring stations: SW-A, Crest/Staff Gauge on Cox Creek downstream of renewal/revision/expansion area; SW-D, Crest/Staff Gauge on Cox Creek upstream of renewal/revision/expansion area; and SW-E,

[69] SW-1 though SW-3 and SW-5, and SW-A, SW-B, SW-C, SW-D, and SW-E for the proposed expansion area. Station SW-2 was relocated downstream of station SW-2A since very little flow was recorded in the 1987 study. Station SW-B was relocated to SW-E in that there was no flow at Station SW-B. Data for SW-C are not included in that its drainage area is not proposed for disturbance.

Crest/Staff Gauge on Owens Creek downstream of renewal/revision/expansion area.

(2). The water quantity and quality at these stations for the study period are summarized in Staff's TA pages 38-40, as follows:[70]

Luminant meets §12.129(1) by providing the following:

- Text on page 129-7, describing the topography of the Kosse Study Area as upland hills having slight to moderate relief with a surface-water divide occurring south and west of the permit area. The surface-water southwest of this divide drains towards the Brazos River. The permit renewal/revision/ expansion application describes five drainage areas: Owens Creek, Heads Creek, Cox Creek, Willow Creek and Steele Creek, which is a tributary of the Navasota River. PBW depicts the baseline monitoring stations and associated watersheds on Plate 129-1.

- A detailed watershed morphometry study for Steele Creek, Willow Creek, Heads Creek, Cox Creek and Owens Creek on page nos. 129-7 through 129-10 and Table Nos. 129-1 through 129-3. The watershed morphometry for each of the five creeks is summarized in Table 129-1. The calculations for the bifurcation ratios and stream length ratios are provided in Table Nos. 129-2 and 129-3.

- Text on page 129-10, indicating that 200 naturally occurring or man-made impoundments exist within the permit boundary. These impoundments primarily serve as livestock or farm ponds. The locations of these impoundments and their respective owners are shown on Plate 129-2 (*Study Area Impoundments*). No major surface-water impoundments are located within the permit area.

- Text on page 129-11, indicating that no significant springs have been identified in Robertson County, and that other less well-known springs may occur in and around the Study Area.

- Text on page 129-24, indicating that five TPDES permits exist near the Study Area (TCEQ 2007). The TPDES permit monitoring locations are shown on Figure 129-4 and listed in Table 129-12.

- Text indicating that in order to identify seasonal variations in water quality, four baseline stations were monitored by HSW in 1987. Due to potential changes to baseline water quality or quantity, PBW collected another 12 months of baseline data (2004-2005). Page 129-12 provides a list of the four baseline monitoring stations and the correlation between the PBW and HSW baseline station locations. PBW also collected additional baseline data to support the permit expansion in 2005 at another five baseline monitoring stations as listed on page 129-12. The locations of the baseline

[70] All references to page numbers are from Luminant's August 6, 2018, application filing.

stations are shown on Plate 129-1. PBW collected data in 2004 from baseline-monitoring Stations SW-1, SW-2A, SW-3 and SW-5 (previously HSW Stations SW-1, SW-2, SW-3, and SW-5, respectively). In 2005, PBW began collecting data from baseline Stations SW-A, SW-B, SW-C, SW-D, and SW-E located within the Steele Creek watershed to support the permit expansion.

- Both HSW and PBW water-quality and water-quantity investigations within the permit area. PBW indicates that although the data collected by HSW in 1987 was considered sufficient to characterize the baseline conditions, another 12 months of data were collected to provide a more updated characterization of the permit area. PBW collected data in 2004 from baseline-monitoring Stations SW-1, SW-2A, SW-3 and SW-5 (previously HSW Stations SW-1, SW-2, SW-3, and SW-5, respectively). The locations of the baseline stations are shown on Plate 129-1. In 2005, PBW began collecting data from baseline Stations SW-A, SW-B, SW-C, SW-D, and SW-E located within the Steele Creek watershed to support the permit expansion.

- That baseline Station SW-B was abandoned and relocated to station SW-E due to “no flow” conditions. Baseline Station SW-C was initially monitored because the preliminary permit boundary for the expansion area showed mining activities within the watershed of Running Branch Creek. The permit boundary and mine plan proposed in this permit renewal/revision application do not intercept the Running Branch Creek watershed; therefore, data collected from baseline Station SW-C are not tabulated or evaluated in the application.

- On page Nos. 129-15 and 129-16, detailed descriptions of baseline station locations and photographs of baseline station locations in Appendix 129-B (*Photographs of Surface-Water Monitoring locations*), except for baseline Stations SW-B and SW-C.

- On page Nos. 129-18 through 129-22, information that includes minimum, maximum, and average discharge conditions, which identify critical low flow and peak discharge rates of streams.

Monthly streamflow and water quality were measured at these stations.

(d). There are two significant springs in the area; however, they are located 17 and 28 miles upstream of the proposed permit area and will not be affected by proposed mining operations. No other springs or seeps were identified in a door-to-door water well inventory when residents were also asked about springs or seeps on their properties.

(e). Information is provided for five wastewater permits issued by the TCEQ for US Silica Company, City of Thornton, City of Kosse, City of Bremond, and Luminant Generation Co. LP (f/k/a TXU Generation Co. LP).

32. Alternative water supplies have been identified to replace water supplies that may be affected and may require replacement as set out in §12.130 of the Regulations in Section .130 of the application (SD2). Luminant identified eight water rights in the vicinity of the proposed permit area, Table 130-1 and Figure 130-1 (SD2) to include updated water right information. Three of these are downstream of the permit area: Water Right 5160 is held by Camp Cooley Ltd. on Steele Creek; Water Right 5298 is held by Luminant (the successor to TXU Electric Company) on Duck Creek; and Water Right 5931 is held by Luminant on tributaries of Steele Creek, Willow Creek, and Heads Creek within the central portion of the permit area. Sources of replacement water include public water systems that include several cities in the area, water supply corporations and others, deep wells into the Carrizo Wilcox, other aquifers, Lake Mexia, Lake Stamford, Lake Limestone, and Lake Navarro Mills. There are non-permitted diversions of 200 acre-feet of water or less used for domestic and livestock purposes that might be affected that are exempt from permitting. Impacts to stock ponds not located in mining areas are unlikely to be affected in that they are not dependent on runoff from streams controlled by mining activities. Luminant has acknowledged its responsibility to replace water sources used for domestic, agricultural, industrial, or other legitimate use if contamination, diminution, or interruption occurs as a proximate result of mining activities in accordance with the requirements of §12.130 of the Regulations. Potential impacts to groundwater users have been addressed in compliance with §12.146 of the Regulations.

33. All required climatological information has been provided for the permit area in the application, Section .131, in compliance with §12.131 of the Regulations for climatological information to characterize the proposed permit area. The report has been signed and sealed by a professional geologist. The study area is in the Modified Marine Subtropical Humid climatic region in Texas (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 26 miles west of the proposed permit renewal area. Mean annual precipitation was 36.63 inches for the years 1932 – 2004, as measured by the National Weather Service (NWS). 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 °F 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 58.18 inches (Quadrangle 611) for the period of record 1954 – 2002. Local precipitation data were collected from one rain gauge operated by PBW and collected from October 2004 through March 2007 (Table 131-2), with the exception of December 20, 2004, when it was damaged, until February 17, 2005. Data from the NWS Cooperative Station in Thornton, approximately 10 miles northwest of the proposed permit renewal area, was used to supplement the data for the missing period of time. The yearly total rainfall at the Thornton rain gauge was 36.98 inches, as supplemented, for 2006, compared to the PBW rain gauge for 2006 of 42.18 inches. The NWS station in Waco, Texas, approximately 45 miles west-northwest of the proposed permit renewal/revision/expansion area, provided wind speed and direction data for the period of record 1968 – 1980, indicating a most frequent annual wind direction from the south and maximum sustained wind during the winter from strong cold fronts.

34. All required vegetative resource information for the proposed permit area is included in Section .132 of the application, as supplemented, and is sufficient to describe premine vegetation important for fish and wildlife habitat, and sufficient to predict the potential for

the re-establishment of vegetation during reclamation pursuant to §12.132 of the Regulations. In section .132 of the application, Luminant provides a vegetation baseline report prepared by its consultant Blanton & Associates, Inc. (Blanton) for the proposed permit area, including the approved vegetation information in Permit No. 50B, the recently-approved 166-acre Incidental Boundary Revision (IBR) area (Permit 50B, Revision No. 27, administratively approved on April 19, 2018), and the proposed 1,502 expansion area. Earlier surveys conducted include baseline reports by the firm now known as Atkins in 1988 and 1991; a baseline report by Post, Buckley, Schuh, and Jernigan, Inc. (PBS&J) in 2005; a baseline report by HDR Engineering, Inc. (HDR) in 2007; the 2015 baseline report from Blanton; and the 2018 IBR baseline report from Blanton; summaries of these previous reports are included in the application. Additional surveys on the Navasota Ladies'-tresses (NLT) *(Spiranthes parksii)* (an orchid) were also previously conducted by various firms and their findings incorporated into Blanton's report, including, Horizon Environmental Services, Inc. 1990 Report on a survey for NLT; PBS&J 2005 Report on a 2004 survey for Navasota ladies'-tresses in Kosse Mine (Appendix 132-D); HDR 2007 Report on 2005 and 2006 surveys for NLT within Kosse Mine, Permit 50 renewal/expansion (Appendix 132-E); and HDR 2014 NLT Fall 2014 Field Survey Report for Permit No. 50A – Area D, with an addendum containing supplemental information, Fall 2014 Field Survey Report (Appendix 132-F), in addition to Blanton's 2017 NLT 2016 Presence/Absence Survey Report for the Kosse Mine. HDR also previously conducted a Large-fruited Sand-Verbena (LFSV) (*Abronia macrocarpa*) May 2014 Field Survey Report for the Kosse Mine Permit No. 50A, Area D, with addendum Figure 1a, LFSV 2014 area of review – Proposed Project Area (USACE No. SWF-2013-00349) and its findings are incorporated into Blanton's report, in addition to Blanton's 2017 LFSV Presence/Absence Surveys (2016 and 2017) at Kosse Mine. These are two plants that are endangered in Robertson and/or Limestone Counties. The updated baseline report contained in the application, as supplemented in SD2, adequately characterizes the proposed permit area for the renewal/revision/expansion area and is sufficient to describe premine vegetation important for fish and wildlife habitat, and sufficient to predict the potential for the re-establishment of vegetation during reclamation.

(1). The proposed permit area is located within the Post Oak Savannah vegetation area of Texas (Figure 132-2). A general location map is included (Figure 132-1). The types of vegetative communities within the 16,563-acre proposed permit area, including the IBR area (Revision No. 27, approved April 19, 2018), include: grasslands, 48.2%; upland hardwood forests, 31.8%; bottomland/riparian forests, 10.5%; hydric habitat, 3.7%; mesquite brushland, 1.5%; disturbed land (oil and gas well pads and paved roads), 1.5%; regenerative areas, 1.5%; cropland (primarily sorghum), 0.6%; aquatic habitat, 0.6%, and savannah, .1% (Table 132-1). Luminant included Plates 132-1 and 132-2 that depict vegetation and habitat types by color aerial photograph. The vegetation types are described in the application. Much of the area has been developed for agriculture; Bermudagrass and Bahiagrass dominate the pastureland areas. The hydric habitats are associated primarily with the creek floodplains. The application includes Plates 132-1 and 132-2, maps with depictions of topography, vegetation transects, and fish and wildlife sampling sites for the permit area. Information is included for vascular plant species and representative vegetation data for each habitat type.

(2). The application, as supplemented in SD2, includes Appendix 132-C (SD2) containing copies of correspondence and meeting notes from species experts, the TPWD, Commission Staff, and the USFWS regarding threatened and endangered species with the potential to occur in Robertson and Limestone Counties. Appendices 132-D, 132-E, 132-F, and 132-H (and their addendum) contain consultants' reports of surveys for the NLT orchid (*Spiranthes parksii*) within the approved permit area. The reports included aerial photo-mapping of survey areas and potential habitat. This orchid typically reaches 6-12 inches in height during florescence and has the potential for occurrence in Limestone and Robertson Counties. It is found within mature woodlands and occurring within upper reaches of minor, intermittent tributaries of the Brazos and Navasota River Basins. There have been multiple known occurrences of this species outside the approved permit area, and two were found within the permit area in 2014 and confirmed during a 2016 survey (Appendices 132-F and 132-H), but none occurred within the expansion area. Luminant also provided information in Appendices 132-G (and its addendum) and 132-I regarding the LFSV (*Abronia macrocarpa*), a plant species with the potential for occurrence, but no known occurrences, within the permit area. Conditions (*e.g.*, soils) that may support potentially suitable habitat for this species occur within the renewal area, although the verbena has not been observed during surveys that have been conducted in portions of the renewal area.

35. As required by §12.133 of the Regulations, adequate fish and wildlife resource information is included in the application, as supplemented, with the current status of state and federal threatened and endangered species and with information to provide an accounting of premine wetlands and waters of the U.S. pursuant to §404 of the Clean Water Act. In Section .133 of the application, Luminant provided a fish and wildlife resource report on the proposed permit area prepared by Blanton in June 2018, including a baseline fish and wildlife report in February 2015 for the 15,040 acre Kosse Mine 50B Permit area, a baseline fish and wildlife report in 2018 for the 166 acre IBR, Permit 50B Revision No. 27, and information for the proposed expansion area in this application. Previous fish and wildlife baseline studies have been conducted including: the firm now known at Atkins' studies in 1988 and 1991; PBS&J's 2005 Kosse Mine fish and wildlife resources information report; HDR's 2006 Kosse Mine, Permit No. 50 renewal/expansion fish and wildlife resources report; Blanton's 2015 Kosse Mine Permit 50A Renewal Fish and Wildlife Resources Information Report; and Blanton's 2018 Kosse Mine Permit 50B Incidental Boundary Revision Fish and Wildlife Resources Information Report. This June 2018 Blanton report, as supplemented (SD2), includes appropriate scope and level of detail to enable the design of a protection and enhancement plan for fish and wildlife required by §12.144 of the Regulations, including site-specific resource information to address listed or proposed endangered or threatened species or their critical habitats or other habitats of unusually high value for fish and wildlife in accordance with the Endangered Species Act of 1973, as amended (16 U.S.C. §1531 *et seq*). The application has sufficient information for state-listed threatened and endangered species. The information meets the requirements of §12.133 of the Regulations. The area studied is in the Navasota River Watershed of the Brazos River Basin in east-central Texas in southern Limestone and northern Robertson Counties. The primary creek within the proposed permit area is Steele Creek, traveling from west to east through the central portion of the permit renewal area. Cox Creek and Owens Creek flow in a southerly

direction and drain into Steele Creek. Heads Creek drains the central portion of the proposed permit area and drains into Steele Creek. The upper reaches of Willow Creek are in the southern part of the proposed permit area.

(a). The creeks within the proposed permit renewal area are all intermittent or ephemeral based on quarterly surface water sampling data presented in Section 129. Although Steele Creek is classified as perennial on the map of potential jurisdictional waters (Plate 133-1) and in the USACE permit issued to Luminant, this inconsistency is likely due to differing stream classification definitions. Marsh habitat and man-made ponds also make up a part of the study area.

(b). Ten aquatic sampling stations were originally sampled in and adjacent to the renewal area as components of previous studies in the Twin Oak-Kosse study area. Five of those are no longer located within the renewal area boundary, and four of those five were removed from the original Kosse Mine Permit 50 reports. Thus, six of the original Twin Oak-Kosse aquatic sampling locations were revisited by PBS&J during the October 2004 field reconnaissance, and the results were submitted as part of the original Kosse Mine Permit 50 application. HDR added ten new locations and revisited three of the original sample locations in 2006 for the renewal area, and Blanton established an additional ten sampling stations from 2014 to 2015 in the expansion area. Blanton's current report included 27 aquatic stations. Water quality sampling results are included in Tables 133-4, 133-5, and 133-6. Appendices 133-B through 133-G as well as various tables within Section .133 contain species sampling results for fish, amphibians, reptiles, birds, mammals, and mussels of potential occurrence. Tables 133-1,133-2, and 133-3 of the application list numerous aquatic habitat sampling locations from 1987, 2006, and 2014/15 respectively, with a classification of type of habitat, depth, width, type of substrate, whether there is aquatic vegetation, bank height, and type of overhead canopy. The sampling stations in the 2014/15 study consist of lacustrine ponds and ephemeral or intermittent steams, ranging in depth from approximately equal to or less than 1 foot to more than 10 feet. The width of the creeks sampled in 2014/15 ranged from approximately 4 to 40 feet. Four of the 2014/15 stations contained aquatic vegetation. The sampling locations consist of open and mixed hardwood (open, partial, and closed) canopies. More detailed descriptions of each site are included in the study, and materials and methods used in sampling were described, along with sampling results and descriptions of species from the previous studies.

(c). Lists of federally-listed and state-listed threatened and endangered species with the potential to occur in Limestone and Robertson Counties are included in the application in Appendix 133-A, as supplemented, and in Tables 133-7 and 133-8. Staff prepared a summary of threatened or endangered species that have been reported or may occur within the proposed permit area. Except for the NLT, ILT, bald eagle, and smooth pimpleback mollusks, all other threatened or endangered species are either not likely to be within the proposed permit area, are possible, or are possible migrants to the area. The following table summarizes information from Luminant and Staff analysis:

Species	Protected Status	Likelihood of Occurrence
Plants		
Navasota Ladies'-Tresses Orchid	Federal Endangered; State Endangered	Present within proposed disturbance area
Large-Fruited Sand-Verbena	Federal Endangered; State Endangered	Possible
Mollusks		
Smooth Pimpleback	Federal Candidate for Listing; State Threatened	Present, occurs in Steele Creek
Texas Fawnsfoot	Federal Candidate for Listing; State Threatened	Possible
Fish		
Blue Sucker	State Threatened	Unknown, Not Likely
Sharpnose Shiner	Federal Endangered	Unknown, Not Likely
Smalleye Shiner	Federal Endangered	Unknown, Not Likely
Amphibians and Reptiles		
Houston Toad	Federal Endangered; State Endangered	Possible
Texas Horned Lizard	State Threatened	Not Likely, rare in east Texas
Timber Rattlesnake	State Threatened	Possible
Alligator Snapping Turtle	State Threatened	Possible
Birds		
Interior Least Tern	Federal Endangered; State Endangered	Present, breeding
Whooping Crane	Federal Endangered; State Endangered	Possible Migrant
Bald Eagle	State Threatened; Federally Protected under Bald and Golden Eagle Protection Act	Present, no nests observed
American Peregrine Falcon	State Threatened	Possible Migrant
Red Knot	Federal Threatened	Possible Migrant
White-Faced Ibis	State Threatened	Possible Migrant
Wood Stork	State Threatened	Possible Migrant
Mammals		
Louisiana Black Bear	State Threatened	Possible
Red Wolf	Federal Endangered; State Endangered	Not Likely, extirpated in Texas

Luminant's protection and enhancement plan for fish and wildlife is set out in Finding of Fact No. 44, *infra*.

36. The information required by §12.134 of the Regulations for soil resources information is included in the application. HF & Associates prepared section 134 of the application (Soil Resources Information) for the 15,663 proposed permit area, including information for the existing 15,040-acre Kosse Mine Permit area, information for the 166-acre IBR (Revision No. 27) and information for the proposed expansion area in the application. The

information presented includes a map delineating different soils, soil identification, soil description, and present and potential productivity of existing soils. Luminant included a soils map (Plate 134-1, Sheets 1 and 2) depicting 29 native soil mapping units of 18 soil series, sample locations, and prime farmland soils. Detailed 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 in Appendices 134-A (Natural Resources Conservation Service official soil series descriptions), 134-B (soil interpretation tables), 134-C (source data sampling results by genetic horizon), 134-D (source data sampling results by the 0-12" and 12-48" intervals), and 134-E (source data sampling results by topsoil and subsoil intervals). More than 60% of soils are considered claypan soils (thin sandy or loamy topsoil overlying dense clayey subsoil); approximately 9.0% of the proposed permit area soils are a deep sand or loamy sand surface 20 inches or greater in thickness over more finely textured subsoil. There are also soils that have sandy surface intervals ranging from 20 to 40 inches thick and 40 to 80 inches thick. Prime farmland soil units comprise approximately 17.8% of the proposed permit area. Staff's TA suggests that Table II in Appendix 145-D contains discrepancies between it, Plate 134-1, and Table 134-1 in section .134 of the Permit. Therefore, Staff proposes to retain Permit Provision No. 2 as revised to require that within 60 days of permit issuance, Luminant shall correct discrepancies between Table II in Appendix 145-D, Plate 134-1, and Table 134-1 in section .134 of the Permit. The Commission adopts Staff's proposed Permit Provision No. 2. Luminant included in the application estimated crop yields for Limestone and Robertson Counties from the NRCS's Web Soil Survey website that are set out by soil map unit (if rated for crop production). Production information for crops in Limestone and Robertson Counties in 2012, except for one entry in Limestone County in 2016 as noted, is included in Table 134-5 (data provided from various United States Department of Agriculture (USDA) 2018 publications for year 2012). The proposed permit area is made up of soils that are classified as suited to cultivation or to pastureland, grazingland, or wildlife habitat. A revised native soil baseline is included to represent the lands within the proposed permit boundaries. 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, sodium adsorption ratio, soluble boron, total cadmium, total selenium, and percentage of coarse fragments. Depth-weighted data do not meet the standards of the Commission suggested criteria for pH, ABA, clay, sand, sodium adsorption ratio, and selenium for the top four feet of reclaimed soils, that is, there are areas that do not meet these standards at certain depths. Laboratory source data does not meet the standards of the Commission for PH, ABA, sand, clay, exchangeable acidity, sodium adsorption ratio, and total selenium. Luminant proposes to use topsoil and subsoil substitute material in reclaiming the top four feet of reclaimed soils. Cumulative frequency distributions for the proposed permit area are included (Tables 134-9 through 134-14) 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, sand, pyritic sulfur, and selenium. The information presented for the native soil baseline is sufficient to determine the suitability of topsoil and subsoil substitution proposed by Luminant.

37. Luminant has described premine land use in the application in accordance with the requirements of §12.135 of the Regulations for the proposed permit area, using historical land-use data, previous studies, limited field verification, and information from the NRCS. Luminant's consultant, Blanton, prepared the premine land-use information after conducting its own review of information regarding the 15,663 proposed permit area,

including information for the existing 15,040 acre Kosse Mine Permit area, information for the 166 acre IBR (Revision No. 27) and information for the proposed expansion area in the application. Blanton incorporated information from the following reports in this application: EH&A's 1988 and 1992 Twin Oak-Kosse land use information; PBS&J's 2005 Kosse Mine Land Use Information Report; HDR's 2007 Kosse Mine Permit No. 50 Land Use Information Report; Blanton's 2015 Kosse Mine Permit 50A Renewal Land Use Information Report; and Blanton's 2018 Kosse Permit 50B Incidental Boundary Revision Land Use Information Report. Plate 135-1, *Land Use Map*, depicting the premine land uses, is included in the application. In Table 135-1, Luminant identified the acreages and percentages of premine land uses for the permit area. These land uses include: undeveloped land, 47.29% (primarily dense to open woodlands); pastureland, 46.46%; industrial/commercial, 2.06% (roads and oil and gas facilities); cropland, 0.64%; grazingland, 2.82%; residential, 0.17%; and developed water resources, 0.56% (stock ponds). In addition to the categorization of uses, the application includes data for land productivity and capability, including pastureland and grazingland compositions (Tables 135-A-1 through 5) and yields for crops and pasture (Table 135-B-1), varying according to soil series and management. Per-acre cropland productivities for wheat and grain sorghum range from 15.0 to 35.0 bushels (bu) and 25 bu to 75 bu, respectively. Typical forage grasses growing on premine pastureland would produce from 2,355 to 6,800 pounds per acre per year, and improved and common Bermuda grass ranges from 2.5 to 9 Animal Unit Months per acre depending on soils and management. Other uses are included for soil series appropriate for other development, as well as limitations on uses. There are no municipal regulations applicable to the proposed permit area. Luminant provided a reference to the TPWD 2013 and 2015 Land and Water Resources Conservation and Recreation Plan, the TPWD 2012 Texas Outdoor Recreation Plan, the Texas Water Development Board 2016 Texas Regional Water Plan, the TPWD 2012 Texas Conservation Action Plan, and general Heart of Texas Council of Governments and Brazos Valley Council of Governments planning and programs.

38. All requirements have been met for the submittal of maps, cross-sections, and plans for the application, as supplemented (SD2) in accordance with §§12.136-.137 and §12.142. Section .136 of the application includes a table entitled "Rule 12.136 Maps: General Requirements" that includes the locations of maps within the application containing certain required information. The locations are set out on pages 136-1 through 136-3, and are as follows as revised by materials submitted in SD2:

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 and 116-2; Appendix 116-B (SD2) and Appendix 116-C (SD2)
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 and 116-2
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 and 2

SECTION	SUBJECT	LOCATION
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 and 2
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 and 3 Plates 136-1 and 2
12.136(6)	The location and boundaries of any proposed reference areas for determining the success of revegetation	None Proposed
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 (SD2)
12.136(8)	Each public road located in or within 100 feet of the proposed permit area	Plates 139-1-1 through 139-1-10
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.	Figure 125(2)-1 Table 125(2)-II
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 and 2 Plates 139-1-1 through 139-1-10
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

In addition to these maps and plans, Luminant has provided information required by §12.137 (SD2) 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 (SD2)
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	Plates 128-1 and 128-5 (SD2) Plate 129-1 Plate 132-1 and 2 Figure 144-F-2 Figure 133-G-2 Figure 1, page 133-F-8 Figure 2, page 133-F-9
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 through 127-11 (SD2)

SECTION	SUBJECT	LOCATION
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 through 127-8 (SD2)
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 128-5 (SD2) through 128-7
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 (SD2) 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 and 137-1-2 Plates 137-2-1 (SD2) and 137-2-2 (SD2) Table 137-1
12.137(b)	Location of certifications	Section 137. Maps and plans not listed in Section 137 are certified individually.

Luminant has included the information required for the following operations maps and plans in accordance with §12.142 of the Regulations as follows:

SECTION	SUBJECT	LOCATION
12.142(1)	Lands affected and changed by the proposed operations	Plates 139-1-1 through -10
12.142(2)(A)	Buildings, utility corridors, and facilities	Plates 136-1 and 136-2 and Plates 139-1-1 through -10
12.142(2)(B)	Area of land to be affected by mining and reclamation	Plates 139-1-1 through -10
12.142(2)(C)	Area of land to be bonded	Plate 142-1 and 142-2
12.142(2)(D)	Coal storage, cleaning and loading areas	Plates 139-1-1 through -10
12.142(2)(E)	Topsoil, spoil, coal waste, and non-coal waste storage areas	Plates 139-1-1 through -10
12.142(2)(F)	Water diversion, collection, conveyance, treatment, storage, and discharge facilities	Plates 148-1 and 148-2
12.142(2)(G)	Air pollution collection and control facilities	None proposed

SECTION	SUBJECT	LOCATION
12.142(2)(H)	Source of waste and waste disposal facilities relating to coal processing or pollution control	Plates 139-1-1 through -10
12.142(2)(I)	Fish and wildlife enhancement and protection	Plate 144-1 Plate 144-2
12.142(2)(J)	Explosive storage and handling facilities	None proposed
12.142(2)(K)	Location of each sediment pond, permanent impoundment, coal processing waste dam and embankment, and fill area for the disposal of excess spoil	Plates 148-1 and 148-2 and Plates 139-2-1 and 139-2-2
12.142(3)	Certification by a qualified registered professional engineer or geologist	Plates and tables are individually certified except as noted below. (application at 142-3)
12.142(4)	Description, plans, and drawings for each support facility	Plates 139-1-1 through –10

39. Luminant has been granted a negative determination of prime farmland for all land tracts within the initial 15,040-acre Kosse Mine, Permit 50B. Luminant requests a negative determination for the expansion area (1,523 acres) in the Kosse Mine that contains prime farmland soil units as identified in the application and depicted and catalogued [Plates 138-1 and -2 (SD2), *Prime Farmland Assessment Map*]. 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. The Regulations at §12.138 provide that the applicant must identify prime farmland soils. Luminant requests a negative determination for all prime farmland soils within the proposed permit area and bases its request for a negative determination of prime farmland on the 2007 prime farmland investigation, the *Prime Farmland Assessment Map* (Plates 138-1 and -2 (SD2)), and the historical use of the land, as demonstrated in the affidavits of use (Appendix 138-A, as supplemented in SD2). Plates 138-1 and -2 (SD2) identify the prime farmland soil series, the tracts on which the soils occur, and the markings showing tracts for which Luminant has not documented right-of-entry. 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 demonstrated 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 SD2) from several persons which indicate 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 the lands. No evidence controverting the affidavits was presented. The Commission approves a negative determination for prime farmland for all tracts within the proposed permit boundaries with prime farmland soils for which adequate affidavits have been provided and for which Luminant has documented a claimed right-of-entry and has included the tracts in Appendix 138-A (SD2). 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). A negative prime farmland determination is made for all tracts acquired by Luminant within the proposed permit area.

40. Luminant has submitted all required materials to document its proposed operations plan for the proposed permit term, as revised in the application and supplements, in accordance with §12.139 of the Regulations, and as set out in the permit provisions contained in Appendix I.

(a). Luminant will recover six lignite seams. Luminant proposes mining in the following four mine areas that it has denoted in the application as DI, DIII, DV and EI areas. Auxiliary areas will also be mined. The Life of Mine map, Plates 125-1 and 125-2, and the Mine Plan and Operations Map, Plates 139-1-1 through 139-1-10, show the areas to be mined in the proposed permit. The interburden unit thickness between the lignite seams ranges from less than 5 feet to greater than 40 feet. Lignite seams proposed for mining during the proposed permit term (2019 to 2023) range from 0.2 to 9 feet. 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 deepest minable seam of lignite averages 180 feet; mining in shallower areas will progress more quickly, and maximum clearing distances will vary from a minimum of 990 feet in the DV Area to a maximum of 1,700 feet in the EI Area (Years 1-4).[71] The time required depends upon various factors including depth of overburden, site-specific vegetation including heavily wooded areas and natural waterways that must be re-routed. Based on the information contained in Tables 139(T)-3 and 139(T)-4 and Figures 139(F)-33 through 36, Luminant requests additional time and distance for backfilling and grading standards for the dragline mining areas within the permit term. All clearing activities will be within surface water control. 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, a revision application will be submitted and approval from the Commission obtained before initiation of the angled or offset pits. Luminant requests stream buffer zone variances for waterway and creek segments depicted in Plates 139-4-1 (SD2) and 4-2 which will support disturbances projected to occur within the proposed permit term.

(b). Other operations are detailed in the application, as supplemented, 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 the E1 area as depicted on Plate 146(d)-1 (SD2), locations of lignite stockpiles, description of overburden, interburden, and topsoil handling, methods of identification of suitable overburden material for placement in the top four feet of postmine surface as a topsoil and subsoil substitute, regrading, stabilization of reclaimed areas, structures used in the mining operations, waste handling, mine

[71] The specific distances are:Clearing Distance – Years 1-4

Dl Area	1,260 ft.
DIII Area	1,420 ft.
DV Area	990 ft.
El Area	1,700 ft.

facilities, and the measures Luminant will use to control dust and other emissions of particulate matter from non-stationary sources. Luminant has listed temporary locations for storage of suitable selective placement material to be used in reclaiming the top four feet of the surface. The suitable material stockpiles are shown on Plates 139-1-1 through 139-1-10. No overburden or topsoil storage areas are proposed as a result of stripping operations. No disposal areas or structures for spoils are proposed, with the exception of the disposal of coal waste from portable screening facilities. There are no proposed permanent overburden storage areas. 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. Luminant has included language in the application confirming that it will meet §12.336 requirements for protection measures.

(c). Luminant has included information in the application, as supplemented, to demonstrate that it will meet the requirements of §§12.382 and 12.402 of the Regulations for activities related to oil and gas wells and pipelines, with the adoption of subsections (1) and (2) of this Finding of Fact. Luminant has demonstrated a right by accommodation agreements to conduct certain activities required to lower or otherwise relocate or otherwise affect pipelines within the areas proposed for disturbance within the proposed permit term with the exception of those of Energy Transfer Fuel LP and J Sugar Co., Inc. Regulation §12.382 requires that the applicant identify and describe pipelines located within the permit area and within 100 feet of the permit area and that the applicant visibly mark them at 200-foot intervals throughout the permit area. Luminant has adequately identified and described wells and pipelines and operations that may affect pipelines [Oil and gas well inventory location map (Plate 128-3), Utilities (Plates 136-1 and 2), and Mine Operations Maps (Plates 139-1-1 through 139-1-10)]. In addition to marking pipelines, §12.382 provides that a minimum of six feet of compacted material must exist between the pipeline and any haul road or access road that crosses the pipeline; Luminant has undertaken to ensure that the six feet of compacted materials will exist for any road or other structure that crosses the pipeline. Regulation §12.382 also specifies that the permittee must not create a cut within 100 feet or one times the depth of the cut (whichever is greater) or conduct blasting within 500 feet of a pipeline. Luminant does not propose blasting. Luminant has undertaken to comply with the marking provisions. Luminant indicates that the location of pipelines will be visibly marked within 100 feet of mining activities. Any proposal related to variances must be reviewed by the Commission for compliance with §12.382, as well as with §12.402 requirements that all surface coal mining operations be conducted in a manner which minimizes damage, destruction, or disruption of services provided by oil, gas, and water wells, oil, gas, and coal-slurry pipelines, and other facilities mentioned in the regulation, that pass over, under, or through the permit area, unless otherwise approved by the owner of those facilities and the Commission.

(1). No surface mining regulatory requirement sets out any buffer requirement for pipelines related to the vicinity of mining-related activities other than that

pipelines must be marked at a minimum of 200-foot intervals within the permit area [12.382 (2)] and that the mine operator cannot create a mining cut within 100 feet of a pipeline or within one times the depth of the cut, whichever is greater, unless the Commission approves a variance in accordance with §12.382(7).

(2). All pipeline owners have facilities that may be affected by surface mining related activities that are proposed near the pipelines that may not require removal/relocation of the pipelines. Luminant indicates on 139-13 that pipelines will 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 10 feet.

(3). Luminant has undertaken to comply with the Commission's Pipeline Safety Rules.

(d). Should the railroad system access become limited between the Kosse Mine and Oak Grove Power Plant, the use of public roadways, using licensed vehicles, will be a secondary means of lignite transportation.

(e). Luminant has included a description of areas where final pits are proposed during the proposed permit term. Luminant also may request temporary cessation of operations (TCOs) and/or backfilling and grading variances in certain areas, and Table 139(T)-2 lists the TCOs and variances applicable to the permit term. Luminant must provide information sufficient for compliance with §12.384 prior to Commission approval of future TCOs. Backfilling and grading variance requests for the D and E mining areas (pp. 139-10 through 139-12) are addressed in Finding of Fact No. 45(c).

(f). Luminant requests variances from the stream buffer zone requirements for activities within the buffer zones of Heads Creek, Cox Creek, Steele Creek, Owens Creek, and Willow Creek for the stream sections shown on Plates 139-4-1 (SD2) and 139-4-2. These requests are addressed in Finding of Fact No. 49.

(g). Final pits are proposed for the proposed permit term in the DI area in 2020, in the DIII area in 2022, in the DV area in 2023, and in the EI area in 2023.

(h). Luminant does not propose disposal areas or structures for spoil or coal processing waste, with the exception of the disposal of coal waste from portable coal screening facilities. Coal from these facilities will be placed in the active pit for disposal.

(i). Lignite is loaded from the pit, using a front-end loader, hydraulic backhoes, and other mobile equipment, and trucked to the Kosse Mine coal barn or approved stockpile areas. From there it is loaded into rail cars and transported by rail to the Oak Grove Steam Electric station. Lignite stockpile and facility areas are shown on Plates 139-1-1 through 139-1-10.

(j). Luminant may conduct exploration activities within the proposed permit area. Luminant has included a discussion of these activities on pp. 139-20 through 139-22. The discussion includes the proposed activities, conducted with prior

notification to the Commission, limitations (no drilling in excess of 300 feet in depth without prior approval by the Commission), providing a map of boreholes cased as wells by March 1 of the year after wells are installed, no diversion of streams, and protection for wildlife. Luminant will meet requirements of §§12.331-12.333 for casing and sealing of drilled holes, will minimize disturbances to the hydrologic balance, and will ensure that acid-forming material and toxic-forming material (AFM/TFM) requirements for handling and disposal will be met. A description of test pits is included.

(k). Luminant has indicated that the Commission will be notified by the end of the first calendar quarter each year of any use of bottom ash on mine road surfaces. Notification will consist of a map that will identity the location of bottom ash use. If new uses of bottom ash on roads are not initiated, then Luminant will provide the Commission a notification letter stating the absence of new bottom ash on roads.

41. No existing structures as defined by §12.3(63) of the Regulations (structures or facilities for which construction began prior to approval of the State program) will be used to facilitate surface mining and reclamation operations (§12.140, Regulations). No blasting is proposed (§12.141, Regulations).

42. The TPWD and USFWS provided general information regarding protected vegetative and wildlife species and made various comments and recommendations. 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 information about species and habitats that are protected by state and federal law as threatened or endangered species, as well as habitats of unusually high value such as important streams, wetlands, and riparian areas. Regulation §§12.144 and 12.380 require a description of how the operator will minimize adverse impacts on fish and wildlife and related environmental values to the extent possible using the best technology currently available, and how the operator, where practicable, will enhance fish and wildlife resources. 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. 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 October 3, 2018, expressing concerns related to various permits, species, revegetation efforts, the planting list, native grasses, grassland wildlife and habitat, and culvert design. TPWD also commented that the application, as supplemented, adequately addressed state-listed threatened and endangered species for the renewal term. Luminant has addressed TPWD's comments in accordance with Commission requirements by modifications to portions of the application. USFWS commented on the application by email dated December 3, 2018, expressing concerns related to the fish and wildlife plan, relocation or transplanting of the NLT plant, and deed restrictions and conservation easements. Luminant provided responses to TPWD's and USFWS's recommendations in an attachment to the SD2 Errata section and by incorporating some of the recommendations into SD2. Staff's responses to TPWD's and USFWS's recommendations are provided in Appendix III (revised) to Staff's TA Addendum and are based on a review of the application through SD2. Staff sent an electric copy of

the renewal/revision/expansion application as supplemented to TPWD and USFWS on March 8, 2019. No further comments from TPWD or USFWS were received regarding SD2.

(a). In Staff's Application Deficiency No. 144-1, Staff recommended that Luminant should commit to prioritizing clearing activities outside the prime breeding season/nesting season. In response, Luminant revised section 144 in SD2 to include a commitment that it will prioritize clearing activities outside the prime breeding season/nesting season, as appropriate and feasible. Staff also recommended that Luminant should incorporate the *Nationwide Standard Conservation Measures* (NSCM) and reference them when referring to best management practice (BMP) in the section, as these BMPs are the best technology standard currently available for the protection of birds, as recommended by both Staff and USFWS. Accordingly, Luminant revised pages 144-6 through 7a in SD2 to reference the NSCM BMPs and to discuss applicable and practicable elements of the NSCM that are incorporated into Section 144 of the application.

(b). In Staff's Application Deficiency No. 145b5B-1, Staff noted the inclusion of the partridge pea in the proposed planting list, Appendix 145-C, because it lacks value for reclaiming pastureland and because the USDA warns that the partridge pea can be poisonous to cattle. Luminant revised Appendix 144-C (SD2) and Appendix 144-D (SD2) to state that the partridge pea will be planted as a minor component (less than 10 percent of the planting mix). Staff then withdrew Application Deficiency No 145b5B-1.

(c). 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 page 144-5 of the application, as supplemented in SD2. Staff noted Luminant's commitment in Appendix III of its TA Addendum.

(d). TPWD notes that there is widespread concern regarding the decline of monarch butterflies and other native insect pollinator species due to reductions in native floral resources. TPWD recommended that Luminant consider revegetating impacted areas with plant species which provide habitat for monarch butterflies and other pollinators to contribute to pollinator conservation efforts. TPWD commented that many species listed in Table 144-C (as supplemented in SD2) are beneficial to monarch butterflies and other pollinators could be preferentially selected during reclamation to establish pollinator habitats, and 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, Staff commented that Table 144-C (as supplemented, SD2) 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 (SD2) 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.

(e). 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 (supplemented in SD2). Luminant, however, also noted in a footnote to Table 144-C that the three native species of *Asclepias* and approximately 37 other species listed on Table 144-C (as supplemented in SD2) may serve as host and/or nectar plants for monarch butterflies, other butterflies and other pollinators. The footnote further indicates that these species will be planted as funding and seed availability allow.

(f). 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. Sufficient information is available in the application to show the adequacy of the reclamation plan for these areas.

(g). TPWD noted that the Kosse Mine would be a good location to establish native tallgrass prairie habitat and commented that Luminant should plant native grasses in pastureland, grazing land, or fish and wildlife reclamation areas, as outlined in Section 12.145 Appendix H (SD2). Staff noted that Table 144-C (SD2) contains native tallgrass prairie species. As indicated on page 145-15, other species on the list are either native or locally naturalized.

(h). TPWD commented that various roads as depicted in Table 154-1 (SD2) may require culverts, which can serve as crossing structures for wildlife, if properly designed. TPWD recommended that Luminant consider the following design features when installing and maintaining culverts: install the shortest culvert possible; install single culverts instead of multiple; provide natural substrate bottoms; install the lower edge of the culvert to be flush with the ground; provide an elevated concrete ledge throughout the length of the culvert where there is persistent water coverage; avoid rip rap when possible; bury all required rip rap, back filled with topsoil and planted with native vegetation; and maintain culverts to prevent significant obstructions. Luminant updated page 154-3 (SD2) of the application to incorporate TPWD's wildlife movement recommendations during culvert installation, as feasible, stating that TPWD's recommendations will be considered to the extent they do not negatively impact the required design criteria and performance standards of the culverts. Staff noted Luminant's changes in Appendix III of Staff's TA Addendum.

(i). 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 addressees state-listed threatened and endangered species for the renewal term.

(j). USFWS commented that Section 144 of the fish and wildlife plan does not include several items, including details regarding an NLT protection site (section 2.1.3.3, pages 144-18 to 144-20). USFWS notes that the details for the 17-acre preservation site can be found in the USFWS letter dated March 15, 2015. Staff noted that details for the 17-acre preservation site can be found in Section 132, Appendix 132-H of the application.

(k). USFWS commented that it understood that the two individual NLT plants present in the mining area will be relocated to a 17-acre site that currently has over 30 NLT individuals in accordance with the NLT protection plan. USFWS recommends that the resources that would be used for the relocation of the two NLT plants would be better spent with planning long-term protection and long-term management for the 17-acre site, as the success rate of relocating NLT is low. USFWS recommended Luminant continue to work with NLT experts to find a suitable location with the 17-acre site if relocation occurs. Staff recommends keeping the transplanting language within the protection plan as it provides an avenue for Luminant Mining if they should find future NLT, as well as allowing Luminant to move forward with their mining operations while a deed restriction is in the process of being developed.

(l). USFWS commented that it understands that a conservation easement, the preferred method to protect property in perpetuity, is not possible based on information contained in Section .144 and the constraints of the site. USFWS recommends language be added to the deed restriction document that involves a third party to ensure long-term protection. Luminant revised Section .144 of the application, page 144-20 (SD2), to include language indicating that the deed restriction documents will be provided to the Commission and USFWS for review, when available, and that Luminant will submit the final agreement to the Commission as a permit revision. Staff noted Luminant's revision and noted that in accordance with §12.215 of the Regulations, Staff coordinates with USFWS on revisions to fish and wildlife plans.

(m). USFWS commented that it disagrees with a statement included in the "Kosse Mine-draft NLT Transplant Plan" dated September 2018 by Blanton & Associates, Inc., stating that the protected site would only be "preserved and maintained in the existing condition and as a potential research/learning site, available for conservation and research purposes, as long as the population exists and NLT remains federally listed." USFWS recommends the site be permanently protected, with assurances for long-term vegetative management for NLT-suitable habitat, in addition to additional funding that may be needed for potential research. USFWS recommended that Luminant remove any statement referencing the NLT with regard to its listing status. In response, Luminant removed the reference to the listing status of the NLT from Section .144 of the application in SD2. Staff noted Luminant's modification to Section .144 in the TA Addendum.

43. Luminant will meet requirements for air pollution control. No air quality monitoring plan must be filed in that the permit area is not located west of the 100th meridian west longitude

and no other factors exist which result in the need for monitoring. A plan for fugitive dust control practices is included in the approved permit that will adequately control fugitive dust resulting from mining and reclamation operations as required by §12.143(b)(2) of the Regulations, including temporary closure of roads when not in use, the use of water trucks for reduction of dust from traveled surfaces, the application of asphalt emulsions, and prompt revegetation with temporary and permanent vegetation.

44. The application, as supplemented in SD2, includes a protection and enhancement plan in accordance with §12.144 of the Regulations to minimize disturbances and adverse effects on fish and wildlife and related environmental values during the proposed operations and reclamation.

(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.

(1). Steps will be taken to protect bald eagles and to relocate timber rattlesnakes in accordance with a TPWD Scientific Permit, if encountered within the proposed permit area, and Luminant will notify the Commission if they are encountered. Luminant coordinated with USFWS in 2008 to ensure compliance with the Migratory Bird Treaty Act (MBTA). Luminant contacted USFWS again in 2015 by telephone and by letter dated February 4, 2015 (Appendix 144-A, SD2) to solicit input and to follow up on prior consultation regarding MBTA compliance. The July 8, 2015 response letter from USFWS, contained in Appendix 144-A (SD2), indicated that USFWS believed that Luminant's mining and reclamation activities fell within the scope of prohibited conduct under the MBTA. In a September 4, 2015 ruling by the United States Court of Appeals for the Fifth Circuit [*United States v. CITGO Petroleum Corp., 801 F.3d 477 (5th Cir. 2015)*], the Court held 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 (SD2)] 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, then Luminant is not exposed to potential liability under the MBTA. In a response letter dated June 20, 2016 [Appendix 144-A (SD2)], USFWS continued to recommend incorporation of the NSCM in Luminant's wildlife plan to provide "maximum protection from potential liability under the MBTA."

(2). 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, as supplemented in SD2).

(3). Luminant's operation does not involve intentional killing or taking of migratory birds, their eggs, or their nests. Luminant has incorporated 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 letter dated July 8, 2015 in Appendix 144-A (SD2)] and by Staff. In response to Application Deficiency No. 144-1, Luminant revised its BMPs to include elements of NSCM and committed to prioritize clearing activities outside the prime breeding season/nesting season, as appropriate and feasible.

(b). In Appendix 144-E, Luminant has included its Interior Least Tern Management Plan for the mine which is based on providing manageable nesting and foraging habitats that are compatible with mine activities and that increase available nesting and foraging habitats for the interior least terns. The terns have nested at the Big Brown mine that is approximately 45 miles away from the Kosse Mine and have been observed nesting at the Kosse Mine since 2011. They appear to be attracted to certain disturbed areas associated with mining such as newly reclaimed areas and recently cleared areas within the mine. In 2011, terns were observed and protected in the DIII area, a recently planted area at the time, and in the DVIII area where a suitable material stockpile was being developed. Two similar areas were used by terns in 2012, as well as in 2013 on suitable material recently placed, where grading operations were ongoing at the same time. Similarly, nesting occurred at two locations in the DI and EI areas in 2014 and in the DI and EI areas in 2015, with two and four colonies, respectively, all on recently leveled material. Luminant's plan uses a typical nesting period, May through September, and includes assessment annually in March. Active mining and reclamation areas will be modified using deterrent strategies that make the areas unattractive to terns, and areas identified as potential nesting habitat and where no operations are planned will be left undisturbed and unplanted to provide areas suitable for tern nesting. If suitable areas away from mining activities are not identified, seasonal nesting areas may be constructed to ensure nesting habitat is available. Luminant further describes specific modification and implementation activities, deterrent methods, and nesting habitat enhancement.

(c). No record of occurrence of the Houston toad (HT) exists within or in the immediate vicinity of the renewal expansion area. Blanton conducted presence/absence surveys for the HT during the 2015, 2016, and 2017 breeding seasons, and no toads were observed. The 2016 and 2017 surveys were conducted after approval of Permit 50B and in accordance with the survey plan in Appendix 144-F. By letter dated March 1, 2018, the Commission stated that no further HT surveys are required for the Permit 50B permit term. (pg. 144-17, application). If HTs are discovered within the renewal/expansion area, then Luminant will comply with section 12.380 of the Regulations by promptly reporting a sighting of the species to the Commission and will comply with the Incidental Take Statement set forth in the 1996 Biological Opinion (USFWS 1996), if a sighting of an HT constitutes a take under the Endangered Species Act.

(d). In Appendix 144-G, Luminant included a previously-approved NLT Survey Plan. Two NLT plants were identified in the renewal area during a 2014 survey. These two plants are within the disturbance boundary for this renewal/revision/expansion application. Luminant proposes to coordinate with the Commission and USFWS to develop a plan to transplant the plants to a protected site. Luminant committed to conducting three years of additional surveys (starting in 2016) in undisturbed portions of the renewal area within the proposed mining disturbance area. Blanton conducted the post-2016 surveys in accordance with the NLT survey plan contained in Appendix 144-G. The NLT survey plan includes species and habitat descriptions, including information describing the NLT and its known and preferable habitats. The historic range of the NLT includes a 13-county area of east-central Texas within the Post Oak Savannah Vegetation Region. The survey plan discusses federal and state regulations protecting the species and requiring reporting. The plan also provides survey methods to be used to determine the occurrence of potentially suitable NLT habitat in the study area as well as procedures to locate and identify any species within the study area. Blanton, conducting the NLT survey on behalf of Luminant, committed to contact a species expert regarding NLT blooming conditions and coordinate with Commission Staff and USFWS to discuss timing and suitability of any survey effort with respect to environmental/growing conditions and observations of the reference population when conducting NLT surveys. The area of the known NLT population will be deed recorded to ensure it is preserved and maintained in its existing condition and as a potential research/learning site, available for conservation and research purposes, as long as the population exists. Luminant is in the process of developing language for the deed restriction document.

(e). In Appendix 144-H, Luminant included a previously approved LFSV Plan for the Kosse Mine. A presence/absence survey was conducted for the LFSV in 2014 in portions of the renewal area. No LFSV plants were found in the 2014 survey and no direct effects on the species were anticipated. Blanton conducted presence/absence surveys for the LFSV in 2016 and 2017, in areas of potentially suitable habitat throughout the renewal area. Blanton also conducted a presence/absence survey for the LFSV in the expansion area in 2015 and 2017. No LFSV species were identified in the surveys and, based on a lack of suitable habitat, no impacts to the species are anticipated. Blanton's surveys for the LFSV were all conducted in accordance with the approved LFSV survey plan (Appendix 144-H). The plan includes species and habitat descriptions, including information describing the species and its known and preferable habitats. The known range of the LFSV covers a three county area of east Texas within the Post Oak Savannah Vegetation Region that includes Freestone, Leon, and Robertson Counties. The survey plan discusses federal and state regulations protecting the species and provides survey methods to be used to determine the occurrence of potentially suitable LFSV habitat in the study area as well as procedures to locate and identify any species within the study area. If LFSV species are located in the area, then Luminant will consult with USFWS and the Commission to determine the most appropriate avoidance and/or protection measures.

(f). In Appendix 144-I, Luminant included a previously approved Mussels Survey Plan for the Kosse Mine. General baseline field surveys for state listed endangered mussels were conducted in 2011 in the renewal area, in 2015 in the expansion area, and 2016 in the renewal area on Steele Creek and the lower portion of Cox

Creek. In the 2016 survey, Blanton recorded the presence of three smooth pimpleback mussels at the Steele Creek sampling location. Blanton conducted the 2016 survey in accordance with the approved survey plan (Appendix 144-I). The plan includes species and habitat descriptions for three freshwater mussels, the threatened false spike (*Quadrula mitchelli*), the smooth pimpleback (*Quadrula houtonensis*), and the Texas fawnsfoot (*Truncilla macrodon*). In addition to designation as state-listed threatened, the smooth pimpleback and Texas fawnsfoot are federal candidates for listing under the Endangered Species Act (ESA), but at this time are afforded no federal regulatory protection. The mussel survey plan includes survey methods and study parameters to effectively evaluate the presence or absence of each of the mussel species within the study area. Survey methods are presented in the plan based on knowledge of natural resources in the region, a review of relevant literature, and discussions with malacological experts. The survey plan (Appendix 144-I) was developed to produce a final technical report, which was submitted to the Commission in June 2017, including discussion of the species and their habitats, survey methods, background site characterization, results of the field survey, and discussion of the conclusions developed from the survey results.

(g). Measures are included related to the removal of surface features, construction of roads and other facilities, proper design of diversions and stream channel restoration, roadway stream crossings, and timely revegetation of stream disturbances. Some ponds will be stocked with fish of appropriate species and stocking rates. Pond edge areas will serve to increase habitat diversity and provide cover and food for birds.

(h). The protection plan, as supplemented in SD2, meets the requirements of §§ 12.144 and 12.380 of the Regulations. The plan includes protective measures during active mining, mining in narrow bands to lessen impacts, and enhancement measures including restoration of streams and other wetlands, and construction of ponds and impoundments. Some impacts to waters of the U.S. that were previously authorized under Luminant's USACE Nationwide Permit No. 21 are no longer authorized by that permit, as it expired on March 12, 2018. Luminant submitted an application for an Individual Permit for anticipated impacts to waters of the U.S. in the Kosse renewal/revision/expansion area to the USACE on January 10, 2018. No disturbed areas will be impacted without appropriate USACE authorization. When Luminant 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. Should this permit differ from the proposed wetlands impact plan contained in the application, as supplemented, Luminant must file an application for revision with the Commission. Loss of wetlands will be mitigated. Luminant has included the following information regarding the presence of wetlands within the permit area (Section .133, as supplemented in SD2) and will comply with mitigation in accordance with acreage and linear feet as the units of measure to quantify impacts and mitigation. Wetland acreage and stream-channel linear feet are the units of measure in all existing surface mining and reclamation permits in Texas. Within the renewal/expansion area, the total areal extent of waters of the United States, including wetlands, is 719 acres. This acreage consists of the following types of waters of the United States:

JURISDICTIONAL CATEGORY	TOTAL PREMINE ACREAGE IN THE 16,543 ACRE PERMIT AREA
FORESTED WETLANDS	497
NON-FORESTED WETLANDS	81
PONDS	59
STREAM CHANNELS	82
TOTAL	**719**

The projected compensatory mitigation ratios, based on ratios in the existing Kosse Mine USACE NWP 21 Authorization are: forested wetlands, 2.0:1.0; non-forested wetlands, 1.5:1.0; ponds, 1.0:1.0; and stream channels, 1.0:1.0.

(i). Luminant includes vegetation lists for species for wildlife habitat and compensatory mitigation areas (Appendix 144-C, SD2) and will use appropriate species with proven nutritional value for fish and wildlife for planting and distribution that are appropriate to lands reclaimed to fish and wildlife habitat.

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

(a). A detailed timetable for the completion of each major step remaining in the reclamation plan for the permit area is included in the application, in accordance with §12.145(b)(1). This timetable is contained on page 145-9 of the application and includes 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 within areas with established ground cover.

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 indicates a combined Phase II and III bond release application will be submitted to the Commission within one year following completion of the extended responsibility period. The timetable also includes provisions 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, and that Phase II and/or Phase III bond release applications will be submitted between April 1 and September 30.

(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).

(1). Luminant provided its reclamation cost estimate in Section .145, Appendix H (SD2). The estimate, $177,347,971.44, includes costs for mined areas, disturbed areas, and ancillary areas. Staff's reclamation cost estimate is $200,777,829. Staff's estimate includes the following disturbance categories: Dragline Mined Areas, Disturbed Areas, Phase I, and Ancillary Areas.

(2). The Commission adopts Staff's estimate of $200,777,829 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.

(3). 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 Kosse 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) 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 as follows for the following mine areas: DI Area: [Figure 139(F)-37, Table 139(T)-4]: Average annual pit progression during the proposed permit term will be 6 pit widths @ 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). Luminant requests a maximum of 24 months to complete backfilling and grading, and Luminant requests a maximum distance of 1,800 feet; DIII Area: [Figure 139(F)-38, Table 139(T)-4]: Average annual pit progression during the proposed permit term will be 7.3 pit widths @ 150 feet each, with annual backfilling and grading time equal to 1,800 feet divided by 1,100 feet times 12 months per year, equaling 20 months (rounded). A time frame of 20 months and a distance of 1,800 feet are requested to complete backfilling and grading for the DIII Area; DV Area: [Figure 139(F)-39, Table 139(T)-4] Average annual pit progression during the proposed permit term will be 6.3 pit widths @ 150 feet each, with annual backfilling and grading time equal to 1,800 feet divided by 940 feet times 12 months per year, equaling 23 months (rounded). A time frame of 23 months and a distance of 1,800 feet are requested to complete backfilling and grading; E1 Area: [Figure 139(F)-40 and Table 139(T)-4]: Average annual pit progression during the proposed permit term will be 6.8 pit widths @ 150 feet each, with annual backfilling and grading time equal to 1,800 feet divided by 1,030 feet times 12 months per year, equaling 21 months (rounded). A time frame of 21 months and a distance of 1,800 feet are requested to complete backfilling and grading; and Auxiliary Mine Areas: Clearing distances for an auxiliary area are determined according to the area in which the auxiliary is located. Backfilling and grading of the remaining auxiliary areas mined with auxiliary equipment will be completed in 180 days following coal removal and shall not be more than 4 pit widths behind the active pit (approximately 1,000 feet) in accordance with section 12.384(a)(3) of the Regulations. The application, as supplemented, includes the postmine contour maps, Plates 139-2-1 and 139-2-2, and the postmine slope maps, Plates 139-3-1 and 139-3-2. These maps and the Slope Comparison Table, 139 (T)-1, indicate that premine and proposed postmine slopes are similar; a slight increase of approximately 5.9% occurs in the 0-5% slope, and slight decreases occur in the 5-10% slope (approximately 4% or less), and in the 10-15% and greater than 15% slope (approximately 1% or less). Based on these proposed changes, the postmine topography will approximate premine topography.

(d). Luminant has included information to meet the requirement of §12.145(b)(4) 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) and has indicated that only mobile equipment shall be used in the selective handling of oxidized overburden approved for placement for the reclamation of the top four feet of reclaimed soils in all mining areas except for the DV Area. In the DV Area, Luminant proposes to use selective handling by the dragline to replace the postmine top four feet with mixed (oxidized and reduced) overburden and interburden materials as suitable substitute materials. Luminant has provided a soil-handling plan that is acceptable as a method to prevent the presence of acid- and/or toxic-forming materials in the top four feet of reclaimed soils. Approval of the use of topsoil substitute material is based on the availability of sufficient suitable materials, the determination that the resulting soil medium is

equal to or more suitable for sustaining revegetation than is the available topsoil, and that the substitute is the best available to support revegetation.

(1). Luminant indicates (p. 145-A-12) that the information presented in Appendix 145-A demonstrates that the suitable replacement material is a viable option for use within the top four feet of leveled minespoil. Key findings of Luminant's study are: 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; 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 Kosse renewal/revision/expansion area provide a limited plant growth medium. Comparison of the selected suitable oxidized intervals to overburden characteristics supports the conclusions that selective handling of overburden can provide materials more suitable for postmine topsoil than are available in native soils.

(2). 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 that the suitable replacement material extends from natural ground surface to the shallowest of the base of the oxidized zone or 5 feet above the uppermost lignite seam, with the following exceptions: a 5-foot buffer zone above and below all rider seams; and all lignite seams and rider seams, including parting clays.

(3). Mobile equipment will be the means for selective handling of suitable material for placement in the top four feet of reclamation in the DI, DIII, and EI Areas due to an inadequate volume of suitable material for selective handling with a dragline in those areas. Selective handling with a dragline will be utilized in the DV Area.

(4). There are areas proposed to be mined in this permit term, in the DV area, where the suitable replacement material is thick enough to be selectively handled with a dragline, as shown on Plates 127-9 and 127-10.

(5). Dragline operators will be provided with appropriate training to avoid placement of acid-forming and/or toxic-forming materials (AFM/TFM) in the top four feet of reclamation.

(e). As set out in §12.145(b)(5), the application, as supplemented, includes a plan for revegetation as required by §§12.390-12.393 and 12.395 of the Regulations. Luminant proposes a plan for revegetation in the application addressing the elements contained in §12.145(b)(5)(A – G). These include, as set out below: (1) a schedule for revegetation, species and amounts per acre of seeds and seedlings to be used, and methods to be used in planting and seeding, mulching techniques, irrigation and pest and disease control, (2) measures to be used to determine the success of revegetation (§12.395), and (3) a soil-testing plan for evaluation of the results of topsoil handling and reclamation procedures related to revegetation.

(1). 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. 45(a). The application includes information on reclaiming land for erosion control and wildlife use (Section .144, Appendix 144-B, as supplemented in SD2), and planting lists for fish and wildlife habitat and compensatory mitigation areas (Section .144, Appendix 144-C, as supplemented in SD2) that include native and introduced species of forbs and grasses, native trees, shrubs, vines, and aquatic plants. The application contains seeding rates and planting dates for grasses and forbs for grazing or hay production (Appendix 145-C, as supplemented in SD2). Appendix 145-B, as supplemented in SD2, specifies desirable invader species for fish and wildlife habitat and pastureland (up to 25% of the ground cover). Appendix 145-D sets out forage production standards for various grasses. Information is also provided for land management and fertilization, mulching, and other erosion control techniques. Luminant will use grazing as a management technique in accordance with the Commission's *Procedures and Standards for Determining Revegetation Success on Surface Mined Lands in Texas* and *Normal Husbandry Practices for Surface-Mined Lands in Texas*. Luminant will use irrigation only as necessary to extend the season to establish vegetation; mulching techniques will include use of cool-season annual or perennial species, bermudagrass sprigs, bermudagrass sod, and/or straw or hay. Luminant will follow state laws regarding pest control. Forage production standards for Luminant's list of grasses are included in Appendix 145-D. As noted above in Finding of Fact No. 36, Luminant agrees that within 60 days of permit issuance, Luminant will correct discrepancies between Table II in Appendix 145-D, Plate 134-1, and Table 134-1 in section .134, in accordance with revised Permit Provision No. 2.

(2). To determine the success of revegetation, Luminant will follow standards set out in the Commission's *Procedures and Standards for Determining Revegetation Success on Surface-Mined Lands in Texas.* For fish and wildlife habitat, ground cover will meet a minimum of 90% of the 78% technical standard [§12.395(a)(2)], and trees and shrubs will meet a minimum 90% [§12.395(a)(2)] 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)]. For

pastureland, ground cover will meet at least 90% of the 95% technical standard [§12.395(a)(2)], and productivity will meet at least the approved production standard during any two years of the extended responsibility period (except the first year). In addition, trees and shrubs must be healthy and have been in place for not less than two growing seasons, and at the time of bond release, at least 80% of the trees and shrubs used to determine success shall have been in place for 60% of the applicable minimum period of responsibility [§12.395(b)(3)(B)]. The proposed permit area receives more than 26 inches of rainfall per year; an extended responsibility period of five years is applicable to the proposed permit area.

(3). Luminant includes a soil-testing plan in the application for evaluation of the results of soil handling and reclamation procedures related to revegetation. Appropriate select material placement and soil testing, in accordance with the Soil Testing Plan and Postmine Performance Standards is included as Appendix II to this Order, will ensure that the reclamation of the top four feet of reclaimed soils results in the required soil medium. The Soil Testing Plan was taken from Appendix VII of Staff TA Addendum. Appendix VII in the TA Addendum is titled "Soil Testing Plan and Postmine Performance Standards." Postmine performance standards are addressed in Table 145-1 (Sec. 145, application) that contains the areally-weighted frequency distribution values against which postmine samples will be measured to determine compliance. Staff indicates Luminant has corrected the values in Table 145-1 but did not include Table 145-1 in Appendix VII of its TA Addendum. Appendix II to this Order includes the soil testing plan taken from Appendix VII of Staff's TA Addendum and postmine mine performance standards set-forth in Table 145-1 of the application. The Commission approves the postmine soil testing plan and performance standards ("Soil Testing Plan") as set out in Appendix II. Further, as Luminant has corrected the values in Table 145-1, existing Permit Provision No. 3 is now moot. Existing Permit Provision No. 3 is removed.

(f). Measures are included to maximize the use and conservation of the coal resource as required in §12.356 in accordance with §12.145(b)(6). Luminant will conduct surface mining so that the best technology currently available is used to minimize future re-disturbance and to recover all economically mineable seams.

(g). The application, as supplemented, includes a plan to ensure that all debris is covered or adequately disposed of, and that all acid-forming and toxic-forming materials and other materials required to be covered are covered with a minimum of four feet of non-toxic and non-acid-forming materials in accordance with §12.145(b)(7).

(h). As required by §12.145(b)(8), Luminant will seal all bore holes, abandoned water wells, monitoring wells, dewatering wells, and oil and gas wells in accordance with the following, as applicable: Coal Exploration Regulations, §12.331-333, Texas Department of Licensing and Regulations, 16 TAC Part 4, §76.104, et seq., 16 TAC Part 1, §3.14 (as approved by the Commission). The plan, as supplemented, is sufficient and complies with §§12.331 – 12.333 of the Regulations.

(i). Luminant has included in the application, as supplemented, a description of steps to be taken to comply with requirements for air quality and water quality laws in accordance with §12.145(b)(9). 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 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. The information provided is sufficient to indicate that Luminant will comply with requirements of the USACE, the Clean Air Act (42 U.S.A. §7401 *et seq.*), and the Clean Water Act (33 U.S.C. §1251 *et seq.*).

46. The application contains sufficient information to meet the requirements of §12.147. Luminant proposes alternative postmine land uses for numerous tracts; Luminant owns virtually all of the tracts proposed for alternative land uses. A depiction of the proposed postmine land uses is included on Plates 147-1 and 147-2. A summary is included in Table 147-1 of the application indicating that Luminant will reclaim 12,042 acres of disturbed and mined lands as follows: pastureland, 82% of disturbed and mined lands (9,847 acres); fish and wildlife habitat, 13% of disturbed and mined lands (1,594 acres); developed water resources, 4% (509 acres); and industrial commercial, residential, and undeveloped, each at or less than 1% (92 acres). In the application, as supplemented in SD1 and SD2, Luminant describes the proposed postmine land uses, the plan for reclamation, a timetable, and information regarding bonding for performance. These proposals will not result in undue delay in reclamation or any hazard to public health or safety or threat of water-flow diminution or pollution. Adequate plant residue and stubble height will be maintained to sustain production and prevent soil erosion in accordance with Table 6 of the Commission's *Procedures and Standards for Determining Revegetation Success on Surface-Mined Lands in Texas*. Fish and wildlife habitat areas are dedicated wholly or partially to the production, protection or management of species of fish or wildlife. Luminant has demonstrated that the alternative land use is economically viable, of more beneficial use to the landowner (Luminant) and is a reasonable reclamation alternative. Luminant will, however, increase developed water resources, will develop some lands as fish and wildlife habitat, and will use species to increase food and cover for wildlife in pastureland areas. Staff analysis considers the alternative land uses as higher or better land uses. The alternative land uses as proposed are approved. Staff noted that the disturbance boundary as shown in Plate 147-1 encompasses areas of WOTUS that are no longer authorized by USACE for impact. Luminant indicated on pages 144-28 and 144-29 of the application, as supplemented in SD2, that no WOTUS will be impacted without appropriate USACE authorization, and Luminant includes reference to the pending the USACE individual permit no. SWF-2019-00033 that will authorize impacts to WOTUS within the proposed expansion area, satisfying Staff's noted application deficiency.

47. The application, as supplemented, contains required information for ponds, impoundments, embankments, and dams as required by §12.148 of the Regulations. Table 139(T)-6 contains the primary sediment control structures and impoundment schedule. Sediment Ponds (SP) D-9 and D-13 are proposed for the requested permit term. Approximate in-service dates are set out in Table 139(T)-6. Existing approved sediment ponds are D-1, D-2, D-5, D-6, D-7, D-8, E-1, E-3, E-4 (temporary pond) and E-5. No permanent or temporary impoundment detailed design plans are proposed within the application; however, they will be submitted at a later date and will comply with postmine land use Commission regulations. The general design plan information for

permanent impoundments proposed within the permit term are located in section .148, Appendix B of the application. The Permanent Impoundment Schedule is located in Table 139(T)-8.

48. The application, as supplemented, contains required information for diversions as required by §12.150. Luminant proposes the following diversions during the permit term as shown in Table 139(T)-7: D-7A Modification No. 1, D-7C, D-9A, D-13A, E-3F, Willow Creek Temporary Relocation, and Willow Creek Permanent Restoration. Previously approved diversions as shown on Table 139(T)-7 include: D-1A; D-1B Modification No. 1; D-1C; D-2A; D-2B-a; D-2B-b; D-5A; D-5B; D-5B Modification No. 1; D-5C; D-6A; D-6B; D-6C; D-6F; D-6H Diversion No. 1; D-6J; D-6K; D-7A Diversion Reanalysis; D-7B; D-8 Diversion No. 1; D-110 Diversion No. 1; D-133 Diversion No. 1; D-143 Diversion No. 1; D-157 Diversion No. 1; Heads Creek Permanent Diversion No. 1, Mod. 3; Heads Creek Permanent Diversion - Nos. 2 and 3 Mod. 1; Heads Creek Permanent Diversion No. 4, Mod. No. 1; Heads Creek Temporary Reroute No. 1; D-127 Diversion No. 1; E-1A Mod. No. 1; E-1B; E-1D; E-1 Haul Road Diversion Nos. 3, 4 and 5; E-3A; E-3C; E-3D; E-3E; E-103 Permanent Diversion No. 1; Cox Creek Permanent Relocation; Owens Creek Temporary Diversion Phase 1, 2, and 3, Owens Creek Permanent Relocation; Stockpile A MFD No. 1; DI MFD - Nos. 1, 14, 19 and 20; DIII MFD No. 21; DV MFD No. 15; and E MFD Nos. 12, 13 and 14. General design plans for the proposed diversions were submitted in the permit application in Section .148, Appendix B. No detailed design plans for diversions were included in the application. Detailed design plans for the diversions will be submitted for approval by the Commission prior to construction.

(a). The application also includes required information for temporary miscellaneous flow diversions (all diversions of flow other than from intermittent or perennial streams) in accordance with requirements of §12.341. The miscellaneous flow diversions minimize adverse impacts to the hydrologic balance within the permit area and adjacent areas to prevent material damage outside the permit area and to assure the safety of the public. Their design, location, construction, maintenance, and removal will be sufficient to meet the performance standards of subsection (a), and they are designed so that the combination of channel, bank, and floodplain configuration is adequate to safely pass the peak runoff of a two-year/6-hour design storm event for a temporary diversion.

(b). No diversions will be located within prohibited distances from occupied dwellings or the permit boundaries, cemeteries, cultural resource sites, or in national parks, refuges, national system of trails, wilderness preservation areas, or wild and scenic rivers.

(c). The following perennial or intermittent stream channel diversions will be constructed during the proposed permit term: Willow Creek Temporary Relocation, Willow Creek Permanent Restoration, and Owens Creek Permanent Relocation (SD2). No detailed design plans of perennial or intermittent stream channel diversions are proposed in the application. Perennial and intermittent stream channels will not be diverted without prior approval from the Commission, and all such diversions will be stable, will protect against flooding and related damage, and will prevent additional contributions of suspended solids to streamflow outside the permit area using the best technology currently available. The diversions will comply with local, state, and federal laws and regulations. Diversion designs will incorporate appropriate channel linings, energy dissipators at discharge points

where necessary, and other erosion protection measures. All diversions are designed to incorporate appropriate slope of banks and use of concrete or grass linings as applicable. Temporary diversions will be removed when they are no longer needed. All diversions will be appropriately bonded.

49. Luminant has requested variances from the prohibitions against conducting activities within 100 feet of perennial or intermittent streams set out in §12.355 of the Regulations. The Commission may approve disturbances within 100 feet of perennial or intermittent streams: (1) if proposed activities will not cause or contribute to the violation of applicable State or federal water quality standards and will not adversely affect the water quantity and quality or other environmental resources of the stream [§12.355(a)(1)], and (2) in cases of temporary or permanent stream-channel diversions, they will comply with §12.341 of the Regulations related to the requirements for approval of diversions [§12.355(a)(2)]. Luminant proposes stream buffer variances for waterway and creek segments depicted in Plates 139-4-1 (SD2) and 139-4-2, *Stream Channel Buffer Zone Variance Map*, which will support disturbances projected to occur within the proposed permit term for stream sections in Heads Creek, Cox Creek, Steele Creek, Owens Creek, and Willow Creek. In compliance with the requirements of §12.355, Luminant has presented information sufficient to meet the requirements of §12.355(a)(1) and (2). All temporary and permanent stream channel diversions will comply with §12.341 in that the design capacities and construction will be at least equal to the capacity of the unmodified stream channel immediately upstream and downstream of the diversions; that is, the combination of channel, bank, and floodplain configuration will be adequate to safely pass at a minimum the peak runoff from a 2-yr/6-hr design storm event (for temporary ephemeral), a 10-yr/6-hr design storm event (for permanent ephemeral), or, a 100-yr/6-hr design storm event (for stream channel diversions). A registered professional engineer will certify designs as meeting the performance standards and design criteria. In areas where the stream channel is impacted by construction activities, a storm-water pollution prevention plan will be followed. Detailed design projects will include such protection plans.

50. The application 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. This includes Luminant's determination of probable hydrologic consequences (PHC) set out in Section .146 of the application, Appendix D, as supplemented in SD2, including a long-term groundwater monitoring plan (LTGM plan), a long-term surface water plan (LTSM) plan, alternate water supply information, and operational procedures, as required by §§12.146 (c) and (d) of the Regulations.

(a). Alternative water supplies are identified (Finding of Fact No. 32), should impacts to existing water supplies occur as a proximate result of surface mining operations.

(b). Selective handling of overburden and appropriate soil testing will identify acid-forming and/or toxic-forming materials (AFM/TFM), and Luminant has included an alternative testing plan after treatment or re-handling to ensure that all AFM/TFM are placed below the top four feet of reclaimed soils. In addition, low-permeability confining beds that exist beneath the lowest lignite seam to be mined should restrict the movement of affected groundwater into underburden sands, except in

areas where the confining layer is thin or absent. The mixed overburden that will be used in backfilling and grading will likely be less transmissive of water than the premine overburden. Resaturation of the overburden is estimated to be from one to several tens of years. Luminant predicts that impacts to groundwater quality will include slight to moderate increases in TDS (total dissolved solids) concentrations.

(c). 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, and Luminant will control this water as a part of its water control plan. Advance dewatering will also cause water level declines. Luminant does not intend to depressurize the underburden, but some underburden depressurization is still likely to occur. In the expansion area, no depressurization is anticipated for the proposed five-year permit term. Groundwater declines will be greater in areas of greater saturated sand thickness. Luminant has identified areas that will require dewatering, including saturated sands greater than 20 feet thick (Plate 128-4), located in the E Area. No advance dewatering is anticipated for in the DI, DIII, and DIV areas. Luminant contracted for computer modeling to predict potential impacts to water wells. Conservative factors such as boundary conditions and recharge were included in the model. Pumping schedules used in the modeling are set out in Table 146(d)-1. Staff's TA comments that Luminant sufficiently addressed dewatering activities in the application, as supplemented, and recommends approval of these activities. Luminant does not propose any depressurization activities in this application; thus, Staff recommends existing Permit Provision No. 4, relating to active well-field dewatering and depressurization activities, not be retained. Existing Permit Provision No. 4 is removed.

(d). The five-foot drawdown contour predicted from modeling from overburden dewatering could extend to a maximum of 5,000 feet beyond the dewatering fields and mine blocks, and the maximum extent of five-foot drawdown from incidental underburden depressurization could extend a slight distance beyond the drawdown predicted for overburden dewatering and pit inflow. More than 100 wells fall within these areas [Plate 146(d)-1 (SD2)]. A number of potentially impacted water wells listed in Table 146(d)-2 (SD2) have been destroyed or abandoned. Wells located closer to the mine pits, completed in the same hydrogeologic units as those being dewatered or depressurized are more likely to be negatively impacted, especially if the completion depths are less than 300 feet from surface.

(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)-12 through 14, application as supplemented in SD2). 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 a potentiometric surface elevation chart that lists the LTGM wells, the baseline water levels from the wells, the fourth quarter (or most recent) water level from the LTGM wells, and the change in water levels, along with a summary of groundwater withdrawal amounts, a map showing the approximate location of the active well field during the previous year and the change in water levels, and an evaluation, with summary, that compares the observed effects from dewatering to the effects predicted in the Probable Hydrologic Consequences (PHC), 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. If no dewatering activities occurred during the year, Luminant will submit a letter to the Commission within 60 days following the end of each calendar year notifying the Commission that no such activities occurred. Discharges of water from dewatering and depressurization activities will be routed through a final discharge pond prior to release from the permit area or will be monitored at the pipe outlet (the location of the TPDES sampling point) and will be monitored and reported to the Commission in accordance with Tables 146(d)-9, 146(d)-10 and 146(d)-11.

(f). Luminant proposes a LTGM plan that will provide sufficient information to ensure the protection of the groundwater hydrologic balance. Luminant will monitor fourteen (14) overburden wells, fourteen (14) spoil wells, eleven (11) Calvert Bluff underburden or interburden wells, and ten (10) Simsboro underburden wells as depicted on Table 146(d)-4, for a total of 49 wells. Spoil wells will be installed within one year of backfilling and grading unless otherwise approved by the Commission or the Director. Quarterly samples will be taken and reported to the Commission within 30 days following the end of the quarter in which they were sampled, for the following parameters: total dissolved solids (TDS), total and dissolved iron (Fe), total and dissolved manganese (Mn), sulfate (SO_4), chloride (Cl), field EC (electrical conductivity), field pH (s.u.), and field temperature. For spoil monitoring wells, annual samples will be taken for 12 trace elements [p. 146(d)-13, application, as supplemented in SD2]. If a new or replacement well is installed, Luminant will conduct one-time sampling for all of the quarterly and annual parameters, as well as calcium, magnesium, carbonate, nitrate- nitrogen, potassium, bicarbonate, and sodium.

(g). The application, as supplemented in SD2, includes appropriate surface water information (Finding of Fact No. 31), modeling of potential impacts on surface water quantity and quality, and a long-term surface water monitoring (LTSM) plan sufficient to detect concentrations of required effluent parameters.

(1). Luminant's surface water modeling effort conservatively addressed 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 650 acres of surface area for life-of-mine water resources; this amount was compared to streamflow records for the monitoring station SW-2A immediately downstream of the permit area. The average annual net evaporative loss represents less than 6% of the average annual flow at that location. 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 10- 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 10-year/24-hour design storm event; they are predicted to increase during mining; after mining and revegetation, they are predicted to decrease to below pre-mine conditions.

(2). Measures will be taken, during and after the proposed surface mining activities, to minimize additional contributions of sediment to surface waters, so 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.

(a). Results of sampling of each final discharge pond will be reported to the Commission. Watersheds will also be monitored at stream sampling stations that will be located appropriately to compare results of sampling at undisturbed and disturbed watersheds ("paired watersheds") along Steele Creek upstream and downstream of proposed disturbances. The stream stages will be monitored using staff gauges with channel rating curves, and rainfall will be recorded using a continuous recording rain gauge. Luminant describes TCEQ sampling requirements and procedures and proposed monitoring and reporting to the Commission.

(b). Table 146(d)-9 summarizes the Point Source and Hydrologic Balance monitoring procedures encompassing the LTSM Program, specifies monthly reporting per the TPDES permit, quarterly reporting of final discharge ponds to be sampled weekly until final bond release is granted, quarterly reporting in an electronic format (along with paper copies of laboratory reports) for long-term monitoring stations for flow data (instantaneous), and water quality data (TDS, TSS, TSM, pH, and total and dissolved iron and manganese), with annual updates of outfall location maps (disturbed and undisturbed).

(c). 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 discharge ponds. Active mining final discharge ponds (ponds that contribute flow to a TPDES outfall) 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, Al and flow will be reported, and if Se is required by the TPDES permit, the Se limits will be based on TMDL limits set by TCEQ.

(d). For active mining final discharge ponds that discharge only during precipitation events within any 24 hour period less than or equal to the 10-year, 24-hour precipitation event, and for postmining final discharge ponds (pond 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.

51. A comprehensive update for the Kosse Mine cumulative hydrologic impact assessment (CHIA) of all anticipated lignite mining activities within a cumulative impact area in the Navasota River Basin contained in portions of Robertson and Limestone Counties was made by Staff in its review of Luminant's application for Kosse Mine Permit No. 50A (Docket No. C7-0026-SC-50-C; approved on February 7, 2012). Both surface water and groundwater impacts were assessed. Pursuant to §1.46(e), An updated CHIA including the mining activities in the Navasota River Basin and, specifically, the effects of mining activities in the expansion area is included in Appendix I to Staff's TA Addendum. All past, present, and proposed surface mining areas within the Navasota River Basin were included in the updated CHIA. The following summary statements were derived from information contained in the updated CHIA document:

For surface water:

7.1.2 Statement of Findings

(1) TDS concentration was used as the indicator parameter in a mass-balance analysis to project changes to the chemical quality of surface water. The largest projected increase will occur nearest the mine boundaries, as could be expected. At Mass-Balance Location B (downstream of the confluence of Steele Creek and the Navasota River), a potential increase in TDS concentration of 14.3% is projected (from 155 mg/L to 177 mg/L). This resultant concentration is significantly below the threshold value of 600 mg/L TDS for TCEQ Stream Segment No. 1209. At Mass-Balance Location A below the Lake Limestone dam, the cumulative effects from the Jewett Mine (Permit No. 32G) will be negligible due to the dilution effects of the Navasota River and Lake Limestone. The predicted increase in TDS concentration at the downstream node of the CIDA at the confluence of the Navasota River and the Brazos River is negligible (1.6% increase, from 421 to 428 mg/L TDS), indicating that no discernable effects will occur at this point. The cumulative impacts are insignificant, primarily the result of a large dilution effect from substantial runoff within the Navasota River Basin drainage area. TDS concentrations in the postmine period are predicted to be comparable to those of the premine period.

(2) The physical changes projected within the reclaimed areas of the mines will cause small changes in the quantity of surface water available for downstream users. Changes that can be expected to the hydrologic flow regime include some attenuation of storm events by surface-water impoundments and somewhat longer sustained flows in receiving streams. 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 Navasota River Basin CIDA. The attenuation of storm runoff and increase in sustained flows is insignificant when compared to the amount of storm runoff originating within the CIDA. For the proposed expansion of Kosse Mine, Luminant has shown in its PHC determination that, after mining and reclamation, runoff increases are slight

because of a change in land use from undeveloped forest to commercial forest, pastureland, and wildlife habitat.

(3) The geomorphic changes within the CIAs drainage basins were evaluated in accordance with the reclamation plan proposed for the disturbed areas. The restoration of disturbed land to its approximate original contour and its managed revegetation will result in a lower soils-loss rate overall from premine to postmine conditions. The possible increases in erosion during certain phases of mining will be mitigated by the construction of surface-water control and treatment structures.

For ground water:

7.2.2 Statements of Findings

(1) The projected aquifer-head drawdowns and declines as a result of mining activities in the Jewett (Permit No. 32G), Gibbons Creek, and proposed expanded Kosse Mines have been assessed for the CIA and found to be generally insignificant. This projection results primarily due to the limited extent of the sand bodies and the usually unconfined conditions within isolated watershed areas encompassing the overburden aquifer(s).

(2) The physical changes projected within the spoil areas of the Jewett Mine (Permit No. 32G), Gibbons Creek Mines and proposed expanded Kosse Mine will cause changes (resaturation rates, and geometry of the ground-water flow regime) that cumulatively are assessed to be insignificant. The principal reason for this result is the isolation of effects within generally unconfined aquifer conditions throughout local watershed areas. Transmissivity of the near-surface aquifers is expected to be permanently decreased within the reclaimed areas relative to the surrounding unmined areas.

(3) Mass-balance analyses used to project water-quality impacts of spoil-area ground water on surrounding aquifers indicate negligible cumulative effects throughout the CIA and CIDA for the subject mines. The same is true for the effects of spoil-area ground water on the streamflow water quality in critical reaches outside the mine areas. Material damage is determined to be insignificant, mainly due to the large dilution effects from the surrounding aquifers and from the substantial runoff within the large drainage areas.

52. The application, as supplemented, complies with the requirements of §12.152 of the Regulation concerning relocation or use of public roads. The Commission approves the requested road buffer variances included in the application, as supplemented, for the requested renewal term. Continued approval of the following road buffer variances, which were previously approved by the Commission, were requested for the proposed permit term in addition to one new road variance:

(a). Public Road Buffer Zone Variances;

(1). State Highway (SH) 7 – Along both sides, starting at a point .23 miles east of the intersection of FM 2749 and S. Hwy 7, to a point 3.85 miles east of

the aforementioned intersection, excluding a southern 100-foot buffer around King Williams Cemetery.

(2). RCR 460 Relocation – Along both sides, from the intersection of RCR 477 and RCR 460, continuing .63 east from the aforementioned intersection.

(3). RCR 462 – Along both sides, from the Limestone-Robertson County line for a distance of .61 miles south, excluding a western 100-foot buffer around Ebenezer Cemetery.

(4). RCR 477 – Along the north side, starting from the intersection of RCR 477 and RCR 460, continuing .15 miles southwest of the aforementioned intersection.

(5). LCR 714 Relocation – Along both sides, from the Limestone-Robertson County line for a distance of .93 miles north, excluding a western 100-foot buffer around Ebenezer Cemetery.

(6). LCR 730 – Along the north side, starting from the intersection of FM 937 and LCR 730 to a point .41 miles southwest of the aforementioned intersection. Along the south side starting .10 miles from the intersection of FM 937 and LCR 730 to a point .32 miles from the aforementioned intersection.

(7). LCR 732 Relocation – Along both sides, starting at a point .46 miles south of the intersection of FM 1246 and LCR 732, continuing 1.5 miles south to the permit boundary.

(b). Luminant also has provided information regarding its rights-of-way delineation. Luminant will use 40 feet as the right-of way width (or 20 feet on either side of the road as measured from the road centerline) (Plate 152-1 and Plate152-2). Luminant will notify the Commission in a timely fashion should it become aware of a situation in which a county road right-of-way may differ from the aforementioned widths.

(c). Luminant provided information that the 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. Luminant will submit for approval its plans and drawings prior to any road modifications, and bonding requirements.

(d). Luminant requested the public road buffer variances for mining, pond construction, construction of diversions, construction of roads, dewatering activities, regrading, reseeding, erosion repair, and such other activities associated with normal mining, construction, and reclamation procedures. Luminant has included information showing that the interests of the public will be protected [Subparagraph (c)].

53. The application, as supplemented, meets the requirements of §12.154 regarding road systems and support facilities. Luminant has presented required information for its transportation system within the proposed permit area for the proposed permit term in the

application, as supplemented. Plates 154-1, 154-2, and 139-1-1 through -10 depict the transportation plan, including 11 existing haul roads and/or haul road modifications or extensions (DI, D5, D3, D3 – Mod. 2, El, El –Mod. 1, El – extension, E2, E3, E-4, Main Haul Road), 18 existing access roads and/or access road modifications (D-5 Nos. 1, 2 and 3; DV – No. 5; D-6 – Nos. 1, 2, 3, and No. 3 extension; D-7 –Nos. 1 and 2; D-8 – Nos. 1 and 2; E-1 – Nos. 1, 2 and 3; and E-3 – Nos. 1, 2 and 3), 9 existing ancillary roads (LCR 732 Access Road, LCR 730 Access Road, LCR 716 Access Road, RCR 462 Access Road, RCR 460 Access Road, RCR 477 Access Road Nos. 1, 2, and 3, and RCR 477 Cut Off Access Road), and two existing equipment assembly facilities roads (numbers 1 and 2). Proposed uses of the roads are set out in the application and approved permit, along with reclamation procedures and a schedule for reclamation (Table 154-1, SD2). Detailed design plans for roads have not been submitted in the application. Typical road sections are provided on Figures 154-1 through 4. The typical haul road will be 80 feet wide with roadside drainage ditches. The road surface thickness may vary from 24 to 48 in. of selected material, compacted as required. The typical dragline walkway will be 150 feet wide with a surface composed of natural ground. Typical access and service roads will be 15 feet and 25 feet wide, respectively, and constructed with roadside drainage ditches. The roads will be surfaced with 1 to 2 in. of crushed stone, bottom ash, iron ore, or other suitable surface. Road grades will not exceed 10 percent. Approximate culvert sizes supporting parameters and peak-flow determinations for typical watersheds are contained on page 154-4. Culverts will be installed in drainageways along the roadway, as needed. Detailed design plans for roads not included in this permit renewal/revision/expansion application will be provided to the Commission for approval prior to construction. Luminant indicates that concrete headwalls, rock riprap or embankments covered with vegetation will be used to protect inlets of ditch relief culverts. The alteration of a natural drainageway during construction of a road is not proposed by Luminant. Detailed design plans for primary roads will be appropriately certified. Roads that are no longer needed to support mining and reclamation activities will be reclaimed.

54. The application contains sufficient information to satisfy the requirements of §12.153 of the Regulations. Luminant will submit individual, detailed design plans for proposed structures addressing the disposal of excess excavated and borrowed material pertaining to constructions projects to the Commission for approval prior to construction. Additional fill material was required to construct the pad sites for mine infrastructure (such as the crusher, lignite stock pile, storage barn and the shop/office areas), and this overburden material was borrowed from the mined-out areas shown on Plate 125-1 and transported to the permanent material fill areas. This overburden fill material will be permanently stored at the locations shown on Plate 139-1-3 (Permanent Overburden Material Fill Areas).

55. 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.

56. The requirements of §12.216 of the Regulations have been met.

    (a). The application, as supplemented, is accurate and complete and all requirements of the Act and Regulations have been met in the application as supplemented, with the inclusion of the permit provisions contained in Appendix I, the Postmine Soil Testing Plan and Postmine Performance Standards contained in Appendix II, and

as approved by the Commission. All required application fees have been paid, and Luminant has provided all required substantive information requested by Staff.

(b). The operations may be feasibly accomplished under the mining and reclamation operations contained in the application, as supplemented.

(c). The CHIA has been completed, and the operations proposed by the application, as supplemented, and as approved by the Commission, have been designed to prevent material damage to the hydrologic balance outside the proposed permit area.

(d). The approved permit area is not included in an area designated unsuitable for surface coal mining operations, is not under study for designation, and the proposed revised permit will not adversely affect any publicly-owned parks or places included in or eligible for listing in the National Register of Historic Places. The application, as supplemented, does not propose activities within a National Park and is not within 100 feet of a cemetery or of any public road (except for access roads as allowed in the Regulations and other roads addressed in this Order). Proposed operations will not come within 300 feet of an occupied dwelling [except as provided for in §12.71(a)(5) and §12.72(f)], public building, school, church, community, or institutional building

(e). The proposed operations will not affect any properties listed on or eligible for listing on the NRHP, except as provided for in §12.71(a)(3).

(f). All right-of-entry documentation has been provided. Documentation required under §12.117(b) for operations involving surface lining of coal where the private mineral estate to be mined has been severed from the private surface estate is not applicable to the proposed permit.

(g). All compliance information has been provided. No pending violations or non-payment of AML fees were found to exist. The AVS system indicated there are no pending violation which 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. No outstanding or unabated violations were found. Luminant does not control and has not controlled mining operations with a demonstrated pattern of willful violations or intent not to comply with the Act and Regulations. Luminant has demonstrated compliance with §12.215(e) and satisfied the requirements for submissions and demonstrations under this paragraph.

(h). The Application/Violation System has been reviewed. If reclamation fees had not been paid by Luminant, then the report would so indicate. No such indication was found.

(i). Operations to be performed at the Kosse Mine in accordance with the proposed permit will not be inconsistent with any other surface mining operations in adjacent areas.

(j). 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. 45, *supra*). The approved bond is sufficient and will remain in place.

(k). There are no alluvial valley floors to be considered pursuant to §12.202 of the Regulations. Luminant has, with respect to prime farmland, satisfied the requirements of § 12.201 of the Regulations.

(l). The proposed postmining land uses are approved in accordance with this Order and the requirements of §12.339.

(m). All specific approvals required for this application for renewal/revision/expansion pursuant to Subchapter K of the Regulations have been made.

(n). Approval of the revision will not affect the continued existence of endangered or threatened species or result in the destruction or adverse modification of critical habitat.

(o). Luminant has satisfied the requirements for approval, as applicable, of a long-term, intensive agricultural postmining land use in accordance with § 12.390.

57. 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.

58. The required public posting of the consideration of this application by the Commission has occurred.

59. 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 Tex. Admin. Code §1.1 *et seq.* and the Administrative Procedure Act (APA), Tex. Gov't Code Ch. 2001 (Vernon Supp. 2019). A public hearing was held in accordance with the Act and Regulations. Open meeting notice has been made as required.

3. Based upon the Findings of Fact, the application for permit was submitted to the Commission by Luminant and was processed, circulated, and reviewed in accordance

with requirements that ensure public participation and that comply with the Act, the Regulations, the Commission's *Practice and Procedure,* and the APA.

4. The application, as supplemented, with the permit provisions, soil testing plan and postmine soil performance standards set out in this Order, complies with the reclamation standards set out in the Act and Regulations.

5. A reclamation cost estimate for the Kosse Mine in the amount of $200,777,829 is hereby approved.

6. Luminant's current blanket collateral bond in the amount of $975,000,000 is in place as approved by the Commission and is not proposed for changes in this docket.

7. Based upon the updated compliance history filed by Luminant in accordance with §§12.116(14) and 12.215(g) of the Regulations and AVS Report, a renewed, revised and expanded permit may be issued for the Kosse Mine.

RECOMMENDATION

Based on the record in this docket, the ALJ recommends that the Commission approve Luminant's application, as supplemented, with the permit provisions contained in Appendix I and the Soil Testing Plan contained in Appendix II, and the permit, renumbered as Permit No. 50C, be issued to Luminant.

Respectfully submitted,

Kyle L. Lebby, Administrative Law Judge
Hearings Division
Railroad Commission of Texas

Date Issued: August 14, 2019

APPENDIX I

PERMIT PROVISIONS

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.

2. Within 60 days of permit issuance Luminant shall correct discrepancies between Table II in Appendix 145-D and Plate 134-1 and Table 134-1 in section .134 of the Permit.

APPENDIX II

SOIL-TESTING PLAN AND POSTMINE PERFORMANCE STANDARDS (Appendix VII to Staff's TA Addendum and Table 145-1 in Sec .145 of Application submitted August 6, 2018, respectively)

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 minesoil 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
4. Neutralization potential
5. Acid/base accounting = Neutralization potential – (Potential acidity + Exchangeable acidity)
6. Texture: sand, silt, and clay (USDA-NRCS)
7. Nitrate-nitrogen
8. Plant available phosphorus, potassium, calcium, and magnesium
9. Cation exchange capacity
10. Sulfur forms

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

1. pH
2. Potential acidity
3. Exchangeable acidity
4. Texture: sand, silt, and clay (USDA-NRCS)
5. Neutralization potential
6. Acid/base accounting = Neutralization potential – (Potential acidity + Exchangeable acidity)
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 (¼ 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.

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

In the event the postmine soil testing plan identifies AFM/TFM parameters outside of state standards or soil baseline, an alternate soil testing plan will be developed. Luminant will submit a plan and schedule to the Commission for approval prior to the initiation of alternate soil testing.

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 is approved by the Commission. The results of these analyses and a remediation plan will be submitted to the Commission.

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

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:

(a). The premine standard is calculated by multiplying category baseline percentages for each soil parameter by total acres within the bank area.
(b). The postmine values are the sums of total banked acres by category for each soil parameter represented by the initial soil sampling data.
(c). 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.

TABLE 145-1

AREALLY-WEIGHTED FREQUENCY DISTRIBUTIONS 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”	0.9%	1.0%	28.0%
12-48”	0.0%	0.9%	16.4%

ACID-BASE ACCOUNTING (ABA)

Tons/ 1000 Tons (t/kt)

SOIL DEPTH	-4	-3	-2	-1
	--------% of area--------			
0-12”	0.9	1.0	6.3	14.7
12-48”	1.5	0.0	5.3	17.2

% Clay

SOIL DEPTH	41-45	46-50	51-55	56-60
	--------% of area--------			
0-12”	2.9%	0.7%	0.0%	1.0%

% Sand

SOIL DEPTH	81 - 85	86 - 90
	-------% of area-----	
	--	
0-12”	5.5%	3.2%

Selenium (Se)

SOIL DEPTH	3	4	5
	--------% of area--------		
0-12”	1.0%	0.0%	0.0%
12-48”	1.0%	0.0%	1.0%

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

Electrical Conductivity (EC)	$\leq$ 4 mmhos/cm
Sodium Adsorption Ratio (SAR)	< 13
Boron (B)	$\leq$ 5 ppm
Cadmium (Cd)	$\leq$ 0.7 ppm