

**RAILROAD COMMISSION OF TEXAS
HEARINGS DIVISION**

**SURFACE MINING DOCKET NO. C20-0013-SC-27-C
APPLICATION BY WALNUT CREEK MINING COMPANY
FOR RENEWAL, REVISION, AND EXPANSION, PERMIT NO. 27H,
CALVERT MINE, ROBERTSON COUNTY, TEXAS**

**ORDER APPROVING APPLICATION
FOR RENEWAL, REVISION, AND EXPANSION OF PERMIT NO. 27H**

Statement of the Case

The Applicant, Walnut Creek Mining Company (WCMC), P.O. Box H, Bremond, Texas 76629, has applied to the Railroad Commission of Texas (Commission) for renewal, revision, and expansion of Permit No. 27H for the Calvert Mine. The application proposes renewal, revision, and expansion of the permit for the surface coal mining operations at the mine located in northwestern Robertson County, Texas.

The Application was filed pursuant to the Texas Surface Coal Mining and Reclamation Act, TEX. NAT. RES. CODE ANN. Ch. 134 (Vernon Supp. 2020) (Act), and the "Coal Mining Regulations," Tex. R.R. Comm'n, 16 TEX. ADMIN. CODE Ch. 12 (Thomson West 2020) ("Regulations"). The permit was last renewed by Commission Order dated October 11, 2016, for the continuation of lignite removal, regrading, and revegetation operations within the permit area for an additional five-year term. The permit area is located in and around the area commonly known as "Tidwell Prairie," which is five miles generally south of the community of Bremond, east of the community of Hammond, and north of the community of Calvert. WCMC proposes in its March 13, 2020, application to change the currently approved permit boundary and increase the size of the approved permit area by expanding by one (1) acre. The new proposed permit area will be 7,774 acres in Robertson County. This area proposed for expansion is located on the northeast corner of the approved permit area. The proposed permit area includes four mine areas (Pits 6A, 6B, 6C, and 6D). WCMC plans to continue reclamation in Pits 6A, 6B, and 6C, while mining within Pit 6D. WCMC proposes to mine approximately 1.9 million tons per year of lignite for consumption at the adjacent Twin Oaks Power Plant. Mine activities began in 1988. Approximately 696 acres are proposed for mining during the requested five-year permit term. WCMC proposes that disturbed areas within the proposed permit boundary be reclaimed to 4,975 acres of pastureland, 114 acres of developed water resources, and 333 acres to industrial/commercial land uses.

The application made up of six volumes was submitted on March 13, 2020, and was declared administratively complete by the Director, Surface Mining and Reclamation Division (SMRD or Staff) and transferred to the Hearings Division by letter dated March 20, 2020. Three supplements to the application were filed thereafter. Staff reviewed the application in its May 18, 2020, Technical Analysis document (TA) and addenda. The parties to the proceeding are WCMC

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and Staff. No other persons sought to intervene in the proceeding. After public notice, the Texas Parks and Wildlife Department (TPWD) filed comments on the application. Staff certifies compliance with the Regulations and WCMC and Staff have agreed on retaining certain permit provisions, deleting others, and adopting new permit provisions. The permit provisions proposed for adoption in this Order are set out in Appendix I to the Order.

The Commission finds that this Order should be issued renewing, revising, and expanding Permit No. 27H as Permit No. 27I with the permit provisions contained in Appendix I. A permit provision has been recommended to address the potential concern raised by TPWD. The record also reflects (Supplement 2, Table 145-4) that WCMC's reclamation cost estimate of \$38,249,645, which is higher than Staff's estimate of \$36,545,391, is recommended for adoption (TA Addendum No. 3). The currently accepted bonds are Surety Bond No. SUR60000217 issued by Ironshore Indemnity, Inc. in the amount of \$22,000,000, and Surety Bond No. N-7002431, issued by Indemnity National Insurance Company, in the amount of \$21,198,583, totaling \$43,198,583 accepted by Commission Order dated February 11, 2020. No increased performance bond is required for approval and issuance of the renewed, revised, and expanded permit.

Based upon the application, as supplemented, the Technical Analysis document and addenda, all factual issues have been addressed as required by the Act and Regulations as set out in the Findings of Fact, Conclusions of Law and Permit Provisions (Appendix I) and the Soil Testing Plan (Appendix II), included as Appendices I and II to this Order. The proposed order was circulated to the parties, WCMC and Staff, and both parties have filed waivers of the preparation and circulation of a proposal for decision. No exceptions were filed.

FINDINGS OF FACT

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

1. Walnut Creek Mining Company (WCMC) submitted its application made up of six volumes for renewal/revision/expansion of Permit No. 27H for its Calvert Mine on March 13, 2020. WCMC filed three supplements. The application and supplements collectively are termed in this Order as the application. The application was declared to be administratively complete by the Director of the Surface Mining and Reclamation Division (SMRD or Staff) and transferred to the Hearings Division by letter dated March 20, 2020. The proposed permit area contains approximately 7,774 acres.
2. Supplements 1-3 were filed August 18, 2020, November 23, 2020, and April 5, 2021. Staff reviewed the initial application in its May 18, 2020, Technical Analysis ("TA") document, Supplement 1 to the application in its September 18, 2020, TA Addendum No. 1, Supplement 2 in its TA Addendum No. 2 dated December 22, 2020, and Supplement 3 in its TA Addendum No. 3 dated May 7, 2021. Staff recommends six permit provisions: two existing provisions from Permit No. 27H, one of which is proposed to be revised, and four

new permit provisions. The parties have agreed that nine existing permit provisions should not be retained.

Two of Staff's proposed permit provisions have been combined as one because they pertain to the same application subsection, one Staff sponsored permit provision is not adopted, and the ALJ recommends an additional permit provision regarding the need for postmine land use amenable to the protection of wildlife. Overall, five (5) permit provisions are adopted as set out in the findings of fact and in Appendix I to this Order.

3. Permit No. 27 was originally issued on October 3, 1988, to Phillips Coal Company, and comprised of 2,240 acres for activities in Mine Block A (now Pit 1). The permit was transferred as Permit No. 27A, 2,263 acres, to Walnut Creek Mining Company, a joint venture, and subsequently revised in 1990 as Permit No. 27B. WCMC renewed the permit in 1993 as 5,183-acre Permit No. 27C for mining in Mine Blocks A and B (now Pits 1 and 2). In 1996, WCMC again renewed the permit as Permit No. 27D with a 5,320-acre permit area, which was later renewed on July 11, 2000, as a 5,877-acre permit area for mining in Pits 2 and 3 (Permit No. 27E). Permit No. 27E was renewed in 2003 with a permit area of 8,688 acres for mining in Pits 2, 3, and 6, as Permit No. 27F, was subsequently renewed on February 9, 2010 (8,668 acres), and was last renewed as Permit No. 27H on October 11, 2016 (8,040 acres). WCMC is proposing to reduce its permit boundary from 8,039.62 (fifth permit term) acres to 7,774 acres in this permit term (includes 1 acre expansion).¹ This application for renewal/revision/expansion (application) was filed pursuant to the Texas Surface Coal Mining and Reclamation Act, TEX. NAT. RES. CODE ANN. Ch. 134 (Vernon Supp. 2020) (Act), and the "Coal Mining Regulations," Tex. R.R. Comm'n, 16 TEX. ADMIN. CODE Ch. 12 (Thomson West 2020) (Regulations). WCMC submitted the specified filing fee (§12.108) and the required verifications of the application and supplements by authorized officers of WCMC. WCMC proposes to continue reclamation in Pits 6A, 6B, and 6C, while mining within Pit 6D and to continue mining in Pit 6 during the permit term. Lignite will be trucked to the Major Oak, LLC Power Plant.
4. The application meets 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 to this Order, and the Soil Testing Plan and Postmine Soil Performance Standards contained in Appendix II to this Order. The required Form SMRD-1C was filed in the Application, and contains all information required by §§12.116-12.154 [§12.107(a)], with inclusion of the

¹ In response to Staff's Application Deficiency No. 119-1 regarding clarification for the reduced acreage (7,774 acres) from the previous permit term (8,040 acres), WCMC's Supplement 1, Errata, states that: "The number of acres anticipated for mining-related disturbances during the eight term is 609 acres, as listed in Table 119-1. Inconsistencies between Table 119-1, page 125-4, and Table 145-3 [noted in Application Deficiency No. 125(1)-1] have been corrected. The proposed one-acre addition to the permit area is located at the western end of Tract No. 6021. The overall permit area is smaller than that approved as Permit No. 27H. The permit boundary was, however, reduced in Revision No. 1 to Permit No. 27H primarily to remove non-right-of-entry properties and to remove areas where mining was not proposed to occur in the future."

information contained in the permit provisions in Appendix I to this Order. In the application, as supplemented, the information is current, presented clearly and concisely, and is supported by appropriate references [§12.107(b)], as contained in the permit provisions in Appendix I to this Order. Technical data have 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)], as contained in Appendices I and II to this Order. Responsible officials 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. The application was filed on March 13, 2020, at least 120 days prior to the expiration of the permit (October 11, 2021) and at least 180 days before the date on which the permittee expects to revise surface coal mining or reclamation operations. [§§12.106(b)((2) and (3)].
6. Proper notice of the application has been provided and comment has been received and acted upon in accordance with the Regulations.
 - (a). Notice was published once a week for four consecutive weeks in the *Robertson County News* on November 19 and 26, and December 3 and 10, 2020. The *Robertson County News* is a newspaper of general circulation in the locality of the proposed surface mining and reclamation operations. The application, as supplemented, was filed with the Robertson County Clerk and with the Commission's offices in Austin, Texas. The draft public notice was included in Supplement 1. The public notice of the Application contains all information required by the Act and §12.207(a) of the Regulations. No request for hearing was filed. The notice includes the elements required by §134.129 of the Act and §12.312(a)(2) of the Regulations: the name of the permittee, the precise location of the land affected, the number of acres, permit number at the time of application and date approved, the amount of bond approved, the type and appropriate dates reclamation work was performed, and a description of the results achieved as they relate to the approved reclamation plan. The notice also contains information on the applicant, location and boundaries of the permit area, the Application's availability for inspection, and the address to which comments should be sent. WCMC submitted an affidavit of publication on January 11, 2021, followed by a corrected affidavit information on January 27, 2021.
 - (b). In accordance with its policy, the Commission sent notices of application by first-class mail to owners of interests in lands within the permit boundary and tracts adjacent to the permit boundary on November 24, 2020. By letter of the same date, the Commission mailed notice of application to the Texas and Federal agencies listed in §12.207 of the Regulations by first-class mail or interagency mail, as appropriate, to the required divisions of the 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); Texas General Land Office; USDA, Natural Resources Conservation Service (NRCS); US Fish and Wildlife Service (USFWS); US Office of Surface Mining Reclamation and Enforcement (OSM); U.S. Department of the Army Corps of Engineers (USACE), to the Robertson County Clerk and County Judge, and to local government agencies.

- (c). TPWD filed comments by letters dated January 14, 2021 and May 28, 2021. Specific comments were made regarding §12.144, *Fish and Wildlife Plan*, and about recent updates to listings on TPWD County Lists that had not been reflected in the application. By letter dated June 1, 2021, WCMC responded to TPWD's letter dated May 28, 2021. Staff has not had the opportunity to respond to TPWD's letter dated May 28, 2021, or WCMC's response dated June 1, 2021. A permit provision is proposed to adequately address TPWD's concerns regarding postmining land use.
- (i). TPWD notes that the applicant makes no firm commitment to implement practices for potential wildlife benefit as part of temporary reclamation in the Calvert Mine and recommends that these commitments be made. The applicant has responded that the goal of temporary reclamation is stabilization of the disturbed area until permanent reclamation can take place and that the use of these sites for temporary benefit to wildlife depends on various factors related to the overall mining processes. The applicant elaborates that it is difficult to select areas for temporary reclamation projects in advance due to the dynamics of the mining operation and that there are constraints on temporary reclamation that cannot be addressed with advance planning or commitment. The seasonal timing of temporary projects may change if the timing of mining changes. The applicant indicates in section .144 of the application that if some wildlife benefit can be garnered through selected plantings, a temporary benefit can be created.
- (ii). In its review of the Conceptual Wildlife Enhancement Plan as presented in Exhibit 144-1 of the application, TPWD identified that the majority of the potential wildlife enhancement areas proposed within the permit area were located to the west of Walnut Creek. TPWD encouraged the applicant to expand its efforts towards wildlife enhancement, particularly in the USACE mitigation area located in the eastern portion of the permit area. WCMC proposes wildlife enhancements east of Walnut Creek in connection with postmine stream locations as authorized by the USACE, and as enhancements around aquatic features, including ponds or wetlands, that may remain in the postmine reclaimed surface.
- (iii). TPWD notes that the applicant's proposed postmine land uses will result in the loss of undeveloped land and grazingland, resulting in the loss of

approximately 65.2% of premine terrestrial wildlife habitat. TWPD expressed concern regarding the complete omission of fish and wildlife habitat from the reclamation plan proposed in section .147 of the application. TPWD believes and recommends that there is substantial opportunity for WCMC to incorporate fish and wildlife habitat during reclamation efforts and to propose this as one of the postmine land uses. WCMC responded to note that the definitions for land use applied by the Commission are based on the use of the land and not the land form and, per the definition at 16 Texas Admin. Code §12.3(99), there was no identified premine wildlife habitat at the Calvert Mine. Although wildlife populations do and did occupy land premine, they occupied land that was used for other primary purposes and designated as such. WCMC proposes postmine land uses that are of an "equal or higher use" than the premine land use, and as such will increase the productivity of much of the mined land's premine use. Further, a postmine land use of pastureland will not prevent wildlife from using the reclaimed areas, and WCMC cited specific examples of such in its response to the TPWD comments.

(iv). In response to its review of the application errata, TPWD advised that its County Lists had undergone a major update after the application had been filed. TPWD updated its County Lists again effective March 5, 2021. The Rufa red knot (*Calidris canutus rufa*) is now listed as State threatened at both the federal and state levels. The Eastern black rail (*Laterallus jamaicensis*) is now listed as threatened at both the federal and state level. The Bald eagle (*Haliaeetus leucocephalus*) is no longer listed as threatened in Texas. The Texas fawnsfoot (*Truncilla macrodon*) is a candidate for federal listing. The Texas horned lizard (*Phrynosoma modestum*) is now listed as threatened at the state level. The applicant has updated the application in section .133 (Supplement 3) to include these listings.

(v). In its May 28, 2021, letter, TPWD elaborated on its recommendations and specifically noted concerns with regard to proposed postmine land uses and their amenability to use by wildlife in the area. Because WCMC did not provide an adequate response to address this issue which was raised under consultation with the State agency responsible for ensuring protection of Texas wildlife, the ALJ has proposed a new permit provision.

7. No request for hearing was filed.
8. The application, as supplemented, contains required information for ownership and control of WCMC. WCMC is a partnership made up of Bighorn Walnut LLC, a Delaware limited liability corporation, and KT Mining, Inc., a Delaware corporation. The resident agent is Ms. Elizabeth Quirk-Hendry.

- (a). Bighorn Walnut, LLC, which holds a 50% interest in WCMC, is a Delaware limited liability company with an office at 500 Alexander Park, Suite 300, Princeton, NJ 08540, and is a wholly owned subsidiary of Black Walnut Mining, LLC, which is a wholly owned subsidiary of Major Oak Holdings, LLC, which is a wholly owned subsidiary of Lonestar II Generation Holdings LLC, which is a wholly owned subsidiary of Lonestar II Intermediate Holdings LLC, which is a wholly owned subsidiary of Lonestar II Holdings LLC, which is a wholly owned subsidiary of Lonestar Generation LLC, which is a wholly owned subsidiary of Viva Alamo Intermediate Holdings LLC, which is a wholly owned subsidiary of Viva Alamo Holdings LLC, which is owned by Blackstone Capital Partners VI NQ L.P. (49.875%), Blackstone Family Investment Partnership VI-NQ ESC L.P. (0.125%), Blackstone Energy Partners NQ L.P. (49.1%), Blackstone Energy Family Investment Partnership NQ ESC L.P. (0.5752%), and Blackstone Energy Family Investment Partnership SMD L.P. (0.3248%), all of which are wholly owned by The Blackstone Group Inc. Stephen A. Schwartzman, Chairman, CEO and Director of the Blackstone Group Inc., owns 10% or more of the Blackstone Group Inc. (Appendix I to this Order entitled *Figure 116-2 Black Walnut Management Company Structure*).
- (b). KT Mining, LLC, which holds a 50% interest in WCMC, is a wholly- owned subsidiary of Bighorn Walnut, LLC, which is owned as set out in subparagraph (a).
- (c). Black Walnut Management Company LLC is the operator for WCMC. It is an affiliate of applicant. Black Walnut Management Company LLC is a Delaware limited liability company with an office at 500 Alexander Park, Suite 300, Princeton, NJ 08540, telephone: 201-859-1814. It is a wholly owned subsidiary of Black Walnut Mining, LLC, which LLC is a wholly owned subsidiary of Major Oak Holdings, LLC, which is a wholly owned subsidiary of Lonestar II Generation Holdings LLC, which is a wholly owned subsidiary of Lonestar II Intermediate Holdings LLC, which is a wholly owned subsidiary of Lonestar II Holdings LLC, which is a wholly owned subsidiary of Lonestar Generation LLC, which is a wholly owned subsidiary of Viva Alamo Intermediate Holdings LLC, which is a wholly owned subsidiary of Viva Alamo Holdings LLC, which is owned by Blackstone Capital Partners VI NQ L.P. (49.875%), Blackstone Family Investment Partnership VI-NQ ESC L.P. (0.125%), Blackstone Energy Partners NQ L.P. (49.1%), Blackstone Energy Family Investment Partnership NQ ESC L.P. (0.5752%), and Blackstone Energy Family Investment Partnership SMD L.P. (0.3248%), all of which are wholly owned by The Blackstone Group Inc. Stephen A. Schwartzman, Chairman, CEO and Director of the Blackstone Group Inc., owns 10% or more of the Blackstone Group Inc. (Appendix II to this Order entitled *Figure 116-1 – Walnut Creek Mining Company Structure*).
- (d). The entities listed in subparagraphs (a) and (b), *supra*, have previously operated only one coal mine, the Calvert Mine.

9. WCMC provided updated information in its application, as supplemented, for its compliance history, management, and ownership and control relationships, other identifying information as required by §12.116 of the Regulations, officers and directors [Tables 116-1 and 116-2 (Supplement 2)], organizational charts (Figure 116-1, Supplement 2), legal and equitable owners of property within and adjacent to the permit area [Appendices 116-1 (Supplement 2) and 116-2 (Supplement 1)], and Exhibit 116-1, land tracts (Supplement 3). The application, as supplemented, includes all information required by §12.116 of the Regulations. Information on Notices of Violation issued to WCMC during the three years prior to the filing of the application, have been included. There are no outstanding violations based upon the application, as supplemented, and Staff's AVS report (TA, Appendix VI).
10. WCMC has identified all landowners and adjacent landowners and owners of other interests in the lands and adjacent lands for the approved permit area. A list of mineral and surface owners within and contiguous to the proposed permit boundary was included. Representative leases are included in Appendix 117-1 (Supplement 1). The application includes all information required for right-of-entry documentation required by §12.117 of the Regulations in Appendix 117-1 (Supplement 1). The application includes all information required for right-of-entry documentation required by §12.117 of the Regulations in Appendix 116-1 (Supplements 1 and 3). Appendix 117-1 is a right of Access Agreement for Tract 6306 (Supplements 1 and 2). WCMC has adequately indicated its limited right-of-entry for access to this tract. WCMC may not conduct mining related activities on the tract until it provides appropriate information as required by §12.117(a) for right-of-entry.
11. The proposed permit area is not within an area designated unsuitable for surface coal mining operations and is not within any area under study for designation (§12.118). WCMC does not claim an exemption for valid existing rights under §12.216(4)(B) and does not propose to conduct surface mining activities within 300 feet of an occupied dwelling as prohibited in §12.71(a)(5). WCMC does not propose additional disturbances that would affect any other protected areas.
12. WCMC denotes this application as the Eighth Permit Term Renewal/revision/expansion. In section .119 of the application, responding to the requirements of §12.119 of the Regulations, WCMC provides the life-of-mine information for years 1988 – 2026, including its proposed mining for the requested term, denoted as 2021-2026. The acreage proposed for mining and other disturbances during the proposed permit term constitutes approximately 609 acres. WCMC projects that an average of 1.9 million tons annually will be recovered. Mining and reclamation will continue during this permit term in Pit 6. Reclamation operations will continue in Pit 1 (formerly Mine Block A), Pit 2 (formerly Mine Block B) and the Hailey Incidental Boundary Area (Pit 3).

13. The administrative law judge has officially noticed the Staff letter dated June 11, 2021, indicating that WCMC has complied with the public liability insurance requirements. WCMC filed a copy of its Certificate of Insurance documenting WCMC's public liability insurance for the Calvert Mine by letter dated June 9, 2021. The certificate states that insurance is provided by Policy No. EN4GL00454-211 issued by Everest National Insurance Company effective from June 17, 2021, through May 1, 2022, replacing a previous certificate of insurance which expired on June 17, 2021. The Certificate of Insurance is in compliance with §12.311 of the Regulations: personal injury and property damage protection in an amount adequate to compensate all persons injured or property damaged as a result of surface coal mining and reclamation operations, including use of explosives and damage to water wells, and entitled to compensation under the applicable provisions of state law. Minimum insurance coverage for bodily injury is not less than \$500,000 for each occurrence and \$1,500,000 aggregate, and minimum insurance coverage for property damage is not less than \$500,000 for each occurrence and \$1,000,000 aggregate.
14. All information is contained in the Application to identify the licenses, registrations, permits, and authorizations needed for the proposed operations, in compliance with §12.121 of the Regulations. WCMC included information for federal licenses and permits pursuant to the jurisdiction of the Environmental Protection Agency (Spill Prevention Control and Countermeasure Plan, and Multi-Sector Storm Water permit), pursuant to the jurisdiction of the Department of Labor Mine Safety and Health Administration (MSHA) (including legal identity number, Ground Control Plan, Mine Training and Retraining Plan), Impoundment Plans for eight impoundments pursuant to the jurisdiction of the U.S. Army Corps of Engineers (State Program General Permit, Nationwide Permit 21 for various project numbers, and an Individual Permit Project No. 2012-00475), and, pursuant to the jurisdiction of TCEQ, permits to appropriate water for four ponds (Permits 5106, 5326, 5482, and 5512, approved and now abandoned), a wastewater discharge permit [Texas Pollutant Discharge Elimination System (TPDES) Permit No. 02881], an air quality permit to construct (Permit No. C-17992) and an air quality permit to operate a facility (now withdrawn). WCMC provided information regarding the TPWD permit (Scientific Research Permit No. SPR-090-169) that is held by a private consultant/contractor of WCMC. Although current, additional information may need to be provided prior to the end of the permit term for USACE authorizations and the TCEQ wastewater discharge permit.
15. All information has been presented in accordance with §12.125(1) of the Regulations to describe the size, sequence, and timing of mining subareas for the life-of-mine, as supplemented in Staff's evaluation for years subsequent to 2020, as well as the proposed permit term. At least three additional permit terms are intended after the proposed permit term. The proposed and life-of-mine areas are shown on Exhibit 125-1, *Term 8 Renewal/Revision/Expansion Permit Sequences* (Supplement 2). Mining is proposed for the permit term through mine year 2026 and is anticipated for the life-of-mine through 2031. WCMC revised the previous designations of the sub-pit areas within the Pit 6 Area to new

designations: Pit 6 center, west, north and east are designated Pits 6A, 6B, 6C, and 6D [(Exhibit 125-1 (Supplement 2) and page 125-1)].

16. The Application contains information in compliance with §12.125(2) and §12.151 of the Regulations, which require the inclusion of a description and identification of any cultural, historical, and archaeological resources listed on, or eligible for listing on, the National Register of Historic Places (NRHP) and known archaeological sites within the proposed permit area and adjacent areas (Exhibit .125-2 and Table 125-2), and a treatment and protection plan for some of these features. Additionally, WCMC has provided information in accordance with §12.151, which requires the inclusion of measures to be used to prevent or minimize adverse impacts on such resources or on the interests of persons who have valid existing rights. There are no cultural resource sites that are eligible for listing on the NRHP within the disturbance boundary for this permit term. There are eight cultural resource sites within the proposed permit renewal, revision, and expansion area that the THC has determined to be eligible for listing on the NRHP. Six of these sites have been approved as fully mitigated by the THC and the Commission and thus are no longer protected (41RT93, 41RT260, 41RT267, 41RT275, 41RT302, and 41RT313). WCMC will avoid the two remaining sites, 41RT254 and 41RT285 so that such sites are not disturbed. There are five sites (41RT292, 41RT298, 41RT301, 41RT317 and 41RT321) that require additional testing for NRHP eligibility but WCMC will avoid these sites during the proposed permit term. Three additional sites are cemeteries which have been relocated out of the disturbance boundary by WCMC. WCMC's treatment and protection plan is contained on page 151-1 of the permit. WCMC has stated it will protect or mitigate all sites determined to be eligible for NRHP status in accordance with its Programmatic Agreement with the THC, the Environmental Protection Agency (EPA) and the Advisory Council on Historic Preservation. WCMC has likewise agreed to obtain Commission approval prior to engaging in mine-related operations in or near protected cultural resource sites. Existing Permit Provision No. 1 adopted with the issuance of Permit No. 27H specified that copies of all correspondence between WCMC and the THC, and between WCMC and the EPA, be provided to SMRD Staff upon receipt. In Supplement 1, WCMC revised page 151-1 to indicate that it would provide copies of correspondence between the THC, the EPA, and the permittee to the Commission concurrently or in as timely a manner as possible. As proposed by Staff, existing Permit Provision No. 1 is no longer necessary and is not retained.
17. A general description of the geology and hydrology has been included in previous permits for the permit area and surrounding areas pursuant to §12.126 of the Regulations. References to the information in Application sections .127, .128, and .129 meet the requirement for a general description of the hydrology and geology of the area of Texas in which the Calvert Mine is located.
18. The application, as supplemented, contains the necessary geological information required pursuant to §12.127 of the Regulations for the proposed permit term. The information is

contained in a report certified by a professional geologist. Geological information provided in approved Permit No. 27H includes a description of the thickness and extent of lignite seams and physical and chemical characteristics of the overburden, interburden, and underburden, locations of geological data points and cross sections from ten continuous cores, including portions of the Pit 6 area. Additional geotechnical information is included in the application for the five-year permit term for the Pit 6D area proposed for mining. WCMC reviewed geologic reports specific to the Pit 6 area that were included in previous permits, including a report submitted by Texas Utilities Mining Company using data from 1985-86 for the then proposed Twin Oak-Bremond Mine, other previously submitted permitting documents and published information, in addition to site investigations. Geologic information from WCMC and its representatives was collected during investigations and drilling programs conducted in 1998, 2000, 2002, 2003, 2004, 2005, 2010, 2011, 2013, and during the current permit term, obtaining information from approximately 700 drilled holes. A geological database and model were developed from this exploration drilling and logging information, lignite and overburden coring (including eight continuous core holes) with laboratory analyses, and hydrologic drilling and testing to determine hydrologic characteristics from overburden and underburden water-bearing zones. Satisfactory information that is representative of the geologic conditions and overburden lithology of areas proposed for disturbance during the proposed permit renewal term has been provided. Along with information contained in Appendix 127-1 of the Fifth Permit Term Application (Permit No. 27F), Sixth Permit Term (Permit No. 27G), and the Seventh Permit Term Application (currently approved Permit No. 27H), the following appendices were included in the Application to support requirements of §12.127 of the Regulations: Appendix 127-1, *Geophysical Logs of Core Holes*; Appendix 127-2, *Core Hole Sample Descriptions*; and Appendix 127-3, (Supplement 1) *Laboratory Analytical Reports-Overburden*, all for Cores 10-6405CC, 10-6406CC, 13-6534CC, 13-6535CC, and 19-6742CC located within the proposed renewal-term mine area. The geological information contained or referenced in the Application meets the requirements of the proposed operations during the proposed five-year permit term.

- (a). The Pit 6 area lies on the outcrop of the lower Calvert Bluff Formation of the Wilcox Group, and is bordered by Walnut Creek and South Walnut Creek. The Calvert Bluff Formation is exposed at the land surface across the entire Pit 6 area. Cross sections showing major structural features are shown on Exhibit 127-2 in the Application (initial submittal). Drilling has confirmed faulting in the Pit 6 area. Mining will occur within the lower third of the Calvert Bluff Formation. The Calvert Bluff overlies the Simsboro Formation, which will not be disturbed. On Figure 127-1 (Supplement 2), WCMC provides a typical stratigraphic and textural section for the Pit 6 area, indicating five lignite seams separated by alternating layers of sand, silt, and clay. Although seven lignite seams occur within the permit area [Seams A (deepest), D, E, F, G, H, and J (shallowest)], only five seams exist within the Pit 6 area. Seams A and H are not laterally extensive and are largely missing. Table 127-1 (Supplement 1) contains a summary of seam thickness and distribution in the Pit 6 Area. Mineable

seams exist within those portions of the Calvert Bluff Formation that contain a lesser sand content; thus, channel sands within these portions are less hydrologically significant. The mineable lignite seams are generally laterally continuous throughout the Pit 6 area (Exhibit 127-2), and overburden thickness ranges from 50 to 150 feet. The underburden is separated from the lowest lignite seam to be mined by clay and silty clay layers and sand or silty sand units (Figure 127-1, Supplement 2; and Figure 128-1, Supplement 1; Exhibit 127-2, initial submittal). This clay represents a confining layer ranging in thickness from approximately 30 feet in the westward portion of the Pit 6 Area to more than 200 feet in areas northeastward from Pit 6. A thick silty sand unit within the J Zone (strata between Seams E and J), a channel sand, grades laterally into a thick sand unit identified as the J Sand (directly above Seam G). Other overburden sand units are generally less than ten feet thick and laterally discontinuous.

- (b). Appendix 127-1 in the supplemented Application contains geophysical logs of Cores 10-6405CC, 10-6406CC, 13-6534CC, 13-6535CC, and 19-6742CC. Two of these core holes were drilled in 2010, two in 2013, and one in 2019, and all were used, in addition to 1988 Core CC-14, to characterize the overburden and underburden stratigraphy within the five-year mine plan area, meeting Commission guidelines for core density and spacing of one core hole per 250 acres and spacing of no more than 4,000 feet. The data used meet Commission guidelines. WCMC included information on the procedures used for drilling, logging, and coring that were contained in approved Appendix 145-3. On Exhibit 127-1 (Supplement 2), WCMC depicts continuous core hole and drill hole locations, geologic section lines, and locations of faulting, while also depicting the approved mine blocks and the proposed mine blocks, identified as dragline operations or truck/shovel operations.
- (c). In addition to geologic characterization, WCMC used the data and information from its drilling programs to determine the potential for occurrence of acid-forming and toxic-forming materials (AFM/TFM), and to establish local groundwater baseline conditions. WCMC proposes to salvage the topsoil and use selected overburden material to substitute the subsoil (bottom of the topsoil to 4 feet), and has included analyses of overburden materials from proposed mining areas to indicate that spoil would generally contain suitable materials [Appendix 127-3 (Supplement 1), Table 127-3 (Supplement 2), and Table 127-4 (Supplement 2)]. WCMC has also used this information to identify areas where suitability limits are slightly exceeded. Near-surface, regraded, mixed spoil materials from the overburden in the Pit 6 area should generally produce a postmine top four feet that is a light clay loam or silty clay loam with pH, electrical conductivity, sodium adsorption ratios, acid-base accounting, and concentrations of boron, selenium, cadmium, and trace elements that will pose minimal risk of the formation of AFM/TFM.

19. Information contained in approved Permit No. 27H, along with that in the Application, as supplemented, is adequate to characterize the groundwater hydrology (§12.128) and the surface-water hydrology (§12.129) of the permit area, including the Pit 6 area.
- (a). In addition to the information contained in section .127 of the Application, the Application includes information from depressurization wells, long-term groundwater monitoring (LTGM) wells, aquifer tests, and private wells within the proposed permit area or within one mile of the permit boundary, an updated water-well inventory, and updated water-quality and water-quantity data. Overburden consists of sediments of the Calvert Bluff Formation, containing generally confined channel sands that are not extensive, other than the J Sand, a thicker, more extensive channel sand. The Simsboro Formation underlies the Calvert Bluff Formation and is a major aquifer. The Simsboro Formation sands will not be disturbed. Exhibit 128-1 (Supplement 2) is a location map showing LTGM well sites developed in 2013, current depressurization wells, current long-term monitoring wells for water quality and level, and plugged and previous monitoring wells. The locations of current LTGM wells used for monitoring the water level of the depressurized Simsboro Formation sands are also depicted on Exhibit 128-1 (Supplement 2). Fault lines are depicted, as are the proposed mine blocks, and identified separately for proposed dragline operations and truck/shovel operations.
- (i). Lignite in the Calvert Bluff occurs with alternating and vertically repeating sequences of clay, silt, silty sand, and narrow, straight thin sand layers. The mine blocks are typically located in areas with multiple lignite seams and sediments with lesser sand content. The lone significant sand zone is termed the J Zone sand that occurs primarily along the eastern boundary of Pit 6. Depths to the top of the J Zone sands range from 20 feet to more than 130 feet below ground surface and are shallower. These sands are under artesian conditions over most of the Pit 6 Area. Depths to water range in water wells range from 20-75 feet below ground surface.
- (ii). WCMC proposes mining the D, E, F, and J seams during the proposed permit term. The D seam is the deepest seam to be mined during the proposed permit term. The E seam above the D, is approximately 5-10 feet thick, the thickest and most areally extensive seam within the Pit 6 area. The F seam, above the E, averages 2.7 feet in thickness. Minor seams occur above the F seam and are not considered part of the lignite reserves. The J seam is the uppermost to be mined; it is present in the extreme eastern areas of Pit 6. It averages approximately 2.5 feet in thickness. The deepest seam, D, is separated from sands mined by a confining bed of approximately 60-150 feet thick (layers of clay, silty clay, silty sand, and thin lignite seams as indicated on Figure 128-3, *Separation Thickness*). Depths to the top of the Upper Simsboro Formation sands range from 150 to 250 feet; the Upper Simsboro sands are generally

less than 75 feet thick. Since mining began, water levels in the Simsboro Formation have declined by 25-60 feet. Production from the aquifer includes municipal, industrial, and depressurization pumping. The thickness of J-Zone sands within the Pit 6 Area ranges from a few feet to more than 50 feet. Exhibit 128-2 (Supplement 1) shows the occurrence of the J-Zone sands, and water-level elevations for the primary J-Zone sand are shown on Exhibit 128-3 (Supplement 1). Water levels for the underburden Simsboro Formation sands are shown on Exhibit 128-4 (Supplement 1).

- (iii). WCMC has described the location and ownership of existing wells, springs, and other groundwater sources. Several inventories of existing wells have been conducted over several years, and WCMC has updated its listing of wells in the Application (Appendix 128-4, Supplement 3). Locations and information for wells were compiled using Texas Water Development Board and Texas Department of Licensing and Regulation as well as previously drilled wells and new wells installed for WCMC. An updated water well inventory map is also provided as Exhibit 128-5 (Supplement 1).
- (iv). The Application contains Appendix 128-1, *Summary of Drilled Holes – Pit 6 Area* (Supplement 1), Appendix 128-2, *Summary of Monitoring Well Completion – Pit 6 Area* (Supplement 1), and Appendix 128-3, *TWDB and TDLR State Well Driller's Reports*. and Appendix 128-4, *Quarterly Water Level and Water Quality Measurements* (Supplement 3). Supplement 3 also contains Table 128-1, *Summary of Calvert Bluff Sands Water Quality – Pit 6 Area*, and Table 128-2, *Summary of Simsboro Formation Water Quality – Pit 6 Area*. Also referenced are numerous appendices from the 5th and 7th permit term applications. Locations of drilled holes and monitoring wells are provided on Exhibit 128-1 (Supplement 2).
- (v). Information indicates that waters in the Calvert Bluff Formation sands and Simsboro Formation sands are generally a calcium carbonate-sodium bicarbonate type. Tables 128-1 and Table 128-2 provide a summary of the water quality data for the Calvert Bluff Formation sands and Simsboro Formation sands, with sampling conducted by WCMC, former Texas Utilities Mining Company (TUMCO), and Thornhill Group Inc. (TGI), from 1982 to 2014. Water quality data in Tables 128-1 and 128-2 are represented by the range and arithmetic average of the samples collected. Water from each of these zones is typically of similar quality, and generally of good quality, usually meeting TCEQ drinking water standards. Generally, wells completed in the Simsboro and underburden zones yield water with low total dissolved solids (TDS) concentrations. Iron and manganese concentrations often slightly exceed secondary drinking water standard limits. The locally isolated Calvert Bluff sand channels yield small to moderate quantities of water and are only

minor water resources. Private domestic, stock, and irrigation wells in the Pit 6 Area represent only minor water resources with regard to water availability. Quarterly water-level monitoring indicates only slight water-level fluctuations in Calvert Bluff water-bearing zones, so discharge from these zones is generally in dynamic equilibrium with recharge. Estimated discharge for these Calvert Bluff zones for proposed mining operations are described in section .139, Appendix 139-1, of the Application. Lignite seams do not yield significant quantities of water, as evidenced by observations along pit highwalls. Primary local and regional discharge from Simsboro Formation sands is due to pumpage by WCMC, TNP, irrigators, and municipalities, including Calvert, Hearne, and Bryan-College Station.

- (vi). Neither the Simsboro sands nor the J-Zone sands crop out within the area to be mined. WCMC estimates that recharge rates within the proposed mine blocks in Pit 6 are probably substantially less than 10 percent (the estimated recharge to outcropping sand zones) of the annual precipitation of approximately 38 inches.
 - (vii). Based upon groundwater conditions, WCMC indicates that dewatering of the overburden will be required, particularly in 2021 and 2026; however, the small and isolated water-bearing zones to be disrupted produce small amounts of water. Depressurization pumping from the Simsboro Formation will continue but will be less than previous depressurization and potential effects to water levels will subsequently be lessened.
- (b). WCMC indicates, and Staff concurs, that the approved permit, which includes information for the Pit 6 area, includes all information required pursuant to §12.129 for surface water for the proposed permit term. Satisfactory information was provided in previous permitting documents to adequately characterize the surface-water regime. The approved information included baseline water-quality data, preliminary monitoring by former TUMCO and quarterly sampling for TUMCO's Twin-Oak Bremond Mine permit application (1984-1987), and ongoing periodic monitoring within the Pit 2 Area and the Pit 6 Area within the proposed permit area, and adjacent areas. This information in the approved permit contains baseline information for the Pit 6 area from six stations (Exhibit 129-1, Permit No. 27F) from April 2000-May 2001, including pH, total suspended solids, sulfates, total and dissolved iron, total manganese, acidity, and other parameters (Appendix 129-1, Tables 129-4, 129-5, 129-6, and 129-7, Permit No. 27F). Statistical data and calculations were also included from critical event sampling. Information was included for surface water bodies, discharges, quality and quantity of surface water including seasonal data, water availability and alternative sources, with appropriate geologic data. Small stock tanks and ponds located within the permit were included in the description. Walnut Creek, an intermittent stream, and its tributaries, South Walnut Creek and

Wilson Creek, drain the permit area. Walnut Creek drains to the Little Brazos River, thence to the Brazos River. No springs exist within the permit area. Information for surface-water quality and surface-water quantity has been adequately referenced in the application to identify and describe the baseline surface-water hydrologic conditions and is sufficient to characterize the proposed areas to be mined or disturbed.

20. Approved Permit No. 27H contains an adequate description of alternative sources of water. WCMC will replace groundwater and surface-water supplies if contaminated, diminished, or interrupted as a result of mining operations as required by the Act and Regulations. No changes are proposed to the approved alternative water supply information in the approved permit, in which WCMC provides a certification of the required information submitted to satisfy the requirement to identify alternative sources of water. Alternative water supplies are intended to replace any water supplies affected by diminution, contamination or interruption caused by the mining operations as required by §12.130. Drilling wells or deepening wells or resetting pumps are possible ways to replace any affected water supplies. WCMC has mitigated a number of wells since mining began. Impacts during the proposed permit term are expected to be similar to past impacts of dewatering. Depressurization pumping may affect the Simsboro in a similar way; however because the Simsboro Formation sands are under artesian conditions, lowering of water levels will not significantly reduce available water. Significant supplies of useable groundwater are noted by WCMC in the approved permit and the application from Calvert Bluff Formation zones outside of mined areas, and from Simsboro Formation sands. If replacement of water supplies is required, WCMC will use wells drilled below mining depths into the Simsboro Formation, or wells completed in unaffected sands of the Calvert Bluff Formation. Temporary water sources may be used until mitigation of an affected water supply is accomplished. Connections to public water supplies may also be employed. WCMC will meet §134.110 of the Act and §12.352 of the Regulations for replacement of any affected water supplies as required.
21. All required climatological data have been provided in Permit Nos. 27 and 27D, by reference in approved Permit No. 27H, and appropriately referenced in the Application. The climatological description is based on data from College Station, Texas (long-term average monthly climatological data, 1910-1980), and data from Marlin, Texas (1902-1906 and 1932-1986). These data include average annual precipitation (39.1 inches, College Station; 36.4 inches, Marlin) and wind direction. The Application contains satisfactory baseline climatological information as required by §12.131 for information for vegetation required by §12.132 of the Regulations for the proposed permit renewal, revision, and expansion area.
22. Staff has indicated in TA Addendum No. 1 that baseline vegetation information provided by reference is satisfactory to meet the requirements of §12.132 of the Regulations for the proposed permit term.

23. The Application contains required fish and wildlife resource information (§12.133, Regulations). The Application contains an updated narrative, replaced in Supplement 1, again replaced in Supplement 2, and revised in Supplement 3, providing this updated information on permit-area fish and wildlife information. Updated wildlife information contained in section .133, of the initial submittal and Supplements 1-3 of the application includes a report on threatened and endangered (T&E) species known or expected to occur in Robertson County, and known or with the potential to occur within the proposed permit area. Table 133-21 (Supplement 3) is a list of these species. As shown in the Application and Staff's review, this table shows threatened and endangered species indicated as potentially occurring in Robertson County; notes are added for the likelihood within the permit area. As noted in the following table, most of the species are not present within Robertson County or are migrants to the permit area or possible migrants.

<u>Common Name</u>	<u>USFW Supplement 2</u>	<u>TPWD²</u>	<u>Potential County Occurrence</u>		<u>Potential Permit- Area Occurrence</u>
			<u>Resident</u>	<u>Migrant</u>	
Swallow-tailed Kite	--	T	-	X	PM
Interior Least Tern	--	E	X	X	Y
White-faced Ibis	--	T	-	X	PM
Wood Stork	--	T	X	X	PM
Red Knot	T	T	--	X	PM
Whooping Crane	E	E	--	X	PM
Piping Plover	T	T	--	X	PM
Black Rail	T	T	--	PM	HU
Sharptnose Shiner	E	E	HN	--	--
Smalleye Shiner	E	E	HN	--	--
Chub Shiner	--	T	--	--	HU
Texas Horned Lizard	--	T	X	--	U
Houston Toad	E	E	X	--	--
Brazos Heelsplitter	--	T	X	--	--
Texas Fawnsfoot	--	T	X	--	--

Table 133-21					
Walnut Creek Mining Company – Permit 27H – Eighth Permit Term Renewal/revision/expansion					
Endangered/Threatened Species with Potential Occurrence in the Permit Area¹					
Common Name	Potential County Occurrence				Potential Permit- Area Occurrence
	USFW Supplement 2	TPWD²	Resident	Migrant	
Navasota Ladies' Tresses	E	E	X	--	HU
Large-fruited Sand Verbena	E	E	X	--	HU

¹ Status for potential occurrence in Robertson County based on online TPWD *Annotated County Lists of Rare Species*, accessed March 16, 2021.

² E = Endangered, T = Threatened, PM = Potential Migrant, U = Unlikely, HU = Highly Unlikely, Y = Documented, HN – Historically Native, no longer recognized locally -- refers to no potential for occurrence.

24. WCMC has also included Exhibit 133-2 in the Application showing a depiction of survey/search locations for the Navasota ladies' tresses in 1989, 1999, 2006, and 2012, large-fruited sand verbena (*Abronia*) in 2007, bald eagle confirmed sightings, Houston toad listening stations and historical Houston toad listening stations (abandoned). Bald eagles appear to be the threatened or endangered species most likely to be observed or to nest within the permit area.
- (a). Field surveys were conducted for T&E species in 1984, 1985, 1986, 1989, 1990, 1991, 1994, 1995, 1996, 2001, 2007, 2012, 2013, 2016, 2017, and 2018 but no listed species were confirmed within or adjacent to the proposed permit area.
- (b). The endangered plant, Navasota Ladies' Tresses Orchid (*Spiranthes parksii*), listed as endangered in 1982, and found in Robertson County in 1983, could occur in the permit area; surveys in 1985, 1990, 1994, 1995, 2000, 2006, 2012, 2016, 2017, and 2018 have not located any specimens in the permit area, although similar species of *Spiranthes* were located. WCMC conducted a three-year protocol series of surveys in the fall seasons of 2016, 2017, and 2018 to justify a negative determination for the remaining habitat areas within the permit area. Staff approved this negative determination by letter dated April 22, 2019.
- (c). The endangered Large-fruited Sand Verbena, with potential to occur within the permit area in sandy soils, has not been identified in surveys. Search locations with contour elevations are depicted on Exhibit 133-2 in the application, which also includes locations for searches for the Houston toad, bald eagle confirmed sightings, and Navasota Ladies' Tresses Orchid search areas. No appropriate sandy soils of adequate depth are identified in the remaining Pit 6 areas to be disturbed, and no plants have been found on any of the sites where sandy soils (including non-habitat qualifying sands) have been mapped within the permit area.

- (d). WCMC updated information regarding the Interior Least Tern in Supplement 3. The species was delisted by the USFWS in January 2021. A 2013 5-year review issued by the USFWS of the tern concluded that the species has achieved recovery throughout its range. The approved protection plan for this bird contained in Section 144 of Permit No. 27H includes annual monitoring for the occurrence of the species from late April through late June. Nesting sites are marked, protected and monitored until departure of the fledged young at the end of the breeding cycle. The number of nesting adults has decreased annually.
- (e). WCMC updated its narrative in the application (Supplement 3) for the Red Knot, indicating that the bird was recently listed by the TPWD as threatened. There is no habitat within or near the mine, although it may visit as a migrant; it prefers the shoreline of the coast and bays.
- (f). WCMC provided information regarding bald eagles that were first observed visiting the permit area in 2012 and have been monitored and protected according the WCMC's plan approved as Revision 8 to Permit 27G and modified in Permit 27H. WCMC provided information in Supplement 1 that the Bald Eagle has been delisted from threatened species status by the TPWD in March 2020 due to the recovery of the species. According to a report by Saalfeld, et al. (2009) there have been increases in nest occupancy of 13% per year and of total number of young of 13% per year from 1971-2005. A nesting pair of bald eagles documented near the Twin Oak Reservoir east of the Calvert Mine were monitored from 1988 – 2005. A bald eagle sighting was recorded at the Calvert Mine in 2012, resulting in the monitoring and protection plan. Since, eagle observations in the mine increased in 2014 and declined in 2015. In February of 2016, a landowner notified WCMC that a bald eagle nest was on his ranch, a tract then within the permit boundary. The nest was blown down in a storm approximately February of 2017; however, it was reported that the two adult eagles and one juvenile had survived. The nest was subsequently rebuilt approximately 200 feet from the fallen nest at the beginning of the next breeding season. This land tract is no longer within the permit boundaries. WCMC has concluded generally that Bald Eagles are in the permit area during the fall-winter-spring and migrate away during the summer. Supplement 1 includes Table 133-21A, which contains survey data for Monitoring Years 2013-2019. The most recent year of survey contained in the table is for 2018-2019 that indicates that out of 111 surveys, 51 eagles were observed. Existing Permit Provision No. 4 provides:

Within 30 days of permit issuance, WCMC shall revise Section 133 and Section 144 regarding the Bald Eagle description and protection plan to: (1) remove outdated, invalidated assessments concluding absence of Bald Eagles nesting in the permit area; (2) acknowledge the presence of nesting eagles within the permit area and the protective measures that

are applicable to those eagles; and (3) revise Section 144 to include a commitment to implement measures to protect Bald Eagles and other large birds from electrocution and collision with power lines.

The information required by this permit provision was provided to SMRD, rendering the provision moot, and Staff agrees that this permit provision is no longer needed. Existing Permit Provision No. 4 is not retained.

- (f). WCMC included a narrative description of the Black Rail, a threatened species that could occur but is unlikely to occur within the permit area due to the lack of habitat used by the bird. It is found on coastal sites, typically salt, brackish, and freshwater marshes, pond borders, wet meadows, and grassy swamps. It is not likely to be found on upland sites such as the mine.
- (g). In Supplement 1, WCMC updated the status of the Brazos Heelsplitter and Texas Fawnsfoot, mussel species that have been identified within the Brazos River system. Recent surveys indicate that the species are currently restricted to the reaches of river above lakes Whitney and Possum Kingdom (Smith, et al. 2019). The species require rivers, lakes, or large flowing streams. None that can sustain the species are located within the Calvert Mine.
- (h). Surveys have been conducted for the endangered Houston toad (*Bufo Houstonensis*, which has a distinctive call) within the permit area. The species is endemic to Texas, with areas of critical habitat established in Bastrop and Burleson Counties. It has been found in several counties in Central Texas including Leon, Milam, and Freestone Counties. It is likely that inadequate habitat exists within the proposed permit area for a viable population. No Houston toads have been observed.
- (i). In addition to studies by TPWD during the late 1980's and 1990's that expanded the accepted range for the Houston toad from Bastrop and Caldwell Counties eastward to include Robertson County and counties eastward, WCMC conducted a survey for the Houston toad for the Pit 6 expansion in a previous renewal application. The study reflects that three named soil series located within the expansion area, Dutek, Robco, and Silstid, are potential suitable sandy soils at the upper end of their 20-40 inch depth range, but these areas are not extensive and much of the area has been cleared and has severely eroded. Surveys were conducted during the 2001 breeding season; no Houston Toads were heard. A listening survey was conducted in 2007; no specimens were heard. WCMC includes information in the application that the USFWS conducted a five-year review of the species in 2011 as required by Section 6 of the Endangered Species Act, the USFWS' first major review of the species since 1984. The species appears to be declining in population. The

review indicates that the key for the Houston toad is habitat, deep sandy soils (greater than 40 inches, or 40 inches in conjunction with shallower soils) as well as wooded or forest communities surrounding breeding sites to allow dispersing young to find appropriate habitat. Suitable habitat has all three characteristics.

- (ii). WCMC has included Exhibit 133-3 in the application that depicts deep sandy soils, mapped wooded (forest) areas and ponds within the premine permit vicinity, the three important factors in habitat for the Houston toad. No areas with these three factors are shown on Exhibit 133-3 within the permit area. WCMC also indicates that a habitat model has been developed for predicting potential occurrence of the species (Buzo, 2008), the Buzo suitability model, based on soils, canopy cover, and breeding sites. Using this model, a large, occupied habitat patch east/southeast of Hearne, Texas was substantiated in the southern half of the patch; this is not within the permit area. Using the criteria in the Buzo model, WCMC evaluated the permit area to determine if patches of habitat exist that could support the Houston toad. WCMC determined that the habitat was insufficient to support a viable Houston toad population. The Pit 6 area specifically had substantial agricultural activity such as tobacco and cotton cropping, cattle grazing, and logging and has experienced significant erosion.
- (iii). In section .133 of its Application, as supplemented, WCMC submitted detailed information about the endangered Houston Toad, including historical background and range, past survey results, characteristics, how the scientific understanding of this species has evolved, why the land in the permit area is not capable of supporting a Houston Toad population and the fact that Houston Toads have never been found in or around the Calvert Mine. WCMC participated in a research effort for three consecutive annual surveys through the Texas State University-San Marcos Development Foundation Non-Endowed Commitment to Fund Houston Toad Research to determine the westernmost occurrences of the toad in Robertson County, specifically in the proximity of the mine permit boundary. Dr. Michael Forstner, one of the leading scientists researching the Houston Toad, was the Principal Investigator for the surveys. During the three years of study, 2016 – 2018, no Houston Toads were located north of Highway 79, located ten miles south of the permit area.
- (i). Bottomland areas, habitat for Timber Rattlesnakes, occurs within the permit area, but no specimens of this species have been found. No Texas Horned Lizards have been documented; this species is unlikely to occur, because of a lack of suitable habitat.

25. The information contained in and referenced from the approved permit, and provided in the Application, for section .132 for vegetative information and section .133 for fish and wildlife habitat 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. Section .132 of the Application, as supplemented (Supplement 1), includes references to baseline vegetative information contained in the Hailey IBR revision to Permit No. 27D (including Exhibit 132-1), the Fifth Permit Term application, in Permit No. 27F, Pit 6 vegetation and habitat information, as amended by Supplements 1 and 2, and Appendix 132-1 in Revision 5 to Permit No. 27H approved on February 2, 2019. Section .133 of the Application is detailed in Finding of Fact No. 24, *infra*.
26. Information for soil resources required by §12.134(a) of the Regulations include a map delineating soils, soil identification, soil description, and present and potential productivity of existing soils for the proposed permit renewal, revision, and expansion area. Information for topsoil substitution is provided by reference to previous permit application submittals [First Permit Term (Permit No. 27), Third Permit Term (Permit No. 27D), Fifth Permit Term (Permit No. 27F), and Seventh Permit Term applications (current Permit No. 27H)], and supplemental soil resources information contained in the Application. Edward F. Janak, Jr., CPSS, a Professional Geoscientist (Soil Science) licensed by the State of Texas, compiled and analyzed the soil survey information provided or referenced in the Application.
- (a). Based on the information and data included in the Application and Staff review, WCMC has met the soil description information requirements of §12.134 for the proposed renewal term. A map identifying the soil map units within the proposed permit area as delineated by the NRCS Web Soil Survey (Robertson County) is contained on Exhibit 134-1 in approved Permit No. 27H, and it depicts the distribution and extent of each map unit within the proposed permit area. Mapping units on Exhibit 134-1 of approved Permit No. 27H are described in Table 134-1 in the Application; the table is footnoted to identify prime farmland soil map units. The taxonomic classifications of the soils in Robertson County are described in Table 20 of Appendix 134-1 (NRCS Soil Survey Report for Robertson County, Texas) in the Application. Detailed descriptions of each soil series and additional soil interpretation tables for Robertson County are also provided in the report in Appendix 134-1 and Appendix 134-4 of approved Permit No. 27D. The one-acre extension area proposed for addition to the approved permit area is pastureland, as depicted on updated Exhibit 135-1 in Supplement 2 of the Application, and the revised prime land-use acreage totals are provided in updated Table 135-1 in Supplement 2 and in Table 147-1 in the initial submittal of the Application.
- (b). WCMC provided potential productivity data of selected crops and forage for Robertson County in Tables 5 and 6 in Appendix 134-1. Current productivity data of

selected crops and forage for Robertson County, as provided by the Texas Cooperative Extension Service, are contained in Appendix 134-2.

- (c). WCMC proposes to continue to implement subsoil substitution in its reclamation plan. Soil baseline information necessary to meet the requirements of §12.134(b) is referenced as included in section .134 in Supplement 1 of approved Permit No. 27H.

27. The approved permit, along with information provided by Staff relating to premine land use acreage after reduction of the permit area as proposed, includes all required information regarding premine land use, capability, and production in accordance with the Regulations, §12.135, for the permit area. Primary premine land uses were pastureland and grazingland. Postmine land-use classifications and acreages are set out in the Finding of Fact No. 37(c), *infra*. Staff noted, however, that WCMC provided the current topography but not the premine topography that is required by this section of the Regulations. Staff proposes and the Commission adopts the following new **Permit Provision No. 3** to address this issue:

Within ninety (90) days of permit issuance, WCMC shall submit and revise Exhibit 135-1, Premine Landuse, to depict the premine topography. The revision shall be processed in accordance with §12.226.

28. WCMC provided required general maps, cross-sections, maps and plans as required by §§12.136 and 12.137 of the Regulations as provided in the Application and Supplements 1-3, and as reviewed by Staff in TA Addenda 1-3, and as required by §12.142 in the application, as supplemented in Supplements 1-3 of the application and as reviewed by Staff in TA Addenda 1-3.
29. A negative determination for prime farmland has been made for the permit area (§§12.138 and 12.201) and is unchanged. No changes were proposed to the information contained in the approved permit for prime farmland soils or prime farmland. The Commission has previously determined that 1,239 acres of prime farmland soils exist within the permit area, but also determined by Orders dated January 26, 1998, and September 9, 2003, that due to the lack of historical use of the 1,239 acres as cropland for five years of the ten years preceding acquisition by the permittee, the acreage did not meet the definition set out in §12.3(83) for "prime farmland." The additional acre to be added to the permit area was included on the Prime Farmland Soils map dated October 11, 2001, in section .138-1 of approved Permit No. 27F. The acre is located within Tract 6021; the acreage is not within a soil map unit designated as prime farmland soils by the Natural Resources Conservation Service. No areas within the permit area constitute prime farmland.
30. All required information has been submitted in the application, as supplemented for the mine plan for the requested permit term in accordance with §12.139. The five-year

requested renewal term is denoted in the application as 2021-2026. The applicant proposes a one-acre increase to the reduced permit boundary.

- (a). Mining, backfilling and topsoil replacement are complete in mine areas denoted as Pits 1, 2, and 3 except in those portions of the Pit 1 area where haul roads, water control structures and office/shop areas are located. Approximately fifty percent of Pit 1 has achieved Phase III bond release and has been removed from the disturbance boundary. Phase I bond release has been achieved on 332 acres in Pit 1 pursuant to Commission Order dated January 15, 2020. Final backfilling, regrading, and topsoil replacement operations have been completed in Pits 2 and 3. Reclamation is ongoing in these areas; however, portions of Pits 1 and 3 will be used for access to Pit 6 and will be reclaimed when no longer needed. Area strip mining is proposed to continue in Pit 6 during the requested eighth permit term and in future permit terms as approved.
- (b). Mining is accomplished with a dragline or hydraulic shovel and backhoes. Some areas require pre-stripping prior to use of the dragline. The lignite is transported by off-highway trucks to Major Oak LLC's Twin Oaks Power Plant adjacent to the mine. WCMC anticipates a maximum annual production of 2,200,000 tons for the proposed permit term.
- (c). Mining is proposed to continue in Pit 6D during the requested eighth permit term: The mining limit line for Pit 6 is depicted on Exhibit 125-1 and Exhibit 139-6.8 shows the limits of mining for Pit 6. Lignite will be mined from the J, F, E and D seams (of 7 total seams in the life-of-mine area) in Pit 6. Mining will be accomplished by dragline and auxiliary equipment (dozers, front-end loaders, backhoes, shovels, scrapers), and mining and reclamation methods will be similar to existing methods. Overburden will be pre-stripped by mobile equipment and a truck-shovel operation ahead of the dragline. WCMC describes steps in mining and reclamation and illustrates mining advance and reclamation operations for the years 2021 through 2026 in Exhibits 139-33.8 through 139-38.8. The four stages of mining are described as clearing, grubbing, and topsoil removal, overburden removal and lignite mining, spoil regrading and contouring, and topsoil replacement and revegetation.
- (d). In Revision No. 9 to Permit No. 27H, a rough backfilling-and-grading variance was approved covering 17.3 acres. The variance was approved in this area to allow for the adjacent 2024 and 2025 mine blocks to advance, facilitate relocation of Energy Transfer's Oasis gas pipeline, and maximize lignite recovery and optimize reclamation. This area is shown on Exhibits 139-33.8 through 139-38.8 and is labeled as "Cessation Area."
- (e). WCMC will use a minimum safety factor for highwall slopes of 1.3 and a

minimum safety factor for spoil slopes of 1.1 based on the computer program STABLE, resulting in recommended highwall angles and recommended spoil angles. Design parameters for the highwall and spoil side are set out in Table 139-3 (Supplement 1).

- (f). Table 145-6 (Supplement 1) lists approved and proposed ponds and sedimentation ponds. Existing and proposed sedimentation ponds and diversions are proposed for use during the requested permit term. General design plans are included in the application for these two structures and are approved; however, detailed design plans have not yet been submitted, therefore, the structures are not approved for construction pending submittal to and approval of these design plans by the SMRD Director. The two structures will divert and abut Willson Creek, and a stream-buffer variance must also be approved prior to construction.
- (g). Table 139-5 (Supplement 1) lists volumes of approved and proposed temporary topsoil stockpiles and the years that they have been or will be removed. Temporary overburden stockpiles will also be used, although most of the overburden is immediately backfilled into the adjacent pit. The locations of topsoil stockpiles and overburden storage areas are shown on Exhibit 139-6.8 of the application, as supplemented (Supplement 1).
- (h). WCMC indicates in application section .139 that non-coal waste (primarily trees and brush) will be stacked and burned in accordance with TCEQ requirements, and post-burning remnants placed in pits. A waste-removal company will remove all other non-coal waste. WCMC indicates that during the eighth permit term the beneficial use of fly ash and bottom ash, as approved during Permit No. 27D, may be utilized for the following eight specific uses: (1) as road base material; (2) as road surfacing or repair material; (3) as traction material on the ramp of the mine pit; (4) on dragline pads to stabilize the pad when it is saturated with moisture; (5) as dragline repair pad material to provide a stable work surface and to provide a pad to lower the boom to a horizontal surface; (6) in water-control ditches and ephemeral drainages as low-water crossing base; (7) as base and surface material on substation pads and groundwater well pads; and (8) as erosion protection material and in any areas where it can be used in place of crushed limestone.
- (i). WCMC describes water-pollution control facilities, mine facilities (depicted on Exhibit 125-1 of the application) and air-pollution control activities.
- (j). WCMC includes a report (Appendix 139-1 in the application) prepared by a licensed professional geoscientist that sets out WCMC's dewatering/depressurization operation plan for currently permitted and proposed operations in the Pit 6 area for proposed mine years 2021-2026. WCMC proposes to utilize

dewatering of significant and saturated Calvert Bluff Formation sand zones in the overburden during the requested permit term in the Pit 6 area to maintain highwall and spoil stability by preventing pit floor heave and inflow from underlying artesian aquifers and to minimize and/or control pit inflows through pit highwalls from adjacent artesian and/or water table aquifers. The plan included in Appendix 139-1 of the application applies to ongoing dewatering and depressurization activities, modified as appropriate based on mine-plan changes and new hydrogeologic data, as well as proposed operations for Pit 6. Staff's review of application section .139 concludes that the dewatering and depressurization activities will be similar to ongoing approved operations and that groundwater will be protected.

- (i). The dewatering plan incorporates assumptions based on previous experience at the mine that saturated sand units less than 10 feet thick do not require advance dewatering, that sand zones less than 50 feet below land surface do not have sufficient saturated thickness to require advance dewatering, that overburden sand zones are hydraulically separate from overlying and underlying zones, and that they require independent water control operations, and that sand zones will be dewatered via open pit inflows and, where applicable, will utilize advanced dewatering well fields. The D lignite seam is the deepest seam in the Pit 6 area to be mined during the proposed permit term. There are Calvert Bluff J-Zone sands within the proposed 2021 through 2026 mine blocks of Pit 6 that will likely require in-pit drainage and removal. Advanced dewatering prior to mining is likely not needed due to the discontinuity of J-Zone sands and WCMC's experience with J-Zone sands in the eastern part of Pit 6. Pit 6 dewatering of the J-Zone sands will be accomplished utilizing by operations to capture and pump direct pit inflows. Pit inflows could range from approximately 5 to 10 gpm per 100 feet of open pit, or 125 to 250 gpm for an average pit intersecting sand units 15 to 25 feet thick and at depths greater than 50 feet. Currently, WCMC utilizes capturing and pumping pit inflows and plans to continue to utilize this method as the mine block progress southward for mine years 2021 through 2026. WCMC predicts that the J-Zone sands will continue to thin out as mining operations move south and west, minimizing potential pit inflows.
- (ii). WCMC indicates that depressurization of the underlying Simsboro aquifer, the aquifer immediately beneath the lowest lignite mined, will be needed to prevent floor heave in the Pit 6 mining areas. Three wells from three existing depressurization well fields located along the perimeter of Pit 2, Wells 53040S, 54450S, and 58110S, and two other existing depressurization wells (6223DS and 6269DS) will remain operational and will be sufficient for Pit 6 depressurization through 2026. The dewatering/depressurization plans from previous permit terms, based on results from monitoring during

the previous permit terms, indicates that the model is effective. Modeling parameters are included in Table 139-1-1 of the application for depressurization of the Simsboro Formation. The report includes Table 139-1-2, a Pit 6 schedule for Simsboro Formation depressurization. The table includes projected water levels for specified control points and includes a comparison between the required depressurization water level at those points and the projected water levels (from total drawdown in the Simsboro Formation since depressurization pumping began associated with Pit 2). Figure 139-1-1 depicts the locations of the depressurization wells, the mine blocks, and the control points.

- (iii). The depressurization plan was based on geologic data and maps, field drilling programs, geophysical logs, historical and recent water-level data, aquifer test analyses and water-quality data. Several assumptions were also included in the depressurization modeling, including conservative assumptions. The assumptions were that no significant hydrologic boundaries occur within the mine area, that aquifers to be depressurized are homogeneous, confined aquifers with infinite areas extents, that water-level declines due to production by others are not considered, that confining pressure greater than 1.76 times the separation thickness of the lignite and the top of the underburden aquifer will cause the floor of the mine pit to heave, that depressurization requirements are based on aquifer water levels prior to any WCMC depressurization pumping, that the hydraulic gradient within the underburden aquifers has no slope prior to pumping, and that Pit 2 pumpage from the three existing wells to be used will continue and will be sufficient for successful depressurization in Pit 6.
31. WCMC does not propose the use of existing structures in surface mining operations. Requirements for the use of existing structures set out in §12.140 of the Regulations do not apply.
 32. WCMC does not proposed blasting within the permit area; therefore, the requirements set out in §12.141 of the Regulations are not applicable.
 33. The approved permit contains a fugitive-dust control plan in compliance with §§12.143(b) and 12.379 of the Regulations that includes watering haulroads and treating roads annually with a dust suppressant, confining traffic to specific areas when possible, prompt grading of road surfaces for stabilization, controlling vehicle speeds, prompt regrading, topsoiling and revegetation, and compliance with TCEQ guidelines and local requirements for burning of cleared materials and other combustibles. No changes are proposed that would affect these procedures. The permit area is east of the 100th meridian west longitude; no air quality-monitoring plan pursuant to §12.143(a) is required.

34. The application, as supplemented, 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. Premine land uses generally related to livestock production and areas were either pastureland or wooded tracts. WCMC's plan is to reclaim lands to pastureland and as consistent with landowner preference. Sufficient adjacent areas to disturbed areas within the permit area will allow dispersion of species. No direct mining will occur to Walnut Creek, and the creek will be protected by the surface water control plan. The creek was previously disturbed for a transportation corridor; however, revegetation on both sides of that area of the creek has assisted in protecting the water quality of the creek and has provided habitat for wildlife. Previously mined areas west of the creek (the Pit 2 area) are progressing through final reclamation processes, including bond release, which will continue through this permit term. Previously mined areas of Pit 6 are undergoing reclamation, and the areas in Pit 6 in which mining is ongoing are conceptual. WCMC included Exhibit 144-1 in Section .144 of the application, *Conceptual Wildlife Enhancement Plan*, which provides a synopsis of the reclamation plans for the entire mine including both existing and proposed features that provide for wildlife enhancement. As the mining progresses, more woodlands will be disturbed, which will lessen the habitat for woodland species. These woodlands constitute regrowth of earlier woodlands that were historically timbered or farmed. To minimize this effect on woodland species, mine operations have been planned to be as compact as feasible, with water control, roads and actual mine disturbances as close together as reasonable. Remnants of these woodlands should remain upon reclamation, which will provide opportunities for wildlife enhancement areas. Construction of ponds impacted only small areas. There were no unique species or high value habitats in the premine landscape. Drainages are re-established during reclamation. Enhancements for fish and wildlife are part of the reclamation plan. The reclamation plan will meet the requirements of §12.144.
- (a). Other than the Interior Least Tern (ILT), no state or federally listed threatened or endangered species' habitat has been found to occur within the permit area, and there is no designated critical habitat for such species. Other species are known to be migrants through or near the permit area. The reclamation plan includes a description of minimization and protective measures for threatened and endangered species, migratory birds, and other species should they occur in accordance with required Commission consultation with TPWD and USFWS. Should species be observed, the Commission and the TPWD and/or the USFWS will be notified, the species will be monitored, and protection plans will be developed and implemented, as necessary.
- (b). Numerous observations of bald eagles have occurred within the permit area since 2012. The first sightings were related to the filling of the BW-1 end lake, and most sightings are near the lake, although the eagles use reclaimed areas

of Pits 1 and 2, and Ponds AW-2 and AW-4, have perched on power poles adjacent to the haul road, and appear to accept operational activities nearby. WCMC has committed to the protection of bald eagles (eagles) by detection of potential bald eagle breeding territories, nest building activity, and avoiding contact when possible and minimizing interaction within the permit boundary. WCMC's protection and monitoring plan will provide early detection and assessment of eagles moving into new areas and potential nesting building behaviors while providing protections for eagles and mining operations with appropriate planning. WCMC has a "constant detection" program, whereby environmental and engineering personnel evaluate eagle sightings and activities, such as potential nest building, from September to May with emphasis on monitoring eagle activity in the mine area and detecting activities (especially nest building) in future mine areas.

Eagles have visited the Calvert Mine during the nine-month nesting season since 2012. Visiting eagles include a nesting pair documented on an adjacent tract, located outside the permit area (currently approximately 3,000 feet from permit boundary). Additionally, wintering eagles have been recorded visiting the mine, taking advantage of the feeding resources provided by the BW-1 end lake. WCMC will notify the Commission of the arrival of the eagles each year. WCMC will provide the C with an annual report (Annual Report) of eagle monitoring and surveying activities (due within 90 days of the end of the breeding season, but no later than August 31 of each year) and at Staff's request provide a copy to TPWD. The map included in the Annual Report will identify locations of surveyed areas and any observed nests. The report will also include text and summary tables of surveys and monitoring observations made during the year.

WCMC will also investigate sightings and determine needed actions to avoid or minimize interaction as much as possible. WCMC will take the following specific measures to protect the known eagles and, if found, any additional eagles and their nests within the permit area: (1) Sightings in previously non-utilized features or areas will be assessed to determine potential interaction with mine activities and the sighting area avoided (except for monitoring) if possible and/or activity minimized as much as feasible; (2) Should nest building occur, a nest be found within the permit area, or observed adjacent to the permit area, WCMC will define a primary occupancy zone and a secondary zone with the nest serving as a center of activity to define the zones. WCMC will utilize current USFWS guidelines relevant to mining activity near an existing eagle nest to establish the USFWS recommended 660-foot buffer zone between the nest and active mining operations. The guidelines require nest monitoring when mining-related activities occur within this protective zone; (3) Mine personnel will be notified of the restricted access to the primary and secondary occupancy zones to minimize unnecessary activity near nesting eagles; (4) WCMC will minimize activities to those necessary for permit compliance and mine efficiency, including worker safety requirements within the zones; (5) WCMC will minimize

mine-related activity in areas between current nesting and feeding habitats; (6) The use of fixed wing aircraft or helicopters within the primary occupancy zone will be minimized. (Drones may be used for collecting conservation data on bald eagle nest(s), provided that the drone(s) operators are licensed by the Federal Aviation Administration (FAA) and precautionary measures are implemented to reduce the risk of any disturbance to nesting eagles [such as launching drones farther than 100 meters {328 feet} from potential eagle nests, not approaching the birds or nests vertically, not surveying eagle nests with drones once fledglings become mobile in the nest tree]). If the USFWS issues bird protection protocols with regard to drones, WCMC will review and incorporate protections to the extent of applicability to eagle nest surveys; and (7) Labeling instructions for chemicals used in the primary or secondary occupancy zones will be strictly followed, and the use of chemicals labeled as toxic to wildlife shall be minimized or avoided as much as feasible. (USFWS, 2007 Bald Eagle Monitoring Guidelines).

The areas around the BW-1 End Lake and other parts of the Pit 2 mine area, where all eagle observations have been recorded, are visited by mine personnel on a limited basis for environmental monitoring, power grid maintenance, pond maintenance, water well maintenance and operation, site inspections and agricultural activities. All personnel are aware of the potential for eagle presence when they enter these areas and know to avoid approaching or harassing the birds. Continued eagle monitoring will document that no adverse effects are occurring by: (1) confirming continued use of these areas by eagles, (2) inferring success or failure of the eagles, when practicable, by observing new juveniles at season's end, (3) detection of behaviors not previously observed during monitoring (e.g., eagles carrying debris as potential nesting materials, eagles carrying food offsite in a direction different from the known nesting site or eagle pairs exhibiting concentrated use of a particular pond); and (4) detection of new nests in the monitoring or adjacent areas. All verified eagle observations during monitoring will be catalogued as a unique sighting and date, times, location, noted behaviors and movements will be documented. Signs of nest building will be particularly watched for and recorded. Fly-overs will include direction from and to, using compass point headings. Negative observations will also be documented, and all data will be entered in the Eagle Observation Monitoring Log Book maintained in the mine office and will be included in the Annual Report.

Surveys will be conducted should an eagle nest be found within the permit boundary or should an eagle activity assessment indicate a nest may potentially occur. In compliance with §12.380(c), any eagle nest found within the permit area will be promptly reported to the Commission, surveys will commence to determine the presence of eagles at the nest (during the known nesting season, September –May) and the range and habitat utilized by eagles of the occupied nest site. Protection protocols provided above will be immediately put in place.

Annual pre-disturbance surveys will be conducted in areas proposed to be disturbed, one year in advance/prior to clearing. Surveys will typically be planned for the winter "leaf-off" periods (generally January–February; the middle of eagle nesting season) to maximize the survey effort. Surveys will take place during varied times of the day for viewing active eagle behavior during the nesting season, and will include driving, pedestrian, drone and casual surveys. Any nest found will be carefully investigated for the presence of eagles, reported to the Commission and options investigated with USFWS. Previously listed protection protocols will be employed while the nest is investigated. Results of annual nest surveys will be reported with the Annual Report, including the time of day the survey took place, survey duration, method of surveying, number of stops made during truck surveys, and documentation of what was observed during the survey, etc.

- (c). The application contains a protection plan for Wood Storks if encountered that includes training to identify the species, reporting, and implementation of a plan of avoidance except for essential environmental and compliance measures, notification to the Commission and consultation with the Commission should prolonged presence in the area occur to formulate a plan to resume operations while completely protecting the birds.
- (d). Interior Least Terns (ILT), a state and federally listed endangered species [Finding of Fact 22(e)], were first observed at the Calvert Mine in June 2016. The previously approved protection plan was initiated upon the confirmation of breeding birds and nesting success was recorded. ILTs have returned each year and the protection plan has been utilized for protection of nesting birds and continuation of mining activities. Minor improvements to the plan to prepare for the visiting birds have been made since the protection plan was approved in 2016. This plan will be in place until the USFWS officially delists the species, at which time it will be modified to a plan for protection of a state-listed species.

ILTs generally appear for nesting in mid-May. WCMC personnel familiar with the identification of the ILT will conduct daily surveys of the road corridors and active mine areas beginning in late April, focusing on cleared areas ahead of mining, recently revegetated areas, recently topsoiled areas, recently regraded spoil areas, active material storage areas, and well pads. Additionally, in combination with any bald eagle monitoring surveys or sightings investigations, ILT will be included for target observations during this time period.

Clearing and grubbing, topsoil removal or other operations that create large bare areas will be curtailed as much as feasible from April through May to discourage ILT nesting near operations. Should these activities be necessary during this time period and ILT are observed at the mine, the affected areas will be roughened to discourage

terns from nesting. Post mine regraded or topsoiled areas attractive to nesting birds but part of planned or ongoing operational activities will be ripped or disked to discourage ILTs from nesting. WCMC will identify potentially suitable nesting areas and may clear vegetation and blade to create sites away from operations. Qualifying areas will be made as attractive as feasible by smoothing areas, keeping personnel away and providing shallow pools to attract potential nesting ILTs. Supplements (small rocks, driftwood, etc.) may be added to target areas as attractions.

ILT nesting sites in or near the active mining or reclamation area will immediately be marked with a 120' buffer. Employees will be notified to avoid the marked area. These areas as well as any other areas where ILTs are found nesting will be assessed to determine approximate number of nesting pairs, egg production and other notable data. All assessment work will be conducted as remotely as possible using binoculars and limited access. The USFWS will be contacted if ILTs select nest sites that impair mine advance to determine what permitting requirements might be required to allow continuation of mining progression.

- (e). The Navasota ladies' tresses (*Spiranthes parksii*) species (NLT), an orchid, was found in southern portion of Robertson County in 1983, but none have been found in repeated surveys of the permit area, and none have been found in the southern portion of Robertson County since the original site was discovered. Based on habitats, protocol surveys and historical survey information discussed in Section 133 of this application, WCMC contends that the NLT does not occur at the Calvert Mine. Permit Provision No. 5 to approved Permit 27H required WCMC to provide a presence/absence survey plan for the 2016 fall survey season for Navasota Ladies' Tresses to the SMRD Director and to report the results of the 2016 survey to the SMRD Director by the end of the first quarter of 2017. WCMC also surveyed the NLT in the fall of 2017 and 2018 and provided survey reports to the SMRD. All surveys were negative for the presence of the NLT. In the instant application, Staff recommended in its TA that WCMC develop a protection plan for the NLT because the mine has potential NLT habitat. The plan proposed by Staff provides for a series of series near the end of each permit term, and that SMRD would be notified in NLT are found. Staff also requested that WCMC continue to update its survey methodology in coordination with Staff, USFWS, and botanists with NLT expertise. Staff sponsors and WCMC agrees to Permit Provision No. 5, as revised, and the Commission adopts this provision, as revised, as **Permit Provision No. 1**, as follows:

WCMC shall provide an updated survey plan by the end of the first quarter of the fifth year after the date of the last survey for Navasota ladies'-tresses (Spiranthes parksii), in preparation for conducting updated presence/absence surveys for review and approval prior to conducting surveys. Surveys will be conducted during the species peak

flowering season in that fifth year providing rainfall amounts measures average to above average during optimal growth periods. If rainfall during the fifth year is less than average, then the actual survey should be delayed until the next growing season that presents favorable conditions and are confirmed with Staff, USFWS, and/or recognized botanical experts for this species.

- (f). Existing Permit Provision No. 6 provides that WCMC shall prioritize clearing activities to outside of breeding and nesting periods, as appropriate and feasible. If clearing occurs during prime nesting seasons, WCMC will deploy bird diverters to discourage nesting in sites scheduled for clearing. Staff believes that the permit provision is still needed and WCMC provided concurrence (Supplement 2, errata). Existing Permit Provision No. 6 is retained, and the Commission adopts as **Permit Provision No. 2**, as follows:

WCMC shall prioritize clearing activities to outside of breeding and nesting periods, as appropriate and feasible. If clearing occurs during prime nesting seasons, WCMC will deploy bird diverters to discourage nesting in sites scheduled for clearing.

WCMC shall have the option, at its discretion under consultation with Staff, to incorporate these requirements into its operation and reclamation plans; however, these requirements remain a part of the plan approved in this Order.

- (g). Measures are included related to the removal of surface features, location of roads and other facilities, proper design of diversions and stream channel restoration, and timely revegetation of stream disturbances. WCMC includes vegetation lists for species for wildlife habitat and mitigation areas and will use appropriate species with proven nutritional value for fish and wildlife for planting and distribution that are appropriate to reclaimed lands. Species are listed in Table .144-1 of the application as supplemented in Supplement 2. Appropriate depictions of wildlife enhancement and wetland mitigation areas appear on Exhibit 144-1. Specific operational activities are included to ensure protection of wildlife. Commission standards for power line construction will be met to ensure minimal danger to eagles or other large birds. Roads will be located to minimize disturbances. No toxic or hazardous materials will be collected in sediment ponds, and pesticide use will be limited. Range, forest, and coal fires will be prevented/controlled/ suppressed; any prescribed burning related to reclamation will be in accordance with NRCS guidelines and coordinated with local authorities. Additional measures will be taken to enhance or protect wildlife. Clearing and grubbing will be scheduled and will be conducted to allow habitats to remain intact as long as feasible. Brush piles may be left to benefit species for short periods. Burning of brush piles will be accomplished when needed so that animals will have a way of escape. Water control ponds will leave existing vegetation in

water storage areas that are not disturbed for dam construction or sediment pool construction (Figure 144-1). WCMC prohibits guns or other weapons in all mine areas that could be used to intentionally take a migratory bird. There are other temporary measures that may benefit wildlife, such as temporary reclamation near water control ponds use of long-term diversion ditches, topsoil storage areas, temporary reclamation of power line rights-of-way, borrow areas, roads or roadside ditches. Temporary reclamation may include temporary cover in various disturbed areas. Many areas can be revegetated with species to provide some wildlife benefit such as food, cover, or structural diversity. Cattle will not be allowed on temporary disturbed and reclaimed areas. If allowed in reclamation, they will be monitored and managed to ensure that wildlife enhancements are not damaged.

- (h). Certain final reclamation activities will be used to enhance wildlife. Enhancement features within pastureland will be based on establishing in certain areas a vegetative base that will be self-sustaining and provide a plant community of equal or higher quality than premine, such as planting trees and shrubs that have a high wild life value for food and cover for wildlife and use of grazing rotation, and/or disking for forb production. Native species of woody plants will be planted for final reclamation for wildlife enhancement areas; they will break up extensive areas of less diverse pastureland. The landscape will contain small stands of woody vegetation with an occasional motte of trees, including a majority of hard mast trees (hickories and oaks) with a reasonable mix but lesser amount of soft mast (fleshy/fruited mast) and a small amount of wind- blown seeded species.
- (i). Walnut Creek includes aquatic resource reconstruction for enhancement of fish and wildlife values including channels and drainages, permanent ponds, and wetlands. Walnut Creek has had minor impacts from a transportation corridor, and South Walnut Creek and Big Willow Creek have been avoided. Intermittent and ephemeral drainages that have been impacted will be reconstructed. Some permanent ponds will be used for wildlife enhancement. Some vegetation species used for wetlands are rated for wildlife value as listed in Table 144-1. Section 145 of the application, as supplemented, contains a complete list of aquatic and wetland plants proposed for use. Reconstructed drainages will be intermittent or ephemeral as were premine drainages, and premine flow rates will be achieved, or reconstructed channels will be sized to carry the designed storm event required. Channels and side slopes will be revegetated with grass and legume species that can tolerate streamflow with minimal erosion. When feasible, woody plants will be planted, and volunteer woody species will be allowed, when not invasive or damaging to the land use, along main stems of restored channels. Aquatic biota will not be re-stocked but will be allowed to develop naturally from other stream areas. Exhibit 144-1 (Supplement 2) sets

out the locations of developed water resources; these resources vary in size, shape, and suitability for wildlife enhancement. Conceptual enhancement planning is shown on the exhibit. Vegetation plantings will synchronize with the specific aquatic-related habitat. Ponds may be stocked with fish in accordance with landowner wishes or for wildlife enhancement. Wetlands will occur occasionally within pastureland use, for example, in depressions, and will occur in conjunction with developed water resources.

- (j). The wetlands mitigation plan contained in the application, as supplemented, meets the requirements of §§ 12.144 and 12.380 of the Regulations. Restoration of Section 404 jurisdictional waters and mitigation for unavoidable temporary losses of said waters is proposed to occur within disturbed areas as part of the reclamation process. Sections 144, 145 and 147 of the application, as supplemented, provide the general reclamation plans and techniques that will be employed to comply with USACE requirements for restoration and mitigation of impacted jurisdictional waters.

A map showing the distribution of 404 jurisdictional waters associated with both on-channel stock ponds and streams in the Pit 6 expansion area is located in Appendix 133-3 and on Exhibit 133-3 in approved Permit 27F. WCMC is currently authorized by the USACE through the Nationwide Permit No. 21 associated with Commission Permits 27F and 27G, as well as through an Individual Permit (IP) for Permit 27H. The IP was granted to cover the remainder of the Calvert Mine life of mine. These authorizations run concurrently with the Calvert Mine permits, allowing proposed mine operations and reclamation activities within all areas of USACE jurisdiction. These USACE authorizations are not, however, restricted by mine permit terms. A copy of these USACE authorization requests (applications) as well as their corresponding USACE authorizations, are on file with SMRD.

A summary of impacts to impacted streams, ponds and wetlands as well as proposed restorations and mitigation for compliance with Section 380 of the Regulations is provided in Table 144-2 (Supplement 3). Appendix 144-1 provides a summary of USACE authorizations for the Calvert Mine. Mitigation rates represent the minimum required for compliance by the USACE authorizations for WCMC. Table 144-A1-1 (Supplement 2) also includes USACE required restoration and mitigation for mining and mining related activities impacting jurisdictional waters within the permit area through the life of mine. Tables 144-2 (Supplement 3) and Appendix 144-1 from the application, which set out the mitigation plan, are approved.

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Table 144-2
Walnut Creek Mining Company - Calvert Mine
Assessments By Renewal Term

Cumulative Impacts/Mitigation for Wetlands, Streams and Ponds (acres & when applicable, linear feet)

	First Term Permit Permit 27*	Second Term Permit Permit 27C	Permit 27D	Hailey Fourth Term Permit 27E	Pit 6 Initial Fifth Term Permit F	P-6 Renewal Sixth Term Permit 27G	P-6 Renewa l Life of Mine Permit 27H	TOTALS
<u>On Channel Ponds</u>								
Baseline	11.5	13.0	0.0	1.2	1.6	0.9	2.2	18.9
Impacts	11.5	0.5	0.0	1.2	1.6	0.9	2.2	6.4
Reclaimed	62	49.0	0.0	149.0	--	--	--	198.0
Proposed Reclaimed	--	--	--	--	1.6	0.9	2.2	4.7
<u>Channels</u>								
Baseline	0	13.0	0.0	2.7	11.6	25,747	58,992	27.3
Impacts	0	0.4	0.0	0.3	0.3	25,747	36,956	1.0
Reclaimed	3.6	0.0	0.0	0.0	0.3	--	--	3.9
Proposed Reclaimed (feet)	--	--	--	--	--	25,747	36,956	62,703
Proposed Reclaimed (acres)					0.1			0.1
<u>Unforested Wetlands</u>								
Baseline	0	168.0	0.0	0.2	4.1	0.0	0.7	173.0
Impacts	0	1.0	0.0	0.2	1.6	0.0	0.7	3.5
Reclaimed	0	1.0	0.0	1.3	2.5	--	--	4.7
Proposed Reclaimed	--	--	--	--	--	0.0	1.4	1.4
<u>Forested Wetlands</u>								
Baseline	0	194.0	0.0	0.0	1.7	0.0	1.7	197.4
Impacts	0	4.0	0.0	0.0	1.7	0.0	1.7	7.4
Reclaimed	0	4.0	0.0	0.0	0.0	0.0	0.0	4.0
Proposed Reclaimed	--	--	--	--	1.7	0.0	3.4	5.1
Baseline Total		388.0	0.0	4.1	19.0	0.9	4.6	389.3
Impacts Total		5.9	0.0	1.7	5.2	0.9	4.6	18.3
Mitigation Total		54.0	0.0	150.3	6.1	0.9	7.0	210.7

NOTE: Mitigation ratios are based on 1:1 ratios.

Initial permit area did not include accounting of streams, lakes or wetlands. Pond acres derived from land use totals; mitigation includes all acres remaining in permit area.

Permit 27G includes impacts/mitigation for 5,151 feet intermittent and 20,596 feet ephemeral channels. Intermittent impacts currently less than proposed.

Permit 27H includes impacts/mitigation for 7,120' feet intermittent and 29,536 feet ephemeral channels; however no direct impacts to Intermittent streams occurred .

Permit 27G & H - Acres are not provided for streams; totals for linear feet are shown under channels, matching USACE delineations.

- (k). TPWD commented on the application by letter dated January 14, 2021. One of TPWD's recommendations questioned the clarity of the section .144 text to convey whether any such practices for potential wildlife benefit will be implemented at the Calvert Mine. TPWD further indicated that no "selected areas" had been identified for these necessary practices (either singly or in combination) and also that in the

text containing descriptions of proposed efforts, the word “may” is utilized, thus not providing any real commitment to implement any of the described practices. Staff agrees with TPWD’s recommendation and requested that WCMC provide more clarity (visually and/or in text) regarding specific measures in both section .144 and in section .147, for the specific word choices “may” to “will”. WCMC incorporated some of the requested changes to address Staff deficiencies; however, it did not provide a reason for declining to incorporate the TPWD recommendations for temporary disturbance areas.

In its January 14, 2021, letter, TPWD also recommended that the applicant’s plan for future implementation of the described practices and, to that end, identify areas of anticipated temporary reclamation that can be designated as “selected areas” for reclamation activities potentially benefitting wildlife. Staff agreed with TPWD’s recommendation and had also requested Calvert to clearly identify wildlife enhancement features/areas in the text and on Exhibit 144-1. WCMC provided some clarity, but Staff continued to agree with TPWD that the fish and wildlife protection plan can and should be further improved with the adoption of the recommended text changes. As stated by Staff (TA Addendum No. 3), the main purpose of section .144 is to describe the thought-out enhancement and protection plan for the proposed permit term in an integrated fashion with the other reclamation activities. WCMC’s response provides a description of the other portions of the reclamation plan it is taking into account, but does not describe how its plan strategically identifies conceptual enhancements, nor does it consider using temporary reclamation areas for temporary enhancements. Staff recommends that WCMC work more closely with restoration personnel skilled in fish and wildlife habitat restoration to identify areas and methods of enhancement. For example, to identify cool season annual native plants that could enhance temporary areas by providing cover and forage, and possibly nectar and pollen, when planted with temporary vegetation. TPWD provided an example in its January 14, 2021, recommendation and Staff also provided examples of ways to depict temporary versus permanent enhancements in TA Addendum No. 2. Again, WCMC’s response does not incorporate TPWD recommendations and makes no changes to the plan. WCMC provides no practical reason for declining to incorporate the recommendations; therefore, Staff sponsors two new permit provisions that refer to the same application subsection, “*Temporary Reclamation Activities for Potential Wildlife Benefit*” and the Commission adopts Staff’s sponsored permit provisions combined as one, **new Permit Provision No. 4**, submitted within ninety (90) days of permit issuance, as follows:

WCMC shall revise its wildlife protection plan subsection “Temporary Reclamation Activities for Potential Wildlife Benefit,” on page 144-19 to replace the text “may” with “will.” In addition, WCMC shall also revise this subsection to replace the sentence “While temporary vegetated areas are

not planted for wildlife enhancement, these areas are often used by local and migratory wildlife.” To read “While not all temporary vegetated areas can be planted for wildlife enhancement, to the extent possible and where practicable, these areas will be planted for wildlife enhancement. In addition, Exhibit 144-1, Conceptual Fish and Wildlife Enhancement Plan, will be updated and submitted to the Commission biannually to identify these locations. These areas are often used by local and migratory wildlife.” The revised text shall be submitted within ninety (90) days of permit issuance for review and processing in accordance with §12.226 of the Regulations.

Staff’s summary and response to the remaining TPWD comments and recommendations can be found in Appendix III to Staff’s TA Addendum No. 3.

35. WCMC has submitted all information required for the reclamation plan in accordance with §12.145. The application, as supplemented, contains a reclamation plan that will restore the mined and disturbed areas to predominantly pastureland.

WCMC proposes the use of topsoil replacement for Pit 6; for the depth interval below the topsoil to four feet in depth, WCMC proposes the use of a subsoil substitute. Topsoil will be removed, stored, and replaced following the backfilling. For Pit 6, topsoil replacement will consist of all topsoil, and if topsoil is less than six inches, WCMC will remove, segregate, and redistribute a six-inch layer that includes the A-horizon and the unconsolidated materials immediately below the A-horizon. WCMC proposes a minimum 7-inch topsoil replacement thickness in Pit 6. A grade-stake method will be used to ensure that the topsoil is distributed as uniformly as possible over regraded areas. Some areas will be reclaimed to developed water resources. Section 145, Application, as supplemented, also includes the species to be planted, planting procedures, postmine soil monitoring and standards to be used for determining revegetation success. The reclamation plan is set out in §§ 12.145 - 12.154 of the application and Supplements 1, 2 and 3. WCMC has submitted all information required for the reclamation plan in accordance with §12.145 for reclamation during the proposed permit term.

- (a). The Regulations at §12.384(b)(4) provide that rough backfilling and grading shall occur in accordance with the time schedule approved by the Commission on the basis of a detailed written analysis by the permittee. Mining and backfilling of pits in Pits 1, 2, and 3 are complete. Pit 1 Area is permanently revegetated except for the haul road, and approximately half of the Pit I Area has been released from bond and removed from the permit area. Phase I bond release has been achieved on 332 acres in Pit 1 pursuant to Commission order dated January 15, 2020. Pit 2 is in the process of permanent revegetation. By Commission order dated January 15, 2020, 1,078 acres were

released from Phase I bond in Pit 2. Temporary structures will be reclaimed when no longer needed. The Pit 3 area has been permanently revegetated and 95 acres released from Phase I bond in Pit 3 by Commission order dated January 15, 2020. Pit 6 is categorized into four geographically contiguous sub-pits within the Pit 6 area as described in Section 139 of this application, as supplemented. Mining progression in Pit 6A was conducted in a northerly direction while mining in Pit 6C progressed in an easterly direction during the seventh term permit (Exhibits 139-27.7 through 139-32.7, Permit 27H) with reclamation occurring within scheduled timeframes, as areas become available, and conditions are suitable. Mining in Pit 6B was completed in 2014 with reclamation activities completed during 2015 and 2016 (Exhibits 139-27.7 and 139-28.7, Permit 27H). Mining began in Pit 6D in 2018 (topsoil stripping began in 2017) and progressed south (Exhibits 139-29.7 through 139-32.7, Permit 27H). For the areas proposed for mining in the application, as supplemented, WCMC proposes topsoil replacement. Topsoil will take up to eight months to complete after the achievement of approximate original contour, and the extended responsibility period (ERP) for vegetation will be initiated within one year after completing permanent revegetation. Final bond release will be requested after completion of the ERP.

- (i). The application includes the specific mining and reclamation operations for the subareas of Pit 6 (Pit 6A, 6B, 6C, and 6D), depicted on Figure 145-B, and in Table 145-2 (*General Reclamation Table*) [§12.145(b)(1)], showing the sequence and timing of mining and reclamation operations within Pit 6D with approved and proposed variances from the distance and timing requirements. Some areas will require a selective subsoil handling plan to ensure that no acid-forming and toxic-forming materials (AFM/TFM) will be present in the top four feet [subparagraph (d) of this Finding of Fact]. WCMC has also requested the time frame of 24 months from coal removal to complete rough backfilling and grading in proposed Pit 6D and a distance of within 1,500 feet from the toe of the highwall. The application, as supplemented, includes a request for approval of a reclamation timetable for backfilling, regrading, accomplishment of approximate original contour (AOC), topsoil replacement, revegetation (temporary and permanent), initiation of the extended responsibility period (ERP), and application for bond release. The reclamation timetable of 24 months and 1,500 feet from the toe of the highwall for backfilling and regrading is approved as set out in the application, as supplemented, for Pit 6D [§12.145(b)(3)] (Supplement 2) and will result in reclamation efforts occurring as contemporaneously as practicable as required by §12.383.
- (ii). Staff reviewed WCMC's request for a variance from the time and distance requirements. Four lignite seams will be recovered in the Pit 6 Area. Specific

operational techniques will be used based on a study of the Pit 6 Area soils present and depth of mining, location of AFM/TFM materials that must be placed below the top four feet of reclaimed soils, and operational sequencing necessary that will require additional time and distance for three areas of Pit 6. The timetable contained in the application for Pits 6A, 6B, 6C, and 6D has been demonstrated to be necessary for the proposed operations.

- (iii). Permanent reclamation schedules for the requested permit term are provided which support WCMC's request for variance. Table 145-3 shows the anticipated annual disturbance and reclamation schedule for the eighth permit term (Supplement 2). The following exhibits were filed that show the sequence and timing of mining and reclamation operations within Pit 6 with approved and proposed variances from §12.384. For Pit 6D, Exhibits 139-33.8 (Supplement 2), 139-34.8 and 139-38.8 (Supplement 1), 139-35.8, 139-36.8, and 139-37.8 (initial submittal). In addition, Figure 145-1 (Supplement 2) illustrates the systematic and chronologic sequence of reclamation milestones and objectives will be attained through release of reclamation obligations that, with the soil testing plan contained in Appendix VII of Staff's TA Addendum No. 3 (Appendix II to this Order), will meet the requirements of §12.145(4).
- (b). A detailed reclamation cost estimate is included in the application, Supplement 2, as required by §12.145(b)(2) of the Regulations. Staff also calculated reclamation costs and recommends that the Commission adopt the estimate contained in the application by WCMC. The Commission adopts WCMC's estimate of reclamation costs as more conservative in that it is in a larger amount and therefore more appropriate for reclamation by a third party in the event of forfeiture. The accepted reclamation performance bonds are Surety Bond No. SUR60000217 issued by Ironshore Indemnity, Inc. in the amount of \$22,000,000, accepted by Commission Order dated January 27, 2015, and Surety Bond No. N7002431, issued by Indemnity National Insurance Company, in the amount of \$21,198,583, accepted by Commission Order dated February 11, 2020, totaling \$43,198,583. This amount is greater than the recommended reclamation cost estimate, \$38,249,645. No additional bond is required.
- (i). WCMC's estimate is based on Exhibit 142-2, *Permit 27 Renewal/revision/expansion Bond Changes Map*, dated revised November 12, 2020 (Supplement 3) showing areas proposed for removal from bond and bond category change areas. The proposed bond map is Exhibit 142-1, *Permit 27 Eighth Term Renewal/revision/expansion Bond Map*, dated February 9, 2020 (Supplement 2). Acreage figures for various disturbances are listed in Appendix 145-3 (Supplement 2), *Projected Reclamation Acreage and Costs*. Staff's estimate is 36,545,391. WCMC's estimate totals \$38,249,645 is a more

conservative estimate than that of Staff, and the ALJ recommends that WCMC's estimate be adopted. WCMC's estimate is adopted.

- (ii). The latest Staff cost estimate was \$36,545,391 and was dated May 7, 2021 (TA Addendum No. 3). For the renewal, revision, and expansion application, Staff estimated reclamation costs for the mine based on the information contained in the application, as supplemented. Staff's estimate, included in Section 12.145(b)(2) and Appendix II to Staff's TA Addendum No. 3, includes reclamation costs per acre at the mined rate, disturbed rate, and ancillary rate based on the disturbance categories shown on WCMC's Exhibit 142-1. Staff's estimate was revised from its reclamation cost estimate approved in Revision No. 10 for the permit dated January 15, 2020, and incorporates the latest equipment costs, and the changes proposed in the renewal, revision, and expansion application.
- (c). Postmine contours are depicted on Exhibit 145-1 (Pits 1, 2, and 3) (*Conceptual Postmine Topography Pits 1, 2 and 3 Area*) and on Exhibit 145-2 (*Conceptual Postmine Topography Pit 6 Area (Supplement 1)*); premine and postmine slopes are depicted on Exhibits 145-3 and 145-4, respectively. WCMC will backfill and regrade to approximate original contour in accordance with §12.145(b)(3) of the Regulations. The application, as supplemented, includes revisions to slope categories with percentages of acreage revised from the approved permit to address changes due to the progression of mining. The following slope category percentages were calculated by Staff in its table [Section 12.145(b)(3) of initial TA] based on Table 145-5 of the application (Supplement 1): Slopes of less than 1%, 28.6% of acreage, compared to the premine percentage, 21.9%; slopes of 1-3%, 40.9 % compared to the premine percentage of 45.5%; slopes of 3-5%, 16.9 % of acreage, compared to a premine percentage of 17.6%; slopes of 5-10%, 11.2% of acreage, compared to 12.1 % of premine acreage; slopes of 10-15%, 1.8% of acreage, compared to 2.0% of premine acreage; slopes of greater than 15%, 0.8 %, compared to 0.9% of premine percentage. The changes constitute increases in slope for more acreage in the less than 1% range and decreases in slope for more acreage in the 1-3%, 3-5%, 5-10%, 10-15%, and >15% slope categories. All changes are slight; the greatest percent changes are an increase of 6.7 percent in the lowest slope category and a decrease of 286.1 acres in the next to lowest slope category. No significant changes will occur in the higher slope categories. The resulting slope percentages are similar to the approved postmine slope percentages. The changes in slope for the proposed postmine topography are approved.
- (d). Because of concerns regarding acid-forming and toxic-forming (AFM/TFM) materials in some depth intervals of the overburden, usually associated with lignite seams, WCMC requests approval of subsoil substitution with selective handling of

overburden in the construction of subsoil (depth of topsoil to four feet in depth). WCMC demonstrated that certain materials are the best available for construction of the subsoil portion of reclamation and that they may be selectively handled for placement in the subsoil. The approved permit contains Appendix 145-SSRA No. 1 (Subsoil Request Area 1) in Permit No. 27F, Supplement 5, in Appendix 145-SSRA No. 2 in Permit No. 27G, Supplement 7, and Appendix 145-SSRA No. 3 in Permit No. 27H, Supplements 1 and 2. In this application, as updated in Supplement 1, Appendix 145-SSRA No. 4 is included. Based on the information provided in the application, as supplemented, and the postmine soil monitoring plan, the subsoil substitution plan for the Pit 6 area is approved.

- (i). Materials filed in the approved permit and in this application, as supplemented, indicate that acid-forming and toxic-forming materials may exist in overburden zones associated with the D, F, G, and J lignite seams. Because of this, and after examination of zones containing suitable materials, WCMC will use only interburden materials above the F seam, above the E seam, and/or between the E and D seams in reclamation of the subsoil.
- (ii). The data for materials to be used in the top four feet were then examined to determine the intervals that were appropriate for subsoil reclamation. In Appendix 145-SSRA No. 4, approved in Revision No. 12 to Permit No. 27H, WCMC has identified and characterized areas from which proposed substitute material from selected overburden by dragline and selected overburden by truck/shovel (or other machinery) will originate. Exhibit 127-1 identifies the mine areas where each will be utilized, identified as "dragline operation" and "truck shovel operation" or with other machinery as "truck shovel assist" or "truck/shovel overburden." Figure SSRA 4(also approved in Revision 12 to Permit 27H) depicts the areas from which the overburden for subsoil replacement is located. Data for overburden cores within or influencing SSRA No. 4 were used to characterize the 706.3-acre area proposed for mining during 2021-2026. Review of the materials to be selectively handled and a comparison with the baseline soil characteristics and frequency distributions and weighted mean values for pH, acid-base accounting (ABA), and clay and sand percentages shows that the proposed subsoil substitute material will be equal to or better than the native soils and is the best available material for subsoil substitution. Table SSRA 4-2 (approved in Revision No. 12, Permit No. 27H) sets out the native subsoil weighted mean values for pH and ABA, and the percentages of clay and sand. Also set out are the frequency distributions by percentage of specific concentrations of pH (≥ 5.0 , 4.5-4.9, and 4.0-4.4 standard units) and ABA (≥ 0 , -1, -2, and ≤ -3) based on data contained in Appendices 134-3 and 134-4 of approved Permit No. 27G, and the frequency distributions by percentage for native subsoil with clay content $\leq 40\%$ and $> 40\%$ and for native subsoil with

sand content $\leq 80\%$ and $> 80\%$. Table SSRA 4-4 (approved in Revision No. 12, Permit No. 27H) provides the same information for the truck/shovel material (truck/shovel assist and truck/shovel overburden) and for the selected overburden material handled by the dragline. Table SSRA 4-5 (approved in Revision No. 12, Permit No. 27H) provides a comparison of the native subsoil to the selected overburden and truck/shovel material. Selective handling of overburden and subsoil substitution is approved as set out in this Finding of Fact, subparagraph (a), and should result in a lower clay content and slightly higher pH values in both the truck/shovel material and selected overburden. The more balanced particle size distributions associated with the lower clay content of the proposed substitute materials should provide increased moisture and nutrient storage and availability relative to the native subsoil.

- (iii). WCMC's approved postmine soil monitoring plan includes sampling to evaluate the postmine Pit 6 area to ensure compliance with requirements for the quality of the postmine top four feet and incorporates a contingency plan for proposed remedial measures should AFM/TFM occur [section .145(b)(5)(G)]. The soil testing plan includes sampling of composite soil samples of the topsoil and the bottom of topsoil to four-foot depth for various constituents, including total selenium and total boron, as well as a random 10% sampling of this interval for various constituents including cadmium. WCMC will use soil amendments and fertilizer based on soil testing results should remedial measures be required prior to revegetation. The postmine soil-testing plan setting out all parameters for which testing will be performed is set out in Staff's TA Appendix VII as reiterated in Appendix II to this Order.
- (e). The revegetation plan is contained in the application, as supplement. WCMC proposes the following postmine land uses: pastureland, developed water resources, and industrial/commercial. The application, as supplemented, includes all required information for a revegetation plan as required by §12.145(b)(5)(A)-(F) of the Regulations for mined and disturbed areas including a general timetable for revegetation (Table 145-2), proposed planting periods (Table 145-11) temporary vegetation/cover crops (Table 145-12), grasses for revegetation (Table 145-13), including volunteer species, forb species for inter/over seeding (Table 145-14), including volunteer species, woody vegetation species (Table 145-15) including volunteer species, aquatic and wetlands plants (Table 145-16) including volunteer species.
- (i). Planting procedures and methods, mulching techniques, seeding rates (in Tables 145-12 through 145-15), and irrigation and pest control measures, and evaluation of cover and productivity. The use of pastureland is based on landowner preference and premine land uses. Pastureland areas will

primarily be revegetated with coastal bermudagrass or other improved bermudagrasses. Bunchgrasses may also be used. Non-native forb species may be used to benefit local wildlife. Woody vegetation will be used in association with developed water resources or in shelterbelts, in mottes, and for wildlife enhancement such as in wetlands and depressions. Woody species will be planted at a minimum rate of 30 stems per acre or at a higher rate for wetlands if required by the USACE. Generally, aquatic plants will range between 1 to 20 plants per 100 square feet of planting zone. Select areas will be seeded with grasses, forbs, and tree species for wildlife benefit.

- (ii). Existing Permit Provision No. 7 provides as follows:

WCMC shall coordinate with Commission Staff to determine if changes to the planting lists in Section 12.145 are needed. Any changes identified shall be submitted in a revision to the permit within 12 months of permit issuance for administrative review and approval by the SMRD Director.

Staff sponsored retention of this permit provision in its initial TA but also noted the concern as Application Deficiency No. 145(b)(5)(B)-1 to address removal of three species from cool and warm season grasses listed in Table 145-13. In its TA Addendum No. 1, Staff noted that the concern had been adequately addressed and recommended that the permit provision not be retained. Existing Permit Provision No. 7 is not retained.

- (iii). Existing Permit Provision No. 8 provides:

Within ninety (90) days of permit issuance, WCMC shall submit a revision to Section 12.145 to remove text referring to success standards for woody vegetation in developed water resources and pastureland use area. The revision may be approved administratively by the SMRD Director.

The information required by this permit provision was provided to the SMRD, rendering the provision moot, and Staff agrees that this permit provision is no longer needed. Existing Permit Provision No. 8 is not retained.

- (iv). Mulching and the planting of cover crops will be used for stabilization during reclamation to prevent erosion when areas are not ready for permanent revegetation. Hay or straw mulch will be used with cover crops for stabilization. Cover crops may be disked under and used as mulch. Seeding may be used as a mulch technique in standing cover crops. Mulch

in permanently revegetated areas will be applied at one ton per acre on areas of less than 10% slope, and two tons on areas of greater than 10% slope. Irrigation will be used to establish woody plants and in the event of drought.

- (v). Success of revegetation will be determined as adapted from the Commission's December 29, 2014 *Procedures and Standards for Determining Revegetation Success of Surface-Mined Lands in Texas*. Ground cover for pastureland will be at least 90% of the technical standard of 95%. Productivity will be measured by harvesting of plots (using sample points and use of multiple harvests to determine production for a growing season) or whole field harvest (with 15-day prior notification to the Commission) using cut and cured hay bales. Productivity must equal or exceed 90% of the USDA Natural Resources Conservation Service (NRCS) technical standard developed for the Calvert Mine (Appendix .145-2 of Permit No. 27F). For enhancement features, the standard used will be the standard of the associated land use in that no fish and wildlife land use is proposed. The revegetation portion of the reclamation plan is in compliance with §12.145(b)(5) (A-F).
- (vi). WCMC provided a plan for reclamation of the disturbed lands within the permit area contained in Sections 12.145 through 12.154 of its permit application and Supplements 1, 2 and 3.
- (f). The selective handling plan and soil testing plan set out in Appendix II to this order (derived from Staff's TAA2, Appendix VII) will ensure that the top four feet of reclaimed soils are free of acid-forming and toxic-forming materials (AFM/TFM) and provide an appropriate soil medium for revegetation in accordance with §12.145(b)(5)(G) and §12.145(b)(7) of the Regulations. WCMC has also described its methods to adequately dispose of debris and combustible materials. Overburden and topsoil will be sampled to a depth of four feet on 5.7-acre grids with two sample intervals, surface to replaced depth of topsoil and replaced depth of topsoil to 4 feet. Depth of topsoil will be reported with soil monitoring reports. Composite samples from each grid will be tested for the parameters set out in the soil-testing plan to determine soil quality. A random ten percent will be sampled and tested for the following trace elements, in their total form: cadmium, selenium, and boron (hot-water extractable). Sample results will be reported to the Commission. Topsoil will also be sampled during the fourth year of the ERP. Sampling times during productivity assessment periods are also set out in the plan. WCMC will use remediation techniques for any problem areas located based on sampling and testing results. The soil-testing plan also includes additional sampling, testing, and reporting (no later than the second month of the fifth year of the ERP) of a random 10% of the 5.7-

acre grids during the fourth year of the five-year ERP. The soil-testing plan includes all measures required to ensure that AFM/TFM is identified and remediated if necessary and to ensure that an appropriate soil medium is present for revegetation. Staff provided Appendix VII, *Soil Testing Plan and Postmine Soil Performance Standards*, that includes accurate pH and ABA values. This plan is contained in Appendix II to this Order with minor revisions for greater clarity and is hereby approved.

- (g). WCMC has designed its operations plan to maximize the recovery of coal in accordance with §12.145(b)(6) to the extent geologically possible consistent with fuel requirements, efficiency of equipment, and compliance with environmental laws (Supplement 1) by its operations plan, by mining to all depths to retrieve all seams that are consistent with safety, minimizing in-pit losses, and use of an efficient loading operation.
- (h). Appropriate methods will be used to bury, segregate or dilute AFM/TFM and to appropriately dispose of materials by recycling, disposal, and storage as required by the Regulations in §12.145(b)(7) by its topsoil salvage and subsoil substitution plan, and disposal of debris and fire hazard materials such as lignite fragments and carbonaceous clays.
- (i). WCMC provided acceptable drill hole casing and sealing procedures required by §12.145(b)(8) and §§12.331 -12.333 (Application and Supplement 2, Appendix 145-1). Existing water wells will be plugged as required by the Commission regulations and regulations administered by the Texas Department of Licensing and Regulation (16 TEX. ADMIN. CODE §76.1 *et seq.*) promulgated pursuant to the Texas Water Well Drillers Act, TEX. WATER CODE Chs. 32 and 33 [§12.145(b)(8)]. WCMC will notify the Commission prior to undertaking a drilling program within the permit area outside the disturbance boundary. All drilling will occur in bonded areas. WCMC has described the procedures it will use for sealing and reclaiming boreholes and water wells, as well as reclamation procedures for drilling sites. There are two inactive oil and gas wells in the northern portion of the permit area; no disturbance is planned around these wells during the requested permit term.
- (j). WCMC has undertaken to comply with federal and state air quality laws, water quality laws and other health and safety standards applicable to proposed disturbances. Sufficient information is presented in the application that reflects compliance with applicable laws administered by the Commission, TCEQ, the Mine Safety and Health Administration (MSHA), and the U.S. Army Corps of Engineers (USACE). The application is in compliance with §12.145(b)(9).

36. The approved permit and application for renewal, revision, and expansion as revised in Supplements 1-3 include a plan as required by §12.146 of the Regulations, of measures to be taken to protect the hydrologic balance of the surface and groundwater systems within the permit area and adjacent areas and to prevent damage outside the permit area, to meet water-quality laws, and to protect groundwater and surface-water users. This plan addresses the requirements of §12.146(a), general requirements for surface water and groundwater, including preventative measures, §12.146(b), an adequate monitoring plan for groundwater, §12.146(c), an adequate monitoring plan for surface water, and §12.146(d), a determination of the probable hydrologic consequences (PHC) of mining on the surface water and groundwater. The PHC determination in section .146 of the Application includes a computer model of potential drawdown of aquifers within and near the permit area to estimate impacts to groundwater users of Calvert Bluff sands and Simsboro sands. The Application, as supplemented, requests approval of new water-control structures for the proposed permit term. WCMC proposes to increase the permit boundary by 1 acre. The geologic setting of the permit and surface-water and groundwater conditions are similar to those that have been reviewed in previous permit applications. Changes proposed relate to documentation of current conditions through the data compiled by monitoring, changes to the monitoring plans, and slight modifications to the approved probable hydrologic consequences determination made previously by WCMC. Alternative water supplies have been identified.
- (a). WCMC has provided information to protect the hydrologic balance of groundwater in accordance with §§12.146(a) and (b). To date, only minimal changes have occurred to the quantity and quality of groundwater and have been as predicted in previous reports contained in WCMC applications, including artesian pressure declines and water level declines in local Calvert bluff sands. The application includes a summary of groundwater monitoring data for Pit 6 (Table 146-1), indicates that monitoring will continue, and indicates that depressurization pumping will continue.
- (i). WCMC includes a list of wells and monitoring schedules for long-term groundwater monitoring (LTGM) of the permit area in Table 146-2 (Supplement 2). Locations of monitoring wells are depicted on Exhibit 128-1, Supplement 2, *Location Map*. There are 18 LTGM wells completed in the Simsboro Formation, seven wells completed in the Calvert Bluff Formation, and five wells completed in the reclaimed spoil. The table contains the frequency of monitoring, either quarterly or annually. Six Simsboro Formation wells are sampled quarterly for water quality. Six Calvert Bluff Formation wells are sampled quarterly for water quality, and five spoil-area wells are sampled quarterly for water quality. Water levels in all 30 Simsboro, Calvert Bluff, and spoil monitoring wells are measured quarterly, although monitoring of five of the Simsboro Formation wells is

subject to the landowner's permission. Two monitoring wells drilled in 2016 were added to the LTGM plan for quarterly water level and water quality sampling. Two new spoil monitoring wells are proposed to be installed within two years following final grading of the wells' locations. Staff indicates its belief that adequate monitoring of groundwater will occur.

- (ii). WCMC indicates that depressurization pumping will be increase over that of the previous permit term due to the dip of the D seam toward the east-southeast within the permit boundary. The depressurization plan is included in Appendix 139-1 (Supplement 1). Depressurization production is expected to increase by a total of approximately 100 gpm from two Pit 6 depressurization wells to adequately reduce water levels. Nevertheless, drawdown resulting from depressurization pumping will decrease, so that some recovery of Simsboro Formation water levels is anticipated. WCMC anticipates that depressurization wells operating in the Pit 2 area for several years may begin to experience failures and will be replaced as needed. Mitigation programs will continue to ensure the protection of nearby ground-water users that have been impacted by mining operations.
- (iii). WCMC indicates that LTGM sampling and monitoring procedures will not change significantly for the proposed permit term. These include submittal of quarterly monitoring results (field parameters for specific conductance and pH) and analytical laboratory results of water quantity and quality [total dissolved solids (TDS), total iron and manganese, dissolved iron and manganese, chloride, and sulfate] within 60 days of sample collection (or 30 days from the end of the quarter, whichever is earlier), as well as any plugging and replacement of wells.

In its initial TA, Staff noted concerns regarding the sampling of spoil LTGM wells with very slow recharge rates. WCMC explained (Supplement 2, errata) that, although the spoil wells show a measurable water level, a reliable water sample cannot be collected. The spoil well does not recharge at an adequate rate after the well is purged to allow the collection of water that represents the current conditions of the water-bearing formation. WCMC went on to clarify that, if a sample were collected prior to purging the well, the water would represent the conditions in the well and not the water-bearing formation. Staff continued to note the concern in TA Addenda Nos. 1 and 2, withdrawing the application deficiency in TA Addendum No. 3. Staff sponsored a new permit provision in TA Addendum No. 2, which it continued to recommend in TA Addendum No. 3, that, prior to commencement of the midterm review of the permit conducted pursuant to §12.225(a) of the Regulations, WCMC would be required to submit a revision to its PHC determination approved in the

Application to include four quarterly groundwater samples from the spoil monitoring wells.

In Supplement 3, WCMC added text to section .146 to address this concern, which reads "Although the spoil material is re-saturating and the spoil wells have a measurable water level, a water sample for water quality analysis has not been collected due to the inadequate rate of recharge in the spoil wells. Previously, when the well was pumped to purge the stagnant water (as is standard practice), the infiltration rate of the formation water through the screen was much less than the pumping rate and, subsequently, the well was pumped dry. It would often take multiple days for the water level to recharge and the water in the casing likely no longer represented aquifer conditions; therefore, the well was considered dry and no water sample was collected."

Additionally, a detailed procedure for collecting water samples from wells with low inflow rates has been provided in Appendix 146-8 in Supplement 3. Text referencing Appendix 146-8 was added to the text under section .146(b)(1) to indicate that Appendix 146-8 contains a detailed procedure for collecting a water sample from wells with low inflow rates.

The issue of water quantity in the spoil LTGM wells has been raised in previous permit renewal dockets for the Calvert Mine. A review of the overburden (and hence, spoil) composition as described in the baseline geology in the area of the mine pits (Application section .127) shows that the material has a very high clay content and is thus not conducive to satisfactory yields to wells completed within the spoil.

Staff's proposed permit provision is not needed and is not adopted.

- (iv). WCMC proposes continuing dewatering and depressurization operations to control pit inflow and to improve highwall stability in the Pit 6 area. Results of computer modeling of the effects from the dewatering or removal by mining of the overburden Calvert Bluff sands for the Pit 6 area show that the dewatering drawdown effects will have little impact. These overburden sands generally produce low volumes of variable quality water, are small, isolated, having little hydraulic conductivity to productive areas within the Calvert Bluff Formation. What groundwater flow exists is toward the mine pits, and thus the effects will be generally limited to areas very near the mine pits. Groundwater-quality impacts are not expected to occur to the surrounding aquifers, including the Simsboro Formation, because of poor hydraulic connection. Resaturation to these small, isolated sand zones may take many years through the mixed clay, silt, and sand. Long-term

use of this aquifer is expected to remain minor, similar to the premine aquifer.

Depressurization of the Calvert Bluff Formation underburden sand and the Simsboro Formation aquifer were modeled for the proposed permit term. The areas to be depressurized were modeled to determine the maximum and minimum amount of pumping needed for the proposed Pit 6 area activities, and to aid in the development of a depressurization plan. Artesian pressure in the Simsboro will be affected. WCMC predicts, based on maximum pumpage that increases in declines of artesian pressure in Simsboro water levels will be small, and that drawdown due to depressurization changes will result in only a few occasions of mitigation. WCMC will continue to submit an annual depressurization report during the first calendar quarter indicating the total volume of water pumped per well and collectively and pumping rates and water levels in monitoring wells, along with a map showing total water-level changes since depressurization began. On Exhibit 146-1 of the application (Supplement 1), WCMC depicts the simulated extent of five feet of drawdown through 2026. Water levels are expected to recover to premine levels, and no long-term adverse impact to water quality is expected. WCMC also provided Table 146-1, *Ground-water Quality Monitoring Summary*, and Table 146-2 (Supplement 2), *Proposed Long-term Ground-Water Monitoring Program*, identifying the LTGM wells, and representative water sampling results and water level recovery. These wells will continue to be used to assess any changes in water quality or water levels. WCMC indicated that three existing wells along the perimeter of Pit 2 will continue to be used for monitoring and will be sufficient to monitor depressurization effects through 2026. Artesian declines should be less than previously experienced because depressurization pumping will be less during the proposed permit term. Surface mining activities have not resulted in any adverse effects to local water quality. Although discharge of depressurization water may increase surface-water flows, the streams within the permit area and adjacent areas are intermittent. No springs have been located within the permit area that might be affected. The water from depressurization will not contain excess suspended solids, and typically it will dilute the total amount and reduce suspended solids. Water pumped from depressurization wells is expected to be of good quality and will be discharged to streams at outfall structures and treated, if necessary, prior to discharge. Staff's review indicates that the groundwater monitoring plan will be sufficient to ensure that effects on groundwater resources are minimized.

- (b). WCMC included in the approved permit, application, and Supplement 1 an updated plan to protect the surface water hydrologic balance in accordance with §12.146(a) and (c).
- (c). WCMC proposes to affect approximately 9.2 square miles of the Walnut

Creek watershed (138 square miles). As described in the Application and Staff's TA, ponds and diversions are proposed to control and discharge surface water pursuant to TCEQ permitting in accordance with water quality parameters, and appropriate discharge as well as stream monitoring will be conducted. WCMC indicates in its surface-water PHC determination that impacts will be minor.

- (i). Measures are included to ensure that no problems exist from acid-forming and toxic-forming materials. Final discharges from ponds will be monitored, and water can be routed to treatment ponds should acid- and/or toxic-forming drainage, or excess suspended solids, exist.
- (ii). Water quality permit requirements will be met. Existing and proposed ponds will be adequate to handle runoff. Appropriate sediment control is proposed through the use of diversions, detention ponds, sedimentation ponds, and treatment ponds. Drainage systems upstream and downstream of the permit area will be monitored; permitted outfalls as set out in WCMC's TCEQ water-quality permit will be monitored as required to ensure that effluents meet water quality requirements or that treatment occurs if necessary to ensure that mining-related permitted discharges contributed to Segment 1242 of the Brazos River will not affect stream segment criteria.
- (iii). The surface-water protection and monitoring plans are provided in the application, pages 146-45 through 146-124 and appendices, as supplemented, and in Table 146-4 of the application. Long-term monitoring site locations, sampling and reporting frequency are included in Table 146-4; locations are depicted on Exhibit 146-6, *Surface Water Monitoring Stations and Discharge Outfalls*, as well as Exhibit 146-7, *Surface Water Monitoring Stations and USGS Topography*. The plan has been revised to update the location of outfalls (Exhibit 146-6 and 146-7 and pp. 146-73 and 74). Sources of water for the outfalls and receiving streams are included, along with water quality data obtained from ongoing stream monitoring (Application, Appendix 146-3) and discharge water quality from groundwater sources in Summary Table 146-5 (application) for flow, pH, total suspended solids, total iron, total selenium, and settleable solids, total aluminum, and dissolved aluminum. A copy of the TPDES Discharge Permit No. WQ0002881000 is included in Appendix 146-4.

Existing Permit Provision No. 2 provides:

The Commission shall be notified promptly of any changes in the list of impoundments and groundwater discharge points comprising each TCEQ and EPA outfall. The Commission shall be provided annually, within 30 days of the anniversary date of permit issuance, a revised outfall map identifying the impoundments and

groundwater discharge points in each outfall. If there are no revisions to the impoundments or ground-water discharge points listed during the year, the Commission may be notified by letter in lieu of the annual map submission.

This permit provision had been adopted to ensure submittal of updated outfall information on a regular basis. This commitment is included in the section .146 text (Supplement 1) and Staff agrees that the permit provision is no longer needed. Accordingly, existing Permit Provision No. 2 is not retained.

Existing Permit Provision No. 9 provides:

WCMC shall report to the Commission via email or facsimile transmission (FAX) ponds with discharge that exceed effluent parameter limits in TPDES Permit No. 02881 within 24 hours of becoming aware of the non-compliant discharge.

This permit provision was adopted to ensure timely submittal of documentation of non-compliant discharges. A footnote was added to Table 146-4 (Supplement 1) to address this commitment and Staff agrees that the permit provision is no longer needed. Accordingly, existing Permit Provision No. 9 is not retained.

Existing Permit Provision No. 10 provides:

Stream channel cross-sections shall be inspected after a 10-year/24-hour storm event and resurveyed if measurable changes in channel geometry that might reasonably modify the rating curve are noted during these inspections. The resurveyed cross-sections and updated rating curves will be submitted to the Commission within 60 days of a 10-year/24-hour storm event or if significant changes are noted during routine inspections. If a 10-year/24-hour storm event does not occur and changes in channel geometry are not observed during the previous year, this will be noted annually with the first quarter monitoring data.

WCMC provided additional text in section .146 (Supplement 1) to describe stream-flow measurement procedures. WCMC also clarified (errata, Supplement 1) that stream-channel surveys are conducted during each sampling event, rather than using rating curves to estimate flows. With this additional clarification, Staff agrees that the permit provision is no longer needed. Accordingly, existing Permit Provision No. 10 is not retained.

- (iv). Discharge criteria are being met. No effects are anticipated to Walnut Creek downstream of the mine.
- (c). The application, as supplemented includes information to update the PHC determination for surface-water impacts. Information is included indicating that concentrations of suspended and dissolved solid, total iron, total manganese, dissolved iron, dissolved manganese, and pH may increase slightly during mining but will approach premine levels following mining. WCMC estimated sediment yields, runoff rates and volumes, and water chemistries from midterm to postmine. WCMC calculated peak flows before, during, and after mining, for the five-year permit term proposed and for the life of mine, as well as evaporation totals from proposed ponds for the 10-year/24-hour and 25-year/6-hour storm events. It is estimated that total peak discharges will be reduced from premine; rates of runoff will increase, but they should be attenuated by evaporation from impoundments and routing of water through spillways. Minor changes in the volume of runoff and runoff rates should occur. Flow regimes in Bee Branch, Big Willow Creek, Willson Creek and Walnut Creek will be changed, but baseflow in these streams is anticipated to increase slightly. Postmine changes in topography and drainage characteristics will also change slightly and may affect basin size, shape, slope, and channel sinuosity. Changes may arise from reduced sediment, reduced flow, and increased baseflow. Evaporative losses of water are anticipated to increase from 305 acres of proposed postmine ponds from premine conditions of 43 acres, resulting in an increase in evaporative losses from approximately a premine 211 acre-feet per year to postmine conditions of 1,500 acre-feet per year (Supplement 1). WCMC indicates that when compared to approximately 21,794 acre-feet of runoff at monitoring station 3, a reduction of approximately 5.9% of average annual runoff or streamflow may be realized. Increases in consumptive losses are expected to have only minor impacts to receiving streams and no impact to downstream users. Increased in TDS, chloride, and sulfate concentrations that have been noted appear to be due to activities upstream of mining. WCMC indicates that trace metals may leach from oxidation of spoil material, especially in mine pits, but that mine water in the pits will be routed to sedimentation ponds and meet discharge requirements prior to discharge. WCMC monitors discharges from sedimentation ponds for aluminum concentrations because the natural stream water contains moderate concentrations of particulate aluminum; however, these aluminum concentrations are not predicted to have a negative impact on receiving streams, as they occur in concentrations that are below the upper limits needed for protection of aquatic life. All projected impacts to surface water were considered by WCMC to be minor.

- (d). On December 22, 2020, SMRD Staff filed its TA Addendum No. 2, which contained a summary of its probable Cumulative Hydrologic Impact Assessment (CHIA) on surface-water and groundwater systems by proposed and anticipated mining operations within a defined Cumulative Impact Area (CIA). Approval of the Application is dependent on a positive determination in Staff's CHIA that mining operations at the Calvert Mine have been designed to prevent material damage to the hydrologic balance outside the Calvert Mine permit area. Staff has prepared three previous CHIAs for the Calvert Mine; on April 19, 1993, for Permit No. 27B (Docket No. C2-0111-SC-27C); on October 14, 2008, for Permit No. 27F (Docket No. C7-0025-SC-27-C, TA Addendum No. 1) due to the increase in surface-water acreage from 118.8 acres to 264 acres; and a revised CHIA completed for Permit No. 27H (Docket No. C14-0012-SC-27-C, TA Addendum No. 1), in which WCMC decreased the permit area by 648 acres. The 1993 CHIA and 2008 CHIA were limited to the life-of-mine operations proposed at the time and did not include the areas proposed for mining addressed in the permit term proposed in this Application. Staff notes that the CHIA was comprehensively updated as part of the Bremond Mine Permit No. 49B renewal, revision, and expansion application (Docket No. C19-0010-SC-49-C) and contained in Staff's TA Addendum No. 2, Appendix I, October 3, 2019, for that docket. This CHIA is a comprehensive update for the entire Walnut Creek watershed. Based upon the information provided by the applicant, Staff's evaluation of the information contained in the supplemented Application, and the Staff-prepared CHIA that was summarized in TA Addendum No. 2, the proposed surface mining and reclamation operations have been designed to minimize effects on surface water and groundwater. A summary of Staff's CHIA follows:
- (i). The existing mines in the Walnut Creek watershed are WCMC's Calvert Mine (Permit No. 27H) and Luminant's Bremond Mine (Permit No. 49C). The Walnut Creek watershed is a tributary to the Little Brazos River. Walnut Creek and the Little Brazos River are part of the Brazos River Basin. Walnut Creek is an intermittent stream with a watershed of approximately 138 square miles and is a subwatershed of the Little Brazos River basin, which covers 329 square miles. The Little Brazos River flows into the Brazos River approximately 25 miles downstream of the Calvert Mine.
- (ii). The Staff described the potential effects of the mining activities of the Calvert and Bremond Mines on the surface and groundwater in the CIA by: (a) delineating two mass-balance calculation points in the CHIA; (b) evaluating baseline water quantity and quality; (c) for surface water, evaluating chemical and physical changes in receiving stream flow, as well as geomorphic changes within the CIA; and (d) for groundwater, evaluating potential aquifer-head drawdowns and declines as well as the physical and

chemical changes in the reclaimed spoil areas, including chemical changes in the spoil groundwater.

- (iii). For surface water, total dissolved solids (TDS) were used as the indicator parameter in the mass-balance analysis to project changes to the chemical quality of surface water. Although Mass-Balance Location No. 1, located on Walnut Creek immediately upstream of its confluence with Little Brazos River, showed the largest potential of TDS concentrations at 31.4% (from 240 mg/L to 315 mg/L), this value is significantly below the threshold value of 750 mg/L TDS for TCEQ Stream Segment No. 1202. Further downstream at Mass-Balance Location No. 2 on the Little Brazos River at identified irrigation Water Rights 4363A and 4364A, the cumulative effects are also predicted to remain significantly less than 750 mg/L. A predicted 13.2% increase (240 mg/L to 272 mg/L) in TDS at the downstream node of the CIA remains well below the TDS concentration maximum of 750 mg/L. The cumulative impacts are also softened by the dilution caused by substantial runoff within the Brazos River Basin drainage area. TDS concentrations post mining are also predicted to be in an acceptable range.
- (iv). The physical changes expected within the mine's reclaimed areas will cause small changes in the quantity of surface water available for downstream users. Changes to be expected include attenuation of storm events due to surface water impoundments and longer sustained flows in receiving streams. This is insignificant when compared to the amount of storm water runoff originating within the CIA and the Brazos River Basin. In addition, it is not expected that post mine soils loss will be less than pre-mine due to the construction of surface water control and treatment structures.
- (v). For groundwater, the Staff found that the projected aquifer-head drawdowns and declines due to mining activities were found to be insignificant within the CIA. This is due primarily to the limited extent of sand bodies and the usually unconfined conditions within isolated watershed areas in the Wilcox's overburden.
- (vi). Mining will cause physical changes in the spoil areas which will alter the spoil resaturation rates and change the geometry of the groundwater flow. However, the cumulative effects of mining on these values are insignificant.
- (vii). Mass balance analyses were also employed to project the impacts to water quality in the spoil area groundwater. These analyses showed measurable cumulative effects throughout the CIA for both mines, but these were significantly less than threshold values established for TDS concentrations in TCEQ Stream Segment No. 1202 and are acceptable. The same is true for

the effects of spoil-area groundwater on streamflow water quality in critical reaches outside the mine areas. The material damage is deemed insignificant because of the dilution effects of surrounding aquifers and from substantial runoff within the large drainage areas.

37. In the application, WCMC proposed alternative land uses on tracts that it owns, on tracts that it leases or for which it has an easement or license agreement. After supplementation of the application, WCMC has provided a sufficiently detailed description to determine the acreage and locations of the proposed postmining land uses.

- (a). Existing Permit Provision No. 11 provides:

Within 30 days of permit issuance, WCMC shall either revise the postmine land-use map to depict CR 427 Alternate or provide for administrative review and approval by the SMRD Director, a signed landowner consultation approving the proposed postmine land use for the tract.

The information required by this permit provision has been provided to the SMRD, rendering the provision moot, and Staff agrees that this permit provision is no longer needed. Permit Provision No. 11 is no longer needed and is not retained.

- (b). WCMC has provided signed landowner consultations for leased tracts proposed for disturbance during the proposed permit term.
- (c). The Application, as supplemented, meets the requirements of §12.147 and §12.399(c) for alternative postmine land uses. The application includes evidence of landowner consultation for changes to the approved postmine land uses. Appropriate agencies were provided the opportunity to review the application and to provide comments. The proposed uses will not result in unreasonable delays in reclamation. The areas are bonded and will remain bonded until release of reclamation obligations is determined to be appropriate by the Commission. Plans were designed under the general supervision of a registered professional engineer who will ensure that the plans conform to applicable accepted standards for adequate land stability, drainage, vegetative cover, and aesthetic design appropriate for the proposed land use. No cropland alternative land uses are proposed for which other requirements would be applicable. The application, as supplemented, and approved permit describe how the proposed alternative postmining land use is to be achieved and the necessary support activities that may be needed to achieve these uses. The application and approved permit include the consideration given to making the surface mining and reclamation operations consistent with surface owner plans and applicable land use plans and programs. The application and approved permit have identified the steps to be taken to comply with applicable water quality laws, rules, and regulations.

Except as described in paragraph (d) of this Finding of Fact, the proposed uses will be compatible with adjacent land uses. The alternative land uses as proposed are approved subject to the exception described in paragraph (d) below. The proposed uses will be compatible with adjacent land uses. The alternative land uses as proposed are approved. WCMC consulted with all landowners for tracts proposed for alternative land uses that are proposed for disturbance during the requested permit term. Based on the last approved postmine land use totals, the following is a comparison between the approved postmine land use acreages of disturbed lands and that proposed in the application:

Postmine Land Use Category	Approved Reclaimed Area (acres)	Proposed Reclaimed Disturbance (acres)	Proposed Change (acres)
Pastureland	4,414	4,907	493
Grazingland	0	0	0
Industrial/Commercial	52	114	62
Undeveloped	0	0	0
Developed Water Resources	280	333	53
Total	4,746	5,354	508

- (d). In its comment letter dated May 28, 2021, TPWD provided further clarification of the concerns noted in its previous letter dated January 14, 2021 (Finding of Fact No. 35, *supra*). TPWD noted specifically that in that WCMC is the owner of the majority of the lands proposed for mining and reclamation in Pit 6, the rationales of landowner requests and reclamation to “a higher and better use” are of limited import in meeting the requirement at §12.399(c)(8) to “prevent or mitigate adverse effects on fish, wildlife, and related environmental values,” as it has ample opportunity to adequately address the need to meet this requirement. By letter dated June 1, 2021, WCMC provided a response to the May 28, 2021, letter, contending that it had adequately responded to TPWD’s concerns in Supplement 3. In fact, it did not provide any substantive response to the additional clarification provided by TPWD. Further, Staff evaluated TPWD’s January 14, 2021, comments; however, in its evaluation in TA Addendum No. 3 it did not recognize the extent of WCMC’s land control. The Commission therefore adopts the following **new Permit Provision No. 5**, as proposed by the ALJ, requiring a change to the proposed postmine land use to meet the requirements of §12.399(c)(8):

Within 90 days of permit issuance, WCMC shall submit a revision to its postmine land-use plan contained in section .147 of the Application to propose appropriate postmine land uses suitable to meet the requirements of §12.399(c)(8). The revised plan shall be submitted

within ninety (90) days of permit issuance for review and processing in accordance with §12.226 of the Regulations.

38. Section .148 of the Application, as supplemented, includes a water-control plan (depicted on Exhibits 148-1 and 148-2) and information in the Application, as supplemented, identify one sedimentation pond (Pond SPC-66) that will be modified during the proposed permit term. No new diversions or detention ponds are proposed. The information meets the requirements of §12.148 (ponds and impoundments) and §12.150 (diversions) for the proposed permit term. No coal-processing waste banks, dams, or embankments are proposed. No permanent sedimentation ponds or permanent impoundments are proposed in the Application, as supplemented. General design plans have been submitted for modifications to Pond SPC-66 in accordance with §12.148 and are certified by a registered professional engineer. General design plans are provided in the Application and described in detail in Staff's TA. The general plans contain a description, map, and cross section of the structures and locations, preliminary hydrologic and geologic information as required by §12.148(a) and are approved. Detailed design plans for modification of Pond SPC-66 will be submitted shortly after approval and issuance of this permit renewal for construction as soon as possible. Detailed design plans must be submitted and approved prior to pond construction.
39. No underground mines exist within the proposed permit area or within 500 feet of the proposed permit boundary (§ 12.149).
40. WCMC proposes that mining and related operations will impact the public road system during the requested five-year term. Exhibit 152-1 (Supplement 1) depicts county road, and a listing of existing and proposed road closures is provided in Table 152-1 (Supplement 1). WCMC indicates that the public and affected landowners will be protected from proposed mining operations and traffic flow will be maintained through alternative routes within the existing road system. WCMC submitted its plan for the temporary closure of certain county roads during the term to be permitted, including a plan to temporarily close approximately 4,050 feet of CR 127 (Rosehill Road) from its intersection with CR 129 (Beck Prairie Road) westward to its intersection with the currently closed portion of CR 127, which is proposed to be temporarily closed in 2023. Documentation of approval from the Robertson County Commissioners Court for the closure of a portion of CR 127 was provided by letter dated April 1, 2021. The temporary closure of a portion of CR 127 is approved.
41. Buffer-zone variances approved in Permit No. 27H are requested for continuation at three locations where mine haulroads cross public roads in the northeastern portion of the Pit 6D area. WCMC describes the measures to be employed to ensure public safety at these crossings in Section 152 (Supplement 1). The buffer-zone variances for haul-road crossings proposed in the Pit 6D area are approved to continue.

42. Existing Permit Provision No. 3 provides:

Prior to the initiation of mining the area beneath County Road 432 approved for closure, the owners of an undivided ½ interest in the coal and oil and gas estate (Dickens) and their authorized representatives, contractors, or lessees may access Tract 6024 via Country Road 432 for the purpose of exploring, developing, and marketing the coal and/or oil and gas. Walnut Creek Mining Company shall maintain the road so that it will provide appropriate reasonable all-weather access to explore, develop, and market the coal and/or oil and gas. Subsequent to the initiation of mining beneath County Road 432, and upon request to explore, develop, and market the coal and/or oil and gas, Walnut Creek Mining Company must provide and maintain appropriate reasonable all-weather access by either a public road constructed with comparable materials, width, and quality as the portion of Country Road 432 to be closed or a private road constructed with comparable materials, width, and quality as the portion of County Road 432 to be closed to connect Tract 6024 to the temporary County Road 432. Should this access road become unusable due to mining operations, Walnut Creek must provide appropriate reasonable all-weather access upon request to explore, develop, and market the coal and/or oil and gas.

This permit provision had been adopted to ensure access to the affected property for oil and gas related activities was maintained. The activities that may have precluded access have been completed and Staff agrees that the permit provision is no longer needed. Accordingly, existing Permit Provision No. 3 is not retained.

43. WCMC proposes no disposal of excess spoil (§ 12.153).
44. The application includes a revised Exhibit 154-1, *Transportation Plan*, containing depictions of existing and proposed roads as defined in the Regulations, 12.3(153) associated with mining, reclamation, or exploration including county roads. No new roads that are outside of the immediate mining area and water control (that are exempt from the definition of "road") are proposed for the requested permit term; no design plans have been submitted for approval. Table 154-1 contains a summary of approved roads within the permit area: Haulroad HR-1, Service Road SR-4, as revised, Service Road SR-6, Haulroad HR-3, as revised, Haulroad HR-TNP, Service Road SR-9, as revised, Haulroad HR-60, Service Road SR-63A, Service Road SR-63B, Service Road SR-64, Service Road SR-65, and Service Road 66. Previously approved permits contained detailed information regarding approved roads. WCMC has presented required information for its transportation system within the proposed permit area for the proposed permit term as required by §12.154 of the Regulations. No support facilities are proposed.

45. No public parks occur in or adjacent to the proposed permit area. No land in the National System of Trails or Wild or Scenic Rivers System occurs in or adjacent to the proposed permit area.
46. The application as supplemented reflects no outstanding notices of violation. WCMC has not had a surface coal mining permit suspended or revoked, or reclamation bond forfeited. All notices of violation (NOVs) have been terminated or are within the time period set for appeal, in the appeal process, or are otherwise being resolved to the satisfaction of the issuing entity. Appendix VI, TA Addendum No. 2 contains the Applicant/Violator System Report prepared by Staff. No outstanding violations or unpaid fees are indicated. There are no outstanding enforcement matters that would prevent issuance of the renewed and revised permit (TA Addendum No 2, Appendix VI).
47. The application, as supplemented, meets the requirements of §12.216.
 - (a). The permit application is accurate and complete and demonstrates compliance with all requirements of the Act and 16 TEX. ADMIN. CODE CH. 12 as noted in the Findings of Fact in this Order and with the adoption of the permit provisions contained in Appendix I and the soil-testing plan contained in Appendix II of this Order.
 - (b). With the adoption of the permit provisions contained in Appendix I and the soil-testing plan contained in Appendix II of this Order, Walnut Creek has demonstrated that surface coal mining and reclamation operations, as required by the Act and Regulations, can be feasibly accomplished under the mining and reclamation plan set out in the supplemented application.
 - (c). A summary of Staff's Cumulative Hydrologic Impact Assessment (CHIA), dated December 22, 2020, was filed for this application, as supplemented. Staff reviewed the impacts from operations to determine whether they have been designed to prevent material damage to the hydrologic balance outside the permit area. Staff assessed the aggregate effects of existing and proposed surface mining activities on the hydrologic systems within the affected watersheds. Staff indicates that in accordance with its CHIA, no long-term adverse impacts are anticipated to occur in the underburden aquifer systems adjacent to the mined areas, to the overburden aquifer systems adjacent to the permit area, or to streamflow outside the permit area as set out in the findings of fact.
 - (d). The permit area is:
 - (i). Not included within an area designated as unsuitable for surface coal

mining operations under §§12.74 - 12.85;

- (ii). Not within an area under study for designation as unsuitable for surface coal mining operations in an administrative proceeding begun under §§ 12.78 - 12.85;
 - (iii). Not on any lands subject to the prohibitions or limitations of §12.71 (a)(1), (6), or (7);
 - (iv). Not within 100 feet of the outside right-of-way line of any public road, except as provided for in Subsection 12.72(a) and as otherwise approved by the Commission and transportation authority; and
 - (v). Not within 300 feet of any occupied dwelling, except as provided for in Paragraph 12.71 (a)(5) and Subsection 12.72(f) of the Regulations.
- (e). WCMC's proposed reclamation and monitoring operations will not adversely affect any publicly owned parks or places included in or eligible for listing on the National Register of Historic Places, except as provided for in Paragraph 12.7 I (a)(3) of the Regulations.
 - (f). WCMC has provided to the Commission documentation required under Regulation §12.117 (b) for operations involving surface mining of coal where the private mineral estate to be mined has been severed from the private surface estate.
 - (g). The report of the Applicant/Violator System (AVS) operated by OSM is contained in Appendix VI of the Staff TAA2. As to the applicant or those who own or control the applicant, the AVS report indicates no pending violations 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. WCMC has demonstrated compliance with §12.215(e) and has satisfied the requirements for submissions and demonstrations under this paragraph.
 - (h). If reclamation fees had not been paid by WCMC, the AVS report would so indicate. Staff found no such indication (TA, Addendum No. 2, Appendix VI).
 - (i). The surface coal mining and reclamation operations to be performed in the renewal, revision, and expansion of Permit No. 27H for the Calvert Mine will not be inconsistent with other operations anticipated to be performed in areas adjacent to the permit area.
 - (j). The reclamation performance bond remains sufficient.

- (k). WCMC has satisfactorily addressed the requirements of §12.201 regarding prime farmland, as described in section .138 of the Application. The permit area is located east of the 100th Meridian West Longitude and contains no alluvial valley floors; therefore, the requirements of §12.202 are not applicable.
 - (l). Proposed postmining land uses in this application, as supplemented, are in accordance with the requirements of §12.399.
 - (m). All specific performance standard approvals required under Subchapter K of this Chapter have been met. No deficiencies remain for the permit application.
 - (n). The proposed activities will not affect the continued existence of endangered and threatened species or result in the destruction or adverse modification of their critical habitats, as determined under the Endangered Species Act of 1973 (16 U.S.C. Sec. 1531 *et seq.*).
 - (o). WCMC has satisfied the requirements of §12.390 for approval, of a long-term, intensive agricultural postmining land use if proposed. None is proposed.
48. KT Mining LLC and Bighorn Walnut LLC are each authorized to transact business in Texas. Both are current in the payment of franchise taxes.
49. The Open Meeting notice of the Commission meeting to consider the application has been made.

CONCLUSIONS OF LAW

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

1. The Commission has jurisdiction under §134.075 of Chapter 134 of the TEX. NAT. RES. CODE (the Act) and §12.216 of the "Coal Mining Regulations," 16 TEX. ADMIN. CODE CH. 12, to approve this application for permit renewal, revision, and expansion as contained in this Order.
2. Proper notice of the application was provided in accordance with the requirements of the Act, the Regulations, the Commission's *Practice and Procedure*, 16 TEX. ADMIN. CODE §1.1 *et seq.* and the Administrative Procedure Act (APA), TEX. ADMIN. CODE CH. 2001 (Vernon Supp. 2020).
3. No public hearing is required nor was one held.

4. The permit provisions contained in Appendix I are necessary to ensure the accuracy of the application or compliance with Regulations. The Commission may adopt the permit provisions contained in Appendix I to this Order pursuant to §§134.011(4) and 134.013(c) of the Act.
5. Based upon the Findings of Fact, the application for renewal/revision/expansion of the permit was submitted to the Commission by WCMC and was processed, circulated, and reviewed in accordance with requirements that ensure public participation and that comply with the Act, Regulations, the Commission's *Practice and Procedure*, and the APA.
6. 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.
7. The accepted reclamation performance bonds total \$43,198,583, an amount in excess of reclamation costs [Finding of Fact No. 32(b)]. No increased performance bond is required for approval and issuance of the renewed and revised permit.
8. The Commission may approve the renewal/revision/expansion of the permit with the Permit Provisions contained in Appendix I, and the soil-testing plan and postmine soil performance standards contained in Appendix II.

IT IS, THEREFORE ORDERED, that the application by WCMC is approved with the above Findings of Fact, Conclusions of Law, Permit Provisions (Appendix I), and Soil Testing Plan and Postmine Soil Performance Standards (Appendix II) contained in this Order are hereby adopted;

IT IS FURTHER ORDERED that this application for renewal, revision, and expansion of surface coal mining and reclamation permit is approved as set out in this Order and Appendices I and II;

IT IS FURTHER ORDERED that no additional bond is required;

IT IS FURTHER ORDERED that the permit as renewed, revised, and expanded is hereby issued and renumbered as Permit No. 271; and

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

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

SIGNED on June 22, 2021.

RAILROAD COMMISSION OF TEXAS

DocuSigned by:
Christi Craddick
15494B7DF4CC424

CHAIRMAN CHRISTI CRADDICK

DocuSigned by:
Wayne Christian
C1C740B47440422

COMMISSIONER WAYNE CHRISTIAN

DocuSigned by:
Jim Wright
EAAE94782E9F4AE

COMMISSIONER JIM WRIGHT

ATTEST:
DocuSigned by:
Callie Farran
3581C80DFDE0476

Secretary, Railroad Commission of Texas



**APPENDIX I
PERMIT PROVISIONS**

1. WCMC shall provide an updated survey plan by the end of the first quarter of the fifth year after the date of the last survey for Navasota ladies'-tresses (*Spiranthes parksii*), in preparation for conducting updated presence/absence surveys for review and approval prior to conducting surveys. Surveys will be conducted during the species peak flowering season in that fifth year providing rainfall amounts measures average to above average during optimal growth periods. If rainfall during the fifth year is less than average, then the actual survey should be delayed until the next growing season that presents favorable conditions and are confirmed with Staff, USFWS, and/or recognized botanical experts for this species.
2. WCMC shall prioritize clearing activities to outside of breeding and nesting periods, as appropriate and feasible. If clearing occurs during prime nesting seasons, WCMC will deploy bird diverters to discourage nesting in sites scheduled for clearing.
3. Within ninety (90) days of permit issuance, WCMC shall submit and revise Exhibit 135-1, Premine Landuse, to accurately depict the premine topography. The revision shall be processed in accordance with §12.226 of the Regulations.
4. *WCMC shall revise its wildlife protection plan subsection "Temporary Reclamation Activities for Potential Wildlife Benefit," on page 144-19 to replace the text "may" with "will." In addition, WCMC shall also revise this subsection to replace the sentence "While temporary vegetated areas are not planted for wildlife enhancement, these areas are often used by local and migratory wildlife." To read "While not all temporary vegetated areas can be planted for wildlife enhancement, to the extent possible and where practicable, these areas will be planted for wildlife enhancement. In addition, Exhibit 144-1, Conceptual Fish and Wildlife Enhancement Plan, will be updated and submitted to the Commission biannually to identify these locations. These areas are often used by local and migratory wildlife."* The revised text shall be submitted within ninety (90) days of permit issuance for review and processing in accordance with §12.226 of the Regulations.
5. Within 90 days of permit issuance, WCMC shall submit a revision to its postmine land-use plan contained in section .147 of the Application to propose appropriate postmine land uses suitable to meet the requirements of §12.399(c)(8). The revised plan shall be submitted within ninety (90) days of permit issuance for review and processing in accordance with §12.226 of the Regulations.

APPENDIX II – SOIL-TESTING PLAN AND POSTMINE SOIL PERFORMANCE STANDARDS
(Adapted from Staff's TA Addendum 2, Appendix VII)

The top four feet of the regraded surface will be free from coal, rider seams, carbonaceous clays associated with these seams, and any other acid forming/toxic forming material.

All mine soils will be sampled and analyzed in accordance with the following procedures to determine reclamation compliance and success.

Soil and spoil sampling will take place upon completion of topsoil replacement. The initial sampling will be conducted one time unless laboratory results indicate further sampling is warranted. The regraded area will be divided into 5.7-acre grids measuring 500 ft × 500 ft (Exhibit 145-5). Partially reclaimed grids will be sampled at a rate of one core per acre. Adjacent grids partially bounded by disturbance limits and/or permanent structures may be combined to form a sampling unit, the size of which will not exceed 5.7 acres. Grids less than two acres may be combined with an adjacent grid, with additional sampling on 200-ft centers where the smaller grid being combined is greater than or equal to one-half (0.5) acre. By maintaining the same sampling density (approximately one sample per acre), these combinations will allow the same level of monitoring while reducing the volume of data that must be analyzed. The southeast corner of each grid will be marked with a permanent identification marker. Six cores will be collected from random locations within each grid. Samples will be collected to a depth of four feet, allowing for topsoil replacement. Cores will be placed no closer than 200 ft from each other. Two sample intervals will be used as follows: (1) surface to replaced depth of topsoil, and (2) replaced depth of topsoil to 48 inches.

A composite of all the samples from the grid will be made for each of the two sample intervals. The composite sample for the surface to depth of topsoil interval will be analyzed in the laboratory for:

- (1) pH
- (2) Texture
- (3) Cation exchange capacity
- (4) Acid/base accounting
- (5) Nitrate-Nitrogen
- (6) Phosphorous
- (7) Potassium
- (8) Calcium
- (9) Magnesium

The composite sample for the depth of topsoil to 48 inches interval will be analyzed in the laboratory for:

- (1) pH
- (2) Electrical conductivity
- (3) SAR
- (4) Texture
- (5) Neutralization potential
- (6) Inorganic carbonates (only in calcareous samples)
- (7) Sulfur forms (organic, pyritic, sulfate)
- (8) Exchangeable acidity (if pH <5.5)
- (9) Cation exchange capacity
- (10) Acid/base accounting
- (11) Potential acidity
- (12) Total Selenium
- (13) Hot-water extractable boron

The results will be reviewed to determine whether they are representative of the sampling grids. The information will then be used to determine the quality of the top four feet, in particular, acid-base accounts, acid-base balances or lime requirements, if any, for pH corrections. Grid sampling for additional toxic forming materials (TFM) will be done only where TFM is predicted to be found based upon premining overburden data. This mine soil sampling program will be conducted one time, not on an annual basis.

Should AFM/TFM be found, steps will be taken to remediate the problem areas. These steps may include, but are not limited to; chemical treatment, covering the material with four feet of suitable plant growth material; or removing and replacing the material to a depth of four feet. The specific correction method will depend on the type of problem, the size of the area, and the type and location of available replacement material.

The mine soil monitoring program information will be reported to the Commission within two years following backfilling and grading, and prior to lands being accepted into the ERP and bond release. For pH and acid/base accounting, the banking method of acreage accounting will be used to compare the top four feet of postmine mine soil quality to the top four feet of premine native soil quality, as summarized in Table 145-17. Postmine soil monitoring parameters other than pH and ABA will not exceed the suggested maximum total concentrations listed in Table I of SMRD Advisory Notice ER-BA-127(b). The soil banking report will include a postmine topographic map with index marks identifying the Texas coordinate numbering system. The map will show the location of the sampled grids, the coal removal line and the disturbance boundary. The average depth of replaced topsoil will also be reported within the monitoring report. Soil amendments including fertilizer and lime and their application rate will be included in the soil fertility monitoring reports.

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**Walnut Creek Mining Company - Eighth Permit Term Renewal/revision/expansion
Postmine Soil Performance Standards - pH and ABA
(Percentage of Disturbance Area)**

	pH			
	pH range	4.0 - 4.4	4.5 - 4.9	
0 – BT *		1.2	13.4	
BT – 48" *		0.3	5.3	
Acid-Base Accounting				
ABA (t/kt)	-4	-3	-2	-2
0" – BT *	0	0	0	3.3
BT – 48" *	0.2	1.7	0.9	4.6

* soil depth interval, where BT = base of topsoil.

In the event the postmine-soil monitoring program identifies AFM/TFM problems, an alternate soil-monitoring program will be initiated. Soil samples will be collected from the 0 to 1-ft, 1 to 2-ft, 2 to 3-ft, and 3 to 4-ft increments at a density of one sample per acre for each affected grid without compositing and will be analyzed for those parameters identified by the SMRD and/or WCMC in the postmine monitoring program as a potential problem. This intensified sampling scheme will assist in identifying the extent of the soil problem. WCMC will notify the Commission of its re-sampling schedule to allow members of the SMRD Staff to be present during this sampling. The results of these analyses and a remediation plan will be submitted to the Commission. Once WCMC remediates the affected area in accordance with section 12.145(b)(7) of the application, WCMC will again collect soil samples from the 0 to 1-ft, 1 to 2-ft, 2 to 3-ft, and 3 to 4-ft increments at a density of one sample per acre for each remediated grid without compositing that will be analyzed for the identified problem parameter. WCMC will submit results and a map showing the impacted areas to the Commission to verify the successful correction of any soil problems previously identified in the postmine-soil monitoring program. The alternate soil monitoring plan will be implemented only when AFM or TFM is identified according to SMRD Advisory Notice AG-PS-145(b)(5)(G), and normal mine soil monitoring procedures will resume at such time as alternate soil testing plan data indicate AFM or TFM [as defined in SMRD Advisory Notice AG-PS-145(b)(5)(G)] is no longer present.

Results from the topsoil sampling program will be utilized to identify necessary amendments prior to revegetation. The following parameters will be used:

Nitrate-nitrogen	Phosphorus	Calcium
pH	Potassium	Magnesium

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The base of topsoil to 48-inch depth increment of ten percent of the (5.7-acre) grids will be randomly sampled and analyzed for the following trace elements, in their total form, except as indicated:

Cadmium

This list is reduced from that shown in the second term permit application as a result of SMRD's agreement with the Texas Mining and Reclamation Association's document entitled, "Position Paper on Trace Element Analysis in the Wilcox Sediments, May 4, 1993" as indicated in the last footnote on Table 1 of SMRD Advisory Notice ER-BA-127(b). The trace metal analyses will be reported to the Commission as part of the spoils monitoring program. The grids sampled will be identified on a map accompanying the report.

During the penultimate year of ERP, ten percent of the (5.7-acre) grids will again be randomly sampled at each of the two sampling depth intervals for the parameters listed above for the initial postmine soil sampling. The results from the penultimate year sampling, along with a map showing the grids sampled, will be submitted to the Commission no later than the second month of the final year of the ERP.

Composite samples will be taken from the surface to depth of topsoil interval within grids defined by postmine land use management unit boundaries (as modified by minesoil monitoring grid boundaries where necessary to maintain a maximum grid size of 100 acres). These samples will be analyzed for pH, nitrate-nitrogen, and plant-available phosphorus, potassium, calcium and magnesium. Sample collection will be conducted during the dormant period of the year immediately prior to the first year of productivity assessment and during the dormant period following the first and second years of productivity assessment.

If the first and second years of productivity assessment are not consecutive, samples will also be collected during the dormant period of the year immediately prior to the second year of productivity assessment. Analytical results and a map showing the grids will be submitted to the Commission by March 31 of the year following each sample collection period.

All mine soil analyses will be conducted in accordance with SMRD Advisory Notice ER-BA-127(b) and Texas Agricultural Extension Service Soil Testing Procedures, and any subsequent amendments.