ANNUAL CCR UNIT INSPECTION REPORT
2024

NEW CASTLE STATION ASH LANDFILL
WEST PITTSBURG, LAWRENCE COUNTY, PENNSYLVANIA

Prepared For:

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NEW CASTLE GENERATING STATION
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CEC Project 327-485.0004

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1.0 INTRODUCTION

On behalf of New Castle Power, LLC, Civil & Environmental Consultants, Inc. (CEC) has prepared the 2024 Annual Inspection Report for the New Castle Station Ash Landfill in accordance with the United States Environmental Protection Agency (USEPA) Coal Combustion Residuals (CCR) Rule 40 CFR 257.84 (§257.84) dated April 17, 2015, as amended July 2, 2015.

Title 40 Code of Federal Regulations (CFR) Part 257 addresses, in part, the management of Coal Combustion Residuals (CCR Rule, or Rule) in regulated units, including landfills. Specific to §257.84(b) of the Rule, existing and new CCR landfills must be inspected on an annual basis by a qualified professional engineer. For the New Castle Generating Station (operated by New Castle Power, LLC), this inspection requirement applies to the existing New Castle Station Ash Landfill (Ash Landfill). In support of this obligation, Mr. Zachary Wisniewski (a qualified professional engineer with Civil & Environmental Consultants, Inc. [CEC]) conducted an on-site inspection of the Ash Landfill on December 17, 2024. The findings from this annual inspection are summarized in the remaining sections of this correspondence.

As required, this report will be placed in the New Castle facility's operating record per §257.105(g)(9), notice provided to the State Director per §257.106(g)(7) and posted to the publicly accessible internet site per §257.107(g)(7). Placement of the prior annual inspection report into the facility's operating record was accomplished on January 14, 2024. Per §257.84(b)(4), the date that the annual inspection report must be entered into the facility's operating record is based on the previous inspection report, therefore, the current report will be entered into the facility's operating record no later than January 15, 2025.

2.0 BACKGROUND

The Ash Landfill is situated north of the main generating station. Prior to landfill development in this portion of the property, an impoundment existed (occupying an area of approximately 120 acres) that was used for the disposal of sluiced fly ash and bottom ash; these operations took place from approximately 1939 to 1978. From 1978 to 1984 and following the installation of electrostatic precipitators at the station, "dry" fly ash was disposed on the dewatered impoundment area. Beginning in 1984, CCR materials (including "dry" fly ash and dredged bottom ash) and non-CCR material (class 2 and 3 wastes only) have been placed in this area.

In 1997, the Pennsylvania Department of Environmental Protection (PADEP) issued Solid Waste Permit No. 300818 for the Ash Landfill, addressing Stages 1, 2, and 3A. In April 2008, a permit modification was issued for Stages 4, 5, 6, and 7, which together comprise a vertical expansion of the Ash Landfill over top of the previously PADEP permitted stages.

From 2008 through 2010, approximately 16.8 acres of layover liner system (liner between Stages 4 and underlying Stages 1, 2, and 3A) was placed within Stage 4. Approximately 17.9 acres of final cover cap liner system was installed over the lower landfill slopes (southern and eastern perimeters) in 2008/2009; approximately 11.6 acres was installed over Stage 1, 2, and/or 3A sideslopes below the area designated for Stage 5 (not active) in 2010; and approximately 10.2 acres was installed over Stage 1, 2, and 3A sideslopes below the area designated for Stage 6 (not active) in 2013. Therefore, Stages 1, 2, and 3A were entirely capped and closed by 2013 with the layover liner system installation in Stage 4 and final cover cap placement in the areas designated for Stages 5 and 6.

Stage 4 is currently the active disposal area. The currently permitted Ash Landfill occupies an area of approximately 60 acres and is operated/maintained in accordance with Permit No. 300818.

In June 2016, the New Castle Generating Station successfully completed a natural gas addition project and began operating with this new fuel source. As a result, disposal of CCR and non-CCR materials (class 2 and 3 wastes only) in the Stage 4 area has been significantly reduced since approximately May 2016. In 2017, intermediate cover, which is now well established, was installed over the majority of the previous active face of Stage 4.

With respect to the Ash Landfill, CEC's evaluation has focused on the following items as outlined in §257.84(b)(1)(i-ii):

- *A review of available information regarding the status and condition of the CCR unit, including, but not limited to, files available in the operating record; and*
- *A visual inspection of the CCR unit to identify signs of distress or malfunction.*

Specific to CEC's preparation of the annual inspection report, and per §257.84(b)(2)(i-iv), the following aspects have been addressed:

- *Any changes in geometry of the structure since the previous annual inspection;*
- *The approximate volume of CCR contained in the unit at the time of the inspection;*
- *Any appearances of an actual or potential structural weakness of the CCR unit, in addition to any existing conditions that are disrupting or have the potential to disrupt the operation and safety of the CCR unit; and*
- *Any other change(s) which may have affected the stability or operation of the CCR unit since the previous annual inspection.*

3.0 OPERATING RECORDS REVIEW

Principal items reviewed as part of this year's inspection included, but were not limited to: Design Drawings, 2024 Weekly and Periodic Landfill Inspection Reports that have been completed since the 2023 inspection, 2023 Annual Landfill Operations Report, and Solid Waste Permit No. 300818. During the site inspection, Mr. Wisniewski interviewed facility personnel (Mr. Christopher Power) to verify the information contained within the operating record.

3.1 ENVIRONMENTAL CONTROL SYSTEM OVERVIEW

3.1.1 Layover Liner System

The active disposal area overlies the previous disposal areas (Stages 1, 2, and 3A). A layover liner system consisting of the subbase layer, geosynthetic clay liner, 60-mil textured HDPE geomembrane with a geocomposite drainage layer and leachate detection system was installed above Stages 1, 2, and 3A prior to placement of CCR materials in Stage 4.

3.1.2 Leachate Collection System

A leachate collection system is used to collect leachate from Stage 4 of the Ash Landfill. Leachate is routed to the Leachate Pond via dedicated perimeter ditches. From the Leachate Pond, the flows are discharged to the Beaver River via Outfall 009 in accordance with the New Castle Station's National Pollutant Discharge Elimination System (NPDES) Permit. There is a leachate leak detection system in place, located beneath the layover liner.

3.1.3 Stormwater Management

"Non-contact" stormwater and surface water is drained downslope. The slopes drain to perimeter stormwater ditches (separate from the leachate ditches) which convey the water to a Sedimentation Pond. From this pond, the waters are discharged to the Beaver River via NPDES-permitted Outfall 006.

"Contact" stormwater from within the active disposal area is collected in the leachate collection system and routed to the Leachate Pond as described above.

3.1.4 Cover System

The top of Stages 1, 2, and 3A that was within the designated areas of Stages 5 and 6 was capped using two feet of final cover soil with vegetative cover; double-sided bonded geocomposite consisting of 220-mil geonet and 6 oz. geotextile drainage layer; a 40-mil textured HDPE flexible membrane liner; and compacted subgrade. All lower perimeter slopes, as well as the plateaus and side slopes of Stages 5 and 6, have a final cover installed and established vegetation where final cover is present.

The majority of Stage 4 has intermediate cover installed.

3.2 SUMMARY OF LANDFILL CONSTRUCTION AND OPERATIONS

No construction activity was completed in 2024 other than routine maintenance activities.

The active disposal area (Stage 4) received 896 tons of residual waste during 2024, comprised mostly of sediment from the leachate pond, which was placed in the landfill from October 7, 2024, to October 10, 2024. As a result, the geometry and topography of Stage 4 has changed minimally.

3.3 REVIEW OF PRIOR INSPECTIONS

3.3.1 Weekly inspections

A review of weekly inspections has concluded that no significant deficiencies occurred at the facility that required remedial actions.

3.3.2 Annual Inspections

A review of the previous annual inspection report has determined that there were no deficiencies or releases, actual or potential structural weaknesses, or concern to the stability of the landfill. All environmental control systems were in good operating condition and functioning as intended.

3.4 CCR DISPOSAL

Based on review of the 2023 Annual Landfill Operations Report and with disposal volumes of 896 tons mostly comprised of sediment from the leachate pond. The total in-place disposal quantity of CCR and non-CCR materials (class 2 and 3 wastes only) is estimated at approximately 1,379,756 tons.

4.0 SITE INSPECTION

The site inspection was performed on December 17, 2024, by Mr. Wisniewski, during which time efforts were focused on identification of standard geotechnical signs of distress or malfunction. Specific aspects such as slumping at the toe of slope, tensile cracking, abnormal or excessive erosion on the side slopes, slope bulging, groundwater/surface water seepage or ponding were assessed. If present, these readily visible signs are potential indicators of structural weakness of the CCR Landfill unit. Photographs were taken during the site inspection to document findings. A photograph location map is included in Appendix A and the photographs are included in Appendix B.

4.1 VISUAL SIGNS OF DISTRESS OR MALFUNCTION

No visual signs of distress or malfunction were observed during the inspection. Stormwater drainage features, slope appearance and stability, leachate conveyance mechanisms, and overall site conditions were assessed. Capped portions of the Ash Landfill exhibited well established vegetative cover. The intermediate cover vegetation of Stage 4 appears healthy with full coverage.

4.2 REVIEW OF ENVIRONMENTAL CONTROL SYSTEMS

With no evidence to the contrary, the layover liner system at the active Stage 4 disposal area is believed to be in good operating condition and functioning as intended. At the time of the inspection, leachate and stormwater conveyance systems were operating as designed. A leachate leak detection pipe was reviewed during the inspection and was not flowing, indicating that the bottom liner system of Stage 4 is not leaking.

4.3 REVIEW OF PREVIOUSLY RECOMMENDED ACTIONS

No corrective actions were required based on the findings of the 2023 Annual Inspection. Recommendations were limited to the continued repair of any animal burrows or holes, if any, observed during weekly inspections to prevent instability, maintenance of access to closed portions of the landfill for inspection purposes, and continued operation and maintenance of the stormwater drainage features and leachate collection systems. Based on site conditions and the review of weekly inspection logs, no animal burrows or holes were observed in 2024.

5.0 CONCLUSIONS

5.1 CHANGES IN GEOMETRY

CCR and non-CCR materials have been placed within the active disposal area at approximate elevations ranging between 836 and 842 feet mean sea level. No significant changes have been made to the geometry of the Ash Landfill site since the previous annual inspection, since only 896 tons of CCR materials were disposed in 2024.

5.2 IN-PLACE CCR DISPOSAL QUANTITIES

As previously mentioned, the total in-place disposal quantity of CCR and non-CCR materials is estimated at approximately 1,379,756 tons.

5.3 APPEARANCES OF AN ACTUAL OR POTENTIAL STRUCTURAL WEAKNESS OF CCR UNIT

At the time of inspection, there were no signs of distress or malfunction that would indicate actual or potential structural weakness at the Ash Landfill.

5.4 CHANGES THAT MAY AFFECT THE STABILITY OR OPERATION OF THE CCR UNIT

There have been no changes to the Ash Landfill area that pose a threat or concern to the stability of the landfill.

6.0 RECOMMENDATIONS

1. Ensure adequate access to the closed portions of the landfill to maintain the ability to perform weekly visual site structural inspections.

2. Continue operations and maintenance of stormwater drainage features and leachate collection systems.

3. Repair any animal burrows or holes observed during weekly inspections to prevent instability

There were no deficiencies or releases identified during the annual inspection that required the owner or operator to perform corrective actions as required under §257.84(b)(5).

7.0 PROFESSIONAL ENGINEER'S CERTIFICATION

In accordance with §257.84(b) of the Rule, I hereby certify based on a review of available information within the facility's operating records and observations from my personal on-site inspection (including the photographs contained in Appendix B), that the New Castle Station Ash Landfill does not exhibit any appearances of actual/potential structural weakness that would be disruptive to the normal operations of the CCR Unit. The unit is being operated and maintained consistent with recognized and generally accepted good engineering standards and practices.

Zachary T. Wisniewski, P.E.
Printed Name of Professional Engineer

Signature

PE088813	Pennsylvania	1/14/25
Registration No.	Registration State	Date

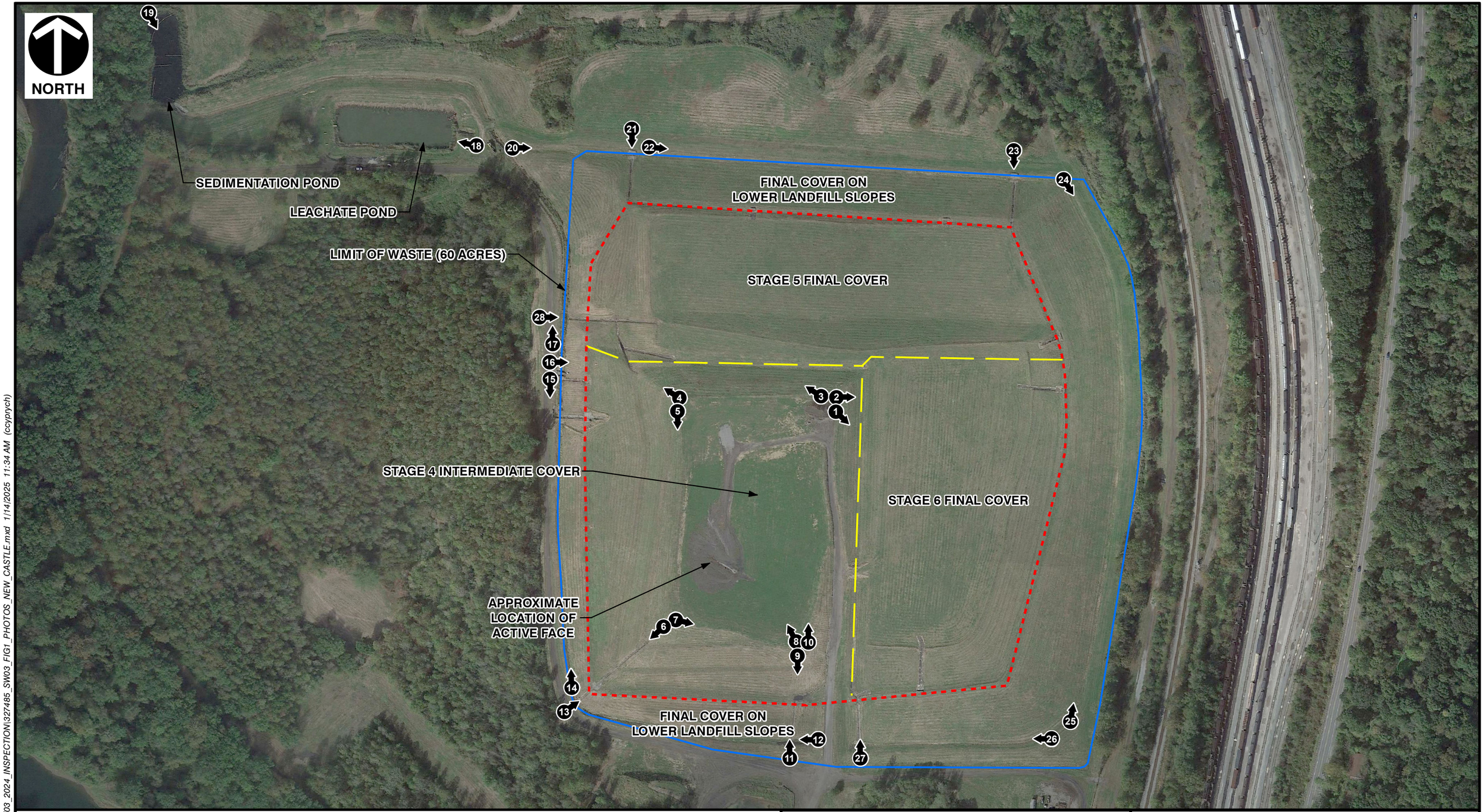
Stamp/Seal:

8.0 REFERENCES

1. Application for Major Permit Modification of Vertical Expansion. New Castle Ash Landfill. Permit I.D. No. 300818. December 2010. Civil & Environmental Consultants, Inc.
2. 2023 New Castle Generating Station Annual Landfill Operations Report.
3. Landfill Periodic Inspection Reports, January 2024 – November 2024.
4. 40 Code of Federal Regulations, Part 257.

APPENDIX A

PHOTOGRAPH LOCATION MAP



LEGEND

2024 ANNUAL INPSECTION PHOTOGRAPH
(ARROW DENOTES DIRECTION OF VIEW)

REFERENCE

GOOGLE EARTH PRO IMAGERY, 2019.

SCALE IN FEET

0 250 500

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NEW CASTLE GENERATING STATION
WEST PITTSBURG, PENNSYLVANIA

PHOTOGRAPH LOCATION MAP

DRAWN BY:	CLC	CHECKED BY:	ZTW	APPROVED BY:	* Hand signature on file DRL*	FIGURE NO:	1
DATE:	JAN 2025	SCALE:	1 " = 250 '	PROJECT NO:	327-485.0004		

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APPENDIX B

PHOTOGRAPHS

Photograph 1: Stage 6 final cover is well vegetated and mowed annually. No evidence of animal burrows, erosion, or stability issues.

Photograph 2: Stage 5/Stage 6 final cover is well vegetated and mowed annually. No evidence of animal burrows, erosion, or stability issues.

Photograph 3: Stage 5 final cover is well vegetated and mowed annually. No evidence of animal burrows, erosion, or stability issues.

Photograph 4: Downchutes from west side of Stage 4 and Stage 5. No evidence of animal burrows, erosion, or stability issues.

Photograph 5: Stage 4 west slope is well vegetated and mowed annually. No evidence of animal burrows, erosion, or stability issues.

Photograph 6: Stage 4 southwest corner slope and downchute is well vegetated and mowed annually. No evidence of animal burrows, erosion, or stability issues.

Photograph 7: Stage 4 south slope is well vegetated and mowed annually. No evidence of animal burrows, erosion, or stability issues.

Photograph 8: Intermediate cover in Stage 4 active area looking northwest is well vegetated and mowed annually.

Photograph 9: Stage 4 south slope is well vegetated and mowed annually. No evidence of animal burrows, erosion, or stability issues.

Photograph 10: Intermediate cover area in Stage 4 active area /Stage 6 final cover is well vegetated and mowed annually.

Photograph 11: Non-contact stormwater downchute on south slope is clear of obstructions. Gabion energy dissipator is installed at the junction with the stormwater (non-contact water) perimeter ditch.

Photograph 12: Non-contact stormwater channel on south slope is clear of obstructions. The final cover south slope is well vegetated and mowed annually. No evidence of animal burrows, erosion, or stability issues.

Photograph 13: Non-contact stormwater downchute in southwest corner is clear of obstructions. Gabion energy dissipator is installed at junction with the stormwater perimeter ditch.

Photograph 14: West non-contact stormwater channel looking north is clear of obstructions. West final cover lower slope is well vegetated and mowed annually. No evidence of animal burrows, erosion, or stability issues.

Photograph 15: West non-contact stormwater channel looking south is clear of obstructions. West final cover lower slope is well vegetated and mowed annually. No evidence of animal burrows, erosion, or stability issues.

Photograph 16: Leachate collection zone and leak detection zone discharge pipes.

Photograph 17: West non-contact stormwater channel looking north is clear of obstructions. West final cover lower slope is well vegetated and mowed annually. No evidence of animal burrows, erosion, or stability issues.

Photograph 18: Leachate (contact water) Pond. No evidence of animal burrows or liner damage.

Photograph 19: Non-contact stormwater Sedimentation Pond.

Photograph 20: North non-contact stormwater channel is clear of obstructions. North final cover lower slope is well vegetated and mowed annually. No evidence of animal burrows, erosion, or stability issues.

Photograph 21: Non-contact stormwater downchute in northwest corner is clear of obstructions. Gabion energy dissipator is installed at the junction with the stormwater (non-contact water) perimeter ditch.

Photograph 22: North non-contact stormwater channel is clear of obstructions. North final cover lower slope is well vegetated and mowed annually. No evidence of animal burrows, erosion, or stability issues.

Photograph 23: Non-contact stormwater downchute in northeast corner is clear of obstructions. Gabion energy dissipator is installed at the junction with the stormwater (non-contact water) perimeter ditch.

Photograph 24: East non-contact stormwater channel looking south is clear of obstructions. East final cover lower slope is well vegetated and mowed annually. No evidence of animal burrows, erosion, or stability issues.

Photograph 25: East non-contact stormwater channel looking north is clear of obstructions. East final cover lower slope is well vegetated and mowed annually. No evidence of animal burrows, erosion, or stability issues.

Photograph 26: South non-contact stormwater channel looking west is clear of obstructions. South final cover lower slope is well vegetated and mowed annually. No evidence of animal burrows, erosion, or stability issues.

Photograph 27: Non-contact stormwater downchute on south slope is clear of obstructions. Gabion energy dissipator is installed at the junction with the stormwater (non-contact water) perimeter ditch.

Photograph 28: Non-contact stormwater downchute on west slope is clear of obstructions. Gabion energy dissipator is installed at base of downchute before the stormwater perimeter ditch.