

ENGINEERING REPORT

FOR

**ANNUAL CCR LANDFILL INSPECTION
40 CFR §257.84(b)
30 TAC §352.841**

**FAYETTE POWER PROJECT
COMBUSTION BY-PRODUCTS LANDFILL**

**PREPARED FOR
LCRA
FAYETTE POWER PROJECT**

**PREPARED BY
LCRA ENGINEERING SERVICES
January 12, 2022**



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This document is certified under the authority of the engineer whose seal appears above. **IT IS NOT TO BE USED FOR PERMITTING, BIDDING, OR CONSTRUCTION PURPOSES**

TABLE OF CONTENTS

1.0	BACKGROUND.....	3
2.0	DOCUMENT REVIEW	4
3.0	LANDFILL GEOMETRY & VOLUME	5
4.0	INSPECTION OF IMPOUNDING STRUCTURES.....	5
4.1	LANDFILL CELL 1 WESTERN EMBANKMENT SLOPE	5
4.2	LANDFILL NORTHERN EMBANKMENT SLOPE	6
4.3	LANDFILL CELL 1 EASTERN EMBANKMENT SLOPE	6
4.4	CELL 1 TOP TEMPORARY CAP.....	6
4.5	RUN-ON/RUN-OFF FACILITIES.....	7
5.0	CONCLUSIONS.....	7
6.0	RECOMMENDATIONS.....	7
6.1	OUTSTANDING RECOMMENDATIONS	7
6.2	NEW RECOMMENDATIONS	7
	APPENDIX A.....	8
	APPENDIX B.....	10
	APPENDIX C.....	12

1.0 BACKGROUND

This report is intended to ensure that the design, construction, operation and maintenance of the Fayette Power Project (FPP) Combustion By-products Landfill (CBL) is consistent with recognized and generally accepted good engineering standards in accordance with the Environmental Protection Agency's Coal Combustion Residual (CCR) rules under 40 CFR Part 257. More specifically this report meets the requirements of 40 CFR §257.84(b) Annual inspections by a qualified professional engineer and 30 Texas Administrative Code (TAC) §352.841, adopted by the Texas Commission on Environmental Quality (TCEQ) on May 22, 2020.

As required by 40 CFR §257.84(b) and 30 TAC §352.841, this inspection report documents the annual inspection of the CBL, located at 6549 Power Plant Road, La Grange, Texas 78945. The CBL is registered as a non-hazardous solid waste management unit (MU013) by the TCEQ as part of TCEQ Registration No. 31575.

The CBL and associated support facilities are located in the southwest portion of the FPP, south of the power plant and north of the Missouri-Kansas-Texas railroad line (Appendix A). LCRA deed recorded a 123-acre tract located within the FPP site for disposal of Class 2 nonhazardous industrial waste. To date, an approximately 30-acre area has been developed as Cell 1 and a 7.9-acre area has been developed as Sub-Cell 2D. In 2013 LCRA notified TCEQ and received concurrence to raise the maximum elevation of the CBL from approximately 430 feet above mean sea level (ft-amsl) to 470 ft-amsl and added Sub-Cell 2D.

The support facilities for the CBL currently include the CBL Sub-Cell 2D Pond contained within Sub-Cell 2D which collects its contact water, the CBL Runoff Pond which collects water from the Sub-Cell 2D Pond and the CBL Cell 1 contact water, the associated runoff channel that routes contact water from the CBL Cell 1 and Cell 2D Pond to the CBL Runoff Pond, and two stormwater drainage channels that route clean non-contact stormwater off-site.

Historically, the support facilities were included in the Annual CCR Landfill Inspection for simplicity. However, the support facilities are not regulated under the CCR rules and instead fall under the terms and conditions of Texas Pollutant Discharge Elimination System (TPDES) permit no. WQ0002105000. Therefore, beginning with last year's reporting period (2020) the support facilities are now inspected under the TPDES permit and will no longer be included in this report unless it is observed they have the potential to affect the stability or disrupt the operation and safety of the CBL as per 40 CFR §257.84(b)(2)(iii) and (iv).

In accordance with 40 CFR §257.84(b)(3) and 30 TAC §252.841, the 2021 annual inspection was performed, document review was conducted, and this report has been prepared to document this work.

2.0 DOCUMENT REVIEW

Pertinent record documents reviewed as part of the development of past inspections' reports were again reviewed for updates since the "ENGINEERING REPORT FOR ANNUAL CCR LANDFILL INSPECTION 40 CFR §257.84(b), FAYETTE POWER PROJECT COMBUSTION BY-PRODUCTS LANDFILL" (2020 Report) was issued on January 15, 2021. This review was intended to capture any revisions or updates to the previously reviewed record documents and addition of new record documents related to design, construction, operation, and maintenance of the CBL. In addition to the 2020 Report there were three (3) new documents produced in 2021 that have been posted to the Publicly Accessible Internet Site as required by 40 Code of Federal Regulations § 257.107. The documents reviewed are as follows:

1. "Coal Combustion Residual Landfill Annual Groundwater Monitoring Report - Calendar Year 2020" dated January 31, 2021, by LCRA, in compliance with 40 CFR §257.93, 30 TAC §352.901-991, and 40 CFR §257.94
2. "Run-on and Run-off Control System Plan for Combustion Byproduct Landfill Registration No. 31575" dated August 11, 2021, by Geosyntec Consultants, in compliance with 40 CFR §257.81(c) and 30 TAC §352.821
3. "Annual Coal Combustion Residuals (CCR) Fugitive Dust Control Report – 2021" dated October 26, 2021, by Waste Management National Services, in compliance with 40 CFR §257.80(c).

These documents were found to ensure adherence to recognized and generally accepted good engineering standards.

The weekly inspections were performed for this facility in calendar year 2021 as required under 40 CFR §257.84(a) and 30 TAC §352.841. The weekly inspection reports for the period from January 1, 2021 through December 15, 2021 were reviewed. Review of these documents did not result in findings indicating the CBL design, construction, operations or maintenance activities would result in potential structural weakness or conditions which are disrupting or have the potential to disrupt the operation or safety of the CBL as currently configured.

During the prior inspection period (2020) the weekly inspection report form was modified to implement the TCEQ regulations, include a list of deficiencies requiring TCEQ notification under 30 TAC §352.841 if found during an inspection, and exclude inspection of the CBL and Sub-Cell 2D Ponds for items other than those that would indicate CBL design, construction, operations or maintenance activities would result in potential structural weakness or conditions which are disrupting or have the potential to disrupt the operation or safety of the CBL. The contact runoff ponds are inspected under the TPDES permit process and recorded on a separate inspection form covered under the TPDES permit.

3.0 LANDFILL GEOMETRY & VOLUME

This is the seventh annual inspection report as required under 40 CFR §257.84(b)(2) with the 2015 report serving as a baseline for changes in geometry of the structure and approximate CCR volume.

An aerial survey was conducted on October 5, 2021 and did not show a change in the landfill impounding structure geometry from the November 23, 2020 survey. This was also confirmed during the field inspection. An approximate layout of the impounding structures is included in Appendix B.

Per 40 CFR §257.84(b)(2)(ii), the CCR volume, as determined by results of the October 5, 2021 aerial survey, is approximately 1,305,570 cubic yards.

4.0 INSPECTION OF IMPOUNDING STRUCTURES

Inspection of the Fayette Power Project's Combustion By-products Landfill was conducted by Mr. Nathan M. Gullo, P.E. and Mr. Samuel C. Brown, P.E. on the morning of November 18, 2021 beginning at 09:00 and concluding at 10:00 hours. The weather was generally cloudy with temperatures in the mid 50's during the inspection. The CBL location had received precipitation amounts of 2.19 inches over the previous 30 days and 50.78 inches since the 2020 inspection.

A follow-up inspection of the FPP CBL Cell 1 final cover system was conducted by Mr. Samuel C. Brown, P.E. on the afternoon of December 2, 2021, beginning at 15:00 and concluding at 16:00 hours. The weather was partly cloudy with temperatures in the mid 70's during the inspection. The CBL location had received precipitation amounts of 1.42 inches since the November 18, 2021 inspection. All precipitation data was provided from the LCRA Hydromet rain gauge number 563400 located at the FPP site.

4.1 LANDFILL CELL 1 WESTERN EMBANKMENT SLOPE

Clay Embankment w/ 1 ft. Vertical to 3 ft. Horizontal slope

Approximate Length: 350 ft.

Approximate Max Impoundment Height: 20 ft. @ 410 ft-amsl

General Condition: **Good** Fair Poor

Problems Noted: **None** Poor Grass Cover Trees or Brush Animal Burrows or Damage

Standing Water/Ponding Wet Areas Erosion Depressions Rutting Cracks

Bulges Misalignment Sinkhole Other: _____

Comments:

(1) Overall, grass cover was in good condition with full coverage. During the initial inspection grass was observed with an approximate height of 12 to 36-inches. A follow-up inspection was conducted shortly after the cover area had been mowed and was observed with an approximate height of 3 to 6-inches. There were no visual signs of active animal activity or history of such. The slopes are visually in alignment with the 3:1 design and no visual evidence of structural issues were observed.

4.2 LANDFILL NORTHERN EMBANKMENT SLOPE

Clay Embankment w/ 1 ft. Vertical to 3 ft. Horizontal slope

Approximate Length: 1,300 ft.

Approximate Max Impoundment Height: 35 ft. @ 420 ft-amsl

General Condition: Good Fair Poor

Problems Noted: None Poor Grass Cover Trees or Brush Animal Burrows or Damage

Standing Water/Ponding Wet Areas Erosion Depressions Rutting Cracks

Bulges Misalignment Sinkhole Other: _____

Comments:

(1) Overall, grass cover was in good condition with full coverage. During the initial inspection grass was observed with an approximate height of 12 to 36-inches. A follow-up inspection was conducted shortly after the cover area had been mowed and was observed with an approximate height of 3 to 6-inches. There were no visual signs of active animal activity or history of such. The slopes are visually in alignment with the 3:1 design and no visual evidence of structural issues were observed.

4.3 LANDFILL CELL 1 EASTERN EMBANKMENT SLOPE

Clay Embankment w/ 1 ft. Vertical to 3 ft. Horizontal slope

Approximate Length: 550 ft.

Approximate Max Impoundment Height: 30 ft. @ 420 ft-amsl

General Condition: Good Fair Poor

Problems Noted: None Poor Grass Cover Trees or Brush

Animal Burrows or Damage Standing Water/Ponding Wet Areas Erosion

Depressions Rutting Cracks Bulges Misalignment Sinkhole

Other: _____

Comments:

(1) Overall, grass cover was in good condition with full coverage. During the initial inspection grass was observed with an approximate height of 12 to 36-inches. A follow-up inspection was conducted shortly after the cover area had been mowed and was observed with an approximate height of 3 to 6-inches. There were no visual signs of active animal activity or history of such. The slopes are visually in alignment with the 3:1 design and no visual evidence of structural issues were observed.

4.4 CELL 1 TOP TEMPORARY CAP

Clay Cap with Topsoil & Grass Vegetation

Approximate Length: 1,000 ft.

Approximate Width: 120 ft.

General Condition: Good Fair Poor

Problems Noted: None Poor Grass Cover Trees or Brush Animal Burrows or Damage

Standing Water/Ponding Wet Areas Erosion Depressions Rutting Cracks

Bulges Misalignment Sinkhole Other: _____

Comments:

(1) Overall, grass cover was in good condition with full coverage. During the initial inspection grass was observed with an approximate height of 12 to 36-inches. A follow-up inspection was conducted shortly after the cover area had been mowed and was observed with an approximate

height of 3 to 6-inches. There were no visual signs of active animal activity or history of such. No visible evidence of structural issues was observed.

4.5 RUN-ON/RUN-OFF FACILITIES

Open Channels, Culverts, CBL Pond & Sub-Cell 2D Pond

General Condition: **Good** Fair Poor

Problems Noted: **None** Operational Issues Safety

Other: _____

Comments:

(1) There were no conditions observed as disrupting or having the potential to disrupt the operation or safety of the CBL.

5.0 CONCLUSIONS

The FPP CBL structure was in good condition at the time of this inspection and does not appear to have an actual or potential structural weakness nor any existing conditions that are disrupting, or have the potential to disrupt, the operation and safety of the CBL. The operation and maintenance of the landfill is currently contracted to a landfill manager believed to have good competency with a plan in place to meet the 40 CFR Part 257 and 30 TAC Chapter 352 requirements for operation of the facility consistent with recognized and generally acceptable good engineering standards.

The CBL is designed, constructed, operated, and maintained consistent with recognized and generally accepted good engineering standards.

6.0 RECOMMENDATIONS

Based on the document review and the inspections conducted on November 18, 2021 & December 2, 2021, no new recommendations are identified.

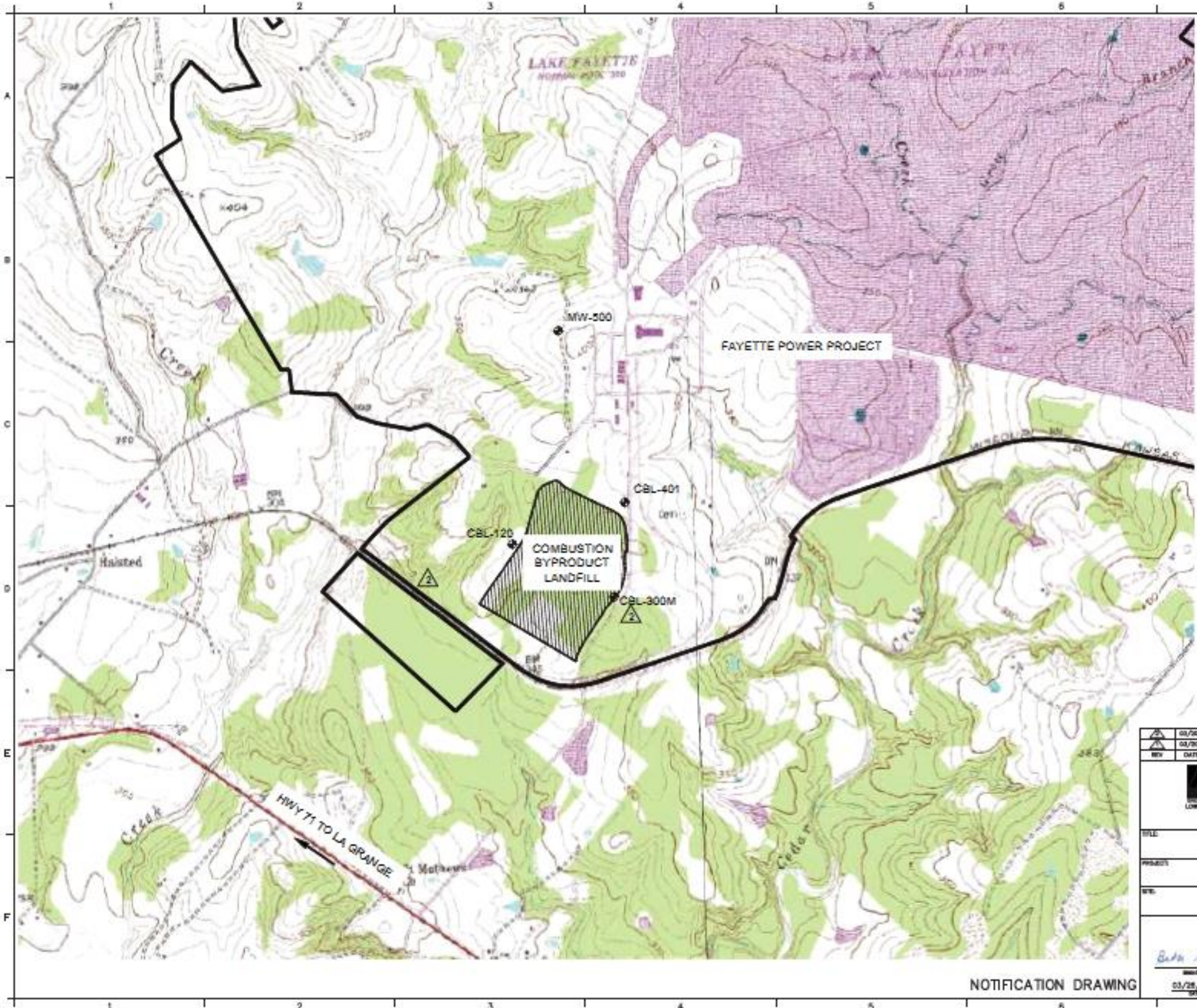
6.1 OUTSTANDING RECOMMENDATIONS

No outstanding recommendations

6.2 NEW RECOMMENDATIONS

No new recommendations

APPENDIX A
FPP COMBUSTION BY-PRODUCTS LANDFILL
LOCATION DRAWING



LEGEND

- FAYETTE POWER PLANT PROPERTY BOUNDARY
- MW-500 GROUNDWATER MONITORING WELL

NOTE:
 BASE MAP SOURCE: UNITED STATES GEOLOGIC SURVEY (USGS),
 7.5 MINUTE SERIES QUADRANGLE (TOPOGRAPHIC) MAP OF:
 LA GRANGE EAST, TEXAS 1957 REVISED 1981
 FAYETTEVILLE, TEXAS 1958 REVISED 1985

I:\Projects\2013\13-001\Drawings\13-001-001.dwg PLOTTED: 03/28/2013 10:14:11 AM

03/20/13	REVISED PROPERTY BOUNDARY & MONITORING WELL NAME (NOT SUBMITTED WITH NOTIFICATION)	04	00
03/20/13	REVISED TOTAL NUMBER OF DRAINAGE	07	00
REV	DATE	DESCRIPTION	DRN

LGRA
 LORAIN CONSULTANTS, INC.
 2702 LAMAR AVENUE, SUITE 100
 AUSTIN, TEXAS 78746
 PHONE: 512.473.2800

Geosyntec
 consultants
 GEOSYNTEC CONSULTANTS, INC.
 TEXAS ENG. FIRM REGISTRATION NUMBER 1182
 3900 WEST CHASE ROAD, SUITE 100
 AUSTIN, TEXAS 78746
 PHONE: 512.452.4300

TITLE: OVERALL SITE PLAN

PROJECT: REVISION TO NOTIFICATION

DESCRIPTION: FAYETTE POWER PROJECT
 COMBUSTION BYPRODUCT LANDFILL

DESIGNED BY: MZ	DATE: MARCH 2013
DRAWN BY: JVV	PROJECT NO: TL0225.02
CHECKED BY: MZ	PLN: 022502N00
REVIEWED BY: BS	DRAWING NO.
APPROVED BY: BS	1 of 9

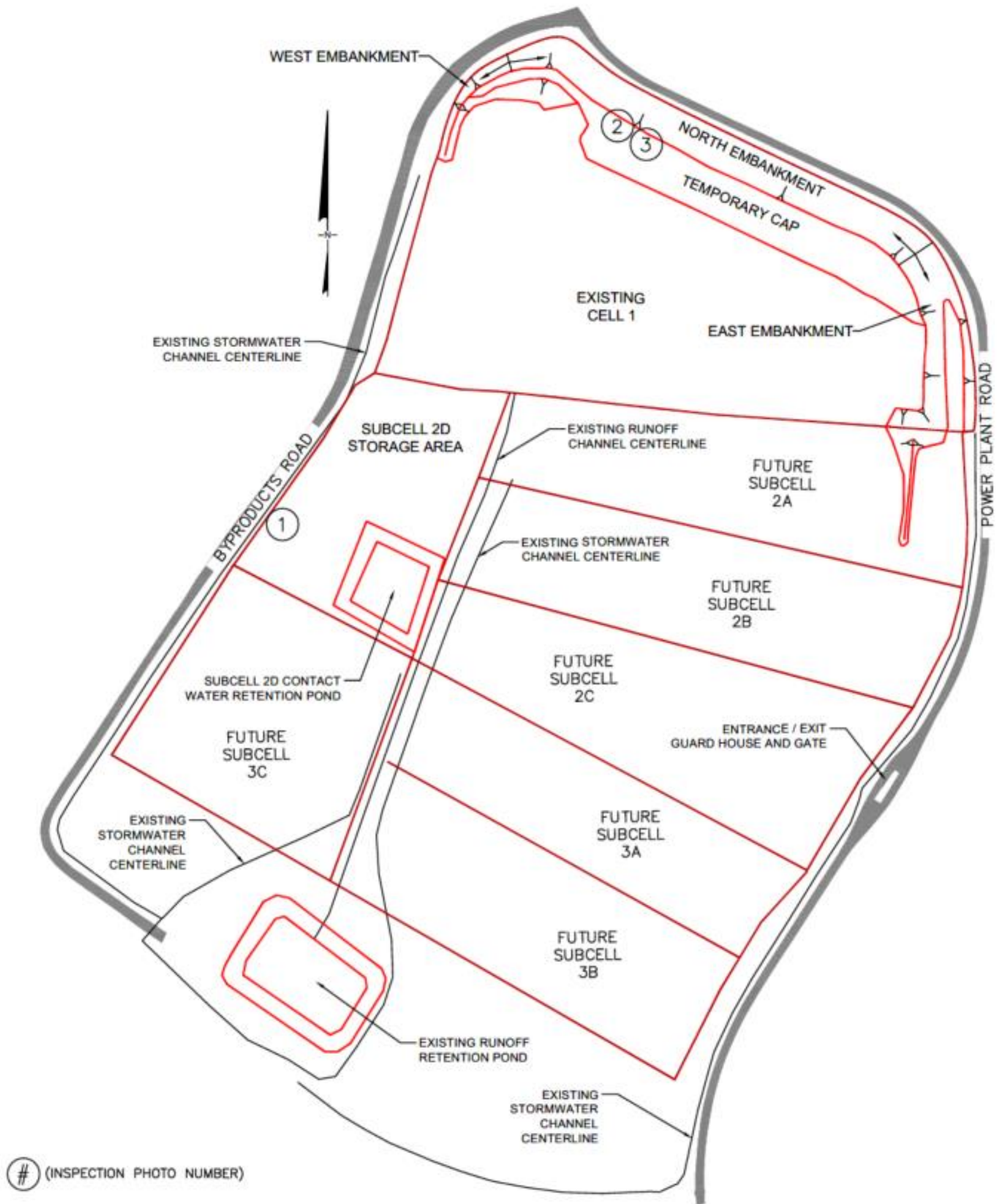
DATE: 03/28/2013

BY: BS

NOTIFICATION DRAWING

APPENDIX B
FPP COMBUSTION BY-PRODUCTS LANDFILL
INSPECTION DRAWING

FPP COMBUSTION BY-PRODUCTS LANDFILL INSPECTION DRAWING



APPENDIX C

INSPECTION PHOTOS



PHOTO 1 – View of active CBL Cell 1 & 2D (11-18-2021)



PHOTO 2 – View of Cell 1 North Embankment Slope during initial inspection (11-18-2021)



PHOTO 3 – View of Cell 1 North Embankment Slope during follow-up inspection (12-02-2021)