

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In The Matter Of:

ELECTRONIC APPLICATION OF EAST)	
KENTUCKY POWER COOPERATIVE, INC. FOR)	
APPROVAL TO AMEND ITS ENVIRONMENTAL)	
COMPLIANCE PLAN AND RECOVER COSTS	)	CASE NO.
PURSUANT TO ITS ENVIRONMENTAL	)	2023-00177
SURCHARGE, AND FOR THE ISSUANCE OF)	
CERTIFICATES OF PUBLIC CONVENIENCE)	
AND NECESSITY AND OTHER RELIEF)	

APPLICATION

Comes now East Kentucky Power Cooperative, Inc. (“EKPC”), by counsel, pursuant to KRS 278.020, KRS 278.183, 807 KAR 5:001 and other applicable law, and hereby requests this Commission enter an Order: (1) approving EKPC’s proposed amendment of its Environmental Compliance Plan (“Compliance Plan”); (2) granting EKPC authority to recover the costs associated with said Compliance Plan amendment through its existing environmental surcharge; (3) issuing Certificates of Public Convenience and Necessity (“CPCN”) for the construction of certain facilities associated with said Compliance Plan amendment; and (4) granting all other required relief. In support of its requested relief, EKPC respectfully states as follows:

I. Introduction

1. EKPC requests Commission authorization to amend its Compliance Plan to include additional projects necessary to comply with the Disposal of Coal Combustion Residuals (“CCR”) from Electric Utilities Rule (“CCR Rule”), the federal Clean Water Act (“CWA”), and other

environmental requirements and obligations that arise from the use of coal in the generation of electric energy. Nearly all of the projects EKPC seeks to include in its Compliance Plan have been undertaken (or will soon be undertaken) without a CPCN, consistent with the exception reflected in KRS 278.020(1) and 807 KAR 5:001, Section 15(3);¹ however, EKPC also seeks to include in its Compliance Plan two proposed projects for which it requests Commission pre-approval and a CPCN—specifically, a project to construct Peg’s Hill (Area D) Phase 2 of the landfill at its Hugh L. Spurlock Station in Mason County, Kentucky (“Spurlock Station”) and a project resulting in the Closure in Place of the Cooper former impoundment (“CFI”) at the John S. Cooper Station in Pulaski County, Kentucky (“Cooper Station”). Finally, in conjunction with its request to amend its Compliance Plan and seek issuance of appropriate CPCNs, EKPC also proposes to recover the costs associated with these activities through its environmental surcharge pursuant to KRS 278.183.

II. Background

A. General Filing Requirements

2. Pursuant to 807 KAR 5:001 Section 14(1), EKPC’s business address is 4775 Lexington Road, Winchester, Kentucky 40391 and its mailing address is P.O. Box 707, Winchester, Kentucky 40392-0707. EKPC’s email address is psc@ekpc.coop. EKPC requests that the following individuals be included on the service list:

Chris Adams, EKPC’s Director of Regulatory and Compliance Services:

chris.adams@ekpc.coop

L. Allyson Honaker, Counsel for EKPC:

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¹ Pursuant to KRS 278.020(1)(a)2, a CPCN is required to begin construction of certain facilities except for “ordinary extensions of existing systems in the usual course of business.”

Brittany Hayes Koenig, Counsel for EKPC:

brittany@hloky.com

3. Pursuant to 807 KAR 5:001, Section 14(1), the grounds for EKPC's request for an amendment of its Compliance Plan, recovery of costs through its environmental surcharge and issuance of CPCNs are set forth herein and in the testimony filed in support hereof.

4. Pursuant to 807 KAR 5:001, Section 14(2), EKPC is a Kentucky corporation, in good standing, and was incorporated on July 9, 1941.

B. Overview of East Kentucky Power Cooperative, Inc.

5. EKPC is a not-for-profit, rural electric cooperative corporation established under KRS Chapter 279 with its headquarters in Winchester, Kentucky. Pursuant to various agreements, EKPC provides electric generation capacity and electric energy to its sixteen (16) Owner-Member Cooperatives ("owner-members"), which in turn serve approximately 560,000 Kentucky homes, farms and commercial and industrial establishments in eighty-nine (89) Kentucky counties. EKPC's Board has stated its strategic objective is to maintain a generation fleet that prudently diversifies its fuel sources while optimizing its capital investments and minimizing stranded assets.

6. EKPC is a "utility" as that term is defined in KRS 278.010(3)(a) and a "generation and transmission cooperative" as that term is defined in KRS 278.010(9). Each of EKPC's sixteen (16) owner-members is a "utility" under KRS 278.010(3)(a), as well as a "distribution cooperative" under KRS 278.010(10) and a "retail electric supplier" under KRS 278.010(4).

7. In total, EKPC owns and operates approximately 3,100 MW of net summer generating capability and 3,400 MW of net winter generating capability. EKPC owns and operates coal-fired generation at the Cooper Station (341 MW) and the Spurlock Station (1,346 MW). EKPC also owns and operates natural gas-fired generation at the J. K. Smith Station in Clark

County, Kentucky (753 MW (summer)/989 MW (winter)) (“Smith Station”) and the Bluegrass Generating Station in Oldham County, Kentucky (501 MW (summer)/567 MW (winter)), landfill gas-to-energy facilities in Boone County, Laurel County, Greenup County, Hardin County, Pendleton County and Barren County (16 MW total), and a Community Solar facility (8 MW) in Clark County, Kentucky. Finally, EKPC purchases hydropower from the Southeastern Power Administration at Laurel Dam in Laurel County, Kentucky (70 MW), and the Cumberland River system of dams in Kentucky and Tennessee (100 MW). EKPC also has 158 MWs of interruptible load and approximately 28 MWs in peak reduction mechanisms. EKPC’s record peak demand of 3,747 MW occurred on December 23, 2022.

8. EKPC owns approximately 3,000 circuit miles of high voltage transmission lines in various voltages, mainly 69kV and greater. EKPC also owns the substations necessary to support this transmission line infrastructure. Currently, EKPC has seventy-seven (77) free-flowing interconnections with its neighboring utilities. EKPC’s transmission system is operated by PJM Interconnection, LLC (“PJM”), of which EKPC has been a fully integrated member since June 1, 2013. PJM is a regional electric grid and market operator with operational control of over 180,000 MW of regional electric generation. It operates the largest capacity and energy market in North America.

C. The Spurlock Station

9. EKPC’s largest coal-fired electric generation facility is the Spurlock Station located a few miles west of downtown Maysville, Kentucky.² The Spurlock Station is situated along the Ohio River and consists of four (4) electric generation units. Spurlock Station Unit #1 (“Spurlock

² Aerial maps/photographs of the Spurlock Station with its major components labeled are attached hereto and incorporated herein as Exhibit A.

1”) began commercial operation on September 1, 1977, and has a net capacity of 300 MW. Spurlock Station Unit #2 (“Spurlock 2”) became operational on March 2, 1981; at 510 MW of net capacity, it is the largest electric generation unit at the Spurlock Station. Spurlock 1 and Spurlock 2 are both conventional, pulverized coal units. Spurlock Station Unit #3 is known as the E. A. Gilbert Unit (“Gilbert Unit”) and began commercial operations on March 1, 2005. The Gilbert Unit utilizes a Circulating Fluidized Bed (“CFB”) technology and boasts a net generating capacity of 268 MW. Spurlock Station Unit #4 (“Spurlock 4”) is a sister unit to the Gilbert Unit and also has 268 MW of generating capacity. Spurlock 4 became operational on April 1, 2009. The combined coal storage capacity of the Spurlock Station is 490,000 tons and the Spurlock Station primarily burns a range of eastern bituminous coals delivered by barge.

10. EKPC has already heavily invested in environmental control equipment at the Spurlock Station. Spurlock 1 is equipped with low NOx burners, selective catalytic reduction (“SCR”) technology, a cold-side electrostatic precipitator (“ESP”), a wet flue gas desulfurization (“FGD”) scrubber; and a wet ESP. Spurlock 2 is equipped with low NOx burners, SCR technology, a hot-side ESP, wet FGD scrubber and a wet ESP. The Gilbert Unit and Spurlock 4 employ CFB combustion technology which in itself is an environmental control technology. The Gilbert Unit and Spurlock 4 are further equipped with selective non-catalytic reduction technology, dry FGD scrubbers and baghouses.

11. On May 18, 2018, the Commission approved EKPC’s 2018 Compliance Plan and various proposed modifications of existing Spurlock Station facilities to comply with state and federal environmental requirements.³ These improvements include conversion of the plant’s

³ *In the Matter of the Application of East Kentucky Power Cooperative, Inc. for Approval to Amend its Environmental Compliance Plan and Recover Costs pursuant to its Environmental Surcharge, Settlement of Certain Asset Retirement Obligations and Issuance of a Certificate of Public Convenience and Necessity and Other Relief*, Order, Case No. 2017-00376 (Ky. P.S.C., May 18, 2018).

bottom ash handling system, construction of a new wastewater treatment plant and fly ash storage silo, and the closure and repurposing of the on-site coal ash pond. These projects help ensure the ongoing safety and stability of EKPC's generation fleet.

12. The four (4) units at the Spurlock Station are among the least expensive electric generation units in the EKPC fleet and have maintained favorable capacity factors following EKPC's full integration into the Reliability Pricing Model ("RPM") Capacity Market administered by PJM. Likewise, prudent management practices have assured that the Spurlock Station's units have a high availability factor. In light of their consistent availability and low-cost operations, the Spurlock Station's units are the workhorses of the EKPC electric generation fleet.

D. The Cooper Station

13. The Cooper Station is EKPC's other coal-fired electric generation facility and is located in the Burnside community of Pulaski County, Kentucky.⁴ The Cooper Station is situated adjacent to Lake Cumberland and consists of two (2) electric generation units. Cooper Station Unit #1 ("Cooper 1") is rated at 116 MW and began commercial operation on February 9, 1965. Cooper Station Unit #2 ("Cooper 2") is larger with 225 MW of electric generation capacity and entered service for EKPC on October 28, 1969. The combined coal storage capacity of the Cooper Station is 250,000 tons. The Cooper Station units burn eastern bituminous coal, delivered exclusively by truck.

14. Cooper Station has a dry ash handling system. In addition, the Cooper Station has a common flue gas desulfurization system including a pulse jet fabric filter that services both Cooper 1 and Cooper 2, and a selective catalytic reduction system that services only Cooper 2.

⁴ Aerial maps/photographs of the Cooper Station with its major components labeled are attached hereto and incorporated herein as Exhibit I, the Direct Testimony of Ms. Laura LeMaster.

Because of these and other investments made by EKPC, the Cooper Station is well-positioned to remain in compliance with existing federal and state environmental mandates.

15. The Cooper Station's fuel costs and operating costs are higher than those of the Spurlock Station. Accordingly, the capacity factor for the Cooper Station has decreased since EKPC's entry into PJM and remains below that of the Spurlock Station. Nevertheless, the Cooper Station's two (2) units continue to be reliable and affordable sources of capacity and energy and have maintained very favorable availability factors. The Cooper Station also provides EKPC with a physical hedge against price volatility in the energy market during peak demand periods. Finally, the Cooper Station is a critical asset due to its location in rural, south-central Kentucky, serving a transmission constrained area. The Cooper Station provides key voltage support in the transmission area throughout southern Kentucky, where the current transmission system is not configured to support the peak load periods in that region without the generation injections at Cooper Station.

E. Overview of Environmental Regulation

1. Breadth of Requirements at the State and Federal Levels

16. Electric utilities are among the most heavily environmentally regulated companies in the United States. Authorities at the federal and state levels oversee nearly every aspect of EKPC's operations, with particular emphasis on the monitoring and abatement of the wastes and by-products that accompany coal-fired electric generation. EKPC has devoted and continues to devote substantial resources to ensure its continued compliance with environmental requirements, especially at its Cooper and Spurlock Stations as described herein.

17. EKPC currently complies with nearly a dozen federal rules that have been promulgated under the authority of the Clean Air Act ("CAA"), including: New Source

Performance Standards; New Source Review; Title IV of the CAA, including rules governing pollutants that contribute to acid deposition; Title V operating permit requirements; Mercury and Air Toxics Standards; summer ozone trading program requirements promulgated after the United States Environmental Protection Agency (“EPA”) acted upon Section 126 Petitions and the Ozone State Implementation Plan Call; National Ambient Air Quality Standards for Sulfur Dioxide, Nitrogen Dioxide, Carbon Monoxide, Ozone, Particulate Matter, Particulate Matter of 2.5 microns or less and Lead; the Cross State Air Pollution Rule; and the Regional Haze Rule.

18. As the Commission is aware, much of EKPC’s environmental compliance activity in recent years has been undertaken as a result of the CCR Rule, which governs the classification, collection and disposal of certain by-products of the combustion of coal (fly ash, bottom ash, boiler slag and flue gas desulfurization materials). The final CCR Rule,⁵ which became effective October 19, 2015, applies to owners and operators of new and existing landfills and new and existing surface impoundments (including all lateral expansions of such landfills and surface impoundments) where CCR material is disposed. The CCR Rule also has applicability to inactive CCR surface impoundments.⁶ The principal objectives of the CCR Rule are as follows: (1) to impose structural integrity requirements to reduce the risk of catastrophic failure of CCR landfills and impoundments; (2) protecting groundwater through monitoring and corrective actions, location restrictions and landfill and impoundment liner design criteria; (3) adopting operating criteria for CCR landfills and impoundments; (4) record-keeping, notification and publicly-

⁵ See 80 Fed. Reg. 21302 (April 17, 2015).

⁶ The CCR Rule currently does not apply to: CCR landfills that ceased receiving CCR materials prior to the effective date of the CCR Rule; CCR landfills and impoundments at facilities that have ceased producing electricity prior to the effective date of the CCR Rule; CCR materials generated at facilities that are not part of an electric utility or independent power producer, such as manufacturing facilities, universities and hospitals; CCR materials generated primarily from the combustion of fuels other than coal; CCR that is beneficially reused; CCR placement at active or abandoned underground or surface coal mines; or CCR material that is placed at municipal solid waste landfills.

available internet website posting obligations; (5) obligations for inactive CCR landfills and impoundments; (6) administration of state programs to implement the CCR Rule; (7) CCR landfill and impoundment closure obligations; and (8) guidelines for beneficial reuse of CCR materials. Numerous projects contained in EKPC's existing and proposed Compliance Plan are the result of the CCR Rule, as further detailed in testimony submitted herewith.

2. The CWA and Related Regulation

19. The federal CWA, and particularly the EPA's promulgation of the current Effluent Limitation Guidelines and Standards for the Steam Electric Power Generating Point Source Category ("ELG Rule") thereunder, also serve as significant stimuli for EKPC's recent environmental compliance investment and activities. The ELG Rule was finalized in its proposed form by the EPA on November 3, 2015. The ELG Rule established revised technology-based effluent limitations and standards for various wastewater streams generated by coal-fired steam electric generating stations. As such, the ELG Rule establishes the best available technology economically achievable requirements for existing facilities. After taking considerable public comment, the ELG Rule became effective on January 4, 2016. The ELG Rule requires that all permits issued in the first permitting cycle following the third anniversary of the effective date of the ELG Rule should include a compliance schedule established by the Division of Water. On September 18, 2017, the EPA published a new Final Postponement Rule that postponed the earliest compliance deadline for these two ELG waste streams but otherwise maintained the ELG standards during the reconsideration.

20. The standards set forth in the ELG Rule are incorporated into the Kentucky Pollutant Discharge Elimination System ("KPDES") requirements imposed upon EKPC by the Kentucky Energy and Environment Cabinet's Division of Water ("Division of Water"). EKPC

included the CFI Closure in Place project with its renewal of the KPDES water permit for Cooper Station in December 2022. The Division of Water issued a public notice of a draft KPDES renewal permit in May 2023, with a final water permit was issued on June 24, 2023. This final water permit will include the new stormwater point source discharge from the stormwater basins needed for the CFI.

3. Additional Environmental Requirements

21. While the CCR Rule and the ELG Rule are primary factors behind EKPC's recent requests to amend its existing Compliance Plan, there are other environmental authorities which also make the proposed Compliance Plan amendments a prudent course of action for EKPC. Thus, even if the CCR Rule or the ELG Rule were not applicable, other legal authorities would still require EKPC and other coal-generating electric utilities in the state to move forward with most, if not all, of the proposed Compliance Plan amendments.⁷

III. Environmental Compliance Efforts – Completed, Underway, and Planned

22. EKPC's Board and managers have invested considerable time and attention to ensuring continued compliance with the myriad of environmental requirements applicable to coal-fired facilities owned by EKPC. Many of the projects pursued in this regard are relatively minor in nature, undertaken in the usual course of EKPC's business, and involve the expenditure of limited funds; these projects, for which no CPCN is required or requested, are detailed in numerical paragraph 39 below and in the testimony accompanying this Application. EKPC also proposes to undertake two projects it believes do require a CPCN – the Spurlock Station landfill, Peg's Hill (Area D) Phase 2 and the CFI Closure in Place, which are also further described below. EKPC

⁷ See Paragraph 39 for a listing of the environmental regulations applicable to the twenty-three projects included in the proposed Compliance Plan amendment. In addition, see the Direct Testimony of Isaac S. Scott, Exhibit ISS-1, for a full listing of the applicable environmental regulations and environmental permits of EKPC's proposed Compliance Plan.

seeks to add each of these projects to its Compliance Plan as reasonable and cost-effective means of complying with applicable environmental requirements.

23. In accordance with the Commission’s directive in Administrative Case 2008-00408,⁸ EKPC also considered whether energy efficiency offered a viable alternative to compliance with the various state and federal obligations attendant to coal-fired generation. While EKPC is committed to cost-effective energy efficiency and other demand response programs, each of the projects—and particularly the Spurlock Station landfill addition—is necessary to sustain approximately 1,687 MW of reliable, coal-fired generation at the Cooper and Spurlock Stations; it is unrealistic to believe EKPC could replace this existing capacity (or a significant portion thereof) with energy efficiency and demand response investments.

A. The Spurlock Station Landfill, Peg’s Hill (Area D) Phase 2

24. As aforementioned, the Spurlock Station is EKPC’s largest coal-fired electric generation facility and has been in operation since 1977. In 1982, EKPC received an operational permit for an inert landfill, located to the southwest of the station. Since 1982, EKPC had continued to develop the Spurlock Landfill under the Kentucky Division of Waste Management (“KDWM”) inert landfill program, special waste landfill program, and currently the CCR program. The initial landfill began with Area A and there have been two horizontal expansions, identified as Areas B and C. In March 2019, EKPC was issued an Agreed Order by KDWM for the development, construction, and operation of a unique, adjacent landfill, which is identified as Area

⁸ See *In the Matter of Consideration of the New Federal Standards of the Energy Independence and Security Act of 2007*, Rehearing Order, Case No. 2008-00408, p. 10 (Ky. P.S.C. July 24, 2012) (“Each electric utility shall integrate energy efficiency resources into its plans and shall adopt policies establishing cost-effective energy efficiency resources with equal priority as other resource options. In each integrated resource plan, certificate case, and rate case, the subject electric utility shall fully explain its consideration of cost-effective energy efficiency resources as defined in the Commission’s IRP regulation (807 KAR 5058).”).

D.⁹ The sediment pond for the Area D Landfill was constructed in 2022. The first landfill cell, Phase 1, is currently under construction.¹⁰

25. To ensure the uninterrupted operation of Spurlock Station, sufficient capacity to dispose of CCR must be maintained at all times. The risk of running out of capacity at the Spurlock Landfill has significant financial implications for the operational costs for Spurlock Station. To manage this risk, EKPC developed and follows its Landfill Management Plan. The Landfill Management Plan provides operational limits on the minimum amount of constructed and permitted landfill capacity at all times, as well as outlines risk mitigation components related to environmental and regulatory compliance at EKPC's landfill facilities.

26. Consistent with its Landfill Management Plan, EKPC has designed the Peg's Hill (Area D) Phase 2 landfill cell. This landfill cell will be 17.33 acres and will provide approximately 2,000,000 cubic yards of ash disposal capacity for the Spurlock Station. Landfill cells are designed to target two to three years of CCR disposal capacity and the landfill cells are expected to be constructed in one calendar year. The Peg's Hill (Area D) Phase 2 construction is projected to provide capacity through 2026. The design construction will comply with all state and federal regulations and will include a composite liner system¹¹ and a continuous leachate collection system. Additional scope elements of the landfill cell construction include perimeter ditches and drainage features, subgrade preparation, and access roads. The anticipated cost of the Peg's Hill

⁹ The Area D Landfill has also been referred to as the "Peg's Hill" Landfill.

¹⁰ In its May 18, 2018 Order in Case No. 2017-00376, the Commission found that a CPCN was required prior to the construction of the expansion of the Spurlock Landfill, with a separate CPCN required prior to commencing construction on each future phase of the Spurlock Landfill. The Commission further found that the first phase expansion was needed for the continued operation of the Spurlock Station and that expansion represented the least-cost option of complying with the CCR and ELG Rules and consequently granted EKPC a CPCN for Area D, Phase 1.

¹¹ The composite liner system utilizes geosynthetic clay and 60-mil HDPE.

(Area D) Phase 2 landfill cell is \$15.7 million. The annual on-going operation and maintenance expense is estimated to be \$242,000.

27. When considering whether to develop the Area D Landfill, EKPC evaluated several onsite and offsite CCR disposal alternatives. Among the alternatives EKPC considered was disposal of CCR material in an existing permitted municipal solid waste landfill, a new landfill constructed by EKPC at a site located less than ten miles from the Spurlock Station, and the various means of CCR transportation to each disposal option. Of the alternatives evaluated, the Area D Landfill site at Spurlock Station was identified as the preferred alternative due to the ability to minimize impacts to natural features, provide a large buffer from adjacent property owners, utilize existing infrastructure, and reduce transportation and disposal costs. The Peg's Hill (Area D) Phase 2 landfill cell is the reasonable, least-cost option to address the Spurlock Station CCR disposal needs, and the EKPC Board of Directors has directed management to pursue this Commission's approval of same.¹²

28. EKPC will finance the Peg's Hill (Area D) Phase 2 project through funds available to it from normal operations or funds available through its unsecured Credit Facility. Once completed, any short-term debt associated with the Peg's Hill (Area D) Phase 2 project will be refinanced using long-term debt available under EKPC's Trust Indenture.

29. EKPC is also requesting to include the Peg's Hill (Area D) Phase 2 project in its Compliance Plan and recover the costs associated with the project through its environmental surcharge mechanism. The Commission has previously approved the inclusion of landfill cell

¹² A copy of the Board's March 14, 2023 Resolution is provided as Exhibit PB-2 to the Direct Testimony of Patrick Bischoff.

projects in the environmental compliance plans and authorized cost recovery through the environmental surcharge mechanism for both EKPC¹³ and other electric investor-owned utilities.¹⁴

30. In summary, the Peg's Hill (Area D) Phase 2 project will provide many benefits to EKPC, including, without limitation, the following:

- a. Complying with the CCR Rule in a reasonable, least-cost manner;
- b. Furthering EKPC's efforts to provide reliable, safe, adequate and reasonable service to its owner-members at rates that are fair, just and reasonable;
- c. Ensuring the continued safe and responsible disposal of CCR materials, particularly in light of Spurlock Station's proximity to one of the largest rivers in North America and its location within the 100-year flood plain; and
- d. Preserving EKPC's ability to comply with future environmental regulations that may be imposed by state and federal authorities.

¹³ See *In the Matter of Application of East Kentucky Power Cooperative, Inc. for Approval of an Amendment to Its Environmental Compliance Plan and Environmental Surcharge*, Case No. 2010-00083, (Ky. P.S.C., Sep. 24, 2010) and *See In the Matter of Application of East Kentucky Power Cooperative, Inc. for Approval to Amend Its Environmental Compliance Plan and Recover Costs Pursuant to Its Environmental Surcharge, and for the Issuance of a Certificate of Public Convenience and Necessity*, Case No. 2018-00270, (Ky. P.S.C., Apr. 1, 2019).

¹⁴ See *In the Matter of Application of Kentucky Utilities Company for Certificates of Public Convenience and Necessity and Approval of Its 2009 Compliance Plan for Recovery by Environmental Surcharge*, Case No. 2009-00197, (Ky. P.S.C., Dec. 23, 2009); *See In the Matter of Application of Louisville Gas and Electric Company for a Certificate of Public Convenience and Necessity and Approval of Its 2009 Compliance Plan for Recovery by Environmental Surcharge*, Case No. 2009-00198, (Ky. P.S.C., Dec. 23, 2009); *See In the Matter of Application of Kentucky Utilities Company for Certificates of Public Convenience and Necessity and Approval of Its 2011 Compliance Plan for Recovery by Environmental Surcharge*, Case No. 2011-00161, (Ky. P.S.C., Dec. 15, 2011); *See In the Matter of Electronic Application of Kentucky Utilities Company for a Certificate of Public Convenience and Necessity and Approval of Amendment to Its 2016 Compliance Plan for Recovery by Environmental Surcharge*, Case No. 2017-00483, (Ky. P.S.C., Jul. 9, 2018); and *See In the Matter of Electronic Application of Duke Energy Kentucky, Inc. for a Certificate of Public Convenience and Necessity to Construct Phase Two of Its West Landfill and Approval to Amend Its Environmental Compliance Plan for Recovery by Environmental Surcharge Mechanism*, Case No. 2018-00156, (Ky. P.S.C., Dec. 10, 2018).

B. The CFI Closure

31. As aforementioned, the Cooper Station is a coal-fired generation facility that has been in operation since 1965. The coal combustion residual by-products (“CCB”) generated at the plant were sluiced to an ash pond located to the west of the generating facility near Highway 1247. In 1977, a dam was constructed to contain approximately 65 acres of ponded area for the sluicing of CCB. CCB was sluiced to the ash pond through an approximately 3,000 linear foot pipeline. During operation, the ash pond discharged through a KPDES outfall structure. The ash pond received sluiced CCB, including fly ash and bottom ash, from the Cooper Station until 1992, when the two generating units were converted to a dry ash system. This ash pond is now referred to as the CFI.

32. The CFI Closure in Place project will include the following activities:

a. The 65 acre CFI will be consolidated to approximately 40 acres. The reduction of the footprint of the CFI would be accomplished by excavation of the CCB from the perimeter margins of the CFI and the consolidation of the CCB within the smaller footprint. Prior to beginning excavation, dewatering will commence to allow for safe execution of the CCB consolidation and associated excavation and will continue as necessary through the CCB grading activities. The dewatered flow will be treated as necessary to meet the KPDES outfall requirements.

b. Perimeter stormwater ditches and stormwater basins for long-term stormwater control will be constructed. After the CCB footprint is reduced, site grading of the consolidated CCB would occur to allow for surface water to drain from the final cover system to the new ditches and stormwater basins.

c. During construction activities, a temporary perimeter stormwater system would be installed to reduce the amount of run on to the CFI area. This temporary stormwater collection system includes the construction of temporary containment berms and pumping systems to the northern stormwater basin for discharge through a KPDES outfall location. The southern stormwater control basin would be utilized during construction as a sedimentation basin for construction site runoff. A KPDES permit will be obtained from the Division of Water for all stormwater discharge associated with the CFI project. Once the cap system is complete, the temporary stormwater system will be removed.

d. Upon completion of the CCB site grading, the final cap system will be installed. The final cap system will consist of a 40-mil geomembrane, with a geotextile cushion overlain by two feet of a soil protection layer. The soil protection layer will include topsoil to allow for native grasses. The cover system would allow for surface water drainage from the cap system into the perimeter stormwater ditches. The final cap system proposed meets the substantive design requirements of the 2015 CCR Rule, which have not changed in the EPA's recently proposed amendments to the 2015 CCR Rule.

33. The anticipated cost for the CFI Closure in Place project is \$47.2 million. The estimated annual operation and maintenance expense for the project is \$65,000.

34. EKPC evaluated four alternatives for the CFI closure project:

a. Alternative 1 – Monitor and Mitigate. Under this alternative woody vegetation would be cleared and there would have been a revegetation of the CFI. A monitoring program would be established which would include inspections of the CFI. Any items noted during the inspections would be mitigated or remediated as required on a case by case basis.

b. Alternative 2 – Closure in Place. The footprint of the CFI would be reduced from 65 acres to approximately 40 acres and the stored CCB would be dewatered. Perimeter stormwater ditches and stormwater basins would be constructed. A final cap system would be installed at the CFI.

c. Alternative 3 – Closure by Removal. The CCB material in the CFI would be excavated, hauled, compacted, and placed in the Cooper Station CCR landfill. This would require a horizontal expansion of the Cooper Station CCR landfill. This alternative would also include the restoration of the CFI area to as close to preconstruction conditions as practicable.

d. Alternative 4 – Closure in Place with in Situ Stabilization. The alternative includes the Closure in Place provided in Alternative 2 with the addition of in Situ Stabilization. This alternative calls for the construction of overlapping grout columns at the base of the CFI above any karst locations. A cementitious mix is combined with the CCB to increase strength and reduce hydraulic conductivity. The intent of the process is the creation of a CCB-cement monolith at the base of the area.

35. Based on the evaluation, EKPC determined that Alternative 2, the Closure in Place, was the alternative that was the most environmentally responsible and least cost, reasonable alternative. Alternative 1 was the lowest cost alternative, but did not provide adequate environmental protection. Alternatives 2, 3, and 4 all provided adequate long term environmental protection with Alternative 2 being the least cost. EKPC's Board of Directors approved the inclusion of the CFI Closure in Place project as part of the amendment to EKPC's environmental compliance plan.¹⁵

¹⁵ See the Direct Testimony of Isaac S. Scott, Exhibit ISS-6.

36. EKPC will finance the CFI Closure in Place project through funds available to it from normal operations or funds available through its unsecured Credit Facility. EKPC is proposing to recover these expenditures as incurred through the environmental surcharge.

37. EKPC is also requesting to include the CFI Closure in Place project in its Compliance Plan and recover the costs associated with the project through its environmental surcharge mechanism. The Commission has previously approved the inclusion of a similar impoundment Closure in Place project in the environmental compliance plan and authorized cost recovery through the environmental surcharge mechanism for another electric investor-owned utility.¹⁶

38. In summary, the CFI Closure in Place project will provide many benefits to EKPC, including, without limitation, the following:

- a. Providing a capping and stormwater system that meets the technical requirements of the CCR Rule in a reasonable, least-cost manner;
- b. Furthering EKPC's efforts to provide reliable, safe, adequate and reasonable service to its owner-members at rates that are fair, just and reasonable;
- c. Ensuring the continued safe and responsible disposal of CCR materials, at the Cooper Station; and
- d. Preserving EKPC's ability to maintain compliance with current and future environmental regulations related to impoundment closures.

¹⁶ See *In the Matter of Application of Kentucky Utilities Company for Certificates of Public Convenience and Necessity and Approval of Its 2016 Compliance Plan for Recovery by Environmental Surcharge*, Case No. 2016-00026, (Ky. P.S.C., Aug. 8, 2016).

C. Other Environmental Projects

39. EKPC is also seeking to include twenty-three (23) additional projects in its amended Compliance Plan. These projects vary in size and may be listed summarily as follows

Compliance Plan Project Reference	Location	Description	Waste Byproduct Controlled	Applicable Regulation	Completion	Project Costs (A) Actual (E) Estimated
Amendment Project No. 1	Spurlock	Spurlock Unit 3 Baghouse (Liner)	Mercury, Particulate Matter (“PM”), Hazardous Air Pollutants (“HAPs”)	40 CFR Part 63	April 2020	\$5,465,071 (A)
Amendment Project No. 3	Spurlock	Spurlock Unit 1 Sonic Horns	CCR	42 CFR 257 401 KAR Chap. 46	May 2020	\$162,151 (A)
Amendment Project No. 4	Spurlock	Spurlock Unit 2 Sonic Horns	CCR	42 CFR 257 401 KAR Chap. 46	December 2017	\$224,529 (A)
Amendment Project No. 9	Spurlock	Spurlock Unit 4 Baghouse (Liner)	Mercury, PM, HAPs	40 CFR Part 63	November 2020	\$4,827,367 (A)
Amendment Project No. 11	Cooper	Cooper Station Inlet Hopper Discharge Modification	PM, HAPs, SOx	40 CFR 50 40 CFR 63	June 2018	\$359,709 (A)
Amendment Project No. 12	Spurlock	Spurlock Station Landfill – Area C, Phase 5	CCR	40 CFR 257 401 KAR Chap. 46	January 2022	\$5,083,982 (A)
Amendment Project No. 15	Smith	Smith Station Landfill – CCR Groundwater Wells	CCR	40 CFR 257 401 KAR Chap. 46	June 2017	\$325,446 (A)
Amendment Project No. 16	Spurlock	Spurlock Station Lagoon	ELG	40 CFR Part 423	June 2023	\$1,285,901 (E)

Compliance Plan Project Reference	Location	Description	Waste Byproduct Controlled	Applicable Regulation	Completion	Project Costs (A) Actual (E) Estimated
		Recirculation Pumps				
Project No. 27	Cooper	Cooper Station Treatment Plant pH Adjustment	KY Water Quality Standards (“WQS”)	40 CFR Part 423	December 2019	\$23,276 (A)
Project No. 28	Spurlock	Spurlock Station Landfill – CCR Groundwater Wells	CCR	40 CFR 257 401 KAR Chap. 46	April 2017	\$249,045 (A)
Project No. 29	Spurlock	Spurlock Station Air Heater Wash Water Pumping System	KY WQS	40 CFR 50 40 CFR Part 423	September 2022	\$2,002,438 (E)
Project No. 30	Spurlock	Spurlock Station Ash Haul Bridge Expansion Joint Plate Protectors	CCR	40 CFR 257 401 KAR Chap. 46	November 2020	\$342,996 (A)
Project No. 31	Spurlock	Spurlock Station Backup Limestone Conveyor and Fuel Feeder	PM, CCR	40 CFR 50 40 CFR 257 401 KAR Chap. 46	March 2020	\$2,646,723 (A)
Project No. 32	Spurlock	Spurlock Station Fly Ash Silo Exhausters	PM, CCR	40 CFR 50 40 CFR 257 401 KAR Chap. 46	May 2020	\$953,827 (A)
Project No. 33	Spurlock	Spurlock Station Site Wide Service Water Project	ELG	40 CFR Part 423	December 2023	\$342,448 (E)

Compliance Plan Project Reference	Location	Description	Waste Byproduct Controlled	Applicable Regulation	Completion	Project Costs (A) Actual (E) Estimated
Project No. 34	Spurlock	Spurlock Units 1&2 – Fly Ash Silo Dust Suppression System	PM, CCR	40 CFR 50 40 CFR 257 401 KAR Chap. 46	January 2018	\$127,547 (A)
	Spurlock	Spurlock Unit 4 – Fly Ash Silo Dust Suppression System	PM, CCR	40 CFR 50 40 CFR 257 401 KAR Chap. 46	December 2018	\$99,165 (A)
Project No. 35	Spurlock	Spurlock Unit 2 – Air Heater Deposition Measurement & Control System	Mercury, PM, HAPs	40 CFR 50 40 CFR Part 63	December 2017	\$397,833 (A)
Project No. 36	Spurlock	WWT and Ash System Platforms	CCR, KY WQS	40 CFR 257 401 KAR Chap. 46 40 CFR Part 423	August 2023	\$700,000 (E)
Project No. 37	Spurlock	Spurlock Station Fly Ash Silo Foggers	PM, CCR	40 CFR 50 40 CFR 257 401 KAR Chap. 46	March 2023	\$269,289 (E)
Project No. 38	Spurlock	Spurlock Station Landfill – Haul Road Paving, Phase 1	CCR	41 CFR 257 401 KAR Chap. 46	November 2020	\$2,097,196 (A)
Project No. 39	Spurlock	Spurlock Station Landfill, Area D, Ponds & Stream Mitigation	CCR, ELG	401 KAR Chap. 46 CWA Sec. 404 40 CFR 257 40 CFR 423	November 2022	\$10,997,198 (E)
Project No. 40	Spurlock	Spurlock Station Landfill,	CCR, ELG	401 KAR Chap. 46 CWA Sec. 404 40 CFR 257 40 CFR 423	September 2023	\$4,979,252 (E)

Compliance Plan Project Reference	Location	Description	Waste Byproduct Controlled	Applicable Regulation	Completion	Project Costs (A) Actual (E) Estimated
		Area D, Phase 1				
	Total All Projects					\$43,962,389

It should be noted that Project No. 40 was previously granted a CPCN by the Commission in Case No. 2017-00376 and construction began within the required time period. In addition, Project No. 40 will also include the Spurlock Station Landfill, Peg’s Hill (Area D) Phase 2 project, which EKPC is seeking a CPCN for in this application.

40. Each project EKPC proposes to include in its amended Compliance Plan reflects the cooperative’s reasonable and cost-effective efforts to satisfy environmental obligations imposed upon its facilities utilized for the production of energy from coal. These projects are described in greater detail in the testimony of Mr. Joseph T. VonDerHaar.

IV. Requests for CPCN and Amendment of Compliance Plan

41. It is well established that the Commission only possesses such powers as granted by the General Assembly.¹⁷ However, the scope of the powers expressly granted by the General Assembly to the Commission to regulate the “rates” and “service” of utilities is plenary in nature, unless otherwise expressly limited or expressed by statute.¹⁸ In the context of a request for issuance of a CPCN, the Commission’s authority under KRS 278.020(1) remains very broad. The

¹⁷ See *Boone Co. Water and Sewer Dist. v. Public Service Comm’n*, Ky., 949 S.W.2d 588, 591 (1997); *Simpson Co. Water Dist. v. City of Franklin*, 872 S.W.2d 460, 462 (Ky. 1994); *Com., ex rel. Stumbo v. Kentucky Public Service Comm’n*, 243 S.W.3d 374, 378 (Ky. App. 2007); *Cincinnati Bell Tel. Co. v. Kentucky Public Service Comm’n*, 223 S.W.3d 829, 836 (Ky. App. 2007); *Public Service Comm’n v. Jackson Co. Rural Elec. Co-op., Inc.*, 50 S.W.3d 764, 767 (Ky. App. 2000).

¹⁸ See KRS 278.040(2); *Kentucky Public Service Comm’n v. Commonwealth of Kentucky, ex rel. Conway*, 324 S.W.3d 373, 383 (Ky. 2010); *Southern Bell Tel. & Tel. Co. v. City of Louisville*, 265 Ky. 286, 96 S.W.2d 695, 697 (Ky. 1936).

General Assembly has, however, chosen to limit the Commission's authority to prohibit or delay recovery of certain costs arising from compliance with environmental laws and regulations by enacting KRS 278.183, the environmental surcharge statute.

A. Certificate of Public Convenience and Necessity

1. KRS 278.020(1) Requires Analysis of "Need" and "Wasteful Duplication"

42. Before undertaking a construction project that is not in the ordinary course of business, a utility must obtain a CPCN from the Commission under the authority of KRS 278.020(1), which states in relevant part:

No person, partnership, public or private corporation, or combination thereof shall...begin the construction of any plant, equipment, property, or facility for furnishing to the public any of the services enumerated in KRS 278.010...until that person has obtained from the Public Service Commission a certificate that public convenience and necessity require the service or construction.... The commission, when considering an application for a certificate to construct a base load electric generating facility, may consider the policy of the General Assembly to foster and encourage use of Kentucky coal by electric utilities serving the Commonwealth.

43. The statute is silent, however, with regard to the criteria which the Commission should apply to any such request from a utility. Accordingly, case law construing KRS 278.020(1) provides the appropriate standard for evaluating EKPC's request for a CPCN in this proceeding. The leading authority on CPCNs is *Kentucky Utilities Co. v. Public Service Comm'n*, which articulates a two-part test for demonstrating entitlement to a CPCN: (1) need; and (2) absence of wasteful duplication. *Kentucky Utilities Co.* provides significant guidance as to what further considerations should be taken into account when evaluating a request for a CPCN under these two criteria.

44. As to "need," Kentucky's highest Court wrote:

We think it is obvious that the establishment of convenience and necessity for a new service system or a new service facility requires first a showing of a substantial inadequacy of existing service, involving a consumer market sufficiently large to make it economically feasible for the new system or facility to be constructed and operated. Second, the inadequacy must be due either to a substantial deficiency of service facilities, beyond what could be supplied by normal improvements in the ordinary course of business; or to indifference, poor management or disregard of the rights of consumers, persisting over such a period of time as to establish an inability or unwillingness to render adequate service.¹⁹

45. The need for the Spurlock Station landfill, Peg’s Hill (Area D) Phase 2 described herein is demonstrated by the fact that, without it, EKPC would be unable to continue to safely and appropriately operate the Spurlock Station in a manner consistent and compliant with federal and state environmental mandates.

46. The need for the CFI Closure in Place described herein is demonstrated by the fact that EKPC seeks to protect the environment and maintain its compliance with the federal CWA and other current and future environmental regulations.

47. With regard to what constitutes “wasteful duplication”, the Court opined:

[W]e think that ‘duplication’ also embraces the meaning of an excessive investment in relation to productivity or efficiency, and an unnecessary multiplicity of physical properties, such as right of ways, poles and wires. An inadequacy of service might be such as to require construction of an additional service facility to supplement an inadequate existing facility, yet the public interest would be better served by substituting one large facility, adequate to serve all the consumers, in place of the inadequate existing facility, rather than constructing a new small facility to supplement the existing small facility. A supplementary small facility might be constructed that would not create duplication from the standpoint of an excess of capacity, but would result in duplication from the standpoint of an

¹⁹ *Kentucky Utilities Co.*, at 890.

excessive investment in relation to efficiency and a multiplicity of physical properties.²⁰

48. In evaluating the “wasteful duplication” aspect of CPCN analysis, the Court further instructed, “[w]e are of the opinion that the Public Service Commission should have considered the question of duplication from the standpoints of excessive investment in relation to efficiency, and an unnecessary multiplicity of physical properties.”²¹ While the avoidance of “wasteful duplication” is a primary consideration for evaluating a request for a CPCN, *Kentucky Utilities Co.* makes clear that the Commission must not focus exclusively upon the cost of a proposal alone. The Commission must also look at an application for a CPCN in relation to the service to be provided by the utility:

[W]e do not mean to say that *cost* (as embraced in the question of duplication) is to be given more consideration than the need for *service*. If, from the past record of an existing utility, it should appear that the utility cannot or will not provide adequate service, we think it might be proper to permit some duplication to take place, and some economic loss to be suffered so long as the duplication and resulting loss be not greatly out of proportion to the need for service.²²

49. In other words, the complete absence of “wasteful duplication” need not be shown to an absolute certainty, “it is sufficient that there is a reasonable basis of anticipation” that the “consumer market in the immediately foreseeable future will be sufficiently large to make it economically feasible for a proposed system or facility to be constructed....”²³ As recently as 2012, the Commission affirmed this point:

²⁰ *Id.*, at 891.

²¹ *Id.*

²² *Id.*, at 892 (emphasis in original).

²³ *Kentucky Utilities Co. v. Public Service Commission*, 59 P.U.R.3d 219, 390 S.W.2d 168, 172 (Ky. 1965).

To demonstrate that a proposed facility does not result in wasteful duplication, we have held that the applicant must demonstrate that a thorough review of all alternatives has been performed. Selection of a proposal that ultimately costs more than an alternative does not necessarily result in wasteful duplication. All relevant factors must be balanced.²⁴

50. EKPC satisfies the “wasteful duplication” component of the CPCN analysis by virtue of the due diligence it has undertaken to determine the investment should be made in the Spurlock Station landfill, Peg’s Hill (Area D) Phase 2, to ensure its continued use as a valuable coal-fired generation resource. The proposed Spurlock Station landfill, Peg’s Hill (Area D) Phase 2 presents the reasonable, least cost option for continued operation of the Spurlock Station and the safe and compliant storage of by-products from the burning of coal on the property.

51. EKPC satisfies the “wasteful duplication” component of the CPCN analysis by virtue of the thorough evaluation of reasonable alternatives it undertook and that the reasonable, least cost alternative was selected to determine the investment to be made for the CFI Closure in Place.

2. Filing Requirements

52. Pursuant to 807 KAR 5:001, Section 15(2)(a), the facts relied upon to show that the proposed construction or extension is or will be required by public convenience or necessity are specifically set forth in numerical paragraphs 24 through 30 of this Application for the Spurlock Landfill Peg’s Hill (Area D) Phase 2 project and in numerical paragraphs 31 through 38 of this Application for the CFI Closure in Place project and in the testimony submitted herewith.

²⁴ *In re the Application of Big Rivers Electric Corporation for Approval of its 2012 Environmental Compliance Plan*, Case No. 2012-00063, Final Order, pp. 14-15 (Ky. P.S.C. Oct. 1, 2012) (citations omitted).

53. Pursuant to 807 KAR 5:001, Section 15(2)(b), EKPC states that it is in the process of obtaining all environmental permits and approvals necessary for the proposed construction. A listing of the permits and approvals relevant to the Spurlock Station landfill, Peg's Hill (Area D) Phase 2 and CFI are included with the Direct Testimony and Exhibits of Mr. Jerry Purvis. The technical aspect of the CFI relevant to the CFI Closure in Place are included in the Direct Testimony of Ms. Laura LeMaster, Exhibit LL-1, the CFI Project Scoping Report ("PSR").

54. Pursuant to 807 KAR 5:001, Section 15(2)(c), a full description of the proposed location, route, or routes of the proposed construction or extension is contained in the testimonies of Mr. Patrick Bischoff (Exhibit H) and Ms. Laura LeMaster (Exhibit I), as well as reflected in the maps attached as Exhibit A and the CFI PSR hereto and incorporated herein. A description of the manner of construction is set forth fully in the testimonies of Mr. Patrick Bischoff and Ms. Laura LeMaster, and specifically in Exhibit LL-1 to Ms. LeMaster's testimony. There are no public utilities, corporations or persons with whom the proposed construction or extension is likely to compete.

55. Pursuant to 807 KAR 5:001, Section 15(2)(d), EKPC is providing herewith one (1) copy in portable document format on electronic storage medium: maps to suitable scale showing the location or route of the proposed construction or extension, as well as the location to scale of like facilities owned by others located anywhere within the map area with adequate identification as to the ownership of the other facilities (see Exhibit A); and plans and specifications and drawings of the proposed plant, equipment, and facilities (see Direct Testimony of Mr. Patrick Bischoff, Exhibit PB-3 and Direct Testimony of Ms. Laura LeMaster, Exhibit LL-1). Pursuant to

the Commission's Order in Case No. 2020-00085,²⁵ EKPC is not providing paper copies of the aforementioned maps.

56. Pursuant to 807 KAR 5:001, Section 15(2)(e), a detailed description of the manner in which EKPC intends to finance the proposed construction or extension is set forth in numerical paragraphs 28 and 36 herein and the testimony of Mr. Thomas Stachnik.

57. Pursuant to 807 KAR 5:001, Section 15(2)(f), EKPC estimates that the annual cost of operation of the Spurlock Station will increase approximately \$242,000 after the Peg's Hill (Area D) Phase 2 is placed into service. The annual cost of operation of the Cooper Station will increase approximately \$65,000 after the CFI Closure in Place is completed.

B. Request for Approval of an Environmental Compliance Plan Amendment

58. When a utility applies for a CPCN for the construction of a facility that is necessary to comply with an environmental mandate, KRS 278.183 is also implicated. The environmental surcharge statute was enacted "to promote the use of high sulfur Kentucky coal by permitting utilities to surcharge their customers for the cost of a scrubber which is part of a power plant that cleans high sulfur coal in order to meet the acid rain provisions of the Federal Clean Air Act amendments of 1990."²⁶ Section 1 of the statute contains the guarantee of cost recovery for such environmental compliance costs:

Notwithstanding any other provision of this chapter, effective January 1, 1993, a utility shall be entitled to the current recovery of its costs of complying with the Federal Clean Air Act as amended and those federal, state, or local environmental requirements which apply to coal combustion wastes and by-products from facilities utilized for production of energy from coal in accordance with the utility's compliance plan as designated in subsection (2) of this

²⁵ See *In the Matter of Electronic Emergency Docket Related to the Novel Coronavirus COVID-19*, Order, Case No. 2020-00085, (Ky. P.S.C., Jul. 22, 2021).

²⁶ *Kentucky Indus. Utility Customers, Inc. v. Kentucky Utilities Co.*, 983 S.W.2d 493, 496 (Ky. 1998).

section. These costs shall include a reasonable return on construction and other capital expenditures and reasonable operating expenses for any plant, equipment, property, facility, or other action to be used to comply with applicable environmental requirements set forth in this section. Operating expenses include all costs of operating and maintaining environmental facilities, income taxes, property taxes, other applicable taxes, and depreciation expenses as these expenses relate to compliance with the environmental requirements set forth in this section.²⁷

59. In order to obtain rate relief under the environmental surcharge statute, a utility must “submit to the commission a plan, including any application required by KRS 278.020(1), for complying with the applicable environmental requirements set forth in [KRS 278.183(1)].”

Following that:

...[T]he commission shall conduct a hearing to: (a) Consider and approve the plan and rate surcharge if the commission finds the plan and rate surcharge reasonable and cost-effective for compliance with the applicable environmental requirements set forth in subsection (1) of this section; (b) Establish a reasonable return on compliance-related capital expenditures; and (c) Approve the application of the surcharge.²⁸

60. The Kentucky Supreme Court characterized KRS 278.183 as “a new right” that “did not exist before the enactment of the surcharge.”²⁹ Thus, the Kentucky General Assembly has chosen to encourage the use of coal by enacting a surcharge mechanism that guarantees a utility the ability to recover costs associated with compliance with environmental mandates. The Commission has commented upon the prescriptive nature of the KRS 278.183 by observing that it “must consider the plan and the proposed rate surcharge, and approve them if [the Commission]

²⁷ KRS 278.183(1).

²⁸ KRS 278.183(2).

²⁹ *Kentucky Indus. Utility Customers, Inc.*, at 500.

finds the plan and rate surcharge to be reasonable and cost effective.”³⁰ The environmental surcharge statute, therefore, relates to and is an important adjunct to the traditional CPCN analysis required by KRS 278.020(1).

61. EKPC implemented its first Compliance Plan following Commission approval in 2005.³¹ EKPC has subsequently amended its Compliance Plan on six (6) occasions.³²

62. EKPC is seeking approval to amend its Compliance Plan to include the twenty-five (25) environmental compliance projects described herein, including the projects EKPC is seeking CPCNs for, as well as recover through its environmental surcharge the costs associated with those projects, which is approximately \$106.9 million. Further, due to the nature of the CFI closure project, EKPC proposes to expense the costs as incurred associated with the project instead of capitalizing those costs, which is approximately \$47.2 million.³³ In addition, EKPC estimates that

³⁰ *In re the Application of Big Rivers Electric Corporation for Approval of its 2012 Environmental Compliance Plan*, Case No. 2012-00063, Final Order, p. 16 (Ky. P.S.C. Oct. 1, 2012).

³¹ *See In the Matter of Application of East Kentucky Power Cooperative, Inc. for Approval of an Environmental Compliance Plan and Authority to Implement an Environmental Surcharge*, Order, Case No. 2004-00321 (Ky. P.S.C., Mar. 17, 2005).

³² *See In the Matter of the Application of East Kentucky Power Cooperative, Inc. for Approval of an Amendment to Its Environmental Compliance Plan and Environmental Surcharge*, Order, Case No. 2008-00115, (Ky. P.S.C., Sep. 29, 2008); *In the Matter of the Application of East Kentucky Power Cooperative, Inc. for Approval of an Amendment to Its Environmental Compliance Plan and Environmental Surcharge*, Order, Case No. 2010-00083, (Ky. P.S.C., Sep. 24, 2010); *In the Matter of the Application of East Kentucky Power Cooperative, Inc. for a Certificate of Public Convenience and Necessity for Alteration of Certain Equipment at the Cooper Station and Approval of a Compliance Plan Amendment for Environmental Surcharge Cost Recovery*, Order, Case No. 2013-00259, (Ky. P.S.C., Feb. 20, 2014); *In the Matter of the Application of East Kentucky Power Cooperative, Inc. for a Certificate of Public Convenience and Necessity for construction of an Ash Landfill at J.K. Smith Station, the Removal of Impounded Ash from William C. Dale Station for Transport to J.K. Smith and Approval of a Compliance Plan Amendment for Environmental Surcharge Recovery*, Order, Case No. 2014-00252 (Ky. P.S.C., Mar. 6, 2015); *In the Matter of the Application of East Kentucky Power Cooperative, Inc. for Approval to Amend its Environmental Compliance Plan and Recover Costs pursuant to its Environmental Surcharge, Settlement of Certain Asset Retirement Obligations and Issuance of a Certificate of Public Convenience and Necessity and Other Relief*, Order, Case No. 2017-00376 (Ky. P.S.C., May 18, 2018); *In the Matter of the Application of East Kentucky Power Cooperative, Inc. for Approval to Amend Its Environmental Compliance Plan and Recover Costs Pursuant to Its Environmental Surcharge, and for the Issuance of a Certificate of Public Convenience and Necessity*, Order, Case No. 2018-00270 (Ky. P.S.C., Apr. 1, 2019).

³³ The \$47.2 million cost for the CFI Closure in Place is included in the total of \$106.9 million for the 25 projects.

the incremental annual operations and maintenance expense associated with the projects EKPC seeks to add to its Compliance Plan will be approximately \$1.1 million.

63. EKPC intends to finance the Spurlock Station Landfill, Peg's Hill (Area D) Phase 2 as set forth in numerical paragraph 28 above. EKPC intends to finance the CFI Closure in Place as set forth in numerical paragraph 36 above. The other projects for which no CPCN is required were, or will be, financed through EKPC's general corporate cash and draws upon its unsecured credit facility. Ultimately these projects will be financed through long-term debt instruments issued pursuant to EKPC's Trust Indenture.

64. EKPC has given the required notice of intent as to the filing of this Application and has provided the requisite notice to its owner-members as well.³⁴

65. Under KRS 278.183(2), EKPC is entitled to earn a return on its investment. The original (and still utilized) methodology for determining an appropriate return is the product of the weighted average debt cost of the debt issuances directly related to the projects in EKPC's Compliance Plan, multiplied by a Times Interest Earned Ratio ("TIER") factor.³⁵ EKPC has updated its weighted average debt cost as of March 31, 2023 and states that its current weighted average debt cost is 4.398%. EKPC is requesting the Commission use its updated weighted average debt cost of 4.398% and a 1.475 TIER factor to arrive at an overall rate of return of 6.487%.³⁶

³⁴ A copy of the Notice of Intent is attached hereto and incorporated herein as Exhibit B. A copy of the Notice given to EKPC's owner-members is attached hereto and incorporated herein as Exhibit C.

³⁵ This determination of the overall rate of return for the environmental compliance rate base utilizing the weighted average cost of debt issuances directly related to projects in the approved Compliance Plan multiplied by the authorized TIER was established in Case No. 2004-00321. EKPC has consistently followed this approach in every six-month and two-year surcharge review proceeding.

³⁶ See *In the Matter of Electronic Application of East Kentucky Power Cooperative, Inc. for a General Adjustment of Rates, Approval of Depreciation Study, Amortization of Certain Regulatory Assets, and Other General Relief*, Order,

66. Based upon the foregoing, EKPC estimates that the annual environmental surcharge impact of its amended Compliance Plan to a residential customer using 1,125 kWh of electricity each month would be as follows:³⁷

Calendar Year Ending	Estimated Annual Revenue Requirement	Percentage Increase Wholesale	Percentage Increase Retail	Estimated Increase in Average Residential Monthly Bill
2024	\$4,847,602	0.43%	0.31%	\$0.31
2025	\$21,626,957	1.90%	1.37%	\$1.36
2026	\$31,725,881	2.79%	2.01%	\$2.00
2027	\$5,194,265	0.46%	0.33%	\$0.32

V. Overview of Testimony

67. EKPC is providing written testimony to support its Application from the following individuals:

- a. Mr. Don Mosier, P.E., Executive Vice President and Chief Operating Officer, will offer testimony supporting EKPC’s corporate profile, strategic objectives and the due diligence that has gone into the development of this proposal.
- b. Mr. Thomas Stachnik, Vice President of Finance and Treasurer, will provide testimony concerning EKPC’s plans to finance the Peg’s Hill (Area D) Phase 2 and CFI projects and other projects described herein, as well as the calculation of EKPC’s weighted average cost of debt associated with debt

Case No. 2021-00103, (Ky. P.S.C., Sep. 30, 2021). The use of a TIER of 1.475 for surcharge purposes was a result of the settlement agreement approved in Case No. 2021-00103.

³⁷ EKPC’s rate schedules do not directly correspond to retail customer classifications. For illustrative purposes EKPC has approximated the impact on an average monthly residential bill reflecting a monthly usage of 1,125 kWh. This approximation reflects EKPC’s best estimate of the impact and is not based on an analysis of residential billing information.

issuances relating to its Compliance Plan as of March 31, 2023. He will also provide testimony concerning EKPC's requested authorized return.

- c. Mr. Jerry Purvis, Vice President of Environmental Affairs, will offer testimony concerning the environmental obligations that EKPC must satisfy. He will also offer detailed testimony as to the purpose, scope and requirements of the CCR Rule, the ELG Rule and other applicable environmental authorities.
- d. Mr. Joseph T. VonDerHaar, Plant Manager of the Spurlock Station, will offer testimony detailing the other projects EKPC has proposed for inclusion in its amended Compliance Plan.
- e. Mr. Patrick Bischoff, P.E., Manager of Construction and Capital Projects, will provide testimony concerning the Spurlock Landfill Peg's Hill (Area D) Phase 2 project.
- f. Ms. Laura LeMaster, P.E., Supervisor of Construction and Capital Projects, will provide testimony concerning the CFI Closure in Place project.
- g. Mr. Isaac Scott, Manager of Pricing, will provide testimony concerning the cost and rate impact of the proposed Compliance Plan amendment. He will also discuss the proposed revisions to the environmental surcharge tariff and the monthly reporting forms.

VI. Conclusion

68. For the past several years, state and federal environmental regulations have required EKPC to make significant modifications to its Spurlock and Cooper coal-fired generating stations. Each of these projects is detailed in this Application and its supporting materials, and each is appropriate for inclusion in EKPC's proposed amended Compliance Plan under KRS 278.183.

Accordingly, EKPC respectfully requests that the Commission allow EKPC to recover the costs of these projects through its environmental surcharge as described herein. Finally, EKPC requests that the Commission approve and issue CPCNs for the Spurlock Landfill Peg's Hill (Area D) Phase 2 and CFI closure projects.

WHEREFORE, on the basis of the foregoing, EKPC respectfully requests the Commission enter an Order:

- 1) Approving the proposed amendment of EKPC's Compliance Plan to include twenty-five (25) additional projects, including the Spurlock Landfill Peg's Hill (Area D) Phase 2 and CFI closure projects;
- 2) Authorizing recovery of the costs associated with said amendment, approximately \$106.9 million, through EKPC's existing environmental surcharge;
- 3) Issuing CPCNs for the Spurlock Landfill Peg's Hill (Area D) Phase 2 and CFI closure projects, as described herein; and
- 4) Granting all other relief to which EKPC may be entitled.

This 30th day of June, 2023.

Respectfully submitted,



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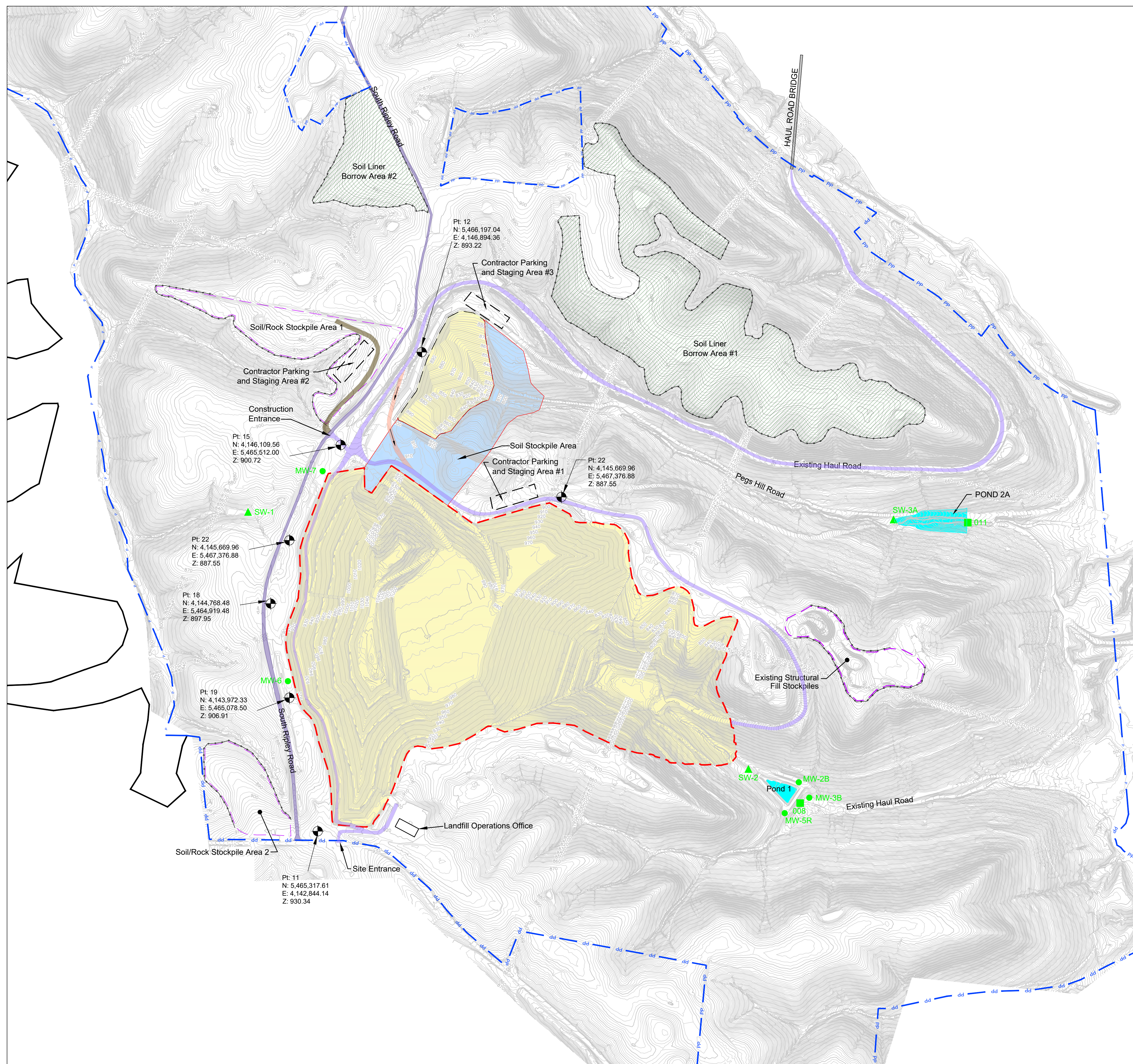
VII. Exhibits

- A. Aerial Maps/Photographs of Spurlock Station with Identified Facilities/Infrastructure (per 807 KAR 5:001, Section 15(2)(d)(1))
- B. EKPC's Notice of Intent to File Application
- C. EKPC's Notice to Owner-Member Cooperatives of Intent to File
- D. Testimony of Don Mosier
- E. Testimony of Thomas Stachnik
 - 1. Determination of Rate of Return on Environmental Compliance Rate Base (Attachment TJS-1).
- F. Testimony of Jerry Purvis
 - 1. Spurlock Station Peg's Hill / Area D Agreed Order (Exhibit JP-1)
 - 2. Cooper Station Kentucky Division of Water KPDES Permit (Exhibit JP-2)
 - 3. Spurlock Station CCR Landfill Permit (Exhibit JP-3)
 - 4. Cooper Station Landfill Permit (Exhibit JP-4)
 - 5. CFI Permit Matrix (Exhibit JP-5)
- G. Testimony of Joseph T. VonDerHaar
 - 1. Fact Sheets of Environmental Projects not requiring CPCN (Attachment JV-1)
- H. Testimony of Patrick Bischoff
 - 1. EKPC Landfill Management Plan (Exhibit PB-1)
 - 2. EKPC Board Resolution – Spurlock Landfill Peg's Hill (Area D) Phase 2 Construction Project (Exhibit PB-2)
 - 3. Preliminary Spurlock Station Peg's Hill (Area D) Phase 2 Drawings (Exhibit PB-3)
 - 4. Construction Quality Assurance Plan (Exhibit PB-4)
- I. Testimony of Laura LeMaster
 - 1. CFI Project Scoping Report (Exhibit LL-1)
- J. Testimony of Isaac Scott
 - 1. Schedule of Current Environmental Compliance Plan and the Project Amendments/Additions (Exhibit ISS-1)
 - 2. Sample Copy of the Monthly Environmental Surcharge Reporting Formats which Reflect Inclusion of the Amended/Additional Projects (Exhibit ISS-2)
 - 3. Determination of BESF reflecting Projects partially recovered through Existing Base Rates (Exhibit ISS-3)

4. Revisions to Environmental Surcharge Tariff (Exhibit ISS-4)
5. Estimate of Revenue Increase and Estimated Bill Impact (Exhibit ISS-5)
6. EKPC Board Resolution – Approval to Amend Environmental Compliance Plan and Seek to Recover Costs Associated with the Specifically Identified Projects (Exhibit ISS-6)

EXHIBIT

A



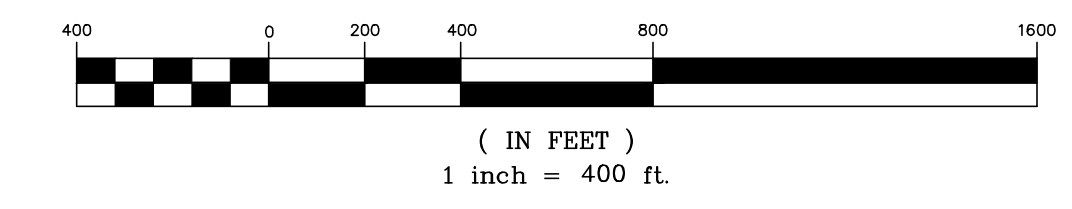
LEGEND

- Existing Contours
- Tree Line
- Tree
- Utility Pole
- ☉ Drain
- Fence
- Spot Elevation
- Existing Access Road
- Approximate Property Boundary
- Approximate Permit Boundary
- Approximate Property & Permit Boundary
- Previously Constructed Liner Area
- Proposed, Phase 2
- Soil Liner Borrow Area
- Permanent Survey Marker
- Groundwater Monitoring Well
- Surface Water Monitoring Point
- KPDES Monitoring Point
- Proposed Silt Fence
- Paved 1-Way Shared Haul Road
- Paved 2-Way Shared Haul Road
- County Road
- Unpaved 2-Way Shared Haul Road
- Unpaved 2-Way Haul Road
- 1 Lane Shared Haul Road Bridge

NOTES

1. Contractor may only perform tree clearing activities within the identified borrow area(s) between October 15th and March 31st.
2. Grading of Borrow Areas shall maintain positive drainage without any standing water. Proper sediment control shall be used to prohibit the migration of sediments per the site's existing Stormwater Pollution Prevention Plan (SWP3). All disturbed areas shall be re-vegetated to a minimum of 90% vegetative growth.
3. Sediment controls shown are minimum required controls. Contractor shall be responsible for providing and maintaining as many structures as needed to eliminate the migration of sediment offsite and/or into Waters of the Commonwealth. This is incidental to construction activities and therefore the responsibility of the Contractor to provide at no expense to EKPC beyond those items addressed on the Bid Schedule.
4. No equipment allowed on existing ditches.
5. All horizontal coordinates listed are projected in NAD83 State Plane Kentucky Single Zone (US Foot). Elevation data is based on the NAVD88 vertical datum.
6. Topography from Aerial Surveys performed in 2018 by GRW.

GRAPHIC SCALE



**PEGS HILL LANDFILL
MASON COUNTY, KENTUCKY
PHASE 2
CONSTRUCTION PLANS**

DRAWN BY: MAS
CHECKED BY: JAM/SMR
DATE: AUGUST 2022
SCALE: AS NOTED
REVISIONS

KENVIRONS
Civil & Environmental Engineers



PROJECT NO.
2020124
SHEET NO.
2 of 13

DRAFT
GENERAL SITE LAYOUT

N:\P\2020\24\AREA D PHASE 2 CONSTRUCTION PLANS\02_GENERAL SITE LAYOUT 12.dwg, GEN SITE, 8/18/2022 5:29:31 PM, MAS

EXHIBIT

B

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:


ELECTRONIC APPLICATION OF EAST)	
KENTUCKY POWER COOPERATIVE, INC. FOR)	
APPROVAL TO AMEND ITS ENVIRONMENTAL)	
COMPLIANCE PLAN AND RECOVER COSTS	)	CASE NO.
PURSUANT TO ITS ENVIRONMENTAL	)	2023-00177
SURCHARGE, AND FOR THE ISSUANCE OF)	
CERTIFICATES OF PUBLIC CONVENIENCE)	
AND NECESSITY AND OTHER RELIEF)	

EAST KENTUCKY POWER COOPERATIVE, INC.'S
NOTICE OF INTENT

Comes now East Kentucky Power Cooperative, Inc. (“EKPC”), by counsel, and hereby gives notice to the Kentucky Public Service Commission (“Commission”), pursuant to KRS 278.183(2) of its intent to file an Application under KRS 278.183. This Application will request approval of the following: an amended Environmental Compliance Plan, cost recovery through the Environmental Surcharge Mechanism, and Certificates of Public Convenience and Necessity for projects contained in the Environmental Compliance Plan.

This 19th day of May, 2023.

Respectfully submitted,




L. Allyson Honaker
Brittany Hayes Koenig
Honaker Law Office, PLLC
1795 Alysheba Way, Suite 6202
Lexington, KY 40509
Telephone (859) 368-8803
allyson@hloky.com
brittany@hloky.com

Counsel for East Kentucky Power Cooperative, Inc.

CERTIFICATE OF SERVICE

This is to certify that foregoing was submitted electronically to the Commission on May 19, 2023 and that there are no parties that have been excused from electronic filing. Pursuant to prior Commission orders, no paper copies of this filing will be submitted.




Counsel for East Kentucky Power Cooperative, Inc.

EXHIBIT

C

MEMORANDUM

TO: Member System CEO's

FROM: Anthony S. Campbell 

DATE: June 27, 2023

SUBJECT: Notice of Amendment to EKPC Environmental Compliance Plan and Environmental Surcharge Mechanism

Following a recommendation from its Strategic Issues Committee, the Board of East Kentucky Power Cooperative, Inc. ("EKPC"), during its regularly scheduled Board Meeting on Tuesday, April 11, 2023, authorized the submittal of an application to the Kentucky Public Service Commission ("Commission") for approval to amend its Environmental Compliance Plan and Environmental Surcharge Mechanism. On May 19, 2023, EKPC gave notice to the Commission of its intent to file an Application for Approval of an Amendment to its Environmental Compliance Plan and Environmental Surcharge Mechanism. The notice also indicated EKPC would be seeking two Certificates of Public Convenience and Necessity ("CPCN"). EKPC plans to file this Application on or after Friday, June 30, 2023.

The amendment will enable EKPC to recover costs associated with the installation of facilities at the Spurlock and Cooper Stations that are necessary to comply with federal regulations like the Disposal of Coal Combustion Residuals from Electric Utilities Rule and the Effluent Limitation Guidelines and Standards for the Steam Electric Power Generating Point Source Category as well as state regulations like the Kentucky Pollutant Discharge Elimination System requirements. Several of the facilities have already been completed and are in service while others are under development and construction of those facilities are expected to be completed by 2027.

EKPC's largest coal-fired electric generation facility is the Spurlock Station. The four electric generation units began commercial operation between 1977 and 2009. EKPC has already heavily invested in environmental control equipment at the Spurlock Station. The four units at the Spurlock Station are among the least-expensive electric generation units in the EKPC fleet and have a high availability factor.

EKPC's other coal-fired electric generation facility is the Cooper Station. The two electric generation units began commercial operation in 1965 and 1969. Like the Spurlock Station, EKPC has made significant investments in environmental control equipment at the Cooper Station. While the two units at the Cooper Station have higher operating costs, these units have maintained very favorable availability factors and serve as a physical hedge against price volatility in the energy market during peak demand periods.

With the proposed environmental compliance plan amendment, EKPC is seeking to add twenty-five projects to the plan. Twenty-two of the projects have been or are nearing completion and did not require CPCNs, consistent with the exception provided in KRS

278.020(1) and 807 KAR 5:001, Section 15(3). EKPC had already secured a CPCN on one of the projects, but had not previously included it as part of its environmental compliance plan. EKPC is seeking CPCNs for two of the projects – Area D, Phase 2 at the Spurlock Landfill and a project to close in place the Cooper Station Former Impoundment. The compliance options reflected by these projects will preserve the long-term usefulness of the Spurlock and Cooper Stations. The total estimated capital cost of the twenty-five projects is \$106.9 million.

Pursuant to KRS 278.183(2), the Commission must issue its decision on the proposed compliance plan amendment and revisions to the surcharge mechanism within six months of the filing of the application. If EKPC files its application by June 30, 2023 and it is accepted as filed, a decision on the application could be expected by December 30, 2023. If the application is approved, cost recovery for the amendment could begin with the first monthly surcharge filing submitted after December 30, 2023.

EKPC's surcharge mechanism, as well as the Member Systems' surcharge pass-through mechanism, reflect formula-based calculations that are prepared each month to provide for the recovery of actual environmental compliance costs incurred during the period. EKPC's surcharge factor and the Member Systems' surcharge pass-through factors are billed to customers using the percentage of revenues approach. Thus there are no present or proposed rates associated with this application. In addition, EKPC's rate schedules do not directly correspond to retail customer classifications. Consequently, a determination of the change in the surcharge amounts billed, the percentage change, and the effect on the average bills for all customer classifications is not possible.

If approved, construction would be completed in 2027. The estimated annual revenue requirement and expected increase in the environmental surcharge at the wholesale level and retail level for the years 2024 through 2027 are shown in the table below. For illustrative purposes, EKPC has also approximated the impact on an average monthly residential bill reflecting a monthly usage of 1,125 kWh. However, this approximation reflects EKPC's best estimate of the impact and is not based on an analysis of residential billing information.

Calendar Year Ending	Estimated Annual Revenue Requirement	Percentage Increase Wholesale	Percentage Increase Retail	Estimated Increase in Average Residential Monthly Bill
2024	\$4,847,602	0.43%	0.31%	\$0.31
2025	\$21,626,957	1.90%	1.37%	\$1.36
2026	\$31,725,881	2.79%	2.01%	\$2.00
2027	\$5,194,265	0.46%	0.33%	\$0.32

Once it is filed, a person may examine this Application at the offices of EKPC located at 4775 Lexington Road, Winchester, Kentucky. This Application may also be examined at the offices of the Commission located at 211 Sower Boulevard, Frankfort, Kentucky, Monday through Friday, 8:00 a.m. to 4:30 p.m., or through the Commission's Web site at

<http://psc.ky.gov> . Any comments regarding this Application may be submitted to the Commission through its Web site or by mail to Public Service Commission, P. O. Box 615, Frankfort, Kentucky 40602.

The estimated impacts contained in this notice are based on the environmental compliance plan amendment as proposed by EKPC but the Commission may order an environmental compliance plan that differs from the proposed environmental compliance plan and resulting estimated impacts contained in this notice.

A person may submit a timely written request for intervention to the Public Service Commission, P. O. Box 615, Frankfort, Kentucky 40602, establishing the grounds for the request including the status and interest of the party. If the Commission does not receive a written request for intervention within thirty (30) days of the initial publication or mailing of the notice, the Commission may take final action on the Application.

EXHIBIT

D

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

IN THE MATTER OF:

ELECTRONIC APPLICATION OF EAST)	
KENTUCKY POWER COOPERATIVE, INC. FOR)	
APPROVAL TO AMEND ITS ENVIRONMENTAL)	
COMPLIANCE PLAN AND RECOVER COSTS	)	CASE NO.
PURSUANT TO ITS ENVIRONMENTAL	)	2023-00177
SURCHARGE, AND FOR THE ISSUANCE OF)	
CERTIFICATES OF PUBLIC CONVENIENCE)	
AND NECESSITY AND OTHER RELIEF)	

DIRECT TESTIMONY OF DON MOSIER
ON BEHALF OF EAST KENTUCKY POWER COOPERATIVE, INC.

Filed: June 30, 2023

1 **Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS, AND**
2 **OCCUPATION.**

3 A. My name is Don Mosier and my business address is East Kentucky Power
4 Cooperative, Inc. (“EKPC”), 4775 Lexington Road, Winchester, Kentucky 40391.
5 I am Executive Vice President and Chief Operating Officer at EKPC.

6 **Q. PLEASE STATE YOUR EDUCATION AND PROFESSIONAL**
7 **EXPERIENCE.**

8 A. I obtained my Bachelor of Science degree in civil engineering from the University
9 of Virginia and my Master of Business Administration degree from the Kenan-
10 Flagler Business School at the University of North Carolina. My professional
11 experience includes working at Carolina Power & Light (now Duke Energy) in
12 Raleigh, North Carolina, developing merchant generation projects and marketing
13 activities, regulatory affairs, and nuclear power plant engineering and operations. I
14 also was an engineering manager of U.S. Operations for Canatom Corp., a Toronto-
15 based engineering firm that provides nuclear plant engineering and construction
16 services. Immediately prior to joining EKPC, I was Vice President of St. Louis-
17 based Ameren Energy Marketing (“AEM”), a subsidiary of Ameren Corp. At
18 AEM, I managed wholesale power trading, plant dispatch, NERC and SERC
19 compliance, transmission and congestion management activities, and customer
20 account management for Ameren Corporation’s unregulated merchant generation
21 fleet located in the Midwest ISO and PJM RTO.

22 **Q. PLEASE PROVIDE A BRIEF DESCRIPTION OF YOUR DUTIES AT**
23 **EKPC.**

1 A. I manage the day-to-day operations of power production, engineering and
2 construction, power delivery, power supply and resource planning, environmental
3 compliance, PJM market and FERC regulatory affairs. I report directly to EKPC's
4 Chief Executive Officer, Mr. Anthony Campbell.

5 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS**
6 **PROCEEDING?**

7 A. The purpose of my testimony is to support EKPC's application in this proceeding
8 and to discuss EKPC's corporate profile and strategic goals. I will also discuss the
9 process undertaken by EKPC to prepare and propose the environmental surcharge
10 amendment and the different projects proposed to be added to EKPC's
11 Environmental Compliance Plan ("Compliance Plan").

12 **Q. ARE YOU SPONSORING ANY EXHIBITS?**

13 A. No I am not sponsoring any exhibits.

14 **Q. PLEASE DESCRIBE EKPC AND ITS OWNER-MEMBERS' SYSTEM.**

15 A. EKPC is a not-for-profit, rural electric cooperative corporation established under
16 KRS Chapter 279 with its headquarters in Winchester, Kentucky. EKPC has \$4.68
17 billion in assets and approximately 700 employees. In 2022, EKPC's energy sales
18 exceeded 14.5 million megawatt hours, contributing to an operating revenue of
19 \$1.24 Billion and a net margin of \$37.2 million. Pursuant to various agreements,
20 EKPC provides electric generation capacity and electric energy to its sixteen (16)
21 owner-members: Big Sandy RECC, Blue Grass Energy, Clark Energy, Cumberland
22 Valley Electric, Farmers RECC, Fleming-Mason Energy, Grayson RECC, Inter-
23 County Energy, Jackson Energy, Licking Valley RECC, Nolin RECC, Owen

1 Electric, Salt River Electric, Shelby Energy, South Kentucky RECC and Taylor
2 County RECC. Those owner-members in turn serve approximately 560,000
3 Kentucky homes, farms and commercial and industrial establishments in eighty-
4 nine (89) Kentucky counties.

5 EKPC is a member of the PJM Interconnection, LLC and owns and operates
6 a total of approximately 3,100 MW of net summer generating capability and 3,400
7 MW of net winter generating capability. EKPC owns and operates coal-fired
8 generation at the John S. Cooper Station in Pulaski County, Kentucky (341 MW)
9 (“Cooper Station”) and the Hugh L. Spurlock Power Station (“Spurlock”) (1,346
10 MW). EKPC also owns and operates natural gas-fired generation at the J. K. Smith
11 Station in Clark County, Kentucky (753 MW (summer)/989 MW (winter)) (“Smith
12 Station”) and the Bluegrass Station in Oldham County, Kentucky (501 MW
13 (summer)/567 MW (winter)), and landfill gas-to-energy facilities in Boone County,
14 Laurel County, Greenup County, Hardin County, Pendleton County and Barren
15 County (16 MW total). In November 2017, EKPC added a Community Solar
16 facility (8 MW) in Winchester, Kentucky to its generation portfolio. Finally, EKPC
17 purchases hydropower from the Southeastern Power Administration at Laurel Dam
18 in Laurel County, Kentucky (70 MW), and the Cumberland River system of dams
19 in Kentucky and Tennessee (100 MW). EKPC’s record peak demand of 3,747 MW
20 occurred on December 23, 2022.

21 EKPC also owns approximately 3,000 circuit miles of high voltage
22 transmission lines in various voltages and the substations necessary to support this

1 transmission line infrastructure. Currently, EKPC has seventy-seven (77) free-
2 flowing interconnections with its neighboring utilities.

3 **Q. HOW WAS THE DECISION MADE FOR THE PROJECTS PROPOSED IN**
4 **THIS PROCEEDING?**

5 A. EKPC's management works diligently to identify and develop the best possible
6 solutions to challenges presented by environmental regulations, operational
7 constraints, and other influences. EKPC's decision to pursue the Cooper Former
8 Impoundment ("CFI") Closure in Place Project ("CIP"), in advance of the EPA's
9 "Proposed Changes for Legacy Coal Combustion Residuals Surface Impoundments
10 and CCR Management Units," is a continuation of EKPC's proactive approach to
11 environmental stewardship as demonstrated in the voluntary closure of Dale
12 Station's four ash ponds in 2017, begun in advance of the final 2015 CCR rule, and
13 the decision to close its active ash pond at Spurlock Station as part of its compliance
14 plan to meet the CCR and ELG rules. The other projects it seeks to add to its
15 Compliance Plan likewise are consistent with EKPC's objective to actively manage
16 EKPC's current and future asset portfolio to safely deliver reliable, affordable and
17 sustainable energy from appropriately diversified resources, and work with federal
18 and state stakeholders to ensure high reliability and economic viability while
19 mitigating evolving regulatory challenges.

20 **Q. PLEASE EXPLAIN THE RELIEF EKPC SEEKS IN THIS PROCEEDING.**

21 A. EKPC seeks to amend its Compliance Plan to include twenty-three (23) projects
22 described in the Direct Testimony of Mr. Joe VonDerHaar. In addition, EKPC is
23 seeking to amend its Compliance Plan to include the Peg's Hill (Area D) Phase 2

1 of the Spurlock Station Landfill and the CFI CIP. EKPC is requesting CPCN's for
2 these two projects. EKPC also is seeking authority to recover the costs associated
3 with the Compliance Plan amendments through its environmental surcharge,
4 pursuant to KRS 278.183.

5 **Q. PLEASE DESCRIBE EKPC'S ENVIRONMENTAL COMPLIANCE PLAN.**

6 A. Pursuant to KRS 278.183, EKPC implemented its first Compliance Plan following
7 Commission approval in 2005.¹ EKPC has subsequently amended its Compliance
8 Plan on six (6) occasions² to include new or amended projects undertaken in
9 connection with its coal-fired generation assets. All of the projects approved for
10 inclusion in EKPC's Compliance Plan have been reasonable and cost-effective for
11 compliance with "those federal, state, or local environmental requirements which
12 apply to coal combustion wastes and by-products from facilities utilized for
13 production of energy from coal," as required by statute.

¹ See *In the Matter of Application of East Kentucky Power Cooperative, Inc. for Approval of an Environmental Compliance Plan and Authority to Implement an Environmental Surcharge*, Order, Case No. 2004-00321 (Ky. P.S.C., Mar. 17, 2005).

² See *In the Matter of the Application of East Kentucky Power Cooperative, Inc. for Approval of an Amendment to Its Environmental Compliance Plan and Environmental Surcharge*, Order, Case No. 2008-00115, (Ky. P.S.C., Sep. 29, 2008); *In the Matter of the Application of East Kentucky Power Cooperative, Inc. for Approval of an Amendment to Its Environmental Compliance Plan and Environmental Surcharge*, Order, Case No. 2010-00083, (Ky. P.S.C., Sep. 24, 2010); *In the Matter of the Application of East Kentucky Power Cooperative, Inc. for a Certificate of Public Convenience and Necessity for Alteration of Certain Equipment at the Cooper Station and Approval of a Compliance Plan Amendment for Environmental Surcharge Cost Recovery*, Order, Case No. 2013-00259, (Ky. P.S.C., Feb. 20, 2014); *In the Matter of the Application of East Kentucky Power Cooperative, Inc. for a Certificate of Public Convenience and Necessity for construction of an Ash Landfill at J.K. Smith Station, the Removal of Impounded Ash from William C. Dale Station for Transport to J.K. Smith and Approval of a Compliance Plan Amendment for Environmental Surcharge Recovery*, Order, Case No. 2014-00252 (Ky. P.S.C., Mar. 6, 2015); *In the Matter of the Application of East Kentucky Power Cooperative, Inc. for Approval to Amend its Environmental Compliance Plan and Recover Costs pursuant to its Environmental Surcharge, Settlement of Certain Asset Retirement Obligations and Issuance of a Certificate of Public Convenience and Necessity and Other Relief*, Order, Case No. 2017-00376 (Ky. P.S.C., May 18, 2018); *In the Matter of the Application of East Kentucky Power Cooperative, Inc. for Approval to Amend its Environmental Compliance Plan and Recover Costs Pursuant to its Environmental Surcharge, and for the Issuance of a Certificate and Public Convenience and Necessity*, Order, Case No. 2018-00270 (Ky. P.S.C., April 1, 2019).

1 **Q. WHEN WAS EKPC’S ENVIRONMENTAL COMPLIANCE PLAN LAST**
2 **AMENDED?**

3 A. EKPC last amended its Compliance Plan in 2018 (Case No. 2018-00270).

4 **Q. PLEASE DESCRIBE THE PROCESS TAKEN BY EKPC TO DETERMINE**
5 **THE PROJECTS TO INCLUDE AND TO DETERMINE THE**
6 **AMENDMENTS NECESSARY TO ITS ENVIRONMENTAL**
7 **COMPLIANCE PLAN.**

8 A. As the Commission is aware, electric utilities like EKPC are among the most
9 heavily environmentally regulated companies in the United States. Authorities at
10 the federal and state levels oversee nearly every aspect of EKPC's operations, with
11 particular emphasis on the monitoring and abatement of the wastes and by-products
12 that accompany coal-fired electric generation. EKPC has devoted and continues to
13 devote substantial resources to ensure its continued compliance with environmental
14 requirements, especially at its Cooper and Spurlock Stations. The testimony
15 submitted herewith of Mr. Jerry Purvis, EKPC's Vice President of Environmental
16 Affairs, provides extensive detail concerning the purpose, scope and requirements
17 of various state and federal environmental regulations that have necessitated the
18 projects EKPC proposes to add to its Compliance Plan .

19 In addition, EKPC’s decision for the CFI CIP was based on information
20 gathered and provided by Geosyntec in its Project Scoping Report. EKPC hired
21 Geosyntec to assist EKPC in evaluating the site to better assess the short- and long-
22 term options for managing the CFI with the goals of protecting the environment
23 and managing any potential risk. EKPC reviewed the information provided by

1 Geosyntec and looked at multiple factors, including costs, environmental effects,
2 constructability, schedule, human health and safety, and permitting in determining
3 which alternative to choose. Geosyntec identified four alternatives for detailed
4 evaluation and these are included and explained in more detail in the Project
5 Scoping Report attached as Exhibit LL-1 to Laura LeMaster's Direct Testimony.
6 Alternative 1, to Monitor and Mitigate, was the least cost option, however EKPC
7 concluded that it did not mitigate or eliminate any of the risks associated with the
8 CFI and was not consistent with EKPC's proactive approach to environmental
9 stewardship as described earlier. Alternatives 2 through 4 were each determined to
10 provide significant benefits of mitigating the long-term risks associated with the
11 CFI. Out of those three alternatives, Alternative 2 significantly reduces long-term
12 environmental risks by consolidating and capping the CFI in accordance with an
13 approved CCR compliance method and is less complex than Alternatives 3 and 4,
14 further reducing risks in project execution. In addition to being lower cost than
15 Alternatives 3 and 4, Alternative 2 does not raise the short-term construction risk
16 as Alternative 3 does and for all practical purposes, provides the same degree of
17 long-term mitigation as Alternative 4.

18 **Q. DID EKPC'S BOARD OF DIRECTORS APPROVE THE AMENDMENTS**
19 **PROPOSED IN THIS PROCEEDING?**

20 A. Yes, as included in the direct testimony of Mr. Isaac Scott as Exhibit ISS-6.

21 **Q. HOW MANY PROJECTS DOES EKPC SEEK TO ADD TO ITS**
22 **ENVIRONMENTAL COMPLIANCE PLAN?**

23 A. EKPC seeks to add twenty-five (25) total projects.

1 **Q. PLEASE DESCRIBE THE SPURLOCK STATION LANDFILL PEG'S**
2 **HILL (AREA D) PHASE 2 PROJECT.**

3 A. The Peg's Hill (Area D) Phase 2 Project, the technical specifications for which are
4 more fully described in the testimony of Mr. Patrick Bischoff submitted herewith,
5 includes the proposed design and construction of Peg's Hill (Area D) Phase 2 for
6 EKPC's Spurlock landfill. This landfill will provide approximately 2,000,000
7 additional cubic yards of coal ash capacity and will meet the requirements of the
8 Coal Combustion Residuals ("CCR") Rule.

9 **Q. PLEASE DESCRIBE THE COOPER STATION FORMER**
10 **IMPOUNDMENT CLOSURE IN PLACE PROJECT.**

11 A. The Cooper Former Impoundment was closed in the early 1990's under ongoing
12 communications with the Kentucky Department of Waste and remains inactive and
13 unregulated. The CFI CIP project, the technical specifications for which are more
14 fully described in the testimony of Mrs. Laura LeMaster and Mr. Jerry Purvis,
15 submitted herewith, includes the consolidation of CCB material from 65 acres to
16 approximately 40 acres. The consolidation of the material will allow for the
17 installation of perimeter stormwater controls to divert water to the newly
18 constructed stormwater basins. The consolidated 40 acres of CCB will be covered
19 with a final cover system which includes a 40-mil thick geomembrane liner overlain
20 by two-feet of soil and new vegetation. The objective of this project is to close the
21 CFI in a manner that is safe and environmentally responsible as well as affordable
22 to EKPC owner-members.

1 **Q. DOES EKPC HAVE THE EXPERIENCE TO ENGINEER, DEVELOP,**
2 **CONSTRUCT AND MAINTAIN THE CFI CIP?**

3 A. Yes. The most relevant example is the active CCR compliant landfill operation
4 adjacent to Cooper Station, which will see continued safe and environmentally
5 sound operations for the foreseeable future. This CCR landfill utilizes the same
6 engineered solution that will be implemented as described herein for the CFI
7 CIP. In addition, EKPC has substantial experience designing, constructing and
8 maintaining state of the art landfills at Smith and Spurlock Stations including the
9 latter's newest Area D landfill expansion as described herein.

10 **Q. DOES THE DECISION TO PROCEED WITH THE CFI CIP IMPACT THE**
11 **FUTURE OPERATIONS OR DECISION TO CLOSE COOPER STATION**
12 **UNITS 1 AND 2?**

13 A. No. The existence of the CFI is an enduring maintenance obligation and liability
14 for EKPC and its Owner-members. The decision to close either Cooper generating
15 units 1 and 2 will be based on regional grid reliability issues in the Somerset area,
16 market economics, future regulatory requirements and/or other strategic
17 considerations unrelated to this request.

18 **Q. HOW WILL THE PROJECTS BE FINANCED?**

19 A. Mr. Tom Stachnik provides a more detailed explanation of the financing necessary
20 for the projects, but I can briefly describe the financing. The twenty-three (23)
21 projects described in the Direct Testimony of Mr. Joe VonDerHaar, in addition to
22 the Spurlock Station Peg's Hill (Area D) Phase 2 landfill construction project, will
23 initially be financed through the funds available from normal operations or funds

1 through its unsecured Credit Facility. Once completed, any short-term debt
2 associated with the projects will be refinanced using long-term debt EKPC has
3 available. EKPC is seeking to finance the CFI CIP project from normal operations,
4 or funds through its unsecured Credit Facility, and then promptly recover the
5 expenses as incurred through the Environmental Surcharge.

6 **Q. WILL EKPC AND ITS OWNER-MEMBERS BENEFIT FROM THE**
7 **PROPOSED PROJECTS?**

8 A. Yes.

9 **Q. WHAT BENEFITS WILL BE PROVIDED TO EKPC AND ITS OWNER-**
10 **MEMBERS AS A RESULT OF THE PROPOSED PROJECTS?**

11 A. EKPC has identified multiple benefits that will accrue to it and its owner-members
12 as a result of pursuing the projects described in this testimony. The Spurlock Station
13 Peg's Hill (Area D) Phase 2 landfill project presents the reasonable, least-cost
14 method for pursuing compliance with environmental regulation of CCR. EKPC
15 recognizes the increasing regulatory risks associated with coal ash storage and
16 treatment. Based on its awareness of these risks, and a desire to address those risks
17 proactively, EKPC decided to explore and evaluate options to ensure that its former
18 coal ash disposal facilities are closed in a manner that is consistent with both
19 regulatory requirements and prudent engineering. These concerns are particularly
20 acute at Cooper Station in light of the potential complications from the underlying
21 karst terrain. Given the nature of this risk, EKPC has decided to formally close the
22 CFI using best engineering practices, including a CCR Rule-compliant cap and
23 stormwater controls. EKPC is also aware that EPA recently issued a Notice of

1 Proposed Rulemaking in which it seeks to expand the scope of the CCR Rule by
2 regulating so-called “legacy surface impoundments” and the newly defined “CCR
3 management units.” EKPC believes it is prudent to complete the closure of the CFI
4 at this time consistent with the technical standards for closure in place under the
5 CCR Rule thereby furthering EKPC's efforts to provide reliable, safe, adequate and
6 reasonable service to its owner-members at rates that are fair, just and reasonable.

7 **Q. WHY ARE THE PROPOSED PROJECTS NEEDED?**

8 A. The need for the projects is discussed in greater detail in the Direct Testimonies of
9 Mr. Jerry Purvis and Mr. Joe VonDerHaar. However, a brief explanation of the
10 need for the projects is that they are needed to comply with environmental
11 regulations. The Peg’s Hill (Area D) Phase 2 landfill project is needed to comply
12 with the CCR Rule. Although EKPC believes that the CFI is currently in
13 compliance with all applicable federal and state regulations. EKPC has determined
14 that the current conditions at the CFI pose an unreasonable risk of a release of ash-
15 related constituents into adjacent waters, including Pitman Creek and Lake
16 Cumberland. Therefore, the CFI CIP Project is needed to ensure that a future
17 violation of the Clean Water Act does not occur.

18 **Q. WILL THE PROJECTS RESULT IN WASTEFUL DUPLICATION OF**
19 **FACILITIES?**

20 A. No. The development and construction of the Peg’s Hill (Area D) Phase 2 project
21 is consistent with the development guidelines outlined in EKPC’s Landfill
22 Management Plan. The Plan provides operational limits on the minimum amount
23 of constructed and permitted landfill capacity at all times. The Plan further outlines

1 risk mitigation components related to environmental and regulatory compliance at
2 EKPC's landfill facilities.

3 The proposed CFI CIP Project will not result in wasteful duplication as
4 EKPC has shown that a thorough evaluation of reasonable alternatives have been
5 considered. Although Alternative 2 was not the actual least cost alternative, as
6 Alternative 1 would be least-cost in the short-term, it was the least cost reasonable
7 alternative that addresses all of the concerns, including environmental, safety, and
8 long-term affordability. These alternatives are explained in further detail in the
9 Project Scoping Report, which is included as an Exhibit to Mrs. Laura LeMaster's
10 testimony at Exhibit LL-1. EKPC has conducted reasonable due diligence to
11 determine that targeted investment should be made with regards to the CFI CIP
12 project to provide a reasonable, cost-effective option to mitigate the risk associated
13 with non-compliance of the aforementioned environmental rules.

14 **Q. DID EKPC PROVIDE NOTICE TO ITS OWNER-MEMBERS?**

15 A. Yes, EKPC provided notice via letter on June 27, 2023

16 **Q. PLEASE SUMMARIZE YOUR TESTIMONY.**

17 A. The CFI CIP Project is a prudent solution to EKPC's need to comply with applicable
18 environmental regulation impacting the former impoundment, specifically the
19 Clean Water Act. In addition, the Spurlock Peg's Hill (Area D) Phase 2 is needed
20 to continue operations at Spurlock Station and comply with the CCR rule. Based
21 on these facts and others, EKPC seeks a CPCN to pursue the CFI CIP and Spurlock
22 Station Peg's Hill (Area D) Phase 2 projects. Additionally, EKPC seeks
23 authorization to amend its Compliance Plan to include not only the CFI CIP and

1 Peg's Hill (Area D) Phase 2 projects, but also the twenty-three (23) other projects
2 that were/are necessary to comply with state and federal rules and regulations
3 impacting coal-fired generation facilities. Finally, pursuant to KRS 278.183, EKPC
4 requests approval to recover the costs of the relevant projects through its
5 environmental surcharge mechanism.

6 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

7 A. Yes.

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ELECTRONIC APPLICATION OF EAST)
KENTUCKY POWER COOPERATIVE, INC. FOR)
APPROVAL TO AMEND ITS ENVIRONMENTAL)
COMPLIANCE PLAN AND RECOVER COSTS)
PURSUANT TO ITS ENVIRONMENTAL)
SURCHARGE, AND FOR THE ISSUANCE OF)
CERTIFICATES OF PUBLIC CONVENIENCE)
AND NECESSITY AND OTHER RELIEF)

CASE NO.
2023-00177

VERIFICATION OF DON MOSIER

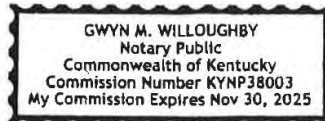
STATE OF KENTUCKY)
)
COUNTY OF CLARK)

Don Mosier, Executive Vice President and Chief Operating Officer for East Kentucky Power Cooperative, Inc., being duly sworn, states that he has supervised the preparation of his Direct Testimony and certain filing requirements in the above-referenced case and that the matters and things set forth therein are true and accurate to the best of his knowledge, information and belief, formed after reasonable inquiry.
Don Mosier

Don Mosier

The foregoing Verification was signed, acknowledged and sworn to before me this 29th day of June, 2023, by Don Mosier.

Gwyn M. Willoughby
Notary Public



EXHIBIT

E

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

IN THE MATTER OF:

ELECTRONIC APPLICATION OF EAST)	
KENTUCKY POWER COOPERATIVE, INC. FOR)	
APPROVAL TO AMEND ITS ENVIRONMENTAL)	
COMPLIANCE PLAN AND RECOVER COSTS	)	CASE NO.
PURSUANT TO ITS ENVIRONMENTAL	)	2023-00177
SURCHARGE, AND FOR THE ISSUANCE OF)	
CERTIFICATES OF PUBLIC CONVENIENCE)	
AND NECESSITY AND OTHER RELIEF)	

DIRECT TESTIMONY OF THOMAS J. STACHNIK
VICE PRESIDENT OF FINANCE AND TREASURER
ON BEHALF OF EAST KENTUCKY POWER COOPERATIVE, INC.

Filed: June 30, 2023

1 **I. INTRODUCTION**

2 **Q. PLEASE STATE YOUR NAME, TITLE AND BUSINESS ADDRESS.**

3 A. My name is Thomas J. Stachnik. I am the Vice President and Treasurer for East
4 Kentucky Power Cooperative, Inc. (“EKPC”). My business address is 4775
5 Lexington Road, Winchester, Kentucky 40391.

6 **Q. PLEASE DESCRIBE YOUR EDUCATION AND EXPERIENCE.**

7 A. I have a Bachelor’s degree in Chemical Engineering from the University of Illinois
8 and an MBA from the University of Chicago; additionally, I hold the Chartered
9 Financial Analyst and Certified Treasury Professional designations. Prior to
10 establishing a career in finance, I enjoyed work as a chemical engineer for
11 approximately ten (10) years. I worked in the Treasury Department of Brown-
12 Forman Corporation for thirteen (13) years before assuming my current role at
13 EKPC in August 2015.

14 **Q. PLEASE DESCRIBE YOUR DUTIES AS VICE PRESIDENT AND**
15 **TREASURER FOR EKPC.**

16 A. I am responsible for the management and direction of the treasury area including
17 borrowing, investing, and cash management. I also oversee the financial
18 forecasting, budgeting, and risk management functions. I report directly to EKPC’s
19 Executive Vice President and Chief Financial Officer, Mr. Cliff Scott.

20 **Q. HAVE YOU TESTIFIED BEFORE THE KENTUCKY PUBLIC SERVICE**
21 **COMMISSION BEFORE? IF SO, IN WHAT CASES?**

22 A. I have provided written testimony pertaining to financing issues in several cases,
23 including Case No. 2017-00376 (Coal Combustion Residuals and Effluent

1 Limitation Guidelines “CCR/ELG”),¹ Case No. 2018-00292 (Bluegrass Dual Fuel)²
2 and Case No. 2021-00103 (EKPC Application for General Adjustment of Rates)³
3 I have also assisted in the preparation of financing applications and responded to
4 the respective data requests in Case No. 2016-00116 (Refinancing of the Credit
5 Facility)⁴, Case No. 2018-00115 (Private Placement Financing)⁵ and Case No.
6 2021-00473 (Credit Facility Refinancing)⁶

7 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS**
8 **PROCEEDING?**

9 A. The purpose of my testimony is to discuss EKPC’s plans to finance the Spurlock
10 Station Landfill Peg’s Hill (Area D) Phase 2 Project and the Cooper Former
11 Impoundment Closure in Place Project. I will also discuss the calculation of

¹ See *In the Matter of the Application of East Kentucky Power Cooperative, Inc. for Approval to Amend its Environmental Compliance Plan and Recover Costs Pursuant to its Environmental Surcharge, Settlement of Certain Asset Retirement Obligations and Issuance of a Certificate of Public Convenience and Necessity and Other Relief*, Order, Case No. 2017-00376 (Ky. P.S.C. May 18, 2018).

² See *In the Matter of the Application of East Kentucky Power Cooperative, Inc. for a Certificate of Public Convenience and Necessity for the Construction of Backup Fuel Facilities at its Bluegrass Generating Station*, Order, Case No. 2018-00292 (Ky. P.S.C. Feb. 28, 2019).

³ See *In the Matter of the Electronic Application Of East Kentucky Power Cooperative, Inc. For A General Adjustment Of Rates, Approval Of Depreciation Study, Amortization Of Certain Regulatory Assets, And Other General Relief*, Order, Case No. 2021-00103 (Ky. P.S.C. Sep. 30, 2021).

⁴ See *In the Matter of the Application of East Kentucky Power Cooperative, Inc. for Approval of the Amendment and Extension or Refinancing of an Unsecured Revolving Credit Agreement in an Amount of up to \$800,000,000 of which up to \$100,000,000 may be in the Form of an Unsecured Renewable Term Loan and \$200,000,000 of which will be in the Form of a Future Increase Option*, Order, Case No. 2016-00116 (Ky. P.S.C. April 11, 2016).

⁵ See *In the Matter of the Application of East Kentucky Power Cooperative, Inc. for Approval of the Authority to Issue up to \$300,000,000 of Secured Private Placement Debt and/or Secured Tax Exempt Bonds and for the Use of Interest Rate Management Instruments*, Order, Case No. 2018-00115 (Ky. P.S.C. July 24, 2018).

⁶ See *In the Matter of the Electronic Application Of East Kentucky Power Cooperative, Inc. For Approval Of The Amendment And Extension Or Refinancing Of An Unsecured Revolving Credit Agreement In An Amount Up To \$800,000,000 Or Which Up To \$100,000,000 May Be In The Form Of An Unsecured Renewable Term Loan And Up To \$400,000,000 Of Which Will Be In The Form Of A Future Increase Option*, Order, Case No. 2021-00473 (Ky. P.S.C. Feb. 8, 2022).

1 EKPC's weighted average cost of debt associated with the debt issuances related to
2 its Compliance Plan.

3 **Q. ARE YOU SPONSORING ANY EXHIBITS?**

4 A. Yes, Attachment TJS-1, which describes the determination of rate of return on
5 environmental compliance rate base.

6 **Q. WERE THE EXHIBITS THAT ARE ATTACHED TO YOUR TESTIMONY
7 PREPARED BY YOU OR SOMEONE WORKING UNDER YOUR
8 SUPERVISION?**

9 A. Yes.

10 **II. FINANCING SPURLOCK PEG'S HILL (AREA D) PHASE 2 LANDFILL
11 PROJECT**

12 **Q. PLEASE DESCRIBE HOW EKPC WILL FINANCE THE PEG'S HILL
13 (AREA D) PHASE 2 OF THE SPURLOCK STATION LANDFILL.**

14 A. Initially any expenditures related to the project will be funded by general corporate
15 cash and borrowings on the Revolving Credit Facility. EKPC will replace any
16 temporary financing with long-term debt issued under the existing trust indenture
17 from the Rural Utilities Service or other lenders.

18 **Q. WILL THIS RESULT IN A MATERIAL EFFECT ON EKPC'S
19 FINANCIAL POSITION?**

20 A. No.

21 **III. FINANCING COOPER FORMER IMPOUNDMENT CLOSURE IN
22 PLACE PROJECT**

1 **Q. PLEASE DESCRIBE HOW EKPC WILL FINANCE THE COOPER**
2 **FORMER IMPOUNDMENT CLOSURE IN PLACE PROJECT.**

3 A. Initially any expenditures related to the project will be funded by general corporate
4 cash and borrowings on the Revolving Credit Facility. Charges related to this
5 project will be recovered promptly as incurred via the Environmental Surcharge.

6 **Q. WILL THIS RESULT IN A MATERIAL EFFECT ON EKPC'S**
7 **FINANCIAL POSTION?**

8 A. No.

9 **Q. WILL THE COMBINED FINANCING FOR THE TWO PROJECTS**
10 **RESULT IN A MATERIAL EFFECT ON EKPC'S FINANCIAL**
11 **POSITION?**

12 A. No.

13 **IV. EKPC'S WEIGHTED AVERAGE COST OF DEBT ASSOCIATED WITH**
14 **DEBT ISSUANCE RELATED TO THE COMPLIANCE PLAN**

15 **Q. WHAT WILL EKPC'S WEIGHTED AVERAGE COST OF DEBT**
16 **ASSOCIATED WITH THE DEBT ISSUANCE RELATED TO THE**
17 **PROJECTS IN THE COMPLIANCE PLAN?**

18 A. The weighted average cost of debt related to these projects is 4.398%.

19 **Q. WHAT RATE OF RETURN WOULD YOU PROPOSE FOR**
20 **ENVIRONMENTAL COMPLIANCE PROJECTS?**

21 A. Applying the 1.475 TIER determined in the 2021 rate case to the weighted average
22 cost of debt above the results in a proposed rate of return of 6.487%. The facts in
23 that case supporting that the 1.475 TIER is fair, just and reasonable still apply.

1 **V. CONCLUSION**

2 **Q. PLEASE SUMMARIZE YOUR TESTIMONY.**

3 A. Proposed projects in this plan will be initially funded with general corporate cash
4 and available credit facility capacity, and costs of capital expenditures will be
5 replaced with long-term debt. A rate of return of 6.487% on Environmental
6 Compliance rate base is proposed.

7 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

8 A. Yes.

EXHIBIT

F

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

IN THE MATTER OF:

ELECTRONIC APPLICATION OF EAST)	
KENTUCKY POWER COOPERATIVE, INC. FOR)	
APPROVAL TO AMEND ITS ENVIRONMENTAL)	
COMPLIANCE PLAN AND RECOVER COSTS	)	CASE NO.
PURSUANT TO ITS ENVIRONMENTAL	)	2023-00177
SURCHARGE, AND FOR THE ISSUANCE OF)	
CERTIFICATES OF PUBLIC CONVENIENCE)	
AND NECESSITY AND OTHER RELIEF)	

DIRECT TESTIMONY OF JERRY B. PURVIS
ON BEHALF OF EAST KENTUCKY POWER COOPERATIVE, INC.

Filed: June 30, 2023

1 **I. INTRODUCTION**

2 **Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS, AND**
3 **OCCUPATION.**

4 A. My name is Jerry B. Purvis and my business address is East Kentucky Power
5 Cooperative, Inc. (“EKPC”), 4775 Lexington Road, Winchester, Kentucky 40391.
6 I am the Vice President of Environmental Affairs for EKPC.

7 **Q. PLEASE STATE YOUR EDUCATION AND PROFESSIONAL**
8 **EXPERIENCE.**

9 A. I received a B.S. degree in Chemistry from Morehead State University and a B.S.
10 degree in Chemical Engineering from the University of Kentucky. I also received
11 a Master of Business Administration from Morehead State University. I have been
12 employed by EKPC for 29 years serving in various positions. On May 28, 2017, I
13 became the Vice President of Environmental Affairs at EKPC.

14 **Q. PLEASE PROVIDE A BRIEF DESCRIPTION OF YOUR DUTIES AT**
15 **EKPC.**

16 A. As Vice President of Environmental Affairs, I am responsible for compliance with
17 environmental laws, the preparation of applications for all environmental permits
18 required for the construction and operation of generation stations, transmission
19 facilities and landfills, and the preparation of environmental impact statements and
20 other documentation necessary to demonstrate compliance with the National
21 Environmental Policy Act to achieve federally approved financing through the
22 Rural Utilities Service. I report directly to the Chief Operating Officer/Executive
23 Vice President, Mr. Don Mosier.

1 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS**
2 **PROCEEDING?**

3 A. The purpose of my testimony is to describe the current status of the landfill at Hugh
4 L. Spurlock Power Station (“Spurlock Station”), the environmental rules applicable
5 to the storage and disposal of coal ash under which EKPC must operate, how those
6 rules apply to the coal ash currently stored at Spurlock Station at the prior phases
7 of the landfill, EKPC’s current permitting activities relating to the Spurlock Station
8 Landfill, and EKPC’s current plan to store the ash and the additional capacity
9 provided by the additional phase. The terms “coal ash,” “Coal Combustion
10 Residuals” or “CCRs,” “Coal Combustion By-Products” or “CCBs,” and “ash
11 materials” are somewhat synonymous and are often used interchangeably as terms
12 for the coal combustion waste generated and disposed of at EKPC’s H.L. Spurlock
13 Station and John S. Cooper Station (“Cooper Station”) (including in the Cooper
14 Former Impoundment (“CFI”)). The use of each term depends in large measure on
15 the environmental regulations that were in effect at the time the coal combustion
16 waste was generated.

17 **Q. ARE YOU SPONSORING ANY EXHIBITS?**

18 A. Yes. I am sponsoring the following exhibits, which I ask to be incorporated into
19 my testimony by reference:

- 20 • Exhibit JP-1 is the Spurlock Station Peg’s Hill / Area D Agreed Order
21 received from the Kentucky Division of Waste Management;
- 22 • Exhibit JP-2 is the final Cooper Station KPDES final permit issued June 24,
23 2023 from the Kentucky Division of Water

- 1 • Exhibit JP-3 is the Spurlock Station Coal Combustion Residual landfill
- 2 permit from the Kentucky Division of Waste Management dated
- 3 10/20/2022.
- 4 • Exhibit JP-4 is the Cooper Station landfill permit from the Kentucky
- 5 Division of Waste Management dated 03/27/2019
- 6 • Exhibit JP-5 is the CFI Permit Matrix

7 **Q. DESCRIBE THE PERMITTING REQUIREMENTS AND EFFORTS OF**
8 **EKPC REGARDING PERMITTING OF THE PROJECTS.**

9 A. EKPC requested authorization for stormwater discharges from the CFI project in
10 its renewal application for the Cooper Station KY Pollutant Discharge Elimination
11 System (“KPDES”) permit, submitted on December 29, 2022. Kentucky issued
12 public notice of a draft KPDES renewal permit, which includes authorization of the
13 Cooper Former Impoundment project, on May 19, 2023, with public comments due
14 by June 18, 2023. The final permit was received from the Kentucky Division of
15 Water on June 24, 2023. Because the CFI is not currently regulated under the
16 federal CCR rule (40 CFR Part 257, Subpart D) and it is not regulated as a landfill
17 under Kentucky’s waste disposal laws, no further authorization is required for the
18 project from the Kentucky Division of Waste Management. EKPC retained an
19 expert consultant to evaluate the CFI site for jurisdictional waters of the United
20 States. That evaluation concluded that there are no jurisdictional streams or
21 wetlands within the area to be affected by the CFI project. Thus, EKPC does not
22 anticipate requiring permit authorizations under Sections 401 and 404 of the Clean
23 Water Act. EKPC does anticipate applying for a dam safety permit from the

1 Kentucky Division of Water (“DOW”) to authorize construction of the south
2 stormwater impoundment as part of the CFI project. In addition to my list of
3 Exhibits, a complete list of the permits required / obtained for the CFI are listed in
4 the Exhibit JP-5 CFI Permit Matrix, for technical engineering aspects see the
5 Geosyntec Project Scoping Report attached to Mrs. Laura LeMaster’s testimony as
6 Exhibit LL-1.

7 **II. PEG’S HILL (AREA D) PHASE 2 SPURLOCK STATION LANDFILL**

8 **Q. WHAT IS COAL ASH?**

9 A. Coal ash is the result of the combustion of coal. Over the history of coal-fired
10 electricity generation, the definition of coal ash (also known as CCR or CCB) has
11 been modified, expanded and narrowed as EPA promulgated new standards for air
12 quality and waste disposal. Pursuant to the EPA’s CCR rule in 2015, CCR is
13 defined to include fly ash, bottom ash, boiler slag, and flue gas desulfurization
14 materials generated from burning coal for the purpose of generating electricity by
15 an electric utility.

16 **Q. HAS THE COMBUSTION OF COAL AT EKPC’S SPURLOCK STATION**
17 **PRODUCED COAL ASH?**

18 A. Yes. When all Spurlock Station units are in full operation, approximately
19 1,300,000 tons of coal ash are typically produced annually consistent with the
20 Landfill Management Plan, April 2023.

21 **Q. WHY IS AN ADDITIONAL PHASE OF THE LANDFILL NECESSARY AT**
22 **SPURLOCK STATION?**

1 A. EKPC produces coal-fired electrical generation at Spurlock Station most days
2 under normal operations for our owner members' systems. As a result of
3 combusting coal to generate steam electricity, the coal-fired boilers produce large
4 volumes of CCR, which require disposal. In addition, EKPC is completing the clean
5 closure by removal of CCR from its on-site surface impoundment at Spurlock
6 Station, which ceased receiving CCR in October 2022, as required by the federal
7 CCR Rule. The remaining CCR is being removed as weather permits and placed in
8 the existing permitted Spurlock CCR landfill. This removal and disposal of CCR
9 from the surface impoundment has created the need to increase on-site CCR landfill
10 disposal capacity. The additional landfill capacity will be provided by a new landfill
11 phase, known as Area D or Peg's Hill, and has been permitted through an Agreed
12 Order with the Kentucky Energy and Environmental Cabinet's Division of Waste
13 Management.

14 **Q. PLEASE DESCRIBE THE SIZE AND CONSTITUENCIES OF THE**
15 **EXISTING LANDFILL AT SPURLOCK STATION.**

16 A. Spurlock's landfill opened in 1981 to receive dry coal ash and by phasing increased
17 landfill space over a number of years. The landfill was designed and built, modified
18 and expanded to receive coal combustion residuals from Spurlock Station. This
19 landfill does not receive waste from other outside facilities. The total permitted area
20 is 1,602.06 acres with a total disposal area of 246.67 acres.

21 **Q. ARE YOU FAMILIAR WITH EXISTING AND/OR PROPOSED FEDERAL**
22 **LAWS AND REGULATIONS GOVERNING THE STORAGE AND**
23 **DISPOSAL OF COAL ASH WITH WHICH EKPC MUST COMPLY?**

1 A. Yes.

2 **Q. PLEASE BRIEFLY DESCRIBE ANY APPLICABLE EXISTING AND/OR**
3 **PROPOSED FEDERAL LAWS AND REGULATIONS GOVERNING THE**
4 **STORAGE AND DISPOSAL OF COAL ASH.**

5 A. EPA promulgated the first national standards for coal combustion residuals (CCR)
6 disposal in December 2014, 40 CFR Part 257, Subpart D (the “CCR rule”). EPA’s
7 CCR rule establishes national standards under Subtitle D of the Resource
8 Conservation and Recovery Act (RCRA) for the disposal of CCR as non-hazardous
9 waste. The promulgation of the CCR rule was prompted in part by the catastrophic
10 releases of CCR at the TVA Kingston and Duke Dan River facilities in Kingston,
11 TN and Eden, NC, respectively. Kentucky subsequently adopted new regulations
12 at 401 KAR Chapter 46 that established permitting procedures and substantive
13 standards based on the federal CCR rule for the regulation of CCR disposal in
14 Kentucky. CCR disposal was formerly permitted under the special waste provisions
15 of 401 KAR Chapter 45. However, the permitting provisions of Chapter 46 were
16 invalidated by the Franklin Circuit Court, but the substantive performance
17 standards for the disposal of CCR in Chapter 46, which are consistent with the CCR
18 rule, remain in effect. The Kentucky Division of Waste Management has
19 subsequently authorized new CCR disposal under its Chapter 45 permitting
20 authority and Chapter 46 substantive standards through the mechanism of Agreed
21 Orders.

22 **Q. ARE YOU FAMILIAR WITH STATE LAWS AND REGULATIONS**
23 **GOVERNING THE STORAGE AND DISPOSAL OF COAL ASH IN THE**

1 **COMMONWEALTH OF KENTUCKY WITH WHICH EKPC MUST**
2 **COMPLY?**

3 A. Yes.

4 **Q. IS COAL ASH CONSIDERED “SPECIAL WASTE” UNDER APPLICABLE**
5 **LAW?**

6 A. Yes. KRS 224.50-760(1)(a) designates utility waste (fly ash, bottom ash, scrubber
7 sludge) as special waste under Kentucky law. A special waste is a waste with a
8 large volume and a low hazard.

9 **Q. WHEN DID THE COMMONWEALTH OF KENTUCKY BEGIN TO**
10 **REGULATE COAL ASH AS A “SPECIAL WASTE”?**

11 A. KRS 224.50-760 was enacted in 1980. In 1982, the predecessor to the Kentucky
12 Energy and Environment Cabinet (“Cabinet”) promulgated regulations related to
13 the disposal of waste, including special wastes. The regulations authorized the
14 disposal of special waste in designated categories of landfills, including an inert
15 landfill, with specific approval from the Cabinet. *See* 401 KAR 30:010 Section
16 1(138)(a) (1983) (since repealed). Moreover, 401 KAR 47:040 (1983) (since
17 repealed) established requirements for permit applications and general design
18 requirements for inert landfills.

19 **Q. HAS THE REGULATION OF SPECIAL WASTE IN THE**
20 **COMMONWEALTH OF KENTUCKY EVOLVED OR CHANGED SINCE**
21 **THE EARLY 1980’s?**

22 A. Yes. In 1992, the Cabinet promulgated 401 KAR Chapter 45 to establish
23 regulations specifically applicable to special waste, including utility waste. These

1 regulations remained applicable until EPA promulgated 40 CFR Part 257, subpart
2 D, the new federal minimum standards known as the CCR rule. KY took action to
3 effectively adopt the new federal standards by reference in 401 KAR Chapter 46.
4 The Cabinet’s proposed permitting provisions in Chapter 46 were invalidated by
5 the Franklin Circuit Court, and the Cabinet has since permitted CCR disposal under
6 its Chapter 45 permitting authority through an Agreed Order mechanism.

7 **Q. WHAT ARE SOME OF THE PERMITTING REQUIREMENTS**
8 **CONTAINED IN 401 KAR CHAPTER 45 GOVERNING SPECIAL**
9 **WASTE?**

10 A. There are a number of permitting requirements contained in 401 KAR Chapter 45
11 governing the storage and disposal of special waste. For example, 401 KAR 45:020
12 Section 2(1) requires a permit for a Special Waste Landfill, 401 KAR 45:030
13 Section 5 prohibits unpermitted disposal facilities, and 401 KAR 45:030 Section 6
14 requires a permit for disposal of special waste. 401 KAR 45:110 establishes
15 technical requirements for the design of Special Waste Landfills. Today, KY
16 utilizes the substantive standards of 40 CFR Part 257, Subpart D, EPA’s CCR rule,
17 through new regulations at 401 KAR Chapter 46.

18 **Q. WHAT IS A “PERMIT BY RULE” AS DESCRIBED IN 401 KAR 45:060?**

19 A. 401 KAR 45:060 designates specific types of facilities used to manage special
20 wastes as having a permit by rule. A permit by rule does not require an application
21 or approval from the Cabinet. While this was the case until the adoption of the 2015
22 federal CCR rule, EKPC subsequently transitioned the Spurlock landfill to the CCR
23 disposal standards of 401 KAR Chapter 46 and the CCR rule in January 2019.

1 EKPC has permitted the new landfill space at Spurlock (known as Area D or Peg's
2 Hill) under the substantive standards of 401 KAR Chapter 46, using the Agreed
3 Order mechanism (as approved by Franklin Circuit Court in the absence of effective
4 permitting provisions under 401 KAR Chapter 46). This additional space was
5 needed for the normal operation of Spurlock Station and the clean closure by
6 removal of the existing surface impoundment on site as described in the existing
7 landfill permit.

8 **Q. WAS AREA D OR PEG'S HILL PERMITTED BY THE KENTUCKY**
9 **DIVISION OF WASTE MANAGEMENT?**

10 A. The Kentucky Energy and Environmental Cabinet's Division of Waste
11 Management has entered into Agreed Orders with EKPC and the Tennessee Valley
12 Authority to permit new CCR landfill disposal after the Franklin Circuit Court
13 invalidated the new CCR permitting procedures in 401 KAR Chapter 46 (and
14 Kentucky has not adopted a U.S. EPA-approved CCR permitting program pursuant
15 to the requirements of the federal CCR rule). The terms of EKPC's Agreed Order
16 for Area D/Peg's Hill meets the applicable standards and requirements of 401 KAR
17 Chapter 46 and 40 CFR Part 257, Subpart D. EKPC fulfilled those requirements
18 and KDWM issued EKPC a landfill permit under Activity 12, on October 20, 2022.
19 EKPC has worked closely with KDWM to install a sedimentation basin and is now
20 placing the landfill liner under KDWM's oversight. EKPC anticipates submitting a
21 construction progress report to KDWM concerning these activities in September
22 2023. The Agreed Order and KDWM landfill permit are in the appendices for
23 reference.

1 **III. COOPER STATION FORMER IMPOUNDMENT**

2 **Q. PLEASE DESCRIBE THE HISTORY OF THE COOPER STATION.**

3 A. Cooper Station is a coal-fired steam electric generating station located near
4 Burnside, Kentucky on the banks of Lake Cumberland. Cooper Station commenced
5 operation in 1965 with Unit 1 operating at a nominal 100 MW. Unit 2 came on line
6 in 1969 producing 220 MW. Each unit was designed to combust coal in a boiler to
7 generate steam, with the steam in turn powering turbines that create electricity. The
8 generated electricity was delivered from Cooper Station to the EKPC electric
9 transmission system, in part to power the growing community of Somerset, Pulaski
10 County, KY. These units satisfied all applicable environmental regulatory
11 requirements at the time of their installation, which predated adoption of most of
12 the major federal environmental laws and the creation of the Environmental
13 Protection Agency (“EPA”). The original plant was designed with two ponds (or
14 surface impoundments) to receive coal ash generated by the combustion of coal at
15 Cooper Station – one planned to support initial operation and the other for later
16 usage. The initial pond was subsequently closed, and a state-permitted dry ash
17 Special Waste landfill was constructed on top of it under 401 KAR 45. My
18 understanding is that the dry ash landfill (now known as the Cooper Landfill) has
19 been in operation since September 28, 1994 and was initially permitted as a special
20 waste landfill under Kentucky law. The Cooper Landfill was horizontally expanded
21 pursuant to a special waste permit received on November 19, 2012, and was
22 subsequently transitioned to an EPA CCR permit (No. SW10000015) on March 27,
23 2019, under 401 KAR Chapter 46. The second ash pond, now called the CFI, was

1 built in 1976 and operated until the early 1990s. It ceased operation when the
2 electric generating units moved to a dry ash handling system. After wet sluicing of
3 coal ceased, the CFI was informally closed by removing freestanding liquids,
4 adding dry ash to consolidate the fill and then vegetating the surface. Since the CFI
5 was closed, Cooper Station sends all its CCR to the dry ash landfill on site.

6 **Q. PLEASE DESCRIBE THE COOPER STATION FORMER**
7 **IMPOUNDMENT.**

8 A. From historical records, EKPC gathers that CFI is a 65-acre former coal ash pond
9 (or surface impoundment), that began construction in 1976 and was completed in
10 1977, began receiving sluiced ash from the two coal-fired steam generating units
11 at Cooper Station. CFI is located on the Cooper Station property, near the entrance
12 to the plant off Kentucky Route 1247. EKPC received a dam permit from the DOW
13 in 1977 authorizing impoundment of ash. The CFI served to store coal ash, with
14 sluice water being discharged through a permitted outfall to Pitman Creek in Lake
15 Cumberland. No formal closure process was followed or required by law at the time
16 of closure. The CFI does not have a soil cap, with vegetation growing directly from
17 the ash, nor does it have modern storm water management features or controls.
18 Currently, stormwater run-on can infiltrate directly into the ash. The CFI was
19 constructed, operated from 1976 to the 1990's and closed informally under the state
20 and federal requirements applicable at the time. CFI ceased operations in the early
21 1990's and, at that time, coal ash was considered non-hazardous and safe for
22 beneficial reuse throughout the Commonwealth of Kentucky and across the Nation.

1 **Q. WHY IS EKPC PROPOSING TO CLOSE THE COOPER STATION**
2 **FORMER IMPOUNDMENT BY CLOSING IN PLACE?**

3 A. EKPC is closing the former coal ash ponds and CCR surface impoundments at its
4 generation stations, beginning first with the former ash ponds at the William C.
5 Dale Station, then the 67-acre CCR surface impoundment at the Spurlock Station
6 (currently underway), and lastly, the Cooper Former Impoundment.

7 In February 2019, south central Kentucky and Tennessee experienced heavy
8 rain fall. Afterwards, EKPC, found appearances of two small depressions on the
9 surface of the CFI near the Somerset Model Air Plane Club recreation runway.
10 After investigating these depressions, EKPC hired a geotechnical consultant to
11 further study the CFI and develop options for minimizing any risks associated with
12 the CFI in its present condition – including the lack of a soil cap and stormwater
13 controls. The conclusions of that evaluation are the basis for this filing.

14 Once the geotechnical firm completed its inspection and report, EKPC
15 made the decision to close this facility by consolidating and grading the ash and
16 capping with a geosynthetic liner system that will shed and control surface water
17 run-off. The cap system will consist of a geosynthetic liner, soil cap and sufficient
18 water management features to control and divert surface water and provide
19 appropriate storage, treatment (“settling”) and sedimentation during construction
20 before discharging into Pitman Creek. Engineering this cap and closing the facility
21 will ensure that EKPC protects the human health, and the environment by meeting
22 Kentucky’s water quality standards. EKPC recently applied to renew the KPDES
23 wastewater discharge permit for Cooper Station on December 29, 2022. That

1 application included a request for DOW to authorize two new outfalls for
2 discharges of stormwater runoff during and after construction of the proposed
3 closure. DOW issued a draft KPDES renewal permit, including authorization for
4 discharges from the proposed CFI closure project, on May 19, 2023, with public
5 comments due on June 18, 2023. EPA and the State reviewed the application,
6 submittals, made determinations and issued the final KPDES “water” permit on
7 June 24, 2023 authorizing Cooper Station’s modifications one of which was CFI.

8 As a prudent utility company, EKPC is pursuing closure of this facility to
9 ensure continued compliance with federal and state environmental requirements,
10 especially those designed to prevent discharges of pollutants to waters of the
11 Commonwealth. The need for this effort has grown as the identified risks associated
12 with coal ash have increased since 2015, when EPA created the first national
13 standards for regulating the storage and disposal of CCR.

14 **Q. PLEASE DESCRIBE THE AREA WHERE THE FORMER**
15 **IMPOUNDMENT IS LOCATED.**

16 A. The 65-acre CFI is located on the Cooper Station property site adjacent to Kentucky
17 Route 1247, near the employee entrance and coal truck haul road. The site is visible
18 from Route 1247 at the “front” of the plant site. The “back” portion of the site is
19 forested, while the “front” area (closest to Route 1247) is covered in grasses and
20 some low shrubs. The former CFI dam is located along the western limit of the CFI,
21 adjacent to the Route 1247 right of way.

22 **Q. PLEASE DESCRIBE IN DETAIL THE NEED FOR THE COOPER**
23 **STATION FORMER IMPOUNDMENT’S CLOSURE IN PLACE.**

1 A. EKPC believes that the CFI is currently in compliance with all applicable federal
2 and state regulations. Nevertheless, EKPC has determined that the current
3 conditions at the CFI pose an unacceptable risk of a release of ash-related
4 constituents into adjacent waters, including Pitman Creek and Lake Cumberland.
5 Because of the lack of a cap or modern stormwater controls, stormwater that lands
6 on the CFI, as well as stormwater runoff from the surrounding watershed, enters
7 the CFI and infiltrates into the ash. Rainfall also can run off the uncapped surface,
8 potentially carrying ash to adjacent surface streams. Moreover, the CFI is located
9 over known karst geology . These factors combine to create a risk of a violation of
10 the Clean Water Act through the release of ash constituents following significant
11 rain events. The closure of the CFI in place will include consolidating the ash
12 boundaries, grading the surface to promote positive drainage, placing an engineered
13 cap over the ash to prevent surface water infiltration, and creating a perimeter ditch
14 system to intercept runoff from the watershed and direct it to stormwater ponds
15 rather than allowing it to infiltrate the CFI. These measures are designed to reduce
16 or eliminate the possibility of run-on and infiltration causing a release of ash to
17 adjacent waters. More details on the technical aspects of the CFI CIP are included
18 in the Direct Testimony of Laura LeMaster and the Scoping Report prepared by
19 Geosyntec, which is attached to Ms. LeMaster's testimony as Exhibit LL-1.

20 **Q. ARE THERE CURRENTLY ANY ENVIRONMENTAL RULES OR**
21 **REGULATIONS THAT REQUIRE THE CLOSURE IN PLACE?**

22 A. EKPC does not believe that any environmental rules specifically require the closure
23 of the CFI at this time. The EPA National Standards for Disposal of Coal

1 Combustion Residuals from Electric Utilities (the CCR Rule) were adopted by EPA
2 and became effective on October 14, 2015. The CCR Rule regulates a variety of
3 facilities used to store and dispose of coal ash, or CCR, at active electric generating
4 stations. However, the CCR Rule currently does not regulate units that did not
5 receive CCR on or after October 19, 2015, and that did not contain both CCR and
6 liquids on or after October 19, 2015. Because the CFI has not received CCR since
7 the early 1990s and has not contained liquids on or after October 19, 2015, it is not
8 currently regulated by the CCR Rule. Nevertheless, as explained above, EKPC has
9 determined that the current uncapped status of the CFI poses an unreasonable risk
10 of a violation of the Clean Water Act and related Kentucky law through a release
11 of pollutants to waters of the Commonwealth. Thus, EKPC believes it is prudent to
12 consolidate, regrade and cap the CFI consistent with the technical standards of the
13 CCR Rule in order to eliminate this risk.

14 EKPC is also aware that EPA recently issued a Notice of Proposed
15 Rulemaking in which it seeks to expand the scope of the CCR Rule by regulating
16 so-called “legacy surface impoundments” and the newly defined “CCR
17 management units.” It appears that some of the regulatory interpretations contained
18 in EPA’s Federal Register notice for the proposed rule suggest that EPA could seek
19 to regulate the CFI in the future. Thus, although a final rule is not expected until
20 mid-2024 and the contents and timing of that rule are unknown at this time, EKPC
21 believes it is prudent to complete the closure of the CFI at this time consistent with
22 the technical standards for closure in place under the CCR Rule in full recognition
23 that more may come as a result of the proposed legacy rule. The project at this time

1 does not contain specific scope of work items to address the proposed legacy rule.
2 Should the rule require such items once finalized by EPA, EKPC will reassess the
3 project scope at that time. The closure of CFI meets the intent to protect human
4 health and the environment, and EKPC will work with the KDWM, the
5 Commission and EPA once the legacy rule is finalized to address the legacy rule
6 requirements through an Environmental Surcharge Compliance plan amendment
7 application.

8 **Q. WHY IS EKPC PROPOSING TO CLOSE IN PLACE THE FORMER**
9 **IMPOUNDMENT AT THIS TIME? WHAT HAS CHANGED OVER THE**
10 **LAST APPROXIMATELY TWENTY YEARS?**

11 A. EKPC recognizes the increasing regulatory risks associated with coal ash storage
12 and treatment. Based on its awareness of these risks and a desire to address those
13 risks proactively, EKPC decided to explore and evaluate options to ensure that its
14 former coal ash disposal facilities are closed in a manner that is consistent with both
15 regulatory requirements and prudent engineering. These concerns are particularly
16 acute at Cooper Station in light of the potential complications from the underlying
17 karst terrain. Given the nature of this risk and timing, EKPC has decided to formally
18 close the CFI using best engineering practices, including a CCR Rule-compliant
19 cap and stormwater controls to mitigate and minimize the risk of a coal ash release
20 to the environment. We have engineered a solution approved by the EKPC Board
21 on March 31, 2023 that authorizes us to seek a CPCN from the Kentucky Public
22 Service Commission (PSC). A favorable decision by the PSC will allow EKPC to
23 move expeditiously to implement its plans designed to protect human health, safety

1 and the environment in the vicinity of Cooper Station. In addition, EKPC can
2 borrow low interest funds or use maintenance dollars to further minimize the
3 impacts to our owner-members' rates in a planned, controlled and highly managed
4 process, unlike the hundreds of millions of costs incurred by TVA and Duke when
5 they experienced catastrophic releases from coal ash ponds in 2008 and 2014,
6 respectively.

7 **Q. PLEASE DESCRIBE THE CCR RULE AND WHAT CHANGES HAVE**
8 **BEEN MADE.**

9 A. Prior to adoption of the federal CCR Rule in 2015, the Kentucky Division of Waste
10 Management (DWM) adopted and administered special waste regulations under
11 their Solid Waste program beginning in the mid- to late 1990s. EKPC permitted its
12 waste disposal facilities and complied with those regulations for many years.

13 **Rule History**

14 On December 22, 2008, a large coal ash spill occurred at the Tennessee Valley
15 Authority (TVA) power plant in Kingston, Tennessee, flooding more than 300 acres
16 of land and releasing coal ash into the Emory and Clinch rivers. This catastrophic
17 spill prompted EPA to assess coal ash surface impoundments and gather
18 information from facilities managing coal ash nationwide. On June 21, 2010 (75
19 Federal Register 35128), EPA issued a proposal to regulate the disposal of CCR
20 generated from the combustion of coal at electric utilities and independent power
21 producers under the Resource Conservation and Recovery Act (RCRA). The
22 proposal contained two regulatory options: to regulate CCR as hazardous waste
23 under RCRA Subtitle C or to regulate CCR as non-hazardous waste under RCRA

1 Subtitle D. Under both alternatives, EPA proposed to establish dam safety
2 requirements to address the structural integrity of surface impoundments and
3 prevent catastrophic releases.

4 After receipt and evaluation of extensive public comments, EPA opted to
5 establish national standards for the disposal of CCR as non-hazardous waste under
6 Subtitle D of RCRA. The rule was signed by the EPA Administrator on December
7 19, 2014, published in the Federal Register on April 17, 2015, and became effective
8 on October 14, 2015. This rule established a comprehensive set of requirements for
9 the safe disposal of CCR from coal-fired power plants.

10 The CCR regulations address the risks from coal ash disposal, such as the
11 leaking of contaminants into ground water, blowing of contaminants into the air as
12 dust, and catastrophic failure of CCR surface impoundments. Additionally, the rule
13 sets out recordkeeping and reporting requirements as well as the requirement for
14 each facility to establish and post specific information to a publicly accessible
15 website.

16 The CCR Rule has been altered and amended several times since 2015 as a
17 result of several federal court decisions and subsequent EPA rulemakings. Some of
18 the more notable changes include a U.S. Court of Appeals, Washington D.C. Circuit
19 Court decision No. 15-1219, decided August 21, 2018, finding that unlined CCR
20 surface impoundments (including those lined only with clay) pose an unreasonable
21 risk to the environment and must be closed or retrofitted. In addition, Congress
22 passed the Water Infrastructure Improvements for the Nation Act (WIIN Act) in
23 2016, authorizing EPA to approve State CCR permitting programs and to

1 administer a federal permitting program in States without an approved program.
2 EPA subsequently proposed and adopted multiple additional rule revisions in
3 response to the WIIN Act and to address court decisions and other implementation
4 issues.

5 EKPC currently has several regulated CCR units at its generating facilities,
6 including four permitted CCR landfills and the CCR surface impoundment at
7 Spurlock Station, which is in the process of closure by removal. (Ash from the
8 Spurlock Impoundment closure is being placed in the on-site Spurlock Landfill.)
9 EKPC maintains a publicly available website on which all required CCR
10 compliance documentation is maintained.

11 As I noted previously, EPA most recently issued a Notice of Proposed
12 Rulemaking on May 18, 2023 regarding “legacy” surface impoundments. Those
13 units are defined as CCR surface impoundments that ceased receiving waste before
14 October 19, 2015; that nevertheless contained both CCR and liquids on or after
15 October 19, 2015; and that are located at an inactive electric generating facility.
16 The proposed rule also would regulate a new category of units identified as “CCR
17 management units,” which are defined as any area of land on which any non-
18 containerized accumulation of CCR is received, placed, or otherwise managed at
19 any time, and that is not a CCR unit. EPA has said it anticipates issuing a final rule
20 in mid-2024. At this time, it is unclear what the final rule will contain or what
21 timelines it will impose on newly regulated units or facilities. Based on the
22 discussion in the Federal Register preamble, it appears EPA may interpret its CCR
23 rules in a manner that would subject the CFI to regulation. Once the legacy rule

1 appears in the federal register and its material contents are clear, EKPC will update
2 the Commission.

3 **Q. WHY DID EKPC NOT CHOOSE A DIFFERENT ALTERNATIVE THAT**
4 **WAS REVIEWED?**

5 A. EKPC has assessed and evaluated options to close each of its form ash ponds on a
6 site-specific basis, taking into account unique site factors such as geology,
7 hydrology, etc. The Scoping Report discusses the four alternatives that were
8 thoroughly reviewed and evaluated. Although alternative number one in the
9 Scoping Report was the least cost, it did not meet the project goals of minimizing
10 effects on the environment. Out of the remaining three alternatives, the closure in
11 place option was the least cost and significantly reduced risk. EKPC chose the
12 option to cap and close the CFI in place due to the nature of the karst geology on
13 which this facility is situated. Closure by removal would require excavation of coal
14 ash down to the underlying strata, which in many places consists of exposed
15 bedrock. This approach would pose the risk of exposing one or more open karst
16 features underlying the current CFI. If EKPC elected to pursue this approach, an
17 ill-timed precipitation event could mobilize exposed coal ash through the exposed
18 karst geology and potentially cause a release into Pitman Creek or Lake
19 Cumberland. The very risk we are trying to avoid – discharging pollutants into
20 Pitman Creek and Lake Cumberland – would have been caused by our own actions
21 in exposing one or more karst geological features to the vagaries of weather. Such
22 risks include the increasing possibility of a microburst rain event that can inundate
23 a construction site within minutes with little to no advance notification. EKPC

1 elected to close the CFI in place, avoiding exposure of the underlying karst bedrock,
2 and consolidating and grading the ash, installing a CCR Rule-compliant engineered
3 cap, and installing storm water controls to prevent or limit infiltration of water into
4 the ash and minimize the risk of a spill into Pitman Creek and, subsequently, Lake
5 Cumberland. Representatives of KDWM visited Cooper Station on December 19,
6 2022 to observe the CFI and review our draft closure plans. KDWM agreed with
7 the plan to close in place. KDWM also concluded that they required no additional
8 permitting for this project. Given this discussion, EKPC is not seeking a permit
9 from KDWM to close the CFI because no permitting action is currently required
10 by the CCR Rule or Kentucky's waste disposal laws. As noted previously, however,
11 EKPC has applied for a modification to its site KPDES permit to authorize two new
12 outfalls for the discharge of stormwater from the CFI site during and after
13 construction of the closure project. KDOW agreed with EKPC's request and issued
14 the final KPDES permit authorizing our CFI project on June 24, 2023.

15 **Q. PLEASE SUMMARIZE YOUR TESTIMONY.**

16 A. EKPC proactively works with the Kentucky Energy and Environmental Cabinet to
17 gain insight, direction, interpretations on EPA rules and programs as delegated to
18 Kentucky by EPA as its authority to act. After studying and vetting, EPA and State
19 regulations, EKPC proactively updates and submits compliance plans once risk,
20 impacts and costs are approved by EKPC leadership and Board. As a part of this
21 regulatory process, EKPC seeks the required permits from the respective EPA and
22 Kentucky Department of Environmental Protection agencies. In this case, EKPC
23 worked with Kentucky Division of Waste and Kentucky Division of Water to

1 prepare, develop and make applications for their review. CFI does not require any
2 action by KDWM but does require a KPDES permit modification, which it plans
3 to see reach final permit action and issuance. KDOW agreed with our request and
4 issued the final KPDES permit on June 24, 2023.

5 For Spurlock Station, because we performed closure by removal that precipitated
6 more landfill space, we actively worked with and submitted permit revisions in
7 accordance to the Agreed Order by which the state granted EKPC a landfill permit
8 on 10/20/2022. EKPC regularly permits new landfill space as required to meet the
9 daily operational need of Spurlock Station. EKPC is in compliance with the existing
10 landfill and surface impoundment permit issued by the KDWM. EKPC meets the
11 requirement of EPA's CCR rule 40 CFR Part 257, Subpart D, and KY regulations
12 pursuant to 401 KAR Chapters 45 and 46.

13 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

14 A. Yes.

EXHIBIT

JP-1

COMMONWEALTH OF KENTUCKY
ENERGY AND ENVIRONMENT CABINET
DIVISION OF WASTE MANAGEMENT
AI# 3004
FILE NO. DWM-34484

FILED
MAR 07 2019
Office of Administrative Hearings

IN RE: East Kentucky Power Cooperative
Peg's Hill Landfill
Spurlock Station
1301 West 2nd Street
Maysville, KY 41056

East Kentucky Power Cooperative
4775 Lexington Road
Winchester, KY 40392

AGREED ORDER

WHEREAS, on April 17, 2015, the United States Environmental Protection Agency promulgated its Final Disposal of Coal Combustion Residuals From Electric Utilities Rule, 40 CFR 257.50 - 257.107 ("CCR Rule"), which establishes self-implementing, national minimum siting, design, and operating criteria for the management and disposal of coal combustion residuals ("CCR") in landfills and surface impoundments.

WHEREAS, as part of the self-implementing nature of the CCR Rule, owners and operators of CCR units must complete, and make publicly available, demonstrations that new or existing CCR units comply with various location restrictions and groundwater monitoring standards ("demonstration documents") and design and operating criteria ("operating plans"), and to have those demonstration documents and operating plans certified by a qualified professional engineer ("PE certification").

WHEREAS, on May 5, 2017, the Energy and Environment Cabinet (“Cabinet”) promulgated (1) 401 KAR Chapter 46:110 to incorporate the CCR Rule standards into state law; (2) 401 KAR 46:120 to establish a registered-permit-by-rule for the management and disposal of CCR in landfills and surface impoundments in Kentucky; and (3) amended 401 KAR 45:010 to remove CCR from regulation under 401 KAR Chapter 45.

WHEREAS, on January 31, 2018, the Franklin Circuit Court issued an opinion and order in *Leach v. Commonwealth of Kentucky*, Civil Action No. 17-CI-00474, invalidating certain provisions of 401 KAR 46:120 and 401 KAR 45:010. The opinion and order was clarified by a subsequent order issued on February 26, 2018 (collectively the “FCC Order”). The FCC Order provides in part that the standards in the CCR Rule that have been incorporated into 401 KAR 46:110 control permit reviews for CCR units required under 401 KAR Chapter 45. The effect of the FCC Order is to require permits to be issued under 401 KAR Chapter 45 for the siting, construction, and operation of CCR Landfills that meet, and are regulated pursuant to, the standards in the CCR Rule and 401 KAR 46:110.

WHEREAS, the FCC Order recognizes certain facilities that were proceeding in good faith toward construction of CCR landfills in reliance on the CCR Rule, 401 KAR 46:110, and the registered permit-by-rule process in 401 KAR 46:120 may enter into Agreed Orders with the Cabinet to facilitate a review process for obtaining the necessary approvals for CCR landfills earlier than could be accomplished under the permitting procedures in 401 KAR Chapter 45.

WHEREAS, 401 KAR 45:030 Section 3 requires that “[p]ermits shall be issued in a manner and shall contain conditions consistent with requirements of applicable state and federal laws.”

WHEREAS, as acknowledged in the FCC Order, the Cabinet recognizes that it has the statutory authority to issue approval to construct and operate a new CCR landfill in compliance

with the standards in the CCR Rule and 401 KAR 46:110 by following the process as set forth in this Agreed Order.

WHEREAS, East Kentucky Power Cooperative (“EKPC”) has been proceeding in good faith in reliance on the CCR Rule, 401 KAR 46:110, and 401 KAR 46:120 to site, design, and plan for the construction of a new CCR landfill designated as Area D/Peg’s Hill Landfill (the “Landfill”) at the H.L. Spurlock Station (“Spurlock”), in Mason County, Kentucky, to provide long-term disposal capacity for its generating operations at Spurlock, including closing by removal its CCR surface impoundment, as required by the CCR Rule.

WHEREAS, EKPC projects that it will need the construction of its Landfill to be completed, and the authority to dispose of CCR in its Landfill, as early as November 2021, but no later than May 2022; and thus EKPC will need to begin subgrade excavation to the bottom of the Landfill in or around May 2020, to allow for the estimated construction time needed to complete the first Landfill cell, assuming favorable weather and other construction related conditions and variables to clean close by removal the CCR surface impoundment.

WHEREAS, the Cabinet and EKPC agree that, in accordance with the FCC Order, the parties should enter into an Agreed Order to facilitate review of EKPC’s plans and specifications to determine compliance with 401 KAR 46:110 and the issuance of a permit for the Landfill in a manner to minimize undue delay.

STATEMENT OF FACTS

1. The Cabinet is charged with the statutory duty of implementing and enforcing KRS Chapter 224 and the regulations promulgated pursuant thereto.
2. EKPC is a not-for-profit electric cooperative owned by sixteen (16) electric distribution owner-member rural cooperatives in eighty-seven (87) counties in Kentucky. Through

its sixteen (16) owner-members, EKPC provides generation and transmission services to more than one million rural Kentuckians.

3. EKPC's Spurlock Station is located at 1301 West 2nd Street near Maysville in Mason County, Kentucky, and generally generates more than 6.9 million megawatt hours of electricity each year, enough to supply more than 627,000 homes.

4. The new Landfill will provide needed disposal capacity for dry CCR materials (such as fly ash, boiler slag, coal mill rejects and gypsum) generated as a result of the long-term operation of Spurlock Station, including the CCR stored in the Spurlock Station CCR surface impoundment, which must be closed to comply with the federal CCR Rule. The clean closure of the Spurlock Station CCR surface impoundment was approved by the Kentucky Public Service Commission by order dated May 21, 2018. The new Landfill will be located adjacent to the existing CCR landfill at Spurlock Station. It will encompass a total area of 102 acres for waste placement, and will be developed in seven phases. The total construction disturbance area for the project is estimated to be approximately 181 acres.

5. Because EKPC plans to submit a financing request to the U.S. Department of Agriculture, Rural Utilities Service ("RUS") to construct the Landfill, RUS issued an Environmental Assessment ("EA") in accordance with the National Environmental Policy Act ("NEPA") and applicable federal regulations that evaluates the environmental impacts of proposed alternatives to provide a long-term solution for the disposal of CCR produced from Spurlock Station. The EA concludes that the least environmentally damaging practicable alternative is the construction and operation of a new onsite landfill for the disposal of dry CCR. The Draft EA was released for public review and comment for 14 days beginning on November 10, 2017. The availability of the Draft EA was announced in the local newspaper, and RUS received no

comments. RUS issued the Final EA and Finding of No Significant Impact (“FONSI”) on December 12, 2017.

6. On October 4, 2017, EKPC published notice in the local newspaper of its intent to construct a new CCR Landfill in compliance with 401 KAR 46:120, which was Kentucky law prior to the FCC Order. On October 13, 2017, EKPC submitted its application to the Division of Waste Management (“DWM”) for a registered-permit-by-rule for the Landfill, which included demonstration documents and PE certifications for location restrictions related to the uppermost aquifer (401 KAR 46:110 Section 2, 40 CFR 257.60), wetlands (401 KAR 46:110 Section 2, 40 CFR 257.61), fault areas (401 KAR 46:110 Section 2, 40 CFR 257.62), seismic impact zones (401 KAR 46:110 Section 2, 40 CFR 257.63), and unstable areas (401 KAR 46:110 Section 2, 40 CFR 257.64) for the Landfill, and for the design standards for the Landfill’s liner and leachate collection and removal system (401 KAR 46:110 Section 3, 40 CFR 257.70).

7. Upon resubmission with the certification statement required by paragraph 10 below, the DWM shall acknowledge and accept the demonstration documents and PE certifications related to wetlands (401 KAR 46:110 Section 2, 40 CFR 257.61), fault areas (401 KAR 46:110 Section 2, 40 CFR 257.62), seismic impact zones (401 KAR 46:110 Section 2, 40 CFR 257.63), and unstable areas (401 KAR 46:110 Section 2, 40 CFR 257.64) described in paragraph 6 above as part of the administrative record for the Landfill. DWM shall accept, review, and approve the demonstration documents and PE certifications related to the uppermost aquifer (401 KAR 46:110 Section 2, 40 CFR 257.60) and liner and leachate collection and removal system (401 KAR 46:110 Section 3, 40 CFR 257.70) consistent with paragraphs 14 and 15 of this Agreed Order.

8. While negotiating this Agreed Order, the Cabinet and EKPC agreed that certain pre-construction activities, including but not limited to fencing, tree clearing, foundation

improvements, and road construction, could commence without any DWM review as may be necessary to maintain EKPC's construction schedule, assuming that any additional, necessary state or federal permits are obtained.

9. Upon the Cabinet's acceptance memorialized in paragraph 7, the Cabinet and EKPC have agreed that EKPC may commence certain initial construction activities, including but not limited to construction of the lay down yard, installation of construction trailers and ancillary buildings, installation of utilities, installation of stormwater and leachate basins, construction of the haul road and scales, and initial excavation to within five feet of the bottom of the Landfill, assuming that any additional, necessary state or federal permits are obtained prior to commencement.

NOW, THEREFORE, for the reasons stated and in reliance on the facts set forth above, EKPC and the Cabinet agree as follows:

DOCUMENT SUBMISSION AND REVIEW

10. Pursuant to 401 KAR 45:030 Section 10, for all submissions made by EKPC pursuant to this Agreed Order, EKPC shall provide a letter or statement signed by a responsible corporate officer containing the certification statement required by 401 KAR 45:030 Section 10 and set forth here:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for such violations.

11. EKPC shall provide to DWM its hydrological/geological report supporting EKPC's groundwater hydrogeological characterization of the Landfill site, including the required PE certification and demonstration documents for the groundwater monitoring system, sampling and analysis program, and detection monitoring program (401 KAR 46:110 Section 8, 40 CFR 257.91, .93, and .94) for the Landfill within sixty (60) days of the entry of this Agreed Order by the Secretary or his designee.

12. The DWM shall review of the report and information described in paragraph 11 above to determine adequacy of monitoring well placement and groundwater characterization compliance with 401 KAR 46:110, which incorporates by reference the CCR Rule, under the following terms:

a. DWM shall complete its initial review within thirty (30) days of receiving the submission. Upon completing its initial review or within seven (7) days of entry of this Agreed Order whichever is later, the DWM may in whole or in part approve the submission, or request additional information and a technical review meeting. Nothing in this Agreed Order prevents DWM from requesting a technical review meeting and providing questions to EKPC prior to the final execution of this Agreed Order.

b. Any request for additional information and a technical review meeting shall be in writing and sent via electronic and U.S. mail to Jerry Purvis, Vice President, Environmental Affairs, East Kentucky Power Cooperative, 4775 Lexington Road, Winchester, KY 40391, Jerry.Purvis@ekpc.coop. The request shall include a proposed date and time for the technical review meeting. The technical review meeting shall be held within ten (10) days of the written request, unless EKPC and DWM mutually agree to an alternate date to hold the technical review meeting. The purpose of the technical review

meeting is to clarify the scope of the additional information request, identify any information or data gaps, and to determine whether additional analysis is necessary to determine compliance with 401 KAR 46:110.

c. At or before the technical review meeting, EKPC shall provide initial responses and answers to any questions submitted by DWM in the request for additional information. EKPC may supplement its initial responses within ten (10) days following the meeting date, unless EKPC and DWM mutually agree to an alternate time period to submit supplemental information.

d. Within twenty-five (25) days of the technical review meeting, DWM shall review EKPC's initial responses to any DWM request for additional information, any supplemental response from EKPC, and any other information provided by EKPC before, at, or after the technical review meeting and either approve or disapprove the submission.

e. Approval or Denial

1. Any approval or denial issued pursuant to subparagraphs a. and d. above shall be in writing and sent via electronic and U.S. mail to Jerry Purvis, Vice President, Environmental Affairs, East Kentucky Power Cooperative, 4775 Lexington Road, Winchester, KY 40391, Jerry.Purvis@ekpc.coop. Any approval shall identify submissions and any additional information DWM relied on to determine that the applicable 401 KAR 46:110 standards, which incorporate by reference the CCR Rule standards, will be met.

2. If DWM denies the submission, EKPC shall either revise and resubmit information addressing the specific issues stated as the basis of denial within thirty days (30) days of receipt unless EKPC and DWM mutually agree to

an alternate time period, or request a hearing pursuant to KRS 224.10-420. DWM agrees that the resubmitted information shall be reviewed consistent with the process outlined subparagraphs a. – d. above except on an expedited basis. The Cabinet agrees that any request for a hearing shall be granted on an expedited basis.

13. Upon written approval of the report described in paragraph 11 above and any additional information provided to DWM before, during, or after a technical review meeting, EKPC shall have immediate authority to begin excavating/grading the Landfill site to the bottom of the cell.

14. Within ten (10) days of entry of this Agreed Order by the Secretary or his designee, EKPC shall submit the demonstration documents and PE certifications for the selected statistical method (401 KAR 46:110 Section 8, 40 CFR 257.91(f), .93(f)(6)) and resubmit the demonstration documents and PE certification related to the uppermost aquifer (401 KAR 46:110 Section 2, 40 CFR 257.60) with the statement required by paragraph 10 above. DWM shall review the submissions, and within ten (10) days of receipt, DWM shall send a letter, acknowledging receipt of the submissions, via electronic and U.S. mail to the EKPC contact set forth in paragraph 12.b.

15. At any time, but no later than five (5) days after receiving authorization to excavate pursuant to paragraph 13 above, EKPC shall resubmit the demonstration document and PE certification related to the design standards for the Landfill's liner and leachate collection and removal system (401 KAR 46:110 Section 3, 40 CFR 257.70). If the liner design supports the installation of an alternative composite liner as allowed by 40 CFR 257.70(c) (incorporated by reference into 401 KAR 46:110 Section 3), EKPC shall submit the supporting liner design information for DWM to review.

a. If the liner design meets the requirements of a composite liner set forth in 40 CFR 257.70(b) (incorporated by reference into 401 KAR 46:110 Section 3), within fifteen (15) days of receipt, DWM shall review and acknowledge in writing receipt of the demonstration and PE certification that the design of the Landfill's liner and leachate collection and removal system complies with specifications set forth in 40 CFR 257.70(a), (b), and (d) (incorporated by reference into 401 KAR 46:110 Section 3). Such acknowledgement shall be sent via electronic and U.S. mail to the EKPC contact identified in paragraph 12.b.

b. If the liner design meets the requirements of an alternative composite liner set forth in 40 CFR 257.70(c) (incorporated by reference into 401 KAR 46:110 Section 3), within thirty (30) days of receipt or of execution of this Agreed Order, whichever is later, DWM shall complete its review of the demonstration document, PE certification, and any liner design information submitted in support of the alternative specifications allowed by 40 CFR 257.70(c) (incorporated by reference into 401 KAR 46:110 Section 3). Except for the date which review shall begin, the review shall be consistent with the process set forth in paragraphs 12.a. – 12.e. above.

c. EKPC shall line the landfill leachate collection basin and provide the DWM with information showing the design plan for the liner to be utilized for the basin.

16. Upon receipt of written acknowledgements or approvals described in paragraph 13 and 15 above, EKPC shall have immediate authority to install the liner, install the leachate collection and removal system, and to complete any unfinished storm drainage features at the Landfill.

17. EKPC shall submit draft closure and post-closure care plans to the DWM within ninety (90) days of entry of this Agreed Order by the Secretary or his designee, along with the signed

statement pursuant to paragraph 10 above. EKPC must resubmit the closure and post-closure care plans with a PE certification and a letter describing any differences between the draft and final plans no later than sixty (60) days prior to the initial receipt of CCR in the new Landfill.

a. Within fifteen (15) days of receiving the PE certified closure and post-closure care plans, DWM shall review and issue a letter acknowledging receipt of the final closure and post-closure care plans with the PE certification(s) and that the closure and post-closure care plans comply with specifications set forth in 40 CFR 257.102(d)(1)-(3)(i) (incorporated by reference into 401 KAR 46:110 Section 9). The letter shall be sent via electronic and U.S. mail to the EKPC contact set forth in paragraph 12.b.

b. If the closure plan includes an alternative final cover system design, DWM shall begin review of any alternative specifications allowed by 40 CFR 257.102(d)(3)(ii) (incorporated by reference into 401 KAR 46:110 Section 9) upon receipt. Except for the date which review shall begin, the review shall be consistent with the process set forth in paragraphs 12.a. – 12.e. above.

18. At any time, but no later than sixty (60) days before the first placement of CCR in the Landfill, EKPC shall submit a draft fugitive dust control plan, draft run-on and run-off control plan, and draft intermediate inspection checklist to the DWM, along with the signed statement pursuant to paragraph 10.

a. Within thirty (30) days of the initial receipt of CCR in the Landfill, EKPC must submit the final initial fugitive dust control plan and run-on and run-off control plan with PE certifications and a letter describing any deviations/changes from the drafts.

b. Within thirty (30) days of the initial receipt of CCR in the Landfill, EKPC shall certify to the DWM pursuant to paragraph 10 of this Agreed Order that EKPC will initiate the inspections required under 40 CFR 257.84(a) and (b) and that EKPC will have

a qualified professional engineer prepare an annual inspection report pursuant to 40 CFR 257.84(b)(2) no later than fourteen (14) months after the date of initial receipt of CCR in the new Landfill.

19. EKPC shall provide DWM notice at least forty-eight (48) hours (i.e., two business days) within completing subgrade excavation, top of soil liner construction, and final construction completion to allow for site inspection. Notice shall be sent via electronic mail to Permitting Section Supervisor, Ken Melton, PE at Ken.Melton@ky.gov and electronic carbon copy to Solid Waste Branch Manager, Danny Anderson, PE at Danny.Anderson@ky.gov. In the event that DWM does not complete the inspections within two (2) business days of the completion dates provided by EKPC, EKPC shall be allowed to continue with construction of the Landfill.

20. Upon completion of construction of the Landfill, but prior to the initial placement of CCR, EKPC shall submit to DWM a PE certification that the composite, or alternative composite, liner and the leachate collection and removal system have been constructed in accordance with the requirements of 40 CFR 257.70 as incorporated into 401 KAR 46:110 Section 3. Within ten (10) days of receiving the certification, DWM shall provide EKPC written authorization to place CCR in the Landfill.

21. Upon completion of construction of the landfill, but prior to the initial placement of CCR, EKPC shall demonstrate and maintain financial assurance sufficient to complete closure and post-closure as required by 401 KAR 46:120 Section 7 in accordance with 401 KAR 45:080 Sections 4 and 7. Within ten (10) days of receiving the demonstration, DWM shall provide EKPC written approval or denial of the demonstration.

22. All submissions, approval or acknowledgement letters, any identified additional information, and demonstration documents and PE certifications sent to DWM pursuant to

paragraphs 1-21 of this Agreed Order shall become part of the administrative record for the permit. Within forty-five (45) days of receiving all of the demonstration documents, plans, PE certifications, and additional information, and issuance of all required approval or acknowledgement letters as set forth in paragraphs 1-21 of this Agreed Order, DWM shall prepare and issue a permit for the operation of the Landfill based upon the completed administrative record as established above.

MISCELLANEOUS PROVISIONS

23. This Agreed Order only addresses the permitting process for the facility described above. Other than those permit issuance matters resolved by entry of this Agreed Order, nothing contained herein shall be construed to waive or to limit any remedy or cause of action by the Cabinet based on statutes or regulations under its jurisdiction, and EKPC reserves its defenses thereto. The Cabinet expressly reserves its right at any time to issue administrative orders and to take any other action it deems necessary that is consistent with this Agreed Order, including the right to order all necessary remedial measures, assess penalties for violations, or recover all response costs incurred, and EKPC reserves its defenses thereto.

24. The Cabinet agrees the document submission and review process reflected in this Agreed Order shall substitute and satisfy EKPC's obligations to apply for a landfill permit pursuant to 401 KAR Chapter 45.

25. This Agreed Order shall not prevent the Cabinet from issuing, reissuing, renewing, modifying, revoking, suspending, denying, terminating, or reopening any permit to EKPC. EKPC reserves its defenses thereto, except that EKPC shall not use this Agreed Order as a defense to those permitting actions.

26. The Agreed Order may not be amended except by a written order of the Cabinet's Secretary or his designee. EKPC may request an amendment by writing the Director of Division

of Waste Management at 300 Sower Blvd. 2nd Floor, Frankfort, Kentucky 40601 and stating the reasons for the request. If granted, the amended Agreed Order shall not affect any provision of this Agreed Order unless expressly provided in the amended Agreed Order.

27. Unless otherwise stated in this Agreed Order, all submittals required of EKPC shall be sent to: Director, Division of Waste Management, 300 Sower Blvd. 2nd Floor, Frankfort, Kentucky 40601.

28. Except for the requirement to comply strictly with permitting regulations to obtain a permit, the Cabinet does not, by its consent to the entry of this Agreed Order, warrant or aver in any manner that EKPC's complete compliance with this Agreed Order will result in compliance with the provisions of KRS 224 and the regulations promulgated pursuant thereto. Notwithstanding the Cabinet's review and approval of any plans formulated pursuant to this Agreed Order, EKPC shall remain solely responsible for compliance with the terms of KRS Chapters 224 and the regulations promulgated pursuant thereto, this Agreed Order and any permit and compliance schedule requirements.


29. This Agreed Order shall be of no force and effect unless and until it is entered by the Secretary or his designee as evidenced by his signature thereon. If this Agreed Order contains any date by which the parties are to take any action or cease any activity, and the Secretary or his designee enters the Agreed Order after that date, then the parties are nonetheless obligated to have taken the action or ceased the activity by the date contained in this Agreed Order.

TERMINATION

30. This Agreed Order shall terminate upon the issuance of a permit pursuant to paragraph 22 above. EKPC reserves its right to file a petition for hearing pursuant to KRS 224.10-420(2) contesting the Cabinet's determination not to issue a permit under the terms of this Agreed Order.

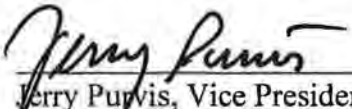
[SIGNATURE PAGES FOLLOW]

AGREED TO BY:



Don Mosier, Chief Operating Officer and Executive Vice President
East Kentucky Power Cooperative, Inc.

2/12/19
Date



Jerry Purvis, Vice President of Environmental Affairs
East Kentucky Power Cooperative, Inc.

2/8/19
Date



Dennis J. Conruff
Attorney for East Kentucky Power Cooperative, Inc.

2/15/19
Date

APPROVAL RECOMMENDED BY:



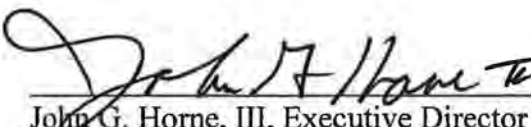
Daniel C. Cleveland, Attorney
Office of Legal Services

2/20/19
Date



Jon Maybriar, Director
Division of Waste Management

3-1-19
Date



John G. Horne, III, Executive Director
Office of Legal Services

3-1-19
Date

ORDER

Wherefore, the foregoing Agreed Order is entered as the final Order of the Energy and Environment Cabinet this 7th day of March, 2019.

ENERGY AND ENVIRONMENT CABINET



R. BRUCE SCOTT, DEPUTY SECRETARY

CERTIFICATE OF SERVICE

I hereby certify that a true and accurate copy of the foregoing AGREED ORDER was mailed, postage prepaid, to the following this 7th day of March, 2019.

Jerry Purvis
Vice President, Environmental Affairs
East Kentucky Power Cooperative, Inc.
4775 Lexington Road
P.O. Box 707
Winchester, Kentucky 40392-0707

Dennis J. Conniff
Frost Brown Todd LLC
400 West Market Street
32nd Floor
Louisville, Kentucky 40202

and mailed, messenger to:

Jon Maybriar, Director
Division of Waste Management

Daniel Cleveland, Attorney
Office of Legal Services



DOCKET COORDINATOR

DWM
BG-D
SH

EXHIBIT

JP-2

KPDES



**KENTUCKY POLLUTANT
DISCHARGE ELIMINATION
SYSTEM**

PERMIT

**AUTHORIZATION TO DISCHARGE UNDER THE
KENTUCKY POLLUTANT DISCHARGE ELIMINATION SYSTEM**

PERMIT NO.: KY0003611

AGENCY INTEREST NO.: 3808

Pursuant to Authority in KRS 224,

East Kentucky Power Cooperative, Inc.
670 Cooper Power Plant Road
Somerset, Kentucky 42501

is authorized to discharge from a facility located at

EKPC John S. Cooper Power Station
670 Cooper Power Plant Road
Somerset, Pulaski County, Kentucky

to receiving waters named

Cumberland River
UT to Pitman Creek

in accordance with effluent limitations, monitoring requirements and other conditions set forth in this permit.

This permit shall become effective on October 1, 2023.

This permit and the authorization to discharge shall expire at midnight, September 30, 2028.

Date Signed: June 24, 2023

**Carey Johnson, Director
Division of Water**

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SECTION 1

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1.1. Compliance Monitoring Locations (Outfalls)

The following table lists the outfalls authorized by this permit, the location and description of each, and the DOW assigned KPDES outfall number:

TABLE 1.					
Outfall No.	Outfall Type	Latitude (N)	Longitude (W)	Receiving Water	Description of Outfall
001	External	36.99844°	84.59394°	Cumberland River (Lake Cumberland)	Stormwater Runoff from substation area, parking lots, and plant roads.
003	External	36.99736°	84.59319°	Cumberland River (Lake Cumberland)	Once-through cooling water with treated effluent from internal Outfall 008
004	Internal	36.99779°	84.58733°	Outfall 008	Boiler chemical metal cleaning waste
005	External	36.99778°	84.58278°	Cumberland River (Lake Cumberland)	Stormwater runoff from active coal combustion residuals landfill and intermittent leachate discharge
006	External	36.99814°	84.59256°	Cumberland River (Lake Cumberland)	Plant water intake
007	External	36.99714°	84.59078°	Cumberland River (Lake Cumberland)	Stormwater runoff from other plant areas
008	Internal	36.99779°	84.58733°	Outfall 003	Treated wastewater from total plant drain system, coal pile runoff, landfill leachate, and metal cleaning wastewater from Outfall 004
009	External	37.00681°	84.60032°	UT to Pitman Creek	Stormwater Runoff and Treated Construction Dewatering
010	External	37.00669°	84.60042°	UT to Pitman Creek	Stormwater Runoff and Treated Construction Dewatering

1.2. Effluent Limitations and Monitoring Requirements

1.2.1. Outfall 001

Beginning on the effective date and lasting through the term of this permit, discharges from Outfall 001 shall comply with the following effluent limitations:

TABLE 2.									
EFFLUENT LIMITATIONS								MONITORING REQUIREMENTS	
Effluent Characteristic	Units	Loadings (lbs./day)		Concentrations				Frequency	Sample Type
		Monthly Average	Daily Maximum	Minimum	Monthly Average	Daily Maximum	Maximum		
Flow	MGD	Report	Report	N/A	N/A	N/A	N/A	1/Quarter	Instantaneous

TABLE 2.

EFFLUENT LIMITATIONS								MONITORING REQUIREMENTS	
Effluent Characteristic	Units	Loadings (lbs./day)		Concentrations				Frequency	Sample Type
		Monthly Average	Daily Maximum	Minimum	Monthly Average	Daily Maximum	Maximum		
Settleable Solids	mg/l	N/A	N/A	N/A	Report	Report	N/A	1/Quarter	Grab
Oil & Grease	mg/l	N/A	N/A	N/A	10	15	N/A	1/Quarter	Grab
pH	SU	N/A	N/A	6.0	N/A	N/A	9.0	1/Quarter	Grab

1.2.2. Outfall 003

Beginning on the effective date and lasting through the term of this permit, discharges from Outfall 003 shall comply with the following effluent limitations:

TABLE 3.

EFFLUENT LIMITATIONS								MONITORING REQUIREMENTS	
Effluent Characteristic	Units	Loadings (lbs./day)		Concentrations				Frequency	Sample Type
		Monthly Average	Daily Maximum	Minimum	Monthly Average	Daily Maximum	Maximum		
Flow	MGD	Report	Report	N/A	N/A	N/A	N/A	Continuous	Recorder
Temperature	°F	N/A	N/A	N/A	Report	100	N/A	Continuous	Recorder
Free Available Chlorine	mg/l	N/A	N/A	N/A	0.2	0.5	N/A	1/Occurrence ¹	Multiple Grab ²
Total Residual Chlorine	mg/l	N/A	N/A	N/A	Report	0.019	N/A	1/Occurrence ¹	Multiple Grab ²
Total Residual Oxidants ³	mg/l	N/A	N/A	N/A	Report	0.2	N/A	1/Occurrence ¹	Multiple Grab ²
Time of Oxidant Addition	Min/day	N/A	N/A	N/A	N/A	120	N/A	1/Occurrence ¹	Log
pH	SU	N/A	N/A	6.0	N/A	N/A	9.0	1/Week	Grab
Hardness (as mg/l CaCO ₃)	mg/l	N/A	N/A	N/A	Report	Report	N/A	1/Month	Grab
Total Recoverable Copper	mg/l	N/A	N/A	N/A	Report	Report	N/A	1/Month	Grab
Chronic WET ⁴	TU _c	N/A	N/A	N/A	N/A	N/A	1.10	1/Year	(⁵)

¹The measurement frequency "Occurrence" means during periods of chlorination or oxidation addition to cooling water, but no more frequent than once per week.

²The sample type 'Multiple Grab' means grab samples collected at the approximate beginning of oxidant discharge and once every fifteen (15) minutes thereafter until the end of the oxidant discharge.

³The term Total Residual Oxidants (TRO) means the value obtained by using the amperometric titration or DPD methods for Total Residual Chlorine described in 40 CFR Part 136. In the event of addition of an oxidant other than Chlorine, the permittee shall receive prior approval from the DOW permitting staff before the initial use. TRO monitoring and limits only apply if the applicant chooses to utilize an oxidant other than Chlorine.

TABLE 3.

EFFLUENT LIMITATIONS								MONITORING REQUIREMENTS	
Effluent Characteristic	Units	Loadings (lbs./day)		Concentrations				Frequency	Sample Type
		Monthly Average	Daily Maximum	Minimum	Monthly Average	Daily Maximum	Maximum		
⁴ WET – Whole Effluent Toxicity									
⁵ See section 4 for WET sampling requirements									

1.2.3. Outfall 004

Beginning on the effective date and lasting through the term of this permit, discharges from Outfall 004 shall comply with the following effluent limitations:

TABLE 4.

EFFLUENT LIMITATIONS								MONITORING REQUIREMENTS	
Effluent Characteristic	Units	Loadings (lbs./day)		Concentrations				Frequency	Sample Type
		Monthly Average	Daily Maximum	Minimum	Monthly Average	Daily Maximum	Maximum		
Flow	MGD	Report	Report	N/A	N/A	N/A	N/A	1/Batch ¹	Calculated
Total Recoverable Copper	mg/l	N/A	N/A	N/A	1.0	1.0	N/A	1/Batch ¹	Grab
Total Recoverable Iron	mg/l	N/A	N/A	N/A	1.0	1.0	N/A	1/Batch ¹	Grab
pH	SU	N/A	N/A	6.0	N/A	N/A	9.0	1/Batch ¹	Grab
¹ Monitoring shall be conducted once per metal cleaning operation.									

1.2.4. Outfall 005

Beginning on the effective date and lasting through the term of this permit, discharges from Outfall 005 shall comply with the following effluent limitations:

TABLE 5.									
EFFLUENT LIMITATIONS								MONITORING REQUIREMENTS	
Effluent Characteristic	Units	Loadings (lbs./day)		Concentrations				Frequency	Sample Type
		Monthly Average	Daily Maximum	Minimum	Monthly Average	Daily Maximum	Maximum		
Flow	MGD	Report	Report	N/A	N/A	N/A	N/A	1/Quarter	Instantaneous
Total Suspended Solids	mg/l	N/A	N/A	N/A	30	60	N/A	1/Quarter	Grab
Oil & Grease	mg/l	N/A	N/A	N/A	5.0	5.0	N/A	1/Quarter	Grab
pH	SU	N/A	N/A	6.0	N/A	N/A	9.0	1/Quarter	Grab

1.2.5. Outfall 006

Beginning on the effective date and lasting through the term of this permit, discharges from Outfall 006 shall comply with the following effluent limitations:

TABLE 6.									
EFFLUENT LIMITATIONS								MONITORING REQUIREMENTS	
Effluent Characteristic	Units	Loadings (lbs./day)		Concentrations				Frequency	Sample Type
		Monthly Average	Daily Maximum	Minimum	Monthly Average	Daily Maximum	Maximum		
Flow	MGD	Report	Report	N/A	N/A	N/A	N/A	Daily	Calculated
Temperature	°F	N/A	N/A	N/A	Report	Report	N/A	Daily	Grab
¹ Cooling Water Intake Inspection	Fail=1 Pass=0	N/A	N/A	N/A	N/A	N/A	Report ²	1/Week	Inspection ³
Hardness (as mg/l CaCO ₃)	mg/l	N/A	N/A	N/A	Report	Report	N/A	1/Month	Grab
Total Recoverable Copper	mg/l	N/A	N/A	N/A	Report	Report	N/A	1/Month	Grab

¹Weekly monitoring of the cooling water intake system shall be performed, during the period the cooling water intake structure is in operation, to ensure that the design and construction technology comply with §125.94 is functioning as designed and is being appropriately maintained and operated.

²If intake system is not functioning as designed and described in the facilities 316(b) Report a “1” is to be reported. If intake system is functioning as designed a “0” is to be reported.

³This inspection may take the form of either visual inspections or the use of remote monitoring devices.

TABLE 6.

EFFLUENT LIMITATIONS								MONITORING REQUIREMENTS	
Effluent Characteristic	Units	Loadings (lbs./day)		Concentrations				Frequency	Sample Type
		Monthly Average	Daily Maximum	Minimum	Monthly Average	Daily Maximum	Maximum		
An annual certification statement signed by the authorized representative shall be submitted to the DOW surface water permits branch no later than January 31 st for the previous year. See Section 5.8.3.3. "Reporting Requirements for Cooling Water Intake" for additional details.									

1.2.6. Outfall 007

Beginning on the effective date and lasting through the term of this permit, discharges from Outfall 007 shall comply with the following effluent limitations:

TABLE 7.

EFFLUENT LIMITATIONS								MONITORING REQUIREMENTS	
Effluent Characteristic	Units	Loadings (lbs./day)		Concentrations				Frequency	Sample Type
		Monthly Average	Daily Maximum	Minimum	Monthly Average	Daily Maximum	Maximum		
Flow	MGD	Report	Report	N/A	N/A	N/A	N/A	1/Quarter	Instantaneous
Settleable Solids	mg/l	N/A	N/A	N/A	Report	Report	N/A	1/Quarter	Grab
Oil & Grease	mg/l	N/A	N/A	N/A	10	15	N/A	1/Quarter	Grab
pH	SU	N/A	N/A	6.0	N/A	N/A	9.0	1/Quarter	Grab

1.2.7. Outfall 008

Beginning on the effective date and lasting through the term of this permit, discharges from Outfall 008 shall comply with the following effluent limitations:

TABLE 8.

EFFLUENT LIMITATIONS								MONITORING REQUIREMENTS	
Effluent Characteristic	Units	Loadings (lbs./day)		Concentrations				Frequency	Sample Type
		Monthly Average	Daily Maximum	Minimum	Monthly Average	Daily Maximum	Maximum		
Flow	MGD	Report	Report	N/A	N/A	N/A	N/A	2/Month	Instantaneous
Total Suspended Solids	mg/l	N/A	N/A	N/A	30.0	91.8	N/A	2/Month	Grab
Oil & Grease	mg/l	N/A	N/A	N/A	13.4	17.5	N/A	2/Month	Grab
pH	SU	N/A	N/A	6.0	N/A	N/A	9.0	2/Month	Grab

1.2.8. Outfall 009

Beginning on the effective date and lasting through the term of this permit, discharges from Outfall 009 shall comply with the following effluent limitations:

TABLE 9.									
EFFLUENT LIMITATIONS								MONITORING REQUIREMENTS	
Effluent Characteristic	Units	Loadings (lbs./day)		Concentrations				Frequency	Sample Type
		Monthly Average	Daily Maximum	Minimum	Monthly Average	Daily Maximum	Maximum		
Flow	MGD	Report	Report	N/A	N/A	N/A	N/A	1/Quarter	Instantaneous
Total Suspended Solids	mg/l	N/A	N/A	N/A	30	60	N/A	1/Quarter	Grab
Oil & Grease	mg/l	N/A	N/A	N/A	10	15	N/A	1/Quarter	Grab
pH	SU	N/A	N/A	6.0	N/A	N/A	9.0	1/Quarter	Grab

1.2.9. Outfall 010

Beginning on the effective date and lasting through the term of this permit, discharges from Outfall 010 shall comply with the following effluent limitations:

TABLE 10.									
EFFLUENT LIMITATIONS								MONITORING REQUIREMENTS	
Effluent Characteristic	Units	Loadings (lbs./day)		Concentrations				Frequency	Sample Type
		Monthly Average	Daily Maximum	Minimum	Monthly Average	Daily Maximum	Maximum		
Flow	MGD	Report	Report	N/A	N/A	N/A	N/A	1/Quarter	Instantaneous
Total Suspended Solids	mg/l	N/A	N/A	N/A	30	60	N/A	1/Quarter	Grab
Oil & Grease	mg/l	N/A	N/A	N/A	10	15	N/A	1/Quarter	Grab
pH	SU	N/A	N/A	6.0	N/A	N/A	9.0	1/Quarter	Grab

1.3. Standard Effluent Requirements

The discharges to Waters of the Commonwealth shall not produce floating solids, visible foam or a visible sheen on the surface of the receiving waters.

SECTION 2

STANDARD CONDITIONS

2. STANDARD CONDITIONS

The following conditions apply to all KPDES permits.

2.1. Duty to Comply

The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of KRS Chapter 224 and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application. Any person who violates applicable statutes or who fails to perform any duty imposed, or who violates any determination, permit, administrative regulation, or order of the Cabinet promulgated pursuant thereto shall be liable for a civil penalty as provided at KRS 224.99.010.

2.2. Duty to Reapply

If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit.

2.3. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

2.4. Duty to Mitigate

The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

2.5. Proper Operation and Maintenance

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

2.6. Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

2.7. Property Rights

This permit does not convey any property rights of any sort, or any exclusive privilege.

2.8. Duty to Provide Information

The permittee shall furnish to the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The permittee shall also furnish to the Director upon request, copies of records required to be kept by this permit.

2.9. Inspection and Entry

The permittee shall allow the Director, or an authorized representative (including an authorized contractor acting as a representative of the Administrator), upon presentation of credentials and other documents as may be required by law, to:

- (1) Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
- (2) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
- (3) Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
- (4) Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.

2.10. Monitoring and Records

- (1) Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
- (2) Except for records of monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five (5) years (or longer as required by 401 KAR 5:065, Section 2(10) [40 CFR 503]), the permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Director at any time.
- (3) Records of monitoring information shall include:
 - a) The date, exact place, and time of sampling or measurements;
 - b) The individual(s) who performed the sampling or measurements;
 - c) The date(s) analyses were performed;
 - d) The individual(s) who performed the analyses;
 - e) The analytical techniques or methods used; and
 - f) The results of such analyses.
- (4) Monitoring must be conducted according to test procedures approved under 401 KAR 5:065, Section 2(8) [40 CFR 136] unless another method is required under 401 KAR 5:065, Section 2(9) or (10) [40 CFR subchapters N or O].
- (5) KRS 224.99-010 provides that any person who knowingly violates KRS 224.70-110 or other enumerated statutes, or who knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall be guilty of a Class D felony and, upon conviction, shall be punished by a fine of not more than \$25,000, or by imprisonment for not less than one (1) year and not more than five (5) years, or by both fine and imprisonment for each separate violation.. Each day upon which a violation occurs shall constitute a separate violation.

2.11. Signatory Requirement

- (1) All applications, reports, or information submitted to the Director shall be signed and certified pursuant to 401 KAR 5:060, Section 4 [40 CFR 122.22].

(2) KRS 224.99-010 provides that any person who knowingly provides false information in any document filed or required to be maintained under KRS Chapter 224 shall be guilty of a Class D felony and upon conviction thereof, shall be punished by a fine not to exceed twenty-five thousand dollars (\$25,000), or by imprisonment, or by fine and imprisonment, for each separate violation. Each day upon which a violation occurs shall constitute a separate violation.

2.12. Reporting Requirements

2.12.1. Planned Changes

The permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when:

(1) The alteration or addition to a permitted facility may meet one (1) of the criteria for determining whether a facility is a new source in KRS 224.16-050 [40 CFR 122.29(b)]; or

(2) The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements under KRS 224.16-050 [40 CFR 122.42(a)(1)].

(3) The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.

2.12.2. Anticipated Noncompliance

The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

2.12.3. Transfers

This permit is not transferable to any person except after notice to the Director. The Director may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under KRS 224 [CWA; see 40 CFR 122.61; in some cases, modification or revocation and reissuance is mandatory].

2.12.4. Monitoring Reports

Monitoring results shall be reported at the intervals specified elsewhere in this permit.

(1) Monitoring results must be reported on a Discharge Monitoring Report (DMR) or forms provided or specified by the Director for reporting results of monitoring of sludge use or disposal practices.

(2) If the permittee monitors any pollutant more frequently than required by the permit using test procedures approved under 401 KAR 5:065, Section 2(8) [40 CFR 136], or another method required for an industry-specific waste stream under 401 KAR 5:065, Section 2(9) or (10) [40 CFR subchapters N or O], the results of such monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Director.

(3) Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified by the Director in the permit.

2.12.5. Compliance Schedules

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than fourteen (14) days following each schedule date.

2.12.6. Twenty-four-Hour Reporting

1) The permittee shall report any noncompliance which may endanger health or the environment to the DOW Regional Office. Any information shall be provided orally within twenty-four (24) hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided within five (5) days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

2) The following shall be included as information which must be reported within twenty-four (24) hours under this paragraph:

- a) Any unanticipated bypass which exceeds any effluent limitation in the permit [40 CFR 122.41 (g)].
- b) Any upset which exceeds any effluent limitation in the permit.
- c) Violation of a maximum daily discharge limitation for any of the pollutants listed by the Director in the permit to be reported within twenty-four (24) hours.

3) The Director may waive the written report on a case-by-case basis under 40 CFR 122.41 (l), if the oral report has been received within twenty-four (24) hours.

4) The permittee is assigned to the Department for Environmental Protection's Columbia Regional Field Office.

- a. Reporting shall be as required in paragraphs 1 through 3 of this subsection except that, if a spill or release of pollutants or contaminants, bypass, upset, or other event of non-compliance occurs that may present an imminent or substantial danger to the environment or the public health or welfare, the permittee shall immediately notify the regional field office by calling the Columbia Regional Field Office at (270) 384-4734.
- b. If a report required by this subsection is made during other than normal business hours, it shall be made through the **twenty-four (24) hour environmental emergency telephone number at (800) 928-2380**.
- c. The reporting requirements of this subsection does not relieve the permittee of reporting required under other laws, regulations, programs, or emergency response plans.

2.12.7. Other Noncompliance

The permittee shall report all instances of noncompliance not reported under Sections 2.12.1, 2.12.4, 2.12.5 and 2.12.6, at the time monitoring reports are submitted. The reports shall contain the information listed in Section 2.12.6.

2.12.8. Other Information

Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, it shall promptly submit such facts or information.

2.13. Bypass

2.13.1. Definitions

- (1) Bypass means the intentional diversion of waste streams from any portion of a treatment facility.
- (2) Severe property damage means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

2.13.2. Bypass Not Exceeding Limitations

The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of Section 2.13.3 and 2.13.4.

2.13.3. Notice

- (1) Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten (10) days before the date of the bypass.
- (2) Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in Section 2.12.6.

2.13.4. Prohibition of Bypass

- (1) Bypass is prohibited, and the Director may take enforcement action against a permittee for bypass, unless:
 - a) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
 - b) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
 - c) The permittee submitted notices as required under Section 2.13.3.
- (2) The Director may approve an anticipated bypass, after considering its adverse effects, if the Director determines that it will meet the three (3) conditions listed above in Section 2.13.4

2.14. Upset

2.14.1. Definition

Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

2.14.2. Effect of an Upset

An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of Section 2.14.3 are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

2.14.3. Conditions Necessary for a Demonstration of Upset

A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

- (1) An upset occurred and that the permittee can identify the cause(s) of the upset;
- (2) The permitted facility was at the time being properly operated; and
- (3) The permittee submitted notice of the upset as required in Section 2.12.6; and
- (4) The permittee complied with any remedial measures required under Section 2.4.

2.14.4. Burden of Proof

In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

SECTION 3
BEST MANAGEMENT PRACTICES PLAN (BMPP)
REQUIREMENTS

3. BEST MANAGEMENT PRACTICES PLAN (BMPP) REQUIREMENTS

The permittee shall develop and implement a Best Management Practices Plan (BMPP) consistent with 401 KAR 5:065, Section 2(4).

3.1. Applicability

These conditions apply to all permittees who use, manufacture, store, handle, or discharge any pollutant listed as: (1) toxic under Section 307(a)(1) of the Clean Water Act; (2) oil, as defined in Section 311(a)(1) of the Act; (3) any pollutant listed as hazardous under Section 311 of the Act; or (4) is defined as a pollutant pursuant to KRS 224.1-010(35) and who have operations which could result in (1) the release of a hazardous substance, pollutant, or contaminant, or (2) an environmental emergency, as defined in KRS 224.1-400, as amended, or any regulation promulgated pursuant thereto (hereinafter, the "BMP pollutants"). These operations include material storage areas; plant site runoff; in-plant transfer, process and material handling areas; loading and unloading operations, and sludge and waste disposal areas.

3.2. Plan

The permittee shall develop and implement a BMPP consistent with 401 KAR 5:065, Section 2(4) pursuant to KRS 224.70-110, which prevents or minimizes the potential for the release of "BMP pollutants" from ancillary activities through site runoff; spillage or leaks, sludge or waste disposal; or drainage from raw material storage.

3.3. Implementation

The permittee shall implement the BMPP upon the commencement of regulated activity. Modifications to the plan as a result of ineffectiveness or plan changes to the facility shall be implemented as soon as possible.

3.4. General Requirements

The BMPP shall:

- (1) Be documented in narrative form, and shall include any necessary plot plans, drawings, or maps.
- (2) Establish specific objectives for the control of toxic and hazardous pollutants.
 - a. Each facility component or system shall be examined for its potential for causing a release of "BMP pollutants" due to equipment failure, improper operation, natural phenomena such as rain or snowfall, etc.
 - b. Where experience indicates a reasonable potential for equipment failure (e.g., a tank overflow or leakage), natural condition (e.g., precipitation), or other circumstances which could result in a release of "BMP pollutants", the plan should include a prediction of the direction, rate of flow, and total quantity of the pollutants which could be released from the facility as result of each condition or circumstance.
- (3) Establish specific BMPs to meet the objectives identified under paragraph (2) b of this section, addressing each component or system capable of causing a release of "BMP pollutants".
- (4) Include any special conditions established in part b of this section.
- (5) Be reviewed by engineering staff and the site manager.

3.5. Specific Requirements

The plan shall be consistent with the general guidance contained in the publication entitled "NPDES Best Management Practices Guidance Document", and shall include the following baseline BMPs as a minimum:

- (1) BMP Committee

- (2) Reporting of BMP Incidents
- (3) Risk Identification and Assessment
- (4) Employee Training
- (5) Inspections and Records
- (6) Preventive Maintenance
- (7) Good Housekeeping
- (8) Materials Compatibility
- (9) Security
- (10) Materials Inventory

3.6. SPCC Plans

The BMPP may reflect requirements for Spill Prevention Control and Countermeasure (SPCC) plans under Section 311 of the Clean Water Act and 40 CFR Part 112, and may incorporate any part of such plans into the BMPP by reference.

3.7. Hazardous Waste Management

The permittee shall assure the proper management of solids and hazardous waste in accordance with the regulations promulgated under the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1978 (RCRA) (40 U.S.C. 6901 et seq.) Management practices required under RCRA regulations shall be referenced in the BMP plan.

3.8. Documentation

The permittee shall maintain a copy of the BMPP at the facility and shall make the plan available upon request to EEC personnel.

3.9. BMPP Modification

The permittee shall modify the BMPP whenever there is a change in the facility or change in the operation of the facility that materially increases the potential for the release of "BMP pollutants".

3.10. Modification for Ineffectiveness

The BMPs and the BMPP shall be reviewed and appropriate modifications implemented to utilize other practicable measures if any of the following events occur:

- (1) As a result of either a fixed or episodic event-driven evaluation, the permittee determines the selected BMPs are not achieving the established performance benchmarks;
- (2) As a result of an evaluation or inspection by Cabinet personnel; or
- (3) A release of any petroleum-based product, toxic or hazardous substance.

3.11. Periodically Discharged Wastewater Not Specifically Covered by Effluent Conditions

The permittee shall include in this BMPP procedures and controls necessary for the handling of periodically discharged wastewaters such as intake screen backwash, meter calibration, fire protection, hydrostatic testing water, water associated with demolition projects, and emergency overflows from the plant drain system, etc.

SECTION 4

WET TESTING REQUIREMENTS

4. WET TESTING REQUIREMENTS

At the frequency specified in the Effluent and Monitoring Requirements section of this permit, the permittee shall initiate or continue the series of tests described below to evaluate wastewater toxicity of the discharge from Outfall 003.

4.1. Sampling Requirements

Three (3) sets of 2 discrete grab samples each shall be collected and composited on days 1, 3, and 5 of the discharge. The samples shall be collected during periods of discharge at least 2 hours apart but no more than 48 hours apart. The samples shall be iced and maintained at not greater than 6°C during collection, storage, transport until used in the test by the laboratory.

4.2. Test Requirements

The chronic WET test consists of 1 short-term static-renewal fathead minnow (*Pimephales promelas*) growth test on 90.91% effluent (1.10 TU_c) at the frequency specified. The test shall begin within 36 hours of the collection of the day 1 sample. The test shall be renewed daily using samples collected on days 1, 3; and 5 in accordance with test method specified in the Test Methods Section below.

4.3. Serial Dilutions

Effluent concentrations for the tests must include the percent effluent required by the permit and at least four additional effluent concentrations.

For a required percent effluent of 100%, test concentrations shall be 20%, 40%, 60%, 80% and 100%.

For a required percent effluent less than 100% but greater than or equal to 75%, the test concentrations shall include the required percent effluent, two (2) concentrations below that are based on a 0.5 dilution factor, and two (2) concentrations above: one (1) at mid-point between 100% and the required percent effluent, and one (1) at 100% effluent.

For a required percent effluent less than 75%, test concentrations shall include the required percent effluent, two (2) concentrations below on a 0.5 dilution factor, and two (2) concentrations above the required percent effluent based on a 0.5 dilution factor, if possible; otherwise, one (1) at mid-point between 100% and the required percent effluent, and one (1) at 100% effluent.

Selection of different effluent concentrations must be approved by DOW prior to testing. Controls shall be conducted concurrently with effluent testing using synthetic water.

4.4. Controls

Control tests shall be conducted concurrent with effluent testing using synthetic water. The analysis will be deemed reasonable and good only if the minimum control requirements are met.

Any test that does not meet the control acceptability criteria shall be repeated as soon as practicable within the monitoring period.

Within 30 days prior to initiating an effluent toxicity test, a reference toxicant test must be completed for the method used; alternatively, the reference toxicant test may be run concurrent with the effluent toxicity test.

For the fathead minnow test: at least 80% survival in controls and the average dry weight per surviving organism in control chambers equals or exceeds 0.25 mg.

4.5. Test Methods

All test organisms, procedures and quality assurance criteria used shall be in accordance with Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms (4th Edition), EPA-821-R-02-013, the most recent edition of this publication, or as approved in advance by DOW.

4.6. Reduction to Single Species Testing

In accordance with approval from DOW on February 3, 2020, whole effluent toxicity testing by East KY Power Cooperative – Cooper Station is reduced to testing with *Pimephales promelas* only. If subsequent testing should reveal concerns with toxicity of the effluent, testing with multiple species may again be required.

4.7. Reporting Requirements

Results of all toxicity tests conducted with any species shall be reported according to the most recent format provided by DOW (See the Section for Submission of DMRs of this permit). Notification of failed test shall be made to DOW within five days of test completion. Test reports shall be submitted to DOW within thirty (30) days of completion. A control chart including the most recent reference toxicant test endpoints for the effluent test method (minimum of 5, up to 20 if available) shall be part of the report.

4.8. Test Results

If noncompliance occurs in an initial test, the permittee shall repeat the test using new samples. Results of this second round of testing will be used to evaluate the persistence of the toxic event and the possible need for a Toxicity Reduction Evaluation (TRE).

Noncompliance with the toxicity limit is demonstrated if the IC₂₅ (inhibition concentration) for reproduction or growth is less than 90.91% effluent. If noncompliance occurs in an initial test, the permittee must repeat the test using a new set of three (3) composite samples. Sampling must be initiated within fifteen (15) days of completing the failed test.

4.9. Accelerated Testing

If the second round of testing also demonstrates noncompliance, the permittee will be required to perform accelerated testing as specified in the following paragraphs.

Complete four (4) additional rounds of testing to evaluate the frequency and degree of toxicity within sixty (60) days of completing the second failed round of testing. Results of the initial and second rounds of testing specified above plus the four (4) additional rounds of testing will be used in deciding if a TRE shall be required.

If results from any two (2) of six (6) rounds of testing show a significant noncompliance with the Toxicity limit, i.e., ≥ 1.2 times the TU, or results from any four of the six tests show toxicity as defined above, a TRE will be required.

The permittee shall provide written notification to DOW within five (5) days of completing the accelerated testing, stating that: (1) toxicity persisted and that a TRE will be initiated; or (2) that toxicity did not persist and normal testing will resume.

Should toxicity prove not to be persistent during the accelerated testing period, but reoccur within twelve (12) months of the initial failure at a level ≥ 1.2 times the TU, then a TRE shall be required.

4.10. WET TRE

If a TRE is required, the permittee shall initiate and/or continue at least monthly testing with both species until such time as a specific TRE plan is approved by DOW. A TRE plan shall be developed by the permittee

and submitted to DOW within thirty (30) days of determining a TRE is required. The plan shall be developed in accordance with the most recent Environmental Protection Agency (EPA) and DOW guidance. Questions regarding this process may be submitted to DOW.

The TRE plan shall include Toxic Identification Evaluation (TIE) procedures, treatability studies, and evaluations of: chemical usage including changes in types, handling and suppliers; operational and process procedures; housekeeping and maintenance activities; and raw materials. The TRE plan will establish an implementation schedule to begin immediately upon approval by DOW, to have duration of at least six (6) months, and not to exceed twenty-four (24) months. The implementation schedule shall include quarterly progress reports being submitted to DOW, due the last day of the month following each calendar quarter.

Upon completion of the TRE, the permittee shall submit a final report detailing the findings of the TRE and actions taken or to be taken to prevent the reoccurrence of toxicity. This final report shall include: the toxicant(s), if any are identified; treatment options; operational changes; and the proposed resolutions including an implementation schedule not to exceed one-hundred-eighty (180) days.

Should the permittee determine the toxicant(s) and/or a workable treatment prior to the planned conclusion of the TRE, the permittee will notify DOW within five (5) days of making that determination and take appropriate actions to implement the solution within one-hundred-eighty (180) days of that notification.

SECTION 5

OTHER CONDITIONS

5. OTHER CONDITIONS

5.1. Schedule of Compliance

The permittee shall attain compliance with all requirements of this permit on the effective date of this permit unless otherwise stated.

5.2. Other Permits

This permit has been issued under the provisions of KRS Chapter 224 and regulations promulgated pursuant thereto. Issuance of this permit does not relieve the permittee from the responsibility of obtaining any other permits or licenses required by this Cabinet and other state, federal, and local agencies.

5.3. Continuation of Expiring Permit

This permit shall be continued in effect and enforceable after the expiration date of the permit provided the permittee submits a timely and complete application in accordance with 401 KAR 5:060, Section 2(4).

5.4. Antidegradation

For those discharges subject to the provisions of 401 KAR 10:030 Section, 1(3)(b)5, the permittee shall install, operate, and maintain wastewater treatment facilities consistent with those identified in the SDAA submitted with the KPDES permit application.

5.5. Reopener Clause

This permit shall be modified, or alternatively revoked and reissued, to comply with any applicable effluent standard or limitation issued or approved in accordance with 401 KAR 5:050 through 5:080, if the effluent standard or limitation so issued or approved:

(1) Contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or

(2) Controls any pollutant not limited in the permit.

The permit as modified or reissued under this paragraph shall also contain any other requirements of KRS Chapter 224 when applicable.

5.6. Cooling Water Additives, FIFRA, and Mollusk Control

The discharge of any product registered under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) in cooling water which ultimately may be released to the waters of the Commonwealth is prohibited, except Herbicides, unless specifically identified and authorized by the KPDES permit. In the event the permittee needs to use a biocide or chemical not previously reported for mollusk control or other purpose, the permittee shall submit sufficient information, a minimum of thirty (30) days prior to the commencement of use of said biocides or chemicals to the Division of Water for review and establishment of appropriate control parameters.

5.7. 316(a)

To support continuance of the alternate thermal effluent limitation in the next permit renewal, the permittee shall submit an alternative thermal effluent limitation request and demonstration, which shall meet the requirements in 40 CFR 125.72. The permittee shall submit the request and demonstration, whether the request is to continue the alternative daily maximum limitation of 100 °F or grant an alternative limitation which is higher than the current limitation. The permittee may base the 316(a)

demonstration upon the absence of prior harm in lieu of predictive studies consistent with 40 CFR 125.73(c).

Exemptions from some permit application requirements are possible where information already submitted is sufficient. If an exemption is desired, a request for reduced application material requirements must be submitted at least 2 years and 6 months prior to permit expiration. Past submittals and previously conducted studies may satisfy some or all of the application material requirements.

5.8. 316(b) Cooling Water Intake Structure

5.8.1 Authority to Operate

The permittee shall at all times properly operate and maintain all water intake facilities. The permittee shall give advance notice to the Division of any planned changes in the location, design, operation, or capacity of the intake structure. The permittee is authorized to use the cooling water intake system which consists of the following:

Cooper Station consists of two once-through cooled coal-fired generating units with a capacity of 341 megawatts. Each unit has its own cooling water intake structure consisting of a single deep-water, offshore withdrawal. Cooper Station withdraws water from Lake Cumberland, which is a constructed reservoir that was completed in 1951 for flood control, production of hydroelectric power, and recreation. The design intake flow for the two intakes is 223 MGD. The actual intake flow for calendar years 2017 – 2021 was 84 MGD, which is 37.7 percent of the design intake flow. Cooper Station's two intakes are located at an invert depth of 57 feet during normal pool levels. EPA has acknowledged that deep-water intakes can substantially reduce impingement and entrainment due to lower biological abundance at depth. The deep intakes are also below the depth of naturally occurring seasonal thermocline which results in low dissolved oxygen levels below the thermocline. The deeper, colder water in the lake bottom enables Cooper Station to use less cooling water, particularly during winter when it is able to operate only one of two circulating pumps per unit to meet its condenser cooling requirements. Water is withdrawn by two separate intake structures which are similar, though not identical, in setup and size. One CWIS is designated at the Unit 1 CWIS while the second is designated as the Unit 2 CWIS; however, piping allows for water from either intake to supply cooling to either of the power generating units. The primary components of each CWIS include:

- A low submerged inlet with coarse bar rack screening
- Two hydraulic turbine pumps per CWIS used to lift water up to a raised wet well
- A single vertical traveling screen per CWIS housed within the raised wet well
- Two raw water circulating pumps per CWIS which withdraw water from the raised wet well and feed water to the units

The estimated intake velocities during design flow (with both pumps operating) at the vertical traveling screens for Unit 1 and Unit 2 are 1.9 fps and 2.62 fps respectively. The traveling screens are typically manually operated twice daily, approximately 10 minutes per shift, but may operate more frequently when the debris loads are high and increased differential pressure across the screens triggers automatic operation. Spray wash is provided to each traveling screen by a spray wash pump. Debris and any organisms that may be collected are washed into a debris trough on the front side of the traveling screen and conveyed out through the side of the CWIS, with open discharge to the water surface of Lake Cumberland. When possible, Cooper Station operates on one lift/circulating pump per unit when cooling demand conditions allow. The 84 MGD actual intake flow is equivalent to 257.8 acre-feet and an average

monthly withdrawal of 7,734 acre-feet. This withdrawal comprises only 0.42 percent of the minimum storage volume and 0.19 percent of the normal pool volume.

5.8.2. Best Technology Available (BTA) Determination

The cooling water intake is approved as BTA for minimizing adverse environmental impact in accordance with the requirements in 40 CFR 125 Subpart J and section 316(b) of the Clean Water Act. The Division of Water has reviewed impingement data from the facility and determined that the impingement rate is *de minimis*. Therefore, no additional controls are warranted.

5.8.3. Intake Structure Standard Requirements

5.8.3.1. Future BTA Determinations for Cooling Water Intake Structure(s)

BTA determinations for entrainment mortality and impingement mortality at cooling water intake structures will be re-confirmed in each permit reissuance, in accordance with 40 CFR 125.90-98. In subsequent permit reissuance applications, the permittee shall provide all the information required in 40 CFR 122.21(r).

Exemptions from some permit application requirements are possible in accordance with 40 CFR 125.95(c) and 125.98(g), where information already submitted is sufficient. If an exemption is desired, a request for reduced application material requirements must be submitted at least 2 years and 6 months prior to permit expiration. Past submittals and previously conducted studies may satisfy some or all of the application material requirements.

5.8.3.2. Visual or Remote Inspection

The permittee shall conduct a weekly visual inspection or employ a remote monitoring device during periods when the cooling water intake is in operation. The inspection frequency shall be weekly to ensure the intakes are maintained and operated to function as designed.

5.8.3.3. Reporting Requirements for Cooling Water Intake

The permittee shall adhere to the reporting requirements listed below:

Discharge Monitoring Reports (DMRs)

The monitoring requirements for units at existing facilities under 40 CFR 125.96 for cooling water withdrawals, blowdown volume, and visual or remote inspections have been established at the appropriate outfalls and shall be reported on the DMR for those outfalls.

Annual certification Statement and Report

Submit an annual certification statement to DOW Surface Water Permits Branch signed by the authorized representative with information on the following, no later than January 31st for the previous year:

- Certification that water intake structure technologies are being maintained and operated as set forth in this permit, or a justification to allow a modification of the practices.
- If there are substantial modifications to the operation of any unit that impacts the cooling water withdrawals or operation of the water intake structure, provide a summary of those changes.
- If the information contained in the previous year's annual certification is still applicable, the certification may simply state as such.

Reporting Records Retention

In accordance with 40 CFR 125.97 (d) records of all submissions that are part of the permit application and reporting requirements must be retained until the subsequent permit is issued to document compliance. Additionally, all records supporting the determination of BTA for entrainment under 40 CFR 125.98(f) or (g) must be retained until such time the determination of BTA for entrainment in the permit is revised.

5.8.3.4. Endangered Species Act

Nothing in this permit authorizes take for the purpose of a facility's compliance with the Endangered Species Act. Refer to 40 CFR 125.98(b)(1) and (2).

5.9. Polychlorinated Biphenyls

Pursuant to the requirements of 40 CFR Part 423.12(b) (2), there shall be no discharge, from any point source, of Polychlorinated Biphenyl compounds such as those commonly used in transformer fluids. The permittee shall implement this requirement as a specific section of the BMP plan developed for this section.

5.10. Combustion Residual Leachate

Pursuant to 40 CFR 423.11(r), the term combustion residual leachate ("leachate") means "leachate from landfills or surface impoundments containing combustion residuals. Leachate is composed of liquid, including any suspended or dissolved constituents in the liquid, that has percolated through waste or other materials emplaced in a landfill, or that passes through the surface impoundment's containment structure (*e.g.*, bottom, dikes, berms). Combustion residual leachate includes seepage and/or leakage from a combustion residual landfill or impoundment unit. Combustion residual leachate includes wastewater from landfills and surface impoundments located on non-adjointing property when under the operational control of the permitted facility."

This permit authorizes the discharge of leachate from Outfalls 003 and 005. For newly discovered leachate seeps from a CCR surface impoundment or a CCR landfill, as defined at 40 CFR 257.53, to the surface that discharge or have a potential to discharge to a water of the commonwealth other than through Outfalls 003 and 005, the permittee shall develop and implement a plan to address such surface seeps. The plan shall be included as part of the on-site BMP Plan and shall address, at a minimum, (1) scheduled inspections for identifying surface leachate seeps, (2) maintenance of CCR landfills and/or impoundments to minimize the potential for surface leachate seeps, and (3) corrective measures that will be implemented upon the discovery of a surface leachate seep that is not being controlled by a permitted outfall authorized for discharge of leachate. The permittee shall notify the DOW Surface Water Permits Branch and the appropriate DOW Field Office of planned corrective measures for any identified surface seeps of leachate as soon as feasible after discovery of such a leachate seep, but no later than ten (10) days after the discovery. Such corrective measures may include: (1) plans to reduce or eliminate the leachate seep to the surface; (2) actions to route the surface leachate seep (via a conveyance designed to contain the flow or eliminate the possibility of infiltration) to an outfall permitted to discharge leachate; and (3) combinations of actions to eliminate or, if elimination is not feasible, reduce and control a surface leachate seep and ensure any discharge to a receiving stream is authorized by the permit. Please note that this does not exempt the permittee from 24-hour reporting Section 2.12 of the permit.

5.11. Outfall Signage

This KPDES permit establishes monitoring points, effluent limitations, and other conditions to address discharges from the permitted facility. In an effort to better document and clarify these locations the permittee should place and maintain a permanent marker at each of the monitoring locations.

SECTION 6

MONITORING AND REPORTING REQUIREMENTS

6. MONITORING AND REPORTING REQUIREMENTS

6.1. KPDES Outfalls

Discharge samples and measurements shall be collected at the compliance point for each KPDES Outfall identified in this permit. Each sample shall be representative of the volume and nature of the monitored discharge.

6.2. Sufficiently Sensitive Analytical Methods

Analytical methods utilized to demonstrate compliance with the effluent limitations established in this permit shall be sufficiently sensitive to detect pollutant levels at or below the required effluent limit, i.e. the Method Minimum Level shall be at or below the effluent limit. In the instance where an EPA-approved method does not exist that has a Method Minimum Level at or below the established effluent limitation, the permittee shall:

- (1) Use the method specified in the permit; or
- (2) The EPA-approved method with an ML that is nearest to the established effluent limit.

It is the responsibility of the permittee to demonstrate compliance with permit parameter limitations by utilization of sufficiently sensitive analytical methods.

6.3. Certified Laboratory Requirements

All laboratory analyses and tests required to demonstrate compliance with the conditions of this permit shall be performed by a laboratory holding the appropriate general or field-only certification issued by the Cabinet pursuant to 401 KAR 5:320.

6.4. Submission of DMRs

The completed DMR for each monitoring period must be entered into the DOW approved electronic system no later than midnight on the 28th day of the month following the monitoring period for which monitoring results were obtained.

For more information regarding electronic submittal of DMRs, please visit the Division's website at: <https://eec.ky.gov/Environmental-Protection/Water/SubmitReport/Pages/NetDMR.aspx> or contact the DMR Coordinator at (502) 564-3410.

EXHIBIT

JP-3



**Kentucky Energy and Environment Cabinet
Department for Environmental Protection
Division of Waste Management**

PERMIT

Facility: **Spurlock Station Landfill and Ash Pond**
KY 8
Maysville, KY 41056

Permittee: **East Kentucky Power Cooperative Inc**
4775 Lexington Rd
P O Box 707
Winchester, KY 40392

Agency Interest: **East KY Power Coop - H L Spurlock Power Station**
KY 8
Maysville, KY 41056

The Division has issued the permit under the provisions of KRS Chapter 224 and regulations promulgated pursuant thereto. This permitted activity or activities are subject to all conditions and operating limitations contained herein. Issuance of this permit does not relieve the permittee from the responsibility of obtaining any other permits, licenses or approvals required by this Division or other state and local agencies.

No deviation from the plans and specifications submitted with your application or any condition specified herein is allowed, unless authorized in writing from the Division. Violation of the terms and conditions specified herein may render this permit null and void. All rights of inspection by representatives of the Division are reserved. Conformance with all applicable Waste Management Regulations is the responsibility of the permittee.

Agency Interest ID #: **3004**

Solid Waste Permit #: **sw08100019, sw08100020, sw08100005**

County: **Mason**

Permitted Activities:

Subject Item	Activity	Type	Status
ACTV002	Special Waste Landfill-Coal/08100005	Construction/Operation	Converted
ACTV003	Coal Combustion Residuals Surface Impoundment/08100005	Permit by Rule	Converted
ACTV004	CDD Landfill <1 Acre-SW-RPBR/08100019	Registered Permit by Rule	Active
ACTV009	CCR Unit - Impoundment/08100020	Registered Permit by Rule	Voided
ACTV010	CCR Unit - Landfill/08100005	Construction/Operation	Active
ACTV011	CCR Unit - Impoundment/08100005	Construction/Operation	Active
ACTV012	CCR Unit - Landfill/08100005	Construction/Operation	Proposed

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Acreage Summary:

Waste Disposal Area (in Acres):

Activity	Disposal Area
CCR Unit - Impoundment	70.00
CCR Unit - Landfill	176.67
Total Disposal Area	246.67
Total Permitted Area	1,602.06

Cost Estimate Summary:

Coverage Type	Cost Estimate	Effective	Comments
Closure	\$11,409,402.08	01/10/2022	Approved under APE20210015
Post-Closure	\$2,871,776.00	01/10/2022	Approved under APE20210015

Financial Assurance Summary:

The owner or operator shall maintain the following financial assurance approved by the Division in compliance with KRS Chapter 224.40-650, KRS Chapter 224.50-862, 401 KAR 45:080, and 401 KAR 48:310:

Instrument Type	Instrument Number	Amount	Date Received	Comments
Corporate Financial Test	1	\$14,291,179.00	04/18/2022	

First Operational Permit Effective Date: 09/20/1982 -- Inert Landfill

Permit Effective Date: 09/20/1992

Permit Expiration Date: Life of Facility

Permit issued: **10/20/2022**

Sincerely,



Danny Anderson, P.E.
Manager, Solid Waste Branch

PERMIT

Permit Conditions:**Facility Information and/or Conditions**

1. ACTV0002 and ACTV0010 - These activity numbers are associated with the landfill known as the Spurlock Station Landfill.
2. ACTV0012 - This activity number is associated with the proposed landfill known as the Peg's Hill Landfill or Area D.

Subject Items**ACTV0002 - Special Waste Landfill-Coal****Variances, Alternate Specifications and Special Conditions:**

1. Buffer Zone: The cabinet has granted a variance to 401 KAR 45:130, Section 1(2) which prohibits wastes to be placed within the zone of collapse of deep-mine workings or within the critical angle of draw of such workings. The permittee has approval to continue to operate the special waste landfill located above the proposed underground limestone mine. [401 KAR 45:130 Section 1(2)]
2. Buffer Zone: The cabinet has granted a variance to 401 KAR 45:130 Section 1, (3) - 250 feet waste placement buffer from an existing karst feature. The karst feature is located at the western proposed waste boundary as shown on the engineering drawings (Sheets 2, 12, 13, 17, 18 of 68) of the application for Modification to Permit No. 081-00005, Special Waste Landfill. Attachment 51 (page 18, 6.3.10.) of this application describes the design to seal off the karst feature prior to construction of the soil liner system which is comprised of the excavation, cleaning, and backfilling with concrete of the feature. [401 KAR 30:020 Section 2(1)(a)]
3. General: The landfill consists of approximately 176.67 acres and was converted from a Special Waste Landfill (ACTV002) to a CCR Unit - Landfill (ACTV010) on January 9, 2019. The landfill is a CCR Unit as defined by 401 KAR 46:101 and is subject to the standards pursuant to 401 KAR 46:110, and the landfill remains subject to the procedural requirements in 401 KAR Chapter 45. [401 KAR 45:020, 401 KAR 45:025, 401 KAR 45:030, 401 KAR 45:040, 401 KAR 45:050, 401 KAR 45:080, 401 KAR 45:140, 401 KAR 46:110]

Approved Applications - The owner or operator shall comply with applicable statutes and regulations and the following approved applications:

1. 06-01-1979 - Plans Approved
2. 09-20-1982 - Operational Permit Issued for Inert Landfill (9-20-82 to 9-20-87)
3. 02-04-1988 - Permit Renewal Issued for Inert Landfill (9-20-87 to 9-20-92)
4. 11-09-1994 - Authorization to Continue Operation
5. 02-28-1996 - Permit Renewal - LI1PR1 (First Operational Permit Issued for Special Waste; effective 9-20-92)
6. 12-01-2004 - Revised Groundwater Monitoring Plan - LS1MOGW1, APE19960001
7. 02-22-2005 - Horizontal Expansion - LS1MOHX1, APE20020001
8. 02-08-2007 - Construction Progress Report - APE20070001, Area A and B (8.77 acres)
9. 04-10-2008 - Construction Progress Report - APE20070004, Area A and B (13.01 acres)
10. 02-10-2010 - Minor Modification - Variance request to allow construction of limestone mine below landfill

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- APE20080002

11. 03-07-2011 - Construction Progress Report - APE20110003 (installation of MW-2A and MW-3A)
12. 04-25-2011 - Construction Progress Report - APE20110005, Area A Phase 1 (6.65 acres)
13. 04-25-2011 - Construction Progress Report - APE20110006 (abandonment of MW-2 and MW-3)
14. 06-08-2011 - Remedial Action Plan - ARM20110001 (arsenic exceedances)
15. 11-10-2011 - Minor Modification - APE20110010 (add waste stream, clarifier sludge)
16. 01-09-2012 - Construction Progress Report - APE20120001, Area A Phase 2 (5.59 acres)
17. 07-20-2012 - Construction Progress Report - APE20120004, Area C, Phase 1, Work Area 1 (16.52 acres)
18. 03-18-2013 - Construction Progress Report - APE20130002, Area C, Phase 1, Work Area 2 (20.38 acres)
19. 11-26-2013 - Minor Modification - APE20130006 (add additional soil borrow areas, expand existing permit boundary)
20. 08-14-2015 - Construction Progress Report - APE20150002, Area C, Phase 2, (15.25 acres)
21. 11-29-2017 - Construction Progress Report - APE20170009 (Abandonment of MW-2A)
22. 01-24-2018 - Construction Progress Report - APE20170014, Area C Phase 3-A (4.74 acres)
23. 01-09-2019 - See the CCR Unit-Landfill activity (ACTV0010) for additional information

ACTV0003 - Coal Combustion Residuals Surface Impoundment

Variances, Alternate Specifications and Special Conditions:

1. General: The Ash Pond was transitioned from a Coal Combustion Residuals Surface Impoundment (ACTV003) to a CCR Unit (ACTV009) pursuant to 401 KAR Chapter 46 on August 2, 2017; the transition was voided, and the Ash Pond was restored back to a Coal Combustion Residuals Surface Impoundment (ACTV003) on February 12, 2018 pursuant to Franklin Circuit Court Civil Action No. 17-CI-00474. [401 KAR 45:040]
2. General: The Ash Pond consists of approximately 70 acres and was converted from a Coal Combustion Residuals Surface Impoundment (ACTV003) to a CCR Unit - Impoundment (ACTV011) on January 9, 2019. The Ash Pond is a CCR Unit as defined by 401 KAR 46:101 and is subject to the standards pursuant to 401 KAR 46:110, and the Ash Pond remains subject to the procedural requirements in 401 KAR Chapter 45. [401 KAR 45:020, 401 KAR 45:025, 401 KAR 45:030, 401 KAR 45:040, 401 KAR 45:050, 401 KAR 45:080, 401 KAR 45:140, 401 KAR 46:110]

ACTV0004 - CDD Landfill <1 Acre-SW-RPBR

Standard Requirements:

1. General: The owner or operator of a solid waste site or facility shall comply with KRS Chapter 224 and 401 KAR Chapters 30, 40, 47 and 48 for the construction and operation of solid waste facilities. [KRS 224.40-305]
2. General: For operation of the Construction/Demolition Debris landfill of one acre or less, the owner or operator shall comply with KRS Chapter 224.40-120, 401 KAR 47:030, 47:110, 48:320 and the approved permit application(s). [401 KAR 48:320]
3. Monitoring: The owner or operator of a less than one (1) acre construction/demolition debris landfill shall comply with the groundwater protection plan requirements of 401 KAR 5:037. [401 KAR 48:320 Section 4(1)(d)]
4. Recordkeeping: If a less than one (1) acre construction/demolition debris landfill does not have adequate scales necessary to weigh the waste, the environmental remediation fee shall be calculated and assessed using a

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conversion factor calculated as follows: For compacted loads, the fee shall be one (1) dollar and seventy-five (75) cents for every three (3) cubic yards of waste. [401 KAR 47:095 Section 1(2)(a)]

5. Recordkeeping: If a less than one (1) acre construction/demolition debris landfill does not have adequate scales necessary to weigh the waste, the environmental remediation fee shall be calculated and assessed using a conversion factor calculated as follows: For all other (uncompacted) loads, the fee shall be one (1) dollar and seventy-five (75) cents for every five (5) cubic yards of waste. [401 KAR 47:095 Section 1(2)(b)]

Variances, Alternate Specifications and Special Conditions:

1. Operation: The owner or operator shall comply with the requirements of 401 KAR 30:031, 47:110, 48:050, 48:320 and the application for this permit, and the conditions herein. [401 KAR 30:031, 401 KAR 47:110, 401 KAR 48:050, 401 KAR 48:320]

2. Operation: The owner or operator shall properly dispose of any non-construction/demolition debris waste at a permitted contained landfill. [401 KAR 48:320 Section 4]

3. Operation: The owner or operator shall erect a sign indicating the type of facility, permit number, operating hours and emergency phone number. The owner or operator shall display a copy of this permit at the office of the facility. [401 KAR 47:120 Section 2, 401 KAR 48:320 Section 4]

4. Operation: The owner or operator shall place the waste in lifts and compact it within one week of disposal. [401 KAR 48:320 Section 4, 401 KAR 47:120 Section 2]

5. Operation: The owner or operator shall restrict unauthorized access to the facility, including a gate or cable kept locked when the facility is not operating. [401 KAR 30:031 Section 10(3)]

6. Operation: The owner or operator shall remove mud and waste from public roadways leading into the facility, as necessary, to avoid potential road hazards or nuisance conditions. [401 KAR 30:031 Section 11, 401 KAR 48:320 Section 4(2)]

7. Closure: The owner or operator shall cover the landfill with two feet of clean soil and revegetate the entire disturbed area. The owner or operator shall revegetate the entire disturbed area with a minimum of 2 legumes, 1 annual grass, and 1 perennial type of grass in sufficient poundage to provide at least 90% ground cover. The cabinet recommends contacting your County Agricultural Agent or the Natural Resources Conservation Service for preferred plant varieties. The seeded area shall be covered with 1.5-2 tons of straw mulch per acre. The mulch shall be stabilized with a netting on slopes which exceed 15%. [401 KAR 48:320 Section 5]

8. Closure: The owner or operator shall cover the landfill with a minimum of two feet of soil, at a slope of 5% to 25%. The cap shall be graded to prevent ponding, and diversion berms shall be provided where surface runoff exceeds the capability of the final cover to sustain the flow without excessive erosion. [401 KAR 48:320 Section 5(1)]

9. Closure: The owner or operator shall record a notice in the property deed that shall, in perpetuity, notify any potential purchaser of the property of the location and time of operation of the landfill, the nature of the waste disposed, and a caution against future disturbance of the area. Such notice shall be recorded in accordance with KRS Chapter 382 and proof of recording shall be submitted to the Cabinet prior to the Cabinet's acceptance of certification of closure. [401 KAR 48:320 Section 5(2)]

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10. Closure: Upon completion of closure of the facility, contact the Cabinet to request a closure inspection for release for your financial assurance. [401 KAR 48:320 Section 5(3), 401 KAR 48:320 Section 5(4)]

11. Operation: The owner or operator shall not allow to be disposed in this facility: household solid waste, industrial solid waste, hazardous waste, friable asbestos, petroleum contaminated soil, tires, appliances, furniture, batteries, light fixtures or other electrical devices containing hazardous or toxic materials, buckets, cardboard, paper, food or drink containers, or any other non-CDD waste. [401 KAR 47:080 Section 2(2), 401 KAR 47:120 Section 2, 401 KAR 48:320 Section 4]

12. Reports and Submittals: The owner or operator shall submit the annual permit renewal fee by September 30 of each year. The check or money order shall be made payable to the Kentucky State Treasurer and accompanied by form DEP 7119. [401 KAR 47:090 Section 5]

13. Reports and Submittals: The owner or operator shall maintain accurate records of the amount of waste received at the Construction/Demolition Debris < 1 Acre Landfill, on report form DEP 7046Q, Quarterly Waste Quantity Report. This form is available at <https://eec.ky.gov/Environmental-Protection/Waste/solid-waste/Pages/solid-waste-branch-forms.aspx>. The owner or operator shall submit quarterly reports by January 30, April 30, July 31, and October 31, to the cabinet, the county in which the facility is located and the waste management district in which the facility is located, with the amount of construction/demolition solid waste measured in tons received at the facility and the geographical source of the waste. If scales are not available to the facility, the owner or operator shall calculate tons from cubic yards using the conversion factors in 401 KAR 47:095. The information shall also be maintained for a period of three (3) years and be available for inspection upon request by the cabinet. [401 KAR 47:095 Section 1, KRS 224.43-330(2)]

14. Reports and Submittals: The owner or operator shall submit to the cabinet an Environmental Remediation Fee (ERF) based on the solid waste disposed of at the facility no later than thirty (30) days following the last day of each calendar quarter (January 30, April 30, July 31, and October 31). Along with the ERF payment, the owner or operator shall submit a Waste Quantity Report, recording the geographical source of the waste and the amount of construction/demolition debris solid waste measured in tons received at the facility. The owner or operator may alternatively submit the combined "Environmental Remediation Fee and Quarterly Waste Quantity Reporting and Submittal Form" in accordance with the cabinet's April 18, 2017 Notice. The Combined ERF/WQR Form available at <https://eec.ky.gov/Environmental-Protection/Waste/solid-waste/Pages/solid-waste-branch-forms.aspx> shall meet the requirements under KRS 224.43-500(4). [401 KAR 47:095 Section 1(3), KRS 224.43-500(4)]

County Sources - The owner or operator may accept waste as authorized by the cabinet pursuant to KRS 224 and/or 401 KAR Chapter 47 from the following counties:

Kentucky: Mason

Approved Applications - The owner or operator shall comply with applicable statutes and regulations and the following approved applications:

1. 09-12-2016 - ARP20160002 - Approval of a Registered Permit-by-Rule Less Than One Acre CDD Landfill
2. 10-22-2018 - APE20180012 - Revised Permit Condition - Recorded Deed Notice

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ACTV0009 - CCR Unit - Impoundment**Variances, Alternate Specifications and Special Conditions:**

1. General: The Ash Pond was transitioned from a Coal Combustion Residuals Surface Impoundment (ACTV003) to a CCR Unit (ACTV009) pursuant to 401 KAR Chapter 46 on August 2, 2017; the transition was voided, and the Ash Pond was restored back to a Coal Combustion Residuals Surface Impoundment (ACTV003) on February 12, 2018 pursuant to Franklin Circuit Court Civil Action No. 17-CI-00474. [401 KAR 45:040]

ACTV0010 - CCR Unit - Landfill**Variances, Alternate Specifications and Special Conditions:**

1. General: The owner or operator of a Coal Combustion Residuals (CCR) Unit shall comply with KRS Chapter 224 and 401 KAR Chapter 46 for the construction, operation, maintenance, and closure of a CCR Unit and other provisions pursuant to 401 KAR Chapters 30, 40, and 45 as applicable. The owner or operator shall comply with the applicable provisions in the Approved Applications listed on this permit document for ACTV0002 - Special Waste Landfill-Coal and with all provisions in the Approved Applications listed on this permit document for ACTV0010 - CCR Unit - Landfill. [401 KAR 45:030, 401 KAR 45:140]

2. General: The owner or operator shall submit the \$15,000 annual fee no later than July 31 of each year pursuant to 401 KAR 46:120. Applications and reports specific to only the Spurlock Station Landfill, or only other CCR Units, for this facility shall not be subject to the filing fees pursuant to 401 KAR 45:250. [401 KAR 46:120 Section 4]

3. General: The Spurlock Station Landfill consists of approximately 176.67 acres and was converted from a Special Waste Landfill (ACTV002) to a CCR Unit - Landfill (ACTV010) on January 9, 2019. The landfill is a CCR Unit as defined by 401 KAR 46:101 and is subject to the standards pursuant to 401 KAR 46:110, and the landfill remains subject to the procedural requirements in 401 KAR Chapter 45. [401 KAR 45:020, 401 KAR 45:025, 401 KAR 45:030, 401 KAR 45:040, 401 KAR 45:050, 401 KAR 45:080, 401 KAR 45:140, 401 KAR 46:110]

Approved Applications - The owner or operator shall comply with applicable statutes and regulations and the following approved applications:

1. 01-09-2019 - See the Special Waste Landfill-Coal activity (ACTV0002) for additional information and site History
2. 01-09-2019 - Construction Progress Report - Area C, Phase 3-B (1.16 Acres) - APE20180013
3. 03-04-2019 - Construction Progress Report - Final Cap, Portions of Areas A & B (38.2 Acres) – APE20190002
4. 07-31-2019 - Construction Progress Report - MW - 1A & MW - 3A Abandonment - APE20190009
5. 09-13-2019 - Construction Progress Report - Area C, Phase 3-C (2.12 Acres) - APE20190012
6. 12-20-2019 - Construction Progress Report - Area C, Phase 3-D (2.58 Acres) - APE20190013
7. 07-28-2020 - Construction Progress Report - Area C, Phase 4-A (7.47 Acres) - APE20200003
8. 02-23-2021 - Construction Progress Report - Area C, Phase 4-B (4.28 Acres) - APE20210005
9. 07-28-2021 - Construction Progress Report - Area C, Phase 4-C (3.41 Acres) - APE20210011
10. 01-10-2022 - Construction Progress Report - Area C, Phase 5-A (5.88 Acres) - APE20210015
11. 06-22-2022 - Construction Progress Report - Area C, Phase 5-B (3.77 Acres) - APE20220009

PERMIT

ACTV0011 - CCR Unit - Impoundment**Variances, Alternate Specifications and Special Conditions:**

1. General: The owner or operator of a Coal Combustion Residuals (CCR) Unit shall comply with KRS Chapter 224 and 401 KAR Chapter 46 for the construction, operation, maintenance, and closure of a CCR Unit and other provisions pursuant to 401 KAR Chapters 30, 40, and 45 as applicable. The owner or operator shall comply with the provisions in the Approved Applications listed on this permit document for ACTV0011 - CCR Unit - Impoundment. [401 KAR 45:030, 401 KAR 45:140]
2. General: The owner or operator shall submit the \$15,000 annual fee no later than July 31 of each year pursuant to 401 KAR 46:120. Applications and reports specific to only Ash Pond, or only other CCR Units, for this facility shall not be subject to the filing fees pursuant to 401 KAR 45:250. [401 KAR 46:120 Section 4]
3. General: The Ash Pond consists of approximately 70 acres and was converted from a Coal Combustion Residuals Surface Impoundment (ACTV003) to a CCR Unit - Impoundment (ACTV011) on January 9, 2019. The Ash Pond is a CCR Unit as defined by 401 KAR 46:101 and is subject to the standards pursuant to 401 KAR 46:110, and the Ash Pond remains subject to the procedural requirements in 401 KAR Chapter 45. [401 KAR 45:020, 401 KAR 45:025, 401 KAR 45:030, 401 KAR 45:040, 401 KAR 45:050, 401 KAR 45:080, 401 KAR 45:140, 401 KAR 46:110]
4. General: The Ash Pond was transitioned from a Coal Combustion Residuals Surface Impoundment (ACTV003) to a CCR Unit (ACTV009) pursuant to 401 KAR Chapter 46 on August 2, 2017; the transition was voided, and the Ash Pond was restored back to a Coal Combustion Residuals Surface Impoundment (ACTV003) on February 12, 2018 pursuant to Franklin Circuit Court Civil Action No. 17-CI-00474. [401 KAR 45:040]

Approved Applications - The owner or operator shall comply with applicable statutes and regulations and the following approved applications:

1. 01-09-2019 - Permit issued in accordance with 401 KAR Chapter 46 technical standards - APE20180013
2. 09-01-2021 - Minor Modification (Closure plan modification for clean closure) - APE20210013

ACTV0012 - CCR Unit - Landfill**Approved Applications - The owner or operator shall comply with applicable statutes and regulations and the following approved applications:**

1. 01-10-2022 - Construction Progress Report (Abandon MW-03, Install MW-3A) - APE20210007
2. 10-20-2022 - Construction Progress Report (Abandon PZ-1, PZ-8) - APE20220013

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Financial Assurance**ACTV0001 - Financial Assurance**

The following is a history of the financial assurance for this facility:

1. 09-20-1982 - SB #0250-05-050741, \$63,000.00
2. 06-10-1988 - Escrow Account #CD912833EW6, \$258,000.00
3. 06-10-1988 - #0250-05-050741 released
4. 09-19-1996 - Escrow Account #CD912800AA7, \$258,000.00
5. 09-19-1996 - Escrow Account #CD912833EW6 released
6. 01-02-2002 - Escrow Account #CD912800AA7 increased to \$270,043.00
7. 11-18-2002 - Escrow Account #CD912800AA7 increased to \$275,984.00
8. 09-07-2004 - Escrow Account #CD912800AA7 increased to \$976,880.00
9. 06-09-2006 - Escrow Account #CD912800AA7 increased to \$1,019,253.68
10. 04-07-2008 - Escrow Account #CD912800AA7 increased to \$1,407,585.00
11. 07-10-2009 - Escrow Account #CD912800AA7 increased to \$1,793,015.58
12. 12-28-2010 - Escrow Account #CD912800AA7 increased to \$1,841,532.00
13. 07-19-2012 - Escrow Account #CD912800AA7 increased to \$2,085,000.00
14. 02-22-2013 - Treasury Bond CUSIP #912833KH2, \$2,949,339.00
15. 07-22-2015 - Treasury Bond CUSIP #912833KH2 increased to \$3,930,000.00
16. 05-23-2016 - Treasury Bond CUSIP #912833KH2 includes \$10,000.00
17. 08-01-2017 - Treasury CUSIP #912833KH2 succeeded by #912833KR0, increased to \$3,940,000.00
18. 01-05-2018 - Treasury CUSIP #912833HK2 succeeded by #912833KR0, increased to \$5,064,975.10
19. 12-17-2018 - Treasury CUSIP #912833KR0 succeeded by #912833KV1, increased to \$10,508,887.00
20. 05-22-2019 - Treasury CUSIP #912833KV1 succeeded by #912833KZ2, for \$10,508,887.00
21. 05-27-2020 - Treasury CUSIP #912833KZ2 increased to \$12,489,033.00
22. 11-19-2020 - Treasury CUSIP #912833KZ2 succeeded by #912796A25, increased to \$12,505,008.00
23. 05-25-2021 - Treasury CUSIP #912796A25 succeeded by #912796H51, for \$12,505,008.00
24. 12-16-2021 - Financial Test, \$14,291,179.00
25. 12-22-2021 - Treasury CUSIP #912796H51 released
26. 04-18-2022 - Financial Test updated, \$14,291,179.00

Monitoring Conditions**GSTR0003 - Groundwater Monitoring - SWB: Chapter 46 Groundwater Monitoring Group**

Group Members: AIOO3004 -

Variances, Alternate Specifications and Special Conditions:

1. Groundwater Monitoring: The owner or operator shall monitor groundwater and provide notifications in accordance with 401 KAR Chapter 46 and submit the results and analysis to the Division of Waste Management, Solid Waste Branch upon request. [401 KAR 45:030, 401 KAR 46:110 Section 10, 401 KAR 46:110 Section 8]

PERMIT

GSTR0004 - Groundwater Monitoring - SWB: Chapter 6 Groundwater Monitoring Group**Group Members:** AIOO3004 -**Variances, Alternate Specifications and Special Conditions:**

1. Groundwater Well Construction: Prior to the installation, modification, or abandonment of a monitoring well at a unit regulated by the Division of Waste Management (DWM), the permittee shall obtain DWM approval of all monitoring-well construction designs and all monitoring-well construction materials. The approval request shall be submitted to the Solid Waste Branch of the DWM. [401 KAR 6:350 Section 12]
2. Groundwater Well Construction: The Division of Waste Management shall be notified at least ten (10) working days prior to monitoring well construction, modification, or abandonment so that a cabinet representative may be present at the construction, modification, or abandonment. [401 KAR 6:350 Section 12]
3. Groundwater Well Construction: The owner or operator shall comply with the standards and provisions in 401 KAR Chapter 6. This includes, but not limited to, the provision each monitoring well shall be constructed, modified, or abandoned by a monitoring well driller or monitoring well driller assistant certified in accordance with KRS 223.425 and 401 KAR 6:320. [401 KAR 6:350]
4. Reports and Submittals: For recordkeeping purposes and in order to verify compliance with 401 KAR Chapter 6 standards, the owner or operator shall submit a Construction Progress Report (CPR) within 45 days of the completion of any groundwater monitoring well installation, modification, or abandonment activities. [401 KAR 45:140 Section 1(8), 401 KAR 6:350]
5. Groundwater Well Construction: As documented in the Monitoring Well Construction Progress Report associated with tracking number APE20210007, the Division of Waste Management (DWM) accepts that the well installation of monitoring well PH-MW-03A and abandonment of monitoring well PH-MW-03 was conducted in accordance with 401 KAR 6:350. This determination is limited to the installation of well PH-MW-03A and abandonment of well PH-MW-03, and does not constitute DWM acceptance of any other well construction detail. [401 KAR 6:350]
6. Groundwater Well Construction: The approval of the Monitoring Well Construction Progress Reports (CPRs) associated with tracking numbers APE20210007 and APE20220013 are limited to the construction activities specifically listed herein. The approval in no way constitutes the acceptance of any monitoring well construction, modification, or abandonment activities conducted previously and not specified in this permit. Approval of the CPRs does not constitute Division of Waste Management acceptance of any well or well network as being appropriate for monitoring groundwater in any particular aquifer or aquifer zone at any CCR Unit pursuant to the provision(s) of 401 KAR Chapter 46. [401 KAR 45:140 Section 2, 401 KAR 6:350]
7. Groundwater Well Construction: As documented in the Monitoring Well Construction Progress Report associated with tracking number APE20220013, the Division of Waste Management (DWM) accepts that the abandonment of piezometers PZ-1 and PZ-8 were conducted in accordance with 401 KAR 6:350. This determination is limited to the abandonments of piezometers PZ-1 and PZ-8, and does not constitute DWM acceptance of any other well construction detail. [401 KAR 6:350]



MATTHEW G. BEVIN
GOVERNOR

CHARLES G. SNAVELY
SECRETARY

ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION

ANTHONY R. HATTON
COMMISSIONER

300 SOWER BOULEVARD
FRANKFORT, KENTUCKY 40601

March 27, 2019

Mr. Jerry Purvis
East Kentucky Power Cooperative, Inc.
4775 Lexington Road
P.O. Box 707
Winchester, KY 40392

Certified Mail No. 7010 1870 0000 9172 9938

RE: Approval of Modification to Groundwater & Surface Water Monitoring Plan
John Sherman Cooper Landfill
Agency Interest No. 3808
Solid Waste Permit No. SW10000015
Application I.D. No. APE20190001
Pulaski County

Dear Mr. Purvis,

The Kentucky Division of Waste Management (DWM), Solid Waste Branch completed review of the application referenced above, received on January 23, 2019. The application proposing to modify the groundwater and surface water monitoring plan is hereby approved.

Enclosed is a copy of the facility permit. To receive an electronic copy of the approved application, please contact Teresa Osborne at (502) 782-6115 on or around April 10, 2019. Be advised that if you consider yourself aggrieved by the issuance of this permit, you have the right, pursuant to KRS 224.10-420(2) to file a petition demanding a hearing with the Cabinet. This right shall be limited to a period of thirty (30) days. The petition should be filed with The Office of Administrative Hearings located at 211 Sower Blvd., Frankfort, KY 40601. See <http://oah.ky.gov> for additional information. If you need additional information, please contact Kenneth Melton, P.E. at (502) 782-6415.

Sincerely,

A handwritten signature in black ink that reads "Danny Anderson".

Danny Anderson, P.E.
Manager, Solid Waste Branch

Mr. Jerry Purvis
March 27, 2019
Page 2 of 2

3808
APE20190001

Enclosure
DA/KM/lkg

c: Mr. Jerry Purvis via e-mail jerry.purvis@ekpc.coop
Mr. Brad Condley via e-mail brad.condley@ekpc.coop
Ms. Brandy Case via e-mail brandy.case@ekpc.coop

EXHIBIT

JP-4



**Kentucky Energy and Environment Cabinet
Department for Environmental Protection
Division of Waste Management**

PERMIT

Facility: **John Sherman Cooper Landfill**
670 Cooper Power Plant Rd
Somerset, KY 42501

Permittee: **East Kentucky Power Cooperative Inc.**
4775 Lexington Rd
P O Box 707
Winchester, KY 40392

Agency Interest: **East KY Power Cooper Station**
670 Cooper Power Plant Rd
Somerset, KY 42501

The Division has issued the permit under the provisions of KRS Chapter 224 and regulations promulgated pursuant thereto. This permitted activity or activities are subject to all conditions and operating limitations contained herein. Issuance of this permit does not relieve the permittee from the responsibility of obtaining any other permits, licenses or approvals required by this Division or other state and local agencies.

No deviation from the plans and specifications submitted with your application or any condition specified herein is allowed, unless authorized in writing from the Division. Violation of the terms and conditions specified herein may render this permit null and void. All rights of inspection by representatives of the Division are reserved. Conformance with all applicable Waste Management Regulations is the responsibility of the permittee.

Agency Interest ID #: **3808**

Solid Waste Permit #: **SW10000015**

County: **Pulaski**

Permitted Activities:

Subject Item	Activity	Type	Status
ACTV002	Special Waste Landfill-Coal/10000015	Construction/Operation	Converted
ACTV003	CDD Landfill <1 Acre-SW-RPBR/10000015	Registered Permit-by-Rule	Active
ACTV005	CCR Unit - Landfill/10000015	Construction/Operation	Active

PERMIT

Acreage Summary:

Waste Disposal Area (in Acres):

Activity	Disposal Area
CCR Unit - Landfill	96.32
Total Disposal Area	96.32
Total Permitted Area	315.25

Cost Estimate Summary:

Coverage Type	Cost Estimate	Effective	Comments
Closure	\$2,006,327.25	06/27/2016	Approved Under APE20160001
Post-Closure	\$424,109.17	06/27/2016	Approved Under APE20160001

Financial Assurance Summary:

The owner or operator shall maintain the following financial assurance approved by the Division in compliance with KRS Chapter 224.40-650, KRS Chapter 224.50-862, 401 KAR 45:080, and 401 KAR 48:310:

Instrument Type	Instrument Number	Amount	Date Received	Comments
Escrow Agreement	28112875	\$4,131,298.00	09/08/2017	

First Operational Permit Effective Date: 09/28/1994 -- Special Waste Landfill

Permit Effective Date: 09/28/1994

Permit Expiration Date: Life of Facility

Permit issued: **03/27/2019**



Danny Anderson, P.E.
Manager, Solid Waste Branch

PERMIT

Permit Conditions:**Facility Information and/or Conditions**

This disposal facility was previously recorded as Agency Interest I.D. number 39771.

Subject Items**ACTV0002 - Special Waste Landfill-Coal****Variances, Alternate Specifications and Special Conditions:**

1. General: The landfill consists of approximately 96.32 acres and was converted from a Special Waste Landfill (ACTV0002) to a CCR Unit - Landfill (ACTV0005) on March 27, 2019. The landfill is a CCR Unit as defined by 401 KAR 46:101 and is subject to the standards pursuant to 401 KAR 46:110, and the landfill remains subject to the procedural requirements in 401 KAR Chapter 45. [401 KAR 45:020, 401 KAR 45:025, 401 KAR 45:030, 401 KAR 45:040, 401 KAR 45:050, 401 KAR 45:080, 401 KAR 45:140, 401 KAR 46:110]

Approved Applications - The owner or operator shall comply with applicable statutes and regulations and the following approved applications:

1. 09-28-1994 - Construction Permit Issued, LS1NW1 - APE19900001
2. 02-14-1996 - Construction/Operation Permit Issued - APE19950001
3. 02-03-2012 - Minor Modification, Add Clarifier Waste Stream - APE20110008 (Previously recorded as AI 39771 / APE20110002)
4. 02-03-2012 - Minor Modification, Add Scrubber Waste Stream - APE20120001
5. 11-19-2012 - Major Modification, Horizontal Expansion - APE20100001
6. 02-28-2013 - Acceptance of USACE Section 404 Permit, Construction Authorization Letter – APE20100001
7. 07-16-2014 - Construction Progress Report, Phases 1A Liner (10.56 acres), Final Cap System Construction (8.42 acres) and 1A-2 Liner System Construction (3.91 acres) - APE20140002
8. 02-10-2016 - Groundwater Assessment Plan - AIN20150001
9. 06-27-2016 - Construction Progress Report, Phase 1B Liner (13.79 acres), Phase 1B Final Cap System Construction (3.5 acres) - APE20160001
10. 01-09-2017 - Groundwater Assessment Report - AIN20160001
11. 03-27-2019 - See the CCR Unit - Landfill [ACTV0005] for additional information

ACTV0003 - CDD Landfill <1 Acre-SW-RPBR**Standard Requirements:**

1. General: The owner or operator of a solid waste site or facility shall comply with KRS Chapter 224 and 401 KAR Chapters 30, 40, 47 and 48 for the construction and operation of solid waste facilities. [KRS 224.40-305]

2. General: For operation of the Construction/Demolition Debris landfill of one acre or less, the owner or operator shall comply with KRS Chapter 224.40-120, 401 KAR 47:030, 47:110, 48:320 and the approved permit application(s). [401 KAR 48:320]

PERMIT

3. **Monitoring:** The owner or operator of a less than one (1) acre construction/demolition debris landfill shall comply with the groundwater protection plan requirements of 401 KAR 5:037. [401 KAR 48:320 Section 4(1)(d)]
4. **Reports and Submittals:** The owner or operator shall submit a report quarterly, by the 15th of January, April, July, and October, to the cabinet, the county in which the facility is located and the waste management district in which the facility is located the amount of household, commercial and residential solid waste measured in tons received at the facility and the geographical source of the waste. [KRS 224.43-330(2)]
5. **Recordkeeping:** If a less than one (1) acre construction/demolition debris landfill does not have adequate scales necessary to weigh the waste, the environmental remediation fee shall be calculated and assessed using a conversion factor calculated as follows: For compacted loads, the fee shall be one (1) dollar and seventy-five (75) cents for every three (3) cubic yards of waste. [401 KAR 47:095 Section 1(2)(a)]
6. **Recordkeeping:** If a less than one (1) acre construction/demolition debris landfill does not have adequate scales necessary to weigh the waste, the environmental remediation fee shall be calculated and assessed using a conversion factor calculated as follows: For all other (uncompacted) loads, the fee shall be one (1) dollar and seventy-five (75) cents for every five (5) cubic yards of waste. [401 KAR 47:095 Section 1(2)(b)]
7. **Recordkeeping:** The owner or operator of the facility shall remit quarterly payments of the environmental remediation fee, accompanied by a completed and signed document entitled "Environmental Remediation Fee Reporting and Submittal Form" (DEP form 5032). [401 KAR 47:095 Section 1(3)]
8. **Recordkeeping:** Quarterly payments shall be equivalent to one (1) dollar and seventy-five (75) cents multiplied times the number of tons of waste disposed in the municipal solid waste disposal facility during that quarter. [401 KAR 47:095 Section 1(4)]
9. **Recordkeeping:** Quarterly payments shall be due on April 30, July 31, October 31, and January 30 of each year. [401 KAR 47:095 Section 1(4)]

Variances, Alternate Specifications and Special Conditions:

1. **Wastestreams:** The owner or operator may only accept waste from the sources which are approved. No off-site waste streams shall be disposed of at this site. Any new source of waste shall be approved by the cabinet prior to accepting or disposing of the waste. [401 KAR 47:110 Section 3(1)]
2. **Operation:** The permittee shall maintain the waste at a slope of 5% to 25%. [401 KAR 47:120 Section 2]
3. **Recordkeeping:** The owner or operator of a less-than-one (1) acre construction/demolition debris landfill shall report quarterly pursuant to KRS 224.43-330. In addition, the owner or operator shall submit DEP 7046, Annual Waste Quantity Report, to the Cabinet annually and upon closure of the facility. [401 KAR 47:110 Section 2(3)(a)]
4. **Reports and Submittals:** The owner or operator shall submit the annual permit renewal fee in accordance with 401 KAR 47:090 Table V by September 30th of each year. The check or money order shall be made payable to the Kentucky State Treasurer and accompanied by form DEP 7119. [401 KAR 47:090 Section 5]

PERMIT

5. Operation: The permittee shall cover each ten (10) foot lift with a minimum of six (6) inches compacted soil. [401 KAR 48:320 Section 4]

6. Closure: The permittee shall cover the landfill with a minimum of two feet of soil, at a slope of 5% to 25%. The cap shall be graded to prevent ponding, and diversion berms shall be provided where surface runoff exceeds the capability of the final cover to sustain the flow without excessive erosion. [401 KAR 48:320 Section 5(1)]

7. Closure: The permittee shall establish permanent vegetative cover over the entire disturbed area with a minimum of two legumes, one annual grass, and one perennial type of grass in quantity sufficient to achieve at least 90% ground cover over the disturbed area. The final cover shall be fertilized and limed as necessary, and straw mulch shall be applied at 1.5 to 2.0 tons per acre, with netting added on runoff channels and slopes which exceed 15%. [401 KAR 48:320 Section 5(1)]

8. Closure: The permittee shall record a notice in the property deed that shall in perpetuity notify any potential purchaser of the property of the location and time of operation of the landfill, the nature of the waste disposed, and a caution against future disturbance of the area. Such notice shall be recorded in accordance with KRS Chapter 382 and proof of recording shall be submitted to the Cabinet prior to the Cabinet's acceptance of certification of closure. [401 KAR 48:320 Section 5(2)]

9. Closure: Upon completion of closure of the facility, contact the Cabinet to request a closure inspection for release for your financial assurance. Closure shall be completed no later than thirty (30) days after last receipt of waste. [401 KAR 48:320 Section 5(3), 401 KAR 48:320 Section 5(4)]

10. Operation: The permittee shall not allow to be disposed in this facility: household solid waste, industrial solid waste, hazardous waste, friable asbestos, petroleum contaminated soil, tires, appliances, furniture, batteries, light fixtures or other electrical devices containing hazardous or toxic materials, buckets, cardboard, paper, food or drink containers, or any other non-CDD waste. [401 KAR 47:080 Section 2(2), 401 KAR 47:120 Section 2]

11. Operation: The permittee shall place the waste in layers, two (2) feet thick or smaller, and compact each layer within one week of disposal. [401 KAR 48:320 Section 4]

Approved Applications - The owner or operator shall comply with applicable statutes and regulations and the following approved applications:

1. 02-03-2012 - New CDD < 1 Acre Activity (effective May 4, 2011) - ARP20110001
2. 10-22-2018- Revised Permit Condition - Recorded Deed Notice - APE20180006

ACTV0005 - CCR Unit - Landfill

Variations, Alternate Specifications and Special Conditions:

1. General: The owner or operator of a Coal Combustion Residuals (CCR) Unit shall comply with KRS Chapter 224 and 401 KAR Chapter 46 for the construction, operation, maintenance, and closure of a CCR Unit and other provisions pursuant to 401 KAR Chapters 30, 40, and 45 as applicable. The owner or operator shall comply with the applicable provisions in the Approved Applications listed on this permit document for ACTV0002 - Special Waste Landfill-Coal and with all provisions in the Approved Applications listed on this

PERMIT

permit document for ACTV0005 - CCR Unit - Landfill. [401 KAR 45:030, 401 KAR 45:140]

2. General: The owner or operator shall submit the \$15,000 annual fee no later than July 31 of each year pursuant to 401 KAR 46:120. Applications and reports specific to only the John Sherman Cooper Station Landfill, or only other CCR Units, for this facility shall not be subject to the filing fees pursuant to 401 KAR 45:250. [401 KAR 46:120 Section 4]

3. General: The John Sherman Cooper Station Landfill consists of approximately 96.32 acres and was converted from a Special Waste Landfill (ACTV0002) to a CCR Unit - Landfill (ACTV0005) on March 27, 2019. The landfill is a CCR Unit as defined by 401 KAR 46:101 and is subject to the standards pursuant to 401 KAR 46:110, and the landfill remains subject to the procedural requirements in 401 KAR Chapter 45. [401 KAR 45:020, 401 KAR 45:025, 401 KAR 45:030, 401 KAR 45:040, 401 KAR 45:050, 401 KAR 45:080, 401 KAR 45:140, 401 KAR 46:110]

Approved Applications - The owner or operator shall comply with applicable statutes and regulations and the following approved applications:

1. 03-27-2019 - See the Special Waste Landfill - Coal [ACTV0002] for additional information and site history
2. 03-27-2019 - Groundwater and Surface Water Monitoring Modification - APE20190001

Financial Assurance**ACTV0004 - Financial Assurance**

The following is a history of the financial assurance for this facility:

1. 07-19-2012 - Escrow Agreement #28112875, \$442,000.00
2. 07-09-2014 - Escrow Agreement #28112875 increased, \$2,542,000.00
3. 04-04-2016 - Escrow Agreement #28112875, \$2,542,000.00
4. 09-08-2017 - Escrow Agreement #28112875 increased, \$4,131,298.00

Monitoring Conditions**GSTR0002 - Groundwater Monitoring - Chapter 46 Groundwater Monitoring Group**

Group Members: AIOO3808 –

Variances, Alternate Specifications and Special Conditions:

1. Only a Kentucky Certified Monitoring Well Driller may construct or abandon monitoring wells. [401 KAR 6:320]
2. The owner or operator shall provide the division a minimum of ten (10) working days advance notice for all groundwater monitoring well construction and abandonment activities. [401 KAR 6:350 Section 12(2)]

PERMIT

3. Groundwater Monitoring: The owner or operator shall monitor groundwater and provide notifications in accordance with 401 KAR Chapter 46 and submit the results and analysis to the Division of Waste Management, Solid Waste Branch upon request. [401 KAR 45:030, 401 KAR 46:110 Section 10, 401 KAR 46:110 Section 8]

EXHIBIT

JP-5

Facility: Cooper Former Impoundment
Client: EKPC
Project: Project Scoping Report
Project No.: GLP8015
Date: June 14, 2023

Permit Requirement Matrix								
Federal	Description	Agency	Permit Duration	Permit Holder	Permit Application Development Duration	Approximate Agency Review	Applicable (Y/N)	Permit Considerations and Issues
a.	Endangered Species Act (ESA) of 1973	USFWS	USFWS Informal or Section 7 Consultation would not have expiration date, provided there are not changes in status or newly listed species. Payment of any mitigation fees will be required before any actions are taken that may affect T&E species.	EKPC	If applicable, 3 months to develop a Biological Assessment letter and surveys for sensitive species (seasonal).	90 days	Y	Any tree cutting, etc., will require coordination with USFWS (either Section 7 or Section 9). Section 7 consultation could result in schedule impact of 6 months. Payment of mitigation fees would result in minimal delay (1-2 months).
b.	The Migratory Bird Treaty Act of 1918 (16 U.S.C. 703-712, MBTA)	USFWS	Because the USFWS only issues permits to authorize individuals or organizations to take or possess birds for certain activities and purposes, any take outside of the permitted activities is prohibited. No permit will be issued for the project; steps must be taken to ensure no migratory bird take.	--	--	--	Y	If migratory birds may be present, would require coordination with USFWS if clearing occurs between April 1 to July 31.
c.	National Environmental Policy Act (42 U.S.C. 4321)	Any federal agency providing authorization or financial assistance	NEPA compliance is a one-time requirement that must be completed before federal support or approval is provided.	--	If applicable: Categorical Exclusion: One month Environmental Assessment: 3 months Environmental Impact Statement: Two years +	If applicable: Categorical Exclusion: Two months Environmental Assessment: Six months to one year Environmental Impact Statement: Two years +	N	If no CWA Section 404 permit is required, no NEPA compliance by COE required.
State and Local	Description	Agency	Permit Duration	Permit Holder	Permit Application Development Duration	Approximate Agency Review	Applicable (Y/N)	Permit Considerations and Issues
a.	Existing KPDES Permit Modification	KDOW	Ongoing.	EKPC	90 days pending KDOW review	May take up to two (2) years from submittal of application	Y	EKPC revised the KPDES permit with additional outfalls for this project.
b.	Kentucky Pollution Discharge Elimination System (KPDES) Permit BMPP Modification	KDOW	--	EKPC	The permittee will modify the BMP whenever there is a change in the facility or change in the operation. This must be completed prior to the work taking place. A Stormwater Pollution Prevention Plan (SWPPP) may be developed and an NOI submitted to supplement the BMP if KDOW requires it. This would take approximately 30 days.	No agency review necessary on BMP update.	Y	Modify BMPP to include best management practices for Closure in place process and supplement with SWPPP if needed.
c.	Kentucky Dam Permitting Regulations, 401 KAR 4:030, 4:060	KDOW	Construction permit duration is one (1) year from issuance, subject to successive renewals if needed. No "ongoing" permit but KDOW inspects and regulates existing dams and may order remedial work if needed.	EKPC	Relies on KDOW Application for Permit to Construct Across or Along a Stream Public notice to be run and proof included with permit application Application development - 3 to 6 months	20 working days	Y	Dam construction permit likely required for proposed stormwater control pond.
d.	Construction/Demolition Debris (CD&D) Landfill Permit, KRS Chapter 224 and 401 KAR Chapters 30, 40, 47, and 48 [KRS 224.40-305]	KDWM	Ongoing.	EKPC	12 months to develop the permit, complete the NOI, public notice and agency reviews	30 calendar days for NOI review 60 working days for application review 30 day public notice 90 working days for technical application	Y	Permit required for relocating the CD&D Landfill.
e.	Historic Preservation	Kentucky Heritage Council (KHC) (SHPO)	If applicable, KHC performs a Site Check to determine if historical or cultural resources will be impacted. No permit is issued. Agency, KHC and applicant must address potential adverse effects before action may proceed.	--	Section 106 Review and Compliance Cover Sheet and Site Check application - 5 days	With complete application - 30 days	Unlikely	Will require coordination with KHC if federal approval such as Section 404 permit is required. This will include a schedule impact of approximately 35 days. This is considered unlikely.
f.	Clay Mining for Borrow Site	KEEC	The permit is good for five years.	EKPC	6 months to develop the permit application, bond approvals, advertisements, public hearings, historical review, surface water quality plan, backfilling plan, equipment list	30 day review period but the agency is currently running behind on reviews	Unlikely	This is only required if EKPC purchases and provides property for this work. 6 months of preconstruction schedule time for developing the advertisement, public comment period, and public hearings in addition to the time required to purchase the property. 30 day review period.
g.	KYTC (Utilizing Their Culvert for Drainage)	KYTC	One time permit request	EKPC	1-2 months depending on bond timing	30 review period	Y	1-2 month prep based on stormwater design and 30 day review by KYTC

EXHIBIT

G

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

IN THE MATTER OF:

**ELECTRONIC APPLICATION OF EAST KENTUCKY)
POWER COOPERATIVE, INC. FOR APPROVAL)
TO AMEND ITS ENVIRONMENTAL)
COMPLIANCE PLAN AND RECOVER COSTS)
PURSUANT TO ITS ENVIRONMENTAL)
SURCHARGE, AND FOR THE ISSUANCE OF)
CERTIFICATES OF PUBLIC CONVENIENCE)
AND NECESSITY AND OTHER RELIEF)**

CASE NO.

2023-00177

**DIRECT TESTIMONY OF JOSEPH T. VONDERHAAR
ON BEHALF OF EAST KENTUCKY POWER COOPERATIVE, INC.**

Filed: June 30, 2023

I. INTRODUCTION

1 **Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS AND OCCUPATION.**

2 A. My name is Joseph T. VonDerHaar and my business address is East Kentucky Power
3 Cooperative, Inc. (“EKPC”), 1301 West Second Street, Maysville, KY, 41056. I am
4 the Plant Manager of Spurlock Power Station for EKPC.

5 **Q. PLEASE STATE YOUR EDUCATION AND PROFESSIONAL EXPERIENCE.**

6 A. I received a Bachelor of Science in Electrical Engineering from the University of
7 Dayton. I have been employed by EKPC since 2008 and have held my current position
8 within the EKPC organization since 2011. Before coming to EKPC I was the Vice
9 President of Operations for an industrial power transmission manufacturing company.
10 Additional utility experience includes positions in System Operations, Transmission
11 and Distribution for the Dayton Power & Light Company and Combined Cycle power
12 plant experience for Public Service of Indiana (now part of Duke Energy).

13 **Q. PLEASE PROVIDE A BRIEF DESCRIPTION OF YOUR DUTIES AT EKPC.**

14 A. I have overall responsibility for the safe, reliable and environmental compliant
15 operation of the Spurlock Power Station. I report directly to EKPC’s Craig Johnson
16 Sr. Vice President of Power Production.

17 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

18 A. The purpose of my testimony is first to describe EKPC’s existing coal-fired generation
19 assets, specifically the Hugh L. Spurlock Station (“Spurlock Station”) and John S.
20 Cooper Station (“Cooper Station”). I will discuss the projects EKPC has undertaken at

1 these facilities in order to comply with state and federal environmental rules and
2 regulations. My testimony is provided in support of EKPC's request to amend its
3 Environmental Compliance Plan to include twenty-three (23) other projects further
4 described herein. EKPC is also seeking to amend its Environmental Compliance Plan
5 to include the Spurlock Station Landfill, Peg's Hill (Area D), Phase 2 project and the
6 Cooper Station Former Impoundment Closure in Place project, for which EKPC is
7 seeking Certificates of Public Convenience and Necessity ("CPCN"). These two
8 projects are described in more detail elsewhere in this application.

9 **Q. ARE YOU SPONSORING ANY EXHIBITS?**

10 A. Yes. Included with my testimony as Attachment JV-1 is a compilation of summary
11 fact sheets relevant to the projects EKPC proposes for inclusion in its Environmental
12 Compliance Plan (except for the two CPCN projects, which are extensively detailed
13 elsewhere).

14 **Q. PLEASE DESCRIBE EKPC'S SPURLOCK STATION.**

15 A. The Spurlock Station is EKPC's largest coal-fired electric generation facility. It is
16 located near the City of Maysville, Kentucky, a few miles west of the center of town,
17 and situated along the Ohio River. The Spurlock Station consists of four (4) electric
18 generation units. Spurlock Station Unit #1 ("Spurlock 1") began commercial operation
19 on September 1, 1977, and has a net capacity of 300 MW. Spurlock Station Unit #2
20 ("Spurlock 2") became operational on March 2, 1981; at 510 MW of net capacity, it is
21 the largest electric generation unit at the Spurlock Station. Spurlock 1 and Spurlock 2

1 are both conventional, pulverized coal units. Spurlock Station Unit #3 is known as the
2 E. A. Gilbert Unit (“Gilbert Unit”) and began commercial operations on March 1, 2005.
3 The Gilbert Unit utilizes a Circulating Fluidized Bed (“CFB”) technology and boasts a
4 net generating capacity of 268 MW. Spurlock Station Unit #4 (“Spurlock 4”) is a sister
5 unit to the Gilbert Unit and also has 268 MW of generating capacity. Spurlock 4
6 became operational on April 1, 2009. The combined coal storage capacity of the
7 Spurlock Station is 490,000 tons and the Spurlock Station primarily burns a range of
8 eastern bituminous coals delivered by barge.

9 **Q. PLEASE DESCRIBE EKPC’S COOPER STATION.**

10 A. The Cooper Station is EKPC’s other coal-fired electric generation facility and is located
11 in the Burnside community of Pulaski County, Kentucky. The Cooper Station is
12 situated adjacent to Lake Cumberland and consists of two (2) electric generation units.
13 Cooper Station Unit #1 is rated at 116 MW and began commercial operation on
14 February 9, 1965. Cooper Station Unit #2 is larger with 225 MW of electric generation
15 capacity and entered service for EKPC on October 28, 1969. The combined coal
16 storage capacity of the Cooper Station is 250,000 tons. The Cooper Station units burn
17 eastern bituminous coal, delivered exclusively by truck.

18 **Q. AS COAL-FIRED GENERATION FACILITIES, ARE THE SPURLOCK AND**
19 **COOPER STATIONS HEAVILY REGULATED?**

20 A. Yes. Authorities at the federal and state levels oversee nearly every aspect of EKPC’s
21 operations, with particular emphasis on the monitoring and abatement of the wastes

1 and by-products that accompany coal-fired electric generation. EKPC continually
2 evaluates existing and anticipated environmental requirements to ensure its facilities
3 are best-positioned for compliance.

4 The testimony submitted herewith of Mr. Jerry Purvis, EKPC’s Vice President
5 of Environmental Affairs, provides extensive detail concerning the purpose, scope and
6 requirements of various state and federal environmental regulations that have
7 necessitated the projects EKPC proposes to add to its Compliance Plan. These include
8 the Effluent Limitation Guidelines and Standards for the Steam Electric Power
9 Generating Point Source Category (“ELG Rule”), the Disposal of Coal Combustion
10 Residuals from Electric Utilities Rule (“CCR Rule”), and other applicable
11 environmental regulations and requirements (including those associated with the
12 Kentucky Pollutant Discharge Elimination System (“KPDES”)), all of which apply to
13 coal combustion wastes and by-products from EKPC facilities utilized for production
14 of energy from coal.

15 **Q. HAS EKPC MADE INVESTMENTS IN ENVIRONMENTAL CONTROLS FOR**
16 **THE SPURLOCK STATION AND COOPER STATION?**

17 A. Yes. With respect to the generation assets themselves, Spurlock 1 is equipped with low
18 NOx burners, selective catalytic reduction (“SCR”) technology, a cold-side (or, in the
19 case of Spurlock 2, hot-side) electrostatic precipitator (“ESP”), a wet flue gas
20 desulfurization (“FGD”) scrubber, and a wet ESP. The Spurlock Station’s other two
21 (2) units employ Circulating Fluidized Bed combustion technology and are further

1 equipped with selective non-catalytic reduction technology, dry FGD scrubbers and
2 baghouses. Conversely, EKPC's Cooper Station has a dry ash handling system. The
3 Cooper Station's two (2) units share a common FGD system including a pulse jet fabric
4 filter, and one of its units is serviced by a SCR system.

5 **Q. WHAT OTHER PROJECTS HAS EKPC UNDERTAKEN IN ORDER TO**
6 **COMPLY WITH STATE AND FEDERAL REGULATIONS IMPOSED UPON**
7 **COAL-FIRED GENERATION FACILITIES?**

8 A. EKPC has invested significant resources in its Spurlock and Cooper Stations to ensure
9 continued compliance with environmental requirements. These investments, both in
10 the generation assets and the plant infrastructure necessary to support those assets, are
11 specifically targeted to comply with regulations and rules imposed by various
12 governmental authorities.

13 Although EKPC's environmental compliance strategies are too numerous and varied
14 to fully discuss here, EKPC's primary efforts in this regard are reflected in the projects
15 contained in (and proposed to be added to) its Environmental Compliance Plan. A
16 significant amendment to EKPC's Environmental Compliance Plan occurred in 2018
17 when the Commission approved various proposed modifications of existing Spurlock
18 Station facilities to comply with state and federal environmental requirements
19 (primarily related to the CCR and ELG Rules).¹ These improvements include

1 In the Matter of the Application of East Kentucky Power Cooperative, Inc. for Approval to Amend its Environmental Compliance Plan and Recover Costs pursuant to its Environmental Surcharge, Settlement of Certain Asset Retirement Obligations and Issuance of a Certificate of Public Convenience and Necessity and

1 conversion of the plant's bottom ash handling system, construction of a new wastewater
2 treatment plant and fly ash storage silo, the closure and repurposing of the on-site coal
3 ash pond, and the expansion of the existing landfill. These projects help ensure the
4 ongoing safety and stability of EKPC's generation fleet.

5 **Q. HOW MANY PROJECTS DOES EKPC SEEK TO ADD TO ITS**
6 **ENVIRONMENTAL COMPLIANCE PLAN AS PART OF THIS**
7 **PROCEEDING?**

8 A. EKPC seeks to amend its Environmental Compliance Plan to reflect twenty-five (25)
9 additional projects, including the two CPCN projects. Of the twenty-three (23) projects
10 not requiring a CPCN, EKPC believes that eight projects should be considered
11 amendments to projects already part of the approved Environmental Compliance Plan.
12 The fact sheets included in Attachment JV-1 identify those projects.

13 **Q. PLEASE DESCRIBE THE PROJECTS EKPC SEEKS TO ADD TO ITS**
14 **ENVIRONMENTAL COMPLIANCE PLAN.**

15 A. Besides the two CPCN projects, there are twenty-three (23) projects that EKPC desires
16 to add to its Environmental Compliance Plan. These projects are associated with the
17 Cooper Station inlet hopper discharge; Cooper Station pH plant treatment; groundwater
18 wells at Spurlock Station landfill and the J. K. Smith Station landfill; Spurlock Station
19 fly ash silo exhausters, dust suppression systems, and foggers; Spurlock Station air
20 heater equipment and systems; Spurlock Station Landfill; Spurlock Station lagoon

Other Relief, Order, Case No. 2017-00376 (Ky. P.S.C., May 18, 2018).

1 recirculation pumps; Spurlock 1 and 2 sonic horns; Spurlock 3 and 4 baghouse liners;
2 Spurlock Station backup limestone conveyor; Spurlock Station service water project;
3 Spurlock Station waste water treatment and ash system platforms; Spurlock Station
4 landfill haul road paving and bridge expansion joint protectors; and Spurlock Station
5 landfill Area D ponds and stream mitigation. Each of these projects, twenty-two (22)
6 projects in total, is described in detail as part of Attachment JV-1.

7 The remaining project EKPC proposes to include in its Environmental
8 Compliance Plan is the Spurlock Station Landfill, Area D, Phase 1. In its application
9 in Case No. 2017-00376² EKPC stated that it intended to expand the existing landfill
10 at the Spurlock Station to accommodate the transfer and disposal of CCR materials
11 from the Spurlock Station ash pond, which EKPC proposed to close as part of its
12 compliance with the CCR Rule. EKPC did not list the landfill expansion as a project
13 in its proposed 2018 compliance plan amendment. In its May 18, 2018 Order, the
14 Commission found that a CPCN was required prior to the construction of the expansion
15 of the Spurlock Station landfill, both for the initial expansion and all future phases of
16 the Spurlock Station landfill. The Commission further found that the expansion was
17 needed for the continued operation of the Spurlock Station landfill and that the
18 expansion represented the least-cost option of complying with the CCR Rule and the

2 See In the Matter of Application of East Kentucky Power Cooperative, Inc. For Approval to Amend Its Environmental Compliance Plan and Recover Costs Pursuant to Its Environmental Surcharge, Settlement of Certain Asset Retirement Obligations and Issuance of a Certificate of Public Convenience and Necessity and Other Relief, Case No. 2017-00376 (Ky. P.S.C. May 18, 2018). The Spurlock Station Landfill, Area D, Phase 1 was referred to as the “Peg’s Hill Landfill” in this case. EKPC did not a CPCN for the landfill expansion.

1 ELG Rule. The Commission granted a CPCN for the Spurlock Station Landfill, Area
2 D, Phase 1 in the May 18, 2018 Order; however, the project was not incorporated into
3 the 2018 compliance plan amendment approved by the Commission. Because it was
4 not part of the amended environmental compliance plan, EKPC has not included the
5 costs associated with the Spurlock Station Landfill, Area D, Phase 1 in its surcharge
6 recovery. Given the Commission's previous finding that Spurlock Station Landfill,
7 Area D, Phase 1 was the least-cost option of complying with CCR and ELG Rules,
8 EKPC believes this project should appropriately be included as part of its currently
9 proposed amendment to its Environmental Compliance Plan.

10 All of the projects EKPC seeks to add to its Environmental Compliance Plan
11 were (or will be) undertaken in order to maintain compliant operations at EKPC's coal-
12 fired generation facilities. The majority of the projects have been completed in the
13 usual course of EKPC's business.

14 **Q. WERE/ARE EACH OF THE PROJECTS EKPC SEEKS TO ADD TO ITS**
15 **COMPLIANCE PLAN REASONABLE AND COST-EFFECTIVE FOR**
16 **COMPLIANCE WITH APPLICABLE ENVIROMENTAL REQUIRMENTS?**

17 A. Yes.

18 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

19 A. Yes.

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ELECTRONIC APPLICATION OF EAST)
KENTUCKY POWER COOPERATIVE, INC. FOR)
APPROVAL TO AMEND ITS ENVIRONMENTAL)
COMPLIANCE PLAN AND RECOVER COSTS)
PURSUANT TO ITS ENVIRONMENTAL)
SURCHARGE, AND FOR THE ISSUANCE OF)
CERTIFICATES OF PUBLIC CONVENIENCE)
AND NECESSITY AND OTHER RELIEF)

CASE NO.
2023-00177

VERIFICATION OF JOSEPH T. VONDERHAAR

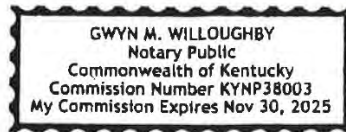
STATE OF KENTUCKY)
COUNTY OF CLARK)

Joseph T. VonDerHaar, Plant Manager of Spurlock Power Station for East Kentucky Power Cooperative, Inc., being duly sworn, states that he has supervised the preparation of his Direct Testimony and certain filing requirements in the above-referenced case and that the matters and things set forth therein are true and accurate to the best of his knowledge, information and belief, formed after reasonable inquiry.

Handwritten signature of Joseph T. VonDerHaar over a printed name line.

The foregoing Verification was signed, acknowledged and sworn to before me this 30th day of June, 2023, by Joseph T. VonDerHaar

Handwritten signature of Gwyn M. Willoughby over a printed name line 'Notary Public'.



EXHIBIT

H

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

IN THE MATTER OF:

ELECTRONIC APPLICATION OF EAST)	
KENTUCKY POWER COOPERATIVE, INC. FOR)	
APPROVAL TO AMEND ITS ENVIRONMENTAL)	
COMPLIANCE PLAN AND RECOVER COSTS	)	CASE NO.
PURSUANT TO ITS ENVIRONMENTAL	)	2023-00177
SURCHARGE, AND FOR THE ISSUANCE OF)	
CERTIFICATES OF PUBLIC CONVENIENCE)	
AND NECESSITY AND OTHER RELIEF)	

DIRECT TESTIMONY OF PATRICK BISCHOFF
ON BEHALF OF EAST KENTUCKY POWER COOPERATIVE, INC.

Filed: June 30, 2023

1 **I. INTRODUCTION**

2 **Q. PLEASE STATE YOUR NAME, TITLE AND BUSINESS ADDRESS.**

3 A. My name is Patrick Bischoff. I am Manager of Construction and Capital Projects
4 for East Kentucky Power Cooperative, Inc. (“EKPC”). My business address is 4775
5 Lexington Road, Winchester, Kentucky 40391.

6 **Q. PLEASE DESCRIBE YOUR EDUCATION AND PROFESSIONAL**
7 **EXPERIENCE.**

8 A. I received a Bachelor’s degree in Civil Engineering from the University of
9 Kentucky. I am a licensed professional engineer in the Commonwealth of
10 Kentucky. I worked in engineering consulting from 2006 to 2013. I have been
11 employed at EKPC since 2013 and a member of the project management
12 department since 2019.

13 **Q. PLEASE DESCRIBE YOUR DUTIES AS MANAGER OF**
14 **CONSTRUCTION AND CAPITAL PROJECTS FOR EKPC.**

15 A. I am responsible for the management, training, and direction of a multi-discipline
16 group of engineers and other technical staff to develop, plan, and execute the power
17 delivery and production capital and major maintenance, short and long range capital
18 and financial plans, and overall project portfolio performance. I report directly to
19 EKPC’s Director of Construction and Capital Management, Mr. Matt Clark.

20 **Q. HAVE YOU TESTIFIED BEFORE THE KENTUCKY PUBLIC SERVICE**
21 **COMMISSION BEFORE? IF SO, IN WHAT CASES?**

22 A. I have not previously testified before the Commission.

1 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS**
2 **PROCEEDING?**

3 A. The purpose of my testimony is to discuss EKPC’s planning, scoping, and
4 engineering efforts for the Hugh L. Spurlock Power Station (“Spurlock”) Landfill
5 Peg’s Hill (Area D) Phase 2 Project (“Project”).

6 **Q. ARE YOU SPONSORING ANY EXHIBITS?**

7 A. Yes. I am sponsoring the following exhibits, which I ask to be incorporated into
8 my testimony by reference:

- 9 • Exhibit PB-1 is the EKPC Landfill Management Plan
- 10 • Exhibit PB-2 is the EKPC Board Resolution authorizing construction of the
11 Project
- 12 • Exhibit PB-3 are the Preliminary Construction Plans
- 13 • Exhibit PB-4 is the Construction Quality Assurance Plan

14 **Q. WERE THE EXHIBITS THAT ARE ATTACHED TO YOUR TESTIMONY**
15 **PREPARED BY YOU OR SOMEONE WORKING UNDER YOUR**
16 **SUPERVISION?**

17 A. Yes, I prepared them.

18 **II. PEG’S HILL (AREA D) PHASE 2 OF THE SPURLOCK STATION**

19 **LANDFILL PROJECT**

20 **Q. PLEASE BRIEFLY DESCRIBE EKPC’S SPURLOCK STATION**
21 **LANDFILL.**

22 A. Spurlock Station, located in Maysville, KY, is the largest coal-fired electric
23 generating facility owned by EKPC and has been in operation since 1977. In

1 1982, EKPC received an operational permit for an inert landfill, southwest of the
2 plant site. Since 1982, EKPC has continued to develop Spurlock Landfill under
3 the KDWM inert landfill program, special waste landfill program, and now the
4 CCR program. The landfill began with Area A, and went through two horizontal
5 expansions, Areas B and C. In March of 2019, EKPC was issued an Agreed Order
6 by the Commonwealth of Kentucky Energy and Environment Cabinet Division of
7 Waste Management for the development, construction, and operation of a unique,
8 adjacent landfill, Peg’s Hill (Area D) Landfill. The sediment pond for Peg’s Hill
9 Landfill was constructed in 2022. The first cell (Peg’s Hill/Area D Phase 1) is
10 currently under construction in 2023.

11 **Q. PLEASE BRIEFLY DESCRIBE THE SPURLOCK STATION LANDFILL**
12 **PEG’S HILL (AREA D) PHASE 2 PROJECT AND ITS OBJECTIVE.**

13 A. The proposed design and construction of the Project for EKPC’s Spurlock’s landfill
14 will provide approximately 2,000,000 additional cubic yards of coal ash capacity
15 and will meet the requirements of the Coal Combustion Residuals (“CCR”) Rule.
16 Environmental compliance and reliability are the key objectives for the Project.
17 Due to projected ash production, a separate project to clean-close the existing ash
18 pond and the conversion of systems to only dry conveyance at Spurlock will exceed
19 the available volume in the current disposal areas within the next 2.5 years. The
20 planning, permitting, and construction of a new area must be timely performed in
21 advance of the predicted capacity depletion to assure that generation will not be
22 interrupted by the lack of a disposal facility.

1 The EKPC-owned and operated special landfill alternative has been
2 evaluated against other alternative disposal sites and found to be the most cost-
3 effective and reliable option by which to meet environmental legal requirements
4 and to keep the Spurlock generating units operating without interruption due to a
5 lack of or inadequate ash disposal facilities. EKPC's Landfill Management Plan,
6 included as Exhibit PB-1, requires design and planning for the Spurlock landfill
7 based upon the generation and placement of 1,300,000 cubic yards per year;
8 therefore, the total yearly savings using the Spurlock landfill as opposed to sending
9 offsite is estimated to be \$47,567,000 per year.

10 **Q. HAVE YOU BEEN INVOLVED IN THE PLANNING, SCOPING AND**
11 **ENGINEERING EFFORTS FOR THE PEG'S HILL (AREA D) PHASE 2**
12 **SPURLOCK STATION LANDFILL PROJECT FROM THE BEGINNING**
13 **OF THE PROJECT?**

14 A. Yes.

15 **Q. PLEASE PROVIDE A DESCRIPTION FOR EACH ELEMENT OF THE**
16 **PROPOSED PROJECT.**

17 A. This project includes the design and construction of Peg's Hill (Area D) Phase 2.
18 The landfill cell will be 17.33 acres and will provide approximately 2,000,000
19 cubic yards of ash disposal capacity for EKPC's Spurlock Power Station. This
20 will be the second landfill cell constructed in Peg's Hill (Area D) and is projected
21 to provide capacity through 2026. The design and construction will comply with
22 all state and federal regulations and will include a composite liner system
23 (geosynthetic clay and 60-mil HDPE) and a continuous leachate collection

1 system. Additional scope elements of the cell construction include perimeter
2 ditches and drainage features, subgrade preparation, and access roads.

3 **Q. PLEASE EXPLAIN THE NEED FOR THIS PROJECT IN DETAIL.**

4 A. To ensure the uninterrupted operation of Spurlock Station, sufficient capacity to
5 dispose of CCR must be maintained at all times. The risk of running out of
6 capacity at Spurlock Landfill has significant financial implications for the
7 operational costs for Spurlock Station.

8 **Q. PLEASE DESCRIBE HOW EKPC MANAGES ITS LANDFILL
9 FACILITIES.**

10 A. EKPC owns, operates, and maintains multiple landfill facilities. The largest
11 landfill in EKPC's generation fleet is the CCR Landfill at Spurlock Station. Since
12 1982, when Spurlock Station Landfill received an operational permit as an inert
13 landfill, EKPC has continued to manage, develop, construct, and operate Spurlock
14 Station Landfill. In 2013, EKPC formalized this management process with the
15 Landfill Management Plan. The Plan outlines goals, processes, and resources to
16 ensure adequate landfill capacity and permit coverage, requirements for design,
17 construction, and quality assurance, and provides operational and maintenance
18 controls and oversight to comply with permit conditions and regulatory
19 requirements. This management process differs from other capital projects that
20 EKPC executes due to the frequency and consistency of landfill cell construction.
21 In lieu of scoping and engineering reports, the Landfill Management Plan
22 prescribes minimum constructed and permitted capacities that will be maintained

1 at all times. This sets a frequency for construction and provides sizing guidance
2 as well. EKPC's Landfill Management Plan is attached as Exhibit PB-1.

3 **Q. PLEASE DESCRIBE THE ALTERNATIVES TO THE PROPOSED**
4 **PROJECT THAT WERE CONSIDERED AND WHY THOSE**
5 **ALTERNATIVES WERE NOT SELECTED.**

6 A. During preliminary design of the Peg's Hill (Area D) Phase 2 landfill cell, EKPC
7 evaluated four layout alternatives. Each of the four layouts provided varying
8 horizontal footprints and associated waste capacities. The four layout alternatives
9 were:

- 10 • Design TWASTE V2: 15.4-acre footprint; 2,043,160 cubic yards of waste
11 capacity
- 12 • Design TWASTE V11: 21.8-acre footprint; 2,667,058 cubic yards of
13 waste capacity
- 14 • Design TWASTE V12: 18.4-acre footprint; 2,440,983 cubic yards of
15 waste capacity
- 16 • Design TWASTE V14: 17.8-acre footprint; 2,163,780 cubic yards of
17 waste capacity

18 Out of the four layout alternatives, the fourth TWASTE V14 was selected
19 as it best meets the size, volume, and operational needs at Spurlock Landfill. A
20 fifth alternative was also considered, one that assumes disposal of Spurlock
21 Station's CCR at an offsite landfill. EKPC evaluated the cost of offsite disposal
22 and the cost was estimated at \$50.00 per cubic yard. This includes the hauling,
23 tipping fee, and disposal fee at the offsite landfill. Offsite disposal is not

1 economically viable when compared to EKPC's costs to own and operate its own
2 landfill. EKPC's cost to develop, operate, and maintain Spurlock Landfill in 2022
3 was estimated at \$13.41 per cubic yard of material. This cost to EKPC includes all
4 permitting, design, construction, maintenance, and contract operations at Spurlock
5 Landfill. If EKPC was forced to place waste offsite due to limited capacity, or
6 elected to dispose of CCR offsite, the annual cost increase to dispose of the CCR
7 waste generated at Spurlock Station, assuming an annual waste production of
8 1,300,000 cubic yards, would be \$47,567,000. Due to the significant cost
9 difference, it is not a viable option for EKPC to pursue the offsite disposal
10 alternative.

11 **Q. PLEASE DESCRIBE WHY THIS PROJECT IS NOT DUPLICATIVE OF**
12 **ANY OTHER SOLUTIONS OR RESOURCES CURRENTLY HELD BY**
13 **THE UTILITY.**

14 A. The development and construction of the Peg's Hill (Area D) Phase 2 project is
15 consistent with the development guidelines outlined in EKPC's Landfill
16 Management Plan. The Plan provides operational limits on the minimum amount
17 of constructed and permitted landfill capacity at all times. The Plan further
18 outlines risk mitigation components related to environmental and regulatory
19 compliance at EKPC's landfill facilities.

20 The Peg's Hill (Area D) Landfill at Spurlock Station received an Agreed
21 Order, providing environmental and regulatory framework for the development,
22 design, construction, and operation of the landfill from the Kentucky Division of
23 Waste Management in March of 2019. This Agreed Order is being provided by

1 Jerry Purvis as an attachment to his testimony. The permit for Peg’s Hill (Area
2 D) Landfill was required due to the waning disposal capacity in the previously
3 permitted Area C of Spurlock Landfill. The Peg’s Hill (Area D) Landfill is the
4 only available on-site construction alternative for Spurlock Station.

5 **Q. WHY WAS A SCOPING REPORT NOT PREPARED FOR THE**
6 **SPURLOCK STATION LANDFILL PEG’S HILL (AREA D) PHASE 2**
7 **PROJECT?**

8 A. The scope for the Spurlock Peg’s Hill (Area D) Phase 2 project is dictated by the
9 EKPC Landfill Management Plan. The size and capacity are large enough to
10 ensure that Spurlock Station has a minimum storage capacity of two years,
11 ~2,600,000 cubic yards, at all times. Landfill cells are designed to target two to
12 three years of CCR disposal capacity, with the caveat that cells should be
13 constructed in one calendar year.

14 The Agreed Order from the Kentucky Division of Waste Management and
15 the CCR Rule dictate minimum design and construction standards of the landfill
16 cell.

17 The scope for the Spurlock Peg’s Hill (Area D) Phase 2 project includes:

- 18 • Earthwork and subgrade development associated with a cell of 17.33 acres
19 in size, providing approximately 2,000,000 cubic yards of capacity
- 20 • Liner system – geosynthetic clay liner and 60-mil HDPE
- 21 • Continuous leachate collection system utilizing geocomposite material and
22 a trunk and branch drainage system
- 23 • Perimeter ditches to control run-on and run-off storm water

1 **Q. WHAT ARE THE ESTIMATED CONSTRUCTION COSTS FOR EACH**
2 **ELEMENT OF THE PROPOSED PROJECT?**

3 A. The total estimated cost to construct the Peg’s Hill (Area D) Phase 2 project is
4 \$15,730,000. The estimate is based off the assumption of a single construction
5 contract issued for all labor and materials associated with constructing the landfill
6 cell. The major elements of the project have been estimated as follows:

- 7 • Earthwork/Subgrade development - \$3,364,078.00
- 8 • Liner system – geosynthetic clay liner and 60-mil HDPE - \$4,804,297.50
- 9 • Leachate collection system - \$2,331,399.00
- 10 • Perimeter ditches - \$347,590.00
- 11 • Ancillary construction activities - \$1,077,635.50

12 In addition to the construction contract, EKPC contracts geotechnical
13 inspection, survey, design engineering, and construction quality-assurance
14 engineering. These services are estimated at a total of \$925,000.00. Owner’s
15 costs, which include EKPC project management and inspection, are estimated at
16 \$525,000.00. Lastly, environmental permitting costs, legal fees, and
17 miscellaneous construction costs are estimated at \$600,000.00. There is a 13%
18 owner’s contingency that has been applied to all aforementioned costs,
19 representing \$1,755,000.

20 **Q. DO YOU BELIEVE THAT THE \$15,730,000 COST ESTIMATE FOR THE**
21 **PEG’S HILL (AREA D) PHASE 2 SPURLOCK STATION LANDFILL**
22 **PROJECT IS A REASONABLE ESTIMATE?**

1 A. Yes. The estimated cost of the Project is \$13,975,000, plus a contingency of
2 \$1,755,000, for a total authorization of \$15,730,000.

3 **Q. WILL THERE BE ANY ONGOING OPERATIONS AND MAINTENANCE**
4 **EXPENSE FOR THE PEG’S HILL (AREA D) PHASE 2 SPURLOCK**
5 **STATION LANDFILL?**

6 A. Yes, the construction of Peg’s Hill (Area D) Phase 2 will result in operations and
7 maintenance costs of \$242,000 per year. This cost includes the incremental
8 increase in annual general maintenance for the landfill, as well as general
9 environmental engineering consulting, groundwater sampling, operational and
10 environmental inspections.

11 **Q. ARE THERE ANY PUBLIC UTILITIES, CORPORATIONS OR PERSONS**
12 **WITH WHOM THIS PROJECT IS LIKELY TO COMPETE?**

13 A No.

14 **Q. WHAT IS THE TIMELINE FOR COMPLETION OF THE PROJECT?**

15 A. This project is scheduled for completion in the fourth quarter of 2024.

16 **III. CONCLUSION**

17 **Q. PLEASE SUMMARIZE YOUR TESTIMONY.**

18 A. The Peg’s Hill (Area D) Phase 2 landfill cell construction project is a prudent
19 measure and routine business function for EKPC to continue to operate Spurlock
20 Station and keep its generating capacity of 1,346 MW available to our Owner-
21 Members. The proposed project presents the most reasonable, least-cost option for
22 continued onsite disposal of CCR byproducts and helps ensure the Station’s units
23 may continue to be valuable resources.

1 Q. DOES THIS CONCLUDE YOUR TESTIMONY?

2 A. Yes.

EXHIBIT

PB-1



Revision #:	3.0
Origination Date:	February 2013
Effective Date:	April 2023

Program Management Plan Cover Sheet

Title: EKPC Landfill Management Plan

Author(s): Patrick Bischoff; Jarrad Burton

Approved by:

Brad A. Young

[Brad A. Young \(May 3, 2023 10:04 EDT\)](#)

Craig Johnson, Senior Vice President, Power Production

Craig Johnson

[Craig Johnson \(May 8, 2023 08:59 EDT\)](#)

Brad Young, Vice President, Engineering & Construction

Jerry Purvis

[Jerry Purvis \(May 8, 2023 11:59 EDT\)](#)

Jerry Purvis, Vice President, Environmental Affairs

May 3, 2023

Date

May 8, 2023

Date

May 8, 2023

Date

EKPC Landfill Management Plan

Prepared by:

**Patrick Bischoff, P.E.
Jarrad Burton, P.E.
East Kentucky Power Cooperative
4775 Lexington Rd.
Winchester, KY 40391**

April 2023

Revision 3.0

EKPC Landfill Management Plan

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Attachments

Attachment A	Facility Maps
Attachment B	Landfill Cost Comparison
Attachment C	Landfill Projection Charts – Spurlock and Cooper
Attachment D	Landfill Management Responsibility Breakdown
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Attachment F	Landfill Departmental/Personnel Responsibility Matrix

Appendices

Appendix 1	Coal Combustion Residual Rule Quality Assurance Plan
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I. Executive Summary:

In 2013, the East Kentucky Power Cooperative (EKPC) Board approved a Landfill Management Program that dedicated employees, equipment, technology, and budget to efficiently manage EKPC's landfill facilities, while also minimizing environmental and operational risks. This management program has been utilized to develop, operate, and maintain Spurlock, Cooper, Smith, and Hancock Creek landfills. Through these management efforts at each site, the Landfill Management Program has provided significant cost saving benefits to our Owner-members since its inception.

With the promulgation of the Coal Combustion Residual (CCR) Rule in 2015 by the Environmental Protection Agency (EPA), EKPC has taken additional steps and measures to maintain compliance with this federal rule. Significant changes experienced by the CCR Rule include routine 7-day and annual inspections, a host of certification reports for the design, operations, closure and post-closure, location restrictions, and groundwater monitoring related to EKPC's landfills, as well as increased risk from sub-standard construction and operational practices.

The two primary risks to EKPC in regards to the landfill facilities: providing sufficient operational capacity for placement of CCR materials, and maintaining compliance with existing permits and the CCR Rule.

The risk of running out of capacity at either Spurlock or Cooper landfills has significant financial implications on the operational costs of those facilities. For example, if Spurlock Landfill were to run out of capacity and CCR material had to be hauled off-site, Spurlock Station would incur an additional \$47,567,000 (Operations and Maintenance budget) per year while another landfill cell is constructed.

Non-compliance with existing Kentucky Division of Waste Management (KDWM) permits and the CCR Rule also bring significant financial risk. At Spurlock Landfill, groundwater contamination could lead to landfill closure and cost an additional \$115,000,000 over a three year period to permit and construct a new landfill. Violations of the Clean Water Act either during construction or operations would result in a fine of up to \$37,500 per day. The CCR Rule utilizes a unique enforcement mechanism for CCR landfills and ash impoundments. Owners of CCR units are required to place a variety of reports, plans, and data on publicly accessible websites. The public, governmental agencies, and third-party interest groups can access the information at any time, and if perceived issues in the posted information exist, these entities can sue the owner of the CCR unit.

This revision to the Landfill Management Plan documents the measures and controls in place to continue to maintain cost effective facilities that provide financial savings to our Owner-Members, while also minimizing risk with Kentucky Division of Waste Management permits and compliance with the CCR Rule.

II. Background:

EKPC owns, operates, and maintains four landfill facilities; three are active and one is inactive. The three active landfills are Spurlock, Cooper, and Smith Landfills. The inactive facility is Hancock Creek Landfill, located at the EKPC Headquarters facility in Winchester. Maps of each facility can be found in Attachment A.

EKPC implemented the Landfill Management Program in 2013 to ensure adequate landfill capacity and permit coverage, provide the highest level of design, construction, and quality assurance during the development of landfill cells, caps, and supporting facilities, and provide operations and maintenance controls and oversight to comply with permit conditions and regulatory requirements. The Landfill Management Plan outlined how EKPC would execute this program, meet the goals listed above, and do so in a manner that provides great financial benefit to the Cooperative.

Beginning in 2013, resources were approved and provided to execute the Plan. A civil engineering position in Production Engineering was created to oversee and support the Landfill Management Program. The engineer is responsible for planning, design, developing construction documents, managing capital construction projects, and providing engineering support on all other landfill activities. An Inspector in Production Engineering was hired to act as daily EKPC representation on capital and maintenance projects. The inspector monitors, confirms, and documents that projects are constructed in accordance with permits, construction documents, and Construction Quality Assurance (CQA) requirements. Finally, civil design drafting software, Civil 3D, was purchased for engineering and design use, annual aerial surveying dollars were dedicated to the budget for capacity and planning purposes, and two four-wheel drive vehicles were purchased for site and project accessibility at the landfills.

Since 2013, EKPC has continued to construct and operate EKPC landfills as required. In that timeframe, four landfill cells have been completed at Spurlock and another will be completed in 2023, one cell was completed at Cooper, and Smith Landfill was permitted and constructed for the ash pond clean closure at Dale Station. These projects have met the regulatory requirements of the Kentucky Division of Waste Management (KDWM) and, after the effective date in 2015, the Coal Combustion Residual (CCR) Rule.

As part of the CCR Rule, EKPC has developed a host of certification reports for the design, operations, closure and post-closure, location restrictions, and groundwater monitoring for active EKPC landfills. Operational changes have also been implemented to comply with the Rule. Specifically, 7-day and annual inspections are executed by contract consultant's at all active landfills. Observations made during inspections identifying action items are tracked through EKPC work order management software. EKPC also utilizes consulting support to assist in the day-to-day oversight of operations at each active landfill. A full breakdown of the CCR Rule

roles and responsibilities can be found in the CCR Rule Quality Assurance Plan (QAP) found in Appendix 1.

Due to changes in the overall management of EKPC landfills, including compliance with the CCR Rule, the Landfill Management Plan has been updated for accuracy. The following Plan will provide a guide for EKPC to continue to effectively operate and maintain environmental compliance at each landfill and act as a reference document for future and current employees involved with landfills at EKPC.

III. Landfill Management Components

a. Facilities

- i.** Spurlock Landfill – Spurlock Station, located in Maysville, KY, is the largest coal-fired electric generating facility owned by EKPC and has been in operation since 1977. In 1982, EKPC received an operational permit for an inert landfill, southwest of the plant site. Since 1982, EKPC has continued to develop Spurlock Landfill under the KDWM inert landfill program, special waste landfill program, and now the CCR program. The landfill began with Area A, and has undergone two horizontal expansions, Areas B and C. The most recent completed cell at Spurlock is Area C Phase 5. Area D (Peg’s Hill) began construction in March of 2022. The pond finished in November 2022 and Phase 1 is expected to finish by fall 2023. Phase 2 and 3 are expected to finish in 2024 and 2025, respectively.
- ii.** Cooper Landfill – The John Sherman Cooper Station is a coal-fired electric generating facility, located in Burnside, KY, that has been in operation since 1964. In 1995, EKPC received a construction permit for the special waste landfill, and in 1996 KDWM issued the final operating permit for the facility. EKPC has disposed dry coal combustion byproducts in the permitted special waste landfill since 1996.
- iii.** Smith Landfill – J.K. Smith Power Station, located in Trapp, KY, has been the site of various actual and proposed electric generation projects since 1979. The 3,272-acre property was originally purchased in 1979 and 1980 with plans to construct two coal-fired steam electrical generating units. The need for the project did not materialize as anticipated and the project was delayed in 1984, and eventually canceled in 1993. EKPC began to construct gas-fired combustion turbines (CTs) at Smith Station to provide peaking generation capacity. Currently there are nine CTs in operation at Smith Station.

In an effort to maintain coal combustion byproduct disposal capacity for the William C Dale Power Station (Dale Station), and also provide backup storage capacity for Cooper and Spurlock Stations, EKPC identified an area at Smith Station to develop a 64-acre site for the construction of a special waste landfill. KDWM issued a construction permit in 2013, and in conjunction

with the clean closure efforts of the ash impoundments at Dale Station, KDWM issued an operating permit for Smith Landfill in 2016.

- iv. Hancock Creek Landfill - Located at EKPC's Headquarters campus in Winchester, KY, Hancock Creek Landfill was permitted and developed to accept coal combustion byproducts from Dale Station. The landfill was initially permitted as an inert landfill with KDWM in 1985. The landfill ceased receiving ash, was capped and closed in 2012, and the post-closure monitoring with KDWM commenced. These post-closure monitoring requirements continue today.

b. Planning

Added generation at Spurlock and the installation of flue gas desulfurization equipment at each station have heightened the need for prudent planning at EKPC landfills. Both Cooper and Spurlock Landfills provide a dramatic savings to EKPC and if landfill capacity were to run out at any time, there would be significant cost increases to operations. A Landfill Cost Comparison outlining the savings is contained in Attachment B. To minimize the risk, EKPC has modified the construction sequence to ensure a minimum capacity of two-years of ash disposal at any given time at each facility. For Spurlock Landfill, the historical planning disposal volume has ranged from 1,200,000 cubic yards to 1,800,000 cubic yards. Since joining PJM, the ash disposal quantities have lowered. As a result, a rolling five year average will be utilized to project capacity needs. Generation projections, two years out, will also be evaluated to ensure planning volumes are appropriate. The Spurlock Ash Pond Closure is expected to increase the disposal volume by anywhere from 200,000 to 650,000 cubic yards per year from 2022 through 2025. A minimum of two years storage capacity will be maintained at all times, at each facility. To manage constructability concerns, cells are designed to handle between two and four years of capacity. With tight earthwork construction windows in Kentucky, May through November, and the need to complete cells in one calendar year, construction must be started on time to ensure capacity.

In an effort to meet these planning needs, EKPC has developed, and utilizes capacity tracking tools to monitor and plan cell constructions and landfill expansions. Annual aerial surveying is performed to provide a 'point in time' reference for volume calculations. This surveyed surface is then compared to the permitted final fill configuration to provide amount of capacity available. To refine the available space calculation from the time of the survey to time of the calculation, the monthly ash generation totals can then be backed out for each month between the date of calculation and the date of survey. The available capacity is then entered into the Landfill Projection Charts (see Attachment C). This chart is utilized to manage and report landfill capacity. The chart tracks projected ash production, actual ash production, available constructed capacity, and permitted capacity.

c. Permitting/Environmental Compliance

The EKPC Environmental Department is the responsible party for developing and submitting permit applications for all EKPC landfill facilities. Environmental continues to maintain close relationships with KDWM, Kentucky Division of Water, and United States Army Corps of Engineers. EKPC's goal is to provide a minimum of 10-years of permitted capacity at all times.

In 2015, the promulgation of the Coal Combustion Residual (CCR) Rule, changed the landscape for utilities that develop, utilize, and manage landfills and ash ponds that receive coal combustion byproducts. The requirements of the CCR Rule have extended beyond the Federal level and are now being integrated into state permitting programs. Historically, through the Kentucky Division of Waste Management (KDWM), all of EKPC's landfill facilities held Chapter 45 Special-Waste Permits. Those permits required lengthy and thorough KDWM review of permit applications and plans, inspections during construction, and final approval prior to waste placement. KDWM is currently drafting new regulations to replace Chapter 45. The EKPC Environmental Department is working closely with KDWM and the utility community to track regulatory changes and meet EKPC needs. EKPC does not anticipate any changes in the forthcoming regulations to the liner system (currently composite – clay and geomembrane components) or leachate collection design.

In addition to permitting changes, the CCR Rule has resulted in additional operational and reporting requirements. These include, but are not limited to:

- Hosting and Maintaining a Publicly Available Website
- Execute and Document 7-Day and Annual Inspections
- Develop, Sample, and Report Groundwater Monitoring Network
- Provide Plans and Certifications for:
 - o Closure and Post-Closure Care
 - o Run-On/Run-off Control System
 - o Location Restrictions
 - o Fugitive Dust Control

The CCR Quality Assurance Program and plan outlines the roles and responsibilities throughout EKPC Engineering and Environmental. A responsibility breakdown figure can be found in the QAP.

d. Construction

The construction of landfill cells, sediment ponds, and related facilities requires rigorous oversight and conformance to the highest construction standards. EKPC has developed a construction program for landfills that meets these stringent needs.

EKPC provides project management from the Capital Construction and Production Engineering departments. The Project Manager assigned to the project oversees all activities from design through construction. This includes development of contract documents, procurement of engineering design, surveying, geotechnical, construction quality assurance engineering, and construction contracts, oversight of all

forementioned contracts, schedule management, budget management, and coordination with Plant representatives and other EKPC stakeholders.

EKPC also employs a dedicated construction inspector, currently out of the Capital Construction department, to be daily EKPC representation during construction. The inspector position ensures proper construction of the subgrade, composite liner system, and leachate collection system. Daily representation and oversight of the construction contractor is imperative to the success and quality of the construction project. By providing a full-time inspector on site EKPC is able to minimize both long term and short term risk. The inspector minimizes the long term risk by making certain the liner is constructed correctly, providing protection to the environment for the life of the landfill. The inspector will minimize short term risk by making sure the contractor is following all EKPC environmental permits as required. In large excavation projects, such as cells, storm water pollution prevention measures can be difficult and must be tended to at all times. An onsite inspector will make sure the contractor is properly performing these duties; thus, protecting EKPC's KPDES permits and assuring compliance and avoiding fines and penalties. Fines for violation of the Clean Water Act can be up to \$37,500 per day.

e. Risk

Two main risks exist for the continued development and operations of EKPC landfills: maintaining sufficient capacity for CCR disposal operations and compliance with environmental permits and regulated programs.

EKPC's cost to develop, operate, and maintain Spurlock Landfill in 2022 was estimated at \$13.41 per cubic yard of material. This cost to EKPC includes all permitting, design, construction, maintenance, and contract operations at Spurlock Landfill. If EKPC were forced to dispose CCR wastes at an offsite landfill, the cost would increase to approximately \$50.00 per cubic yard. This cost includes the hauling, tipping fee, and disposal fee at an offsite landfill and reflects a discounted disposal fee based on projected quantities.

The financial risk, if sufficient capacity is not maintained, to EKPC is significant. At Spurlock alone the cost increase based off of planned disposal rates would be \$47,567,000 per year.

Coal combustion residual landfills are receiving more public scrutiny in recent years, particularly through the legal enforcement component of the CCR Rule. Now, more than ever, the quality of construction and operations of a CCR landfill is paramount. Risk exposures related to the protection of groundwater, surface water, and air quality exist for all EKPC CCR landfills and are directly tied to the proper execution of construction and operational activities.

The CCR Rule incorporates a unique enforcement mechanism for CCR landfills and ash impoundments. Owners of CCR units are required to place a variety of reports, plans, and data on publicly accessible websites. The public, governmental agencies,

and third-party interest groups can access the information at any time, and if perceived issues in the posted information exist, these entities can sue the owner of the CCR unit.

EKPC is also regulated at the State level through a Kentucky Pollutant Discharge Elimination System (KPDES) Permit for surface water quality, Kentucky Division of Air Quality (KDAQ) Title V Permit for air emissions, and Kentucky Division of Waste Management (KDWM) for landfill design, construction, operations, and groundwater quality.

Each permitting program has associated financial risks for non-compliance. For example, violations of the Clean Water Act, through non-compliance with a KPDES permit, fines can be up to \$37,500 per day. And the fine can be retroactive to the last documented point of compliance.

IV. Landfill Management Plan

The Landfill Management Plan will focus on all five areas of landfill management: Planning, Permitting, Construction, Operations, and CCR Rule Compliance. See Attachment D for a responsibility breakdown for each landfill facility.

a) *Planning*

This Landfill Management Plan proposes methodology to calculate landfill capacity and trend ash production to maintain sufficient permitted and constructed capacity at all times. First, annual aerial surveying will be contracted and performed to provide a “point in time” reference for each active landfill. The current surface of the landfill will be compared against the final design fill configuration surface to provide the amount of capacity available. The capacity available will be input into the Landfill Projection Chart (See Attachment C). This chart will be used as the tool to manage landfill capacity and report landfill capacity. It shows the projected ash production, actual ash production, constructed capacity, and permitted landfill capacity. From this chart a 10 year plan will be set for each facility. The Production Engineering or Construction & Capital Management department will lead all planning efforts, coordinating with the needs of each Station, consulting all stakeholders, and informing stakeholders as needed. Planning for each specific facility is described further below.

- i. *Spurlock Landfill* - At Spurlock Station, the five year rolling average (2018-2022) of 1,300,000 cubic yards of ash is planned to be wasted per year. In addition, through 2026, an additional 200,000 to 650,000 cubic yards per year will be included to account for the closure of the Spurlock Ash Pond. To minimize the risk of losing sufficient capacity for operations at Spurlock, the following guidelines have been established:
 - o Landfill cells will be designed to target two to three years of ash capacity. This will allow cells to be completed in one calendar year.

- Permitting capacity of at least ten years will be maintained at all times.
 - A five year rolling average will be utilized to plan landfill development. A minimum of two years' capacity will be maintained at all times.
 - Project budgets and capital work plan development will be created so that design occurs two calendar years prior to a planned construction. This will allow for more accurate annual budget development. For example, if a landfill cell is planned for 2024, the engineering design component would have to be budgeted for 2022. While the capital work plan may have a +/- 30% estimate at the time of project creation, by having a 100% final design prior to the 2024 budget due date (April 1, 2023), EKPC can refine the constructed cost and accurately reflect the estimated constructed cost in the budget.
 - Constructed capacity, permitted capacity, planned and actual waste quantities are tracked for Spurlock Station to monitor status of the landfill and develop capital projects and work plans.
 - Annual surveys are executed to track volumes placed in the landfill. Volumes provided through the landfill operations contract are also utilized for reporting purposes.
- ii. *Cooper Landfill* – Ash generation at Cooper Station has reduced since EKPC has joined PJM. The historical high in ash processed was 228,091 cubic yards in 2012. From 2018 through 2022, Cooper has processed an average of 50,393 cubic yards of ash. For planning purposes, 80,000 cubic yards per year will be assumed (peak during the 5 year average).
- Landfill cells will be designed to target two to three years of ash capacity. This will allow cells to be completed in one calendar year.
 - Permitting capacity of at least ten years will be maintained at all time.
 - A five year rolling average will be utilized to plan landfill development. A minimum of two years' capacity will be maintained at all times.
 - Project budgets and capital work plan development will be created so that design occurs two calendar years prior to a planned construction. This will allow for more accurate annual budget development.
 - Constructed capacity, permitted capacity, planned and actual waste quantities are tracked for Cooper Station to monitor status of the landfill and develop capital projects and work plans.
 - Annual surveys are executed to track volumes placed in the landfill.
- iii. *Smith Landfill*
- Waste placement is tracked and is required to occur at least once every two years to maintain Smith Landfill as an “active” landfill under the CCR Rule.
 - Smith is permitted to accept CCR waste from Spurlock or Cooper and can act as a backup to either facility in an emergency situation.
- iv. *Hancock Creek Landfill*

- Hancock Creek Landfill is currently in post-closure monitoring with KDWM and was closed prior to the effective date of the CCR Rule.
 - No new additions of CCR is expected at Hancock Creek Landfill
- b) *Permitting:* Permitting the landfills is the responsibility of EKPC Environmental. Environmental's significant permitting experience and relationships with the Kentucky Division of Waste Management, Kentucky Division of Water, and US Army Corps of Engineers are an asset to the management of EKPC landfills. This plan will keep the current policy of providing a minimum of 10 years permitted capacity available at all times. A detailed permit strategy can be found in Attachment E Landfill Permit Phasing.
- c) *Construction:* Construction & Capital Management or Production Engineering will lead construction project efforts at all landfill facilities. All landfill cells and other landfill related projects (ponds, haul roads, etc.) are incorporated into the capital work plan and budget by the engineering groups. The designated Project Manager then sees the project through design and construction. This Project Manager will procure all services required for the construction project, including but not limited to: construction contractor, material purchases, surveying consultant, CQA consultant, and geotechnical inspection. During construction the Project Manager holds weekly progress meetings, coordinates with call stakeholders (contractor, CQA engineer, surveyor, geotechnical inspector, EKPC plant personnel, EKPC environmental, landfill operations) to maintain the success of the project, reviews billing worksheets, initiates the invoicing process through PeopleSoft, reviews as-builts, and establishes asset structure breakdown.

Construction & Capital Management also provides an inspector for construction of landfill cells and landfill related projects. The inspector is on site at all times to monitor construction activities and acts as EKPC's most important CQA measure. By providing a full time inspector, EKPC is able to minimize both long and short terms risks. The inspector minimizes long term risk by making sure the liner is constructed correctly, providing protection to the environment for the life of the landfill. The inspector minimizes short term risk by making sure the contractor is following all EKPC environmental permits as required. In large excavation projects, like landfill cells, storm water pollution prevention measures can be difficult and must be tended to at all times. An onsite inspector will make sure the contractor is properly performing these duties; thus protecting EKPC's KPDES permits and assuring compliance and avoiding fines and penalties. Fines for violation of the Clean Water Act can be up to \$37,500 per day.

- d) *Operations:* Operations of the landfill is currently the responsibility of the Materials Handling Manager/Superintendent at each site. Under this Landfill Management Plan, the day to day operations will stay at this position since they are ultimately responsible for ensuring the silos are emptied daily allowing the plant to continue operating. Also, this person provides a contact point for the contractor operating the landfill. Each facility will have at least one licensed Landfill Operator/Manager at

all times. This licensure is provided through the Kentucky Energy and Environment Cabinet, Department for Environmental Protection.

The Materials Handling Manager/Superintendent will be provided assistance from EKPC Environmental, Construction & Capital Management, and Production Engineering. Construction & Capital Management or Production Engineering will also have a minimum of one engineer licensed as a Landfill Operator/Manager at all times to provide support as needed.

- i. *Spurlock Landfill* – Day to day operations at Spurlock Landfill are executed by a contract operator. The operator is responsible for emptying silos, loading haul trucks, hauling to the landfill, placement and compaction of the CCR materials, implementing and maintaining erosion and sediment controls, maintaining the haul road, and other tasks as outlined in the contract documents.

To help support Spurlock Station in the oversight of the daily operations, Engineering & Construction provides an onsite inspector from the Capital Construction group or a contract consultant, depending on the availability of resources. EKPC engineering conducts a minimum of weekly visits to Spurlock Landfill to ensure that work orders are being completed, fill is occurring appropriately, and operations are following the contract requirements.

- ii. *Cooper Landfill* – Day to day operations at Cooper Landfill are executed by the Cooper Material Handling department, with hauling performed by a contractor. The Material Handling department is responsible for management of CCR materials at the plant, loading CCR materials, coordinating hauling operations with contractor, placing and compacting CCR materials, and maintenance of the landfill and erosion and sediment controls. Maintenance activities include completing all work orders generated either internally or by outside contracts. Production Engineering and Environmental will assist, as required, to determine approaches to address work order items.

To help support Cooper Station, Production Engineering provides fill plans and oversees a consulting contract that provides an onsite engineer at Cooper Landfill a minimum of one day every other week.

- iii. *Smith Landfill* – While Smith Landfill remains an active CCR landfill, routine filling does not occur. Smith Plant personnel are responsible for the maintenance of the landfill and erosion and sediment controls. Maintenance activities include completing all work orders generated either internally or by outside contracts. Production Engineering and Environmental will assist, as required, to determine approaches to address work order items.

To help support Smith Station, Production Engineering provides fill plans and oversees a consulting contract that provides an onsite engineer at Smith Landfill a minimum of one day every other week.

- iv. *Hancock Creek Landfill* – Hancock Creek Landfill is in post-closure monitoring under the Chapter 45 Special Waste Permit issued by KDWM. Since Hancock Creek did not receive CCR materials after the effective date of the CCR Rule, the landfill does not fall under the CCR Rule regulatory program. The EKPC Headquarters Facility department is responsible for maintenance of the landfill and cap.

General operational items and assistance actions from supporting departments are detailed below.

- Waste Disposal: Only the materials listed in the KDWM permit will be disposed of at EKPC landfill. Any questions can be directed to Environmental.
- Maximum 2 Foot Lifts: The permit provides a maximum lift of 2 feet for proper waste compaction, compacting the waste in any larger lifts is not compliant with our KDWM permit.
- Waste Compaction: To achieve proper compaction the waste must be compacted as soon as it arrives to the working face. A drop in moisture content resulting from stockpiling the material will not allow compaction. 85% Compaction is required in the KDWM permit and must be achieved. Monthly third party density testing (through use of nuclear density gauge) will be conducted by the contractor to provide record of compaction. A monthly compaction report will be provided by the contractor to the Materials Handling Manager/Superintendent.
- Temporary Sediment Controls: Sediment controls are necessary to assure compliance with the Clean Water Act. These controls (rock checks, berms, silt fence, etc.) shall be placed by the contractor wherever necessary to prevent sediment migration into jurisdictional waters. An inspection should be performed by the contractor once a week to ensure proper maintenance of the sediment controls. Any controls that are half full of sediment or more should be cleaned out and placed back into service. Adjoining waters will be watched during rain events to ensure compliance. Environmental will assist with quarterly inspections of all temporary storm water controls, and inspections as needed to ensure compliance.
- Constructed Waste Limits: All waste must be kept within the constructed waste limits. The contractor will be responsible to keep waste within this boundary. Environmental will assist the Materials Handling Superintendent with quarterly inspections that will document if the waste is outside the constructed waste limits.
- Borrow from approved borrow areas: Borrow material for use in the landfill operations must come from an approved borrow area.

- Dust Suppression: The contractor must provide dust suppression on the open landfill and roads to meet the Title V Air Permit and CCR Fugitive Dust Plan.
- Permanent Stormwater Controls: These controls (ditches and ponds) must be maintained to design capacity. When these controls have silted in and no longer provide design capacity, the contractor must clean them out and return the controls to working order. Environmental will monitor and maintain capacity for permanent stormwater controls.
- Haul Roads: The haul roads must be maintained to provide safe access to the working face at all times.
- Long Term Cover Survey: When long term cover is established in an area the contractor must provide their survey data to EKPC. This survey data is needed to submit the CPR to officially close that section of the landfill.
- Positive Drainage: The contractor must maintain positive drainage on all of the waste slopes and the flat top. Any standing water should be addressed with a re-grade of that area.
- Licensed landfill manager/operator: The contractor or EKPC operations must have a landfill manager and operator licensed by the Kentucky Energy and Environment Cabinet (EEC) Department of Environmental Protection (DEP).
- Groundwater Sampling & Submittal: Environmental and Plant Lab will provide assistance and be responsible for the groundwater sampling.
- KPDES Sampling & Submittal: Environmental and Plant Lab will provide assistance and be responsible for the KPDES sampling.
- Quarterly Environmental Inspections: Environmental will provide assistance and document quarterly inspections to ensure compliance with all environmental regulations.

V. Current Resources

The following resources are currently (in full or part) utilized and required to maintain the EKPC Landfill Management Plan. Any change to the allocation of these resources would require revision of the Plan.

Civil Engineer 1 – Engineering and Construction – Landfill Planning, Project Management, CCR Inspections, Landfill Operations Support

Construction & Capital Management Inspector

Two 4-Wheel Drive Vehicles

Civil 3D Drawing Software

Annual Surveying Budget Dollars

Annual Operations Oversight Budget Dollars

Material Handling Supervisor/Manager – Spurlock Station, Cooper Station, Smith Station

Environmental Engineer

Contract Engineer – Engineering and Construction – Landfill Operations Oversight Support

Contract Engineer – Engineering and Construction – CCR Inspections

Support from Environmental Compliance Department

VI. Revision History

Revision No.	Prepared By	Date of Revision
Revision 1.0	Matt Clark and Mark Brewer	February 2013
Revision 2.0	Patrick Bischoff and Laura LeMaster	May 2019
Revision 3.0	Jarrad Burton and Patrick Bischoff	May 2023

Attachment A

Facility Maps



COOPER STATION

COOPER STATION LANDFILL

NOTES:

- 1. MAP DATA: GOOGLE



date 8/5/2016

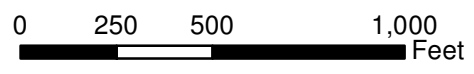
designed A. MYERS

**EAST KENTUCKY POWER
COOPERATIVE
COOPER STATION
SITE PLAN**

project	-
contract	-
drawing	rev no.
SK - CIVIL - 001	0



Hancock Creek Landfill Location Map
East Kentucky Power Cooperative - Headquarters Campus





SMITH STATION

SMITH STATION LANDFILL

NOTES:

- 1. MAP DATA: GOOGLE



date 8/5/2016

designed A. MYERS

**EAST KENTUCKY POWER
COOPERATIVE
SMITH STATION
SITE PLAN**

project	-
contract	-
drawing	rev no.
SK - CIVIL - 001	0



NOTES:

- 1. MAP DATA: GOOGLE



date 8/5/2016

designed A. MYERS

**EAST KENTUCKY POWER
COOPERATIVE
SPURLOCK STATION
SITE PLAN**

project	-
contract	-
drawing	rev no.
SK - CIVIL - 001	0



NOTES:

- 1. MAP DATA: GOOGLE



date 8/5/2016

designed A. MYERS

**EAST KENTUCKY POWER
COOPERATIVE
SPURLOCK STATION LANDFILL
SITE PLAN**

project	-
contract	-
drawing	rev no.
SK - CIVIL - 002	0

Attachment B
Landfill Cost Comparison

Landfill Cost Comparison

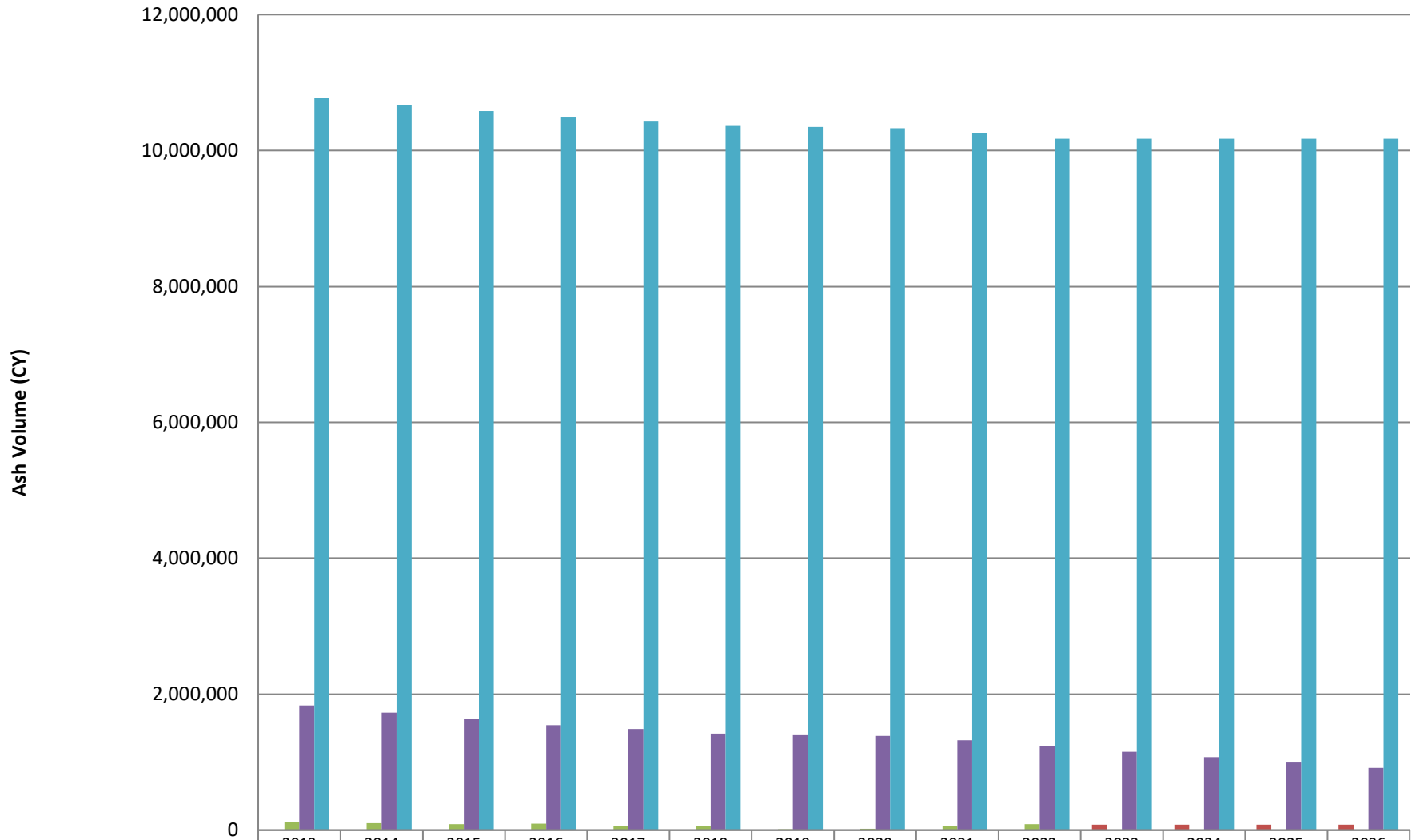
<i>EKPC Power Station</i>	<i>Average Ash Production (tons per Year)</i>	<i>Cost to Develop, Construct, Operate, & Maintain EKPC Landfill (Dollars per ton of Ash)</i>	<i>Cost to Transport & Dispose In Commercial Landfill (Dollars per ton of Ash)</i>	<i>Savings Per Year (Dollars per Year)</i>
Spurlock	1,300,000*	\$13.41	\$50.00	\$47,567,000
Cooper	80,000	\$8.33	\$54.00	\$3,653,600
EKPC Total	1,380,000			\$51,220,600

**Excludes estimated 200,000-650,000 tons per year through 2026 for the Spurlock Ash Pond Closure*

Attachment C

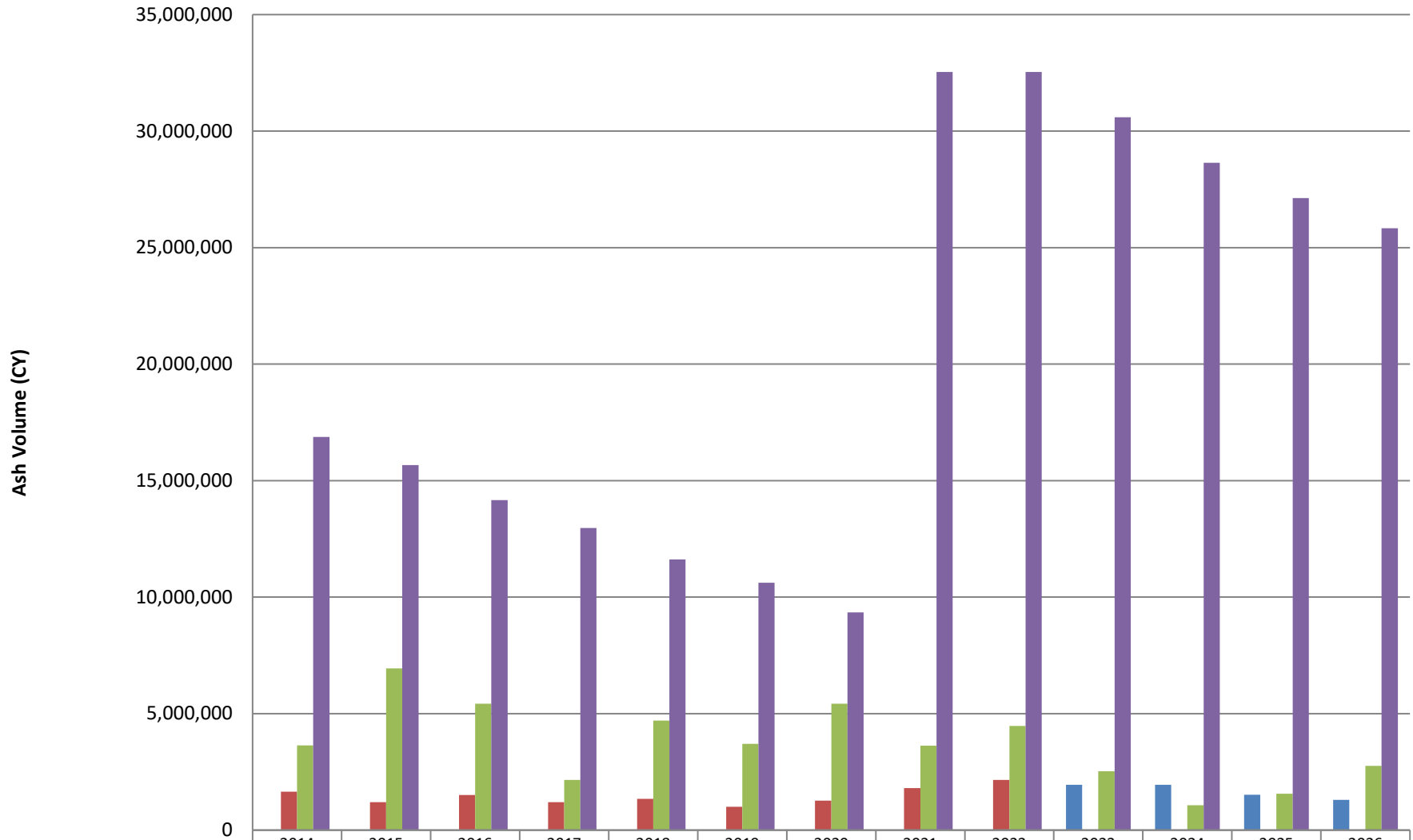
Landfill Projection Charts – Spurlock and Cooper

Cooper Landfill Projections



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Projected Ash Production (CY)											80,000	80,000	80,000	80,000
Actual Ash Production (CY)	118,129	103,040	89,408	95,260	58,940	66,522	12,037	20,413	66,498	86,496				
Constructed Capacity (CY)	1,832,768	1,729,728	1,640,320	1,545,060	1,486,120	1,419,598	1,407,561	1,387,148	1,320,650	1,234,154	1,154,154	1,074,154	994,154	914,154
Permitted Landfill Capacity (CY)	10,773,000	10,669,960	10,580,552	10,485,292	10,426,352	10,359,830	10,347,793	10,327,380	10,260,882	10,174,386	10,174,386	10,174,386	10,174,386	10,174,386

Spurlock Landfill Projections



■ Projected Ash Production (CY)										1,950,000	1,950,000	1,514,000	1,300,000
■ Actual Ash Production (CY)	1,654,675	1,204,632	1,507,046	1,199,669	1,345,045	1,005,883	1,269,737	1,803,060	2,153,804				
■ Constructed Capacity (CY)	3,641,535	6,936,903	5,429,857	2,150,330	4,705,285	3,699,402	5,429,665	3,626,605	4,472,801	2,522,801	1,072,801	1,558,801	2,758,801
■ Permitted Landfill Capacity (CY)	16,875,818	15,671,186	14,164,140	12,964,470	11,619,425	10,613,542	9,343,805	32,540,745	32,540,745	30,590,745	28,640,745	27,126,745	25,826,745

Attachment D

Landfill Management Responsibility Breakdown

Cooper Landfill
 Responsibility Breakdown
 12/27/2022

<i>Planning & Construction</i> Engineering	<i>Operations & Maintenance</i> Power Station	<i>Permitting & Env. Compliance</i> Environmental
<ul style="list-style-type: none"> - Engineering Support for Permitting, Operations, & Maintenance (including fill plans) - Annual Surveying - Provide Available Airspace Volume Calculations - Develop Long Term Construction Plan - Design & Construct Landfill Cells - Provide Inspection for Construction - Provide CQA for Construction - Design & Construction of supporting facilities for landfills (e.g. sediment ponds, roads, etc.) - Oversee Execution of 7-Day & Annual CCR Inspections - Maintain CCR Design Documents <ul style="list-style-type: none"> - Pre-Construction - Post Construction - Run-on/Run-off - Closure/Post-Closure - Budget Support - Operations Procurement Support - Design and Construct Landfill Caps - ARO Closure/Post Closure Estimates 	<ul style="list-style-type: none"> - Daily Hauling - Daily Landfilling - Monthly Compaction Testing - Maintain Landfill: including the working face, haul road, existing cap, and sediment controls - O&M Budget Management <ul style="list-style-type: none"> - Receivers/Invoicing - Budget Development - Coordinate with Third Party hauling contractor as necessary for operations - Complete Operations <ul style="list-style-type: none"> - Loading - Hauling - Placement - Reviews, Monitors, and Closes Inspection Driven Work Orders - Complete SWPPP Inspections 	<ul style="list-style-type: none"> - Permit Landfill - Quarterly Inspections - Groundwater Monitoring <ul style="list-style-type: none"> - Installation - Closure/Abandonment - Sampling - Statistical Analysis - Reporting - KPDES Monitoring - Review of all CCR Documents - Maintain CCR Documents <ul style="list-style-type: none"> - Fugitive Dust - Groundwater Monitoring - Location Restrictions - Environmental Engineering Support for all Elements of Project Lifecycle <ul style="list-style-type: none"> - Review Construction Plans - Oversee Env. Sensitive Activities <ul style="list-style-type: none"> - Provide Recommendations and Options to Maintain Env. Compliance - Perform Env. Inspections and Document Audits as Needed <ul style="list-style-type: none"> - Regularly Monitor all Stormwater Controls - Verify Operations Activities are in Compliance with Permits & Permit Applications - Budget Support for Env. Items

Smith Landfill
 Responsibility Breakdown
 12/27/2022

Planning & Construction Engineering	Operations & Maintenance Power Station	Permitting & Env. Compliance Environmental
<ul style="list-style-type: none"> - Engineering Support for Permitting, Operations, & Maintenance - Annual Surveying as required - Provide Available Airspace Volume Calculations, as required - Develop Long Term Construction Plan - Design & Construct Landfill Cells - Provide Inspection for Construction - Provide CQA for Construction - Design & Construction of supporting facilities for landfills (e.g. sediment ponds, roads, etc.) - Oversee Execution of 7-Day & Annual CCR Inspections - Maintain CCR Design Documents <ul style="list-style-type: none"> - Pre-Construction - Post Construction - Run-on/Run-off - Closure/Post-Closure - Budget Support - Design & Construct Landfill Caps - ARO Closure/Post Closure Estimates 	<ul style="list-style-type: none"> - Maintain Landfill: including the working face, haul road, existing cap, and sediment controls (including weekly inspection reports) -Using Internal Workforce, complete Work Orders generated - Contract with a Third Party Contractor Work Orders that cannot be completed internally, <ul style="list-style-type: none"> - O&M Budget Management - Receivers/Invoicing - Budget Development - Reviews, Monitors, and Closes Inspection Driven Work Orders - Complete SWPPP Inspections 	<ul style="list-style-type: none"> - Permit Landfill - Quarterly Inspections - Groundwater Monitoring <ul style="list-style-type: none"> - Installation - Closure/Abandonment - Sampling - Statistical Analysis - Reporting - KPDES Monitoring - Review of all CCR Documents - Maintain CCR Documents <ul style="list-style-type: none"> - Fugitive Dust - Groundwater Monitoring - Location Restrictions - Environmental Engineering Support for all Elements of Project Lifecycle <ul style="list-style-type: none"> - Review Construction Plans - Oversee Env. Sensitive Activities - Provide Recommendations and Options to Maintain Env. Compliance - Perform Env. Inspections and Document Audits as Needed <ul style="list-style-type: none"> - Regularly Monitor all Stormwater Controls - Verify Operations Activities are in maintenance with Permits & Permit Applications - Budget Support for Env. Items - Coordinate to maintain Smith as an operating Landfill per the CCR Rule

Spurlock Landfill
 Responsibility Breakdown
 2/6/2023

<i>Planning & Construction</i> Engineering	<i>Operations & Maintenance</i> Power Station	<i>Permitting & Env. Compliance</i> Environmental
<ul style="list-style-type: none"> - Engineering Support for Permitting, Operations, & Maintenance - Develop Long Term Construction Plan - Design & Construct Landfill Cells - Provide Inspection for Construction - Provide CQA for Construction - Design & Construction of supporting facilities for landfills (e.g. sediment ponds, roads, etc.) - Design and construct landfill caps - Oversee Execution of 7-Day & Annual CCR Inspections - Enter, Monitor, and Close Inspection Driven Work Orders - Maintain CCR Design Documents <ul style="list-style-type: none"> - Pre-Construction - Post Construction - Run-on/Run-off - Closure/Post-Closure - Annual Surveying including airspace Volume Calculations - ARO Closure/Post Closure Estimates - Capital and Operations Budget Support - Operations Procurement Support including development of the Landfill Management Contract bid package - Provide oversight support for Daily Operations including Loading, Hauling, and Placement 	<ul style="list-style-type: none"> - Daily Hauling - Daily Landfilling - Monthly Compaction Testing - Maintain Landfill: including the working face, haul road, existing cap, and sediment controls - O&M Budget Management <ul style="list-style-type: none"> - Receivers/Invoicing - Budget Development - Oversee Daily Operations including Loading, Hauling, and Placement - Review and Monitor Inspection Driven Work Orders - Review and Comment on Contract and Technical Documents - Contract with a third-party contractor for work orders not completed as part of Landfill Operations contract 	<ul style="list-style-type: none"> - Permit Landfill - Quarterly Inspections - Groundwater Monitoring <ul style="list-style-type: none"> - Installation - Closure/Abandonment - Sampling - Statistical Analysis - Reporting - KPDES Monitoring - Review of all CCR Documents - Maintain CCR Documents <ul style="list-style-type: none"> - Fugitive Dust - Groundwater Monitoring - Location Restrictions - Environmental Engineering Support for all Elements of Project Lifecycle <ul style="list-style-type: none"> - Review Construction Plans - Oversee Env. Sensitive Activities - Provide Recommendations and Options to Maintain Env. Compliance - Perform Env. Inspections and Document Audits as Needed <ul style="list-style-type: none"> - Regularly Monitor all Stormwater Controls - Verify Operations Activities are in Compliance with Permits & Permit Applications - Budget Support for Env. Items - Review, Comment, and Approve Env. Documents Outlined in Contract Documents

Attachment E
Landfill Permit Phasing

Landfill Permit Phasing*

Spurlock Landfill:



Cooper Landfill:



Smith Landfill:



*Permitting is phased to provide a minimum 10 years of capacity available at all times

**Future permitted capacity needs at Cooper Landfill will be re-evaluated as needed

Attachment F

Landfill Departmental/Personnel Responsibility Matrix

Cooper Landfill - Responsibility Matrix

December 4, 2022

Legend	
	Original LF Plan/Pre-CCR
	Post-CCR Rule

Task	Planning and Construction Production Engineering	Operations & Maintenance Spurlock	Permitting & Env. Compliance Environmental
Daily Hauling		Material Handling Superintendent	
Daily Landfilling		Material Handling Superintendent	
Monthly Compaction Testing		Third Party Contractor	
Maintain Landfill; including the working face, haul road, existing cap, and sediment controls		Material Handling Superintendent	
Engineering Support for Permitting, Operations, & Maintenance	Jarrad Burton		
Annual Surveying	Jarrad Burton		
Provide Available Airspace Volume Calculations	Jarrad Burton		
Develop Long Term Construction Plan	Jarrad Burton		
Design & Construct Landfill Cells	Production or Capital Construction Engineer		
Design & Construct Landfill Caps	Production or Capital Construction Engineer		
Provide Inspection for Construction	Capital Construction Inspector Contract Consultant		
Provide CQA for Cell Construction	Production or Capital Construction Engineer		
Design & Construction of Supporting Facilities (e.g. sediment ponds, roads, etc.)	Production or Capital Construction Engineer		
Permit Landfill			Jessica Dixon
Quarterly Inspections			Contract Consultant
Groundwater Monitoring			Jessica Dixon
- Installation			Jessica Dixon
- Closure/Abandonment			Jessica Dixon
- Sampling			Contract Consultant
- Statistical Analysis			Contract Consultant
- Reporting			Jessica Dixon
KPDES Monitoring			Cooper Lab
Environmental Support for all elements of Project Lifecycle (review plans, oversee Env. Sensitive Activities, provide recommendations to maintain compliance)			Jessica Dixon
Perform Env. Inspections and Document Audits as needed			Jessica Dixon
Regularly Monitor all Stormwater Controls			Jessica Dixon
Verify Operation Activities are in compliance with permits and permit applications			Jessica Dixon
Oversee Execution of 7-Day & Annual CCR Inspections	Jarrad Burton		
Maintain CCR Design Documents	Jarrad Burton		
- Pre-Construction	Jarrad Burton		
- Post Construction	Jarrad Burton		

Cooper Landfill - Responsibility Matrix

December 4, 2022

Legend	
	Original LF Plan/Pre-CCR
	Post-CCR Rule

Task	Planning and Construction Production Engineering	Operations & Maintenance Spurlock	Permitting & Env. Compliance Environmental
- Run-on/Run-off	Jarrad Burton		
- Closure/Post-Closure	Jarrad Burton		
Budget Support	Jarrad Burton		
Operations Procurement Support	Jarrad Burton		
Coordinate with Third Party Hauling Contractor		Material Handling Superintendent	
Complete Daily Operations		Material Handling Superintendent	
- Loading		Material Handling Superintendent	
- Hauling		Material Handling Superintendent	
- Placement		Third Party Contractor Material Handling Superintendent	
Reviews, Monitors, and Closes Inspection Driven Work Orders		Material Handling Superintendent	
O&M Budget Management		Contract Consultant Eddie Hudson	
- Receivers/Invoicing		Eddie Hudson	
- Budget Development		Eddie Hudson	
Review of all CCR Documents			Jessica Dixon
Maintain CCR Documents			Jessica Dixon
- Fugitive Dust			Bobby Webb
- Groundwater Monitoring			Jessica Dixon
- Location Restrictions			Jessica Dixon
Budget Support for Env. Items			Jessica Dixon

Smith Landfill - Responsibility Matrix

February 6, 2023

Legend	
	Original LF Plan/Pre-CCR
	Post-CCR Rule

Task	Planning and Construction Production Engineering	Operations & Maintenance Spurlock	Permitting & Env. Compliance Environmental
Maintain Landfill; including the working face, haul road, existing cap, and sediment controls		Robert Segress	
Engineering Support for Permitting, Operations, & Maintenance	Jarrad Burton		
Annual Surveying	Jarrad Burton		
Provide Available Airspace Volume Calculations	Jarrad Burton		
Develop Long Term Construction Plan	Jarrad Burton		
Design & Construct Landfill Cells	Production or Capital Construction Engineer		
Design & Construct Landfill Caps	Production or Capital Construction Engineer		
Provide Inspection for Construction	Capital Construction Inspector Contract Consultant		
Provide CQA for Cell Construction	Production or Capital Construction Engineer		
Design & Construction of Supporting Facilities (e.g. sediment ponds, roads, etc.)	Production or Capital Construction Engineer		
Permit Landfill			Jessica Dixon
Quarterly Inspections			Contract Consultant
Groundwater Monitoring			Jessica Dixon
- Installation			Jessica Dixon
- Closure/Abandonment			Jessica Dixon
- Sampling			Contract Consultant
- Statistical Analysis			Contract Consultant
- Reporting			Jessica Dixon
KPDES Monitoring			Cooper Lab
Environmental Support for all elements of Project Lifecycle (review plans, oversee Env. Sensitive Activities, provide recommendations to maintain compliance)			Jessica Dixon
Perform Env. Inspections and Document Audits as needed			Jessica Dixon
Regularly Monitor all Stormwater Controls			Jessica Dixon
Verify Operation Activities are in compliance with permits and permit applications			Jessica Dixon
Oversee Execution of 7-Day & Annual CCR Inspections	Jarrad Burton		
Maintain CCR Design Documents	Jarrad Burton		
- Pre-Construction	Jarrad Burton		
- Post Construction	Jarrad Burton		
- Run-on/Run-off	Jarrad Burton		
- Closure/Post-Closure	Jarrad Burton		
Budget Support	Jarrad Burton		

Smith Landfill - Responsibility Matrix

December 5, 2022

Legend	
	Original LF Plan/Pre-CCR
	Post-CCR Rule

<i>Task</i>	<i>Planning and Construction Production Engineering</i>	<i>Operations & Maintenance Spurlock</i>	<i>Permitting & Env. Compliance Environmental</i>
Operations Procurement Support	Jarrad Burton		
Using Internal Work force, complete generated WO		Robert Segress	
Contract with Third Party Contractor any generated Work Orders that cannot be completed internally		Robert Segress Dale Anderson	
Reviews, Monitors, and Closes Inspection Driven Work Orders		Robert Segress Dale Anderson	
O&M Budget Management		Dale Anderson	
- Receivers/Invoicing		Dale Anderson	
- Budget Development		Dale Anderson	
Review of all CCR Documents			Jessica Dixon
Maintain CCR Documents			Jessica Dixon
- Fugitive Dust			Bobby Webb
- Groundwater Monitoring			Jessica Dixon
- Location Restrictions			Jessica Dixon
Coordinate to maintain Smith LF as an operating Landfill per the CCR Rule			Jessica Dixon
Budget Support for Env. Items			Jessica Dixon

Spurlock Landfill - Responsibility Matrix

February 6, 2023

Legend	
	Original LF Plan/Pre-CCR
	Post-CCR Rule

Task	Planning and Construction Production Engineering	Operations & Maintenance Spurlock	Permitting & Env. Compliance Environmental
Daily Hauling		Contract Operator	
Daily Landfilling		Contract Operator	
Monthly Compaction Testing		Contract Operator	
Maintain Landfill; including the working face, haul road, existing cap, and sediment controls		Contract Operator	
Engineering Support for Permitting, Operations, & Maintenance	Jarrad Burton		
Annual Surveying	Jarrad Burton		
Provide Available Airspace Volume Calculations	Jarrad Burton		
Develop Long Term Construction Plan	Jarrad Burton		
Design & Construct Landfill Cells	Jarrad Burton		
Design & Construct Landfill Caps	Jarrad Burton		
Provide Inspection for Construction	Capital Construction Inspector		
Provide CQA for Cell Construction	Contract Consultant Jarrad Burton		
Design & Construction of Supporting Facilities (e.g. sediment ponds, roads, etc.)	Jarrad Burton		
Permit Landfill			Jessica Dixon
Quarterly Inspections			Contract Consultant
Groundwater Monitoring			Jessica Dixon
- Installation			Jessica Dixon
- Closure/Abandonment			Jessica Dixon
- Sampling			Contract Consultant
- Statistical Analysis			Contract Consultant
- Reporting			Jessica Dixon
KPDES Monitoring			Spurlock Lab
Environmental Support for all elements of Project Lifecycle (review plans, oversee Env. Sensitive Activities, provide recommendations to maintain compliance)			Jessica Dixon
Perform Env. Inspections and Document Audits as needed			Jessica Dixon
Regularly Monitor all Stormwater Controls			Jessica Dixon
Verify Operation Activities are in compliance with permits and permit applications			Jessica Dixon
KPDES Monitoring			Spurlock Lab
Oversee Execution of 7-Day & Annual CCR Inspections	Jarrad Burton		
Maintain CCR Design Documents	Jarrad Burton		

Spurlock Landfill - Responsibility Matrix

February 6, 2023

Legend	
	Original LF Plan/Pre-CCR
	Post-CCR Rule

Task	Planning and Construction Production Engineering	Operations & Maintenance Spurlock	Permitting & Env. Compliance Environmental
- Pre-Construction	Jarrad Burton		
- Post Construction	Jarrad Burton		
- Run-on/Run-off	Jarrad Burton		
- Closure/Post-Closure	Jarrad Burton		
Coordinate with Landfill Operator as Required (per contract documents)	Jarrad Burton		
Review and Comment on Contract and Technical Documents	Jarrad Burton		
Budget Support	Jarrad Burton		
Update & Develop Bid Document for Landfill Management Contract	Jarrad Burton		
Procurement Support for Landfill Operations	Jarrad Burton		
Oversight support for Daily Operations including Loading, Hauling, and Placement	Jarrad Burton Capital Construction Inspector Contract Consultant		
Enters/Reviews/Monitors/Closes Inspection Driven Work Orders	Jarrad Burton		
Oversee Daily Operations including Loading, Hauling, and Placement		Greg Culp	
O&M Budget Management		Greg Culp	
- Receivers/Invoicing		Greg Culp	
- Budget Development		Greg Culp	
Review of all CCR Documents			Jessica Dixon
Maintain CCR Documents			Jessica Dixon
- Fugitive Dust			Bobby Webb
- Groundwater Monitoring			Jessica Dixon
- Location Restrictions			Jessica Dixon
Budget Support for Env. Items			Jessica Dixon
Review and Comment on Env. Documents Outlined in Contract Documents			Jessica Dixon

Appendix 1

Coal Combustion Residual Rule Quality Assurance Plan



CCR Implementation CCR Quality Assurance Program





**EAST KENTUCKY
POWER COOPERATIVE**

A Touchstone Energy[®] Cooperative 

East Kentucky Power Cooperative

March 2023
Revision 3



CCR Implementation CCR Quality Assurance Program

Prepared for

East Kentucky Power Cooperative
Winchester, Kentucky

March 2023
Revision 3

Prepared by

Burns & McDonnell Engineering Company, Inc.
Kansas City, Missouri

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Table 1-1 Summary of Tier Requirements 1-1

LIST OF ABBREVIATIONS

<u>Abbreviation</u>	<u>Term/Phrase/Name</u>
BMcD	Burns & McDonnell
CCR	Coal Combustion Residual
CFR	Code of Federal Regulations
CMMS	Computer Maintenance Management System
E&C	Engineering & Construction Shared Services
EKPC	East Kentucky Power Cooperative
EPA	Environmental Protection Agency
IT	Information Technology
P&C	Privileged and Confidential
PR	Public Relations
QA	Quality Assurance
QAP	Quality Assurance Program
RCRA	Resource Conservation and Recovery Act
U.S.C.	United States Code

1.0 INTRODUCTION

On April 17, 2015, the Environmental Protection Agency (EPA) issued the final version of the federal Coal Combustion Residual Rule (CCR Rule) to regulate the disposal of coal combustion residual (CCR) materials generated at coal-fired units. The CCR Rule is administered as part of the Resource Conservation and Recovery Act (RCRA, 42 United States Code [U.S.C.] §6901 et seq.), using the Subtitle D approach.

The intent of this Quality Assurance Program (QAP) is to establish roles and responsibilities for individuals within East Kentucky Power Cooperative's (EKPC's) existing organization in developing and posting the applicable CCR required documentation for compliance with the CCR Rule. The program is intended to be used as a manual process for quality control of CCR Rule compliance documentation that may need to be placed in all or some of the following: the CCR Working Folder (internal), the CCR Operating Record and the CCR public website. This is a partially automated process that uses existing data management systems (or new data management systems) within EKPC's organization. The process flowcharts in Appendix B are meant to be the framework used for a manual process and later developed into an automated process. Appendix A contains a CCR Compliance Hierarchy chart indicating reporting relationships and the flow of CCR compliance documentation within EKPC's organization.

This QAP is not intended to detail out specifics of each individual CCR document requirement but, instead, provide a framework for the overall roles and responsibilities necessary for CCR compliance. Individual CCR Managers will be responsible for understanding details associated with specific CCR plan requirements and provide the necessary information to implement those plans.

There are three tiers described in the program. Posting requirements prescribed in the CCR Rule are indicated in Table 1-1.

Table 1-1 Summary of Tier Requirements

Tier	Required to be in CCR Operating Record	Required to be on CCR Public Website
Tier I	No	No
Tier II	Yes	No
Tier III	Yes	Yes

The three tiers are as follows:

- Tier I - Documents, reports, performance specifications, workflows, or systems to be completed/maintained to support CCR Rule compliance but are not required to be documented in the CCR Operating Record or on the CCR public website.
- Tier II - Documents or reports that are required under the CCR Rule to be in the CCR Operating Record but not required to be on the CCR public website.
- Tier III - Documents or reports that are required under the CCR Rule to provide a notification to the State Director, to be in the CCR Operating Record and placed on the CCR public website within 30 days of placement in the CCR Operating Record.

2.0 DEFINITIONS & TERMS

The following definitions and terms are used throughout this program and are listed below to clarify their meaning in this report.

- Privileged and Confidential (P&C) – Term to indicate that a document, report, or other form of correspondence is prepared by or under the direction of legal counsel and internal to EKPC.
- Qualified Person (Qualified Inspector) – A person or persons trained to recognize by visual observation specific appearances of structural weakness and other conditions that are disrupting or have the potential to disrupt the operation or safety of the CCR unit.
- CCR Working Folder – The CCR Working Folder is an internal EKPC file system with an organized folder structure for supplemental documents related to CCR Rule compliance documentation. These documents are not currently required per the CCR Rule and do not need to be located within the CCR Operating Record. Documents may include (but are not limited to) Draft documents under review and specifications related to CCR compliance.
- CCR Operating Record –The CCR Operating Record is an internal EKPC file system with an organized folder structure for CCR Rule compliance documentation specific to a plant or station owned by EKPC. This folder structure maintains documentation required by the CCR Rule and organizes the documents by their respective EKPC operating station.
- CCR Public Website – The publicly accessible website required by 40 Code of Federal Regulations (CFR) §257.107 which must be titled “CCR Rule Compliance Data & Information.”
- Coal Combustion Residuals –Byproducts from the combustion of coal (including solid fuels classified as anthracite, bituminous, subbituminous, or lignite) for the purpose of generating steam to produce electricity or electricity and other thermal energy by electric utilities and independent power producers. CCR includes fly ash, bottom ash, boiler slag, and flue gas desulfurization materials.
- CCR compliance – Used as short-hand within this document for CCR Rule Compliance.
- Environmental Management System – A framework that aids organizations with the review, evaluation, and improvement of environmental goals and performance. For EKPC, Perillon, an Environmental Health and Safety management software, is used to help with the scheduling of activities in the CCR compliance processes.

3.0 ROLES

Defined within this Section are the Roles of an individual or individuals related to completing the quality process defined herein. Contact information for individuals filling roles defined herein can be found in Appendix D.

- CCR Legal Counsel (Legal) – Refers to EKPC’s legal counsel with members both in-house and contracted. The role of Legal will be to review particular documentation as deemed necessary to maintain CCR compliance. These documents generally fall into the category of significant documents that are generated by a Professional Engineer on a semi-annual, annual, or longer period of time basis; however, there may be other documentation outside of this category deemed necessary for legal review at the discretion of the CCR Executive Sponsor, CCR Engineering Compliance Director, or CCR Environmental Compliance Director.
- Plant – Refers to the station level or plant level within EKPC’s existing organization and will be specific to each individual station. The Plant will be responsible for any remedial actions that are determined as a result of inspections or other CCR Rule documentation. The Plant will also support the Contractor as required for the Contractor to perform their tasks related to CCR compliance.
- CCR Executive Sponsor – Refers to EKPC’s corporate level Executive Sponsor who shall oversee CCR compliance Roles, review contract-term solutions, and review projects required to maintain CCR compliance. The Executive Sponsor will have limited roles in monitoring documents prior to placement in the CCR Operating Record or on the CCR public website and will only perform these roles if specifically requested by the CCR Environmental Compliance Director or the CCR Engineering Compliance Director.
- CCR Environmental Compliance Director – Refers to EKPC’s corporate level Environmental Director who is the lead for CCR compliance documentation that falls within environmental compliance. Environmental compliance is broken into three major categories: groundwater monitoring, fugitive dust emissions, and location restrictions. The CCR Environmental Compliance Director’s role will be to monitor documentation for groundwater monitoring, fugitive dust, and location restrictions prior to placement in the CCR Operating Record or on the CCR public website. Additionally, the CCR Environmental Compliance Director will have roles for monitoring contract-term solutions and projects required to maintain CCR compliance as well as monitoring the procurement of contract services to perform CCR Rule reporting.
- CCR Engineering Compliance Director – Refers to EKPC’s corporate level Engineering Director who is the lead for CCR compliance documentation that falls within the E&C group’s expertise

for maintaining CCR compliance. Engineering compliance is broken into three major categories: closure/post-closure, run-on/run-off/flood design, and design management (inspections). The CCR Engineering Compliance Director's role will be to monitor documentation for closure/post-closure, run-on/run-off/flood design, and inspections prior to placement in the CCR Operating Record or on the CCR public website. Additionally, the CCR Engineering Compliance Director will have roles for monitoring contract-term solutions and projects required to maintain CCR compliance as well as monitoring the procurement of contract services to perform CCR Rule reporting.

- CCR Managers – CCR Managers will be the team lead for the specific CCR compliance process(es) in their area of expertise required to keep EKPC in compliance with the CCR Rule. The individual CCR Managers will perform multiple roles related to CCR compliance which may include (but not be limited to) prompting the Contractor to mobilize for inspections/documentation, coordination between the plant and contractor, reviewing CCR documents before being posted on the CCR Operating Record or CCR public website, requesting reviews from other personnel for CCR documentation, performing inspections, initiating actions to correct deficiencies as noted from CCR documentation (i.e. work orders), performing audits on Contractor performed work, and determining contract-term solutions and projects required to maintain CCR compliance. CCR Managers will work with the CCR Gatekeeper to stay up-to-date on CCR Rule updates and add/revise flow charts within the QA program in order to maintain compliance with the CCR Rule. The following roles are grouped under the title of CCR Managers:

- Design Manager – Refers to the Primary Design Manager who oversees design and construction process and performs landfill and surface impoundment inspections and periodically reviews various inspections' work documents. This individual shall also email drafts of inspections to specified entities listed in the respective flowchart, continually compile draft comments, and determine if the comments have been addressed. Additionally, the Primary Design Manager must update the remedial action log for all sites in the CCR Working Folder and ensure that any related instrument data files from the site are placed in the CCR Working Folder.
- Fugitive Dust Manager – Refers to the Primary Fugitive Dust Manager who evaluates citizen complaints and determines the steps for ensuring that they are addressed appropriately. This individual must determine if additional information on the complaint is needed or if any non-compliance exists. All completed work concerning the complaint must be reported to Public Relations (PR) and saved in the CCR Working Folder and the complaint log. The Primary

- Fugitive Dust Manager must also create and review draft annual fugitive dust reports in the CCR Working Folder and compile feedback from draft reports to update as needed.
- Groundwater Manager – Refers to the Primary Groundwater Manager who oversees the Groundwater Monitoring Program Process, the Detection Monitoring Process, the Assessment Monitoring Process, the Assessment of Corrective Measures Process, the Selection of Remedy Process, the Implementation of the Corrective Action Program, and the Annual Groundwater Monitoring and Corrective Action Report Process. Within these processes, the Primary Groundwater Manager performs a multitude of tasks listed in the related flowcharts pertaining to maintaining groundwater standards, identifying any statistically significant increases, determining the remedial action and remedy, if any, and performing semiannual and annual monitoring to track the success of remedial actions. Within these processes, the Primary Groundwater Manager must review any draft reports and compile comments to be delivered to the appropriate entities.
 - Engineering Manager – Refers to the Primary Engineering Manager who is lead for other managerial roles within the E&C group and, if required, aids in assessing potential corrective measures for groundwater contamination and selecting the remedy and interim measures required to reduce contaminant leaching from CCR unit.
 - Closure Manager - Refers to the Primary Closure Manager who, if required, aids in assessing potential remedial measures for groundwater contamination and selecting the remedy and interim measures required to reduce contaminant leaching from CCR unit. Additionally, this individual is responsible for overseeing the closure and post-closure care requirements of any CCR unit's.
 - Backup Manager(s) – Refers to the secondary, tertiary, etc. roles provided within the same division of responsibility as the Primary Manager who will primarily review draft reports and deliver comments to the Primary Design Manager, and act as team lead for the specific CCR compliance process(es) in their area of expertise to keep EKPC in compliance with the CCR Rule in the absence of the Primary Manager. In the absence of the Primary Manager, the individual Backup Manager(s) will perform multiple roles related to CCR compliance which may include (but not be limited to) prompting the Contractor to mobilize for inspections/documentation, coordination between the plant and contractor, reviewing CCR documents before being posted on the CCR Operating Record or CCR public website, requesting reviews from other personnel for CCR documentation, performing inspections, initiating actions to correct deficiencies as noted from CCR documentation (i.e. work orders), performing audits on Contractor performed work, and determining contract-term solutions

and projects required to maintain CCR compliance. More than one CCR Backup Manager may be provided for specific roles as deemed necessary to maintain CCR compliance in extenuating circumstances.

- Contractor – Refers to contractors or 3rd parties that are not within EKPC’s existing organization. The roles of the Contractor will be to perform work scope(s) specified by contract documents executed between EKPC and the Contractor. The work scopes will be specific to the CCR Rule reporting and documentation requirements. The Contractor will maintain work scope deadlines to provide information to EKPC to maintain CCR Rule compliance.
- Corporate Information and Technology (IT) – Refers to the Information and Technology group within EKPC’s existing organization. Corporate IT will support the CCR Gatekeeper by developing and/or refining automated functions within existing or new data management systems to aid in streamlining the Quality Assurance Program. IT will also be responsible for providing the necessary security permissions inside the EKPC server folder structure to allow read/write access as required to view/enter/modify/remove CCR related documents within the CCR Operating Record.
- Web Services – Refers to the group within EKPC’s existing organization that will develop and maintain the CCR public website.
- CCR Gatekeeper – Refers to the individual within EKPC’s existing organization that will be the overall manager and leader of the QAP related to CCR Rule compliance documentation. Primary responsibilities of the Gatekeeper include placing documentation in the CCR Operating Record and on the CCR public website (if applicable), reviewing documentation prior to being placed in the CCR Operating Record or on the CCR public website, checking CCR Rule updates/changes, override capabilities to move CCR documentation to the next step in the quality process if the CCR Manager is not available to complete their step, and notifying the state or tribal authority when CCR documents have been posted to the CCR Operating Record and on the CCR public website. The Backup Gatekeeper primarily reviews draft reports and delivers comments to the Primary Gatekeeper.
- Engineering and Construction Shared Services (E&C) – Refers to the group within EKPC’s existing organization that will be in charge of maintaining a Computer Maintenance Management System (CMMS) software as it pertains to aiding CCR Rule compliance. E&C will be the primary interface with the CMMS software to modify/adapt the existing work order process to serve the needs of the CCR Rule. When necessary, E&C will produce documentation, from CMMS, that a work order has been completed.

- Public Relations (PR) – Refers to the group within EKPC’s existing organization that will be in charge of contact with the public. PR will be the liaison between the public and the engineering or environmental groups. PR will be responsible for receiving questions/comments/complaints/etc. from the public and directing them to the correct party within EKPC’s organization or addressing them if they are in the public relations area of expertise. PR will also be responsible for contacting the public representative if additional information is required for the engineering or environmental groups to properly address the concern.
- Central Lab – Refers to the group within EKPC’s existing organization that will be in charge of overseeing groundwater analysis.
- Project Manager – Refers to the individual within EKPC’s existing organization that is in charge of an EKPC capital or maintenance project. The Project Manager will be responsible to coordinate and discuss the Project with CCR Managers so as to provide the input necessary for the CCR Managers to update and/or revise CCR documents, as necessary, which are impacted by the Project.
- CCR QAP Team – All CCR managers, gatekeepers, and other parties related to the QAP which shall meet, at minimum, semi-annually to discuss pending and upcoming compliance dates and documentation required for the scheduling process.

4.0 TIER I DOCUMENTS

CCR related documents, reports, performance specifications, workflows, or systems in Tier I include (but are not limited to):

- Internal administrative documents for managing the CCR Public Website
- Performance specifications to hire Contractors for reports, inspections, etc. to remain in CCR Rule compliance
- Automatic and manual processes (data management processes) that aid in CCR Rule compliance and provide the framework for maintaining CCR Rule compliance
- CCR Fugitive Dust Citizen Complaints
- Draft documentation
- Legal and Technical Memos
- Other documents prepared to aid meeting and/or maintaining the requirements in the CCR Rule that are not required to be prepared or maintained under the CCR Rule

Activities associated with Tier I documents will be performed by an EKPC employee or a Contractor if deemed necessary. The CCR Managers or CCR Gatekeeper will oversee each of the activities being performed by EKPC or the Contractor. The applicable CCR Manager or the CCR Gatekeeper will be selected based on their specific area of expertise and the CCR compliance quality assurance hierarchy chart provided in Appendix A. The CCR Environmental Compliance Director or CCR Engineering Compliance Director will approve a Contractor (if deemed necessary) based on the CCR Manager's review and recommendations. The applicable CCR Manager or the CCR Gatekeeper will be responsible to obtain the necessary documents/feedback from the party performing the task as defined by the roles and Appendix B. Documents will be saved outside of the CCR Operating Record in the CCR Working Folder.

Appendix B contains process flowcharts outlining the activities associated with Tier I documents. These are to be used by the CCR Managers or the CCR Gatekeeper to perform the associated tasks and to track the progress of these tasks in order to stay in compliance with the CCR Rule.

5.0 TIER II DOCUMENTS

CCR related documents or reports in Tier II include:

- Inspection Documents
 - 7-day Inspection Reports
 - 30-day Inspection Reports
- Documentation of the Design, Installation, Development, and Decommissioning of any Monitoring Wells, Piezometers, and Other Measurement, Sampling, and Analytical Devices
- Results of Constituent Concentrations per Assessment Monitoring Program
- Documentation Recording Public Meetings to Discuss Corrective Measures Assessment (if required)
- Documenting Surface Impoundment Identification Marker Installation
- Documentation of Remedial Actions

Activities associated with Tier II documents will be performed by an EKPC employee or a Contractor if deemed necessary. The CCR Managers will oversee each of the activities being performed by EKPC or the Contractor. The applicable CCR Manager will be selected based on their specific area of expertise and the CCR compliance quality assurance hierarchy chart provided in Appendix A. The CCR Environmental Compliance Director or CCR Engineering Compliance Director will approve a Contractor (if deemed necessary) based on the CCR Manager's review and recommendations.

Draft documentation associated with Tier II documents will be considered Tier I documentation until the documents have been fully reviewed and approved by the applicable EKPC personnel. The applicable CCR Manager will be responsible to obtain the necessary Draft documentation from the party performing the task. The CCR Manager will save the Draft documentation outside of the CCR Operating Record in the CCR Working Folder and notify the applicable parties inside EKPC's existing organization that the documents are ready for review. The CCR Environmental Compliance Director will advise the CCR Manager if Legal Counsel shall be included in the review process. The CCR Manager will address review comments in the Draft documentation and provide final documentation to the review team. This may require issuing comments to the Contractor performing the scope of work to update and submit final documentation. After the review process has been completed, the CCR Manager will notify the CCR Gatekeeper to place the final documentation in the CCR Operating Record. Draft and final documents shall follow the naming convention as outlined in Section 7.0.

Remedial actions, if any, will be initiated by entry into a CMMS system or equivalent data management process system for remedial action via a work order. The CCR Managers will initiate these work orders to be performed at the Plant level. Once the work order is completed by the Plant, the CCR Manager will document that the remedial action was completed and provide this documentation for the CCR Gatekeeper to place in the CCR Operating Record along with the appropriate CCR documentation that originally initiated the remedial action. If required, the CCR Manager will coordinate with E&C Shared Services to obtain the necessary -remedial action completion documentation indicated above.

Appendix B contains flowcharts outlining the activities associated with Tier II documents. These are to be used by the CCR Managers and the CCR Gatekeeper to perform the associated tasks and to track the progress of these tasks in order to stay in compliance with the CCR Rule.

6.0 TIER III DOCUMENTS

CCR related documents or reports in Tier III include:

- Fugitive Dust Control Documents
 - Fugitive Dust Control Plans
 - Annual Fugitive Dust Control Reports
- Closure/Post-Closure Documents
 - Notice of Intent to Initiate Closure
 - Annual Closure Progress Reports
 - Closure and Post-Closure Plans
 - Notification of Closure Completion
 - Alternative Closure Notification
 - Alternative Closure Annual Progress Reports
 - Time extension for initiating closure
 - Time extension for completing closure
 - Notification of Intent to Close CCR unit
 - Deed Notification
 - Notification of Completion of Post-Closure Care
- Inspection Documents
 - Annual Inspections
 - Initial and Periodic Reports
 - History of Construction
 - Hazard Potential Classification Assessments
 - Structural Stability Assessments
 - Safety Factor Assessments
 - Run-On/Run-Off Control System Plans
 - Inflow Design Flood Control System Plans
 - Emergency Action Plans (significant or high hazard CCR Units)
 - Annual Face-to-Face meeting with local emergency responders (significant or high hazard CCR Units)
- Groundwater Monitoring Documents
 - Groundwater Monitoring System Certification
 - Groundwater Monitoring Report and Corrective Action Reports
 - Certification of Selected Statistical Method(s)

- Notification that an Assessment Monitoring Program has been Established
- Notification Identifying Constituents Exceeding Groundwater Protection Standard
- Notification Stating Assessment of Corrective Measures has been Initiated
- Completed Assessment of Corrective Measures
- Selection of Remedy Semi-Annual Report
- Completion of Remedy
- Construction Documents for existing, new or expansions of CCR units
 - Liner Design and Construction Certifications
 - Documentation of liner type for Existing CCR Surface Impoundments
- Corrective Measures
 - Corrective Measures Taken to Remedy a Deficiency or Release Identified by the CCR Rule's operating requirements
- Retrofit Documents
 - Retrofit Plan
 - Notification of Intent to comply with Alternative Retrofit requirements
 - Annual Retrofit Progress Reports
 - Retrofit Time Extension
 - Notification of Intent to Initiate Retrofit
 - Completion of Retrofit
- Location Restrictions Documents
 - Placement Above the Uppermost Aquifer
 - Wetlands
 - Fault Areas
 - Seismic Impact Zones
 - Unstable Areas

Activities associated with Tier III documents will be performed by an EKPC employee or a Contractor if deemed necessary. The CCR Managers will oversee each of the activities being performed by EKPC or the Contractor. The applicable CCR Manager will be selected based on their specific area of expertise, and the CCR compliance quality assurance hierarchy flowchart provided in Appendix A delineates the chain of command for each role in EKPC's CCR compliance program. The CCR Environmental Compliance Director or CCR Engineering Compliance Director and the CCR Executive Sponsor will approve a Contractor (if deemed necessary) based on the CCR Manager's review and recommendations.

Draft documentation associated with Tier III documents will be considered Tier I documentation until the documents have been fully reviewed and approved by the applicable EKPC personnel. The applicable CCR Manager will be responsible to obtain the necessary Draft work from the party performing the task. The CCR Manager will save the Draft documentation outside of the CCR Operating Record in the CCR Working Folder and notify the applicable parties inside EKPC's existing organization that the documents are ready for review. The CCR Environmental or the CCR Engineering Compliance Director will advise the CCR Manager if Legal Counsel shall be included in the review process. The CCR Manager will issue comments to the Contractor performing the scope of work to update and submit final documentation. After the review process has been completed, the CCR Manager will notify the CCR Gatekeeper to place the final documentation in the CCR Operating Record and on the CCR public website and notify the State Director and/or Tribal Authority that the CCR compliance documentation has been placed in the CCR Operating Record and on the CCR public website. Draft and final documents shall follow the naming convention as outlined in Section 7.0.

Work orders, if any, will be initiated by entry into the CMMS system or equivalent data management process system for any remedial or corrective action via a work order. The CCR Managers will initiate these work orders to be performed at the Plant level. Once the work order is completed by the Plant, the CCR Manager will document that the work order was completed and provide this documentation for the CCR Gatekeeper to place in the CCR Operating Record along with the appropriate CCR documentation that originally initiated the remedial action. If required, the CCR Manager will coordinate with E&C to obtain the necessary completion documentation indicated above. Remedial actions shall not be placed on the CCR public website unless specifically identified as a Tier III document in the process flowcharts found in Appendix B. Some remedial actions may require contract-term solutions that the CCR Managers will bring to the attention of the CCR Executive Sponsor, the CCR Environmental Compliance Director, and/or the CCR Engineering Compliance Director so that a solution can be determined prior to initiating a work order or procuring contract services to perform the work.

Appendix B contains flowcharts outlining the activities associated with Tier III documents. These are to be used by the CCR Managers and the CCR Gatekeeper to perform the associated tasks and to track the progress of these tasks in order to stay in compliance with the CCR Rule.

7.0 DATA ORGANIZATION AND NAMING CONVENTIONS

Data organization is a critical function in the QAP process in order to ensure documentation is maintained for internal use or for CCR Rule compliance. The tiers discussed in this program document and shown in the process flowcharts located in Appendix B indicate folder structures and electronic mailboxes in which various documents will be saved or sent to throughout steps of each process. Tables containing information and file system permissions for these folder structures and electronic mailboxes can be found in Appendix C.

Naming conventions for Tier II and Tier III documents are to follow the standard naming convention noted below. This standardization is intended to allow for easy organization of documentation that has to be placed in the CCR Operating Record or on the CCR public website.

- Naming convention standard:
 - Location_Unit_Date of Document/Report_Document/Report type
- Example naming convention:
 - Spurlock_Ash Pond_20151019_7-Day Inspection Report

Tier I documentation will not have a standard naming convention since this documentation will be for various internal purposes that EKPC requires. If deemed necessary, EKPC will mutually agree upon the naming of any of these documents and provide this information to the Contractor if one has been hired to perform the scope of work. However, Tier I documentation that is a Draft version of Tier II and Tier III documentation shall follow the same naming convention noted above but add “Draft” prior to the standard.

- Example Draft naming convention:
 - Draft_Spurlock_Ash Pond_20151019_7-Day Inspection Report

Subject line naming conventions for electronic mail correspondence related to the development and final submittal of Tier II and Tier III documentation are to follow the standard naming convention noted below. The standardization is intended to allow for easy organization of correspondence between EKPC and the Contractor performing the scope of work related to documents necessary to maintain CCR Rule

compliance. Electronic mail correspondence related to Draft documentation shall follow the same naming convention except that “Draft” shall be included as indicated below.

- Subject line naming convention standard:
 - CCR – Location_Unit_Date of Document/Report_Document/Report type
- Example subject line naming convention:
 - CCR – DRAFT_Cooper_Landfill_20151021_7-Day Inspection Report
 - CCR – Spurlock_Ash Pond_20151019_7-Day Inspection Report

CCR compliance documentation placed in the CCR Operating Record and on the CCR public website can be removed after five years. The CCR Gatekeeper shall review the CCR Operating Record and CCR public website on an annual basis to determine if removal of any CCR compliance documentation is allowed to be performed. The CCR Gatekeeper will consult with the CCR Environmental Compliance Director and the CCR Engineering Compliance Director to determine if the CCR compliance documentation should be removed pursuant to the CCR Rule or if the documentation is necessary to remain. Based on that determination, the CCR Gatekeeper shall remove necessary documentation from the CCR Operating Record and the CCR public website. Prior to removal of any documentation from the CCR Operating Record, the CCR Gatekeeper will archive the historical documentation in a separate file retention system outside the CCR Operating Record and the CCR Working Folder deemed necessary by the CCR Environmental Compliance Director or the CCR Engineering Compliance Director.

8.0 SCHEDULING

Appendix B provides process flowcharts for the CCR compliance processes. Within these process flowcharts are expected durations and/or specific dates to aid in the scheduling of activities for individual CCR Managers as well as other Roles as defined in Section 3.0. Scheduling may require prior planning as some documentation will take longer to generate than others, which has been indicated in the process flowcharts. Additional process flowcharts may be required in revisions to this manual to allow for CCR Rule changes or EKPC internal changes.

As part of the scheduling process, the CCR Gatekeeper, along with legal oversight, tracks CCR compliance dates and when subsequent documentation is required to be placed into the CCR Operating Record. The CCR Gatekeeper uses an environmental management system, such as Perillon, to do so. This process fits the specific needs of multiple CCR Units and their current, but separate and unique, CCR compliance requirements. As additional requirements are implemented, Perillon will be updated to reflect the necessary scheduling dates. The CCR Gatekeeper will implement, at a minimum, semi-annual meetings with the entire CCR QAP team to discuss the pending and upcoming compliance dates and documentation required.

Appendix E contains a glossary of CCR documents. This glossary contains three groups of documents:

- Scope of work documents and supplements used to procure services to perform inspections/assessments/reports/etc. to comply with the CCR Rule
- CCR Rule compliance documents that are to be reviewed and/or revised periodically to comply with the CCR Rule
- Procedural documents used to track and outline processes necessary to comply with the CCR Rule

This glossary is intended to be used as a reference to review how various documents are to be used and when they should be used in order to comply with the CCR Rule. The glossary is designed to track revisions to the native documents to verify the current revisions are always used. Additionally, the glossary is intended to identify specific CCR Working Folder documents that assist in CCR Rule compliance.

9.0 QUALIFICATIONS

The CCR Rule requires that either a qualified person or a professional engineer perform specific tasks associated with CCR Rule compliance. A qualified person does not have to be a professional engineer. However, some training must be provided to the individual(s) responsible for performing the activity. CCR compliance plans/programs have been developed to include qualifications for a qualified person in the context of the specific plans/programs. In the absence of a CCR compliance plan/program, the following qualifications shall be used as guidance.

- A qualified person for the purposes of inspections is intended to mean an individual who:
 - Recognizes specific appearances of structural weakness and other conditions which are disrupting or have the potential to disrupt the operation or safety of the CCR unit by visual observation.
 - Is competent in items relating to CCR unit investigation and operation for the type of CCR unit being inspected.
 - Understands the effects of adverse CCR unit incidents and failures and potential causes of failures.
 - Is qualified by education, technical knowledge and experience to make the specific technical certifications
- For documents required by the CCR Rule to be sealed by a professional engineer, the engineer must be licensed in the Commonwealth of Kentucky and have qualifications for similar work.
- For tasks to be performed by a surveyor:
 - Topographic surveys shall be performed by a licensed professional surveyor in the Commonwealth of Kentucky
 - Bathymetric surveys shall be performed by or under the direction of a licensed professional surveyor in the Commonwealth of Kentucky.

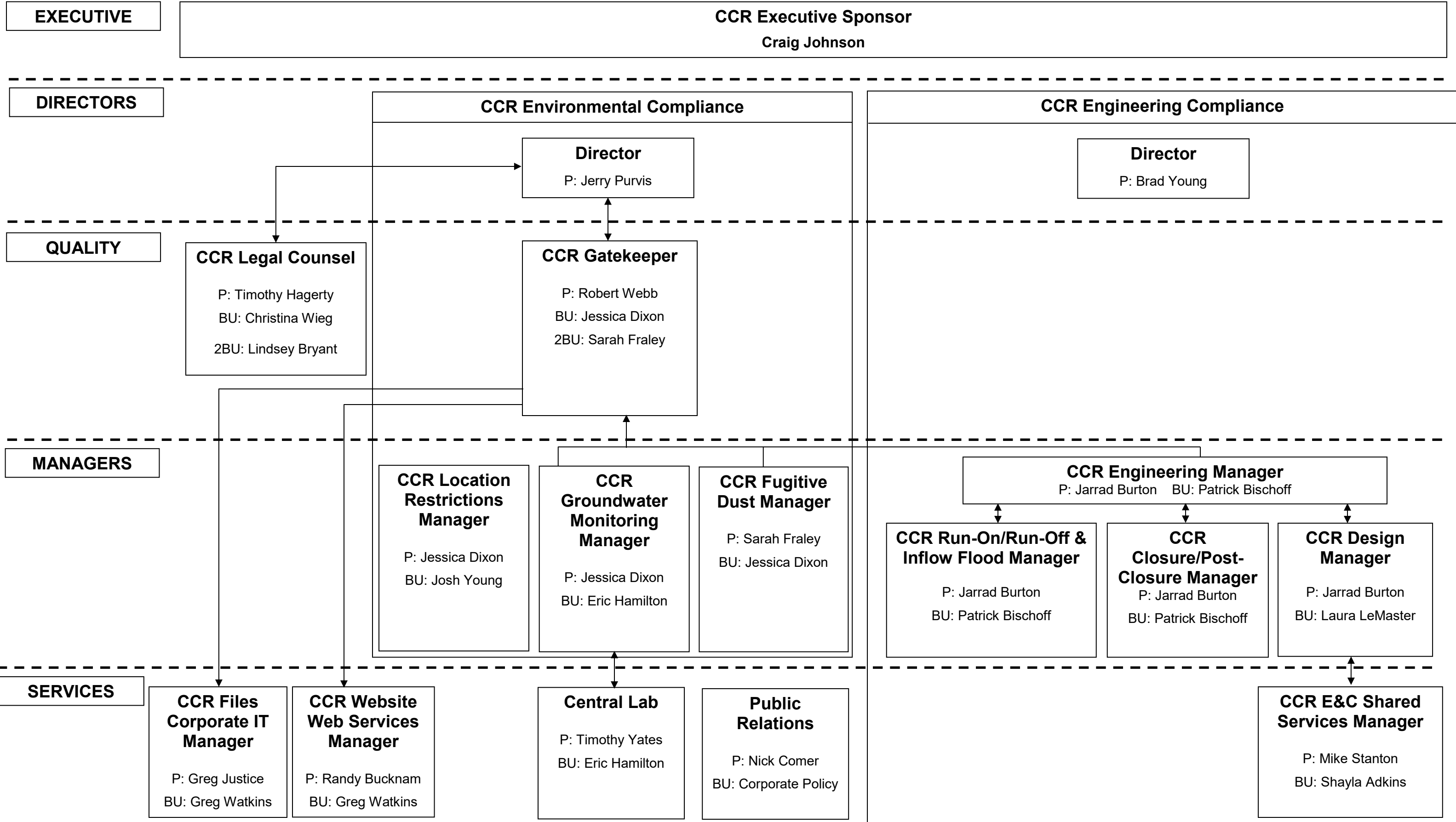
10.0 PROGRAM ASSESSMENT

On an annual basis, the CCR Gatekeeper will meet with the CCR Environmental Compliance Director, the CCR Engineering Compliance Director, and the CCR Managers to review the existing Quality Assurance Program to identify any needed changes. If any action items are identified, they will be incorporated by the CCR Gatekeeper and included in the record of revisions and updates in Section 11.0. Finally, the CCR Gatekeeper will redistribute the updated Quality Assurance Program to each of the EKPC personnel filling the Roles as defined in this document.

APPENDIX A – CCR COMPLIANCE QUALITY ASSURANCE HIERARCHY CHART

CCR Compliance Quality Assurance Hierarchy Chart

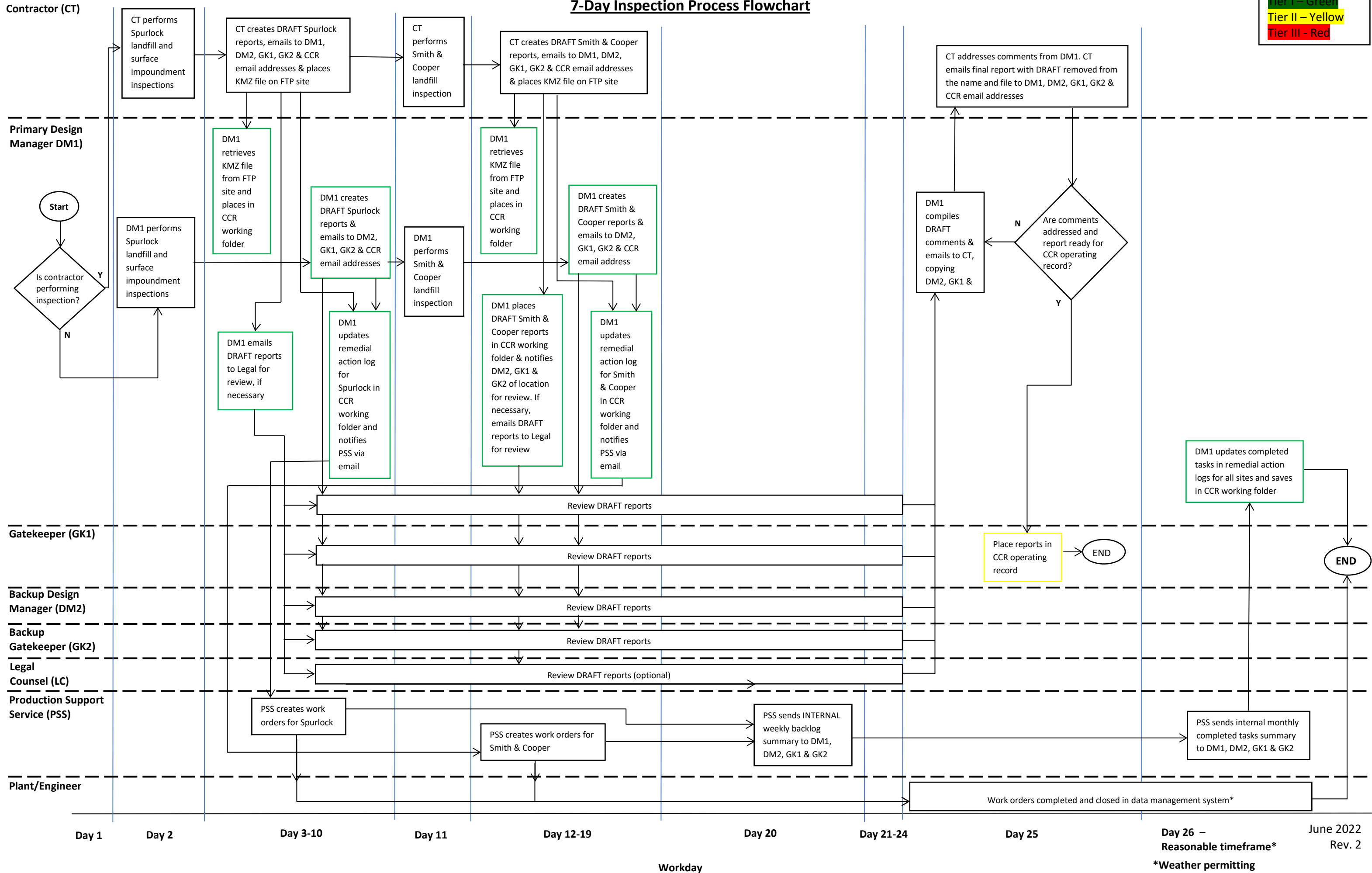
P: Primary
 BU: Backup
 2BU: Second Backup



APPENDIX B – PROCESS FLOWCHARTS

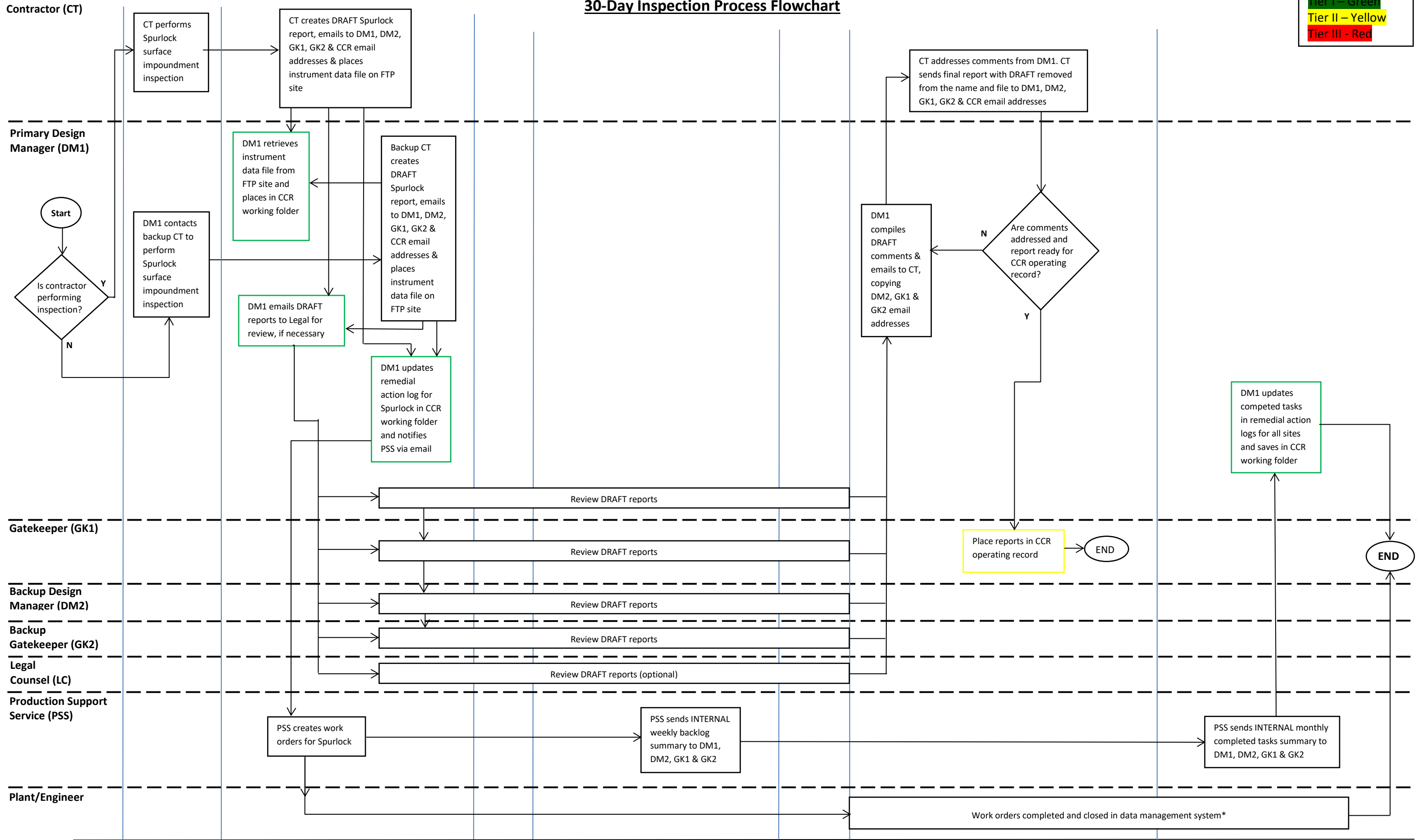
7-Day Inspection Process Flowchart

Tier I – Green
 Tier II – Yellow
 Tier III - Red



30-Day Inspection Process Flowchart

Tier I – Green
 Tier II – Yellow
 Tier III - Red



Day 1*
 *Same day of the week every 28 days

Day 2

Day 3-10

Day 11-14

Day 15

Day 16-26

Day 27

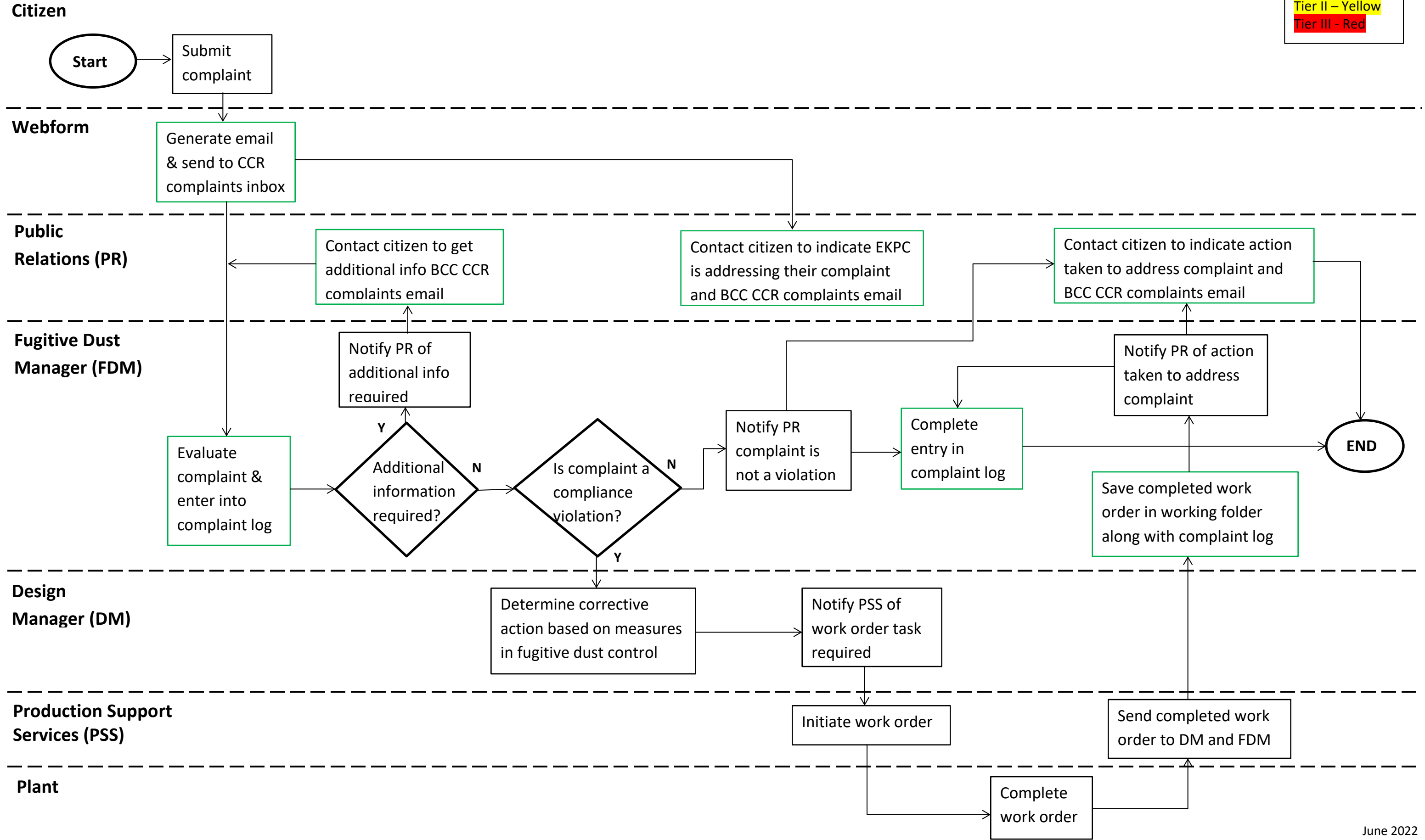
Day 28 –
 Reasonable timeframe**

June 2022
 Rev.2

**Weather permitting

Fugitive Dust (FD) Citizen Complaint Flowchart

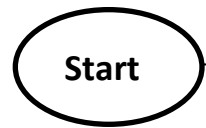
Tier I – Green
Tier II – Yellow
Tier III - Red



Annual Fugitive Dust Control Report Flowchart

Tier I – Green
Tier II – Yellow
Tier III – Red

Fugitive Dust
Manager 1 (FDM1)



Create DRAFT
annual fugitive dust
and save to CCR
working folder

Reconcile feedback
and update report

Fugitive Dust
Manager 2 (FDM2)

Review DRAFT report

Gatekeeper 1
(GK1)

Review DRAFT report

Place in CCR
operating
record and
public
website

Notify
appropriate
state and/or
tribal
authority



Backup
Gatekeeper (GK2)

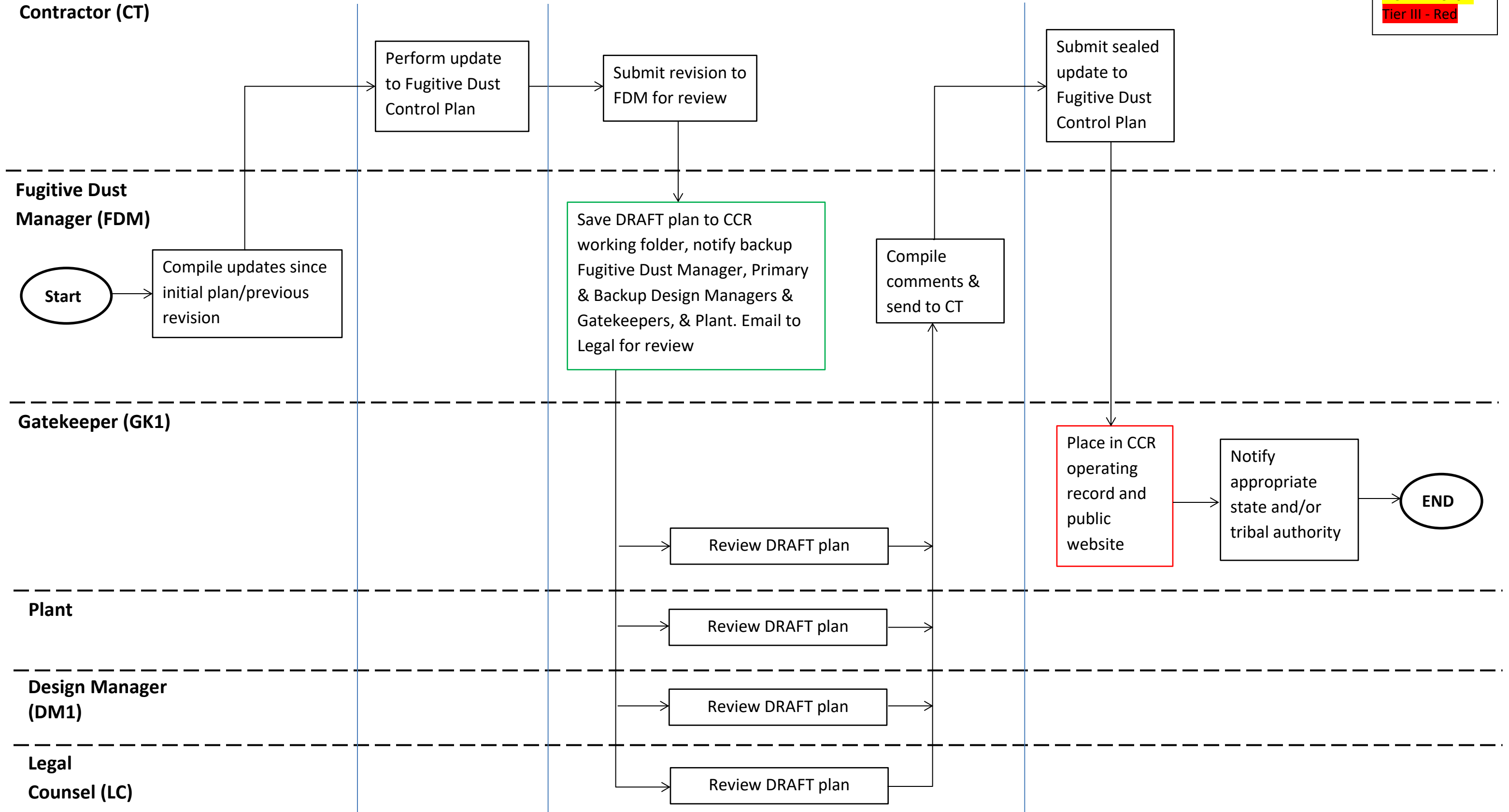
Review DRAFT report

Legal
Counsel (LC)

Review DRAFT report

Amendment to Fugitive Dust Control Plan Process Flowchart*

Tier I – Green
Tier II – Yellow
Tier III - Red

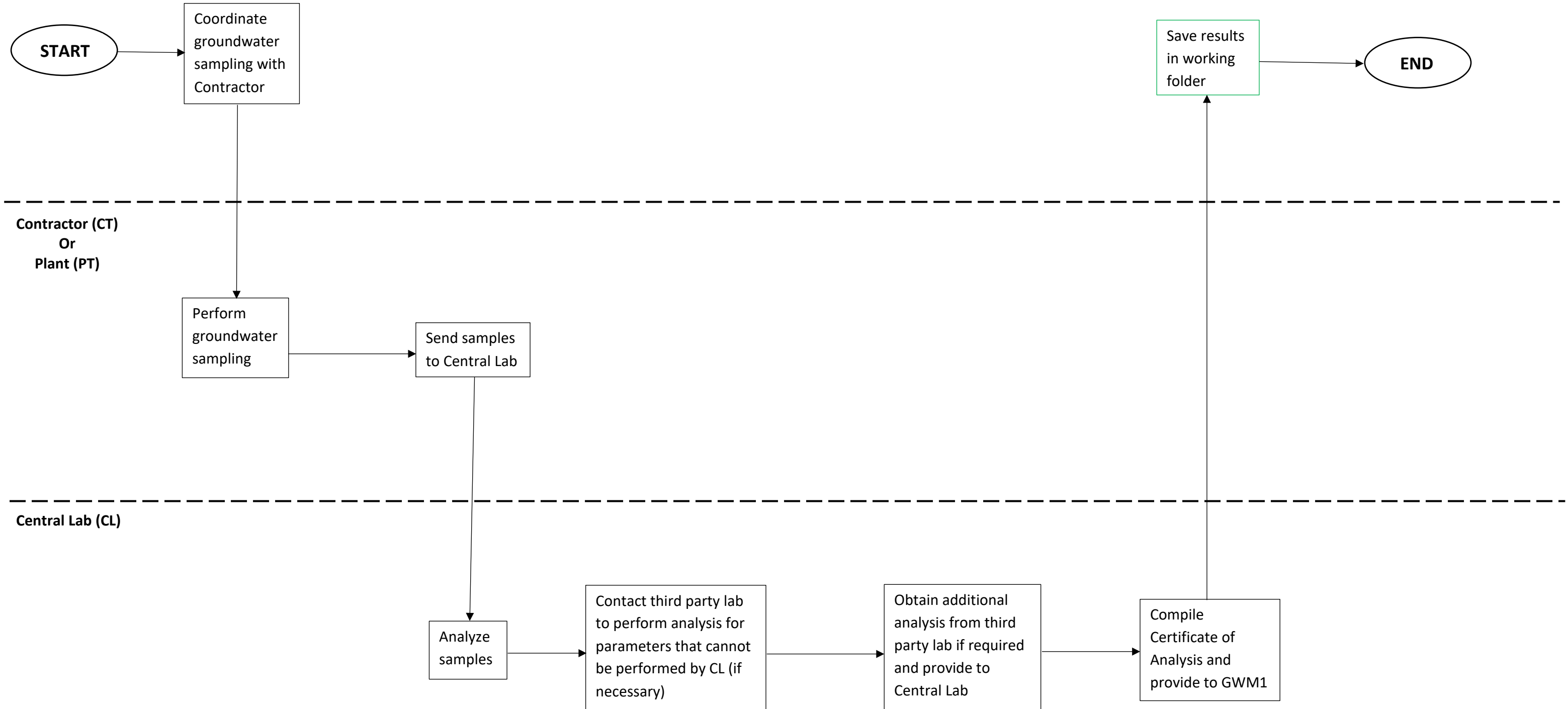


*If condition at plant changes substantially affecting the written fugitive dust control plan in effect

Groundwater Monitoring Sampling and Analysis Outline Flowchart¹

Tier I – Green
Tier II – Yellow
Tier III - Red

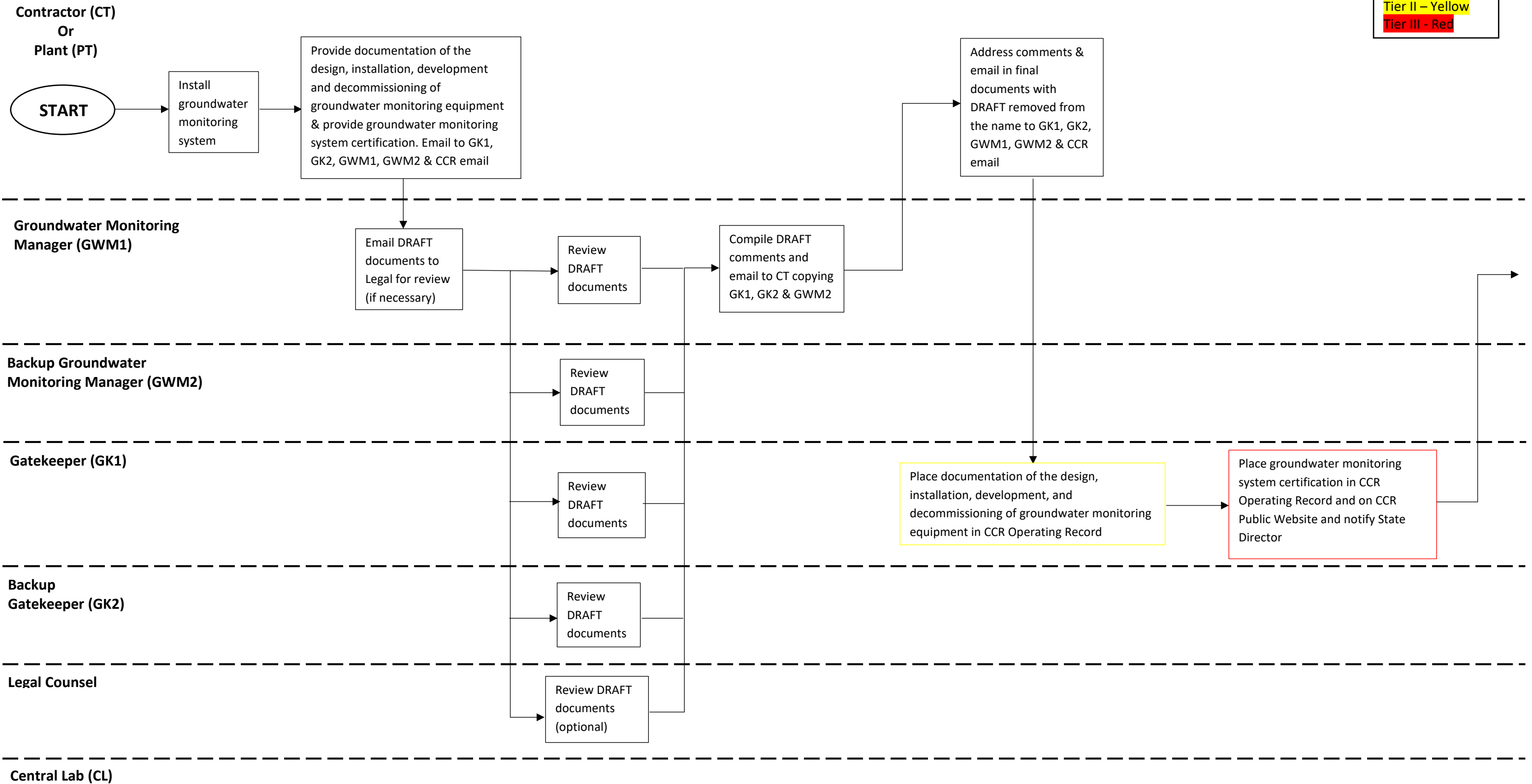
Groundwater Monitoring Manager (GWM1)



¹ This is an overview of the process. Specific groundwater processes can be found on subsequent and more detailed flowcharts.

Establishing Groundwater Monitoring Program Process Flowchart (Pg. 1)

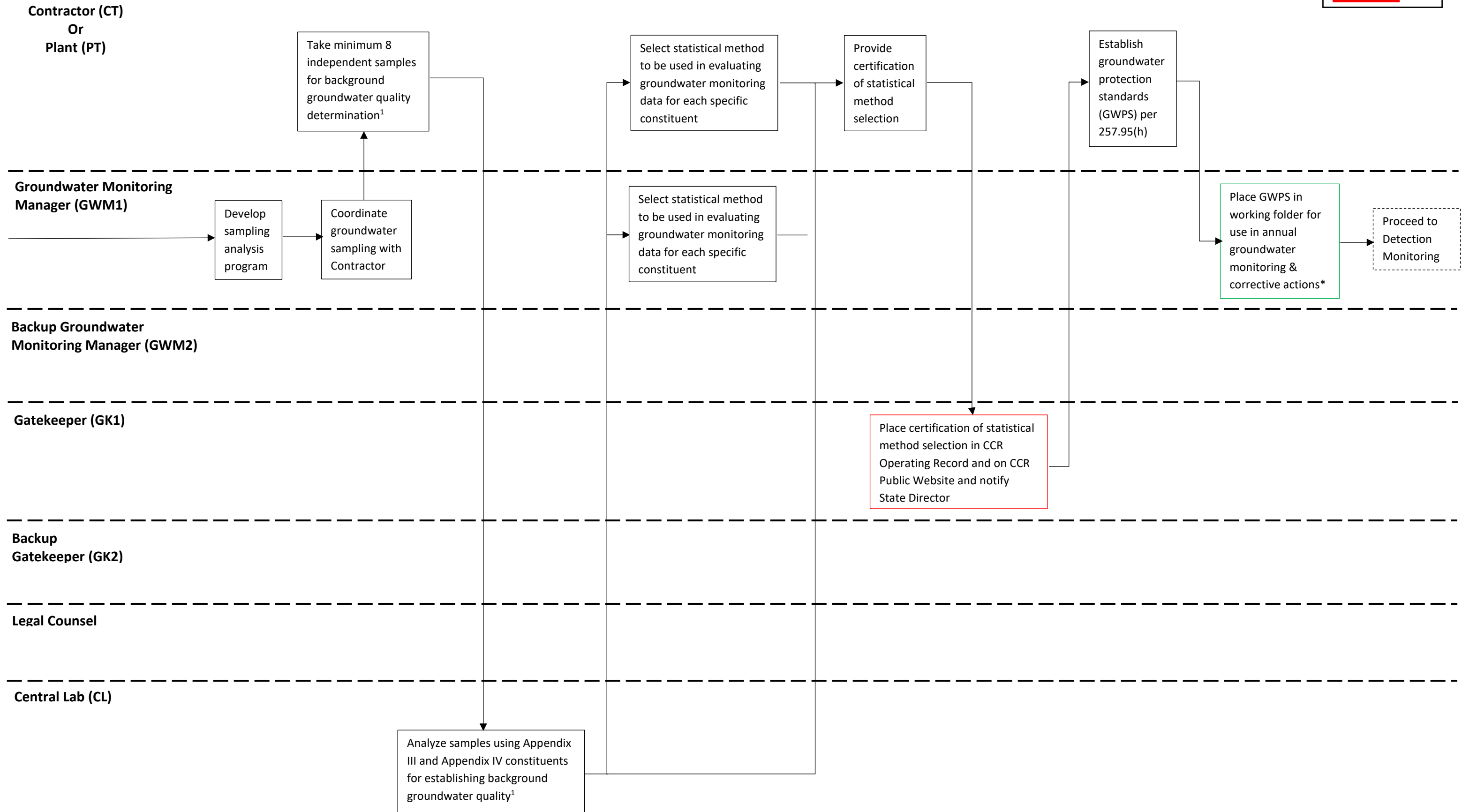
Tier I – Green
Tier II – Yellow
Tier III - Red



¹ For detailed tasks related to groundwater sampling and analysis, refer to Groundwater Sampling & Analysis Process Flowchart

Establishing Groundwater Monitoring Program Process Flowchart (Pg. 2)

Tier I – Green
Tier II – Yellow
Tier III - Red

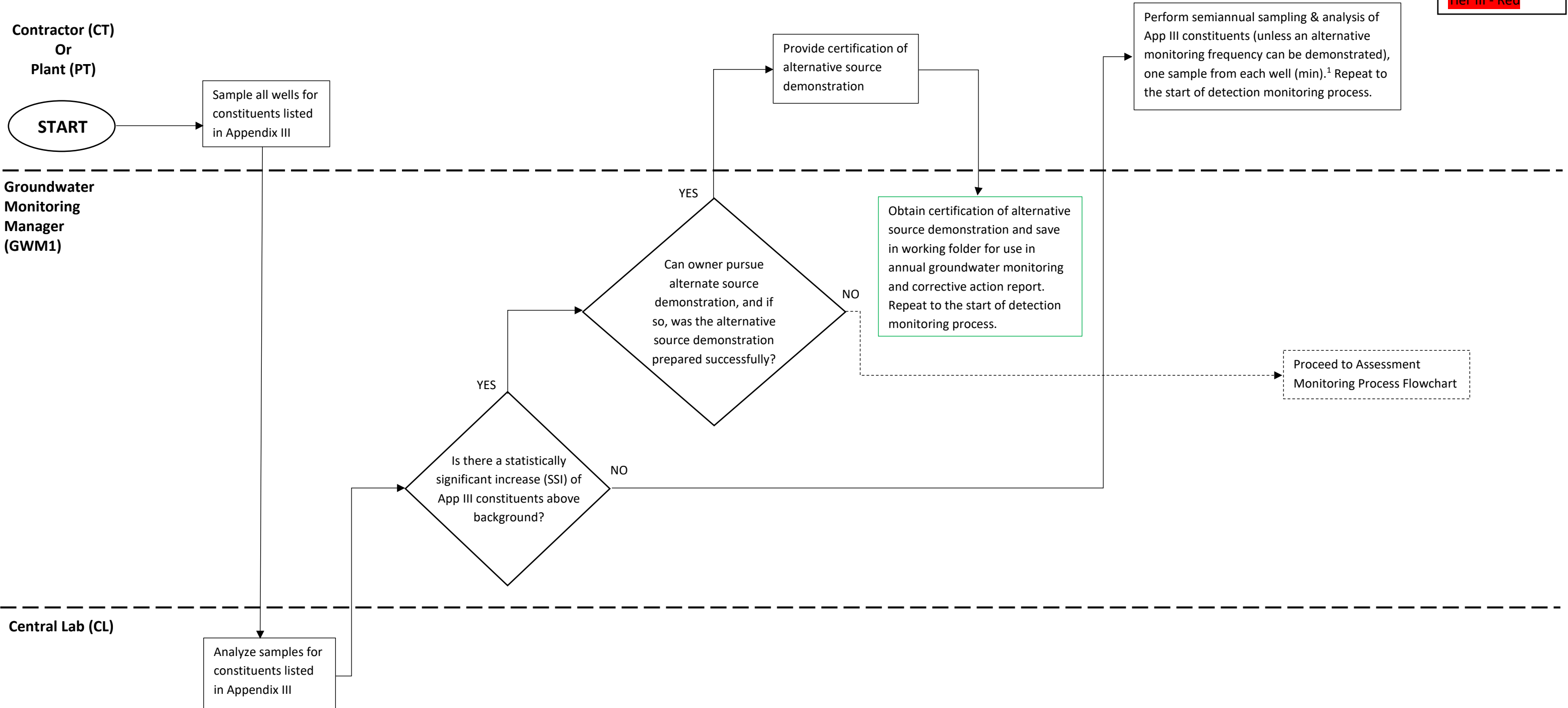


¹ For detailed tasks related to groundwater sampling and analysis, refer to Groundwater Sampling & Analysis Process Flowchart

***Does not have to be initiated prior to proceeding to detection monitoring**

Detection Monitoring Process Flowchart

Tier I – Green
Tier II – Yellow
Tier III - Red



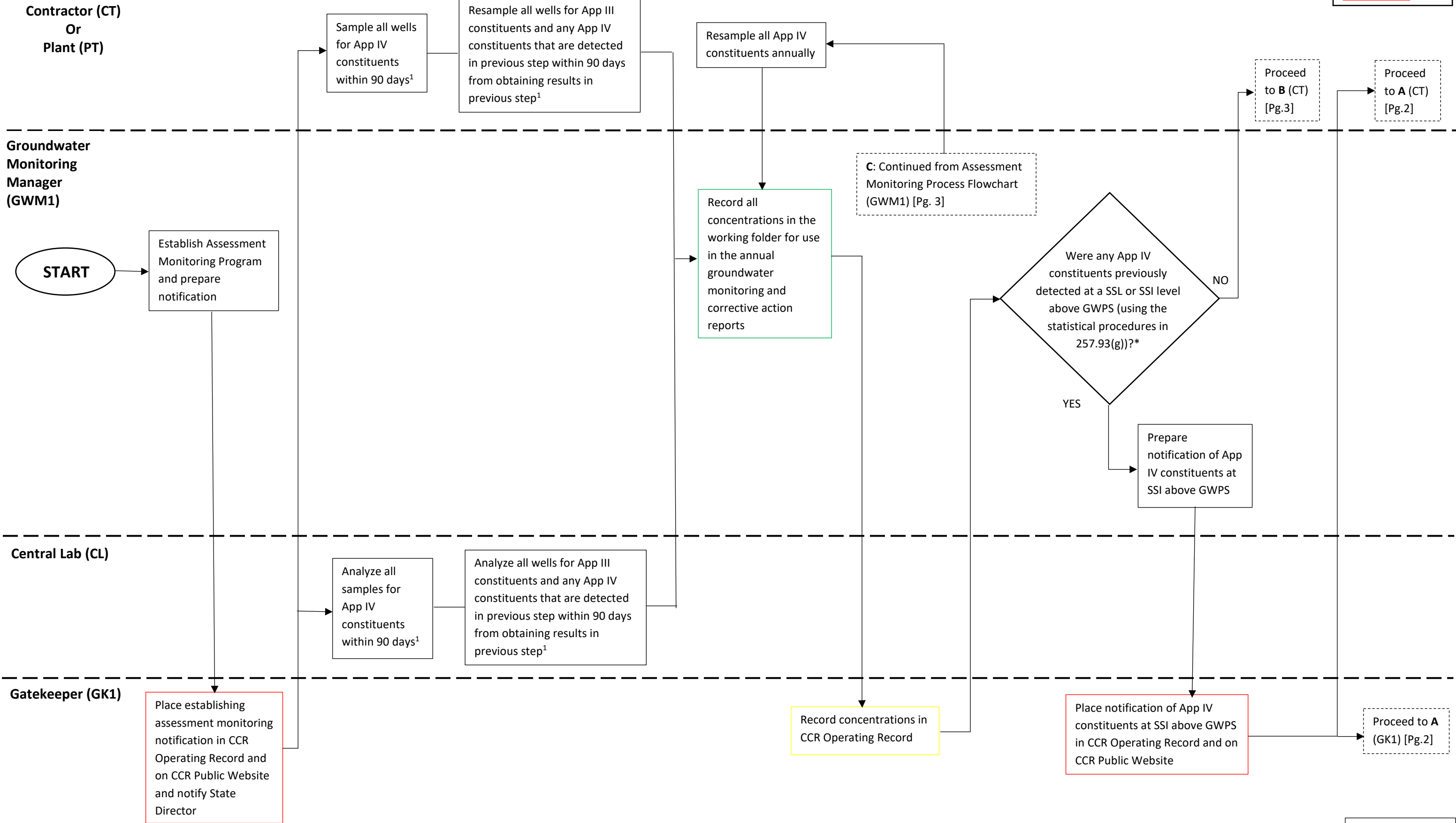
¹ For detailed tasks related to groundwater sampling and analysis, refer to Groundwater Sampling & Analysis Process Flowchart

*SSL: Statistically Significant Increase

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Rev. 2

Assessment Monitoring Process Flowchart (Pg. 1)

Tier I – Green
 Tier II – Yellow
 Tier III - Red



¹ For detailed tasks related to groundwater sampling and analysis, refer to Groundwater Sampling & Analysis Process Flowchart

*Established prior to comparison

Assessment Monitoring Process Flowchart (Pg. 2)

Tier I – Green
Tier II – Yellow
Tier III - Red

Contractor (CT)

A: Continued from (CT) [Pg.1]

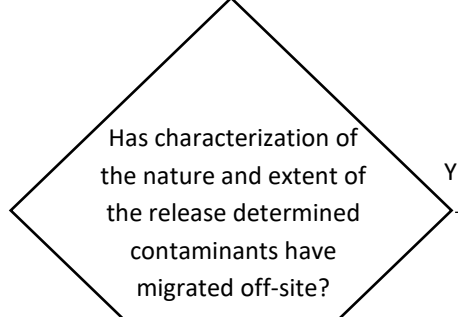
Characterize the nature and extent of the release per 257.95(g)(1)

Provide certification of alternative source demonstration

Public Relations (PR)

Notify all persons who own the land or reside on the land that directly overlies any part of the plume of contamination.

Groundwater Monitoring Manager (GWM1)



Prepare notification of all persons who own land or reside on the land that directly overlies any part of the plume of contamination

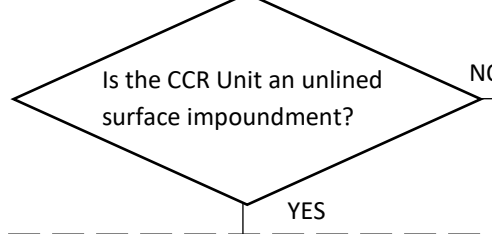
Obtain certification of alternative source demonstration and include in annual groundwater monitoring and corrective action report

Gatekeeper (GK1)

A: Continued from (GK1) [Pg.1]

Place notification for all persons who own land or reside on the land that directly overlies any part of the plume of contamination in CCR operating record and on CCR public website

Engineering Manager (EM1)



Proceed to Assessment of Corrective Measures Process Flowchart

Closure Manager (CM1)

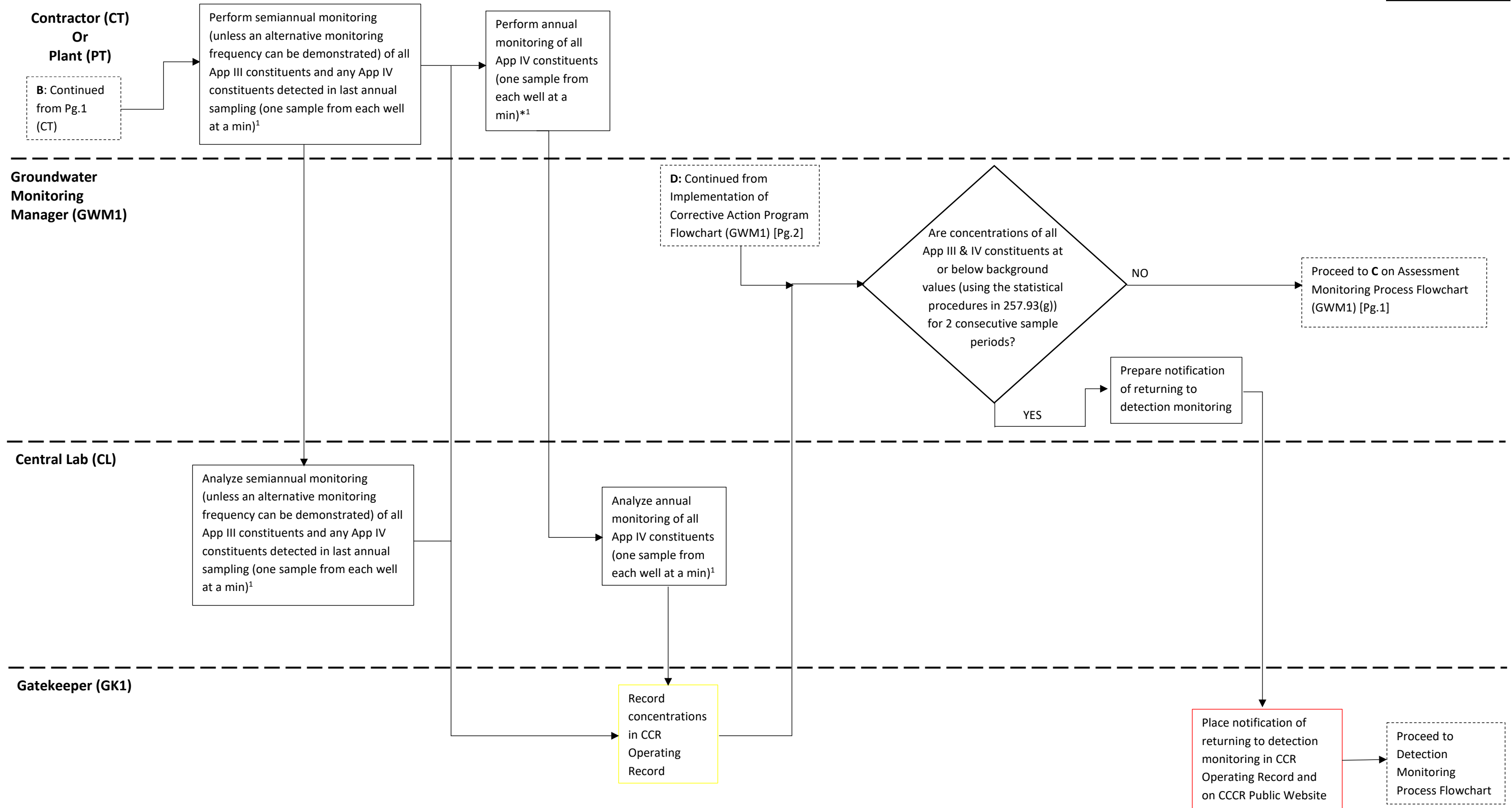
Close unlined surface impoundment per 257.101(a) and place notification in CCR Operating Record and on CCR Public Website and notify SD

¹ For detailed tasks related to groundwater sampling and analysis, refer to Groundwater Sampling & Analysis Process Flowchart

*SSL: Statistically Significant Level

Assessment Monitoring Process Flowchart (Pg. 3)

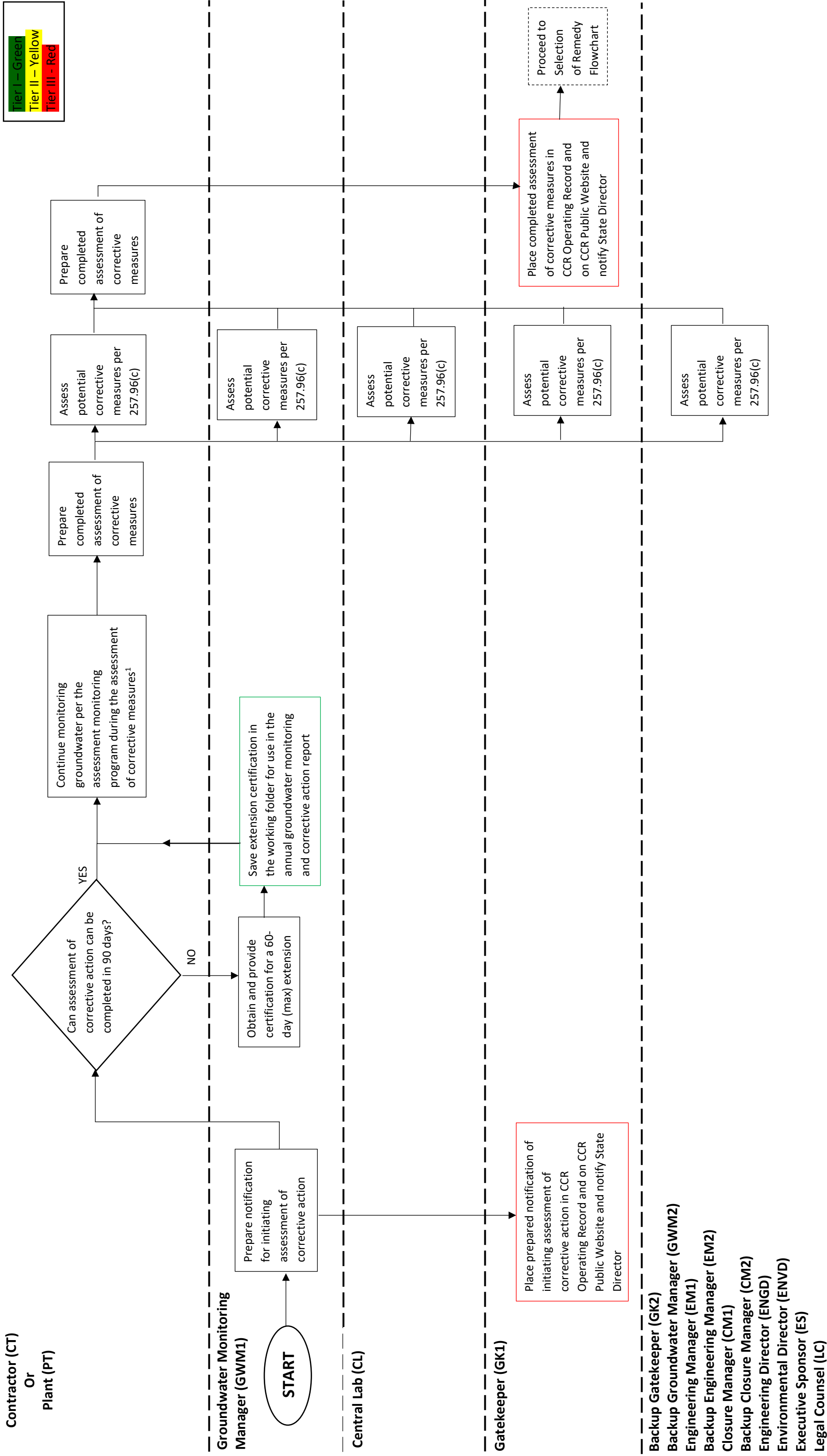
Tier I – Green
Tier II – Yellow
Tier III - Red



¹ For detailed tasks related to groundwater sampling and analysis, refer to Groundwater Sampling & Analysis Process Flowchart

***This occurs after the results of every two semi-annual events are analyzed for SSIs/SSLs**

Assessment of Corrective Measures Process Flowchart



Tier I - Green
Tier II - Yellow
Tier III - Red

¹ For detailed tasks related to groundwater sampling and analysis, refer to Groundwater Sampling & Analysis Process Flowchart

Selection of Remedy Process Flowchart

Tier I – Green
Tier II – Yellow
Tier III - Red

Groundwater Monitoring Manager (GWM1)

START

Hold a public meeting with interested and affected parties to discuss results of remedial measures assessment at least 30 days prior to selecting a remedy

Public Relations (PR)

Hold a public meeting with interested and affected parties to discuss results of remedial measures assessment at least 30 days prior to selecting a remedy

Gatekeeper (GK1)

Place public meeting minutes in CCR Operating Record

Place semiannual remedy selection/design progress report in CCR Operating Record and on CCR Public Website

Select remedy

Place final remedy report and certification in CCR operating record and on CCR public website

Proceed to Implementation of the Corrective Action Program Flowchart

Contractor (CT)

Prepare semiannual remedy selection/design progress report

Review comments and revise report

Prepare and certify final report describing remedy and how it meets standards per 257.97 (b), (c), and (d).

Backup Gatekeeper (GK2)
Backup Groundwater Manager (GWM2)
Engineering Manager (EM1)
Backup Engineering Manager (EM2)
Closure Manager (CM1)
Backup Closure Manager (CM2)
Engineering Director (ENGD)
Environmental Director (ENVD)
Executive Sponsor (ES)
Legal Counsel (LC)

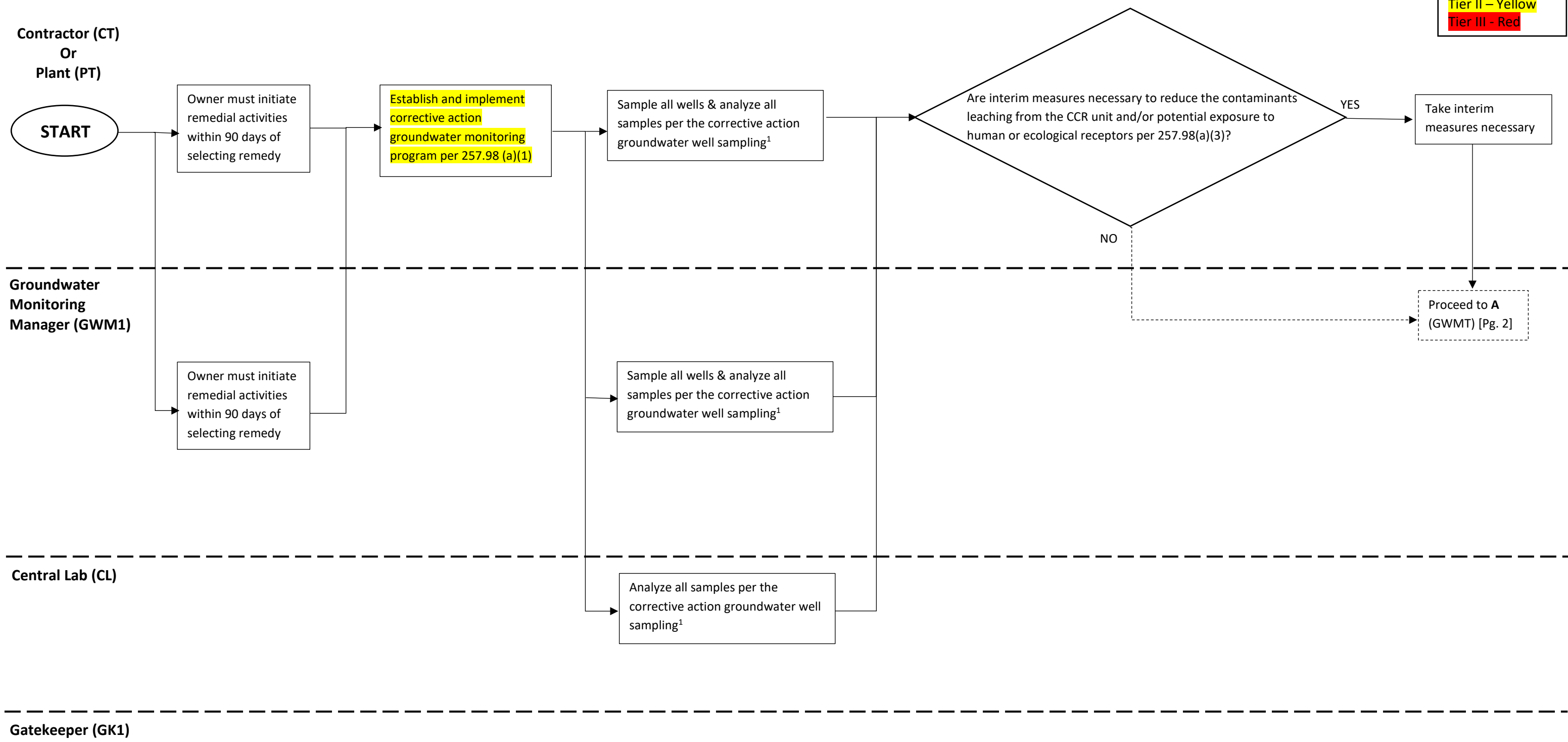
Review each report and make comments

Select remedy

¹ For detailed tasks related to groundwater sampling and analysis, refer to Groundwater Sampling & Analysis Process Flowchart

Implementation of the Corrective Action Program (Pg. 1)

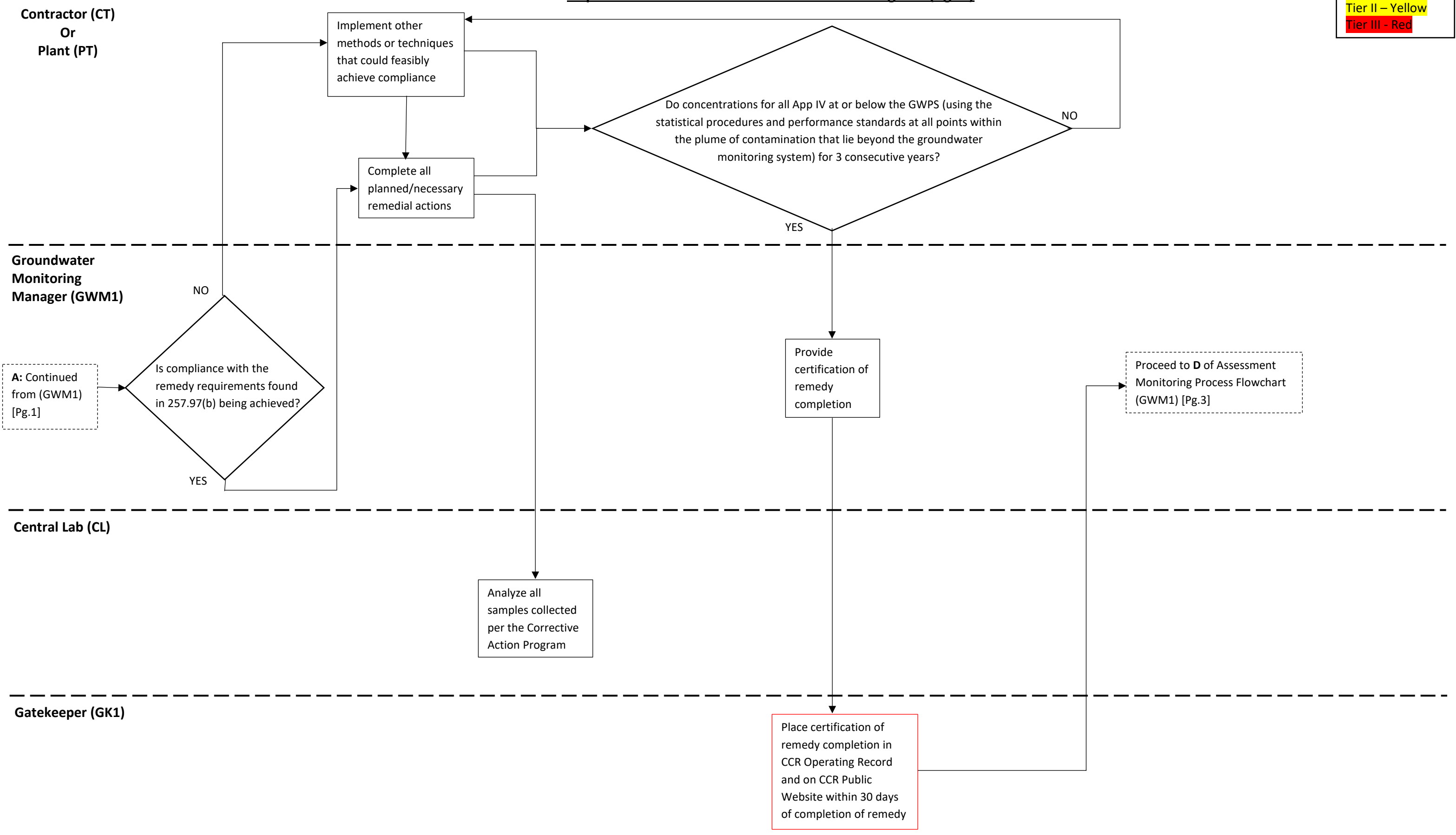
Tier I – Green
Tier II – Yellow
Tier III - Red



¹ For detailed tasks related to groundwater sampling and analysis, refer to Groundwater Sampling & Analysis Process Flowchart

Implementation of the Corrective Action Program (Pg. 2)

Tier I – Green
 Tier II – Yellow
 Tier III - Red

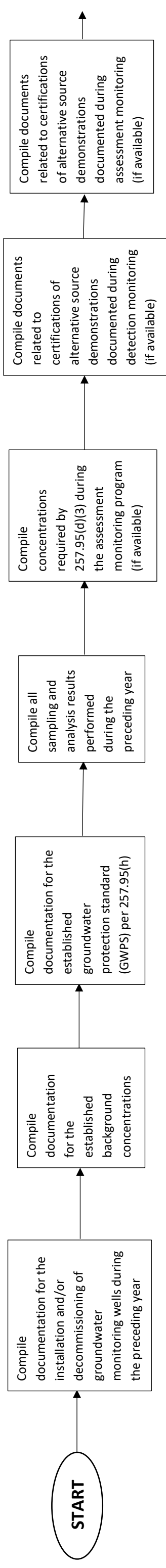


¹ For detailed tasks related to groundwater sampling and analysis, refer to Groundwater Sampling & Analysis Process Flowchart

Annual Groundwater Monitoring and Corrective Actions Report Process Flowchart (Pg. 1)



Groundwater Monitoring Manager (GWM1)



Gatekeeper (GK1)

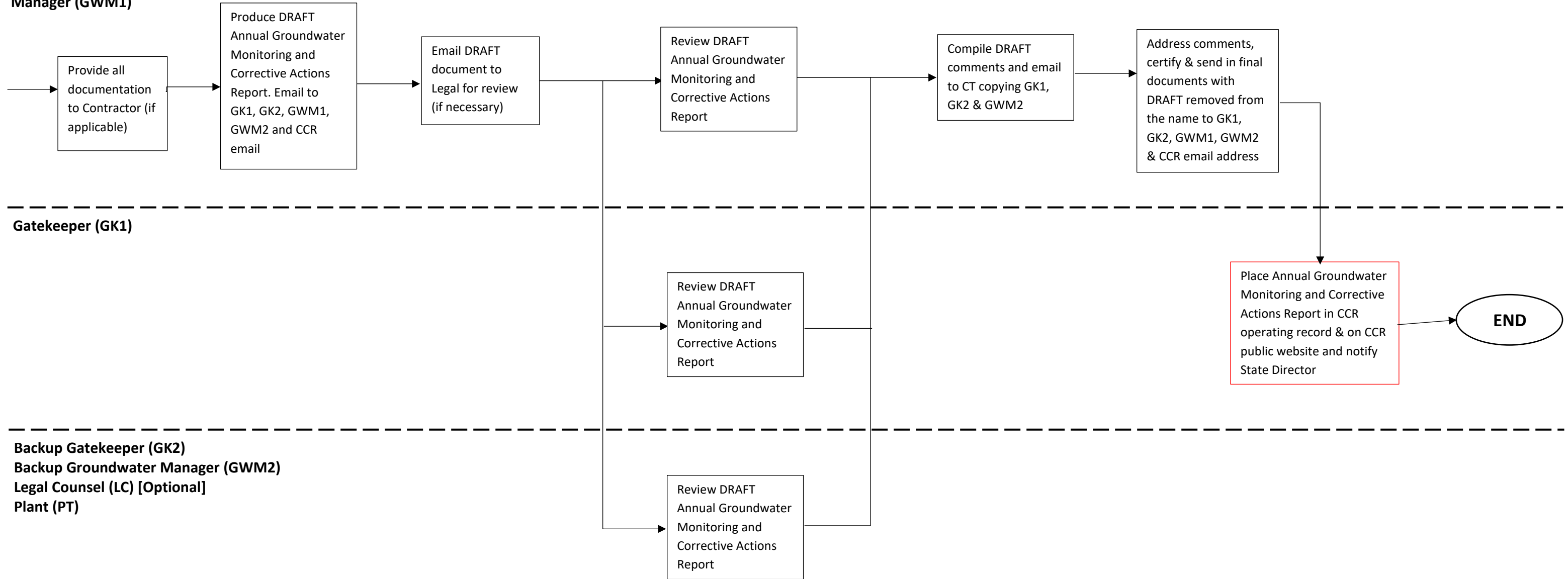
**Backup Gatekeeper (GK2)
Backup Groundwater Manager (GWM2)
Legal Counsel (LC)
Plant (PT)**

¹ For detailed tasks related to groundwater sampling and analysis, refer to Groundwater Sampling & Analysis Process Flowchart

Annual Groundwater Monitoring and Corrective Actions Report Process Flowchart (Pg. 2)

Tier I – Green
Tier II – Yellow
Tier III – Red

Groundwater Monitoring Manager (GWM1)



¹ For detailed tasks related to groundwater sampling and analysis, refer to Groundwater Sampling & Analysis Process Flowchart

APPENDIX C – FILE SYSTEM PERMISSIONS

CCR OPERATING RECORD		CCR WORKING FOLDER	
H:\CCR Rule Operating Record		H:\CCR Working Folder	
Read/Write Permission	Read Only Permission	Read/Write Permission	Read Only Permission
Jerry Purvis	Brad Young	Robert Webb	Craig Johnson
Robert Webb	Jarrad Burton	Patrick Bischoff	Jerry Purvis
Sarah Fraley	Matt Clark	Jarrad Burton	Brad Young
Jessica Dixon	Joe VonDerHaar	Matt Clark	David Meade
	Troy Lovell	Jessica Dixon	Josh Young
	Spencer Barrett	Laura LeMaster	Brad Young
	Greg Culp	Timothy Yates	David Samford
	John Warren	Eric Hamilton	
	Phillip Duncan	Jared Daugherty	
	Shawn Goad	Sarah Fraley	
	David Samford		
	Eric Hamilton		
	Patrick Bischoff		
	Craig Johnson		

CCR WORK ORDERS

H:\CCR Working Folder\CCR WO's

Read/Write Permission	Read Only Permission
Jerry Purvis	Brad Young
Robert Webb	David Meade
Patrick Bischoff	Matt Clark
Sarah Fraley	Joe VonDerHaar
Mike Stanton	Troy Lovell
Shayla Atkins	Spencer Barrett
Wes Truesdale	Greg Culp
Jarrad Burton	John Warren
Jessica Dixon	Phillip Duncan
Eric Hamilton	Rick Merritt
Laura LeMaster	

CCR ELECTRONIC MAILBOX		CCR FUGITIVE DUST CITIZEN COMPLAINTS ELECTRONIC MAILBOX	
Size: 500MB		Size: 500MB	
CCR@ekpc.coop		CCRcomplaints@ekpc.coop	
Full Permission	Read Only Permission	Full Permission	Read Only Permission
Robert Webb	Craig Johnson	Robert Webb	Craig Johnson
Patrick Bischoff	Jerry Purvis	Patrick Bischoff	Jerry Purvis
Jarrad Burton	Brad Young	Jarrad Burton	Brad Young
Jessica Dixon	David Meade	Jessica Dixon	David Meade
Laura LeMaster	Sarah Fraley	Laura LeMaster	Sarah Fraley
	David Smart		Nick Comer
	Matt Clark		David Smart
	Eric Hamilton		Matt Clark

CCR FTP SITE
External User Access
Site: ftp://ekpc.coop
User: CCRFTP
Password: P0werUP&D0wn
Internal User Access
\\webserver\ccrftp

APPENDIX D – CONTACT INFORMATION

Role	Principal Contact & Email Address	Address	Office telephone number	Alternate telephone numbers
East Kentucky Power Cooperative				
CCR Executive Sponsor	Craig Johnson craig.johnson@ekpc.coop	4775 Lexington Road Winchester, KY 40391	859-745-9427	859-746-1418
CCR Environmental Compliance Director	Jerry Purvis jerry.purvis@ekpc.coop	4775 Lexington Road Winchester, KY 40391	859-745-9244	859-595-5246
CCR Engineering Compliance Director	Brad Young brad.young@ekpc.coop	4775 Lexington Road Winchester, KY 40391	859-745-9287	859-595-9097
CCR Gatekeeper	Robert Webb robert.webb@ekpc.coop	4775 Lexington Road Winchester, KY 40391	859-745-9219	859-749-4902
CCR Groundwater Monitoring Manager/Gatekeeper Primary Backup/ Fugitive Dust Backup Manager/Location Restrictions Manager	Jessica Dixon jessica.dixon@ekpc.coop	4775 Lexington Road Winchester, KY 40391	859-745-9345	859-644-2748
CCR Fugitive Dust Manager/Gatekeeper Secondary Backup	Sarah Fraley sarah.fraley@ekpc.coop	4775 Lexington Road Winchester, KY 40391	859-745-9621	502-319-1552
CCR Engineering/Location Restrictions & Design/Closure/Post-Closure/Run-On/Run-Off Manager	Jarrad Burton jarrad.burton@ekpc.coop	4775 Lexington Road Winchester, KY 40391	859-745-9317	606-359-1912
CCR Engineering/ Closure/Post-Closure/Run-On/Run-Off Backup Manager	Patrick Bischoff patrick.bischoff@ekpc.coop	4775 Lexington Road Winchester, KY 40391	859-745-9693	859-229-4684
CCR Location Restrictions & Design Backup Manager	Laura LeMaster laura.lemaster@ekpc.coop	4775 Lexington Road Winchester, KY 40391	859-745-9234	859-983-0308
CCR Groundwater Monitoring Backup Manager/Central Lab Backup	Eric Hamilton eric.hamilton@ekpc.coop	4775 Lexington Road Winchester, KY 40391	859-745-9403	859-595-3867
Central Lab Primary	Timothy Yates tim.yates@ekpc.coop	4775 Lexington Road Winchester, KY 40391	859-745-9273	859-808-0866

Role	Principal Contact & Email Address	Address	Office telephone number	Alternate telephone numbers
East Kentucky Power Cooperative				
CCR Location Restrictions Backup Manager	Josh Young josh.young@ekpc.coop	4775 Lexington Road Winchester, KY 40391	859-745-9799	859-749-0553
CCR E& C Shared Services Manager	Mike Stanton mike.stanton@ekpc.coop	4775 Lexington Road Winchester, KY 40391	--	--
CCR E&C Shared Services Backup Manager	Shayla Adkins shayla.adkins@ekpc.coop	4775 Lexington Road Winchester, KY 40391	--	--
CCR Corporate IT Manager	Gregory Justice	4775 Lexington Road Winchester, KY 40391	859-745-9341	--
CCR Web Services Manager	Randy Bucknam randy.bucknam@ekpc.coop	4775 Lexington Road Winchester, KY 40391	859-745-9410	859-595-4547
CCR Web Services Backup Manager Corporate IT Backup Manager	Greg Watkins greg.watkins@ekpc.coop	4775 Lexington Road Winchester, KY 40391	859-745-9356	--
Public Relations Primary	Nick Comer nick.comer@ekpc.coop	4775 Lexington Road Winchester, KY 40391	859-745-9450	--
CCR Compliance Legal Counsel	David Smart david.smart@ekpc.coop	4775 Lexington Road Winchester, KY 40391	859-745-9237	859-317-3576
Spurlock Station Primary Contact	Greg Culp greg.culp@ekpc.coop	301 W 2nd St Maysville, KY 41056	606-883-3165 ext. 387	606-375-6887
Spurlock Station Backup Contact	Jacob Bevins jacob.bevins@ekpc.coop	301 W 2nd St Maysville, KY 41056	606-883-3165 ext. 259/265	606-584-6936
Spurlock Station Emergency Contact	Control Room	301 W 2nd St Maysville, KY 41056	606-883-3165 ext. 600	--
JK Smith Station Primary Contact	John Warren john.warren@ekpc.coop	12145 Irvine Rd Winchester, KY 40391	859-745-4157 ext. 6240	859-745-6240
JK Smith Station Backup Contact	Keith McCoy keith.mccoy@ekpc.coop	12145 Irvine Rd Winchester, KY 40391	859-745-4157 ext. 6325	859-771-3818
JK Smith Station Emergency Contact	Plant Operator	12145 Irvine Rd Winchester, KY 40391	859-745-4157 ext. 6310	--
Cooper Station Primary Contact	Phillip Duncan phillip.duncan@ekpc.coop	Cooper Power Plant Rd Somerset, KY 42501	606-561-4138 ext. 7214	606-271-4873
Cooper Station Backup Contact	Shawn Goad shawn.goad@ekpc.coop	Cooper Power Plant Rd Somerset, KY 42501	606-561-4138 ext. 7231	606-271-2366
Cooper Station Emergency Contact	Control Room	Cooper Power Plant Rd Somerset, KY 42501	606-561-4138	Dial 0 from Plant Phone

Role	Principal Contact & Email Address	Address	Office telephone number	Alternate telephone numbers
Frost Brown Todd LLC				
Legal Counsel Associate	Timothy Hagerty thagerty@fbtlaw.com	400 West Market Street 32nd Floor Louisville, KY 40202-3363	502-568-0268	502-558-7990
Legal Counsel Associate	Christina Wieg cwieg@fbtlaw.com	One Columbus Center 10 West Broad Street, Suite 2300 Columbus, OH 43215-3484	614-559-7219	740-385-0160

APPENDIX E – CCR DOCUMENT GLOSSARY

Glossary of CCR Documents

Description	Original Document File Name	Use	Commentary	File Location		
				Working Folder	Operating Record	CCR Website
30-Day Inspection Checklist (Surface Impoundment Instrumentation)	CCR Surface Impoundment 30-day Checklist.docx	Included in the 30-day inspection scope of work to be used as the checklist to perform the instrumentation inspection at a CCR Surface Impoundment	30-day inspections are to be kept in the CCR Operating Record	X	X	
30-Day Inspection Scope of Work	Scope of Work CCR Surface Impoundment 30-Day Inspection.doc	Used to procure services to perform 30-day instrumentation inspections at CCR Surface Impoundments		X		
5-Year Structural Integrity Assessment CCR Compliance Summary (Initial)	CCR Compliance Summary Initial Structural Integrity Assessment.docx	Included in the Initial Structural Integrity Assessment scope of work to be used in the Assessment Report as a summary table in the first section of the report	This document was only used for the Initial Structural Integrity Assessment at the Spurlock Ash Pond prior to full implementation of all CCR Rule Procedures	X		
5-Year Structural Integrity Assessment CCR Compliance Summary (Periodic)	CCR Compliance Summary Structural Integrity Assessment Report.docx	Included in the Periodic 5-Year Structural Integrity Assessment scope of work to be used in the Assessment Report as a summary table in the first section of the report	CCR Engineering Manager must ensure that the most recent version of the document is in the working folder	X		
5-Year Structural Integrity Assessment Scope of Work (Initial)	Scope of Work CCR Unit Initial Structural Integrity Assessment.doc	Used to procure services to perform the Initial Structural Integrity Assessment at the Spurlock Ash Pond (Surface Impoundment)	This scope of work was only used for the Initial Structural Integrity Assessment at the Spurlock Ash Pond (Surface Impoundment) prior to full implementation of all CCR Rule Procedures. It only contains the scope of work for the Structural Stability Assessment and Safety Factor Assessment (i.e. no other 5-year CCR requirements)	X		

Glossary of CCR Documents

Description	Original Document File Name	Use	Commentary	File Location		
				Working Folder	Operating Record	CCR Website
5-Year Structural Integrity Assessment Scope of Work (Periodic)	Scope of Work CCR Unit Structural Integrity Assessment Report.doc	Used to procure services to perform the Periodic 5-Year Structural Integrity Assessment at CCR Surface Impoundments and CCR Landfills. These services include all requirements for the Annual Inspection at CCR Surface Impoundments and CCR Landfills since the 5-Year Assessment counts as the Annual Inspection when the Annual inspection is required in the same year.	<p>This scope of work document was prepared for EKPC to procure a single contractor to perform all subsequent services required by the CCR Rule to be performed every 5-Years at EKPC's fleet of Surface Impoundments and Landfills.</p> <p>Services included in this scope include:</p> <p>For Surface Impoundments: inspection, evaluation, hazard potential classification assessment, structural stability assessment, safety factor assessment, review emergency action plan (if applicable), review inflow design flood control system plan, and review history of construction.</p> <p>For Landfills: inspection, evaluation, and review run-on and run-off control system plans</p> <p>CCR Engineering Manager must ensure that the most recent version of the document is in the working folder</p>	X		
7-Day Inspection Checklist (Landfill)	CCR Landfill 7-day Checklist.docx	Included in the 7-day and Annual Inspection scope of work documents to be used as the checklist to perform the inspections at a CCR Landfill	<p>7-day inspections are to be kept in the CCR Operating Record</p> <p>Documents are differentiated between landfill and surface impoundment within the working folder.</p>	X	X	
7-Day Inspection Checklist (Surface Impoundment)	CCR Surface Impoundment 7-day Checklist.docx	Included in the 7-day and Annual Inspection scope of work documents to be used as the checklist to perform the inspections at a CCR Surface Impoundment	7-day inspections are to be kept in the CCR Operating Record	X	X	
7-Day Inspection Scope of Work	Scope of Work CCR Unit 7-Day Inspection.doc	Used to procure services to perform 7-day inspections at CCR Surface Impoundments and CCR Landfills		X		
Aerial CADD File Index	Aerial_File_Index.xlsx	This file is used to track the Aerial CADD files, Aerial Imagery, and the CCR Documents each Aerial pdf is used as an Appendix	CCR Engineering Manager must ensure that the most recent version of the document is in the working folder	X		

Glossary of CCR Documents

Description	Original Document File Name	Use	Commentary	File Location		
				Working Folder	Operating Record	CCR Website
Aerial CADD File (Cooper Landfill)	SK-Cooper.dgn	This Aerial file is used as an Appendix in various CCR Documents	This is a generic Aerial of the Landfill and the Station CCR Engineering Manager must ensure that the most recent version of the document is in the working folder	X		
Aerial CADD File (Cooper Landfill GW)	SK-Cooper-GW.dgn	This Aerial file is used as an Appendix in the GMP and SAP documents	This Aerial is used to indicate the various monitoring points and piezometers at the Site. CCR Engineering Manager must ensure that the most recent version of the document is in the working folder	X		
Aerial CADD File (Smith Landfill)	SK-Smith.dgn	This Aerial file is used as an Appendix in various CCR Documents	This is a generic Aerial of the Landfill and the Station CCR Engineering Manager must ensure that the most recent version of the document is in the working folder	X		
Aerial CADD File (Smith Landfill GW)	SK-Smith-GW.dgn	This Aerial file is used as an Appendix in the GMP and SAP documents	This Aerial is used to indicate the various monitoring points at the Site CCR Engineering Manager must ensure that the most recent version of the document is in the working folder	X		
Aerial CADD File (Spurlock Station)	SK-Spurlock.dgn	This Aerial file is used as an Appendix in various CCR Documents	This is a generic Aerial of the Station indicating various CCR or Non-CCR Surface Impoundments. CCR Engineering Manager must ensure that the most recent version of the document is in the working folder	X		
Aerial CADD File (Spurlock Surface Impoundment)	SK-Spurlock-Ash-Pond.dgn	This Aerial file is used as an Appendix in various CCR Documents	This is a generic Aerial of the CCR Surface Impoundment and the Station CCR Engineering Manager must ensure that the most recent version of the document is in the working folder	X		
Aerial CADD File (Spurlock Surface Impoundment Instrumentation)	SK-Spurlock-Ash-Pond-2.dgn	This Aerial file is used as an Appendix in various CCR Documents	This Aerial indicates the various instrumentation located around the CCR Surface Impoundment CCR Engineering Manager must ensure that the most recent version of the document is in the working folder	X		

Glossary of CCR Documents

Description	Original Document File Name	Use	Commentary	File Location		
				Working Folder	Operating Record	CCR Website
Aerial CADD File (Spurlock Surface Impoundment Instrumentation)	SK-Spurlock-Ash-Pond-3.dgn	This Aerial file is used as an Appendix in various CCR Documents	This Aerial indicates the various instrumentation located around the CCR Surface Impoundment and includes the Piezometers installed in 2015 CCR Engineering Manager must ensure that the most recent version of the document is in the working folder	X		
Aerial CADD File (Spurlock Surface Impoundment GW)	SK-Spurlock-Ash-Pond-GW.dgn	This Aerial file is used as an Appendix in the GMP and SAP documents	This Aerial is used to indicate the various monitoring points located around the CCR Surface Impoundment CCR Engineering Manager must ensure that the most recent version of the document is in the working folder	X		
Aerial CADD File (Spurlock Landfill 1)	SK-Spurlock-Landfill.dgn	This Aerial file is used as an Appendix in various CCR Documents	This is a generic Aerial of the Landfill and the Station CCR Engineering Manager must ensure that the most recent version of the document is in the working folder	X		
Aerial CADD File (Spurlock Landfill 2)	SK-Spurlock-Landfill-2.dgn	This Aerial file is used as an Appendix in various CCR Documents	This is a generic Aerial of the Landfill. CCR Engineering Manager must ensure that the most recent version of the document is in the working folder	X		
Aerial CADD File (Spurlock Landfill GW)	SK-Spurlock-Landfill-GW.dgn	This Aerial file is used as an Appendix in the GMP and SAP documents	This Aerial is used to indicate the various monitoring points located around the Landfill CCR Engineering Manager must ensure that the most recent version of the document is in the working folder	X		
Annual Closure Progress Report	Dale_Ash Ponds 2,3,4_20161114_Annual Closure Progress Report.pdf	Used to document the closure status of the CCR Surface Impoundments at Dale Station		X		
Annual Fugitive Dust Control Report (Cooper Landfill)	Annual Fugitive Dust Control Report	Used to document the actions taken to control CCR fugitive dust, record all citizen complaints related to fugitive dust, and any corrective measures taken	To be completed 14 months after placing initial fugitive dust control plans in the CCR Operating Record and Annually thereafter. Reference the Power Plant's specific Fugitive Dust Plan for additional information CCR Fugitive Dust Manager must ensure that the most recent version of the document is in the working folder	X	X	X

Glossary of CCR Documents

Description	Original Document File Name	Use	Commentary	File Location		
				Working Folder	Operating Record	CCR Website
Annual Fugitive Dust Control Report (Smith Landfill)	Annual Fugitive Dust Control Report	Used to document the actions taken to control CCR fugitive dust, record all citizen complaints related to fugitive dust, and any corrective measures taken	To be completed 14 months after placing initial fugitive dust control plans in the CCR Operating Record and Annually thereafter. Reference the Power Plant's specific Fugitive Dust Plan for additional information CCR Fugitive Dust Manager must ensure that the most recent version of the document is in the working folder	X	X	X
Annual Fugitive Dust Control Report (Spurlock Landfill)	Annual Fugitive Dust Control Report	Used to document the actions taken to control CCR fugitive dust, record all citizen complaints related to fugitive dust, and any corrective measures taken	To be completed 14 months after placing initial fugitive dust control plans in the CCR Operating Record and Annually thereafter. Reference the Power Plant's specific Fugitive Dust Plan for additional information CCR Fugitive Dust Manager must ensure that the most recent version of the document is in the working folder	X	X	X
Annual Fugitive Dust Control Report (Spurlock Surface Impoundment)	Annual Fugitive Dust Control Report	Used to document the actions taken to control CCR fugitive dust, record all citizen complaints related to fugitive dust, and any corrective measures taken	To be completed 14 months after placing initial fugitive dust control plans in the CCR Operating Record and Annually thereafter. Reference the Power Plant's specific Fugitive Dust Plan for additional information CCR Manager must ensure that the most recent version of the document is in the working folder	X	X	X
Annual Inspection CCR Compliance Summary (Initial)	CCR Compliance Summary Initial Annual Report.docx	Included in the Initial Annual Inspection scope of work to be used in the Inspection Report as a summary table in the first section of the report	This document was only used for the Initial Annual Inspection at the Spurlock Ash Pond prior to full implementation of all CCR Rule Procedures	X		
Annual Inspection CCR Compliance Summary (Periodic)	CCR Compliance Summary Annual Report.docx	Included in the Initial Annual Inspection scope of work to be used in the Inspection Report as a summary table in the first section of the report	CCR Engineering Manager must ensure that the most recent version of the document is in the working folder	X		
Annual Inspection Scope of Work (Initial)	Scope of Work CCR Unit Initial Annual Inspection.doc	Used to procure services to perform the Initial Annual Inspection at the Spurlock Ash Pond (Surface Impoundment)	This scope of work was only used for the Initial Annual Inspection at the Spurlock Ash Pond (Surface Impoundment) prior to full implementation of all CCR Rule Procedures. It also included the scope of work for providing the Initial Hazard Potential Classification Assessment	X		

Glossary of CCR Documents

Description	Original Document File Name	Use	Commentary	File Location		
				Working Folder	Operating Record	CCR Website
Annual Inspection Scope of Work (Periodic)	Scope of Work CCR Unit Periodic Annual Inspection.doc	Used to procure services to perform the Periodic Annual Inspection at CCR Surface Impoundments and CCR Landfills	This scope of work document was prepared for EKPC to procure a single contractor to perform the subsequent annual inspections at EKPC's fleet of Surface Impoundments and Landfills. This document shall be used to procure services prior to requiring posting of the subsequent Annual Inspections in the CCR Operating Record CCR Engineering Manager must ensure that the most recent version of the document is in the working folder.	X		
Annual Inspection Scope of Work (Periodic [Ash Pond Only])	Scope of Work CCR Surface Impoundment Periodic Annual Inspection.doc	Used to procure services to perform the Periodic Annual Inspection at CCR Surface Impoundments	This scope of work document was prepared for EKPC to procure a contractor to perform the subsequent annual inspections at EKPC's fleet of Surface Impoundments. This document shall be used to procure services prior to requiring posting of the subsequent Annual Inspections in the CCR Operating Record CCR Engineering Manager must ensure that the most recent version of the document is in the working folder.	X		
Annual Inspection (Cooper Landfill)	Cooper_Landfill_20160114_Annual CCR Inspection Report.docx	Used to document the annual inspection at the CCR Unit	Initial annual inspection performed by BMcD with subsequent annual inspections performed by Contractor CCR Engineering Manager must ensure that the most recent version of the document is in the working folder.	X	X	X
Annual Inspection (Smith Landfill)	Smith_Landfill_20160114_Annual CCR Inspection Report.docx	Used to document the annual inspection at the CCR Unit	Initial annual inspection performed by BMcD with subsequent annual inspections performed by Contractor CCR Engineering Manager must ensure that the most recent version of the document is in the working folder.	X	X	X
Annual Inspection (Spurlock Landfill)	Spurlock_Landfill_20160114_Annual CCR Inspection Report.docx	Used to document the annual inspection at the CCR Unit	Initial annual inspection performed by BMcD with subsequent annual inspections performed by Contractor CCR Engineering Manager must ensure that the most recent version of the document is in the working folder.	X	X	X

Glossary of CCR Documents

Description	Original Document File Name	Use	Commentary	File Location		
				Working Folder	Operating Record	CCR Website
Annual Inspection (Spurlock Surface Impoundment)	Spurlock 2015 CCR Unit Initial Annual Inspection Report_FINAL_20151228_MB.pdf	Used to document the annual inspection at the CCR Unit	Initial annual and subsequent annual inspections performed by Contractor CCR Engineering Manager must ensure that the most recent version of the document is in the working folder.	X	X	X
CCR Inspection Training Recommendation	EKPC CCR Inspection Training Recommendation Letter.pdf	This letter was provided by Burns and McDonnell as an evaluation of training recommendations for a qualified person as defined by the CCR Rule		X		
Certification of the Selection of Statistical Method for Groundwater Monitoring Plan (Cooper Landfill)	Cooper_Landfill_20190309_Statistical Method Selection & Certification	Used to document the selection of a statistical method certification for groundwater monitoring		X	X	X
Certification of the Selection of Statistical Method for Groundwater Monitoring Plan (Pegs Hill Landfill)	Pegs Hill_Landfill_20191017_Statistical Method Selection & Certification	Used to document the selection of a statistical method certification for groundwater monitoring		X	X	X
Certification of the Selection of Statistical Method for Groundwater Monitoring Plan (Smith Landfill)	Smith_Landfill_20190620_Statistical Method Selection & Certification	Used to document the selection of a statistical method certification for groundwater monitoring		X	X	X
Certification of the Selection of Statistical Method for Groundwater Monitoring Plan (Spurlock Ash Pond)	Spurlock_Ash Pond_20171010_Statistical Method Selection & Certification	Used to document the selection of a statistical method certification for groundwater monitoring		X	X	X
Certification of the Selection of Statistical Method for Groundwater Monitoring Plan (Spurlock Landfill)	20190620_Statistical Method Selection & Certification	Used to document the selection of a statistical method certification for groundwater monitoring		X	X	X
Closure Plan (Cooper)	Cooper Landfill Closure Plan.docx	Used to document the steps necessary to close the CCR Landfill at the Cooper Power Plant at any point during the active life of the CCR Unit	This document does not have to be revised unless there is a change to the CCR Unit that would substantially affect the written plan or unanticipated events occur which necessitate a revision to the plan	X	X	X
Closure Plan (Smith)	Smith Landfill Closure Plan.docx	Used to document the steps necessary to close the CCR Landfill at the J.K. Smith Power Plant at any point during the active life of the CCR Unit	This document does not have to be revised unless there is a change to the CCR Unit that would substantially affect the written plan or unanticipated events occur which necessitate a revision to the plan	X	X	X
Closure Plan (Spurlock Ash Pond)	Spurlock Ash Pond Closure Plan.docx	Used to document the steps necessary to close the CCR surface impoundment at the Spurlock Power Plant at any point during the active life of the CCR Unit	This document does not have to be revised unless there is a change to the CCR Unit that would substantially affect the written plan or unanticipated events occur which necessitate a revision to the plan	X	X	X

Glossary of CCR Documents

Description	Original Document File Name	Use	Commentary	File Location		
				Working Folder	Operating Record	CCR Website
Closure Plan (Spurlock Landfill)	Spurlock Landfill Closure Plan.docx	Used to document the steps necessary to close the CCR Landfill at the Spurlock Power Plant at any point during the active life of the CCR Unit	This document does not have to be revised unless there is a change to the CCR Unit that would substantially affect the written plan or unanticipated events occur which necessitate a revision to the plan	X	X	X
Data Management and Public Website Recommendation	EKPC CCR - Data Management and Public Website_Final.pdf	Recommendation performed by Burns and McDonnell to initiate CCR document management		X		
Demonstration for a Site-Specific Alternative of Closure Deadline (Spurlock Ash Pond)	Spurlock_Ash Pond_20201130_Alt Closure Extension Demonstration_Rev 2B	Used as a demonstration for when the facility is required to provide detailed information regarding the process the facility is undertaking to develop the alternative capacity.		X	X	X
Emergency Action Plan (Spurlock Surface Impoundment)	EAP - Spurlock Ash Pond Tracked Changes 2016.doc	Emergency Action Plan for the Spurlock CCR Surface Impoundment	The EAP is not required by the CCR Rule since the Surface Impoundment has been classified as a Low-Hazard Potential Surface Impoundment. However, Burns and McDonnell provided Rev. 5 recommendations on April 19, 2016 to bring the EAP in-line with new CCR Recommendations in case the EAP is required by the CCR Rule at a later date	X		
Fugitive Dust Citizen's Complaint Log	EKPC CCR Rule Fugitive Dust Citizen Complaint Log.xlsx	Used to log citizen's complaints relative to fugitive dust at any of the facilities	Located in the CCR Working Folder. Also included as an Appendix to the Quality Assurance Program. Fugitive Dust Manager to keep this log up-to-date	X		
Fugitive Dust Plan (Cooper)	Cooper Fugitive Dust Control Plan.docx	Used to document the Fugitive Dust Plan at the Cooper Power Plant	Amend and certify this document whenever there is a change in conditions that would substantially affect the written plan CCR Fugitive Dust Manager must ensure that the most recent version of the document is in the working folder.	X	X	X
Fugitive Dust Plan (Smith)	Smith Fugitive Dust Control Plan.docx	Used to document the Fugitive Dust Plan at the J.K. Smith Power Plant	Amend and certify this document whenever there is a change in conditions that would substantially affect the written plan CCR Fugitive Dust Manager must ensure that the most recent version of the document is in the working folder.	X	X	X
Fugitive Dust Plan (Spurlock)	Spurlock Fugitive Dust Control Plan.docx	Used to document the Fugitive Dust Plan at the Spurlock Power Plant	Amend and certify this document whenever there is a change in conditions that would substantially affect the written plan CCR Fugitive Dust Manager must ensure that the most recent version of the document is in the working folder.	X	X	X

Glossary of CCR Documents

Description	Original Document File Name	Use	Commentary	File Location		
				Working Folder	Operating Record	CCR Website
Groundwater Monitoring Plan (Cooper Landfill)	Cooper Landfill Groundwater Monitoring Plan.docx	This document establishes the groundwater sampling and well installation procedures and requirements to be used when monitoring groundwater at the Cooper Power Plant CCR Landfill	This document will serve as the Groundwater Monitoring System Certification, be sealed, and placed in the CCR Operating Record and on the CCR public website CCR GM Manager must ensure that the most recent version of the document is in the working folder.	X	X	X
Groundwater Monitoring Plan (Pegs Hill Landfill)	Pegs Hill Landfill Groundwater Monitoring Plan.docx	This document establishes the groundwater sampling and well installation procedures and requirements to be used when monitoring groundwater at the Spurlock Power Plant Pegs Hill CCR Landfill	This document will serve as the Groundwater Monitoring System Certification, be sealed, and placed in the CCR Operating Record and on the CCR public website CCR GM Manager must ensure that the most recent version of the document is in the working folder.	X	X	X
Groundwater Monitoring Plan (Smith Landfill)	Smith Landfill Groundwater Monitoring Plan.docx	This document establishes the groundwater sampling and well installation procedures and requirements to be used when monitoring groundwater at the J.K. Smith Power Plant CCR Landfill	This document will serve as the Groundwater Monitoring System Certification, be sealed, and placed in the CCR Operating Record and on the CCR public website CCR GM Manager must ensure that the most recent version of the document is in the working folder.	X	X	X
Groundwater Monitoring Plan (Spurlock Ash Pond)	Spurlock Ash Pond Groundwater Monitoring Plan.docx	This document establishes the groundwater sampling and well installation procedures and requirements to be used when monitoring groundwater at the Spurlock Power Plant CCR surface impoundment	This document will serve as the Groundwater Monitoring System Certification, be sealed, and placed in the CCR Operating Record and on the CCR public website CCR GM Manager must ensure that the most recent version of the document is in the working folder.	X	X	X
Groundwater Monitoring Plan (Spurlock Landfill)	Spurlock Landfill Groundwater Monitoring Plan.docx	This document establishes the groundwater sampling and well installation procedures and requirements to be used when monitoring groundwater at the Spurlock Power Plant CCR Landfill	This document will serve as the Groundwater Monitoring System Certification, be sealed, and placed in the CCR Operating Record and on the CCR public website CCR GM Manager must ensure that the most recent version of the document is in the working folder.	X	X	X
Groundwater Monitoring System Design and Construction Certification (Cooper Landfill)	Cooper_Landfill_20171017_Groundwater Monitoring System Certification	Used to document the certification of groundwater monitoring system		X	X	X

Glossary of CCR Documents

Description	Original Document File Name	Use	Commentary	File Location		
				Working Folder	Operating Record	CCR Website
Groundwater Monitoring System Design and Construction Certification (Pegs Hill Landfill)	Pegs Hill_Landfill_20210524_Groundwater Monitoring System Certification	Used to document the certification of groundwater monitoring system		X	X	X
Groundwater Monitoring System Design and Construction Certification (Smith Landfill)	Smith_Landfill_20171017_Groundwater Monitoring System Certification	Used to document the certification of groundwater monitoring system		X	X	X
Groundwater Monitoring System Design and Construction Certification (Spurlock Ash Pond)	Spurlock_Ash Pond_20171017_Groundwater Monitoring System Certification	Used to document the certification of groundwater monitoring system		X	X	X
Groundwater Monitoring System Design and Construction Certification (Spurlock Landfill)	Spurlock_Landfill_20171017_Groundwater Monitoring System Certification	Used to document the certification of groundwater monitoring system		X	X	X
Groundwater Monitoring Well Installation Specification	EKPC CCR Groundwater Monitoring Well Installation Specification.docx	This document is used to procure services to install groundwater monitoring wells at a CCR Unit		X		
Hazard Potential Classification - Initial (Spurlock Surface Impoundment)	Spurlock 2015_Hazard Potential Classification Assessment_REV 0_032416_Fi....pdf	Used to document the Hazard Potential Classification at the CCR Surface Impoundment	Initial Hazard Potential Classification performed by S&ME	X	X	X
Hazard Potential Classification - Periodic (Spurlock Surface Impoundment)	Spurlock 2015_Hazard Potential Classification Assessment.pdf	Used to document the Hazard Potential Classification at the CCR Surface Impoundment	Periodic Hazard Potential Classification performed by S&ME CCR Engineering Manager must ensure that the most recent version of the document is in the working folder.	X	X	X
History of Construction (Spurlock Ash Pond)	CCR Compliance History of Construction Spurlock Ash Pond.docx	Used to document the history of construction of the Spurlock Ash Pond	This document shall be completed and placed in the CCR Operating Record no later than October 17, 2016. It shall also be provided to the Contractors performing the Annual Inspection and 5-Year Structural Integrity Assessment Reports for them to review and update if required	X	X	X
History of Construction Guidelines	CCR Compliance History of Construction Guidelines.docx	Used to provide guidance to EKPC or any contractor hired to review the History of Construction of the Spurlock Ash Pond	Included in the scope of work for the Annual and 5-Year Structural Integrity Assessments at the Spurlock Ash Pond for the Contractor to use in reviewing and updating the History of Construction Document if necessary	X		
Hydrogeological Investigation Scope of Work	EKPC Hydrogeologic Scope of Work.docx	Used to procure services to perform a Hydrogeological Investigation at a CCR Unit to determine adequate groundwater monitoring points		X		
Hydrogeological Investigation (Cooper Station Landfill)	FINAL - Tt Cooper Station Landfill CCR Report 9-21-16.pdf	Investigation performed by Tetra Tech to determine groundwater monitoring points at the CCR Unit		X		
Hydrogeological Investigation (Smith Station Landfill)	FINAL DRAFT - Tt Smith Station Landfill CCR Report - March 21 2016 with Attachments.pdf	Investigation performed by Tetra Tech to determine groundwater monitoring points at the CCR Unit		X		

Glossary of CCR Documents

Description	Original Document File Name	Use	Commentary	File Location		
				Working Folder	Operating Record	CCR Website
Hydrogeological Investigation (Spurlock Station Landfill)	FINAL DRAFT - Tt Spurlock Landfill CCR Report - March 21 2016 with Attachments.pdf	Investigation performed by Tetra Tech to determine groundwater monitoring points at the CCR Unit		X		
Hydrogeological Investigation (Spurlock Station Surface Impoundment)	FINAL DRAFT - Tt Spurlock Ash Pond CCR Report - March 21 2016 and Attachments.pdf	Investigation performed by Tetra Tech to determine groundwater monitoring points at the CCR Unit		X		
Identification Marker Scope of Work (CCR Surface Impoundment)	FINAL SOW - EKPC CCR Identification Marker.doc	This document is used to procure services to install an Identification Marker at a CCR Surface Impoundment pursuant to the CCR Rule		X		
Inflow Design Flood Control System Plan (Spurlock Ash Pond)	Spurlock Ash Pond Inflow Design Flood Control System Plan.docx	Used to document that the existing CCR Surface Impoundment at the Spurlock Power Plant has an inflow design flood control system designed, constructed, operated, and maintained to meet the requirements of the CCR Rule	This document shall be amended at any time there are changes to the Surface Impoundment that affect the plan. The plan is also required to be reviewed every 5-years and has been included in the Periodic 5-Year Structural Assessment Scope of Work Document CCR Engineering Manager must ensure that the most recent version of the document is in the working folder.	X	X	X
Intent to Initiate Closure (Dale Surface Impoundments)	Dale_Ash Ponds 2,3,4_20151016_Intent to Initiate Closure.docx	Used to document the intent to initiate closure of CCR Surface Impoundments at Dale Station	Note that it was recommended to stay in the CCR Operating Record and CCR public website following changes to the CCR Rule in Fall 2016	X	X	X
Liner Construction	Spurlock Ash Pond Liner Construction.docx	Used to document the liner construction at the existing CCR surface impoundment at the Spurlock Power Plant		X	X	X
Location Restrictions (Cooper Landfill)	Cooper Landfill Location Restrictions.docx	Used to demonstrate location restrictions at the existing CCR Landfill at the Cooper Power Plant		X	X	X
Location Restrictions (Pegs Hill Landfill)	Pegs Hill_Landfill_20170727_Location Restriction & Design Demonstration Report.docx	Used to demonstrate location restrictions at the existing CCR Landfill at the Spurlock Power Plant - Pegs Hill Landfill		X	X	X
Location Restrictions (Smith Landfill)	Smith Landfill Location Restrictions.docx	Used to demonstrate location restrictions at the existing CCR Landfill at the J.K. Smith Power Plant		X	X	X
Location Restrictions (Spurlock Landfill)	Spurlock Landfill Location Restrictions.docx	Used to demonstrate location restrictions at the existing CCR Landfill at the Spurlock Power Plant		X	X	X
Location Restrictions (Spurlock Ash Pond)	Spurlock_Ash Pond_20181010_Location Restrictions Demonstrations	Used to demonstrate location restrictions at the existing CCR Ash Pond at the Spurlock Power Plant		X	X	X
Location Restrictions Scope of Work	Scope of Work CCR Unit Location Restrictions.docx	Used to procure services to perform the Location Restrictions at the Spurlock Ash Pond	Shall be reviewed and used to procure services two to three months prior to posting the Location Restrictions to the CCR Operating Record. The CCR Rule deadline for this document is October 17, 2018	X		

Glossary of CCR Documents

Description	Original Document File Name	Use	Commentary	File Location		
				Working Folder	Operating Record	CCR Website
Notification of Establishing Assessment Monitoring for Groundwater Monitoring (Spurlock Impoundment)	Spurlock_AshPond_20180815_Notification of Establishing Assessment Monitoring for Spurlock Impoundment	Used to document the notification that an assessment monitoring programs has been established		X	X	X
Notification Template	CCR Notification Template.docx	Used to send notifications to the appropriate state and/or tribal authority when a CCR compliance document has been posted to the CCR Public Website and/or the CCR Operating Record		X		
Pre-Construction Design and Construction Certification (Pegs Hill Landfill)	Pegs Hill_Landfill_20170727_Location Restriction & Design Demonstration Report.docx	Used to document the design certification for new units or lateral expansions on existing units at Pegs Hill Landfill		X	X	X
Pre-Construction Design and Construction Certification for Area C Phase 3 (Spurlock Landfill)	Spurlock_Landfill_20160607_Pre-Construction Design and Construction Certification for Area C Phase 3	Used to document the design certification for new units or lateral expansions on existing units at Spurlock Landfill		X	X	X
Pre-Construction Design and Construction Certification for Area C Phase 4 (Spurlock Landfill)	Spurlock_Landfill_20180712_Pre-Construction Design and Construction Certifications for AreaC Phase4	Used to document the design certification for new units or lateral expansions on existing units at Spurlock Landfill		X	X	X
Pre-Construction Design and Construction Certification for Area C Phase 5 (Spurlock Landfill)	Spurlock_Landfill_20210324_Pre-Construction Design and Construction Certifications_Area C Phase 5	Used to document the design certification for new units or lateral expansions on existing units at Spurlock Landfill		X	X	X
Post-Closure Plan (Cooper Landfill)	Cooper Landfill Post Closure Plan.docx	Used to document the post-closure care and maintenance procedures for the CCR Landfill at the Cooper Power Plant as well as the planned use for the property during the post-closure care period	This document does not have to be revised unless there is a change to the CCR Unit that would substantially affect the written plan or unanticipated events occur which necessitate a revision to the plan	X	X	X
Post-Closure Plan (Smith Landfill)	Smith Landfill Post Closure Plan.docx	Used to document the post-closure care and maintenance procedures for the CCR Landfill at the J.K. Smith Power Plant as well as the planned use for the property during the post-closure care period	This document does not have to be revised unless there is a change to the CCR Unit that would substantially affect the written plan or unanticipated events occur which necessitate a revision to the plan	X	X	X
Post-Closure Plan (Spurlock Landfill)	Spurlock Landfill Post Closure Plan.docx	Used to document the post-closure care and maintenance procedures for the CCR Landfill at the Spurlock Power Plant as well as the planned use for the property during the post-closure care period	This document does not have to be revised unless there is a change to the CCR Unit that would substantially affect the written plan or unanticipated events occur which necessitate a revision to the plan	X	X	X

Glossary of CCR Documents

Description	Original Document File Name	Use	Commentary	File Location		
				Working Folder	Operating Record	CCR Website
Post-Closure Plan (Spurlock Ash Pond)	Spurlock Ash Pond Post Closure Plan.docx	Used to document the post-closure care and maintenance procedures for the CCR Surface Impoundment at the Spurlock Power Plant as well as the planned use for the property during the post-closure care period	This document does not have to be revised unless there is a change to the CCR Unit that would substantially affect the written plan or unanticipated events occur which necessitate a revision to the plan	X	X	X
Post-Construction Design and Construction Certifications for Area C Phase 3 (Spurlock Landfill)	Spurlock_Landfill_20180131_Post-Construction Design and Construction Certifications for Area C Phase 3	Used to document the post-construction design certification for new units or lateral expansions on existing units at Spurlock Landfill		X	X	X
Post-Construction Design and Construction Certifications for Area C Phase 3-B (Spurlock Landfill)	Spurlock_Landfill_20181023_Post-Construction Design and Construction Certification_Area C Phase 3-B	Used to document the post-construction design certification for new units or lateral expansions on existing units at Spurlock Landfill		X	X	X
Post-Construction Design and Construction Certifications for Area C Phase 3-C (Spurlock Landfill)	Spurlock_Landfill_20190607_Post-Construction Design and Construction Certification_Area C Phase 3-C	Used to document the post-construction design certification for new units or lateral expansions on existing units at Spurlock Landfill		X	X	X
Post-Construction Design and Construction Certifications for Area C Phase 3-D (Spurlock Landfill)	Spurlock_Landfill_20191206_Post-Construction Design and Construction Certification_Area C Phase 3-D	Used to document the post-construction design certification for new units or lateral expansions on existing units at Spurlock Landfill		X	X	X
Post-Construction Design and Construction Certifications for Area C Phase 4-A (Spurlock Landfill)	Spurlock_Landfill_20200728_Post-Construction Design and Construction Certification_Area C Phase 4-A	Used to document the post-construction design certification for new units or lateral expansions on existing units at Spurlock Landfill		X	X	X
Post-Construction Design and Construction Certifications for Area C Phase 4-B (Spurlock Landfill)	Spurlock_Landfill_20210209_Post-Construction Design and Construction Certification_Area C Phase 4-B	Used to document the post-construction design certification for new units or lateral expansions on existing units at Spurlock Landfill		X	X	X
Post-Construction Design and Construction Certifications for Area C Phase 4-C (Spurlock Landfill)	Spurlock_Landfill_20210701_Post-Construction Design and Construction Certifications_Area C Phase 4-C	Used to document the post-construction design certification for new units or lateral expansions on existing units at Spurlock Landfill		X	X	X
Post-Construction Design and Construction Certifications for Area C Phase 4-C (Spurlock Landfill)	Spurlock_Landfill_20211130_Post-Construction Design and Construction Certification_AreaC Phase 5-A	Used to document the post-construction design certification for new units or lateral expansions on existing units at Spurlock Landfill		X	X	X
Quality Assurance Program	Quality Assurance Program.docx	Used to outline the procedures used to comply with the CCR Rule	This is a living document and should be reviewed each year and revised as necessary to meet EKPC's needs pertaining to CCR compliance CCR GateKeeper must ensure that the most recent version of the document is in the working folder.	X		
Quality Assurance Program Contacts List	QAP Contacts.docx	Used as an Appendix to the QAP document to record the contact information for all individuals filling the Roles outlined in the QAP	CCR Managers must ensure that the most recent version of the document is in the working folder.	X		
Quality Assurance Program Document Glossary	QAP Document Glossary.xlsx	Used as an Appendix to the QAP document to track the various documents created to bring EKPC in compliance with the CCR Rule	CCR Managers must ensure that the most recent version of the document is in the working folder.	X		

Glossary of CCR Documents

Description	Original Document File Name	Use	Commentary	File Location		
				Working Folder	Operating Record	CCR Website
Quality Assurance Program File System Permissions	QAP File System Permissions.docx	Used as an Appendix to the QAP document to record the employees within EKPC's infrastructure as well as any outside contractors who have permission to access or modify data located inside EKPC's file systems. This also includes access information for the CCR FTP site	CCR Gate Keeper must ensure that the most recent version of the document is in the working folder.	X		
Quality Assurance Program Hierarchy Chart	QAP Hierarchy.docx	Used as an Appendix to the QAP document to indicate the CCR organizational hierarchy and flow of information related to CCR compliance documentation	CCR Managers must ensure that the most recent version of the document is in the working folder.	X		
Quality Assurance Program Process Flowchart (30-Day Inspection)	QAP Flowchart 30-Day Inspection.docx	Used to outline the Tasks and Responsible Roles for the 30-day inspection procedure for CCR surface impoundments	This is a living document that should be reviewed and revised any time the procedure is modified to fit EKPC's needs CCR Managers must ensure that the most recent version of the document is in the working folder.	X		
Quality Assurance Program Process Flowchart (7-Day Inspection)	QAP Flowchart 7-Day Inspection.docx	Used to outline the Tasks and Responsible Roles for the 7-day inspection procedure for CCR landfills and surface impoundments	This is a living document that should be reviewed and revised any time the procedure is modified to fit EKPC's needs CCR Managers must ensure that the most recent version of the document is in the working folder.	X		
Quality Assurance Program Process Flowchart (Annual Fugitive Dust Control Report)	QAP Flowchart Fugitive Dust.docx	Used to outline the Tasks and Responsible Roles for preparing the annual fugitive dust control report	This is a living document that should be reviewed and revised any time the procedure is modified to fit EKPC's needs CCR Managers must ensure that the most recent version of the document is in the working folder.	X		
Quality Assurance Program Process Flowchart (Annual Groundwater Monitoring and Corrective Actions Report)	QAP Flowchart Groundwater Monitoring.docx	Used to outline the Tasks and Responsible Roles for preparing the annual groundwater monitoring and corrective actions report for a CCR Unit	This is a living document that should be reviewed and revised any time the procedure is modified to fit EKPC's needs CCR Managers must ensure that the most recent version of the document is in the working folder.	X		
Quality Assurance Program Process Flowchart (Annual Inspection)	QAP Flowchart Annual Inspection.docx	Used to outline the Tasks and Responsible Roles for the Annual inspection procedure for CCR Landfills and surface impoundments	This is a living document that should be reviewed and revised any time the procedure is modified to fit EKPC's needs CCR Managers must ensure that the most recent version of the document is in the working folder.	X		

Glossary of CCR Documents

Description	Original Document File Name	Use	Commentary	File Location		
				Working Folder	Operating Record	CCR Website
Quality Assurance Program Process Flowchart (Assessment Monitoring)	QAP Flowchart Groundwater Monitoring.docx	Used to outline the Tasks and Responsible Roles for the Assessment Monitoring Procedures at a CCR Unit	This is a living document that should be reviewed and revised any time the procedure is modified to fit EKPC's needs CCR Managers must ensure that the most recent version of the document is in the working folder.	X		
Quality Assurance Program Process Flowchart (Assessment of Corrective Measures)	QAP Flowchart Groundwater Monitoring.docx	Used to outline the Tasks and Responsible Roles for the Assessment of Corrective Measures at a CCR Unit	This is a living document that should be reviewed and revised any time the procedure is modified to fit EKPC's needs CCR Managers must ensure that the most recent version of the document is in the working folder.	X		
Quality Assurance Program Process Flowchart (Detection Monitoring)	QAP Flowchart Groundwater Monitoring.docx	Used to outline the Tasks and Responsible Roles for the Detection Monitoring Procedures at a CCR Unit	This is a living document that should be reviewed and revised any time the procedure is modified to fit EKPC's needs CCR Managers must ensure that the most recent version of the document is in the working folder.	X		
Quality Assurance Program Process Flowchart (Establishing Groundwater Monitoring Program)	QAP Flowchart Groundwater Monitoring.docx	Used to outline the Tasks and Responsible Roles for establishing the groundwater monitoring program at a CCR Unit	This is a living document that should be reviewed and revised any time the procedure is modified to fit EKPC's needs CCR Managers must ensure that the most recent version of the document is in the working folder.	X		
Quality Assurance Program Process Flowchart (Fugitive Dust Citizen Complaints)	QAP Flowchart Fugitive Dust.docx	Used to outline the Tasks and Responsible Roles for documenting and responding to citizen's complaints relative to fugitive dust at any of the facilities	This is a living document that should be reviewed and revised any time the procedure is modified to fit EKPC's needs CCR Managers must ensure that the most recent version of the document is in the working folder.	X		
Quality Assurance Program Process Flowchart (Fugitive Dust Control Plan Amendment)	QAP Flowchart Fugitive Dust.docx	Used to outline the Tasks and Responsible Roles for amending the fugitive dust control plan at any of the facilities	This is a living document that should be reviewed and revised any time the procedure is modified to fit EKPC's needs CCR Managers must ensure that the most recent version of the document is in the working folder.	X		
Quality Assurance Program Process Flowchart (Groundwater Sampling and Analysis)	QAP Flowchart Groundwater Monitoring.docx	Used to outline the Tasks and Responsible Roles for typical groundwater sampling and analysis procedures at any CCR Unit	This is a living document that should be reviewed and revised any time the procedure is modified to fit EKPC's needs CCR Managers must ensure that the most recent version of the document is in the working folder.	X		

Glossary of CCR Documents

Description	Original Document File Name	Use	Commentary	File Location		
				Working Folder	Operating Record	CCR Website
Quality Assurance Program Process Flowchart (Implementation of Corrective Action Program)	QAP Flowchart Groundwater Monitoring.docx	Used to outline the Tasks and Responsible Roles for the Implementation of Corrective Action Program at a CCR Unit	This is a living document that should be reviewed and revised any time the procedure is modified to fit EKPC's needs CCR Managers must ensure that the most recent version of the document is in the working folder.	X		
Quality Assurance Program Process Flowchart (Selection of Remedy)	QAP Flowchart Groundwater Monitoring.docx	Used to outline the Tasks and Responsible Roles for the Selection of Remedy at a CCR Unit	This is a living document that should be reviewed and revised any time the procedure is modified to fit EKPC's needs CCR Managers must ensure that the most recent version of the document is in the working folder.	X		
Remedial Action Log (Cooper Station)	EKPC CCR Cooper Inspection Remedial Action Log.xlsx	This log is to be used in conjunction with routine inspections in order to coordinate inspection observations with plant maintenance activities. This log is updated by both the Design Manager and Production Support Services as inspections and maintenance are performed	This log is only used for the Cooper Landfill	X		
Remedial Action Log (Smith Station)	EKPC CCR Smith Inspection Remedial Action Log.xlsx	This log is to be used in conjunction with routine inspections in order to coordinate inspection observations with plant maintenance activities. This log is updated by both the Design Manager and Production Support Services as inspections and maintenance are performed	This log is only used for the Smith Landfill	X		
Remedial Action Log (Spurlock Station)	EKPC CCR Spurlock Inspection Remedial Action Log.xlsx	This log is to be used in conjunction with routine inspections in order to coordinate inspection observations with plant maintenance activities. This log is updated by both the Design Manager and Production Support Services as inspections and maintenance are performed	There are two tabs in this log; one for the Spurlock Ash Pond and one for the Spurlock Landfill	X		
Run-On/Run-Off Control System Plan (Cooper Landfill)	Cooper Landfill Run-On/Run-Off Control System Plan.docx	Used to document that the existing CCR Landfill at the Cooper Power Plant has a run-on/run-off control system designed and constructed to meet the requirements of the CCR Rule	This document shall be amended at any time there are changes to the Landfill that affect the plan. The plan is also required to be reviewed every 5-years and has been included in the Periodic 5-Year Structural Assessment Scope of Work Document CCR Engineering Manager must ensure that the most recent version of the document is in the working folder.	X	X	X

Glossary of CCR Documents


Description	Original Document File Name	Use	Commentary	File Location		
				Working Folder	Operating Record	CCR Website
Run-On/Run-Off Control System Plan (Smith Landfill)	Smith Landfill Run-On/Run-Off Control System Plan.docx	Used to document that the existing CCR Landfill at the J.K. Smith Power Plant has a run-on/run-off control system designed and constructed to meet the requirements of the CCR Rule	This document shall be amended at any time there are changes to the Landfill that affect the plan. The plan is also required to be reviewed every 5-years and has been included in the Periodic 5-Year Structural Assessment Scope of Work Document CCR Engineering Manager must ensure that the most recent version of the document is in the working folder.	X	X	X
Run-On/Run-Off Control System Plan (Spurlock Landfill)	Spurlock Landfill Run-On/Run-Off Control System Plan.docx	Used to document that the existing CCR Landfill at the Spurlock Power Plant has a run-on/run-off control system designed and constructed to meet the requirements of the CCR Rule	This document shall be amended at any time there are changes to the Landfill that affect the plan. The plan is also required to be reviewed every 5-years and has been included in the Periodic 5-Year Structural Assessment Scope of Work Document CCR Engineering Manager must ensure that the most recent version of the document is in the working folder.	X	X	X
Safety Factor Assessment - Initial (Spurlock Surface Impoundment)	Spurlock_Ash Pond_20161031_Initial Safety Factor Assessment.pdf	Used to document the Safety Factor Assessment at the CCR Surface Impoundment	Initial Safety Factor Assessment performed by Contractor	X	X	X
Safety Factor Assessment - Periodic (Spurlock Surface Impoundment)	Spurlock_Ash Pond_20161031_Periodic Safety Factor Assessment.pdf	Used to document the Safety Factor Assessment at the CCR Surface Impoundment	Periodic Safety Factor Assessment performed by Contractor	X	X	X
Sampling and Analysis Plan (Cooper Landfill)	Cooper Landfill Sampling and Analysis Plan.docx	Used to outline the procedures for the collection of groundwater samples, sample handling, field documentation, and quality control at the Cooper Power Plant CCR Landfill		X		
Sampling and Analysis Plan (Smith Landfill)	Smith Landfill Sampling and Analysis Plan.docx	Used to outline the procedures for the collection of groundwater samples, sample handling, field documentation, and quality control at the J.K. Smith Power Plant CCR Landfill		X		
Sampling and Analysis Plan (Spurlock Ash Pond)	Spurlock Ash Pond Sampling and Analysis Plan.docx	Used to outline the procedures for the collection of groundwater samples, sample handling, field documentation, and quality control at the Spurlock Power Plant CCR surface impoundment		X		
Sampling and Analysis Plan (Spurlock Landfill)	Spurlock Landfill Sampling and Analysis Plan.docx	Used to outline the procedures for the collection of groundwater samples, sample handling, field documentation, and quality control at the Spurlock Power Plant CCR Landfill		X		
Schedule - CCR Compliance (Cooper Landfill)	WORKING - EKPC CCR Compliance Schedule - Cooper Landfill.pdf	Used to outline tasks associated with bringing the CCR Unit into compliance with the CCR Rule		X		
Schedule - CCR Compliance (Dale Surface Impoundments)	WORKING - EKPC CCR Compliance Schedule - Dale Ash Ponds 2, 3 & 4.pdf	Used to outline tasks associated with bringing the CCR Units into compliance with the CCR Rule		X		

Glossary of CCR Documents


Description	Original Document File Name	Use	Commentary	File Location		
				Working Folder	Operating Record	CCR Website
Schedule - CCR Compliance (Deliverables)	WORKING - EKPC CCR Compliance Schedule - Deliverables.pdf	Used to outline (at a high level) deliverables necessary to bring EKPC into compliance with the CCR Rule		X		
Schedule - CCR Compliance (Smith Landfill)	WORKING - EKPC CCR Compliance Schedule - Smith Landfill.pdf	Used to outline tasks associated with bringing the CCR Unit into compliance with the CCR Rule		X		
Schedule - CCR Compliance (Spurlock Coal Pile Runoff Pond)	WORKING - EKPC CCR Compliance Schedule - Spurlock Coal Pile Run-Off Pond.pdf	Used to outline tasks associated with bringing the Unit into compliance with the CCR Rule		X		
Schedule - CCR Compliance (Spurlock Gypsum Pile)	WORKING - EKPC CCR Compliance Schedule - Spurlock Gypsum Pile.pdf	Used to outline tasks associated with bringing the Unit into compliance with the CCR Rule		X		
Schedule - CCR Compliance (Spurlock Landfill)	WORKING - EKPC CCR Compliance Schedule - Spurlock Landfill.pdf	Used to outline tasks associated with bringing the CCR Unit into compliance with the CCR Rule		X		
Schedule - CCR Compliance (Spurlock Surface Impoundment)	WORKING - EKPC CCR Compliance Schedule - Spurlock Ash Pond.pdf	Used to outline tasks associated with bringing the CCR Unit into compliance with the CCR Rule		X		
Structural Integrity Assessment - Initial (Spurlock Surface Impoundment)	Spurlock_Ash Pond_20161031_Initial Structural Stability Assessment.pdf	Used to document the structural integrity assessment of the CCR Surface Impoundment	Initial Structural Integrity Assessment performed by Stantec	X	X	X
Structural Integrity Assessment - Periodic (Spurlock Surface Impoundment)	Spurlock_Ash Pond_20161031_Periodic Structural Stability Assessment.pdf	Used to document the structural integrity assessment of the CCR Surface Impoundment	Periodic Structural Integrity Assessment performed by Stantec CCR Engineering Manager must ensure that the most recent version of the document is in the working folder.	X	X	X
Subsurface Investigation Scope of Work	EKPC - CCR Compliance Landfill Subsurface Technical Scope of Work - Rev0.pdf	Used to procure services to perform a subsurface investigation at the CCR Landfill Sites		X		
Survey (Cooper Landfill)	cooper ash landfill lr-11_15.pdf	This survey was performed to determine the volume of CCR material in the Landfill for use in the Annual Inspection Document required by the CCR Rule		X		
Survey (Spurlock Landfill)	spurlock landfill lr-11_15.pdf	This survey was performed to determine the volume of CCR material in the Landfill for use in the Annual Inspection Document required by the CCR Rule		X		
Well Data	EKPC CCR RULE WELL DATA.pdf	Information on the pumps installed at the groundwater monitoring wells	Smith Landfill, Spurlock Landfill, Spurlock Surface Impoundment	X		
Well Locations (Smith Landfill)	Smith Landfill Wells Lat Long.csv	Contains the latitude and longitude for the groundwater monitoring wells installed at the CCR Unit		X		
Well Locations (Spurlock Landfill)	Spurlock Landfill Wells Lat Long.csv	Contains the latitude and longitude for the groundwater monitoring wells installed at the CCR Unit		X		
Well Locations (Spurlock Surface Impoundment)	Spurlock Ash Pond Wells Lat Long.csv	Contains the latitude and longitude for the groundwater monitoring wells installed at the CCR Unit		X		

Glossary of CCR Documents

Description	Original Document File Name	Use	Commentary	File Location		
				Working Folder	Operating Record	CCR Website
Well Records (Smith Landfill)	Final Draft - Smith Station Landfill CCR Report Dec 2 2016 - Well Drilling & Development Forms.pdf	Documents prepared by Tetrattech to record the installation of groundwater monitoring wells at the CCR Unit		X		
Well Records (Spurlock Landfill)	FINAL DRAFT - Tt Spurlock Landfill CCR Report - Drilling & Development Forms.pdf	Documents prepared by Tetrattech to record the installation of groundwater monitoring wells at the CCR Unit		X		
Well Records (Spurlock Surface Impoundment)	Final Draft - Tt Spurlock Ash Pond CCR Report - Drilling & Development Forms.pdf	Documents prepared by Tetrattech to record the installation of groundwater monitoring wells at the CCR Unit		X		



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EXHIBIT

PB-2

**FROM THE MINUTE BOOK OF PROCEEDINGS
OF THE BOARD OF DIRECTORS OF
EAST KENTUCKY POWER COOPERATIVE, INC.**

At a regular meeting of the Board of Directors of East Kentucky Power Cooperative, Inc. held at the Headquarters Building, 4775 Lexington Road, located in Winchester, Kentucky, on Tuesday, March 14, 2023 at 9:30 a.m., EDT, the following business transacted:

Approval to Fully Implement the Spurlock Landfill Area D Phase 2 Construction Project

After review of the applicable information, Strategic Issues Chairman Boris Haynes made a motion for approval to fully implement the Spurlock Landfill Area D Phase 2 Construction Project, seconded by Landis Cornett, and passed by the full Board to approve the following:

Whereas, The proposed design and construction of Area D Phase 2 (“the Project”) for East Kentucky Power Cooperative, Inc.’s (“EKPC”) Hugh L. Spurlock Power Station’s (“Spurlock”) landfill will provide approximately 2,000,000 additional cubic yards of coal ash capacity and will meet the requirements of the Coal Combustion Residuals (“CCR”) Rule;

Whereas, Environmental compliance and reliability are the key objectives for the Project;

Whereas, The EKPC-owned and operated special landfill alternative has been evaluated against other alternative disposal sites and found to be the most cost-effective and reliable option by which to meet environmental legal requirements and to keep the Spurlock generating units operating without interruption due to a lack of or inadequate ash disposal facilities;

Whereas, The estimated cost of the Project is \$14,300,000, plus a contingency of \$1,430,000, for a total authorization of \$15,730,000; now, therefore, be it

Resolved, The EKPC Board of Directors (“Board”) hereby authorizes the President and Chief Executive Officer, or designee, to fully implement the Project at a total estimated cost of \$15,730,000, including contingency, in accordance with the 2023 – 2025 Rural Utilities Service (“RUS”) Three Year Construction Work Plan and approved EKPC Budget; and

Resolved, The Board hereby further authorizes Staff to execute the necessary contracts for equipment or services, to apply for and borrow funds from RUS and other lenders, request any needed authorization for financing or rate recovery from the Kentucky Public Service Commission (“KPSC”), and to use general funds for the Project, until such time as RUS or other loan funds become available; and

Resolved, The Board hereby further authorizes the President and Chief Executive Officer, or designee, to apply for required or advisable certificates, permits, and

approvals with regulatory and environmental agencies of the Commonwealth of Kentucky and the United States Federal Government or other entities, including a Certificate of Public Convenience and Necessity (“CPCN”) and rate recovery via the Environmental Surcharge for the Project and to take any other actions, necessary or desirable, to assure that full project implementation is achieved.

The foregoing is a true and exact copy of a resolution passed at a meeting called pursuant to proper notice at which a quorum was present and which now appears in the Minute Book of Proceedings of the Board of Directors of the Cooperative, and said resolution has not been rescinded or modified.

Witness my hand and seal this 14th day of March, 2023.



Randy Sexton, Secretary

Corporate Seal

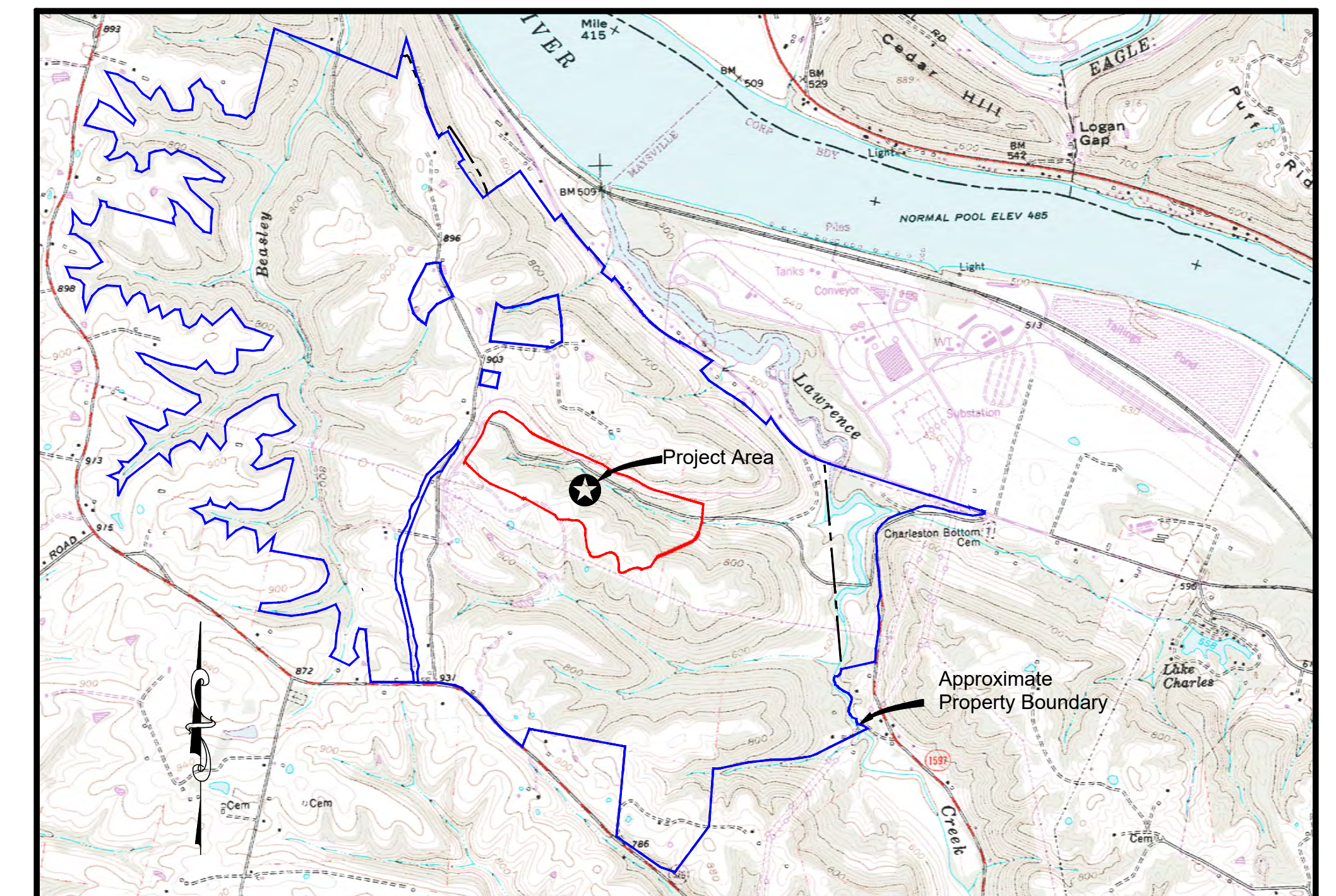
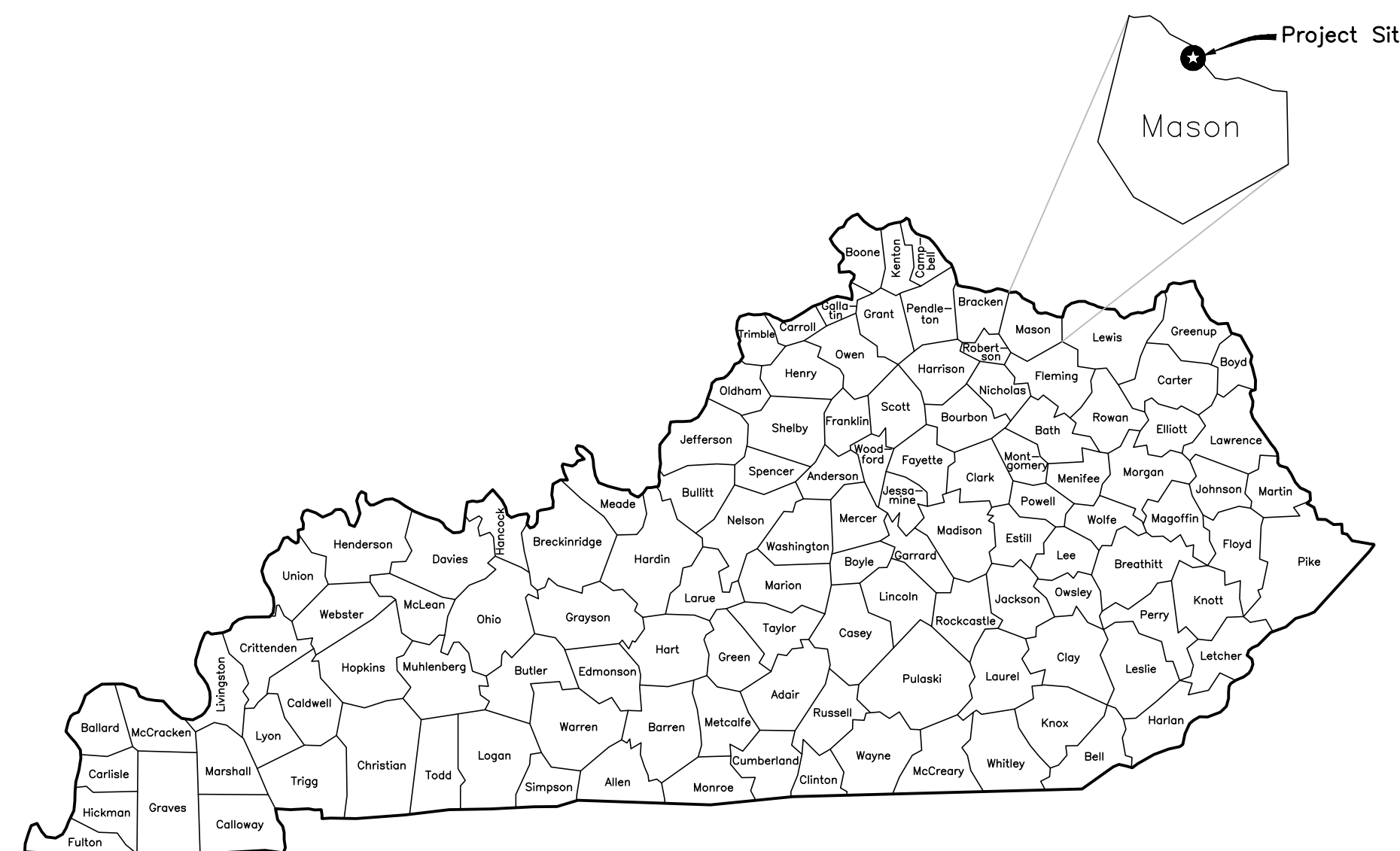
EXHIBIT

PB-3

PHASE 2 DESIGN PLANS AT EAST KENTUCKY POWER COOPERATIVE, INC. PEGS HILL LANDFILL MASON COUNTY, KENTUCKY PERMIT NO. 081-00005 AUGUST 2022

INDEX OF SHEETS

DESCRIPTION	SHEET NO.
TITLE SHEET	1
GENERAL SITE LAYOUT	2
DEMOLITION / STORMWATER MANAGEMENT PLAN	3
UNDERDRAIN PLAN	4
SUBGRADE STAKING PLAN	5
SUBGRADE ISOPACH	6
SOIL LINER STAKING PLAN	7
LEACHATE COLLECTION SYSTEM & GEOSYNTHETICS PLAN	8
DETAILS	9-13



LOCATION MAP
SCALE: 1"= 2000'

Prepared For:



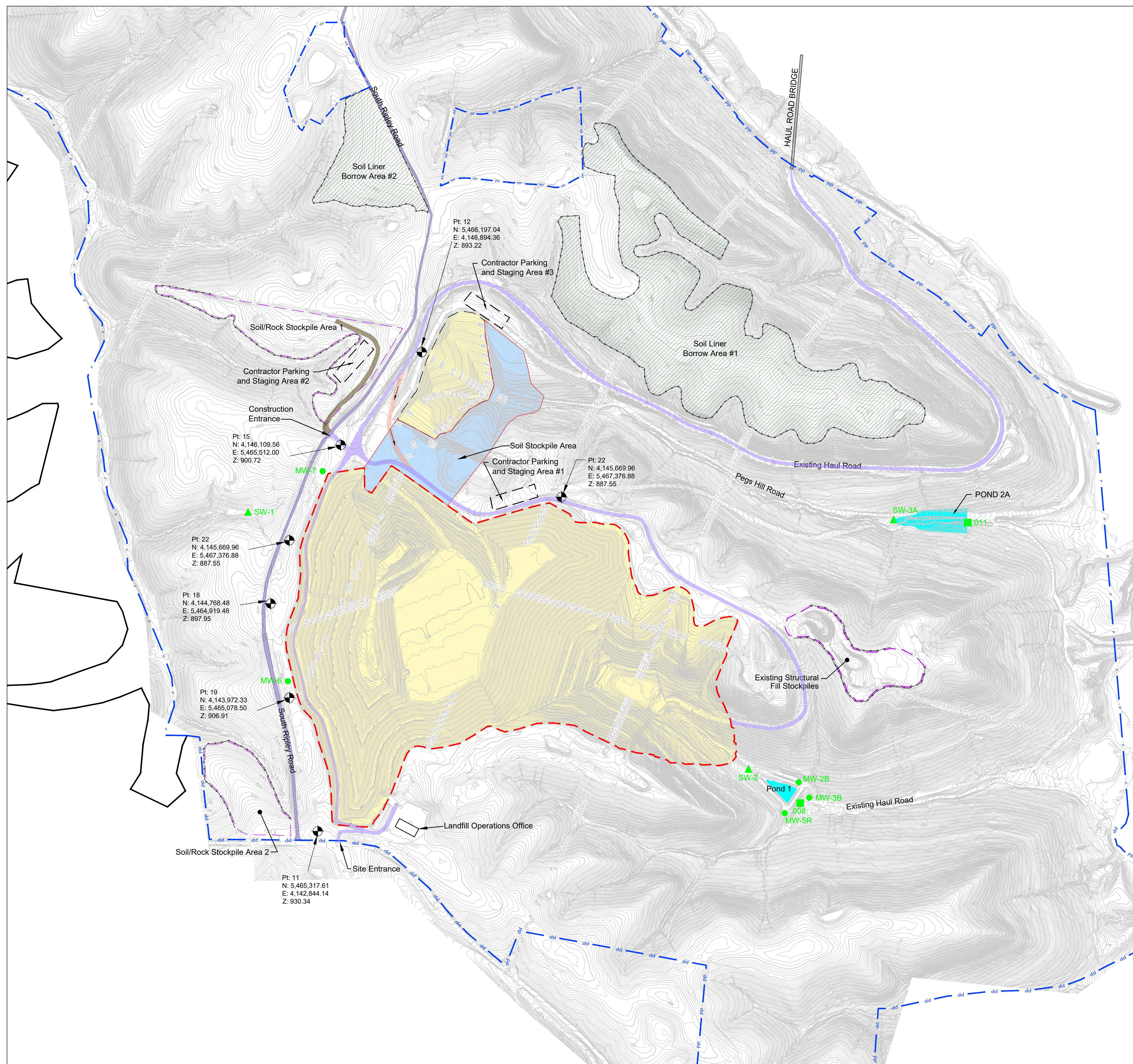
East Kentucky Power Cooperative
4775 Lexington Road
P.O. Box 707
Winchester, Kentucky 40392-0707

Prepared By:



DRAFT

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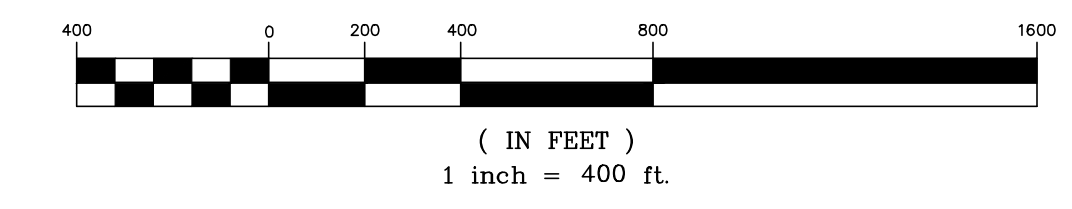
LEGEND

- Existing Contours
- Tree Line
- Tree
- Utility Pole
- Drain
- Fence
- Spot Elevation
- Existing Access Road
- Approximate Property Boundary
- Approximate Permit Boundary
- Approximate Property & Permit Boundary
- Previously Constructed Liner Area
- Proposed, Phase 2
- Soil Liner Borrow Area
- Permanent Survey Marker
- Groundwater Monitoring Well
- Surface Water Monitoring Point
- KPDES Monitoring Point
- Proposed Silt Fence
- Paved 1-Way Shared Haul Road
- Paved 2-Way Shared Haul Road
- County Road
- Unpaved 2-Way Shared Haul Road
- Unpaved 2-Way Haul Road
- 1 Lane Shared Haul Road Bridge

NOTES

1. Contractor may only perform tree clearing activities within the identified borrow area(s) between October 15th and March 31st.
2. Grading of Borrow Areas shall maintain positive drainage without any standing water. Proper sediment control shall be used to prohibit the migration of sediments per the site's existing Stormwater Pollution Prevention Plan (SWP3). All disturbed areas shall be re-vegetated to a minimum of 90% vegetative growth.
3. Sediment controls shown are minimum required controls. Contractor shall be responsible for providing and maintaining as many structures as needed to eliminate the migration of sediment offsite and/or into Waters of the Commonwealth. This is incidental to construction activities and therefore the responsibility of the Contractor to provide at no expense to EKPC beyond those items addressed on the Bid Schedule.
4. No equipment allowed on existing ditches.
5. All horizontal coordinates listed are projected in NAD83 State Plane Kentucky Single Zone (US Foot). Elevation data is based on the NAVD88 vertical datum.
6. Topography from Aerial Surveys performed in 2018 by GRW.

GRAPHIC SCALE



**PEGS HILL LANDFILL
MASON COUNTY, KENTUCKY
PHASE 2
CONSTRUCTION PLANS**

DRAWN BY: MAS
CHECKED BY: JAM/SMR
DATE: AUGUST 2022
SCALE: AS NOTED
REVISIONS

KENVIRONS
Civil & Environmental Engineers



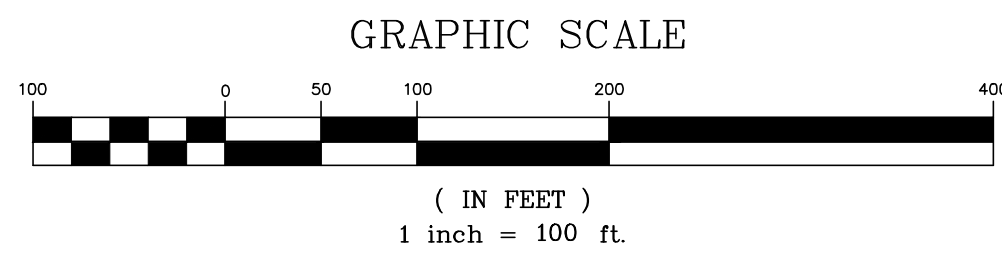
PROJECT NO.
2020124
SHEET NO.
2 of 13

DRAFT
GENERAL SITE LAYOUT

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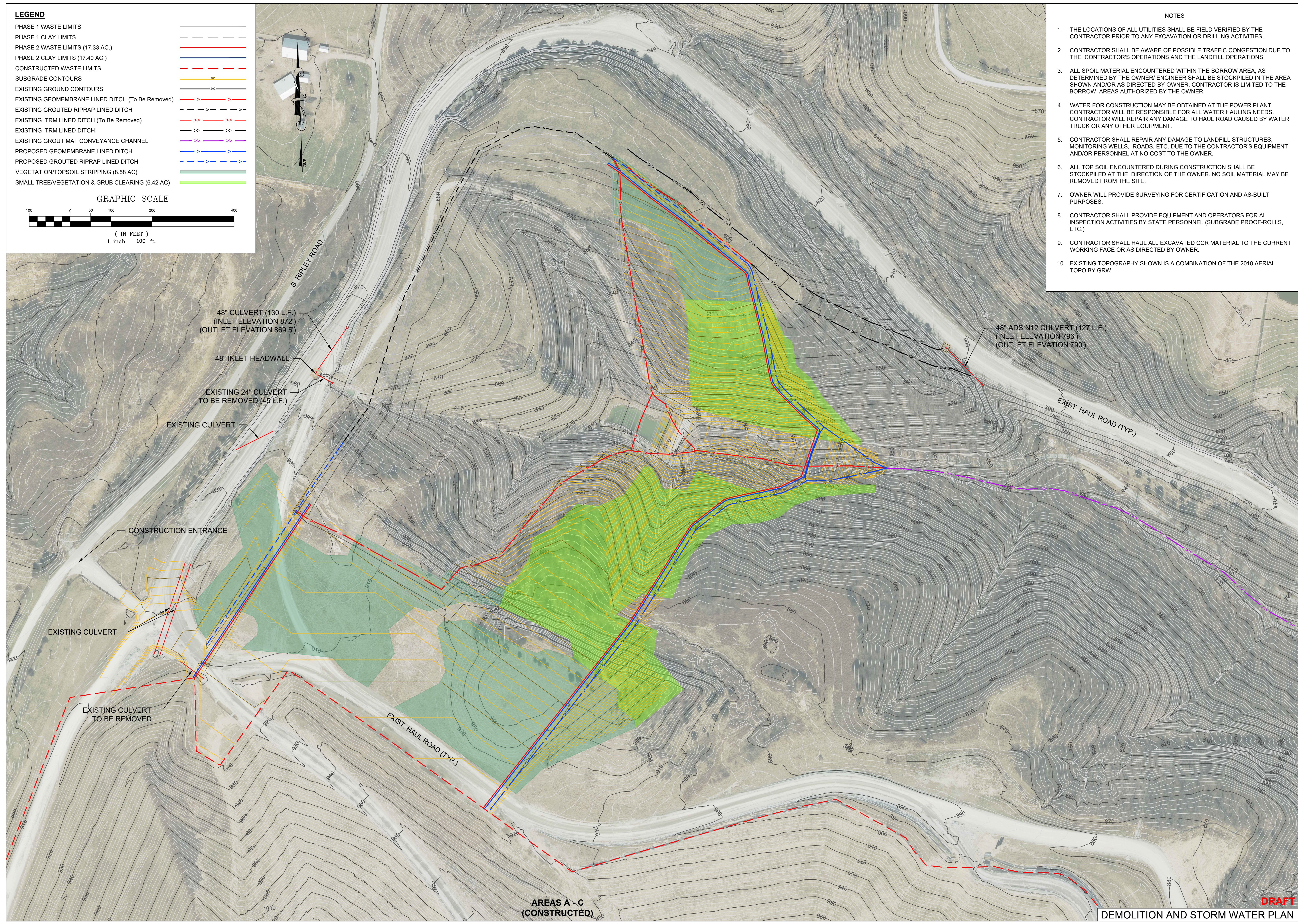
LEGEND

- PHASE 1 WASTE LIMITS ---
- PHASE 1 CLAY LIMITS ---
- PHASE 2 WASTE LIMITS (17.33 AC.) ---
- PHASE 2 CLAY LIMITS (17.40 AC.) ---
- CONSTRUCTED WASTE LIMITS ---
- SUBGRADE CONTOURS ---
- EXISTING GROUND CONTOURS ---
- EXISTING GEOMEMBRANE LINED DITCH (To Be Removed) ---
- EXISTING GROUDED RIPRAP LINED DITCH ---
- EXISTING TRM LINED DITCH (To Be Removed) ---
- EXISTING TRM LINED DITCH ---
- EXISTING GROUT MAT CONVEYANCE CHANNEL ---
- PROPOSED GEOMEMBRANE LINED DITCH ---
- PROPOSED GROUDED RIPRAP LINED DITCH ---
- VEGETATION/TOPSOIL STRIPPING (8.58 AC) ---
- SMALL TREE/VEGETATION & GRUB CLEARING (6.42 AC) ---



NOTES

1. THE LOCATIONS OF ALL UTILITIES SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO ANY EXCAVATION OR DRILLING ACTIVITIES.
2. CONTRACTOR SHALL BE AWARE OF POSSIBLE TRAFFIC CONGESTION DUE TO THE CONTRACTOR'S OPERATIONS AND THE LANDFILL OPERATIONS.
3. ALL SPOIL MATERIAL ENCOUNTERED WITHIN THE BORROW AREA, AS DETERMINED BY THE OWNER/ ENGINEER SHALL BE STOCKPILED IN THE AREA SHOWN AND/OR AS DIRECTED BY OWNER. CONTRACTOR IS LIMITED TO THE BORROW AREAS AUTHORIZED BY THE OWNER.
4. WATER FOR CONSTRUCTION MAY BE OBTAINED AT THE POWER PLANT. CONTRACTOR WILL BE RESPONSIBLE FOR ALL WATER HAULING NEEDS. CONTRACTOR WILL REPAIR ANY DAMAGE TO HAUL ROAD CAUSED BY WATER TRUCK OR ANY OTHER EQUIPMENT.
5. CONTRACTOR SHALL REPAIR ANY DAMAGE TO LANDFILL STRUCTURES, MONITORING WELLS, ROADS, ETC. DUE TO THE CONTRACTOR'S EQUIPMENT AND/OR PERSONNEL AT NO COST TO THE OWNER.
6. ALL TOP SOIL ENCOUNTERED DURING CONSTRUCTION SHALL BE STOCKPILED AT THE DIRECTION OF THE OWNER. NO SOIL MATERIAL MAY BE REMOVED FROM THE SITE.
7. OWNER WILL PROVIDE SURVEYING FOR CERTIFICATION AND AS-BUILT PURPOSES.
8. CONTRACTOR SHALL PROVIDE EQUIPMENT AND OPERATORS FOR ALL INSPECTION ACTIVITIES BY STATE PERSONNEL (SUBGRADE PROOF-ROLLS, ETC.)
9. CONTRACTOR SHALL HAUL ALL EXCAVATED CCR MATERIAL TO THE CURRENT WORKING FACE OR AS DIRECTED BY OWNER.
10. EXISTING TOPOGRAPHY SHOWN IS A COMBINATION OF THE 2018 AERIAL TOPO BY GRW



PEGS HILL LANDFILL
MASON COUNTY, KENTUCKY
PHASE 2
CONSTRUCTION PLANS

DRAWN BY: MAS	
CHECKED BY: JAM	
DATE: AUGUST 2022	
SCALE: AS NOTED	
REVISIONS	



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 DEMOLITION AND STORM WATER PLAN

DRAWN BY: MAS
CHECKED BY: JAM
DATE: AUGUST 2022
SCALE: AS NOTED
REVISIONS



LEGEND

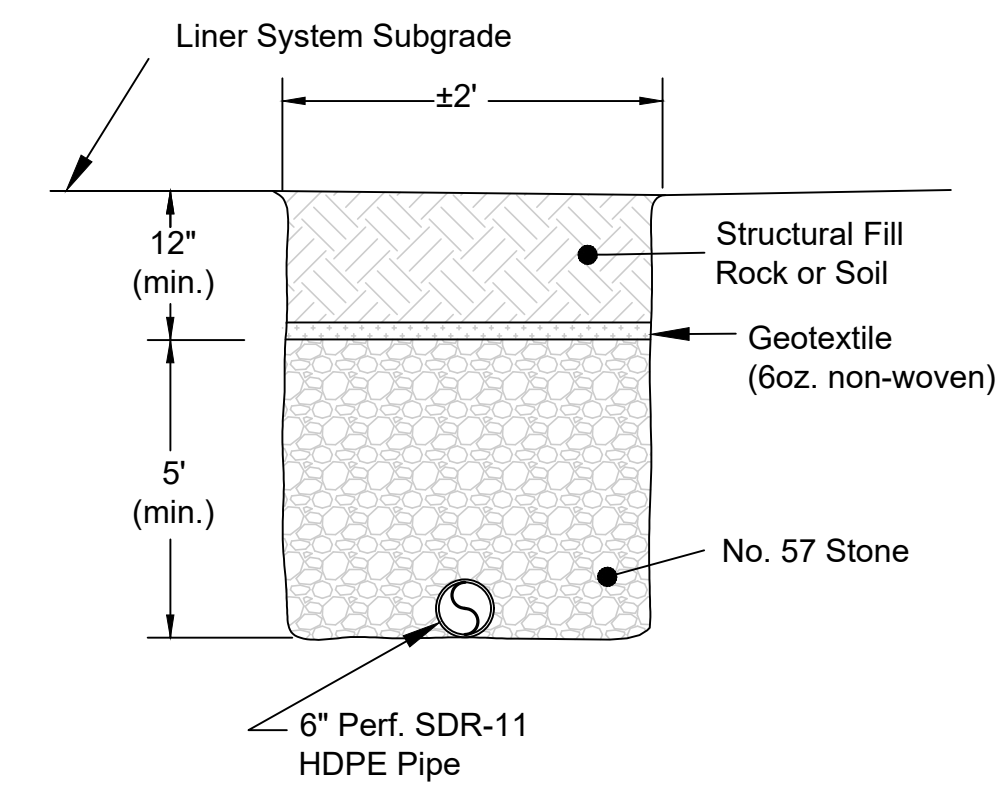
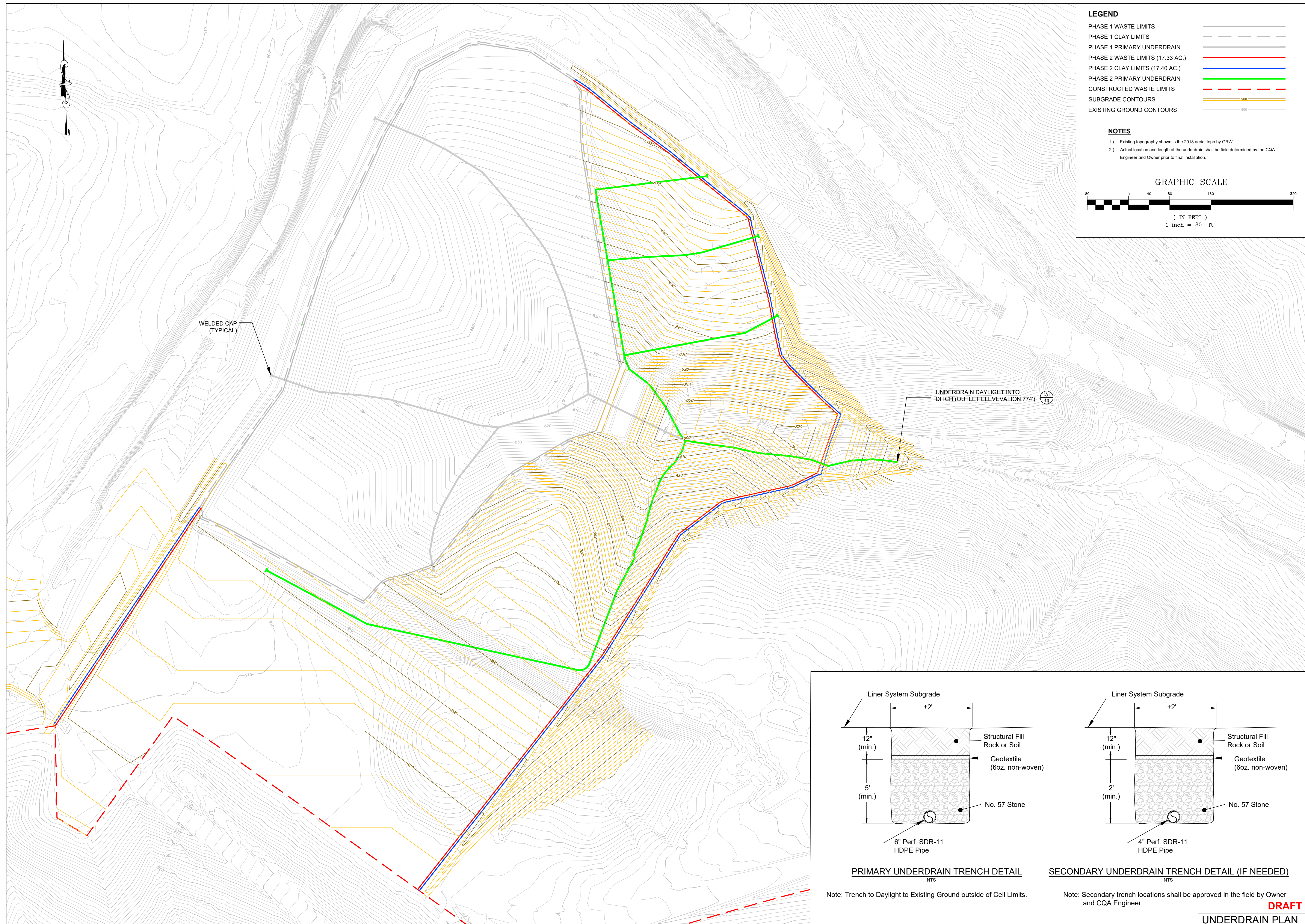
- PHASE 1 WASTE LIMITS
- PHASE 1 CLAY LIMITS
- PHASE 1 PRIMARY UNDERDRAIN
- PHASE 2 WASTE LIMITS (17.33 AC.)
- PHASE 2 CLAY LIMITS (17.40 AC.)
- PHASE 2 PRIMARY UNDERDRAIN
- CONSTRUCTED WASTE LIMITS
- SUBGRADE CONTOURS
- EXISTING GROUND CONTOURS

NOTES

- Existing topography shown is the 2018 aerial topo by GRW.
- Actual location and length of the underdrain shall be field determined by the CQA Engineer and Owner prior to final installation.

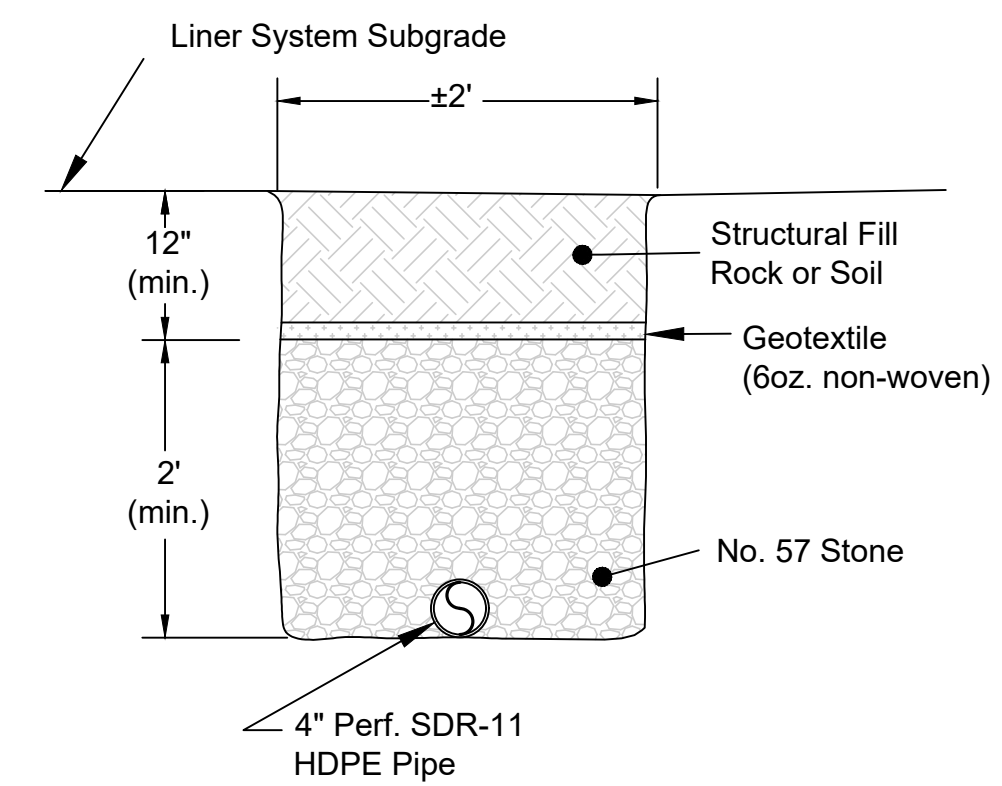
GRAPHIC SCALE

(IN FEET)
1 inch = 80 ft.



PRIMARY UNDERDRAIN TRENCH DETAIL
NTS

Note: Trench to Daylight to Existing Ground outside of Cell Limits.



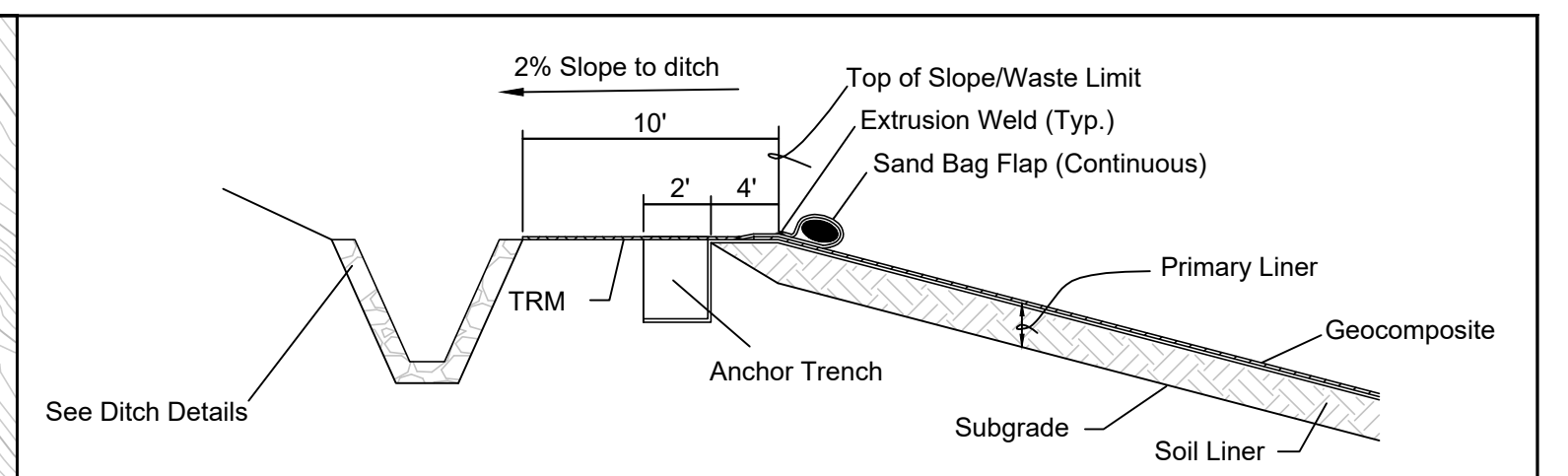
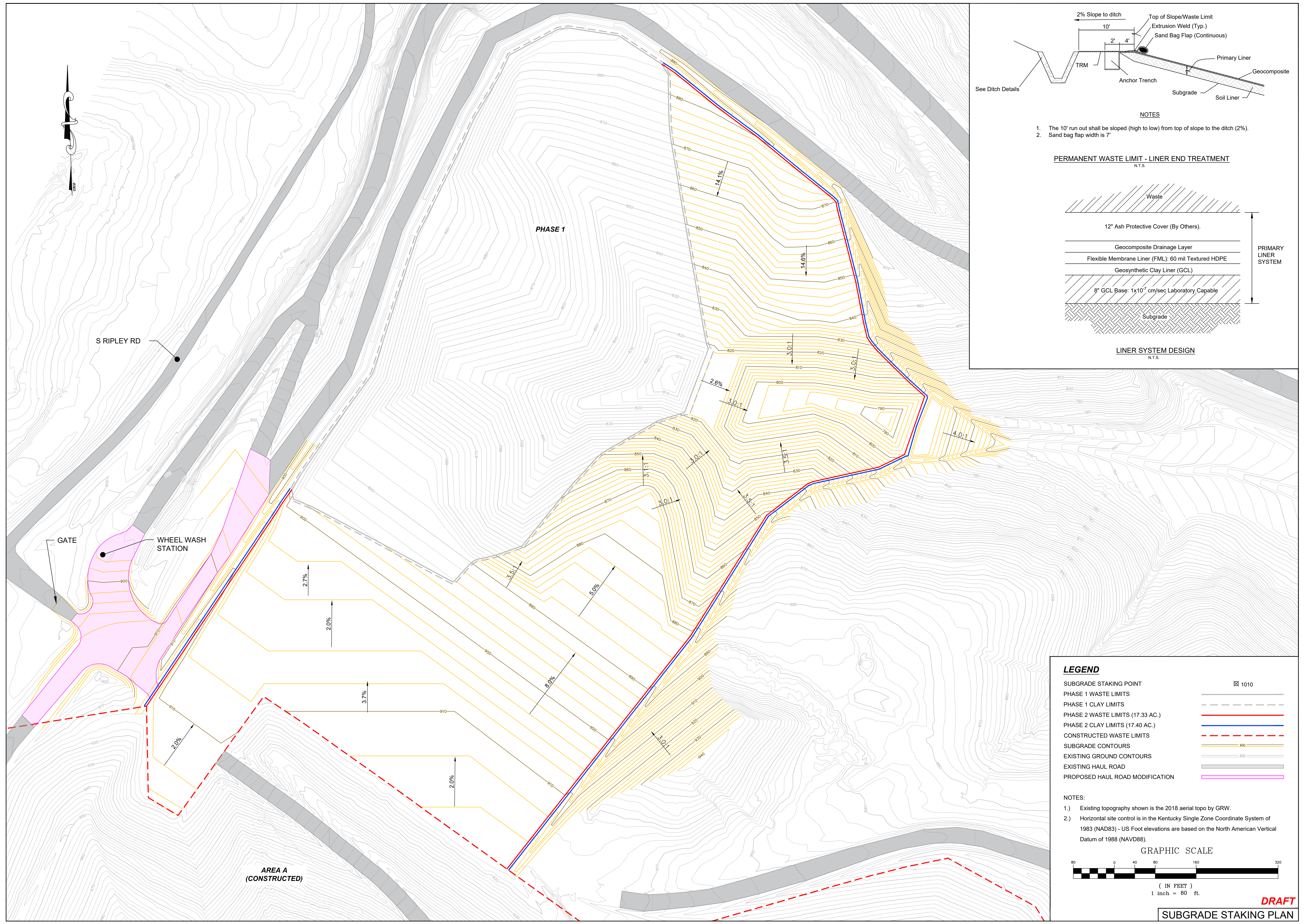
SECONDARY UNDERDRAIN TRENCH DETAIL (IF NEEDED)
NTS

Note: Secondary trench locations shall be approved in the field by Owner and CQA Engineer.

DRAFT
UNDERDRAIN PLAN

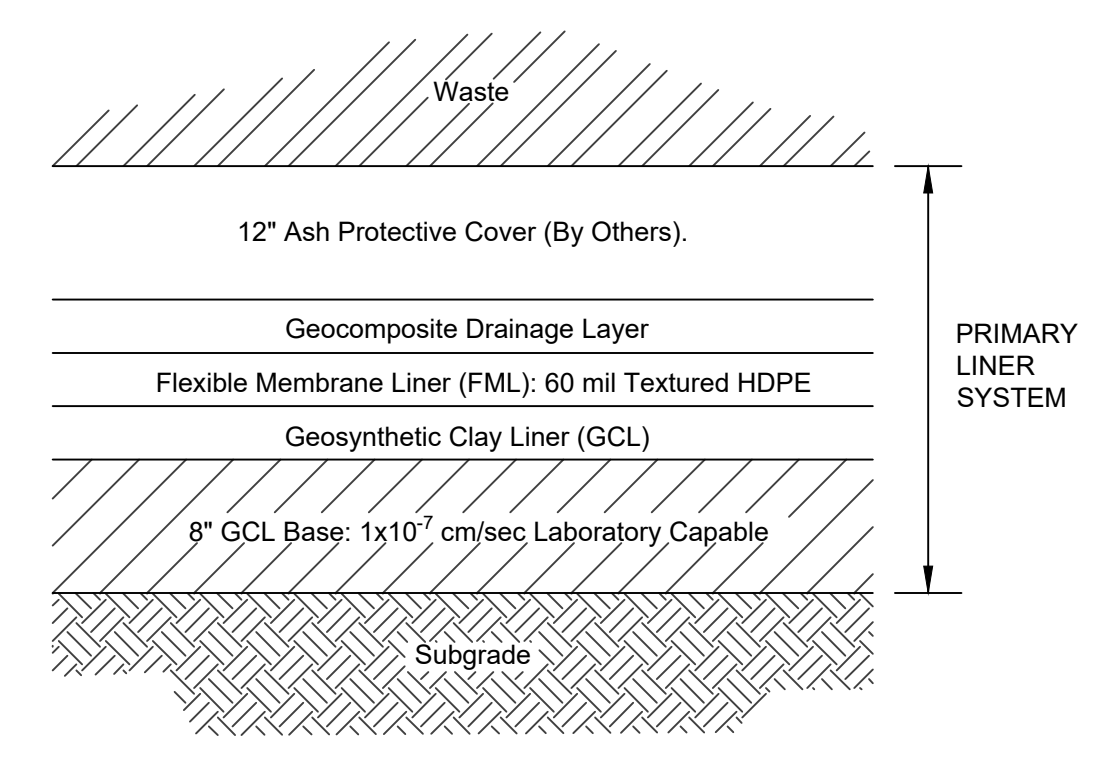
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DRAWN BY: RCH
CHECKED BY: STO
DATE: AUGUST 2022
SCALE: AS NOTED
REVISIONS



- NOTES**
- The 10' run out shall be sloped (high to low) from top of slope to the ditch (2%).
 - Sand bag flap width is 7'

PERMANENT WASTE LIMIT - LINER END TREATMENT
N.T.S.

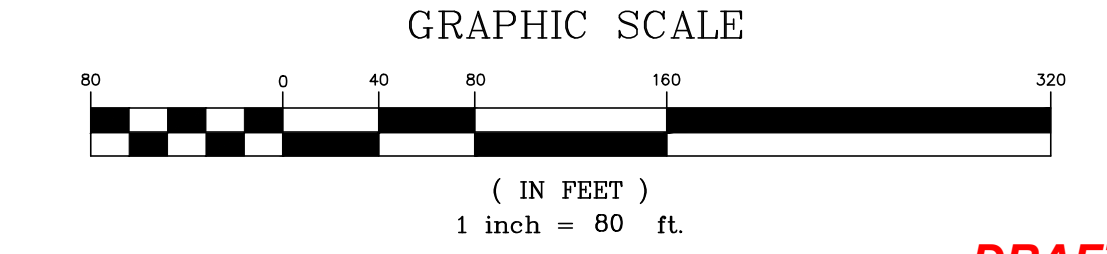


LINER SYSTEM DESIGN
N.T.S.

LEGEND

SUBGRADE STAKING POINT	⊗ 1010
PHASE 1 WASTE LIMITS	--- ---
PHASE 1 CLAY LIMITS	--- ---
PHASE 2 WASTE LIMITS (17.33 AC.)	--- ---
PHASE 2 CLAY LIMITS (17.40 AC.)	--- ---
CONSTRUCTED WASTE LIMITS	--- ---
SUBGRADE CONTOURS	--- ---
EXISTING GROUND CONTOURS	--- ---
EXISTING HAUL ROAD	--- ---
PROPOSED HAUL ROAD MODIFICATION	--- ---

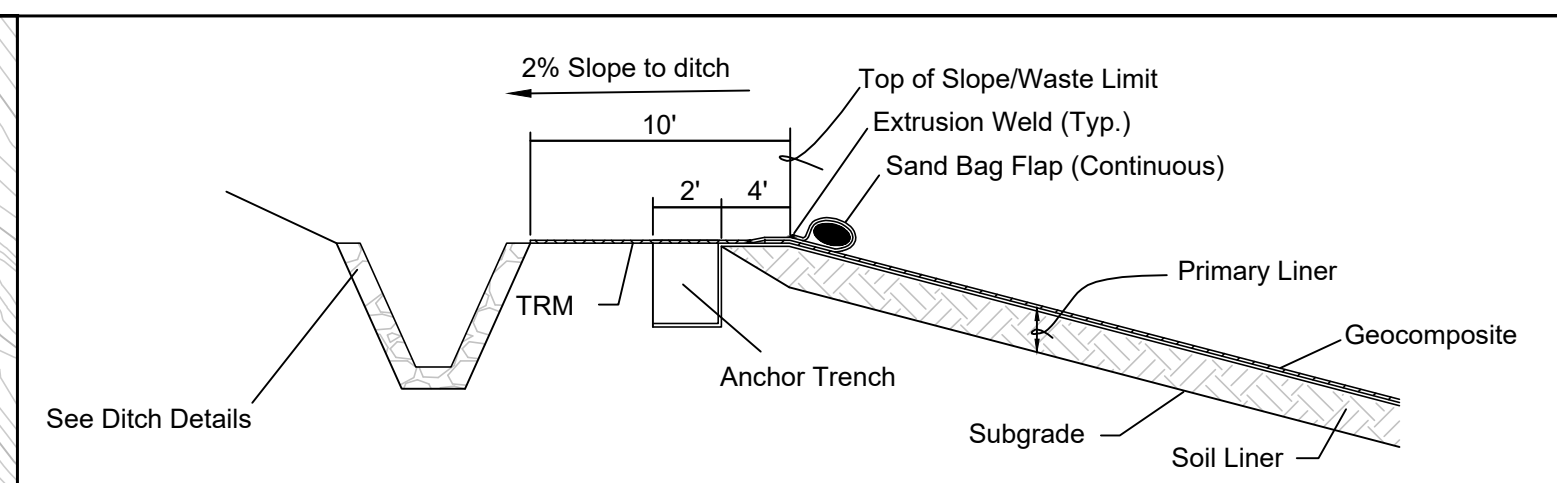
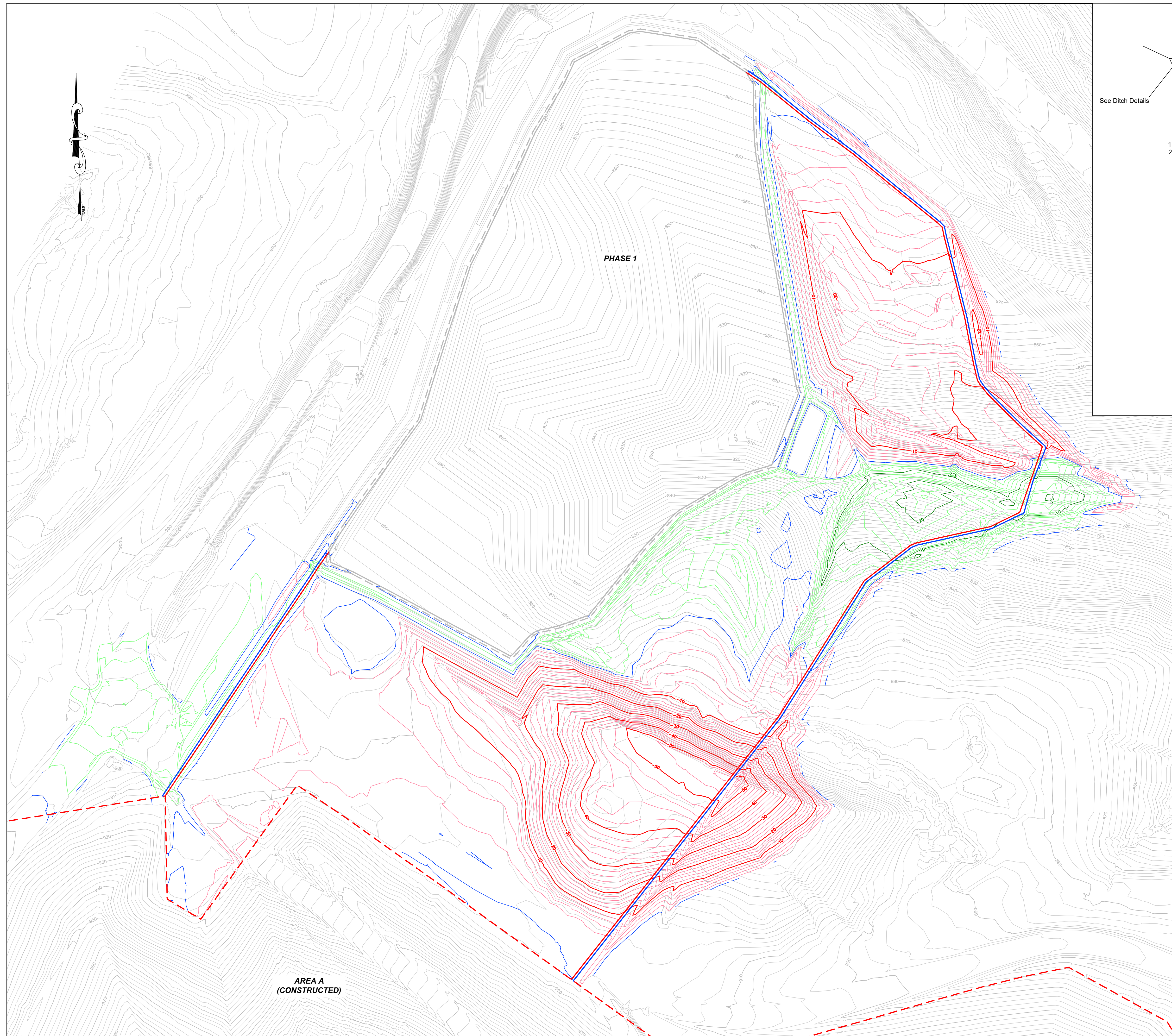
- NOTES:**
- Existing topography shown is the 2018 aerial topo by GRW.
 - Horizontal site control is in the Kentucky Single Zone Coordinate System of 1983 (NAD83) - US Foot elevations are based on the North American Vertical Datum of 1988 (NAVD88).



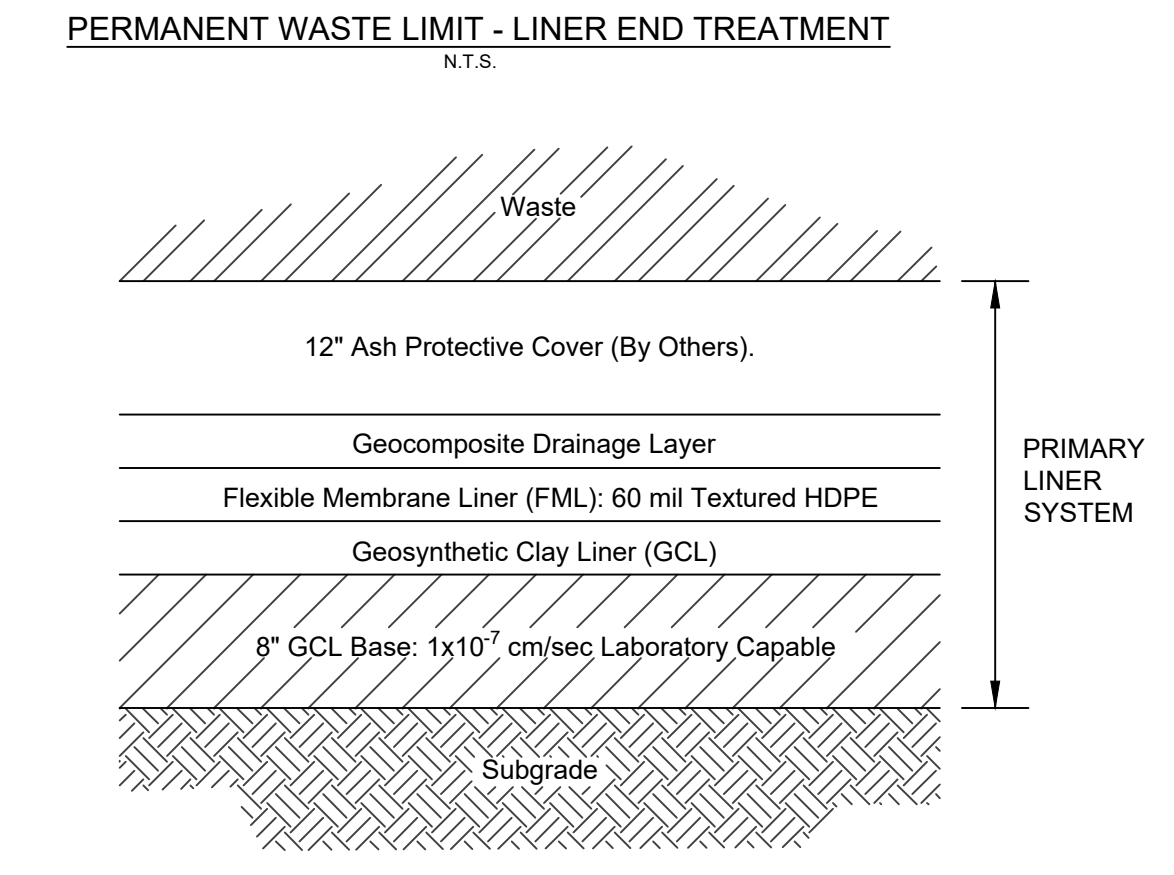
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SUBGRADE STAKING PLAN

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DRAWN BY: RCH
CHECKED BY: STO
DATE: AUGUST 2022
SCALE: AS NOTED
REVISIONS



- NOTES**
- The 10' run out shall be sloped (high to low) from top of slope to the ditch (2%).
 - Sand bag flap width is 7'.



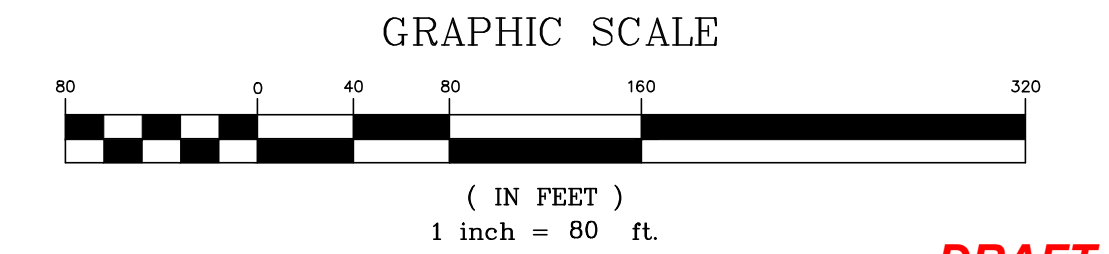
LEGEND

PHASE 1 WASTE LIMITS	— (dashed red)
PHASE 1 CLAY LIMITS	— (dashed blue)
PHASE 2 WASTE LIMITS (17.33 AC.)	— (solid red)
PHASE 2 CLAY LIMITS (17.40 AC.)	— (solid blue)
CONSTRUCTED WASTE LIMITS	— (dashed red)
ISOPACH ZERO CUT/FILL CONTOURS	— (solid blue)
ISOPACH CUT CONTOURS	— (solid red)
ISOPACH FILL CONTOURS	— (solid green)
EXISTING GROUND CONTOURS	— (solid grey)

SUBGRADE CONSTRUCTION VOLUMES

APPROXIMATE SUBGRADE CUT VOLUME: 278,417 CY
 APPROXIMATE SUBGRADE FILL VOLUME: 51,154 CY
 APPROXIMATE T.O.R. CUT VOLUME: 42,241 CY
 APPROXIMATE SOIL CUT VOLUME: 236,176 CY

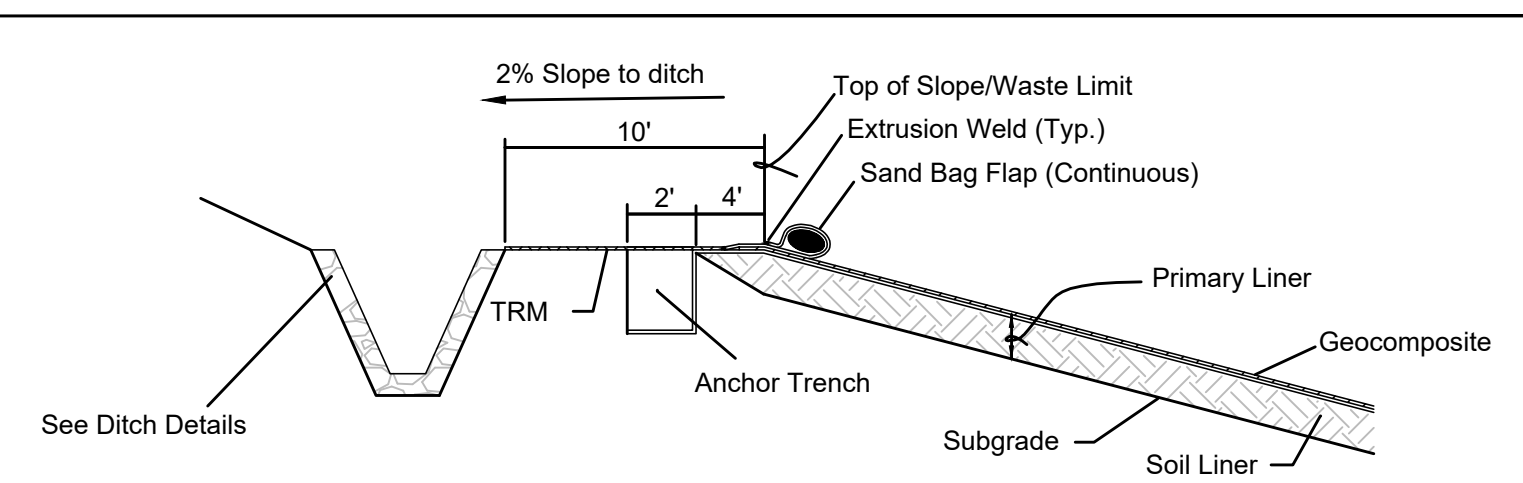
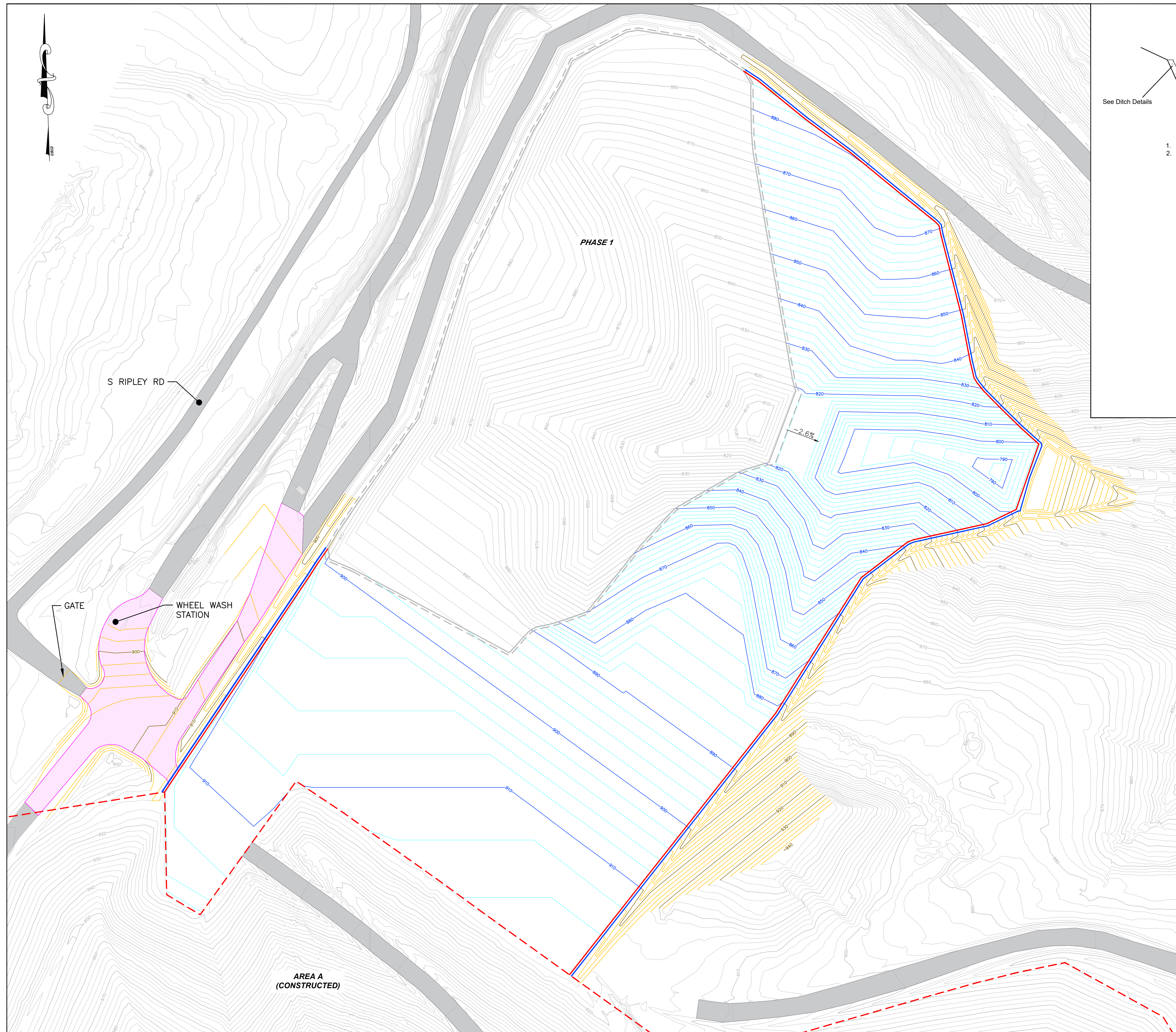
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- Existing topography shown is the 2018 aerial topo by GRW.
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DRAFT
SUBGRADE ISOPACH

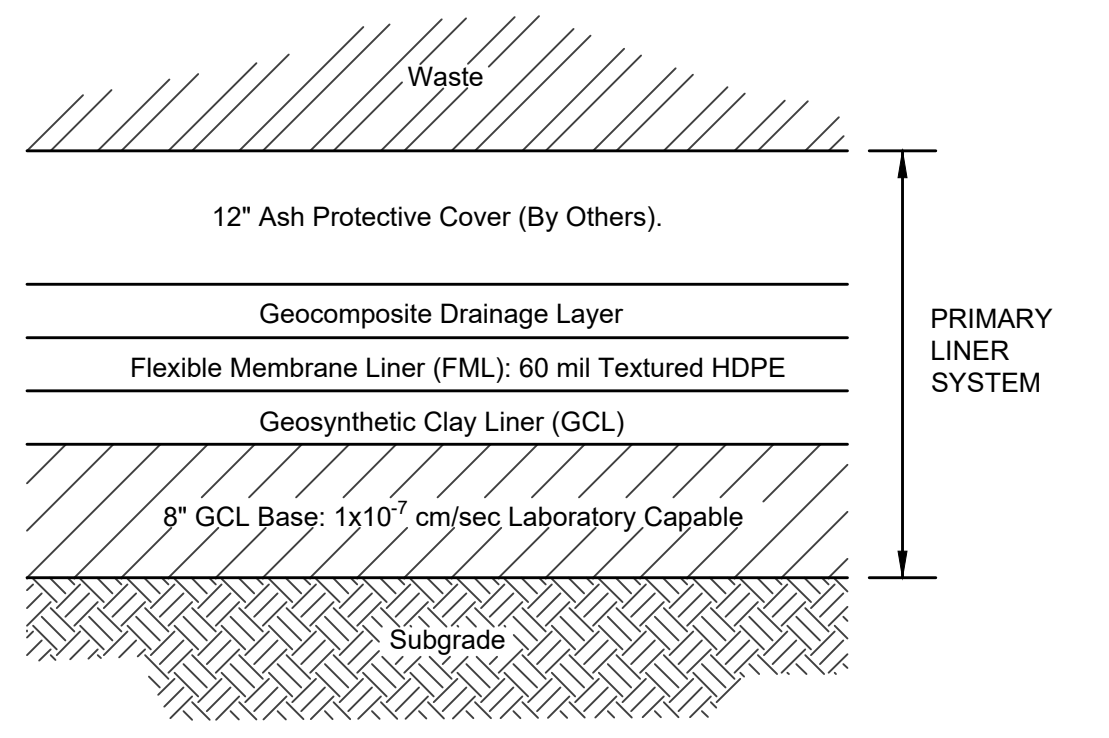
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DRAWN BY: RCH
CHECKED BY: STO
DATE: AUGUST 2022
SCALE: AS NOTED
REVISIONS



- NOTES**
- The 10' run out shall be sloped (high to low) from top of slope to the ditch (2%).
 - Sand bag flap width is 7'

PERMANENT WASTE LIMIT - LINER END TREATMENT
N.T.S.



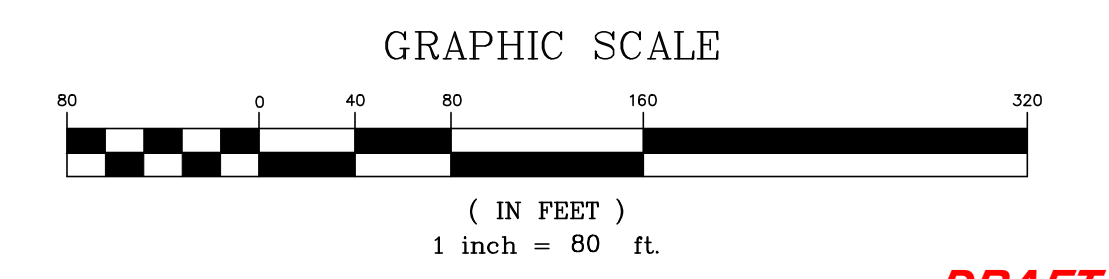
LINER SYSTEM DESIGN
N.T.S.

LEGEND

SOIL LINER STAKING POINT	⊗ 1010
PHASE 1 WASTE LIMITS	--- ---
PHASE 1 CLAY LIMITS	--- ---
PHASE 2 WASTE LIMITS (17.33 AC.)	--- ---
PHASE 2 CLAY LIMITS (17.40 AC.)	--- ---
CONSTRUCTED WASTE LIMITS	--- ---
SOIL LINER CONTOURS	--- ---
SUBGRADE CONTOURS	--- ---
EXISTING GROUND CONTOURS	--- ---
EXISTING HAUL ROAD	--- ---
PROPOSED HAUL ROAD MODIFICATION	--- ---

SOIL LINER CONSTRUCTION QUANTITIES
APPROXIMATE SOIL LINER FILL VOLUME: 18,750 CY

- NOTES:**
- Existing topography shown is the 2018 aerial topo by GRW.
 - Horizontal site control is in the Kentucky Single Zone Coordinate System of 1983 (NAD83) - US Foot elevations are based on the North American Vertical Datum of 1988 (NAVD88).

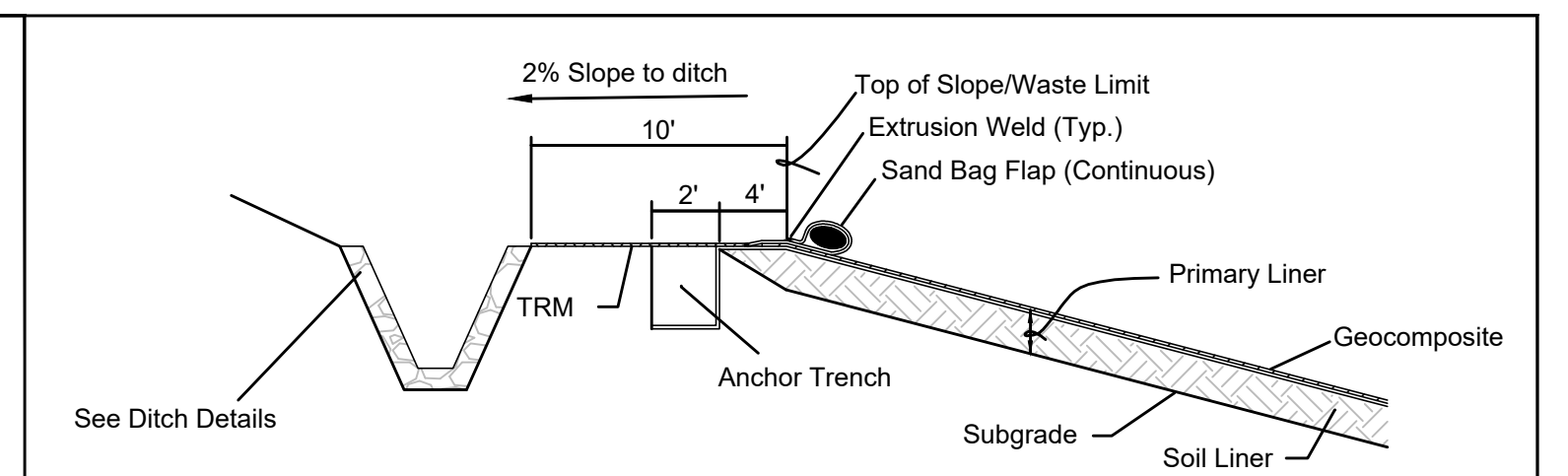
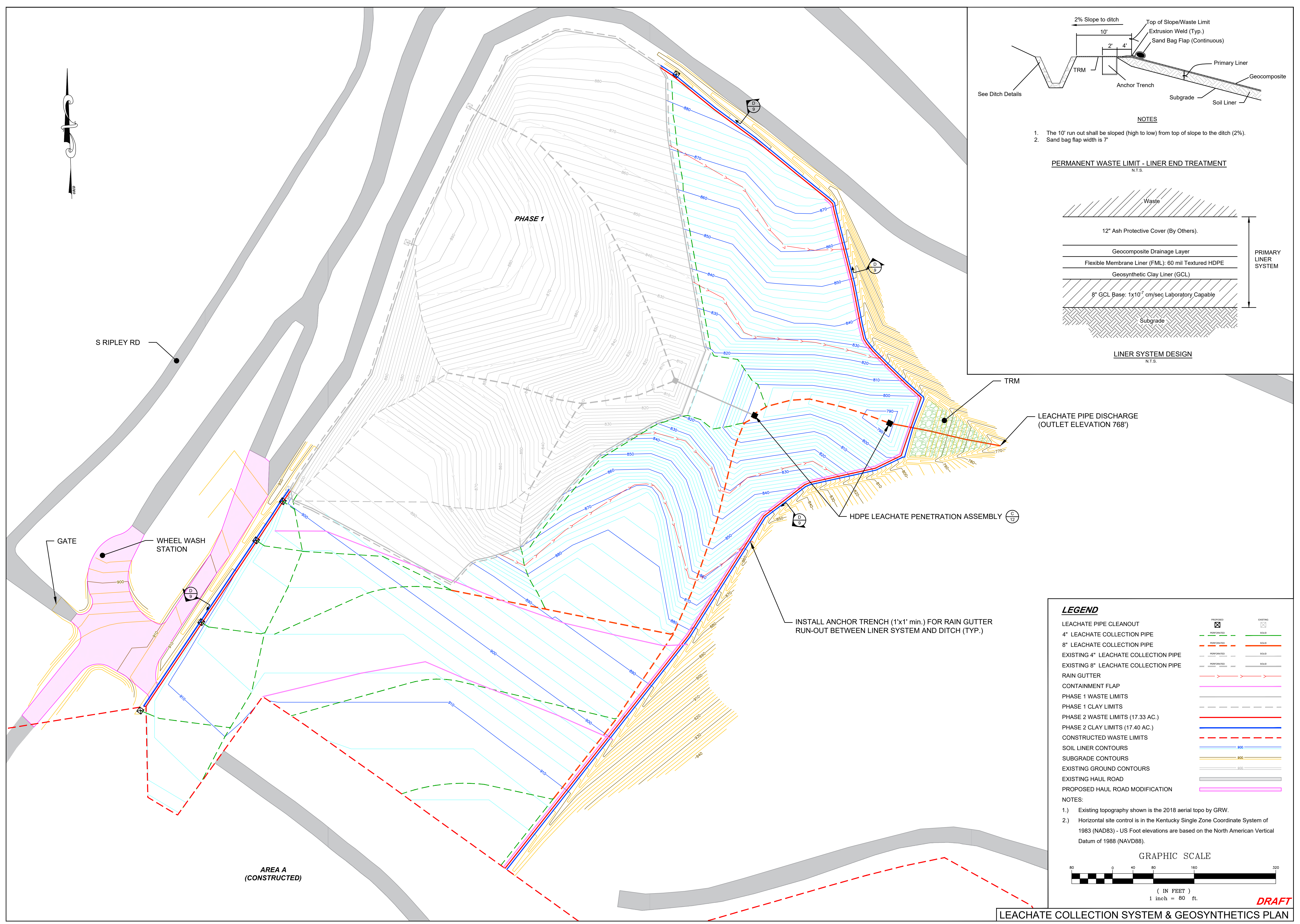


SOIL LINER STAKING PLAN

DRAFT

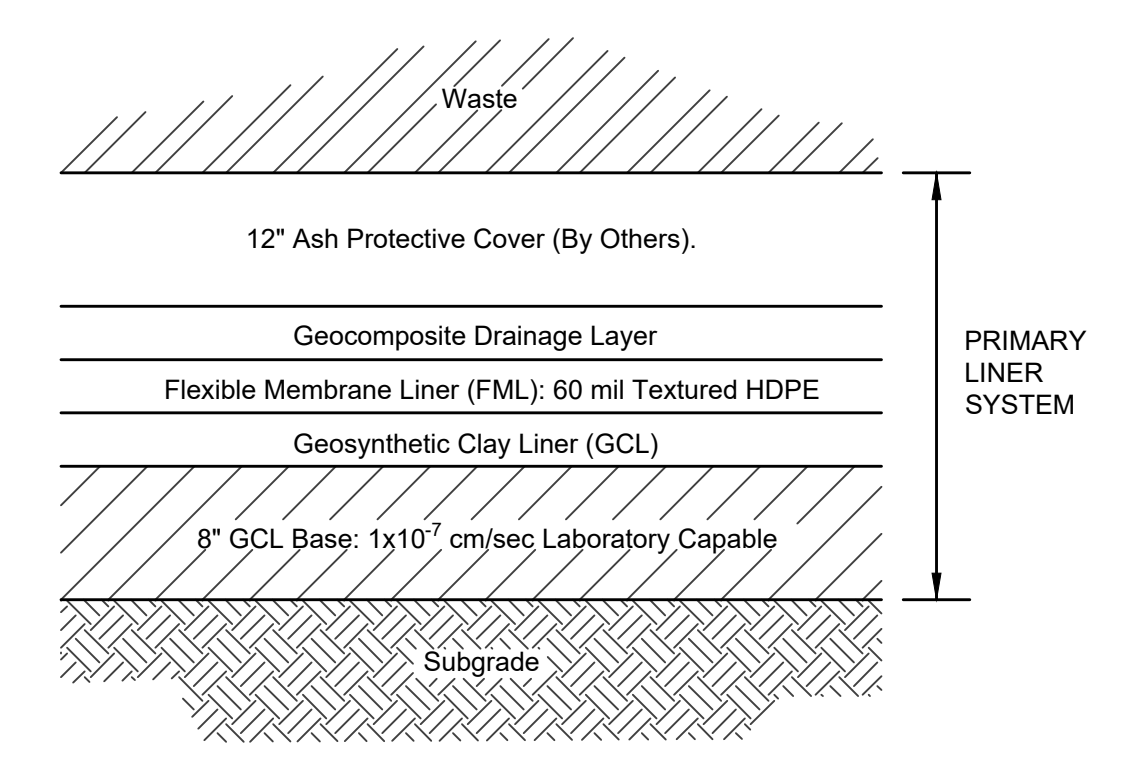
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DRAWN BY: RCH
CHECKED BY: STO
DATE: AUGUST 2022
SCALE: AS NOTED
REVISIONS



- NOTES**
- The 10' run out shall be sloped (high to low) from top of slope to the ditch (2%).
 - Sand bag flap width is 7'

PERMANENT WASTE LIMIT - LINER END TREATMENT
N.T.S.

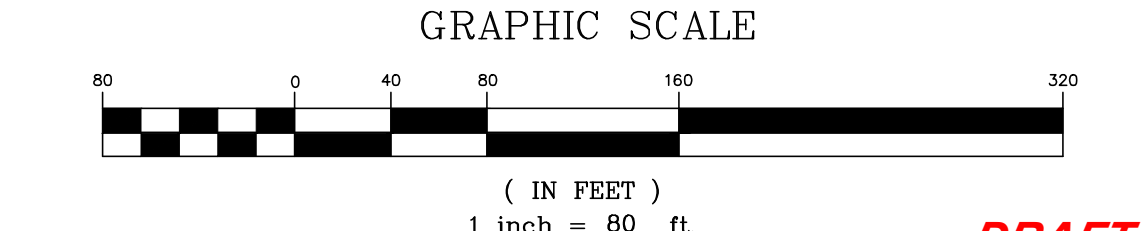


LINER SYSTEM DESIGN
N.T.S.

LEGEND

LEACHATE PIPE CLEANOUT		EXISTING 4" LEACHATE COLLECTION PIPE	
4" LEACHATE COLLECTION PIPE		EXISTING 8" LEACHATE COLLECTION PIPE	
8" LEACHATE COLLECTION PIPE		RAIN GUTTER	
EXISTING 4" LEACHATE COLLECTION PIPE		CONTAINMENT FLAP	
EXISTING 8" LEACHATE COLLECTION PIPE		PHASE 1 WASTE LIMITS	
RAIN GUTTER		PHASE 1 CLAY LIMITS	
CONTAINMENT FLAP		PHASE 2 WASTE LIMITS (17.33 AC.)	
PHASE 1 WASTE LIMITS		PHASE 2 CLAY LIMITS (17.40 AC.)	
PHASE 1 CLAY LIMITS		CONSTRUCTED WASTE LIMITS	
PHASE 2 WASTE LIMITS (17.33 AC.)		SOIL LINER CONTOURS	
PHASE 2 CLAY LIMITS (17.40 AC.)		SUBGRADE CONTOURS	
CONSTRUCTED WASTE LIMITS		EXISTING GROUND CONTOURS	
SOIL LINER CONTOURS		EXISTING HAUL ROAD	
SUBGRADE CONTOURS		PROPOSED HAUL ROAD MODIFICATION	
EXISTING GROUND CONTOURS			
EXISTING HAUL ROAD			
PROPOSED HAUL ROAD MODIFICATION			

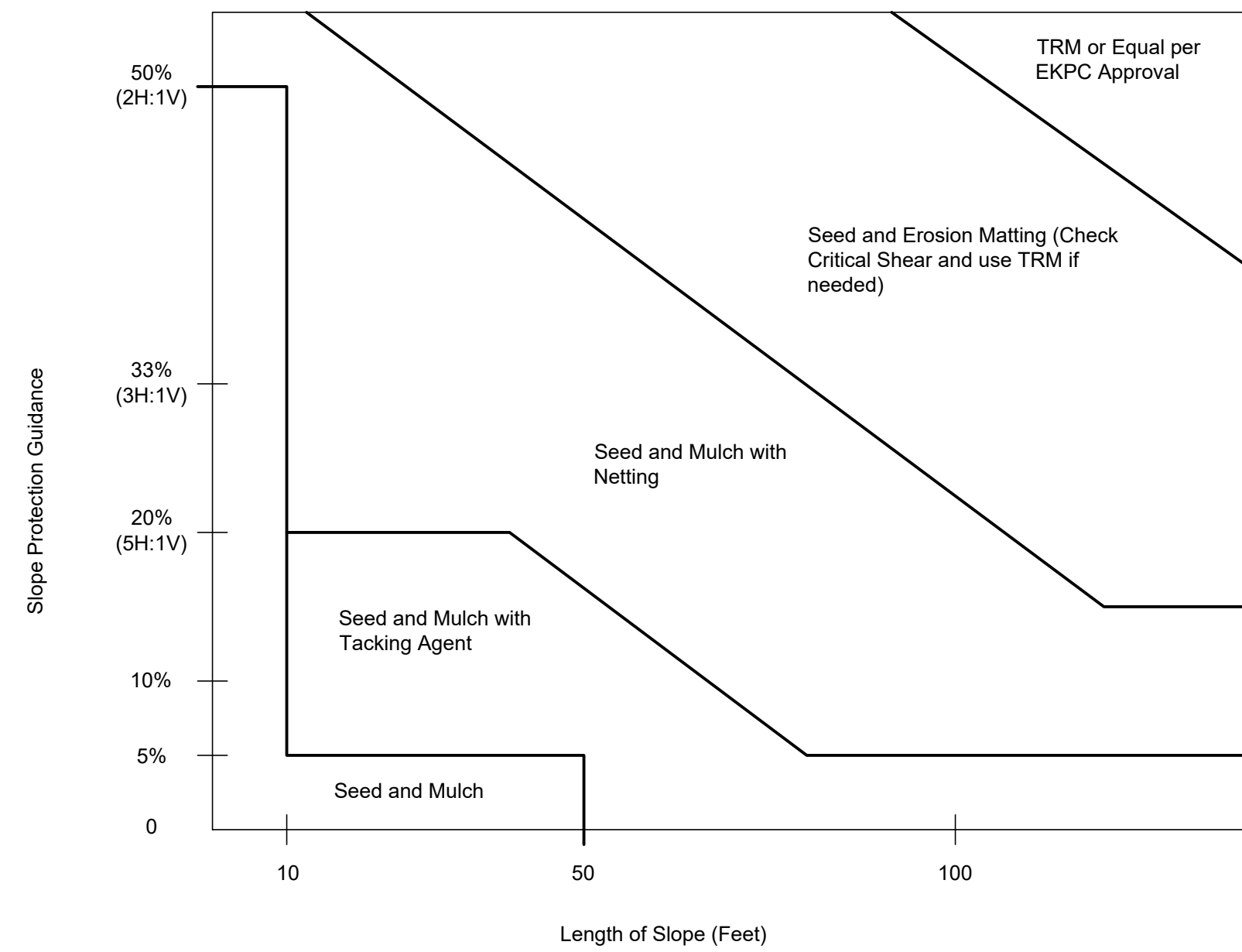
- NOTES:**
- Existing topography shown is the 2018 aerial topo by GRW.
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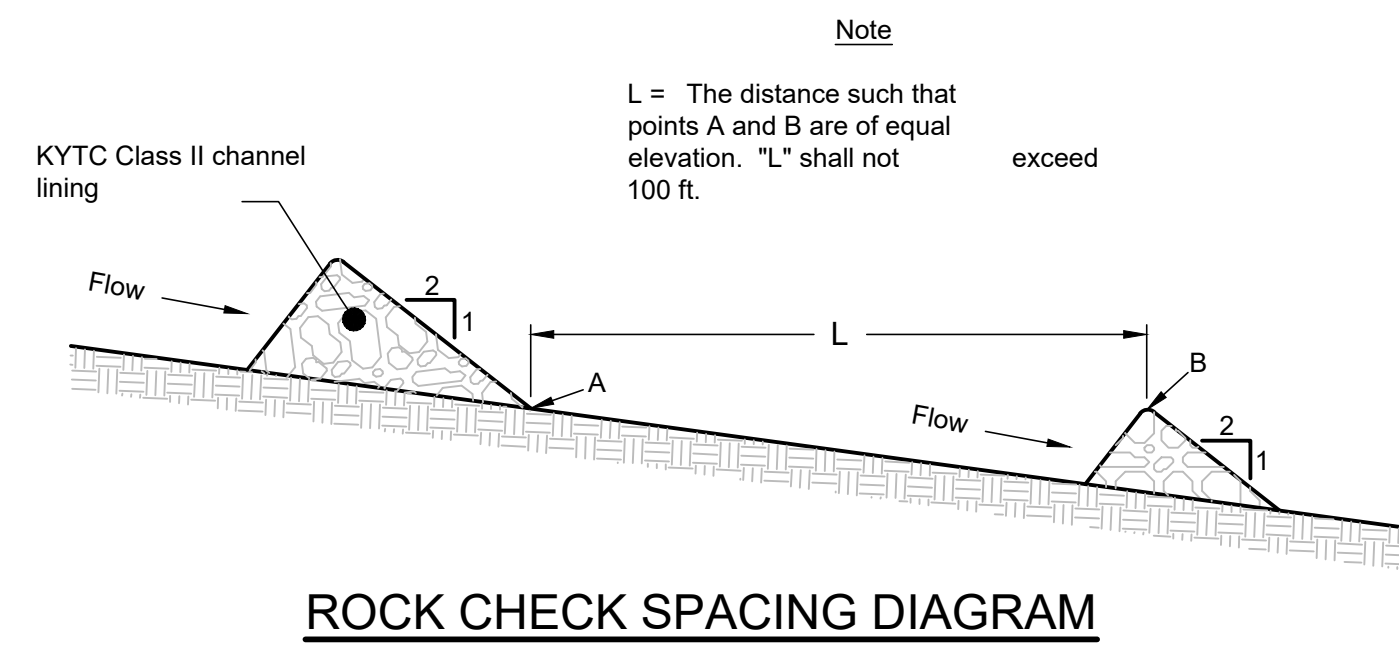
LEACHATE COLLECTION SYSTEM & GEOSYNTHETICS PLAN

DRAFT

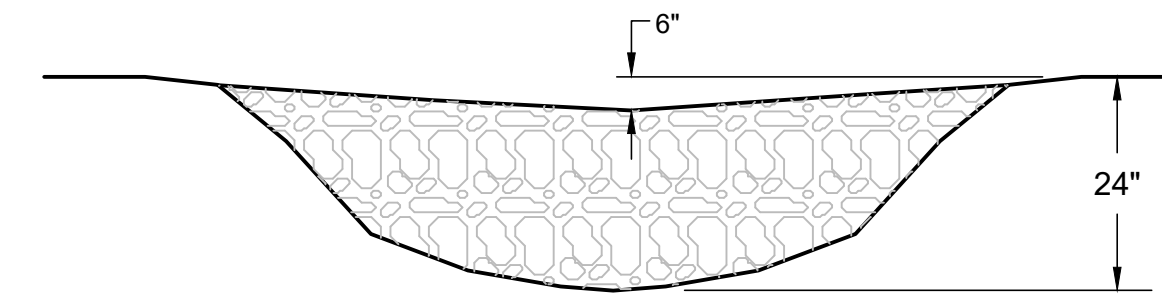
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CHECKED BY: STO	
DATE: AUGUST 2022	
SCALE: AS NOTED	



SLOPE PROTECTION GUIDANCE
N.T.S.



ROCK CHECK SPACING DIAGRAM
N.T.S.



CROSS SECTION
N.T.S.

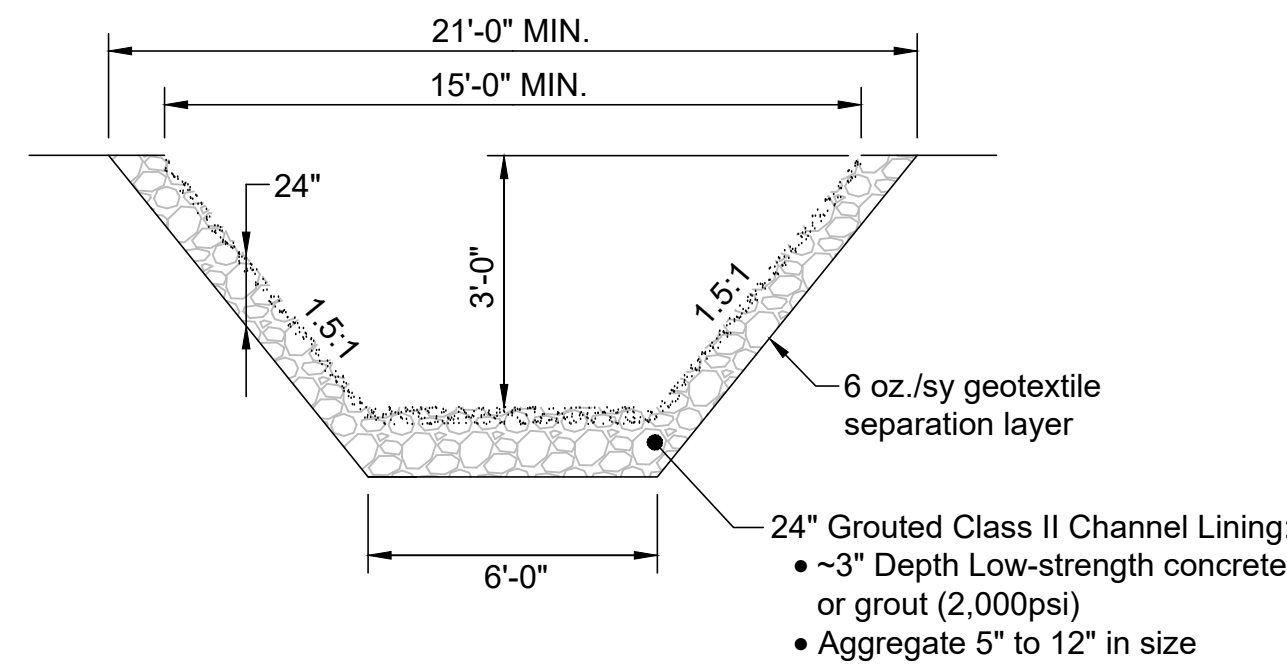


TEMPORARY SILT CHECK
N.T.S.

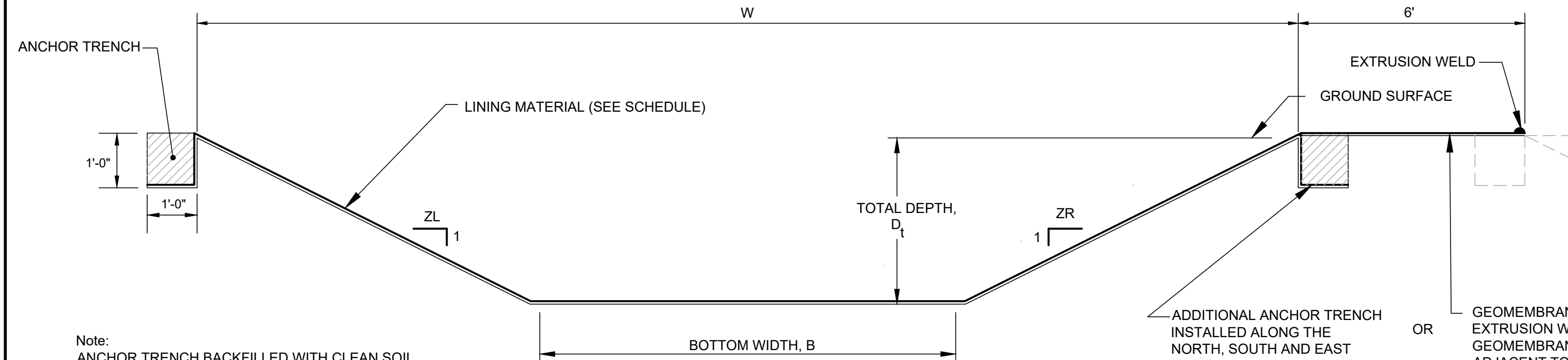
DITCH SCHEDULE

CHANNEL DESCRIPTIONS	CHANNEL IDENTIFICATION	AVERAGE BOTTOM SLOPE FT/FT	TOTAL DEPTH (FT) Dt (MIN.)	BOTTOM WIDTH B(FT)	SIDE SLOPE ZL / ZR	LINING MATERIAL	DITCH WIDTH, W (FT.)
PERMANENT PERIMETER DITCH	DITCH TYPE 1	VARIES	5.0	6.0	1.5 / 1.5	GROUTED RIPRAP	21/15 (OUTSIDE/INSIDE)
TEMPORARY PERIMETER DITCH	DITCH TYPE 2	VARIES	3.0	3.0	1.5 / 1.5	GEOMEMBRANE	12
TEMPORARY CONTAINMENT BERM DITCH	DITCH TYPE 3	1.0%	2.0	2.0	1.5 / 1.5	GEOMEMBRANE	8

TRM: (TURF REINFORCEMENT MATTING) SEMI-PERMANENT SYNTHETIC EROSION CONTROL MATTING WHICH GRASS WILL GROW THROUGH WITH MINIMUM LONG-TERM SHEAR STRESS 6-LB/SF. TRM SHALL BE PURCHASED AND INSTALLED BY EARTHWORKS CONTRACTOR. ONLY OUTSIDE OF ROCK CUT.
DITCH PROTECTION: 24" GROUTED CLASS II CHANNEL LINING WITH 3" LOW STRENGTH CONCRETE OR GROUT (2,000 psi). GROUT/CONCRETE TO COMPLETELY COVER AND SEAL TOP OF CHANNEL LINING WITHOUT VOIDS, HOLES OR DEPRESSIONS. SEE SHEET 10 FOR DITCH TYPE 5 DETAILS.

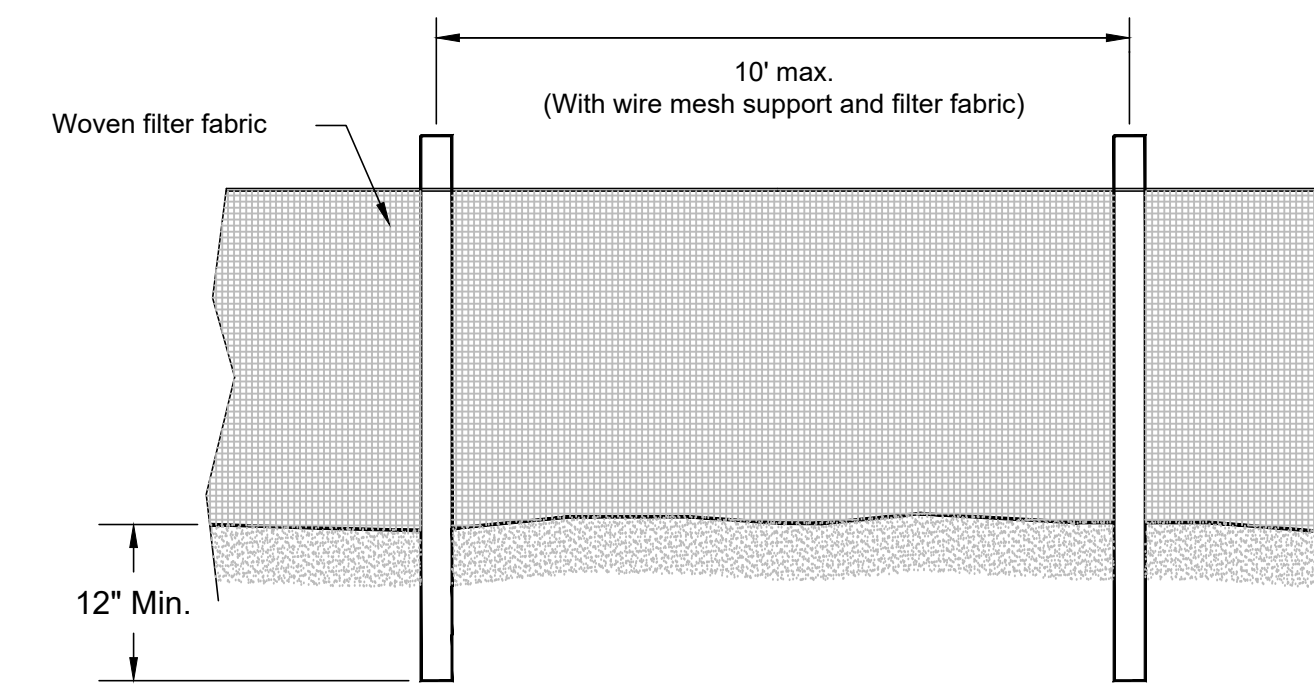


PERMANENT PERIMETER DITCH
N.T.S.



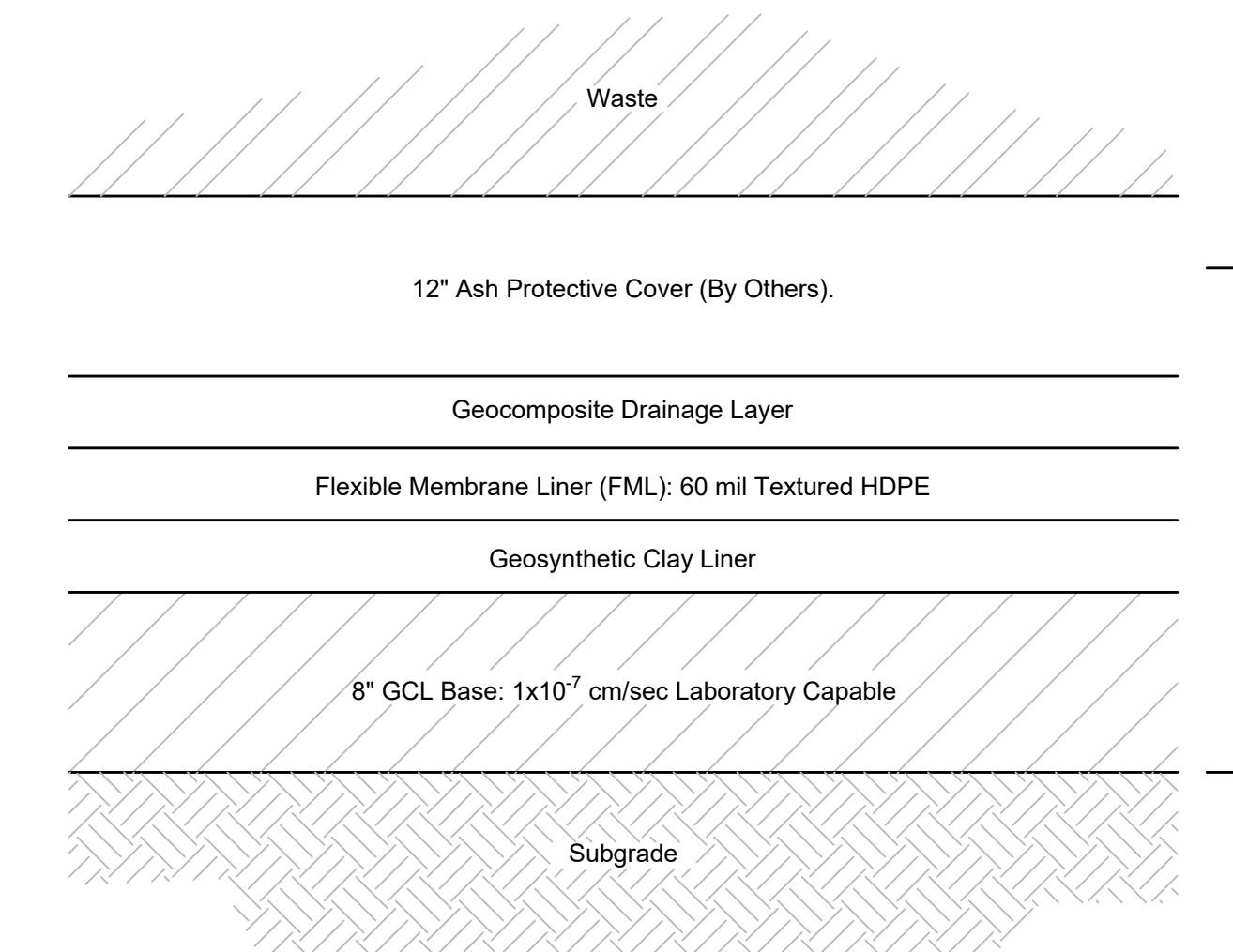
GEOMEMBRANE LINED DITCH SECTION VIEW A-A
N.T.S.

TYPICAL SURFACE WATER DITCH- GEOMEMBRANE LINED
N.T.S.

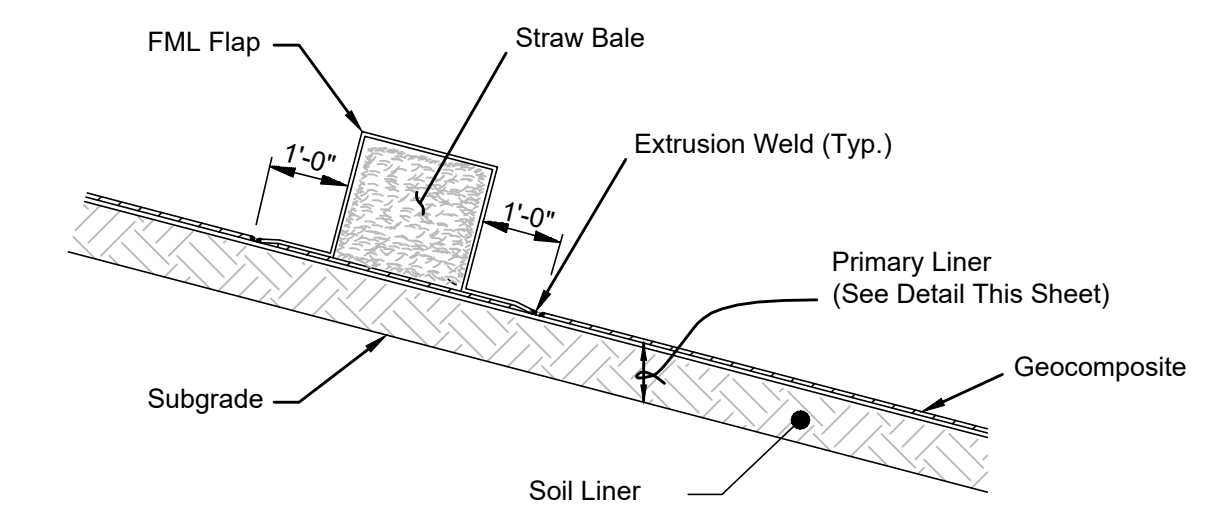


SILT FENCE
N.T.S.

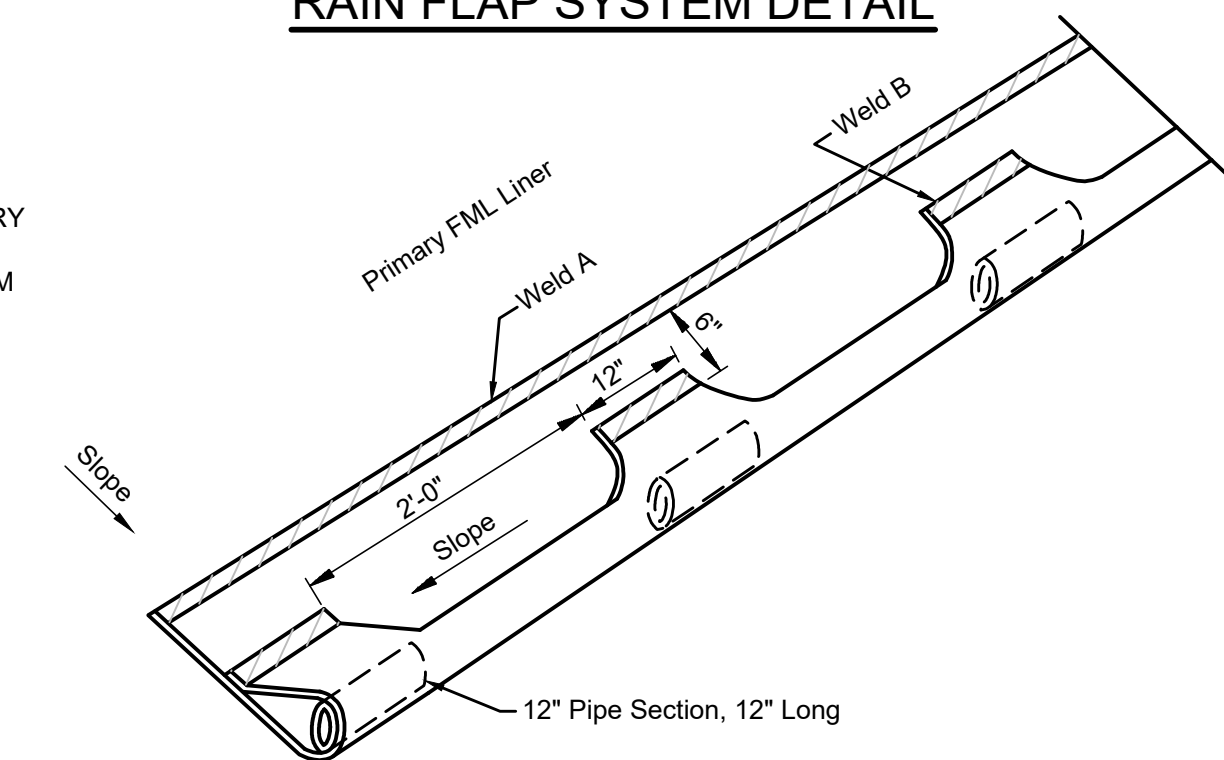
- Filter fabric shall be purchased in a continuous roll and cut to the length of the barrier. When joints cannot be avoided, filter fabric shall be spliced together only at a post with 3 ft. (min.) overlap, and securely sealed.
- Posts shall be spaced at 6 ft. intervals in areas of rapid runoff.
- Posts shall be at least 5 ft. in length.
- Steel posts shall have projections for fastening wire and fabric.
- Wood posts shall be 2 inches by 2 inches or equivalent. Steel posts shall be 1.33 lbs per lineal foot.
- A wire mesh support fence shall be fastened securely to the up-slope side of the posts using heavy duty wire staples at least 1 inch in length, wire ties or hog rings. The wire shall extend into the trench a minimum of 2 inches and shall not extend more than 36 inches above the original ground surface.
- Washed stone shall be used to bury skirt when silt fence is used adjacent to a channel, creek, or pond.
- Turn silt fence up-slope at ends.



LINER SYSTEM DESIGN
N.T.S.

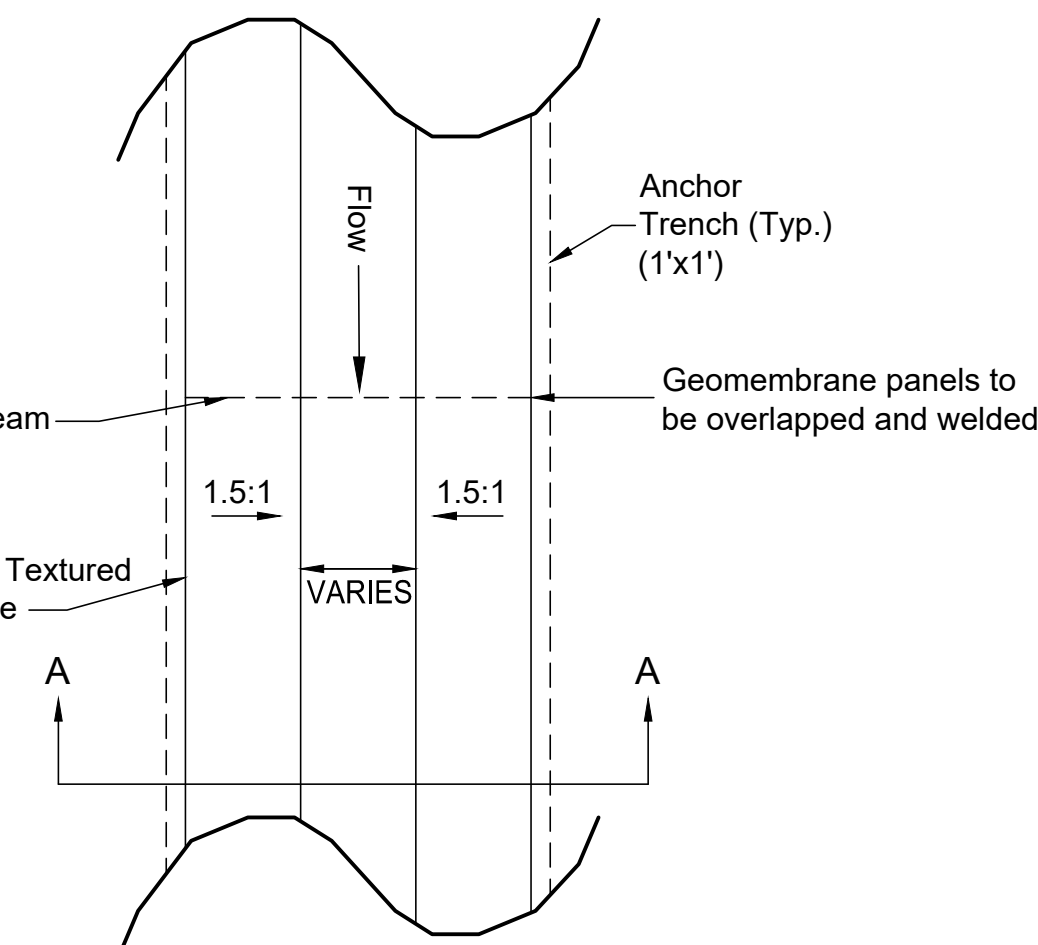


RAIN FLAP SYSTEM DETAIL
N.T.S.



- Note:
- Contractor to provide anchor trench between liner system and ditch to support rain gutter. Min. anchor trench dimensions 1'x1'.

RAIN GUTTER SYSTEM DETAIL
N.T.S.

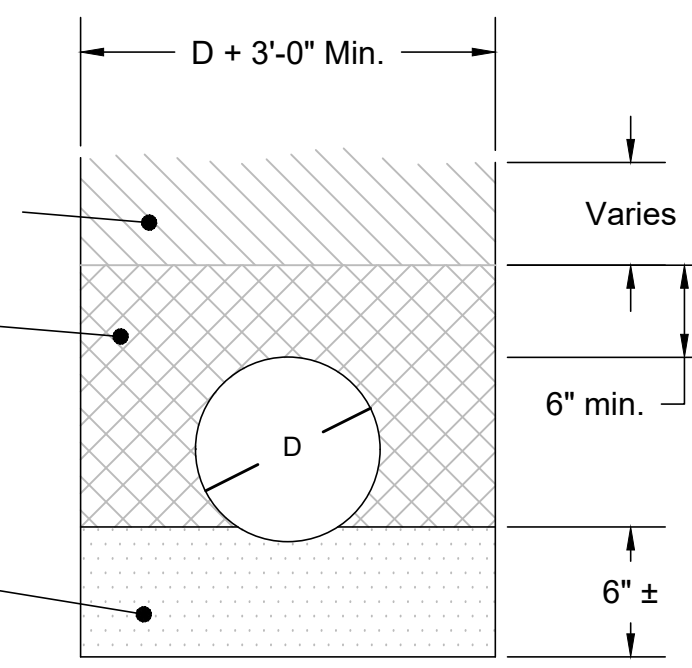


GEOMEMBRANE DITCH PLAN VIEW
N.T.S.

Note: If ditch subgrade consists of in-situ rock, Contractor shall place a 16-oz. non-woven geotextile between the rock subgrade and geomembrane. Geotextile material to be supplied by owner, as needed.

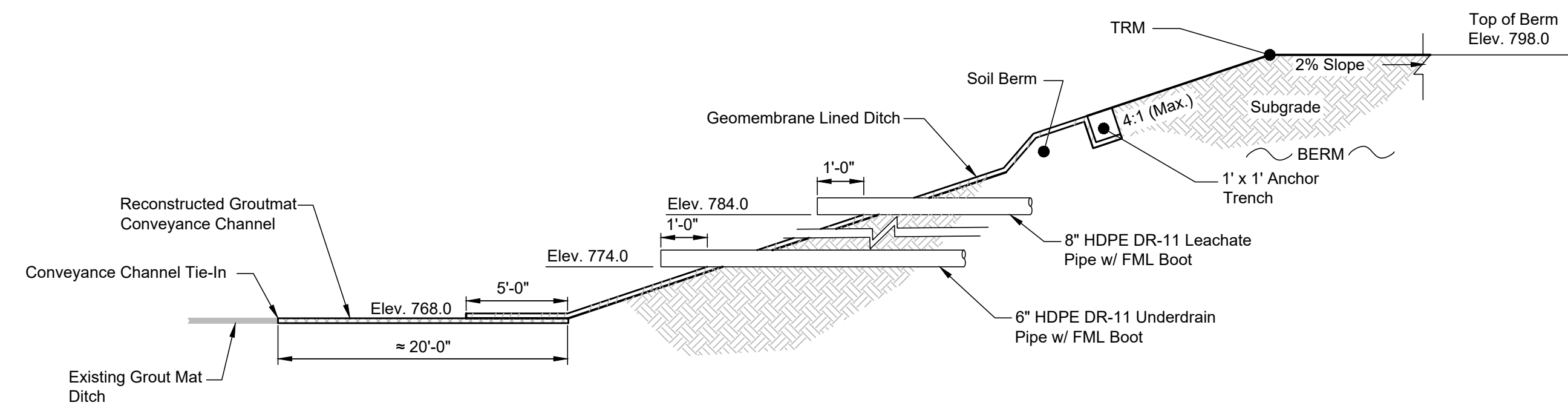
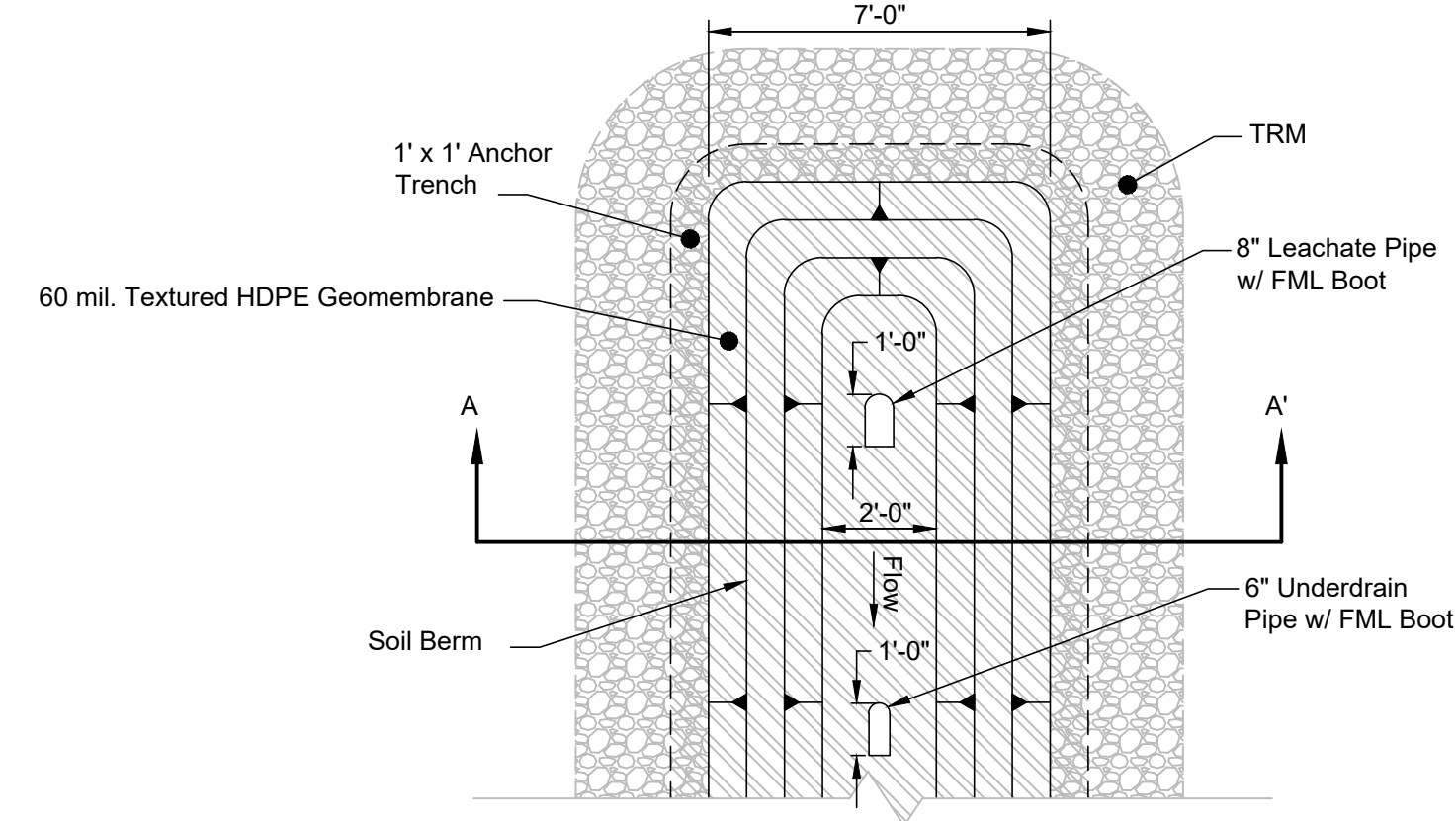
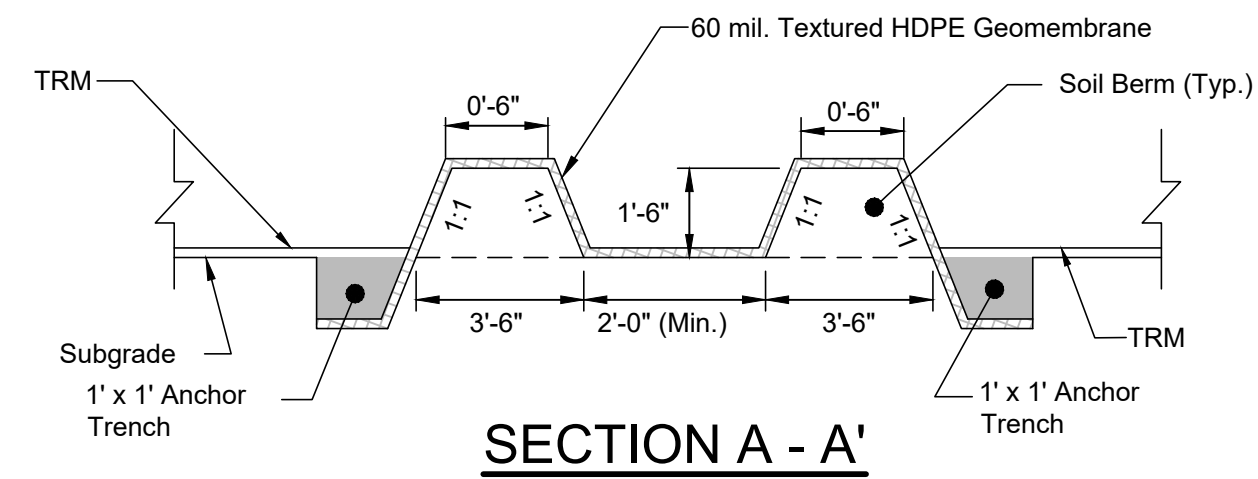
Legend

- Embankment
- Soil Embankment
- Final Backfill (As Necessary)
- Soil embankment to be free of rocks or other deleterious material larger than 2" in any dimension. To extend no less than 6" above the top of pipe.
- Coarse Sand Bedding or No. 9 or 11 Stone



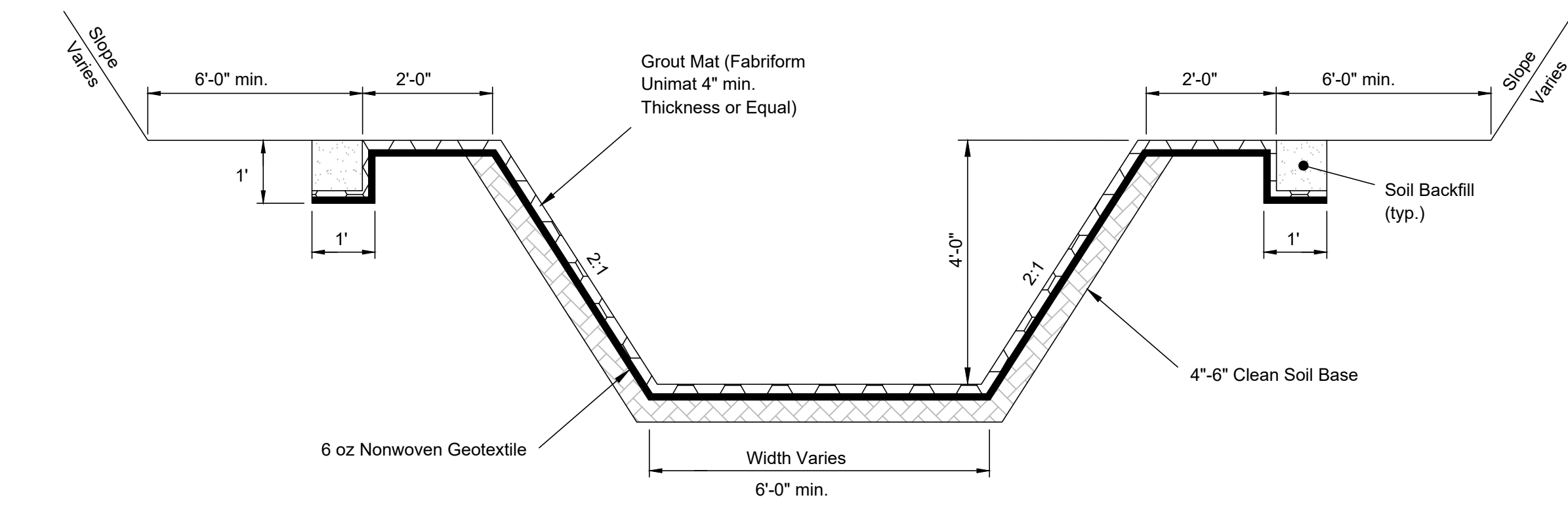
TYPICAL PIPE TRENCH DETAIL
N.T.S.

DRAFT
DETAILS

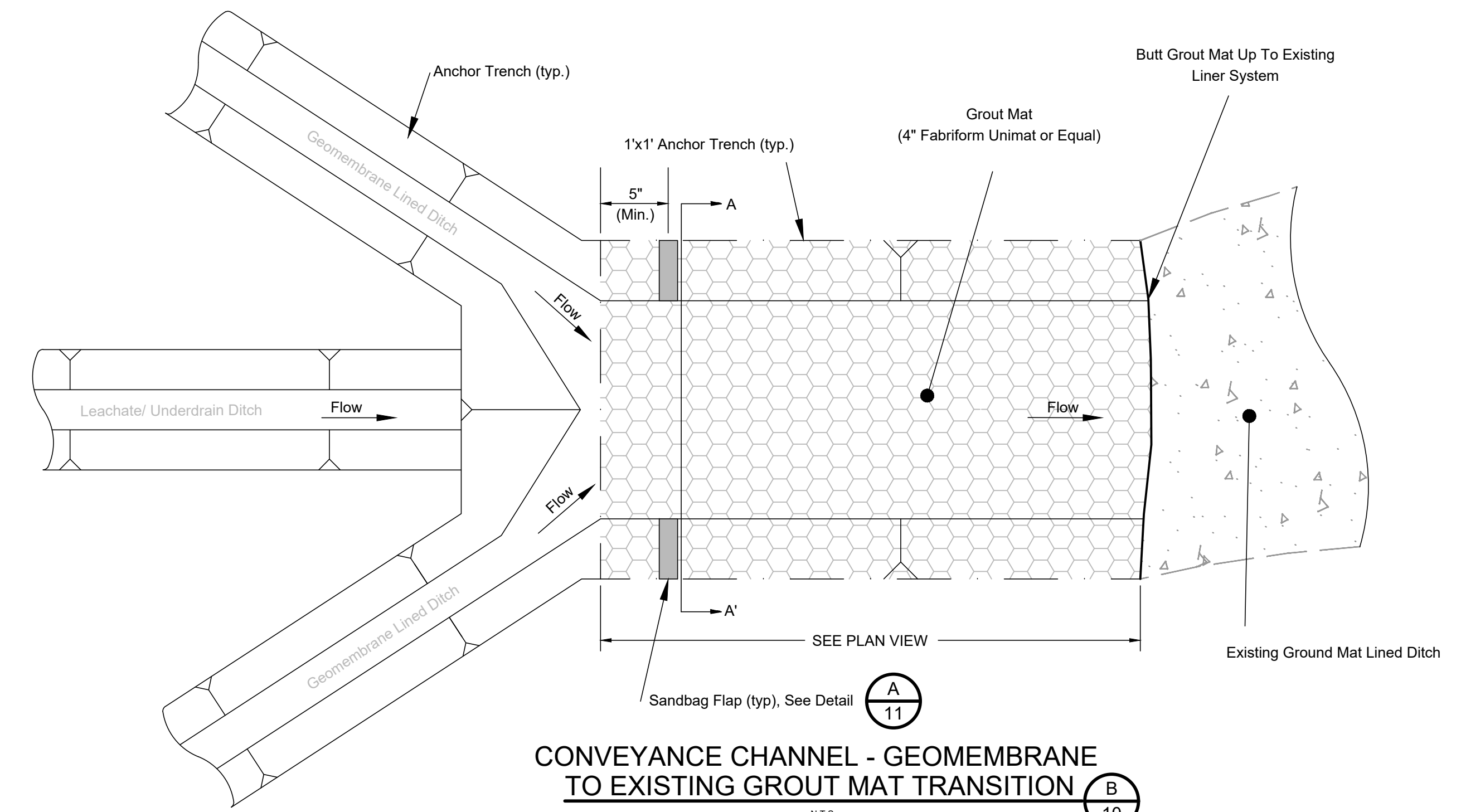


UNDERDRAIN & LEACHATE PIPE TERMINATION DETAIL

A
10



SECTION A - A'
N.T.S.



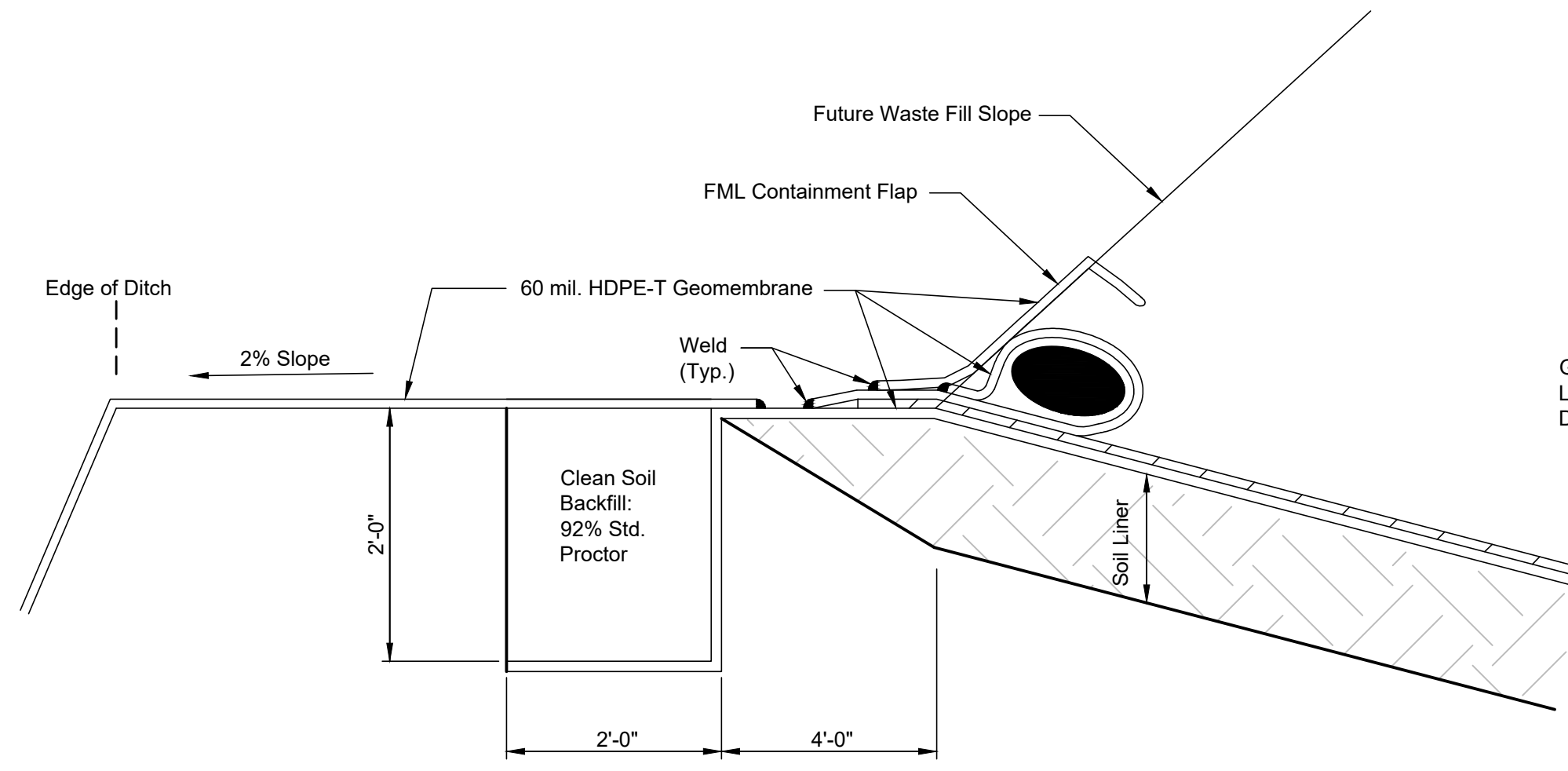
CONVEYANCE CHANNEL - GEOMEMBRANE TO EXISTING GROUT MAT TRANSITION

B
10

Note

1. Reconstructed Existing Groutmat Conveyance Ditch Section Removed During Demolition Construction Activities for Phase 2.

DRAWN BY: MAS
CHECKED BY: STO
DATE: AUGUST 2022
SCALE: AS NOTED
REVISIONS

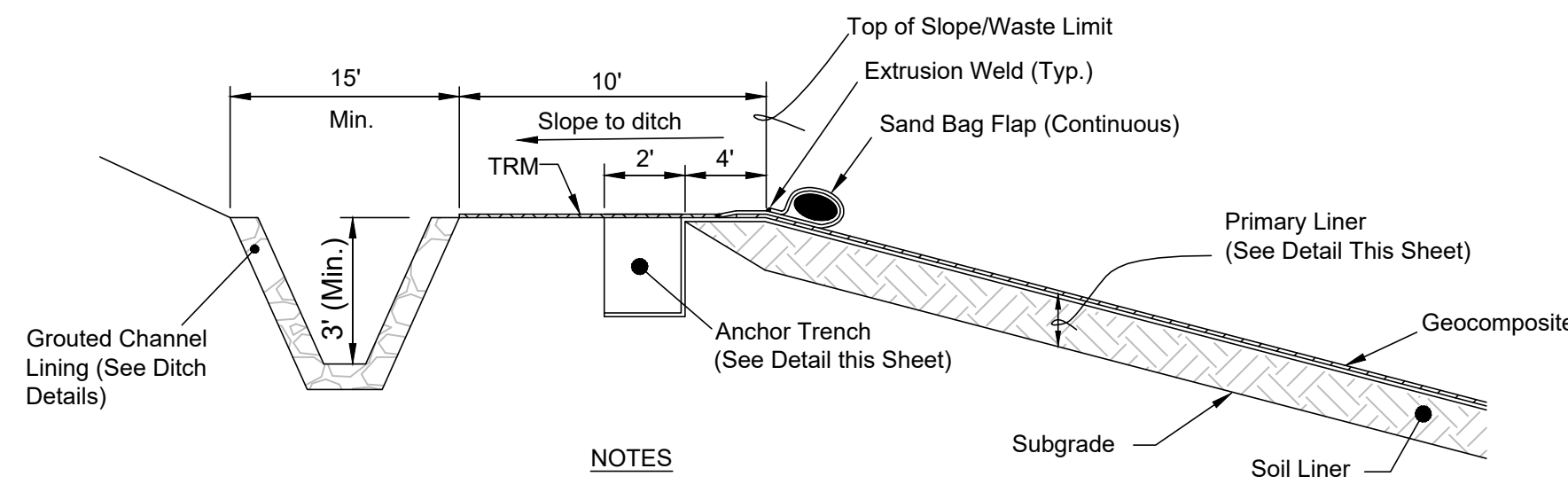


CONTAINMENT FLAP DETAIL

A
11

Notes

1. Containment Flap is a total of 7 ft. wide.
2. Flap shall be folded and sand bagged at waste limits.

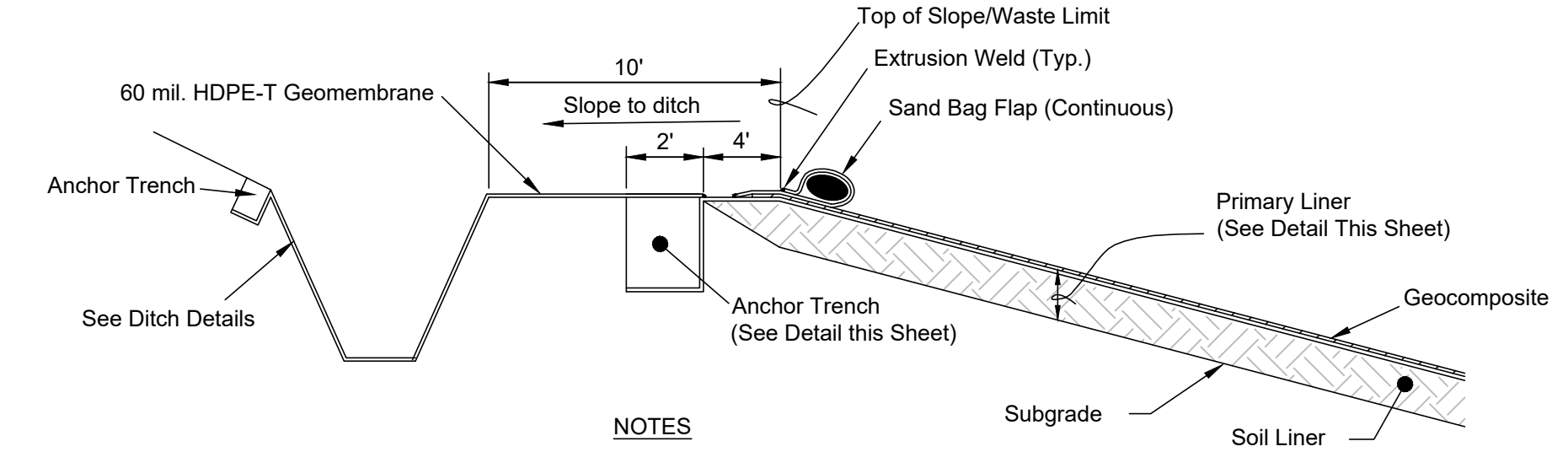


PERMANENT WASTE LIMIT - LINER END TREATMENT

B
11

N.T.S.

- NOTES
1. The 10' run out shall be sloped (high to low) from top of slope to the ditch (2%).
 2. Sand bag flap width is 7'

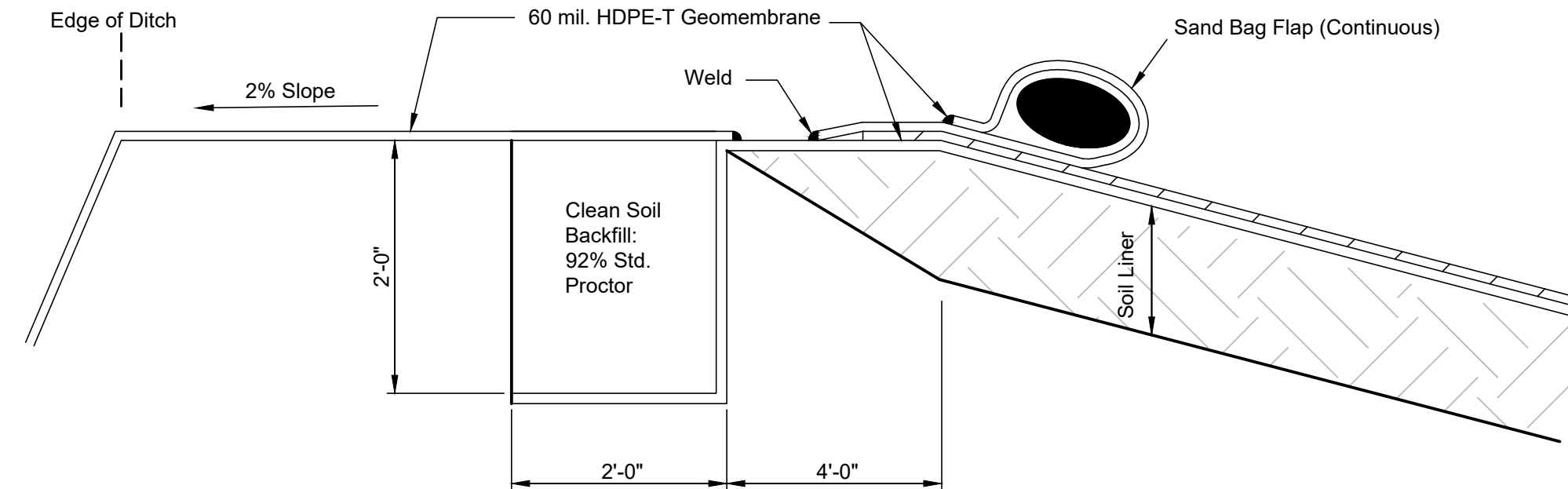


TEMPORARY WASTE LIMIT LINER END TREATMENT

C
11

N.T.S.

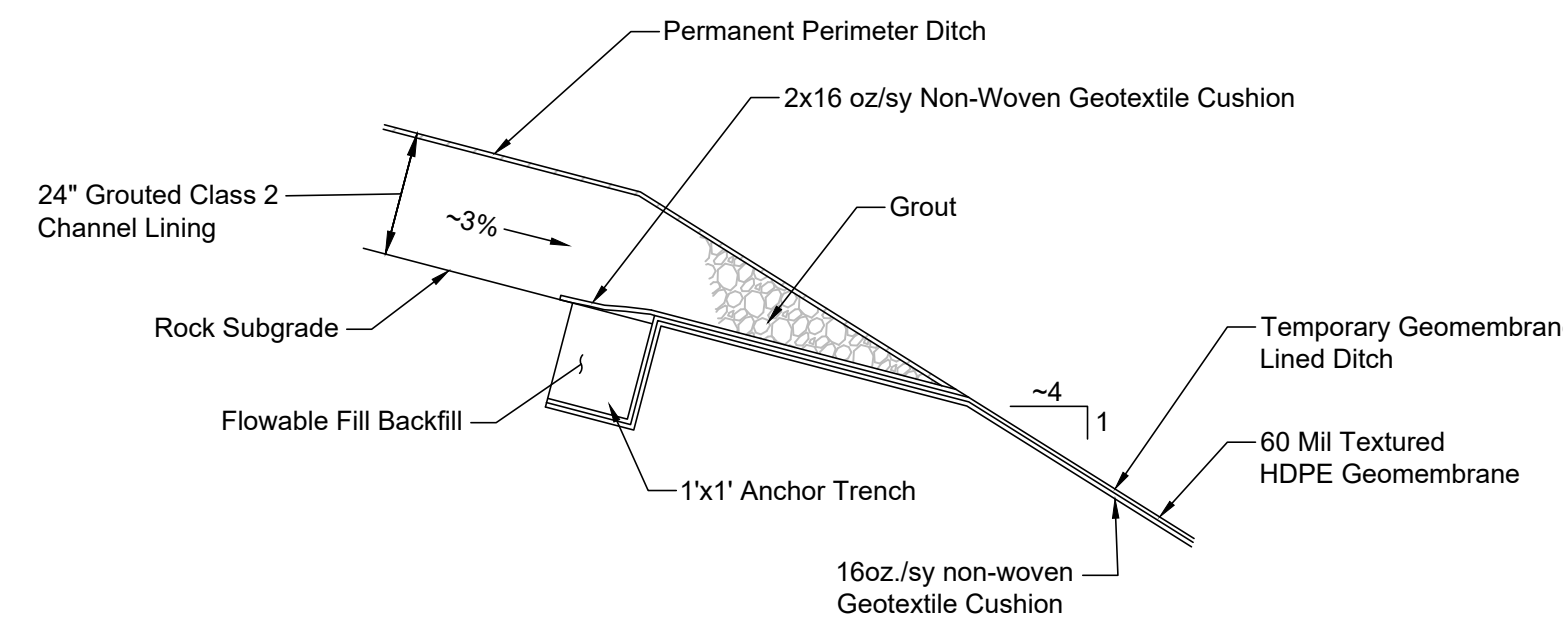
- NOTES
1. The 10' run out shall be sloped (high to low) from top of slope to the ditch (2%).
 2. Sand bag flap width is 7'



ANCHOR TRENCH DETAIL

D
11

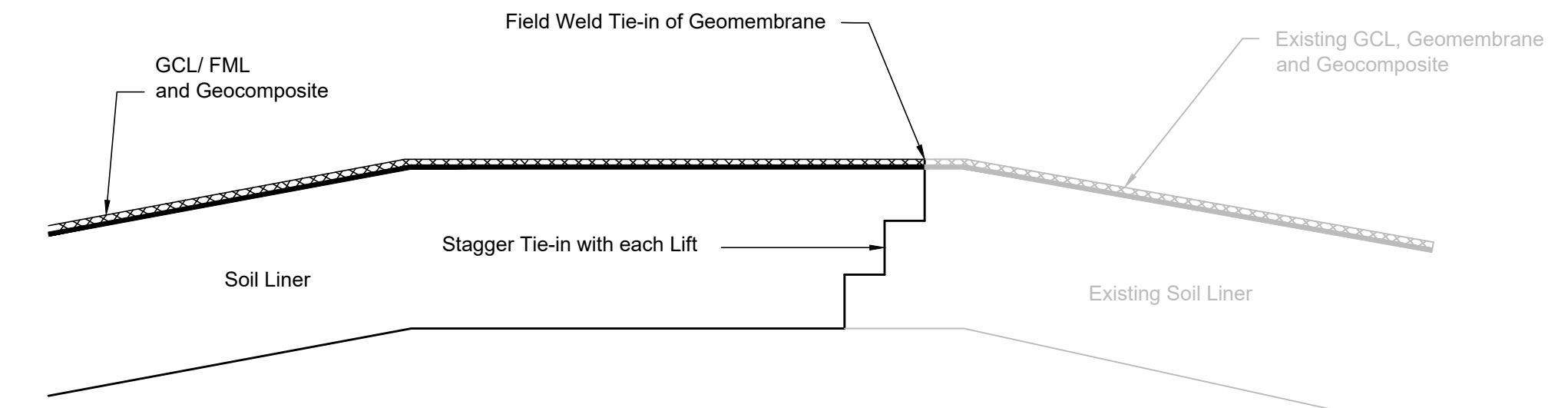
N.T.S.



PERMANENT PERIMETER DITCH TO GEOMEMBRANE DITCH TRANSITION

E
11

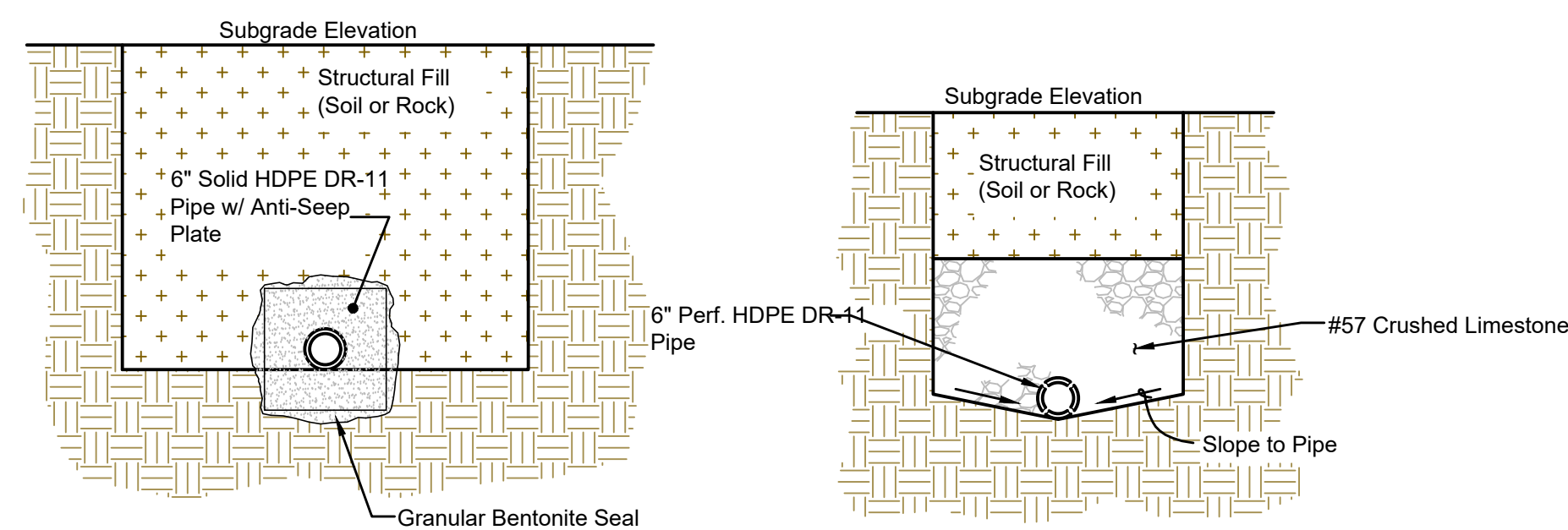
N.T.S.



GEOSYNTHETIC LINER TIE-IN DETAIL

F
11

N.T.S.



VIEW A-A'

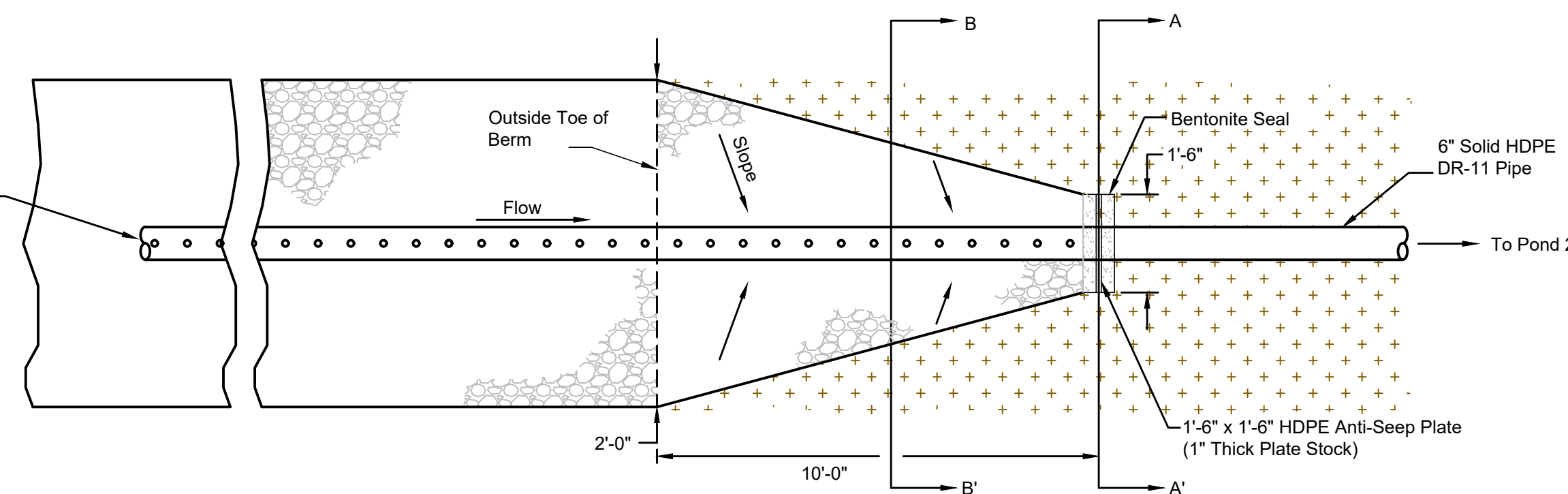
VIEW B-B'

UNDERDRAIN TERMINATION DETAIL (UPGRADIENT)

G
11

N.T.S.

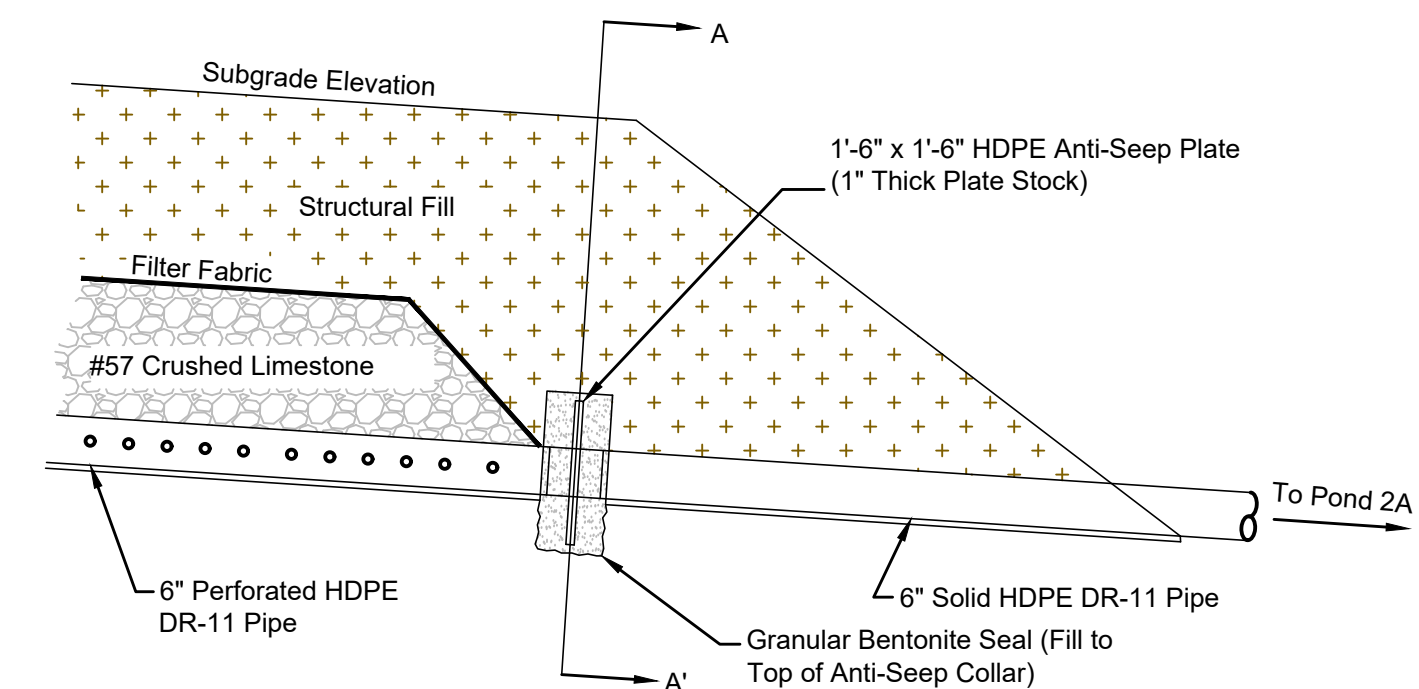
Connect to Existing Underdrain with Flexible Femco Coupling or equal



UNDERDRAIN PIPE FLOW TRANSITION DETAIL

H
11

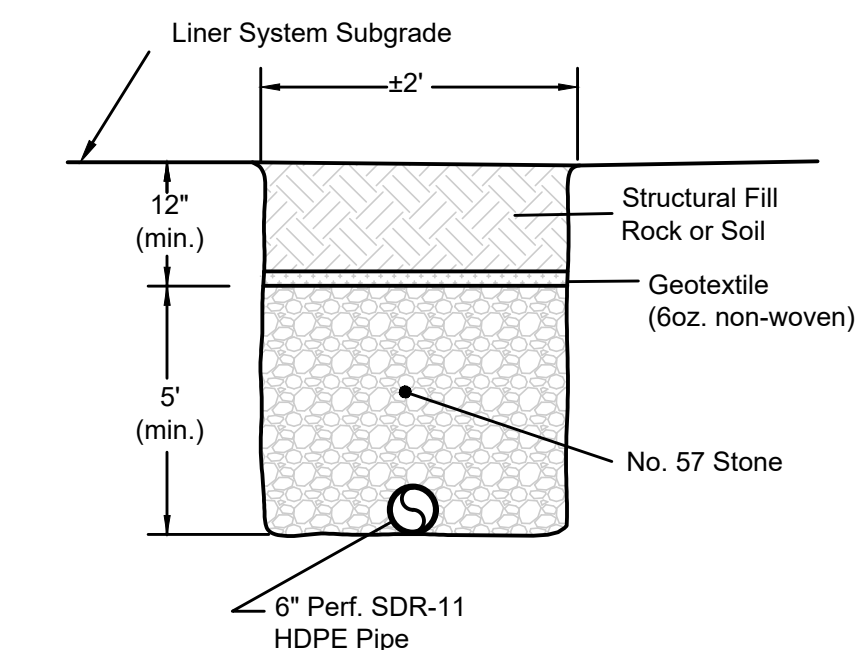
N.T.S.



UNDERDRAIN EXIT PIPE DETAIL

I
11

N.T.S.



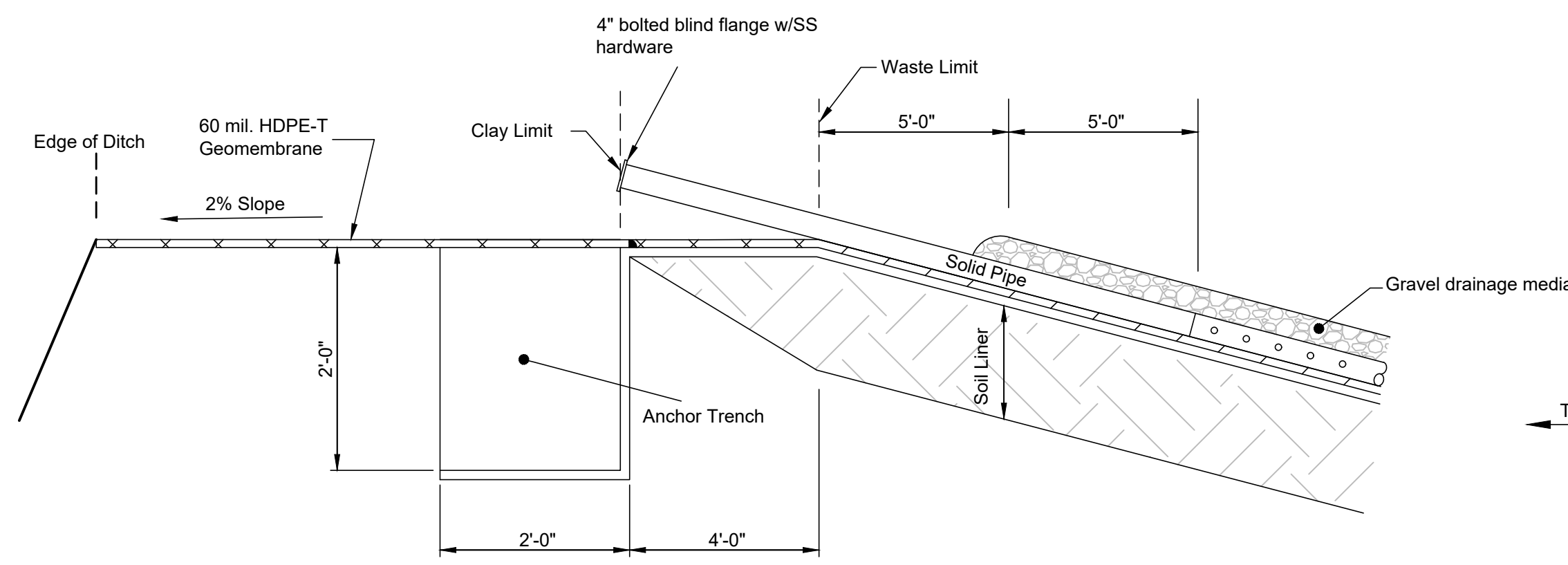
PRIMARY UNDERDRAIN TRENCH DETAIL

J
11

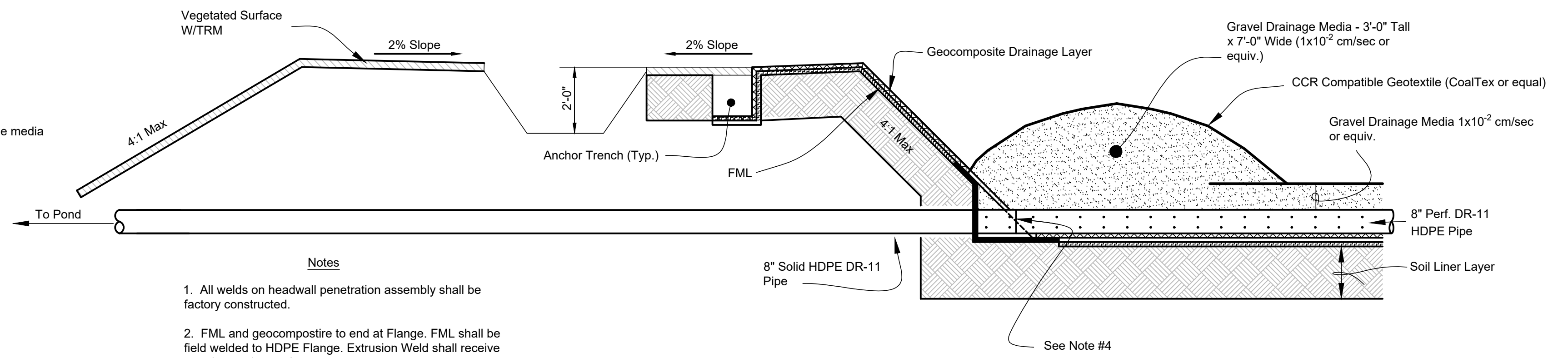
N.T.S.

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CHECKED BY: SMR
DATE: AUGUST 2022
SCALE: AS NOTED
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DRAWN BY: MAS
CHECKED BY: SMO
DATE: AUGUST 2022
SCALE: AS NOTED
REVISIONS

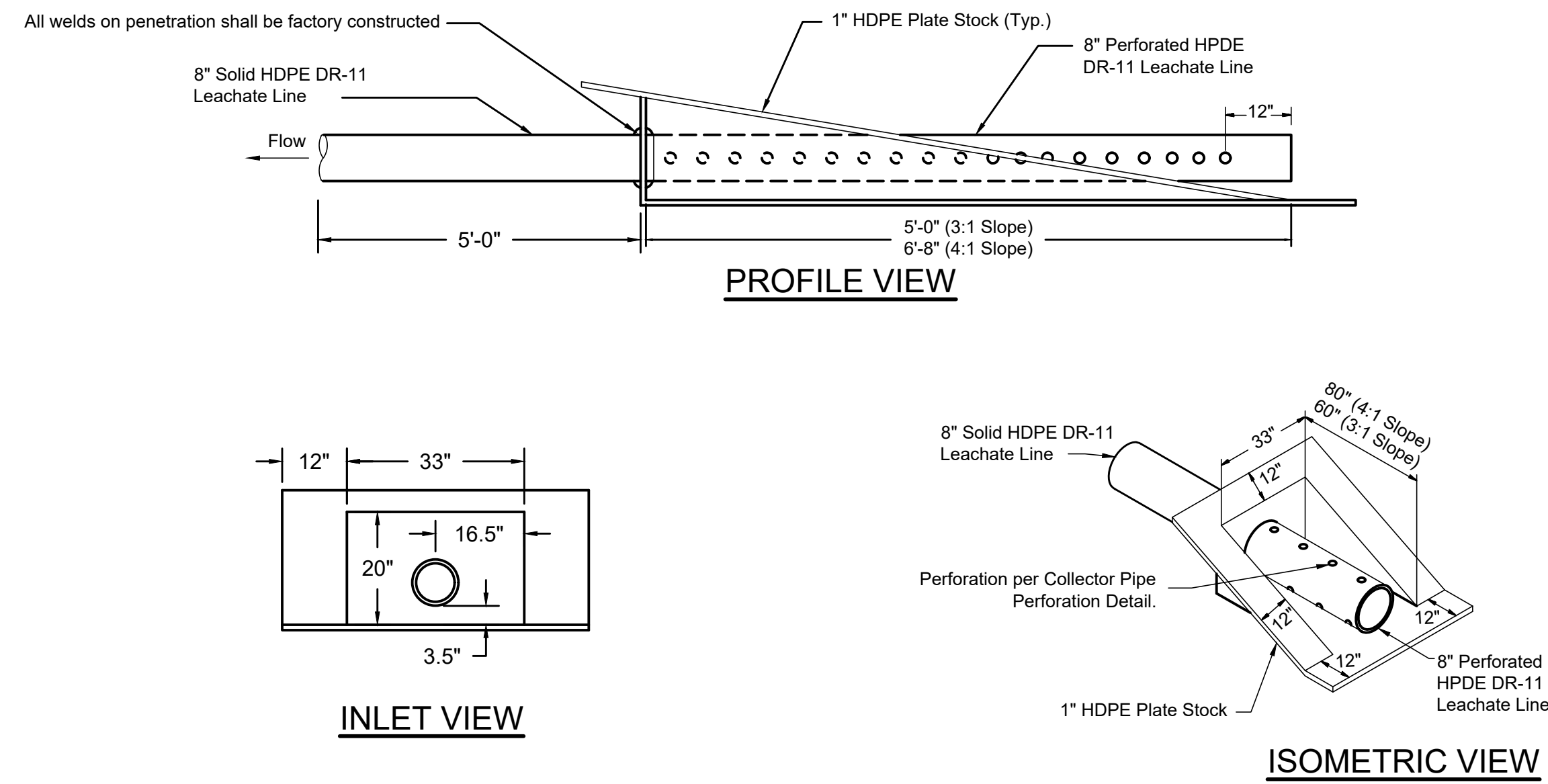


LEACHATE PIPE CLEANOUT DETAIL (A)
N.T.S. 12

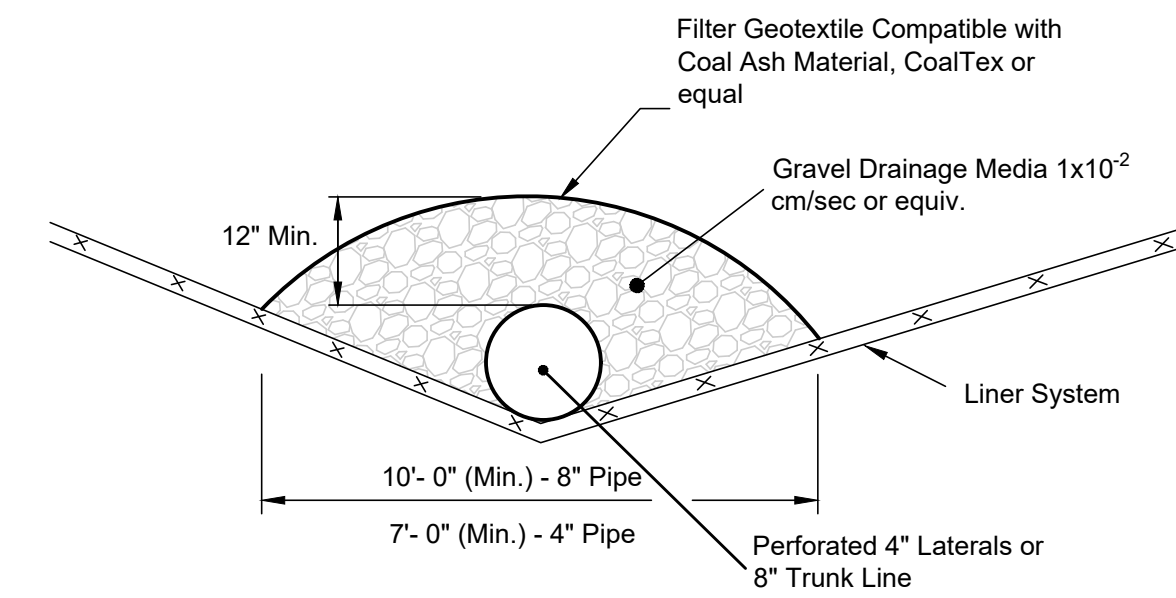


- Notes**
- All welds on headwall penetration assembly shall be factory constructed.
 - FML and geocomposite to end at Flange. FML shall be field welded to HDPE Flange. Extrusion Weld shall receive non-destructive testing.
 - All leachate piping shall be cleaned and/or flushed and accepted by the Owner prior to placing leachate collection system into service.
 - 8" perforated leachate collection line shall be connected to the headwall penetration assembly stub out pipe by butt-fusion welding or electrofusion coupling.

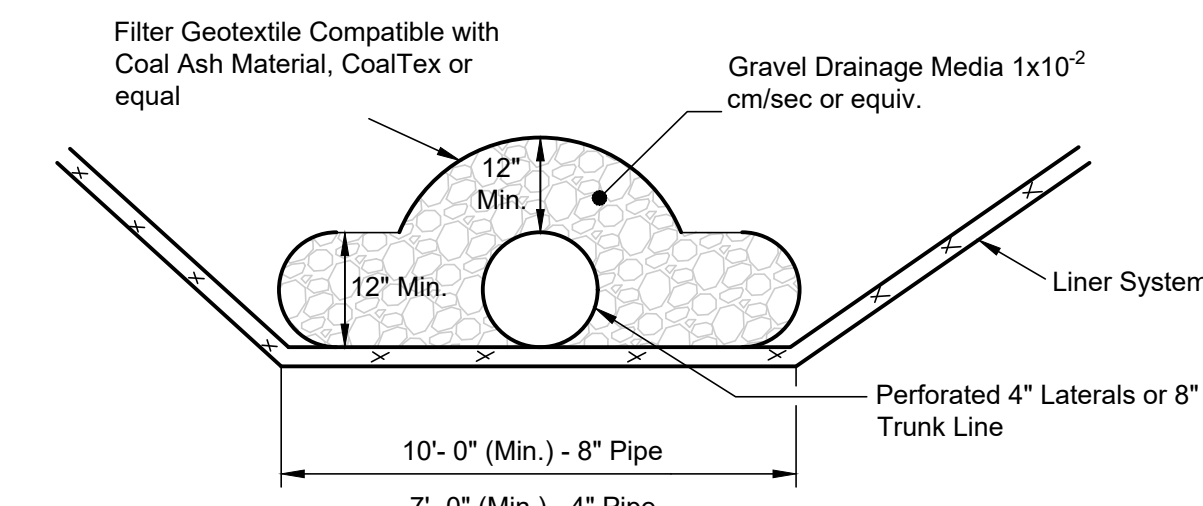
HEADWALL PENETRATION AND TOE DETAIL (B)
N.T.S. 12



HEADWALL PENETRATION ASSEMBLY (C)
N.T.S. 12



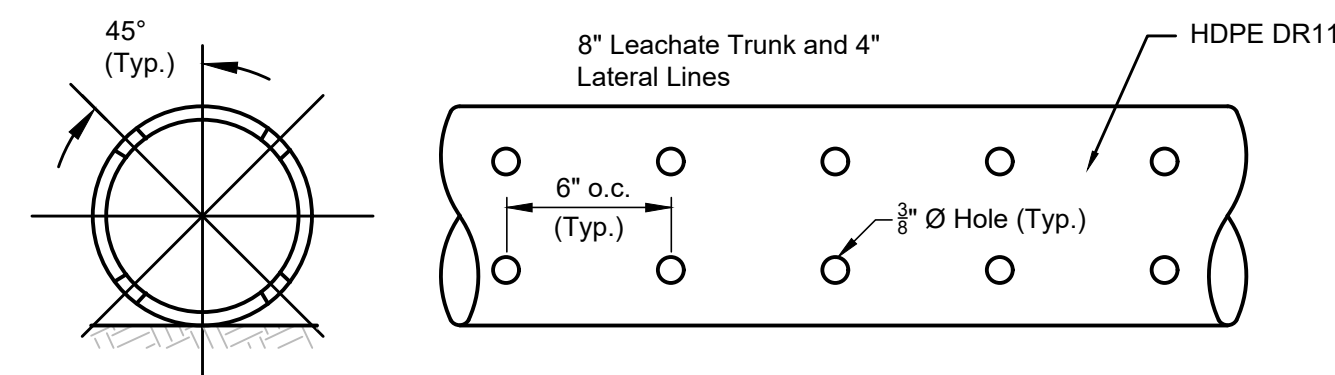
TRIANGULAR SHAPED AND BENCH DRAINAGE PATHWAY (D)
N.T.S. 12



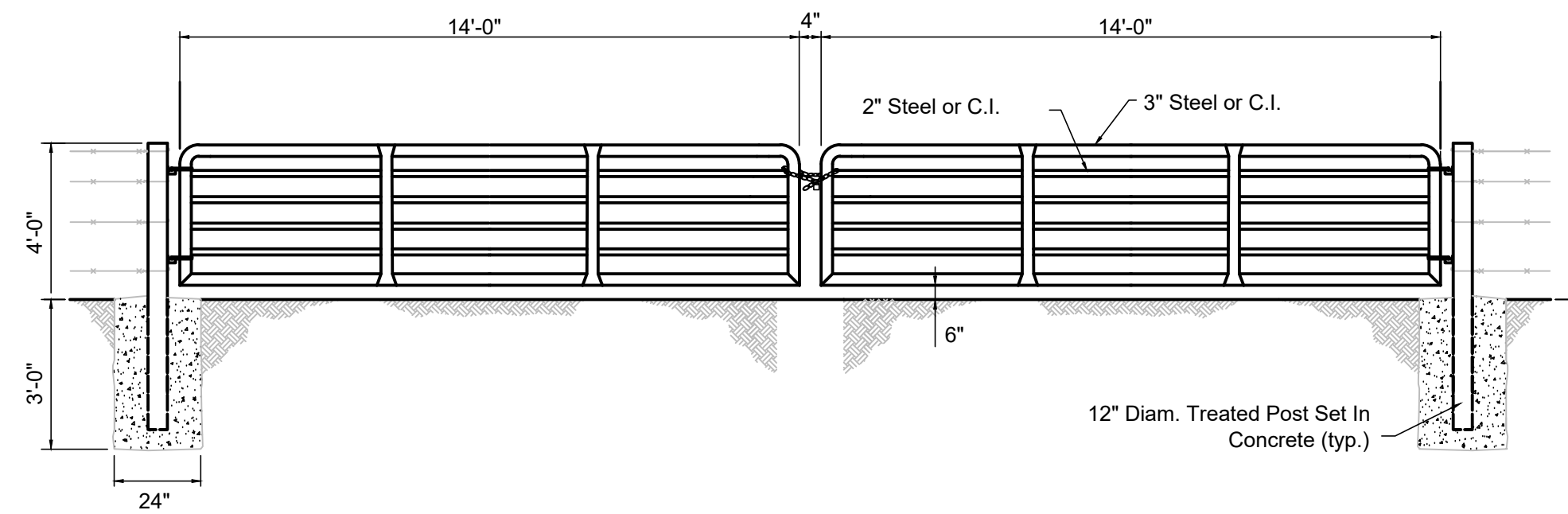
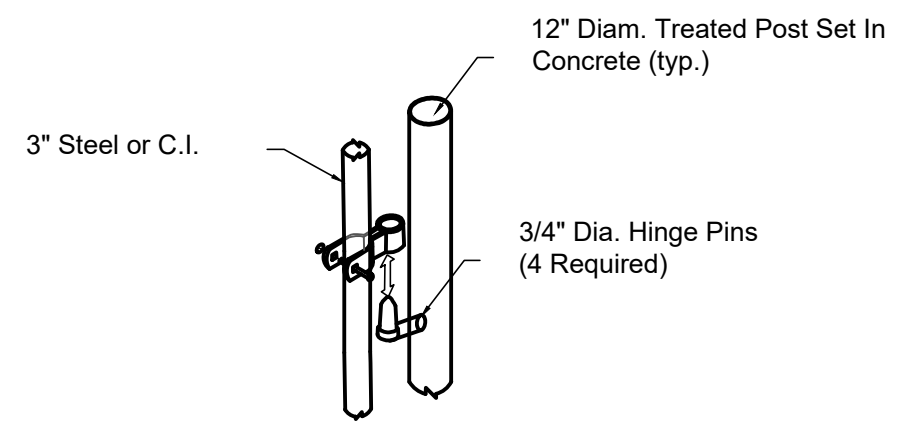
TRAPEZOIDAL SHAPED DRAINAGE PATHWAY (E)
N.T.S. 12

- Notes**
- All Gravel shall be placed with equipment that will not exceed ground pressure of 5 psi and must be approved prior to use by the Owner and Engineer.
 - Drainage media shall be completely encased inside the geotextile. The geotextile seam shall be sewn or fusion welded. CoalTex geotextile (or equal) shall be placed so the non-woven side will be in contact with the CCR waste.

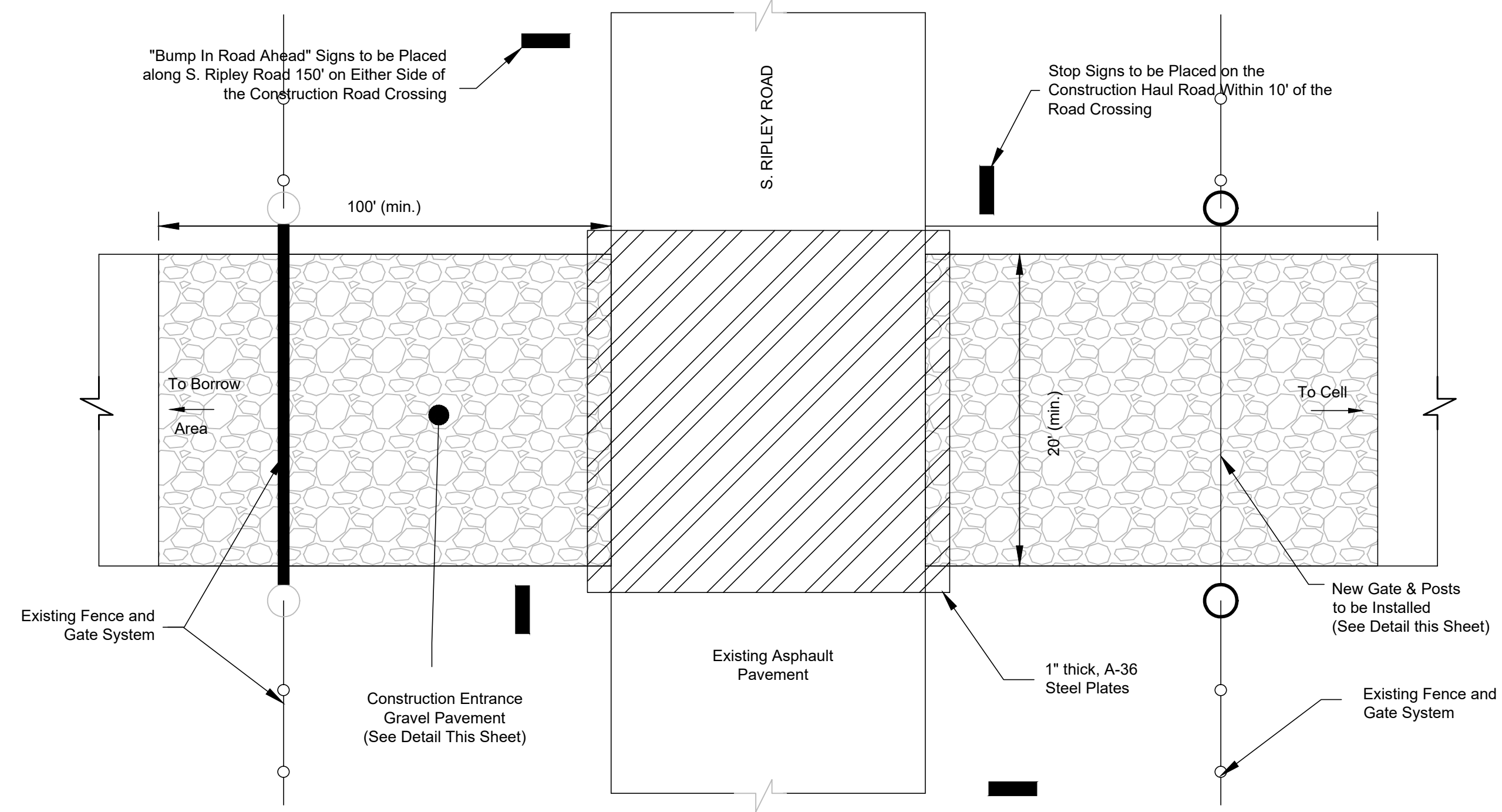
LEACHATE COLLECTION PIPE DETAIL
N.T.S.



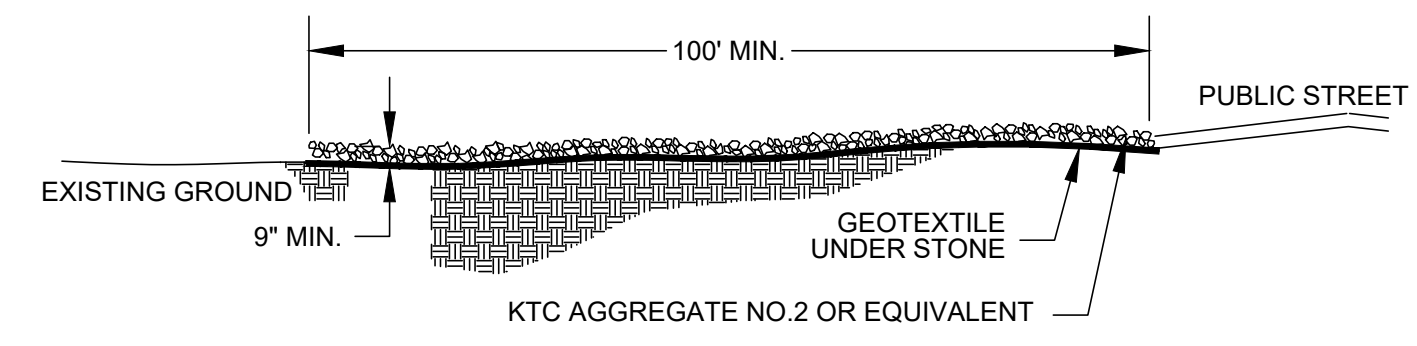
COLLECTION PIPE PERFORATION DETAIL (F)
N.T.S. 12



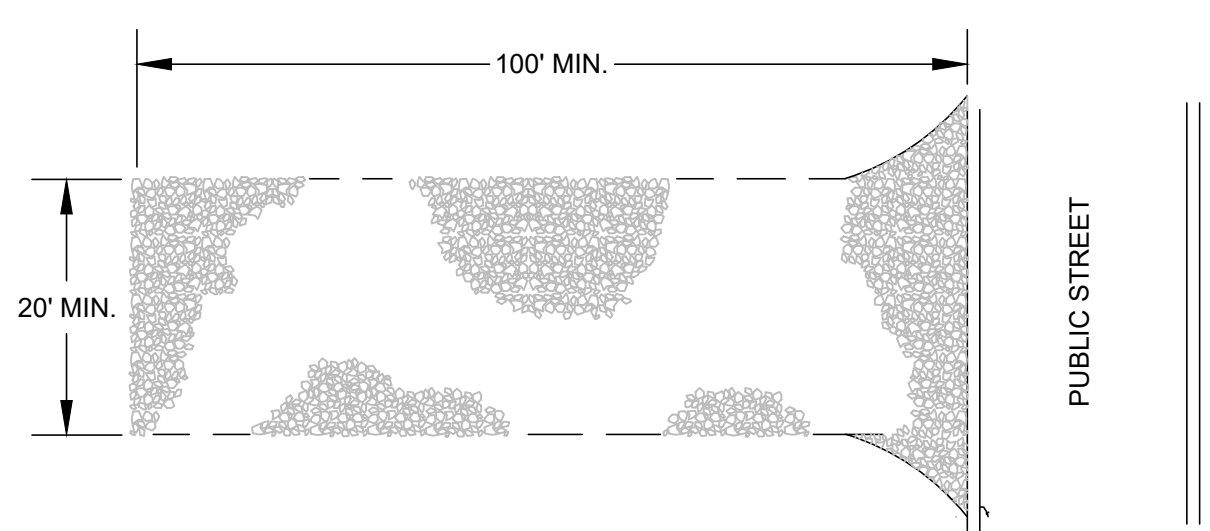
CONSTRUCTION ENTRANCE GATE DETAIL A
13



COUNTY ROAD CROSSING DETAIL C
13



CROSS SECTION

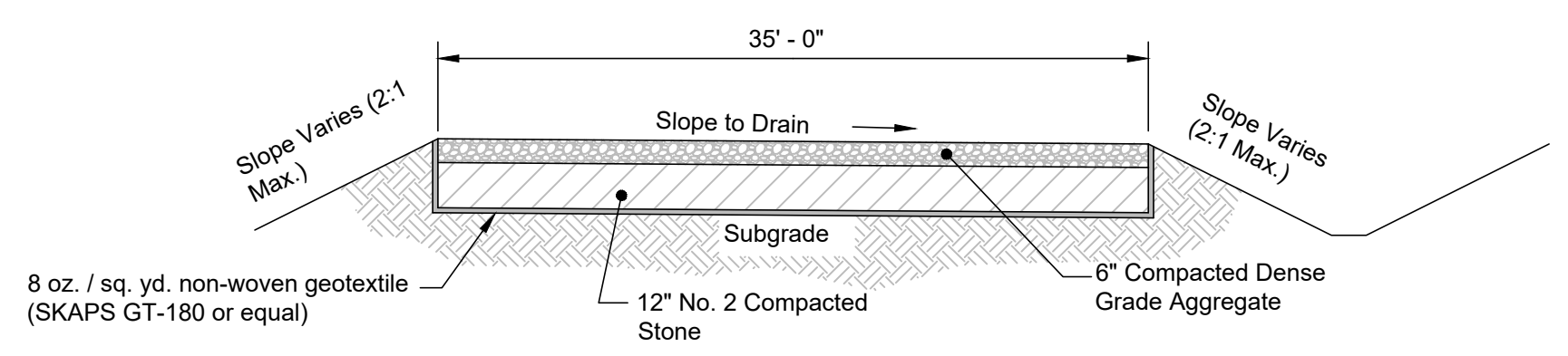


PLAN VIEW

NOTES

1. A STABILIZED ENTRANCE PAD OF CRUSHED STONE SHALL BE LOCATED WHERE TRAFFIC WILL ENTER OR LEAVE THE CONSTRUCTION SITE ONTO A PUBLIC STREET.
2. SOIL STABILIZATION FABRIC SHALL BE USED AS A BASE FOR THE CONSTRUCTION ENTRANCE.
3. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC STREETS OR EXISTING PAVEMENT. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS WARRANT AND REPAIR OR CLEAN OUT OF ANY MEASURES USED TO TRAP SEDIMENT.
4. ANY SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO PUBLIC STREETS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY.
5. WHEN APPROPRIATE, WHEELS MUST BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTERING A PUBLIC STREET. WHEN WASHING IS REQUIRED, IT SHALL BE DONE IN AN AREA STABILIZED WITH CRUSHED STONE WHICH DRAINS INTO AN APPROVED SEDIMENT BASIN.

CONSTRUCTION ENTRANCE - GRAVEL PAVEMENT B
13



HAUL ROAD DETAIL D
13



PEGS HILL LANDFILL
MASON COUNTY, KENTUCKY
PHASE 2
CONSTRUCTION PLANS

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DATE: AUGUST 2022	SCALE: AS NOTED
REVISIONS	



PROJECT NO.
2020124
SHEET NO.
13 of 13

DRAFT
DETAILS

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EXHIBIT

PB-4

East Kentucky Power Cooperative, Inc.

**QAQC PLAN
for the
Peg's Hill Landfill - Phase 2**

Spurlock Power Station

June 2023

CONSTRUCTION QUALITY CONTROL PLAN

1.0 PURPOSE AND SCOPE

This document is a site and project specific Construction Quality Control Plan (Plan) that addresses construction of the bottom liner system, final cap system, and sediment ponds for all landfill development. The purpose of this Plan is to ensure that elements of the landfill are constructed in a manner that meets or exceeds all applicable design criteria, permit conditions, and technical specifications. This Plan should be considered to represent the minimum quality control requirements for landfill development. Initial sections of this Plan present the responsibilities and authority of each participant, as well as quality control personnel assignments. Sections presenting construction quality control activities follow.

2.0 RESPONSIBILITY AND AUTHORITY

2.1 Owner

The Owner is responsible for the facility and for implementing the Construction Quality Control Plan. The Owner shall be responsible for overall management of construction activities to include but not be limited to contracting, administration, and retaining the services of qualified professionals as required during the life of the facility. In addition, the Owner shall approve any design and/or quality control revisions and administer related permit modifications.

2.2 Permitting Agency

The landfill will operate under a permit issued by the Kentucky Division of Waste Management. The Kentucky Division of Waste Management (KDWM) will review all Quality Assurance and Quality Control (QA/QC) documentation during and/or after construction to verify conformance with the permit conditions, permitted engineering drawings, and applicable regulations.

2.3 Design Engineer

The Design Engineer will be a professional engineer licensed in Kentucky. Responsibilities of the Design Engineer include construction drawing preparation as well as development of the Construction Quality Control Plan.

2.4 QA/QC Engineer

QAQC PLAN

The QA/QC Engineer shall be a registered professional engineer licensed in Kentucky. The QA/QC Engineer is responsible for executing this Plan during construction activities. Responsibilities of the QA/QC Engineer shall include management of construction monitoring, testing, and related documentation. The QA/QC Engineer shall provide field personnel to sample, test, inspect, and document construction materials and monitor activities during landfill development. Construction materials include all geosynthetic and earthen materials used for landfill development. Construction activities include construction of the bottom liner system, final cap system, and sediment ponds.

3.0 BOTTOM LINER AND FINAL CAP SYSTEMS CONSTRUCTION QUALITY CONTROL

3.1 Pre-Construction Meeting

Prior to construction, a pre-construction meeting shall be held to discuss project activities with all participants.

3.2 Construction Activities

Bottom liner system construction includes excavation and structural fill material (soil, shale or rock) placement where needed to achieve required subgrade elevations. Once subgrade preparation is complete, bottom liner system construction activities may include one or more of the following: placement of soil liner material, geosynthetic clay liner, flexible membrane liner, drainage layer and piping associated with a leachate collection system. Final cap system construction includes grading of existing waste and/or cover material, placement of additional cover material (as needed), placement of a flexible membrane liner, installing a drainage layer (as needed), and placement of vegetative cover.

3.3 Excavation

1. Top soil and/or vegetation shall be removed from the existing ground surface (clear and grub) prior to excavation.
2. After excavation to design subgrade elevations has been achieved, the QA/QC Engineer and Kentucky Division of Waste Management personnel shall inspect the finished subgrade surface. The Earthwork Contractor shall proof roll the subgrade surface using a four (4) tire, 100,000 lb. (min.) loaded scraper or approved equal. The QA/QC Engineer shall identify areas that require additional work (i.e. soft material areas). Such areas will be reworked; soft materials removed and backfilled with structural fill and proof rolled again until a passing result is obtained.
3. The QA/QC Engineer or his representative will visually inspect the finished subgrade surface for seeps. In the event that a significant seep, as determined by the QA/QC

QAQC PLAN

Engineer, is encountered, an underdrain system will be installed as shown in the engineering plans.

3.4 Structural Fill

3.4.1 Existing Ground Preparation

1. Top soil and/or vegetation shall be removed from the existing ground surface (clear and grub) prior to structural fill material placement.
2. Once clear and grub activities are finished the QA/QC Engineer or his representative will visually inspect the exposed ground surface. The ground surface will be evaluated for the suitability for structural fill material placement. The Earthwork Contractor shall proof roll the subgrade surface using a 4 tire, 100,000 lb. (min.) loaded scraper or approved equal. The QA/QC Engineer shall identify areas that require additional work (i.e. soft material areas). Such areas will be reworked; soft materials removed and backfilled with structural fill and proof rolled again until a passing result is obtained.
3. The QA/QC Engineer or his representative will visually inspect the exposed ground surface for seeps. In the event that a significant seep, as determined by the QA/QC Engineer, is encountered, an underdrain system will be installed as shown in the engineering plans.

3.4.2 Soil Structural Fill Material

1. Soil material shall be substantially free of organic material. All soil material used shall be soils that classify as CH, CL, MH, ML, CL-ML, SC or SM-SC according to the unified soil classification system. The material shall contain no stones whose largest dimension exceeds twelve (12) inches. All soil material proposed for use as structural fill shall receive prior approval of the QA/QC Engineer.
2. The distribution and gradation of material throughout the Zone shall be such that the Zone will be free from lenses, pockets, streaks or layers of material differing substantially in texture or gradation from the surrounding material. The combined excavation and placing operations shall be such that the material being compacted in the Zone will be blended sufficiently to secure the best practicable degree of compaction and stability. Successive loads of material shall be placed on the fill so as to produce the best practicable distribution of the material.
3. The thickness of the layers before compaction with rollers shall not be more than eighteen (18) inches or twelve (12) inches after compaction. No material placed by dumping in piles or windrows shall be incorporated in a fill layer in that position, but shall be moved and spread by blading or similar approved methods.

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- The following laboratory tests and classification shall be performed on representative samples of the soil structural fill material being utilized:

Table 1 – Soil Structural Fill Material Testing

Test	Test Method	Frequency
Natural Moisture Content	ASTM D2216	1 Test per Soil Type or Each Change in Material Type
Particle Size Distribution	ASTM D422	1 Test per Soil Type or Each Change in Material Type
Atterberg Limits	ASTM D4318	1 Test per Soil Type or Each Change in Material Type
Soil Classification	ASTM D2487	1 Test per Soil Type or Each Change in Material Type
Specific Gravity	ASTM D854	1 Test per Soil Type or Each Change in Material Type
Standard Proctor	ASTM D698	1 Test per Soil Type or Each Change in Material Type

3.4.3 Shale Structural Fill Material

- Shale structural fill material shall consist of soil-like shale and intermediate shale with a Slake Durability Index of less than 95. In addition, shale material shall include friable sandstone, weathered rock, or similar materials. Large rock fragments or limestone/sandstone slabs with any dimension greater than twelve (12) inches shall be broken down and included in the shale material or removed. All shale material proposed for use as structural fill shall receive prior approval of the QA/QC Engineer.
- Shale material shall be placed in twelve (12) inch maximum loose lifts to the full width of the cross-section. Each lift shall be bladed as required prior to compaction to ensure uniform layer thickness. Large rock fragments or limestone/sandstone slabs having any dimension greater than twelve (12) inches shall be removed from the layer to be compacted, or broken down and then incorporated into the lift.
- The following laboratory test shall be performed on representative samples of the soil structural fill material being utilized:

Table 2 – Shale Structural Fill Material Testing

QAQC PLAN

Test	Test Method	Frequency
Slake Durability Index	ASTM D4644	1 Test per Material Type

3.4.4 Rock Structural Fill Material

1. Rock material shall be placed as a zoned fill which includes a lower zone located up to within approximately two (2) feet below subgrade and an upper zone comprising the last two (2) feet below subgrade.
2. The lower zone of fill shall be constructed primarily of durable rock placed in maximum two (2) foot lifts with maximum boulder dimensions of approximately two (2) feet. The fill shall be placed into final position by blading or dozing in a manner that will minimize voids, pockets and bridging.
3. The upper zone of fill shall be constructed primarily of select, well graded rock or random earth and bedrock material with maximum dimensions of one (1) foot. The presence of fines within the upper zone is required to “choke” the voids present within the lower zone which will minimize potential downward migration of the overlying soil material.
4. The two (2) foot upper zone shall be placed by blading or dozing the select material into uniform twelve (12) inch lifts (to minimize voids, pockets and bridging) and then compacting the material with a sheepsfoot or tamping foot roller. It may be necessary to adjust the moisture content of the select material prior to final compaction operations depending on specific composition of the material.
5. In areas where fill depths are less than five (5) feet, all fill shall be constructed as outlined herein for the upper zone.
6. Areas of rock fill that form an outside slope of the landfill shall be constructed with the upper four (4) inches composed of vegetative soil. This material shall be seeded and mulched once construction is complete in accordance with the contract drawings and specifications.

3.4.5 Moisture Control

Soil Structural Fill Material

1. During compaction operations the surface of the fill and the materials being placed shall receive an amount of water necessary to achieve compaction to 92% of its maximum dry density as determined by ASTM D698.

Shale Structural Fill Material

QAQC PLAN

1. If shale material is dry, water shall be applied to accelerate the slaking action (breakdown) and to facilitate compaction. The water shall be distributed by an approved method which provides uniform application of the required quantity of water. The water shall be uniformly incorporated throughout the entire lift by a multiple gang disk meeting the requirements of this specification. The amount of water shall be that required to achieve a compaction to 92% of its maximum dry density as determined by ASTM D698.

Rock Structural Fill Material

1. Moisture control will not be required for rock embankment.

3.4.6 Compaction Equipment

Soil or Shale Structural Fill Material

1. These fill materials shall be compacted with a sheepsfoot / tamping foot compactor. The rollers shall be operated at speeds of no more than five (5) miles per hour.

3.4.7 Compaction Requirements

Soil Structural Fill Material

1. After each layer of soil fill has been placed, spread, and contains the required moisture, it shall be compacted by passing a tamping foot roller over the entire surface of the layer a sufficient number of times to obtain the specified density. A minimum of four (4) passes shall be required.
2. Adjustments in the compactive effort shall be made on the basis of field density determinations made as the construction progresses. Vibrating rollers shall not be used to compact soil.
3. Soil fill material shall be compacted to 92 percent of its maximum dry density as determined by ASTM D698. In-place moisture shall be within -5% below to 2% above optimum moisture as determined by ASTM D698. In-place material not meeting these specifications shall be reworked until satisfactory results are obtained.
4. Field compaction tests, utilizing the nuclear method outlined in ASTM D2922 or other methods, will be performed as the construction proceeds.

Shale Structural Fill Material

QAQC PLAN

1. Shale material shall receive a minimum of three (3) passes with a static roller followed by blading and a minimum of two (2) passes with a vibratory roller. The rollers shall not exceed five (5) miles per hour during these passes. Each fill layer shall be compacted to a minimum of 92 percent of maximum dry density as determined by ASTM D698. The number of passes will, at the direction of the QA/QC Engineer, be adjusted upward if necessary to obtain 92 percent of maximum dry density.
2. Field compaction tests, utilizing the nuclear method outlined in ASTM D2922 or other methods, will be made as the construction proceeds.

Rock Structural Fill Material

1. See Section 3.4.4 of this Plan.

3.4.8 Proof Roll

1. After structural fill material has been placed to the design subgrade elevations shown in the engineering drawings, the QA/QC Engineer and Division of Waste Management personnel shall inspect the top of the subgrade surface. The Earthwork Contractor shall proof roll the subgrade surface using a 4 tire, 100,000 lb. (min.) loaded scraper or approved equal. The QA/QC Engineer shall identify areas that require additional work (i.e. soft material areas). Such areas will be reworked; soft materials removed and backfilled with structural fill and proof rolled again until a passing result is obtained.

3.4.9 Surveying

1. Sufficient survey control referenced to existing site control will be taken to show the finished elevations of the subgrade and used as a reference for the various layers of the bottom liner system. Sufficient data will be available to create a computer model of the finished surface.

3.5 Soil Liner Material

3.5.1 24" Soil Liner Layer (Low Permeable Soil)

1. Soil material shall be free of organic material, tree roots, wood, or other decayable material and rocks no larger than one 3/4 inch in diameter on the final surface and two (2) inches for all lower lifts. Soil liner material not meeting the rock size limits above, shall be processed to remove oversized rocks. The process method shall be approved by the Engineer. The KDWM will be notified prior to the start of soil liner processing.

QAQC PLAN

2. Low permeability soil material shall have a maximum remolded coefficient of permeability of 1×10^{-7} centimeters per second based on permeability testing per ASTM D5084. The soil shall be compacted to a minimum of ninety-two (92) percent of the standard proctor density at moisture content at or above optimum moisture content as determined by ASTM D698 unless a modified proctor is used. But in no case shall the dry density or moisture content be less than specified by the laboratory testing of the soil being utilized.
3. Compaction shall be performed by properly controlling the moisture content, lift thickness, and other necessary details to obtain the density, moisture and permeability characteristics. During construction, the moisture content of the soil shall be maintained.
4. The following laboratory tests and classification shall be performed on representative samples of the low permeable soil material being utilized:

Table 3 – Low Permeable Soil Material Testing

Test	Test Method	Frequency
Natural Moisture Content	ASTM D2216	1 Test per 2,000 cy or Each Change in Material Type
Particle Size Distribution	ASTM D422	1 Test per 2,000 cy or Each Change in Material Type
Atterberg Limits	ASTM D4318	1 Test per 2,000 cy or Each Change in Material Type
Soil Classification	ASTM D2487	1 Test per 10,000 cy or Each Change in Material Type
Specific Gravity	ASTM D854	1 Test per 10,000 cy or Each Change in Material Type
Permeability	ASTM D5084	1 Test per 20,000 cy or Each Change in Material Type
Standard Proctor	ASTM D698	1 Test per 20,000 cy or Each Change in Material Type

5. All low permeable soil material shall be placed in lifts not to exceed six (6) inches compacted.
6. Sufficient survey control will be taken to show finished elevations of the placed low permeable soil material. Sufficient data will be available to create a computer model of the finished surface.
7. At least nine (9) moisture and density tests per acre per lift of soil material placed will be performed in the field using a nuclear density apparatus.

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8. This Plan will assure that the layers of the homogeneous low permeability soil material are compacted using compactors with full depth penetrating feet to obtain the required density and moisture. The feet length shall be one (1) inch longer than the loose soil layer thickness.
9. Smooth rollers may be used at the end of each work period to seal the surface from rain infiltration.

3.5.2 8" Soil Liner Layer (GCL Base)

1. The soil materials utilized shall be capable of achieving 1×10^{-7} centimeters per second based on permeability testing per ASTM D5084. The soil materials shall be compacted to a minimum dry density of 92 percent of the standard proctor density as determined by ASTM D698 unless a modified proctor is used.
2. Compaction shall be performed by properly controlling the moisture content, lift thickness and other necessary details to obtain the density and moisture requirements.
3. The following laboratory tests and classification shall be performed on representative samples of the GCL base soil material being utilized:

Table 4 – GCL Base Material Testing

Test	Test Method	Frequency
Standard Proctor	ASTM D698	1 Test per 20,000 cy or Each Change in Material Type

4. All GCL base soil material shall be placed in one (1) lift if the material particle size is 1-inch or less. The soil liner will be placed in two (2) lifts if the material is processed (screened) for 2-inch minus and 1-inch minus separately.
5. Soil material shall be free of organic material, tree roots, wood, or other decayable material and rocks larger than two (2) inches in diameter. In addition, the top surface of the soil liner shall be free of rocks greater than one (1) inch in diameter. Soil material not meeting the rock size limits above, shall be processed to remove oversized rocks. The process method shall be approved by the QA/QC Engineer. The KDWM will be notified prior to the start of soil liner processing.
6. Sufficient survey control will be taken to show the finished elevations of the liner base and used as a reference for the various layers of the liner. Sufficient data will be available to create a computer model of the finished surface.

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7. At least nine (9) moisture / density tests per acre per lift of soil material placed will be performed in the field using a nuclear density apparatus.

3.6 Geosynthetic Clay Liner

3.6.1 Products

The geosynthetic clay liner (GCL) shall consist of a layer of pure sodium bentonite clay encapsulated between two (2) polypropylene geotextiles, one (1) woven and one (1) non-woven. Equivalent material as determined by the QA/QC Engineer maybe used with KDWM approval.

3.6.2 Pre-Construction QA/QC Requirements

1. The manufacturer will provide the QA/QC Engineer with a list of guaranteed properties for each GCL component. The manufacturer will also provide the Owner and the QA/QC Engineer with a written certification that the materials delivered have properties which meet or exceed all values guaranteed for that type of material.
2. The manufacturer shall submit a certification that all rolls delivered meet the following specifications at a minimum:

Table 5 – GCL Manufacturer Quality Control Testing

Test	Test Method	Test Value
Bentonite Content ¹	ASTM D5993 (at 0% moisture)	≥ 0.75 lb / sf
Bentonite Swell Index	ASTM D5890	24 ml / 2g
Hydraulic Conductivity	ASTM D5887	≤ 3.0 X 10 ⁻⁹ cm/sec
Peel Strength	ASTM D6496	2.1 lb / in
Moisture Content	ASTM D5993	35 % (max.)
Grab Tensile	ASTM D6768	23 lb / in

Notes:

1 – GCL shall be compatible with CCR waste.

2 – Values shown are minimum values based on GRI-GCL3. Final MQA values will be based on actual GCL model selected for installation. See specifications.

3.6.3 Packaging, Storage, and Handling

1. The GCL shall be wound around a cardboard core to facilitate handling. The core is not intended to support the roll for lifting but should be sufficiently strong to prevent collapse during transit. The manufacturer will identify all rolls with the following information:

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- a. Manufacturer's name;
 - b. Product identification;
 - c. Lot number;
 - d. Roll number; and,
 - e. Roll dimensions.
2. All rolls shall be labeled and bagged in packaging that is resistant to photodegradation by ultraviolet (UV) light.
 3. A dedicated storage area shall be selected at the job site that is level, dry, well-drained, and away from high traffic areas.
 4. All stored GCL materials and accessory bentonite (if applicable) must be covered with plastic sheeting or tarpaulin until their installation. All materials will be inspected prior to use. Any unsuitable material encountered will be replaced or repaired.

3.6.4 Construction QA/QC Requirements

1. The QA/QC Engineer will examine all manufacturer certifications to ensure that the property values listed on the certifications meet or exceed those specified for the GCL. Any deviations will be reported to the Owner.
2. Upon manufacturing or delivery of the GCL, the QA/QC Engineer or his representative will inspect the material. The following conformance tests may be performed:

Table 6 – GCL Conformance Testing

Test	Test Method	Test Value
Bentonite Content	ASTM D5993	≥ 0.75 lb / sf @ 0% moisture
Bentonite Swell Index	ASTM D5890	24 ml / 2g
Grab Tensile	ASTM D6768	23 lb / in
Peel Strength	ASTM D6496	2.1 lb / in

Notes:

- 1 – GCL shall be compatible with CCR waste.
- 2 – Values shown are minimum values based on GRI-GCL3. Final minimum conformance values will be based on actual GCL model selected for installation. See specifications.
- 3 – CCR compatibility testing shall be conducted using ASTM D6766 (tested out to full termination criteria) using a site specific leachate sample.

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The testing frequency of the GCL shall be taken at a minimum rate of one (1) per lot or one (1) per 100,000 square feet, whichever is the most frequent. The QA/QC Engineer will examine all results from laboratory conformance testing and will report any nonconformance to the Owner.

If revisions to ASTM, GRI specifications or other test procedures used in manufacturer quality assurance or construction conformance testing occurs, the CQA Engineer shall incorporate the changes into the project's CQA program.

3.6.5 Deployment

1. The surface upon which the GCL is to be installed shall be smooth and free of debris, roots, sticks, and rocks larger than one (1) inch in any dimension. The level of compaction shall be such that no rutting is caused by installation equipment or other construction vehicles.
2. Immediately prior to GCL deployment, the soil liner material shall be final-graded to fill in all voids or cracks and then smooth-rolled to provide the best practicable surface for the GCL. At completion of this activity, no sharp irregularities or abrupt elevation changes shall exist in the soil liner material.
3. All GCL seams shall be formed in accordance with manufacturer's recommendations. The edges of GCL panels will be adjusted to smooth out wrinkles, creases, or "fishmouths". GCL panel overlaps will be "shingled" so as to prevent flow into the seam.

3.6.6 Damage Repair

1. Any damage in the form of cuts or tears in the GCL, shall be identified and repaired by the installer by cutting a patch from unused GCL and placing it over the affected area.
2. The damaged area should be cleaned of all dirt and debris. A patch of GCL shall be cut to fit over the damaged area and to extend one foot in all directions around it. Accessory bentonite shall then be placed around the perimeter of the affected area at the rate of one-half (1/2) pound per lineal foot and the patch shall be placed over the damage. The patch shall be heat bonded to the GCL panel to keep the patch in position during further geosynthetics installation.

3.7 Flexible Membrane Liner

3.7.1 Products

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The flexible membrane liner (FML) to be used in the bottom liner system will be textured 60-mil High Density Polyethylene (HDPE). The final cap system will contain either textured 40-mil HDPE or textured 40-mil Linear Low Density Polyethylene (LLDPE) flexible membrane liner.

The flexible membrane liner material shall have a demonstrated hydraulic conductivity less than 1×10^{-12} centimeters per second and chemical and physical resistance not adversely affected by waste placement or leachate generated. The manufacturer shall submit a certification to ensure chemical compatibility of the liner material chosen.

3.7.2 Pre-Construction QA/QC Requirements

1. Origin and identification of the raw materials used to manufacture the FML;
2. Copies of quality control certificates issued by the producer of the raw materials used to manufacture the FML; and
3. Reports of tests conducted to verify the quality of the raw materials used to manufacture the FML shall be issued to the QA/QC Engineer. The properties to test shall include, at a minimum: density and percent carbon black. Testing and testing frequencies should conform to Geosynthetic Research Institute (GRI) Standard GRI-GM13 for HDPE FML and GRI-GM17 for LLDPE FML. These standards are generally reviewed for revisions on a periodic basis, thus, the standards are updated often. GRI is the current industry standard and the most recently adopted version of GRI-GM13 and GRI-GM17 should be followed as long as no conflict exists between the GRI standard and the Kentucky Administrative Regulations (KAR). The KAR will govern in the event of a conflict. If revisions to GRI, ASTM or other standards occur, no modification will be required by the Kentucky Division of Waste Management.
4. The FML manufacturer shall submit certification on all rolls for the following properties, in addition to the pertinent GRI-GM standards:

Table 7 – FML Manufacturer Quality Control Testing

Test	Test Method	Test Value
Permeability	ASTM E96	$\leq 1 \times 10^{-12}$ cm/sec
Chemical Compatibility	EPA 9090	No significant change in properties

3.7.3 Packaging, Storage, and Handling

1. The geomembrane shall be shipped rolled. Folded or otherwise creased liner will not be accepted. The liner shall be marked and tagged with the following information:

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- a. Manufacturer's Name
 - b. Roll Length
 - c. Gross Weight
 - d. Inspected By
 - e. Date of Manufacture
 - f. Resin Lot Number
 - g. Roll Width
2. A dedicated storage area shall be selected at the job site that is level, dry, well-drained, and away from high traffic areas. The ground surface will be suitably prepared such that no stones or other rough objects which could damage the FML are present.
 3. Unloading of rolls at the job site will be performed so that no damage to the FML occurs. Pushing, sliding, or dragging of FML rolls shall not be permitted.
 4. If storage of FML rolls at the job site is longer than six (6) months, a sacrificial covering or temporary shelter will be provided for protection against precipitation, ultraviolet exposure, and accidental damage.

3.7.4 Construction QA/QC Requirements

1. The QA/QC Engineer will verify that certificates have been provided by the FML manufacturer which include all rolls and that each certificate identifies the roll related to it. The QA/QC Engineer will review the certificates and verify that the manufacturer certified roll properties meet the specifications.
2. Upon manufacturing the rolls of FML, the QA/QC Engineer or its designee will ensure that samples are removed and forwarded to a qualified laboratory for conformance testing. The following conformance test procedures may be completed as follows:

Table 8 – 60-mil Textured HDPE FML Conformance Testing

Properties	Test Method	Test Value
Thickness mils	ASTM D5994	60-mil (min. avg.)
Density (min. avg.)	ASTM D1505 / ASTM D792	0.940 g/cc
Asperity Height	ASTM D7466	16-mil (min. avg.)
Tensile Properties (min. avg.) yield strength break strength yield elongation break elongation	ASTM D6693 Type IV	126 lb/in. 90 lb/in. 12% 100%

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Tear Resistance (min. ave.)	ASTM D1004	42 lb
Puncture Resistance (min. ave.)	ASTM D4833	90 lb
Carbon Black Content (range)	ASTM D4218	2.0 - 3.0 %
Carbon Black Dispersion	STM D5596	See Note 1

Notes:

1. Carbon black dispersion (only near spherical agglomerates) for 10 different views: 9 in categories 1 or 2 and 1 in category 3.

Table 9 – 40-mil Textured LLDPE FML Conformance Testing

Properties	Test Method	Test Value
Thickness mils (min)	ASTM D5994	40-mil (min. avg.)
Density g/ml (max.)	ASTM D1505 / ASTM D792	0.939
Asperity Height	ASTM D7466	16-mil (min. avg.)
Tensile Properties (min. avg.) break strength - lb/in. break elongation - %	ASTM D6693 Type IV	60 250
Tear Resistance - lb (min. avg.)	ASTM D1004	22
Puncture Resistance - lb (min. avg.)	ASTM D4833	44
Carbon Black Content - %	ASTM D4218	2.0-3.0
Carbon Black Dispersion	ASTM D5596	See Note 1

Notes:

1. Carbon black dispersion (only near spherical agglomerates) for 10 different views: 9 in categories 1 or 2 and 1 in category 3.
 - a. Samples will be taken across the entire width of the roll and will not include the first outer wrap. The QA/QC Engineer or his designee will mark the machine direction on the samples with an arrow.
 - b. Unless otherwise specified, samples will be taken at a rate of one per lot or one per 100,000 square feet whichever is the most frequent.
 - c. Test results will be examined by the QA/QC Engineer and any results in non-conformance with the specifications will be reported to the Owner immediately.
 - d. The liner material may also be tested at the manufacturing site prior to delivery to the landfill.
 - e. The FML installer shall submit copies of proposed panel layout drawings to the QA/QC Engineer for review prior to actual installation.

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- f. If revisions to ASTM, GRI or other test procedures used in construction conformance testing occurs, the CQA Engineer shall incorporate the changes into the project's CQA program.
3. Quality control testing performed in the field by the FML installer under the supervision of the QA/QC Engineer or his representative shall assure conformity of the FML installation with the engineering plans, reports, and specifications submitted in accordance with the following requirements:
 - A. Prequalification Test Seams:
 1. Test seams shall be prepared and tested by the Geomembrane Installer to verify that seaming parameters (speed, temperature, and pressure of welding equipment) are adequate.
 2. Test seams shall be made by each welding technician for each welding machine and for each type of weld (smooth liner to smooth liner, smooth liner to textured liner, textured liner to textured liner and extrusion welding) to be performed by that technician and machine. The test seams shall then be tested in accordance with ASTM D6392 at the beginning of each seaming period. Test seaming shall be performed under the same conditions and with the same equipment and operator combination as production seaming. The test seam shall be approximately 3.3 meters (10 feet) long for fusion welding and one (1) meter (three (3) feet) long for extrusion welding with the seam centered lengthwise. At a minimum, tests seams should be made by each technician one (1) time every four (4) to six (6) hours; additional tests may be required with changes in environmental conditions and if/when machine settings change.
 3. Six (6) 25-mm (one (1)-inch) wide specimens shall be die-cut by the Geomembrane Installer from each end of the test seam. These specimens shall be tested by the Geomembrane Installer using a field tensiometer testing both tracks for peel strength (three (3) tests) and also for shear strength (three (3) tests). Each specimen should fail in the parent material and not in the weld, "Film Tear Bond" (F.T.D. failure). Seam separation equal to or greater than 25% of the track width shall be considered a failing test.
 4. The minimum acceptable seam strength values to be obtained for all specimens tested are listed in this Section. All specimens shall pass for the test seam to be a passing seam.
 5. If a test seam fails, an additional test seam shall be immediately conducted. If the additional test seam fails, the seaming apparatus shall be rejected and

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not used for production seaming until the deficiencies are corrected and a successful test seam can be produced.

6. A sample from each test seam shall be labeled. The label shall indicate the date, ambient temperature, number of the seaming unit, technician performing the test seam and pass or fail description. The sample shall then be given to the COMPANY's Representative for archiving.

B. Field Seam Non-Destructive Testing:

1. All field seams shall be non-destructively tested by the Geomembrane Installer over the full seam length before the seams are covered. Each seam shall be numbered or otherwise designated. The location, date, test unit, name of tester and outcome of all non-destructive testing shall be recorded and submitted to the COMPANY's Representative.
2. Testing should be done as the seaming work progresses, not at the completion of all field seaming, unless agreed to in advance by the COMPANY's Representative. All defects found during testing shall be numbered and marked immediately after detection. All defects found should be repaired, retested and remarked to indicate acceptable completion of the repair.
3. Non-destructive testing shall be performed using vacuum box, air pressure, or spark testing equipment.
4. Non-destructive tests shall be performed by experienced technicians familiar with the specified test methods. The Geomembrane Installer shall demonstrate to the COMPANY's Representative all test methods to verify the test procedures are valid.
5. Extrusion seams shall be vacuum box tested by the Geomembrane Installer in accordance with ASTM D4437 and ASTM D5641. The vacuum chamber method consists of using a box with a transparent top that is placed over the seam that has been coated with a water soap solution. A vacuum of three (3) pounds per square inch is developed in the box. When a leak is encountered, the solution placed over the seam is observed to bubble indicating the presence of air traveling through the seam and a drop in vacuum pressure is indicated on the test apparatus. Should a leak be encountered, (a drop of vacuum pressure in excess of 0.5 PSIG and/or bubbles are observed) the area shall be resealed and retested until the sealed area passes testing. COMPANY's REPRESENTATIVE shall observe all tests and record test locations, test unit number, name of tester, and the results of such testing and report all test results to the COMPANY's

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REPRESENTATIVE. The COMPANY's REPRESENTATIVE shall inform the geomembrane Installer of any required repairs.

6. Double Fusion seams with an enclosed channel shall be air pressure tested by the Geomembrane Installer in accordance with ASTM D 5820 and ASTM D4437. The pressurized dual seam method consists of injecting pressurized air into the air channel that results from seam construction. The air channel shall be inflated using a hypodermic needle and pressurized to 30 pounds per square inch for a period of five (5) minutes. If the pressure drop is within tolerances listed in section "b" below, the seam is accepted. The air channel shall be punctured at the end opposite of the test site to determine complete seam testing. Should an unacceptable pressure drop occur, the distance of seam tested will be halved until the defect is located. When the defect is located, the area will be resealed and retested until the sealed area passes testing. COMPANY's REPRESENTATIVE shall observe and record all test locations, test unit number, name of tester, and the results of such testing and shall report all test results to the COMPANY's REPRESENTATIVE. The COMPANY's REPRESENTATIVE shall inform the geomembrane Installer of any required repairs.
 - a. Equipment for testing double fusion seams shall be comprised of but not limited to: an air pump equipped with a pressure gauge capable of generating and sustaining a pressure of 210 kPa (30 psig), mounted on a cushion to protect the geomembrane; and a manometer equipped with a sharp hollow needle or other approved pressure feed device.
 - b. The Testing activities shall be performed by the Geomembrane Installer. Both ends of the seam to be tested shall be sealed and a needle or other approved pressure feed device inserted into the tunnel created by the double wedge fusion weld. The air pump shall be adjusted to a pressure of 210 kPa (30 psig), and the valve closed. Allow two (2) minutes for the injected air to come to equilibrium in the channel, and sustain pressure for five (5) minutes. The seam is considered leak tight if pressure loss does not exceed the following: 40-mil material – 28 kPa (4 psig), 60-mil material – 21 kPa (3 psig), 80-mil material – 14 kPa (2 psig) after this five (5)-minute period. Release pressure from the opposite end verifying pressure drop on needle to ensure testing of the entire seam. The needle or other approved pressure feed device shall be removed and the feed hole sealed.

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- c. If loss of pressure exceeds 28 kPa (4 psig) during the testing period or pressure does not stabilize, the faulty area shall be located, repaired and retested by the Geomembrane Installer.
- d. Results of the pressure testing shall be recorded on the liner at the seam tested and on a pressure testing record.

C. Destructive Field Seam Testing:

1. Destructive seam testing shall be conducted on the finished production seam at the rate of one test per 500 feet of seam length. Destructive seam tests shall be conducted on samples taken from the production seam. Sample locations shall be patched by seaming a section of liner material into the area voided during the sample collection. The patch shall be nondestructively tested in accordance with the plans and specifications.
2. Samples shall be 45 inches in length and 12 inches in width with the 45-inch dimension along the seam length. Samples shall be prepared by cutting the sample with a die into one (1) inch wide coupons for testing.
3. Samples shall be subdivided into three (3) equal lots. One lot shall be submitted to a state-approved laboratory for testing, one lot shall be tested at the site, and the third lot shall be retained by the COMPANY's REPRESENTATIVE for the COMPANY/Operator. Each subplot of samples shall be further divided into 10 coupons. Five (5) of these 10 coupons shall be tested for shear and five (5) of these 10 coupons shall be tested for peel.
4. Each lot of samples shall be tested for shear and peel to determine the acceptability of the seam. Peel and shear testing shall be conducted by the use of ASTM Test Method D6392. Each coupon shall be of the dimensions of one (1) inch in width and of sufficient length to be placed in the testing mechanism.
 - a. The acceptable shear strength of the constructed seam shall be 95% of the specified minimum yield strength of the geomembrane. The film tear bond (FTB) shall occur within the unseamed sheet material rather than along the seam.
 - b. The acceptable peel strength of a fusion welded seam shall be 72% of the specified minimum yield strength of the geomembrane. The acceptable peel strength of an extrusion welded seam shall be 62% of the specified minimum yield strength of the geomembrane. The FTB shall occur within the unseamed sheet material rather than along the

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seam. Seam integrity requirements described above are based on GRI-GM19 (HDPE) and GRI-GM17 (LLDPE) specifications, which will be used to determine seam acceptability.

5. The allowable failure of seam testing shall be one (1) coupon failure per lot of five. The allowable failure rate shall apply to each lot of five (5) coupons and shall not be applied as an average over quantities of coupon lots. Should more than one (1) failure occur in a given coupon lot, the seam shall be repaired or reconstructed as specified herein.
6. If more than the allowable variances should occur in the destructive seam testing, the COMPANY's REPRESENTATIVE shall ensure that the seam is reconstructed between the location of the sample which failed and the location of the next acceptable sample or the welding path is retraced to an intermediate location at least 10 feet from the location of the sample which failed the test, and a second sample is taken for an additional field test. Should the second sample pass the required testing, the seam shall be reconstructed between the location of the second test and the original sampled location. If the second sample fails the required testing, the procedure shall be repeated. All acceptable seams shall lie between two (2) locations where samples passed the required test procedures and shall include one (1) test location along the reconstructed seam. Seam reconstruction shall consist of extrusion welding a 1-foot wide strip of geomembrane over the failed seam.

3.7.5 Deployment

1. No horizontal seams are allowed within five (5) feet of the toe of the slope.
2. Unroll only those factory-packaged sections which are to be anchored or seamed together in one day. Panels should be positioned with the overlap recommended by the manufacturer, but not less than two (2) inches.
3. After panels are initially in place, remove as many wrinkles as possible. Unroll several panels and allow the liner to "relax" before beginning field seaming. The purpose of this is to make the edges which are to be bonded as smooth and free of wrinkles as possible.
4. Once panels are in-place and smooth, commence field seaming operations.

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5. No support equipment used by any contractor shall be allowed on the geomembrane. Personnel working on the geomembrane shall not smoke, wear damaging shoes or engage in any activity which damages the geomembrane.
6. The anchor trench shall be excavated, backfilled and compacted. Care should be taken when backfilling the trench to prevent any damage to the geomembrane.

3.7.6 Damage Repair

1. Any damage to the FML shall be repaired by the installer. Repairs will be performed in accordance with manufacturer's recommendations. Acceptable repair procedures include, but are not limited to:
 - a. Patching – used to repair holes and tears;
 - b. Grind and Reweld – used to repair small sections of extrusion welded seams;
 - c. Spot Welding – used to repair small minor, localized flaws;
 - d. Capping – used to repair failed seams.
2. All surfaces must be clean and dry at the time of repair. All patches shall extend at least four (4) inches beyond the edge of the defect, and all patches must have rounded corners.
3. All FML repairs shall be non-destructively tested. Repairs which pass non-destructive testing shall be deemed acceptable.

3.8 Synthetic Drainage Layer (Geocomposite)

3.8.1 Products

1. The manufacturer and installer of the geocomposite materials shall provide proof of experience on similar projects. The manufacturer and installer will be subject to approval by the Owner.
2. All geocomposite materials will have a non-woven geotextile material heat bonded to both sides of the geonet and a minimum permeability of 1×10^{-3} cm/sec if utilized in the final cap system as a drainage layer or 1×10^{-2} cm/sec if used in the bottom liner system as a drainage layer.
3. All geocomposite materials shall retain their structure during handling, placement, and long-term service.
4. All geocomposite materials shall be capable of withstanding outdoor exposure for a minimum of twenty (20) days with no measurable deterioration.

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3.8.2 Pre-Construction QA/QC Requirements

1. The manufacturer will provide the Owner and QA/QC Engineer with a list of guaranteed properties for the type of geocomposite to be supplied. The manufacturer will also provide the Owner and QA/QC Engineer with a written certification that the materials delivered have properties which meet or exceed all values guaranteed for that type of geocomposite material.
2. Manufacturer certifications and testing:
 - a. Origin and identification of the raw materials used to manufacture the geocomposite.
 - b. Copies of quality control certificates issued by the producer of the raw materials used to manufacture the geocomposite.
 - c. Reports of tests conducted to verify the quality of the raw materials used to manufacture the geocomposite and tests conducted on the final product after the manufacturing process is complete.
 - d. The following tests in addition to the items above will be certified by the manufacturer:

Table 10 – Geocomposite Manufacturer Quality Control Testing

Test	Test Method	Test Value
Geonet Component Thickness	ASTM D5199	See Note 1
Density of Geonet Component	ASTM D1505	≥ 0.92 g / cm
Ply Adhesion	ASTM D7005	≥ 1 lb / in
Transmissivity (3:1 slopes)	ASTM D4716	$\geq 6.80 \times 10^{-5}$ m ² /sec
Transmissivity (5% slopes)		$\geq 5.17 \times 10^{-4}$ m ² /sec

Notes:

1. Geonet thickness may vary dependent upon the gradient and load required.
2. See Specifications for gradient and loading requirements.

3.8.3 Packaging, Storage, and Handling

1. Geocomposite shall be supplied in rolls wrapped in relatively impermeable and opaque protective covers.
2. Geocomposite rolls shall be labeled with the following information.
 - a. manufacturer's name;

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- b. product identification;
 - c. lot or batch number;
 - d. roll number; and
 - e. roll dimensions.
3. Handling of geocomposite rolls shall be done in a manner such that damage does not occur to the material or its protective wrapping.
 4. A dedicated storage area shall be selected at the job site that is level, dry, well-drained, and away from high traffic areas. The geocomposite rolls shall be elevated off of the ground.
 5. If storage of geocomposite rolls at the job site is longer than six (6) months, a sacrificial covering or temporary shelter will be provided for protection against precipitation, ultraviolet exposure, and accidental damage.

3.8.4 Construction QA/QC Requirements

1. The QA/QC Engineer will examine all manufacturer certifications to ensure that the property values listed on the certifications meet or exceed those specified for the particular type of geocomposite. Any deviations will be reported to the Owner.
2. Upon manufacturing or delivery of the geocomposite, the QA/QC Engineer or his designee will inspect the material. Should any doubt arise regarding the compliance of the material, samples will be removed and forwarded to the approved laboratory for testing to verify conformance to both the specifications and the list of guaranteed properties.
3. Geocomposite materials will be inspected at the job site for damage. Any damaged geocomposite will either be rejected or repaired at the discretion of the QA/QC Engineer.
4. The following conformance test procedures tests may be performed on the geocomposite:

Table 11 – Geocomposite Conformance Testing

Test	Test Method	Test Value
Geonet Component Thickness	ASTM D5199	See Note 1
Density of Geonet Component	ASTM D1505	$\geq .92$ g / cm
Ply Adhesion	ASTM D7005	≥ 1 lb / in
Transmissivity (3:1 slopes)	ASTM D4716	$\geq 6.80 \times 10^{-5}$ m ² /sec
Transmissivity (5% slopes)		$\geq 5.17 \times 10^{-4}$ m ² /sec

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Notes:

1. Geonet thickness may vary dependent upon the gradient and load required.
 - a. The testing frequency of the geocomposite shall be taken at a minimum rate of one (1) per lot or one per 100,000 square feet, whichever is the most frequent.
 - b. The QA/QC Engineer will examine all results from laboratory conformance testing and will report any nonconformance to the Owner.
 - c. If revisions to ASTM, GRI or other testing procedures used in construction conformance testing occurs, no modifications will be required by the Kentucky Division of Waste Management.

3.8.5 Deployment

1. The Contractor shall handle all geocomposite in such a manner as to ensure the geocomposite drainage layers are not damaged in any way.
2. The Contractor shall take any necessary precautions to prevent damage to underlying layers during placement of the geocomposite.
3. In the presence of wind, all geocomposite shall be weighted with sandbags or the equivalent. Such sandbags shall be installed during placement and shall remain until replaced with cover material.
4. On side slopes, the geocomposite shall be secured in the anchor trench and then rolled down the slope in such a manner as to continually keep the geocomposite in tension.
5. If necessary, the geocomposite shall be positioned by hand after being unrolled to minimize wrinkles.
6. Care shall be taken during placement of geocomposite not to entrap dirt or excessive dust in the geocomposite that could cause clogging of the drainage system, and/or stones that could damage the adjacent liner. If dirt or excessive dust is entrapped in the geocomposite, it should be cleaned prior to placement of the next material on top of it. Care shall be exercised when handling sandbags, to prevent rupture or damage of the sandbags.
7. Geocomposite shall only be cut using Manufacturer's recommended procedures.
8. Unless otherwise specified, geocomposite shall not be welded to liners.
9. Tools shall not be left on, in, or under the geocomposite.

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10. After unwrapping the geocomposite from its opaque cover, the geocomposite shall not be left exposed for a period in excess of twenty (20) days unless a longer exposure period is approved by the QA/QC Engineer, based on a formal demonstration from the Contractor that the geotextile component of the geocomposite is stabilized against U.V. degradation for a period in excess of twenty (20) days.

3.8.6 Damage Repair

1. Any holes or tears in the geocomposite shall be repaired by placing a patch extending two (2) feet beyond the edges of the hole or tear. The patch shall be secured by tying fasteners through the bottom geotextile and the geonet of the patch, and through the top geotextile and geonet on the slope. The patch shall be secured every six (6) inches with approved tying devices. The top geotextile component of the patch shall be heat sealed to the top geotextile of the geocomposite needing repair. If the hole or tear width across the roll is more than fifty (50) percent of the width of the roll, the damaged area shall be cut out and the two portions of the geonet shall be joined in accordance with manufacturer's recommendations.

3.9 Granular Drainage Layer

3.9.1 Products

1. The granular drainage material used in the leachate collection system shall consist of hard, clean, granular, durable materials. Granular drainage material shall be free of any metals, roots, trees, stumps, concrete, construction debris, other organic matter and deleterious materials and coatings.
2. Granular drainage materials may vary depending on the types of materials available at the time of each construction project. The KDWM shall pre-approve the granular drainage material prior to its use.

3.9.2 Pre-Construction QA/QC Requirements

1. The following laboratory test shall be performed on representative samples of the granular drainage material being utilized:

Table 12 – Granular Drainage Material Testing

Test	Test Method	Test Value
Permeability	ASTM D2434	$\geq 1 \times 10^{-2}$ cm/sec
Particle Size Analysis	ASTM C136	$\leq 5\%$ Passing No. 200 sieve

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- a. The largest particle size shall be no larger than two (2) inches in the largest dimension unless approved by the Owner or QA/QC Engineer.
 - b. The testing frequency of the granular drainage material shall be taken at a minimum rate of one (1) test per material type and source.
2. All granular drainage material laboratory analysis shall be submitted to the KDWM during or prior to the pre-construction meeting for each construction project the material is utilized.

3.9.3 Material Placement

1. Granular drainage material shall be placed in a manner not to damage any adjacent geosynthetic materials. Placement procedures shall be approved by the Owner or QA/QC Engineer prior to material placement.
2. Granular drainage material shall be placed with low ground pressure (LGP) dozers and access ramp / back dumping techniques.
3. Granular drainage material shall be placed in a minimum one (1) foot thick lift. Material shall be placed in a manner that does not shift leachate collection pipes or stress the FML. No compaction or moisture control is required. LGP dozers (CAT D6 dozer or smaller) shall operate on a minimum one (1) foot thickness of drainage media at all times. All other equipment that will travel over the drainage media shall be pre-approved by the Owner and CQA Engineer.
4. Drainage media shall be placed beginning at the base of slopes and proceed up slope. Under no condition shall material placed of the bottom liner system be deployed down slope.

3.10 Geotextile

3.10.1 Products

1. All geotextiles shall be nonwoven needle punched synthetic fabric consisting only of continuous filament polyester or polypropylene manufactured in a manner approved by the QA/QC Engineer and Owner. The geotextiles shall be inert and unaffected by long-term exposure to constituents found in the landfill leachate.

3.10.2 Pre-Construction QA/QC Requirements

1. The geotextile manufacturer shall be responsible for the production and delivery of geotextile rolls and shall be a well-established firm with more than two (2) years experience in the manufacture of geotextiles. The manufacturer shall submit a statement to the QA/QC Engineer listing:

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- a. Certified minimum property values of the proposed geotextiles and the tests used to determine those properties.
 - b. Production capacity available and projected delivery dates for this project.
2. Manufacturer certifications and testing:
- a. Origin and identification of the raw materials used to manufacture the geocomposite.
 - b. Copies of quality control certificates issued by the producer of the raw materials used to manufacture the geocomposite.
 - c. Reports of tests conducted to verify the quality of the raw materials used to manufacture the geocomposite and tests conducted on the final product after the manufacturing process is complete.
 - d. The following tests in addition to the items above will be certified by the manufacturer:

Table 13 – Geotextile Manufacturer Quality Control Testing

Test	Test Method	Frequency
Mass per Unit Area	ASTM D5261	Every 100,000 ft ²
Grab Tensile Strength	ASTM D4632	Every 100,000 ft ²
Grab Tensile Elongation	ASTM D4632	Every 100,000 ft ²
Trapezoidal Tear Strength	ASTM D4533	Every 400,000 ft ²
Puncture Strength	ASTM D4833	Every 400,000 ft ²
UV Resistance	ASTM D7238	Certified

3.10.3 Packaging, Storage, and Handling

1. Geotextile shall be supplied in rolls wrapped in relatively impermeable and opaque protective covers.
2. Geotextile rolls shall be labeled with the following information.
 - a. manufacturer's name;
 - b. product identification;
 - c. lot or batch number;
 - d. roll number; and
 - e. roll dimensions.

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3. Handling of geotextile rolls shall be done in a manner such that damage does not occur to the material or its protective wrapping.
4. A dedicated storage area shall be selected at the job site that is level, dry, well-drained, and away from high traffic areas. The geotextile rolls shall be elevated off of the ground.
5. If storage of geotextile rolls at the job site is longer than six (6) months, a sacrificial covering or temporary shelter will be provided for protection against precipitation, ultraviolet exposure, and accidental damage.

3.10.4 Construction QA/QC Requirements

1. The QA/QC Engineer will examine all manufacturer certifications to ensure that the property values listed on the certifications meet or exceed those specified for the particular type of geotextile. Any deviations will be reported to the Owner.
2. Upon manufacturing or delivery of the geotextile, the QA/QC Engineer or his designee will inspect the material. Should any doubt arise regarding the compliance of the material, samples will be removed and forwarded to the approved laboratory for testing to verify conformance to both the specifications and the list of guaranteed properties.
3. Geotextile material will be inspected at the job site for damage. Any damaged material will either be rejected or repaired at the discretion of the QA/QC Engineer.
4. The following conformance test procedures tests may be performed on the geotextile:

Table 14 – Geotextile Conformance Testing

Test	Test Method	Frequency
Mass per Unit Area	ASTM D5261	Every 100,000 ft ²
Grab Tensile Strength	ASTM D4632	Every 100,000 ft ²
Grab Tensile Elongation	ASTM D4632	Every 100,000 ft ²
Trapezoidal Tear Strength	ASTM D4533	Every 400,000 ft ²
Puncture Strength	ASTM D4833	Every 400,000 ft ²
UV Resistance	ASTM D7238	Certified

- a. The QA/QC Engineer will examine all results from laboratory conformance testing and will report any nonconformance to the Owner.

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- b. If revisions to ASTM, GRI or other testing procedures used in construction conformance testing occurs, the CQA Engineer shall incorporate the changes into the project's CQA program.

3.10.5 Deployment

1. The geotextile material shall be handled in such a manner as to ensure it is not damaged in any way.
2. The Contractor shall take any necessary precautions to prevent damage to underlying layers during placement of the geotextile.
3. After unwrapping the geotextile from its opaque cover, the geotextile shall not be left exposed for a period in excess of twenty (20) days unless a longer exposure period is approved by the CQA Representative, based on a formal demonstration from the Contractor that the geotextile is stabilized against U.V. degradation for the proposed period of exposure. If white colored geotextile is used, precautions shall be taken against "snowblindness" of personnel.
4. The Contractor shall take care not to entrap stones, excessive dust, or moisture in the geotextile during placement.
5. The Contractor shall weight all geotextiles with sandbags, or the equivalent, in the presence of wind. Such sandbags shall be installed during placement and shall remain until replaced with protective soil cover or other components of the bottom liner system.
6. The Contractor shall examine the entire geotextile surface after installation to ensure that no potentially harmful foreign objects are present. The Contractor shall remove any such foreign objects and shall replace any damaged geotextile.

3.10.6 Damage Repair

1. On slopes steeper than five (5) horizontal to one (1) vertical, a patch made from the same geotextile shall be double seamed into place (with each seam one-half (1/2) inch apart and no closer than two (2) inches from any edge). Should any tear exceed ten (10) percent of the width of the roll, that roll shall be removed from the slope and replaced with new material.
2. On slopes flatter than or equal to five (5) horizontal to one (1) vertical, a patch made from the same geotextile shall be spot-seamed in place with a minimum of two (2) feet overlap in all directions.
3. Care shall be taken to remove any soil or other material which may have penetrated the torn geotextile.

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3.11 Direct Shear Testing

Direct shear testing shall be performed on the interface identified in the stability analysis report as providing the lowest friction resistance prior to liner system construction when the following applies:

1. Initial liner construction project after issuance of permit.
2. Change in product (change in manufacturing process).
3. Change in product brand from initial testing.

Frequency of direct shear testing may be increased at the direction of the Owner, Design Engineer or QA/QC Engineer. The materials tested shall be representative of the actual materials to be used during construction.

3.12 Final Cap Vegetative Soil Layer

1. The material used in the vegetative soil layer shall consist of general materials with horticultural value (this may be soil, shale or combination thereof). The material may be mixed with alternative materials (sewage sludge and compost) but will not exceed 25 percent of the total volume of the vegetative soil layer. The soil layer used will sustain vegetative growth and prevent root penetration of the underlying geosynthetic layers.
2. Soil material may consist of on-site soils that are free of refuse or debris. Rocks greater than six (6) inches in size shall be minimized; soil material not meeting the rock size limits above shall be processed to remove over-sized rocks. The process method shall be approved by the QA/QC Engineer. The Kentucky Division of Waste Management will be notified prior to the start of vegetative material processing.
3. The vegetative soil layer shall be uniformly placed and spread into loose lifts as specified by the QA/QC Engineer.
4. Final grades of vegetative soil layer shall be at or above the minimum required thickness of twenty four (24) inches.
5. Sufficient survey control will be taken to show the finished elevations of the vegetative soil layer. Sufficient data will be available to create cross-sections.
6. The appropriate seed mixture as specified in Attachment 47 shall be placed on the prepared surface at the rate outlined in Attachment 47. Composite

representative soil samples may be collected for analysis prior to the seeding phase. Soil amendments, if necessary, will be applied per the results of the testing.

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7. Mulching material shall be evenly placed over all seeded areas. Mulch shall be hay, straw, or similar materials applied at the approximate rate of 1.5 tons / acre immediately following seeding. In addition, mulch mat may be placed over seeded areas.

4.0 SEDIMENT POND CONSTRUCTION QUALITY CONTROL

4.1 Pre-Construction Meeting

Prior to construction, a pre-construction meeting shall be held to discuss project activities with all participants.

4.2 Construction Activities

Sediment pond construction includes excavation and structural fill material (soil or shale) placement where needed to achieve required subgrade elevations. Once subgrade preparation is complete, construction activities may include one or more of the following: placement of structural fill material (pond dam construction), soil liner material, geosynthetic clay liner, flexible membrane liner, and granular materials. In addition, principal and emergency spillways will be constructed in accordance with the engineering drawings.

4.3 Excavation

1. Top soil and/or vegetation shall be removed from the existing ground surface (clear and grub) prior to excavation.
2. After excavation to design subgrade elevations has been achieved, the QA/QC Engineer shall inspect the finished subgrade surface. The Earthwork Contractor shall proof roll the subgrade surface (only where embankment will be placed to construct the dam) using a four (4) tire, 100,000 lb. (min.) loaded scraper or approved equal. The QA/QC Engineer shall identify areas that require additional work (i.e. soft material areas). Such areas will be reworked; soft materials removed and backfilled with structural fill and proof rolled again until a passing result is obtained.
3. The QA/QC Engineer or his representative will visually inspect the finished subgrade surface for seeps. In the event that a significant seep, as determined by the QA/QC Engineer, is encountered, an underdrain system will be installed as shown in the engineering plans for ponds that will receive a liner system or if a seep is encountered in the location where the dam will be constructed.

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4.4 Structural Fill

4.4.1 Existing Ground Preparation

1. Top soil and/or vegetation shall be removed from the existing ground surface (clear and grub) prior to structural fill material placement.
2. Once clear and grub activities are finished the QA/QC Engineer or his representative will visually inspect the exposed ground surface. The ground surface will be evaluated for the suitability for structural fill material placement. The Earthwork Contractor shall proof roll the subgrade surface using a 4 tire, 100,000 lb. (min.) loaded scraper or approved equal. The QA/QC Engineer shall identify areas that require additional work (i.e. soft material areas). Such areas will be reworked; soft materials removed and backfilled with structural fill and proof rolled again until a passing result is obtained.
3. The QA/QC Engineer or his representative will visually inspect the exposed ground surface for seeps. In the event that a significant seep, as determined by the QA/QC Engineer, is encountered, an underdrain system will be installed as shown in the engineering plans.

4.4.2 Soil Structural Fill Material

1. Soil material shall be substantially free of organic material. All soil material used shall be soils that classify as CH, CL, MH, ML, CL-ML, SC or SM-SC according to the unified soil classification system. The material shall contain no stones whose largest dimension exceeds six (6) inches. All soil material proposed for use as structural fill shall receive prior approval of the QA/QC Engineer.
2. The distribution and gradation of material throughout the Zone shall be such that the Zone will be free from lenses, pockets, streaks or layers of material differing substantially in texture or gradation from the surrounding material. The combined excavation and placing operations shall be such that the material being compacted in the Zone will be blended sufficiently to secure the best practicable degree of compaction and stability. Successive loads of material shall be placed on the fill so as to produce the best practicable distribution of the material.
3. The thickness of the layers before compaction with rollers shall not be more than nine (9) inches. No material placed by dumping in piles or windrows shall be incorporated in a fill layer in that position, but shall be moved and spread by blading or similar approved methods.
4. The following laboratory tests and classification shall be performed on representative samples of the soil structural fill material being utilized:

Table 15 – Soil Structural Fill Material Testing (Sediment Ponds)

Test	Test Method	Frequency
Natural Moisture Content	ASTM D2216	1 Test per Soil Type or Each Change in Material Type
Particle Size Distribution	ASTM D422	1 Test per Soil Type or Each Change in Material Type
Atterberg Limits	ASTM D4318	1 Test per Soil Type or Each Change in Material Type
Soil Classification	ASTM D2487	1 Test per Soil Type or Each Change in Material Type
Standard Proctor	ASTM D698	1 Test per Soil Type or Each Change in Material Type

4.4.3 Shale Structural Fill Material

1. Shale structural fill material shall consist of soil-like shale and intermediate shale with a Slake Durability Index of less than 95. In addition, shale material may include friable sandstone, weathered rock, or similar materials. Large rock fragments or limestone/sandstone slabs with any dimension greater than six (6) inches shall be broken down and included in the shale material or removed. All shale material proposed for use as structural fill shall receive prior approval of the QA/QC Engineer.
2. Shale material shall be placed in six (6) inch maximum compacted lifts to the full width of the cross-section. Each lift shall be bladed as required prior to compaction to ensure uniform layer thickness. Large rock fragments or limestone/sandstone slabs having any dimension greater than six (6) inches shall be removed from the layer to be compacted, or broken down and then incorporated into the lift.
3. The following laboratory test shall be performed on representative samples of the soil structural fill material being utilized:

Table 16 – Shale Structural Fill Material Testing (Sediment Ponds)

Test	Test Method	Frequency
Slake Durability Index	ASTM D4644	1 Test per Material Type

4.4.4 Moisture Control

Soil Structural Fill Material

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1. During compaction operations the surface of the fill and the materials being placed shall receive an amount of water necessary to achieve compaction to 95% of its maximum dry density as determined by ASTM D698.

Shale Structural Fill Material

1. If shale material is dry, water shall be applied to accelerate the slaking action (breakdown) and to facilitate compaction. The water shall be distributed by an approved method which provides uniform application of the required quantity of water. The water shall be uniformly incorporated throughout the entire lift by a multiple gang disk meeting the requirements of this specification. The amount of water shall be that required to achieve a compaction to 95% of its maximum dry density as determined by ASTM D698.

4.4.5 Compaction Equipment

Soil or Shale Structural Fill Material

1. These fill materials shall be compacted with a sheepsfoot / tamping foot compactor. The rollers shall be operated at speeds of no more than five (5) miles per hour.

4.4.6 Compaction Requirements

Soil Structural Fill Material

1. After each layer of soil fill has been placed, spread, and contains the required moisture, it shall be compacted by passing a tamping foot roller over the entire surface of the layer a sufficient number of times to obtain the specified density. A minimum of four (4) passes shall be required.
2. Adjustments in the compactive effort shall be made on the basis of field density determinations made as the construction progresses. Vibrating rollers shall not be used to compact soil.
3. Soil fill material shall be compacted to 95 percent of its maximum dry density as determined by ASTM D698. In-place moisture shall be within -4% below to 2% above optimum moisture as determined by ASTM D698. In-place material not meeting these specifications shall be reworked until satisfactory results are obtained.
4. Field compaction tests, utilizing the nuclear method outlined in ASTM D2922 or other methods, will be performed as the construction proceeds.

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Shale Structural Fill Material

1. Shale material shall receive a minimum of three (3) passes with a static roller followed by blading and a minimum of two (2) passes with a vibratory roller. The rollers shall not exceed three (3) miles per hour during these passes. Each fill layer shall be compacted to a minimum of 95 percent of maximum dry density as determined by ASTM D698. The number of passes will, at the direction of the QA/QC Engineer, be adjusted upward if necessary to obtain 95 percent of maximum dry density.
2. Field compaction tests, utilizing the nuclear method outlined in ASTM D2922 or other methods, will be made as the construction proceeds.

4.4.7 Surveying

1. Sufficient survey control referenced to existing site control will be taken to show the finished elevations of the pond and used as a reference for the various layers of the pond liner system (where applicable) and spillways. Sufficient data will be available to create a computer model of each finished surface.

4.5 Soil Liner

4.5.1 6" Soil Layer

1. Soil material shall be substantially free of organic material. All soil material used shall be soils that classify as CH, CL, MH, ML, CL-ML, SC or SM-SC according to the unified soil classification system. All soil material proposed for use shall receive prior approval of the QA/QC Engineer. The soil materials shall be compacted to a minimum dry density of 92 percent of the standard proctor density as determined by ASTM D698 unless a modified proctor is used.
2. Compaction shall be performed by properly controlling the moisture content, lift thickness and other necessary details to obtain the density and moisture requirements.
3. The following laboratory tests and classification shall be performed on representative samples of the soil material being utilized:

Table 17 – Soil Liner Material Testing (Sediment Ponds)

Test	Test Method	Frequency
Standard Proctor	ASTM D698	1 Test per 20,000 cy or Each Change in Material Type

4. All soil material shall be placed in one (1) lift.

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5. Soil material shall be free of organic material, tree roots, wood, or other decayable material and rocks larger than two (2) inches in diameter. In addition, the top surface of the soil liner shall be free of rocks greater than one (1) inch in diameter. Soil material not meeting the rock size limits above, shall be processed to remove oversized rocks. The process method shall be approved by the QA/QC Engineer. The KDWM will be notified prior to the start of soil processing.
6. Sufficient survey control will be taken to show the finished elevations of the 6" soil layer and used as a reference for the various layers of the pond liner system. Sufficient data will be available to create a computer model of the finished surface.
7. At least nine (9) moisture / density tests per acre per lift of soil material placed will be performed in the field using a nuclear density apparatus.

4.6 Geosynthetic Clay Liner

1. If geosynthetic clay liner is utilized in the sediment ponds, it will be installed in accordance with Section 3.6 of this Plan.

4.7 Flexible Membrane Liner

1. If flexible membrane liner is utilized in the sediment ponds it will be textured 60-mil HDPE. Materials and installation will be in accordance with Section 3.7 of this Plan.

4.8 Geotextile

1. If geotextile is utilized in the sediment ponds, it will be installed in accordance with Section 3.10 of this Plan.

4.9 Principal / Emergency Spillway and Granular Materials

1. Pipe for the principal spillway shall be 16 gauge (min.) steel Ultra Flo Aluminized Storm Sewer Pipe (smooth interior) or equivalent meeting the requirements of AASHTO M-36. Pipe for the riser shall be 16 gauge (min.) Aluminized steel corrugated pipe or equivalent. At a minimum, shop fabricated seams and perforations (where applicable) shall be shop coated with a zinc coating on both sides to at least millage of the undisturbed coating.
2. Concrete shall be Class A concrete as per section 601, concrete, of the Kentucky Department of Transportation, "Standard Specification for Road and Bridge Construction", current edition.
3. Granular materials and channel lining used over geosynthetic materials or to armor the emergency spillway and embankment slope downstream of the principal spillway shall be durable rock as determined by Slake Durability Index testing or equivalent

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procedures. Stones of smaller sizes shall be permissible for use in filling voids in the upper surface and dressing the slope. Individual rock fragments shall be dense, sound, and free from cracks, seams, and other defects conducive to accelerated weathering.

5.0 INSPECTIONS

5.1 Random Inspections

1. During bottom liner system, final cap system, and sediment pond construction activities the QA/QC Engineer will personally conduct random inspections to check on QA/QC field personnel, contractors, and other elements of construction.

5.2 Final Inspection

1. Upon completion of bottom liner system, final cap system, and sediment pond construction activities the QA/QC Engineer will personally conduct a final inspection for the certification required by 401 KAR 45:030 Section 9(11)(d).

6.0 QA/QC DOCUMENTATION

6.1 Documentation

Complete QA/QC documentation will be maintained and organized by the QA/QC Engineer during all construction projects. The documentation may include the following:

1. Construction activities summary
2. Earthen materials conformance testing
3. Geosynthetic material manufacturers' quality assurance information
4. Geosynthetic material conformance testing information
5. QA/QC field technician observation logs and test data sheets
6. As-built drawings and record survey information
7. Contractor submittals
8. Photographic documentation
9. Design and/or specification changes

6.1.1 Field Observations

Construction related field observations, testing, and related documentation will be generated by QA/QC personnel in accordance with the requirements provided in this Plan and project specifications. Field observations and testing results will be recorded on forms similar to the example forms contained in Appendix A of this Plan.

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6.2 Construction Progress Reports

At the completion of each landfill construction project, the QA/QC Engineer will prepare a Construction Progress Report which includes the QA/QC documentation and other relevant information required by the KDWM.

The Construction Progress Report will be certified by the QA/QC Engineer and submitted to the Owner. The Owner will submit the Construction Progress Report to the Kentucky Division of Waste Management in accordance with 401 KAR 45:030 Section 9(11)(d). When signing the Construction Progress Report the Owner will make the following certification: "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for such violations"

**CQA/CQC Documentation
Geomembrane Trial Seam Testing**

Project _____ Installer _____
 Date _____ Inspector _____
 Page _____ of _____ Test Criteria Hot Shoe Peel _____ Shear _____
 Material _____ Extension Peel _____ Shear _____

Seam No.	Time	Mach.	Tech.	Temp.	Hot Shoe Temp./Speed	Ext. Gun Temp./Preheat	Peel Out-In	Shear	P/F

