

CCR Rule Operating Criteria §257.84(b)(1) 2023 Annual Inspection by A Qualified Engineer Final

CCR Landfill Hunter Power Plant Castle Dale, Utah

December 15, 2023

PREPARED FOR

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PROFESSIONAL ENGINEER CERTIFICATION

I hereby certify, as a Professional Engineer in the State of Utah, that the information in this document was assembled under my direct supervisory control. This report is not intended or represented to be suitable for reuse by PacifiCorp or others without specific verification or adaptation by the Engineer.

I hereby certify, as a Professional Engineer in the State of Utah that this report has been prepared in accordance with and meets the requirements of 40 Code of Federal Regulations §257.84(b)(1).

Chad Tomlinson

Chad Tomlinson, P.E.

December 15, 2023

Date

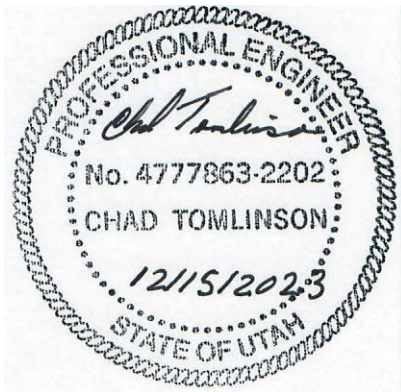


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1.0 OVERVIEW OF FINDINGS

The annual inspection and associated report is being completed for the purpose of providing due diligence by PacifiCorp and reasonable assurance, to the extent obtained by the due diligence, of its coal combustion residual facilities. The inspection was performed according to the requirements for annual inspection 257.84 (for CCR landfills) of 40 CFR Parts 257 and 261, Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities, Final Rule, dated April 17, 2015 [1].

1.1 General Overview

The Hunter Power Plant (Plant) is operated by PacifiCorp and is a coal-fueled steam-electric operation with three operating units having a total generating capacity of 1,577.2 MW. Fly ash, bottom ash, and flue gas desulfurization (FGD) produced by the plant are disposed of in the CCR Landfill. These waste materials are delivered to the CCR landfill by truck.

The coal combustion residual (CCR) rules requirement for signage is not applicable to CCR landfills. They are only required for surface water impoundments. Therefore, signage for the Hunter Landfill is not required.

1.2 Location

The Hunter Power Plant is located in Emery County, Utah, approximately 2.5 miles south of Castle Dale, Utah. Access to the plant is provided by Utah Highway 10 (UT-10). The CCR Landfill is located approximately 1.4 miles southeast of the plant. The majority of the CCR Landfill is used for disposal of dry bottom ash, fly ash, and FGD material with a smaller portion permitted as a Class IIIb Industrial Waste Landfill.

1.3 Summary of Inspection Findings

The field inspection was performed on August 24, 2023 and found the principal project features of the Hunter CCR Landfill to be in satisfactory condition. Nothing was observed that would suggest an active or impending issue with stability of the landfill and the run-on and run-off control features were being maintained to preserve design capacity. The layout of the CCR Landfill is provided in **Figure 1**.

A completed inspection checklist and photographic log of the 2023 inspection are presented in **Appendix A** and **B**, respectively. Observations from the 2023 inspection include the following:

- Hay is being spread across the non-reclaimed ash slopes to minimize erosion and provide organic substrate for future cover. Vegetation is beginning to establish on non-reclaimed slopes.
- Inlets and outlets of culverts associated with run-off channels had varying degrees of accumulated vegetation and sediment; however, not in amounts to effect their hydraulic capacities.
- Sediment pond had no standing water.



Figure 1 : Hunter CCR Landfill

2.0 DESIGN AND DOCUMENTATION REVIEW

2.1 Design and Construction Information

Tetra Tech reviewed the CCR Landfill Draft Basis of Design Memorandum [2], CCR Landfill Design Documents [3], and Run-On and Run-Off Control Plan [4] to obtain information regarding the design and operation of the CCR Landfill. The CCR Landfill occupies approximately 230 acres and includes an existing access (haul) road, perimeter ditches, and the zero-discharge stormwater retention basis (104 acre-ft) with a total landfill capacity of 44.5 million cubic yards. A typical cross-section of the CCR Landfill is presented in **Figure 2**

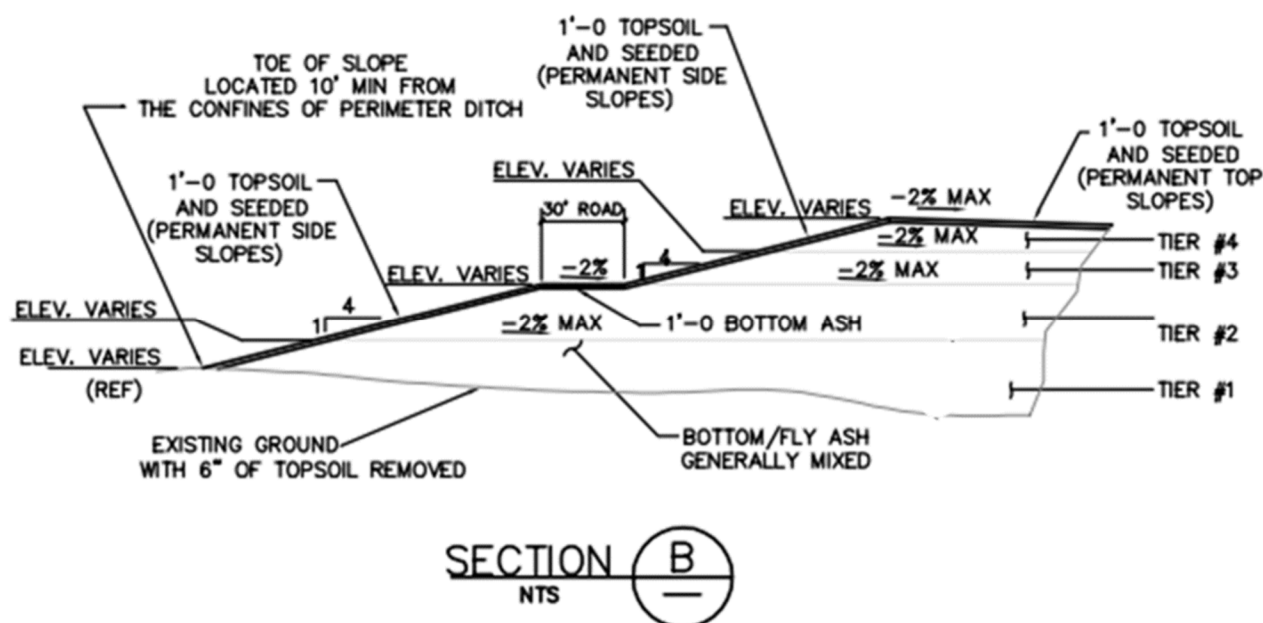


Figure 2 – Typical Cross Section of CCR Landfill

Stormwater runoff from the CCR Landfill is controlled by a perimeter ditch that discharges stormwater to the Stormwater Retention Basin. Stormwater run-on is prevented with run-on control berms and a run-on diversion channel.

2.2 Operating History

There have been no recorded incidences of slope failure or failure of the CCR Landfill's run-on and run-off control system.

2.3 Previous Periodic Structural Analyses

The Cornforth Phase 1 geotechnical study [5] was completed in 2009 and did not recommend a formal risk assessment of the landfill structure.

2.4 Results of Inspection by a Qualified Professional Engineer

The CCR Landfill is subject to periodic inspections by the Hunter Power Plant staff. Tetra Tech reviewed the inspection reports and did not find anything that indicated that the integrity of the CCR Landfill is compromised. These inspections are documented and retained by PacifiCorp.

Review of the results of these inspections did not identify any previously unidentified issues. It is the opinion of the author of this document that the interim inspections and reporting by plant staff are appropriate and adequate, as required by the CCR rules and industry standards, for this CCR Unit.

2.4.1 Results of Previous Annual Inspections

This is the ninth annual periodic inspection conducted under CCR rules [1]. Prior to conducting the 2023 inspection, Tetra Tech staff reviewed the previous annual inspection [6,7,8,9,10,11,12,13] to identify any areas of concern to focus on during the 2023 inspection. The previous annual inspection identified no structural deficiencies that would indicate a cause for concern associated with failure of the landfill slopes or run-on and run-off control system.

This report and other pertinent reports and data are accessible at the following website:
[Coal Combustion Residual \(CCR\) : PacifiCorp \(brkenenergy.com\)](https://brkenenergy.com)

3.0 FIELD INSPECTION OF EXPANSION LANDFILL

3.1 General Overview of Annual Inspection

A field inspection was conducted on August 24, 2023, by Tetra Tech staff, Chad Tomlinson, P.E. Personnel from the Hunter Plant met with Chad Tomlinson and accompanied him during the inspection. The field inspection was performed by walking along the toe of the landfill slopes and drainage features. Features and conditions were documented on the inspection checklist (**Appendix A**) and were photographed (**Appendix B**). The approximate locations of the photos are detailed in the inspection photo log overview map on the first page of **Appendix B**. In addition to documenting current features, the photograph log of existing conditions is intended to provide a baseline for future inspections.

3.2 Geometry Review

There have been no changes in the design geometry of the landfill. Once a specific portion of the landfill has reached capacity, the external slopes are being graded to 4H:1V.

3.3 Volume of CCR Stored

It is estimated the current volume of CCR stored in the landfill at approximately 18.81 million cubic yards (CY) considering approximately 440,024 CY of ash placed in the CCR Landfill since the last inspection.

3.4 Observed Changes

This is the ninth annual inspection conducted pursuant to §257.84(b)(1) for the CCR Landfill. Based on a review of the 2022 Annual Inspection Report [13], there does not appear any material changes to the condition of CCR Landfill and drainage features. A table summarizing the findings from the 2022 annual inspection and any changes observed from the 2023 inspection is presented in **Table 1**.

Table 1 – Summary of Changes from 2022 and 2023 Annual Inspections

2022 Annual Inspection Observations	2023 Observations
Extent of rilling of the unreclaimed slopes appeared to be similar to what was observed in 2021.	Extent of rilling of the unreclaimed slopes were similar than observed during previous inspections..
Straw continues to be added to graded ash slopes as a temporary cover. Vegetation	Straw continues to be used as temporary cover on external ash slopes.

2022 Annual Inspection Observations	2023 Observations
continues to establish on portions of the slopes.	
Water was not observed in the downstream energy dissipation structure. There were no recorded discharges of water from the sediment pond.	No water was observed in location, likely due to the absence of recent precipitation.
Deposited sediment was still observed to be accumulated at outlet of culvert up to the mid-height of the culvert.	Most culverts have varying amounts of accumulated sediment. Recommend clearing inlet and outlet of culverts of debris and sediment.

3.5 Monitoring, Maintenance, and Repair Recommendations

Based on the results of the site inspection, there were no identified deficiencies indicative of structural weaknesses of the Industrial Landfill slopes. However, as part of PacifiCorp's operation of Industrial Landfill, Tetra Tech recommends the following:

- Clear inlet and outlet ends of culverts to preserve design flow capacity.

4.0 LIMITATIONS AND CONSULTANT QUALIFICATIONS

This report presents observations and conclusions drawn from a review of pertinent documents referenced in Section 5, and a field inspection of the CCR Landfill. The purpose of the review and inspection has been to assess the safety or adequacy of the facilities according to industry standards against catastrophic failure of the major constructed elements during normal operations or unusual or extreme events based on visual inspection and available information. A secondary purpose is to identify any potential deficiencies related to the CCR rules [1].

The conclusions and professional opinions presented herein were developed by the independent consultant and are in accordance with generally accepted engineering principles and practices at the time and location the services were provided. Tetra Tech makes no other warranty, either expressed or implied

4.1 Professional Engineer qualifications

The professional engineer for this inspection is Chad Tomlinson. He is licensed in the State of Utah (4777863-2202) as a civil engineer. He has over 21 years of experience in civil/structural engineering and has performed inspections and safety evaluations on landfills, dams, canals, and numerous other water containing structures.

5.0 SOURCE(S)

- [1] USEPA, 2015. 40 CFR Parts 257 and 261, Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule. April 17, 2015. 201 pp.
- [2] URS, 2015. Hunter Power Plant CCR Landfill Draft Basis of Design Memorandum. November 2015.
- [3] URS, 2015. Hunter Plant PacifiCorp CCR Landfill Design Documents. December 2015.
- [4] Tetra Tech, 2021. §257.81 Run-on and Run-off Control for CCR Landfills: Hunter Power Plant – Coal Combustion Residual Landfill. Revision 0. October 7, 2021.
- [5] Cornforth Consultants Inc., “Phase I Geotechnical Assessments: Scrubber Emergency Holding Pond and FGD Cell/Ash Landfill, Hunter Power Plant,” Castle Dale, Utah, 2009.
- [6] URS, 2015. 2015 Coal Combustion Residuals Annual Inspection: Hunter Power Plant Landfill. December 29, 2015.
- [7] URS, 2016. 2016 Coal Combustion Residuals Annual Inspection: Hunter Power Plant – Landfill. November 29, 2016.
- [8] URS, 2017. 2017 Coal Combustion Residuals Annual Inspection: Hunter Power Plant Landfill. November 30, 2017.
- [9] AECOM, 2018. 2018 Coal Combustion Residuals Annual Inspection: Hunter Power Plant, Hunter CCR Landfill,” December 11, 2018.
- [10] AECOM, 2019. 2019 Coal Combustion Residuals Annual Inspection: Hunter Power Plant, Hunter CCR Landfill. December 18, 2019.
- [11] AECOM, 2020. 2020 Coal Combustion Residuals Annual Inspection: Hunter Power Plant, Hunter CCR Landfill. December 15, 2020.
- [12] Tetra Tech, 2021. CCR Rule Operating Criteria §257.84(b)(1) Annual Inspection by A Qualified Engineer. CCR Landfill. Hunter Power Plant. December 16, 2021.
- [13] Tetra Tech, 2022. CCR Rule Operating Criteria §257.84(b)(1) Annual Inspection by A Qualified Engineer. CCR Landfill. Hunter Power Plant. December 16, 2022.

REVISIONS

Revision Number	Date	Revision Made	By Whom
B	11/30/2023	Issued to PacifiCorp for Review	Chad Tomlinson
0	12/15/2023	Issued for Use	<i>Chad Tomlinson</i>

APPENDIX A – ANNUAL INSPECTION CHECKLIST

Feature Name:
Hunter CCR Landfill

Feature ID:
NA

Date:
08/24/2023

Inspected by: Chad Tomlinson		Date: 08/24/2023		Phone No.: 801-633-9765	
Type of Inspection: <input type="checkbox"/> Initial <input checked="" type="checkbox"/> Periodic <input type="checkbox"/> Follow-up <input type="checkbox"/> Other: Annual Inspection				Weather: <input type="checkbox"/> Wet <input checked="" type="checkbox"/> Dry <input type="checkbox"/> Snow Cover <input type="checkbox"/> Other:	
Remarks: CCR Landfill observed to be in satisfactory condition. No deficiencies identified.					
Total Precipitation Last 24 hours: None					
PROBLEMS					
COVER	<input checked="" type="checkbox"/> 1. None	<input type="checkbox"/> 5. Vegetation >2" dia.	<input type="checkbox"/> 9. Settlement	<input type="checkbox"/> 13. Seepage	<input type="checkbox"/> Vegetation <input type="checkbox"/> Gravel <input type="checkbox"/> Soil <input type="checkbox"/> Asphalt <input checked="" type="checkbox"/> Other: Temporar cover consisting of straw on portions of landfill slope.
	<input type="checkbox"/> 2. Animal burrows	<input type="checkbox"/> 6. Vegetation islands	<input type="checkbox"/> 10. Cracks	<input type="checkbox"/> 14. Ponding	
	<input type="checkbox"/> 3. Animal damage	<input type="checkbox"/> 7. Poor grass cover	<input type="checkbox"/> 11. Erosion	<input type="checkbox"/> 15. Other:	
	<input type="checkbox"/> 4. Weeds & brush	<input type="checkbox"/> 8. Slope stability	<input type="checkbox"/> 12. Rills		
	Comments/Action Items: None				
Actions: <input checked="" type="checkbox"/> None <input type="checkbox"/> Maintenance <input type="checkbox"/> Monitoring <input type="checkbox"/> Minor Repair <input type="checkbox"/> Engineering					
PROBLEMS					
SLOPES & PERIMETER BERMS	<input type="checkbox"/> 1. None	<input type="checkbox"/> 5. Vegetation >2" dia.	<input type="checkbox"/> 9. Settlement	<input type="checkbox"/> 13. Seepage	<input type="checkbox"/> Vegetation <input type="checkbox"/> Gravel <input type="checkbox"/> Soil <input type="checkbox"/> Asphalt <input checked="" type="checkbox"/> Other: Temporary cover consisting of straw on portions of landfill slopes.
	<input type="checkbox"/> 2. Animal burrows	<input type="checkbox"/> 6. Bare spots >25 ft ²	<input type="checkbox"/> 10. Cracks	<input type="checkbox"/> 14. Ponding	
	<input type="checkbox"/> 3. Animal damage	<input type="checkbox"/> 7. Poor grass cover	<input checked="" type="checkbox"/> 11. Erosion	<input type="checkbox"/> 15. Other:	
	<input type="checkbox"/> 4. Weeds & brush	<input type="checkbox"/> 8. Slope stability	<input checked="" type="checkbox"/> 12. Rills		
	Comments/Action Items: Minor rilling of ash slopes observed.				
Actions: <input checked="" type="checkbox"/> None <input type="checkbox"/> Maintenance <input checked="" type="checkbox"/> Monitoring <input type="checkbox"/> Minor Repair <input type="checkbox"/> Engineering					
PROBLEMS					
LEACHATE SYSTEM	<input checked="" type="checkbox"/> 1. None	<input type="checkbox"/> 3. Piping leaking	<input type="checkbox"/> 5. Tank leaking		
	<input type="checkbox"/> 2. Sump	<input type="checkbox"/> 4. Containment leaking	<input type="checkbox"/> 6. Other:		
	Comments/Action Items: None				
	Actions: <input checked="" type="checkbox"/> None <input type="checkbox"/> Maintenance <input type="checkbox"/> Monitoring <input type="checkbox"/> Minor Repair <input type="checkbox"/> Engineering				
	7. Is the Leachate transmission system functioning properly? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A				
8. Is the leak detection system functioning properly? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A					

Feature Name:
Hunter CCR Landfill

Feature ID:
NA

Date:
08/24/2023

EROSION SEDIMENT CONTROLS		PROBLEMS				
EROSION SEDIMENT CONTROLS	<input type="checkbox"/> 1. None	<input type="checkbox"/> 3. Ditch failure	<input checked="" type="checkbox"/> 5. Debris	<input type="checkbox"/> 7. Silt fences	<input type="checkbox"/> 9. Rip rap aprons	
	<input type="checkbox"/> 2. Channel	<input type="checkbox"/> 4. Ditch washouts	<input checked="" type="checkbox"/> 6. Sediment	<input type="checkbox"/> 8. Filter socks	<input type="checkbox"/> 10. Other:	
	OBSERVATIONS					
	11. No erosion or sediment controls.				<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	12. Is there exposed waste on exterior slopes? Graded ash slopes have temporary star cover.				<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> N/A
	13. Are perimeter run-on diversion ditches present and in good repair?				<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> N/A
	14. Are perimeter run-off diversion ditches present and in good repair?				<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> N/A
	Comments/Action Items: Minor sediment and debris accumulated at inlet and outlet of drainage culverts.					
	Actions: <input type="checkbox"/> None <input checked="" type="checkbox"/> Maintenance <input type="checkbox"/> Monitoring <input type="checkbox"/> Minor Repair <input type="checkbox"/> Engineering					
	OTHER		OBSERVATIONS			
OTHER	1. Are temporary covers functioning as intended? Straw used as temporary cover.				<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> N/A
	2. Are stormwater systems functioning as intended?				<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> N/A
	3. Are fences and gates in good condition?				<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> N/A
	4. Are security devices in good condition?				<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> N/A
	5. Are signs in good condition?				<input type="checkbox"/> Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
	6. Are reference monuments/survey monuments in good condition?				<input type="checkbox"/> Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
	Comments/Action Items: None					
Actions: <input checked="" type="checkbox"/> None <input type="checkbox"/> Maintenance <input type="checkbox"/> Monitoring <input type="checkbox"/> Minor Repair <input type="checkbox"/> Engineering						

Inspector Signature: Chad Tomlinson

Date: 8/24/2023

APPENDIX B – PHOTOGRAPHIC LOG

Hunter CCR Landfill – Photographic Log Locations



Photo Number: 1	Date: 8/24/2023 12:53 p.m.
Location: Hunter CCR Landfill	Comments: Looking southeast up at haul road grate. Road grate used to remove ash from tires and intercept stormwater running down haul road.



Photo Number: 2	Date: 8/24/2023 12:54 p.m.
Location: Hunter CCR Landfill	Comments: Looking southwest along northwest slope of landfill at run-off ditch and run-on berm.



Photo Number: 3	Date: 8/24/2023 12:58 p.m.
Location: Hunter CCR Landfill	Comments: Looking north at inlet of culvert draining run-off channel shown in Photograph 2. Note minor amounts of ash deposited at inlet.



Photo Number: 4	Date: 8/24/2023 1:00 p.m.
Location: Hunter CCR Landfill	Comments: Looking north from ash haul road at discharge end of culvert and continuation of channel shown if Photographs 2 and 3.



Photo Number: 5	Date: 8/24/2023 1:04 p.m.
Location: Hunter CCR Landfill	Comments: Looking south at discharge end of culvert shown in Photograph 3. Note accumulation of ash at discharge of culvert.



Photo Number: 6	Date: 8/24/2023 1:07 p.m.
Location: Hunter CCR Landfill	Comments: Looking north down run-off channel towards culvert shown in Photograph 2.



Photo Number: 7	Date: 8/24/2023 1:09 p.m.
Location: Hunter CCR Landfill	Comments: Looking southeast at high point (break in grade) of run-off channel.



Photo Number: 8	Date: 8/24/2023 1:12 p.m.
Location: Hunter CCR Landfill	Comments: Looking southeast on top of run-on berm and perimeter road.



Photo Number: 9	Date: 8/24/2023 1:13 p.m.
Location: Hunter CCR Landfill	Comments: Looking north up run-on berm and perimeter road.



Photo Number: 10	Date: 8/24/2023 1:19 p.m.
Location: Hunter CCR Landfill	Comments: Looking east down run-on berm along southwest slope of landfill.



Photo Number: 11	Date: 8/24/2023 1:26 p.m.
Location: Hunter CCR Landfill	Comments: Looking west on top of run-on berm and run-on channel.



Photo Number: 12	Date: 8/24/2023 1:28 p.m.
Location: Hunter CCR Landfill	Comments: Looking northeast down run-on berm and end of run-on channel



Photo Number: 13	Date: 8/24/2023 1:46 p.m.
Location: Hunter CCR Landfill	Comments: Looking north at inlet side of culvert draining run-off between perimeter road and run-on berm.



Photo Number: 14	Date: 8/24/2023 1:49 p.m.
Location: Hunter CCR Landfill	Comments: Looking northeast at discharge side of culvert shown in Photograph 13. Note accumulated brush and vegetation.



Photo Number: 15	Date: 8/24/2023 1:51 p.m.
Location: Hunter CCR Landfill	Comments: Looking northwest at inlet to culvert discharge to stormwater retention pond.



Photo Number: 16	Date: 8/24/2023 1:53 p.m.
Location: Hunter CCR Landfill	Comments: Looking southwest at discharge end of culvert shown in Photograph 15. Note vegetation beginning to obstruct discharge end of culvert.



Photo Number: 17	Date: 8/24/2023 2:05 p.m.
Location: Hunter CCR Landfill	Comments: Looking west at outlet of stormwater retention pond outlet system.



Photo Number: 18	Date: 8/24/2023 2:10 p.m.
Location: Hunter CCR Landfill	Comments: Looking southwest at discharge end of culvert passing road to industrial landfill. Note some accumulation of sediment and vegetation growth.



Photo Number: 19	Date: 8/24/2023 2:15 p.m.
Location: Hunter CCR Landfill	Comments: Looking northeast at inlet to culvert in Photograph 18. Discharge end of culvert recommended to be cleaned.



Photo Number: 20	Date: 8/24/2023 2:20 p.m.
Location: Hunter CCR Landfill	Comments: Looking southeast at depressed area used as detention area to capture run-off from northern portion of access road..



Photo Number: 21	Date: 8/24/2023 2:20 p.m.
Location: Hunter CCR Landfill	Comments: Looking southeast at depressed area used as detention area to capture run-off from southern portion of access road.

